



Report on the macroeconomic forecasts in the Autonomous Regions' Budgets for 2015

Executive summary

AIReF endorses the forecasts for 2015 of all the Autonomous Regions. It considers the forecasts given by Madrid and Murcia to be less likely. The forecasts of the other Autonomous Regions do not have any bias and AIReF endorses them as likely. [Page 7](#)

The methodology in this report compares the forecasts of the Autonomous Regions against those contained in two statistical models. The combination of the two models allows a certain balance to be struck between the inclusion of the latest most-up-date information and a more long-term outlook. [Page 5](#)

AIReF recommends the inclusion of a comparison with other independent forecasts and a more explicit explanation of the methodology, assumptions and parameters of the forecasts. All of the Autonomous Regions must comply with these requirements under EU legislation. [Page 9](#)

AIReF recommends the use of more homogeneous GDP and employment variables. All those Autonomous Regions that do not adopt in their future budgets identical forecasts to those included in the State General Budget should provide at least like-for-like GDP and employment forecasts. [Page 9](#)

The mission of AIReF, the Independent Authority for Fiscal Responsibility, is to ensure strict compliance with the principles of budgetary stability and financial sustainability contained in article 135 of the Spanish Constitution.

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Contents

- I. [Introduction](#)
- II. [Methodology](#)
- III. [Endorsement of the macroeconomic forecasts of the Autonomous Regions for 2015](#)
- IV. [Conclusions and recommendations](#)

I. Introduction

AIReF has to prepare a report on the macroeconomic forecasts incorporated into all the draft budgets of the General Government sector. The report must indicate whether or not it endorses these forecasts, in compliance with articles 14 of its Organic Law and 12 of its Statute. However, should any government entity incorporate into or apply to its budgetary plans a set of forecasts that correspond exactly to those incorporated by another government entity within whose territorial scope it falls, if AIReF has already endorsed those forecasts it is not necessary for a specific report to be published. In such event, it will be sufficient to expressly state that this is the case in the draft budgetary plan itself. On 26th September, AIReF issued and published on its website the report endorsing as likely the macroeconomic forecasts contained in the draft General State Budgets for 2015 (GSB2015).

The Autonomous Regions that have published macroeconomic forecasts that do not exactly correspond to the forecasts for Spain in the GSB2015 are: Andalusia, Aragón, Balearic Islands, Basque Country, Canary Islands, Castilla-La Mancha, Castilla León, Catalonia, Galicia, Madrid, Murcia, and Valencia.

The macroeconomic forecasts must satisfy certain requirements applicable to the budgetary frameworks of the EU member States, as specified in article 4 of its COUNCIL DIRECTIVE 2011/85/EU of 8th November 2011. Article 14 of the Organic Law states that AIReF's report on macroeconomic forecasts should assess the degree to which the forecasts meet these requirements. This report interprets that, in the case of the Autonomous Regions, these requirements are that the forecasts shall be:

- Realistic and use the most up-to-date information.
- Be based on the most likely macrofiscal scenario or on a more prudent scenario.

- Be compared with the most up-to-date forecasts of other independent bodies.
- Include the methodology, assumptions and relevant parameters underpinning the forecasts.

The macroeconomic forecasts contained in the Autonomous Regions' draft budgets are very heterogeneous and do not have a direct or significant impact on their fiscal planning. The content and the methods used to draw up the forecasts are highly diverse. The main purpose of the macroeconomic forecasts of the Autonomous Regions is to place their budgetary decisions within a benchmark economic context that facilitates comprehension of the implications of such decisions for citizens. Neither the fiscal revenues nor the expenditures appear to be significantly linked to regional economic developments. Consequently, unlike the budgets of central government entities, the existence of biases in their forecasts has no direct link to their fiscal forecasts.

This report compares the 2015 macroeconomic forecasts for GDP and/or employment of the Autonomous Regions against those included in the GSB2015 for the entire domestic economy, and analyses whether they contain any bias. However, it does not present an *ex post* assessment of the forecasts from previous years.

A bias will be deemed to exist in the forecast of a variable if the variable deviates by more than one standard deviation from the forecasts in the statistical models used to contrast them. Two models will be applied. One is based on the simple extrapolation of the differences observed between the growth rates of GDP and employment in each Autonomous Region and in Spain since the year 2000. The other is derived from a statistical forecasting model that, apart from expected growth rates for Spain, also incorporates all relevant information on economic indicators.

The criteria to endorse the GDP and employment forecasts of those Autonomous Regions that have made a forecast that differs from the forecast contained in the GSB2015 are as follows:

- The forecasts will not be endorsed if they have an upward bias in both variables in the two models.
- They will be endorsed as less likely if they have a bias in one of the two variables in one of the models.
- They will be endorsed as likely if they do not have biases, and
- They will be endorsed as prudent if they do not have an upward bias in either of the two variables in either of the two models.

II. Methodology

The methodology followed in this report is based on a comparison of the Autonomous Regions' forecasts with those of two statistical models. One model is simple, easy-to-understand and relatively stable. The other model is more refined and complex although its results are relatively less stable. The combination of both models in the validation criteria allows a certain balance to be struck between the latest, most-up-to-date information and a more long-term outlook.

The more refined model (Model 1) enables a projection to be made for the GDP and employment of all the Autonomous Regions as a whole and assess possible biases in their forecasts in a consistent manner against the projections endorsed for the State. In Spain's National Accounts the estimates corresponding to Spain's Regional Accounts (SRA) are available only on a yearly basis and are published with a certain time lag compared to the period of reference. To assess the forecasts incorporated by the Autonomous Regions in their budgets, taking into account the most up-to-date economic information, the quarterly profiles for each Autonomous Region's GDP and employment are estimated up to the current moment in time and are predicted for the future in a manner consistent with the economic indicators for each of them, thus

imposing a temporal consistency constraint, and also with those of the Spanish domestic economy, which ensures transversal consistency. Thus the transversal and temporal quantitative coherence of the estimates in Spain's National Accounts —both quarterly accounts (published by the CNTE), and annual accounts (published in the SRA)— is preserved, while at the same time the most up-to-date current data are used. However, this advantage of incorporating the most-up-to-date data makes the findings of the model more sensitive to innovations.

The GDP and employment projections for the Autonomous Regions are made together in three stages [methodology here]. From a technical standpoint, the methodology applied for this joint projection combines models of time series with benchmarking algorithms (temporal disaggregation and reconciliation) and works in three stages:

1. Seasonal adjustment and forecast of the short-term regional indicators,
2. Initial quarterly estimates of regional GDP and employment, and
3. Reconciliation of the preliminary GDP and employment estimates without losing the temporal consistency imposed in the previous stage.

The simple model (Model 2) obtains the forecast of each variable for each Autonomous Region separately as the sum of the forecast for Spain, which is its principal determining factor, plus the average of the series of historic differences in the values recorded for this variable in the Autonomous Regions, minus the value recorded in Spain during the period from 2000-2013. The upper boundary of the confidence interval to define the bias in the Autonomous Region's forecast is equal to the forecast in the model plus one standard deviation of this series of observed historical differences. As the forecasts in this model rely solely on the estimates of annual historical time series, they are not affected by the latest economic data.

III. Endorsement of the macroeconomic forecasts of the Autonomous Regions for 2015

AIReF endorses the macroeconomic forecasts incorporated into the Autonomous Regions' budgetary plans for 2015. None of the Autonomous Regions presents forecasts that the two models used for checking purposes identified as biased in GDP and employment. The quantitative results of Models 1 and 2 are presented in tables 1 and 2 respectively and are summarised qualitatively in chart 3 in the Annex .

However, AIReF deems that the GDP and employment forecasts presented by Madrid and Murcia are less likely. According to the results of Model 1 the forecasts of both variables presented by Madrid and Murcia have an upward bias.

All of the other Autonomous Regions' forecasts do not contain any bias and AIReF endorses them as likely, although some of them are skewed to the upside, others to the downside and others appear approximately centred in one or the other variable. The forecast of a variable is considered skewed to the upside or to the downside depending on whether it is higher or lower respectively than the central forecast of the two Models used for the comparison. Otherwise they are considered to be approximately centred. Thus:

- Andalusia presents cautious GDP projections.
- Aragon has centred forecasts.
- Balearic Islands has only published a GDP growth forecast that is considered centred.
- Basque Country has centred GDP and employment forecasts.
- Canary Islands puts forward centred forecasts.
- Castilla y León projects cautious GDP and employment growth figures.
- Castilla La Mancha has published only GDP growth forecasts that are optimistic.

- **Catalonia** presents optimistic GDP forecasts.
- **Galicia** has published centred GDP forecasts and cautious employment forecasts.
- **Navarra** has centred forecasts that are practically equal to both models.
- **Valencia** only presents GDP forecasts, which are considered to be centred

The Autonomous Regions of **Asturias**, **Cantabria**, **Extremadura** and **La Rioja**, have not presented forecast different from those of Spain.

The forecasts of Autonomous Regions that are different from those of the Spanish domestic economy use the latest most up-to-date information available, but not all give comparisons against other forecasts or report on their methodology and parameters. Table 4 in the Annex summarises the application of these requirements set by EU legislation

IV. Conclusions and recommendations

AIReF endorses the forecasts for 2015 of all the Autonomous Regions although it deems the forecasts of Madrid and Murcia to be less likely.

The GDP forecasts made by Castilla La Mancha and Catalonia, as well as those of Madrid and Murcia are optimistic; those made by Aragón, Balearic Islands, Canary Islands, Castilla-León, Galicia and Valencia are centred; and the forecasts of Andalusia, Basque Country and Navarra are cautious.

The employment forecasts of Aragón, Catalonia, Madrid and Navarra are optimistic; the forecasts of Andalusia, Basque Country, Canary Islands, Castilla-León and Murcia are centred; the ones presented by Galicia are cautious.

AIReF recommends that all Autonomous Regions not complying with the requirements to include a comparison with other, independent forecasts and to make explicit the methodology, assumptions and parameters they have used should do so.

AIReF likewise recommends that GDP and employment variables should be more homogeneous. All the Autonomous Regions that do not adopt in their future budgets identical forecasts to those in the State General Budget should provide at least forecasts on GDP in like-for-like terms with Spain's Regional Accounts, and on employment in like-for-like terms either with Spain's Regional Accounts or the Labour Force Survey.