

The regional dimension of the Banco de España Business Activity Survey

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Rationale

The Banco de España Business Activity Survey (EBAE) may be a useful source of information for monitoring regional economic developments. This article aims to analyse the regional dimension of the EBAE results.

Takeaways

- Harnessing the regional dimension of the EBAE seems appropriate, as the regional distribution of firms in the sample is similar to that of the universe of firms and, moreover, some of the survey results are strongly correlated with other indicators available at regional level.
- Based on the EBAE results, over the last four quarters (2022 Q3 to 2023 Q2) turnover proved more buoyant in the Canary Islands and the Madrid region, whereas in the South, Centre, North-West and Catalonia it was more sluggish.
- Overall, the regions where turnover performed more positively over the last 12 months are those which in mid-2022 lagged farther behind in recovering their pre-pandemic GDP level and those facing more favourable demand conditions.

Keywords

Economic outlook, turnover, prices, regions.

JEL classification

E32, L25, E66, R11.

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Introduction

The Banco de España Business Activity Survey (EBAE), which assesses quarterly the activity of a sample of non-financial corporations (NFCs),¹ is a useful tool for monitoring economic developments in Spain. Since late 2020 the survey has compiled essentially qualitative data on turnover, employment, the prices paid and charged by responding firms and their perception of the main determinants of their business activity.² The size of this survey, with an average of around 5,200 valid responses in the 11 waves conducted up to 2023 Q2, enables the firms' responses to be analysed from different perspectives, such as sector of activity and firm size.³

The purpose of this article is to analyse the regional dimension of the EBAE results, as in light of the limited availability of real-time regionally disaggregated indicators, the survey may be an additional source of useful conjunctural information in this respect.⁴

First, to validate the geographical representativeness of the survey and its information, we compare the regional distribution of EBAE responses with that of the universe of firms according to the Central Business Register (DIRCE) prepared by the National Statistics Institute (INE), and we analyse the correlation between the survey's regional results and other economic indicators. Broadly speaking, harnessing the EBAE's regional dimension seems appropriate, fundamentally for three reasons: the number of responses is stable across regions; the regional distribution of the respondents is similar to that of the business sector; and the survey results correlate satisfactorily with other reference regional economic indicators.

Second, we indicate some uses of the regional data from the EBAE for conjunctural analysis, focusing on the survey results over the last four quarters. Turnover was stronger in the Canary Islands and the Madrid region, whereas in the South, Centre, North-West and Catalonia it was weaker. Overall, the regions where turnover performed more positively over the last 12 months are those which lagged farther behind in recovering their pre-pandemic GDP level and those facing more favourable demand conditions.

Regional representativeness of the sample

The EBAE is an online survey sent to a sample of some 15,000 NFCs, of which just over one-third regularly respond to surveys conducted by the Banco de España's Central Balance Sheet Data Office.

1 Further details on the survey and publications drawing on earlier waves can be found [here](#).

2 The results of the latest wave of the survey can be found in Fernández Cerezo and Izquierdo (2023).

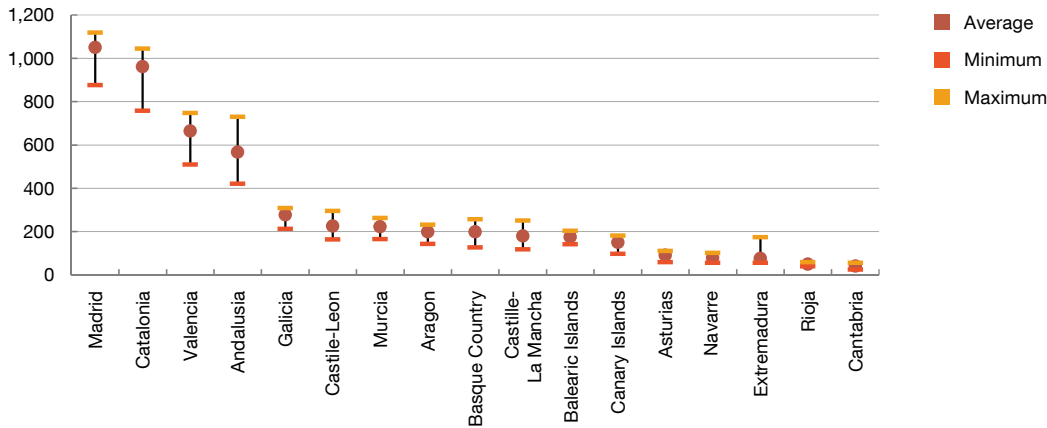
3 Fernández Cerezo, González, Izquierdo and Moral-Benito (2021).

4 For other tools developed at the Banco de España aimed at monitoring regional economic developments, see Gil, Leiva-León, Pérez and Urtasun (2019) and Fernández Cerezo (2021).

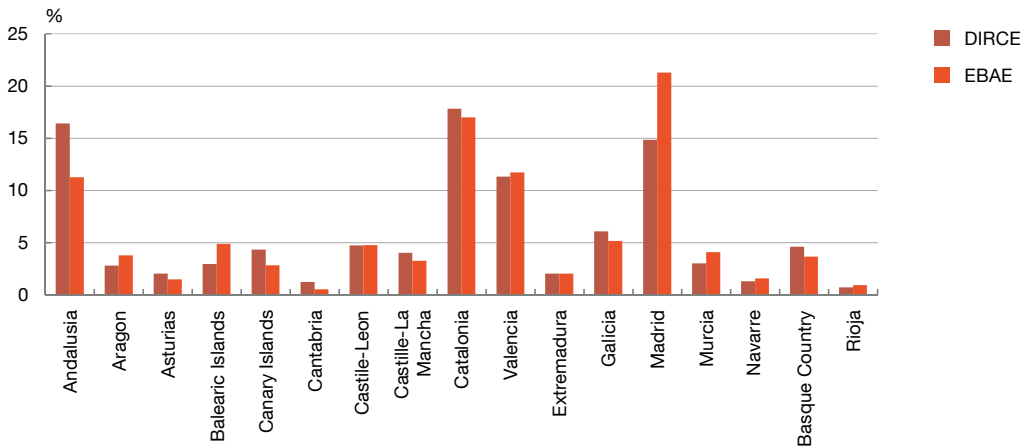
Chart 1

Regional distribution of EBAE responses

1.a Number of valid EBAE responses, by region (a)



1.b Distribution of number of firms, by region (a)



SOURCES: EBAE and INE.

a The responses to the 11 waves of the EBAE conducted to date (2020 Q4-2023 Q2) are considered.



The level of firms’ participation has so far been highly satisfactory and the number of responding firms has gradually increased, from approximately 4,000 valid responses in the first wave (2020 Q4) to almost 6,300 responses in 2023 Q2.

Breaking down the responses by region, we observe that, as expected, a higher number of responses are concentrated in the biggest regions. Chart 1.a depicts the distribution of the responses by region in which the responding firm’s registered office is located. The average number of responses for the 11 waves conducted to date and the highest and lowest number of responses per wave are shown for each region. On average, 38.6% of the respondents are from Madrid and Catalonia (around 1,050 and 960 firms, respectively), followed by the Valencia region and Andalusia (some 650 and 570 firms, respectively). At the other end of the scale, there are four regions which have not reached 100 responses in any wave of the survey: Navarre, Rioja, Cantabria and Asturias.

In light of the small sample size in some regions, in the subsequent analysis the survey results are grouped into Nomenclature of Territorial Units for Statistics (NUTS) level 1 regions.⁵ The exception is Catalonia, which is stripped out of the East (which also comprises the Valencia region and the Balearic Islands) and analysed separately on account of its large sample size.

Evaluating whether the regional distribution of the EBAE responses is reasonably similar to that of the business population is also useful. To do this, we use the distribution of the business population, drawing on information from the DIRCE. Chart 1.b shows that the average distribution of firms for all waves of the EBAE conducted to date is reasonably similar to that of the business population in virtually all regions.⁶ However, some discrepancies are observed: most notably Andalusia, which is somewhat under-represented in the EBAE sample (11.3%, versus 16.4% in the DIRCE), and the Madrid region, which is somewhat over-represented (21.3%, versus 14.9% in the DIRCE).

Whether or not the EBAE responses at regional level capture recent economic developments in the different regions should also be assessed. To do so, a simple approach consists of analysing the correlation between firms' responses about turnover in the EBAE and other variables that enable changes in economic activity in the region to be measured.

First, as an official measure of quarterly GDP that is consistent with the INE's national reference value is not available for all regions,⁷ we compare firms' responses about the quarterly change in turnover with GDP estimated by the Independent Authority for Fiscal Responsibility (AIReF).⁸ For each region we calculate: (i) the correlation between the gap between turnover reported by firms in the EBAE and its pre-pandemic level⁹ (2019 Q4) and the change in regional GDP estimated by AIReF vis-à-vis 2019 Q4; and (ii) the correlation between the EBAE indicator¹⁰ of change in turnover in the relevant quarter and the quarterly rate of change of regional GDP estimated by AIReF. The first two columns of Table 1 show these two correlations for each region. The information from the EBAE is similar to AIReF's regional estimates of economic activity, despite the differences between the two data sources. Specifically, the second correlation (based on quarterly changes) is positive for the groups of regions analysed, amounting to close to 80% in Madrid and Catalonia and to 70% in the North-West and South.¹¹ However, in some cases, the correlation is somewhat weaker, requiring the quarterly changes in turnover in these regions to be analysed with caution.

5 Accordingly, the survey results are presented for eight Spanish regions: Madrid, Catalonia, Canary Islands, North-West (Galicia, Asturias and Cantabria), North-East (Basque Country, Navarre, Rioja and Aragon), Centre (Castile-Leon, Castile-La Mancha and Extremadura), South (Andalusia and Murcia) and East (Valencia and Balearic Islands).

6 The EBAE results depicted in the chart were calculated using weights that allowed us to replicate the distribution of firms by sector (15 sectors) and size (four sizes) in the Statistics for Social Security-registered Firms (*Estadística de Empresas Inscritas en la Seguridad Social*).

7 The INE's latest Spanish Regional Accounts refer to 2021.

8 In this comparison it must be borne in mind that the EBAE responses refer to the quarterly change in nominal turnover, while AIReF's estimate refers to real GDP. The latter is prepared for all regions using the same methodology and is consistent with the INE's Spanish Regional Accounts and Quarterly National Accounts. For more details, see Cuevas and Quilis (2015).

9 Calculated drawing on the quantitative data, albeit in interval form, provided by firms on this gap in each quarter.

10 Firms' responses are summarised in an index that weights their qualitative assessments on a five-point scale ranging from "significant decrease" to "significant increase". Thus, were all respondents to reply either "significant decrease" or "significant increase", the index would take the value of -2 or 2, respectively.

11 In this same period, the correlation between the EBAE turnover index and the quarterly change in GDP estimated by the INE amounted to 72%.

Table 1

Correlation coefficients between EBAE turnover and other indicators of activity at regional level

Regions	Pre-pandemic GDP level gap - AIReF (a)	Quarterly change in GDP - AIReF (b)	Quarterly change in the ITI (c)	Quarterly change in the SSAI (d)
Canary Islands	0.92	0.61	0.52	0.45
Catalonia	0.97	0.78	0.34	0.90
Centre (Castile-Leon, Castile-La Mancha, Extremadura)	0.98	0.56	0.45	0.76
Madrid	0.98	0.79	0.53	0.76
East (Valencia, Balearic Islands)	0.99	0.35	0.72	0.73
North-East (Aragon, Rioja, Navarre, Basque Country)	0.94	0.56	0.42	0.82
North-West (Asturias, Cantabria, Galicia)	0.95	0.70	0.57	0.80
South (Andalusia and Murcia)	0.97	0.67	0.76	0.94
National total	0.99	0.72	0.69	0.85

SOURCES: EBAE, AIReF and INE.

a For each region we compare the results for the question on the change in turnover relative to 2019 Q4 with the change in GDP estimated by AIReF relative to 2019 Q4.

b For each region we compare the quarterly change in turnover in the survey with the quarterly rate of change of GDP estimated by AIReF.

c For each region we compare the quarterly change in turnover of industrial sector firms responding to the survey with the quarterly change in the INE's ITI.

d For each region we compare the quarterly change in turnover of market services firms responding to the survey with the quarterly change in the INE's SSAI.

The first correlation (based on the gap vis-à-vis the pre-pandemic level) comfortably exceeds 90% in all regions.

Second, there are numerous economic indicators referring to a wide range of areas (such as industrial production, consumption, turnover, the housing market and financing conditions) that are consistent for all regions.¹² Two indicators that, a priori, more closely approximate the EBAE's turnover indicator are the Industrial Turnover Index (ITI) and the Services Sector Activity Indicator (SSAI), which the INE prepares monthly.¹³ The last two columns of Table 1 show the correlation, for each region, between the quarterly change in turnover for industrial sector and market services firms reported in the EBAE and the quarterly changes in the ITI and the SSAI, respectively. The correlations are positive, exceeding 90% in the services sector in Catalonia and the South.

The main advantage of the EBAE when monitoring regional economic activity is that it provides information on the buoyancy of economic activity and its drivers with very little lag compared with the above-mentioned indicators. While the EBAE results are usually published in the last month of the quarter in question, AIReF's regional GDP estimate is published a few days after the INE has published its quarterly GDP flash estimate, around 30 days after the quarter in question has ended. The ITI and the SSAI are published around 50 days after the related month has ended. For example, the ITI and the SSAI for June would not be published until mid-August, while the EBAE results for Q2 are available before the end of June.

¹² For a comprehensive description of the regional indicators available for the Spanish economy, see Artola, Gil, Leiva-León, Pérez and Urtasun (2019).

¹³ Turnover comprises amounts billed by the firm for the provision of services and the sale of goods.

In short, despite some limitations in the EBAE's representativeness, harnessing its regional dimension can provide useful early information that complements the existing information on economic activity in the different regions and its drivers.

Conjunctural indicators: turnover, prices and constraints on activity

This section analyses the key results on the economic performance of the Spanish regions over the last four quarters (from 2022 Q3 to 2023 Q2), drawing on information from the EBAE. This period is interesting because it was marked by heightened inflationary pressures associated with the war in Ukraine. This contributed to a slowdown in the Spanish economy, following the sharp growth observed in 2022 Q2, which was at least partly on account of the momentum from the post-pandemic economic reopening.¹⁴

Overall, the results of the survey show that firms have reported weak turnover over the last 12 months, although the picture is highly uneven across regions. As will be seen below, firms in the South, Centre, North-West and Catalonia reported greater sluggishness in turnover, while firms in the Canary Islands and the Madrid region reported that it had been more dynamic.

There are several factors that account for these recent cross-regional differences in turnover, including most notably the impact of the pandemic and the subsequent economic reopening. In general, the regions whose turnover has performed better over the last 12 months¹⁵ tend to be those which in mid-2022 lagged farther behind their pre-pandemic activity level¹⁶ (see Chart 2.a). For instance, the Canary Islands – which are highly dependent on tourism and were harder hit by the travel restrictions – is the region where turnover increased the most, which is consistent with the gradual easing of those restrictions. In turn, the positive performance of turnover in the Madrid region may be linked to its greater specialisation in the services sector,¹⁷ which fared better than industry in the period considered. By contrast, in the Centre, South and North-West regions, which lagged less behind owing to their lower reliance on contact-intensive sectors, firms saw a sharper slowdown in turnover.

In this respect, the differences in demand conditions reported by firms in each region could also explain the cross-regional heterogeneity in turnover. Overall, an average of 20% of Spanish firms reported insufficient demand as a constraint on turnover in the last four quarters. Yet this factor had a more adverse impact in certain regions, especially in the North-East and North-West where industry – which fared worse in the period considered – accounts for a higher share of the productive system, whereas demand fared better in the Canary Islands, given the strong recovery in tourist flows. Indeed, these differences in demand conditions may help explain the regional

14 In addition, analysing a full year provides a more informative picture of recent economic performance across the regions, compared with the high volatility and seasonality that a quarterly picture can sometimes give.

15 Measured as the average quarterly change in business turnover over the last four quarters (from 2022 Q3 to 2023 Q2).

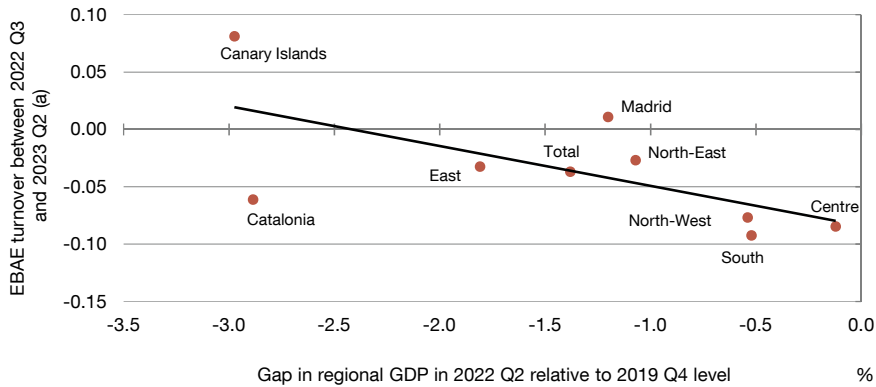
16 In terms of the GDP gap between 2022 Q2 and 2019 Q4, based on AIReF GDP estimates.

17 In 2021 the Madrid region had the highest share of market services GVA of all the Spanish regions (68%), closely followed by the Balearic Islands (67%).

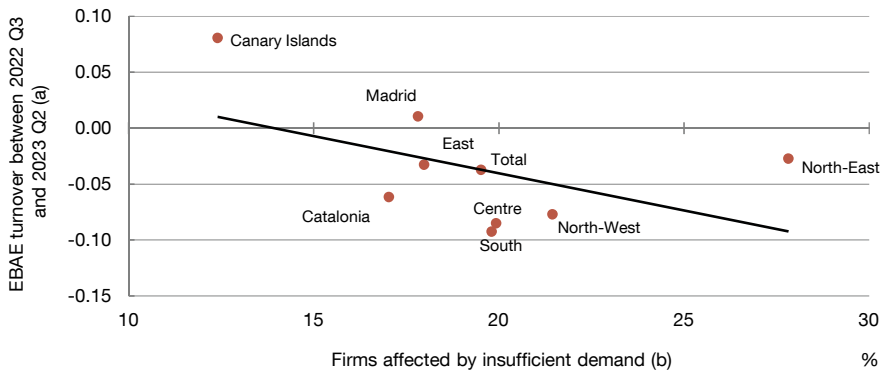
Chart 2

Determinants of recent regional economic developments

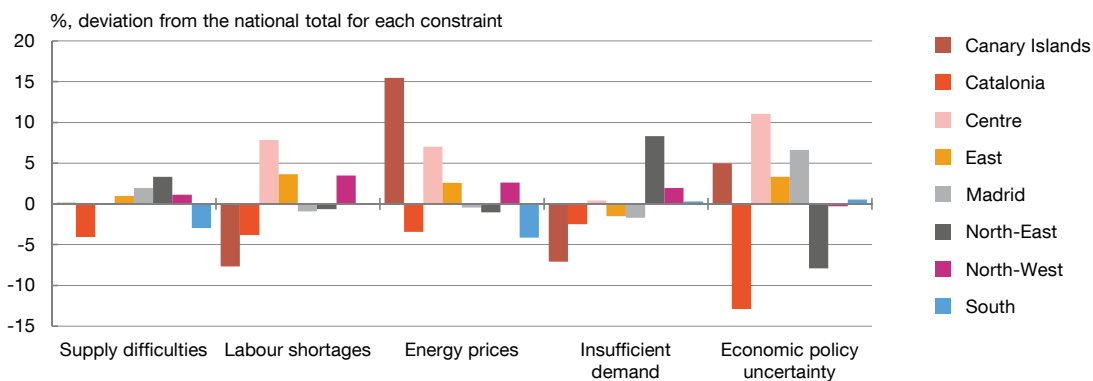
2.a Pre-pandemic level gap and turnover



2.b Demand conditions and turnover



2.c Constraints on business activity



SOURCES: EBAE and AIReF.

- a Index constructed by assigning the following values to the firms' qualitative responses: Significant increase = 2; Slight increase = 1; Unchanged = 0; Slight decrease = -1; Significant decrease = -2.
- b Firms reporting an adverse or very adverse impact of each of the factors on their activity.



differences in turnover, as it was stronger in those regions where a lower percentage of firms reported being affected by insufficient demand (see Chart 2.b).

It is also interesting to analyse the extent to which other factors are affecting business activity across the regions. Chart 2.c shows the proportion of firms in each region reporting an adverse or very adverse impact of each of the factors shown. This proportion is expressed as differences vis-à-vis the national total, considering the average responses in the last four waves of the EBAE. Among the supply-side factors, higher energy prices are having a more adverse impact on firms' activity in the Canary Islands and the Centre, possibly related, in the first case, to the energy-intensive nature of air and sea travel and, in the second, to a higher population dispersion and distance from distribution and consumption centres. As to labour shortages, firms in the Canary Islands and Catalonia report a smaller impact, compared with greater shortages reported by firms in the Centre, North-West and East, which could be linked to the higher share of agriculture and to rural depopulation in the first two, and to a higher share of seasonal tourism work in the East.¹⁸ Meanwhile, the North-East (with a higher share of industry) has had the most difficulties receiving supplies from usual suppliers. Lastly, economic policy uncertainty is having an uneven impact across the Spanish regions: while in Catalonia and the North-East the impact is approximately 10 percentage points below the national average, firms in the Centre report a negative impact significantly above average.

The EBAE also offers additional information on another set of factors that may have affected business activity in the period considered. For example, it provides information on participation in the investment projects associated with the Next Generation EU (NGEU) funds in 2023 Q1. Of the Spanish firms surveyed, 16.5% had already submitted applications for NGEU funds, while 73.5% had not done or had no intention of doing so.¹⁹ Firms in the Madrid region and the East have been particularly active in this area so far, as some 20% have already applied for NGEU funds, compared, for example, with just 10% in the Canary Islands and Catalonia. However, these cross-regional differences are somewhat lower when firms that intend to apply for such funds in the coming months are included (see Chart 3.a).

Lastly, although the main advantage of analysing the regional dimension of the EBAE is related to how turnover and the constraints on activity have evolved, the survey also provides useful information on price and cost expectations one year ahead.²⁰ As Chart 3.b shows, firms in Catalonia and the South expect the cost of their inputs to rise less over the coming year than firms in the Canary Islands and the North-West. One of the main factors behind these differences in expected cost pressures is the different impact of supply difficulties. The regions facing the most difficulties receiving supplies from their usual suppliers tend to expect higher cost pressures over the coming year.

18 According to the 2022 Q2 survey, labour shortages were especially severe in agriculture, hospitality and construction, where almost 50% of firms reported being adversely affected.

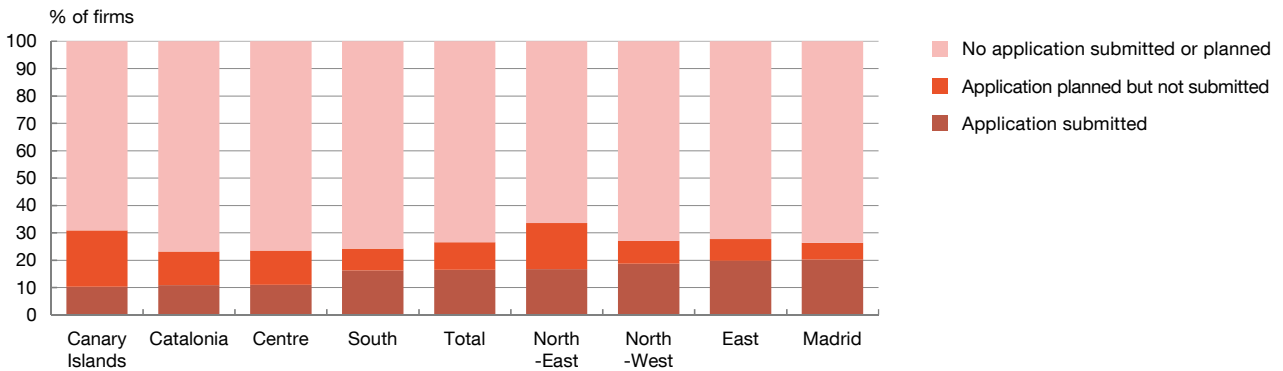
19 The remaining 10% have still not submitted applications but intend to do so in the coming months.

20 The information on quarterly price developments is less valuable owing to the short time (some two weeks) to publication of the monthly consumer price index (CPI) by region.

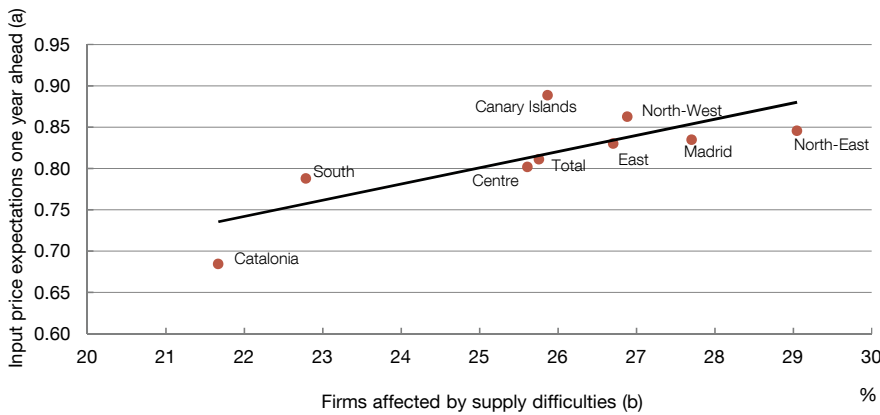
Chart 3

Participation in NGEU projects and price expectations one year ahead

3.a Participation in NGEU projects



3.b Supply difficulties and input price expectations one year ahead



SOURCE: EBAE.

- a Index constructed by assigning the following values to the firms' qualitative responses: Significant increase = 2; Slight increase = 1; Unchanged = 0; Slight decrease = -1; Significant decrease = -2.
- b Firms reporting an adverse or very adverse impact of each of the factors on their activity.



To conclude, the EBAE has become a useful tool for conjunctural analysis and diagnosis of the Spanish business sector. The large sample size (over 6,000 firms in its latest waves) means that the results of the survey can be analysed from various dimensions. This article shows that the information provided by the EBAE can be used to monitor regional economic activity and the specific factors that influence it.

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