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## **Human capital, research and development and structural transformation: The case of Portugal's failed transition to a knowledge-based economy (2000-2019)**

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Master (MSc) in Political Economy

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Instituto Universitário de Lisboa

September, 2023

Department of Political Economy

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*To my sister Claudia, for her love and support have always accompanied me,  
encouraging me in the pursuit of my interests and passions.*



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This work has been the fruit of a challenging process. I recall countless moments when I had to confront feelings of frustration and solitary wandering through ungraspable flows of thoughts, which appeared to lead nowhere or even sabotage the slow progress previously made. However, as I am writing these last lines, it seems that I made it, and, in retrospect, I also have to admit that working on this dissertation has given me a great sense of intellectual pride and fulfilment, for which I am intensely grateful.

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## Resumo

Desde a década de 1990, as políticas que promovem a acumulação e melhoria dos recursos de conhecimento têm sido consideradas essenciais para a produtividade e o crescimento económico. Neste contexto, Portugal, alinhado com as estratégias de desenvolvimento da UE desde 2000, tem investido significativamente em capital humano e em I&D. Contudo, o país não conseguiu melhorar o seu perfil de especialização. Partindo de narrativas contrastantes sobre os motores da mudança estrutural, a dissertação aborda este enigma através de uma análise diacrónica da economia no seu conjunto, concentrando-se em seis dimensões: reformas estruturais na regulação económica (1) e na segurança social (2), capacidade da economia para absorver eficazmente trabalhadores qualificados e despesas em I&D (3), capacidade produtiva no sector industrial (4), política industrial (5) e alcance e fundamentos da intervenção económica do Estado (6). Os resultados obtidos para a primeira, segunda e quarta dimensões sugerem que uma interpretação baseada numa perspetiva "produtivista" permite uma melhor compreensão do caso português face às interpretações que enfatizam a necessidade de reformas estruturais. Aliás, os resultados relativos à terceira dimensão questionam a interpretação de que os esforços para expandir e melhorar os recursos de conhecimento têm sido insuficientes. Enfim, embora as contribuições heterodoxas anteriores tenham analisado de forma perspicaz o fraco desempenho económico de Portugal principalmente através da ótica da economia política internacional, os resultados relativos à quinta e sexta dimensões também evidenciam que nem a política industrial nem a intervenção do Estado cumpriram com a ambição de melhorar a estrutura produtiva do país.

**Palavras-chave:** Mudança estrutural, I&D, capital humano, capacidade produtiva, reformas estruturais, política industrial

**Código JEL:** L50; 052





## **Abstract**

Since the 1990s, policies that foster the accumulation and improvement of knowledge inputs have been considered pivotal for productivity and economic growth. In this context, Portugal, aligning with the EU development strategies since 2000, has invested significantly in human capital and promoting R&D activities. Nevertheless, despite remarkable progress in these areas, the nation has failed to upgrade its specialisation profile. Drawing from contrasting narratives about the drivers of structural change, the dissertation addresses this puzzle through an economy-wide diachronic analysis focusing on six key dimensions: structural reforms in economic regulation (1) and in the social model (2), the economy's capacity to effectively absorb qualified labour and R&D expenditures (3), productive capacity within the manufacturing sector (4), industrial policy (5), and the scope and rationales of the state's economic intervention (6). The results obtained in the first, second and fourth dimensions suggest that an interpretation grounded in a "productionist" perspective provides a better understanding of the Portuguese case than mainstream accounts emphasising the need for institutional structural reforms. Furthermore, the findings concerning the third dimension cast doubt on the interpretation that Portuguese efforts to expand and improve knowledge inputs have been insufficient. Lastly, while previous heterodox contributions have insightfully examined Portugal's weak economic performance primarily through the lens of international political economy dynamics, the findings regarding the fifth and sixth dimensions also highlight that neither industrial policy nor state intervention at the national level have aligned with the ambition of upgrading the country's productive structure.

**KEYWORDS:** Structural change, R&D, human capital, productive capacity, structural reforms, industrial policy

**JEL Classification:** L50; 052



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# Introduction

Structural transformation is the development process through which nations transform their productive structure and the capabilities underlying them<sup>1</sup>. This process materialises by switching to more highly valued-added knowledge and technologically intensive productive activities. Empirical evidence (Szirmai, 2011; World Bank, 2002, p. 406) corroborates that upgrading the specialisation profile of a nation's economy is paramount to achieving long-term economic growth. Most fundamentally, more sophisticated productive structures imply the development of productive forces better suited to enable human flourishing for the many while addressing the existential threat of anthropogenic climate change. Put differently, upgrading a nation's specialisation profile opens the possibility of embarking on sustainable and high-quality development. However, the issue of how to achieve this transformation has been an object of contention in economic development since the days of early development economics in the 1950s.

In the 1990s, in parallel to the culmination of a general process of restructuring of advanced capitalist economies beginning in the 1970s, the idea that knowledge and technology had become more critical than in the past for economic development turned into common wisdom and was embraced by international organisations and institutions, such as the Organisation for Economic Co-operation and Development (OECD) and the World Bank. Based on these premises, an influential body of literature in political economy, drawing from endogenous growth theory, has contended that, for a country to compete globally as a knowledge-based economy, it must invest substantially in human capital (primarily through higher education) and research development (R&D). This theoretical framework has been one central pillar of the European Union's (EU) strategy for economic development since 2000, as epitomised by the Lisbon Agenda and its successor, the Europe 2020 strategy.

This dissertation aims to analyse the case of Portugal's failed attempt to specialise in technological and knowledge-intensive activities. The Portuguese case presents a puzzle worthy of inquiry because although its governments have endeavoured to promote human capital formation and R&D activities since 2000 and have accomplished significant

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<sup>1</sup>This is a narrow definition of structural transformation, drawn from a "productionist" perspective (see Chang, 2010a), to which the author of this dissertation does not fully adhere. In fact, in his view, structural transformation should encompass and prescriptively recommend not only changes in productive structure but in the relations of production as well. However, for this dissertation's objectives, the author methodologically adopts the narrower definition of structural change. For digging further into the alternative perspective, grounded on more radical insights, it is recommended to read Ashman et al. (2020).



improvements in these realms, Portugal has failed to deepen its productive structure in the last two decades (see section 1.2). Exactly as at the turn of the century, Portuguese exports are still based on low-tech and low-medium-tech products. Furthermore, Portugal has increasingly relied on low-productivity and non-tradable service sectors, such as tourism and real estate activities, regarding the export of services. Hence, given that the case of Portugal seems to be at odds with common wisdom, the dissertation's research question is the following: *Why did Portugal fail to structurally transform its economy despite its remarkable improvements in human capital and R&D?*

This is a relevant question also because the unfinished structural transformation of the Portuguese economy has been considered by prominent Portuguese scholars as a great fragility of its economy, which had contributed to both its poor growth performance in the last two decades and the deterioration of its external indebtedness, thereby highly exposing the country to the 2010-2012 European external debt crisis (Godinho & Mamede, 2016; Mamede et al., 2014; Martins & Mamede, 2022). Furthermore, the increased reliance on sectors based on international mobility of people, such as tourism and hospitality, has also made Portugal vulnerable to the harsh economic consequences of the COVID-19 pandemic (Martins & Mamede, 2022, pp. 60-61). These overall structural weaknesses were not addressed by the 2011 Memorandum of Understanding (MoU) between the Portuguese Republic and the Troika of the European Commission (EC), the European Central Bank and the International Monetary Fund, which trivialised the problem of competitiveness of the Portuguese economy to fiscal sustainability and labour costs, thereby legitimising a process of enforced convergence to the export-led growth model of core countries through internal devaluation (Scharpf, 2021). The proof that this intervention did not solve the external fragility of the Portuguese economy is provided by the EC's annual *Alert Mechanism Report 2022* (EC, 2021a, p. 71).

The research question is addressed through an interpretative study focusing on two alternative lines of explanation. The first conjecture, grounded on the Lisbon Agenda's wisdom precepts, speculates on the possibility that the Portuguese failure is attributable to two factors. First, the level of investment in R&D and human capital reached by Portugal has been insufficient to transition the country towards knowledge-intensive activities. Second, the higher education and technological agenda was not backed by the necessary structural reforms to eliminate product and labour market "rigidities" and "modernise" the social model according to "smart" social investment criteria. The second alternative departs entirely from the premises of the first. Based on a capability-based approach (Lee, 2020) and its specific

operationalisation within a production-centred perspective (Andreoni, 2011; Andreoni & Chang, 2016, 2017, 2019; Andreoni & Gregory, 2013; Chang & Andreoni, 2020, pp. 8-12), this stance points instead to the problematic nature of the Portuguese and EU growth strategies for being disconnected from concrete productive dynamics.

The dissertation's main argument goes along the lines of the latter interpretation. Furthermore, it is also conjectured that Portugal has moved further from virtuous structural change due to structural reforms based on the conceptual framework of the first interpretation and a lack of a coherent commitment at the national level to upgrade the country's productive structure. Consequently, this dissertation also ends up engaging in a debate with other heterodox accounts on the question of structural transformation in Portugal, especially those that provide an overall positive assessment of the industrial policy implemented in Portugal (Godinho & Mamede, 2016; Mamede, 2023a; Mamede et al., 2014). While complementary to their understanding that the lack of structural change in Portugal should be mainly attributed to the effects of internationally-driven macro-dynamics on an already structurally weak economy, this dissertation highly questions the rationales of industrial policy and state intervention in Portugal.

The dissertation is structured as follows. The first chapter presents the literature review, which breaks into two sections. The first section consists of a general theoretical discussion to elucidate the importance of human capital and R&D in endogenous growth theory, the context and the main pillars of the Lisbon Strategy, the different perspectives on Lisbon's strategy failure and alternative views on structural transformation. The second section introduces the Portuguese case in more detail. The second chapter illustrates the dissertation's methodology based on an interpretative approach. The empirical analysis of the case study is conducted in the third chapter. In the fourth chapter, the main results of the empirical analysis are presented and discussed in light of the theoretical discussion presented in the first section of the first chapter. Finally, the conclusions of the dissertation are presented.



# Chapter 1

## Literature review

### 1.1 The theoretical framework

#### 1.1.1 On the importance of human capital and R&D in endogenous growth theory

The idea that investing in human capital through education and R&D is critical to accomplishing long-term economic growth in a new global economy characterised by the unprecedented importance of knowledge accumulation, although not new, has its roots in endogenous growth theories. This literature emerged in the 1980s due to the growing dissatisfaction with the neoclassical growth model by Solow (1956). The Solow model makes three essential predictions. First, it predicts that, given a population growth rate, the real income per capita level is determined by capital accumulation. Second, it anticipates that economic stagnation is inevitable in the long run due to diminishing returns to capital unless exogenous technological change comes in. Lastly, it expects conditional convergence among low-income and high-income countries sharing the same macroeconomic fundamentals. Whilst this model had been very influential among early development economists, it started to be deeply questioned in the 1980s because, besides the fact that the model itself recognised that much of the economic growth could be attributed to the exogenous residual, except for the case of East Asian economies (EAEs), conditional international convergence failed to materialise, and some high-income countries managed to sustain permanent economic growth with the same level of savings (Cypher & Dietz, 2004, pp. 234-240). Therefore, endogenous growth theories sought to make sense of these empirical puzzles by questioning either the property of diminishing returns to capital (Lucas, 1988) or technology's exogeneity (Romer, 1990).

The AK model by Lucas (1988) underlines the significance of human capital accumulation for escaping diminishing returns to capital. Since the social returns to education and training are higher than individual returns, Lucas considers human capital accumulation a key driver for economic growth. The positive externalities of human capital are associated with more productive, highly educated and trained workers making other workers more productive. Empirical studies, such as the one by Barro (1991), based on data from 98 countries in the period 1960-1985, seem to support the insight by Lucas that human capital accumulation, measured in terms of school enrolment rate, increases productivity and promotes economic growth. However, more recent studies (Égert et al., 2022) claim that the

quality of education matters much more for productivity gains than its quantity. Hence, more relevance has been given to other indicators, such as the Programme for International Student Assessment (PISA) and the Program for the International Assessment of Adult Competencies (PIAAC).

Romer (1990) rejects the AK model's conclusion that capital accumulation can sustain long-term economic growth. This model refuses the assumption of a fixed rate of technology and departs entirely from the dynamics of capital accumulation, arguing that diminishing returns are instead escaped through innovation-driven technological progress attained by investing in R&D. R&D leads to higher productivity and economic growth due to knowledge spillovers and scale effects. The former is caused by knowledge being non-rival, implying that innovators do not absorb the full benefits of their research activities. The latter has to do with the fact that more resources devoted to R&D lead to a higher rate of innovation and economic growth. This scale effect is especially underlined by Grossman and Helpmann's analysis (1994, p. 34), which suggests that the benefits of R&D are not linear and tend to accrue once a certain critical threshold of R&D expenditure is reached. In this light, the innovation process is shaped by firms' incentives to undertake uncertain investments in R&D. The willingness to make such investments depends on various factors, including expectations of seizing monopoly profits, maintaining market power or capturing market shares and the availability of an affordable skilled workforce. Besides promoting innovation, Griffith et al. (2003) argue that investing in R&D also contributes to building absorptive capacity. Griffith et al. (2004), drawing from a panel of industries in 12 OECD countries, provide empirical evidence that investing in R&D promotes economic growth both directly (through innovation) and indirectly (through the catching-up effect).

The policy implications of Lucas and Romer's models are that governments must incentivise investment in R&D and human capital. The latter implicitly emphasises the necessity to invest in higher education given that it considers human capital not in terms of its general accumulation but in terms of its skills level. The rationales for this guideline are mainly two. First, human capital and R&D generate positive externalities far exceeding the private benefits of individuals and firms producing them. Thus, their provision risks being below the socially optimal level if left in the hands of the market. Second, simultaneous investment is necessary to unleash positive cumulative effects since investing in R&D generates higher demand and productivity of higher education and subsidising higher education leads to increased profitability of R&D. It implies that endogenous growth models

make a case for a horizontal industrial policy with limited government intervention to solve market failures.

### **1.1.2 The Lisbon Strategy: A knowledge-based economy with European characteristics or a liberalisation agenda?**

The notion that knowledge and technology had become more relevant than in the past for staying competitive and achieving long-term growth emerged in the 1990s during the maturation of a general restructuring process of advanced capitalist economies beginning in the 1970s when the Fordist production regime entered into crisis. In this context, the rise of Information Communication Technologies (ICTs) and the trend of firms from high-income countries to offshore low-value-added manufacturing to middle-income and low-income countries seemed to present mature economies with both a challenge and opportunity to pursue a growth strategy aimed at upgrading their level of specialisation to the production of more technologically and knowledge-intensive tradable goods and services. In the 1990s, the diverse growth performance of OECD countries and the economic dynamism of those high-income countries that specialised in the ICT sector strengthened the knowledge-based paradigm within international organisations and institutions. This paradigm shift was reflected in several reports. In a report published in 1996, the OECD contended that “knowledge is now recognised as the driver of productivity and economic growth” (OECD, 1996, p. 3). In its annual *World Development Report 1998/1999*, the World Bank (1998) concluded that knowledge, not capital accumulation, is the key to development and growth.

In a white paper, the EC (1993) regarded that the EU was lagging behind these recent transformations, especially when compared to Japan and the U.S. According to the document, this was mirrored by its overall economic performance with shrinking growth potential, the deterioration of its trade performance, specifically in high-value-added markets, and the fact that, in the 1990s, for the first time after decades of catching up, the divergence between the EU and the US in terms of real GDP per capita increased due to the better growth performance of the latter. This was also at odds with what was previously expected, primarily through the lens of neoclassical macroeconomic models, given that the US had a lower saving rate and high trade deficit and the EU had just integrated into a single market. Hence, this further backed the view that the key to the US economy dynamism in the 1990s was its early transition to a knowledge-based economy.

In light of the new endogenous growth models, on the one hand, and the ascent of neoliberal orthodoxy, on the other, the view that the US was more successful in its early

transition to a knowledge-based economy because of more significant investments in R&D and education, and softer economic regulation turned into the hegemonic narrative. In fact, several authors (Sapir et al., 2004) attributed the poor economic performance of European countries not only to low investment in R&D and education but also to institutional rigidities caused by excessive employment protection legislation (EPL) and product market regulation (PMR). According to this perspective, the former would hamper technological change by reducing workers' efforts, disincentivising firms to pursue innovative but risky activities and preventing the reallocation of workers and occupations from declining sectors to innovative ones (see Cappellari et al., 2012, pp. 190-191 for a review). The latter is considered detrimental to innovation since it would prevent small and medium innovative firms from entering the market due to high entry barriers and disincentivise incumbent-protected firms from innovating further (Aghion et al., 2005). Lastly, what concerned the EU at the time was the belief that its age-based income-transfer welfare model was becoming unsustainable due to its ageing population, high unemployment, and insufficient labour market participation (Esping-Andersen et al., 2002).

The Lisbon Strategy was approved under the Portuguese presidency of the European Council as the EU's direct response to these challenges. As a result of a lengthy and elaborate exchange between innovation scholarship and policy-making (M. J. Rodrigues, 2002), the Lisbon Agenda aimed at transforming the EU into "the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion" (Lisbon European Council, 2000, p. 2). As stressed by M. J. Rodrigues (2009, p. 2), this formulation is significant for conveying the crucial understanding that, in the mind of EU scholars and policy-makers, the objective of turning the EU into a knowledge-based economy could not be separable from the goal of preserving social cohesion. As a matter of fact, at the end of the 1990s, it was already clear that the EU could not just emulate the US liberal market-based approach, given that rising inequalities and social exclusion were the other side of the coin of the latter's dynamism. Therefore, the core underlying idea of the Lisbon Strategy was to transform the EU into a knowledge-based economy while remaining founded on the essential pillars of European identity, which, according to some scholars (Castells, 2002), were embedded into its social model.

In understanding the ideological pillars of the Lisbon Agenda, one should acknowledge the influence of two central doctrines: the social democratic tradition and the new emerging "Third Way" variant of neoliberalism (Morel et al., 2012). As personified by Esping-

Andersen et al. (2002), the former emphasised the need to recalibrate the European social model towards higher social investment while keeping key social protection measures, such as unemployment benefits. As instead exemplified by Giddens (1998), while turning the traditional neoliberal idea of the welfare state as a mere cost into a growth-enhancing productive factor, the latter highlighted the need to adjust compensatory and passive welfare measures (considered morally hazardous and wasteful) into more fiscally sustainable social investment criteria, such as early childhood education and care (ECEC), higher education and active-labour market policies (ALMPs). However, despite their relevant differences, what both traditions had in common at the time was the primacy of social investment based on a logic of “preparing” rather than “compensating” and the idea that the European way to a knowledge-based economy consisted of finding a compromise between preserving the European social model and acknowledging the demands of contemporary capitalism by adapting the former's necessity to the latter's economic imperative. Hence, under these premises and given the prior neoliberal trajectory undertaken by the EU integration in the 1990s as embodied by the creation of the Economic and Monetary Union (EMU), the Lisbon Strategy became increasingly tilted toward a de facto liberalising agenda (Amable et al., 2009).

The Lisbon Strategy and its successor, the Europe 2020 strategy, incorporated a comprehensive policy and institutional approach, encompassing innovation policy and structural reforms in economic regulation and social security. In innovation policy, the Lisbon Strategy set the goals for the EU to reach 3% of gross domestic expenditure on R&D (two-thirds of which from the private sector) by 2010<sup>2</sup> and introduced the European Innovation Scoreboard<sup>3</sup> to benchmark the innovation performance of member states. The path of structural reform for the labour market envisaged in the spirit of the agenda, known as “flexicurity”, consisted of dismantling EPL in favour of labour flexibility complemented by ALMPs. In product markets, the prescribed recipe was deregulation. As for the social protection systems, the stress was on recalibration from traditional welfare measures like pensions and compensatory income transfers to criteria aimed at social investment, primarily

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<sup>2</sup>The target of reaching 3% of R&D intensity by 2010 was set in the 2002 Barcelona European Council. This target was kept in the Europe 2020 strategy. However, given the Europe 2020 strategy's failure to reach it, the target was recently reconfirmed (EC, 2021b) for 2030.

<sup>3</sup>The European Innovation Scoreboard was transformed into the Union Innovation Scoreboard (UIS) following the Europe 2020 strategy.



through expanding and improving the provision of ECEC<sup>4</sup> and higher education<sup>5</sup>. In this context, EU public policies had to adapt to Lisbon's paradigm as well, implying that a greater share of the European structural and investment funds (ESIF) was allocated to R&D activities<sup>6</sup>, tertiary education and ALMPs, and became increasingly subjected to new competitive benchmarking criteria at the expense of the logic of regional convergence (Landesmann & Stöllinger, 2020; Marques et al., 2022, p. 345; Pianta et al., 2016, p. 21).

### **1.1.3 The failure of the Lisbon Strategy: What did it go wrong?**

It is commonly acknowledged, even among its intellectual advocates, that the Lisbon Strategy failed or, at best, made little progress in achieving its objectives. In fact, besides failing to reach its main quantitative targets<sup>7</sup> from 2000 to 2010, the Lisbon Agenda failed to turn the EU into the most competitive and dynamic knowledge-based economy globally and foster more social inclusion. Some critics (Lundvall & Lorenz, 2012, p. 333) even say that the severity and prolonged duration of the EU's 2007-2008 global financial crisis (GFC) further demonstrated this failure. However, some of the pitfalls of the Lisbon Agenda were already acknowledged before and partially prompted its mid-term review in 2005. Hence, one can split the main criticisms in two when assessing the Lisbon Strategy. On the one hand, one finds those that retain the underlying theoretical framework and the core objectives of the Lisbon Agenda but criticise the extent and the way the agenda was implemented. On the other hand, another body of literature criticises its core substance.

Several authors that belong to the former stream of the literature (Goulard & Bailey, 2010; Soete, 2009, p. 39) argue that the primary limitation of the Lisbon Strategy was its reliance on the open method of coordination (OMC)<sup>8</sup> for implementation. The rationale for this criticism is twofold. First, it is argued that, unlike other domains in which the EU has exclusive competence, the OMC does not provide the EU with the legal instruments to make

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<sup>4</sup>The 2002 Barcelona European Council set the goal of providing ECEC to at least 33% of children under three years of age and 90% of children between 3 years old and mandatory primary-school age in the EU by 2010. These targets were confirmed in the European Pact for Gender Equality 2011-2020 and mentioned again in the Europe 2020 Strategy.

<sup>5</sup>The Europe 2020 strategy set the goal for the EU to reach a share of 40% of higher graduates in the younger cohort by 2020.

<sup>6</sup>Based on calculations by Landesmann and Stöllinger (2020), RDI and technology accounted for 14% of the 2014-2017 EU budget on industrial policy, which amounts to the second most significant share of the budget after regional policy.

<sup>7</sup>The main quantitative objectives were to achieve a 3% R&D intensity, a 70% employment rate and an average economic growth of 3% by 2010.

<sup>8</sup>The OCM is a form of "soft law" conceived for implementing measures and policies over which the EU has no competence.

binding decisions. This implied that much of the implementation relied on the member states' efforts. Second, it is also asserted that another issue of the OMC was its little focus. In fact, instead of concentrating on a few feasible goals, the Lisbon Agenda set a long list of complicated objectives, many of which were formed in a too abstract and general way. As illustrated by the Sapir Report (Sapir et al., 2004), this line of criticism was very influential around the time of the 2005 mid-term review, which narrowed down the Lisbon Agenda's objectives to achieve more growth and jobs and put more emphasis on implementing liberalising structural reforms (Lundvall & Lorenz, 2012). Furthermore, another argument in line with the "lack of implementation hypothesis" underlines the failure of the EU to fully adhere to a growth strategy based on science and technology (Archibugi & Coco, 2005). This also appears to be displayed by the EU's constant failure to reach its 3% target of R&D intensity in the period 2000-2020.

The alternative view about the failure of the Lisbon Strategy differs from the former line of criticism for contesting the essence of the agenda. This more profound criticism begins by questioning the overall project of institutional reforms to reduce EPL and PMR. These reforms' assumption is that they would boost employment and promote innovation. However, based on OECD data, Amable et al. (2009) find that countries closer to the technological frontier do not share the same institutional arrangements regarding EPL and PMR. Furthermore, the supposed evidence about the adverse effects of EPL and PMR on innovation is not compelling. Conversely, it is acknowledged that higher EPL may positively affect technological change through several mechanisms, such as incentivising employers and employees to invest in specific skills, promoting trust and workplace cooperation, favouring the selection of efficient firms over technological laggards, making firms more selective in the recruitment of workers and incentivising firms to turn to labour-saving technologies (see Cappellari et al., 2012, pp. 190-191 for a review). By the same token, lower PMR may be an obstacle to structural change through various means, such as prematurely exposing new and restructuring firms to foreign competition, not discriminating between monopolies caused by innovative and predatory activities, promoting duplication efforts, inefficient scales and scrapping of specific assets owned by failed firms (see Andreoni & Chang, 2019, p. 138 for a review).

Various theoretical and empirical works also contest the Lisbon Agenda's overemphasis on higher education and R&D expenditure as a means that necessarily fosters better economic performance. For example, based on EU data, Bilbao-Osorio and Rodríguez-Pose (2004) show that the relationship between R&D intensity and economic growth is affected by various

country-specific factors. In particular, a problematic aspect of recommending these measures in an indiscriminating manner is that it disregards how their effectiveness largely depends on the country's specialisation profile. In this regard, Mamede (2017, pp. 388-389) argues that a risk associated with advising an increase of R&D intensity in countries with a few R&D-intensive industries is having an excess of R&D in less R&D-intensive sectors. In the same fashion, Marques et al. (2022) find that the expansion of higher education fostered by EU public policies in countries with a low share of high-tech industries and stagnant economic growth has contributed to the phenomenon of over-qualification in several EU countries.

However, a more fundamental problem with reducing a development strategy to providing knowledge inputs is that it overlooks how educated workers and R&D departments are not the only source of technological change. As emphasised by the concept of "learning in production" (Andreoni, 2011, p. 47; Chang & Andreoni, 2020, pp. 8-12), innovation has a cumulative and incremental dimension that directly derives from solutions to problems that materialise in the production process. Furthermore, the introduction of innovations and the decisions concerning investments to obtain them rely on the existence or expectations of a certain level of productive capacity, which, in turn, depends on an aggregate demand that makes it feasible (e.g., in terms of scale and time horizon). Hence, it implies that the Lisbon Strategy presented two significant conceptual limitations. First, by embracing a social investment paradigm that claims that one can easily and unproblematically distinguish between social expenditures that are bad (e.g., pensions) and good (e.g., higher education, ALMPs and ECEC) for productivity, it ignored the productivity-enhancing role of aggregate demand (Storm, 2020). Most fundamentally, it "*de-linked* [emphasis added] production and innovation dynamics from each other" (Chang & Andreoni, 2020, p. 8).

The EU's growth strategy's disregard for the actual production process was nonetheless the outcome of a post-industrial worldview strongly associated with the mainstream narrative surrounding the notion of a knowledge-based economy. The concept of a knowledge-based economy has often been presented as tantamount to a type of advanced capitalist economy in which knowledge-intensive services have replaced traditional manufacturing activities as the main driver of economic development (Chang, 2010b). However, this vision, often based on a wrong account of the drivers of deindustrialisation, fails to recognise how manufacturing activities are *still* vital for productivity and growth. The reasons why manufacturing is crucial for economic development are due to the unique properties of its activities, given their stronger structural interdependencies and complementarities with other sectors of the economy and the higher income elasticity of demand for their products (Andreoni & Chang,

2016, 2017, pp. 15-19, 2019, pp. 142-143; Andreoni & Gregory, 2013; Chang, 2010b). In this sense, part of the knowledge-based paradigm has also ignored how even “a country’s capacity to develop its services sector depends on the specific structural/technological composition of its manufacturing sector” (Andreoni & Gregory, 2013, p. 36).

From this alternative perspective, it follows that, as a consequence of its service-oriented bias, the Lisbon Agenda ended up compromising itself as it dismissed the actual productive dynamics at play in the EU, in particular, the growing polarisation of productive structures between the Southern periphery and the Central/Northern core. The already pre-existing structural asymmetries within the EU were further accelerating around the same time as the launching of the Lisbon Strategy, mainly due to the structural combined effects unleashed by the low specialisation profile of the Southern European economies (SEEs), the completion of monetary integration and the deepening of the processes of European integration and globalisation. In fact, the mutually reinforcing effects of deindustrialisation and financialisation associated with currency appreciation and unrestricted financial capital inflows from core countries weakened the productive capacity of SEEs (Celi et al., 2017, pp. 234-240; Gambarotto et al., 2019; Mamede, 2020; Storm & Naastepad, 2016), whose effects were further exacerbated by the increased exposure of these economies’ poorly sophisticated tradable sector to superior competitors, mainly from Eastern Europe (Celi et al., 2017, pp. 70-73). Then, in the late 2000s and early 2010s, the prolonged economic crisis and its prescribed cure of economic austerity inflicted a final blow on SEEs’ productive capacity by destroying their domestic demand (Celi et al., 2017, pp. 112-127; Gambarotto et al., 2019, pp. 158-161; Pianta et al., 2016, p. 13), with the further consequence of deepening these countries’ specialisation in low-wage and low-productivity service activities (Storm & Naastepad, 2016, pp. 66-67).

In conclusion, from a production-based view, the decline of productive capabilities in SSEs would have required the Lisbon Agenda to include in its framework a development strategy to reverse the enlargement of the EU’s structural asymmetries. However, this option was not contemplated within an optimistic pro-market ideological framework founded on a belief that “sustainable economic growth with better and more jobs and greater social cohesion” (Lisbon European Council, 2000, p. 2) can be achieved through liberalising structural reforms and the upgrading of individual workers and firms’ capabilities. The problem with this view is that it obscures how these objectives primarily result from conscious efforts to deepen *collective* productive capabilities rather than individual ones in a context of free and fair competition (Andreoni & Chang, 2017). It implies that the most

critical issue overlooked by the EU growth strategy is a vision of a transformative industrial policy to strengthen the specialisation profile of member states, particularly in the Southern periphery.

#### **1.1.4 The elephant in the room: The role of industrial policy for structural change**

The assertion that an industrial policy aimed at strengthening the specialisation profile of member states is missing in the EU growth strategy deserves clarification for two reasons. First, the EU does not have a precise mandate on industrial policy, and many of the instruments used to impact the industrial sector come from its exclusive competence over trade and competition. This is also confirmed by the fact that member states' expenditures on industrial policy far surpass the amount spent at the EU level (Landesmann & Stöllinger, 2020, p. 635). Second, there is no agreed definition of what industrial policy is and should be aimed at. Those who claim that industrial policy is just any policy affecting industries (Donges, 1980, p. 189) or that it should be limited to providing productive inputs undersupplied by the market and equally affecting all industries without selectivity (Corden, 1980, pp. 182-183) would not say that the EU lacks an industrial policy. In fact, its guidelines to increase R&D intensity and improve human capital and infrastructure comply with the image of a horizontal industrial policy with limited government intervention to solve market failures under conditions of fair competition.

This way of understanding industrial policy seems to persist throughout time despite the more recent emphasis on specific high-technological sectors under the framework of the Europe 2020 strategy<sup>9</sup>. The fact that the fundamental way the EU looks at industrial policy has not changed is demonstrated by the *General Principles of EU Industrial Policy* (European Parliament, 2023, p. 1), which reiterates that “industrial policy is horizontal in nature and aims to secure framework conditions favourable to industrial competitiveness”. However, besides the fact, already addressed in the previous section, that the development of productive capabilities cannot be simply reduced to the provision of knowledge inputs but it requires the existence of a resilient productive capacity (especially in manufacturing), the EU’s approach to industrial policy results as particularly problematic for one additional reason, that is, by limiting its conceptualisation of industrial policy to the implementation of horizontal measures that are supposed not to “interfere” with market mechanisms, it diminishes the

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<sup>9</sup>The 2012 strategy (EC, 2012, p. 3) emphasises “six priority action lines”: advanced manufacturing technologies, key enabling technologies, bio-based products, sustainable industrial and construction policy, raw materials, clean vehicles, and smart grids.

transformative potential of public intervention. The idea that such a restricted and unselective scope of action can deliver economic efficiency is, in turn, grounded on two wrong assumptions that need to be addressed.

The first concerns the claim that a particular category of economic interventions exists that does not interfere with the market. This is never the case (Rodrik, 2009, p. 6) because, except perhaps for basic education, there is no such thing as a productive input whose benefits are sector or firm-neutral (Andreoni & Chang, 2016, p. 494). It implies that any intervention is doomed to benefit specific industries or sectors over others. Hence, the real question is not whether one wants to interfere or not with the market but *whether* one wants to do it consciously. However, refraining from conscious intervention bears a higher risk of wasting public resources (Andreoni & Chang, 2016, p. 494). As an example, take tax credits aimed at promoting R&D investment. This would be a case of a horizontal policy that would inevitably benefit R&D-intensive industries more. However, as discussed in the previous section, if this measure is introduced in a country with a few R&D-intensive industries, there is a higher risk that these incentives would be absorbed by less R&D-intensive activities, thereby jeopardising the effectiveness of this measure.

The second misconception is about the understanding of *whose choices* in the economy are mainly responsible for economic development. Within a pro-market perspective, the implicit belief is that private businesses already “know best” (or that the state “knows worst”) where productive efforts and investments should be directed. The only problem is that it is not always viable or attractive for them to pursue these activities, given, for instance, that the social benefits outweigh the individual ones (see section 1.1) or the entry costs are too high. Hence, in this framework, state intervention should be confined to economically supporting or, at best, softly incentivising businesses without meddling in their decisions, thereby refraining from providing strategic vision and coordination. This conceptual framework is nonetheless unsatisfactory because it ignores two facts. First, as Mazzucato (2013) underline, private capitalists often do not break into the most promising activities because they either lack the vision or courage to deal with the uncertainty that such effort would require. Second, there is also a political economy issue that, especially in countries with unsophisticated productive structures, anti-dirigiste approaches to industrial policy may end up supporting hegemonic class coalitions whose interests are antithetical to structural change (Oqubay, 2020, pp. 39-41).

In conclusion, based on these premises, an industrial policy that acknowledges room for conscious economic planning and specifically targeted interventions seems better suited to

achieve economic development than an agenda solely relying on market incentives complemented by soft “horizontal” measures. However, as already implicitly conveyed in the discussion above, an industrial policy that fulfils these characteristics presupposes recognising the crucial role the state and public policy can play in driving structural transformation. To put it differently, developing a transformative industrial policy requires the conceptual existence of a *developmental state*.

### **1.1.5 Lessons from developmental states: The state as an agent of structural change**

The concept of developmental state presents a valid historical account of the importance of state intervention in driving structural change. This notion has been mainly used to analyse the growth miracle of EAEs (Japan, South Korea, Taiwan and Singapore) in the second half of the 20th century. However, it is also acknowledged that several of the measures implemented by EAEs were deployed by previous industrialisers (Chang, 2006) and were at the core of the Chinese growth miracle since the end of the 1970s (Chang, 2016). Whilst it is incorrect to talk about “one general model” (Lall, 2006, p. 85), the general developmental agenda of EAEs presents strong similarities based on using industrial policies to foster structural transformation from primary to knowledge-intensive production, such as infant industry protection, export promotion, state-owned enterprises (SOEs) restricted or selective foreign direct investment (FDI), R&D and private-sector corporate restructuring (Chang, 2006).

The EAEs’ success was not merely due to the indiscriminate use of these policies but to their selectivity, timing and coordinated implementation within a solid institutional framework characterised by a strong state capacity (Chang, 2006; Lall, 2006). Hence, from this perspective, one should recognise, for instance, the ability of EAEs to select those industries with more linkages and spillovers while realistically assessing the possibilities to progressively access them without underestimating their leap capacity. In this sense, based on a capability-based approach, Lee (2020) refers to the example of South Korea continuously adapting its industrial policy tools according to the evolution of its firms’ capabilities. In this analysis, he especially emphasises how South Korea embarked on a less explicitly selective industrial policy to build its technological (R&D) capabilities only in the final stage of its development process, namely after nurturing its overall production capabilities through traditional industrial policy measures such as infant industry protection to expand productive capacity, technological licensing in key capital intensive industries to build absorptive

capacity, entry controls to guarantee rents for fixed capital and R&D and export promotion to discipline economic rents.

The stages prior to the building of its technological (R&D) capabilities were critical for South Korea's development because they enabled the emergence of large conglomerates (the chaebols), which by the mid-1980s had already accumulated enough productive capabilities in terms of learning experience and productive capacity to turn to R&D-intensive activities. However, even in the last stage, it is not entirely true that the government's role simply limited itself to horizontal tax incentives for R&D promotion. In this regard, the example given by the telecommunication equipment industry is emblematic since the South Korean government kept supporting it through various means, such as limiting the import of foreign telecommunication equipment, implementing a quota mechanism for firms' market shares, making ad-hoc legislation to encourage investment, providing financing for its domestic digital switching system and guaranteeing demand for domestic manufacturers through purchases by the state-owned Korea Telecom (Lee et al., 2012, p. 24).

The case of South Korea is just an example. As stressed by Chang (2006), other EAEs explored alternative routes in accordance with pre-existing differences in productive structures. For instance, since the Taiwanese productive structure consisted of small-medium enterprises (SMEs) rather than large private companies, it required SOEs, in conjunction with more (although monitored) opening towards FDI, to play a pivotal role in capabilities-building. This was especially true in technological development, where the government carried out most of the R&D expenditures. Finally, another example is given by China, which, in addition to other measures inspired by EAEs, chose to promote technology transfer by setting up joint ventures between its SOEs and FDI (Chang, 2016).

In approaching the conclusion, it is essential not to forget that industrial policy is not merely a technical issue but a political economy one as well. Sometimes, this fact is overlooked by part of the developmental state literature, which tends to overestimate the capacity of governments to adhere to a process of structural transformation. For example, Lall (2006, p. 79), referring to how a country copes with globalisation, says that "the fault...lies more in the countries than in the external environment". If taken to the extreme, this perspective risks leading to a de-contextualised and ahistorical account of the developmental state (Oqubay, 2020, p. 39), thereby turning an excellent case study into a standardised one-fit-all approach similar to the neoliberal market fundamentalist agenda. This issue is especially relevant as many countries have not succeeded in climbing the development ladder, remaining blocked into the so-called "middle-income trap" (Gill & Kharas, 2007, pp. 17-18).



A political economy understanding of structural change implies considering this process' internal and external constraints (Oqubay, 2020, pp. 39-41). Thus, suppose we return to the case of EAEs. Even in that case, we cannot abstract their success from their ability to find a way out of these constraints by, for example, expropriating domestic landowner elites through land reforms (Kay, 2002) or benefiting from regional “flying-geese” patterns of growth (Lee, 2020, p. 666). These internal and external impediments are still central today. However, they present themselves in different forms. Instead of landowner elites and old-style imperialism practices imposed by colonial rulers, it seems that today, the most significant barrier to a genuinely transformative industrial policy is posed by financial elites and “new imperialist” practices concealed in the World Trade Organisation (WTO) (Chang & Andreoni, 2020, pp. 24-27).

The question of external constraints to industrial policy is even more evident in the context of the EU, given the straitjacket of its competition and fiscal rules. However, while acknowledging the unequal and restricted access to an industrial policy at the national level, a careful analysis of transformations in the EU approach to industrial policy since the 2007-2008 GFC suggests that it may be possible to make a case for an alternative industrial policy at the EU level addressing environmental challenges as well as structural asymmetries. As highlighted by Pianta et al. (2016, 2020), although the current EU approach to the industrial policy is inadequate both in terms of instruments and resources available, the most recent commitment by the EU, at least in words, to reindustrialisation (EC, 2014) and, specifically, to the targeting of specific sectors (EC, 2012, p. 3), in conjunction with the development of new unprecedented initiatives and dynamics such as the Juncker Plan<sup>10</sup>, the expanded role of the European Investment Bank, the growing dissatisfaction of big member states with competition rules<sup>11</sup>, the EU's pragmatic opening to make exceptions to its fiscal and competition rules during moments of crisis and the launch of a first proper fiscal policy at the EU level (the Next Generation EU) may point to a possibility to make a breach in the EU's institutionally embedded neoliberalism. However, this scenario is inevitably contingent upon shifts in the “balance of power within European institutions and among national governments and political forces” (Pianta et al., 2016, p. 55).

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<sup>10</sup>According to Pianta et al. (2020, p. 785), the relevance of the Juncker Plan consists of the fact that, for the first time, it set up an EU-level program to acquire a budget from private and public sources to be reinvested in member states' infrastructure and production systems. The European Fund for Strategic Investment introduced by the Juncker Plan was transformed into the Invest EU following the approval of the long-term EU budget 2021-2027.

<sup>11</sup>See, for instance, *the Franco-German Manifesto for a European Industrial Policy for the 21st Century*.

## **1.2 The debate on Portuguese economic stagnation: A problem of insufficient education and R&D?**

This dissertation aims to elucidate the reasons for Portugal's lack of virtuous structural change from 2000 to 2019. However, after digging into the theoretical discussion, this section aims to introduce the case study briefly. This begins by briefly drawing from its previous relatively recent economic trajectory in the second half of the 20th century. Based on the historical analysis by Costa al. (2016), two crucial general facts to mention in this regard are Portugal's late industrialisation beginning in the 1960s and the exceptionally high rates of economic growth and convergence in terms of GDP per capita with the rest of Europe during the periods 1950-1973 and 1986-1998. According to these authors, the international context played a more significant role than national institutions and policy-making in determining the growth fluctuations of Portugal in the 20th century. As a matter of fact, the former period of high growth coincides with the period of post-war economic expansion taking place elsewhere in Western Europe, and the latter took place when Portugal joined the European Economic Community in 1986.

Around the turn of the century, Portugal turned from one of the best to one of the worst growth performers in the EU, thereby starting to diverge again from the rest of Europe. Furthermore, Portugal was also one of the countries most exposed to the 2010-2012 European external debt crisis and the economic consequences of the COVID-19 pandemic. Various analyses from Portuguese scholars (Godinho & Mamede, 2016; Mamede et al., 2014; Martins & Mamede, 2022), in line with other heterodox contributions engaged in a debate with the "labour-costs-centred view" on the eurozone crisis (Storm & Naastepad, 2016), converge on the interpretation that one factor that strongly contributed to Portugal's poor growth performance and external indebtedness has been its structural weakness. From this perspective, it is argued that the root of the problem, alongside the liberalisation of the financial sector since the early 1990s, was the overlapping of the Portuguese specialisation profile with the ones of low-wage China and Eastern Europe, which exposed Portugal to the risk of not being able to compete neither with more advanced economies due to their more sophisticated productive structures nor with those economies with a similar level of specialisation given their superior price competitiveness. Thus, according to these authors, this situation of being "stuck in the middle" (Mamede et al., 2014, p. 259) proved to be fatal in the 2000s when three major exogenous shocks hit Portugal: China entering the WTO in

2001, the EU enlargement to the East in 2004 and the appreciation of the euro vis-à-vis the dollar between 2001 and 2008.

The structural weakness of the Portuguese economy is markedly evident if one observes data from the OECD Structural Analysis Database and International Trade in Service Statistics (as cited in Baccaro, 2021). These data reveal that the Portuguese specialisation profile has not merely remained unchanged but has undergone a slight regression. As shown in Table 1.1, while the technological intensity of Portugal’s exports is still based on producing low-tech and low-medium-tech goods, the share of high-tech exports in 2014–2018 has decreased compared to 1999-2003. Furthermore, as illustrated in Table 1.2, the reliance on non-tradable low-skill and low-technology-intensive services exports, such as travel (mainly tourism and hospitality), has increased in the last decade. These findings are especially significant if one compares this overall (lack of) structural change with Portugal's last virtuous phase of structural transformation in the 1990s, in which the already ongoing decline of traditional low-tech and medium-low-tech industries, such as textiles, clothing and footwear, was at least partially compensated by FDI-driven gains in medium-tech and medium-high-tech sectors, such as machinery and transport equipment, as exemplified by the opening of the AutoEuropa automotive assembly plant in Palmela by Ford and Volkswagen in 1995 (Stadheim, 2023, p. 11).

**Table 1.1** Portugal's export goods by technological intensity (1990-2018).

Period	High	Medium High	Medium	Medium low	Low
1990-1993	5.72	19.73	8.48	64.26	1.48
1994-1998	5.72	19.73	8.48	64.26	1.48
1999-2003	7.30	28.84	8.47	53.54	1.57
2004-2008	10.40	29.59	10.06	47.47	2.20
2009-2013	9.41	27.94	13.19	44.46	2.98
2014-2018	6.26	28.42	13.89	47.40	3.62

Source: OECD STAN Database (as cited in Baccaro, 2021).

**Table 1.2.** Portugal’s export services by sector (2010-2017)

Period	Transportation	Travel	Financial	Intellectual property	Telecom	Other business services
2010-2014	25.34	43.09	1.71	0.22	4.50	15.93
2015-2017	21.95	47.68	1.22	0.36	4.85	16.63

Source: OECD International Trade in Service Statistics (as cited in Baccaro, 2021).

Whilst there seems to be good evidence that structural backwardness is one of the most critical weaknesses of the Portuguese economy, its causes are an object of contention in the literature. One of the interpretations that have gained the most traction asserts that the unfinished structural transformation of the Portuguese economy is partially due to insufficient investments in human capital and R&D. In this regard, Silva and Teixeira (2012), based on education indicators from the 1980-2007 period, argue that, from the supply-side, the lack of a skilled workforce, which is a characteristic that Portugal shares with other SEEs, has played a significant role in the persistence of a strong bias towards low-skill and low-tech activities. According to these authors, this is demonstrated by higher school drop-out rates and lower PISA scores compared to the EU and OECD average. Within their reasoning, it is also suggested that a vicious cycle might be at work between the country’s low educational attainments and its unsophisticated productive structure, in which the two mutually reinforce each other. This conjecture has been more recently revamped by Burroni et al. (2021), who, besides highlighting the lower educational achievements (especially in terms of higher education), also stress the insufficient efforts of SEEs towards promoting R&D activities, as displayed by their lower level of R&D intensity and researchers among employees.

The explanation of Portugal’s unfinished structural change in these terms is nonetheless problematic. Since these are all analyses in which Portugal is grouped with other SEEs, which are, in turn, compared with other European economies, there seems to be a tendency to either dilute or overlook some meaningful differences among these countries. Although it is true that all SSEs significantly suffered from the crises already mentioned and present significant structural weaknesses, it is often insufficiently recognised how their economic trajectories and “growth strategies” (Hassel & Palier, 2021, pp. 21-25) before the 2007-2008 GFC crisis were quite different (Baccaro & Bulfone, 2022). In the case of Portugal, if one considers the policy-makers’ discourses and critical decisions in the 2000s and contextualises them within the

broader intellectual climate of the time, it is possible to ascertain a consensus to transition to a knowledge-based economy.

There are pieces of evidence for the claim that Portugal sought to become a knowledge-based economy. First, the Lisbon Agenda was approved under the initiative of the Portuguese government, which held the Presidency of the European Council at the time of the strategy's approval. Second, Portuguese policymakers often emphasised in their discourses, even amid running for electoral campaigns, the desire to transform Portugal into a knowledge-based economy through a "technological shock" (Dias, 2004). Besides discourses, Portuguese governments introduced several innovation-oriented strategies to improve individual qualifications and life-long learning and foster private R&D. Among these, one finds strategies encouraged both in the exclusive realm of domestic policy, such as the National Action Programme for Growth and Jobs (2005-2008) and the ambitious Technological Plan (2005-2009), and strategies co-financed by ESIF, such as the National Strategic Reference Framework (2007-2013) and Portugal 2020 (2014-2020). In this context, although one can find several elements of a typical innovation policy mix (see Godinho, 2016; Mamede et al., 2014 for a review), one measure is particularly worth mentioning to give an idea of this strategic commitment, that is the Tax Incentive System for Business R&D (SIFIDE), first launched 1997, which, according to a study made by the consulting company Ayming (Negócios, 2020), in 2020, resulted as the most generous R&D tax incentive in the world.

Third, based on this growth strategy, the progress made by Portugal in various educational, scientific and technological indicators has been remarkable. This is shown in Table 1.3, which presents the changes in Portugal since the turning of the century in the share of R&D intensity, number of researchers, higher educational attainments within the young cohort and PISA scores in mathematics, science and reading. These changes, especially concerning the number of researchers, higher educational achievements and PISA scores<sup>12</sup>, in which Portugal passed from being one of the poorest performers to surpassing the OECD average<sup>13</sup>, are noteworthy, particularly when compared with other SEEs. Furthermore, the significant change in tertiary educational attainments casts severe doubts on Silva and Teixeira's (2012) hypothesis that a vicious cycle exists between low education levels and the economic structure. The Portuguese case shows that it is possible to improve significantly in all educational, scientific, and technological indicators without advancing in terms of

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<sup>12</sup>Andreas Schleicher, the OECD Director of Education and Skills, framed Portugal's improvement in PISA scores as "Europe's biggest success story" (Tavares, 2017).

<sup>13</sup>Although in 2019 the share of 25-34 years old with tertiary education was below the OECD average, Portugal also surpassed this threshold in 2021.

economic growth and structural change. Hence, all these findings deeply question the interpretation that Portugal's lack of structural transformation must be ascribed to poor educational achievements and R&D efforts, given that the relevant improvements achieved in the last two decades in these fields have not led to a virtuous structural transformation in Portugal. Notwithstanding, this also opens the puzzle of *why* the Portuguese growth strategy did not succeed since it was consistent with one of the central tenets of the Lisbon Agenda's economic intelligentsia, and it is still at the core of the EU horizontal approach to industrial policy.

**Table 1.3.** Portugal's attempt to turn into a knowledge-based economy (2010-2019)

	2000	2019	Change 2000-2019
Gross domestic expenditure on R&D (% of GDP)	0.722	1.396	+ 0.674
Researchers (per 1000 employed)	3.32	10.13	+ 6.81
25-34 years old with tertiary education (% of the same age group)	12.95	37.37	+ 24.42
PISA mean scores:			
Mathematics	466.0	492.0	+ 26
Science	474.0	492.0	+ 18
Reading	470.0	492.0	+ 22

*Source:* OECD Education and Innovation and Technology indicators. Note that PISA scores in 2000, except for reading, are from 2003 (mathematics) and 2006 (science). PISA scores in 2019 are from 2018.



## Chapter 2

### Methodology

The dissertation seeks to understand why Portugal failed to become a knowledge-based economy despite its growth strategy centred on improving its educational, scientific and technological capabilities. The relevance of this inquiry is both case-specific, given its link with the question of Portuguese economic stagnation and external fragility, and theoretical, since there seems to be a rupture with the common wisdom. The research question is addressed through an interpretative approach, which consists of “the use of theoretical frameworks to provide an explanation of particular cases, which can lead to an evaluation and refinement of theories” (Vennesson, 2008, p. 227). The answer to the research question relies on two possible lines of interpretation constructed from the previous chapter's theoretical discussion.

The first conjecture points out that simply increasing investment in R&D and human capital is insufficient for structural change. What is required is to reach a “certain” level of R&D expenditures and human capital accumulation, given that the benefits of these investments accrue when a certain critical threshold is reached (see sub-section 1.1.1). Hence, this framework stresses that, although Portugal improved its performance in education, science and technology indicators, it failed to reach the 3% target of R&D intensity recommended within the EU’s development strategy and has reached the 40% target of higher graduates within the young cohort too recently to yield the expected results. Furthermore, from this perspective, it is also emphasised that higher education and technological policy was just one aspect of the EU’s growth strategy, which was supposed to be complemented by structural reforms to liberalise product and labour markets and recalibrate social expenditures towards other social investment criteria, such as ALMPs and ECEC. The underlying rationales of this reform agenda are rooted in the assumption that excessive EPL, PMR, and wasteful social expenditures produce “rigidities” and inefficiencies hindering structural change (see sub-section 1.1.2).

The second alternative provides an entirely different explanation. Within this perspective, it is stressed that the effectiveness of pursuing a non-explicitly selective industrial policy aimed at developing technological (R&D) capabilities and improving the qualifications of the workforce through the expansion of higher education, such as the one pursued by Portugal, depends on a broader pre-existing level of productive capabilities, which are primarily embodied in a country’s sustained capacity to “make things” (manufacturing), given its



superior structural linkages and interdependencies with other sectors of the economy (see sub-section 1.1.3). If this condition is not fulfilled, then a more interventionist and selective scope of public intervention is needed to achieve such development of productive forces (see sub-sections 1.1.4 and 1.1.5).

In order to assess the validity of these two theoretical frameworks, the empirical part is structured in six sections. The first three sections evaluate the validity of the first interpretation. More specifically, the first and second sections examine the regulatory trajectory in product and labour market regulation and the structural trends that might point to the emergence of a social investment paradigm in the welfare system. While changes in economic regulation can be examined through the evolution of single quantitative indicators, such as the OECD indicators of PMR and EPL, the assessment of a recalibration of the social model towards social investment criteria focuses instead, still through the use of quantitative datasets from the OECD and the Eurostat, on Portugal's performance in respect to two of the "most smart" and one of the "least smart" social protection policies within the social investment framework. The former refers to ALMPs and ECEC. The latter points to pensions. Last, the third section analyses the outcome of higher education and technological agenda in more detail by looking at the evolution of the OECD indicator of overqualification and the distribution of business expenditure in R&D (BERD) in time<sup>14</sup>.

The last three sections assess the validity of the second interpretation. The fourth section provides a diachronic analysis of Portugal's productive capacity in manufacturing and its specific manufacturing industries, mainly by referring to the evolution in industrial production output. The fifth section investigates the broad budgetary and thematic dimensions of the industrial policy implemented in Portugal by taking as an example the amount and distribution of expenditures related to industrial policy in the period 2014-2020, whose estimates are based on data from the EU 2014-2020 Multiannual Financial Framework (MFF), the 2014-2020 Cohesion Policy Overview and the EU State Aid Scoreboard (SAS)<sup>15</sup>. The last section studies the role of the Portuguese state as an agent of structural transformation. This last enquiry is carried out by observing the change in the budgetary and regulatory dimensions of the Portuguese state's intervention in the economy based on data

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<sup>14</sup>This methodology is inspired by a previous study conducted by Mamede (2017, p. 388), whose results provide the starting point of the analysis in the empirical sub-section.

<sup>15</sup>This methodology, including the classification of expenditures related to industrial policy, is drawn from the analysis of the EU's industrial policy in Landesmann & Stöllinger (2020). For more details, see Tables A22.2 and A22.3 in Landesmann & Stöllinger (2020, pp. 655-656). The results of this study are presented in the empirical section with the purpose of comparison between average EU trends and Portugal.

from EU SAS and the medium-level and low-level OECD indicators of PMR, including those presented in the 2018 updated version.

When the earliest data are available and comparable in time, the time frame considered in the empirical analysis, except for the case of industrial policy (section 3.5), which, for the sake of parsimony, only concentrates on the period 2014-2020, generally takes into consideration changes from the mid-1990s to 2019. The mid-1990s are chosen as a starting point of this enquiry because it is the period in which several crucial reforms consistent with the spirit of the Lisbon Strategy started to appear in Portugal. In this regard, it is relevant to underline that when the Lisbon Agenda was approved, the Portuguese presidency of the European Council was held by Prime Minister António Guterres, who indeed took office in 1995. Then, the year 2019 is selected as the last year of the analysis to include all the main changes in the variables of interest since 1995, except the ones that might be connected to the COVID-19 pandemic, whose full consequences are still unfolding. In conclusion, given the extended time frame and the several dimensions considered, the empirical analysis inevitably relies on multiple sources, such as newspaper articles, reports and quantitative datasets from national and international organisations and institutions and secondary literature.



## Chapter 3

### Empirical analysis

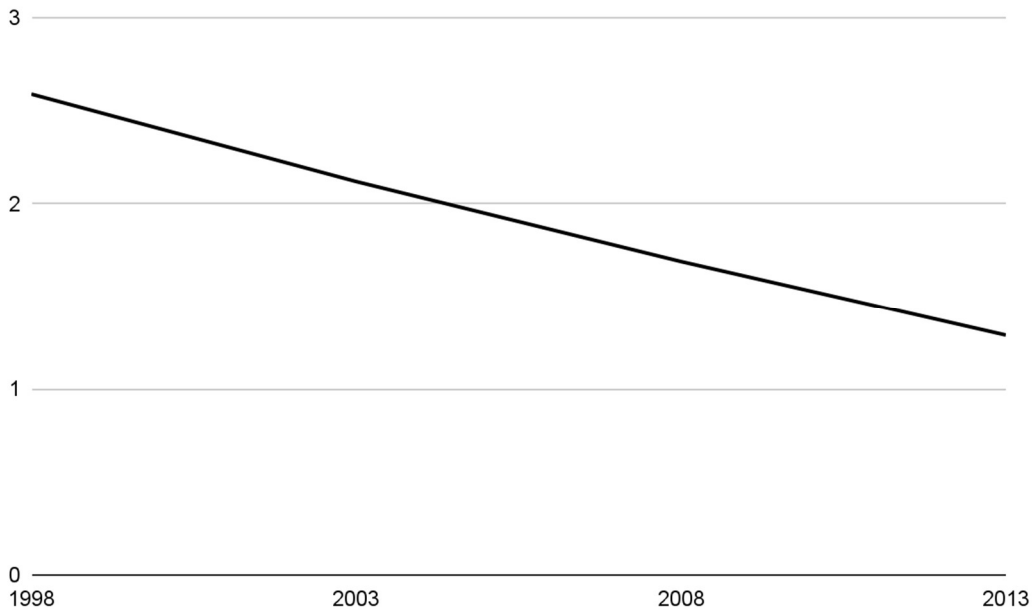
#### 3.1 Structural trends in economic regulation

##### 3.1.1 Product market regulation

An analysis of the diachronic change in the economy-wide OECD indicator of PMR, which measures the “distortions” to competition generated by both the involvement of the state in the economy and the presence of cross-sectoral impediments to the entry of domestic and foreign companies, in Portugal between 1998 and 2013 (Figure 3.1) reveals that Portugal systematically deregulated its product markets. Within this period, Portugal was a “top reformer” (OECD, 2014, p. 12), turning from one of the least to one of the most competitive OECD countries with regulatory barriers inferior to the OECD average (OECD, 2018). As part of the deregulatory agenda during this period, one should acknowledge several measures, including those aimed at liberalising gas and electricity markets, increasing competition in the telecommunications and postal services as well as in the transport sector, revising competition law in harmonisation with the EU competition legal framework, liberalising the access and exercise of regulated professions, improving the speediness and the effectiveness of competition rules’ enforcement and eliminating golden shares and other state special rights in private companies (Gouveia et al., 2019, p. 131).

Although several of the deregulation measures mentioned above were introduced during the crisis period 2008-2013, especially as a result of conditionalities present in the 2011 MoU with the Troika, the data displayed in Figure 3.1 shows that Portugal had already made significant steps towards product market deregulation prior to the crisis (see also section 3.6). In conclusion, according to the OECD (2018), although there is still scope for improvement, Portugal is currently considered a country with a satisfactory (low) level of PMR, which presents an alignment with the “best regulatory practices” in terms of public ownership, rules governing public procurement and administrative requirements for start-ups, and one of the most competitive friendly regulatory environments in the energy and retail sectors.

**Figure 3.1.** PMR in Portugal (1998-2018).



*Source:* OECD Product Market Regulation 2013 Statistics. Note that the value of PMR for the year 2018 was calculated through a newly updated methodology, whose value cannot be compared with the one of previous years.

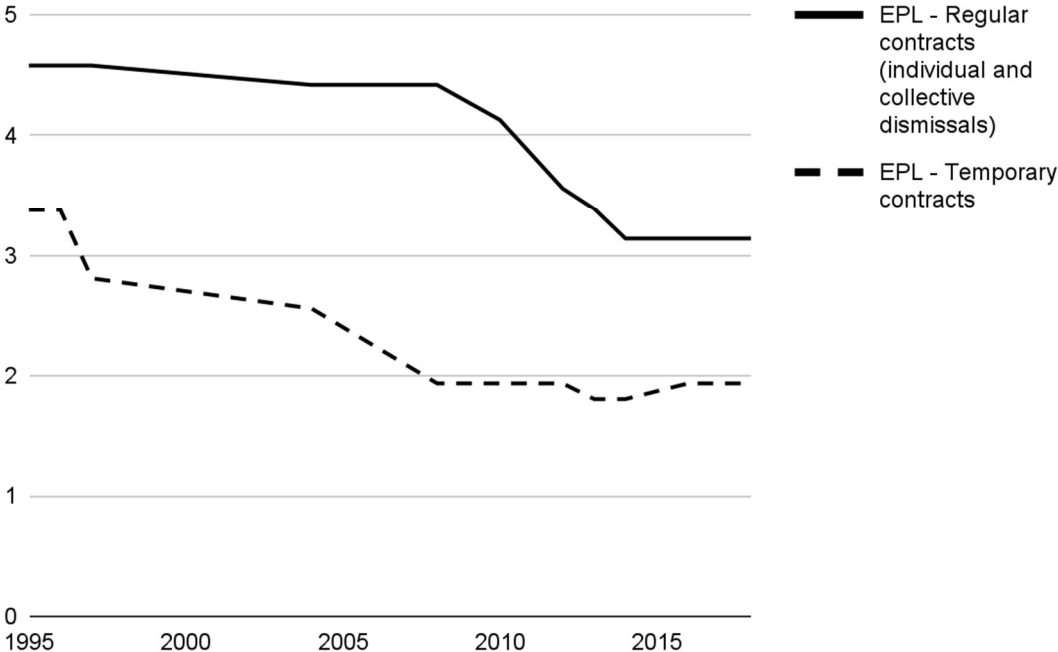
### 3.1.2 Labour market regulation

An assessment of the changes in time of the OECD indicators of EPL, which measures the strictness of regulation on individual and collective dismissals for regular contracts and the use of temporary contracts, in Portugal between 1995 and 2019 (Figure 3.2) shows that Portugal, except for the case of temporary contracts in the post-crisis period 2014-2019, consistently liberalised its labour markets by dismantling EPL for both regular and temporary contracts. In this sense, the Portuguese case presents itself as “an unambiguous example of liberalisation” (Eichhost & Marx, 2021, p. 105).

More in detail, two facts can be observed from the data presented in Figure 3.2. First, in relatively recent times, the Portuguese labour market has always been characterised by a significantly different level of regulation applied to open-ended and fixed-term contracts. This was especially true before the crisis, in which a level of protection already in line with the OECD average for temporary contracts complemented a high level of protection for permanent contracts. Second, while during the pre-crisis period 1995-2008, it was mainly fixed-term contracts that were liberalised, since the 2007-2008 GFC, permanent contracts have been the main target of deregulation. This latter trend was promoted under the conditionalities of the 2011 MoU with the Troika, which introduced softer regulatory

requirements for dismissals, lower severance payments, more flexible working time arrangements and a weakening of collective bargaining. While the fundamental objective of the MoU was internal devaluation, de-dualisation was used as a pretext, beneath the dominant assumption that the high level of segmentation in the Portuguese labour market was due to the high level of protection of open-ended contracts rather than to the strong existing incentives to use fixed-term contracts (ILO, 2018, p. 60).

**Figure 3.2.** EPL in Portugal (1995-2019).



*Source:* OECD Employment and Labour Market Statistics. Note that the data used are from “version 1 (1985-2019)”.

### 3.2 Structural trends in social investment

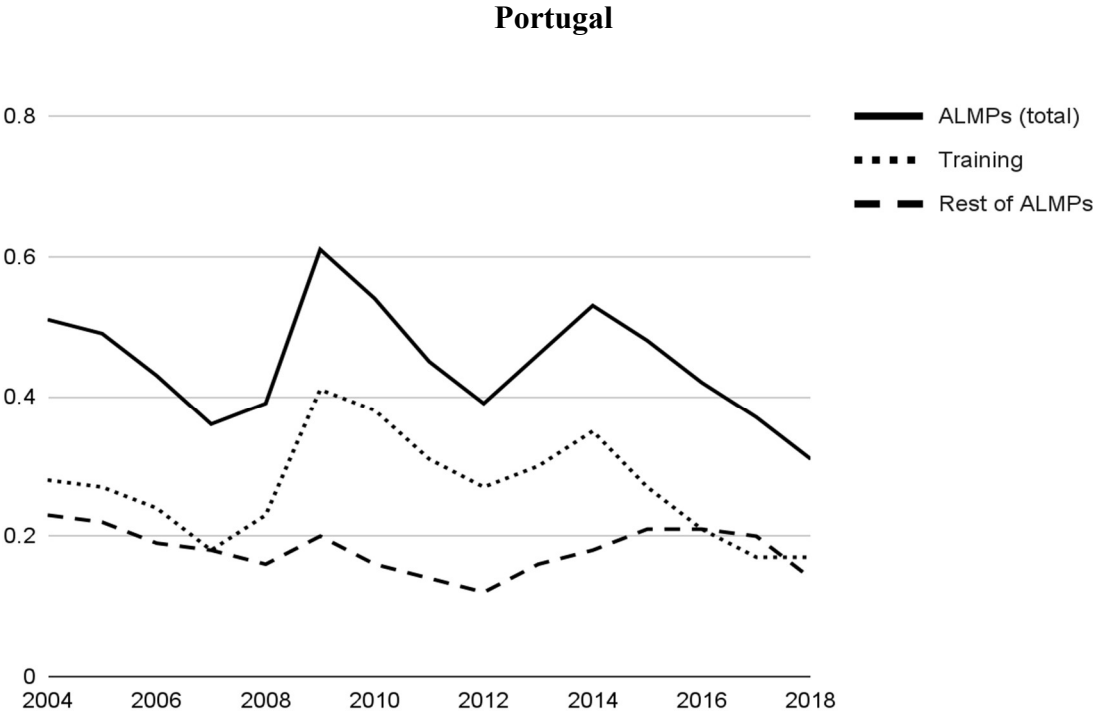
#### 3.2.1 Active labour-market policies

An analysis of the use of ALMPs for assessing the presence of a social investment paradigm in the Portuguese social model should begin by acknowledging that an excessive focus on the total level of expenditures in ALMPs presents critical limitations. First, it does not consider the financial constraints limiting Portugal’s investment efforts on ALMPs. This fact especially applies to the post-MoU crisis period 2011-2014, given the country’s obligation to comply with fiscal austerity (Marques & Hörisch, 2020). Second, the aggregate level of expenditures on ALMPs is an indicator that includes several sub-categories, many of which are weakly

related to social investment. In this sense, the approach developed by Bonoli (2012), who distinguishes among four types of ALMPs<sup>16</sup> and in which the category of “upskilling”, which in the OECD Database for Public Expenditures and Participants in Labour Market Programmes corresponds to “training”, primarily counts as social investment, can provide valuable insights.

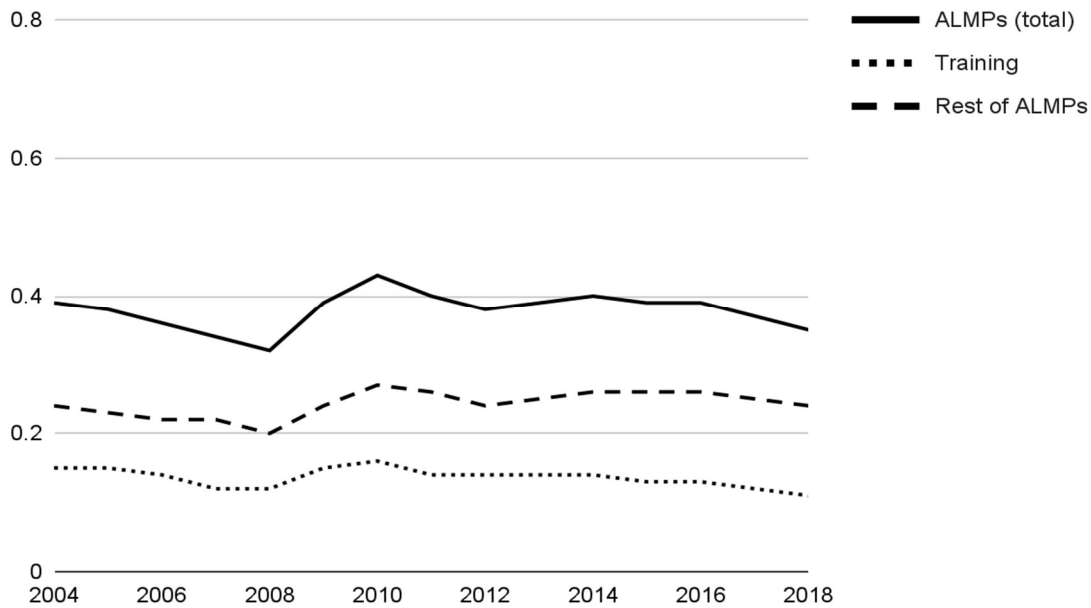
Based on these considerations, two facts can be observed from the data shown in Figure 3.3, which compares the ALMPs spending profile of Portugal with the OECD in 2004-2018. First, the total level of expenditures (as % of GDP) of Portugal, although not exceptionally high, was in line with the OECD average throughout the whole period. Most importantly, it can also be observed that, in comparative terms, Portugal prioritised social-investment-oriented ALMPs more. Not surprisingly, this was especially true in the period 2007-2009.

**Figure 3.3.** ALMPs spending profile (% of GDP) in Portugal and the OECD (2004-2018).



<sup>16</sup>Bonoli distinguishes among “incentive reinforcement”, “occupation”, “employment assistance”, and “upskilling”. According to him, the latter two account for social investment-oriented ALMPs. However, it is specified that this is especially true for “upskilling”, given that it has both a strong pro-market orientation and a human capital investment bias.

## OECD



*Source:* OECD Employment and Labour Market Statistics. Note that “Rest of ALMPs” account for “employment incentives”, “sheltered and supported employment and rehabilitation”, “direct job rotation”, and “start-up incentives”, and that data for the OECD is available only from the year 2004.

Although the increase in investment in upskilling during this period could be partially attributed to changes in the business cycle, given the lower opportunity cost of participation in training programmes in the context of rising unemployment due to the economic downturn (ILO, 2018, p. 97), other economic strategic considerations should be given more relevance. In fact, first, Portugal, differently from the rest of the EU, was already witnessing a significant increase in unemployment since the early 2000s. Second, the higher investment in ALMPs, specifically in training, during this period coincides with the EC's (2007) drafting of the document *Towards Common Principles of Flexicurity*, which primarily emphasises the use of ALMPs to complement the deregulation of labour markets. This is important because Portugal did not play a marginal role in shaping these dynamics at the EU level. On the contrary, as in the case of the Lisbon Strategy, it was during the Portuguese Presidency of the EU in 2007, at the time held by a Prime Minister, José Socrates, who, as in 2000, belonged to the centre-left political party (PS), that the concept of “flexicurity” became prominent in EU policy-making (Bekker, 2012).

In conclusion, it should be not nonetheless acknowledged that the 2011 MoU might have marked a shift in the rationales of ALMPs from social investment concerns to an orthodox neoliberal paradigm centred on promoting labour market participation through “incentive reinforcement”. As a matter of fact, the MoU, which was implemented by a centre-right



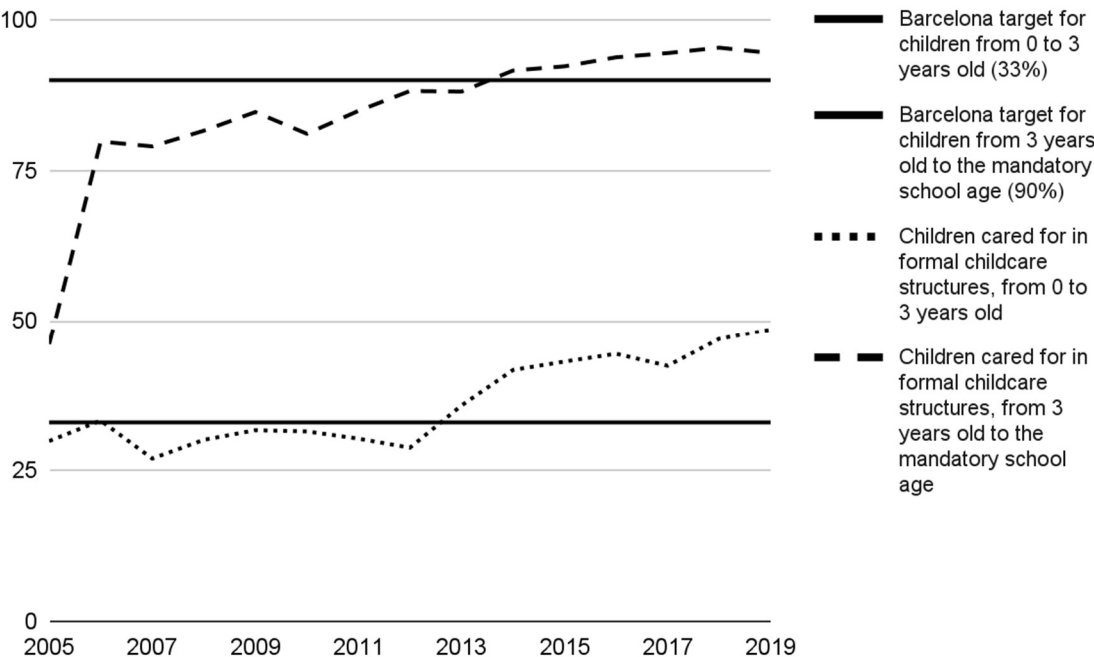
coalition getting into power during the same year, introduced several measures aimed at curtailing both the duration and benefit rates of unemployment and social protection schemes (Pereirinha & Murteira, 2016, pp. 602-605).

### **3.2.2 Early childhood care and education**

An examination of the diachronic variation of the share of children enrolled in ECEC in Portugal in the period 2005-2019 (Figure 3.4) reveals the country's impressive improvements during this period. By the end of the 2010s, Portugal successfully reached the two benchmark targets established by the 2002 Barcelona European Council. This achievement is remarkable if one considers that, while at the end of the 1990s, Portugal was one of the worst performers in Western Europe (Tavora, 2012, p. 64), by the end of the previous decade, it turned into one of the best performers in the EU. According to the report on the Barcelona objectives drafted by the EC (2018, p. 9), Portugal is part of a small group of five EU countries (with Denmark, the Netherlands, Sweden and Luxembourg) that, besides reaching the 33% target provision of ECEC for children under three years old, achieved coverage of at least 50% of the total population of children of that age group. Furthermore, from the data displayed in Figure 3.4, it can be observed that, by the end of the 2010s, the provision of ECEC for children between three years old and mandatory school age had almost become universal. Lastly, Portugal also distinguishes itself in terms of the amount of time spent by children in childcare facilities, with one of the highest rates of provision of full-time childcare (30 hours or more a week) in the EU (EC, 2018, pp. 11-13).

This impressive upward structural trend in ECEC should be understood in the broader context of an attempt to defamiliarise the Portuguese social model in accordance with an already exceptionally high participation of women in the workforce (Guillén et al., 2021). This agenda was especially promoted from the mid-1990s and, besides the expansion of ECEC, included other measures, such as the expansion of child benefits and family allowances for low-income families and more generous parental leaves for both parents. However, orthodox neoliberal austerity from 2011 to 2014 also led to a severe retrenchment in family policy through stingier allowances and stricter eligibility criteria (Guillén et al., 2021; Pereirinha & Murteira, 2016, pp. 610-611).

**Figure 3.4.** Provision of ECEC by age group (as % of the population of each age group) in Portugal (2005-2019).



Source: Eurostat. Note that the data on the indicators displayed in the figure are only available from the year 2005.

Despite the harsh austerity measures, the data shown in Figure 3.4 confirm that Portugal continued to progress remarkably in the coverage of ECEC for both age groups, which was less the case in the other SEEs affected by austerity measures. This was especially true in Greece, where, between 2011 and 2016, there was a substantial drop in the provision of ECEC in both age groups (EC, 2018, pp. 10-12). In conclusion, it is also worth mentioning that the Portuguese government has recently decided to make ECEC under three years old completely free of charge (Maia, 2022). This is significant because it shows the willingness to adjust the provision of ECEC in compliance with more universalistic criteria. In fact, despite being relatively more affordable in terms of net costs compared to the rest of the OECD (OECD, 2007, as cited in Tavora, 2012, p. 70), only ECEC from the age of four was provided freely in state-run facilities, while ECEC for children under three years old, which is mainly provided by private non-profit organisations partially subsidised by the state, used to charge prices established according to the children’s household income.

**3.2.3 Pensions**

In examining the relatively recent structural trends in social protection, the one domain in which Portuguese governments, before and during the crisis period, seem to have

demonstrated the firmest and most coherent commitment is enforcing retrenchment in pensions. The fact that this is poorly captured by indicators on pension spending as a share of GDP and social expenditure, in which Portugal still appears as a top spender, besides unfavourable demographic trends, can also be attributed to the deteriorating effects of prolonged economic stagnation on the economy and, particularly, social security (Banco de Portugal, 2011, as cited in Pereirinha & Murteira, 2016, p. 606).

The strong commitment by Portuguese governments to curtailing pensions can be nonetheless ascertained by the continuous path of reforms since the 1990s. Among the measures implemented since then, one should include the elongation of the minimum contributory period, the extension of the term to calculate the retirement benefits, the alignment of retirement age between men and women, the introduction of rules that sanctioned early retirement and incentivised prolonged staying in the labour-market and the retreat to secure the preservation of the real value of pensions through various indexation criteria (Guillén et al., 2021; Pereirinha & Murteira, 2016, pp. 605-607). In this sense, the reform of 2007, which even the OECD hailed for being “innovative” and “revolutionary” (Madeira, 2007), results as particularly emblematic for the introduction of the so-called “sustainability factor”, which indexed the retirement scheme to the ageing of the population. Most recently, under the conditionalities of the 2011 MoU, pensions underwent further retrenchment through measures such as the progressive reduction of pensions above 1,500 euro, the suspension of the application of retirement indexation rules (except for the lowest pensions) and taxation.

In conclusion, the outcome of these policies has still been substantial. According to projections from the Banco de Portugal (2011, as cited Pereirinha & Murteira, 2016, p. 606), the 2007 reform would allow for containment in the increase of the cost of pensions between 2004 and 2050 from 9.7% to 5.5 % of GDP, with the result of moving Portugal from the group of countries with high-risk of sustainability of public finances to the ones with medium-risks. The cost-effectiveness of the reforms has also been corroborated by projections from the EC (2015, p. 74), whose forecast is that, between 2013 and 2060, Portugal would be among the countries reducing the public expenditure on pensions, from 13.8% to 13.1% of GDP. However, the obvious problem with these assessments is that they ignore the deteriorating effects of these policies on the well-being of retired people in Portugal, where more than 73% of retired people earn less than the minimum wage (Oliveira, 2023) and the retirement age, which is currently 66 years and four months, is expected to reach the 67 years soon.

### **3.3 Where did all the higher education and R&D go?**

#### **3.3.1 Higher education**

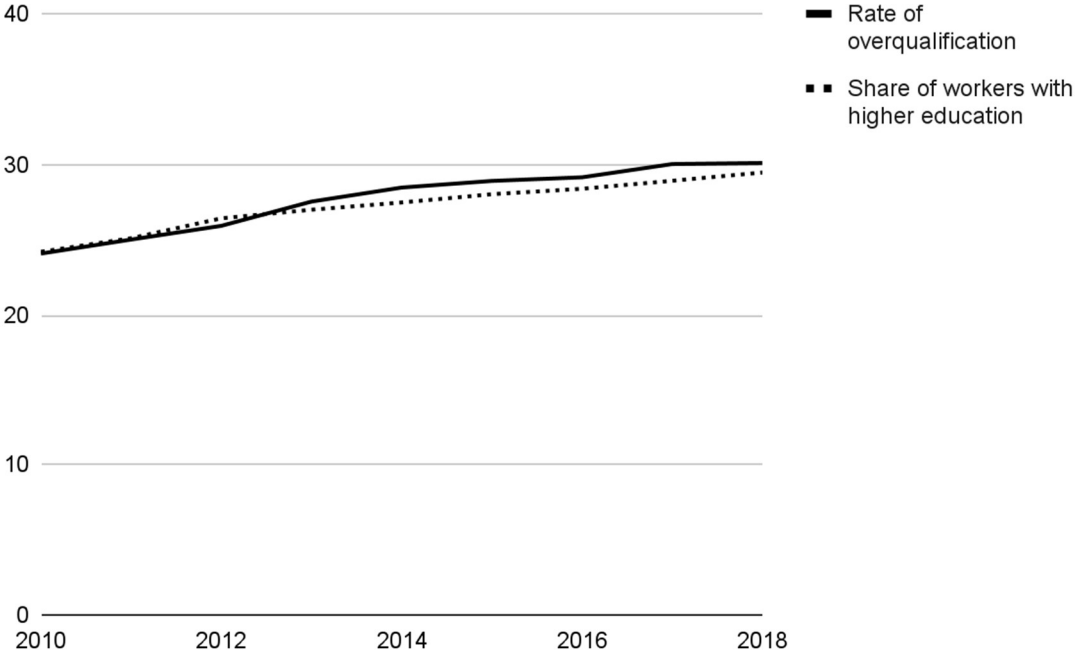
An assessment of Portugal's extraordinary effort to expand the provision of higher education among the younger generations should focus on the capacity of the productive structure to absorb such an increase in qualifications. One way to have an idea of this aspect is by looking at the level of mismatch in the country between the skills demanded by the labour market and the skills supplied by the education and training system as exemplified by the OECD indicator of overqualification, which compares the individual qualifications of each worker according to the "normal" qualifications usually required by the occupation. Hence, according to data from the OECD Skills for Jobs Database, Portugal is the country in the EU with the highest rate of overqualified people in the workforce, and it is among the top three list (preceded by Turkey and Mexico) in the OECD.

The fact that overqualification has increased in line with the improvement of qualifications among young workers in recent years is shown by Figure 3.5, which, based on data from FJN/Brighter Future and Quadros de Pessoal (GEP/MTSSS) (as cited in Fundação José Neves, 2021), shows the evolution of both the share of young workers between 24 and 34 years old with higher education and the rate of overqualification within the same group in the period 2010-2018. Hence, in this period, while the share of young graduate workers in enterprises increased from 24.2% to 29.5%, the overqualification rate passed from 24.1% to 30.1%.

A more detailed understanding of the capacity of the Portuguese economy to manage the increase in qualifications can also be uncovered by looking at the evolution of the sectoral distribution of jobs and the change in the presence of graduate workers across sectors. Previous studies, such as the one conducted by Guimarães (2022) and M. Rodrigues et al. (2022, pp. 14-16), have undertaken this task. The former, based on a comparison with a group of selected EU countries in the period 2008-2020, finds that, despite some gains in some high-knowledge and high-medium-tech industries, such as computer programming and the automotive sector, the proportion of workers in knowledge-intensive and high-tech industries in Portugal remains comparatively low and that low knowledge-intensive activities, such as accommodation and restaurant or real estate, still absorb a relevant share of the workforce. These results are complemented by the latter study, which also finds that the share of high workers with tertiary education has increased in those activities with a lower proportion of

graduates, such as accommodation and restaurant, processing industry, wholesale trade and transport and storage.

**Figure 3.5.** Share of young workers with higher education and the rate of overqualification within the same group of workers in Portugal (2010-2018).

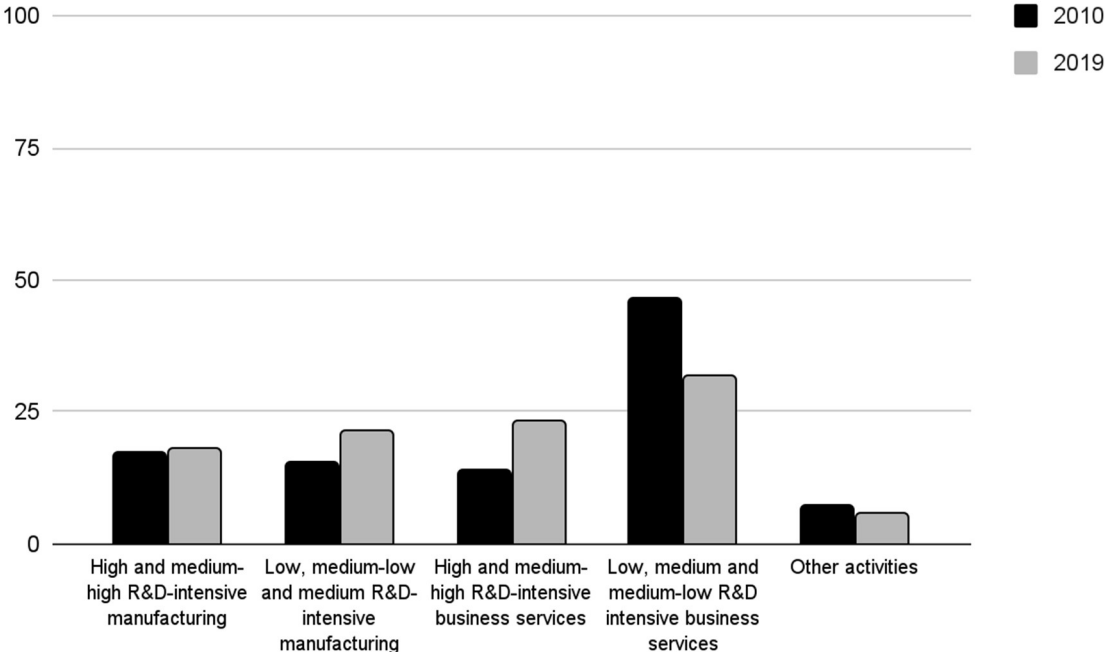


*Source:* JN/Brighter Future, Quadros de Pessoal (GEP/MTSSS) (as cited in Fundação José Neves, 2021).

**3.3.2 R&D**

In the same fashion as what has been done in the previous section, an assessment of the increased efforts by Portuguese governments to foster R&D activities, specifically in the private sector, through increased investment should analyse the capacity of the productive structure to absorb such investment by directing it to more R&D-intensive activities. Insights from previous contributions (Mamede, 2017, pp. 385-389, 2023c) already point to the fact that, compared to the rest of the EU, Portugal presents a higher amount of BERD in less R&D-intensive activities, such as ICT services, financial and insurance activities, transport and storage and provision of utilities, and a lower R&D intensity in more R&D-intensive activities, such as electronics and manufacturing of transport equipment. For instance, in contrast to Germany, which is a country with a level of R&D intensity above the “critical” 3% target, the weight of BERD in value added is between 2 and 5 times superior in the following low-R&D intensive industries: extractive, timber, wood, paper, construction, transport and bank and insurance (Mamede, 2023c).

**Figure 3.6.** Proportion of BERD in Portugal across and within sectors according to the level of R&D intensity (2010 and 2019).



*Source:* Eurostat, own calculations. Note that the classification of activities according to their level of R&D intensity is based on the OECD ISIC Rev. 4 taxonomy.

In order to have a more systematic glance and insights into the diachronic change in the distribution of BERD in the Portuguese economy, Figure 3.6 shows the distribution of BERD across sectors and within each sector according to the level of R&D intensity for the years 2010 and 2019. From the data presented, it is possible to observe that, at the sectoral level, although manufacturing activities in 2019 absorbed a more significant share of BERD compared to 2009, business services still account for most of the investment in R&D. Regarding changes within sectors, there were some variations. First, it seems that much of the increase in BERD in manufacturing during this period was absorbed by low, medium-low and medium R&D-intensive activities, which, differently from 2009, got most of the BERD expenditure in this sector. The opposite trend occurred in services, where there was an expansion of high and medium-high R&D-intensive activities, although low, medium-low and medium R&D-intensive still absorbed the more significant share. In conclusion, there was an improvement during this period in terms of overall changes in the proportion of BERD directed to the most R&D-intensive activities. Nevertheless, despite this overall qualitative improvement complemented by an increase of BERD as a share of the total gross domestic

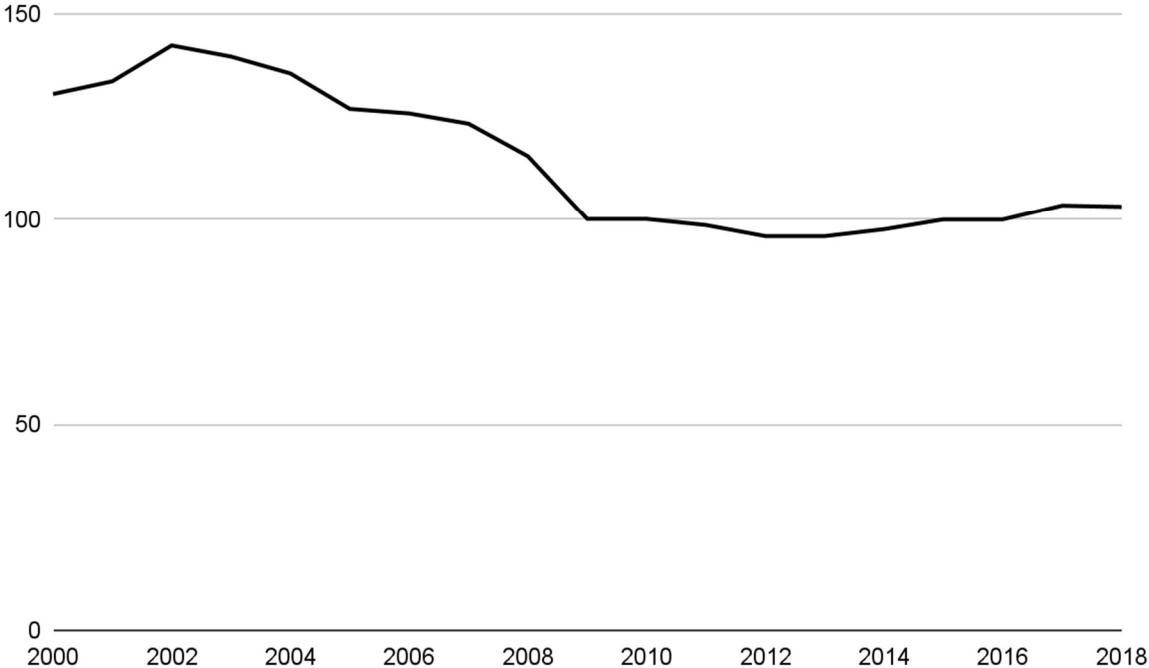
expenditure in R&D, it still results that most BERD in Portugal is directed towards manufacturing and, especially, services industries that are not R&D-intensive.

### **3.4 Productive capacity in the manufacturing sector**

An assessment of productive dynamics in Portugal from 2000 to 2019 shows that the country's economy suffered from a severe decline in its productive capacity in manufacturing activities. Several trends indisputably capture this fact. On the one hand, the share of employment in manufacturing fell from 21.9% to 17.6% (Eurostat, 2023a), the share of manufacturing in value added dropped from 17.2% to 13.7% (Eurostat, 2023b), and the output of industrial production in manufacturing declined by 21.7% (OECD, 2023). On the other, the share in value-added of non-tradable non-manufacturing activities increased during the same period (see Figure 4.1 and Figure 4.2 in Mamede, 2020 for a more general overview) such that, while in 2000, the combined share in value-added of non-tradable industries such as food and accommodation and real estate was slightly more than half of the corresponding share by manufacturing, by 2019, the former had a higher share in value-added than the latter (Eurostat, 2023b). Furthermore, the fact that these trends occurred in a context of economic stagnation reveals a typical symptom of a premature deindustrialisation process (Martins & Mamede, 2022, p. 56).

More in detail, Figure 3.7 shows the evolution of industrial production in manufacturing from 2000 to 2018. From the data presented, it can be ascertained that industrial production started to decline before the economic crisis until 2014, which is the year that marked the end of the prolonged crisis and the beginning of the economic recovery. The advent of the economic crisis in 2008 led nonetheless to an acceleration of the fall in industrial production. In fact, while between 2002 and 2007, industrial production decreased by 13.5%, in 2008-2013, the decline was 16.9%. The effects of the crisis on the country's productive capacity are also captured by a 17.1% loss of firms and a 15.7% destruction of jobs between 2008 and 2012 (Gambarotto et al., 2019, p. 159).

**Figure 3.7.** Industrial production in manufacturing in Portugal (2000-2018), (index 2015=100)



Source: OECD Industrial production indicator.

However, the decline in industrial production in this period was not only quantitative but qualitative as well. The downfall of traditional low-tech and medium-low-tech industries, such as textile and clothing, was accompanied by a decline in the production of medium-high-tech and high-tech industries. In this regard, Table 3.1 shows that, although the fall in industrial production in the latter group concerned all sectors, it was especially severe in the following: computer, electronic and optical products (high-tech), electrical equipment (medium-high-tech), motor vehicles, trailers and semi-trailers (medium-high-tech). More precisely, in aggregate terms, while the decline of industrial production in medium-tech industries had already started in the early 2000s (Stadheim, 2023, p. 12), probably as a result of the relocation of automotive industries to Eastern Europe (Godinho & Mamede, 2016, p. 334), this was not the case for high-tech industries, whose overall level of industrial production increased in the same period and dramatically fell only in 2008 (see Figure 4.8 in Celi et al., 2017, p. 125).

Figure 3.7 also shows that in the post-crisis period 2014-2018, there were signs of recovery in the volume of manufacturing production, which, before then, had been steadily declining since 2002. This slight trend towards reindustrialisation during this period is also supported by other evidence, such as an increase in the share in value added by manufacturing



from 13.5% to 14.2% (Eurostat, 2023b) and manufacturing employment from 17% to 17.7% (Eurostat, 2023a).

**Table 3.1.** Industrial production in high-tech and medium-high-tech industries in Portugal (2002-2018), (index 2015=100).

Industry	2002	2004	2006	2008	2010	2012	2014	2016	2018
Chemical and chemical products	99.3	107.3	106.2	100.8	102.3	90.4	96.2	97.5	87.9
Basic pharmaceutical products and pharmaceutical preparations	79.1	76.2	84.3	92.0	83.2	79.1	84.6	100.2	108.8
Computer, electronic and optical products	298.0	322.0	165.3	156.7	171.3	197.0	113.7	113.5	144.4
Electrical equipment	229.6	199.6	153.3	144.6	113.2	100.9	94.0	99.6	110.2
Machinery and equipment n.e.c.	111.7	102.9	99.0	98.9	92.9	93.6	95.4	98.9	103.4
Motor vehicles, trailers, and semi-trailers	254.4	190.9	309.2	211.5	93.2	82.5	97.2	98.5	120.0
Other transport equipment			179.9	164.0	136.5	116.2	96.1	100.4	115.1

*Source:* Eurostat. Note that the taxonomy used for including high-tech and medium-high-tech industries is NACE Rev. 2 2-digit level.

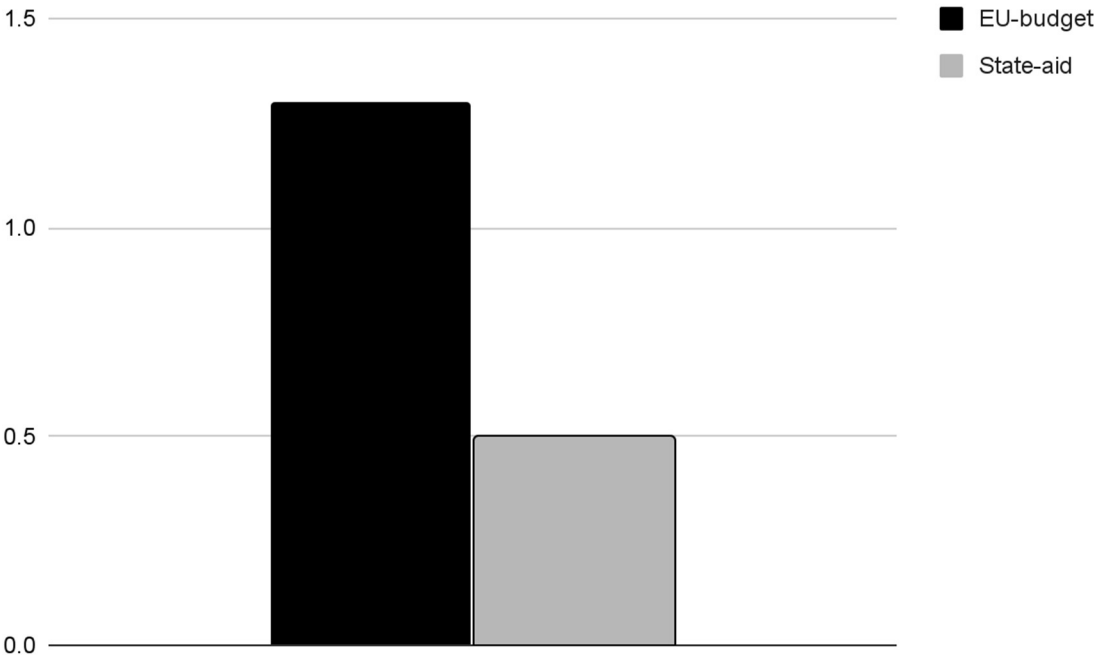
This trend's size is nonetheless insufficient to point to the emergence of a sustained reindustrialisation process, as neither the share of manufacturing employment nor the volume of industrial production reached the pre-crisis levels and are still substantially below the early 2000s performance. Furthermore, when taking into account the weight of the different manufacturing activities in terms of their share in value-added, the increased export-oriented profile of the Portuguese economy in the post-crisis period (Baccaro, 2021) and the variation in the technological intensity of exports (see Table 1.1 in section 1.2), it seems plausible to suggest that the increase in industrial production since 2014 is more attributable to low-tech

and medium-low-tech activities rather than to the more technologically intensive sectors. In conclusion, it should also be kept in mind that the Portuguese economic recovery was mostly decoupled from its manufacturing dynamics, as it was mainly driven by other sources, precisely the external demand for non-tradable services, such as tourism and real estate (Martins & Mamede, 2022, pp. 60-61).

### **3.5 Industrial policy: Quantification and thematic allocation of the expenditures**

Based on data from the EU 2014-2020 MFF, which corresponds to the EU long-term budget for that period, the 2014-2020 Cohesion Policy Overview, which provides detailed information on the thematic allocation of ESIF for the same period, the EU SAS, which indicates the amount of member states' controlled financial resources directed to economic activities considered by the EC with a "distortionary" potential, and the categorisation of industrial policy items found in Landesmann & Stöllinger (2020), it is estimated that the amount spent, on average, by Portugal on industrial policy in the period 2014-2019 corresponds to around 1.8% of its GDP. The data in Figure 3.8 shows that the most significant share of industrial policy expenditures in Portugal during this period, which amounts to more than 70% of the total, came from the EU budget. In comparative terms, the overall amount dedicated to industrial policy is higher than that spent in the EU (see Landesmann & Stöllinger, 2020, p. 635). However, the higher dependence on the EU budget for financing industrial policy distinguishes the Portuguese case from the EU average. This is nonetheless explained by the fact that most Portuguese regions, similarly to the case of other nations in the Southern and Eastern EU periphery (Landesmann & Stöllinger, 2020, p. 642), are important beneficiaries of ESIF, which indeed account for more than 90% of the total EU amount directed to industrial policy-related expenditures in Portugal.

**Figure 3.8.** Average spending on industrial policy in Portugal, by source (as % of GDP) (2014-2019).



*Source:* EC, own calculations. Note that the figure excludes Portugal’s co-financing to the EU budget.

Turning attention to the thematic orientation of the industrial policy expenditures during this period, presented in Table 3.2, one finds a dominance of horizontal industrial policy measures. This is the case for all three sources of industrial policy expenditures considered, although each presents different policy priorities. For example, within the EU-funded share, excluding ESIF, the lion’s share goes to R&D, innovation (RDI) and technology, followed by employment education and training, and infrastructure. As for state aid, the most significant allocation goes to regional development, which consists mainly of subsidies to firms located in the less advantaged and outermost regions of the country (Norte, Centro, Alentejo, Região Autónoma dos Açores and Região Autónoma da Madeira). Although the state aid allocated to regional development is traditionally treated as a distinct category from horizontal and sectoral forms of state aid, it is usually labelled as a horizontal measure (Gual & Jódar-Rosell, 2006, p.9). Other non-negligible amounts of state aid are directed to SME support and RDI and technology. Lastly, regarding the EU’s amounts disbursed via ESIF, which is the primary source of all industrial policy spending, one finds a more balanced pattern of expenditures, which are mainly oriented towards themes already prioritised by the other sources, such as

employment, education and training, RDI and technology and SME support, plus ecological transformation.

**Table 3.2.** Allocation of industrial policy spending in Portugal across policy fields for each source (2014-2019).

Industrial policy field	EU budget (excluding ESIF)	ESIF	State aid
Ecological transformation	2.28	13.75	0.58
Employment, education and training	19.78	24.02	2.65
Infrastructure	10.21	2.49	0.00
RDI and technology	63.45	10.04	7.55
Regional policy	0.00	100.00	66.90
SME support	0.63	17.46	14.64
Sectoral industrial policy	3.65	0.72	0.86
Other	00.00	31.52	6.80
TOTAL	100.00	100.00	100.00

*Source:* EC, own calculations. Note that the calculations for ESIF include Portugal’s co-financing and they are also extended to the whole period 2014-2020 but without including the fund “fostering crisis repair and resilience”.

Although, in comparative terms, there are essential differences in the allocation of industrial policy expenditures between Portugal and the rest of the EU, for this analysis, what is relevant is to highlight that the fact that horizontal policies tend to be much more critical than sectoral measures is a finding that is in line with the EU average (see Table 22.2 in Landesmann & Stöllinger, 2020, pp. 636-637). Even so, the extent to which sectoral measures are poorly funded in Portugal is more significant. This is especially true within the state aid allocation, which in the rest of the EU absorbs a non-negligible amount of 7% of the total state aid (see Table 22.2 in Landesmann & Stöllinger, 2020, pp. 636-637), which is more than what is directed to SME support and employment, education and training. However, in Portugal, the estimated amount of state aid that goes to specific sectors is less than 1%.

In conclusion, it is true that, although the horizontal industrial policy approach is dominant compared to sectoral policy, it does not mean that the measures introduced in Portugal did not benefit specific sectors over others. This fact is also emphasised by previous assessments of Portuguese industrial policy (see Box 1 for more details and implications). For example, Mamede & Feio (2012) find that the main horizontal measures implemented in

Portugal, such as the SIFIDE, are de facto selective as they benefit technological and knowledge-intensive industries more relative to their weight in the economy. On the other hand, the same study also admits that the more significant share of resources related to these measures still go to industries that are neither technologically nor knowledge-intensive.

**Box 1. Portuguese industrial policy and the question of structural change in previous heterodox contributions**

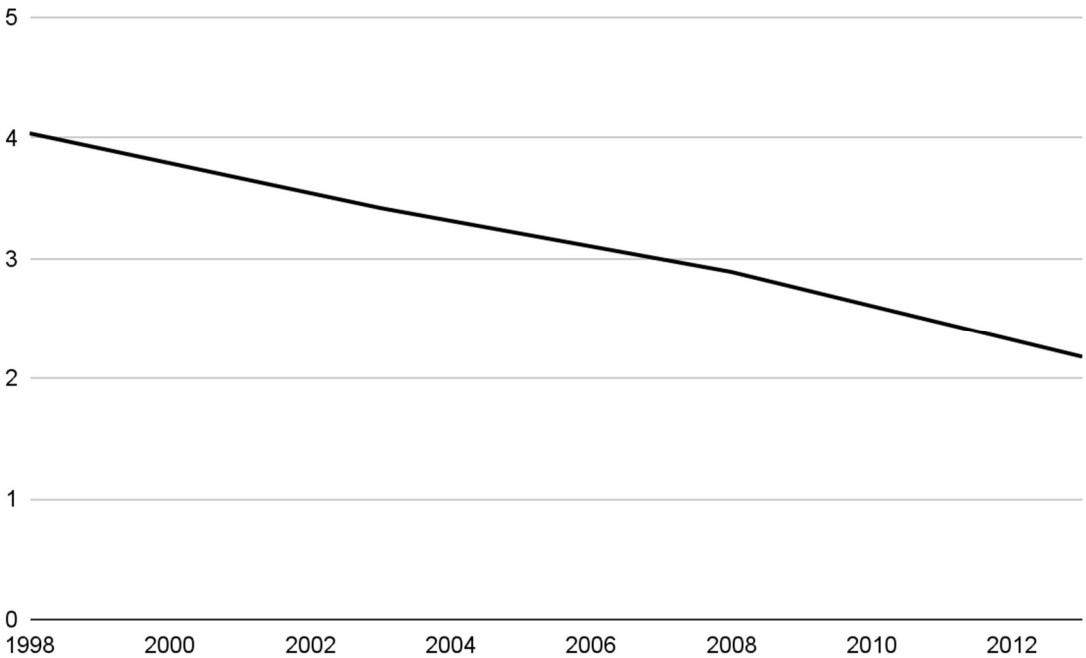
Section 1.2 of this dissertation shows that Portugal has improved remarkably in several educational, scientific and technological indicators. Although structural change did not follow these efforts, a proper assessment of the Portuguese growth strategy must first recognise some improvements in productive structure attributable to strengthening the national innovation and education system and promoting other policies aimed at supporting and internationalising Portuguese firms. Previous assessments of Portugal's industrial policy, such as the one conducted by Mamede et al. (2014), acknowledge this fact and highlight that, as a result of these industrial policy measures, Portugal's achievements can be verified by several trends, such as an increase in the number of firms performing R&D, a fast pace of improvements in innovation benchmark indicators, such the UIS, and the achievement of a positive technological balance of payments.

In general, within this framework, in which other independent assessments and evaluations are also considered and complemented by comparative case studies with other countries facing declining competitiveness (see Godinho & Mamede, 2016 for a comparison with Italy), the overall assessment of the industrial policy implemented in Portugal is positive. As a consequence, although it is remarked that there is still space for improvement, especially in the setting of objectives and in the coordination and coherency of interventions (Mamede, 2023a; Mamede et al., 2014), it is also stressed that the lack of a structural change in Portugal cannot be attributed to the absence of a proper industrial policy but mainly to international political economy trends tied to globalisation and EU economic and monetary integration since the 1990s, as well to the weight of a historical delay in the country's economic development. In other words, it is asserted that no possible amount or better design of "micro-solutions" can compensate for the "macro-problems" (monetary, exchange rate, fiscal, and trade policy at the EU level) affecting the country's productive structure (Mamede, 2015, p. 174; Mamede, 2023a).

### 3.6 The state as an agent of structural change?

Drawing from data available in the EU SAS concerning the amount of state aid spent in Portugal for the years 2000 and 2019, it can be ascertained that there was a substantial reduction, which amounts to more than 1% of the GDP, in the state-controlled funds dedicated to industrial policy during this period. This drop is also relevant compared to the rest of the EU countries since this was the second most considerable state aid decrease in the EU during this period. The fact that Portugal has been strongly reducing its state aid is also acknowledged by previous contributions to EU industrial policy, such as Pianta et al. (see figure 5 in Pianta et al., 2016, p. 20), who find that Portugal was among the countries that reduced state aid the fastest between 1995 and 2013. Thus, as a result of these changes, while in 2000, Portugal was still one of the countries with the highest amount of state aid, in 2019, on the contrary, it was among those that dedicated the least resources to this field.

**Figure 3.9. State control in Portugal (1998-2013).**



*Source:* OECD Product Market Regulation Statistics.

Turning the attention from the budgetary to the regulatory level, as shown by the evolution of the medium-level OECD PMR indicator of state control between 1998 and 2013 (Figure 3.9), it can be observed that there was a continuous and severe decline in this dimension as well, which was the most pronounced in the whole OECD. The result is that, during this period, Portugal passed from a level of state control that was the second highest in

the OECD to a value in line with the group average in 2013. Moreover, from the data contained in the 2018 updated version of the OECD PMR indicator, it is possible to see that Portugal is currently a country in which the level of “distortion” induced by state involvement is in line with the OECD average but also in which, as displayed by lower-level indicators, public ownership and, in particular, the scope of SOEs present one of the lowest values in the whole OECD. The same applies to government involvement in the network sector. Lastly, although, in terms of involvement in business operations, Portugal presents a value that is still higher than the OECD average due to higher-than-average scores in the lower indicators of retail price control regulation and command and control regulation, within this domain, the level of public procurement is also substantially below the group average.

Notwithstanding that the drivers of these regulatory trends in Portugal can be various, the findings concerning the level of public ownership and, specifically, the scope of SOEs and the government’s involvement in the network sector point to the critical role played by privatisations since 1995. In fact, the mid-1990s, in continuity with a previous initial phase of privatisations in the early 1990s<sup>17</sup>, which primarily affected the banking and financial sector, and in line with the Maastricht Treaty requirements to decrease public deficits to access the EMU, marked the beginning of a sustained process of privatisations, which continued until 2015. Among the most known cases of privatised SOEs during this period, one should include the privatisations of EDP (electricity), GALP (oil and gas), ANA (airport operator), CTT (postal service) and TAP<sup>18</sup>(national airline).

Besides the impact in regulatory terms, privatisations have also affected the state’s revenues, as it is estimated that the Portuguese state lost more than 6.8 billion euros of dividends between 2013 and 2023 (Público, 2023). In conclusion, it is relevant to highlight that the process of privatisation, which centre-left and centre-right governments pushed with the same fervour, was often complementary, especially in more recent times, to the attempt to attract FDI (as the cases of ANA and TAP show), whose promotion should, in turn, also be linked with the objective to obtain a relatively fast and easy economic recovery through the expansion of low-productivity activities, such as real estate and tourism (Mamede, 2023a,

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<sup>17</sup>The history of privatisations in Portuguese relatively recent democratic history began in the early 1990s following a revision of the Constitution in 1989, which eliminated a previous constitutional provision establishing the post-1974 Revolution nationalisations as an “irreversible conquest of the working classes”.

<sup>18</sup>The TAP was privatised by the centre-right government coalition in 2015. In 2016, the Portuguese state repurchased 50% of the company’s shares, and in 2020, it re-nationalised the company to prevent it from collapsing due to the economic effects of the COVID-19 pandemic. However, the current centre-left government has recently manifested its willingness to privatise the national airline again (see Público, 2023).

2023b; Mamede & Martins, 2022, pp. 60-61). The case of real estate is particularly emblematic, given the vast array of fiscal and other regulatory incentives deployed to attract foreign investors, such as the Golden Visa Program<sup>19</sup> (Jones, 2023).

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<sup>19</sup>Only in 2023 the Portuguese government has decided to suspend the Golden Visa Programme.





## Chapter 4

### Discussion of the results

#### 4.1 Main results

The main findings from the empirical analysis are the following:

*Finding 1.* From the mid-1990s until 2014, Portugal effectively pursued a structural reform agenda to liberalise its product and labour markets. Due to these changes, Portugal is today a country whose level of economic regulation is much more in line with the OECD trends than when the reforms began. This is especially true for PRM, in which, according to various dimensions captured by medium-level and low-level indicators of PMR (e.g., public ownership), the country is now even considered a promoter of the “best regulatory practices”.

*Finding 2.* Portugal has also followed a path of structural reforms in recalibrating the social model towards social investment criteria. In fact, the objectives and designs of ALMPs implemented are strongly related to the social investment paradigm. Furthermore, the expansion of ECEC and the cut of pensions have been significant. However, it is also important to highlight how the promotion of social investment was less continuous and coherent in time than in the case of liberalisation reforms. The crisis period marked a shift from a “Third Way” neoliberal social investment paradigm, in which cuts in some welfare domains (e.g., pensions) were compensated by more investment in others (e.g., higher education, ALMPs and ECEC), to orthodox neoliberal austerity, in which the curtailing of social expenditures was instead generalised. From the analysis conducted, it is nonetheless unclear the extent to which economic austerity determined a complete U-turn regarding the achievement of social investment targets. Except perhaps for ALMPs, Portugal continued to progress in the provision of ECEC and higher education, and the retrenchment of pensions is consistent with economic austerity as much as it is with social investment.

*Finding 3.* Notwithstanding the substantial efforts to expand the provision of higher education and increase R&D intensity since 2000, the Portuguese productive structure has mostly failed to take advantage of this investment. The level of overqualification in the workforce has constantly increased in recent years, such that Portugal currently presents one of the highest shares of overqualified labour in the whole OECD. Furthermore, compared to other EU countries, a relevant share of the workforce keeps working in sectors which are neither technologically nor knowledge-intensive. Along the same lines, private R&D expenditure remains concentrated in non-R&D-intensive activities.

*Finding 4.* From 2002 to 2013, Portugal had a dramatic decline in productive capacity. This is shown by the downward trend in industrial production of the manufacturing sector during this period. This pattern deepened during the crisis period 2008-2013. Furthermore, the deterioration of productive capacity was also qualitative, affecting medium-high and high-tech industries. Although in the post-crisis period 2014-2018, industrial production in manufacturing industries slightly rebounded, the size of this trend is too small to indicate a reindustrialisation process.

*Finding 5.* The industrial policy implemented in Portugal, as exemplified by the average amount and thematic allocation of expenditures in the period 2014-2020, presents the following characteristics. First, unlike the EU average, it mainly relies on the EU budget, given the comparatively smaller amounts of state aid and the higher relevance of ESIF. Second, it presents a thematic allocation in which horizontal industrial policies are unsurprisingly dominant. Among the main industrial policy priorities across different sources, one finds RDI and technology (from all three sources), employment, education and training (from the EU “central” budget and the ESIF) and SME support (from the ESIF and state aid). An interesting finding is that, even though the focus on horizontal policies is a trend which is aligned with the rest of the EU, the extent to which sectoral policies are poorly funded seems to be greater in Portugal, as it can be ascertained by comparing the distribution of state aid’s expenditures.

*Finding 6.* Since the mid-1990s, there has been a severe drop in the scope and variety of budgetary and regulatory tools available to the Portuguese state to foster the nation’s structural change. This is illustrated by a decline in state aid and the medium-level PMR indicator of state control. These reductions were among the most prominent in the EU and the OECD. Furthermore, the scope of strategic industrial policy tools, such as SOEs and public procurement, is strongly restricted in Portugal, even compared to other EU countries. Overall, these results seem to point to the critical role of the large-scale privatisation process since 1995, which, in more recent times, has also served the purpose of attracting foreign capital, particularly in non-tradable service sectors. In this sense, one can observe that complementary to a substantial state’s retreat in the use of transformative industrial policy tools, one also finds an intense form of state activism in promoting activities, such as tourism and real estate, whose benefits for the nation's economic development are, at best, questionable.

## **4.2 Interpretation of the results**

The dissertation research question asks why Portugal failed to transform into a knowledge-based economy despite improving human capital and encouraging R&D activities. The research question has been approached through two different lines of interpretation. The two possible explanations were based on the first chapter's theoretical discussion. Thus, to provide meaning to the main findings listed in the previous section, it is useful to briefly recall the main concepts from the theory and elucidate how the two interpretative conjectures formed to address the research question have been constructed from that discussion.

In the theoretical part, it has been stressed that the Lisbon Strategy was a response to the EU's policymakers' concern for various issues that became apparent in the 1990s. On the one hand, as the EC (1993) pointed out, there was a widening gap in terms of economic performance between the EU and other advanced capitalist economies, such as the US and Japan. On the other hand, as highlighted by Esping-Andersen et al. (2002), the EU welfare systems began to suffer from severe pressures linked to high unemployment, low employment rates and population ageing. Hence, under the influence of a different set of ideas, the 2000 Lisbon European Council (2000) established that the solution to these problems, whose origins had to be attributed to a delay in transitioning to a knowledge-based economy, consisted of the implementation of structural reforms aimed at eliminating institutional "rigidities" in product and labour markets and "wasteful" expenditures in the social model, with the complementation of an ambitious technological and research agenda.

After a decade and amid prolonged exposure to the 2007-2008 GFC, it became clear that the Lisbon Agenda failed to reach its objectives. However, there is still no consensus on what went wrong with the strategy. On the one hand, it has been hypothesised that the problem lay in the agenda's insufficient implementation, which was too reliant on member states' initiatives (Archibugi & Coco, 2005; Goulard & Bailey, 2010; Soete, 2009, p. 39). On the other hand, it has been asserted that the issue with the Lisbon Strategy has to do with a wrong set of assumptions about the role of liberalisation reforms and production dynamics in innovation. In this regard, the alternative explanation points to the following facts. First, liberalising product and labour markets might be deleterious to technical change (see Cappellari et al., 2012, pp. 190-191; Andreoni & Chang, 2019, p. 138 for a review). Most importantly, as stressed in Lee's (2020) analysis of the evolution of South Korean industrial policy as well as by "productionist" and manufacturing-oriented theoretical contributions to economic development (Andreoni, 2011; Andreoni & Chang, 2016, 2017, 2019; Andreoni & Gregory, 2013; Chang & Andreoni, 2020, pp. 8-12) production matters for innovation. This means that the sustained capacity of a nation's economy to produce things, especially in those

industries with more links and interdependencies with the rest of the economy, is as crucial for structural transformation as increasing the level of qualifications of the workforce or promoting R&D activities in enterprises. Hence, from this perspective, the issue with the Lisbon Strategy is that it ignored the productive dynamics at play in the EU, especially in SEEs, whose low level of specialisation and decline in productive capacity would have required a shift of prioritisation from the trinity of structural reforms, higher graduates and R&D to more selective and "interfering" industrial interventions.

Based on this debate about the Lisbon Strategy's failure, it has been conjectured that the case of Portugal's missed transition to a knowledge-based economy despite its improvement in human capital formation and R&D could be attributed to two possible explanations. On the one hand, the lack of transformation to a knowledge-based economy may be interpreted through the lens of a failure to implement the Lisbon Agenda in Portugal. In fact, as recently emphasised by Burrioni et al. (2021), similarly to the other SEEs, the level of R&D in Portugal is still below the EU's 3% target. Furthermore, the relatively high share of young people with tertiary education, which aligns with the target set by the Europe 2020 strategy, might have been achieved too recently to make a difference. Then, there is also a question of whether Portugal implemented the institutional structural reforms recommended in the framework of the strategy. On the other hand, the strategy's failure may be explicated based on a production-centred view highlighting its decoupling from the country's productive dynamics, as embodied by its productive capacity in the manufacturing sector.

The first conjecture has been assessed in the first three sections of the empirical analysis, which scrutinise Portugal's structural trends in economic regulation and social investment and the precise outcome of the higher education and R&D agenda. The results of these empirical sections seem to suggest that the first line of interpretation has low explanatory power in grasping the Portuguese case. In fact, the empirical evidence illustrates that Portugal has thoroughly implemented structural reforms to liberalise its product and labour markets and, even though with more ambiguities, it has also pursued a recalibration of its social security system in line with social investment concerns. Furthermore, the country's low capacity to absorb its investments in R&D and higher education, which has been evaluated in terms of the failure to direct the more significant share of BERD and workers to more technologically and knowledge-intensive activities, also calls into question the interpretation that the country's efforts in this regard have been either insufficient or too recent to lead to the expected changes.

The second interpretation was mainly addressed in the fourth section of the empirical chapter, which analyses the country's productive capacity in the manufacturing sector and its specific industries. The results of this assessment seem to provide a better understanding of why the Portuguese growth strategy did not work. The empirical analysis shows that, in parallel to an accumulation and improvement of the quality of its knowledge inputs, the country's productive capacity, as demonstrated by the variation in industrial production's output, has been severely declining since the early 2000s. This trend further intensified during the economic crisis. Furthermore, the downfall of production affected traditional low-tech and medium-low-tech industries as well as the medium-high-tech and high-tech ones, whose relevance in the economy was minor even before deindustrialisation, thereby further aggravating the already existing problem of the economy's low level of specialisation.

Based on these premises and along the lines of a production-centred interpretation, it seems plausible to assert that pursuing a growth strategy mainly centred on human capital and R&D was not adequately aligned with Portugal's productive capabilities. Furthermore, it may well be the case that the dismantlement of EPL and PMR may have jeopardised the transition to more technological and knowledge-intensive industries by reducing the firms' incentives to pursue these activities in favour of a bias towards low-wage and low-productivity sectors, which, as extensively presented by Mamede (2020), have consolidated their presence in the economy since the early 2000s. Consequently, as also shown in the fifth section of the empirical chapter, what has been really missing within the EU and Portuguese growth strategies is an industrial policy aimed at strengthening the specialisation profile of the Portuguese economy through non-exclusively horizontal measures.

It is true that, in the framework of the EU competition rules, the space for more selective and dirigiste industrial initiatives is strongly constrained. Furthermore, section four of the empirical chapter, whose findings have been compared with the general EU trends found by Landesmann & Stöllinger (2020), shows how Portugal's funding of industrial policy, differently from the EU average, mainly depends on the EU budget. This is relevant because it implies even greater subjection to the EU's industrial policy priorities, which, as also acknowledged by Mamede (2017), de facto ignore the existence of structural asymmetries within the EU, meaning that their objectives and design are not adjusted to the specific structural characteristics of peripheral countries, such as Portugal. Additionally, as also underlined in the previous assessments of Portuguese industrial policy (Godinho & Mamede, 2016; Mamede, 2023a; Mamede et al., 2014) and within post-Keynesian theoretical insights (Storm, 2020), it is essential to mention that the good functioning of an industrial policy

cannot be separated from favourable macroeconomic dynamics, which, again, in the context of the EU and the EMU, tend to be rather adverse. However, the empirical analysis conducted in the last two sections also shows that, at the national level, industrial and public intervention rationales have not been consistent with the declared objective of improving the country's specialisation level.

The interpretation of the following facts suggests the lack of a coherent commitment towards upgrading the country's productive structure. First, the results regarding the thematic allocation of industrial policy expenditures within state-controlled finances show that sectoral aid is less used in Portugal compared to the rest of the EU, in which it absorbs almost the same share devoted to employment, education and training and SME support combined. On the contrary, in Portugal, the amount going to these horizontal measures is estimated to be more than 20 times superior to what is directed to sectoral aid. This is not a minor difference. Second, as presented by the trends in the amount of state aid and state control since the end of the 1990s, the narrowing in the scope and variety of budgetary and regulatory tools available to the Portuguese state to drive economic development has been significant, both in absolute and in comparative terms with the rest of the EU and the OECD. Once again, this can be attributed to international constraints, such as the need to adjust the public debt ratio to the Maastricht criteria between 1995 and 2000 or the obligation to comply with the conditionalities of the 2011 MoU with the Troika. Nevertheless, the extent and continuity in the process of state's retreat, which has been among the most noticeable in the EU and the OECD, in addition to other findings concerning the reduced scope of SOEs and use of public procurement, even in comparison with other EU and OECD countries, seem to indicate that the external neoliberal constraints do not explain everything. Actually, it appears that, even in the context of the international straitjacket, Portuguese policymakers have themselves enthusiastically adopted a strong pro-market neoliberal stance, thereby further restricting the already circumscribed policy space available to them to upgrade the nation's productive structure. In conclusion, the decision in more recent times to bet on activities like tourism and real estate in order to achieve a rapid economic recovery at the expense of future losses in economic efficiency is additional proof of how the Portuguese growth strategy has been strongly inconsistent with its ambition to favour the emergence of more sophisticated sectors.

□

## Conclusions

The discussion about the knowledge-based economy and the path to its transition has been dominated by certain assumptions concerning the sources of growth and productivity in the post-Fordist growth regime. Under the influence of endogenous growth models, the first assumption identifies policy interventions aimed at improving and accumulating knowledge inputs as the key ingredient to economic success. Rooted in orthodox neoliberal ideas, the second assumption highlights the role of “fluid” labour and product markets in unleashing the forces of innovation and allowing economies' adaptation to economic shocks. Popularised by the “Third Way” variant of neoliberal doctrine, the third assumption emphasises the necessity to adapt the welfare system to the requirements of a knowledge-based economy by prioritising social investment policies at the expense of the traditional compensation-oriented logic.

The analysis conducted in the dissertation, whose guiding research question is concerned with interpreting the lack of virtuous structural transformation in Portugal despite pursuing an ambitious educational and research agenda since the early 2000s, presents Portugal as an interesting case study of implementing these tenets into a concrete economic reality. In fact, Portugal not only sought to improve its level of human capital and promote R&D activities but also followed a coherent plan of structural reforms to liberalise its product and labour markets and make its social model more aligned with the social investment paradigm. International institutions, particularly the OECD, have also acknowledged and praised these efforts. Nevertheless, after more than two decades of economic stagnation, high exposure to economic crises, a lack of positive structural change and increased specialisation in low-productivity activities, it is clear that this development agenda did not lead to the expected results.

This dissertation interprets the failure of the Portuguese growth strategy in light of its separation from the concrete productive dynamics of the country. In fact, the empirical evidence shows that, around the same time Portugal achieved an exceptional expansion in the number of high graduates and researchers, as well as a remarkable improvement in the students' PISA scores and an increase in the gross domestic level of R&D expenditure, there was a substantial deterioration of the country's general level of productive capabilities through a process of deindustrialisation. This implies that the economy's capacity to benefit from such investments, which was already scarce given the pre-existing level of structural backwardness, dramatically decreased.



This interpretation is based on the view that the assumptions upon which the Portuguese growth strategy was founded are themselves problematic. The issue with them originates from a post-industrial and market-optimistic worldview that overlooks the role that manufacturing and state intervention still play in advancing the development of a nation's productive structure. In fact, first, manufacturing has structural links and interdependencies with the rest of the economy that make its resilience fundamental for productivity gains of the economy as a whole, including in knowledge-intensive service activities (Andreoni & Chang, 2016, 2017, pp. 15-19, 2019, pp. 142-143; Andreoni & Gregory, 2013; Chang, 2010b; Chang & Andreoni, 2020, pp. 8-12). Second, the state's intervention is paramount to allocating investments and productive efforts towards ground-breaking paths that risk-averse private agents would never dare to explore (Mazzucato, 2013). The latter concern is especially valid for countries with insufficient or declining productive capabilities due to a stronger tendency of market forces to channel resources towards low-productivity sectors. The Portuguese case is a good demonstration of this problem. As Storm (2015, p. 66) argues, the misallocation of cheap credit towards non-tradable sectors in SEEs following monetary integration was not indeed caused by excessive product or labour market "rigidities" but by the markets' compliance with an "impeccable capitalist logic", that is, money goes to activities with higher and safer private returns, which, in the case of SEEs, generally correspond to low wage and low productivity sectors. Thus, implementing structural reforms to dismantle PMR and EPL might have further prevented Portugal's transition towards knowledge-intensive sectors by consolidating the existing market bias towards non-sophisticated industries.

The main argument of this dissertation is complementary to the previous contributions on the question of structural change in Portugal. As stressed by Godinho and Mamede (2016), Mamede (2015, 2020), Mamede et al. (2014) and Martins and Mamede (2022), the decline in productive capabilities in Portugal since the early 2000s should be attributed to the conflating effects of structurally determined dynamics linked to the deepening of the processes of globalisation and European economic and monetary integration, such as financial liberalisation, currency appreciation and exposure to competition from China and Eastern Europe, on a historically inherited structural backwardness. However, while the "macro-problems" (Mamede, 2015, p. 174; Mamede, 2023a) negatively affecting the Portuguese economy have been insightfully pointed out and stressed by this literature, this dissertation moves the attention to the poor rationales of industrial and, more generally, public policy at the national level.

Hence, this dissertation also suggests that the industrial policies implemented in Portugal, which are strongly dependent on the EU's "horizontal" priorities, are not appropriate for the state of the country's productive capabilities, which would require a more selective scope of intervention. Furthermore, despite the narrow space for alternative policy action in the context of the EU regulations, it seems that Portuguese policymakers went even beyond in the pursuit of a neoliberal agenda than what the observance of the country's international obligations would have already required. In fact, the use of strategic industrial policy tools, such as SOEs and public procurement, is low even compared to other EU and OECD countries. Lastly, the active promotion of non-tradable sectors, such as tourism and real estate, is not justifiable within the rationale of a development strategy aiming at elevating the country's productive structure.

In conclusion, in the same fashion as Chang and Andreoni's (2020, pp. 24-27) contribution to an "Industrial Policy for the 21<sup>st</sup> Century" in the Context of WTO's "new imperialist" rules, this dissertation encourages future academic literature to rediscover and investigate the actual policy space for alternative industrial policy approaches in the context of the EU. Of course, this does not mean ignoring or taking the external constraints of such policy space for granted. A *new developmental agenda* for Southern Europe should question and challenge the EU's competition and fiscal regulations, as well as its industrial policy's regional and thematic allocation. The final part of the theoretical discussion has briefly touched upon this point. In this regard, Pianta et al.'s (2016, p. 55) reflections are relevant for underlining how any possibility of reforming the EU's rules depends on evolution in the balance of power between EU institutions, national governments and political forces. In this sense, it might be interesting to dig into the different international and national political conditions at play during the COVID-19 economic crisis compared to the European external debt crisis in 2010-2012. The change in the balance of power among member states and political forces might have indeed played a role in shaping the different outcomes, which, in the case of the COVID-19 crisis, led to the Next Generation EU, a first fiscal policy at the EU level. In fact, differently from the 2010-2012 crisis, during the negotiations for a common EU response to the crisis, one could find a solid bloc of SEEs plus France aligned to a common bargaining position (Siza, 2020), in addition to a peculiar and unprecedented political context within SEEs: a coalition between the centre-left (PD) and anti-establishment populists (M5S) in Italy, a centre-left government (PS) externally supported by the communists (PCP) and the radical left (BE) in Portugal and a coalition between the centre-left (PSOE) and the radical left (UP) in Spain.



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