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Abstract

This paper examines the functioning of the European Single Market through the experience of Spain and Portugal, two economies whose geographical proximity, shared border and joint EU membership since 1986 make them a particularly informative case study. Organizing the analysis around the Single Market's four freedoms, the paper combines descriptive indicators, structural-gravity estimates, a multi-country general-equilibrium trade model, price-convergence and electricity-coupling measures, administrative labour-market data, survival analysis and granular investment and banking data to assess integration in trade, energy, labour mobility and capital markets. The findings show that Iberian integration is substantial but markedly uneven across dimensions. Trade in goods and production network linkages have deepened considerably since accession, and wholesale electricity markets are exceptionally well integrated, reflecting strong complementarities between Spanish solar and Portuguese hydropower generation. By contrast, services trade, labour mobility and non-bank financial investment remain comparatively underdeveloped. These results show that the legal framework of the Single Market has generated deep integration in some markets while leaving others fragmented, and that closing the remaining gaps requires more effective implementation, regulatory cooperation and mutual recognition, supported by infrastructure investment and interoperable administrative systems.

Keywords: Iberian economic integration, international trade, energy, migration, capital markets.

JEL classification: F15, F14, F22, F36, Q43, O52.

Resumen

Este documento analiza el funcionamiento del mercado único europeo a partir de la experiencia de España y Portugal. Su proximidad geográfica, su frontera común y su pertenencia conjunta a la Unión Europea desde 1986 los convierten en un caso de estudio especialmente útil. El análisis se organiza en torno a las cuatro libertades del mercado único y evalúa la integración en comercio, energía, movilidad laboral y mercados de capitales. Para ello combina indicadores descriptivos, estimaciones de gravedad estructural, un modelo de comercio de equilibrio general multipaís, medidas de convergencia de precios y de acoplamiento de los mercados eléctricos, datos administrativos del mercado laboral, análisis de supervivencia y datos granulares de inversión y exposiciones bancarias. Los resultados muestran que la integración ibérica es considerable, pero muy desigual entre dimensiones. El comercio bilateral de bienes y los vínculos en las redes de producción se han intensificado notablemente desde la adhesión. Los mercados eléctricos mayoristas presentan un grado de integración excepcional, gracias a la fuerte complementariedad entre la generación solar española y la hidroeléctrica portuguesa. En cambio, el comercio de servicios, la movilidad laboral y la inversión financiera no bancaria siguen relativamente poco desarrollados. Estos resultados indican que el marco jurídico del mercado único ha generado una integración profunda en algunos mercados, pero ha dejado otros fragmentados. Cerrar las brechas pendientes exige reforzar la aplicación efectiva de las normas, la cooperación regulatoria y el reconocimiento mutuo, junto con la inversión en infraestructuras y sistemas administrativos interoperables.

Palabras clave: integración económica ibérica, comercio internacional, energía, migración, mercados de capitales.

Códigos JEL: F15, F14, F22, F36, Q43, O52.

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1. Introduction

The free movement of goods, workers, services and capital has been at the heart of European economic integration since the Treaty of Rome. These four freedoms now underpin the Single Market, defined in Article 26(2) TFEU as “an area without internal frontiers” (European Union 2008). They are intended to allow firms and households to operate across national borders under conditions increasingly comparable to those prevailing within a domestic economy. By reducing regulatory, administrative and physical barriers, the Single Market should enlarge the effective size of markets, intensify competition, enable economies of scale, improve the allocation of labour and capital, and facilitate the diffusion of technology and knowledge. For consumers, the expected benefits include greater choice, lower prices and improved quality; for firms, they include access to larger markets, more diversified suppliers and a broader pool of skills and financing.

The materialization of these objectives guided the Commission of the European Communities (1985) White Paper on completing the internal market and the subsequent Single European Act, which set the end of 1992 as the deadline for removing many of the remaining physical, technical and fiscal barriers (European Communities 1986). The Single Market has since become a core component of the European Union’s economic model and an important source of collective influence in the global economy. Recent policy reports have nevertheless emphasized that its potential remains only partially realized, particularly in services, energy, telecommunications, finance and other sectors in which national regulations and infrastructures continue to fragment the European economy (European Commission 2020; European Parliament 2023; Letta 2024; Draghi 2024).

Spain and Portugal formally joined the European Economic Community on 1 January 1986, following the signing of the Treaty of Accession in Madrid and Lisbon in June 1985. Portugal submitted its membership application in March 1977 and Spain formally applied for accession in July 1977. Negotiations dragged on for close to eight years before the treaty was finally signed — a process that proved considerably more lengthy and difficult than Greece’s accession five years earlier, given the scale of the economic interests at stake, chiefly the friction between Spain’s large agricultural and fishing sectors and existing member states, particularly France, who feared being undercut on products such as fruit, vegetables and wine.

Both countries entered a multi-year transition period rather than adopting the full body of Community law immediately: free movement of workers was not fully achieved until 1993, and the transitional arrangements covering agriculture were among the longest, running up to ten years for certain products such as vegetables. This staggered timetable coincided with, and fed into, the Community’s broader push toward completing the internal market, since the Single European Act had set 1 January 1993 as the target date for a fully operational internal market. Accordingly, Portugal’s transitional period was completed only in 1993, even though the bulk of its economic impact had already materialized within roughly the

first three years after accession, and Spain likewise oriented its structural and financial reforms around meeting the challenges of the single European market's establishment that same year. Both countries thus entered the Single Market as full participants only once their respective transitional arrangements lapsed at the end of 1992, alongside the Community-wide completion of the internal market on 1 January 1993.

A substantial body of research associates European integration with higher trade, productivity and income. Mayer et al. (2019), for example, estimate that EU integration increased trade between member-country pairs by approximately 109% and average real income by around 4.4%. Using a broader macroeconomic counterfactual, in 't Veld (2019) estimates that accumulated integration in goods and services may have raised EU GDP by approximately 8–9% relative to a scenario without the Single Market. Other studies identify stronger competition and productivity improvements following reductions in trade costs (Badinger 2007; Notaro 2011). Such estimates should be interpreted with care as they rely on different models and counterfactuals, and some capture the wider effects of EU membership rather than the Single Market alone. Nevertheless, they consistently indicate that lowering cross-border frictions can generate sizeable benefits through trade creation, specialization, competition and more efficient resource allocation.

The gains are not automatic or evenly distributed. Formal legal freedom does not necessarily imply that economic agents can move, trade or invest across borders without significant costs. Differences in product requirements, licensing, taxation, professional qualifications, public procurement, administrative procedures and digital systems can continue to function as implicit barriers (European Commission 2020). Language, housing and the portability of social rights can restrict labour mobility, while home bias, differences in insolvency regimes and fragmented financial supervision can constrain the cross-border allocation of capital. Network industries, such as energy, present additional challenges because integration depends not only on common rules but also on physical interconnections, compatible market arrangements and adequate infrastructure. Accordingly, the economic value of the Single Market depends on implementation, enforcement and the interaction among its four freedoms.

This occasional paper examines these issues through the experience of Spain and Portugal. The Iberian case is especially informative. Both countries joined the European Communities in 1986 and subsequently experienced a major expansion of cross-border trade, investment and institutional cooperation. Their geographical proximity, shared border and participation in common European rules should favour a high degree of integration. At the same time, differences in market size, productive specialization, migration patterns, energy resources and financial structures create potentially important asymmetries. The Iberian peninsula therefore provides a useful setting in which to assess both the achievements of the Single Market and the frictions that remain between two closely connected EU economies.

The paper applies the four freedoms as its conceptual benchmark while organizing the empirical diagnosis around four closely related dimensions. Firstly,

it studies bilateral trade in goods and services, the most direct expression of firms' ability to serve the neighbouring market. Secondly, it analyses energy market integration. Although energy is not a separate treaty freedom, it offers a particularly revealing application of the free movement of goods and services in a network industry whose functioning also depends on infrastructure and investment. Thirdly, the paper examines migration and labour mobility as manifestations of the free movement of persons. Fourthly, it assesses foreign direct investment, portfolio holdings and banking exposures as indicators of the free movement of capital.

The analysis combines comparable aggregate indicators with harmonized sectoral and microeconomic evidence where available. It covers long-term developments, benchmarks the Spain–Portugal relationship against selected EU country pairs and uses several complementary methods. These include descriptive indicators, value chain measures, structural gravity estimates of implicit trade barriers, a multi-country and multi-sector general equilibrium trade model, measures of price convergence and electricity market coupling, annual demographic statistics and census information, administrative labour market records, duration analysis of migrant employment spells, Oaxaca–Blinder decompositions of wage differentials, and granular data on investment and banking exposures. This very broad approach reflects the fact that integration is multidimensional: no single indicator can establish whether two economies function as one market. The present diagnosis is also intended to provide a basis for subsequent analytical work on the structural barriers identified in each area.

Several main findings emerge. Firstly, Iberian integration is substantial but markedly uneven across markets. Trade in goods between Spain and Portugal has deepened considerably since EU accession and has grown faster than in several comparable country pairs. Iberian production networks have also become more closely connected since the mid-1990s, with a particularly notable increase in Portugal's participation in manufacturing value chains. However, integration in services remains comparatively limited. The structural gravity estimates suggest that implicit barriers are equivalent to tariffs of approximately 20% in manufacturing and more than 100% in services. These estimates encompass regulatory and other non-tariff frictions rather than observed customs duties within the Single Market. Simulations based on a model with sectoral input–output linkages suggest that halving the estimated bilateral barriers could raise GDP by approximately 0.1% in Spain and 0.4% in Portugal, illustrating both the meaningful magnitude of remaining gains and their asymmetric importance for the smaller economy.

Secondly, the energy evidence shows how regulatory integration, infrastructure and technological complementarity can reinforce one another. Although Spain and Portugal remain highly dependent on imported energy, particularly oil and gas, their external suppliers are more diversified than those of the EU as a whole. Their wholesale electricity markets are exceptionally closely integrated. Prices coincide within €1/MWh in approximately 95% of hours, one of the highest rates among the European borders considered. Electricity exchanges have expanded, supported by

the complementarity between Spanish solar generation and Portuguese hydropower and pumped-storage capacity. Spain tends to export during midday solar peaks, while Portugal can export during morning and evening hours or absorb surplus generation through pumping. This illustrates how a larger integrated market can improve the use of renewable resources, system flexibility and security of supply.

Thirdly, cross-border mobility remains less developed than geographical proximity might suggest. Bilateral mobility is asymmetric, with more Portuguese moving to Spain than Spaniards moving to Portugal. Nonetheless, bilateral flows of both university students and workers remain modest compared with those observed between other relevant pairs of EU countries. The educational attainment of Iberian movers has increased—being particularly high among Spanish residents in Portugal—and employment has progressively shifted towards services. Wage differentials between the two countries remain sizeable, and the Oaxaca–Blinder decomposition shows that differences in gender, age and sectoral composition explain only a limited part of the gap, with most of it remaining after accounting for these observable characteristics. Migrant workers are numerically concentrated in urban areas, although their share of local employment is especially significant in border regions. These patterns indicate that legal mobility coexists with economic, administrative and social barriers that continue to limit the emergence of a fully integrated Iberian labour market.

Fourthly, capital-market integration is characterized by deep but selective connections. Bilateral foreign direct investment and portfolio positions do not stand out relative to several comparable EU pairs, whereas cross-border banking exposures are relatively strong. Spain is Portugal's principal financial counterparty across several sectors and instruments. Portugal, by contrast, accounts for a smaller but stable share of Spain's external exposures, concentrated mainly in banking and non-financial corporations, creating an asymmetric yet potentially systemic channel of financial transmission. Spain is also Portugal's leading FDI partner by both investment stock and number of firms, while Portugal is a frequent destination for Spanish investors even though its share of total Spanish outward FDI remains limited.

Taken together, the findings convey four broad messages. Firstly, common EU rules and more than three decades of integration have produced substantial bilateral connections, especially in goods trade and wholesale electricity. Secondly, progress differs sharply across the four freedoms: services, labour mobility and non-bank financial investment remain less integrated. Thirdly, complementarities create tangible benefits, but asymmetries matter—the gains from removing barriers and the exposure to bilateral shocks are generally greater for Portugal. Fourthly, the remaining obstacles are predominantly structural and sector-specific. Therefore, completing the market requires more than the formal removal of border controls. Regulatory cooperation, mutual recognition, infrastructure, administrative interoperability and effective enforcement are essential complements to treaty-based freedoms.

The remainder of the paper is organized into four sections. Section 2 examines bilateral trade in goods and services, value chain participation, implicit barriers and the potential gains from further integration. Section 3 analyses energy dependence, electricity market coupling, cross-border exchanges and technological complementarities. Section 4 studies migration and labour mobility, including the composition, geographical distribution, labour market outcomes and permanence of Iberian movers, as well as the wage differentials between both countries. Section 5 assesses foreign direct investment, portfolio holdings, banking exposures and the associated transmission channels. The concluding remarks, presented in Section 6, synthesize the evidence, identify the main remaining barriers and set out priorities for further analytical work.

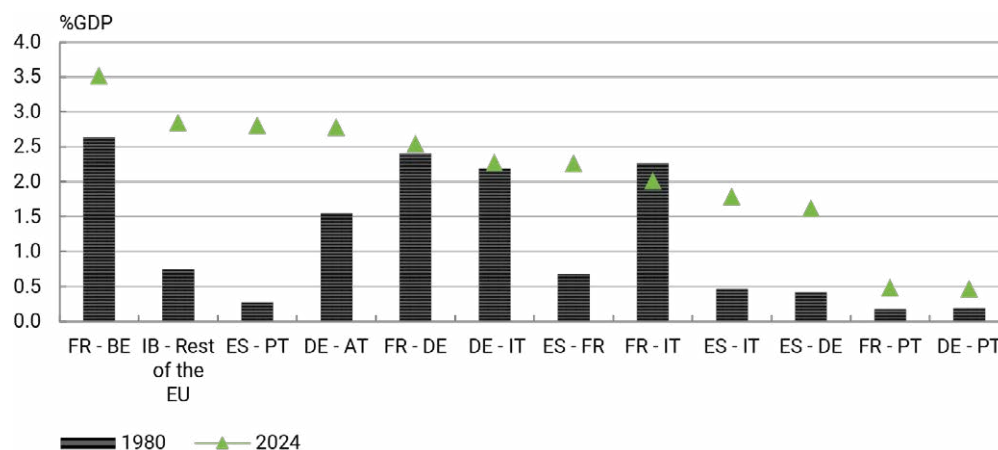
2. Trade in goods and services

2.1. The evolution of trade integration in goods and services

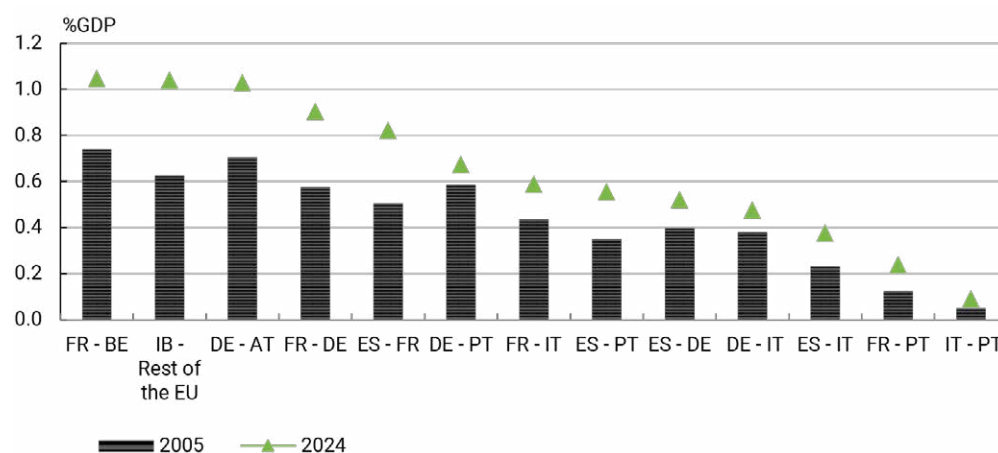
This subsection documents the evolution of Iberian trade integration in goods and services, benchmarked against other EU country pairs. Integration is measured as the intensity of bilateral trade, defined as the sum of exports and imports between two economies as a share of their combined (pairwise) GDP. Normalizing by pairwise GDP nets out differences in country size and makes pairs of very different magnitudes comparable. Figure 1 reports this measure for goods and services, comparing an early and a recent year; country pairs are ranked by their 2024 trade intensity, and Iberia (Spain and Portugal) is treated as a single economy when set against the rest of the EU.

Panel A of Figure 1 shows that Iberian goods integration has risen substantially since the two countries' 1986 EU accession. Bilateral goods trade increased for most EU country pairs between 1980 and 2024 but the rise is especially pronounced for Spain–Portugal, which moved from a very low intensity in 1980 to one of the highest in 2024, ranking third among the pairs considered, only behind France–Belgium and Iberia's trade with the rest of the EU. Iberian integration in goods has therefore not only deepened but it has outpaced that of comparable EU economies, reflecting the dense cross-border production linkages examined in Subsection 2.2.

Panel B of Figure 1 displays a markedly different pattern for services. Trade intensities are considerably lower than for goods across country pairs—the vertical scale is roughly three times smaller—and Spain–Portugal lies in the middle-to-lower part of the distribution rather than near the top. Iberian integration in services thus remains comparatively modest from an EU perspective. Compared with Belgium–France and Austria–Germany, this lower level of integration is mainly driven by non-travel services, while integration in travel services is more comparable (Figure A.1 in Appendix A). Since 2005, Iberian services integration has also increased less than in these two country pairs (0.2 pp, compared with 0.3 pp in both cases), reflecting a smaller increase in non-travel services, partly offset by a higher increase



(a) Goods



(b) Services

Notes: The figure reports aggregated bilateral trade (exports plus imports) between pairs of EU countries, expressed as a share of their combined GDP. For goods, the figure compares 1980 and 2024; for services, it compares 2005 and 2024, reflecting the later availability of harmonized bilateral services data. The country set comprises Spain (ES), Portugal (PT), France (FR), Italy (IT), Germany (DE), Austria (AT) and Belgium (BE). IB (Iberia) denotes Spain and Portugal treated as a single economy; “IB – Rest of the EU” reports Iberia’s trade with the remaining EU countries. Pairs are ranked left to right by their 2024 trade intensity. Sources: bilateral trade in goods flows, International Monetary Fund; bilateral trade in services flows, WTO–OECD Balanced Trade in Services database (BaTIS); GDP, World Bank.

Figure 1: Trade in goods and services between different pairs of countries

in travel services. Taken together, the results indicate that the deep and fast-growing integration achieved in goods has no equivalent in services, an asymmetry consistent with the larger residual barriers in services documented in Subsection 2.3.

2.2. *Integration through Iberian value chains*

The bilateral trade statistics presented in the previous subsection provide an important measure of the intensity of trade between Portugal and Spain, but are less informative about the extent to which export-related production in the two countries is organised across bilateral value chains. This subsection therefore complements that evidence with OECD Trade in Value-Added (TiVA) indicators.

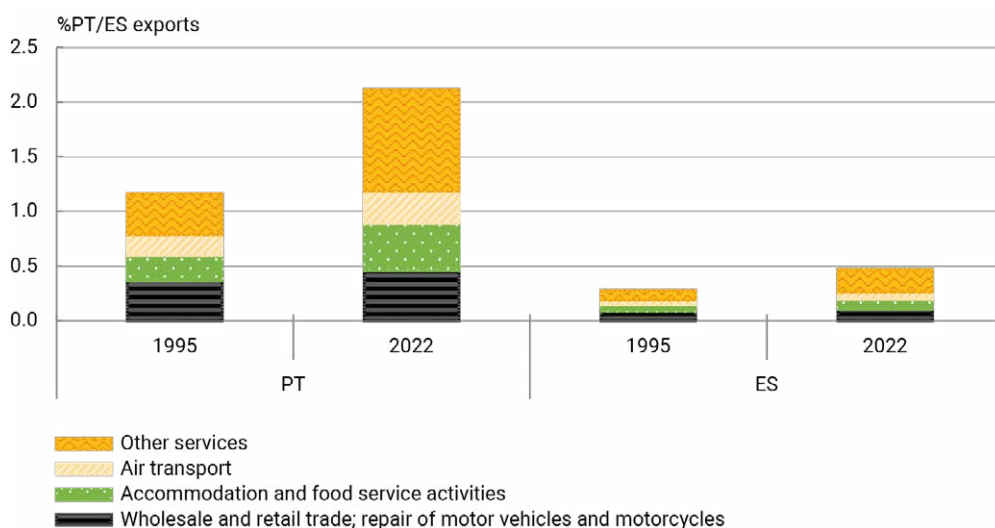
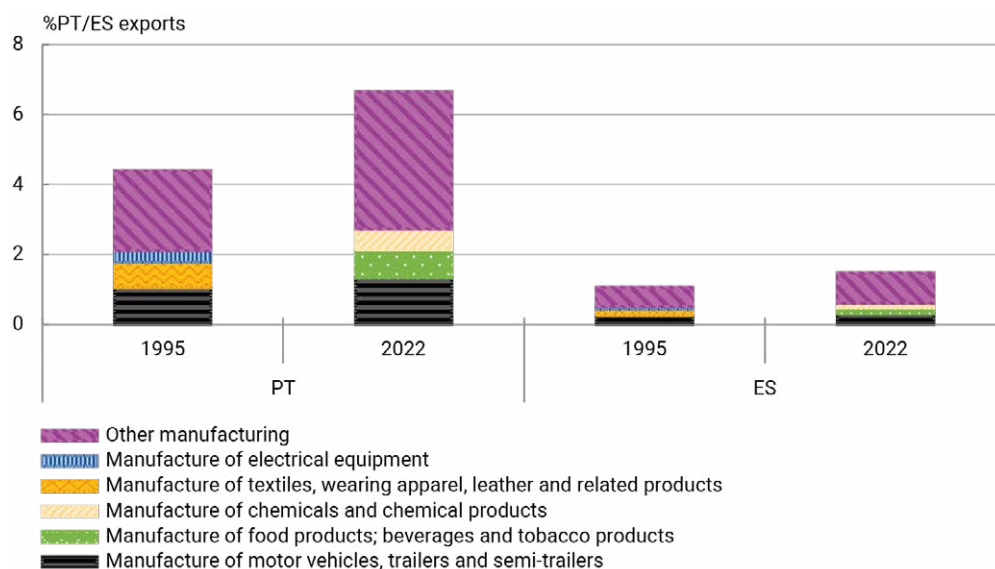
Participation in global value chains is typically measured using two indicators: backward participation, defined as the foreign value added embodied in a country's exports, and forward participation, defined as the domestic value added embodied in a partner country's exports. To assess bilateral value-chain integration between Portugal and Spain, we consider the sum of these two components relative to each country's gross exports. The indicator therefore measures the importance of bilateral production linkages in each country's exports.

Figure 2 shows that Iberian value-chain integration has deepened substantially since the mid-1990s. The increase is particularly pronounced from Portugal's perspective (3.2 p.p.) and is driven mainly by rising backward participation, as Portuguese exports have become increasingly reliant on value added originating from Spain. By contrast, Spain's backward participation with Portugal has remained broadly stable over the same period, while the more modest increase in its bilateral value-chain participation has been driven mainly by forward linkages.

Manufacturing has been the main driver of deeper Iberian value-chain integration. In 2022, manufacturing of motor vehicles, food products and chemicals together accounted for around 40% of manufacturing-related Iberian value-chain participation. The automotive sector, which is typically characterised by internationally fragmented production (Timmer et al. 2014), makes the largest contribution. Food manufacturing recorded the largest increase between 1995 and 2022, while the contribution of chemicals also more than doubled in both Portugal and Spain. By contrast, textiles and wearing apparel, one of the main contributors in 1995, declined in relative importance. This is consistent with the sector's falling share in both countries' exports, particularly in Portugal, against the background of increased international competition from low-cost producers and the progressive liberalisation of textile trade (Amador and Cabral 2008; Amador and Opromolla 2009). More generally, the expansion observed in the residual "other manufacturing" category suggests a broad-based deepening of Iberian linkages, extending beyond a few key industries.

Although services account for a much smaller share of bilateral value-chain integration than manufacturing, linkages have also strengthened over time. Wholesale and retail trade remains the largest contributor, while accommodation and food services recorded the strongest increase between 1995 and 2022. Air transport also makes a significant contribution to bilateral services integration.

Figure 3 benchmarks the Iberian results against two other EU country pairs: Belgium-France and Austria-Germany. As in the Portugal-Spain case, bilateral value-chain participation is higher for the smaller economy, and manufacturing



Notes: Iberian value chain participation is defined as the sum of backward participation (the Iberian partner's value added embodied in the country's exports) and forward participation (the country's value added embodied in the partner's exports), expressed as a share of the country's gross exports. The figure reports the three sectors with the largest contributions to the index for each country and year; all remaining sectors are grouped under "Other manufacturing" or "Other services". Source: OECD TiVA.

Figure 2: Iberian value chain participation

accounts for the bulk of bilateral integration. Motor vehicles are also the main contributor in Austria-Germany, while food products rank first in Belgium-France. In services, accommodation and food services and air transport services make larger

contributions in the Iberian case, consistent with the greater importance of tourism-related activities in Portugal and Spain. By contrast, professional, scientific and technical activities account for a comparatively larger share of bilateral value-chain integration in France-Belgium and Austria-Germany, which may partly reflect the role of linguistic proximity.

Overall, the evidence indicates that the expansion of Iberian trade has been accompanied by deeper value added linkages between Portuguese and Spanish export activities, particularly in manufacturing. At the same time, integration remains uneven across sectors and comparatively low in services. This asymmetry may reflect the persistence of frictions affecting cross-border services activities, motivating the analysis of the trade barriers presented in the next subsection.

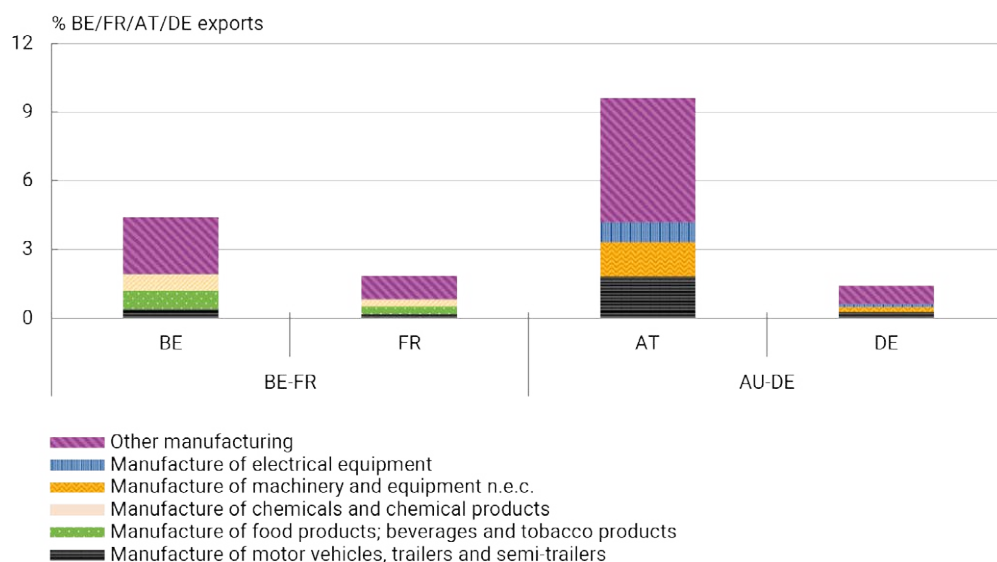
2.3. Trade barriers and the gains from deeper Iberian integration

This subsection moves from the descriptive evidence on Iberian trade integration to a quantitative assessment of the remaining barriers between Spain and Portugal, and the potential gains from reducing them. The evidence presented above suggests that Iberian integration is advanced but uneven. Goods trade and manufacturing value-chain linkages have strengthened over time, while services trade remains comparatively less integrated. The objective here is therefore to estimate the size of the remaining bilateral trade frictions and to assess the potential trade and value added effects of reducing them.

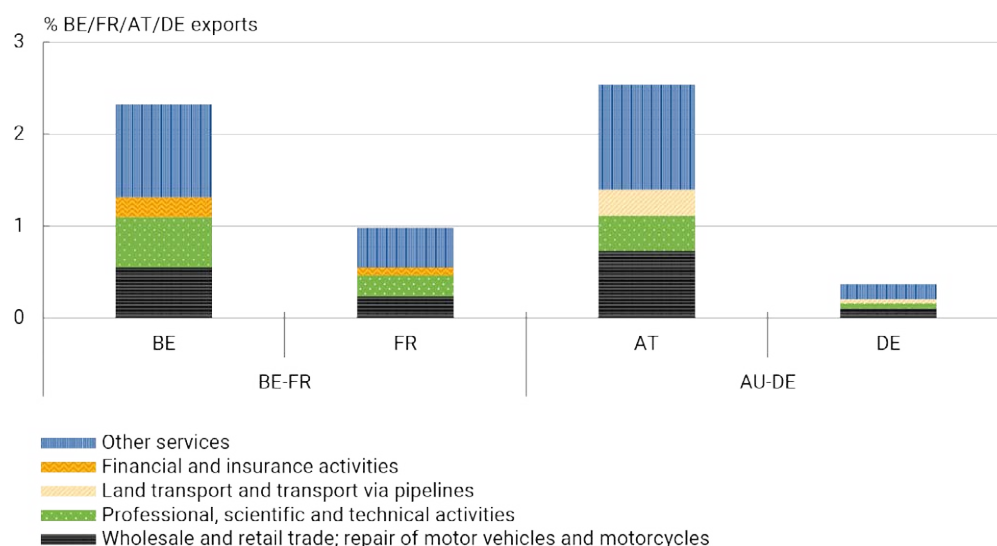
The analysis proceeds in two steps. First, it estimates sector-level tariff-equivalent measures of residual trade barriers between Spain and Portugal using structural gravity regressions. These measures express the estimated border-related friction in ad-valorem equivalent terms, that is, as the hypothetical tariff rate that would generate the same proportional reduction in trade as the estimated border effect. Second, the estimated trade cost wedges are introduced into a multi-country, multi-sector quantitative trade model to simulate how bilateral trade and value added would respond to partial reductions in bilateral Portugal–Spain trade costs.

A central feature of the approach is that the estimated tariff equivalents should not be interpreted as observed tariffs. Since Spain and Portugal are members of the EU Single Market, bilateral tariffs are zero. Positive tariff-equivalent values therefore capture residual frictions that make cross-border trade lower than otherwise comparable domestic trade. These frictions may include policy-actionable elements, such as administrative procedures, regulatory differences, information costs, or barriers to cross-border service provision. However, they may also reflect less directly actionable factors, such as consumer preferences, familiarity with domestic suppliers, local business networks, established distribution channels, or cultural patterns of demand.

This distinction motivates the counterfactual design. Since the estimated wedge cannot be decomposed into policy-actionable and non-actionable components, the simulations do not assume that all residual frictions can or should be removed. Instead, they consider partial reductions in the estimated trade cost wedge,



(a) Manufacturing



(b) Services

Notes: Bilateral value-chain participation is defined as the sum of backward participation (the partner country's value added embodied in the country's exports) and forward participation (the country's value added embodied in the partner country's exports), expressed as a share of the country's gross exports. The figure reports the three sectors with the largest contributions to the index for each country; all remaining sectors are grouped under "Other manufacturing" or "Other services". Data refer to 2022. Source: OECD TiVA.

Figure 3: Bilateral value-chain participation in selected EU country pairs

providing illustrative benchmarks for the potential gains from deeper Iberian integration.

2.3.1. Constructing tariff-equivalent trade barriers. The first exercise constructs sector-level tariff-equivalent trade barriers from gravity regressions estimated over the period 2013–2022. The objective is to estimate how much lower international flows are relative to otherwise comparable domestic flows, conditional on standard bilateral controls and on exporter-year and importer-year fixed effects. Including domestic flows is essential because the border coefficient is identified relative to within-country trade, which is the omitted benchmark. The resulting coefficient captures the residual trade reducing effect associated with crossing a national border, after controlling for geography, language, outward and inward multilateral resistance, and country-time supply and demand conditions.

The empirical specification follows the structural gravity literature and is estimated by Poisson pseudo-maximum likelihood (PPML) with high dimensional fixed effects. PPML is appropriate for bilateral trade data because it accommodates zero trade flows and is robust to heteroskedasticity (Santos Silva and Tenreyro 2006).

The model is estimated separately for each sector. Since trade costs, elasticities and multilateral resistance terms may differ across sectors, estimating the model at the sectoral level avoids imposing a common border effect across activities with different degrees of tradability, regulation, or supply and demand conditions. The separability property of structural gravity implies that the gravity equation can be estimated sector by sector, treating each sector as a separate gravity system. Equivalently, this corresponds to a pooled specification in which all fixed effects and trade cost coefficients are allowed to vary by sector (Yotov et al. 2016).

For each sector s , the dependent variable is bilateral trade from exporter i to importer j in year t . The estimating sample includes both international and domestic trade flows. The sector-specific estimating equation is:

$$X_{ijt}^s = \exp \left(\alpha_{it}^s + \gamma_{jt}^s + \delta^s \ln dist_{ij} + \rho^s Contig_{ij} + \mu^s ComLang_{ij} + \sum_k \beta_k^s B_{ij}^k \right) + \varepsilon_{ijt}^s. \quad (1)$$

where X_{ijts} denotes bilateral trade in sector s ; α_{its} and γ_{jts} are exporter-year-sector and importer-year-sector fixed effects; $dist_{ij}$ is bilateral distance; $Contig_{ij}$ is an indicator for a shared border; and $ComLang_{ij}$ is an indicator for a common official language. The variables B_{ij}^k are mutually exclusive indicators that partition international trade flows into four groups: trade between Portugal and Spain; trade between Portugal or Spain and other EU members; trade between Portugal or Spain and non-EU partners; and all remaining international trade flows.¹ Domestic trade is excluded from these indicators and therefore constitutes the reference category.

The coefficients β_k^s measure the difference between each category of international trade and domestic trade in sector s , conditional on the controls

1. The United Kingdom is consistently coded as a non-EU partner throughout the sample period.

and fixed effects. In particular, the Spain–Portugal coefficient is interpreted as the residual border effect for bilateral Iberian trade. If $\beta_k^s < 0$, trade in that international category is equal to $\exp(\beta_k^s)$ times otherwise comparable domestic trade; equivalently, the proportional difference relative to domestic trade is $\exp(\beta_k^s) - 1$.

The next step is to convert this estimated border effect into an ad-valorem equivalent using sector-specific trade elasticities. Let θ_s denote the absolute value of the sector-specific trade elasticity. Under the standard structural gravity interpretation, bilateral trade flows depend negatively on bilateral trade costs. In sector s , this relationship can be written as:

$$X_{ijt}^s \propto (\tau_{ijt}^s)^{-\theta_s}, \quad (2)$$

where τ_{ijt}^s is the gross bilateral trade cost factor. This factor is expressed in iceberg form: $\tau_{ijt}^s = 1$ corresponds to frictionless trade, while, for example, a $\tau_{ijt}^s = 1.10$ means that trading across locations involves a cost wedge equivalent to 10 percent of the value shipped. Because $\theta_s > 0$, higher trade costs reduce trade, and the magnitude of this reduction depends on the sector-specific elasticity.

The tariff-equivalent trade cost is the value of τ that rationalises the same proportional reduction in trade as the estimated border effect:

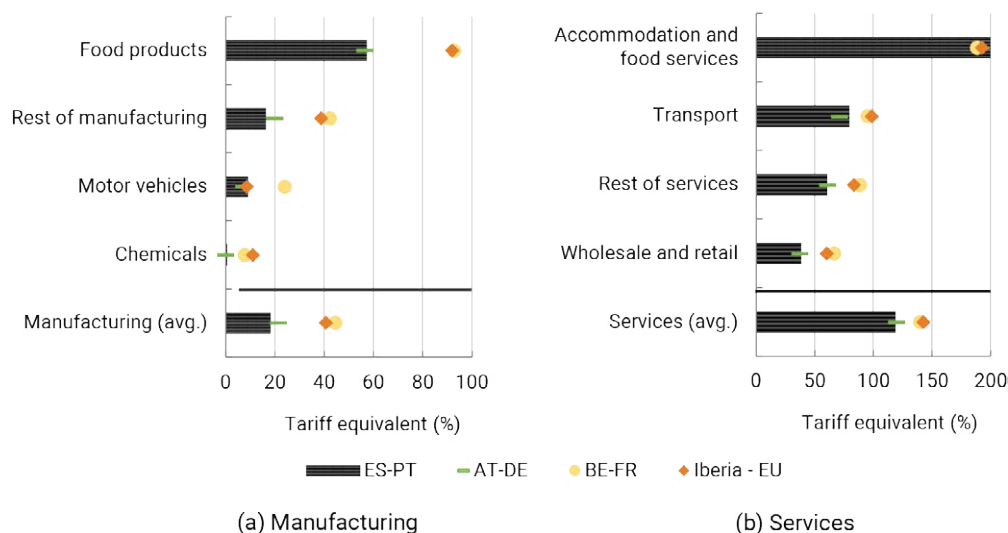
$$\exp(\beta_k^s) = (\tau_k^s)^{-\theta_s}. \quad (3)$$

Solving for the corresponding ad-valorem equivalent (AVE) gives:

$$AVE_k^s = 100 \times \left[\exp\left(-\frac{\beta_k^s}{\theta_s}\right) - 1 \right]. \quad (4)$$

Thus, the reported value is the hypothetical tariff rate that would reduce trade by the same proportion as the estimated border effect. For example, an estimated border coefficient of -0.4 combined with a trade elasticity of 4 implies an ad-valorem equivalent of approximately 10.5 percent. Larger negative border coefficients imply larger tariff-equivalent barriers, while sectors with higher trade elasticities translate a given trade flow reduction into a smaller tariff equivalent. Sector-specific trade elasticities are taken from Fontagné et al. (2022), mapped to the sectoral classification used in our exercise.

2.3.2. Trade barriers: Results. The results show that integration between Portugal and Spain is still incomplete, particularly in services. The estimated ad-valorem equivalent of the remaining barrier is around 20 percent in manufacturing, but above 100 percent in services (Figure 4). This is consistent with the descriptive evidence presented above, which points to a relatively high degree of integration in goods trade and a more limited degree of integration in services. The gravity-based evidence therefore confirms that the main remaining integration gap is concentrated in services, where barriers appear to be much larger than in manufacturing.



Notes: The figure reports tariff-equivalent trade barriers constructed from sector-specific gravity regressions estimated by Poisson pseudo-maximum likelihood with high-dimensional fixed effects. Exporter-year and importer-year fixed effects are included as the theory-consistent way of controlling for multilateral resistance terms. For each sector, bilateral trade flows, including both international and domestic trade, are regressed on log distance, contiguity, common official language, and a set of dummy variables that partition international trade flows into four groups: trade between Portugal and Spain; trade between Portugal or Spain and other EU members; trade between Portugal or Spain and non-EU partners; and all other international trade flows. Estimated border coefficients, β^s , are converted into ad valorem tariff equivalents (AVEs) using sector-specific trade elasticities, θ^s , according to $AVE^s = 100 [\exp(-\beta^s/\theta^s) - 1]$. The reported values therefore represent the tariff that would generate the same reduction in trade flows as the estimated non-tariff border frictions. “Rest of manufacturing” is constructed as the simple average of the tariff-equivalent barriers estimated at the sector level for the manufacturing sectors not reported in the figure. “Rest of services” is constructed as the simple average of the tariff-equivalent barriers estimated at the sector level for the remaining service sectors. Sample period: 2013–2022. Source: OECD TiVA.

Figure 4: Estimated trade barriers in ad-valorem equivalents

In manufacturing, the estimated barriers differ considerably across sectors. Figure 4 reports the three sectors highlighted in the previous value-chain analysis as especially relevant for Iberian production linkages: motor vehicles, food products and chemicals. It also reports a residual “rest of manufacturing” category, constructed as the simple average of the tariff-equivalent barriers estimated at the sector level for the remaining manufacturing industries. Food products exhibit relatively high frictions, while motor vehicles and chemicals display much lower barriers.

This pattern is consistent with differences in the organization and regulation of these sectors. Food products are more exposed to country-specific consumer information requirements, packaging rules and distribution arrangements, as market access often depends on brand familiarity, language, shelf-space allocation, and national retail networks. For example, EU food labeling rules allow Member States to require mandatory information in the language understood by consumers in the

destination market. In addition, evidence on territorial supply constraints in the EU retail sector shows that supplier practices in fast-moving consumer goods can limit cross-border sourcing by retailers and wholesalers, reducing the ability to exploit price and supply differences across Member States (VVA Economics & Policy and LE Europe 2020; Ashton 2025). These patterns may also reflect stronger home bias in food consumption, driven by persistent preferences for locally familiar products and consumption habits formed over time (Atkin 2013).

By contrast, motor vehicles and chemicals are sectors with more developed EU-level regulatory harmonization and more established cross-border production networks. In motor vehicles, the EU Whole Vehicle Type-Approval system allows certification in one Member State to be used for EU-wide marketing without further testing, reducing the scope for country-specific technical barriers. The sector is also organized around regional value chains, and Spain and Portugal are both integrated into the European automotive network, including in new mobility technologies (Lampón et al. 2024). In chemicals, different regulations provide a common EU framework for registration, risk management, classification, labeling and packaging, while rules on dangerous goods transport harmonize safety requirements but still imply documentation and handling obligations.

The lower estimated Spain–Portugal barriers in motor vehicles and chemicals (with respect to, e.g., food products) are therefore consistent with sectors where firms are larger, products are more standardized, and regulatory compliance is more often organized at the EU rather than at the national level.²

More generally, in most manufacturing sectors the implied barrier between Spain and Portugal is lower than the corresponding barrier between the two countries and the rest of the EU. This is consistent with the idea that Spain and Portugal benefit from particularly strong economic integration, long-established commercial relationships, dense bilateral trade networks, shared logistics infrastructures, and well-developed supplier linkages, which may reduce the effective cost of cross-border transactions relative to trade with other EU partners. This interpretation is also supported by the comparison with other country pairs. The estimated Spain–Portugal barriers are close to those observed between Austria and Germany, another neighboring pair characterized by strong economic links and high cross-border market integration. At the same time, they are lower than those estimated between

2. A practical review by the Cámara de Comercio de España identifies a range of administrative, documentary and linguistic requirements that may increase the cost of selling goods across the Spain–Portugal border. These include translating labels and instructions, notifying or registering products, demonstrating their legal marketing in the country of origin, submitting technical documentation and using national administrative platforms. The review documents product specific procedures affecting, among others, measurement instruments, non-harmonized fertilizers, used machinery, certain construction products, food supplements and precious metals. Depending on the product, firms may need to provide certificates or test reports, adapt documentation to Portuguese, submit prior notifications or, in some cases, obtain authorization (Cámara de Comercio de España 2026). Although these requirements often implement common EU rules or pursue legitimate policy objectives, they can generate additional compliance costs for cross-border suppliers, particularly smaller firms.

Belgium and France, suggesting that physical proximity alone does not necessarily translate into the same degree of effective market integration.

In services, the estimated barriers are substantially larger than in manufacturing across all service sectors, but the size of the wedge differs across them. Figure 4 reports the main service categories considered in the analysis: transport, wholesale and retail trade, accommodation and food services, and a residual “other services” category. Accommodation and food services stand out with particularly high implicit barriers, while sizable frictions also appear in transport, wholesale and retail trade, and other services.

This pattern is consistent with the nature of services trade. Services are generally less tradable than goods and more exposed to regulatory, administrative, and demand side segmentation. Many services require proximity to the client, knowledge of local rules, language-specific interaction, professional accreditation, or a local commercial presence. In accommodation and food services, cross-border trade is also constrained by the local nature of consumption and by the importance of location-specific demand. In transport and wholesale and retail trade, frictions may reflect logistics organization, distribution networks, regulatory requirements and relationships with local clients and suppliers. Even within the Single Market, these features can generate a sizable gap between domestic and cross-border activity.

The interpretation of these estimates requires some caution, especially for services. A tariff-equivalent above 100 percent does not mean that there is an explicit policy barrier of that magnitude. Rather, it means that, after controlling for other factors, trade across the Spain–Portugal border is much lower than otherwise comparable domestic trade, and that this gap is equivalent to a very large ad-valorem trade cost. Part of this wedge may reflect regulations, administrative procedures or other frictions that can be reduced by policy. Another part may reflect home bias, local information, established supplier relationships, consumer preferences, or the need for proximity, which are less directly actionable. The estimates should therefore be read as diagnostic measures of integration gaps, rather than as direct measures of removable policy barriers.

The policy implication is that remaining barriers are much higher in services than in manufacturing. Potentially actionable frictions may include licensing procedures, mutual recognition of qualifications, differences in sector-specific regulation, digital interoperability, tax and reporting procedures, public procurement practices, and administrative requirements that make cross-border service provision costly. Reducing information gaps and fixed costs for smaller firms may also matter, especially where domestic networks remain dominant. For manufacturing trade, the remaining obstacles appear more sector-specific, and may include labeling and packaging requirements, conformity assessment, phytosanitary and food safety procedures, logistics costs, and the functioning of national distribution networks. At the same time, not all estimated frictions are actionable via policy, or even desirable to remove. Some may reflect preferences for domestic suppliers, familiarity with local brands, established business relationships, domestic

distribution channels, or cultural patterns of demand. These factors can reduce cross-border trade relative to domestic trade, but they do not necessarily correspond to market failures or avoidable regulatory barriers. For example, consumers may prefer familiar food products, firms may rely on long-standing local suppliers, and service providers may benefit from proximity and knowledge of local practices. The distinction is nevertheless policy relevant. The estimated wedge identifies where cross-border integration remains limited and where further investigation is most useful. The relevant policy question is therefore which part of the estimated barrier reflects avoidable frictions that policy can realistically reduce.

2.3.3. Quantifying the economic effects of lowering trade barriers. The second exercise quantifies the effect of lowering the estimated Spain–Portugal trade cost wedges. The two counterfactual scenarios are obtained from a multi-country, multi-sector general equilibrium trade model à la Caliendo and Parro (2015). This class of models is designed to quantify how trade cost changes affect economies once direct and indirect adjustment channels are taken into account. The model incorporates sectoral heterogeneity, trade in intermediate inputs, input–output linkages across sectors, and endogenous changes in prices and wages.

The model is calibrated to the observed baseline equilibrium and uses the gravity-based tariff equivalents described above as measures of initial bilateral trade frictions between Spain and Portugal. Consistent with the interpretation of these estimates as residual wedges rather than fully removable barriers, the exercise simulates partial liberalization rather than full elimination. Specifically, two scenarios are considered: a 25 percent and a 50 percent reduction in the estimated iceberg trade cost wedge.

Let $\tau_s^{bln} \geq 1$ denote the baseline sector-specific iceberg trade cost inferred from the tariff-equivalent estimate. The trade cost wedge is $\tau_s^{bln} - 1$. This wedge measures the proportional cost of trading relative to a frictionless benchmark. For example, $\tau_s^{bln} = 1.20$ means that selling across the border involves a trade cost equivalent to 20 percent of the value traded: in iceberg terms, 1.20 units must be shipped for one unit to arrive effectively at destination. Equivalently, the delivered cost of the traded good or service is 20 percent higher than under frictionless trade.

A partial liberalization reduces only a fraction of this wedge, rather than eliminating it entirely. The counterfactual iceberg trade cost (τ_s^{cfl}) is:

$$\tau_s^{cfl}(\lambda) = 1 + (1 - \lambda)(\tau_s^{bln} - 1), \quad \lambda \in \{0.25, 0.50\}. \quad (5)$$

Thus, if $\tau_s^{bln} = 1.20$, the initial trade cost wedge is 20 percent. A 25 percent reduction lowers this wedge from 20 percent to 15 percent, implying $\tau_s^{cfl} = 1.15$. A 50 percent reduction lowers the wedge from 20 percent to 10 percent, implying $\tau_s^{cfl} = 1.10$.

The reductions are applied exclusively to bilateral Spain–Portugal trade costs, symmetrically and separately by sector. Trade costs for all other country-pairs

are held fixed. This design isolates the consequences of lowering residual bilateral Iberian frictions, rather than simulating a broader EU-wide or global liberalization.

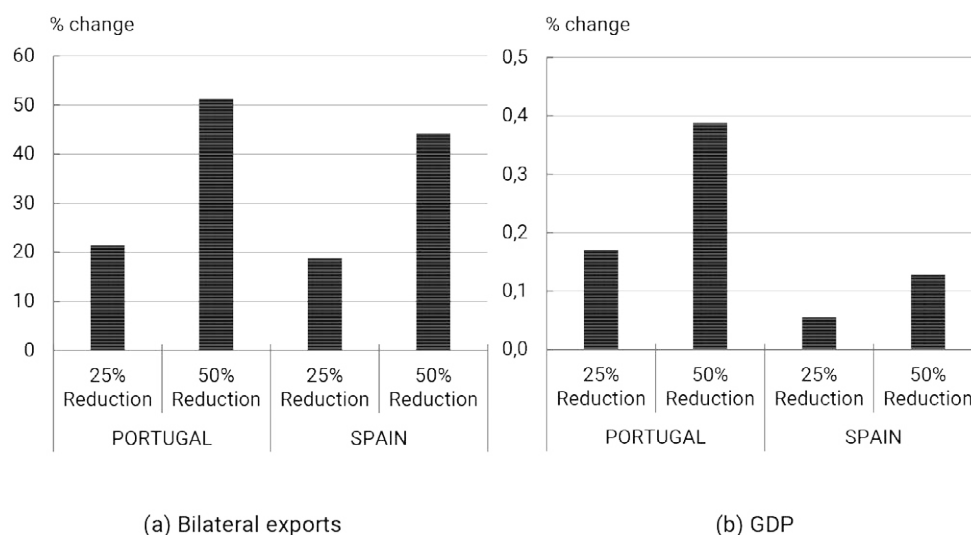
The counterfactual scenarios should not be interpreted as forecasts of a specific policy package, but as illustrative, policy-relevant benchmarks. Since the estimated border wedge cannot be decomposed into policy-actionable and non-actionable components, the scenarios reduce only part of the estimated friction rather than eliminating it entirely. The 25 percent and 50 percent reductions therefore reflect a conservative assumption: reforms in regulation, administration, infrastructure, information provision or cross-border service provision may lower some residual frictions, but not the whole wedge.

The model solves for a new general equilibrium allocation. The reported effects are therefore not mechanical partial equilibrium effects on bilateral trade alone. Lower trade costs reduce the delivered price of goods and intermediate inputs traded between Spain and Portugal. This changes sourcing decisions, input costs, expenditure patterns, sectoral competitiveness, wages, and prices. Input–output linkages then propagate the initial bilateral shock through the production network. A reduction in trade costs in one sector can benefit downstream sectors that use its output as an intermediate input, and can also reallocate activity across countries and sectors. The reported results should be interpreted as long-run comparative static effects after full adjustment to the lower trade costs.

2.3.4. Trade and GDP effects. The counterfactual results indicate that lowering the remaining barriers would generate sizable gains from trade for both Portugal and Spain. Under a 25 percent reduction in the estimated bilateral wedges, bilateral trade between Portugal and Spain increases by about 20 percent. Under a 50 percent reduction, the export effects increase to about 51 percent for Portugal and 44 percent for Spain (Figure 5). The non-linearity between the 25 percent and 50 percent scenarios reflects the structure of the model and the fact that trade cost reductions operate through changes in prices, sourcing, and general equilibrium feedbacks, rather than through a purely proportional mechanical channel.

The value added effects are smaller in percentage terms, as expected, but economically meaningful. A 25 percent reduction in implicit barriers raises GDP by around 0.17 percent in Portugal and 0.06 percent in Spain. A 50 percent reduction raises GDP by around 0.39 percent in Portugal and 0.13 percent in Spain (Figure 5). The larger relative gain for Portugal is consistent with the asymmetry in country size and exposure. For a smaller economy, bilateral integration with a larger neighbor represents a larger share of potential market access and input sourcing opportunities. Spain also gains, but the same bilateral shock is diluted over a much larger economic base.

These GDP effects are modest in absolute terms, but sizable in the context of quantitative general equilibrium trade models, which often imply small aggregate



Notes: The figure reports counterfactual trade and value added responses obtained from a multi-country, multi-sector general-equilibrium trade model in the spirit of Caliendo and Parro (2015), calibrated using the estimated tariff-equivalent trade barriers. Sector-level trade elasticities are calibrated using Fontagné et al. (2022). The counterfactual exercises consider a partial liberalization of bilateral trade frictions between Spain and Portugal, corresponding to a 25 percent and a 50 percent reduction in the iceberg trade-cost wedge, respectively. Iceberg trade costs are defined as $\tau^s \geq 1$, where $\tau^s - 1$ captures the tariff-equivalent component of trade frictions. A 25 percent or 50 percent reduction therefore corresponds to a proportional reduction in the wedge, $\tau^s - 1$, and is implemented as $\tau_s^{cfl}(\lambda) = 1 + (1 - \lambda)(\tau_s^{bln} - 1)$, with $\lambda \in \{0.25, 0.50\}$, where τ_s^{bln} denotes sector-specific baseline iceberg costs inferred from the gravity-based tariff equivalents. Counterfactual reductions are applied exclusively to Spain–Portugal bilateral trade costs on a sector-by-sector basis, while trade costs for all other country pairs are held fixed. Reported outcomes reflect the general-equilibrium effects of lowering bilateral Spain–Portugal trade barriers, including changes in bilateral trade flows and value added through sectoral linkages, input-output relationships, and endogenous price and wage adjustments.

Figure 5: Economic effects of reducing trade barriers between Portugal and Spain

welfare effects even when trade responses are large.³ For example, Caliendo and Parro (2015) find that NAFTA substantially increased intra-bloc trade, while the estimated welfare gains for the United States were only 0.08 percent. In relative terms, the Iberian results are comparable to the gains that Spain and Portugal are expected to obtain from recent EU trade policy initiatives: Baur et al. (2026) calculate GDP gains of around 0.15 and 0.18 percent for Portugal and Spain,

3. The difference between bilateral export effects and GDP effects is important. Export responses are large because the shock directly lowers trade costs on Spain–Portugal flows. GDP effects are more moderate because they measure the net economy-wide gain after prices, wages, sourcing decisions, and sectoral reallocation have adjusted. Some of the increase in bilateral trade may substitute for trade with other partners or for domestic sourcing.

respectively.⁴ Iberian integration would also more than offset the calculated GDP losses from the recent US tariff increase, around 0.03 percent for both countries.

The results should also be read as conservative estimates of the broader potential benefits of integration. The model captures long-run comparative static reallocation but not transition dynamics, investment responses, productivity gains, firm entry, scale economies, or innovation effects. If lower barriers allow firms to expand, enter new markets, adopt better technologies, or build denser cross-border supply networks, the full long-run benefits are likely to be larger than those reported here (Boehm et al. 2024; Baqaee and Malmberg 2025). Conversely, the model abstracts from adjustment costs and distributional effects across firms, workers, and regions. This means that positive aggregate gains may coexist with uneven short-run effects, for example if some firms lose market share, some workers face reallocation costs, or some regions benefit less from the expansion of cross-border activity. These effects matter for policy design, since the aggregate gains from integration may be easier to realize if they are accompanied by measures that reduce adjustment costs and help firms and workers access the new opportunities. Future work could incorporate these dimensions using models with heterogeneous workers, regional labor markets, imperfect labor mobility, or explicit group-level welfare effects (Autor et al. 2016; Fan 2019; Galle et al. 2023).

3. Energy markets

3.1. *Energy dependence and security of supply*

3.1.1. Import dependence. The Iberian Peninsula combines high external dependence on fossil fuels with relatively diversified supplier structures and a rapidly decarbonising electricity system. This creates a distinction between exposure to global fossil-fuel markets, which remains high, and supplier-specific disruption risk, which is more contained than import-dependence indicators alone would suggest.

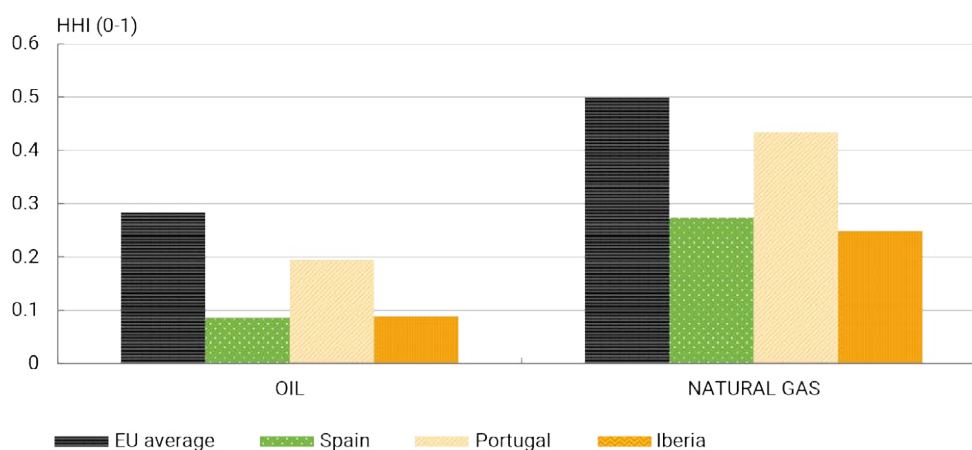
Spain and Portugal remain structurally more dependent on imported energy than the European Union as a whole. Non-EU imports accounted for 66% of gross available energy in Spain and 57% in Portugal, compared with 44% in the EU average. This external dependence is particularly marked in fossil fuels. Imports from non-EU countries represented around 87% of available oil in Spain and 80% in Portugal, while imports from non-EU countries accounted for approximately 93% of available natural gas in Spain and 98% in Portugal.

High import reliance increases exposure to international price shocks and geopolitical disruptions, but the associated security-of-supply risk also depends

4. Their simulations include seven trade agreements being negotiated, adopted, or already ratified, with key trade partners, i.e. Mercosur (Argentina, Brazil, Paraguay, and Uruguay), India, the United Arab Emirates, Australia, Indonesia, Malaysia, and Thailand. We compare with the case where these agreements deliver complete tariff elimination and moderate reductions in non-tariff barriers.

on the concentration of suppliers, the type of fuel imported, the availability of alternative sources and the flexibility of domestic infrastructure. The evidence presented in Figure 6 suggests that Iberian supplier concentration is lower than in the EU average, especially for oil. In 2024, Spain recorded a very low concentration index for crude oil imports, while Portugal also remained below the EU benchmark, despite a more concentrated supplier structure than Spain. For natural gas, concentration is higher in both countries, but still below the corresponding EU figure.

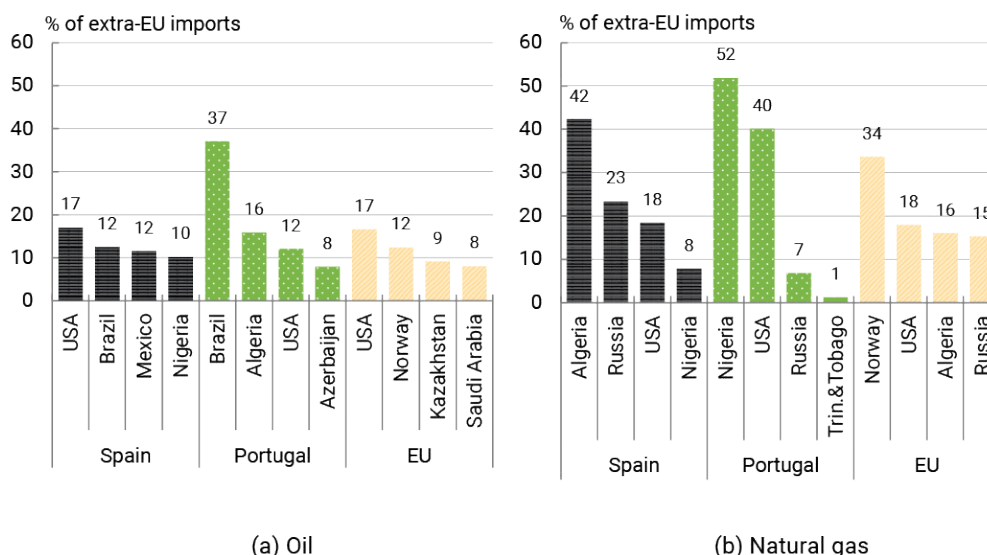
Supplier-level data reinforce this distinction (Figure 7). Spain's oil-import basket is relatively diversified, with the United States as the largest individual supplier but no single country accounting for a dominant share. Portugal's oil imports are more concentrated, with Brazil representing a sizeable share, although the overall concentration index remains below the EU average. Natural-gas imports are more exposed to a smaller set of partners. Algeria is the main supplier to Spain, while Portugal relies heavily on liquefied natural gas from Nigeria and the United States.



Notes: The Herfindahl–Hirschman Index (HHI) measures the concentration of import sources and is calculated as the sum of squared shares of each supplier, $HHI = \sum_i share_i^2$, where $share_i$ is imports from partner i divided by total imports. The index is computed only for non-EU suppliers, using total non-EU imports as the denominator. It ranges from 0 to 1, with values close to 0 indicating diversified sources and values close to 1 indicating strong dependence on a few suppliers. The Iberia bar shows the HHI computed for the Iberian Peninsula as a single market, combining Spain and Portugal. The EU average is the simple average of country-level HHIs. To improve comparability, Austria, Bulgaria, Poland and Slovakia are excluded from the calculation because of large shares of unidentified imports in the underlying trade statistics.

Figure 6: Herfindahl–Hirschman index for non-EU imports, 2024 (0-1)

3.1.2. Structure of final consumption. The structure of final energy consumption helps explain the persistence of external dependence. Table 1 presents the joint sectoral and energy-product composition of final energy consumption in Portugal, Spain and the EU-27 in 2024, with each cell expressed as a share of total final energy consumption in the corresponding economy. In all three cases, the largest



Source: Eurostat.

Figure 7: Main extra-EU suppliers of oil and natural gas, 2024 (% of extra EU imports)

component is the use of oil and petroleum products in transport. However, relative to the EU average, transport-related consumption of oil and petroleum products plays a larger role in both Portugal and Spain, particularly in the latter (it accounts for 34.4% of total final energy consumption in Portugal and 38.1% in Spain, compared with 29.3% in the EU-27). Electricity accounts for roughly one quarter of final consumption, broadly in line with the EU average. Beyond these common features, Portugal stands out for its relatively high share of renewables and biofuels.

Renewable electricity generation reduces the import content of the power sector, but its aggregate effect on external energy dependence depends on the pace at which electricity substitutes fossil fuels in transport, heating and industry. Electrification is thus the main mechanism through which domestic renewable generation can reduce exposure to imported oil and gas. In this context, electricity-market integration becomes increasingly relevant: interconnections, storage and demand-side flexibility determine the extent to which variable renewable generation can be absorbed efficiently across the Iberian system and, over time, linked to wider European markets.

3.2. Wholesale electricity-market integration

3.2.1. Institutional design. The Iberian Electricity Market (MIBEL) embodies the successful integration of the Portuguese and Spanish wholesale power markets. Originally conceived in early 2000's, it was implemented in July 2007, and in 2009 integration deepened further, driven by the expansion of physical interconnection capacity. It belongs to the European internal electricity market, which enhances cross-border market integration in a more interconnected European framework.

% of total final energy consumption

Region	Sector	Oil and petroleum products	Natural Gas	Renewables and biofuels	Electricity	Other	Total
Spain	Industry	2.5%	10.0%	3.3%	7.4%	0.8%	24.0%
	Transport	38.1%	0.4%	2.2%	0.5%	0.0%	41.2%
	Households	2.9%	3.7%	2.7%	8.1%	0.0%	17.4%
	Other sectors	4.1%	2.8%	1.6%	8.8%	0.0%	17.3%
	Total	47.6%	16.9%	9.8%	24.8%	0.8%	100.0%
Portugal	Industry	3.0%	7.0%	7.3%	8.9%	1.0%	27.2%
	Transport	34.4%	0.2%	2.3%	0.5%	0.0%	37.4%
	Households	2.0%	1.5%	6.6%	7.7%	0.0%	17.8%
	Other sectors	3.4%	1.4%	3.3%	9.2%	0.1%	17.4%
	Total	42.8%	10.1%	19.5%	26.3%	1.1%	100.0%
EU-27	Industry	2.6%	7.8%	2.9%	8.2%	3.1%	24.6%
	Transport	29.3%	0.4%	1.9%	0.7%	0.0%	32.3%
	Households	2.7%	7.7%	5.9%	7.0%	2.7%	26.0%
	Other sectors	2.8%	3.8%	1.8%	7.5%	1.0%	16.9%
	Total	37.4%	19.7%	12.5%	23.4%	6.8%	100.0%

30 or more 20-30 10-20 5-10 2.5-5 Less than 2.5

Notes: Each interior cell reports final energy consumption for a given sector–energy product combination as a percentage of total final energy consumption in the economy. Marginal totals indicate the contributions of each sector and energy product. Source: Eurostat, Complete energy balances.

Table 1. Contributions of sector–energy product combinations to total final energy consumption in Portugal, Spain and the EU-27, 2024 (%)

Specifically, in the day-ahead market, supply and demand bids are matched under a common algorithm and the available capacity is allocated.

The economic rationale for MIBEL extends beyond the simple harmonisation of trading rules. Firstly, by allowing generation assets located in either country to compete in a common wholesale market, integration enlarges the relevant market size and improves the allocation of production across the Iberian Peninsula. Electricity can be supplied by the lowest-cost generating units available in either country, subject to interconnection constraints, reducing average production costs and increasing allocative efficiency.

A second benefit arises from risk sharing. Because electricity demand, hydro conditions, wind availability and solar generation are not perfectly correlated across countries, an integrated market allows temporary shortages in one system to be partly offset by surplus generation in the other. This reduces the likelihood of extreme price movements and enhances security of supply. The value of this

mechanism has increased over time as renewable generation has expanded, since weather conditions differ across locations and technologies.

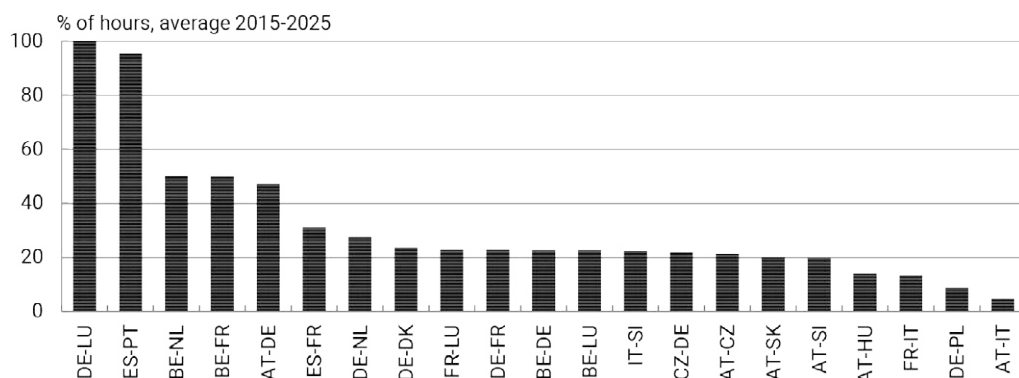
Lastly, integration may also encourage investment by providing a more predictable market. Stable cross-border trading arrangements reduce regulatory uncertainty, increase the pool of potential buyers and sellers, and improve price transparency. These factors lower investment risk and facilitate the financing of generation and storage projects whose economics depend on future wholesale revenues. This effect becomes particularly important in capital-intensive technologies such as pumped hydro and battery storage, where profitability depends on expectations regarding future market conditions.

3.2.2. Assessment of integration. Figure 8 reports, for each European border, the degree of price coupling, defined as the share of hours in which the absolute difference between hourly wholesale prices is at most 1 €/MWh over the period 2015–2025, considering only contiguous EU country pairs. The borders of the following countries are included: Spain (ES), Portugal (PT), France (FR), Italy (IT), Germany (DE), Austria (AT), and Belgium (BE). The Spanish and Portuguese wholesale electricity markets are highly integrated, with prices coinciding in 95% of hours, one of the highest levels of price convergence observed in Europe. When the interconnection between the two countries is not congested, both obtain the same price; thus, despite having an integrated market, price differences arise owing to interconnection congestion.

The contrast with the Spanish–French border is particularly informative. Despite belonging to the European internal electricity market, Spain and France exhibit price convergence in only around 30% of hours. This difference largely reflects more limited interconnection capacity. Additionally, only the Germany–Luxembourg border exhibits a higher degree of price convergence, as Luxembourg is fully embedded within the German price zone. By contrast, Spain and Portugal are separate bidding zones with independent regulators, transmission systems and renewable support frameworks. Achieving a similar degree of price convergence under these conditions reflects the exceptional level of coordination attained within MIBEL.⁵

This pattern reveals high bilateral electricity flows between Spain and Portugal. The evolution of bilateral trade therefore allows us to better understand the evolution of Iberian integration. In the first years of MIBEL, cross-border exchanges were influenced to a large extent by hydroelectric conditions, with Portugal frequently acting as a net exporter during periods of abundant reservoir inflows. More recently, however, the rapid expansion of renewable generation in Spain,

5. For the broader European context, Pellini (2012) finds that, up to 2012, convergence across European electricity wholesale spot markets remained partial and time-varying despite two decades of internal market reforms, which underscores how exceptional the degree of ES–PT convergence documented here is by comparison.



Notes: For each EU border, price coupling is defined as the share of hours in which the absolute difference between hourly wholesale electricity prices is no greater than €1/MWh. The reported values correspond to the average percentage of such hours over the period 2015–2025, considering only contiguous EU country pairs. The borders of the following countries are included: Spain (ES), Portugal (PT), France (FR), Italy (IT), Germany (DE), Austria (AT), and Belgium (BE). Sources: EMBER and ENTSO-E.

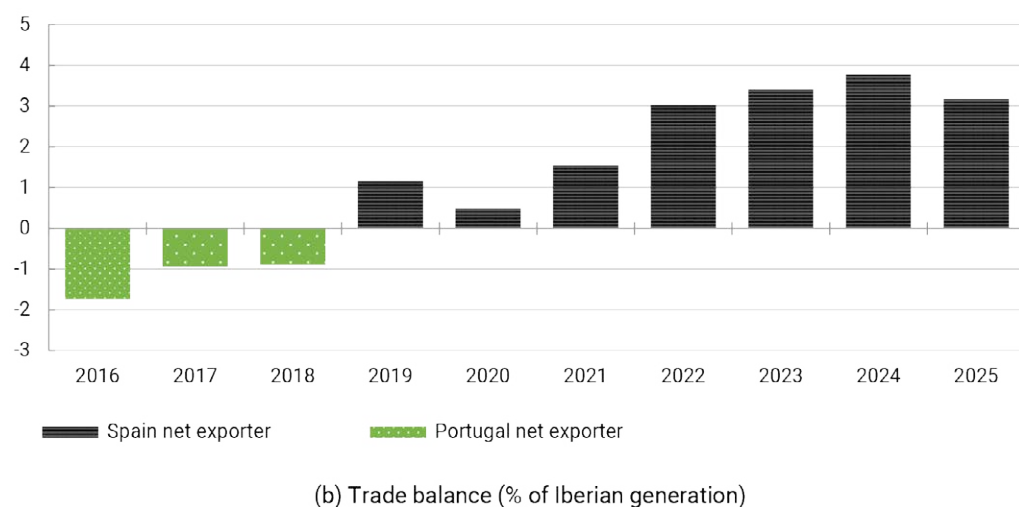
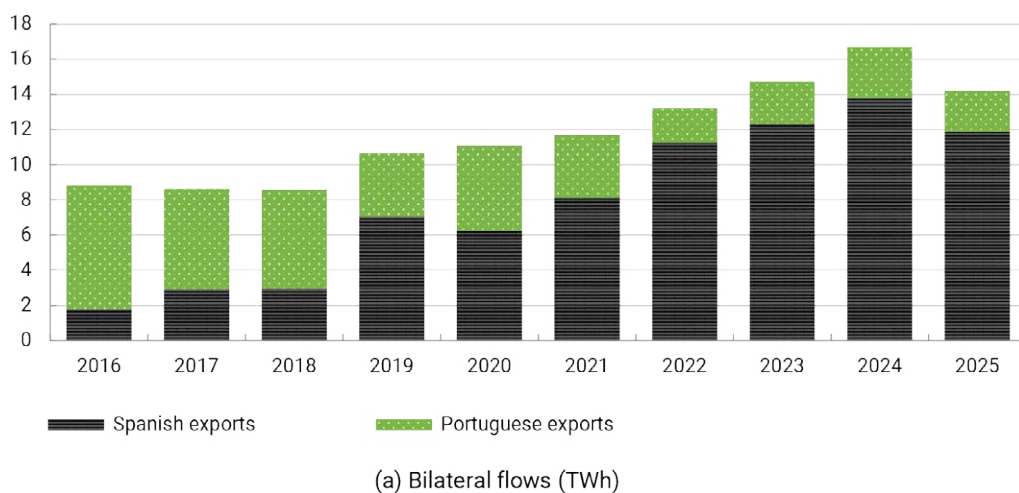
Figure 8: Share of hours with wholesale price differences below €1/MWh, by EU border (average, 2015–2025)

particularly solar photovoltaics, has altered the pattern of bilateral trade and increased the scale and complementarity of cross-border electricity exchanges.

Figure 9 shows annual bilateral electricity flows in TWh (Panel A) and net electricity trade as a share of total Iberian generation (Panel B). Electricity trade between Spain and Portugal has increased substantially over the last decade, largely driven by growing Spanish exports. Until 2018, Portugal was typically a net exporter of electricity, reflecting the importance of hydropower in its generation mix. Since then, the expansion of wind and solar generation in Spain has progressively increased Spanish exports in midday hours.⁶

3.2.3. Renewable energy support schemes. Despite sharing a common wholesale market, Spain and Portugal continue to rely on different regulatory mechanisms to remunerate renewable generation. The coexistence of heterogeneous support schemes within a highly integrated electricity market illustrates an important feature of European energy integration: common wholesale price formation can coexist with nationally determined mechanisms for promoting investment and achieving climate objectives. The two schemes have nonetheless been broadly equivalent in their overall thrust:

6. Electricity is the only energy product with substantial bilateral trade between Spain and Portugal: in 2024, Portugal sourced essentially all of its electricity imports from Spain, while Spain sourced around 27% of its electricity imports from Portugal; bilateral electricity trade (imports plus exports) represented 36% of final electricity consumption in Portugal and 16% in Spain, compared with negligible bilateral trade in oil and natural gas.



Notes: Panel (a) shows bilateral flows in TWh. Panel (b) shows the net balance as a share of total Iberian generation: positive values mean Spain is a net exporter, negative values, Portugal. Source: ENTSO-E.

Figure 9: Annual bilateral electricity flows between Spain and Portugal (TWh) and net trade as a share of Iberian generation

Portugal initially promoted renewable generation through feed-in tariffs, which provided long-term fixed remuneration largely insulated from wholesale market conditions. These schemes successfully accelerated investment in wind and solar generation but also contributed to the accumulation of tariff deficits. Since 2019, renewable support policy has increasingly relied on competitive auctions and Contracts for Difference. Under these schemes, producers receive revenue stability while remaining exposed to market signals, and support levels are determined through competition rather than administrative pricing.

Spain followed a broadly similar trajectory. During the 2000s, renewable deployment was supported through regulated tariffs that guaranteed revenues independent of market outcomes. These incentives contributed to a rapid expansion

of renewable capacity, particularly wind and solar power, but also to the accumulation of significant tariff deficits within the electricity system. The 2013–2014 reform replaced feed-in tariffs with a remuneration mechanism designed to guarantee a “reasonable return” on investment, thereby strengthening the link between producers’ revenues and market conditions while restoring the financial sustainability of the electricity system. Since 2020, support for new renewable projects has increasingly been allocated through competitive auctions.

Thus, the transition towards more market-oriented support mechanisms took place in the context of a progressively more integrated Iberian electricity market. In this respect, MIBEL provided a common institutional framework within which market participants operated and investment decisions were made.

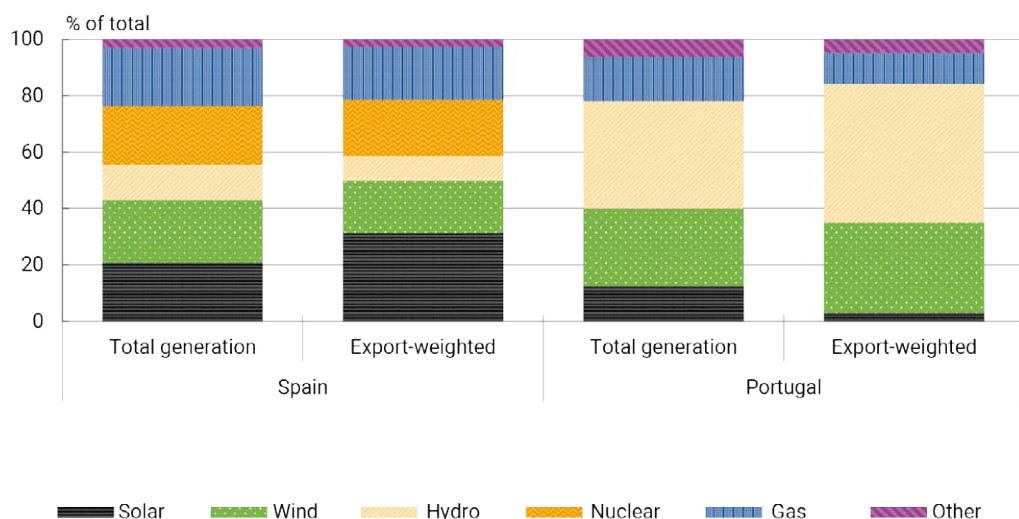
3.3. From market coupling to technological complementarity

3.3.1. The intra-day pattern of bilateral trade. While annual trade balances are informative, they provide only a partial picture of market integration. Electricity is traded continuously throughout the day, and annual net exports may conceal substantial two-way exchanges occurring over much shorter time horizons.

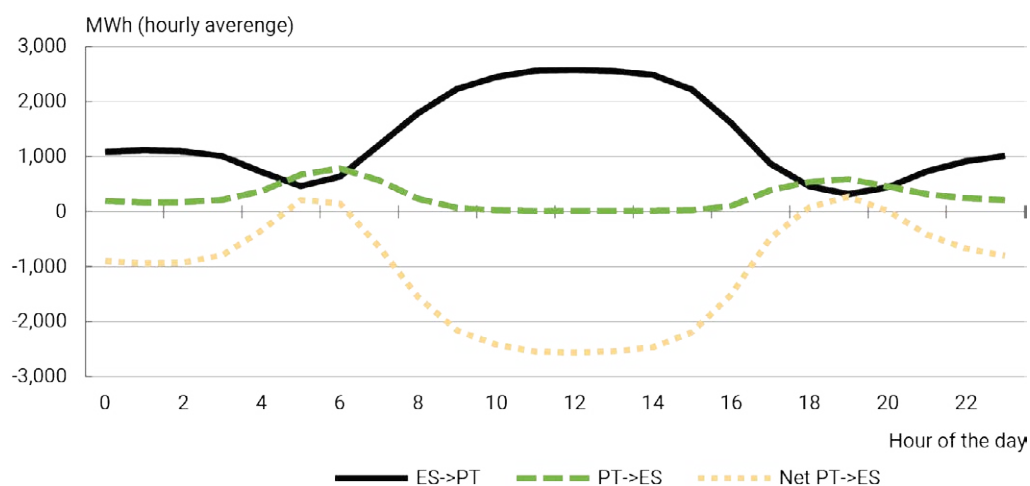
Figure 10 illustrates this point. Panel A compares each country’s generation mix with its contribution to cross-border exports in 2025, while Panel B presents the average hourly profile of bilateral flows. The results suggest that electricity trade increasingly reflects the complementary characteristics of the two systems rather than persistent differences in average generation costs. Panel A reflects Spanish specialization in solar energy exports and Portuguese prevalence of hydropower exports and, to a lesser extent, wind. Consistent with this specialization pattern, Panel B depicts that Spain tends to export during the middle of the day, when abundant photovoltaic generation depresses domestic prices, whereas Portugal exports relatively more during morning, evening and nighttime hours, drawing on hydropower flexibility and wind generation.

The interconnection is increasingly being used not only to equalize prices across space, but also to reallocate electricity across different production technologies and time periods. As a result, the gains from integration depend not only on market coupling and transmission capacity, but also on the extent to which the two countries can exploit complementarities between solar generation, wind resources, hydropower and storage technologies. This distinction is important in a high-renewable system. Solar and wind have very low marginal costs, but their production is weather-dependent and only imperfectly aligned with demand. Hydropower and pumped storage are more flexible because water can be retained and generation shifted across hours.

Figure 11 provides direct evidence of this technological complementarity. Panel A shows pumped-storage consumption as a share of national electricity generation in Spain and Portugal. The difference between both countries is striking. Although Spain has expanded solar generation much more rapidly, Portugal devotes a substantially larger share of electricity generation to pumped-storage consumption,



(a) Generation mix



(b) Hourly profile of cross-border electricity exports

Notes: Panel (a) shows each country's technology mix in total generation versus its weight in cross-border exports for 2025. Panel (b) shows the average hourly profile of bilateral flows in 2025. Source: ENTSO-E.

Figure 10: Generation mix and hourly profile of cross-border electricity exports, Spain and Portugal, 2025

exceeding 10% of national generation in recent years compared with around 3% in Spain. This reflects the greater importance of Portuguese pumped hydro as a source of system flexibility.

Panel B compares the average hourly profile of Spanish electricity exports to Portugal with Portuguese pumping activity in 2025. The two series display a remarkably similar intra-day pattern. Both increase sharply during the middle of the day, coinciding with the hours of highest photovoltaic production in Spain, and both fall in the evening, when solar generation declines. Part of the electricity

exported from Spain during solar-rich hours is absorbed by Portuguese pumped-storage facilities and shifted to periods of higher system value.

More generally, the figure suggests that the benefits of Iberian integration increasingly derive from the interaction between different technologies rather than from simple price convergence. Spanish solar generation and Portuguese hydropower appear to perform complementary functions within a common market: Spain contributes low-cost electricity during daylight hours, while Portugal provides a disproportionately large share of storage and hydro flexibility. In this sense, the interconnection is not merely reallocating electricity between countries; it is facilitating the combination of distinct renewable and flexibility assets across the Iberian Peninsula.

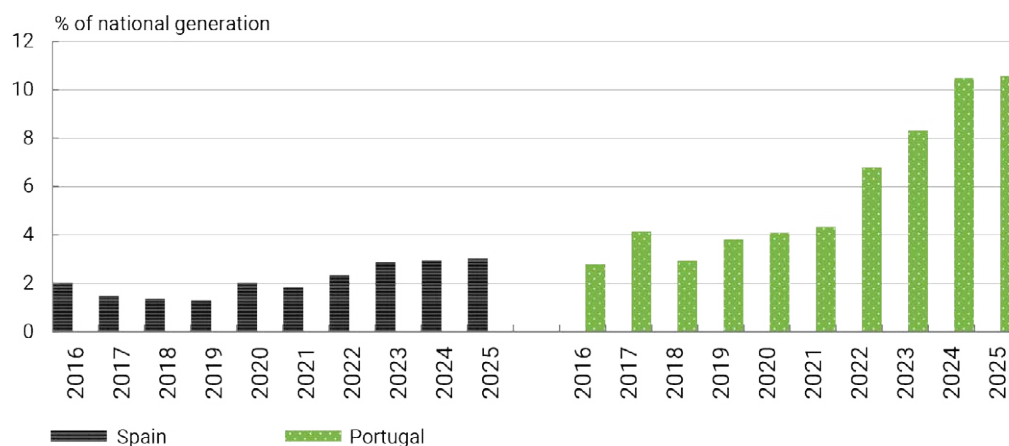
3.3.2. Renewables, prices and the value of flexibility. The expansion of wind and solar lowers the average wholesale price through the merit order. Quintana (2024) estimates that, in the first half of 2024, Spanish wholesale prices were around 40% below a counterfactual in which wind and solar generation had remained at their 2019 levels. The estimated relationship is non-linear: the price effect becomes larger when renewable output is sufficient to displace the fossil technology that would otherwise set the marginal price.⁷

The same mechanism increases intra-day dispersion. In the first half of 2024, zero or negative prices occurred in 15% of hours in the sample analyzed by Quintana (2024).⁸ Storage, flexible demand and interconnection can respond to that signal. Pumped hydro and batteries absorb electricity in low-price hours and release it when renewable output falls. Interconnection permits surplus generation to reach a broader demand base. Flexible industrial or household demand can move consumption towards hours of abundant electricity. These margins support renewable revenues, limit curtailment and reduce reliance on fossil generation.

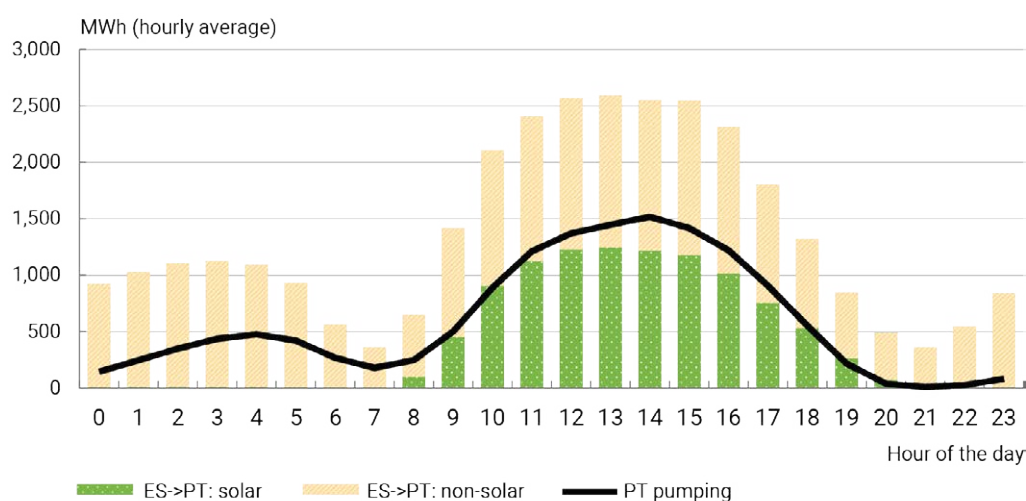
An important challenge is to improve storage of solar energy. Figure 12 illustrates the value of solar-energy storage by comparing average electricity prices during midday hours and evening demand peaks in 2025. The results reveal a striking Iberian pattern. Spain and Portugal exhibit the largest price differentials among the countries considered, with average evening prices exceeding midday prices by around €64/MWh and €62/MWh, respectively. The corresponding differences are substantially smaller in Belgium, France, Germany, Austria and Italy. This pattern is consistent with the rapid expansion of solar generation in the Iberian Peninsula, which depresses prices during daylight hours and creates a pronounced

7. Quintana (2024) also finds that, under the renewable-deployment scenarios envisaged in the update of the National Integrated Energy and Climate Plan, wholesale electricity prices could fall by an additional 50% by 2030, although this projection is subject to considerable uncertainty regarding supply-side factors and demand response.

8. Consistent with this mechanism, BBVA Research estimates that the 20 percentage-point increase in the renewable share of Spanish generation between 2021 and 2024 reduced wholesale electricity prices by close to 20% (12.5% over 2021–23 and 7.5% in 2024), with no clear evidence to date that lower prices are deterring renewable investment (Cubero et al. 2025).



(a) Storage consumption (% of national generation)



(b) Spanish exports vs. Portuguese pumping-storage by hour

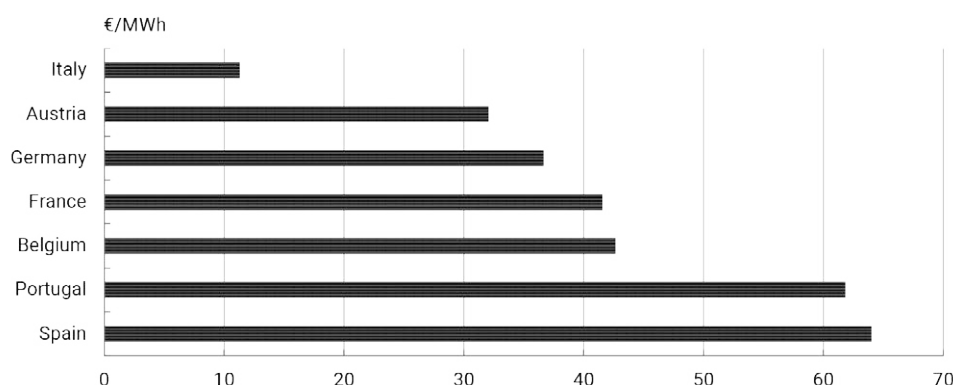
Notes: Panel (a) shows pumping-storage as a share of national generation. Panel (b) shows Spanish exports to Portugal split between solar and no-solar in 2025. The line traces Portuguese pumping. Source: ENTSO-E.

Figure 11: Technological complementarity between Spanish solar exports and Portuguese pumped-storage activity, 2025

price rebound in the evening when solar production declines but demand remains high.

The existence of these systematic intra-day price gradients suggests that additional storage capacity could generate sizeable welfare gains. Batteries and other storage technologies can shift electricity from periods of abundant solar production to evening demand peaks, reducing curtailment and improving the utilization of renewable resources. The fact that Spain and Portugal display some

of the largest intra-day price differentials in Europe suggests that the economic returns to additional flexibility may be particularly high in the Iberian market.



Notes: The figure reports, for each country, the average difference between wholesale electricity prices during evening hours (18:00–22:00) and midday hours (11:00–16:00) in 2025. For each day, the evening price is computed as the average wholesale price between 18:00 and 22:00, while the midday price is computed as the average wholesale price between 11:00 and 16:00. The reported values correspond to the average of the daily evening–midday differentials over the year. The country set comprises Spain, Portugal, Belgium, France, Germany, Austria and Italy. Higher values indicate greater potential gains from shifting electricity consumption or storage from solar-rich midday hours toward evening demand peaks. Sources: EMBER and ENTSO-E.

Figure 12: Evening–midday price differential, 2025 (€/MWh)

3.4. Retail electricity prices and consumer-level integration

3.4.1. Retail price formation in Spain and Portugal. Wholesale integration in MIBEL has produced a high degree of convergence in generation-level prices, but consumer-level integration remains incomplete because retail prices also reflect national tariff rules, contract structures and tax systems. Assessing retail integration therefore requires examining both how these components differ across Spain and Portugal and how they shape the transmission of wholesale-price movements to households and firms.

In both countries, the final retail electricity price comprises three broad elements: regulated network charges, set by the national regulators (CNMC in Spain and ERSE in Portugal); taxes and levies, including VAT and electricity-specific excise taxes; and energy and commercialisation costs, the latter determined either through regulated tariffs or freely negotiated contracts. The main cross-country differences concern the way regulated tariffs are updated, the prevalence of fixed-price and indexed contracts, and the design of taxes and policy charges. Together, these features determine the speed and extent of wholesale-to-retail pass-through.

In Spain, retail market liberalisation is largely complete for non-household consumers, while households may choose between freely negotiated contracts and the regulated reference tariff, the Precio Voluntario para el Pequeño Consumidor

(PVPC). The distinctive feature of the PVPC is its close link to OMIE day-ahead and intra-day wholesale prices.⁹ At end-2024, the PVPC covered around 8.4 million households, corresponding approximately to 28.5% of domestic consumers and 22% of household electricity consumption (CNMC 2025). The PVPC's close link to wholesale prices improves the transmission of scarcity and abundance signals, potentially encouraging demand response, but it also exposes households more directly to short-term market fluctuations.

In Portugal, liberalisation followed a comparable timeline but produced a larger liberalised-market share. Regulated end-user tariffs were progressively phased out for large consumers from 2011 and for low-voltage residential customers from 2013, being replaced by transitional tariffs supplied by the Comercializador de Último Recurso (CUR).¹⁰ At end-2024, 86.8% of electricity customers were in the liberalised market, with fewer than 820,000 remaining under regulated tariffs (ERSE 2025). Unlike the Spanish PVPC, the Portuguese regulated tariff is set annually by ERSE and reviewed quarterly only when wholesale prices deviate materially from the annual forecast. In addition, available evidence suggests that fixed-price contracts are more prevalent in Portugal, including among households and many smaller firms, whereas indexed contracts have had a more visible role in Spain, particularly through the PVPC. The combination of less frequent tariff updates and greater reliance on fixed-price contracts is therefore consistent with a slower and smoother pass-through of wholesale-price movements in Portugal.

Tax design reinforces this contrast. In Spain, percentage-based charges — including the Impuesto Especial sobre la Electricidad, VAT and, before its suspension during the energy crisis, the IVPEE levy on electricity generation — vary with the pre-tax bill and can therefore amplify wholesale-price movements. Portugal combines VAT with a very small flat excise duty per kilowatt-hour and the audiovisual contribution, a structure that mechanically transmits less wholesale price volatility to the final bill.

3.4.2. Retail price dynamics and the limits of consumer-level integration. The 2021–2023 energy shock provides a natural stress test of consumer-level integration within MIBEL. Figure 13 shows the evolution of retail electricity prices for household and non-household consumers in Spain, Portugal and the EU average since 2019. Before the energy crisis, Iberian retail prices were broadly aligned with EU average, and price levels in Spain and Portugal were similar despite differences in retail frameworks. The shock generated a sharp albeit temporary

9. Under its original design, the energy term was updated hourly and published daily by Red Eléctrica. Since January 2024, Royal Decree 446/2023 has partially smoothed this link by blending spot prices with forward-market references, with the forward component increasing from 25% in 2024 to 55% by 2026. This reform reduces bill volatility while preserving a significant connection with wholesale market conditions.

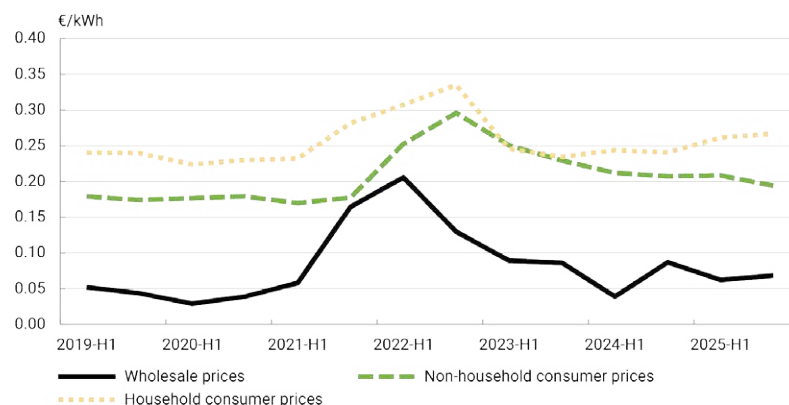
10. However, the extinction of transitional tariffs has been repeatedly postponed, most recently to end-2027 by Decree-Law 69/2025.

divergence between Spain and Portugal: relative to the second half of 2019, Spanish household prices rose by approximately 40%, reaching around €0.335/kWh in the second half of 2022, while Portuguese household prices increased by only 2%, to about €0.222/kWh. These figures refer to Eurostat household electricity consumption band DC and include all taxes and levies. Since 2023, retail prices in both countries have remained below the EU average for household and non-household consumers, reflecting lower MIBEL electricity prices supported by abundant renewable generation and lower gas prices.

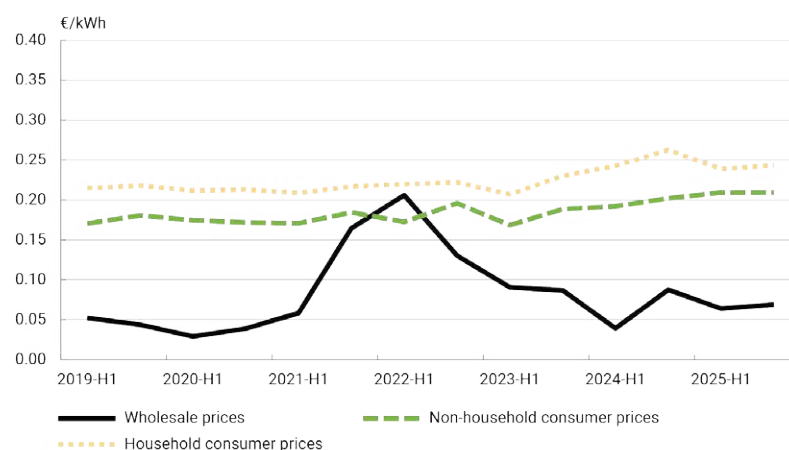
Figure 14 decomposes observed retail prices for household and non-household consumers in Spain and Portugal into the MIBEL energy cost, taxes and levies and a residual differential. This residual should not be interpreted as a pure supplier margin, as it also includes network tariffs and other regulated or contractual components that cannot be separately identified in Eurostat data. The larger increase in retail prices in Spain is mainly associated to the differential component. In Portugal, this component was negative in 2021 H2 and 2022 H1, likely reflecting rigidities in retail pricing — regulated tariffs, fixed contracts and hedging cycles — and policy constraints limiting immediate pass-through. Taxes and levies also contributed to the temporary divergence: their contribution declined in both countries from 2022 H1, but more markedly in Portugal, where it turned negative in 2023 H1, owing to the CIEG component.¹¹ The gap subsequently narrowed as wholesale prices declined and the temporary Portuguese tariff offsets diminished.

Overall, this episode illustrates that wholesale market integration does not mechanically translate into consumer-level price convergence. As discussed in Subsection 3.2.1, the institutional architecture of MIBEL was designed to deliver price convergence at the generation and trading level, while retail tariff methodologies, update frequencies, contract structures and taxation remained national. These institutional differences materially shaped the timing and magnitude of retail-price adjustment during the crisis. The gradual reform of Spain's PVPC towards greater reliance on forward-price references and the increasing availability and, at times, competitiveness of indexed offers in Portugal may narrow future differences in pass-through. Nonetheless, national regulation and contracting practices will continue to condition the degree of consumer-level integration.

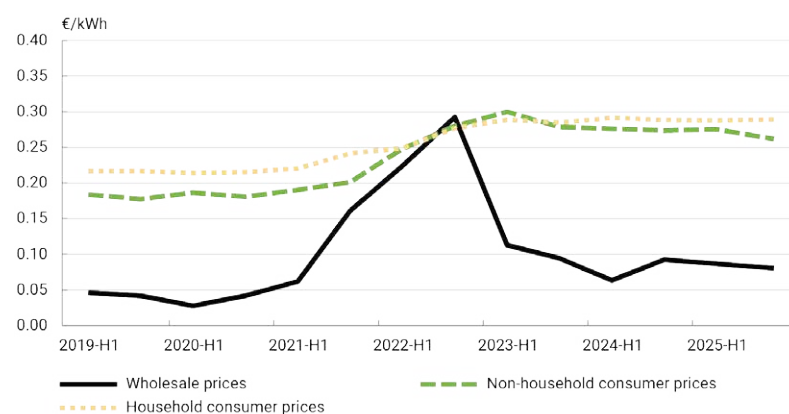
11. Costs of general economic interest (Custos de Interesse Económico Geral, CIEG) comprise a set of electricity-system costs arising mainly from energy-policy, environmental and public-interest measures established by legislation. These costs are mainly recovered through the Global System Use component of regulated network-access tariffs and borne by consumers in both the regulated and liberalised markets.



(a) Spain



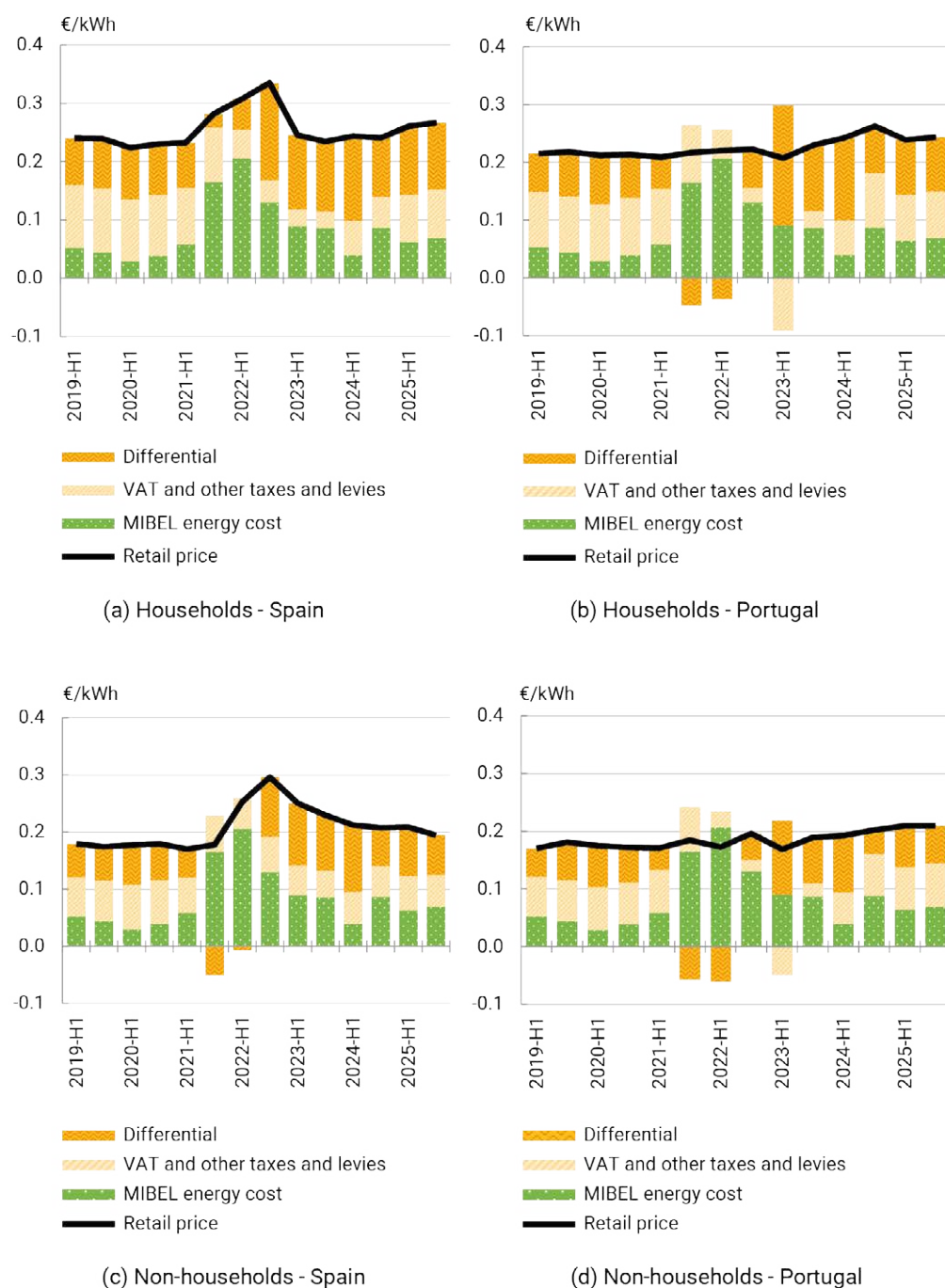
(b) Portugal



(c) EU-27

Notes: The figure reports half-yearly electricity prices for households (consumption band DC, annual consumption between 2,500 and 4,999 kWh) and non-households (consumption band IB, annual consumption between 20 and 499 MWh), together with the corresponding wholesale electricity price in each geographical area. Retail prices include all taxes and levies. Sources: Eurostat and ESIOS-REE.

Figure 13: Evolution of electricity prices for households and non-households in Spain, Portugal and the EU-27 (€/kWh)



Notes: The figure shows half-yearly electricity prices for households in consumption band DC corresponding to annual consumption between 2,500 and 4,999 kWh, and for non-households in consumption band IB corresponding to annual consumption between 20 and 499 MWh. Total electricity prices are decomposed into the MIBEL energy cost, VAT and other taxes and levies, and a residual component. The differential is calculated as the difference between the total electricity price and the sum of the first two components. Sources: Eurostat and ESIOS-REE.

Figure 14: Decomposition of electricity prices for households and non-households in Spain and Portugal (€/kWh)

4. Labour markets

4.1. Migration and student mobility

Migration and labour mobility constitute one of the most direct channels through which economic integration materialises. The movement of workers and students contributes to the allocation of human capital across countries, facilitates the diffusion of knowledge and skills, and helps labour markets adjust to asymmetric shocks. This subsection examines migration and mobility between Portugal and Spain, focusing on bilateral migration stocks, movers' demographic and educational characteristics, as well as their participation and unemployment rates, and university student mobility.

The bilateral Iberian corridor is also benchmarked against other European migration and mobility corridors to assess whether the observed patterns are distinctive or reflect broader European trends. This comparative perspective is particularly informative, as migration intensity can only be meaningfully interpreted relative to that observed between neighbouring countries with similarly strong economic and geographical ties. The analysis is primarily descriptive and draws on three rich data sources, which are presented in the next subsection.

4.1.1. Data sources and methodological considerations. Three main statistical sources underpin the analysis. First, Eurostat demographic statistics provide annual information on population stocks by citizenship and country of residence. Second, the OECD Database on Immigrants in OECD Countries (DIOC), together with national census sources, provides information on residents classified by country of birth, age, educational attainment and labour status. Third, Eurostat learning-mobility statistics provide information on the cross-border mobility of university students between Portugal and Spain. Taken together, these datasets allow migration and mobility to be examined from complementary perspectives: annual migration dynamics, the demographic and socio-economic characteristics of migrants, and educational mobility as a potential precursor of future labour mobility.

The annual migration analysis is based on Eurostat demographic statistics. Because annual information by country of birth is not available for Portugal, bilateral migration is measured using nationality-based statistics. These data allow the evolution of migration stocks to be followed continuously between 2002 and 2025.¹² Their main advantage is the ability to trace migration developments over time and to place recent migration trends within a longer-term perspective. However, the reliance on citizenship rather than country of birth implies that naturalisation and differences in nationality legislation may affect measured migrant stocks (Appendix B).

12. Information is available by sex and age.

To complement the annual evidence, the analysis uses census-based information mainly from the OECD DIOC database. These data cover residents aged 15 and above and include information on their demographic characteristics, such as age, gender, citizenship and country of birth, duration of stay and labour market status, occupations, sectors of activity, fields of study and educational attainment. As data are available for 2001, 2011 and 2021 it is possible to study the long-run evolution of migrant stocks and their demographic composition. The census data therefore provide a richer picture of the demographic and human-capital characteristics of migrants than annual statistics. They also allow labour market outcomes, such as participation and unemployment rates, to be compared across different groups of movers. In addition, for some of the destinations of Iberian emigration, whose data are not available or complete in DIOC, data from their national censuses are used directly.¹³

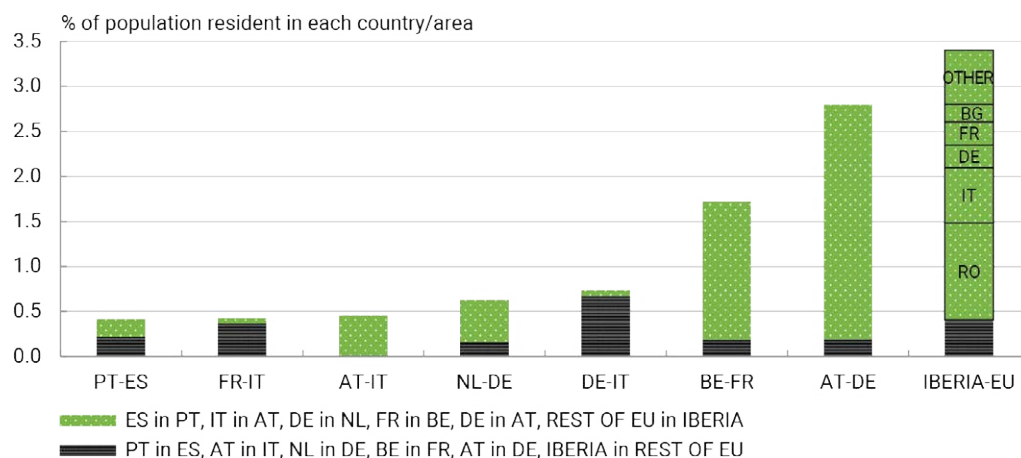
A third source is provided by Eurostat learning-mobility statistics, which facilitate the analysis of educational mobility between Portugal and Spain. The focus is on mobile students enrolled in tertiary degree programmes (ISCED levels 6 to 8), covering bachelor's, master's and doctoral studies. Data are available for 2024, with historical information beginning in 2013, and include a breakdown by sex.¹⁴ Unlike migration statistics, which capture realised residential mobility, these data provide information on cross-border movements associated with higher education and therefore offer insights into a potential channel through which future labour mobility may emerge.

4.1.2. Migration between Portugal and Spain in a European perspective. Despite geographical proximity, cultural affinities and increasing economic integration, labour mobility within the Iberian Peninsula remains modest by European standards (Figure 15). Although bilateral migrant stocks have increased in recent years, Portuguese nationals represent only around 0.22% of Spain's resident population, while Spanish nationals account for approximately 0.19% of Portugal's population. These shares are substantially below those observed in several neighbouring-country pairs, particularly Germany–Austria, France–Belgium and Germany–the Netherlands.

13. This is the case of the United States, the United Kingdom and Andorra.

14. The data used are those referred to degree mobile students. Degree mobility is defined as the physical crossing of a national border to enrol in a degree programme at tertiary-level in the country of destination. The degree programme would require the students' presence for the majority of courses taught. The country of origin is defined as the country of prior education i.e. country where upper secondary diploma was obtained.

A similar pattern is observed when the analysis is limited to the working-age population (Appendix C), regardless of differences in the number of cross-border employees across the pairs of countries analysed.¹⁵



Notes: The figure reports bilateral stocks of immigrants between pairs of EU countries (areas), expressed as a share of population resident in the destination country (area), for the year 2025 (2024 for residents in Portugal and Iberia, 2022 for residents in Denmark and Croatia and 2019 for residents in Poland). The country set comprises Spain (ES), Portugal (PT), France (FR), Italy (IT), Germany (DE), Austria (AT), Belgium (BE) and The Netherlands (NL). IBERIA denotes Spain and Portugal treated as a single economy; “IBERIA-EU” reports bilateral stocks between Iberia and the remaining EU countries. EU excludes Greece, Cyprus and Malta for Iberian residents there. Immigrants are defined by their citizenship. Source: Eurostat.

Figure 15: Bilateral immigrants across pairs of EU countries/areas in 2025 (percentage)

An additional perspective is obtained by comparing bilateral Iberian migration with the broader mobility of other EU citizens to and from the Peninsula. The stock of Portuguese and Spanish citizens residing elsewhere in the European Union is considerably larger than the stock residing in their neighbouring Iberian country. In relative terms, it amounts to around 0.4% of the non-Iberian EU countries. Conversely, citizens from the rest of the EU represent close to 3% of the population living in the Iberian Peninsula. The composition of this EU population is highly uneven. Romanian citizens constitute by far the largest EU migrant community resident in Iberia, representing more than 1% of the population of the destination countries. Their presence exceeds that of several major Western European nationalities combined, including Italians, Germans and French nationals. This pattern highlights the importance of Central and Eastern European migration in shaping intra-EU mobility towards the Peninsula since the enlargements of the

15. Harmonised EU-wide data on residents of each country working in specific foreign countries are not available. However, partial evidence from the European Commission suggests that cross-border employment does not materially alter the overall pattern observed among resident population. (European Commission 2024, 2026).

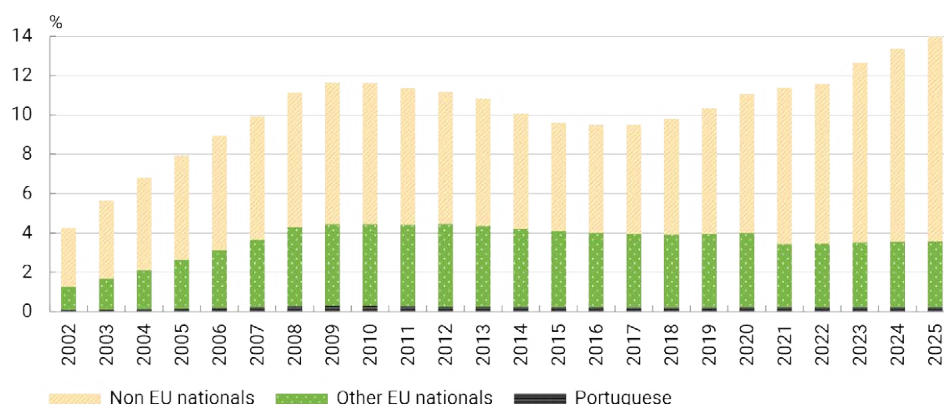
European Union. It also suggests that, for both Portuguese and Spanish citizens, mobility towards the wider European Union remains quantitatively more important than mobility within the Peninsula itself.

Looking at developments over time, annual demographic statistics indicate that bilateral Iberian migration and migration from other EU countries have largely stagnated as a share of the population since the aftermath of the global financial crisis (Figure 16). By contrast, the share of non-EU nationals has followed a more cyclical pattern. In both Spain and Portugal, non-EU immigration declined during the years that followed the sovereign debt crisis, reflecting weak labour-market conditions and subdued migration inflows, before resuming a strong upward trajectory from the late 2010s onwards. In Spain, non-EU nationals represented roughly 3% of the population in the early 2000s and exceeded 10% by 2025, while Portugal has also recorded a pronounced increase since the late 2010s. Consequently, recent immigration dynamics in both countries have been driven overwhelmingly by non-EU migration rather than by deeper labour mobility within the Peninsula or within the European Union. From this perspective, the Iberian migration corridor should be understood as one component of a much broader process of internationalisation of both labour markets, in which extra-EU migration has played the dominant role.

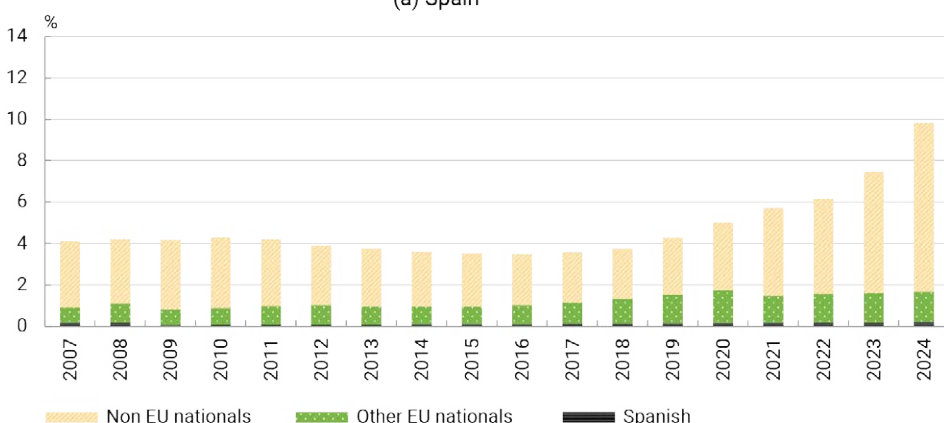
4.1.3. Destination choices and demographic characteristics of Iberian movers.

Traditionally, emigration rate is much higher in Portugal than in Spain. However, there are some similar patterns in the choices of emigrants of both countries. The bulk of migrants within the Iberian peninsula are in their working-age (75% in the case of Portuguese resident in Spain and 68% for Spanish living in Portugal, in 2021). European countries and the USA are among the preferred destinations of Iberian working-age migrants. France is their main destination for both countries. However, it is followed by different rankings of destination countries. In 2021, the top 5 stock of Spanish-born emigrants aged 25 to 64 was composed also by the United States, the United Kingdom, Germany and Switzerland. Portugal was the 11th preferred destination. For the Portuguese-born emigrants, the top 5, after France, includes Switzerland, the United Kingdom, the United States and Canada. Spain was the 6th chosen country (Figure 17). Regarding Iberian youth emigrants (aged 15 to 24) whose share is below 12% in both countries, they prefer the United Kingdom and EU destinations. The USA and Canada were important destinations for Portuguese emigrants in the past but are no longer in the top-5 of youth emigrants. Instead, Spain and Germany entered into this group. In the case of the Spanish youth emigrants, the USA are in the 4th place of their choices while the UK is the preferred destination. Note that this age bracket migration covers mainly students. In 2021, 76% of the young Spanish in Portugal were out of the labour market as inactive and in the case of the young Portuguese living in Spain this share was 70%.

4.1.4. Educational attainment and labour market outcomes. For Iberian movers aged above 24, educational attainment has increased significantly in the past two



(a) Spain



(b) Portugal

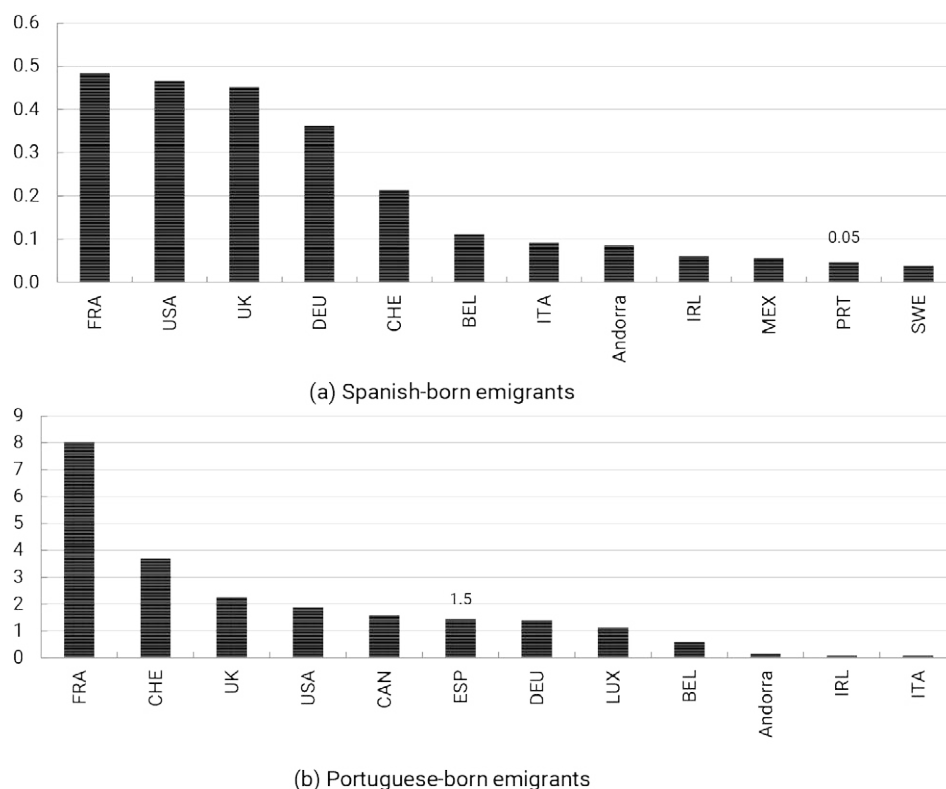
Note: The figure reports annual stocks of immigrants defined by their citizenship and expressed as a share of population resident in Spain (panel (a)) and in Portugal (panel (b)). Source: Eurostat.

Figure 16: Stocks of immigrants in Iberia

decades. The share of Portuguese-born residents in Spain with tertiary education increased from 8% in 2001 to 21% in 2021. In the case of the Spanish movers to Portugal, this share grew from 26% to 43% in the same period (Figure 18). Such evolution translates also on the role of migrants in the labour market. For example, unemployment-rate gaps between immigrants and natives have narrowed, while immigrants' occupational profiles have shifted towards services in both countries.

In fact, labour market outcomes provide additional insight into the integration of movers.¹⁶ As it is shown in Table 2, unemployment differentials between natives and immigrants narrowed considerably between 2011 and 2021 in both countries.

16. This analysis is referred to people aged 25-64. The additional evidence for younger cohorts shows that unemployment differential of young Spanish-born residents in Portugal remained relatively large compared with that observed for other groups, while participation rates among young Spaniards were comparatively low on both sides of the border.



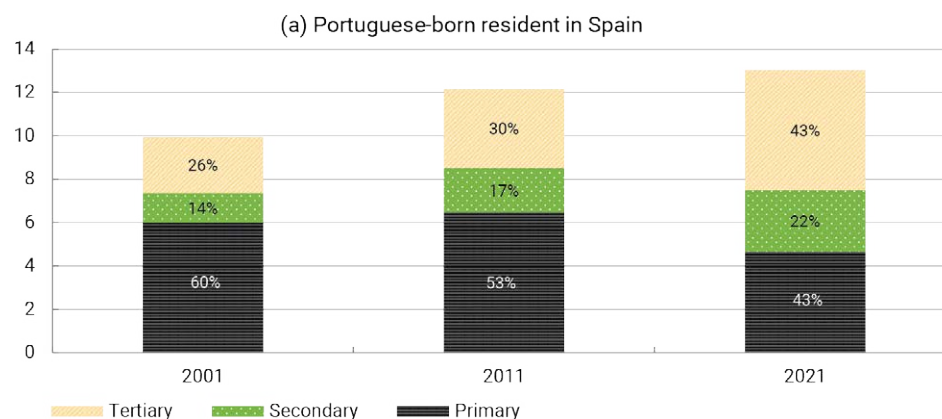
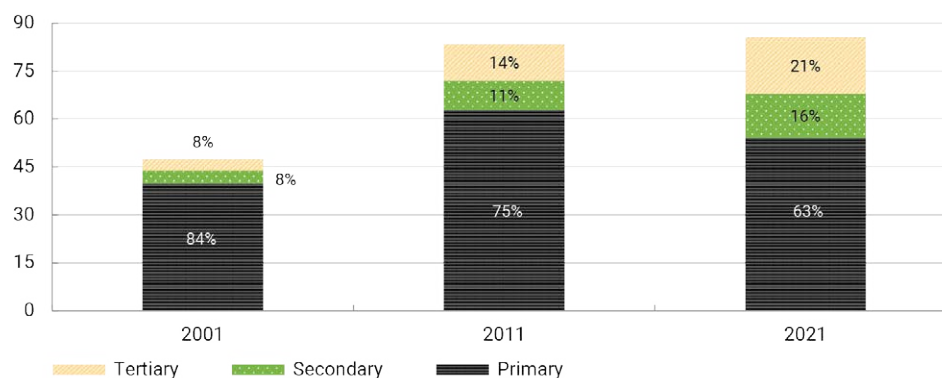
Note: The figure reports the stocks of Iberian emigrants from each country as a percentage of the same country-born residents in the native country: Spain (panel (a)) and Portugal (panel (b)). Sources: Eurostat (Census Hub), Government of Andorra, OECD (DIOC), ONS (GB) and U.S. Census Bureau (authors' calculations).

Figure 17: Main destinations of Iberian emigrants (aged 25-64,%), 2021

Nevertheless, meaningful differences remained in Spain, where unemployment rates for Portuguese-born residents, other EU migrants and especially non-EU immigrants continued to exceed those of natives. By contrast, unemployment differentials in Portugal became much smaller and largely disappeared among European-born migrants.

Participation rates reveal another important contrast (Figure 19). In Spain, labour force participation among Portuguese-born residents and other European migrants was substantially lower than among natives in 2021. In Portugal, differences between natives and immigrants were much less pronounced.

4.1.5. Student mobility. Labour mobility is often preceded by educational mobility. Eurostat's stock data on tertiary students indicate that cross-border university mobility between Portugal and Spain remains limited relative to several other European corridors (Figure 20). In 2024, the proportion of Portuguese students studying in Spain and Spanish students studying in Portugal was considerably lower than analogous shares observed between Germany and Austria, Belgium and France, or Germany and the Netherlands. Moreover, as in the case



Note: The figures show the stock of Iberian immigrants broken down by maximum educational attainment in each year and country: Spain (panel (a)) and Portugal (panel (b)). Source: OECD (DIOC database).

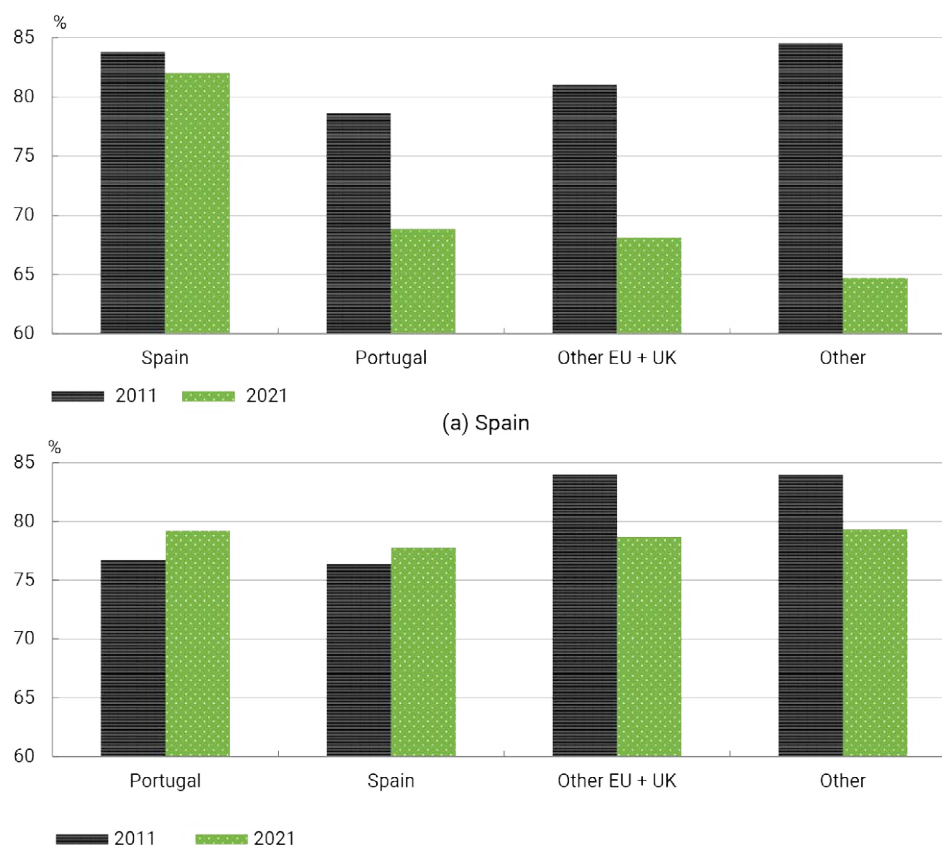
Figure 18: Educational attainment of Iberian movers (aged over 24, thousand of individuals and %)

	Spain				Portugal			
	Unemployment rate		Differential immigrants-natives		Unemployment rate		Differential immigrants-natives	
	2011	2021	2011	2021	2011	2021	2011	2021
Spain	25.2	15.5	—	—	12.3	7.1	0.6	0.0
Portugal	31.4	20.7	6.2	5.3	11.7	7.1	—	—
Other EU + UK	33.9	19.9	8.7	4.4	10.8	6.0	-0.9	-1.1
Other	39.3	22.9	14.1	7.4	14.9	10.8	3.2	3.6

Notes: The table reports unemployment rates of natives and immigrants defined by their country of birth in Spain and Portugal. Share of labour force aged 25-64 in 2011 and 2021. Source: OECD (DIOC, from Census data).

Table 2. Unemployment rate by country of birth and differentials between natives and immigrants (aged 25-64, % and pp)

of labour migration, student mobility between the two Iberian countries is also modest when compared with the broader educational integration of both countries



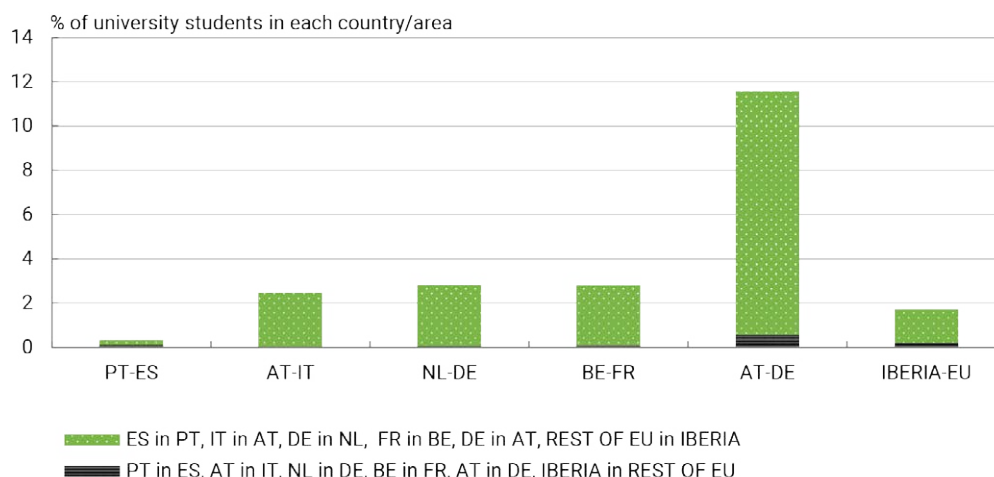
Notes: The figure reports participation rates of natives and immigrants defined by their country of birth in Spain (panel (a)) and Portugal (panel (b)). Share of population aged 25-64 in 2011 and 2021. Source: OECD (DIOC, from Census data).

Figure 19: Participation rates by country of birth

within the European Union. The share of Portuguese and Spanish students enrolled in degree programmes elsewhere in the EU exceeds the corresponding bilateral stocks, while students from the rest of the EU account for a much larger presence in Iberian higher-education institutions than students moving between Portugal and Spain. This suggests that educational mobility within the Peninsula remains only one component of a much broader European mobility network.

4.2. Labour mobility and wage differentials between Portugal and Spain

Labour mobility is an important margin of adjustment in the labour market. Transitions across jobs, sectors and geographical areas contribute to the reallocation of workers and may improve the quality of worker-firm matches. In practice, however, labour mobility between Portugal and Spain remains limited, despite geographical proximity and the absence of major formal barriers to movement. Portugal and Spain nevertheless provide an informative setting in which to study these mechanisms. Bilateral worker flows are markedly asymmetric and display distinctive sectoral, geographical and permanence patterns. At the same



Notes: The figure reports bilateral stocks of mobile university students between pairs of EU countries (areas), expressed as a share of total university students enrolled in the destination country (area), for the year 2024. The data used are those referred to degree mobile students enrolled in tertiary degree programmes (ISCED levels 6 to 8), covering bachelor's, master's and doctoral studies. Degree mobility is defined as the physical crossing of a national border to enroll in a degree programme at tertiary-level in the country of destination. The degree programme would require the students' presence for the majority of courses taught. The country of origin is defined as the country of prior education i.e. country where upper secondary diploma was obtained. The country set comprises Spain (ES), Portugal (PT), France (FR), Italy (IT), Germany (DE), Austria (AT), Belgium (BE) and The Netherlands (NL). IBERIA denotes Spain and Portugal treated as a single economy; "IBERIA-EU" reports bilateral stocks between Iberia and the remaining EU countries. EU excludes The Netherlands and Slovenia for Iberian residents there. Source: Eurostat.

Figure 20: Bilateral university students across pairs of EU countries/areas in 2024 (percentage)

time, wage levels differ substantially between the two countries, potentially affecting the incentives associated with cross-border employment.

4.2.1. Data and methodology. The analysis of bilateral labour mobility relies on Social Security administrative records. For Portugal, these records provide monthly information on individual workers, their employers and employment relationships. For Spain, the analysis uses the *Muestra Continua de Vidas Laborales* (MCVL), a 4% random sample of individuals affiliated with, or receiving benefits from, the Spanish Social Security system. Their longitudinal structure makes these datasets particularly well suited to identifying entries into the destination labour market and to following workers over time after entry.

The wage analysis relies on a combination of administrative sources that allow for a broadly harmonised comparison of workers and jobs across the two countries. For Portugal, the source is *Quadros de Pessoal*, a matched employer – employee dataset containing detailed information on workers, firms and remuneration. For Spain, the analysis continues to rely on the MCVL, which also provides information

on workers' employment histories and earnings. Although the two sources differ in coverage and structure, the analysis is restricted to a common set of worker and job characteristics that can be defined consistently across countries, allowing the wage differential between Portugal and Spain to be assessed within a comparable framework.

For the mobility analysis, the sample comprises all employees observed in the respective Social Security administrative records. For the wage analysis, the common sample is restricted to full-time employees. Wages are measured as workers' monthly total wage in nominal terms, and the analysis is conducted separately for 2019 and 2024.¹⁷

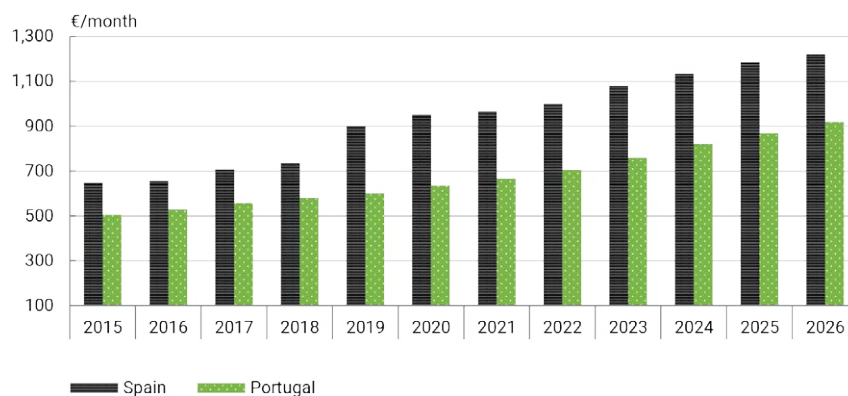
Although the datasets provide detailed administrative information, some differences in coverage and recording remain. The empirical analysis therefore prioritises measures and covariates that can be defined consistently across countries. This is particularly relevant for the Oaxaca–Blinder decomposition estimated below, where differences in variable definitions could otherwise be mechanically reflected in the estimated composition effect.

4.2.2. Institutional setting. Two institutional features are especially relevant for interpreting the results: statutory minimum wages and unemployment insurance. Other institutional features are also likely to shape mobility, particularly those affecting its costs, such as the recognition of qualifications, the portability of social rights, the taxation of cross-border workers, administrative interoperability, housing and commuting costs, and family-related constraints. As these are difficult to measure consistently across countries and over time, our results should be interpreted as capturing the role of institutions operating through returns to employment, rather than the full range of institutional determinants of mobility.

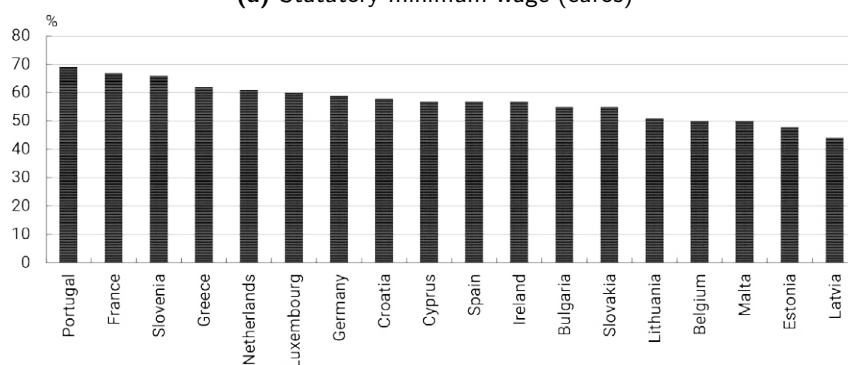
Statutory minimum wages have increased substantially in both Portugal and Spain over the period considered (Figure 21). As shown in panel (a), the minimum wage rose from 505 euros in Portugal and 649 euros in Spain in 2015 to 920 euros and 1,184 euros, respectively, in 2024, with further increases thereafter. Although the statutory minimum wage remains higher in Spain in absolute terms, its cumulative increase over the period was stronger in Portugal. These developments are relevant for cross-country wage comparisons, particularly towards the lower end of the wage distribution, and may also affect the relative attractiveness of employment opportunities across the border.

The position of the minimum wage within the wage distribution, however, differs markedly between the two countries. In 2024, the Kaitz index — measured as the statutory minimum wage relative to the median wage — stood at around 69% in Portugal and 57% in Spain. Portugal recorded the highest value among the euro area countries shown in panel (b), whereas Spain was closer to the middle

17. Wages in the Spanish personnel records are top-coded. To ensure comparability across countries, wages in the Portuguese data are capped at the corresponding Spanish upper limits: 4,070.1 euros per month in 2019 and 4,720.5 euros in 2024.



(a) Statutory minimum wage (euros)



(b) Kaitz index in euro area countries in 2024 (percentage)

Notes: The Kaitz index is defined as the ratio between the national minimum wage and the median wage. The calculations are based on the Structure of Earnings Survey sample, which covers employees in enterprises with 10 or more employees, in sections B to S of NACE Rev. 2, excluding section O (public administration and defence; compulsory social security). Earnings are gross, i.e. before deduction of taxes and social security contributions payable by the employee. Source: Eurostat.

Figure 21: Statutory minimum wages in Portugal and Spain

of the distribution. Thus, despite the higher nominal minimum wage in Spain, the wage floor is relatively more prominent in the Portuguese wage distribution. This is an important consideration when interpreting cross-country wage differences, particularly at the lower end of the distribution.

Unemployment insurance may influence labour market adjustment by shaping workers' income during periods of joblessness and the incentives associated with job search. Differences in benefit duration and replacement rates may affect the timing of re-employment and the range of employment opportunities considered by unemployed workers, and therefore provide useful institutional context for interpreting labour mobility patterns in Portugal and Spain.

Under the standard contributory schemes, unemployment protection is broadly similar in the two countries, although its design differs.¹⁸ In Portugal, the benefit generally replaces 65% of reference earnings and its duration depends on both age and contribution history, reaching a maximum of 780 days. In Spain, the replacement rate is higher during the first six months (70%) and falls to 60% thereafter, while duration depends on contributions accumulated over the previous six years and is capped at 24 months. Neither system is therefore unambiguously more generous: Portugal provides longer potential contributory support for some workers, whereas Spain offers a higher replacement rate at the beginning of the unemployment spell.

The main difference emerges after exhaustion of the contributory benefit, particularly for older unemployed workers. Both countries provide additional means-tested support, but Spain has a specific subsidy for unemployed workers aged 52 or over that can continue until retirement. In Portugal, protection instead combines the time-limited *Subsídio Social de Desemprego Subsequente* with the possibility of early retirement under specific age and contribution-history conditions.

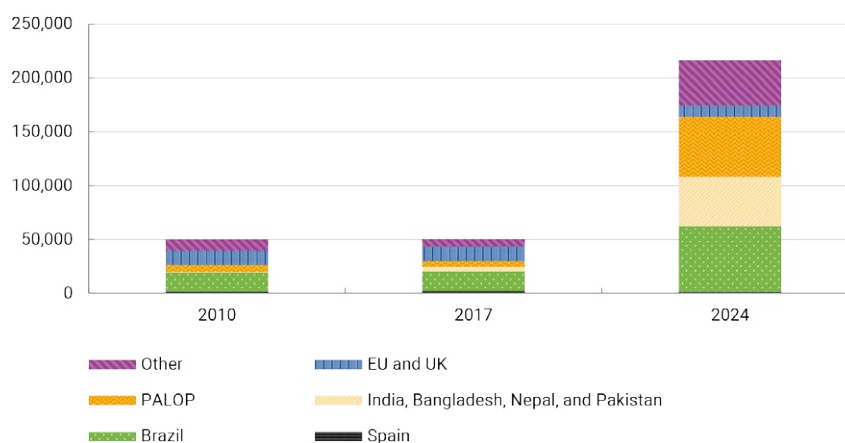
Pension protection during unemployment also differs across the two countries. In Portugal, periods receiving both the contributory unemployment benefit and the means-tested social unemployment benefit are credited to the Social Security contribution record, and therefore count towards the contributory career for pension purposes. In Spain, the contributory unemployment benefit also includes pension contributions, whereas ordinary unemployment subsidies generally do not. A key exception is the subsidy for workers aged 52 or over, which includes pension contributions based on 125% of the minimum contribution base and can continue until the ordinary retirement age.

4.2.3. Patterns of bilateral labour mobility. Bilateral labour mobility is examined through entry patterns into the neighbouring labour market, the characteristics of entrants, their sectoral and geographical distribution, and their permanence after entry.

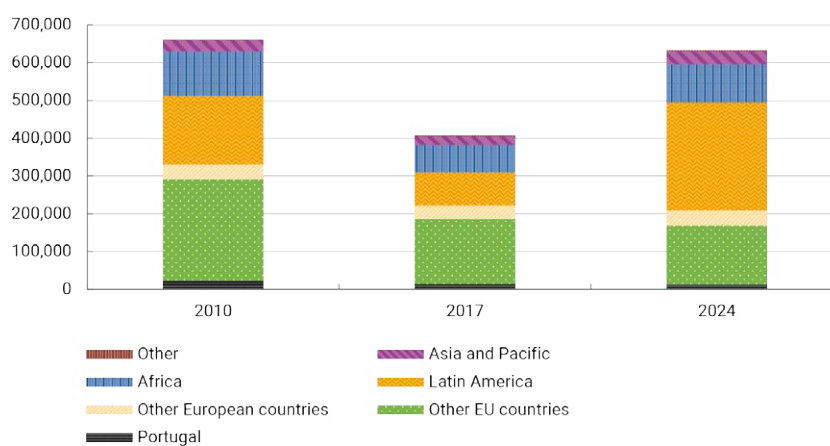
Bilateral worker movements account for only a small fraction of overall foreign inflows in both countries. In Portugal, foreign inflows have become increasingly dominated by workers from Brazil, South Asia and the Portuguese-speaking African countries. At the beginning of the period, Spanish entrants represented a more visible component of foreign inflows: their share was around 8% in 2013, but declined to below 1% in recent years (Figure 22). In Spain, overall foreign inflows are substantially larger and dominated by workers from Latin America, while Portuguese entrants have consistently represented only around 2–3% of total foreign inflows.

These patterns provide a useful benchmark for interpreting bilateral labour mobility. Although Portugal and Spain are geographically close and workers face

18. Appendix Table D.1 summarizes the main features of unemployment protection in Portugal and Spain.



(a) Foreign workers entering Portugal



(b) Foreign workers entering Spain

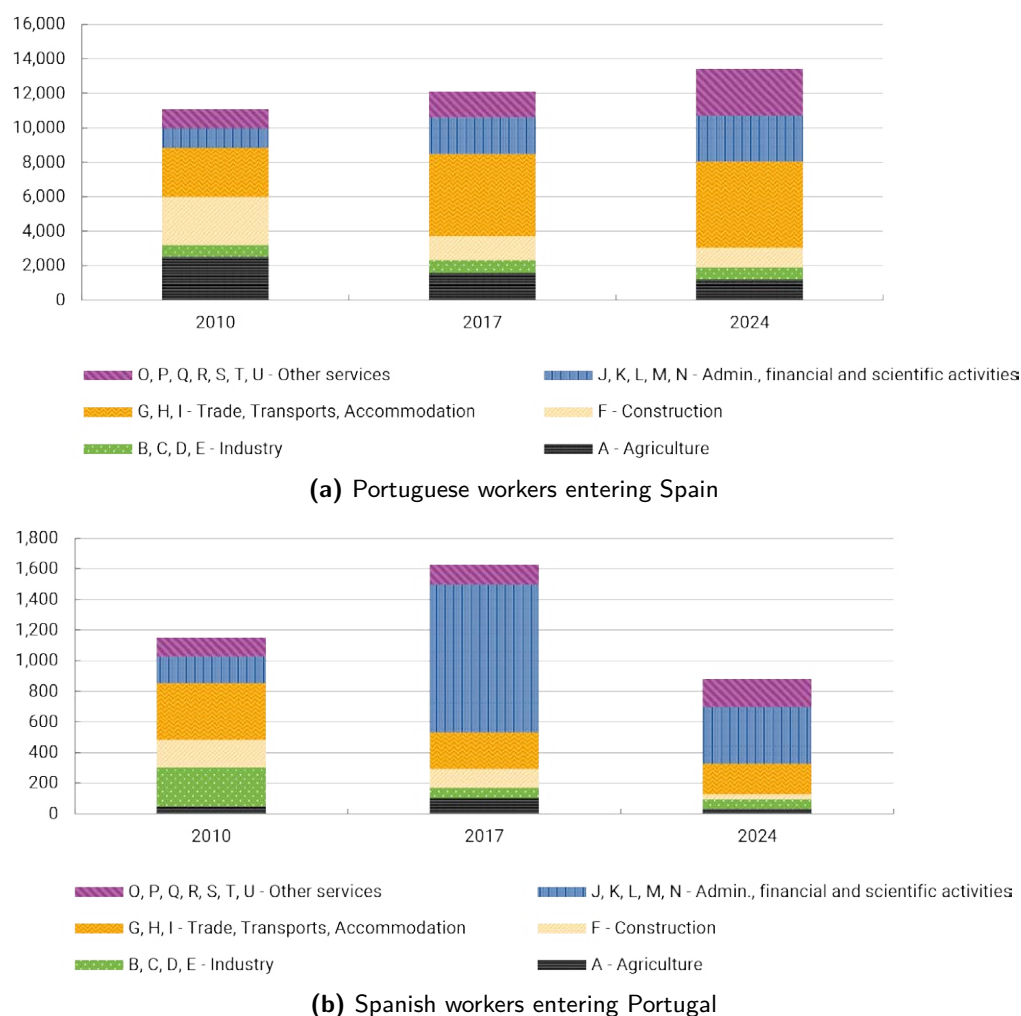
Notes: Inflows refer to workers entering the Social Security records of the destination country. The vertical scales differ across panels. PALOP refers to the Portuguese-speaking African countries. Sources: Portuguese Social Security and *Muestra Continua de Vidas Laborales*.

Figure 22: Foreign worker inflows by origin (number of workers)

few formal restrictions on movement, bilateral flows remain modest relative to migration from other origins. The Iberian labour corridor therefore represents only one component of the broader internationalisation of the two labour markets.

The sectoral composition of bilateral entries has also changed over time. Among Portuguese workers entering Spain, agriculture and construction accounted for a larger share of entries at the beginning of the period, while more recent entries are increasingly concentrated in service activities. A similar pattern is observed among Spanish workers entering Portugal, alongside a declining role for industry and construction (Figure 23).

The demographic profile of bilateral entrants has also evolved. Iberian movers tend to be somewhat older and more frequently male than other European entrants into the respective destination countries, although gender differences have narrowed



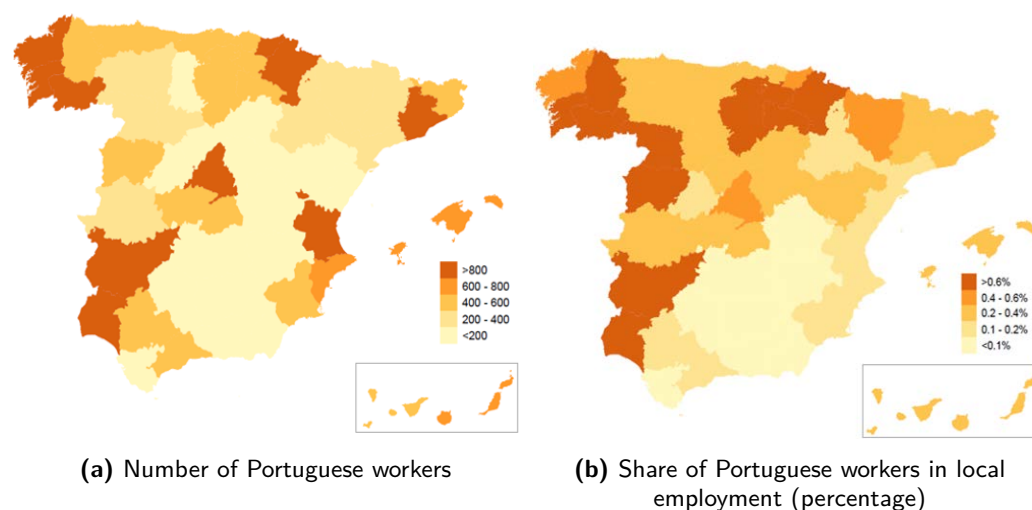
Notes: An entry is defined as a worker's first appearance in the Social Security records of the destination country. The sector of activity refers to the sector at entry. The vertical scales differ across panels. Sources: Portuguese Social Security and *Muestra Continua de Vidas Laborales*.

Figure 23: Sectoral composition of bilateral worker entries (number of workers)

over time. The female share increased from around 30% in 2010–2014 to about 40% in 2020–2024 in both directions, while their average age in the most recent period was around 36 years, slightly above that of other EU and UK entrants.

Figures 24 and 25 reveal a clear distinction between the geographical concentration of Iberian workers in absolute terms and their relative importance in local employment. In absolute numbers, Spanish workers in Portugal and Portuguese workers in Spain are predominantly concentrated in larger urban and economically dense areas. In Portugal, Spanish workers are concentrated mainly around Lisbon and Porto, while Portuguese workers in Spain are similarly concentrated in major urban areas, particularly Madrid and Barcelona. By contrast, their share in local employment tends to be higher in areas close to the Portuguese–Spanish border. This pattern suggests that geographical proximity

plays a particularly important role in bilateral labour mobility: although cross-border employment remains quantitatively small at the national level, it can be considerably more relevant to local labour markets in border areas. This local dimension is also reflected in commuting patterns: around 30% of Spanish workers employed in Portugal reside in Spain, compared with less than 3% of Portuguese workers employed in Spain who reside abroad.



Note: Location refers to the registered location of the employing firm. Source: *Muestra Continua de Vidas Laborales*.

Figure 24: Geographical distribution of Portuguese workers in Spain, 2024



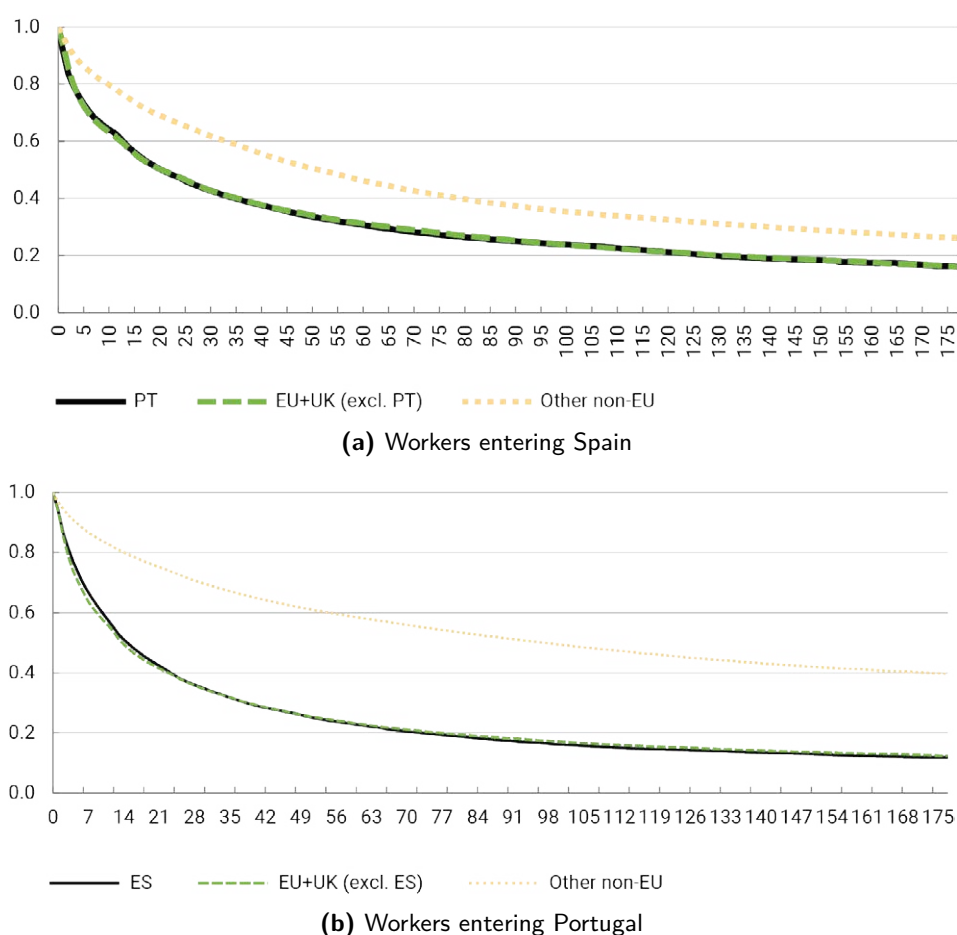
Note: Location refers to the registered location of the employing firm. Source: Portuguese Social Security.

Figure 25: Geographical distribution of Spanish workers in Portugal, 2024

A further dimension of bilateral mobility concerns workers' attachment to the destination labour market. Kaplan–Meier estimates show that Portuguese workers entering Spain tend to remain in the destination labour market somewhat longer

than Spanish workers entering Portugal (Figure 26). Nevertheless, the permanence profiles of both bilateral groups are broadly comparable with those of other European workers and markedly shorter than those observed for non-EU entrants.

Survival probabilities decline relatively rapidly during the first years following entry, indicating substantial turnover among cross-border workers. This pattern is consistent with bilateral mobility often involving temporary or medium-term labour-market experiences rather than permanent attachment to the destination labour market. Taken together with the relatively small scale of bilateral inflows, these results point to a modest but heterogeneous degree of labour-market integration across the Iberian border.



Notes: Data cover entries from 2010 onwards and workers are followed until the end of the available observation period. The figure reports Kaplan–Meier survival probabilities by workers' origin. An exit is identified after more than 12 consecutive months without a record in the Social Security data of the destination country. Sources: Portuguese Social Security and *Muestra Continua de Vidas Laborales*.

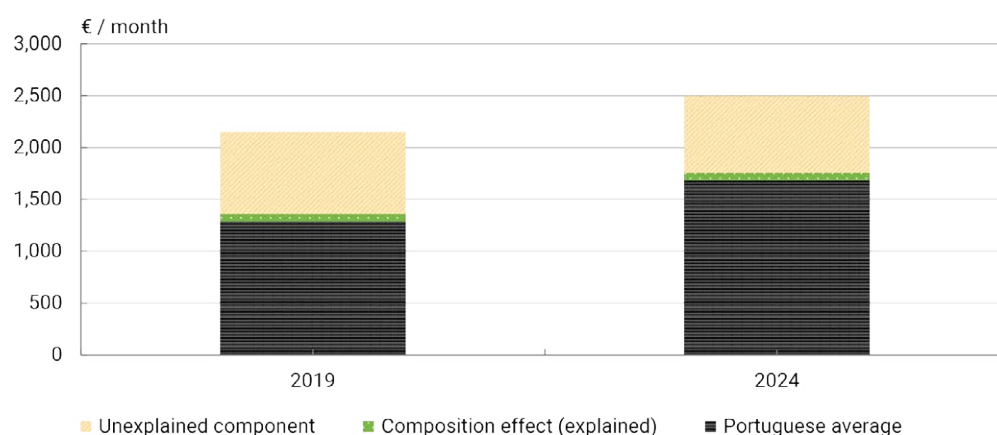
Figure 26: Permanence in the destination labour market (percentage)

4.2.4. Wage differentials between Portugal and Spain. The evidence presented above points to relatively limited bilateral labour mobility, despite the absence of major formal restrictions on movement. This raises the question of whether differences in labour-market returns create sufficiently strong incentives for cross-border mobility. We therefore turn to wage differentials between the two countries.

Average wages are systematically higher in Spain than in Portugal, although the gap narrowed somewhat between 2019 and 2024. The difference is significant and is observed between worker groups and sectors of activity. Assessing how much of this gap reflects differences in the composition of employment is important for interpreting the potential economic incentives associated with cross-border mobility.

To assess the extent to which the wage gap reflects differences in employment composition, we apply an Oaxaca–Blinder decomposition separately for 2019 and 2024. The analysis is based on harmonised personnel records for the two countries and considers all combinations of gender, age group, and sector of economic activity as observable characteristics, resulting in 80 different cells each year. The decomposition separates the overall wage differential into a composition effect, associated with differences in the characteristics of workers employed in the two countries, and a remaining wage-structure component.

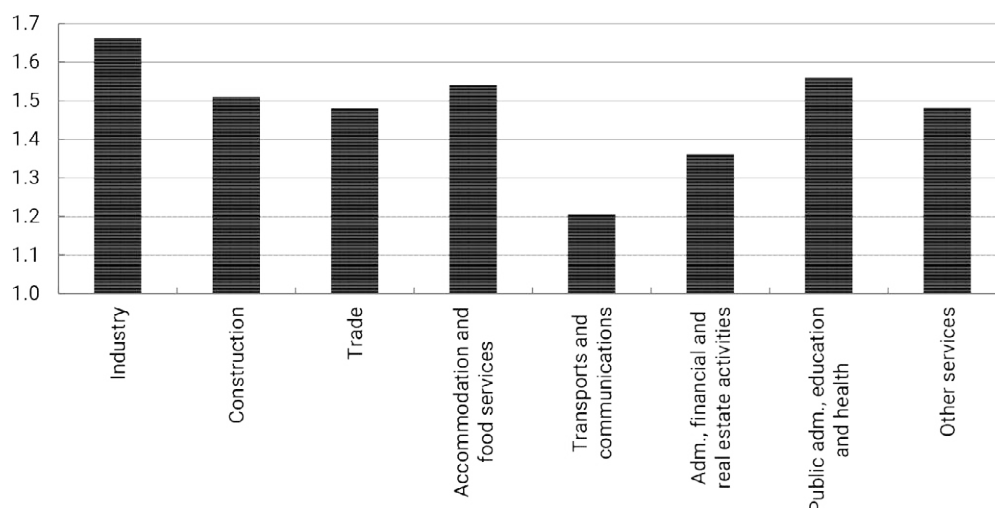
The results show that differences in the observable composition of employment account for only a relatively small part of the wage gap (Figure 27). Most of the difference between average wages in Spain and Portugal remains after accounting for differences in gender, age, and sectoral composition. This pattern is observed in both 2019 and 2024, indicating that the higher average wage level in Spain cannot be attributed primarily to differences in these observable characteristics, but rather to wage differences in each of the cells considered.



Notes: The figure reports an Oaxaca–Blinder decomposition of the average monthly total wage gap between Spain and Portugal. The decomposition is performed separately for 2019 and 2024 and controls for gender, age group and sector of economic activity. The composition effect captures the part of the wage differential associated with differences in these observable characteristics. Sources: *Quadros de Pessoal* and *Muestra Continua de Vidas Laborales*.

Figure 27: Contribution of employment composition to the Spain–Portugal wage gap (euros)

Wage differentials also vary substantially by sector of economic activity. In 2024, average wages in Spain are higher than in Portugal in all sectors considered, although the size of the gap varies markedly (Figure 28). The smallest differential is observed in transport and communication, where wages in Spain are around 21% higher than in Portugal. At the other end of the distribution, the largest differential is recorded in industry, where Spanish wages are approximately 66% higher. The remaining sectors lie between these two extremes, pointing to substantial heterogeneity in relative wage levels by sector.



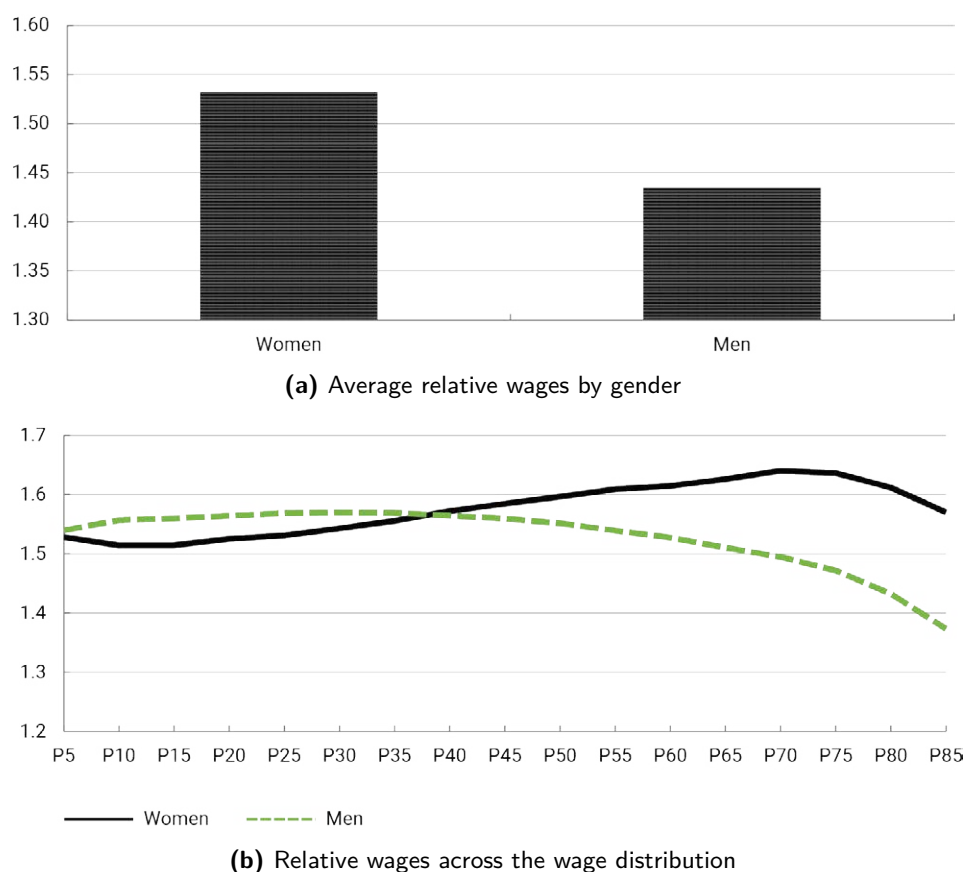
Notes: Relative wages are defined as the ratio between average wages in Spain and Portugal within each sector. A value of one indicates equal average wages in the two countries. Sources: *Quadros de Pessoal* and *Muestra Continua de Vidas Laborales*.

Figure 28: Relative wages by sector of economic activity, 2024

The wage differential also differs by gender. In 2024, the average Spain–Portugal wage gap is larger for women than for men: average wages of women in Spain are around 53% higher than those of women in Portugal, compared with approximately 43% for men. This difference is not uniform across the wage distribution (Panel a of Figure 29).

This difference is not uniform across the wage distribution (Panel b of Figure 29). At the lower end of the distribution, the Spain–Portugal wage differential is slightly smaller for women than for men. For men, relative wages remain broadly stable up to around the median and then decline progressively towards the upper tail. For women, however, the wage gap increases across much of the distribution, reaching its highest levels around the upper-middle percentiles before declining at the very top. As a result, the gender ranking reverses in the upper half of the distribution, where the Spain–Portugal wage gap is larger for women than for men.

Differences in national gender wage gaps provide additional context. In Portugal, the gender wage gap increases markedly along the wage distribution, with the difference between men’s and women’s wages becoming progressively larger at



Note: Relative wages are defined as the ratio of wages in Spain to wages in Portugal for the corresponding gender and percentile of the wage distribution. Sources: *Quadros de Pessoal* and *Muestra Continua de Vidas Laborales*.

Figure 29: Spain–Portugal wage differential by gender and percentile, 2024

higher wage levels. In Spain, the gender wage gap displays a more moderate increase towards the upper part of the distribution. These different profiles help explain why the bilateral wage advantage of Spain is particularly large for women in the upper half of the wage distribution.

Taken together, the evidence points to a contrast between sizeable differences in remuneration and relatively limited bilateral labour mobility. This suggests that pecuniary incentives alone are insufficient to account for cross-border worker movements. Other mobility costs and frictions — including geographical, family, linguistic and institutional factors — may therefore remain relevant, although their individual contributions cannot be identified from the descriptive evidence presented here. From a policy perspective, bilateral labour-market integration thus appears to be considerably stronger in some border areas and sectors than suggested by aggregate flows, while remaining limited at the level of the two national labour markets.

5. Cross-border investment and financial linkages

Formal restrictions on capital movements within the European Union were removed before the completion of the Single Market. The degree of financial integration between two member states is therefore an empirical question about realised cross-border positions rather than about legal barriers (Head and Mayer 2021). This section addresses that question for Spain and Portugal using five complementary approaches. Subsection 5.1 benchmarks bilateral direct investment, portfolio holdings and banking claims against those of comparable EU country pairs and adds a price-based indicator of equity-market co-movement. Subsection 5.2 measures the scale, persistence and composition of the bilateral position from the international investment position and financial accounts of both economies. Subsection 5.3 represents the full set of cross-border positions as a weighted bipartite sector-counterparty network and recovers its community structure. Subsection 5.4 uses supervisory data to measure the banking channel, where the relationship is largest and most asymmetric, and Subsection 5.5 uses firm-level data to characterise direct investment. Throughout, positions are read from both sides of the border, because the same bilateral stock represents a different degree of exposure for each economy.

To carry this out, the ECB's monitoring framework (European Central Bank 2026b) distinguishes price-based indicators, which measure the dispersion of yields and returns across markets, from quantity-based indicators, which measure cross-border holdings and exposures. When analysing a single country pair, the quantity-based class carries most of the information, and the analysis of bilateral financial integration can be structured along three dimensions: its scale relative to the size of each economy, the sectors and instruments through which it is intermediated, and its symmetry.

The analysis is conducted against a euro-area background in which financial integration has strengthened since the deterioration observed in 2021–22, although the recovery has been uneven across market segments and does not represent a return to uniformly high integration. Between end-2022 and 2025, composite price- and quantity-based indicators rose above their post-EMU averages, driven mainly by greater integration in debt securities markets and cross-border interbank lending (European Central Bank 2026b,a). By contrast, equity-market integration weakened over the same period, while intra-euro-area foreign direct investment remained at historically low levels. Gravity estimates point to a similar asymmetry, as frictions in bilateral equity holdings declined more rapidly between the euro area and the United States than among euro-area countries themselves (Anaya Longaric et al. 2026). Frictions in bilateral bank positions remain large and, once positions are scaled relative to domestic credit, are comparable in magnitude to those observed in goods trade, reflecting primarily information rather than transport costs (Yotov 2012; Okawa and van Wincoop 2012; Brei and von Peter 2018; Portes and Rey 2005). In the Spain–Portugal bilateral relationship, these patterns suggest that bank-intermediated financial linkages should be relatively stronger than equity-based linkages.

5.1. Bilateral financial linkages in a European perspective

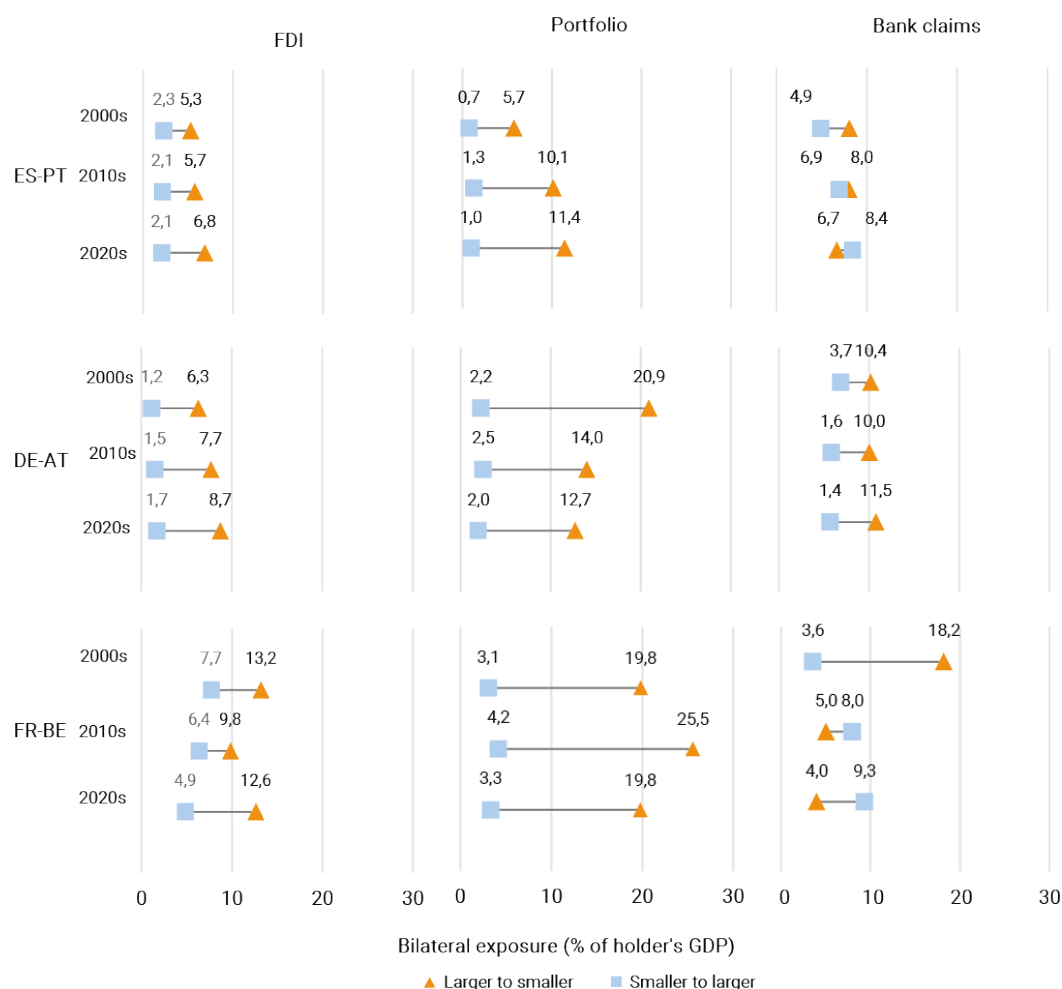
To put Iberian financial integration into perspective, we compare bilateral financial linkages between Spain and Portugal with those observed for two other pairs of neighbouring euro-area economies: Germany–Austria and France–Belgium. Figure 30 reports bilateral foreign direct investment (FDI), portfolio investment, and consolidated banking claims for each decade since the 2000s, scaling each bilateral position by the GDP of the country holding the assets. This normalization allows us to assess the macroeconomic importance of bilateral positions for each economy while preserving their direction. As a complementary measure, Figure E.1 in the Appendix reports total bilateral positions, summing both directions and normalizing by the combined GDP of each country pair.

Two main patterns emerge. First, the magnitude and direction of bilateral financial linkages vary across instruments and country pairs. In FDI, the Spain–Portugal relationship is relatively balanced, although bilateral positions remain modest in aggregate, broadly comparable to Germany–Austria and substantially smaller than France–Belgium. Portfolio investment exhibits greater directional asymmetry, with Portuguese positions in Spain representing a larger share of Portugal's GDP than Spanish positions in Portugal represent of Spain's GDP. In aggregate, portfolio linkages between Spain and Portugal remain smaller than those observed for the other two country pairs.

Second, banking stands out as a particularly important dimension of Iberian financial integration. Bilateral banking positions are relatively large in both directions when measured against the GDP of the country holding the assets, suggesting a more balanced relationship in terms of their macroeconomic importance. This is also reflected in Figure E.1, where aggregate banking positions between Spain and Portugal are comparable to those between France and Belgium and substantially larger than those between Germany and Austria in the most recent decade.

Importantly, the macroeconomic importance of bilateral positions does not necessarily imply that each country accounts for a similarly large share of its partner's total external financial positions. As discussed in the next subsection, the relative importance of each country within its partner's total external financial positions remains highly asymmetric, with Spain accounting for a substantially larger share of Portugal's external positions than vice versa.

A complementary picture emerges from price-based measures of financial integration. Figure 31 compares the co-movement of daily equity-market returns for the same three country pairs. Equity returns in Spain and Portugal are strongly correlated, but less so than in the two benchmark pairs. By the end of the sample, the correlation between Spanish and Portuguese equity returns stands at around 0.68, compared with around 0.78 for Germany–Austria and 0.77 for France–Belgium. Thus, the particularly strong Iberian linkages observed in banking claims do not extend uniformly to market-based measures of financial integration.

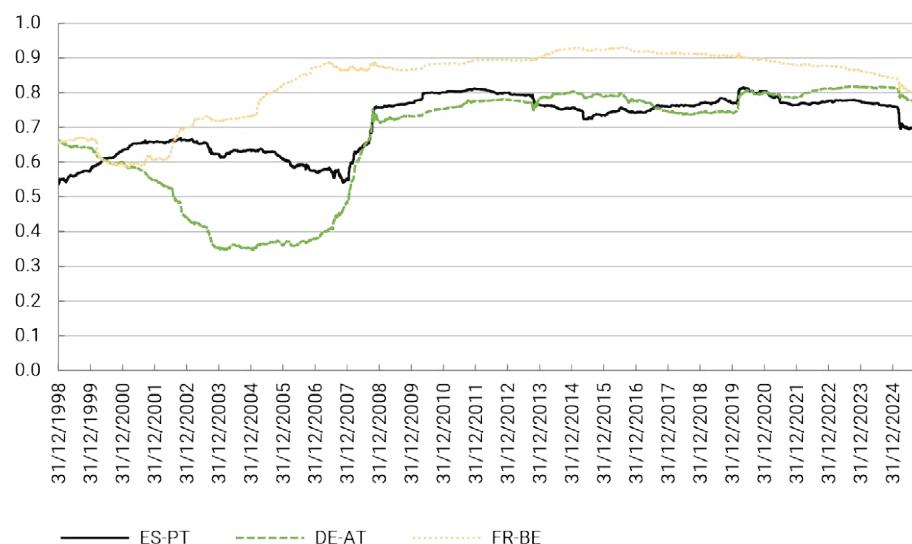


Notes: The figure compares bilateral financial linkages between Spain–Portugal, Germany–Austria, and France–Belgium across foreign direct investment (FDI), portfolio investment, and consolidated bank claims. For each country pair and decade, the triangle marker reports the claims of the larger country on the smaller country, expressed as a share of the larger country's GDP, while the square marker reports the claims of the smaller country on the larger country, expressed as a share of the smaller country's GDP. Markers represent decade averages. Sources: IMF, BIS, and authors' calculations.

Figure 30: Bilateral financial linkages in selected European country pairs

5.2. The bilateral exposure relationship

Spain is Portugal's largest financial counterparty, accounting persistently for about a quarter of Portugal's euro-area exposures. Bilateral positions are concentrated in banks and non-financial corporations, while their instrument composition has gradually shifted from bank-intermediated instruments towards equity. From Spain's perspective, Portugal accounts for a much smaller share of external



Notes: The figure reports five-year rolling correlations of daily equity-market returns for Spain–Portugal, Germany–Austria, and France–Belgium. Equity-market returns are computed using the IBEX 35 and PSI 20 indices for Spain and Portugal, the DAX and ATX indices for Germany and Austria, and the CAC 40 and BEL 20 indices for France and Belgium. Own elaboration. Source: Datastream.

Figure 31: Equity-market co-movement across selected European country pairs

exposures, likewise concentrated in banks and non-financial corporations. This share has declined on the asset side and remained broadly stable on the liability side.

This subsection uses international investment position (IIP) and financial accounts data to decompose bilateral exposures by institutional sector and financial instrument. This decomposition allows for a richer characterization of the bilateral financial relationship than would be possible from aggregate positions alone. These data also constitute the standard basis for quantity-based measures of external financial integration (Lane and Milesi-Ferretti 2018).¹⁹

At the end of 2025, Portuguese cross-border assets vis-à-vis Spain amounted to €66.7 billion and liabilities to €91.4 billion, well above the corresponding positions vis-à-vis Luxembourg (€42.5 billion in assets), France (€37.1 billion), and the Netherlands (€36.5 billion). As a share of Portugal's euro-area position, Spain accounts for 24.1 per cent of assets and 23.1 per cent of liabilities; as a share of Portugal's total external position, the corresponding figures are 17.3 and 16.6 per cent. Spain alone thus accounts for an exposure equivalent to more than two-fifths of that vis-à-vis all other euro-area counterparties combined.

Read from the Spanish side, however, the same relationship looks very different in scale. At the end of 2025, Spanish cross-border assets vis-à-vis

19. Positions exclude financial derivatives and employee stock options (F7) and other accounts receivable/payable (F8). Two denominators are used throughout the analysis: the euro-area position, which provides the relevant benchmark for integration within the monetary union, and the total external position.

Portugal amounted to €71.6 billion, substantially below those vis-à-vis major counterparties such as France (€331.4 billion), the United States (€314.2 billion), and Italy (€230.2 billion). Spanish liabilities vis-à-vis Portugal were smaller still, at €30.1 billion, compared with €269.9 billion vis-à-vis the United Kingdom, €269.5 billion vis-à-vis the Netherlands, and €257.8 billion vis-à-vis France. As a share of Spain's euro-area position, Portugal accounts for 3.7 per cent of assets and 1.4 per cent of liabilities; as a share of Spain's total external position, the corresponding figures are 2.2 and 0.7 per cent. Portugal is therefore a relatively small financial counterparty from Spain's perspective, in sharp contrast with Spain's importance in Portugal's external financial position.

Figure 32 shows that Portugal's concentration in Spain is not a recent phenomenon and that the bilateral relationship is highly asymmetric. On the Portuguese side (left panel), Spain's share of Portugal's euro-area assets rose from about 22 % in 2014 to a peak of nearly 28 % in 2019–20, before declining to 24.1 % in 2025. Relative to Portugal's total external assets, the corresponding share increased from about 14 % to nearly 19 % in 2020, before easing to 17.3 %. Liabilities display a more stable pattern, with Spain's share increasing only modestly, from about 21 % to 23.1 % of Portugal's euro-area liabilities and from about 16 % to 16.6 % of total external liabilities over the period 2014–25. This stability is itself informative. Over a period spanning the recovery from the sovereign debt crisis, the pandemic, and the subsequent monetary tightening cycle, Spain's weight in Portugal's external balance sheet has remained persistently high. The bilateral relationship therefore appears mature rather than progressively deepening, in contrast to the renewed increase in euro-area quantity-based integration indicators since 2022 (European Central Bank 2026b).

On the Spanish side (right panel), the relationship is significantly smaller and, on the asset side, has continued to decline in relative importance. Portugal's share of Spain's euro-area assets nearly halved over the decade, from about 7.3 % at the end of 2014 to 3.7 % at the end of 2025, and its share of Spain's total external assets followed a similar path, from 4.4 % to 2.2 %. The liability side shows no comparable decline relative to the euro area: Portugal's share of Spain's euro-area liabilities remained within a narrow 1.3–1.7 % range throughout the period, ending at 1.4 %, little changed from its 2014 level. Relative to Spain's total external liabilities, however, Portugal's share declined more gradually, from around 1.2 % to 0.7 %. This decline in Portugal's share of Spanish external assets does not reflect a contraction in bilateral positions. Spanish assets vis-à-vis Portugal increased from about €52.7 billion in 2014 to €71.6 billion in 2025. Rather, the decline is driven by a much faster expansion of Spain's external asset portfolio elsewhere: over the same period, Spain's euro-area assets rose from around €719 billion to €1.95 trillion. This expansion was concentrated in currency and deposits, investment fund shares, and long-term debt securities, instruments in which Portugal represents a relatively small counterparty. Geographically, Spanish assets also increased substantially more vis-à-vis other euro-area partners, particularly Luxembourg, France, Germany, Ireland, Italy, and the Netherlands. The fall in Portugal's share therefore appears

to reflect the broader diversification and expansion of Spain's external asset portfolio rather than a retrenchment of financial positions vis-à-vis Portugal. The asymmetry has therefore widened: Spain's weight in Portugal's external balance sheet has remained persistently high, whereas Portugal's relative importance in Spain's external assets has diminished substantially.

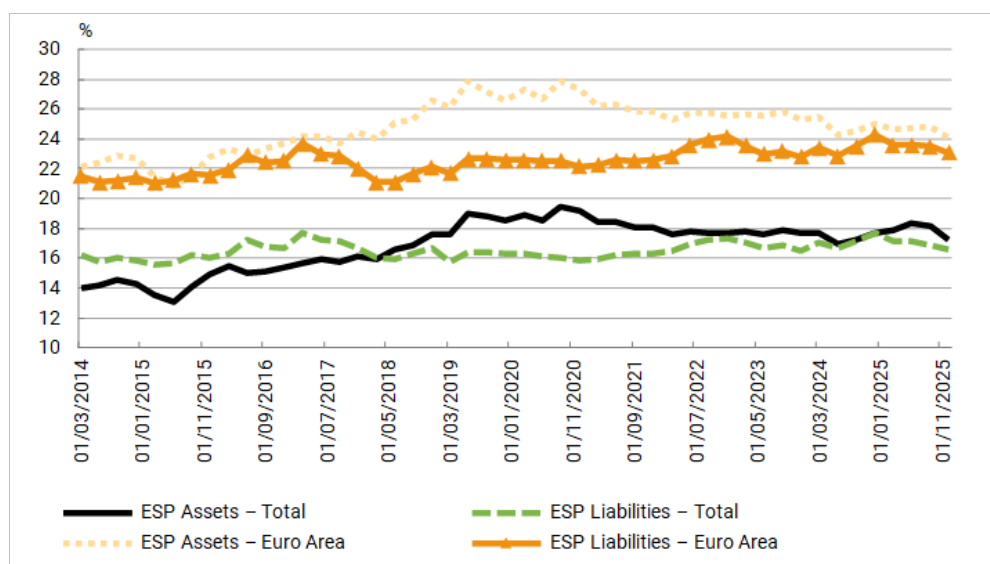
Table 3 provides a sectoral breakdown of these bilateral financial linkages, showing that Spain's importance within Portugal's external financial positions is particularly pronounced in banking and non-financial corporations. On the Portuguese side, Spain is the largest single-country counterparty overall, accounting for 16.9 % of total external positions. It is also the largest single-country counterparty for banks (24.2 %) and non-financial corporations (19.7 %). Spain is also an important counterparty for insurers (14.8 %) and the central bank (14.0 %), although it is not the largest in either case. By contrast, Spain plays a more limited role in the external positions of the Portuguese government (7.4 %) and households (5.1 %), where other European countries and international financial centres account for larger shares.

On the Spanish side, Portugal accounts for only 1.4 % of total external financial positions, with its largest sectoral shares in non-financial corporations (2.3 %) and banks (1.9 %). Its shares are even smaller in the remaining sectors, including government (0.4 %), insurers (1.7 %), and households (0.7 %). Thus, while banking and non-financial corporations are important channels of bilateral financial linkages in both countries, their geographical significance differs markedly: Spain is a major counterparty for Portuguese banks and firms, whereas Portugal accounts for a relatively small share of the external positions of their Spanish counterparts.

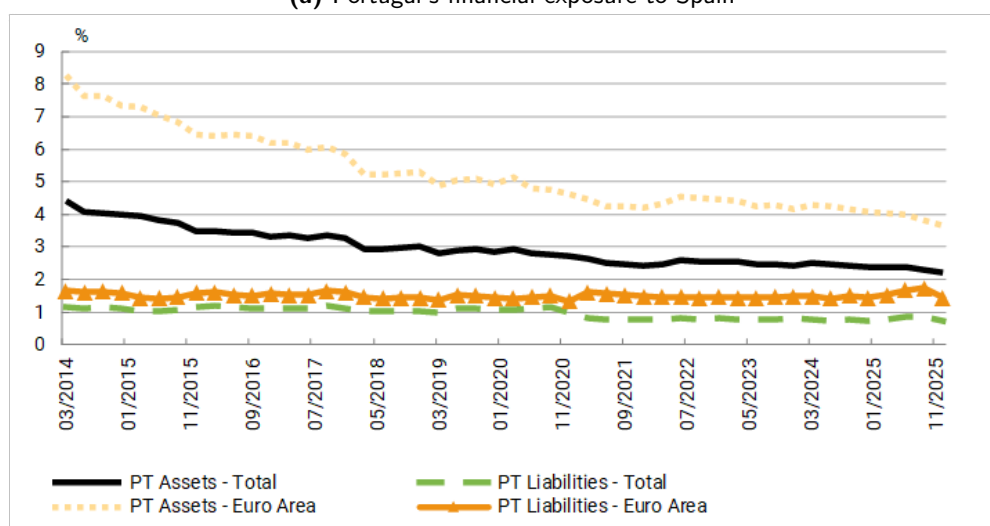
5.3. The structure of cross-border exposures: a network approach

Bilateral shares discussed in the previous section measure how large Spain is in Portugal's external balance sheet. They do not identify however where in that balance sheet Spain sits, whether the exposure constitutes one concentrated relationship or several, and whether Spain holds the same structural position as other large counterparties within or outside the rest of the euro area. This subsection addresses this question by treating the full matrix of sector-counterparty positions jointly and applying community detection methods for weighted bipartite networks. The approach follows the sector-instrument and geography-instrument network analyses developed for the euro area (Andersen and Sánchez Serrano 2024), Spain (Sánchez Serrano 2025), and Portugal (Mizinski and Saldías 2025).

Cross-border positions are represented as a two-mode network with two disjoint sets of nodes. The first comprises the eleven resident institutional sectors of the financial accounts, ranging from the central bank and banks to investment funds, insurers, pension funds, non-financial corporations, general government, and households. The second comprises counterparty geographies, with each geography represented separately on the asset and liability sides to preserve the direction of bilateral positions. Edges connect sectors to geographies and are weighted



(a) Portugal's financial exposure to Spain



(b) Spain's financial exposure to Portugal

Notes: The figure shows the evolution of bilateral financial exposures between Portugal and Spain from 2014 to 2025. Panel (a) reports Spain's share of Portugal's external assets and liabilities, while Panel (b) reports Portugal's share of Spain's external assets and liabilities. In both panels, the solid black line represents bilateral assets as a share of total external assets, the dashed green line represents bilateral liabilities as a share of total external liabilities, the dotted light-orange line represents bilateral assets as a share of euro-area external assets, and the solid orange line with triangle markers represents bilateral liabilities as a share of euro-area external liabilities. Sources: Banco de Portugal, Banco de España, and authors' calculations.

Figure 32: Bilateral financial exposure between Portugal and Spain, 2014–2025

by the share of each sector's cross-border assets or liabilities vis-à-vis that geography, making weights comparable across sectors of very different absolute size.

Panel A. Portugal: share of each sector's external position (per cent)							
Counterparty	All sectors	Banks	Firms	Government	Central bank	Insurers	Households
Spain	16.9	24.2	19.7	7.4	14.0	14.8	5.1
France	12.2	18.1	7.9	16.3	20.4	14.0	4.4
Luxembourg	11.4	7.4	9.9	6.3	1.2	17.1	25.8
Netherlands	9.6	4.0	15.8	4.1	3.7	4.7	11.7
Rest of the world	9.0	10.4	12.1	1.8	6.8	9.0	3.4
Germany	7.5	8.5	5.2	13.0	16.8	4.3	5.7
United States	7.4	5.2	6.0	17.3	1.0	5.7	14.1
United Kingdom	5.9	4.6	8.1	4.3	4.6	4.4	6.1
Italy	5.3	6.8	2.0	14.1	6.3	9.5	0.6
Ireland	4.4	2.9	2.2	4.0	3.8	10.0	13.1
Rest of euro area	2.3	1.5	2.1	4.7	3.4	1.9	2.4
Belgium	2.2	2.4	1.7	3.2	5.4	2.0	1.2
Switzerland	2.1	1.6	2.6	1.1	0.4	1.0	5.1
Latin America & Caribbean	1.9	2.1	2.7	0.4	0.3	1.0	0.9
Japan	1.1	0.1	0.3	1.9	11.7	0.5	0.1
China	0.7	0.3	1.4	0.0	0.3	0.1	0.3

Panel B. Spain: share of each sector's external position (per cent)							
Counterparty	All sectors	Banks	Firms	Government	Central bank	Insurers	Households
Rest of the world	24.2	24.1	12.3	90.5	13.5	8.1	3.3
Rest of euro area	12.5	1.7	1.2	7.4	85.4	2.1	0.8
Luxembourg	8.3	2.5	11.4	0.1	0.0	10.7	50.7
France	8.0	13.0	8.6	0.2	0.1	16.5	8.3
United Kingdom	7.0	7.2	13.4	0.1	0.0	4.5	3.2
Netherlands	6.8	10.1	9.7	0.2	0.2	10.3	3.0
Ireland	6.6	7.3	9.7	0.4	0.0	8.6	15.5
United States	6.4	8.2	6.5	0.1	0.0	8.5	5.4
Germany	5.6	7.9	8.4	0.4	0.1	8.9	3.9
Latin America & Caribbean	5.2	4.8	7.1	0.2	0.0	1.1	1.4
Italy	4.4	7.4	3.6	0.0	0.5	13.5	1.0
Belgium	1.7	2.3	3.0	0.0	0.0	2.2	0.7
Portugal	1.4	1.9	2.3	0.4	0.0	1.7	0.7
Switzerland	1.3	0.9	2.2	0.0	0.0	2.5	1.9
China	0.3	0.8	0.3	0.0	0.0	0.3	0.1
Japan	0.3	0.1	0.4	0.0	0.0	0.8	0.0

Notes: Averages of asset and liability positions at 2025Q4, excluding F7 and F8 instruments. In both panels each cell is the share of the sector's own external position held vis-à-vis the counterparty (each column, including all sectors, sums to 100). Counterparties within each panel are ranked in descending order of the "all sectors" column, with the partner country in bold. Firms refers to non-financial corporations (NFC); investment funds, other financial institutions, financial auxiliaries, captive financial institutions and money lenders (CFIML), and pension funds are omitted here for space. Counterparty regions are mutually exclusive. Sources: Banco de Portugal and Banco de España, international investment position and financial accounts and authors' calculations.

Table 3. External financial position by resident sector and counterparty, 2025Q4

This construction is the geographical counterpart of the whom-to-whom sector-instrument matrices used to map the Portuguese domestic financial network, which is characterised by a dense and bank-centric structure that remained broadly stable

over 2013–24, with the rest of the world playing a central role in funding and shock transmission (Mizinski and Saldías 2025).

Communities are identified using the LPAwb+ algorithm of Beckett (2016), which maximises modularity in weighted bipartite networks. The procedure does not require the number of communities to be specified ex ante and partitions sectors and counterparty geographies jointly. A community therefore consists of domestic sectors and the foreign counterparties to which they are most closely connected, as revealed by the structure of cross-border exposures.²⁰

Table 4 shows the resulting sector–geography matrices for Portugal and Spain, with cell shading proportional to exposure size and boxes marking the communities recovered along the diagonal of each partition.

Applied to the Portuguese sector–geography matrix, we identify three communities (top panel in Table 4). The first is a *corporate ownership channel*, grouping non-financial corporations, captive financial institutions, other financial intermediaries (OFI) and financial auxiliaries with their liability-side exposure to Spain, the rest of the world, Luxembourg and the United Kingdom. Spain is the largest single counterparty for OFI (17.1% of liabilities) and, marginally, for non-financial corporations (8.7% versus 7.7% for the rest of the world), while Luxembourg dominates for captive financial institutions (19.7%) and financial auxiliaries (25.1%), with Spain a secondary counterparty in both.

The second is a *banking and savings channel*, grouping banks, insurers, households, investment funds and pension funds with their asset-side exposure to the rest of the euro area and to Spain. The rest of the euro area is the largest counterparty throughout (22.6% for banks, 18.2% for insurers, 17.7% for pension funds), with Spain a consistent but secondary presence (11.8%, 7.7% and 5.7% respectively). Households are the exception: their asset-side exposure to Spain (2.6%) is small relative to both the rest of the euro area (13.0%) and Luxembourg (12.9%), indicating that the household savings channel runs mainly through investment vehicles rather than through direct exposure to Spain.

The third is the *sovereign core*, which groups general government and the central bank with their liability-side exposures to the rest of the euro area and their asset-side exposures to the rest of the world. Spain does not enter this community as a counterparty. Instead, government liabilities are predominantly vis-à-vis the rest of the euro area (32.5%), while the central bank's positions are concentrated in the rest of the euro area on the liability side (29.5%) and the rest of the world on the asset side (17.3%). This finding goes beyond the absence of large bilateral exposures to Spain: the algorithm assigns Spain to a different community altogether, rather than giving it a small weight within the sovereign block.

20. Community detection produces a partition rather than an estimate with conventional statistical uncertainty, and the resulting partition may be sensitive to the weighting scheme and the aggregation of counterparties. Its value here is primarily descriptive: it reveals how the external balance sheet is organised based on the structure of exposures themselves, without imposing ex ante which sectors and geographies should be grouped together.

	ES_L	RoW_L	LU_L	GB_L	US_L	IE_L	LatAm_L	LatAm_A	Other EA_A	ES_A	LU_A	US_A	IE_A	GB_A	Other EAL	RoW_A
Firms	8.7	7.7	5.9	4.8	3.6	1.3	1.1	2.2	18.4	12.9	2.5	1.6	0.7	2.1	17.0	9.6
Captive Fin. Ins.	3.8	4.1	19.7	2.4	1.3	0.6	1.4	4.5	14.3	6.0	8.1	0.8	1.4	2.7	16.7	12.3
OFI	17.1	0.7	2.1	3.1	3.5	11.1	0.1	0.1	16.9	5.9	1.1	2.4	4.3	13.0	12.3	6.4
Fin. Auxiliaries	1.9	0.6	25.1	12.8	0.2	3.8	1.1	2.7	7.8	3.6	21.0	0.1	0.8	7.8	4.5	6.2
Banks	12.4	6.3	4.8	2.5	2.8	0.9	1.4	0.6	22.6	11.8	2.5	2.4	2.1	2.0	18.9	6.0
Insurers	5.8	18.1	4.4	1.9	0.9	0.4	0.3	0.5	18.2	7.7	9.3	3.2	5.8	2.2	18.2	3.2
Households	3.6	15.7	10.9	2.4	2.3	3.9	0.1	0.4	13.0	2.6	12.9	7.1	6.5	3.0	11.2	4.5
Inv. Funds	3.0	10.2	14.4	1.0	5.2	1.9	1.9	0.1	15.3	3.9	11.1	8.6	5.3	1.8	12.3	4.1
Pension Funds	0.0	0.0	47.6	0.0	0.0	0.0	0.0	0.0	17.7	5.7	10.7	2.3	11.7	0.6	2.4	1.2
Government	4.0	1.8	2.7	2.3	5.4	1.3	0.0	0.9	10.1	2.5	4.8	20.6	4.5	1.7	32.5	4.9
Central Bank	8.4	4.3	1.0	3.4	0.4	2.9	0.2	0.0	25.9	4.9	0.1	0.6	0.5	0.6	29.5	17.3

(a) Portugal

	PT_A	Latam_A	Latam_L	Other EMU_A	Other EMU_L	RoW_A	GB_A	IRLA	US_A	US_L	PT_L	GB_L	IRL_L	LUX_A	LUX_L	RoW_L
Central Bank	0.0	0.0	0.0	25.3	61.1	11.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1
Banks	1.7	4.2	0.6	23.9	18.4	6.9	4.1	1.5	5.5	2.7	0.2	3.1	5.8	1.1	1.4	18.9
Insurers	0.8	0.7	0.4	45.3	8.1	8.5	3.5	7.8	8.1	0.4	0.9	1.0	0.8	10.5	0.2	3.1
Inv. Funds	0.8	0.9	0.0	40.1	0.1	8.3	5.0	8.8	14.5	0.0	0.0	0.0	0.0	16.5	0.0	5.0
Firms	1.3	6.0	1.1	10.2	24.3	3.3	4.9	1.5	3.3	3.1	1.0	8.5	8.1	4.2	7.3	11.8
Pension Funds	0.4	0.3	0.0	34.1	0.0	7.2	3.2	19.0	15.9	0.0	0.0	0.0	0.0	19.8	0.0	0.0
Captive Fin. Ins.	0.2	20.5	12.2	5.3	14.7	3.7	5.3	0.2	2.8	4.9	0.7	6.8	1.5	3.1	9.9	8.3
Fin. Auxiliaries	0.0	7.9	0.0	7.4	16.2	1.1	0.4	0.2	29.0	28.6	0.0	1.3	1.6	0.8	0.6	4.7
OFI	1.4	0.1	0.4	11.4	10.0	0.4	0.5	0.2	0.8	1.3	0.0	2.7	6.5	2.2	4.1	58.3
Government	0.4	0.2	0.0	4.3	3.9	2.2	0.1	0.4	0.1	0.0	0.0	0.0	0.0	0.1	0.0	88.3
Households	0.6	1.4	0.0	17.1	0.6	5.2	3.2	15.5	5.4	0.0	0.1	0.0	0.0	50.1	0.6	0.2

(b) Spain

Notes: Rows are resident institutional sectors and columns are counterparty geographies split into asset (_A) and liability (_L) nodes. Boxes mark the estimated communities. Cell values represent the percentage distribution of each sector's cross-border positions across counterparty geographies. Red shading is scaled independently within each column, with darker shades indicating higher values relative to other sectors in the same column.

Table 4. Sector–geography bipartite networks of cross-border positions.

The corresponding partition of the Spanish sector–geography matrix (bottom panel of Table 4) also yields three communities, but Portugal occupies a markedly more peripheral position. The first is a *euro-area investment and banking core*,

grouping the central bank, banks, insurers, investment funds, and firms with their exposures to the rest of the euro area, Latin America, and the rest of the world. This core contains the largest weights in the Spanish network by a wide margin: the central bank's liabilities to the rest of the euro area alone account for 61.1%, while banks' assets vis-à-vis the rest of the euro area account for 23.9%. Portugal enters this community only on the asset side and with relatively small weights: 1.7% for banks, 1.3% for firms, and 0.8% for both insurers and investment funds.

The second is a *fund-administration gateway*, grouping pension funds, captive financial institutions, and financial auxiliaries with their exposures to Ireland, the United Kingdom, and the United States. The pattern is consistent with the role of fund domiciliation and special-purpose vehicles rather than direct economic linkages: financial auxiliaries hold 29.0% of their assets and 28.6% of their liabilities vis-à-vis the United States, while pension funds hold 19.0% of their assets vis-à-vis Ireland. Portugal does not enter this community.

The third is an *external-funding and Luxembourg nexus*, grouping OFIs, general government, and households with their liability-side exposures to the rest of the world and, for households, their asset-side exposure to Luxembourg. Positions are highly concentrated within this community: government liabilities to the rest of the world account for 88.3%, OFI liabilities for 58.3%, while household assets vis-à-vis Luxembourg reach 50.1%, potentially reflecting the role of Luxembourg as a major domicile for investment funds. Portugal enters this community only on the liability side and with negligible weights: 0.1% for households and effectively zero for OFIs and general government.

In sum, Spain appears in two of Portugal's three communities as a leading or core counterparty, with weights ranging from 6 to 17%, and is structurally absent from the third. Portugal also appears in two of Spain's three communities, but only as a marginal counterparty, with weights below 2%. The network partitions therefore reveal a pronounced asymmetry in bilateral centrality: Spain is material to the structure of Portugal's external balance sheet, whereas Portugal plays only a peripheral role in the structure of Spain's.

5.4. Banking exposures and the asymmetry of transmission

The preceding analysis has shown that banking is a particularly important dimension of financial integration between Spain and Portugal. We now examine these linkages in greater detail using consolidated supervisory data, which capture exposures held through foreign subsidiaries and distinguish between original and risk-weighted exposures. Table 5 reports material counterparty countries²¹ for the Spanish and Portuguese banking systems under both metrics, averaged over 2022–25 and expressed as shares of total exposures outside the domestic market.

21. Following the methodology of the [ESRB](#).

Spanish banking system				Portuguese banking system			
Original exposures		Risk-weighted		Original exposures		Risk weighted	
Country	Share (%)	Country	Share (%)	Country	Share (%)	Country	Share (%)
United Kingdom	13.8	Mexico	8.6	Poland	20.4	Poland	18.2
United States	7.3	United Kingdom	8.0	Mozambique	13.3	Spain	12.6
Mexico	6.4	United States	7.8	France	7.1	France	9.2
Brazil	5.6	Brazil	6.7	Spain	5.5	Germany	7.6
Portugal	3.7	Portugal	3.8	Netherlands	3.4	Italy	4.6
Türkiye	2.7	Türkiye	3.7	Angola	3.3	Mozambique	3.3
Germany	2.5	Germany	2.8	Macao	3.3	Belgium	3.2
Chile	2.2	Chile	2.3	United States	2.7	Macao	2.9
France	2.0	France	2.2	United Kingdom	2.4	United States	2.8
Poland	1.8	Poland	2.0	Luxembourg	2.4	Luxembourg	2.5
Italy	1.2	Italy	1.6	Germany	2.2	Netherlands	2.2
Argentina	1.1	Peru	1.6	Brazil	1.6	United Kingdom	2.2
Peru	1.1	Colombia	1.4	Cape Verde	1.6	Ireland	1.7
Colombia	0.8	Argentina	1.0	Switzerland	1.0	Angola	1.2

Notes: Shares, in per cent, of total non-domestic original exposures and of total non-domestic risk-weighted exposures, averaged over 2022–2025. Each column is ranked independently on its own denominator, so the set of countries differs across columns. Exposures are consolidated and therefore include the local positions of foreign branches and subsidiaries. Sources: Supervisory statistics (COREP) and author's calculations.

Table 5. Material counterparty countries for the Iberian banking systems, 2022–2025 averages

The asymmetry in bilateral banking exposures is pronounced. On a risk-weighted basis, Spain is the second most material foreign exposure of the Portuguese banking system, accounting for 12.6 per cent of its non-domestic exposures, behind Poland. By contrast, Portugal ranks fifth for the Spanish banking system, accounting for 3.8 per cent, behind Mexico, the United Kingdom, the United States, and Brazil. Comparing original and risk-weighted exposures reveals an additional difference. For Portuguese banks, Spain's share more than doubles from 5.5 per cent of original foreign exposures to 12.6 per cent on a risk-weighted basis, suggesting a higher average risk weight than for the rest of their foreign portfolio, consistent with a greater concentration in corporate and retail credit. For Spanish banks, Portugal accounts for nearly identical shares under both metrics (3.7 and 3.8 per cent, respectively).

Geographical proximity and the presence of foreign subsidiaries may help explain the importance of bilateral banking linkages between Spain and Portugal. Previous evidence shows that cross-border credit increases with geographical proximity and the presence of branches and subsidiaries in the destination market (Brei and von Peter 2018). These factors are particularly relevant for Spanish banking activity in

Portugal, where a significant part of consolidated exposures reflects lending through Spanish-owned subsidiaries.

These findings should be interpreted with some caution. While the asymmetry in relative exposures reflects differences in the geographical composition of the two banking systems' foreign portfolios, differences in their size also matter for the absolute magnitude of bilateral exposures. Greater concentration in Portugal should not necessarily be interpreted as greater financial vulnerability, since the systemic implications of bilateral exposures also depend on their absolute magnitude, risk characteristics, and the capacity of banks to absorb losses. Moreover, exposures within the banking union operate under a common supervisory and resolution framework.

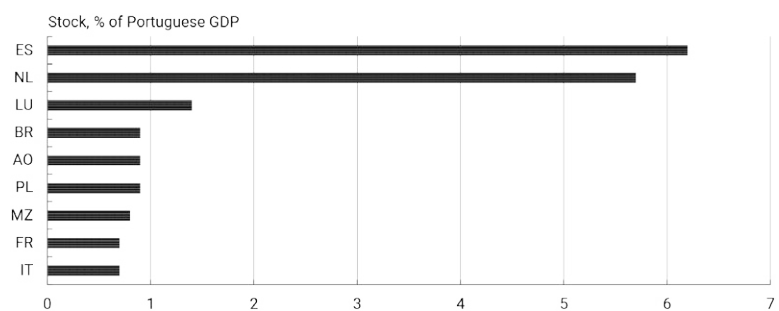
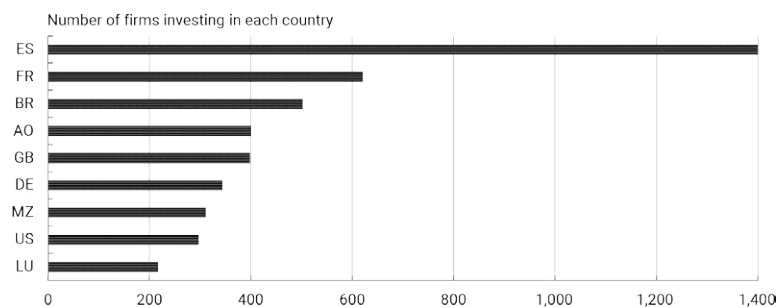
5.5. Foreign direct investment

Spain is Portugal's leading direct investment partner, ranking first in both investment stock and number of firms. Portugal, in turn, attracts more Spanish direct investors than any other destination but ranks only seventh by stock.

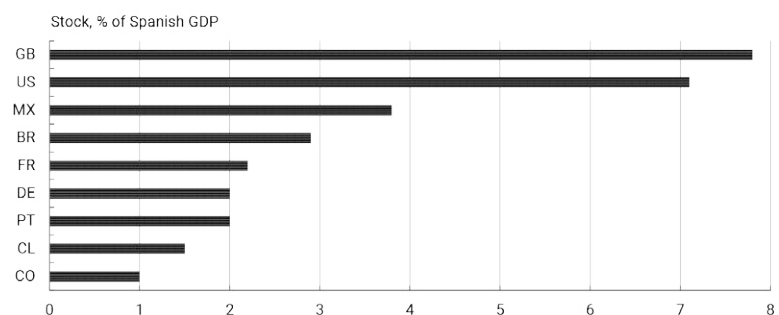
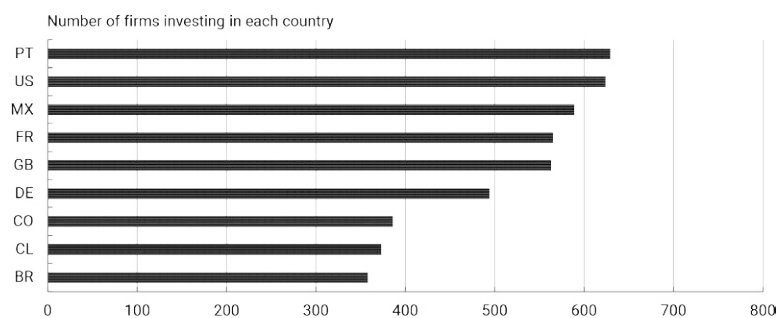
Figure 33 reports direct investment stocks and the number of investing firms by partner country. From the Portuguese side (upper panel), Spain ranks first on both dimensions, with a stock equivalent to 6.2 per cent of Portuguese GDP and around 1,400 investing firms at end-2024. The Netherlands holds a stock of similar size (5.7 per cent of GDP) but accounts for only 212 firms, a pattern consistent with the concentration of large positions in holding-company and captive-finance structures (Mizinski and Saldías 2025). France attracts the second-largest number of Portuguese investors after Spain (621), but accounts for a stock of less than 1 per cent of GDP; Brazil, Angola, and the United Kingdom display a similar combination of numerous investors and comparatively small aggregate positions. Among Portugal's main destinations, the average position in Spain is around EUR 12.8 million per firm, well below those in the Netherlands (EUR 77.7 million) and Luxembourg, as well as Poland, where the aggregate position is dominated by a large banking investment, but above those in Italy and the main operating destinations in Latin America and lusophone Africa (around EUR 4–7 million).

From the Spanish side (bottom panel), Portugal attracts more Spanish investing firms than any other destination (629), marginally ahead of the United States and Mexico and well ahead of the United Kingdom, France, and Germany. Yet Portugal ranks only seventh by investment stock, at 2.0 per cent of Spanish GDP in 2024, behind the United Kingdom (7.8 per cent), the United States (7.1 per cent), Mexico (3.8 per cent), Brazil (2.9 per cent), France (2.3 per cent), and Germany (2.1 per cent). Among Spain's ten main destinations, Portugal has the smallest average position, at around EUR 8 million per firm, compared with EUR 415 million in the United Kingdom, EUR 198 million in the United States, and around EUR 108–165 million in France, Germany, Brazil, and Mexico.

The bilateral relationship therefore differs markedly along the extensive and intensive margins. Spain is important for Portuguese direct investment on both



(a) Portugal



(b) Spain

Notes: Panel (a) reports Portugal's foreign direct investment by partner country, panel (b) Spain's. Within each panel, the upper chart counts the resident firms with direct investment in each partner and the lower chart reports the corresponding stock as a share of the reporting country's GDP. Positions refer to end-2024. Sources: Banco de Portugal, Banco de España, and authors' calculations.

Figure 33: Foreign direct investment by partner country

margins, whereas Portugal's importance for Spanish investment lies predominantly on the extensive margin: it attracts the largest number of Spanish investors, but their average positions are comparatively small. This provides another manifestation of the size asymmetry documented above.

6. Final Remarks

This paper has examined the extent and nature of economic integration between Portugal and Spain more than three decades after their accession to the European Communities. The analysis was motivated by the observation that the formal removal of internal borders and the establishment of common European rules do not necessarily imply that neighbouring economies operate as a single market. We based our analysis on the four Single Market freedoms as a conceptual benchmark and combined evidence on trade, energy, labour mobility and capital market integration with a range of aggregate, sectoral and microeconomic indicators. This approach was intended to identify not only where integration has advanced most strongly, but also where significant barriers and differences remain and where further integration could generate economic gains.

The evidence points to substantial but uneven integration. The strongest connections are found in goods trade and wholesale electricity markets, where geographical proximity, complementary production structures and common European rules have supported deep bilateral linkages. By contrast, services, labour mobility and some forms of capital market integration remain considerably less integrated. Results suggest that the Single Market has been highly effective in reducing some forms of economic distance, but much less so in eliminating the structural factors that continue to shape cross-border economic decisions. Importantly, the magnitude and distribution of the potential gains from further integration cannot be understood independently of the substantial difference in economic size between the two countries. Portugal is the smaller economy and is thus generally more exposed to developments in Spain and may obtain larger proportional gains from reductions in bilateral barriers. The same asymmetry also implies greater exposure to bilateral shocks. For Spain, the Portuguese market represents a much smaller share of the domestic economy, so the aggregate effects of bilateral integration are correspondingly more limited, even though individual firms, sectors and regions may face much stronger effects.

The results also underline that incomplete integration should not necessarily be interpreted as evidence of policy failure. Not all observed differences across countries represent barriers that should or could be removed. Firms and households make decisions according to preferences, historical ties, language, geography, market size and institutional characteristics, and these factors can generate persistent home-country and home-market effects even in the presence of common rules. The Iberian experience illustrates the distinction between formal and effective market integration: common European legislation can remove legal and regulatory

barriers to cross-border activity, but it cannot eliminate all economic differences or ensure that agents will choose to trade, migrate or invest across borders to the same extent as within their domestic market. Effective integration is also constrained by the European Union's institutional architecture. Important competences remain at national level, allowing differences in taxation, regulation, social systems, public administration and market organization to persist. In some sectors, particularly in segments of services and network industries, these institutional boundaries continue to limit the extent to which the four freedoms can translate into fully integrated markets.

Several limitations should be kept in mind when interpreting the evidence. First, the availability and comparability of data remain important constraints. While the analysis combines several sources and, where possible, exploits detailed sectoral and administrative information, the four dimensions of integration cannot yet be examined using fully harmonized micro-level data for the two countries. Differences in definitions, coverage, reporting practices and institutional arrangements limit the extent to which firm, worker and financial-unit behaviour can be compared directly. These limitations are particularly relevant when attempting to distinguish genuine economic barriers from differences arising from the composition of firms, workers or financial exposures. Further progress in the harmonization and integration of administrative and supervisory databases would considerably improve the analysis. Ongoing cooperation between the central banks of Portugal and Spain and the gradual development of more comparable and integrated datasets offer particularly promising opportunities.

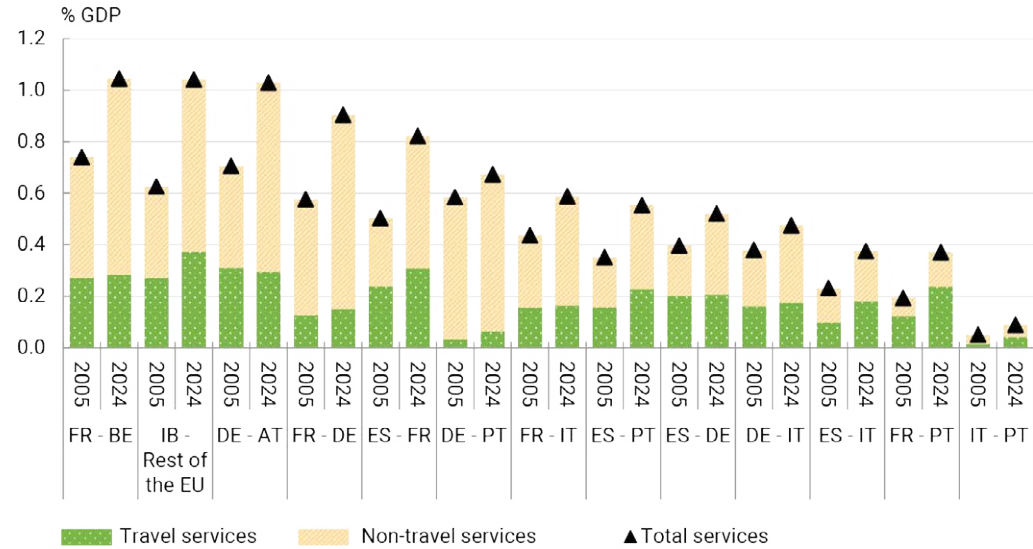
These developments point to several directions for future research. A first open question concerns the extent to which the remaining bilateral barriers are genuinely policy-induced and thus amenable to further integration, as opposed to reflecting persistent preferences, geography or differences in economic structure. A second concerns the distribution of the gains from integration: aggregate effects may conceal substantial heterogeneity across firms, sectors, regions and households, particularly given the asymmetry in country size. More comparable micro data could help identify which agents benefit from integration, which remain constrained by existing barriers, and whether the adjustment costs associated with deeper integration are concentrated in particular regions or sectors. A third key question concerns the interaction between the different freedoms. Greater integration in energy markets, for example, may affect firms' location and investment decisions, while migration, trade and financial integration can reinforce one another. Finally, the experience of Portugal and Spain raises the broader question of whether the next phase of European integration should focus primarily on removing remaining formal barriers or increasingly on improving regulatory cooperation, administrative interoperability, infrastructure and the functioning of cross-border markets. Addressing these questions would help distinguish the gains that can still be achieved through deeper Single Market integration from those that depend on broader structural changes in the two economies.

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Appendix A: Decomposing trade in services between travel and non-travel services



Notes: The figure reports aggregated bilateral trade (exports plus imports) in services between pairs of EU countries, expressed as a share of their combined GDP. Travel services correspond to the “Travel” category (SD) in the balance of payments statistics, and non-travel services to the other categories. The figure compares 2005 and 2024, reflecting the later availability of harmonized bilateral services data, compared to goods. The country set comprises Spain (ES), Portugal (PT), France (FR), Italy (IT), Germany (DE), Austria (AT) and Belgium (BE). IB (Iberia) denotes Spain and Portugal treated as a single economy; “IB – Rest of the EU” reports Iberia’s trade with the remaining EU countries. Pairs are ranked left to right by their 2024 trade intensity. Sources: WTO–OECD Balanced Trade in Services database (BaTIS); GDP, World Bank.

Figure A.1: Trade in services between different pairs of countries: decomposition between travel and non-travel services

Appendix B: Reconciling annual and census-based bilateral migration data

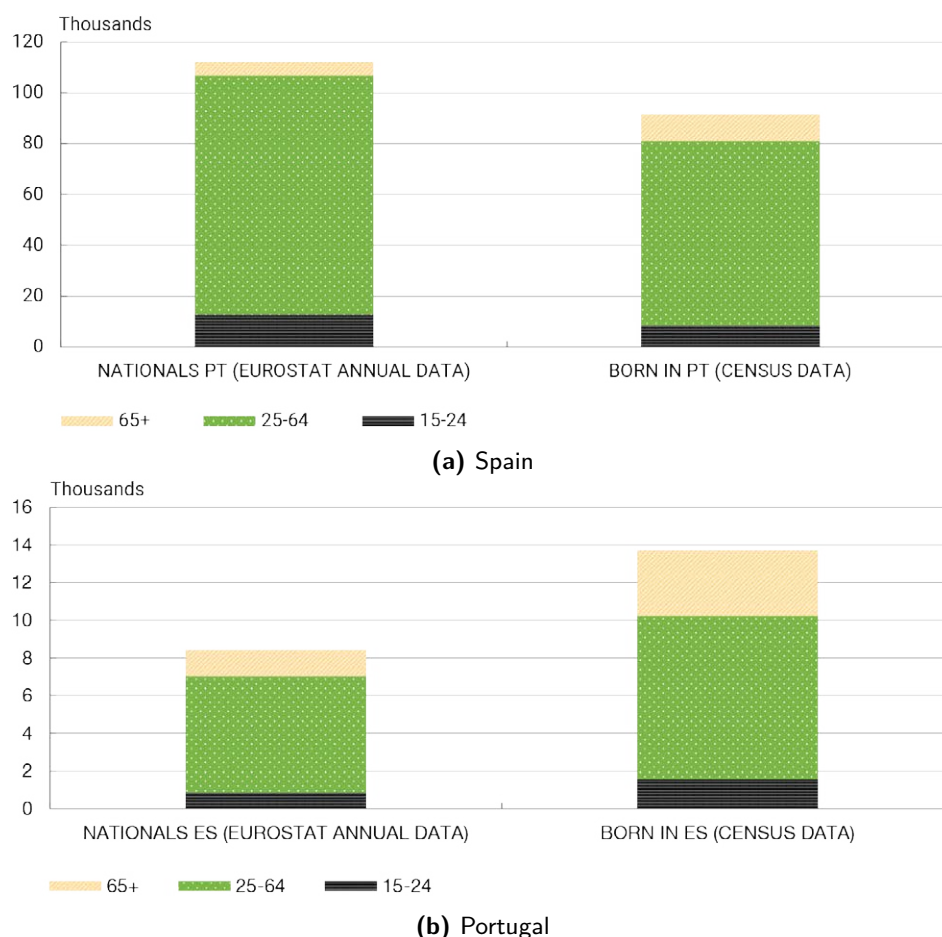
The analysis presented in subsection 4.1 combines annual demographic statistics from Eurostat with census-based information from the OECD Database on Immigrants in OECD Countries (DIOC). While these sources are broadly consistent in their objective of measuring international mobility, they differ in both frequency and statistical design. More importantly, DIOC and Census data provides information on migrants according to both citizenship and country of birth. Throughout the subsection, migrants are identified on the basis of their country of birth, which is generally regarded in the international literature as the preferred definition of an immigrant. Unlike citizenship, which may change over time through naturalisation or other legal processes, country of birth remains fixed throughout an individual's life and therefore provides a more stable and comparable measure of migration histories. Accordingly, the census-based analysis presented in the main text relies on country of birth rather than nationality whenever possible.

The use of country-of-birth information in the main analysis raises a natural question regarding comparability with annual Eurostat statistics, which for the Portuguese case are only available on a nationality basis. The purpose of this appendix is therefore twofold. First, it quantifies the extent to which estimates of bilateral migrant stocks differ when migrants are identified by citizenship rather than by country of birth. Second, it examines whether additional discrepancies arise even when the same migrant definition is used in both annual and census data. Together, these exercises help reconcile the various sources used throughout the subsection and clarify the interpretation of the empirical results.

A first source of divergence arises from the choice of migrant definition. To isolate this effect, Figures B.1 and B.2 compare annual Eurostat statistics by citizenship with DIOC census data by country of birth for 2011 and 2021, respectively. The comparison is not intended to assess which concept is preferable—country of birth is already adopted as the main definition in the chapter—but rather to illustrate the empirical importance of this methodological choice.

The comparison for 2011 reveals sizeable differences between nationality-based and birthplace-based measures. Among Spanish residents in Portugal, the number of individuals born in Spain exceeded the number of Spanish nationals in all age groups. The discrepancy was particularly pronounced among older migrants: while annual statistics recorded roughly 1,400 Spanish nationals aged 65 or over living in Portugal, census data identified more than 3,500 residents in that age group who had been born in Spain. A substantial difference was also observed among individuals aged 25–64, for whom the census count exceeded the nationality-based measure by around 40 per cent.

For Portuguese residents in Spain, the picture was more nuanced. Among working-age individuals, annual nationality-based data reported almost 94,000 Portuguese nationals aged 25–64, compared with around 73,000 residents born in Portugal in the census. Among those aged 65 and over, however, the reverse pattern



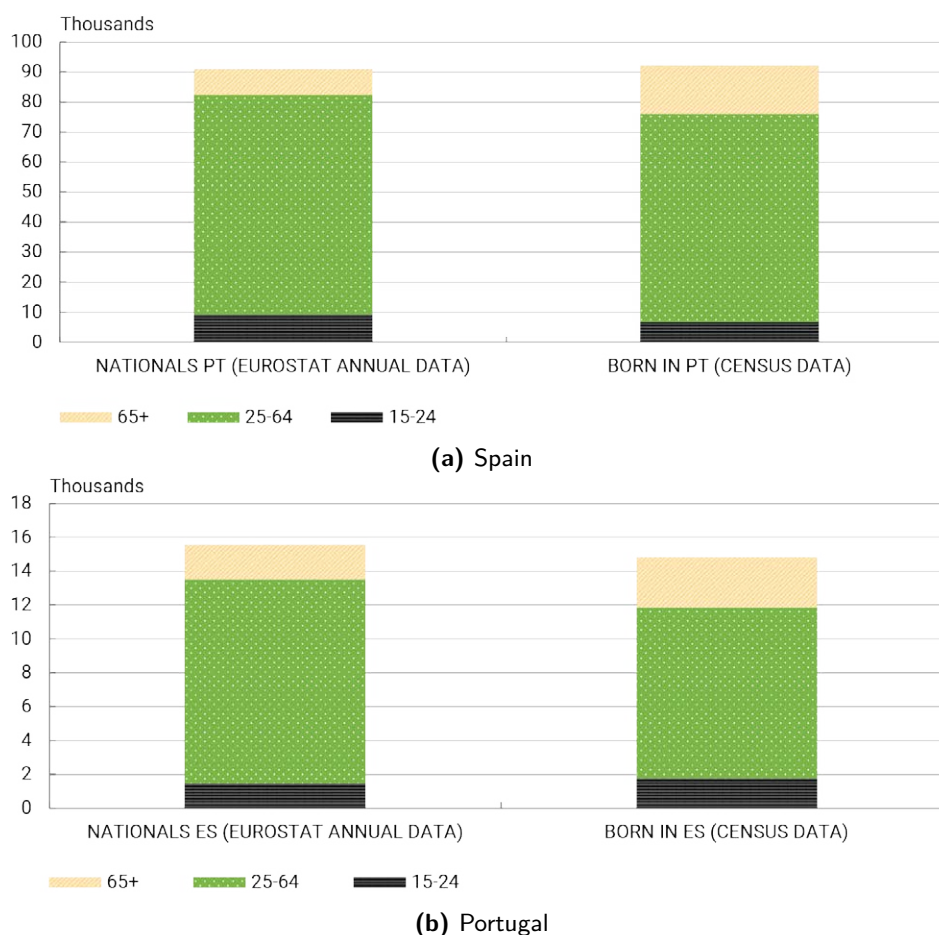
Notes: The figure reports the breakdown by age-bracket of the number (thousands) of Iberian immigrants defined by citizenship (Eurostat annual data) and by country of birth (DIOC census data) for 2011 in Spain (panel (a)) and Portugal (panel (b)). Sources: Eurostat and OECD (DIOC, from Census data).

Figure B.1: Bilateral stocks of Iberian immigrants by age-bracket, 2011

emerged, with census data indicating close to 10,700 Portugal-born residents compared with about 5,500 Portuguese nationals in the annual statistics.

These results illustrate how citizenship and country of birth capture different dimensions of migration histories. The particularly large discrepancies observed among older cohorts are consistent with the long-term effects of naturalisation and settlement processes, which weaken the relationship between current nationality and place of birth. Consequently, analyses based on citizenship and country of birth can produce materially different estimates of both the size and age composition of migrant populations.

The same comparison for 2021 indicates that these definitional differences persist, although they have become less pronounced for some population groups. For Spanish residents in Portugal, the gap between nationality- and birthplace-based measures narrowed substantially among individuals aged 25–64. Nevertheless,



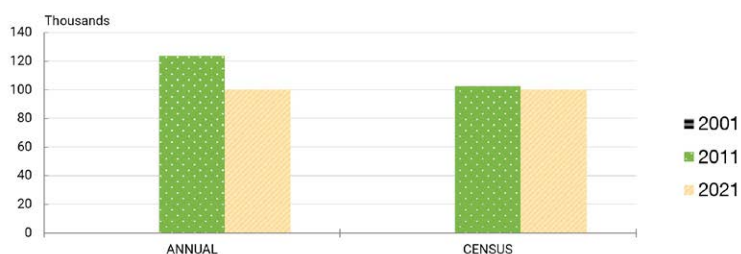
Notes: The figure reports the breakdown by age-bracket of the number (thousands) of Iberian immigrants defined by citizenship (Eurostat annual data) and by country of birth (DIOC census data) for 2021 in Spain (panel (a)) and Portugal (panel (b)). Sources: Eurostat and OECD (DIOC, from Census data).

Figure B.2: Bilateral stocks of Iberian immigrants by age-bracket, 2021

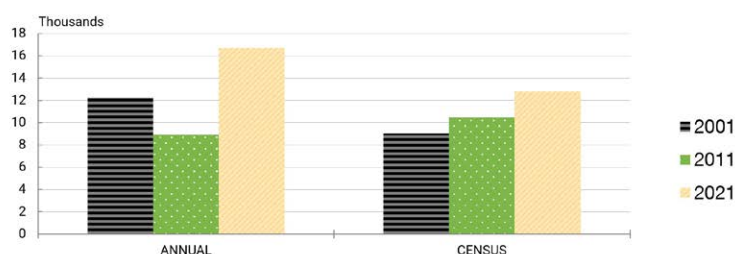
census counts remained noticeably higher among the elderly population. A similar evolution can be observed among Portuguese residents in Spain. While nationality-based and birthplace-based estimates became considerably closer for the working-age population, substantial differences remained among individuals aged 65 or over, for whom the census count was still almost twice as large as the number recorded in annual nationality-based statistics.

The greater convergence among younger and middle-aged cohorts probably reflects the fact that their migration histories are more recent and therefore less affected by nationality changes accumulated over the life cycle. By contrast, the weaker correspondence observed among older cohorts highlights the importance of distinguishing between citizenship and country of birth when analysing ageing migrant populations, retirement migration or the long-term evolution of established migrant communities.

While Figures B.1 and B.2 combine differences in both statistical source and migrant definition, Figure B.3 isolates the role of the data source itself. In this case, annual and census statistics are compared using the same nationality criterion, thereby allowing the effect of differing statistical procedures and population counts to be assessed separately from the effect of migrant definitions.



(a) Spain



(b) Portugal

Notes: The figure reports the number (thousands) of Iberian immigrants defined by citizenship according to Eurostat annual data and DIOC census data in Spain (panel (a)) and Portugal (panel (b)). Sources: Eurostat and OECD (DIOC, from Census data).

Figure B.3: Bilateral stocks of Iberian immigrants (defined by citizenship), according to different sources

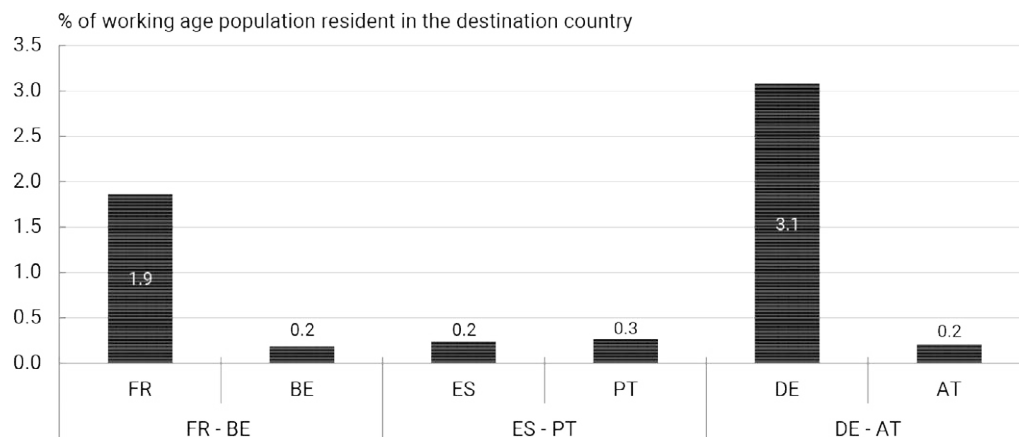
The results indicate that annual demographic statistics and census counts may diverge substantially even when migrants are defined in exactly the same way. Among Spanish citizens residing in Portugal, annual statistics recorded approximately 12,200 individuals in 2001, compared with around 9,000 in the census. In 2011 the relationship reversed, with census figures exceeding annual estimates. Even in 2021, when the two measures moved closer together, a difference of several thousand individuals remained.

A similar pattern is observed for Portuguese citizens residing in Spain. In 2011, annual statistics reported almost 124,000 residents, compared with approximately 103,000 in the census. By contrast, the discrepancy virtually disappeared in 2021, when annual and census estimates both indicated a stock of around 100,000 Portuguese citizens living in Spain.

The narrowing of the gap in the most recent census suggests an improvement in consistency between annual demographic statistics and census counts over time. At the same time, the sizeable discrepancies observed in earlier census waves indicate that annual and census figures should not necessarily be interpreted as interchangeable, even when using the same migrant definition. Differences in data collection methods, population registers, estimation procedures and census coverage can all contribute to variations in measured migrant stocks.

Overall, the evidence presented in this appendix shows that discrepancies between annual Eurostat statistics and census-based DIOC data have a dual origin. One component reflects differences in the underlying definition of migrants, namely citizenship versus country of birth. Another component originates from differences between annual demographic estimates and census counts themselves. Although these methodological issues do not alter the subsection's main conclusions regarding the relative scale and characteristics of migration between Portugal and Spain, they are important for interpreting levels, demographic structures and changes over time. A clear understanding of these distinctions is therefore essential when comparing evidence across datasets and motivates future work aimed at establishing a consistent bridge between annual and census-based measures of migration within the Iberian Peninsula.

Appendix C: Bilateral Iberian migration of working age: comparison with other pairs of EU countries



Notes: The figure shows bilateral stocks of immigrants aged 15–64 between pairs of EU countries, expressed as a share of the population in the same age group resident in the destination country. Data refer to 2025, except for residents in Portugal, for whom they refer to 2024. As a comparable age breakdown is not available for France, the share of Belgian citizens residing in France is calculated using the total population. Immigrants are defined by citizenship criterium (first row of labels on the horizontal axis). Source: Eurostat.

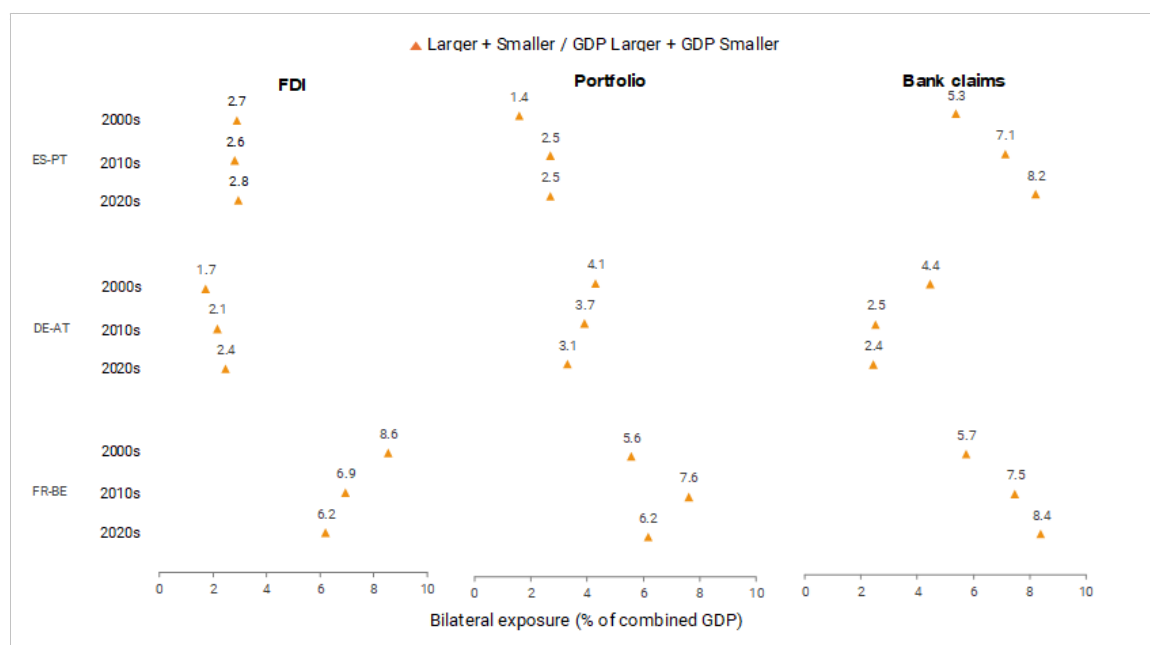
Figure C.1: Bilateral immigrant stocks across EU country pairs in 2025 (working-age population, percentage)

Appendix D: Unemployment protection in Portugal and Spain

	Portugal	Spain
Contributory benefit	65% of reference earnings	70% of the regulatory base during the first 180 days; 60% thereafter
Maximum contributory duration	Up to 780 days (26 months), including extensions for longer contribution histories; duration depends on age and contribution history	Up to 720 days (24 months); duration depends on contributions accumulated during the previous 6 years
Support after exhaustion	Means-tested <i>subsídio social de desemprego subsequente</i> . For beneficiaries under 40, duration is generally half of the period associated with their age and contribution record; for those aged 40 or over, it may equal the contributory-benefit period, providing up to 26 additional months	Means-tested unemployment subsidy. After exhaustion of the contributory benefit, duration can reach 30 months, depending on family responsibilities, age and the duration of the contributory benefit exhausted
Pension contributions during unemployment protection	Periods receiving the contributory unemployment benefit and the social unemployment benefit are credited to the Social Security contribution record. For the contributory benefit and the initial social unemployment benefit, the credited remuneration is the reference remuneration; for the subsequent social unemployment benefit, it is the amount of the contributory unemployment benefit previously received	The contributory unemployment benefit includes pension contributions. Ordinary unemployment subsidies generally do not; the subsidy for workers aged 52+ is an exception and includes pension contributions based on 125% of the minimum contribution base
Protection of older unemployed workers	Early retirement may be available after exhaustion of unemployment protection, from age 57 or 62 depending on age at unemployment and contribution history; early access may be subject to penalties	<i>Subsidio para mayores de 52 años</i> can be received until the ordinary retirement age and includes pension contributions based on 125% of the minimum contribution base

Table D.1. Main features of unemployment protection in Portugal and Spain

Appendix E: Aggregate Bilateral Financial Linkages in Selected European Country Pairs



Notes: The figure compares aggregate bilateral financial linkages between Spain–Portugal, Germany–Austria, and France–Belgium across foreign direct investment (FDI), portfolio investment, and consolidated bank claims. For each country pair and decade, total bilateral positions are calculated as the sum of positions held by each country in the other, expressed as a percentage of their combined GDP. Markers represent decade averages. Sources: IMF, BIS, and authors' calculations.

Figure E.1: Aggregate bilateral financial linkages in selected European country pairs

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