Box 1.1

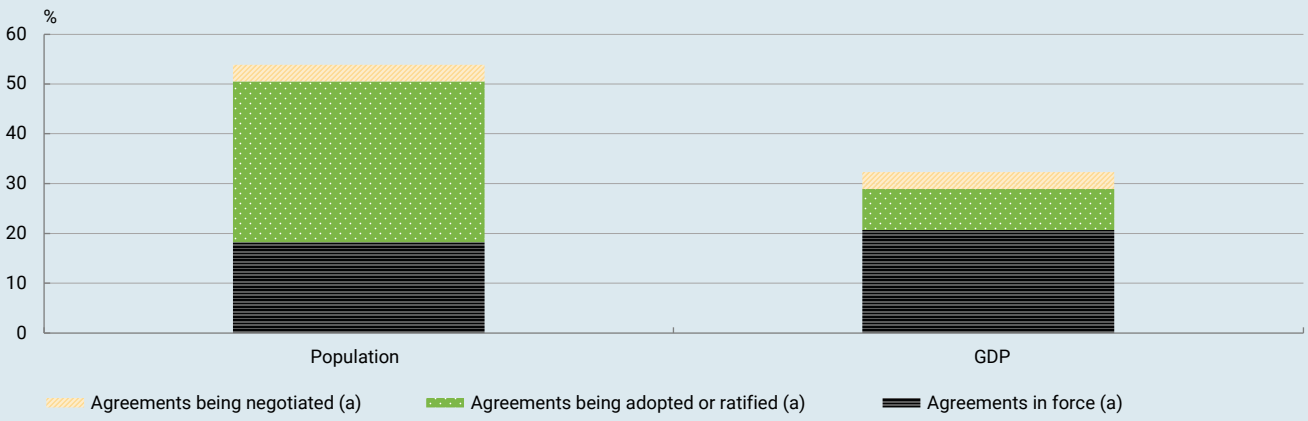
BENEFITS OF THE EUROPEAN UNION'S RECENT TRADE AGREEMENTS

In recent years and against an increasingly uncertain geopolitical backdrop, the European Union (EU) has stepped up its trade negotiation agenda as part of a strategy aimed at diversifying alliances and reducing strategic dependencies. This agenda seeks to strengthen economic ties with a wide range of trade partners (including Mercosur, India, Indonesia and Australia, in addition to various South-East Asian economies) that, according to the aggregation considered in this box, account for around 35% of the world's population and close to 10% of global GDP (Chart 1).

In particular, the recent agreements with Mercosur, India, Indonesia and Australia are broad in scope and include deep tariff liberalisation, the reduction of non-tariff barriers, commitments linked to services and digital trade, reciprocal access to public tenders and provisions on investment, sustainability and regulatory cooperation (Table 1). However, the degree of openness in these areas varies significantly across agreements, from broader commitments (as in the case of Australia) to narrower approaches (for example, the agreement with India). Nevertheless, all these agreements improve access to large and highly dynamic markets, boost integration with strategic value chains — including those related to critical raw materials, advanced manufactured goods and green technologies — and establish predictable legal frameworks for trade and investment over the long term.

These agreements should boost bilateral trade flows between the EU and its trade partners considerably. Specifically, in the case of the EU-Mercosur agreement, the available estimates point to a sizeable increase in trade between the two blocs (around 37% in the long term). First, these gains would reflect the reduction in tariff barriers: the agreement eliminates tariffs on more than 90% of traded products over a period of 15 years. This would lower Mercosur's effective tariff on imports from the EU from 11% to close to 1%, and the EU's effective tariff on imports from Mercosur from 4% to 2%. Second, the gains would also reflect the decrease in non-tariff barriers thanks to the simplification of customs processes and improved access to public procurement and domestic service markets. Overall, these effects would materialise

Chart 1
Trade partners as a percentage of the global economy



SOURCES: European Commission and Banco de España.

a The economies have been classified according to the information available on the European Commission's website. The agreements being negotiated include Malaysia, the Philippines, Tajikistan, Thailand and the United Arab Emirates. The agreements being adopted or ratified include Australia, India, Indonesia, Kyrgyzstan, Mercosur (Argentina, Brazil, Paraguay and Uruguay), Uzbekistan and all the Economic Partnership Agreements being adopted or ratified with African, Caribbean and Pacific countries and regions (Benin, Burkina Faso, Burundi, Cape Verde, The Gambia, Guinea, Guinea-Bissau, Haiti, Liberia, Mali, Mauritania, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, Tanzania, Togo and Uganda). The agreements in force include Albania, Algeria, Andorra, Antigua and Barbuda, Armenia, Azerbaijan, the Bahamas, Barbados, Belize, Bosnia and Herzegovina, Botswana, Cameroon, Canada, Chile, Colombia, the Comoros, Costa Rica, Côte d'Ivoire, Dominica, the Dominican Republic, Ecuador, Egypt, El Salvador, Eswatini, the Faroe Islands, Fiji, Georgia, Ghana, Grenada, Guatemala, Guyana, Honduras, Iceland, Israel, Iraq, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kosovo*, Lebanon, Lesotho, Liechtenstein,Madagascar, Mauritius, Mexico, Moldova, Montenegro, Morocco, Mozambique, Namibia, New Zealand, Nicaragua, North Macedonia, Norway, the Palestinian Authority, Panama, Papua New Guinea, Peru, Samoa, San Marino, Serbia, Seychelles, Singapore, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Saint Lucia, the Solomon Islands, South Africa, South Korea, Suriname, Switzerland, Trinidad and Tobago, Tunisia, Türkiye, Ukraine, the United Kingdom, Vietnam and Zimbabwe. *The designation of Kosovo is without prejudice to positions on its status and is in line with United Nations Security Council Resolution 1244 (1999) and the Opinion of the International Court of Justice on its declaration of independence.

Box 1.1

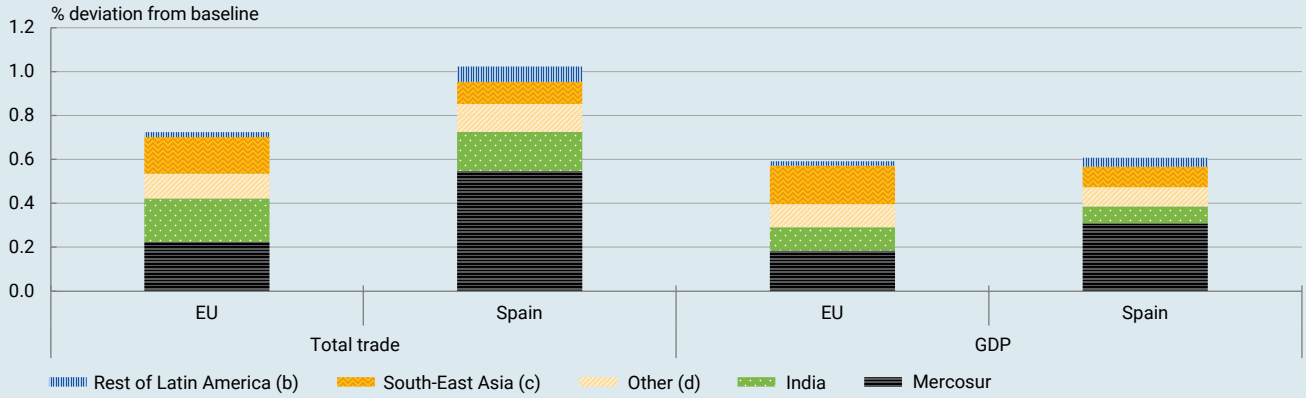
BENEFITS OF THE EUROPEAN UNION'S RECENT TRADE AGREEMENTS (cont'd)

Table 1
Trade agreements signed by the EU or in force from 2025

		Contents of the agreement								
Trade partner	Type of agreement	Elimination or reduction of tariffs (> 90% of products)	Time frame to reduce tariffs	Tariff-rate quotas for sensitive agricultural products	Safeguard mechanism	Reduction of tariffs on imports of critical raw materials and related products	Liberalisation of trade in services	Reciprocal access to public tenders	Cooperation on technical and phytosanitary barriers	Investment
Australia	New agreement	Elimination	Up to 5 years	✓	✓	✓	✓	✓	✓	✓
Chile	Modernisation of previous agreement	Elimination	Up to 7 years	×	×	✓	✓	✓	✓	✓
India	New agreement	Reduction	Up to 10 years	✓	✓	✓	✓	✓	✓	✓
Indonesia	New agreement	Elimination	Up to 5 years	✓	✓	✓	✓	✓	✓	✓
Mercosur	New agreement	Elimination	Up to 15 years	✓	✓	✓	✓	✓	✓	✓
Mexico	Modernisation of previous agreement	Elimination	Up to 10 years	×	×	✓	✓	✓	✓	✓

SOURCES: European Commission and devised by authors.
NOTE: The tariff reduction time frame indicates the upper limit for most products. "Safeguard mechanism" refers to the existence of a clause allowing for the temporary reintroduction of tariffs or the suspension of tariff reductions where trade liberalisation leads to sudden import surges that cause, or threaten to cause, serious injury to domestic producers.

Chart 2
Expected effects on global trade and GDP (a)

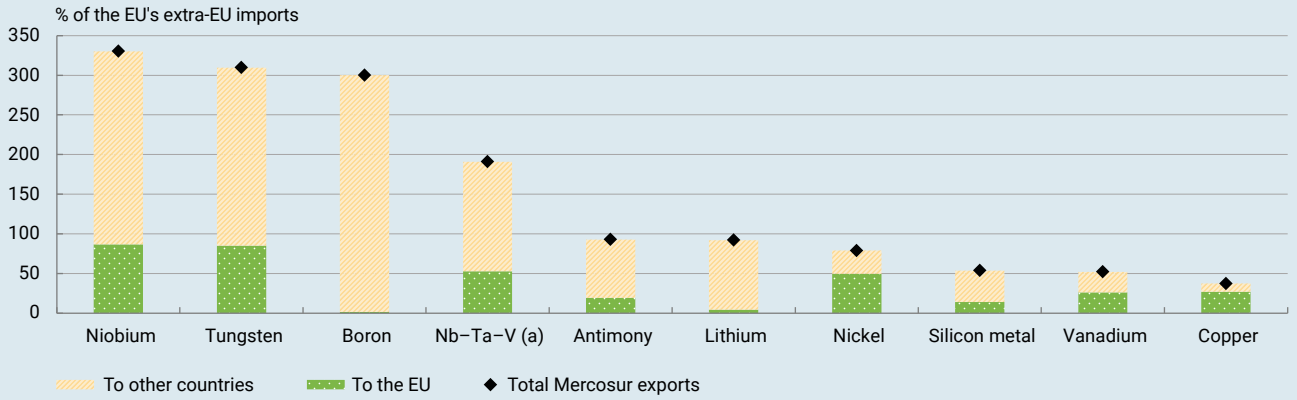


SOURCE: Banco de España.

a The quantitative trade model, based on Allen, Treb, Costas Arkolakis and Yuta Takahashi (2020). "Universal Gravity". *Journal of Political Economy*, vol. 128 (2). https://www.journals.uchicago.edu/doi/full/10.1086/704385, was implemented using the algorithm in Campos, Rodolfo G., Iliana Reggio and Jacopo Timini. (2025). "ge_gravity2: a command for solving universal gravity models". *The Stata Journal*. https://rolf-campos.github.io/publication/sj-2025-ge_gravity2/sj-2025-ge_gravity2.pdf. The expected reductions in trade barriers under the EU-Mercosur agreement are based on the estimates in Timini, Jacopo, and Francesca Viani. (2022). "A highway across the Atlantic? Trade and welfare effects of the EU-Mercosur agreement." *International Economics*, vol. 169, pp. 291-308. https://doi.org/10.1016/j.inteco.2022.02.003. The effects of the other agreements on trade barriers are constructed by scaling up the estimated effect of the EU-Mercosur agreement using a specific scaling factor, standardised in all cases in relation to that agreement. This factor has three components: (i) the initial level of bilateral trade barriers, proxied by tariffs imposed, to capture the potential pre-agreement scope for liberalisation; (ii) the agreement's effective coverage, constructed by assigning to each major sector (agriculture, mining and quarrying and manufacturing) a liberalisation intensity that reflects the presence of partial exclusions or liberalisations, weighted by the importance of each sector in the bilateral trade of reference; and (iii) a measure of the agreement's depth and enforceability, capturing reductions in non-tariff barriers. The expected effect on bilateral trade under each agreement is therefore obtained by directionally scaling the effect of the EU–Mercosur agreement using this relative factor, which is also defined at the directional level.
b Rest of Latin America: Chile and Mexico.
c South-East Asia: Indonesia, Malaysia, the Philippines and Thailand.
d Other: Australia, Kyrgyzstan, New Zealand, United Arab Emirates, Uzbekistan, Tajikistan and the African, Caribbean and Pacific countries and regions that have Economic Partnership Agreements pending renewal.

Box 1.1
BENEFITS OF THE EUROPEAN UNION'S RECENT TRADE AGREEMENTS (cont'd)

Chart 3
Mercosur exports of critical and strategic raw materials and share exported to the EU (2023)



SOURCES: Banco de España, drawing on CEPII-BACI, and European Commission (2023).

a Nb-Ta-V refers to niobium, tantalum and vanadium in the mining stage. The analysis of the critical and strategic raw materials is based on bilateral trade flows corresponding to Harmonised System 6-digit codes in European Commission. (2023). *Study on the critical raw materials for the EU 2023 – Final Report.* https://op.europa.eu/en/publication-detail/-/publication/57318397-fdd4-11ed-a05c-01aa75ed71a1. Mercosur includes Bolivia. The chart depicts, for each mineral, Mercosur exports as a percentage of the EU's extra-EU imports. A value greater than or equal to 100% denotes that Mercosur exports can cover all EU imports.

under a framework that preserves sanitary and technical standards and protects geographical indications, and is further supported by a safeguard system – alongside limited tariff concessions and tariff-rate quotas – designed to minimise potential abrupt adjustments, above all in agricultural products in the case of the EU.

When considering the effect on overall trade and output, the relative importance of each agreement depends not only on the specific reductions in tariff and non-tariff barriers, but also on the importance of the partner for EU and Spanish trade and the size of its economy. For the EU as a whole, the most important agreements in this respect would be those with Mercosur, India and various South-East Asian economies (Chart 2). For Spain, however, the Mercosur agreement stands out in particular, as it would account for over half of the expected gains. This is due to the importance of the region in Spain's trade (4%, twice the EU average).

The implications of these agreements are not just limited to their aggregate economic effects; in some cases they also have major strategic benefits. In this regard, the Mercosur agreement may boost the diversification of Europe's supply of the critical raw materials needed for the digital and energy transitions, by eliminating various non-tariff barriers, such as minimum pricing, export taxes and non-automatic import licensing. At the same time, the agreement could strengthen certain productive ties between the two blocs and encourage the development of refining processes that will help diversify Europe's supply (for example, by eliminating "tariff escalation", that is, higher tariffs on processed goods than on raw materials). Against this backdrop, it should be noted that Mercosur's current exports of critical and strategic raw materials have the potential to cover in full or in part the EU's extra-EU imports (Chart 3).

Box 1.2

THE REGULATORY AND SUPERVISORY SIMPLIFICATION AGENDA: HEADWAY MADE BY THE BANCO DE ESPAÑA

The far-reaching regulatory and supervisory reforms undertaken in the wake of the global financial crisis have contributed to the development of a considerably more robust and resilient European banking system. However, the gradual build-up of rules, procedures and institutional frameworks has given rise to an increasingly complex framework that may affect the system's competitiveness and its ability to support economic growth effectively.

Against this backdrop, simplifying the regulatory and supervisory framework has cemented itself as a priority on the European agenda, in order to maintain the high standards reached while improving the financial system's integration and competitiveness.[1] The main authorities, agencies and bodies have contributed to this review process from their respective areas of competence. Both the European Central Bank (ECB) and the European Banking Authority (EBA) established high-level task forces and published reports[2] on the simplification and efficiency of the European framework. The Banco de España launched an internal review process conducted by a cross-departmental working group, which has identified areas for improvement and prepared specific proposals for the regulatory and supervisory framework. This has served as a basis for channelling technical contributions in the main European and international fora, thereby strengthening the Banco de España's active role in the simplification agenda.

The proposals are structured around five major areas:

- Supervisory procedures. In addition to the initiatives already announced by the Single Supervisory Mechanism (SSM),[3] the Banco de España proposes the further simplification and streamlining of current supervisory procedures, to make them more predictable and stable and boost their efficiency and effectiveness. In particular, it welcomes the supervisory review and evaluation process shifting from an approach that is overly focused on capital requirements to a more risk-based approach that more systematically incorporates qualitative components and improves the framework's ability to address emerging risks. It also advocates streamlining the use of supervisory expectations and guidelines, maintaining their function as a common reference and avoiding excessive detail that generates unnecessary complexity or results in further binding requirements. Lastly, it is important to strengthen the role of joint supervisory teams to optimise and speed up supervisory processes, to thus move towards more efficient and risk-based banking supervision.

- Legislative complexity. There is scope to reduce the legislative complexity associated with the proliferation of delegated acts, which stems from the difficulty lawmakers face to reach consensus over primary (level 1) legislation and the attendant accumulation of mandates in technical standards and guidelines (levels 2 and 3). This situation may generate a significant burden for banks and authorities, without proportional improvements in legislative quality or supervisory effectiveness. Accordingly, the Banco de España has advocated the deprioritisation, elimination and simplification of prudential mandates to streamline them, and the optimisation of certain processes under the resolution framework. At the same time, it is in favour of prioritising structural improvements, such as the EBA's Pillar 3 Data Hub project[4] and the review of the Single Rulebook, to achieve a more consistent and efficient European regulatory framework.

- Capital requirements and resolution framework. The Banco de España proposes simplifying the European capital requirements and resolution framework, maintaining the levels of resilience achieved but eliminating specific components that add unnecessary complexity, thereby simultaneously boosting its alignment with international standards. On the capital requirements front, there is scope to further simplify the design, shifting to a two-tier structure: a single microprudential capital buffer comprising the main existing requirements, which would increase the transparency and predictability of its calibration; and a macroprudential buffer resulting from merging the countercyclical capital buffer and the systemic risk buffer. Similarly, under the resolution framework, there is considerable room to streamline the current requirements' design, without watering them down. In

1 The European Commission launched the strategy in March 2025 and plans to publish a report on the banking system and the single market in 2026, following the public consultation launched in early 2026 on the banking sector's competitiveness.

2 In December 2025 the ECB published the proposals of the High-Level Task Force on Simplification. In October the EBA published its report on the efficiency of the regulatory and supervisory framework.

3 In December the SSM published a report that set out the ongoing agenda for more effective, efficient and risk-based European banking supervision.

4 This data hub will enable, drawing on the information that institutions already report, the centralised preparation and dissemination by the EBA of the information that banks disclose to the market.

Box 1.2
THE REGULATORY AND SUPERVISORY SIMPLIFICATION AGENDA: HEADWAY MADE BY THE BANCO DE ESPAÑA (cont'd)

this respect, the current framework could be replaced with a single requirement based on a proportion of the bank's assets in the form of capital and subordinated debt. Alternatively, it could shift to the widespread use of the requirements that are now applied to global systemically important institutions.

- Proportionality for small and non-complex institutions. There is scope to strengthen and extend the principle of proportionality under the current regulatory and supervisory framework, and thus adapt the requirements to the circumstances of small and non-complex institutions. Given their smaller size and lower complexity and risk profiles, the consistent application of regulatory and supervisory obligations generates unnecessary burdens without benefitting the system's stability. Therefore, the Banco de España advocates an approach that, while maintaining risk sensitivity, adapts the obligations to these institutions' specific operational profiles and simplifies certain capital, liquidity and supervisory procedure requirements.

- Financial reporting requirements. Institutions have seen their reporting obligations increase significantly in recent years. Two-thirds of this information is requested on the basis of consistent criteria at European level. In addition to contributing to European initiatives to streamline reporting, the Banco de España has conducted an extensive review of information requests based on a cost-benefit analysis of the usefulness and possible duplication of the information requested at national level. This process has already resulted in significant reductions, via the publication of Banco de España Circular 1/2025 and a forthcoming circular to be published in mid-2026. Both initiatives are expected to eliminate approximately half of the financial reporting requirements at national level. At the same time, to continue with this drive, the governance arrangements applicable to future information requests have also been strengthened.

These technical stances have been developed as part of the debate under way in Europe on how to boost the European banking sector's competitiveness, led by the European Commission. This debate, which also includes other key components, such as the need to complete the banking union, will result in a report that the Commission plans to publish in the third quarter of 2026 (following the public consultation launched at the beginning of the year) and which will serve as the basis for a legislative proposal in early 2027. This initiative will enable progress to be made towards a simpler, more consistent and predictable regulatory and supervisory framework that boosts the financial system's ability to contribute to European competitiveness, without undermining the levels of soundness and resilience achieved to date.

Box 1.3

THE IMPACT OF NATURAL GAS PRICES ON ELECTRICITY PRICES IN EUROPEAN ECONOMIES

Increases in natural gas prices on international markets, by raising the generation costs of combined cycle power plants, are eventually reflected in the electricity prices of European economies. Since this technology dominates price setting on wholesale electricity markets, its marginal costs have traditionally been fully passed through to average electricity prices. Given that 2 MWh of natural gas are required to generate 1 MWh of electricity, an increase of €10 in the price of natural gas has tended to result in an increase of €20 in the average market price of electricity.

In the context of the current energy shock, which has significantly raised the international prices of energy commodities, particularly natural gas, this direct relationship with electricity prices is an additional channel through which the energy shock is passed through to European economies. However, in recent years, this relationship has begun to weaken in the Spanish market, thanks to the rising contribution of renewables to the energy mix.

The increasing share of wind and solar generation has meant that, for a growing number of hours each day, electricity prices are determined by technologies with

Chart 1
Spanish wholesale electricity prices are becoming less dependent on natural gas prices (a)

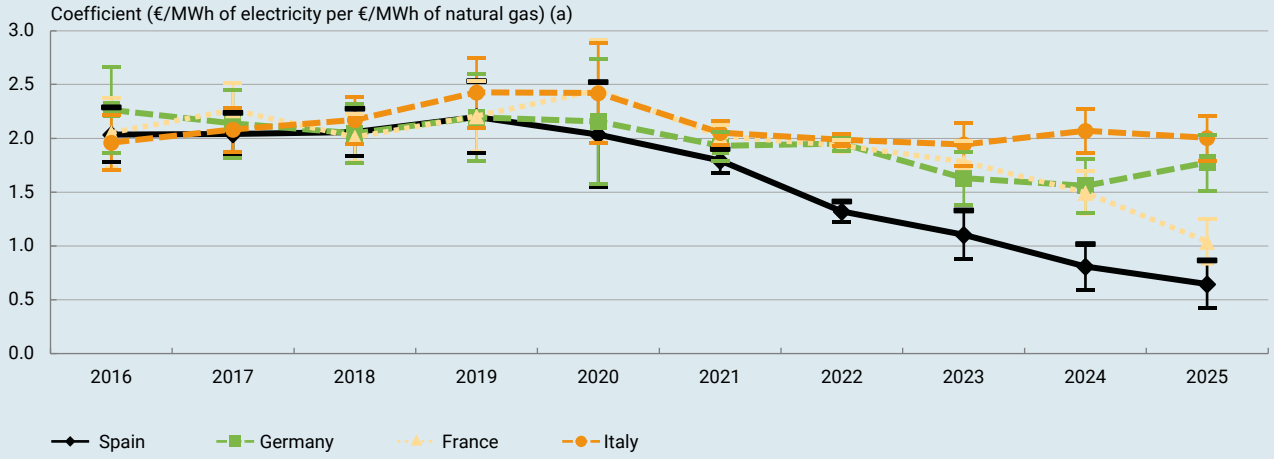
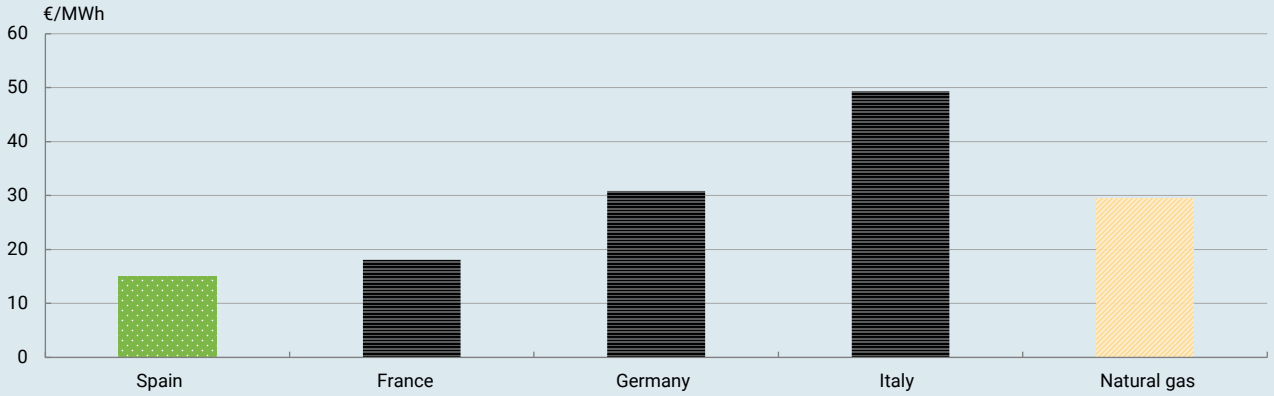


Chart 2
Electricity and natural gas futures prices until 2027 (b)



SOURCES: ENTSO-E, OIMP, MIBGAS AND EEX.

a Estimated coefficients of the regression Electricity price = β * natural gas price * year + γ * CO2 price + ε, using weekly data. 95% confidence intervals.
b Difference between the average quarterly baseload electricity futures with maturities between 2026 Q2 and 2027 Q1 and the average natural gas futures for the same period. Difference between prices negotiated between 23 February and 19 March.

Box 1.3

THE IMPACT OF NATURAL GAS PRICES ON ELECTRICITY PRICES IN EUROPEAN ECONOMIES (cont'd)

lower marginal costs than natural gas generation. Consequently, wholesale electricity prices in Spain are becoming progressively less sensitive to changes in international natural gas prices.

Chart 1 shows, for the four largest euro area economies, the estimated coefficients of the relationship between changes in wholesale electricity prices and changes in natural gas prices since 2016. Until 2021, the sensitivity of electricity prices to natural gas prices hardly varied (standing at around two as a result of the technical requirement mentioned above). Since 2022, however, the pass-through of gas prices to average electricity prices in Spain has steadily declined. Part of this decline was due to the Iberian exception mechanism (in force in 2022 and 2023), which capped electricity prices when natural gas prices surged as a consequence of the war in Ukraine. This pass-through has continued to diminish over the last two years owing to the greater share of renewable technologies in electricity generation and the resulting displacement of fossil fuels as marginal technologies. By contrast, the pass-through of natural gas prices to electricity prices has remained broadly unchanged in the other large euro area economies, with the exception of France.

Thus, according to these estimates, up until 2021, a €10/MWh increase in the price of natural gas led to a €20/MWh rise in the price of electricity on the Spanish wholesale market, while today the same change would entail an increase of between €5 and €10 in the average price of electricity.

This shift has been reflected in recent electricity price developments. Specifically, until 2021, the price paid by Spanish industry was very similar to that paid by its European peers. From 2022 onwards, however, a significant price gap has opened up between Spain and the rest of the euro area. The progressive decoupling of electricity prices from natural gas prices driven by the greater share of renewable technologies has resulted in a cumulative increase in industrial electricity prices in Spain between 2021 and 2025 H1 (€40/MWh) that is roughly half the average increase recorded in other European economies (around €80/MWh).

These differences have also been reflected across European countries in the response of electricity prices to the recent increase in natural gas prices following the outbreak of the conflict in Iran in late February. Thus, faced with an increase of around €30 in natural gas futures in the weeks following the start of the Iran war,[1] electricity futures in Spain are pricing in an increase of somewhat less than €15 (Chart 2). This increase is smaller than those seen in the other major European economies, especially in Italy and Germany, where electricity generation is more dependent on fossil fuels.

1 On data to 19 March.

Box 1.4

FISCAL RESPONSES TO INFLATIONARY ENERGY SHOCKS: PAST EXPERIENCE AND RECENT DEVELOPMENTS

The war in Iran, with its impact on fossil fuel prices and the energy system as a whole, has triggered a significant increase in the price of energy. These developments are similar to the inflationary surge in 2022 following the Russian invasion of Ukraine and have significant implications for macroeconomic stability and the development and well-being of households and firms. They particularly affect the most vulnerable groups and those with greater exposure to energy-cost increases.

This box analyses the experience of 2022, from a comparative international perspective, with an ex-post analysis of the measures implemented. It also describes the measures currently being implemented in Spain, by Royal Decree-Law 7/2026,[1] and in other countries.

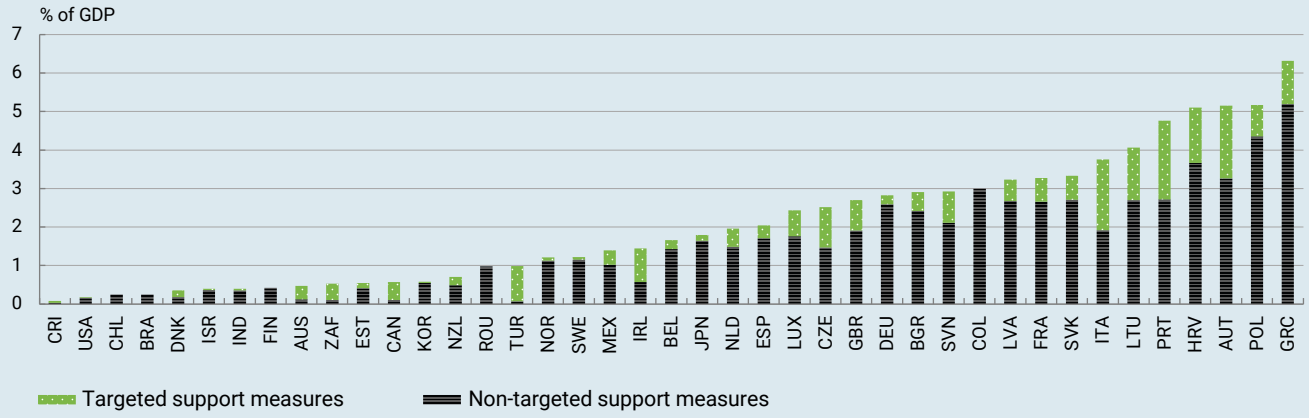
The fiscal measures adopted in a context of rising inflation driven by energy shocks can be assessed with reference to the recommendation to implement targeted, temporary and tailored measures[2] that ensure a balance between their benefits (protection of particularly hard-hit or vulnerable agents and containment of price increases) and costs (their direct budgetary cost and distortion of price signals, which may impede a reduction in the consumption of more expensive energy products).

The inflationary episode of 2022 from an international perspective: fiscal measures and distributional effects

During the inflationary episode of 2022 and 2023, OECD countries' fiscal responses were highly heterogeneous in terms of their size and design (Chart 1). Within Europe, there were significant differences: while Denmark and Finland adopted the smallest packages (around 0.4% of GDP), Poland and Greece implemented the largest (5.2% and 6.3% of GDP, respectively). In Spain, measures amounted, overall, to around 2% of GDP.

Only a minority of the measures implemented were targeted at vulnerable groups or those especially hard hit by the energy shock, the rest (around 74%) being non-targeted measures, often in the form of reductions in taxes on particular goods. However, in some countries targeted measures represented a larger share of all measures, this being the case, in Europe, in Ireland, Denmark, Italy and Portugal (where targeted measures represented between 43% and 61% of their fiscal packages). In others by contrast, targeted measures represented only a small part (less than 10%) of all those implemented, as was the case in Romania, Finland, Sweden, Norway and Germany. In Spain, it is estimated that around 16% of the measures were targeted.

Chart 1
Fiscal cost of support measures in 2022-23 (a)



SOURCE: OECD Energy Support Measures Tracker.

a Measures are considered to be non-targeted if their main beneficiaries are all households, firms or energy consumers.

1 Royal Decree-Law 7/2026, of 20 March 2026, which approves the Comprehensive Crisis in the Middle East Response Plan.

2 European Commission. (2026). "Commission proposes actions to protect Europeans from the fossil energy crisis and accelerate the shift to clean, homegrown energy"; European Central Bank. (2026). "Economic, financial and monetary developments". *ECB Economic Bulletin,* 2/2026; Organisation for Economic Co-operation and Development (OECD). (2026). "Energy prices are spiking again. New relief measures, old lessons". Policy brief, 13 April.

Box 1.4

FISCAL RESPONSES TO INFLATIONARY ENERGY SHOCKS: PAST EXPERIENCE AND RECENT DEVELOPMENTS (cont'd)

Focusing on fiscal measures that had a direct impact on households, recent evaluations of the repercussions of the 2022 inflationary episode for the major euro area economies[3] and for the EU27 as a whole[4] show that fiscal policies had a significant compensatory effect on the loss of household purchasing power, although differences are observed both across countries and across households within each country.

These evaluations rely on microsimulation methods to incorporate both price and income growth, as well as the policy measures implemented, whose impact on households is estimated using EU-SILC (European statistics on income and living conditions) survey data. The results are presented in accordance with two complementary metrics. First, the change in purchasing power, defined as growth in prices net of price measures minus effective income growth, taking into account income-transfer measures. Second, a measure of the welfare impact, based on the concept of compensating variation (the income households require to be able to maintain their previous level of consumption), which considers the capacity of households to absorb part of the shock through a reduction in their saving rate.

The results, summarised in Table 1, show that, for the set of countries analysed, purchasing power declined by 2.4 percentage points (pp), this reduction being cushioned by the effect of the price measures (+1.5 pp) and income measures (+0.9 pp) adopted. In the absence of any measures, the decline in purchasing power would have been larger (-5.2 pp), as prices without measures increased more than incomes without measures. In welfare terms, the reduction would have been smaller (-0.8% of disposable income) as households were able to absorb part of the shock by reducing their saving.

By country, the results are more heterogeneous: some, such as France (+0.8 pp), saw increases in purchasing power, while in others, such as Germany (-4.7 pp), the loss was very marked, or, as in the case of Italy (-2.3 pp), more moderate.[5] Spain stands in a middle-ranking position in terms of purchasing power (-1.7 pp), slightly above the EU27, ahead of Germany, close to Italy and behind France. This favourable position is mainly explained by the greater effectiveness of price-reduction measures in Spain (+2.1 pp contribution), given that income measures had a very limited impact (+0.1 pp), markedly lower than in the EU27 (+0.9 pp) and in Italy (+2.3 pp). In terms of welfare, however, Spain's position deteriorates relative to the European average: the compensating variation amounts to -1.5% of disposable income, compared with -0.8% for the EU27 as a whole, placing Spain between Germany (-2.1%) and Italy (-0.3%). This divergence between the two metrics suggests that, although price measures effectively reduced the cost of the consumption basket, Spanish households had less scope with regard to their savings to cushion the real welfare shock, as they devote a larger share of their income to consumption.

It is also important to note that there are significant differences in the distributional impact of the measures within each country, according to household characteristics. The effects differ, either because the measures depend on household characteristics by design, or because consumption patterns – and thus the benefits of price reductions – vary across households. In terms of purchasing power, the impact for the EU27 as a whole displays a progressive pattern: the lowest income decile experienced an increase in purchasing power (+1.5 pp), while the highest decile recorded losses, mainly as a result of targeted income measures. In contrast, in welfare terms, the inflationary shock – together with the policies implemented – had a negative effect across all deciles, with the lowest income decile experiencing a welfare loss of -2.7% of disposable income for the EU27 as a whole.

In the case of Spain, the distributional impact of the fiscal policies implemented in 2022 differs from the European average. In terms of purchasing power, the lowest income decile recorded a larger decline (-2.4 pp) than the average for Spanish households (-1.7 pp), in contrast to the progressive pattern observed in the EU27. In welfare terms, the loss (measured by the compensating variation) amounts to -6.3% of disposable income for the lowest decile, well above the average loss in Spain (-1.5%) and

3 Antonio F. Amores, Henrique Basso, Johannes Simeon Bischl, Paola De Agostini, Silvia De Poli, Emanuele Dicarlo, Maria Flevotomou, Maximilian Freier, Sofia Maier, Esteban García-Miralles, Myroslav Pidkuyko, Mattia Ricci and Sara Riscado. (2025). "Inflation, Fiscal Policy, and Inequality: The Impact of the Post-Pandemic Price Surge and Fiscal Measures on European Households". *Review of Income and Wealth,* 71(1).

4 Maria Flevotomou et al. (2026). "Fiscal Policy and High Inflation in 2022". Forthcoming. This paper and the previous one are both the result of collaboration between the Eurosystem, the Banco de España and the European Commission's Joint Research Centre.

5 Countries also experienced differences in the intensity of the inflationary shock in 2022, which ranged from 6% in France to 20% in Estonia. Also, within each country, lower-income households faced higher price increases owing to the composition of their consumption basket. See Evangelos Charalampakis, Bruno Fagandini, Lukas Henkel and Chiara Osbat. (2022). "The impact of the recent rise in inflation on low-income households". *ECB Economic Bulletin,* 7/2022.

Box 1.4

FISCAL RESPONSES TO INFLATIONARY ENERGY SHOCKS: PAST EXPERIENCE AND RECENT DEVELOPMENTS (cont'd)

Table 1
Impact of measures implemented in 2022 on household purchasing power and welfare

	EU27	Spain	Germany	France	Italy
Change in purchasing power (pp) (a)					
All households	**-2.4**	**-2.1**	**-4.1**	**0.8**	**-1.3**
Due to price measures	1.5	2.1	0.4	2.6	2.9
Due to income measures	0.9	0.1	0.9	0.3	2.3
Rest (price growth less income growth, in both cases without measures)	-4.8	-4.3	-5.4	-2.2	-6.5
Decile 1 (lowest 10% of households by income)	**1.5**	**-2.4**	**-1.6**	**1.3**	**15.4**
Due to price measures	1.6	3.1	0.4	2.7	3.1
Due to income measures	4.0	1.1	2.4	1.7	12.4
Rest (price growth less income growth, in both cases without measures)	-4.1	-6.6	-4.5	-3.0	-0.1
Change in welfare (compensating variation, % disposable income) (b)					
All households	**-0.8**	**-1.5**	**-2.1**	**2.0**	**-0.3**
Due to price measures	1.2	1.9	0.3	1.7	2.5
Due to income measures	0.9	0.1	0.9	0.3	2.3
Rest (price growth less income growth, in both cases without measures)	-2.9	-3.4	-3.3	0.0	-5.1
Decile 1 (lowest 10% of households by income)	**-2.7**	**-6.3**	**-4.8**	**1.0**	**7.9**
Due to price measures	2.5	5.1	0.5	3.0	5.8
Due to income measures	4.0	1.1	2.4	1.7	12.4
Rest (price growth less income growth, in both cases without measures)	-9.2	-12.5	-7.8	-3.6	-10.3

SOURCE: Banco de España based on Flevotomou et al. (2026). "Fiscal Policy and High Inflation in 2022". Forthcoming.

a Change in purchasing power: an indicator defined as the difference between the growth rate of prices net of the measures adopted and the actual growth rate of household incomes, incorporating the effects of measures implemented through income transfers.
b Change in welfare (compensating variation): measure based on the microeconomic concept of compensating variation, defined as the additional income needed for households to reach the level of utility associated with their prior consumption pattern, taking into account the heterogeneity of saving rates and, therefore, of responses to the price and income changes.

the average loss for the same decile in Europe (-2.7%), pointing to a concentration of the welfare impact on the most vulnerable households. These effects are partly explained by the relatively small size of the targeted income measures implemented in Spain, although those that were implemented were particularly efficient, as they were highly concentrated among recipients of the minimum income scheme and non-contributory pensions, and would thus have mitigated the impact of the shock on these groups.[6]

The fiscal measures implemented in 2026 in Spain and in Europe in response to the war in Iran

The Spanish Government approved a package of fiscal measures (Royal Decree-Law 7/2026), the details, duration and budgetary impact of which are shown in Table 2.[7]

6 A recent formal exploration of the differential impact on welfare of price-reduction and income-support measures, for the case of Spain, is presented in Myroslav Pidkuyko and Raffaele Rossi. (2026). "Fiscal Policy during the Cost-of-Living Crisis". Documentos de Trabajo, Banco de España. Forthcoming. The authors show that, although both instruments generate welfare gains compared to when no fiscal measures are implemented, income-targeted transfers are significantly more effective.

7 For further details and an estimation of the impact of this package of measures on activity and inflation, see Banco de España. (2026). *Macroeconomic projections and quarterly report on the Spanish economy. March 2026*.

Box 1.4

FISCAL RESPONSES TO INFLATIONARY ENERGY SHOCKS: PAST EXPERIENCE AND RECENT DEVELOPMENTS (cont'd)

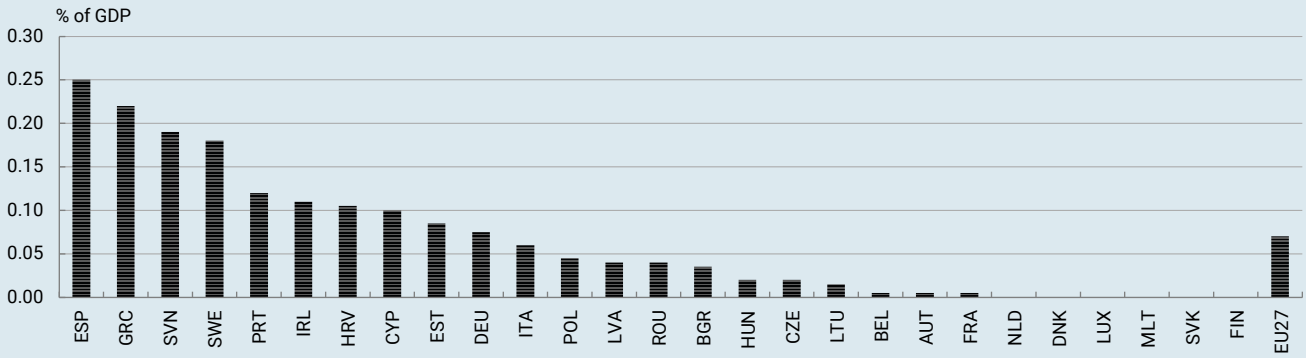
Table 2
Fiscal support measures contained in Royal Decree-Law 7/2026 (a)

	Amount (% of GDP)	Date effective
Reduction of energy taxes (b)	0.11	
Reduction in the rate of VAT on fuels (from 21% to 10%)		30.6.2026
Reduction in the rate of VAT on electricity, gas and firewood (from 21% to 10%)		31.5.2026
Reduction in excise duty on hydrocarbons		30.6.2026
Reduction in excise duty on electricity (from 5.11% to 0.5%)		31.5.2026
Abolition of IVPEE (c)		30.6.2026
Subsidies, direct aid and other measures	0.15	
Additional reduction of €0.20/l of diesel for transport, agriculture and livestock sectors		30.6.2026
Aid for industrial and energy sectors (d)		30.12.2026
Transfers to primary sector and maritime transport (e)		30.12.2026
Energy-consumer protection measures (f)		30.12.2026
Personal income tax deductions for the acquisition of electric vehicles: Auto+ programme		30.12.2026
TOTAL	0.26	

SOURCE: Banco de España.

a The measures included in this table are presented in Royal Decree-Law 7/2026, which also includes other measures with no direct budgetary cost (e.g. those funded through the Recovery and Resilience Facility).
b The reduction in VAT and in excise duties on hydrocarbons and electricity may cease to be effective in June, depending on the April CPI figures.
c The abolition of the IVPEE is accompanied by a compensatory subsidy for companies in the electricity sector.
d This package of measures also includes a zero tariff for underground gas storage, effective until March 2027.
e This package of measures also includes aid for maritime transport services, effective until June 2026.
f This package of measures also includes making electricity and natural gas contracts more flexible, effective until June 2026.

Chart 2
Fiscal cost of support measures in 2026 (a)



SOURCE: Banco de España based on European Commission estimates (Spring 2026 Economic Forecast).

a Measures adopted or announced are included with details from 1 March 2026 until the forecast closing date (4 May). Actions to mitigate the impact of high energy prices on households and firms are included, while others, such as energy transition investments, are excluded. Only measures with a direct budgetary impact are considered

A first set of measures consists of a broad-based reduction in energy taxes, with an estimated budgetary impact of around 0.15% of GDP. These measures include a reduction in the rate of VAT on fuels, electricity, gas and firewood from 21% to 10%, as well as cuts in excise duties on hydrocarbons and electricity and the abolition of the tax on the value of electricity production (IVPEE, by its Spanish initials). They will generally remain in force until

Box 1.4

FISCAL RESPONSES TO INFLATIONARY ENERGY SHOCKS: PAST EXPERIENCE AND RECENT DEVELOPMENTS (cont'd)

30 June 2026, although some expired on 31 May, as a result of the developments in the April consumer price index (CPI).

A second group of measures includes, among other actions, a set of subsidies and direct aid schemes targeted at energy-intensive sectors, with an estimated budgetary impact of around 0.14% of GDP. These measures include rebates of €0.20 per litre of diesel for the transport and primary sectors until June 2026, along with various forms of support for industry and the energy sector until December 2026, such as reductions in network access charges for electricity-intensive industries, a zero levy on gas storage and increased CO_2 compensation. Additional provisions, until the end of 2026, include support for the agricultural and fisheries and maritime transport sectors, various measures to protect energy consumers, an extension of the heating subsidy and personal income tax deductions for the purchase of electric vehicles.

The measures adopted bear close similarities to those implemented during the 2022-23 inflationary episode, insofar as they are broadly applicable, they are based on subsidies to particularly hard-hit industries and their primary aim is to contain price increases. Although it is still too early to quantify the impact of the current energy shock on households, its nature suggests it will have distributional effects comparable to those observed in the previous episode.[8,9]

From an international perspective, the Spanish response is consistent with a broadly observed pattern across OECD countries. According to the OECD,[10] as of early April 2026, 26 of its member countries had implemented at least one support measure in response to the energy shock stemming from the conflict in Iran, with reductions in fuel taxes, VAT and excise duties being the most common interventions. Targeted income-support measures have been used to a lesser extent: approximately two-thirds of the measures announced are temporary, with explicit expiry dates, while only around one-third are targeted in scope and primarily aimed at the sectors most exposed to rising fuel prices, such as agriculture and road haulage.

Within the European context, Member States have committed in total around €14.5 billion[11] in fiscal measures to mitigate the impact of the shock, with notable differences in their scale and design. Chart 2 shows that Spain has mobilised the largest amount of resources relative to GDP – around 0.25%, according to European Commission estimates – followed by Greece, Slovenia, Sweden and Portugal. As in the 2022-23 episode, non-targeted measures – essentially broad-based reductions in energy taxes – account for around 75% of the total fiscal cost at the European level.

Cross-country comparisons reveal common patterns, with tax reductions accounting for a large share of the response in Spain, Germany and Italy, whereas France appears to have prioritised, in its initial fiscal response, regulatory instruments and agreements with the private sector (Table 3). In Spain, measures to support the hardest-hit industrial sectors are also particularly prominent, which

8 The impact of inflation on households is complex and not limited to the change in consumer prices. Its distributional effect also depends on other channels, such as the behaviour of household income (Chrysa Leventi, Alberto Mazzon and Fabrice Orlandi. (2024). "Indexing wages to inflation in the EU: fiscal drag and benefit erosion effects". EUROMOD Working Paper Series, 02/24, Centre for Microsimulation and Policy Analysis), the fiscal measures adopted (Antonio F. Amores, Henrique Basso, Johannes Simeon Bischl, Paola De Agostini, Silvia De Poli, Emanuele Dicarlo, Maria Flevotomou, Maximilian Freier, Sofia Maier, Esteban García-Miralles, Myroslav Pidkuyko, Mattia Ricci and Sara Riscado. (2025). "Inflation, Fiscal Policy, and Inequality: The Impact of the Post-Pandemic Price Surge and Fiscal Measures on European Households". *Review of Income and Wealth,* 71(1)), the effect of fiscal drag (Esteban García-Miralles, Maximilian Freier, Sara Riscado, Chrysa Leventi, Alberto Mazzon, Glenn Abela, Laura Boyd, Baiba Brusbārde, Marion Cochard, David Cornille, Emanuele Dicarlo, Ian Debattista, Mar Delgado-Téllez, Mathias Dolls, Ludmila Fadejeva, Maria Flevotomou, Florian Henne, Alena Harrer-Bachleitner, Viktor Jászberényi-Király, … Lara Wemans. (2026). "Fiscal drag in theory and in practice: A European perspective". *European Economic Review,* 185(105275)) and the net wealth channel (Clodomiro Ferreira, José Miguel Leiva, Galo Nuño, Álvaro Ortiz, Tomasa Rodrigo and Sirenia Vazquez. (2026). "The heterogeneous impact of inflation on households' balance sheets". *SERIEs,* 17, pp. 31-53; Filippo Pallotti, Gonzalo Paz-Pardo, Jiri Slacalek, Oreste Tristani and Giovanni L. Violante. (2024). "Who bears the costs of inflation? Euro area households and the 2021-2023 shock". *Journal of Monetary Economics,* 148, Supplement (103671)).

9 For an analysis of the distributional impact of the policies implemented in 2022 and 2023, see Esteban García-Miralles. (2023). "Support measures in the face of the energy crisis and the rise in inflation: an analysis of the cost and distributional effects of some of the measures rolled out based on their degree of targeting". *Economic Bulletin - Banco de España,* 2023/Q1, 15; for an evaluation of the distributional impact of the measures of Royal Decree-Law 7/2026, see Spanish Independent Authority for Fiscal Responsibility. (2026). *Report on the Initial Budget of the General Government 2026,* 5/26, 15 April.

10 OECD. (2026). "Energy prices are spiking again. New relief measures, old lessons". Policy brief, 13 April.

11 European Commission. (2026). "Policy measures in EU Member States to address the 2026 energy price shock".

Box 1.4

FISCAL RESPONSES TO INFLATIONARY ENERGY SHOCKS: PAST EXPERIENCE AND RECENT DEVELOPMENTS (cont'd)

Table 3
Fiscal support measures implemented in Spain, Germany, France and Italy in response to the war in Iran

Spain (a)	A broad package of temporary energy tax cuts, including reductions in VAT and excise duties on fuels, gas and electricity.
	A set of direct aid measures and subsidies, including professional diesel rebates and transfers to specific sectors (transport and primary sectors, and energy-intensive industries).
	Measures to protect vulnerable consumers and fiscal stimulus measures in areas such as electric mobility.
Germany	Regulatory measures aimed at limiting increases in fuel market prices (restrictions on the frequency of price rises and strengthening of the sanctioning framework).
	A temporary, broad-based reduction in excise duties on fuels.
France (b)	Regulatory and market supervision measures (including inspections at petrol stations) to contain price increases.
	Promoting the role of private agents in stabilising fuel prices through voluntary caps, limits on speculation and penalties for unjustified mark-ups
	Relatively targeted measures to support economic activity, including tax deferrals, emergency loans and specific fuel aid schemes.
	Instruments aimed at alleviating liquidity pressures on firms, in particular small and medium-sized enterprises (SMEs).
Italy	A temporary reduction in excise duties on fuels (€0.25/l), which has been extended, as the main containment instrument.
	Strengthening of fuel market supervision, with measures to curb speculative behaviour and sanction unjustified increases in mark-ups.

SOURCE: Banco de España.

a For further details, see Table 2.
b At the end of May, France announced a package of support measures targeted at households, the details of which are still to be specified.

may partly explain the higher weight of fiscal measures in the overall response.

In conclusion, the fiscal measures set out in Royal Decree-Law 7/2026, which are similar in design to those implemented in 2022 and 2023 and those adopted in other European countries, tend to place greater emphasis on non-targeted instruments, such as tax reductions. However, a proper assessment of their macroeconomic and distributional effects will only be possible at a later date, when more complete information is available on the evolution of the conflict, its impact on energy prices and the final set of measures adopted to mitigate its effects on economic agents.

Box 1.5

INTANGIBLE INVESTMENT AND THE GROWTH IN NON-TRAVEL SERVICES EXPORTS IN SPAIN

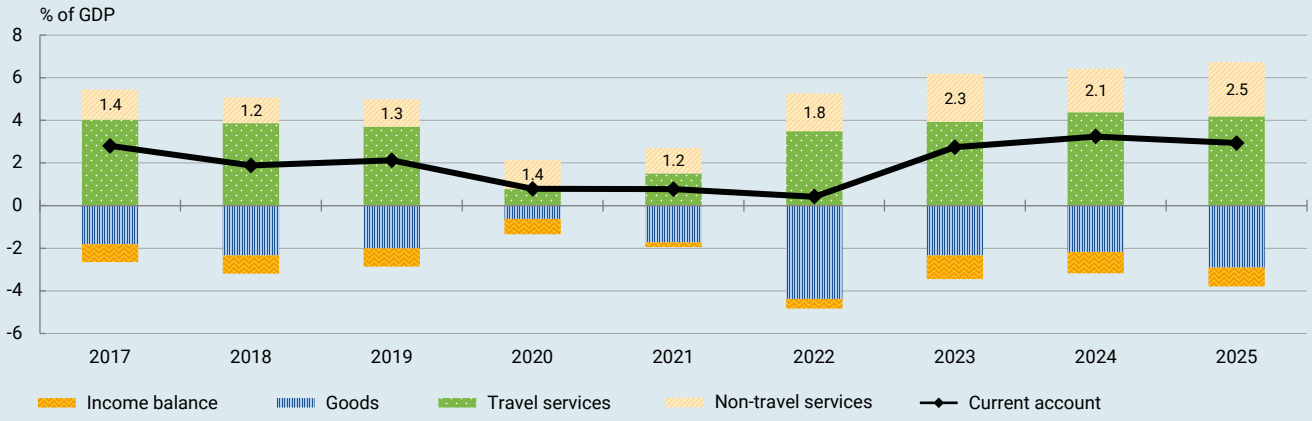
Over the past decade, growth in exports[1] of non-travel services has emerged as one of Spain's most significant structural economic transformations. This item's contribution to the current account surplus turned positive after the 2008 recession (Chart 1). Data for 2025 show that this trend is continuing, with the contribution increasing by 0.6 percentage points (pp).

In 2025 non-travel services exports accounted for 7.1% of GDP – slightly less than in the euro area as a whole, where they exceeded 8% of GDP – and have overtaken travel services, which represented 6.2% of GDP. The most dynamic components were telecommunications and technical activities (architecture, engineering, trade and waste management), which are characterised by high value added and high productivity. In 2025 exports of technical services represented 1.7% of GDP in Spain (compared with 1.2% in the euro area), while telecommunications exports accounted for 1.4% (compared with 2.1% in the euro area). Since 2019, consulting, and management and financial services have each grown by around 0.2 percentage points (pp), reaching 0.9% and 0.5% of Spanish GDP, respectively, in 2024. By destination, non-travel services exports are mainly to European Union (EU) countries, although the US market, while still relatively small, has gained importance in recent years.

These developments have been driven by a surge in global demand for services, particularly digital services. Between 2017 and 2024 world exports of these services increased by 50 pp, with digital services rising even more sharply (by close to 80 pp) over the same period (Chart 2.a). This expansion has been favoured by the technological advances of recent decades, which have led to profound changes in the world economy, enabling the growth and diversification of services exports. At the same time, the growing integration of services into goods trade and the increasing complexity of global value chains have fostered the internationalisation of non-travel services. At the European level, the reduction of barriers to trade in services[2] following the implementation of various regulations has also played a key role.

Chart 1
Over the past decade, growth in exports of non-travel services has emerged as one of Spain's most significant structural economic transformations

1.a Current account balance in Spain



SOURCE: Banco de España.

1 In this box, the term "exports" refers to the receipts recorded in the Balance of Payments (BoP) and not to the exports recorded in the National Accounts (NA). Although there are no differences between the total for services in the BoP and services in the rest-of-the-world account of the NA, travel services purchased through travel agencies and tourism expenditure for business purposes are classified differently, and this may generate discrepancies between the two statistics' travel and non-travel services series.

2 Since the Services Directive (2006), known as the "Bolkenstein Directive", which laid the foundations for the single market for services, numerous EU-wide regulations have been implemented in different areas (capital markets, the digital single market and public procurement) that have fostered cross-border trade in services. However, barriers to trade in services persist.

Box 1.5

INTANGIBLE INVESTMENT AND THE GROWTH IN NON-TRAVEL SERVICES EXPORTS IN SPAIN (cont'd)

Spain has especially benefited from this environment. Although Spain's share of the global non-travel services market remains relatively small – at around 2%, in line with Italy's – it has been increasing, most notably in information, financial and other non-digital services (Chart 2.b). This contrasts with developments in other European countries, such as Italy, France and Germany, which have not been able to increase their relative shares in the international non-travel services market.

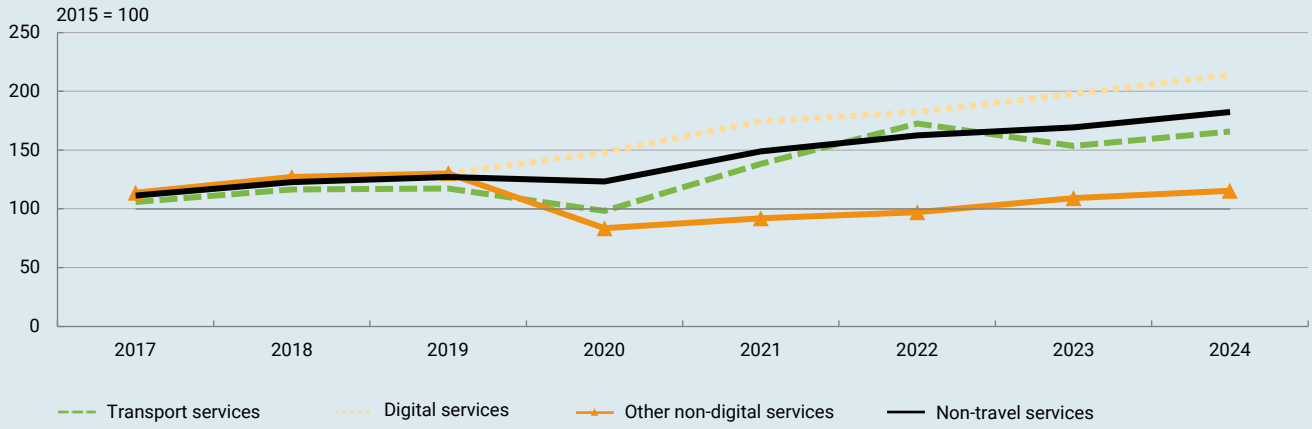
In addition, Spain's non-travel services sector has seen gains in competitiveness in recent years which, measured on the basis of the terms of trade (Chart 3.a), have far outpaced those in travel services. These developments appear to be underpinned by a better relative performance of productivity in non-travel sectors. Indeed, Spain's relative productivity vis-à-vis the euro area has risen more markedly for professional and administrative services than for the economy as a whole (Chart 3.b).

This sharp growth in the non-travel services sector is linked to a surge in intangible investment. Specifically, between 2019 and 2023 investment grew more strongly in these sectors than in the rest of the economy (Chart 4), driven – to a greater extent than in other sectors – by intangible investment.

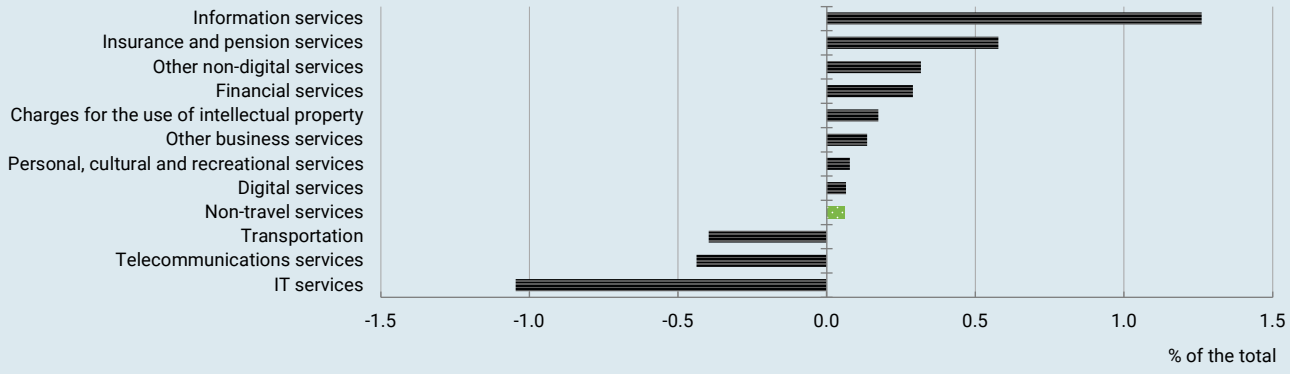
Chart 2

The surge in global demand for services, especially digital services, has been one of the main drivers of growth in non-travel services exports, both in Spain and worldwide

2.a Global nominal exports of services



2.b Change in Spain's share in global exports of non-travel services (2019 vs 2024)



SOURCE: WTO.

Box 1.5

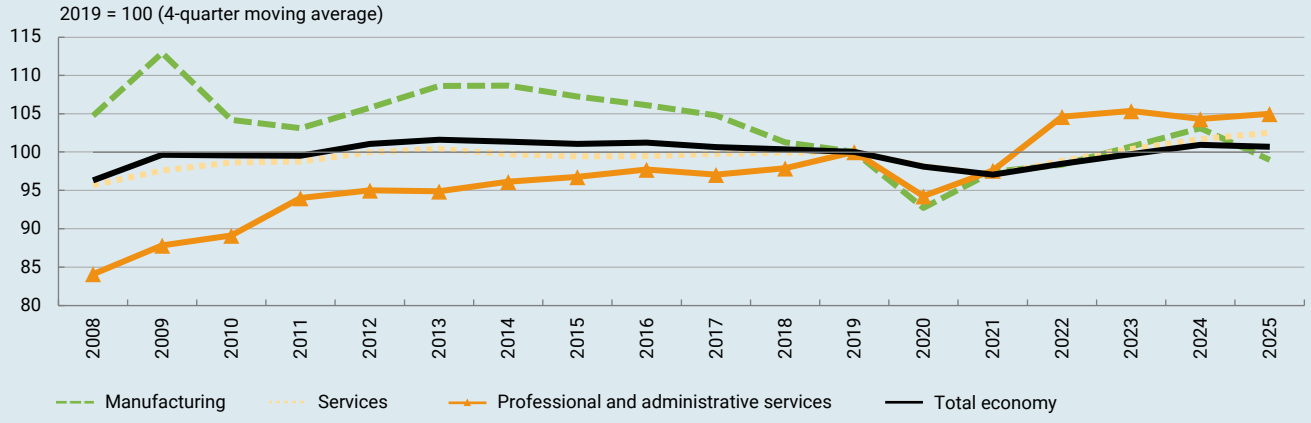
INTANGIBLE INVESTMENT AND THE GROWTH IN NON-TRAVEL SERVICES EXPORTS IN SPAIN (cont'd)

Drawing on firm-level data, it is possible to analyse the link between productivity gains and the rise in business investment in non-travel services sectors in Spain and other European countries. In the most recent period, the relationship between productivity and investment has strengthened for these services in Spain more markedly than in the rest of the economy[3] and relative to other European countries. In particular, between 2019 and 2023 the relationship between increases in investment and productivity growth among Spanish firms in the non-travel services sector intensified significantly (Chart 5), particularly compared with firms in other economic sectors.

Chart 3
In recent years, non-travel services sectors have seen notable gains in competitiveness, unlike goods, which have experienced declines

3.a Terms of trade (a)

3.b Spain/euro area relative productivity (in hours worked)



SOURCES: INE and Banco de España.

a The terms of trade are defined as the ratio between export and import prices. Increases (decreases) in the terms of trade imply losses (gains) in competitiveness.

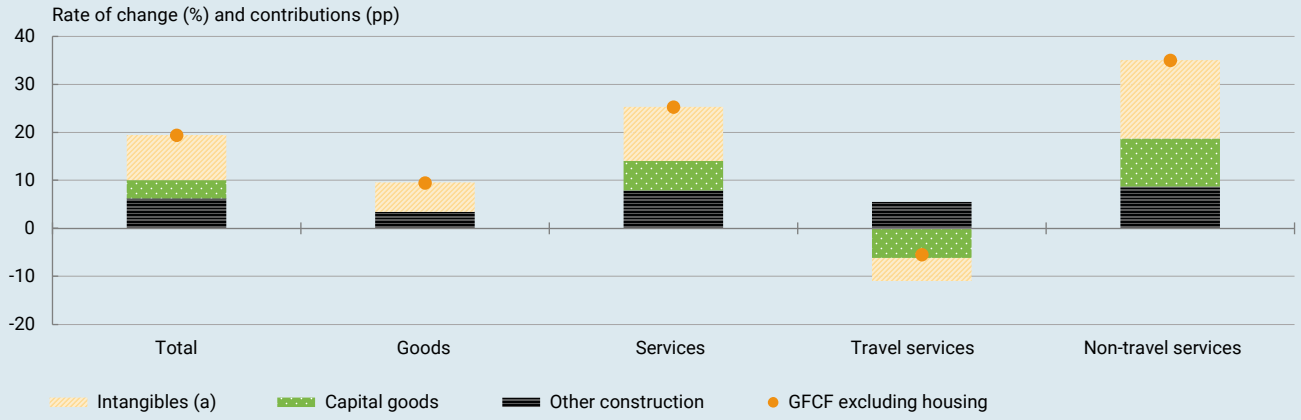
3 For further details, see Chapter 3 of this Report.

Box 1.5

INTANGIBLE INVESTMENT AND THE GROWTH IN NON-TRAVEL SERVICES EXPORTS IN SPAIN (cont'd)

Chart 4
The structural shift in the non-travel services sector is closely linked to the surge in intangible investment

4.a Change in GFCF in Spain between 2019 and 2023, by sector

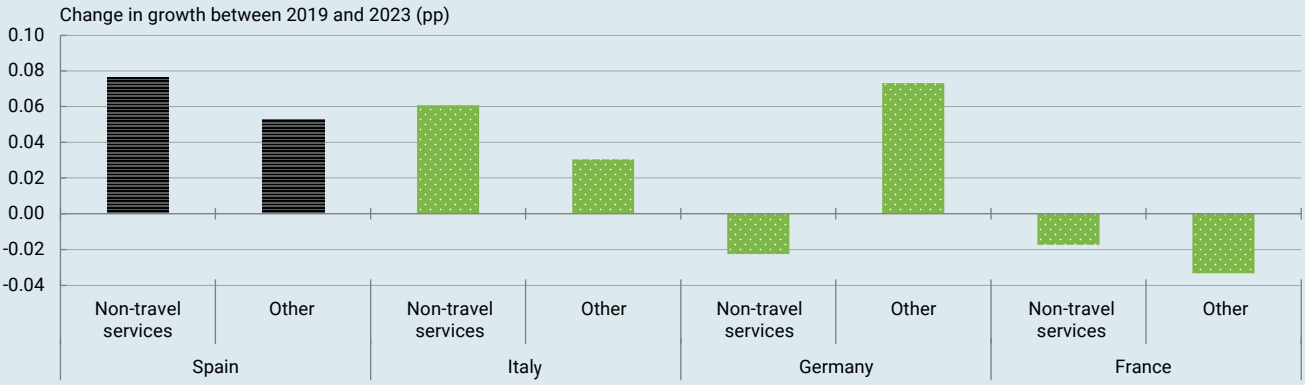


SOURCES: INE and Banco de España.

a For simplicity, "intangible" includes the item "cultivated biological resources". This item accounts for a negligible part of investment.

Chart 5
Between 2019 and 2023, the link between investment growth and productivity strengthened more among Spanish firms than among firms in other European countries. This pattern was even more pronounced among firms in non-travel services sectors

5.a Growth in business investment and TFP, by country (a)



SOURCE: Banco de España.

a The dependent variable is investment growth and the variable of interest is TFP. Fixed effects for firm size and sector-year are included.

Box 1.6

SPAIN'S UNEMPLOYMENT BENEFIT ASSISTANCE FOR INDIVIDUALS AGED OVER 52/55

In 1984, a non-contributory unemployment benefit was introduced for the over-55s,[1] and was later extended to include individuals over the age of 52. It differs from other unemployment protection schemes in two ways: its duration is indefinite until retirement age is reached, and retirement contributions are paid by the public employment services.

This benefit was introduced in a macroeconomic and labour market environment very different from that prevailing today. In the wake of the oil crisis in the mid-1970s, the integration of young people into the labour market was notably weak and the youth unemployment rate remained very high (Chart 1). This was a source of considerable concern and prompted a series of legislative changes, among them the benefit analysed in this box, which offered protection to older individuals who lost their jobs, and measures that facilitated young people's access to vacant positions.

Since its introduction, this benefit has undergone various changes concerning eligibility, the benefit amount, age of entitlement and the contribution base, especially in the latter two variables. Specifically, the minimum entitlement age was lowered to 52 in 1989, raised again to 55 in 2012 and ultimately reduced back to 52 in 2019. As for the contribution base, it initially stood at 100% of the minimum wage, but following the creation of the IPREM (multipurpose public indicator of income) in 2004, the benefit amount (linked to the IPREM) and the contribution base (linked to the minimum wage) began to diverge. Moreover, in 2007 the contribution base was increased to 125% of the minimum wage, reduced back to 100% in 2012 and again increased to 125% in 2019. However, the benefit has retained its two defining features: indefinite duration and the payment of retirement contributions by the public employment service. This despite the differences between the conditions at the time it was introduced and those prevailing today, the latter shaped by an extended period of economic growth and a marked increase in unemployment rates among the over-55s following the global financial crisis (Chart 2), which have yet to fully return to earlier levels.

These conditions may have a negative effect on beneficiaries' incentives to return to work. In this respect, of the beneficiaries who did not work in 2021, only 8.9% returned to work for at least one day in 2022, well below the figure (29.9%) observed for recipients of contributory unemployment benefits. This low probability of returning to employment persists over time: in 2024, the majority (55%) of beneficiaries had started to receive the benefit before reaching the age of 55 (Chart 3).

Meanwhile, re-employment prospects also depend on other socioeconomic factors. Specifically, as Chart 4 shows, the existence of household income other than the beneficiary's reduces incentives to return to work.[2] In addition, older individuals – who are closer to retirement – are less likely to return to employment, as are women.

The literature has causally examined the relationship between receipt of this benefit and re-employment rates, drawing on the changes over time in the age threshold for eligibility. Domènech-Arumi and Vannutelli (2025)[3] have found that the 2012 increase in the age threshold from 52 to 55 led to a rise in the number of affected workers returning to employment, especially among the younger individuals within the cohort. Arranz and García-Serrano (2022)[4] found evidence of strategic behaviour on the part of firms and workers exploiting this regulatory reform, with some layoffs being delayed until workers reached older ages following its introduction.

However, since these studies analyse the benefit as a whole, the extent to which the disincentive effect is attributable to the benefit's indefinite duration or to the associated retirement contributions cannot be established. In this regard, a substantial body of literature associates prolonged unemployment assistance with low re-employment rates. For Spain, Guillamón, Izquierdo and Puente[5] (2026) have developed a microsimulation model

1 This benefit complements the standard, contributory unemployment benefit, which has no age requirement, a maximum duration of 30 months and is payable to unemployed individuals who have exhausted or are not eligible for contributory benefits because they have not contributed for the minimum required period.

2 Since 2019, eligibility for the subsidy has been assessed individually, so household income may differ substantially across recipients depending on other sources of income within the household.

3 Gerard Domènech-Arumí and Silvia Vannutelli. (2025). "Bringing Them In or Pushing Them Out? The Labor Market Effects of Pro-Cyclical Unemployment Assistance Changes". *The Review of Economics and Statistics,* 107(2), pp. 324-337.

4 José M. Arranz and Carlos García-Serrano. (2022). "La evaluación del impacto de las políticas públicas: el caso de las políticas del mercado de trabajo". Papeles de Economía Española, 172, Fundación de las Cajas de Ahorros (Funcas).

5 Cristina Guillamón, Mario Izquierdo and Sergio Puente. (2026). "Duration vs. Replacement Ratio: A Microsimulation Analysis of Unemployment Benefits". Forthcoming.

Box 1.6
SPAIN'S UNEMPLOYMENT BENEFIT ASSISTANCE FOR INDIVIDUALS AGED OVER 52/55 (cont'd)

for contributory unemployment benefits that links their parameters (duration and amount) to the probability of returning to work. Their findings indicate that while both parameters disincentivise the return to work, the duration effect is of a greater order of magnitude.[6]

By contrast, the literature has paid little attention to the specific role that retirement contributions could play. In this respect, the regulatory reforms introduced over time provide an opportunity to analyse their impact. Until 2004 the benefit was set at 80% of the minimum wage, while contributions were based on 100% of the minimum contribution base, resulting in an over-contribution ratio of 1.25 relative to the benefit amount (Chart 5). Since the introduction of the IPREM that year, this ratio increased significantly, reflecting stronger growth in the minimum

Chart 1
Unemployment and long-term unemployment rates, youth (aged 16-29)

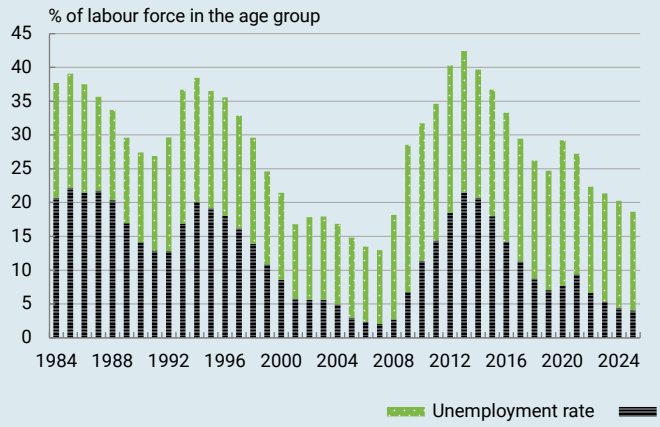


Chart 2
Unemployment and long-term unemployment rates, ages 55+

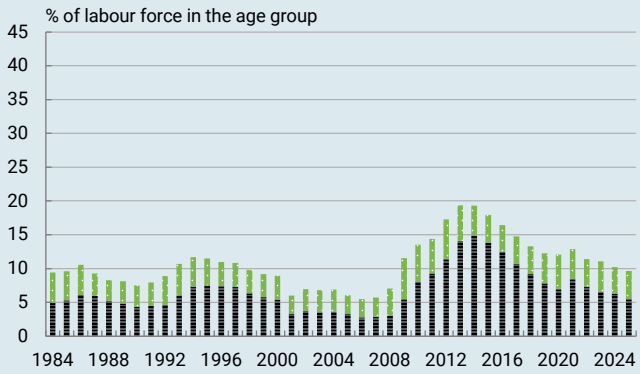


Chart 3
Distribution of beneficiaries of the unemployment benefit for over-52s in 2024, by age at first receipt (b)

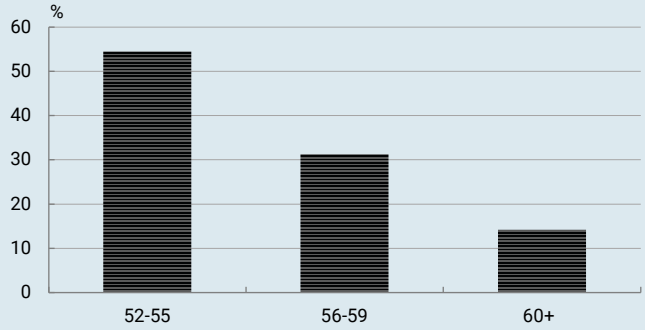
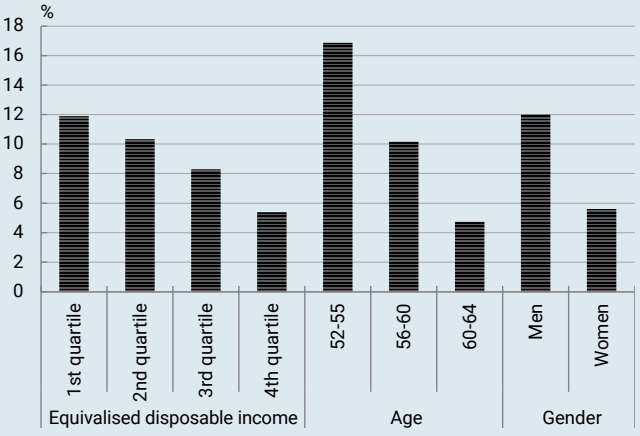


Chart 4
Probability of finding employment in 2022 among recipients in 2021 of the unemployment benefit for over-52s (c)



SOURCES: INE, Tesorería General de la Seguridad Social, IEF/AEAT and Banco de España.

a Long-term unemployed are defined as individuals who have been seeking employment for at least one year.
b Based on micro data from the social security administrative labour record (MCVL, by its Spanish initials).
c Individuals aged 52-64 not in employment in 2021. Equivalised gross disposable income is found using the modified OECD equivalence scale. Household Panel prepared by the Institute for Fiscal Studies and tax authorities (IEF/AEAT).

6 Other related papers for Spain include Yolanda Rebollo-Sanz. (2012). "Unemployment insurance and job turnover in Spain". *Labour Economics*, 19(3), pp. 403-426, and Yolanda F. Rebollo-Sanz and Núria Rodríguez-Planas. (2020). "When the Going Gets Tough...: Financial Incentives, Duration of Unemployment, and Job-Match Quality". *The Journal of Human Resources,* 55(1), pp. 119-163.

Box 1.6
SPAIN'S UNEMPLOYMENT BENEFIT ASSISTANCE FOR INDIVIDUALS AGED OVER 52/55 (cont'd)

wage relative to the IPREM, along with the increase in the contribution base to 125% of the minimum wage. The changes in the associated contribution, not observed in the amount of the benefit, provide a basis for estimating the differential effect of over-contribution on the probability of returning to employment.

This estimate is based on the model developed by Guillamón, Izquierdo and Puente (2026), extended to incorporate the effects of unemployment benefits, thus distinguishing between the standard contributory unemployment benefit, the non-contributory unemployment benefit of indefinite duration for individuals aged over 52/55, and the over-contribution associated with the latter.[7] Once the model has been estimated, a microsimulation is performed for all recipients of the indefinite-duration benefit aged 55. For each individual, the observed over-contribution is replaced by a counterfactual one, in which the contribution base is lowered until it equals the amount of the benefit (i.e. 80% of the IPREM). The results are shown in Chart 6. They suggest that the probability of returning to work would have been somewhat higher, with an especially pronounced effect among women, for whom it may even have doubled in recent years.[8] This stronger effect appears to reflect both the increase in the minimum wage in 2019 and the rise in the contribution base to125% of the minimum wage.

The above findings suggest that the disincentive to return to work stemming from the non-contributory unemployment benefit for individuals aged over 52/55 could, to a significant extent, be largely attributed to the over-contribution that this benefit entails. However, this evidence

Chart 5
Ratio of the contribution base to the unemployment benefit for over-52s/55s

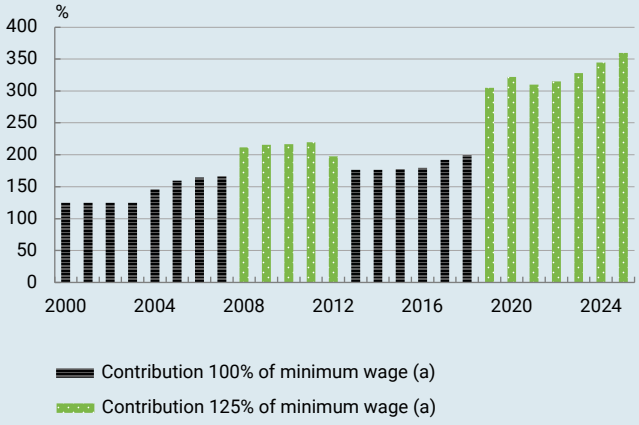
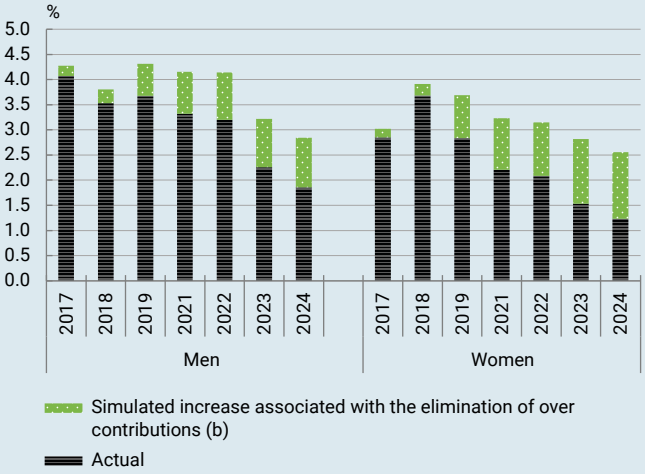


Chart 6
Probability of returning to work the following month among 55-year old beneficiaries of the contributory benefit



SOURCES: INE, Tesorería General de la Seguridad Social, IEF/AEAT and Banco de España.

a Ratio of the contribution base applied to beneficiaries of the unemployment benefit assistance for individuals aged over 52/55 (100% or 125% of the minimum wage, depending on the period) to the benefit amount received (80% of the IPREM). In 2007, the change in the contribution base to 125% of the minimum wage took place in late November; accordingly, the chart includes data only from 2008 onwards. In 2019, the change occurred in February and is therefore reflected for the full year. In 2012, the change in the contribution base to 100% of the minimum wage took place mid-year; accordingly, the ratio for that year is calculated as the average of the two values (112.5%).
b Simulation based on an extension of the model in Guillamón, Izquierdo and Puente (2026), excluding 2020.

7 Specifically, three variables are calculated: the amount of the standard contributory benefit, the amount of the unlimited-duration benefit and the latter's contribution base. In all three cases, the variables are rescaled by the wage earned in the previous job. The three variables are also interacted with individual-level characteristics such as gender or education, giving rise to different estimates for each person.

8 Chart 6 shows average effects, whereas the microsimulation exercise provides a different probability increase for each individual. For instance, for women in 2024, the average probability increase of 1.33 percentage points (pp) shown in the chart stems from a wider distribution, where the 5th and 95th percentiles are equal to 0.85 pp and 3 pp, respectively.

Box 1.6
SPAIN'S UNEMPLOYMENT BENEFIT ASSISTANCE FOR INDIVIDUALS AGED OVER 52/55 (cont'd)

should be interpreted with caution, as the data used to isolate the effect of over-contribution from the benefit's other features relate only to changes in the minimum wage independent of the IPREM and to changes in the contribution base from 100% to 125% of the minimum wage. These changes are small relative to the differences in replacement rates observed across individuals, making it difficult to accurately estimate the isolated effect of over-contributions. Accordingly, some of the estimated effects ascribed in this exercise to over-contribution may in fact be associated with other features of the benefit, such as its indefinite duration.

Box 1.7

DEVELOPMENTS IN GOVERNMENT REVENUE AND SPENDING IN THE WAKE OF THE PANDEMIC

Both government revenue and expenditure in Spain have increased markedly since the outbreak of the COVID-19 pandemic, rising as a share of GDP. Specifically, between 2019 and 2025 revenue rose by 3.2 percentage points (pp) relative to GDP, while expenditure grew by 2.5 pp. If funds from the Recovery and Resilience Facility (RRF) are included, these increases stand at 4.0 pp and 3.3 pp respectively (Charts 1 and 2). Government revenue in Spain reached 42.9% of GDP in 2025, with spending at 45.3% (Table 1).

In that same period, government expenditure as a share of GDP grew even more sharply in the broader euro area[1] (4.5 pp on average, including the RRF) than in Spain, while government revenue also grew (1.6 pp), but to a lesser extent than in Spain. As a result, average euro area expenditure stood 1.4 pp of GDP above the level in Spain (4.6 pp if the comparison is made with the euro area aggregate), while on the revenue side there was some convergence between Spain and the euro area average, although the euro area level remained 1.8 pp higher (4.0 pp if comparing with the euro area aggregate). As a result, the gap between the general government balances in the two regions narrowed, with the euro area balance deteriorating markedly (from -0.5% to -2.9% of GDP), while Spain's improved somewhat (from -3.1% to -2.4%).

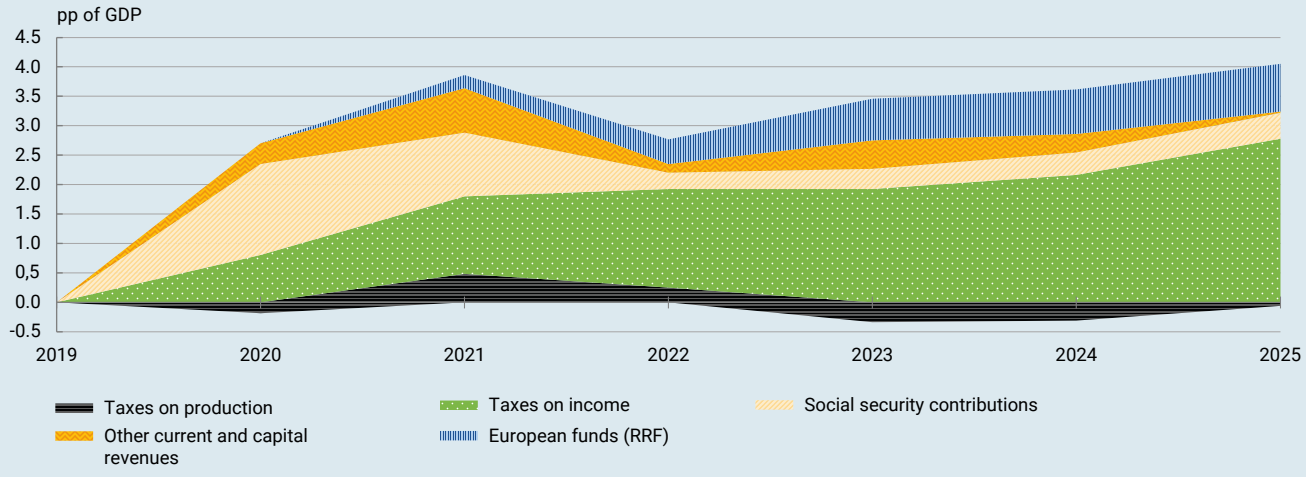
This box analyses the main drivers and components behind these developments in public revenue and expenditure in Spain and assesses their persistence to gauge their future trajectory.[2]

An analysis of recent developments in government revenue shows that the significant increase observed since 2019 has been driven mainly by direct taxes, followed by social security contributions. This, in turn, reflects both a robust increase in tax bases, outpacing GDP growth, and the impact of discretionary measures and of fiscal drag.

Chart 1 highlights the growth in income taxes, which rose by 2.8 pp of GDP between 2019 and 2025. Of this rise, 1.7 pp is accounted for by personal income tax, with a further 1.0 pp owing to corporate income tax. Social security contributions also increased their share by 0.4 pp, while taxes on production saw their share decline by 0.1 pp, with other current and capital revenue staying stable relative to GDP. RRF funds contributed 0.8 pp to revenue in 2025.

Of the factors underlying these developments (broken down according to the methodology set out in García-

Chart 1
Developments in revenue relative to GDP since 2019. Breakdown by components



SOURCES: Banco de España and IGAE.

1 Arithmetic mean of the revenue-to-GDP and expenditure-to-GDP ratios of the euro area countries.

2 For further details, see Esteban García-Miralles and Juan Manuel Scarilli. "Public revenue and spending in the wake of the pandemic". Documentos Ocasionales, Banco de España. Forthcoming. This report combines a highly disaggregated examination of available information on revenue and expenditure with a range of modelling techniques that draw on tax micro data and models to break down the determinants of government revenue.

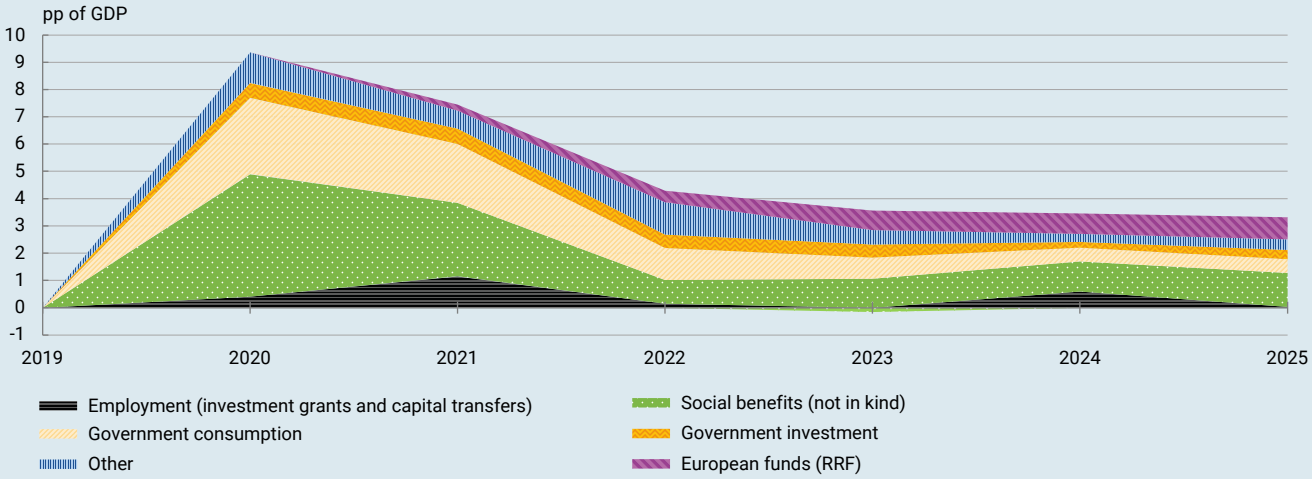
Box 1.7

DEVELOPMENTS IN GOVERNMENT REVENUE AND SPENDING IN THE WAKE OF THE PANDEMIC (cont'd)

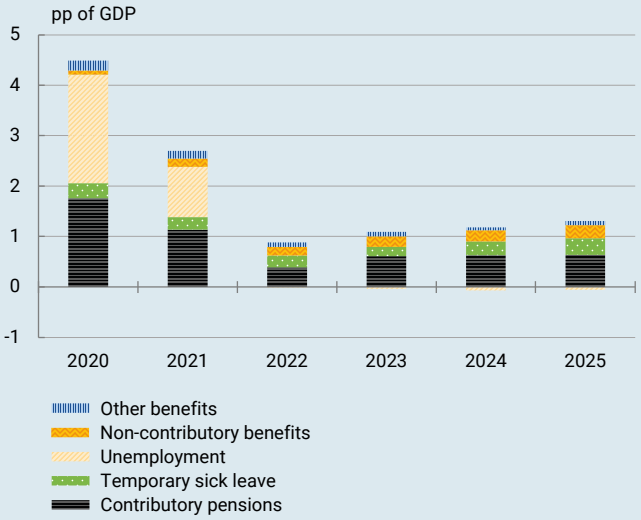
Miralles and Martínez Pagés, 2023)[3], three stand out. First, tax bases grew faster than GDP as economic growth during this period was concentrated in components that are more heavily taxed, accounting for 1.5 pp of the increase between 2019 and 2025. Accordingly, the strong performance of tax bases over this period appears closely linked to the economic cycle. This is consistent with the fact that certain taxes, such as personal and corporate income taxes, tend to respond more strongly to the business cycle (with elasticities above one, or high tax buoyancy).[4]

Chart 2
Since the pandemic, government expenditure has increased as a share of GDP, driven in particular by social benefits (notably on termporary sick leave) and persistently high spending on intermediate consumption

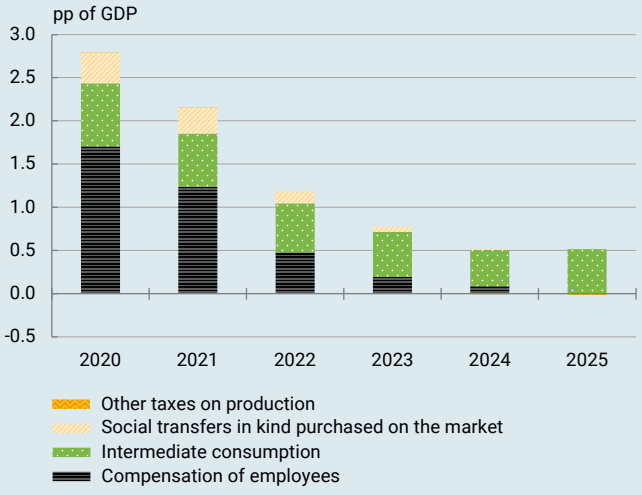
2.a Developments in government spending relative to GDP since 2019. Breakdown by components



2.b Developments in social benefits relative to GDP since 2019. Breakdown by components



2.c Developments in government consumption relative to GDP since 2019. Breakdown by components



SOURCES: Banco de España and IGAE, based on García-Miralles and Scarilli (2026).

3 Esteban García-Miralles and Jorge Martínez Pagés. (2023). "Government revenue in the wake of the pandemic: tax residuals and inflation". *Economic Bulletin - Banco de España,* 2023/Q1, 16.

4 Vincent Belinga, Dora Benedek, Ruud de Mooij and John Norregaard. (2014). "Tax Buoyancy in OECD Countries". IMF Working Papers, WP/14/110, International Monetary Fund.

Box 1.7

DEVELOPMENTS IN GOVERNMENT REVENUE AND SPENDING IN THE WAKE OF THE PANDEMIC (cont'd)

Second, effective personal income tax rates rose during the period owing to fiscal drag, reflecting the fact that tax parameters were not fully updated in line with household income growth or inflation. This accounts for 1.2 pp of the rise in the revenue-to-GDP ratio.[5] In the absence of measures to reverse the increase in average effective

Table 1
Government revenue and expenditure as a percentage of GDP

pp of GDP

	2019	2020	2021	2022	2023	2024	2025
Total government revenue	39.0	41.5	42.8	41.7	42.1	42.3	42.9
Income and wealth taxes	10.3	11.1	11.6	12.0	12.2	12.5	13.1
Personal income tax (including non-resident individuals)	7.9	8.8	8.6	9.0	9.0	9.1	9.6
Corporate income tax (including non-resident legal entities)	2.1	2.0	2.6	2.7	2.8	2.9	3.1
Other income and wealth taxes	0.3	0.4	0.4	0.3	0.4	0.4	0.4
Taxes on production	11.4	11.2	11.9	11.7	11.1	11.1	11.3
VAT (including Canary Islands general indirect tax)	6.5	6.3	6.8	6.8	6.4	6.4	6.8
Taxes on products (excise duties, transfer tax, stamp tax, etc.)	3.2	3.1	3.3	3.1	2.8	2.9	3.1
Other taxes on products and imports	1.7	1.9	1.9	1.7	1.8	1.7	1.5
Social security contributions	12.8	14.4	13.9	13.1	13.2	13.2	13.3
Other current and capital receipts	4.4	4.8	5.2	4.6	4.9	4.7	4.4
European funds (RRF)	0.0	0.0	0.2	0.4	0.7	0.8	0.8
Average euro area revenue	43.1	43.0	43.3	43.2	43.3	44.3	44.7
Aggregate euro area revenue	46.5	46.6	46.9	46.5	45.9	46.5	46.9
Total government expenditure	42.0	51.4	49.5	46.3	45.4	45.5	45.3
Social benefits	15.7	20.2	18.4	16.6	16.8	16.8	17.0
Contributory pensions	12.2	14.0	13.4	12.6	12.9	12.9	12.9
Temporary sick leave	0.8	1.1	1.0	1.0	0.9	1.0	1.1
Unemployment	1.5	3.7	2.5	1.5	1.5	1.4	1.5
Non-contributory benefits	0.3	0.4	0.5	0.5	0.5	0.6	0.6
Other benefits	0.9	1.0	1.0	0.9	0.9	0.9	0.9
Government consumption	18.6	21.4	20.7	19.7	19.3	19.1	19.1
Compensation of employees	10.7	12.5	12.0	11.2	10.9	10.8	10.8
Intermediate consumption	5.1	5.9	5.8	5.7	5.7	5.6	5.6
Social transfers in kind purchased on the market	2.6	3.0	2.9	2.8	2.7	2.6	2.6
Government investment	2.2	2.8	2.8	2.7	2.7	2.4	2.6
Investment grants and capital transfers	0.8	1.2	1.9	0.9	0.6	1.3	0.8
Extraordinary items (a)	0.1	0.2	1.1	0.1	0.0	0.8	0.3
Other	0.7	0.9	0.8	0.8	0.6	0.6	0.5
Other	4.8	5.9	5.4	6.0	5.3	5.1	5.2
Subsidies	1.0	1.9	1.4	1.9	1.4	1.2	1.2
Effective interest paid	2.3	2.2	2.1	2.3	2.4	2.4	2.4
Other transfers and current accounts	1.5	1.8	1.9	1.7	1.6	1.5	1.6
Total expenditure of European funds (RRF)	0.0	0.0	0.2	0.4	0.7	0.8	0.8
Capital expenditure, of which:	0.0	0.0	0.2	0.3	0.5	0.6	0.7
Gross fixed capital formation	0.0	0.0	0.0	0.1	0.3	0.3	0.3
Average euro area government expenditure	42.2	49.6	47.4	45.2	45.5	46.0	46.7
Aggregate euro area government expenditure	47.0	53.6	52.0	49.9	49.4	49.5	49.9

SOURCES: Banco de España, IGAE and Eurostat.

a Capital transfers related to the COVID-19 pandemic, natural disasters and court decisions.

5 See Sofía Balladares and Esteban García-Miralles (2026) for a more detailed analysis of this phenomenon in Spain over the recent period. "Fiscal Drag with Microsimulation: Evidence from Spanish Tax Records". *Fiscal Studies,* pp. 1-25. Similarly, Esteban García-Miralles et al. (2026). "Fiscal drag in theory and in practice: A European perspective". *European Economic Review,* 185(105275) documents this phenomenon across Europe, identifying Spain as one of the countries where it has been most predominant.

Box 1.7
DEVELOPMENTS IN GOVERNMENT REVENUE AND SPENDING IN THE WAKE OF THE PANDEMIC (cont'd)

rates, the impact will be structural and, unless further adjustments are made, effective rates will continue to climb.[6]

Third, other revenue measures contributed around 0.8 pp.[7] These included, in particular, higher social contributions linked to the pension reform, the temporary levy on banks and the cap on corporate income tax relief for subsidiaries' losses.

Government spending, meanwhile, had been on a declining path in the years prior to the COVID-19 pandemic, following the measures adopted in response to the 2008 financial crisis and the subsequent economic recovery.[8] The pandemic, however, marked a turning point and lead to higher spending across nearly all components.

Since 2019, the expenditure-to-GDP ratio has risen by 2.5 pp, excluding RRF-related spending, which added a further 0.8 pp (Chart 2.a).

The increase is spread across a wide range of items, although social benefits, government consumption and, to a lesser extent, domestically financed government investment account for the bulk of the rise (2.1 pp).

Table 2 shows the increase in expenditure relative to GDP up to 2024 (the latest year available in this case) broken down by function. As can be seen, most of the rise is concentrated in social welfare (1.4 pp), economic affairs (0.9 pp), health (0.4 pp) and general public services (0.4 pp). By sub-sector, the share of total spending by the central government grew (0.7 pp), in contrast to those of local government (-0.5 pp) and social security funds (-0.3 pp). For regional governments, spending shares rose in housing, health, general public services, and public order and safety, while declining in economic affairs and education.

A disaggregated analysis of the main expenditure items is therefore essential in assessing the persistence of their recent increase.[9]

First, social benefits other than social transfers in kind stand out, having risen by 1.3 pp of GDP between 2019 and 2025 (Chart 2.b). Of this increase, 0.6 pp is due to higher contributory pension spending, 0.3 pp to the rise in temporary sick leave (a phenomenon that is very pervasive in Spain, across all regions, age groups and sectors of activity)[10] and 0.3 pp to non-contributory benefits (chiefly the minimum income scheme). By contrast, spending on unemployment benefits declined by 0.1 pp of GDP between 2019 and 2025, reflecting the fall in the unemployment rate.

Second, government consumption increased by 0.5 pp of GDP between 2019 and 2025 (0.6 pp including spending associated with the RRF). Despite the increases recorded during the pandemic appearing temporary, they have proven relatively persistent in some components. This is particularly true of intermediate consumption (Chart 2.c), which rose by 0.7 pp between 2019 and 2020,[11] with most of that increase (0.5 pp) maintained through to 2025. This contrasts with the other components of government consumption, where the sharp increase recorded in 2020 faded in subsequent years.

A more detailed analysis, using data up to 2024, allows the components driving the increase in government consumption in general and intermediate consumption in particular to be broken down by function.[12] Between 2019 and 2024, government consumption increased by 0.6 pp of GDP. Slightly more than half of this increase reflects higher healthcare spending (0.3 pp). Within this category,

6 However, effective tax rates are already at historically high levels, which could point to downward adjustment in the context of future tax reforms.

7 Other factors not explicitly captured by the model drove a 0.3 pp reduction in the revenue-to-GDP ratio.

8 Francisco Martí and Javier J. Pérez. (2015). "Spanish Public Finances through the Financial Crisis". *Fiscal Studies* , 36(4), pp. 527-554.

9 It should be noted that all the measures adopted in response to the health and economic crisis caused by the COVID-19 pandemic were temporary. Their budgetary impact raised government expenditure by 3.9 pp, 2.9 pp and 0.5 pp in 2020, 2021 and 2022, respectively, with these effects coming to an end in 2023. Accordingly, the rise in government expenditure observed since 2019 appears to be linked more to structural policy decisions than to temporary measures that have gradually become permanent..

10 Banco de España. (2025). "Box 5. A preliminary analysis of the increase in temporary sick leave in Spain". See Banco de España, *Annual Report 2024,* pp. 172-175 According to the study on temporary sick leave published by the Independent Authority for Fiscal Responsibility (AIReF by its Spanish acronym) as part of the second phase of the 2022-2026 Spending Review, the incidence of sick leave due to common contingencies increased by almost 60% between 2017 and 2024, with musculoskeletal and respiratory illnesses particularly prevalent. The largest cumulative increases are observed in infectious diseases (the incidence rate has doubled) and in mental health conditions (up by 80%). Mental health conditions also show the longest average durations, at 98.5 days in 2024. See AIReF. (2025). *Incapacidad temporal. Estudio.*

11 A similar pattern was observed in the wake of the financial crisis, when intermediate consumption rose by 0.7 pp of GDP between 2007 and 2009, before falling back to its 2007 level by 2017. However, spending on compensation of employees never returned to its pre-crisis level.

12 Although the classification of the functions of government (COFOG) data used in Table 2 do not provide a breakdown of RRF spending, a Banco de España estimate is used, which is net of such expenditure. In any event, RRF-linked expenditure in government consumption is estimated at less than 0.1 pp of GDP in each year of the period shown.

Box 1.7
DEVELOPMENTS IN GOVERNMENT REVENUE AND SPENDING IN THE WAKE OF THE PANDEMIC (cont'd)

the most persistent components are employee compensation (almost 0.2 pp and especially concentrated in outpatient services)[13] and intermediate consumption in hospital services (0.2 pp). The increase in government consumption outside the healthcare sector is largely explained by the rise in intermediate consumption related to economic affairs (0.1 pp) and social welfare (0.1 pp), along with the contribution of other items (0.1 pp).

Third, government investment rose by 0.3 pp of GDP between 2019 and 2025. This increase effectively doubles to 0.7 pp if RRF-related spending is included.

Lastly, spending on other items rose by 0.4 pp of GDP over this period, reflecting overall developments in several components, notably higher subsidies (0.2 pp) and higher effective interest rates (0.1 pp).

Having characterised recent expenditure dynamics, it is important to assess their degree of persistence. The nature of the components showing the strongest growth, combined with an analysis of persistence based on their historical behaviour, suggests a degree of inertia, especially on the expenditure side.

In particular, social benefits are shaped by the demographic ageing process and by rising spending associated with temporary sick leave. In this regard, the AIReF notes that this increase may reflect both cyclical factors, linked to scarring effects of the pandemic and pressures in primary care, and more structural elements stemming from the design of these benefits.[14]

Government consumption is especially relevant for assessing the fiscal policy stance and its persistence, as it is one of the expenditure categories with scope for discretionary adjustment in the short term. In this case, the components of government consumption showing the strongest growth are linked to certain healthcare services that have not returned to their pre-pandemic share of GDP. Moreover, this increase is concentrated in items that display greater inertia, such as employee compensation and intermediate consumption in outpatient services.

Table 2
Government expenditure, by function and sub-sector. 2019-24

	2019					2024				
	General government	Central government	Social security funds	Regional government	Local government	General government	Central government	Social security funds	Regional government	Local government
Function classification	% of GDP	% of spending				% of GDP	% of spending			
01 General public services	5.4	64.0	0.2	18.1	17.7	5.8	64.5	0.3	18.8	16.4
02 Defence	0.8	100.0	—	—	—	0.9	100.0	—	—	—
03 Public order and safety	1.8	53.3	—	23.4	23.3	1.8	52.2	—	24.6	23.2
04 Economic affairs	4.2	38.9	5.1	32.3	23.6	5.1	42.2	3.9	31.6	22.4
05 Environmental protection	0.9	6.4	—	21.5	72.1	1.0	12.7	—	22.3	65.0
06 Housing and community amenities	0.4	1.1	—	36.6	62.3	0.5	2.6	—	40.7	56.7
07 Health	6.1	3.8	2.2	92.8	1.2	6.5	3.5	1.9	93.7	0.9
08 Recreation, culture and religion	1.2	16.4	—	22.8	60.7	1.2	17.6	—	22.6	59.8
09 Education	4.0	3.4	0.0	91.3	5.3	4.1	4.0	0.0	90.7	5.2
10 Social protection	17.3	10.1	80.4	5.9	3.6	18.7	9.9	80.3	6.4	3.4
TOTAL	42.0	22.0	33.9	32.5	11.5	45.5	22.7	33.7	32.6	11.0

SOURCES: IGAE and Banco de España.

13 A comparison of healthcare and education is instructive: both sectors account for around a quarter of public employment and a similar share of total employee compensation. Between 2019 and 2024, public employment in education increased by 18%, above the overall rise in public employment (10%), yet its compensation as a share of GDP remained stable. By contrast, employment in healthcare rose by 8%, while employee compensation increased its share of GDP by 0.2 pp. Lastly, pharmaceutical spending remained stable as a share of GDP over the period, unlike in earlier phases.

14 As a result, social welfare spending rose by 1.4 pp above its 2019 level, mainly driven by social benefits other than social transfers in kind (1.2 pp).

Box 1.7

DEVELOPMENTS IN GOVERNMENT REVENUE AND SPENDING IN THE WAKE OF THE PANDEMIC (cont'd)

Government investment (2.6% of GDP excluding RRF-related spending) remains below its historical average (3.4% since 1995) and faces upward pressures in the future owing to defence commitments.

Within the remaining expenditure categories, the increase in subsidies is particularly noteworthy. The rise is the result of various measures aimed at mitigating the effects of the energy crisis, including the public transport subsidies that were introduced in 2022 and have been subsequently extended.

The analysis presented in this box documents a significant increase in the size of general government, as measured by revenue and expenditure ratios as a percentage of GDP (Table 1). On the expenditure side, the analysis indicates a high degree of inertia in spending growth in the absence of measures to alter its trajectory, with increases concentrated to a large extent in social benefits, government consumption – particularly in healthcare spending – and government investment. The revenue dynamism observed reflects a combination of factors linked to the economic cycle and more persistent factors in the longer term linked to discretionary measures – in particular the incomplete indexation of personal income tax, which has contributed significantly to higher tax receipts. These trends[15] underline the need to define a detailed and granular medium-term fiscal strategy that takes into account both recent developments in these components and emerging spending needs in areas such as defence, climate change and digitalisation.

15 This assessment is consistent with results obtained using the European Commission and the Eurosystem's methodology, which breaks down revenue into the cyclical component (linked to the position of the economy in the cycle) and the structural component. The results suggest that, since 2019, the cyclical component of revenue and expenditure has played a relatively limited role, accounting for around 20%-30% of the observed increase.

Box 2.1

HETEROGENEITY IN HOUSE PRICE GROWTH ACROSS SPAIN'S LARGE URBAN AREAS: A FIRST APPROXIMATION BASED ON A REPEAT SALES INDEX

The availability of granular data on house purchases makes it possible to calculate house price indicators for different geographical areas, both for average amounts and price per square metre. These metrics can provide information on the average price of housing transactions in a given period and geographical location. However, such indicators may be biased as a measure of house price developments over time if differences in the characteristics of the properties transacted are not considered. This box sets out experimental results for a second-hand house price index based on the repeat sales methodology – or Case-Shiller index – which provides an alternative measure of house price developments for Spain's six largest urban areas during the housing market recovery period from 2014 to 2024. This index is constructed using granular information on house purchases and their characteristics, digitalised by the General Council of Notaries since 2007.

The calculation of house price changes based on average prices per square metre in different years may be of limited value for assessing house price developments if no statistical treatment is applied. The main problem lies in the composition of the housing transactions used to calculate average prices varying over time and across geographical areas. For instance, if a larger proportion of lower-quality dwellings are bought or sold in a given year, the increase in the average price may be smaller than that obtained when comparing the prices of dwellings with similar characteristics. Similarly, if the proportion of purchases in higher-income geographical areas increases, the average price for a geographical area as a whole could rise by more than the prices in higher-income areas. Therefore, rates of change based on average price indicators per square metre reflect both changes in prices and changes in the composition of housing transactions.

The Spanish National Statistics Institute (INE) compiles the house price index (HPI) to provide an appropriate measure of changes over time in the prices of new and second-hand open-market housing over time. This index has been available on a quarterly basis since 2007 for all Spanish regions and for Spain as a whole. The methodology used for the HPI combines stratification – grouping dwellings with common characteristics – and hedonic regression models to control for the observable characteristics of the dwellings. Under this methodological approach, price changes are calculated by keeping constant the observable characteristics of dwellings and weighting the different dwelling types (strata) according to their relative weight in total housing expenditure.[1] This index is the most appropriate for measuring house price developments in Spain and keeps the composition of dwellings constant based on their observed characteristics. However, such price indexes are not available for local geographical units such as municipalities or urban areas.

The literature on price indexes has suggested alternative methods for accurately measuring changes in house prices. This box presents experimental results for one such method – a Case-Shiller-type repeat sales index – for Spain's large urban areas. This approach is based on calculating price differences for the same dwelling sold repeatedly over time and subsequently aggregating the information on price changes across all repeat sale transactions in the market. By comparing the price of the same dwelling at different points in time, it is possible to control for the quality or other time-invariant characteristics of the dwelling, including those that are complex or impossible to measure. The main advantage of this approach is that, by controlling for these characteristics, it limits potential biases stemming from changes in the composition of dwellings. Moreover, it is simple to implement as it requires fewer assumptions and data on dwelling characteristics.[2]

However, this method also has limitations, most notably the following: (i) the need for long purchase/sale time series to enable a sufficient number of repeat sales to be identified in order to ensure the statistical robustness of the index, since in less liquid markets – with few housing resales – the index may be more volatile and less reliable;[3] (ii) the under-representation of new housing in the measurement of prices;

1 The HPI's methodological design is aligned with the European Union's (Harmonised House Price Index) coordinated by Eurostat. It is a chained Laspeyres index that weights dwellings with common characteristics according to their relative share in total expenditure over the previous two years.

2 For methodological details, see Karl E. Case and Robert J. Shiller. (1987). "Prices of single family homes since 1970: New indexes for four cities". *New England Economic Review,* September/October, pp. 45-56; Karl E. Case and Robert J. Shiller. (1989). "The Efficiency of the Market for Single-Family Homes". *American Economic Review,* 79(1), pp. 125-137, and Jan de Haan. (2013). "Repeat Sales Methods". In *Handbook on Residential Property Price Indices (RPPIs),* International Monetary Fund.

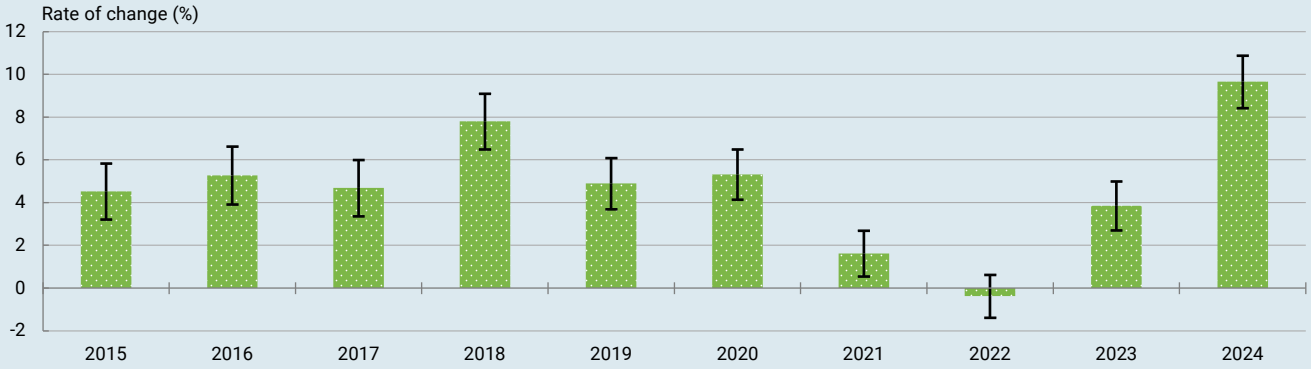
3 Granular transaction data are available from 2007, but the results are reported only for the 2014-24 recovery period, for which the sample size is large enough to allow these price indexes to be estimated with statistical reliability.

Box 2.1

HETEROGENEITY IN HOUSE PRICE GROWTH ACROSS SPAIN'S LARGE URBAN AREAS: A FIRST APPROXIMATION BASED ON A REPEAT SALES INDEX (cont'd)

Chart 1
Estimated growth in real house prices since 2015 is higher when housing characteristics are taken into account

1.a Annual growth of the Case-Shiller real house price index for Spain (a) (b)



SOURCE: Banco de España on data from the General Council of Notaries.

a The Case-Shiller index is estimated based on observations of repeat sales of the same dwelling. For each property, the log change in the price between the current sale and the previous sale is calculated, and a regression with time effects is estimated, using weights that are inversely proportional to the variance of the error component modeled as a function of the time lapsed between the two sales. The sample includes only collective open-market housing and excludes outliers and repeat sales occurring within less than one year. The estimation is based on data for the period 2007-24. The index is deflated by the CPI.
b Standard errors and 95% confidence intervals for the price index are calculated using clustering by district where the dwelling is located and by transaction year.

(iii) the difficulty of making adjustments that capture the effects of depreciation or home improvements on prices, or (iv) a possible upward bias in the measurement of house prices during upturns, along with greater short-term volatility, owing to the selection of dwellings that are resold in the most dynamic markets.[4]

The repeat sales index used in this box incorporates a series of assumptions and adjustments to minimise potential biases. Specifically, the index is calculated for collective open-market housing, excluding subsidised housing and single-family homes given their small sample size. Outliers[5] and repeat sales occurring within less than one year are removed to limit biases stemming from unobserved changes in housing quality. The index is obtained from the standard estimation of a specification based on the log change in price between two sales of the same dwelling, including indicators for the current and preceding sale periods.[6] This series is deflated by the CPI in order to obtain real values.

Chart 1 shows the annual change in real house prices in Spain between 2014 and 2024, estimated using the Case-Shiller repeat sales method. Over this period, the average inflation-adjusted rate of increase in house prices was 4.7%. This exceeds the rise in the average price per square metre where no adjustment is made for composition effects.[7] This differential suggests that there have been significant

4 See Nancy E. Wallace and Richard A. Meese. (1997). "The construction of residential housing price indices: a comparison of repeat-sales, hedonic-regression, and hybrid approaches". *The Journal of Real Estate Finance and Economics,* 14(1), pp. 51-73; Eric Ghysels, Alberto Plazzi, Rossen Valkanov and Walter Torous. (2013). "Forecasting real estate prices". In *Handbook of Economic Forecasting,* 2, pp. 509-580, and Mick Silver. (2016). "How to better measure hedonic residential property price indexes". IMF Working Papers 16/213.

5 Observations corresponding to the top and bottom 1% of price changes, for each interval between repeat sales and for each geographical area, are excluded. Observations with a price per square metre below the 1st percentile or above the 99th percentile of the values observed among transactions in the province of the dwelling's location over the 12 months prior to the transaction are also removed.

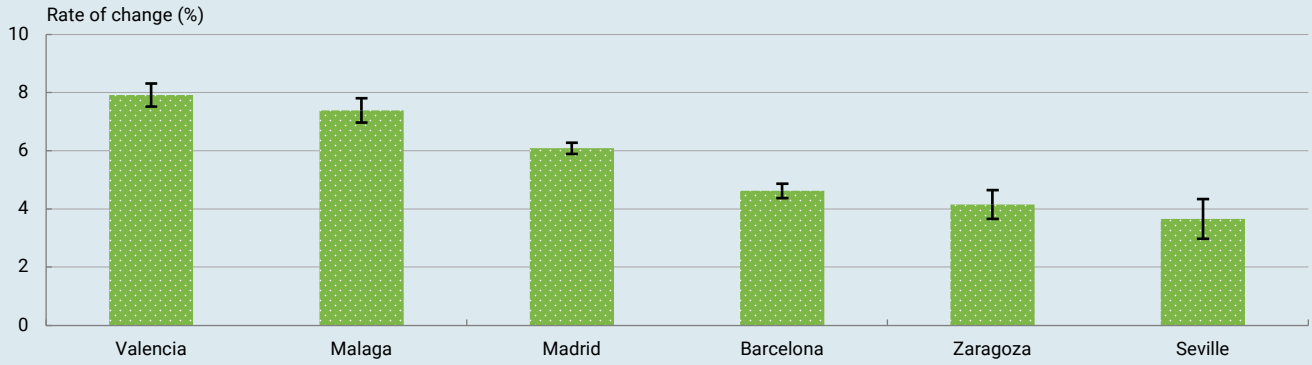
6 The latter are included with a negative sign. See, for example, Jan de Haan. (2013). "Repeat Sales Methods". In *Handbook on Residential Property Price Indices (RPPIs)*, International Monetary Fund.

7 In the period 2014-24, the annual rate of change of the real average price per square metre of collective housing, without adjusting for composition effects, stood at an average of 2.1% for the population of transactions as a whole and 3.3% when the sample is restricted to repeat sales.

Box 2.1
HETEROGENEITY IN HOUSE PRICE GROWTH ACROSS SPAIN'S LARGE URBAN AREAS: A FIRST APPROXIMATION BASED ON A REPEAT SALES INDEX (cont'd)

Chart 2
There is a high degree of heterogeneity in house price developments across urban areas

2.a Average annual growth rate of the Case-Shiller real house price index in 2014-24 (a) (b)



SOURCE: Banco de España, with data from the General Council of Notaries.

a For each urban area, the index is estimated using the repeat sales methodology described in Chart 1, but restricting the sample to the observations for that area.
b Standard errors and 95% confidence levels for the price index are calculated using clustering by district where the dwelling is located and by transaction year.

changes in the composition of housing transactions over time and across geographical areas, and that failing to account for them would bias house price growth downwards. One possible explanation for this divergence is the presence of quality-adjustment mechanisms in the housing purchased during upward phases in the price cycle, for instance, a higher share of house purchases in municipalities located further away from urban centres in order to lower the average value of house purchases.

The granularity of the available data allows Case-Shiller price indexes to be estimated for the most active urban housing markets, where a sufficient number of repeat sales are identified. This box discusses the results for the urban areas of Madrid, Barcelona, Valencia, Seville, Malaga and Zaragoza.[8] The experimental nature of these indicators should be emphasised, particularly for urban areas where the number of transactions available for the estimation of price indexes is more limited and confidence intervals around the point estimate are wider. Chart 2 shows the average annual growth of real house prices for the sample of repeat sales dwellings in the six urban areas over the period 2014-24.

The results indicate a high degree of heterogeneity in house price developments across different urban areas, with notable growth in areas where there is strong demand for non-residential housing, such as Malaga, or where residential rental prices have increased markedly, such as Valencia (see Box 3.2). The wider Madrid urban area, which has a significant weight in the national housing market (see Chapter 2, section 2), posted stronger growth than the aggregate index, while growth in the Barcelona area was in line with the average for Spain as a whole. Urban areas subject to lower demographic pressure, such as Zaragoza and Seville, recorded significant increases, albeit below the national average.

Comparing the price changes derived from the Case-Shiller indexes with the increase in average prices per square metre in the repeat sales sample and in the overall population of transactions suggests that composition effects are also material at the local level. For example, in Barcelona the comparison with the repeat sales sample indicates that the average annual rate of change is 2.4 percentage points (pp) higher when using the Case-Shiller

8 The average share of transactions included in the repeat sales sample, relative to total transactions in urban areas, ranges from 8.2% in Madrid to 11.9% in Valencia, standing at 8.9% for the overall sample of repeat sales. This share increases over time, reaching 20.1% in 2024, with similar levels across the urban areas analysed in this box. In absolute terms, the total number of repeat sales averages 23,000 per year and reaches 70,000 in 2024; among the urban areas considered, the highest figure is recorded in Madrid, at 10,000, and the lowest in Zaragoza, at 1,000.

Box 2.1

HETEROGENEITY IN HOUSE PRICE GROWTH ACROSS SPAIN'S LARGE URBAN AREAS: A FIRST APPROXIMATION BASED ON A REPEAT SALES INDEX (cont'd)

index, while in Madrid or Malaga this difference is around 1.5 pp. The largest differences attributable to changes in housing composition are observed in Valencia, where they average around 2.9 pp over the period 2014-24.

The results from this experimental statistic point to an important conclusion for the analysis of the housing market in the most recent period. Assessing affordability conditions on the basis of average prices alone would not capture the different adjustment margins that households may have used in order to access housing. Failing to account for these changes in housing composition would attenuate the increase in the amounts paid by households to purchase a dwelling. According to the results presented in this box, this appears to have been particularly significant in large urban areas, in areas with stronger non-residential demand and where supply constraints are greater.

Box 2.2

RESIDENTIAL RENTAL PRICE DEVELOPMENTS (2019-24): MEASURING THE PRICES OF STOCK AND FLOWS BASED ON TAX SOURCES

Suitable rental price indicators are required for analysing the residential rental market and housing affordability. One of the difficulties of measuring these prices is that the regulation of the rental market leads to rental housing prices being modified heterogeneously over time according to the contract law governing the setting of rental prices. Thus, the average price of the total rental housing units or the rental housing stock in a market may vary because: (i) the prices of contracts in force are updated annually; (ii) new prices are agreed for rollovers at the end of the contracts; (iii) new prices are set for housing units coming onto the market; and (iv) average prices change because housing units leave the rental market. This box presents a breakdown of changes in the average residential rental price for each component.[1] The period 2019-24 is analysed for the whole Spanish economy and the six most populous cities in Spain.[2]

Residential rental prices and their components are measured based on tax data from the rental housing owners' personal income tax returns. A rental price, in terms of euro per square metre, can be calculated for each rental housing unit from the information in these returns, based on the owners' gross rental income, the days in a year when the housing unit was rented and the floor area of the housing unit.[3] As from 2019 this information identifies when the rental contract changes and, thus, isolates the prices of new contract flows.

Chart 1 shows the annual change between 2019 and 2024 in the real average price[4] for (i) the rental housing stock; (ii) housing with contracts in force with prices that can be updated according to existing legislation; and (iii) housing units covered by new rental contracts. The last component includes situations such as a new price set for a new tenant or for the same tenant in a previous contract.

The average year-on-year rate of change in the real price of the rental housing stock stood at 0.4% between 2019 and 2024, with cumulative growth of 2% during that period. This seems to contrast with developments in house prices which, according to the National Statistic Institute's (INE) house price index (IPV), increased by 8.1% in real terms between 2019 and 2024, with an average annual percentage change of 1.6%. However, the smaller rise in the prices of rental housing stock is due to less buoyant price increases in rental contracts since they are legally capped. Indeed, rent increases in rental contracts dampened real prices by an annual average of -1.7% during that period as they decreased during 2021 and 2022. This contrasts with the buoyant real prices of new contract flows, which grew at a similar rate to house prices. Specifically, the real prices of new contracts grew by 1.4% on average between 2019 and 2024. In addition, these prices show a rising trend from averages of around 0% in 2020-22, to 2.9% in 2023 and 4.6% in 2024. These changes in the real prices of rental flows are consistent with a rental market where supply does not grow enough to meet new demand. Marginal entry prices are increasingly higher, while tenants with contracts in force are temporarily buffered from rent rises for the term of their contracts.

The change in average rental prices is also affected by the composition effects generated by housing entering and leaving the rental market.[5] One option for quantifying the price effect of this housing rotation is to measure prices in terms of an entry premium and an exit discount. The entry premium is defined as the ratio of the average rent of housing units entering the market to the average rent of housing units that continue to be rented. Similarly, the exit discount is calculated as the ratio of the average rent of housing units leaving the market to the average rent of housing units that continue to be rented.[6] Additionally, in order to consider the composition

1 The analysis in this box differs from other approaches that measure rental cost such as the INE's rental housing price index (RHPI), where price indices are calculated that keep the composition of rental housing static. By contrast, this box examines how changes in the composition of rental housing affect the average price of the rental housing stock.

2 The area that in this box approximates the whole Spanish economy corresponds to Spain's common fiscal territory. The analysis starts in 2019 since this is the first year with information on new rental contracts.

3 Floor area is also used as a weighting measure for rental housing in average price dynamics.

4 Prices are deflated with the consumer price index. Cumulative inflation in this period is 18.5%, a significant amount which was impacted by the 2022 inflationary process when average inflation was 8.4%.

5 Composition effects are reduced when price changes are calculated between two periods for housing units with contracts in force whose characteristics do not change over time. Nevertheless, the quality of these rental housing units or the terms and conditions of the related contracts may also change in ways that cannot be observed. This will give rise to composition effects that are not accounted for.

6 Changes in entry and exit prices may also reflect other differences in housing composition such as changes in floor area or other non-observable dimensions affecting housing quality.

Box 2.2

RESIDENTIAL RENTAL PRICE DEVELOPMENTS (2019-24): MEASURING THE PRICES OF STOCK AND FLOWS BASED ON TAX SOURCES (cont'd)

effects, these relative prices are calculated taking into account the geographical distribution of housing entering and leaving the rental market. For this purpose, the entry premium and exit discount are calculated at the census section level and are aggregated at the geographical level for which the corresponding inflow and outflow prices are reported.

Chart 1
Year-on-year change in real prices of residential rental housing (a)

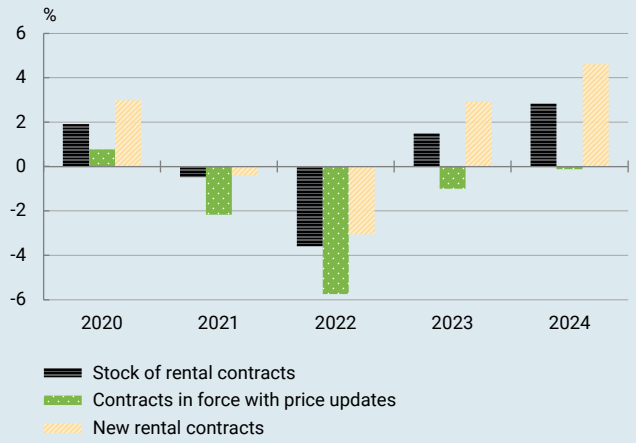


Chart 2
Entry premium and exit discount (b)

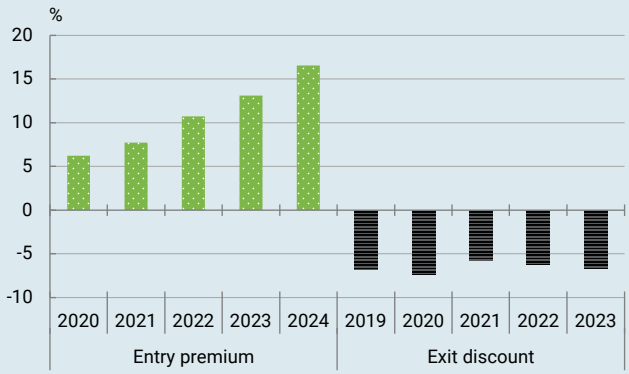


Chart 3
Year-on-year change in real prices of residential rental housing in large cities in the period 2019-24

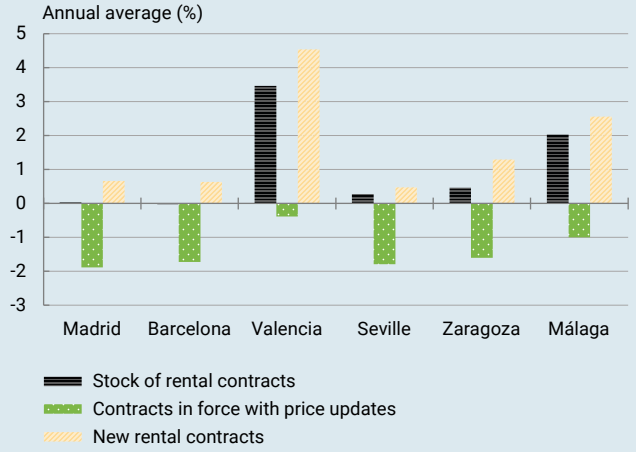
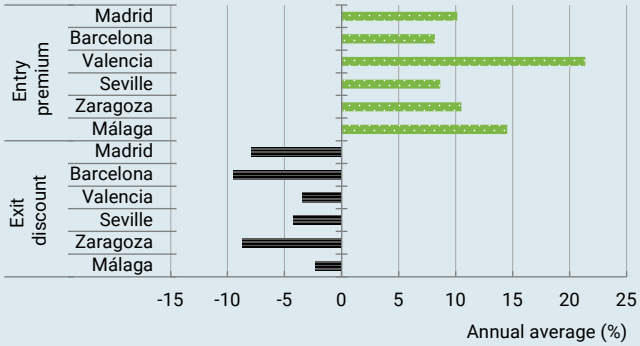


Chart 4
Entry premium and exit discount in large cities in the period 2019-24



SOURCE: Banco de España, drawing on data from AEAT.

a Changes in price expressed in euro per square metre. The category of new rental contracts for housing which remains in the rental market includes contracts with new tenants and new prices set with the same tenant in a new contract.

b The entry premium in period t is calculated as the ratio of the average rent of housing entering the market in period t to the average rent of housing which continues to be rented in periods t and t-1. The exit discount in period t is calculated as the ratio of the average rent of housing leaving the market in period t to the average rent of housing which continues to be rented in periods t and t + 1. Prices in euro per square metre. The geographical composition is adjusted by calculating the entry premium and exit discount for each census section, which are subsequently aggregated by weightings in proportion to the rented floor area of the rental housing inflows and outflows.

7 The entry premium not adjusted for geographical composition was 3.6% in 2024 and the exit discount stood at 17%.

8 Average for the six largest cities, the difference amounts to 1.2 percentage points (pp) for the entry premium and to 0.2 pp for the exit discount, compared with differences of 11.1 pp and 9.4 pp, respectively, for the national aggregate.

Box 2.2

RESIDENTIAL RENTAL PRICE DEVELOPMENTS (2019-24): MEASURING THE PRICES OF STOCK AND FLOWS BASED ON TAX SOURCES (cont'd)

Chart 2 shows the changes in the entry premium and the exit discount at aggregate level adjusted for geographical composition. The entry premium increased from 6.2% to 16.6% between 2020 and 2024, which shows that new rental housing contributes most to the increase in average prices. The exit discount held steady at around 6.5% during this period. Adjustments for geographical composition increase the entry premium and reduce the exit discount compared to the unadjusted estimates.[7] This implies that most of the discount would be attributable to housing outflows being concentrated in areas with lower prices, whereas housing inflows would be increasingly concentrated in areas with higher average prices. It is also consistent with a residential rental market that is affordable for a larger proportion of higher-income households and less affordable for vulnerable households.

Rental prices in large cities

Chart 3 shows the average annual rates of change between 2019 and 2024 in the average real price of the rental housing stock, of the rent updates of contracts in force and of the new contracts for the six most populous cities in Spain. Chart 4 depicts the entry premium and exit discount for these cities.

The patterns of the changes in the average real price of the rental housing stock (with an average annual rate of change of 0%) and in the different components are similar for Madrid and Barcelona between 2019 and 2024. The most buoyant real prices can be seen in the component of new rental contracts of previously leased housing, which increased by 0.6% per year compared to a 1.9% reduction in contract updates. Barcelona has somewhat lower entry premiums and exit discounts than Madrid, which suggests that the housing entering and leaving the rental market in Barcelona has relatively lower prices. In both cities, the high entry premiums, ranging from 8% to 10.5%, show that it is the new homes coming onto the rental market that support average price rises.

Notably, the city of Valencia has the highest increases, both in terms of price by component and in entry premiums. The real prices of new contracts grew at a annual average of 4.5% and the entry premium exceeded 20%. Similar dynamics, albeit on a smaller scale, are seen in the city of Málaga which has average annual price increases of 2.5% and an entry premium of 14.5%. In both cities the number of new contracts whose prices are higher has increased notably. This, together with more elevated entry prices, has pushed the average price of residential rental stock higher.

The differences between the calculations of the entry premium and exit discount without adjustment and those adjusted for geographical composition are significantly lower for large cities than the differences discussed for the national aggregate.[8] This fact indicates that the geographical composition of housing inflows and outflows is more significant when constructing national price indicators, while at city level, composition adjustments are less important. This evidence is consistent with the academic literature indicating that the housing market is essentially a local market.

Rental prices have picked up at the same time as the rotation of rented housing has slowed. This decline partly reflects the legislative changes which as from 2019 increased the duration of rental contracts for housing owned by individuals from three to five years.[9] Thus, the market share of contract rollovers has progressively declined from 25.4% in 2019 to 21.8% in 2023. Similarly, the relative weight of new housing entering the rental market[10] has dropped from 13.3% in 2020 to 11.3% in 2024. The same indicator for housing leaving the market has also decreased, albeit to a lesser degree, from 9.6% in 2019 to 8.6% in 2024. The fall in inflows to the rental market and the increase in both the entry premium and the price of new contracts suggest a decrease in the supply of residential rental housing as opposed to growing demand for rental properties.

9 Furthermore, this lower rotation can also be explained by different measures that have extended contracts with vulnerable households since 2021.
10 The calculation considers its contribution to the total rented floor area.

Box 2.3

HETEROGENEITY IN HOUSEHOLD AFFORDABILITY AND OWNERSHIP: EVIDENCE FROM THE SPANISH SURVEY OF HOUSEHOLD FINANCES (2002-24)

Over the past 25 years, the Spanish real estate market has been characterised by strong variations in real house prices, major changes in mortgage lending conditions and shifts in home ownership patterns. Against this background, it is worth analysing, from a long-term perspective, how the characteristics of households that own their primary residence have changed compared with renter households, and understanding the reasons underlying home ownership decisions.

The first section of this box documents, drawing on the Spanish Survey of Household Finances (EFF), the characteristics – age, income,[1] educational attainment and place of birth – of individuals who either purchased or rented a dwelling in the three years prior to each survey wave. This approach makes it possible to compare how the profiles of individuals exposed to housing affordability conditions have changed across different phases of the Spanish real estate cycle.[2]

The period under analysis has been marked by a substantial increase in renting among households gaining access to housing. The second section of this box uses data from the three EFF waves conducted between 2020 and 2024 to explore the reasons behind the decision to rent.[3] Based on households' responses, these reasons can be grouped into two categories: preference-driven factors and financial constraints limiting access to home ownership. This analysis is conducted for all renter households and describes in detail how these reasons vary by age, income, educational attainment and place of birth (Spain or abroad).

Characteristics of buyers and renters

An analysis of changes in the characteristics of buyers and renters of primary residences between 2002 and 2024 reveals significant shifts in their socio-economic composition over time. Table 1.a shows that home buyers tend to have higher income levels, be older on average and have higher educational attainment, with all three indicators increasing over time.[4] Moreover, although the share of homeowners born outside Spain has increased, home ownership remains more widespread among native-born individuals.

Home buyers tend to be concentrated among higher-income groups. For example, in 2002-08 the proportion of buyers in the top quintile of the income distribution (23%) was 4.1 percentage points (pp) lower than the proportion in the bottom two quintiles combined. This composition shifted in 2011-14. The share of buyers in the top income quintile rose steadily to 35% in 2022-24, compared with 17% for buyers in the bottom two quintiles.

Over the period analysed, there was also a sustained decline in the relative share of younger home buyers (under 35) accompanied by a shift towards older buyers. Specifically, the proportion of buyers under 35 fell from 38% to 24%, while the share of those aged over 45 increased. This shift partly reflects the gradual ageing of the population. Indeed, the average age of the population aged 18 and over rose from 46.7 in 2002-08 to 50.1 in 2022-24.

Among recent home buyers, the average age at the time of purchase has followed a similar pattern, increasing from 40.5 in the earlier periods to 43.8 in 2022-24. However, between 2011-14 and 2022-24 the average age of recent buyers rose by around 4 years, compared with 1.8 years for the overall adult population.

In terms of educational attainment, the proportion of recent buyers with a university education also increased sharply over the period under review, rising from 23% in 2002-08 to 39% in 2011-14. It subsequently remained relatively stable, reaching 41% in 2022-24. This increase came at the expense of lower levels of education, with upper secondary education falling from 36% to 32% and education below the upper secondary level falling from 41% to 27% between 2002-08 and 2022-24. The 19 pp increase in the share of university-educated recent buyers between 2002-08 and 2022-24 exceeds that observed

1 The income measure used in this box is total household income in the calendar year preceding that of the survey.

2 To present the results more easily, the available EFF years have been grouped into different real estate market periods: real estate boom (2002, 2005 and 2008), financial crisis (2011 and 2014), recovery (2017 and 2020) and an expansionary period (2022-24) with notable growth in both house prices and rents.

3 The EFF included new questions that allow for an analysis of the reasons behind households' home ownership decisions.

4 This analysis uses a sample of individuals (rather than households) in which ownership of assets and liabilities is allocated to each household member based on the information provided by the household.

Box 2.3

HETEROGENEITY IN HOUSEHOLD AFFORDABILITY AND OWNERSHIP: EVIDENCE FROM THE SPANISH SURVEY OF HOUSEHOLD FINANCES (2002-24) (cont'd)

Table 1
Characteristics of homebuyers and renters

1.a Characteristics of recent buyers (%) (a)

	2002-08	2011-14	2017-20	2022-24
Household income percentile				
Lower than 20	8.7	3.7	5.9	5.8
20-40	18.5	13.3	10.1	11.5
40-80	49.7	47.3	46.8	48.1
80-100	23.1	35.8	37.2	34.6
Age				
Under 35	38.0	36.1	23.0	24.3
35-44	35.2	37.9	37.7	33.9
Over 44	26.8	26.1	39.2	41.8
Education				
Below upper secondary	40.9	31.1	24.8	26.6
Upper secondary	36.5	29.8	33.2	32.2
University studies	22.6	39.0	42.1	41.3
Country of birth				
Foreign-born	12.0	13.3	17.7	21.5
Born in Spain	88.0	86.7	82.3	78.5

1.b Characteristics of recent renters (%) (b)

	2002-08	2011-14	2017-20	2022-24
Household income percentile				
Lower than 20	22.9	20.9	20.2	25.1
20-40	22.5	25.5	23.3	25.9
40-80	45.9	35.7	37.7	38.5
80-100	8.7	17.9	18.8	10.4
Age				
Under 35	53.8	45.4	36.6	32.6
35-44	30.8	32.8	32.9	29.4
Over 44	15.4	21.8	30.5	38.0
Education				
Below upper secondary	35.8	39.5	36.3	31.0
Upper secondary	44.6	34.0	33.8	36.9
University studies	19.5	26.5	29.9	32.1
Country of birth				
Foreign-born	42.5	36.6	38.0	53.4
Born in Spain	57.5	63.4	62.0	46.6

SOURCE: Banco de España (EFF).

a Recent buyers are defined as those who purchased their home in the three years preceding each survey wave.
b Recent renters are defined as those whose tenancy began in the three years preceding each survey wave.

Box 2.3

HETEROGENEITY IN HOUSEHOLD AFFORDABILITY AND OWNERSHIP: EVIDENCE FROM THE SPANISH SURVEY OF HOUSEHOLD FINANCES (2002-24) (cont'd)

among the general adult population (8 pp). The proportion of foreign-born individuals among recent buyers also rose over this period (from 12% in 2002-08 to 21% in 2022-24), although this increase was smaller than that for the population as a whole.

Renters' characteristics have also experienced significant changes. While renters tend to be concentrated in the bottom two income quintiles, the share of these income quintiles among recent renters rose by 6 pp over the period analysed, from 45% in 2002-08 to 51% in 2022-24 (Table 1.b). Likewise, the proportion of young tenants declined over the period, with a shift towards older age groups. Among renters whose tenancy began in the three years leading up to each EFF wave, the proportion of individuals under the age of 35 fell from 54% in 2002-08 to 33% in 2022-24, while the percentage of over-44s rose from 15% to 38%. This 21 pp decline in the share of recent renters under the age of 35 is much larger than the decrease in the share of this age group in the overall population (8 pp) over the same period.[5]

The educational attainment and the place of birth of recent renters follow a similar pattern to that of home buyers. For example, among recent renters, the proportion of individuals with a university education increased by around 12.5 pp (from 19.5% to 32.1%) and that of foreign-born individuals rose by 11 pp (from 42.5% to 53.5%). The share of other groups fell slightly in 2022-24, to 37% for tenants with upper secondary education and 31% with education below upper secondary level.

Reasons for renting: constraints or preference?

Since 2020 the EFF has provided household-level information on the reasons behind the decision to rent. Specifically, the survey asks renter households why they opted to rent rather than buy. These responses make it possible to distinguish between preference-based reasons[6] and reasons related to financial constraints, in terms of liquidity, savings or access to credit.[7]

Table 2.a shows that, over 2020-24, roughly half of all renter households reported exclusively financial constraint-related reasons; 20% mentioned only preference-related reasons, while a further 20% cited a combination of both types of reasons. Overall, 72% of households reported at least one financial constraint-related reason in 2020, a percentage that rose to 75% in 2024.

By age (Table 2.b), in 2024 renter households with a reference person aged between 35 and 44 were more likely than other households to cite only financial constraint-related reasons. By contrast, preference-based reasons alone were relatively more frequent among households with a reference person aged between 45 and 64. Meanwhile, 33% of young renter households reported both types of reasons, the highest proportion across all age groups.

By income (Table 2.b), in 2024 62% of renter households in the bottom quintile of the income distribution reported financial constraint-related reasons alone, while just 13% mentioned only preference-related reasons. In total, 86% of renter households in the bottom quintile reported at least one constraint-related reason limiting their access to home ownership.

The relative importance of financial reasons declines as income rises, dropping from 62% in the bottom income quintile to 18% in the top decile. The opposite is observed for preference-related reasons, which increase from 13% in the bottom quintile to 62% in the top decile. It should be highlighted that, in this top decile, only 9% of households reported both types of reasons, while 11% reported other reasons (for example, being in the process of searching for a home to buy), the importance of which also increases with income.

By educational attainment (Table 2.b), around 70% of tenants across all groups reported financial constraint-related reasons. The actual figure ranges from 80% among households with less than upper secondary education to 75% among those with upper secondary education and 67% among those with a university education. In the latter

5 In addition to population ageing, another contributing factor is the decrease in the rate at which young people leave the family home. For example, the proportion of young people living with their parents has increased from 55% in 2002-08 to 63% in 2022-24.

6 Preference-driven reasons are captured through three responses: "renting is cheaper than buying", "renting is a more flexible option" and "frequent change of residence".

7 Constraints related to liquidity, savings or access to credit are associated with three responses: "I do not qualify for a mortgage", "I cannot afford the down payment on a home" and "I would not be able to keep up with mortgage payments".

Box 2.3

HETEROGENEITY IN HOUSEHOLD AFFORDABILITY AND OWNERSHIP: EVIDENCE FROM THE SPANISH SURVEY OF HOUSEHOLD FINANCES (2002-24) (cont'd)

group, the proportion of households renting solely for preference-based reasons is higher (26%) than in the other groups (16.5%–18.6%). Across all groups, around 22% of households stated that they rent for reasons related to both preference and financial constraints. Table 2.b shows that 59% of those born outside Spain cited only financial constraint-related reasons (compared with 47% among the Spanish-born population), and that preference-based reasons were less common among this group (17% versus 23%). 22% of households in both groups said that they rent for reasons related to both financial constraints and preference.

Table 2
Households' reasons for renting

2.a Reasons for renting rather than buying (%)

	Financial constraints	Preference	Both reasons	Others, including searching for a home
2020	51.9	22.2	19.6	6.3
2022	52.7	19.2	21.0	7.0
2024	52.6	19.8	22.5	5.1

2.b Reasons for renting, by type of household. 2024 (%) (a)

	Financial constraints	Preference	Both reasons	Others, including searching for a home
Age				
Under 35	41.3	14.8	33.3	10.6
35-44	59.9	13.8	22.2	4.2
45-54	52.7	25.1	16.1	6.1
55-64	49.7	27.9	20.5	2.0
Over 64	56.4	19.3	23.2	1.1
Lower than 20	62.3	12.7	24.2	0.7
20-40	49.0	20.9	24.4	5.7
40-80	52.5	19.2	21.6	6.7
80-90	44.4	26.2	19.2	10.2
90-100	18.0	61.7	9.4	10.9
Education				
Below upper secondary	57.4	16.5	23.1	3.0
Upper secondary	53.0	18.6	22.1	6.3
University studies	45.1	26.4	22.3	6.3
Country of birth				
Foreign-born	58.8	16.6	22.6	1.9
Born in Spain	46.6	22.9	22.4	8.2

SOURCE: Banco de España (EFF).

a Age, educational attainment and country of birth are those of the reference person responding to the survey (the household member with the greatest knowledge of the household's finances).

Box 2.4

THE EFFECTS OF HOUSE PRICE GROWTH ON IMMIGRANTS' INTERNAL MOBILITY AND LOCATION CHOICE IN SPAIN

The marked cumulative growth in real house prices in Spain since 2014, both for purchases and rentals, could shape workers' residential location choices. In particular, changes in relative house prices may affect residents' degree of internal mobility across Spain and influence inflows of new residents from abroad and their residential location choices.[1] This box presents a preliminary estimate of the effect that the uneven increase in real house prices across Spanish provinces in the period 2014-24 may have had on both internal and external migration flows.

This box seeks to estimate the effect of changes in real residential rental prices[2] across Spanish provinces on migration flows to those provinces. To this end, it adopts an empirical approach based on the estimation of different gravity models, separately analysing internal migration and the distribution of new immigrants across Spanish provinces. Using the available data, different migrant groups can be identified according to two age brackets (under-35s and over-35s) and place of birth (Spain or abroad).[3]

The empirical analysis combines data on internal and external migration flows from the Spanish National Statistics Institute's (INE) Residential Variation Statistics and Statistics on Migrations and Changes of Residence with province-level data on average rental prices provided by the Spanish tax authorities (AEAT). Migration data capture movements of residents across Spanish provinces and inflows from abroad to those provinces. CPI-adjusted real residential rental prices are a useful proxy for how much it costs individuals who change their place of residence to enter the housing market in a given region.

The analysis is conducted in two stages: first, it estimates the effects of rental prices on the composition of migration flows across different destinations and, second, their effect on the intensity of migration flows from each place of origin. In the first stage, bilateral migration flows are estimated, i.e. movements of residents between all possible origin-destination pairs. In the case of internal mobility, all combinations of Spanish provinces as origin and destination are considered; for external migration, the flows between each country of origin and each Spanish destination province are analysed. This approach identifies substitution effects across destinations by estimating, for the same origin, group of individuals and year, how a relative increase in housing prices in one destination shifts migration flows to other destinations.

The empirical approach takes into account the possible impact of migration networks, which may facilitate mobility and the inflow of new residents. Accordingly, the analysis of migration flows controls for time-invariant characteristics of origins and destinations, and for their interactions with migrant type defined by age bracket and country of birth. In addition, the analysis accounts for the economic conditions and size of the destination, using variables such as average wages and population of the destination province, in order to isolate the effect of house prices from other factors that may also attract migrants to a given destination. Furthermore, it considers origin-specific characteristics in different years and by migrant type. Thus, the effects of real rental housing prices are identified by comparing alternative migration destinations for the same group of individuals, origin and year.

The estimates show that a 1% increase in the average real rental price in one province relative to another destination province reduces the relative flows of internal migration to the province in question by 0.6% (Table 1, column 1).[4] As for external migration, the findings indicate that a 1% increase in real housing rental prices in one province relative to other provinces reduces the share of immigrant inflows to that province by 0.4% (Table 1, column 2). Overall, these findings point to a relative reallocation of migration flows across Spanish provinces associated with differential rental price growth. These estimates suggest that cumulative increases in real residential housing prices reduce both internal and international migration to provinces with stronger rental price growth.[5]

1 See Edward Glaeser and Joseph Gyourko. (2018). "The Economic Implications of Housing Supply". *Journal of Economic Perspectives*, 32(1), pp. 3-30, and Chang-Tai Hsieh and Enrico Moretti. (2019). "Housing Constraints and Spatial Misallocation". *American Economic Journal: Macroeconomics*, 11(2), pp. 1-39.

2 To simplify, the analysis focuses on rental prices, although house purchase prices in a given region – another tenure dimension associated with mobility – are proportional to rental prices. Accordingly, the effects of house price increases on mobility are captured, to a large extent, by the analysis presented in this box.

3 Since migration flows are count variables, with a high proportion of zeros, Poisson models are used. For methodological details, see Curci, Khametshin and López-Rodríguez. (2026). "Housing Affordability and Spatial Reallocation of Labor". Documento de Trabajo, Banco de España. Forthcoming.

Box 2.4

THE EFFECTS OF HOUSE PRICE GROWTH ON IMMIGRANTS' INTERNAL MOBILITY AND LOCATION CHOICE IN SPAIN (cont'd)

Whereas the first stage of the estimation captures the geographical composition of migration flows, the second stage assesses how real rental prices affect aggregate migration flows, examining whether the rise in real rental prices has changed, in aggregate terms, the level of immigration to Spain or the volume of internal movements. This aggregate analysis of migration flows is especially significant given their magnitude in Spain.[6] For instance, between 2021 and 2024, 4.7 million new residents arrived in Spain, 2.5 million residents left the country and around 2.7 million residents moved to another province within Spain.[7] It is therefore interesting to assess the potential aggregate impact of house prices on the composition, destination and volume of these flows.

Table 1
The increase in real rental prices between 2014 and 2024 appears to have affected internal mobility, immigrant inflows and the allocation of migration flows across provinces (a)

	Migration flow substitution		Migration flow levels	
Origin of flows	Spain [1]	Abroad [2]	Spain [3]	Abroad [4]
Log of real rental price at destination	-0.607***	-0.414***		
	[0.0387]	[0.0774]		
Log of real rental price at origin			0.338***	
			[0.0804]	
Log of real rental price at destination			-1.775***	
Internal migrants			[0.465]	
Log of real rental price at destination				-5.791*
Immigrants				[2.965]
Observacion	115,920	138,577	2,576	3,262
Fixed effects: Origin x Destination x Characteristics	Yes	Yes	No	No
Fixed effects: Origin x Characteristics	No	No	Yes	Yes
Fixed effects: Origin x Characteristics x Year	Yes	Yes	No	No
Fixed effects: Destination x Characteristics x Year	No	No	No	No
Fixed effects: Characteristics x Year	No	No	Yes	Yes
Controls	Yes	Yes	Yes	Yes

FUENTE: Banco de España on data from the Spanish tax authorities (AEAT) and INE.

a The table shows Poisson Pseudo-Maximum Likelihood estimates for internal and international migration flows. The dependent variable is always a migration flow (in levels). Colums [1] and [3] correspond to internal migration within Spain; columns [2] and [4], to immigration to Spain. Columns [1] and [2] estimate bilateral origin-destination flows, whereas columns [3] and [4] estimate total exit or entry flows. The treatment variable is either the logarithm of the real rental price in the Spanish province of destination or origin, according to the specification, or a price index for the usual destinations constructed as the average price weighted by migration network observed between 2004 and 2007. All the regressions include the average wage and the population as controls, both in logarithms. In the bilateral specifications, these variables are specific to the destination province; in the aggregate specifications, they are constructed as weighted averages of the usual destinations. Demographic characteristics are defined by age groups and country of birth. All the regressions include the fixed effects reported in the table. Robust standard effects are shown in brackets. *, ** and *** denote statistical significance at 10%, 5% and 1%, respectively.

4 These results are higher, albeit consistent with, those estimated in Ha Nguyen, Ashwini Arulrajhan, Carlo Pizzinelli, and Ippei Shibata. (2026). "The Impact of House Prices on Internal Migration: The Case of Spain". IMF Working Paper, 26/65. Moreover, the estimates are aligned with the results for the United States in William W. Olney and Owen Thompson. (2026). "The determinants of declining internal migration". *Journal of Urban Economics*, 153.

Box 2.4

THE EFFECTS OF HOUSE PRICE GROWTH ON IMMIGRANTS' INTERNAL MOBILITY AND LOCATION CHOICE IN SPAIN (cont'd)

Turning to internal migration, the effects of real rental prices on the aggregate flows from each potential Spanish province of origin to every other Spanish province are analysed. This analysis requires a specification that controls for both time-varying characteristics and fixed characteristics of the provinces of origin, each interacted with migrant type. In the estimated specifications, real rental prices in the province of origin and average prices across all potential destinations, weighted by the distribution of internal migrants (migration network) between 2004 and 2007, act as push and pull factors, respectively.

In the case of external migration, the flows analysed correspond to total immigration to Spain by country of origin and migrant type. The specifications used control for fixed characteristics of migration origin and for determinants that vary over time. These controls are linked to migrant type to isolate the effect of real rental prices in Spain as a pull factor. The key explanatory variable is the average real rental price across Spanish destination provinces, weighted by the distribution of immigrants between 2004 and 2007.

The estimates indicate that a 1% increase in the average real rental price in typical destination provinces of internal and international migrants –the housing pull factor – reduces migration flows within Spain by 1.8% and migration flows to Spain by 5% (Table 1, columns 3 and 4). In addition, an increase in rental prices in Spanish provinces of origin is associated with a 0.4% rise in migration to other Spanish provinces (Table 1, column 3), consistent with a housing push factor.

These findings suggest that the increase in real rental prices between 2014 and 2024 has shaped the allocation of migration flows and overall internal mobility across Spanish provinces, as well as immigration inflows to Spain. The literature points to productivity losses that may stem from the geographical reallocation of workers driven by differential increases in house prices. These productivity losses arise through two channels. First, if house price growth is stronger in more productive geographical areas, the resulting reallocation of migration flows away from these areas reduces aggregate productivity.[8] Second, lower migrant inflows weaken the agglomeration effects that increase productivity and wage premia for both existing and new residents, thereby reducing growth in larger urban areas that receive migrants.[9]

5 The estimates are robust when both control function specifications and a Bartik-type instrumental estimation strategy are adopted, based on sectoral labour demand shocks and their differential impact according to the predetermined sectoral distribution of Spanish provinces. The Poisson models' explanatory power of the four specifications that include the fixed effects considered is very high, with a pseudo-R2 statistic (degree of plausibility) that exceeds 95%.

6 Jesús Fernández-Huertas. (2025). "The Second Spanish Immigration Boom". IZA Discussion Paper, 18185.

7 Over the period 2021-24, Spain ranked first among EU destination countries in terms of the immigrant share of the population, and second in terms of the number of immigrants (with some 5.2 million cumulative arrivals), only behind Germany. France and Italy received around 1.6 million each, while the Netherlands, Poland and Romania received close to 1 million.

8 Chang-Tai Hsieh and Enrico Moretti. (2019). "Housing Constraints and Spatial Misallocation". *American Economic Journal: Macroeconomics*, 11(2), pp. 1-39.

9 For a review of the literature, see Stuart Rosenthal and Williams Strange. (2004). "Evidence on the nature and sources of agglomeration economies". In *Handbook of Regional and Urban Economics*, vol. 4, pp. 2119-2171. Elsevier, and Gilles Duranton, Laurent Gobillon, and Sébastien Roux. (2010). "Estimating Agglomeration Economies with History, Geology, and Worker Effects". In *Agglomeration Economics*, pp. 15-66. University of Chicago Press. For an estimation of the agglomeration effects in Spain, see Jorge de la Roca and Diego Puga. (2017). "Learning by Working in Big Cities". *The Review of Economic Studies*, pp. 106-142.

Box 3.1

A DESCRIPTION OF SPANISH FIRMS' RETURN ON PRODUCTIVE CAPITAL

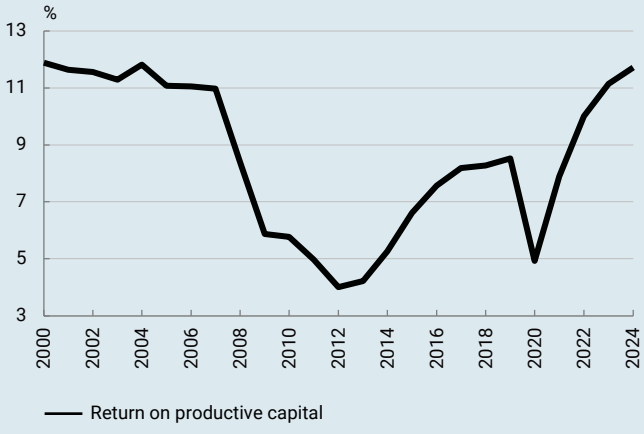
Business profits and profitability levels play a key role in economic developments, as they are the driver of new productive investments. When companies report profits and maintain suitable profitability levels, they have the resources to reinvest in their operations, improve their infrastructure, drive innovation in products and services and increase their competitiveness. This reinvestment capacity is essential for business growth and thus for job creation and the economic development of society. Moreover, a business environment with comparatively appealing profitability levels attracts new domestic and foreign investors looking for investment opportunities. This virtuous circle promotes new project development, the diversification of the productive system and better quality standards and improved social well-being. This box analyses the return on firms' productive capital in the period 2000-24 and the heterogeneity underlying these dynamics, in order to identify the more profitable types of firms and sectors with greater growth potential, as well as their weaker and more vulnerable counterparts. Additionally, Spanish firms' profitability is compared with that of firms in some European countries. Lastly, the box analyses the degree to which profitability influences business investment decisions in the period analysed.

The return on productive assets can be calculated in different ways, which may differ depending on the analytical approach adopted. This box uses one of the most common definitions which is, moreover, consistent with economic theory. Specifically, return on productive capital is measured as the ratio of ordinary profit (excluding financial revenue)[1] to productive assets, defined as tangible and intangible assets (excluding financial assets) and inventories.[2]

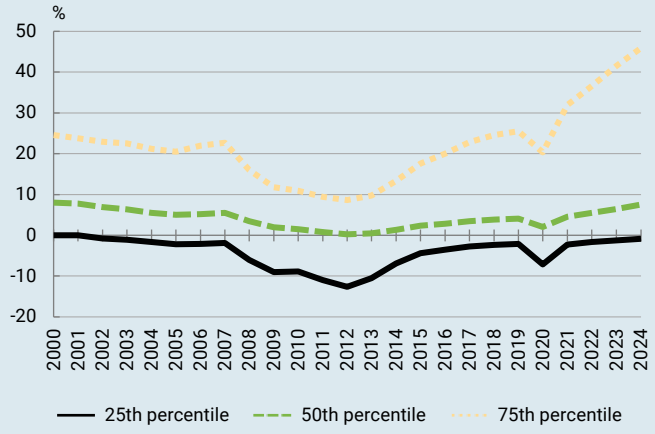
Drawing on this definition, Chart 1.a shows aggregate profitability from 2000 to 2024 for the whole sample of the Integrated Central Balance Sheet Database (CBI).[3] There are five clearly different sub-periods. Initially, profitability levels remained notably stable at around 12% until 2007. Subsequently, as a result of the global financial crisis

Chart 1
Description of Spanish firms' return on productive capital

1.a Aggregate developments (2000-24)



1.b Distribution by percentile



SOURCE: Banco de España (CBI) and BACH.

1 Ordinary profit is all ordinary revenue relating to the firm's productive activity minus the expenses required to perform that activity (including the depreciation of tangible and intangible assets). Financial income (mainly interest and dividends) is excluded, since the financial transactions of some non-financial corporations do not constitute their core business. For this reason, holding and parent companies have also been excluded.

2 This definition is compatible with other approximations of business profitability, such as that used in Chapter 3 of this report, where the numerator of this ratio is profit or loss for the year (after tax) and the denominator is total assets. This box focuses on the ordinary return on productive assets, excluding financial assets.

3 The CBI is a sample containing annual information on nearly 900,000 non-financial corporations. It is highly representative, although somewhat biased towards larger companies.

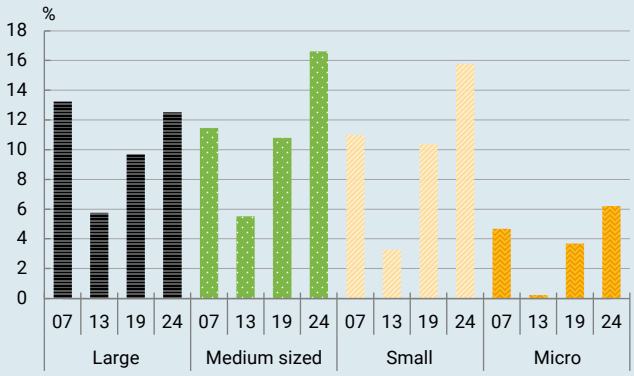
Box 3.1
A DESCRIPTION OF SPANISH FIRMS' RETURN ON PRODUCTIVE CAPITAL (cont'd)

business profitability declined sharply, bottoming out at around 4% in 2012. Its gradual recovery from 2013 onwards was halted by the impact of the pandemic in 2020, which triggered a sharp decline in that year. Next, a fresh period of growth began, which pushed the return on productive capital back to 12% in 2024 (according to the latest available information), on a par with its pre-financial crisis level.

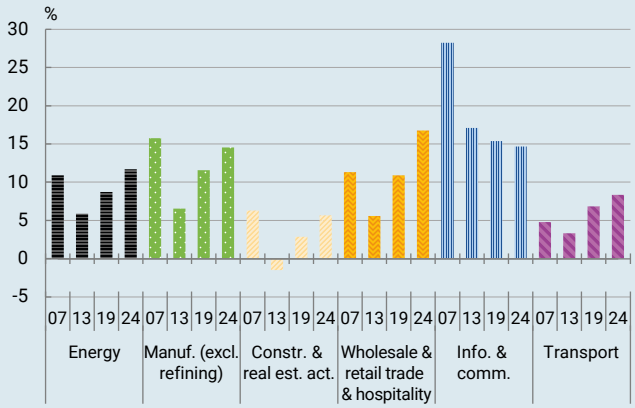
Aggregate profitability developments sum up suitably the average performance in the corporate sector. However, this shared pattern coexists with high cross-firm heterogeneity that is evident when analysing the distribution of profitability, as measured by the 25th, 50th and 75th percentiles. Thus, the pattern observed is very similar to that of the aggregate ratio, although the median firm has somewhat lower profitability levels, while the 25th and 75th percentiles depict sharper changes (Chart 1.b). Likewise, profitability has been more dispersed in recent years, suggesting that the profitability gap between the most profitable firms (75th percentile) and those at the lower end of the distribution (25th percentile) has widened in the recent period.

Chart 2
Spanish firms' return on productive capital. Breakdown by size, sector and productivity quintile

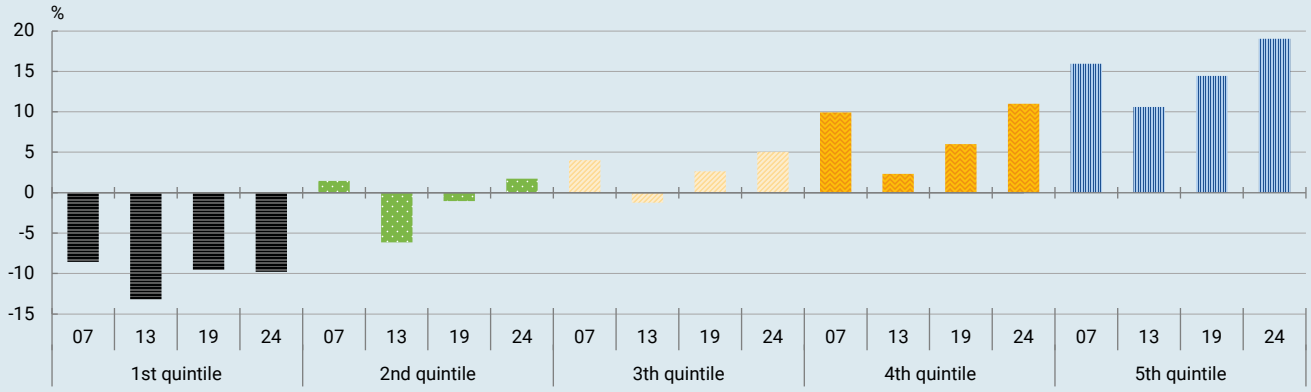
2.a Breakdown by size (a)



2.b Breakdown by sector



2.c Breakdown by TFP quintile (b)



SOURCES: Banco de España (CBI) and BACH.

a Enterprise size is defined according to Commission Recommendation 2003/361/EC which classifies enterprises as microenterprises, small, medium-sized or large based on staff numbers, turnover and balance sheet total.
b The quintiles are calculated each year by sector (CNAE two-digit code). TFP is calculated by firm-level production functions using the Wooldridge method (2009).

Box 3.1
A DESCRIPTION OF SPANISH FIRMS' RETURN ON PRODUCTIVE CAPITAL (cont'd)

The analysis by sector and size shows that the level of the ratio varies considerably, although it performs similarly over time. The breakdown by size shows that microenterprises are systematically the segment with the lowest profitability. Meanwhile, the largest firms – the most profitable at the beginning of the period analysed – had already been overtaken by small and medium-sized enterprises before the pandemic started. However, this difference is amplified notably in the post-pandemic period, when profitability recovered particularly strongly at small and medium-sized enterprises (Chart 2.a).[4] By sector, the return on capital differs notably, with relatively high figures in manufacturing, wholesale and retail trade and hospitality, and information and communication services. Over time, the latter would be the only sector not to follow the general pattern as a result of its continually declining profitability levels (Chart 2.b). This appears to be the result of the profound changes in this sector in the period analysed, which have led to a progressive narrowing of its margins against a backdrop of appreciable increases in its productive capital.[5] Also, profitability in the wholesale and retail trade and hospitality sector in the most recent period has risen notably to around 50% higher than its levels in the period 2000-07.[6]

Furthermore, when firms are classified by productivity levels, clearly different behaviours can also be observed.[7] Thus, Chart 2.c, which shows the profitability of firms by productivity quintile, reveals that more productive firms have higher profitability levels. Likewise, the general pattern observed over time is similar to that of the aggregate ratio, except for in the first quintile, which includes the least productive firms. This group not only records consistently negative values, but also performs less favourably than the other groups, with the result that its profitability in 2024 deteriorated slightly relative to that recorded in 2019. Equally, there is a noticeably stronger recovery in profitability at firms in the highest quintiles (the most productive firms) in the recent period, suggesting that after the global financial crisis and, particularly, the pandemic, the positive relationship between a more efficient allocation of resources and higher profitability appears to have intensified.

Furthermore, when comparing the return on capital in Spain and in certain neighbouring economies – Portugal, France, Italy and Belgium – similar cross-country patterns emerge, although the return on capital fluctuates to different degrees. Thus, initially the levels of return on productive capital varied noticeably and were higher in France and Belgium – at around 14% – in 2007 (Chart 3). However, this cross-country gap has been narrowing significantly, prompting return on productive capital to converge with the result that they ranged from approximately 10% to 12% in 2024 in the five countries analysed.

Finally, the relationship between the return on capital and the probability of firms recording zero or positive net investment was analysed by estimating a linear probability model that controls for other typical determinants of investment, such as debt burden, indebtedness, sales growth and TFP, as well as for year and firm fixed effects. The results in Chart 4 show a positive and statistically significant correlation between firms' profitability in the previous year and their investment decisions that has intensified in the most recent period (2013-24) and appears to have been reflected across all firm sizes. Overall, these findings confirm that return on capital is an important determinant of firms' investment decisions and has played a particularly significant role in the post-global financial crisis recovery phase, by contributing to the expansion of productive activity.

4 Enterprise size is defined according to Commission Recommendation 2003/361/EC, which classifies enterprises as microenterprises, small enterprises, medium-sized enterprises or large firms based on staff numbers, turnover and balance sheet total.

5 The liberalisation of the telecommunications sector between 2000 and 2024 had a significant impact on its profitability. In addition, the usual measures of return on productive assets were affected by a succession of significant mergers and corporate restructuring, which appears to have inflated intangible assets through substantial goodwill, and by the large infrastructure investments required by the new technologies introduced. See, for example, Emanuele Tarantino, Chiara Atzeni, Chiara Cirignaco, Dominik Erharter and Hans Zenger. (2026). "An analysis of the EU telecom sector's ability to remunerate its cost of capital". VoxEU Column, 29 January.

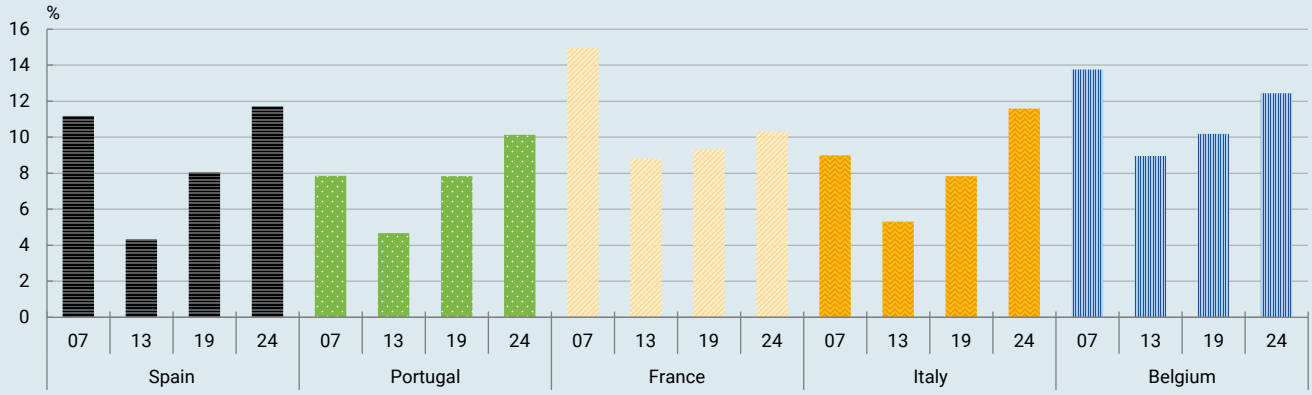
6 After the pandemic, the wholesale and retail trade sector and, particularly, the hospitality sector have seen a gradual increase in margins amid elevated demand, which would largely explain the higher profitability of these firms. For more details, see the regular reports of Observatorio de Márgenes Empresariales.

7 Firms are classified as more or less productive based on their relative total factor productivity (TFP) position according to their sector each year, as defined by the Spanish National Classification of Economic Activities (CNAE) two-digit code. This means that firms in each quintile and year may be different. TFP is calculated by estimating firm-level production functions using the Wooldridge method (see M. Wooldrige (2009). "On estimating firm-level production functions using proxy variables to control for unobservables". *Economics Letters,* 104(3), pp. 112-114).

Box 3.1
A DESCRIPTION OF SPANISH FIRMS' RETURN ON PRODUCTIVE CAPITAL (cont'd)

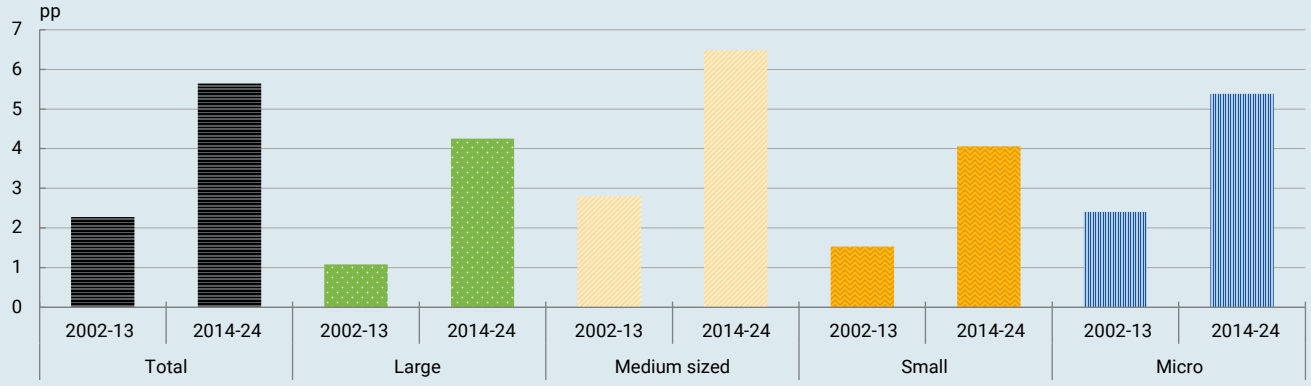
In short, aggregate return on productive capital moves in line with the different phases in the business cycle and in recent years has stood at similar levels to their pre-financial crisis ones. However, while this analysis is necessary to understand developments in the corporate sector as a whole, it should be supplemented by other analyses that take into account the heterogeneity of this sector. This box addresses some of these aspects and reveals, for example, that smaller and less productive firms seem to have systematically recorded lower return on capital, that the gap between the most and least profitable firms seems to have widened in recent years, and that there are significant differences in levels of return on productive capital across sectors and neighbouring countries in Europe. Lastly, the regression analysis conducted in this box confirms that there is a positive correlation between firms' profitability and their propensity to invest, which has also intensified in the most recent period.

Chart 3
International comparison of return on productive capital



SOURCES: Banco de España (CBI) and BACH.

Chart 4
Relationship between business profitability in a given year and the probability of recording positive net investment in the subsequent year (a)



SOURCES: Banco de España (CBI) and BACH.

a Marginal impacts obtained by estimating a linear probability model using the fixed effects method for the period 2000-24 (excluding 2020) with standard errors adjusted and clustered at firm level. However, since information up to the two years immediately before is required to construct the explanatory variables, the estimation begins in 2002. The estimation is made using CBI data. All the regressions control for sector, year and firm size. The variable which has to be explained takes a value of one if the net investment is greater than or equal to zero and a value of zero in the opposite case. The explanatory variables are profitability, debt burden, indebtedness, year-on-year sales growth and TFP, all of which are lagged. The coefficients are interpreted as the change in the probability of investing (in pp) in response to a one unit change in profitability. These coefficients, except in the case of large and medium-sized firms in the period 2002-13 are significant at 5%.

Box 3.2

THE BANCO DE ESPAÑA IN-HOUSE CREDIT ASSESSMENT SYSTEM

The Banco de España has an in-house credit assessment system (ICAS) called ICAS BE,[1] designed to assess the credit quality of public and private Spanish non-financial corporations (hereafter, firms).

Role in Eurosystem monetary policy

ICAS BE ratings are primarily used within the Eurosystem's monetary policy framework, specifically in relation to collateral. In particular, the ICAS BE is the main credit assessment source used by monetary policy counterparties to determine whether loans extended to Spanish firms meet the minimum credit quality requirement to be eligible as collateral in Eurosystem refinancing operations. The ICAS BE thereby supports collateral availability for financial institutions, ultimately contributing to a more efficient transmission of monetary policy to the real economy.

The ICAS BE's importance as a rating source in the Eurosystem's collateral framework has grown markedly in recent years,[2] as reflected in the growth in the share of non-marketable assets pledged by Spanish counterparties, which rose from 25% in 2022 to 37% in 2025. Similarly, the percentage of banks using the ICAS BE as their main rating source when pledging non-marketable assets has risen by more than 20 percentage points, to over 40% in 2025.[3]

Rating system typology

The ICAS BE comprises two distinct rating systems, which differ primarily in the type of firms assessed and whether an analyst is involved in the rating process.

The Full-ICAS (F-ICAS BE) is used for large firms (around 600 in total) and combines a statistical model with an expert model, enabling case-by-case assessments by specialist analysts. The Statistical-ICAS (S-ICAS BE), meanwhile, is aimed at SMEs and provides ratings for approximately 900,000 firms through a fully automated process that requires no analyst involvement.

The systems were also launched at different moments in time. The F-ICAS BE has been used as an accepted rating source within the Eurosystem collateral framework since the late 1990s. The S-ICAS BE, on the other hand, is more recent, having been authorised in 2020 as part of the measures approved by the Eurosystem in response to the COVID-19 crisis.

Both rating systems draw on a broad set of data sources. These notably include the economic and financial data contained in firms' financial statements, along with information from the Banco de España's Centralised Credit Register (CCR), which, among other aspects, provides details on firms' bank loan repayment behaviour.

Rating scale

The ICAS BE assessment process produces a credit rating for each firm using a master scale comprising 21 rating categories. Each category corresponds to a range of probabilities of default (PDs) over a one-year horizon, meaning it can be directly mapped to the harmonised credit quality steps (CQS) scale established for the Eurosystem collateral framework (Table 1). For example, an ICAS BE rating of 5+ is associated with a PD of between 0.40% and 0.77%. This maps to CQS 4 on the Eurosystem scale, whose PD ranges from 0.40% to 1%.

Predictive power for default risk

Since each credit rating is associated with a PD over a one-year horizon, these PDs can be compared with the default rates observed over the subsequent 12 months. For SMEs, the ICAS BE has consistently proven highly effective at sorting and quantifying firms' default risk. This is illustrated in Chart 1.a, which shows for each rating class the actual default rates between 2019 and 2025 for SMEs rated by the ICAS BE (solid line), together with the PD range predicted a year earlier, defined by its minimum and maximum values (broken lines).

In particular, two key aspects are evidenced. First, the ICAS BE correctly sorts firms by their default risk, given the monotonically increasing relationship between risk classes and default rates:[4] lower ratings translate into higher default rates in the following 12 months. Second,

1 For a more detailed description of the ICAS BE and its rating system, see Sergio Gavilá, Alfredo Maldonado and Antonio Marcelo. (2020). "The Banco de España in-house credit assessment system". *Financial Stability Review - Banco de España,* 38, pp. 95-122.

2 Sergio Gavilá, Lola Morales and Rafael Vivó. (2025). "The role of loans and the ICAS BE in the Eurosystem's collateral framework in 2025". *Economic Bulletin - Banco de España*, 2025/Q3, 02.

3 On data at April 2025, a total of 17 banks pledge non-marketable assets, of which 14 use the ICAS BE, with seven using it as their main rating source.

4 The definition of default used aligns with the requirements for ICASs and is based on Article 178 of Regulation (EU) No 575/2013 (CRR). For more information on the ICAS definition of default, see Aria et al. (2021). "Overview of central banks' in-house credit assessment systems in the euro area". Documentos Ocasionales, 2131, Banco de España.

Box 3.2
THE BANCO DE ESPAÑA IN-HOUSE CREDIT ASSESSMENT SYSTEM (cont'd)

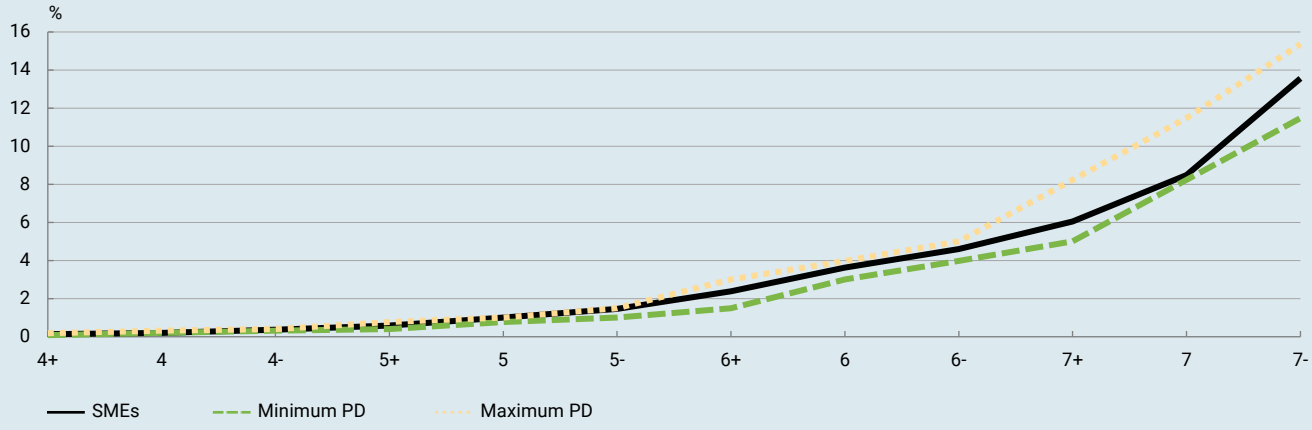
Table 1
Correspondence between ICAS BE risk categories, PDs and Eurosystem CQS

	CQS						
	1 and 2	3	4	5	6	7	8
	(PD ≤ 0.10%)	(0.10% < PD ≤ 0.40%)	(0.40% < PD ≤ 1.00%)	(1.00% < PD ≤ 1.50%)	(1.50% < PD ≤ 3.00%)	(3.00% < PD ≤ 5.00%)	(PD > 5.00%)
ICAS BE credit rating	1, 2+, 2, 2-, 3+, 3 and 3-	4+, 4 and 4-	5+ and 5	5-	6+	6 and 6-	7+, 7, 7-, 8 and D

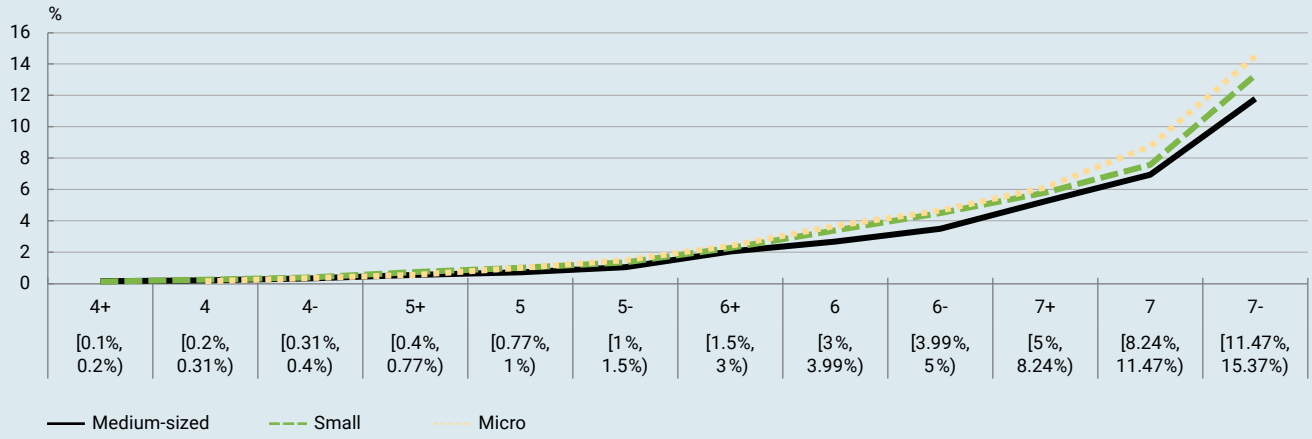
SOURCE: Banco de España.

Chart 1
Association between credit rating and the PD observed over the next 12 months

1.a SME default rates, by ICAS BE rating (a) (b)



1.b Default rates, by SME size and ICAS BE rating (a) (b)



SOURCE: Banco de España.

a SMEs are defined as firms with fewer than 250 employees (see methodological annex to Chapter 3 of this report).
b The definition of default used aligns with the requirements for ICASs and is based on Article 178 of Regulation (EU) No 575/2013 (CRR).

Box 3.2
THE BANCO DE ESPAÑA IN-HOUSE CREDIT ASSESSMENT SYSTEM (cont'd)

the ICAS BE appropriately gauges firms' default risk, since the actual default rates for each risk class fall within the PD range predicted one year earlier. These findings also hold true for the different firm sizes, especially for microenterprises (Chart 1.b).

Predictive power for business growth

Beyond its capacity to anticipate SMEs' repayment behaviour, ICAS BE ratings also provide important information on business growth. Chart 2.a shows that higher-rated firms exhibit stronger growth over the following three years, measured using the main firm size indicators: number of employees, turnover and assets. Accordingly, SMEs with a higher level of business solvency, per their ICAS BE rating, tend to record higher growth in subsequent years.

For instance, the turnover of the best-rated firms (4+) increased by around €1 million over the following three years, compared with an increase of just €200,000 for the lowest-rated firms (7-). The difference is even more pronounced in terms of assets and employees: the lowest-rated firms show zero growth, whereas the highest-rated firms increase their assets by around €1 million and their workforce by eight employees.

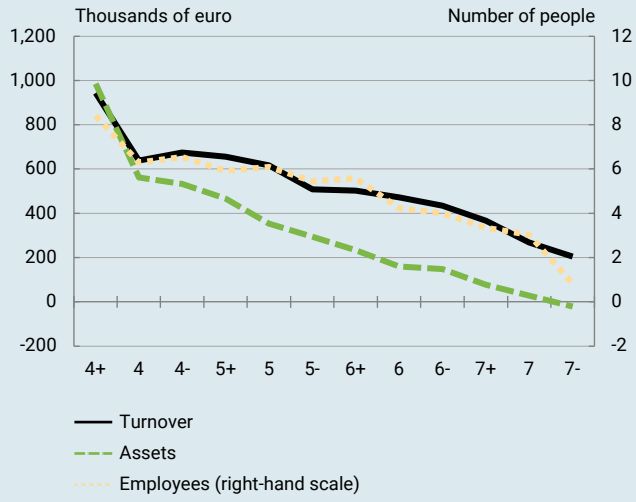
However, the relationship observed in Chart 2.a could be partly influenced by a composition effect, insofar as the distribution of firms by risk class is not consistent in terms of size. To explore this, Chart 2.b breaks down the results by firm size and presents employee developments for micro-, small and medium-sized enterprises, confirming that the positive relationship between higher credit ratings and stronger employment growth holds within each segment.

Implications for corporate financing and reducing information asymmetries

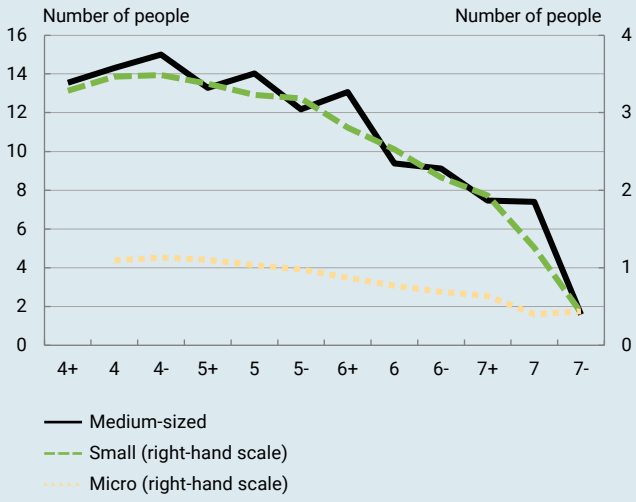
Given its strong predictive power with respect to firms' financial solvency and business growth, there is considerable potential for the ICAS BE to play a significant role in the corporate financing process, beyond the above-mentioned positive effect on financial institutions' operational liquidity stemming from smoother access to Eurosystem financing. Specifically, the independent and objective credit assessment provided by the ICAS BE can help mitigate existing information asymmetries in corporate financing: for financial institutions, it can serve as a valuable complement to their internal credit risk assessment and inform financing decisions; for firms, it can strengthen their negotiating position and support their financial education.

Chart 2
Relationship between firms' credit ratings and business growth

2.a Three-year change in SMEs' turnover, assets and number of employees, by ICAS BE rating (a)



2.b Three-year change in number of employees, by SME size and ICAS BE rating (a)



SOURCE: Banco de España.

a SMEs are defined as firms with fewer than 250 employees (see methodological annex to Chapter 3 of this report).

Box 3.2
THE BANCO DE ESPAÑA IN-HOUSE CREDIT ASSESSMENT SYSTEM (cont'd)

Stronger financial knowledge can help firms identify strengths and vulnerabilities in terms of financial solvency, as well as implement strategies aimed at strengthening their financial position and, consequently, expanding their access to finance and growth opportunities.

Information sharing with firms

To strengthen the quality of ICAS BE credit assessments and optimise the benefits associated with their dissemination, the Banco de España has launched an initiative to share information with the rated firms. As part of this exchange, firms send updated quantitative and qualitative information to the Banco de España, which in turn provides each firm with its ICAS BE rating report.

This initiative is aligned with Banco de España's institutional objectives as it reinforces its public service role. In particular, it contributes to the Strategic Plan 2030, which includes the "An approachable bank" initiative, aimed at enhancing transparency, accountability and engagement with society. Therefore, the new ICAS BE operational process makes the Banco de España an active and valuable partner for the business sector. This interaction not only enhances firms' understanding of solvency criteria, but also positions the Bank as an accessible and instructive institution, committed to economic development.

Box 3.3

THE ROLE OF CREDIT COOPERATIVES IN THE PROVISION OF FINANCING TO SMALL AND MEDIUM-SIZED ENTERPRISES

This box examines the distribution of lending by credit cooperatives based on their geographical presence, their specialisation in productive sectors, their customer type and their performance since 2017 relative to other banks. The analysis takes into account the structural differences between the balance sheets of the two types of credit institutions, which affect their specialisation and the allocation of credit to non-financial corporations. It also analyses the extent to which the greater flow of financing from credit cooperatives to small and medium-sized enterprises (SMEs) – with a certain bias towards smaller productive units and, especially, the self-employed – can be explained by supply-side factors and whether the flow is stronger in local markets where most credit cooperative activity is concentrated. Lastly, within the SME segment, it examines the risk associated with lending to microenterprises and assesses whether credit cooperatives behave differently from other banks.

While credit cooperatives account for a relatively small share of the Spanish banking system (9.6% of total credit drawn down in 2025), they play a particularly key role for certain segments of the economy. This importance can be assessed from three main perspectives: a geographical standpoint, the sectoral dimension and customer type (see Box 3.2 of the Banco de España's *Supervision Report 2025*).

From a geographical perspective, credit cooperatives are prominent in the least populated provinces, where they make a key contribution to financial inclusion. For instance, in 2025 their market shares exceeded 20% in some provinces (reaching over 50% in Soria and Zamora and around 35% in Teruel, Almería and Cuenca), while in others they were low, at less than 10% – in the most densely populated provinces (Madrid and Barcelona) they even accounted for under 4%. This highlights the elevated heterogeneity at territorial level (Chart 1.a). Over the last 20 years, their market share has increased more markedly in the least densely populated provinces.

Turning to sectoral specialisation, cooperatives play a key role in certain productive sectors, most notably agriculture, which accounted for around 35% of credit cooperative lending in 2025. Their presence was also higher than their average market share in trade (11.5%) and manufacturing (10.8%) (Chart 1.b).

Lastly, by customer type, credit cooperatives are clearly geared towards lending to SMEs and the self-employed. Their market share in the SME segment stood at 11.4% in 2025 (almost 2 percentage points (pp) higher than their average share in total lending), with a clear focus on smaller productive units. Their share of lending to the self-employed was higher still (28%), underscoring their role as key financial intermediaries for this group.

Recently, this specialisation has resulted in greater resilience to business cycle fluctuations. During both the global financial crisis and the subsequent economic upswing (marked by intense deleveraging), credit cooperatives have outperformed other banks: from 2017 to mid-2025 their stock of total lending increased by 32.2%, compared with growth of virtually zero in the rest of the banking sector (1.4%). This higher growth is also seen in lending to SMEs and the self-employed. For instance, lending by credit cooperatives to SMEs barely changed (-2%), in contrast to the decline of 18.9% in lending to SMEs by the rest of the banking system (Chart 1.c). Meanwhile, cooperatives' lending to the self-employed grew by 11.3%, whereas that extended by other banks decreased by 29.2%.

Lastly, credit cooperatives' financial indicators are broadly speaking more favourable than those of the rest of the banking sector. In 2025 their non-performing loan (NPL) ratio was lower (2.4%, versus 3%), and they had higher solvency and liquidity levels. In particular, the common equity tier 1 ratio stood at 20.6%, well above the 13.8% in the rest of the banking sector. Similarly, the liquidity coverage ratio stood at 324%, versus 167% for other banks. Meanwhile, profitability – and also efficiency – was at similar levels, with return on assets of around 0.96%. The better asset quality position – a 0.6 pp difference in the NPL ratio – remained at similar levels to those of 2017 (1 pp).

The greater flow of credit cooperative lending to SMEs owes more to demand and supply-side factors, and cooperatives' presence in areas where their high market share coincides with a prevalence of microenterprises, than to differences purely associated with lending policy. Indeed, as mentioned above, the bulk of cooperatives' business is concentrated in certain regions and economic sectors.

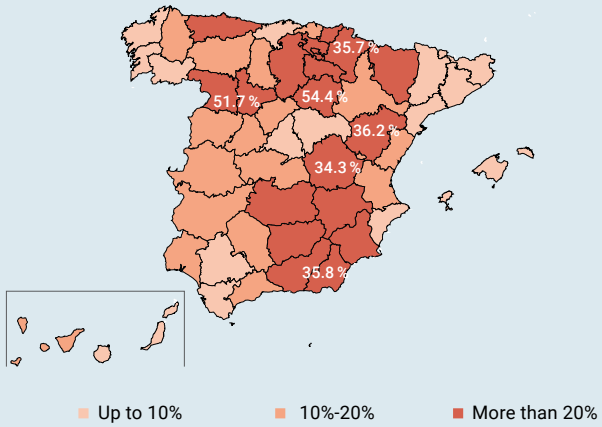
To assess credit cooperatives' supply of credit to different business segments, controlling for the latter's demand, a regression analysis was conducted that studies the relationship between growth in bank lending and credit institution type (cooperatives versus other credit institutions) in the period 2014-24. The model incorporates

Box 3.3

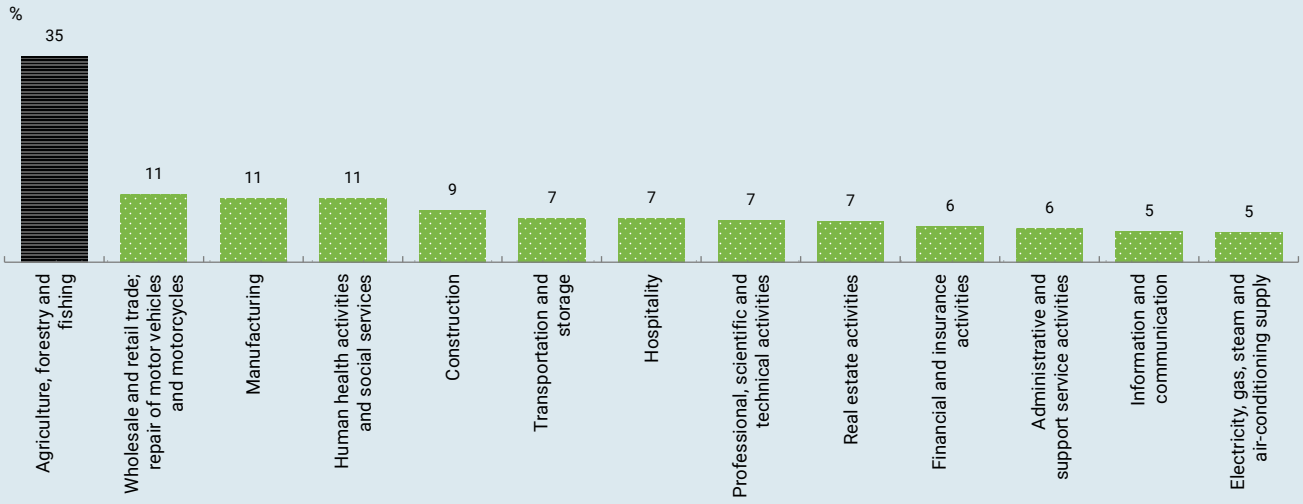
THE ROLE OF CREDIT COOPERATIVES IN THE PROVISION OF FINANCING TO SMALL AND MEDIUM-SIZED ENTERPRISES (cont'd)

Chart 1
Presence of credit cooperatives and credit developments

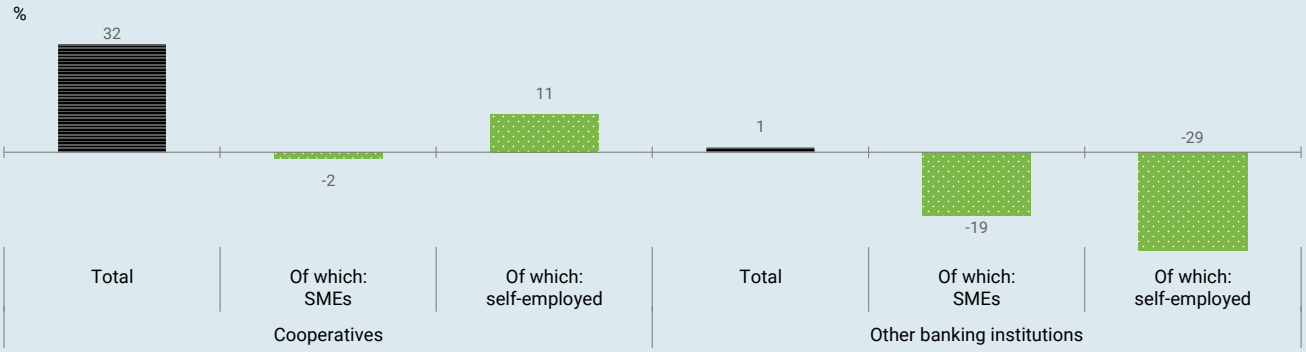
1.a Market share of credit cooperatives, by province. June 2025



1.b Market share of credit cooperatives, by sector. June 2025



1.c Change in stock of lending between December 2017 and June 2025



SOURCE: Banco de España.

Box 3.3
THE ROLE OF CREDIT COOPERATIVES IN THE PROVISION OF FINANCING TO SMALL AND MEDIUM-SIZED ENTERPRISES (cont'd)

firm-year fixed effects, which isolate supply-side factors by comparing changes in credit extended by both types of institutions to the same firm within a segment defined by its size. It also includes bank-year fixed effects to control for the aggregate supply of each institution at any given time and for all the lender's characteristics (for example, size, capital position, liquidity, profitability, etc.).

Column 1 of Table 1 shows the average annual growth in the stock of lending extended by credit cooperatives to different SME segments (microenterprises, small enterprises and medium-sized enterprises) compared with other institutions. The results confirm the descriptive evidence: even when controlling for the same firm's demand, credit cooperatives' lending to SMEs (especially to microenterprises) has declined less than that of other institutions. As indicated in Section 3.2 of Chapter 3 of this report, this pattern is consistent with cooperatives' practice of relationship lending, based on the accumulation of soft information over the course of long-standing lender-borrower relationships, which reduces the financial reporting opacity that characterises small enterprises. To reinforce this interpretation, a further regression analysis is conducted. This regression is similar to the one performed above, but focuses exclusively on microenterprises, where information asymmetries are more pronounced. The estimates confirm this evidence (see column 2).

To check whether this result is due to cooperatives' better knowledge of their local markets (and, therefore, an information advantage), the following exercise is performed (Table 2). For each banking institution, municipalities are classified into two categories: (i) its main market (where most of its corporate lending portfolio is concentrated) and (ii) the other municipalities where it is present. The new model also incorporates firm-year and bank-year fixed effects. The findings are shown in column 2, while column 1, which corresponds to the prior analysis, is included for reference purposes. While credit cooperatives increase their lending to microenterprises outside their main municipality (1.3 pp), they do so much more in their local market (2.2 pp). This is consistent with soft information being more readily available in these areas. The definition of local market is then narrowed further, comparing the municipalities where the cooperative is the main lender (in other words, it has the highest market share) with those that are not its main market or those where, despite being its main market, other institutions have a higher volume of lending to firms. The estimated differential effect in this new exercise, reported in column 3, is even stronger (4.3 pp in the local market, versus 1.4 pp in the others), underscoring the importance of the information component.

Lastly, an analysis is conducted of whether these practices, based on better market knowledge, result in lower risk

Table 1
Lending by cooperatives compared with other institutions, by firm size (a)

	Impact on growth in lending	
	(1)	(2)
Microenterprise x Cooperative	0.039 ***	0.014 ***
	(0.007)	(0.003)
Small enterprise x Cooperative	0.035 ***	
	(0.007)	
Medium-sized enterprise x Cooperative	0.012 *	
	(0.006)	
Observations	2,685,160	2,685,160
R^2	0.371	0.371

SOURCE: Banco de España.

a Results obtained by estimating a regression of growth in lending on interactions between binary variables that denote firm size (microenterprise, small enterprise or medium-sized enterprise) and a binary variable that takes the value 1 if the institution is a credit cooperative. The controls are firm-year and bank-year fixed effects. The sample period is 2014-24. The average growth in lending to firms during that period is -4.82%. The standard errors are grouped at firm-bank and year-sector level. The asterisks denote the level of significance of the coefficients: *** 1%, ** 5% and * 10%.

Box 3.3
THE ROLE OF CREDIT COOPERATIVES IN THE PROVISION OF FINANCING TO SMALL AND MEDIUM-SIZED ENTERPRISES (cont'd)

levels, in keeping with the descriptive evidence presented at the beginning of this box. In other words, whether cooperatives' lower NPL ratio compared with other institutions is explained by the composition of their portfolio or by an information advantage that leads to better borrower selection. To do so, both the ex ante risk and the ex post risk are assessed.

To analyse ex ante risk, the regression model shown in column 1 of Table 2 is expanded, incorporating the three-way interaction between the binary variables that identify cooperatives, microenterprises and lagged probability of default (PD) (from the prior period), in addition to the two-way interaction between PD and the cooperative indicator. The results of the estimation (Table 3) show that cooperatives' credit supply to firms with higher PDs is similar to that of other institutions in all segments (microenterprises and beyond), since the coefficients of the two interactions are very small and not statistically different from zero. This finding is consistent with the evidence presented in Section 3.2 of Chapter 3 of this report, according to which, since 2014, different types of credit institutions have shown similar risk-taking profiles.

Lastly, to study ex post risk, three (linear) probability models are estimated whose dependent variables are binary variables that indicate the existence (or not) of an NPL in year t+1, t+2 or t+3 (columns 1, 2 and 3 of Table 4, respectively). In all three models, the regressor of interest is the interaction between a binary variable that indicates microenterprise and another binary variable that takes the value 1 if the credit institution is a credit cooperative. In all the specifications the controls are bank-year fixed effects and sector-province-size-year fixed effects, where size refers to microenterprises and small, medium-sized and large enterprises, and sector refers to NACE Rev.2 classes. The latter are included to control for the main business characteristics that might affect the propensity to default on a bank loan. In addition, the sample is restricted to firms with no NPLs or loans in arrears in year t-1, since the

Table 2
Lending to microenterprises by cooperatives, on the basis of their local market (a)

	Impact on growth in credit		
	(1)	(2)	(3)
Microenterprise x Cooperative x Local market		0.022 ***	
		(0.005)	
Microenterprise x Cooperative x Other municipalities		0.013 ***	
		(0.003)	
Microenterprise x Cooperative	0.014 ***		
	(0.003)		
Microenterprise x Cooperative x Main lender in local market			0.043 ***
			(0.015)
Microenterprise x Cooperative x Other municipalities			0.014 ***
			(0.003)
Observations	2,685,160	2,685,160	2,685,160
R^2	0.371	0.371	0.371

SOURCE: Banco de España.

a The dependent variable is always credit growth. In column 1 the regressor of interest is the interaction between a binary variable that denotes microenterprise and a binary variable that takes the value 1 if the institution is a credit cooperative. In column 2 the regressors of interest are the three-way interaction between microenterprise, cooperative and a binary variable that takes the value 1 if it is the cooperative's local market (the municipality where the highest percentage of its corporate loan book is concentrated) and the three-way interaction between microenterprise, cooperative and a binary variable that takes the value 1 for the other municipalities where it is present. Column 3 shows a variation of the previous analysis in which the local market is defined as the municipality where the cooperative is the main lender (has the highest market share). In all the specifications the controls are firm-year and bank-year fixed effects. The sample period is 2014-24. The average growth in lending to firms during that period is -4.82%. The standard errors are grouped at firm-bank and year-sector level. The asterisks denote the level of significance of the coefficients: *** 1%, ** 5% and * 10%.

Box 3.3
THE ROLE OF CREDIT COOPERATIVES IN THE PROVISION OF FINANCING TO SMALL AND MEDIUM-SIZED ENTERPRISES (cont'd)

characteristics of this type of firm may differ from the others and may potentially be correlated with their PD. The results of the three specifications are very similar and indicate that microenterprises that borrow from cooperatives are 0.01 pp-0.02 pp less likely to have an NPL. These effects are highly significant, although relatively smaller than the percentage of observations with NPLs in the three samples (0.76%-0.85%).

This finding could indicate that, thanks to their information advantage in local markets and in the microenterprise segment, as well as a closer relationship with their

Table 3
Risk-taking by cooperatives compared with other institutions: ex ante risk (a)

	Impact on growth in lending
Microenterprise x Cooperative	0.017***
	(0.004)
Microenterprise x Cooperative x PD	-0.001
	(0.001)
Cooperative x PD	0.000
	(0.001)
Observations	2,685,160
R^2	0.371

SOURCE: Banco de España.

a Results obtained by estimating a regression of credit growth on three interactions. The first is an interaction between a binary variable that denotes microenterprise and a binary variable that takes the value 1 if the institution is a credit cooperative. The second is a three-way interaction between the binary variables that identify cooperatives, microenterprises and lagged probability of default. The third is a two-way interaction between lagged probability of default and the binary variable denoting cooperative. In all the specifications the controls are firm-year and bank-year fixed effects. The sample period is 2014-24. The average growth in lending to firms during that period is -4.82%. The standard errors are grouped at firm-bank and year-sector level. The asterisks denote the level of significance of the coefficients: *** 1%, ** 5% and * 10%.

Table 4
Risk-taking by cooperatives compared with other institutions: ex post risk (a)

	Impact on probability of having NPLs		
	(1)	(2)	(3)
Microenterprise x Cooperative	-0.001***	-0.002***	-0.002***
	(0.000)	(0.000)	(0.000)
Observations	3,208,648	2,532,350	2,040,074
R^2	0.107	0.124	0.145

SOURCE: Banco de España.

a The dependent variables are binary variables that denote the existence of an NPL in year t+1, t+2, or t+3 (columns 1, 2 and 3, respectively). The regressor of interest is always the interaction between a binary variable that denotes microenterprise and another binary variable that takes the value 1 if the institution is a credit cooperative. In all the specifications the controls are bank-year fixed effects and sector-province-size-year fixed effects, where size corresponds to microenterprises, small enterprises, medium-sized enterprises and large firms, and sector to the NACE Rev.2 classes. The sample is restricted to firms that had no NPLs or loans in arrears in year t-1. The sample period is 2014-24. The proportion of observations with NPLs is 0.76%, 0.83% and 0.85% in the samples of columns 1, 2 and 3, respectively. The standard errors are grouped at firm-bank and year-sector level. The asterisks denote the level of significance of the coefficients: *** 1%, ** 5% and * 10%.

Box 3.3

THE ROLE OF CREDIT COOPERATIVES IN THE PROVISION OF FINANCING TO SMALL AND MEDIUM-SIZED ENTERPRISES (cont'd)

customers, credit cooperatives are able to better select the firms they lend to and more exhaustively monitor their activities. All this would result in a lower proportion of problem loans among borrowers, in line with the findings in Álvarez-Román, Mayordomo, Vergara-Alert and Vives (2024)[1] and Casado and Martínez-Miera (2025).[2]

Credit cooperatives' business model also poses specific challenges associated with their geographical concentration and their smaller size. In particular, depopulation and the limited availability of investment opportunities in certain areas may restrict their growth and make them more dependent on the economic activities specific to their environment, which raises their vulnerability to adverse sectoral or climate shocks. In addition, the small size of some institutions hinders the professionalisation of governance, digitalisation and the development of advanced risk management capabilities. All this against a backdrop in which credit cooperatives complement the key role played in the financial system by larger banks – given their greater geographical and sectoral diversification, their access to wholesale markets and the larger scale of their operations – by funding major projects and absorbing adverse macroeconomic shocks. In doing so, credit cooperatives contribute to stable aggregate credit growth.

1 Laura Álvarez-Román, Sergio Mayordomo, Carles Vergara-Alert and Xavier Vives. (2024). "Climate risk, soft information and credit supply". Documentos de Trabajo, 2406, Banco de España.

2 Alejandro Casado and David Martínez-Miera. (2025). "Banks' specialization and private information". Documentos de Trabajo, 2539, Banco de España.

Box 3.4

THE IMPACT OF THE DIGITAL KIT ON BUSINESS PRODUCTIVITY

Digital Kit scheme

With an unprecedented budgetary allocation (€3,067 million) and over 900,000 subsidies granted to small and medium-sized enterprises (SMEs) and the self-employed, the Digital Kit scheme is the largest business digitalisation initiative ever launched in Spain. It seeks to boost firms' uptake of digital solutions, strengthen business competitiveness and narrow digital gaps across firm sizes, geographical areas and sectors.

The scheme is financed through Next Generation EU funds from the European Union, within the framework of the Recovery, Transformation and Resilience Plan (RTRP), and is managed by the public enterprise Red.es. For more information on the scheme, see the Red.es report.

Different calls for applications have been aimed at business segments according to the number of workers. Each segment provides for a specific maximum digital voucher amount and a set of eligible solutions, allowing for a more targeted allocation of public resources.

The scheme is structured into five broad segments: segment I comprises firms with between 10 and 49 workers, which are eligible for a digital voucher of up to €12,000; segment II includes firms of between 3 and 9 workers, eligible for a voucher of up to €6,000; and segment III comprises microenterprises and the self-employed (between 0 and 2 workers), which were initially allocated vouchers of €2,000 (subsequently increased to €3,000). More recently, the scheme has been opened up to medium-sized enterprises, with the creation of segment IV, comprising firms with 50-99 workers (eligible for a voucher of up to €25,000), and segment V, for firms with 100-249 workers (eligible for a voucher of up to €29,000). Moreover, an extraordinary call for applications was launched for entities without independent legal status (joint ownerships, civil-law partnerships and shared-ownership agricultural holdings), thus extending the scheme to groups that initially did not qualify.

Rather than direct transfers of monetary grants, the subsidies are provided to beneficiaries in the form of digital vouchers, which are redeemed with accredited suppliers ("agentes digitalizadores adheridos") when they contract services from a predefined catalogue of solutions. This catalogue covers areas such as online presence and e-commerce, customer and process management, e-invoicing, cybersecurity, secure communications and electronic office tools, with more recent calls also encompassing advanced artificial intelligence-enabled solutions and managed cybersecurity.

Payment is made directly to the provider once the solution has been properly implemented and justified, which reduces liquidity problems for the beneficiary and limits the risk of misuse of funds.

Through its design and a management strategy focused on promoting and facilitating access to the subsidies, the scheme has deliberately sought to lower administrative and digital barriers. This has made it possible to identify and serve firms and self-employed persons that have a lower level of digitalisation (including those without any prior experience in accessing public subsidies) and adapt the level of support to their size and degree of technological development, as well as ensuring a high level of geographical coverage. Indeed, the scheme has reached over 90% of Spanish municipalities, including virtually all rural ones.

Impact assessment

This box discusses the impact of the Digital Kit scheme on beneficiary firms' total factor productivity (TFP). TFP measures the efficiency with which a firm combines its factors of production (capital and labour) to generate output, and is one of the fundamental drivers of long-term economic growth.[1] In this context, this box assesses whether receiving aid for digitalisation has yielded improvements in the recipient SMEs' productive efficiency.

The analysis draws on administrative micro data from Red.es covering all the firms participating in the Digital Kit scheme, across all calls. These records are linked to accounting information from the Banco de España's Integrated Central Balance Sheet Database (CBI), available only up to 2024.

The analysis is limited to firms that implemented the digital solution in 2023, as at least one year of information since treatment is required to estimate the impact. Since financial data are only available up to 2024, firms treated after 2023 are excluded. The resulting sample consists of a panel of over 60,000 firms for the period 2014-24. The pre-treatment period covers 2014-22 and the post-treatment period is 2023-24.

1 For a detailed description of the TFP measurement, see the Methodological annex to Chapter 3 of this report.

Box 3.4
THE IMPACT OF THE DIGITAL KIT ON BUSINESS PRODUCTIVITY (cont'd)

To identify the scheme's effect on TFP, a difference-in-differences (DiD) approach is used that exploits variation in the effective use of the Digital Kit voucher, with the treatment group including firms that used the subsidy and the control group comprising those that were granted the voucher, but did not use it before it expired.

This design can isolate the impact of the scheme's effective implementation, by controlling for both eligibility and the applicable regulatory framework, and reduces selection concerns associated with the decision to participate in the scheme.

The scheme's effect is identified through a comparison of the TFP developments of the two groups before and after the voucher is granted, based on the assumption that their trajectories would have followed parallel trends had the voucher not been used.

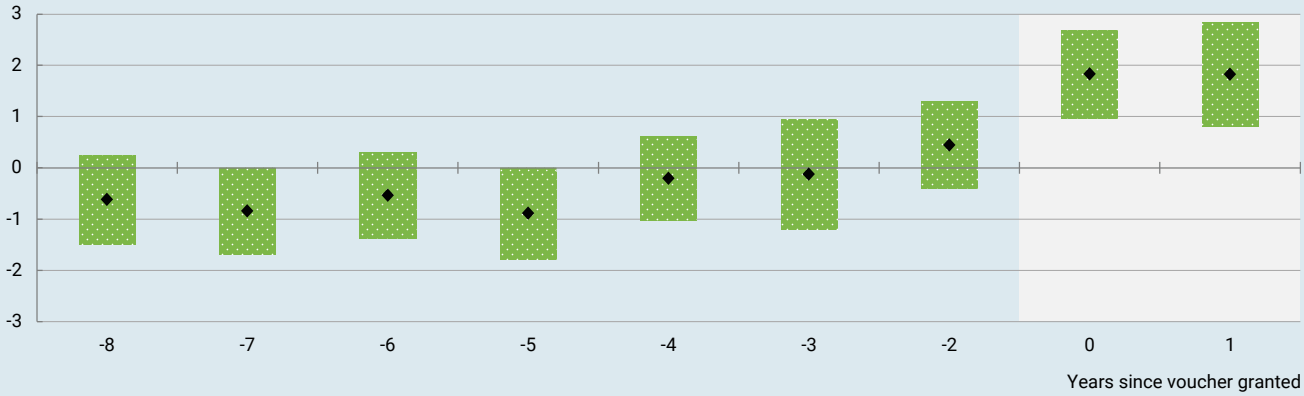
The plausibility of this assumption is assessed through an analysis of the pre-treatment periods. Chart 1 shows the difference in terms of TFP between the two groups in each year relative to the voucher being granted, without correcting for observable characteristics. The coefficients in the years before treatment (years −8 to −2) are systematically close to zero and not statistically significant, supporting the plausibility of the parallel trends assumption.

However, given that the decision to use the voucher – as opposed to letting it expire – could be correlated to observable business characteristics (such as size, financial position or sector of activity), estimation of the scheme's effect needs to be corrected for possible systematic differences between treated and untreated firms. Firms that are more dynamic or better managed or have greater administrative capacity could, a priori, be more inclined to redeem the voucher, which would introduce a bias into the direct comparison of the two groups.

Specifically, the estimator proposed by Callaway and Sant'Anna (2021) is used, which assigns greater weight to control group firms with similar pre-treatment observable characteristics to those of the beneficiary firms, and less weight to those with less comparable characteristics. This procedure intuitively "rebuilds" a control group whose main variables resemble, on average, those of the treated group before the voucher is granted, such that the subsequent comparison is between equivalent firms.[2]

Table 1 presents the effectiveness of this reweighting, listing the differences in observable characteristics between groups before and after the adjustment. After reweighting, the control group firms have very similar characteristics to those of the beneficiary firms before

Chart 1
Difference between TFP of treated firms and untreated firms



SOURCES: Banco de España (CBI) and Red.es.

2 Alberto Abadie. (2005). "Semiparametric Difference-in-Differences Estimators". *The Review of Economic Studies*, 72(1), pp. 1-19; Pedro H. C. Sant'Anna and Jun Zhao. (2020). "Doubly robust difference-in-differences estimators". *Journal of Econometrics*, 219(1), pp. 101-122; Brantly Callaway and Pedro H. C. Sant'Anna. (2021). "Difference-in-Differences with multiple time periods". *Journal of Econometrics*, 225(2), pp. 200-230; Liyang Sun and Sarah Abraham. (2021). "Estimating dynamic treatment effects in event studies with heterogeneous treatment effects". *Journal of Econometrics*, 225(2), pp. 175-199; and Kirill Borusyak, Xavier Jaravel and Jann Spiess. (2024). "Revisiting Event-Study Designs: Robust and Efficient Estimation". *The Review of Economic Studies*, 91(6), pp. 3253-3285.

Box 3.4
THE IMPACT OF THE DIGITAL KIT ON BUSINESS PRODUCTIVITY (cont'd)

treatment. Before the reweighting, the treated firms are on average slightly larger (in terms of assets, value added and number of workers) and older than the control group. After the reweighting, the differences in observable characteristics are reduced to almost zero, reinforcing the credibility of the counterfactual scenario used to identify the scheme's effect.

Results

The results show that the Digital Kit scheme has a positive and statistically significant impact on beneficiary firms' TFP. The main estimate, presented in Chart 2.a, indicates that use of the voucher is associated with TFP being approximately 1.2% higher one year later. By construction, the estimator eliminates the shocks common to each period and allows for the existence of permanent differences in levels among firms, such that the estimated effect captures exclusively the variation attributable to use of the voucher.

In the sample, the average amount of the treatment stands at approximately €5,000, implying an increase of around 0.25% in TFP for every €1,000 of subsidy received. To put

Table 1
Observable characteristics in 2021 (a)

Mean value per firm

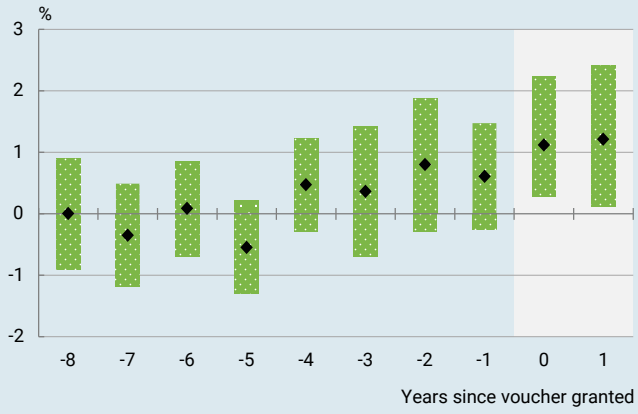
Variable	Treated firms	Untreated firms (unweighted)	Untreated firms (weighted)	Difference (unweighted)	Difference (weighted)
Value added (ln)	5.7	5.4	5.7	0.3	0.0
Assets (ln)	6.7	6.5	6.7	0.2	0.0
Number of workers (ln)	2.0	1.7	2.0	0.3	0.0
Debt-to-assets ratio	0.2	0.2	0.2	0.0	0.0
Age	21.6	20.8	21.6	0.8	0.0
Number of firms	42,818	14,909	14,909		

SOURCES: Banco de España (CBI) and Red.es.
NOTE: "ln" refers to the natural logarithm.

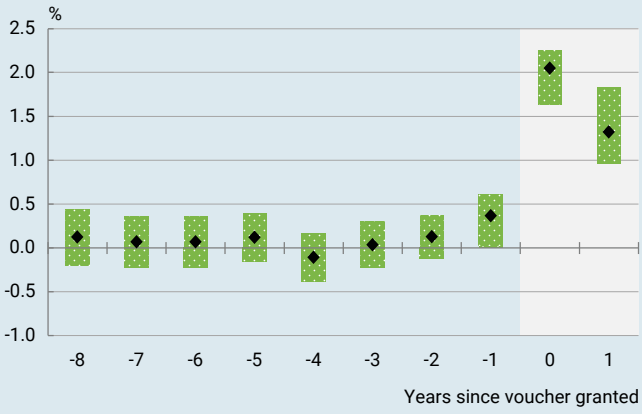
a The table shows averages of observable covariates measured in 2021, before treatment. The "unweighted" columns show means for the control group without weights, while the "weighted" columns report means for the control group using inverse probability of treatment weights. The difference is defined as treated firms minus untreated firms.

Chart 2
Estimated effect of the Digital Kit scheme on beneficiary firms

2.a Estimated effect on TFP



2.b Estimated effect on the proportion of intangible assets



SOURCES: Banco de España (CBI) and Red.es.

Box 3.4
THE IMPACT OF THE DIGITAL KIT ON BUSINESS PRODUCTIVITY (cont'd)

this in context, these firms' TFP grew by around 2% in 2023. In this regard, the Digital Kit's estimated impact accounts for a substantial share of the TFP growth observed among treated firms that year. This suggests that the scheme contributed significantly to the improvement in their productivity, although it was not the sole driver.

This result is robust to different empirical specifications and identification strategies. First, the control group (firms with expired vouchers) is replaced by a group of firms treated in 2025 that have not yet implemented the digital solution within the sample window. The benefit of using this alternative control group is that it comprises firms that decided to participate in the scheme and therefore have similar behavioural profiles to those of the treated group. With this specification, the estimated effect is of a similar or slightly higher magnitude, standing at around 1.6%. Second, Table 2 sets out the results obtained with six alternative estimators, all variants of a doubly robust DiD approach. In all cases, the impact of the treatment ranges from 1.5% to 1.7%.

Overall, the evidence suggests that the Digital Kit scheme has made a significant contribution to improving the beneficiary SMEs' TFP.

Mechanisms

The effects of the scheme materialise through a process of productive transformation that primarily affects how firms organise and combine their resources. Digitalising internal processes, such as e-invoicing and inventory management, helps reduce operational costs and allows resources to be reallocated to higher value-added activities. This results in a more efficient use of the factors of production, the variable specifically captured by TFP.

In addition, adopting e-commerce and digital presence tools opens up access to larger markets and improves income generation capacity, contributing to economies of scale and a more intensive use of installed capital. In line with this, evidence on the capital-labour ratio confirms the presence of a capital deepening process, attributable to the work-enhancing digital technologies adopted.

These efficiency gains appear to be accompanied by a reshaping of the capital base, with a rising proportion of intangible and digital assets. Although this is not immediately reflected in a higher total stock of intangibles recorded in the accounts (in part due to measurement limitations and the non-capitalisable nature of some solutions), the evidence shows a significant increase in the share of intangibles in total capital. This pattern points to a stronger integration of these assets into the production process (Chart 2.b).

Economic policy implications

Based on the results of this analysis, the Digital Kit scheme has made a significant contribution to improving the beneficiary SMEs' TFP. Although moderate, the magnitude of the estimated effect is economically relevant, given the scheme's extensive coverage and the high number of beneficiary firms.

Table 2
Robustness checks: effect of the Digital Kit on TFP (a)

Estimator	Average effect of treatment	Standard error
dripw	0.017***	0.005
drimp	0.016***	0.005
reg	0.016***	0.005
ipw	0.015***	0.005
stdipw	0.015***	0.005
sipwra	0.016***	0.005

SOURCE: Banco de España.

a The coefficients show the average treatment effect on treated firms, measured as the change in TFP, in logarithms. The asterisks indicate statistical significance at 1%. Robust standard errors. A coefficient of 0.017 implies an increase in productivity of approximately 1.7% associated with effective use of the scheme. The estimators used are: dripw: doubly robust inverse probability weighting estimator; drimp: doubly robust imputation estimator; reg: regression adjustment; ipw/stdipw: inverse probability weighting (standard and standardised); and sipwra: semiparametric inverse probability weighting estimator with regression adjustment.

Box 3.4
THE IMPACT OF THE DIGITAL KIT ON BUSINESS PRODUCTIVITY (cont'd)

Nonetheless, these results should be interpreted with caution. On the one hand, the impact observed may potentially decrease over time, insofar as part of the effects may be attributable to short-lived dynamics (such as diminishing returns on digital investments, convergence with untreated companies or changes in the technological and competitive environment), which could lead to the initial benefits progressively fading. On the other, the total effect may as yet be underestimated, as the time horizon available does not fully capture the benefits associated with digitalisation (such as process and product innovation, complementarities with human and organisational capital, or learning and scaling effects), which tend to materialise gradually. Monitoring these firms over the coming years will be key to discerning which of these dynamics ultimately predominates.

Box 3.5

THE EFFECTS OF THE 2021 LABOUR MARKET REFORM ON SPANISH FIRMS' PRODUCTIVITY

The use of temporary employment contracts has been widespread across Europe in the recent period, with Spain among the countries with the highest rates. According to Eurostat, temporary contracts accounted for 24.9% of employment in Spain, against the European Union (EU) average of 13.0%. The high level of temporary employment in Spain in recent decades has entailed significant employment volatility, with sharp reactions to economic downturns. This temporary employment also erodes job stability and quality and can therefore constrain firm productivity and growth.

The labour market reform introduced by Royal Decree-Law 32/2021 sought to contain the adverse effects linked to Spain's high proportion of temporary contracts and to bolster job quality and firms' dynamism through measures to increase internal flexibility and training. In particular, Royal Decree-Law 32/2021 restricted the scope for temporary hiring, mainly by removing contracts for specific tasks and services in most circumstances, thereby encouraging permanent hires, whether on an ordinary or seasonal basis. It also envisaged the automatic conversion of temporary contracts into permanent ones when employees had accrued 18 months of service at the same firm over a 24-month period. Following the reform's entry into force, the average temporary employment ratio in Spain fell from 24.9% in 2021 to 14.9% in 2025, narrowing the gap to the EU average of 11.5%.

This box examines how the tighter limits on temporary hiring introduced by the 2021 reform have affected the productivity of Spanish firms.[1]

Reducing temporary employment within firms can help raise productivity through three channels. First, greater job stability allows workers to develop task-specific skills and build up more firm-specific human capital. Second, job stability may encourage firms to invest more in employee training. Third, there may be a selection effect whereby firms most accustomed to using temporary contracts are forced to exit the market when their use is restricted. Since firm closures tend to fall disproportionately on less productive firms and those that make greater use of temporary contracts, this effect could increase aggregate productivity.[2]

To estimate the reform's potential effect on firm productivity, the identification strategy in this box is based on comparing those firms most affected by the reform because they made greater use of temporary contracts (those with a higher share of such contracts in 2021, in the top quartile of firms by temporary employment ratio) with those less affected because they used temporary contracts more moderately (those in the second and third quartiles). The exercise draws on two data sources: first, the universe of individuals registered with the Social Security system and, second, the Central Balance Sheet Data Office (CBSO) of the Banco de España, which allow the temporary employment ratio of firms to be identified and offer complementary information.[3] The Social Security data make it possible to study developments in temporary employment, job creation and job destruction by contract type and job tenure, but they do not contain detailed firm-level balance sheet information. The CBSO, by contrast, offers highly comprehensive information on firms' balance sheets and profit and loss accounts, but its data on firms' employment and its characteristics are not as granular.

Following the reform's entry into force, temporary employment fell markedly across firms that used temporary contracts, although the decline was particularly pronounced among those that had relied on them more. Among firms in the top quartile by temporary contract use, the share of temporary jobs had fallen by around 32 percentage points (pp) on average from January 2022 compared with pre-reform levels. However, in the middle quartiles, the drop was around half that, at 16 pp (Chart 1.a). As a result, the gap in the temporary employment ratio between the firms making greatest use of such

1 Cristina Barceló, Diego Caminero, Federico Tagliati and Ernesto Villanueva. "Firm level responses to sharp changes in the access to Fixed-Term Contracts". Forthcoming.

2 Josep Pijoan-Mas and Paul Roldan-Blanco. (2024). "Dual labor markets and the equilibrium distribution of firms". Documentos de Trabajo, 2442, Banco de España present a theoretical model that makes it possible to analyse how restrictions on temporary hiring trigger the exit of low productivity firms and boost aggregate productivity. Moreover, Joseph G. Altonji and Robert A. Shakotko. (1988). "Do Wages Rise with Job Seniority?". The Review of Economic Studies, 54(3), pp. 437-459 (for the United States) and Jose Garcia-Louzao, Laura Hospido and Alessandro Ruggieri. (2023). "Dual returns to experience". *Labour Economics,* 80(102290) (for Spain) detail the positive relationship between job tenure on the one side and wages and human capital on the other, while Andrea Caggese, Ozan Güler, Mike Mariathasan and Klaas Mulier. (2024). "Heterogeneous Firing Costs, Worker Types, and Productivity: Evidence from a Natural Experiment" show falls in productivity linked to greater employment protection.

3 Note that the two datasets are analysed separately and are not combined in this box because there is no exact firm-level matching between the two sources. The two groups of firms defined according to their use of temporary contracts are identified separately within each dataset and yield very similar estimates of the distribution of firms' temporary employment ratios.

Box 3.5
THE EFFECTS OF THE 2021 LABOUR MARKET REFORM ON SPANISH FIRMS' PRODUCTIVITY (cont'd)

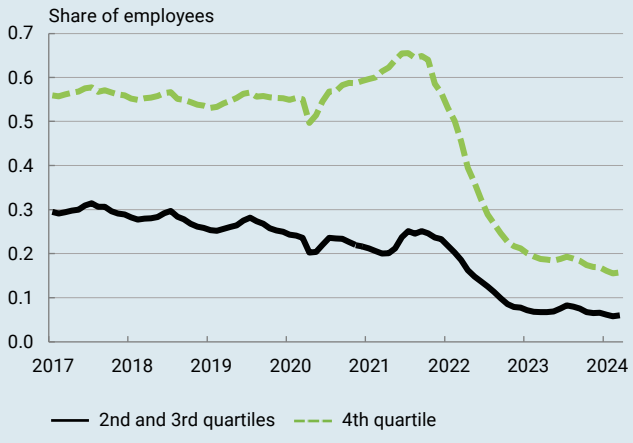
contracts and those making a more moderate use narrowed by 16 pp on average.

The adjustment in employment composition was also more pronounced among firms with a high reliance on temporary contracts. Following the reform's entry into force, these firms reduced their temporary employment by 8 pp relative to those with a moderate share of temporary employment (Chart 1.b). This reduction was offset mainly by greater creation of permanent employment through ordinary contracts (4 pp more than among firms with moderate temporary employment levels), while the contribution of permanent seasonal contracts was relatively limited (1 pp). Overall, firms with a high share of temporary employment prior to the reform reduced such employment by around 3 pp more than firms with a moderate share. This effect is explained entirely by a higher rate of firm exit among firms that depended more on temporary hiring, rather than by decreased temporary employment among firms that remained active in the market, as discussed below.

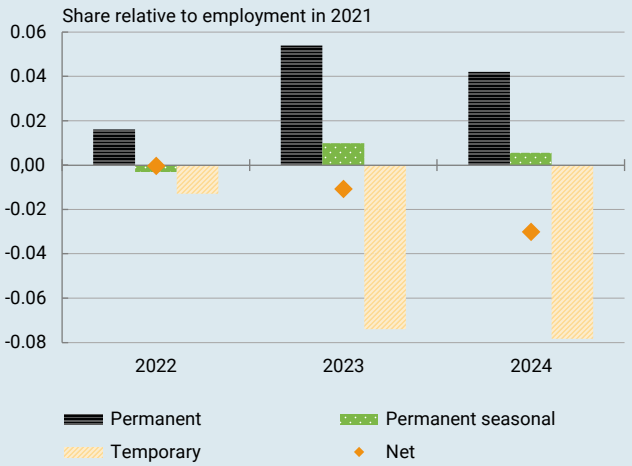
Value added per full-time equivalent is used as an indicator to analyse the effect of the reform on firms' productivity.[4] Chart 2.a shows how productivity developed differently among firms with a high share of temporary hiring relative to those with a moderate share, benchmarked against each firm's average productivity between 2017 and 2019. The difference in productivity growth was small and not statistically different from zero between 2017 and 2021, suggesting that the two groups showed similar dynamics before the reform. After the 2021 labour market reform, however, firms with a higher share of temporary employment experienced higher productivity growth than those with a moderate share. In 2022, productivity in the group of firms with a high share of temporary employment grew by 1.2 pp more relative to 2017-19 than it did in the group of firms with only a moderate share. The estimated difference in growth was 0.5 pp in 2023 and 0.7 pp in 2024 (Chart 2.a). Over the 2022-24 period (since the reform), the average difference in productivity growth for firms with a high share of temporary employment was around 0.9 pp

Chart 1
Temporary employment ratio and change in employment by contract type

1.a Temporary employment ratio by quartile of temporary contract use



1.b Difference in employment change between firms with intensive and moderate use of temporary contracts by contract type



SOURCE: Ministerio de Inclusión, Seguridad Social y Migraciones (register of employment relationships). See Barceló, Caminero, Tagliati and Villanueva (2025).

4 The CBSO provides data on full-time equivalents. During the pandemic, there were widespread temporary layoffs or short-time work arrangements (known in Spanish as ERTEs). Employees furloughed in this way are counted as if they were working, but they do not generate output, which distorts productivity as measured. For comparison purpose, the share of each firm's employees on furlough is estimated, allowing productivity developments across firms to be compared on a like-for-like basis.

Box 3.5
THE EFFECTS OF THE 2021 LABOUR MARKET REFORM ON SPANISH FIRMS' PRODUCTIVITY (cont'd)

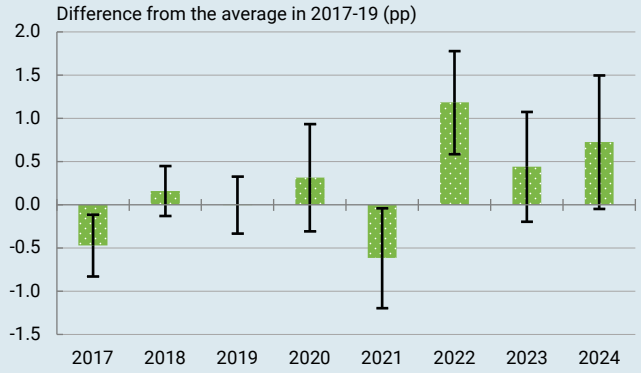
(with a standard error of 0.2 pp).[5] This trend indicates that restricting the use of temporary contracts was associated with a relative improvement in productivity among firms most exposed to the regulatory change.

The stronger productivity growth observed among firms most affected by the reform is consistent with the first channel noted earlier, linked to greater job stability and the resulting accumulation of firm-specific human capital. Available estimates put the returns on accumulated human capital for those employed on a permanent contract (proxied by the wage return to job tenure) at around 2% per year worked.[6] If, between 2022 and 2024, average tenure or experience in the job had increased by an amount equivalent to two years, this would imply (assuming that the wage return on job tenure associated with a permanent contract translates directly and equally into productivity gains) an average increase in productivity of around 4 pp over the same period. Moreover, firms with a high share of temporary employment recorded an average increase in permanent hiring of 16 pp above firms with a moderate share (Chart 1.a). This mechanism would imply an expected difference in productivity growth of approximately 0.64 pp (calculated as 0.02 × 2 × 16 pp) in favour of the former. This is the same order of magnitude as the estimated difference in productivity between the two groups (0.9 pp).

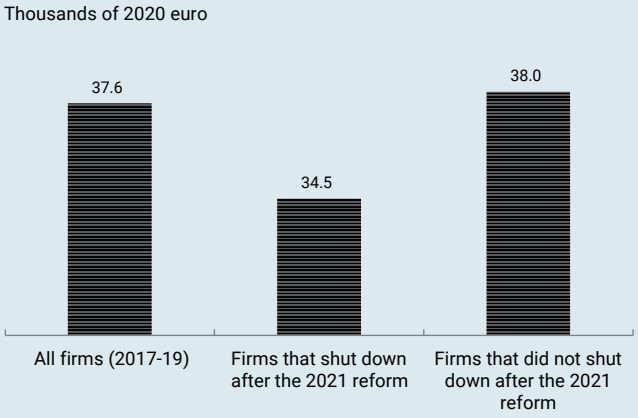
As regards the second channel (firms potentially offering more employee training), there is no evidence of a differential increase in investment in training by firms with a higher share of temporary contracts. That said, training expenditure data are only available for a small subset of the firms covered by the CBSO, which may not be fully representative of the firms analysed here.[7] As a result, the evidence available does not allow firm conclusions to be drawn regarding this mechanism's impact.

Chart 2
Impact of the reform on productivity across firms according to their use of temporary contracts

2.a Difference in the ratio of value added per employee (ERTE-adjusted) among companies with high and moderate shares of temporary employment



2.b Value added per employee (ERTE-adjusted) across groups of firms with intensive use of temporary contracts



SOURCE: Banco de España (CBSO). See Barceló, Caminero, Tagliati and Villanueva (2025).

5 The regressions' dependent variable is the difference between the logarithm of each firm's productivity in a given year and its 2017-19 average. Explanatory variables include indicators for firm size, sector (at NACE Rev. 2 section level) and year, as well as their interactions. Dummy variables for region are also included. The 2024 estimates should be treated with caution because they do not include the full set of firms covered by the CBSO.

6 See García-Louzao, Hospido and Ruggieri (2023) for an estimate of the wage return associated with job stability.

7 After applying the same consistency filters as in the original sample, only 56 firms remain in the control group, with 21 in the treatment group. The data are available for relatively large firms, with around 150 full-time equivalents, ten times the size of the firms in the sample used in Chart 2.a. The same regression described in footnote 5 is estimated, but with training expenditure as a share of output value taken as the dependent variable.

Box 3.5

THE EFFECTS OF THE 2021 LABOUR MARKET REFORM ON SPANISH FIRMS' PRODUCTIVITY (cont'd)

Lastly, regarding the extensive margin channel and firm exit channel, it should be noted that the estimations of the effect of the reform on productivity presented above are based solely on firms that were active throughout the analysis period, meaning that they only capture developments in productivity within these surviving firms. This approach does not account for the mechanism whereby less productive firms exit the market, which can also help raise aggregate productivity. If firms that relied more heavily on temporary hiring faced higher closure rates after the reform (and if those firms were disproportionately less productive), this selection process would operate as an additional channel not captured by the estimates based solely on surviving firms.

Chart 2.b explores this mechanism. It shows that before 2021 firms with higher shares of temporary hiring that closed after the reform had noticeably lower productivity levels (measured as value added per employee) than surviving firms (€34,500 and €38,000, respectively). In addition, after the reform came into force, the exit rate was higher among firms that were more dependent on temporary employment (10.7% compared with 8.5% among firms with a moderate share of temporary contracts). This combination (higher probability of exit and lower productivity) suggests that these firms' exit from the market contributed to raising average productivity among firms with a high share of temporary employment through a compositional effect, in addition to the productivity gains within surviving firms documented in this box.

Box 3.6

PUBLIC PROCUREMENT AND SME GROWTH

Public procurement is a key instrument of public sector economic intervention, with significant effects on economic activity and aggregate productivity, mainly through its impact on firm growth and the allocative efficiency of resources.

Through public tenders, the public sector channels a significant share of aggregate demand towards private firms, influencing not only the level of economic activity but also the structure and dynamics of the business sector. Beyond its direct impact on sales, public procurement may also significantly affect firm's production, financing and growth decisions, particularly in the presence of financial frictions.[1]

To estimate the impact of public procurement on private firms, we conduct a firm-level analysis using data on contract awards in Spain and other comparable euro area countries (for more details, see the data sources annex to Chapter 3 of this report). The results show that being awarded a public contract has dynamic effects on firms' sales to the private sector. Specifically, private-sector sales decline in the year the contract is awarded (crowding-out effect), but increase significantly in subsequent years (crowding-in effect). The inclusion of firm fixed effects means that the estimated effect is identified through intra-firm comparisons of the growth of firms' private-sector sales in periods when they were awarded a contract with periods when they were not.

In Spain the impact of public procurement on private-sector sales is substantially larger for small and medium-sized enterprises (SMEs) than for large firms. This difference is evident both in the initial crowding-out phase and in the subsequent crowding-in phase, with a positive impact of around 7 percentage points (pp) for SMEs, compared with approximately 1 pp for large firms (Chart 1.a). This suggests that public procurement plays a particularly important role as a catalyst for Spanish SME growth, whereas this size-related heterogeneity is not observed in other comparable euro area countries (Chart 1.b).

This pattern is consistent with a mechanism based on financial constraints. When a contract is awarded, firms – and SMEs in particular – must reallocate productive and financial resources in order to fulfil the new public contract. Given their limited access to external financing, this reallocation initially leads to a reduction in activity aimed at the private sector, giving rise to a crowding-out effect in the short term. In subsequent periods, however, the public contract itself serves as a form of implicit collateral, improving firms' access to external financing. This channel, together with the additional profits generated by the contract itself, strengthens firms' internal financing capacity and enables them to expand production aimed at the private sector once again, giving rise to the crowding-in effect.

Overall, this mechanism supports firm growth in the medium term and shows that public procurement is especially beneficial for SMEs, as they typically face tighter financial constraints. In particular, the possibility of using public contracts as collateral strengthens their access to external financing and their ability to self-finance, thereby expanding their growth opportunities to a greater extent than for large firms. Moreover, insofar as these effects are concentrated among more productive SMEs (which are typically more financially constrained because they are younger and have less collateral), public procurement can help improve allocative efficiency and, ultimately, aggregate productivity.

The impact on Spanish SMEs is also greater in tenders with a higher number of bidders, reinforcing the idea that competitive public procurement design can amplify its effects on allocative efficiency and aggregate productivity.

To identify the types of tenders in which the impact on SMEs is greatest, we examine how the effect varies with the number of bids received in each tender, comparing outcomes for tenders receiving a single bid with those for tenders with a moderate number of bidders (defined as four to six bids).

The results indicate that, for SMEs, the effect of being awarded a public contract on private-sector sales increases with the number of bidders (Chart 1.c). This pattern is consistent with the idea that a higher level of participation in tendering procedures enhances the effects of public procurement on the most financially constrained firms, reinforcing its role as an efficient selection mechanism and a driver of SME growth.

These results underline the role of competition in amplifying the positive effects of public procurement, particularly for SMEs. In light of this evidence, it is

1 Julian di Giovanni, Manuel García-Santana, Priit Jeenas, Enrique Moral-Benito and Josep Pijoan-Mas. (2025). "Buy Big or Buy Small? Procurement Policies, Firms' Financing, and the Macroeconomy". Staff Reports, 1006, Federal Reserve Bank of New York.

Box 3.6
PUBLIC PROCUREMENT AND SME GROWTH (cont'd)

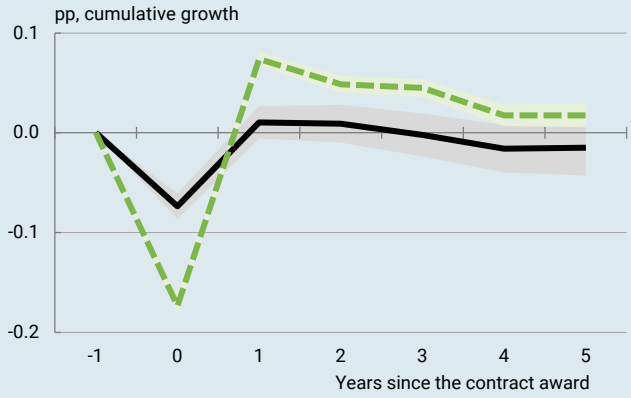
particularly important to analyse recent developments in the participation intensity of public procurement processes and their possible impact on SMEs' access to this market.

SMEs in Spain face significantly higher – and rising – barriers to entry in public procurement processes than their counterparts in other euro area countries, in a context in which, moreover, the percentage of tenders receiving a single bid has risen steadily since 2013.

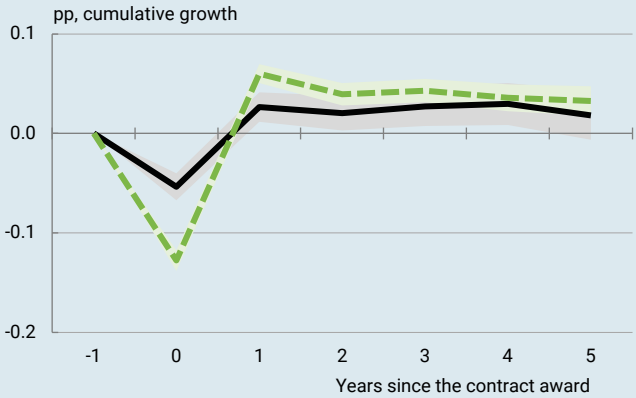
Entering the market for public contracts entails an initial fixed cost that is, in relative terms, higher for smaller firms. By way of illustration, in 2019 between 18% and 34% of large firms were awarded at least one public contract, compared with only 2% to 4% of SMEs, pointing to substantially higher barriers to entry for the latter. The evidence shows that this cost is significantly higher in Spain than in the other countries analysed, and that it has increased since 2013.

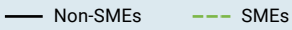
Chart 1
Impact of public procurement on Spanish and European SME growth

1.a Impact on Spanish firms' sales to the private sector, by firm size (a)

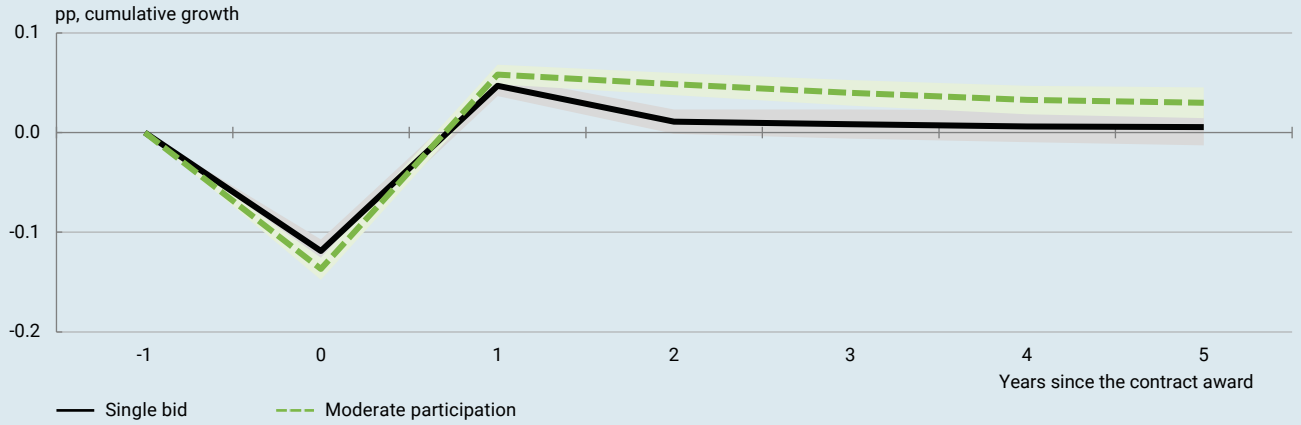


1.b Impact on euro area firms' sales to the private sector, by firm size (a) (b)





1.c Impact on Spanish SMEs' sales to the private sector, by degree of participation (c)



SOURCES: Tenders Electronic Daily and Orbis.

a SMEs are defined as small and medium-sized enterprises with less than 250 employees (see methodological annex to Chapter 3 in this Report).
b Only includes Germany, France, Italy, Portugal and Belgium.
c "Single bid" includes tenders receiving only one bid. "Moderate participation" includes tenders receiving between four and six bids.

Box 3.6
PUBLIC PROCUREMENT AND SME GROWTH (cont'd)

From that year onwards the SME penalty (measured as the average marginal effect of being an SME on the probability of winning a contract, holding other firm characteristics constant) has increased notably in Spain, while comparable dynamics are not observed in other euro area countries (Chart 2.a).

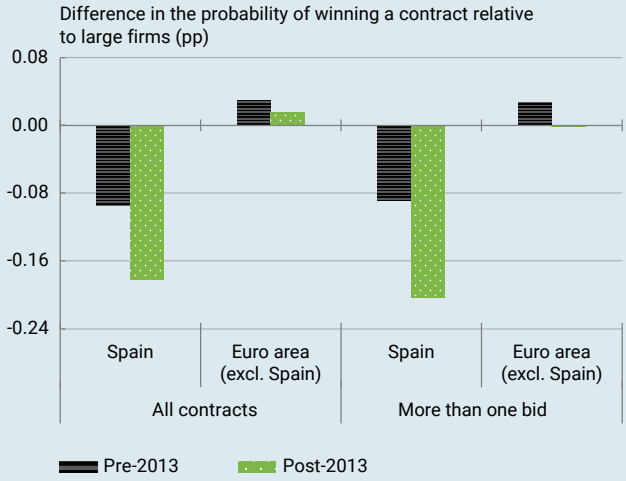
In addition, the percentage of tenders with a single bid in Spain rose from 19% in 2013 to 35% in 2023, an increase somewhat larger than that observed in the other euro area countries analysed (Chart 2.b). These developments point to a decline in the participation intensity of public procurement processes, which is particularly relevant in light of the previous findings showing that the strongest positive effects of public procurement are concentrated in tenders with greater participation – especially for SMEs. Against this backdrop, the increase in tenders receiving a single bid could be limiting the potential of public procurement for stimulating business growth, especially for smaller firms.

Overall, these patterns suggest that the increase in tenders receiving a single bid and the higher relative cost of accessing the public procurement market for SMEs – which is particularly marked in Spain – may be reducing the capacity of public procurement to foster competition, ease financial constraints and promote business growth.

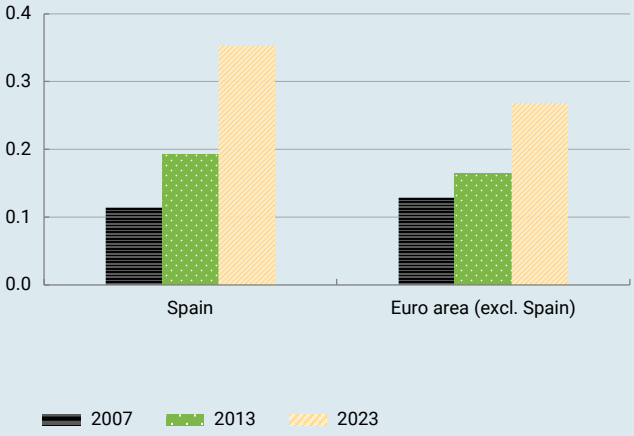
These barriers to entry for SMEs are particularly concerning in a context in which both local and regional governments in Spain are heavily biased towards awarding public contracts to local firms. Specifically, the evidence shows that local and regional governments alike clearly favour suppliers located within their own jurisdiction, reducing effective competition and potentially amplifying barriers to entry for non-local firms, including many SMEs.[2]

Chart 2
Percentage of tenders receiving a single bid and difficulties faced by SMEs in accessing public procurement

2.a SME penalty in accessing public procurement (a)



2.b Share of tenders receiving a single bid



SOURCES: Tenders Electronic Daily and Orbis.

a The chart shows the average marginal effects of being a small or medium-sized enterprise on the probability of winning a public contract. This probability is estimated using a logit model that controls for age, size, productivity and accumulated experience in public procurement. The model includes country-specific sectoral and time effects and allows coefficients to differ between Spain and the rest of the euro area. The effects can be interpreted as the average difference in the probability of being awarded a contract between SMEs and large firms with comparable observable characteristics.

2 Manuel García-Santana and Marta Santamaría. (2024). "Governments' Home Bias and Efficiency Losses: Evidence from National and Subnational Governments". CEPR Discussion Paper Series, 19256, Centre for Economic Policy Research.