Lúcio Vinhas de Souza
Harvard University, United States
vinhasdesouza@gmail.com
orcid.org/0009-0001-1697-0875
Daniel Diaz
Brandeis University, United States
ddiaze@brandeis.edu

DOI: https://doi.org/10.14195/2183-203X_58_2

Growth and Convergence in Portugal: Historical and Policy Experiences at National and Metropolitan Level

Crescimento e Convergência em Portugal: Experiência Histórica e Políticas a Nível Nacional e Metropolitano

Lúcio Vinhas de Souza
Daniel Diaz

Received for publication: July 24, 2024
Revision accepted for publication: September 26, 2024

ABSTRACT
Contrary to other EU countries, Portugal has become relatively poorer for almost a quarter of century. Growth decomposition exercises show that this is due to a reduction in capital accumulation and a sharp fall in total factor productivity. There are areas in which the country can act to reduce the fall, by capitalizing on national comparative advantages and the diverse but complementary features of its two largest metropolitan regions, Lisbon and Porto. However, this requires policy changes.
Keywords: Economic growth; growth decomposition; economic policies; regional economics; demographics; European Union.

JEL classification: F4; F6; H00; J1; O1; O4; O5.

Acknowledgement: This paper has benefited from work done by one of the authors as a consultant for the World Bank. The collaboration with the "Growth Lab" at Harvard University is gratefully acknowledged. The paper does not necessarily reflect the opinion of any organization to which its authors are or have been affiliated. All usual disclaimers apply.

1. Introduction

Portugal is a small country, with just 1.5% of the GDP (in nominal terms, 1.8% in purchasing power parity, PPP), and 2.3% of the population of the European Union: both figures also show a decreasing trend. It is a very open economy, with international trade (imports and exports of goods and services) representing more than 100% of GDP and a great dependence on external capital flows. These features interact with a productive structure overwhelmingly made up of micro-enterprises concentrated in traditional and low-technology sectors that have difficulty accessing credit and that invest little, and with a centralized and cumbersome state. The integration process with the European Union (EU) and what it represents – namely, free access to large external markets and sources of capital, monetary and institutional stability, significant and prolonged financial flows for the support of reforms and investment – potentially provide a way out of some of these dilemmas, but has been so far used in a less than optimal way. This paper tries to explain historically why this happened and suggest some alternatives to better explore the windows of opportunity open to the country.

2. A Historical Analysis of Economic Convergence in Portugal[1]

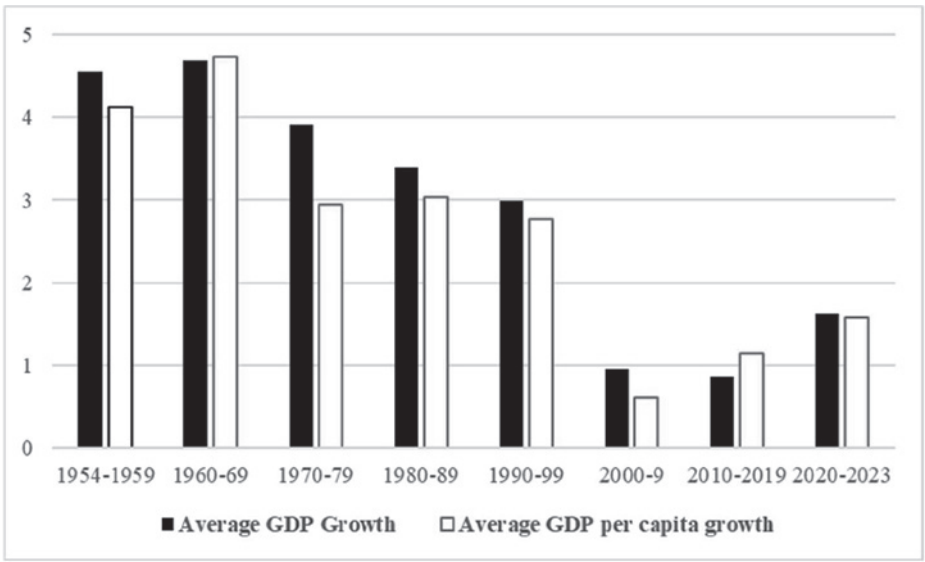
2.1. Convergence Before EU Accession

Portugal was under a dictatorial regime between the military coup of 1926 and another military coup in April 1974, the famous "Carnation Revolution". During most of the dictatorship period, namely from 1933 to 1974, Portugal was under the so-called "Estado Novo" (the "New State"), a nationalist, corporatist and autarchic regime that, however, implemented a series of economic liberalization and integration measures, particularly after the end of the Second World War. Namely, the country benefited from financial support from the Marshal Plan, having joined the Organization for European Economic Cooperation (OEEC) – the body created to manage disbursements from the Marshall Plan in 1948 (the OEEC became later the Organization for Economic Cooperation and Development, OECD, in 1961), it also joined the European Free Trade Association (EFTA) in 1960 and signed a free trade agreement with the European Economic Community (EEC, the predecessor of the EU) in 1972.

The real integration unleashed by those actions was led by a historically unique set of large and diversified family-owned Portuguese industrial and financial conglomerates: the Companhia União Fabril (CUF) Group, the Champalimaud Group, the Espírito Santo Group, Banco Português do Atlântico, Banco Borges & Irmão, Banco Fonsecas & Burnay and Banco Nacional Ultramarino, which, according to some estimates, had a combined turnover of around 75% of the Portuguese GDP of 1974 (CUF Group, for example, was ranked among the 200 largest companies in Europe in the early 1970s, being the largest in the Iberian Peninsula: see Ferreira da Silva et al , 2015).

[1] For a longer description of Portugal's performance across many dimensions during part of this period, see Mateus (2013) and Amaral (2022).

Figure 1: Average growth in GDP and GDP per capita in Portugal, in %.



Source: BdP and INE (SLEP).

As a result, Portugal registered a strong process of liberalization and economic integration that lasted from the mid-1950s to 1973. This liberalization occurred simultaneously with the country's accession to international trade blocs and organizations and was parallel to a global cycle of economic development and integration, and resulted in significant "real convergence" effects – that is, the approximation of the country's level of development to that observed in more advanced economies: as a matter of fact, these were larger than those observed during its period as an EU Member State.[2] Specifically, the average growth rate of GDP and GDP per capita during the period between the mid-1950s and the Portuguese EU accession in 1986 was twice as high as during the post-EU accession period: namely, it was respectively 3.9 % and 2.0% for GDP growth, and for GDP per capita growth, the values are 3.4% to 1.9%: see Figure 1).[3]

It should also be borne in mind that during this period Portugal was involved in military conflicts in its "overseas provinces" from 1961 until 1974. It also faced a succession of major economic and political shocks with the end of the "Estado Novo" dictatorship – including the temporary expropriation and nationalization of most large national private companies,

[2] See Barros and Garoupa (1993).

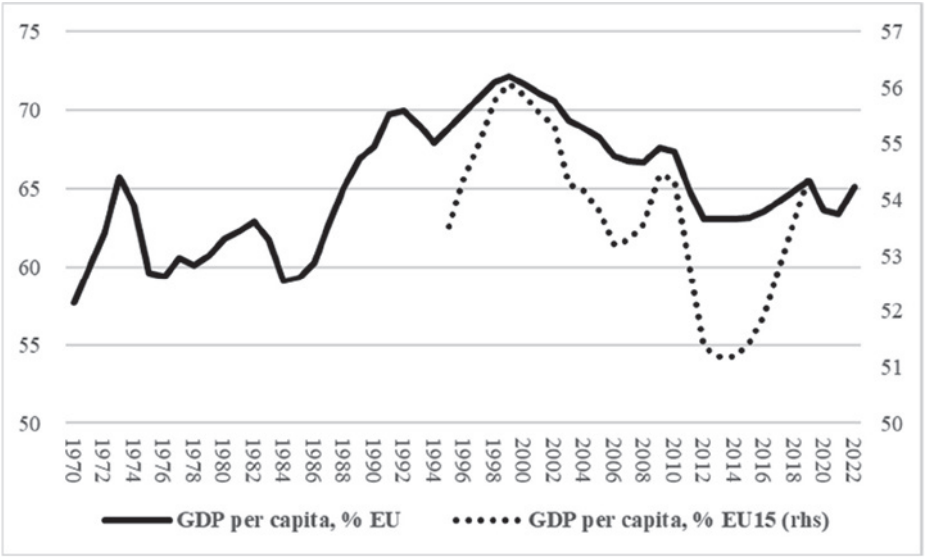
[3] The values come from the "Long Series for the Portuguese Economy" (SLEP, in Portuguese) database, a joint analytical effort by the Bank of Portugal (BdP) and the National Statistics Institute (INE) that provides consistent economic series dating back to the beginning of the 1950s.

the exile of their owners, as well as massive outflows of capital from the country, in parallel with a "decolonization" shock and the influx of hundreds of thousands of inhabitants from its overseas provinces in just a few months. This was aggravated by oil shocks of 1973 and 1979, leading to internal and external imbalances that culminate in two IMF programs in 1976/77 and 1982/83.

2.2. Convergence *After* EU Accession

Portugal submitted its application for membership of the EEC on March 28, 1977, with official negotiations taking place between October 1978 and March 1985: Portugal became an EU Member State on January 1, 1986. However, the process of Portugal's real economic convergence stalled relatively soon afterwards: from around 60% of EU per capita GDP in 1986 (a figure lower than that observed before the shocks of the mid-1970s), it reached a peak of around 72% in 1999, but fell back to around 65% in 2022, a value lower than in 1973 (see Figure 2: if we use as a reference value not the EU aggregate, but only the so-called "EU15", which is a set of higher income countries before the EU enlargements to less developed countries in Central and Eastern Europe in 2004, 2008 and 2020, the picture is the same). The minimum of the series is observed – not surprisingly – at the nadir of the euro area crisis, roughly stagnating afterwards.

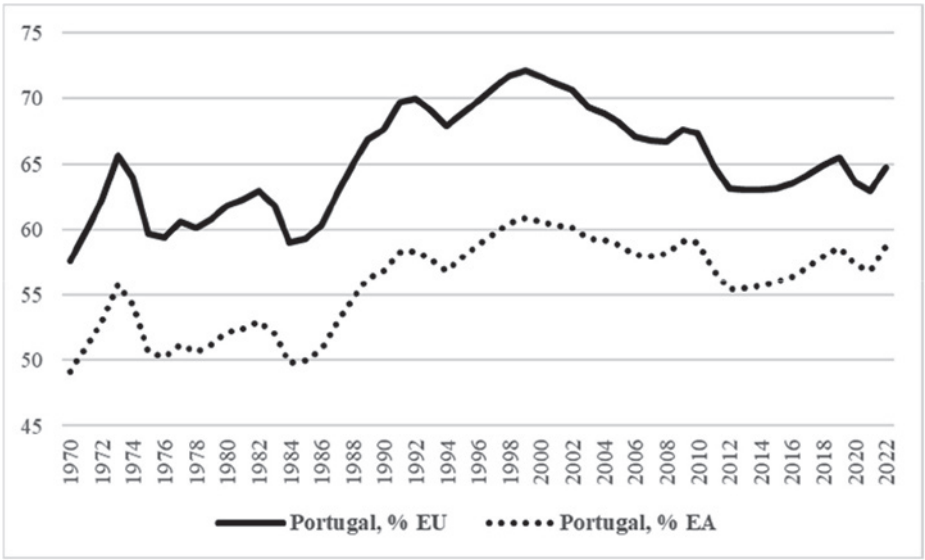
Figure 2: Portugal's GDP per capita as a percentage of the EU's GDP per capita



Sources: World Bank and Eurostat.

The figures above are in constant values but there are other important variables to take into account in such a comparison: namely, the difference in terms of price level (Portugal, a relatively poorer and less productive country than the EU average, have lower prices for non-tradable goods and services) and the share of active population employed (since GDP reflects the value added by this component of the population). Therefore, in Figure 3 we use a series of GDP per capita for the employed population in terms of purchasing power parity (or PPP, i.e., adjusting for differences in price levels) for a comparison between the EU average, the euro area and Portugal.

Figure 3: GDP in PPP per capita of the employed population in Portugal, as a percentage of the equivalent value of the EU and the euro area (EA)



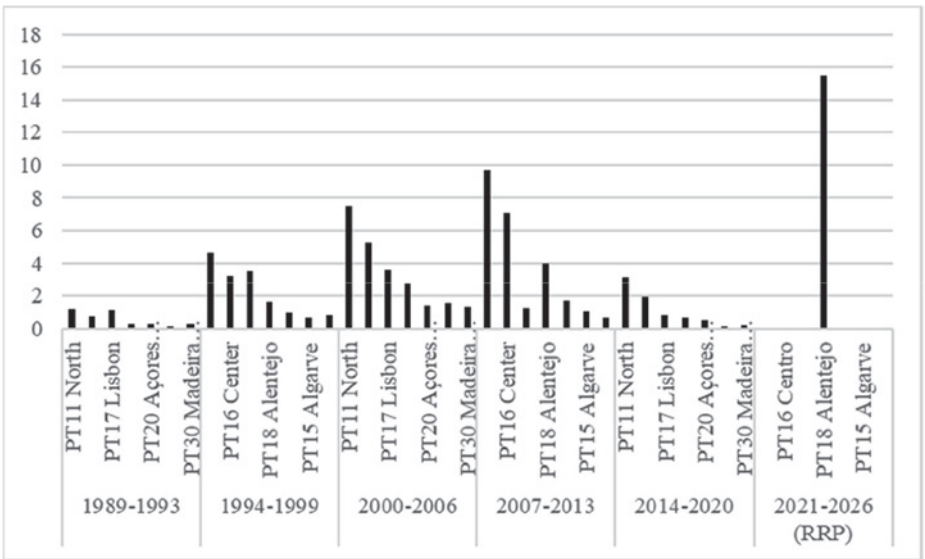
Source: World Bank.

Even though the levels are slightly different, the results of this comparison are essentially the same as those obtained with the series in Figure 2: the level of GDP per capita in relation to the EU reaches approximately 66% in 1973, before the "Carnation Revolution", had fallen to 59% in 1985 before Portugal's entry into the EU, reached a maximum of 72% in 1999, then falling to below 65% (again, below the value of 1973) in 2022. Again, the minimum is during the euro area crisis, followed by a plateauing.

This result is puzzling. After all, joining the EU in 1986 enabled Portugal a tax-free access to a very large market for exports, while joining the euro – the common European currency, in 1999, not only eliminated the economic costs of a separate currency for interactions with

other euro area economies – Portugal's largest economic partners, but implied more favorable financing conditions and less uncertainty for all economic agents in the country: both should have supported higher economic growth, all else constant.[4] Furthermore, Portugal has also benefited from very significant and long-term EU unilateral transfers: when one adds up all the different types of EU support over time, the total value is close to half of Portuguese GDP (see Figure 4). Namely, through, *inter alia*, the European Regional Development Fund, the Cohesion Fund, the European Social Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund, the EU unilaterally transferred to Portugal around €76 billion between 1989 and 2020, that is, an average of 1.7% of Portuguese annual GDP for more than 30 years. Additionally, in 2021, around € 15.5 billion was allocated to Portugal through its "Recovery and Resilience Plan" (or RRP, which is, in effect, a national development strategy focused on the so-called "digital transitions and energy", although initially presented as budgetary support related to the recession caused by policies to combat the 2020 COVID pandemic: see Governo Português, 2021).[5]

Figure 4: EU Fund Flows to Portugal (€ billion)



Source: European Commission.

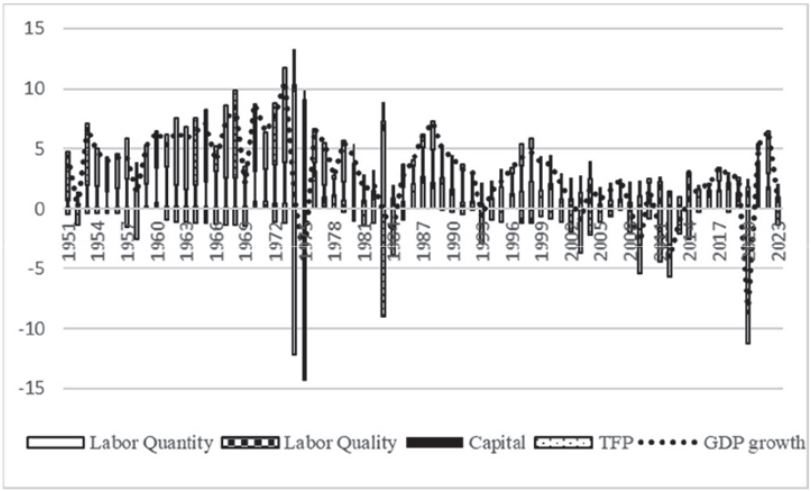
[4] In reality, Portugal's economic integration with the EU in terms of real flows has declined since the introduction of the euro: for example, exports to the EU have fallen from 83% in 1999 to around 70% in 2023. For the travails of the euro area (and other global shocks), see Vinhas de Souza (2024b).

[5] Additionally, Portugal also benefited from access to European Investment Bank (EIB) € 56 billion in loans on preferential terms, and to approximately € 52 billion in loans also on preferential terms granted by EU institutions during the euro area sovereign crisis in 2010-13.

Below we perform a growth accounting decomposition exercise, to understand the effects of those shocks and the underlying drivers of the convergence break down (see Figure 5). Based on the Solow growth model (Solow, 1956), growth accounting exercises assess the relative contribution of labor, capital and technology to the economic growth of a country using a Cobb-Douglas production function, given by $Y_t = AK_t^{\alpha} L_t^{1-\alpha}$, where Y is GDP, K and L are, respectively, capital and labor stock, and A is total factor productivity (or TFP). The contribution of the labor production factor to GDP growth is further distinguished below between labor quantity and quality, the former based on hours worked, while measures of labor quality are based on the skill composition of workers, proxied by their educational attainment level.[6]

The resulting estimates show that the contribution of the *quantity* of work remained at similar average levels before and after accession (around 0.4-0.5 percentage points of GDP), while the *quality* of labor's contribution to growth almost doubled (from 0.4 to 0.7 percentage points). However, the contribution of capital to growth decreased by around 30% (from 2.0 to 1.5 percentage points), while the contribution of total factor productivity (TFP, a factor representing technological advances) became negative (from 1.6 percentage points before EU accession to -0.6 afterwards). In other words, Portugal's reduction in growth and convergence is associated with these falls in investment and TFP (Conselho para a Produtividade, 2019).

Figure 5: Decomposition of growth drivers for Portugal, 1951-2023



Source: Conference Board.

[6] See de Vries and Erumban (2022), for a deeper description of the growth decomposition methodology and of the data series used in it. For a recent application of this methodology to a non-EU country – namely, China, see Vinhas de Souza (2024a).

Using a simple unconstrained Chow test to determine the point of any eventual structural break in those series yields different dates: for GDP and TFP growth, the break date is 1975, while for labor quality and capital the breaks are respectively in 1999 and 2000 (labor quantity has no structural break in the series). What could lie behind these breaks? The related ones for GDP and TFP happened at the same time as the "regime change" of 1974, while the break in labor qualification coincides with the (cumulative) effects of increased spending and wider availability of more education in Portugal from mid-1986 onwards. As for the break in capital accumulation, it happened at the same time as two external competitiveness shocks for Portugal in the late 1990s/early 2000s: first, the 2004 entry of new members states from Eastern Europe in to the EU, which was preceded by association and trade agreements that largely liberalized trade with the bloc already from the late 1990s (Vinhas de Souza, 2004) and, secondly, China became a member of the World Trade Organization in 2001.

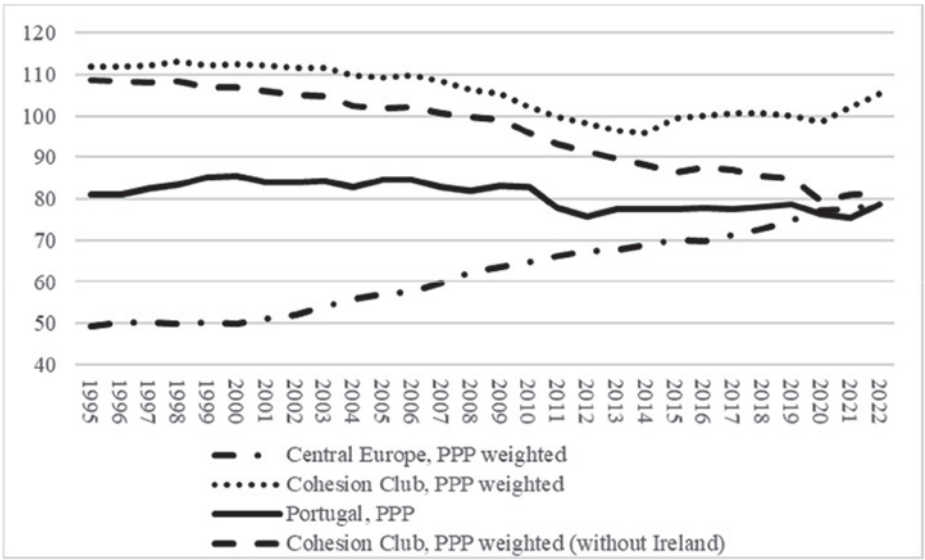
A stalling of economic convergence after joining the EU is not observed in other countries that joined the bloc and also benefited from the influx of significant EU funds, from countries in Central and Eastern Europe that have more recently entered the EU – all of which have essentially experienced continuous processes of convergence towards higher levels of GDP per capita – to Ireland, which became a member of the EU in 1973 and joined the euro area in 1999. However, there are several other examples of stalling and "divergence" in what one could call the "Cohesion Club". These are EU members in South Western Europe that have also generally benefited from the unilateral transfer of resources from the EU for several decades that have a similarly negative (or even worse) performance as Portugal in terms of convergence: Cyprus, Spain, Greece and Italy (see Figure 6).[7]

All countries in the "Cohesion Club" have experienced a prolonged process of divergence, from Greece (a drop of almost 31% between its maximum point of convergence in relation to GDP per capita in EU PPP in 2004 and 2022), to Italy (a 29% drop between 1995 and 2022), Spain (a 20% drop between 2006 and 2022) and Cyprus (a 12% drop between 2008 and 2022): these numbers imply drops that are between two and five times more serious than that observed in Portugal, and this despite transfers from the EU that in some cases were even more significant than those received by Portugal (in relation to GDP). It is noteworthy that they happened in different moments –albeit clustered throughout the 2000s, and none at the same time of Portugal's break. The only real exception among members of the "Cohesion Club" is Ireland, which opted for a development strategy based on creating favorable conditions for foreign private investment (either from the EU or outside the EU), complemented with investment in fixed and human capital (Ireland went from 90% of EU GDP per capita after accession to 290% in 2022, recording the second highest per capita income in the EU, after Luxembourg).[8] Broadly speaking, this is a similar strategy to that adopted by EU Member States in Central and Eastern Europe (Gill and Raiser, 2012).

[7] These are also the countries – together with Ireland – that were most affected by the sovereign debt crisis in the euro area (see Vinhas de Souza and Tudela, 2012).

[8] There are known issues with Irish GDP estimates, given the way foreign companies record their profits, and alternative measures reduce the size of the expansion, but this does not change the results of the comparison (see Honohan, 2021).

Figure 6: Convergence, Central and Eastern Europe, "Cohesion Club" and Portugal



Note: The series were aggregated with weights derived from the GDP in PPP of each Member State in relation to its group.
Source: European Commission.

A comparative exercise in decomposing growth factors using the same methodology and series as above helps to understand what led to this result (see Table 1). It demonstrates a clear and common drop in the contribution of growth factors since the entry of these countries into the EU, and an even greater drop since their entry into the euro area (which happened at about the same time as the external competitiveness shocks described above): this drop is particularly serious and affects more factors in Italy and Greece. Especially worrying is the fact that the TFP has become negative in all these countries. The main exception in Table 1 is Poland, where EU Accession coincides with an increase in the contribution of most growth factors (bar TFP, but which still remains positive, unlike the other countries).

Table 1: Average values for the growth decomposition exercise for "Cohesion Club" countries and for Poland

	A: Whole Sample	B: Since EU entry	C: Before EU entry	D: Since EA entry	*B-C Difference*	*C-D Difference*
PT: GDP	3.1	2.0	4.4	1.0	(2.4)	(3.4)
PT: Tqt	0.4	0.4	0.5	(0.0)	(0.1)	(0.5)
PT:Tqa	0.5	0.7	0.4	1.0	0.3	0.6
PT: C	1.7	1.5	2.0	1.1	(0.4)	(0.8)
PT: TFP	0.5	(0.6)	1.6	(1.1)	(2.2)	(2.7)
EL: GDP	3.1	1.1	6.0	0.3	(4.8)	(5.6)
EL: Tqt	0.2	0.3	(0.1)	0.2	0.4	0.3
EL:Tqa	0.5	0.5	0.6	0.3	(0.1)	(0.3)
EL: C	1.1	0.8	1.5	0.5	(0.7)	(1.0)
EL: TFP	1.2	(0.6)	3.9	(0.8)	(4.4)	(4.6)
IT: GDP	2.7	2.4	6.1	0.4	(3.7)	(5.7)
IT: Tqt	0.0	(0.0)	0.6	0.1	(0.7)	(0.5)
IT:Tqa	0.2	0.2	0.4	0.3	(0.2)	(0.1)
IT: C	1.4	1.3	1.6	0.8	(0.3)	(0.8)
IT: TFP	1.1	0.9	3.5	(0.7)	(2.6)	(4.2)
ES: GDP	3.6	2.2	5.0	1.6	(2.8)	(3.4)
ES: Tqt	0.2	0.8	(0.4)	0.6	1.3	1.1
ES:Tqa	0.4	0.4	0.4	0.4	0.1	0.0
ES: C	1.6	1.4	1.9	1.3	(0.4)	(0.6)
ES: TFP	1.4	(0.5)	3.3	(0.7)	(3.7)	(3.9)
CY: GDP	4.2	2.3	5.0	1.7	(2.6)	(3.3)
CY: Tqt	0.9	0.6	1.0	0.4	(0.4)	(0.6)
CY:Tqa	0.3	0.4	0.3	0.4	0.1	0.1
CY: C	1.9	1.4	2.1	1.1	(0.7)	(0.9)
CY: TFP	1.1	0.0	1.6	(0.2)	(1.6)	(1.8)
IE: GDP	3.4	3.5	3.1	2.6	0.4	(0.4)
IE: Tqt	0.1	0.4	(0.6)	0.5	1.0	1.1
IE:Tqa	0.3	0.3	0.3	0.3	(0.0)	(0.1)
IE: C	2.4	2.8	1.3	3.8	1.5	2.4
IE: TFP	0.6	(0.1)	2.0	(1.9)	(2.0)	(3.9)
PL: GDP	2.8	3.7	2.2		1.4	

	A: Whole Sample	B: Since EU entry	C: Before EU entry	D: Since EA entry	*B-C Difference*	*C-D Difference*
PL: Tqt	0.1	0.6	(0.2)		0.7	
PL:Tqa	0.3	0.5	0.1		0.4	
PL: C	1.5	2.1	1.1		1.1	
PL: TFP	0.9	0.4	1.2		(0.8)	

Notes: PT: Portugal, IE: Ireland, ES: Spain, EL: Greece, IT: Italy, CY: Cyprus, PL: Poland. GDP: real GDP growth, Tqt: Contribution of the quantity of the labor factor, Tqa: Contribution of the quality of the labor factor, C: Contribution of the capital factor, TFP: total factor productivity.
Source: Conference Board.

To add light to the Portuguese case, section 3 will provide a deeper look at investment (e.g., the capital factor of production) and the ecosystem of Portuguese private companies' post-1974 and its relationship with public policies, while section 4 will present a more detailed analysis of the labor factor of production.

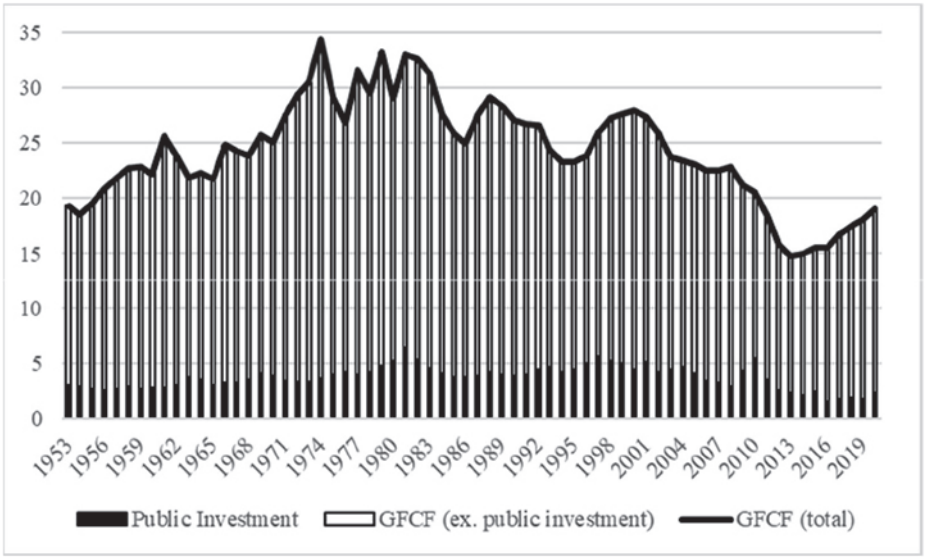
3. Firms, Investment and the State in Portugal

After the dismantling of large private family conglomerates with the "Carnation Revolution", Portugal's economy became heavily dominated by "Small and Medium Enterprises" (SMEs): only 0.1% of all Portuguese companies are now classified as "large" (i.e., with more than 250 employees and an annual turnover exceeding €50 million: of the 1.4 million Portuguese companies in 2021, less than 1400 had this status, none of which are comparable in scale with the pre-1974 groups), but *96% of all companies are classified as "micro"* (i.e., with less than 10 employees and less than €2 million in annual turnover).[9]

Portuguese companies currently also tend to operate in less sophisticated and non-tradable sectors: for example, only 5% of Portuguese companies in 2021 are in the manufacturing sector, 16% in retail trade, 8% in restaurant services and accommodation and 4% in the real estate sector. Taking this profile into account, the private sector invests little in general, and even less in research and development activities, or R&D (below 1% of GDP in 2020): gross fixed capital formation (GFCF), including public investment, fell from 35% of GDP in 1974 to 19% in 2020 (Figure 7).

[9] For comparison, 1.4% of U.S. companies are classified as "large" – an order of magnitude more than in Portugal, and 79% as "micro".

Figure 7: Gross fixed capital formation (GFCF) and public investment (% of GDP)

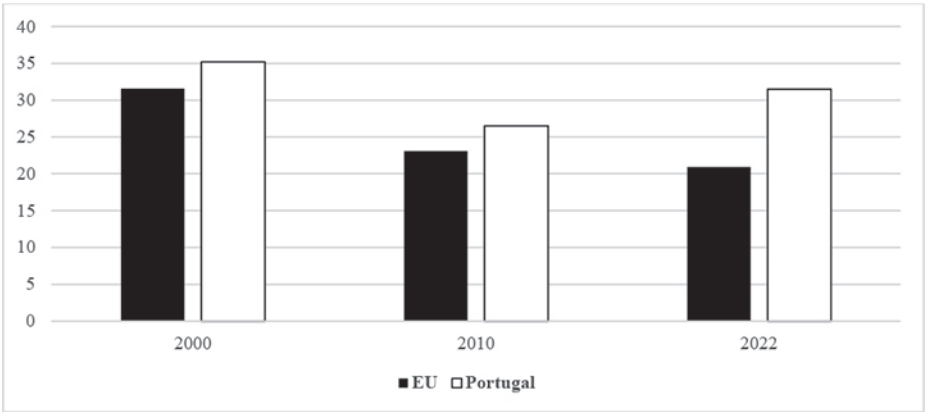


Source: BdP and INE (SLEP), IMF.

Furthermore, an unusually high number of Portuguese companies are (formally) *systematically loss-making*: according to the Ministry of Finance, between 1998 and 2021, on average, more than 43% of Portuguese companies showed negative results *every year*, but this did not translate into a renewal of the Portuguese business ecosystem (while 48.6% of companies in 2020 were not profitable, only a quarter of this number closed their doors). One reason for this is that these mostly small businesses face high tax costs and a burdensome regulatory environment, both considerably above EU averages, which also leads to a significant level of informality (see Figures 8 and 9 and World Bank, EBRD and EIB, 2020: the temporary drop observed in corporate taxation in mid-2010 was driven by the adjustment needs and conditions of the IMF/EU adjustment programs during the sovereign rating crisis, and were partially reversed by subsequent governments).[10]

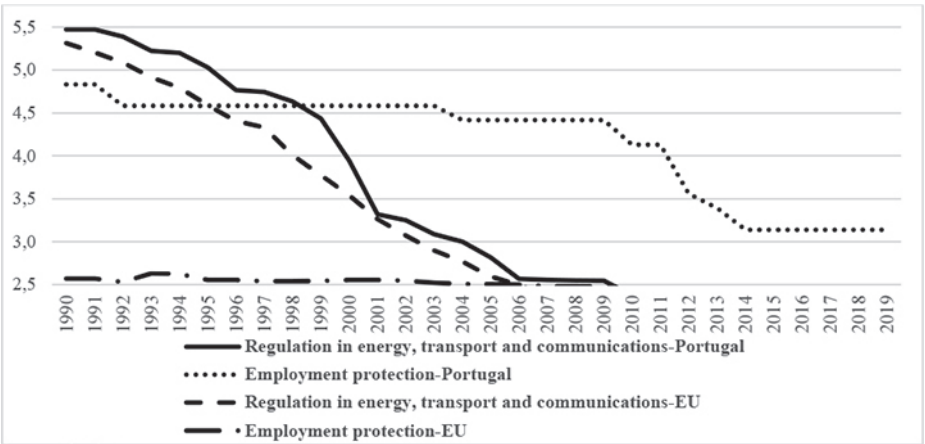
[10] See also "Compare to Grow: National Competitiveness Indicators", Business Roundtable Portugal Association, Lisbon, 2024, which also documents the high "context costs" in Portugal.

Figure 8: Corporate taxation (%)



Source: OECD.

Figure 9: Regulatory Burden

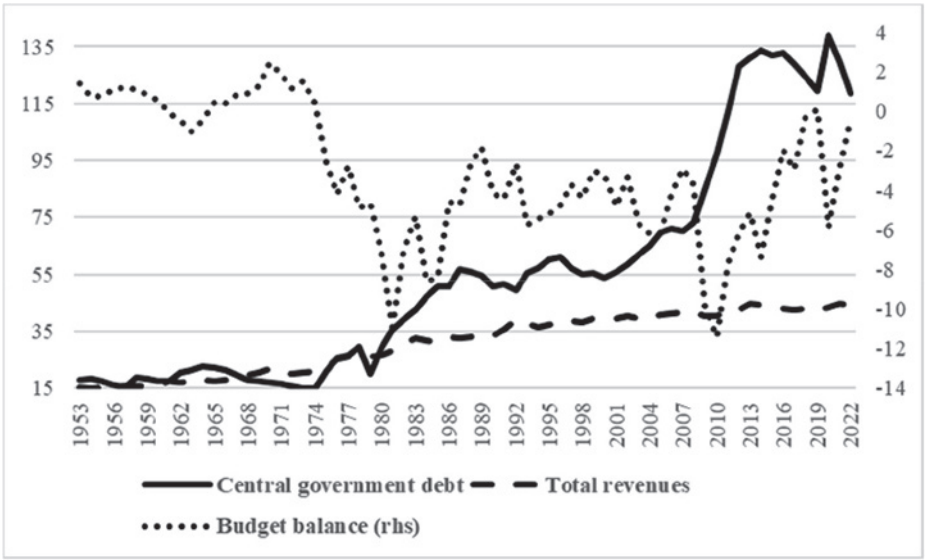


Source: OECD.

This heavier role of the state in the economy is also demonstrated by the fiscal stance of the Portuguese government: it accumulated a public debt stock above 100% of GDP since 2010 (it was below 15% until 1974), had continuous budget deficits since 1975 (with the

exception of a 0.1% of GDP surplus in 2019), and this despite tax revenues having more than doubled in terms of GDP in the same period, from 20% to around 45% (see Figure 10).

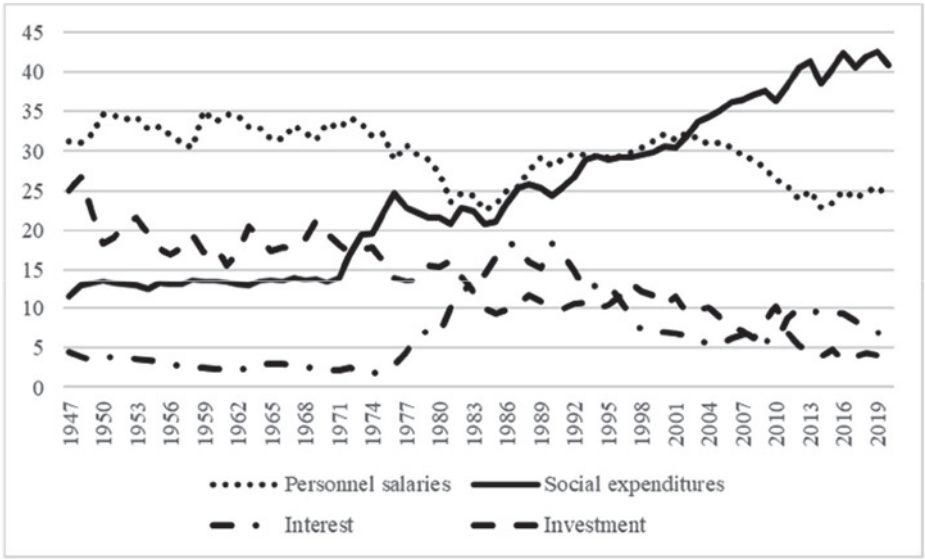
Figure 10: Revenue, budget balance and government debt in Portugal (% of GDP)



Source: BdP and INE (SLEP), IMF.

A greater state role is also apparent in the way the increased revenue is used: namely, expenditure on social benefits (pensions, public health, etc.) have more than doubled in terms of total state expenses, at over 40%, at the same time that investment expenditures have collapsed to less than 5% – around a quarter of what they were in 1974, and a value below what is necessary to avoid the erosion of the Portuguese public capital stock (the most stable item in terms of the state's total expenditure ratio is its "personnel expenses", which remain at around 25%: see Figure 11). The total capital stock in Portugal fell significantly, with the ratio between capital stock (public and private) and GDP being reduced from 3.4 to 2.5 between 1960 and 2019 (IMF, 2021).

Figure 11: Evolution of types of government expenditures in Portugal (% of total)



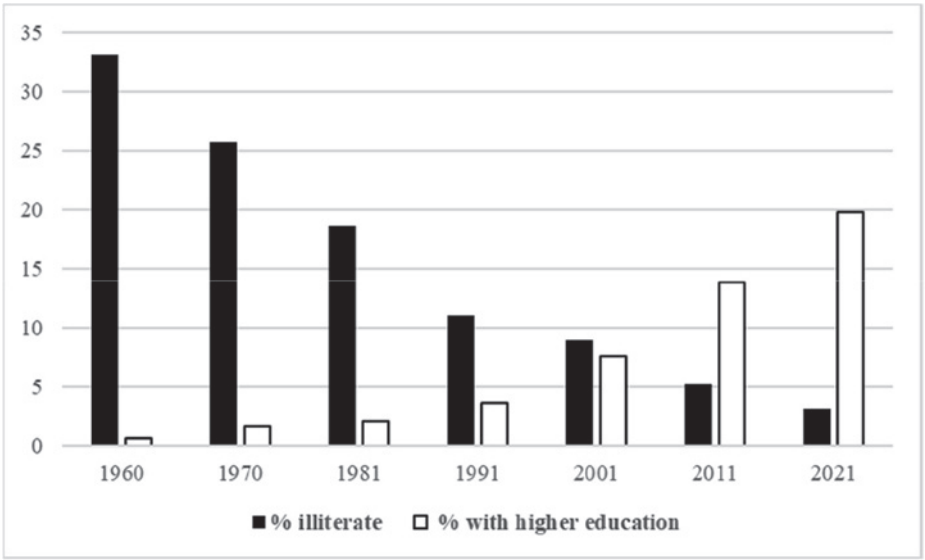
Source: BdP and INE (SLEP), IMF.

These high business "context" costs have negative effects in the productivity of Portuguese companies, and on their tendency to invest (see Amador et al, 2019, and Business Roundtable Portugal Association, 2024). The repeated crises of recent decades persistently and negatively also affected access to finance by Portuguese companies (see Karmakar, 2019).

4. The Role of Human Capital

The most positive point of the growth decomposition in Section 2 was the continued importance of human capital accumulation. The process through which this happened was fundamentally simple: the Portuguese population migrated from rural to urban areas (that is, from lower productivity activities to higher productivity activities), and at the same time acquiring higher levels of human capital.

Figure 12: Education levels of the Portuguese population



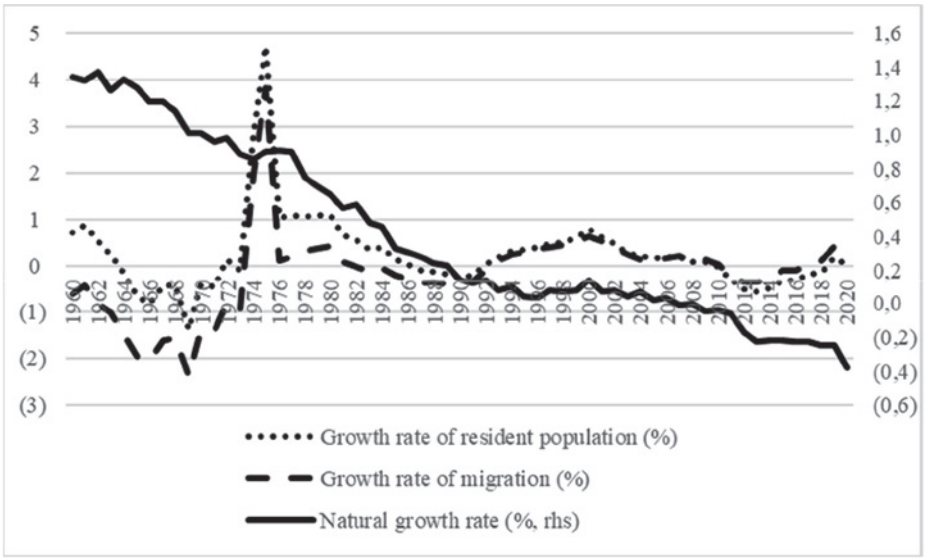
Source: INE, World Bank.

According to INE data, the percentage of the population that in 2020 lived in "predominantly urban areas" was 73.4%, while 12.4% lived in "predominantly rural areas" (compared to almost two thirds of the total population that lived in rural areas in 1960, according to the World Bank). At the same time, levels of human capital rose sharply: from a share of illiteracy of more than a third of the total population in 1960 – parallel to a percentage of the population with higher academic qualifications of less than 1% that year, in 2021 around 20% of Portuguese people had university qualifications and only 3% were illiterate (see Figure 12).

These are notable achievements – and, incidentally, achieved with significant EU financial support for education in Portugal (see OECD, 2022) – from a human, social and economic point of view. However, further increasing the amount of human capital faces restrictions, given the already high percentage of the urban population, and the aging and decline of the Portuguese population (Portugal's population decreased by almost three hundred thousand inhabitants between 2010 and 2020, while life expectancy increased to more than 81 years, compared to 64 in 1960: the drop in population was partially offset by migration, largely from former Portuguese colonies in America and Africa, see Figure 13). On the one hand, further deepening of the quality of human capital appears viable (see Campos and Reis, 2019), since the percentage of the Portuguese population with higher education is still lower than in the EU (although the gap is concentrated in older age groups).

This said, it is necessary to take into account the internal needs for the economic absorption of a more qualified workforce: while Portugal has a long history of emigration, historically concentrated in non-European destinations, this is now increasingly towards other Member States of the EU, given the freedom of movement and establishment granted by EU membership. The upshot is that the country now has *net emigration* (therefore, the decrease in the total population is due to *both* a birth rate below the replacement level – in the case of Portugal, since 1982, and with a figure of 1.4 births per woman in 2021, the lowest in the EU – and the net emigration).

Figure 13: Growth dynamics of the Portuguese population



Sources: BdP and INE (SLEP), and World Bank.

This is also a highly qualified net emigration ("brain drain"), with almost half of all Portuguese emigrants in 2021 having higher academic qualifications (or more than twice their percentage in the Portuguese population). The number of emigrants graduating in 2021 was equivalent to almost 13% of the more than 93 thousand Portuguese students who graduated from higher education institutions that year, which obviously has great costs for the country. It is also important to highlight that the immigrants who partially compensate for this net emigration do not necessarily have levels of incorporation of human capital equivalent to the workers who leave Portugal. On the drivers of this net migration, surveys suggest that the main reason is simply the lack opportunities domestically – INE estimates that almost 24% of those aged between 16 and 24 in Portugal were unemployed at the

end of 2023, compared to around 5% of those between 25 and 74 years old, while those employed in other EU countries received salaries that are often a multiple of equivalent ones in Portugal (see Pires, 2019).

Creating conditions for the internal absorption of this qualified workforce is inherently related to an expansion of more innovative economic activities through more productive private investment, the theme of section 3.

5. **Evaluating Growth Opportunities for Portugal**

The earlier sections of this paper will now be completed by an assessment of the sectors that can be used to enhance Portugal's growth performance at a national level and regionally, namely in its two largest cities, Lisbon and Porto, where around a third of the entire Portuguese population resides and where almost half of the Portuguese GDP is produced.

5.1. At National Level

To assess Portugal's overall competitiveness we use here the "Economic Complexity Index" (ICE).[11] It classifies countries based on the *diversification and complexity* of their export basket, using data from the "Atlas of Economic Complexity" from Harvard University's "Growth Laboratory". In 2021, Portugal ranked 35th in the ICE, a position similar to its historical

[11] Economic complexity uses methods of spectral analysis and network theory to reduce the dimensionality of the data in ways that preserve more information than simple aggregates (see Balland et al., 2021). Specifically, the ECI is a ranking of countries based on the complexity and diversity of their export baskets. "High complexity" countries have a range of sophisticated, specialized capabilities and are therefore able to produce a highly "diverse" set of complex products. Determining the economic complexity of a country depends not only on the productive knowledge of a country, the absolute number of products that it makes, but also on their "ubiquity" (e.g., the number of countries that export the product), and in the sophistication and "diversity" of products those other countries make. The ECI calculation –formally the *second* eigenvector k of the matrix M of measures of "diversity" and "ubiquity" in the production and export capabilities of country c and product p, is show below (after Hausmann and Klinger, 2006):

$$k_{c,n} = \frac{1}{k_{c,0}} \sum_{p} M_{c,p} \frac{1}{k_{p,0}} \sum_{c'} M_{c'p} k_{c',n-2}$$

$$= \sum_{c'} k_{c',n-2} \sum_{p} \frac{M_{c'p} M_{c,p}}{k_{c,0} k_{p,0}}$$

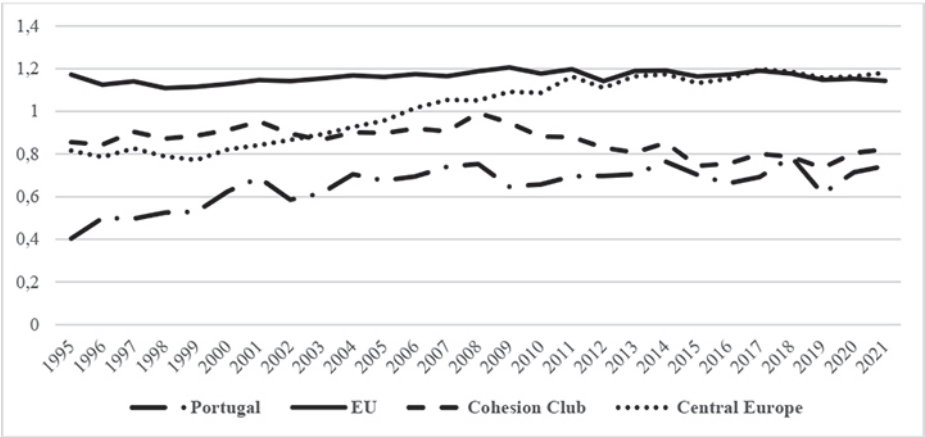
$$= \sum_{c'} k_{c',n-2} M^{c}_{c,c'}$$

where

$$M^{c}_{c,c'} = \sum_{p} \frac{M_{c',p} M_{c,p}}{k_{c,0} k_{p,0}}$$

ranking, which is a sign that the Portuguese economy has maintained its relative global level of complexity. In effect, given that Portugal is slightly more complex than expected for its level of income, this index suggests the country has an upward growth potential. This said, Portugal underperforms the complexity of all its European peer groups, be it the EU as an aggregate (excluding Luxembourg and Malta due to lack of data), the "Cohesion Club" or the Central and Eastern European countries that joined the EU in 2004 and 2007 (Figure 14): the growing economic complexity of the EU members in Central/Eastern Europe is particularly notable.

Figure 14: Comparison using ICE



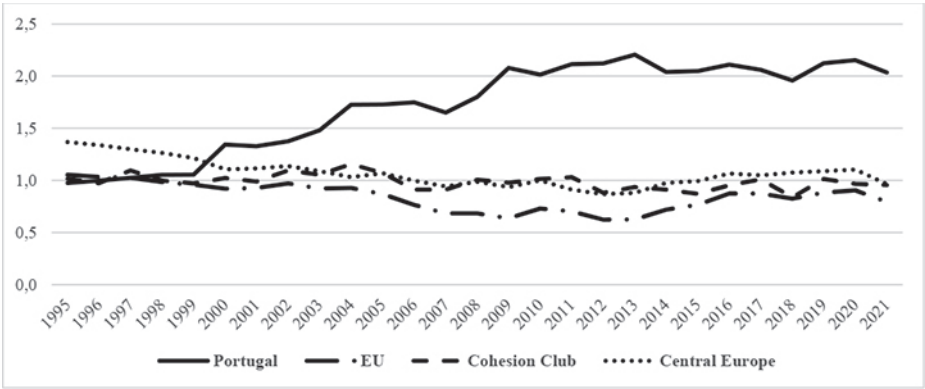
Source: Atlas of Economic Complexity, "Growth Lab", Harvard University.

With regard to the complexity of exports, in 2021 Portugal remained in the lower-middle portion of the distribution, focused mainly on agriculture, services and textiles, while growth opportunities are provided by those products of higher complexity that Portugal exports but in small quantities, such as semiconductors, automobiles and motor vehicle parts. Still other sectors such as chemicals, industrial and electrical machinery play an important role as export-oriented sectors that promote growth. A sign that Portugal is exporting more complex products is the decline of textiles and the rise of vehicles in the period from 1995 to 2021: textiles fell from 1.61% of global share to 0.77%, while the importance of vehicles increased from 0.36% to 0.52%.

Therefore, growth enhancing policies should support the private sector to increase the number of more complex products that it produces and exports. Those would help Portugal to create further links to other more complex products, further boosting growth, beyond the economic gains in diversifying production using already available national know-how to bridge the existing gap in the complexity of Portuguese exports in relation to its EU peers.

However, it is worth mentioning Portugal's improvement in the Economic Complexity Perspective Index (IPCE), a product-level version of the ICE that captures how much the "neighborhood" of complex products defines productive capabilities for a given country (Hidalgo et al., 2007). In other words, the IPCE is a measure of complex products that the country could produce given its existing know-how and capabilities (e.g., a measure of the easiness of economic diversification). Figure 15 shows that, contrary to the ICE results, Portugal would have significant potential gains from international diversification into new products in which the country's performance is below its current capacity and knowledge, compared to its peers.

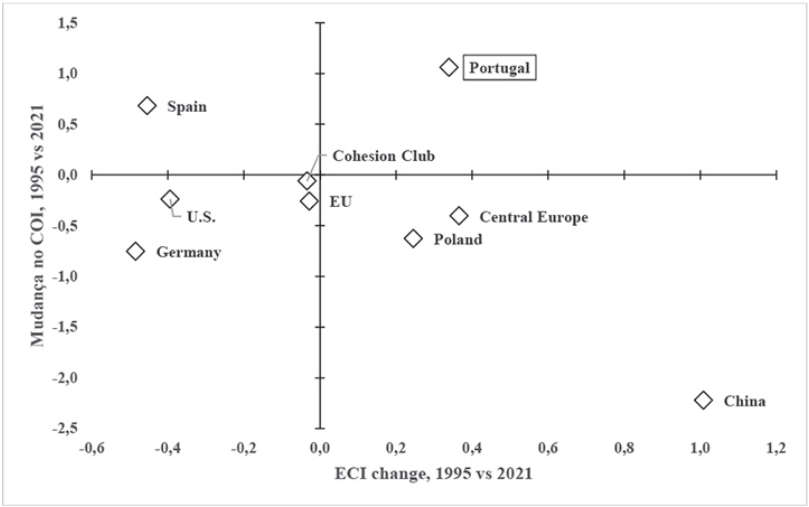
Figure 15: Comparison using IPCE



Source: Atlas of Economic Complexity, "Growth Lab", Harvard University.

Finally, Figure 16 shows the variation in the ICE and IPCE for Portugal between 1995 and 2021. Among the selected countries and groups, Portugal was the only country that improved slightly in the ICE index, *while at the same time improving significantly in the IPCE*. This result confirms that although there has been a merely marginal improvement in Portugal's complexity, *potential unexploited gains* could be very significant.

Figure 16: ICE *vs* IPCE



Source: Authors' calculations based on the Harvard University's "Growth Laboratory" data.

5.2. Lisbon

We now present an analysis of the comparative advantages of the two major metropolitan regions in Portugal using the "Metroverse" tool, another part of the suite of analytical frameworks from Harvard's "Growth Laboratory". In practical terms, this tool estimates a φ measure of similarity (or distance) between products i and j based on the conditional probability of having a Revealed Comparative Advantage (RCA), which measures whether a region x is an effective exporter (RCA>1) of a given good i or not (RCA<1), given that that region has a comparative advantage in good j at time t, and vice versa. The minimum of the pairwise conditional probabilities is given by:[12]

$$\varphi_{i,j,t} = \min\left\{\left\{P\left(RCAx_{i,t}\right) \mid \left(RCAx_{j,t}\right), P\left(RCAx_{j,t}\right) \mid \left(RCAx_{i,t}\right)\right\}\right\}$$

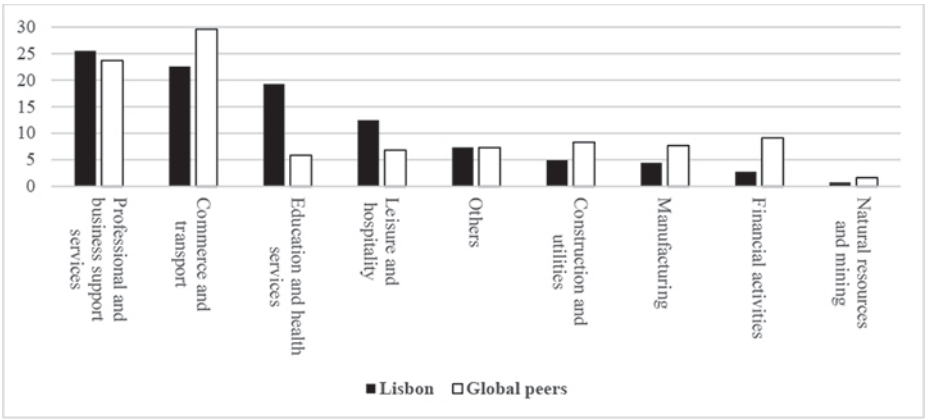
and where the RCA of region r and product p is given by

$$RCA_{rp} = \frac{X_{rp} \Big/ \sum^{r} X_{rp}}{\sum^{p} X_{rp} \Big/ \sum^{r} \sum^{pr} X_{rp}}$$

[12] For a fuller description of its underlying methodology, see Diodato, Neffke and O'Clery (2018).

Lisbon's largest economic sector in terms of employment is professional and business support services, with 25.5% of the city's workers (with the administrative and support services subsector representing 12.3% of employment in the city). Trade and transport (22.6%) is another important sector. Compared to its "global peers"[13] in terms of workforce allocation, Lisbon is relatively more intensive in educational services, hospitals and administrative and support services. Its relative disadvantages are in the financial, construction, manufacturing and commerce and transport sectors, as can be seen in Figure 17.

Figure 17: Comparison of the Economic Composition of Lisbon, 2020



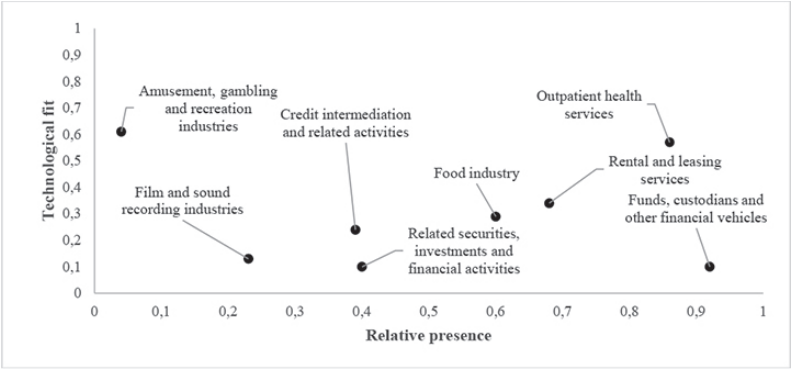
Source: Metroverse, "Growth Lab", Harvard University.

In terms of the relatedness of networks between products –referred to as the "product or industrial space", in Lisbon knowledge clusters[14] are in services, food and durable goods, together representing 85% of employees in the city: these industries are close to those that are already well developed in Lisbon and are sectors of potential growth. Figure 18 shows that promising industries for expansion are health, some financial sectors, media, tourism (therefore, mostly services' sectors) and in food production.

[13] Similar cities in terms of competitiveness in the same sectors. While the tool selects "global peers" automatically using this criterion, the program also allows the choice of specific "global peers" using certain factors (such as population, GDP per capita and/or regional filters: for example, Lisbon can be directly compared with Madrid).

[14] Sets of industries grouped together due to their technological relationship. Industries within the same "cluster" normally share similar knowledge or production capabilities, and they reveal a city's knowledge base and its potential for diversification.

Figure 18. Growth opportunities for Lisbon, 2020

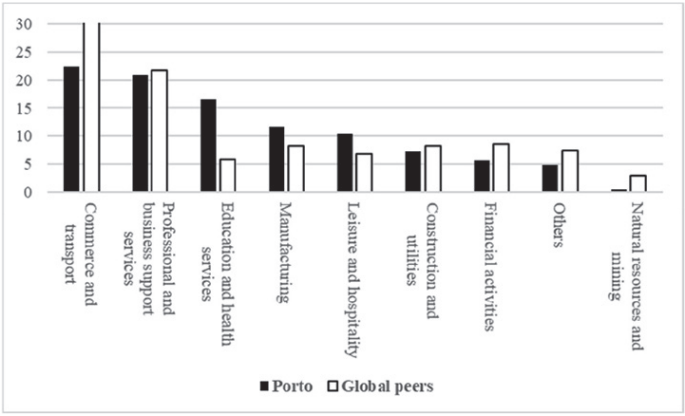


Source: Metroverse, "Growth Lab", Harvard University.

5.3. Porto

Porto's largest economic sector is commerce and transport, with 22.4% of the city's workers, followed by professional and commercial services companies (20.9%, of which administrative and support services are 11%). In relation to similar cities, as shown in Figure 19, Porto is relatively more intensive in educational services, manufacturing and leisure, while showing weaknesses in the other sectors.

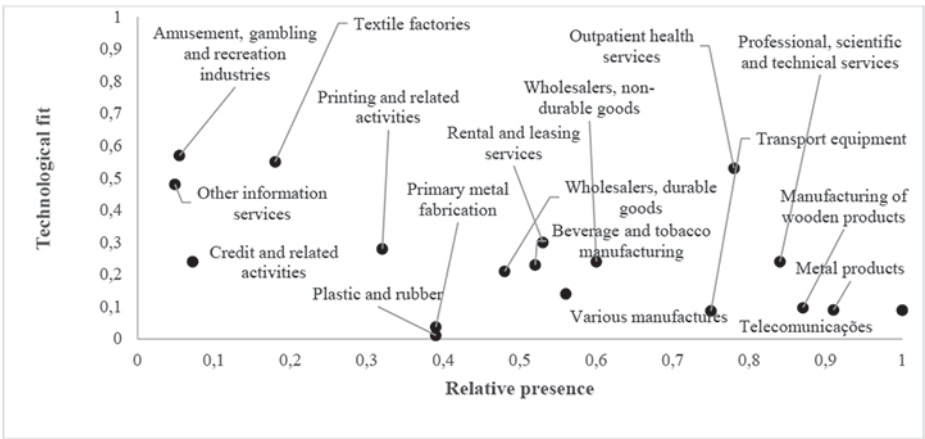
Figure 19: Comparison of the Economic Composition of Porto, 2020



Source: Metroverse, "Growth Lab", Harvard University.

In terms of the industrial space of Porto, the knowledge clusters that are potential candidates for diversification are services, food and durable goods, together representing 82% of the employed population. Given the productive structure of Porto – and in great contrast to Lisbon, the most "promising" sectors are largely in manufacturing industries (with a relatively greater intra-sectoral dispersion than in Lisbon), as illustrated in Figure 20.

Figure 20: Growth Opportunities for Porto, 2020



Source: Metroverse, "Growth Laboratory", Harvard University.

6. Conclusions and Some Policy Recommendations

Portugal has not fully used the opportunities provided by EU accession, and has regressed in terms of relative economic developed for almost a quarter of a century. It will also face serious adverse factors in the future, as its population is aging and shrinking, and its productive structure is heavily biased towards firms that are too small and too concentrated in traditional non-tradable sectors.

The paper concludes that a main reason for this outcome was fall in TFP after the "structural break" of the "Carnation Revolution", and the fall in investment at the time of international competitive shocks of the late 1990/early 2000s, which undermined a national economic development and international integration strategy roughly followed since the 1950s. Policies that modified the distribution and structure of the national entrepreneurial ecosystem and expanded significantly the state's non-productive current expenditures and its regulatory and tax footprints may have contributed to this outcome. More hopefully, the paper also concludes that the country has significant untapped diverse competitiveness potential at both the national and regional levels – namely in Lisbon and Porto, its two largest cities.

This underperformance could therefore be corrected and existing opportunities leveraged by policies that are more supportive of a private sector-led development, incentivizing firms to grow larger, produce more sophisticated products and exit the market faster when they fail, increasing the domestic demand for a more qualified labor force, and by policies that are adapted to the diverse comparative advantages of the regions in Portugal. Other EU countries – within and outside the euro area, from Ireland to Poland – show that such strategy is possible.[15]

Another conclusion of this work is that EU membership is better understood as providing several instruments which, if properly used, can significantly support convergence. However, this positive result depends on the choice and implementation of a specific set of coherent national and local policies (Vinhas de Souza et al., 2018). As a corollary, it also implies preparing the country for that moment when these net positive EU flows will eventually be reduced (or even end, like in the case of Ireland), especially with upcoming further EU enlargements Eastward (Vinhas de Souza, 2024c).

[15] For instance, Naudé and Cameron, 2021, estimate that the reorganization of global supply chains after COVID 19 provides significant further opportunities for external-demand led growth for Portugal. As the process of supply chains has continued after the pandemic, led by security-related movements towards "friend" and "near-shoring", the potential gains could be even higher.

References

Amador, J.; Cabral, S.; Ringstad, B. (2019) Que Custos de Contexto Estão Associados a Produtividade das Empresas Portuguesas? In Banco de Portugal, Departamento de Estudos Económicos, *O Crescimento Económico Português: Uma Visão sobre Questões Estruturais, Bloqueios e Reformas,* Lisboa, 281-287.

Amaral, L. (2022) *Economia Portuguesa, As Últimas Décadas*. Lisboa, Edição Revista, Fundação Francisco Manuel dos Santos.

Balland, P.-A.; Broekel, T.; Diodato, D.; Giuliani, E.; Hausmann, R.; O'Clery, N.; Rigby, D. (2022). The new paradigm of economic complexity. *Research Policy*, 51(3), 104450.

Barros, P.; Garoupa, N. (1993) Convergência Portugal-CEE: Alguma Evidência, FE/UNL, Lisboa Working Paper, n.º 204.

Business Roundtable Portugal (2024) *Comparar Para Crescer: Indicadores da Competitividade Nacional,* Lisboa.

Campos, M.; Reis, H. (2019) Ainda compensa investir em educação? In Banco de Portugal, Departamento de Estudos Económicos, *O Crescimento Económico Português: Uma Visão sobre Questões Estruturais, Bloqueios e Reformas*, Lisboa, 53-60.

Conselho para a Produtividade (2019) *A Produtividade da Economia Portuguesa* (1.º Relatório), Lisboa.

de Vries, K. and Erumban, A. (2022) *Total Economy Database: A Detailed Guide to its Sources and Methods*, The Conference Board, New York.

Diodato, D.; Neffke, F.; O'Clery, N. (2018) Why do Industries Coagglomerate? How Marshallian Externalities Differ by Industry and Have Evolved Over Time, Harvard University Working Paper, no. 89.

Ferreira da Silva, A.; Amaral, L.; Neves, P. (2015) Business groups in Portugal in the Estado Novo period (1930-1974): Family, power and structural change. *Business History*, 58(1), 49-68.

Gill, I.; Raiser, M. (2012) *Golden Growth: Restoring the Lustre of the European Economic Model*, Europe and Central Asia Studies, Washington, D.C., World Bank Group.

Hausmann, R.; Klinger, B. (2006) Structural Transformation and Patterns of Comparative Advantage in the Product Space, Working Paper Series rwp06-041, Harvard University, John F. Kennedy School of Government.

Hidalgo, C.A.; Klinger, B.; Barabási, A.L.; Hausmann, R. (2007) The product space conditions the development of nations. *Science*, 317(5837), 482-487.

Honohan, P. (2021) Is Ireland really the most prosperous country in Europe?, Economic Letter, 1/EL/21), Central Bank of Ireland.

IMF (2021) Investment and Capital Stock Dataset, 1960-2019.

Karmakar, S. (2019) Que Importância tem o Acesso ao Financiamento para o Desempenho das Empresas em Períodos de Crise? In Banco de Portugal, Departamento de Estudos Económicos, *O Crescimento Económico Português: Uma Visão sobre Questões Estruturais, Bloqueios e Reformas, Lisboa* , 147-155.

Mateus, A. (cord.) (2013) *A Economia, a Sociedade e os Fundos Estruturais: 25 Anos de Portugal Europeu*. Lisboa, Fundação Francisco Manuel dos Santos.

Naudé, W.; Cameron, M. (2021) Export-led growth after COVID-19: The case of Portugal, *Notas Económicas*, 52, 7-53.

OECD (2022) *Resourcing Higher Education in Portugal,* Paris.

Pires, R. (2019) Portuguese Emigration Today. In Pereira, C.; Azevedo, J. (Eds), *New and Old Routes of Portuguese Emigration*. Springer.

Solow, R. (1956) A contribution to the theory of economic growth. *Quarterly Journal of Economics*, 70(1), 65-94.

Vinhas de Souza, L. (2004) Financial Liberalization and Business Cycles: The Experience of the New EU Member States in The Baltics and Central Eastern Europe, Deutsche Bundesbank, Discussion Papers Series n.° 23/04, Frankfurt, Germany.

Vinhas de Souza, L. (2024a) Caught in the Middle? China and the 'Middle Income Trap', LUISS Institute for European Analysis and Policy, Working Paper 9/2024.

Vinhas de Souza, L. (2024b) *A Century of Global Economic Crises: Monetary Policy in Search of an Anchor*. UK, Palgrave Macmillan.

Vinhas de Souza, L. (2024c) *Unresolved Business: Enlarging the EU towards Moldova and Ukraine (and perhaps Georgia*), VoxEU, CEPR, UK. Retrived from https://cepr.org/voxeu/columns/unresolved-business-enlarging-eu-towards-moldova-and-ukraine-and-perhaps-georgia

Vinhas de Souza, L.; Dreute, O.; Isaila, V.; Frie, J-M. (2018) Reviving convergence: making EU member states fit for joining the euro area. In Nowotny, E.: Ritzberger-Grünwald, D.; Schuberth, H. (Eds.), *Structural Reforms for Growth and Cohesion: Lessons and Challenges for CESEE Countries and a Modern Europe*, Edward Elgar Publishing, 214-224.

Vinhas de Souza, L.; Tudela, M. (2012) *Euro Area Periphery: Structural Reforms Have Significantly Improved External Imbalances, but Full Resolution May Still Take Years, Moody's Special Comment 144845*.

World Bank, EBRD and EIB (2020) *Enterprise Surveys, What Businesses Experience: Portugal 2019 Country Profile*.

XXII Governo Português (2021) *Recuperar Portugal. Construindo o Futuro – Plano de Recuperação e Resiliência*, Lisboa.