

REPORT ON THE MAIN BUDGETARY LINES OF THE 2020 BUDGETS OF THE PUBLIC ADMINISTRATIONS

REPORT 63/19





Autoridad Independiente
de Responsabilidad Fiscal

The Independent Authority for Fiscal Responsibility (AIReF by its Spanish acronym) was created with the mission of ensuring strict compliance with the principles of budgetary stability and financial sustainability set out in Article 135 of the Spanish Constitution.

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EXECUTIVE SUMMARY

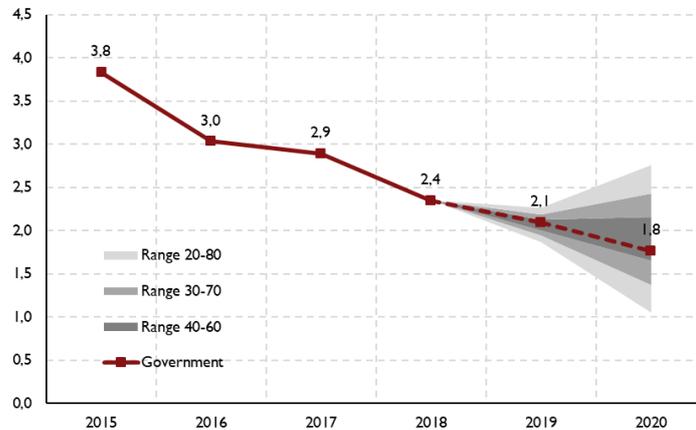
This report analyses the macroeconomic and fiscal scenario of the 2020 Budgetary Plan sent to the European Commission on 15 October. Current legislation provides that the Independent Authority for Fiscal Responsibility (AIReF) must prepare a report before 15 October on the draft budgets and main budgetary lines of the Public Administrations (PAs). If the General State Budget is not presented, the Budgetary Plan is configured as the major milestone of Spain's fiscal strategy for 2020. Therefore, AIReF prepares a report on the macroeconomic forecasts underlying the 2020 Budgetary Plan as well as its budgetary scenario.

Since the publication of the previous report in July there have been changes in the economic and fiscal situation and new information has been published, notably the revision of the National Accounts series conducted by the National Statistics Institute (*INE* for its Spanish acronym) and by General Intervention Board of the State Administration (*IGAE* for its Spanish acronym) within the framework of the European Statistical Programme. This review has led to significant changes in both the macroeconomic variables and the accounts of the PAs, which affect the analysis of the Budgetary Plan.

- **Assessment of the macroeconomic scenario**

AIReF endorses the Government's macroeconomic forecasts included in the 2020 Budgetary Plan. The GDP scenario presented in the Budgetary Plan is in line with AIReF's forecasts, falling in the middle of its interval. In addition, AIReF believes that the Government has behaved prudently in the preparation of its forecasts as it presents a scenario with no policy change, consistent with the current situation of a caretaker government; and as it made the effort to incorporate the significant impact of the revision of the National Accounts series conducted by the INE into its analysis. The basic assumptions underlying the macroeconomic scenario accompanying the 2020 Budgetary Plan are considered feasible. With regard to the 2019-2022 Stability Programme Update, the external environment included in the Budgetary Plan has deteriorated, in line with the forecasts of the European Central Bank and other international agencies.

REAL GDP, RATE OF CHANGE (%)



The downward revision of world growth, growth for the Spanish export markets and of the euro zone should be emphasised. On the contrary, the Government's assumptions relating to short and long-term interest rates now entail greater support to growth. The rates have been revised downwards, in line with the evolution of the forward curve, although the existence of a negative differential with respect to long-term market expectations on the rates should be noted. Finally, the expectations on the evolution of the price of oil are conservative, standing above the most recent forecasts of various international agencies, as well as the crude oil quotes on the futures markets. In this sense, the sluggish trend of oil prices forecasted by the main international agencies could imply a reduction in the cost of imports and a containment in price indices with respect to the Government's baseline scenario.

The composition of growth is considered plausible, characterised by a progressively dominant contribution of domestic demand, and a positive contribution, although sluggish, of the external sector, in line with the statistical revision of the National Accounts published by the INE at the end of September (RE2019). Thus, the path envisaged for 2020 in the Budgetary Plan entails a growth pattern in line with previous years, supported by domestic demand as the main driver and with a progressive maturation of the economic cycle in the medium term, to then converge with its potential growth. The evolution of private consumption gains momentum in 2020 with respect to the figure for 2019. This dynamic is in line with AIReF's forecast, although slightly below in 2020. This forecast is based on the evolution and contribution of its main determinants, with the impact of the statistical revision essentially limited to 2019. The main variables that support the evolution of private consumption effectively anticipate a sustained growth, although

slower in the coming years, even assuming a certain upturn in precautionary saving as suggested by recent data revised by the INE. The productive investment envisaged for both 2019 and 2020 in the Budgetary Plan is above AIReF's forecasts, particularly in 2019, in which two quarters have already been observed and where the economic information does not allow us to anticipate a rise in line with the Government's forecasts. The Government forecasts an investment in construction for 2020 in line with AIReF's forecasts, with modest rates compared to the recent historical pattern, confirming a profile of more balanced growth for the economy. The Government's public consumption forecast establishes a markedly slower path in 2020, which contrasts with AIReF's forecast, which maintains rates in line with 2019. Finally, as regards the external sector, the expected evolution of imports for 2020 incorporates a trajectory in line with the dynamics of domestic demand, compared to the values in 2019, where there is a decoupling that leads to a positive contribution from the external sector well above the historical average. These values are in line with AIReF's forecasts, maintaining a slightly positive contribution of the external sector to GDP growth in 2020.

- **Assessment of the budgetary scenario**

The Budgetary Plan places the deficit for 2020 at 1.7% GDP, which would entail a reduction of 0.8% in the 2019-2020 period. This result is in line with AIReF's baseline scenario, although there are differences in the distribution of the correction throughout the period.

NET LENDING/BORROWING 2020 AND ADJUSTMENT PATH IN % GDP

Lending (+) Borrowing (-) as % GDP	2018	Government forecast		AIReF's baseline scenario	
		2019 2nd EC Notification	2020 Budgetary Plan	2019	2020
Central Government (CG)	-1,3	-0,8	(.)	-0,7	-0,6
Social Security Funds (SSF)	-1,4	-1,4	(.)	-1,3	-1,3
Regions	-0,3	-0,3	(.)	-0,5	-0,2
Local Governments (LGs)	0,5	0,4	(.)	0,4	0,4
General Government (GG)	-2,5	-2,0	-1,7	-2,1	-1,7
Non-recurrent operations	0,3	0,2	0,1	0,5	0,2
GG without non-recurrent operations	-2,2	-1,8	-1,6	-1,6	-1,5

(.) Not available

AIReF believes that this result could be achieved with a level of revenue and expenditure 0.1% higher than the Government's forecasts in both cases.

AIReF places the revenue level at 39.7% GDP, taking into account the new macroeconomic scenario, which assumes a slowdown compared to the Report on the Stability Programme Update (SPU 2019-2022) and detracts a little over 0.1% GDP from the revenue estimate made at that time. The differences

compared to the Budgetary Plan can mainly be seen in the distribution by headings which includes, in AIReF's opinion, an optimistic forecast of taxes on income and wealth that is offset by a conservative estimate of income of other types, mainly taxes on production and imports.

On the expenditure side, AIReF's baseline scenario estimates that these would represent 41.4% GDP in 2020, 0.1% higher than the percentage reflected in the Budgetary Plan, and with a greater relative weight of current expenditure compared with the Government's forecasts.

Although the Budgetary Plan does not provide the breakdown by sub-sectors on this occasion, AIReF believes that the Local Governments (LGs) and the Social Security Funds (SSF) will maintain a result similar to that of 2019 and that the rest of the sub-sectors will reduce their deficit, 0.1% in the case of the Central Government (CG) and 0.3% in the Autonomous Regions.

AIReF's estimates imply, as in the Budgetary Plan, a no-policy-change scenario which, however, includes a revaluation of pensions with the CPI, a rise of public employees' salaries according to the agreement with the trade unions and the implementation of some of the recommendations arising from the Spending Review announced last April in the SPU 2019-2022. In this regard, it should be noted that AIReF considers the Government's quantification of the effects of these recommendations to be tight, while it has doubts about the final impact, which will depend on the speed with which the necessary procedural and policy changes can get off the ground.

As a starting point for the evaluation of the Budgetary Plan for 2020 covered by this report, AIReF has revalued the year 2019 with the latest information available, revising its forecast of a deficit upwards by 0.1% GDP. This update is due to the statistical revision of the national accounts to which reference has been made above, the impact of the new macroeconomic scenario and the incorporation of new information from the PAs, both on execution for the current year and on the end of 2018.

None of these changes have a high impact when considered individually, but all of them revise AIReF's deficit estimates downwards to 2.1% GDP.

On the one hand, the revision of the accounts of the PAs alters the starting point for the estimates for 2019, with a slightly negative net effect on the deficit.

In addition, changes in the macroeconomic scenario, coupled with the statistical revision of its variables, also have an impact on the estimates for 2019 because this new macroeconomic scenario results in lower collection, which affects the expected deficit by a little less than 0.1% GDP.

Finally, AIReF's forecasts incorporate new information published since July, as well as information provided by the different administrations. Although the changes with positive and negative effects in the deficit tend to be offset, the net result is an increase in the deficit also less than 0.1% GDP.

NET LENDING/BORROWING 2019 IN % GDP

Lending (+) Borrowing (-) as % GDP	2018	2019		
		AIReF July Rep.	AIReF Current	2nd EC Notific.
Central Government	-1,3	-0,6	-0,7	-0,8
Social Security Funds	-1,4	-1,3	-1,3	-1,4
Regions and LGs	0,2	-0,1	-0,1	0,1
<i>Regions</i>	-0,3	-0,5	-0,5	-0,3
<i>Local Governments</i>	0,5	0,4	0,4	0,4
General Government	-2,5	-2,0	-2,1	-2,0

By sub-sector, the CG worsens its forecast by around 1,000 million, 0.1% GDP, with respect to the report on expected compliance with the targets published in July, standing at 0.7% of GDP. This evolution is mainly explained by an increase in net terms of around 700 million in transfers to the Regions compared to what AIReF forecasted in July, which improves the balance, but in a much lower proportion (around 300 million), given that the transfers arising from the financing system, for the most part, were already considered by the Regions in their budgets and, therefore, do not entail higher revenue, and others – (National Fund for Energy Efficiency-) are linked to the realisation of expenditure. The balance of the LGs is also worsened by 600 million, while the SSF do not under significant changes.

- **Expenditure rule**

The Budgetary Plan refers to compliance with the EU expenditure rule but does not include information about the national expenditure rule provided for in the Organic Law on Budgetary Stability and Financial Sustainability (LOEPySF for its Spanish acronym). For 2019 compliance with the national expenditure rule is similar to that forecasted in the July report, with the CG being the only administration to comply due to the effect of non-recurring expenditure and the situation of budgetary carryover. For 2020, compliance improves, with the CG, regional and LG sub-sectors growing at the reference rate envisaged in the report on the situation of the Spanish economy and with less impact of non-recurring operations than recorded in 2019.

- **Debt sustainability**

As in the past four years, the Budgetary Plan foresees a reduction in the debt-to-GDP ratio. AIReF considers the debt projection of the Budgetary Plan to be unlikely for 2019 and only just feasible for 2020. After five years of strong economic growth and historically low interest rates, the debt-to-GDP ratio has practically not decreased. The drop observed in the interest rates has led to a significant reduction in the debt burden. This saving is a great opportunity to accelerate the pace of deleveraging.

- **Fiscal Policy Stance**

In July 2019 the ECOFIN Council agreed to the closure of the Excessive Deficit Procedure that Spain had opened since 2009, therefore it began to apply the preventive arm of the Stability and Growth Pact that is more demanding in terms of fiscal effort. The Budgetary Plan expects non-compliance with the annual fiscal consolidation of 0.65% GDP required for 2019 and 2020 and computable expenditure growth limited to 0.6% in 2019 and 0.9% in 2020. AIReF's estimates ratify this non-compliance, despite estimating a lower structural deficit than estimated in the Budgetary Plan.

- **Recommendations**

AIReF makes a series of recommendations on transparency due to the revision of the National Accounts series:

To the INE:

- According to the general principles of the INE's revision policy, in particular principle 15, it should fulfil its own requirements of transparency and information to users by implementing a transparent communication policy and an active policy for the revision of National Accounts data, which reflects the European best practices, through:
 - ✓ the publication and dissemination of the existing methodological guides on the procedure for preparation of the National Accounts;
 - ✓ the adaptation of the dissemination of the data revision to the national and European budget calendars;
 - ✓ the improvement of the communication of the revisions, including comparative exercises that allow the end user of the statistics to understand the motivation and scope of the revisions.

To the IGAE:

- In general, any changes, either by a statistical revision or the introduction of new data, should always be accompanied by the issue of an explanatory note on the changes made.
 - In particular, the methodological note on the statistical revision to be published should include a description and quantification of the effect of the changes, separating those arising from the update of information sources from those caused by the application of the methodological changes of the statistical revision of this year.
-

In addition, the need to devise a strategy that envisages a medium-term view anchored in a credible debt reduction path remains, so **AIReF keeps the following recommendations in place:**

-
- The setting of budgetary stability targets for the 2020-2022 period should be underpinned by a government debt reduction path, which translates into a fiscal strategy that includes an analysis of the evolution of the structural balance in the medium term.
 - The analysis and information that serves as a basis for determining the path of the stability targets and debt for the General Government and for each of the sub-sectors should be published.
 - The fiscal strategy should consider the European framework and offer information relating to compliance.
-

As the data for a rigorous assessment of the rise in the minimum wage may not be available for AIReF and other researchers, **AIReF keeps the following recommendations in place:**

-
- The Ministry of Labour, Migrations and Social Security and the Ministry of Economy and Business should conduct an assessment of the effects of the rise in the minimum wage for 2019 based on the most rigorous methodologies and if necessary using the collaboration of external evaluators and publishing the results and the methodology used.
 - They should make the administrative data needed to replicate this and perform other evaluations available to researchers and institutions, always safeguarding the necessary confidentiality of the personal data of the subjects.
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1 INTRODUCTION

This report analyses the macroeconomic and fiscal scenario contained in the 2020 Budgetary Plan sent to the European Commission on 15 October. Current legislation provides that the Independent Authority for Fiscal Responsibility (AIReF) must prepare a report before 15 October on the draft budgets and main budgetary lines of the Public Administrations. If the General State Budget is not presented, the Budgetary Plan is configured as the major milestone of Spain's fiscal strategy for 2020. Therefore, AIReF prepares a report on the macroeconomic forecasts underlying the 2020 Budgetary Plan as well as its budgetary scenario, with a special assessment of the impact stemming from the revenue and expenditure measures planned. This analysis results in a series of recommendations.

On that date, AIReF anticipated its endorsement of the macroeconomic scenario underlying the Budgetary Plan. AIReF believes that the Government has behaved with prudence in the preparation of its forecasts as it presents a scenario with no policy change, consistent with the current situation of an acting Executive government; and as it made the effort to incorporate the significant impact of the revision of the National Accounts series conducted by the National Statistics Institute (INE) into its analysis. This initial assessment was sent to the Government, allowing AIReF's conclusions and endorsement to be included before the Budgetary Plan is submitted to the EU institutions.

The report on the Budgetary Plan is a provisional pronouncement that will later be finalised when the draft budgets of the various public administrations are presented. Within the normal budgetary procedure, the Budgetary Plan is sent to the European Commission once the Government has presented its draft General State Budgets (GSB). However, the situation of an acting Government prevents the submission and processing of said draft. In the case of the Territorial Administrations, the situation is heterogeneous with different degrees of progress in their budgetary procedures. AIReF will publish the reports on the main budgetary lines of the draft budgets of these administrations as it receives the necessary information.

In addition, AIReF will update its assessment of the General Government (GG) once, after the formation of the Government, a new Budgetary Plan materialises and/or a draft GSB for 2020 is presented.

The Budgetary Plan only contains the budgetary estimates of the GG. The fiscal scenario outlined in the Budgetary Plan is defined exclusively for the GG, detailing the main revenue and expenditure headings in National Accounts. On this occasion, unlike in previous budgetary plans, it does not show an estimation of the balance by sub-sector. On the other hand, the second deficit and debt notification to the European Union does contain a breakdown of the lending/borrowing forecasts by sub-sector for 2019.

2 MACROECONOMIC SCENARIO

2.1 Starting point

2.1.1 Changes since April: review and current situation

AIReF's macroeconomic scenario for 2019 and 2020 has been updated as a result of the latest short-term information available and the statistical revision of the National Accounts series. Since the publication of AIReF's macroeconomic scenario last April in the context of the Stability Programme Update for 2019-2022 (SPU 2019-2022), AIReF's estimates have been revised to incorporate two relevant aspects. First, the new short-term information concerning the first half of the year and the beginning of the third quarter enriches the interpretation of GDP growth in 2019. Second, the statistical revision of the national accounts series by the INE has meant that the main series that have characterised the evolution of the Spanish economy in recent decades have undergone changes, on occasion, of some importance. This means that the relations between the major macroeconomic variables that serve as the basis of the models used for the analysis of the Spanish economy have been affected.

Adequately distinguishing between these causes and separating their effects is key in predicting the future evolution of the Spanish economy. When considering the scenario for 2019 and 2020, the first step is to calibrate the impact of each of these factors, the short-term shock and the statistical shock, so as to be able to infer the behaviour of the main aggregates in the future. In fact, our understanding of the macroeconomic reality depends on changes in the economy, the object of study, but also changes in the models used by analysts and, less frequently, the changes carried out by the National Statistics Institutes. These changes occur as a result of revisions, incorporation of new sources of information or improvements in their processes. These revisions usually have little quantitative relevance but can sometimes lead to the questioning of phenomena believed to be known and a rethinking of our way of understanding, and, therefore, predicting the economic reality.

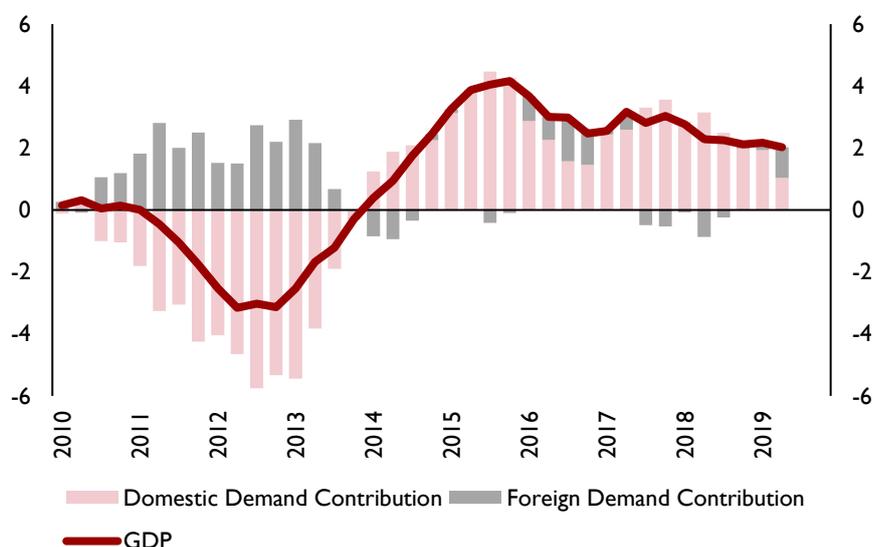
2.1.1.1 New short-term information

From the growth peaks in 2015 there has been a gradual moderation in the variation rates of GDP, in line with a maturing economic cycle. After having reached a cyclical trough in 2013, GDP growth returned to positive growth rates, around 4% in 2015. From then on, growth has been moderating, in line with progressive maturing of the economic cycle (see chart 1). Contrary to the historical pattern in previous stages of growth, this phase has been characterised by positive contributions of both domestic and external demand, both contributing to a more balanced growth.

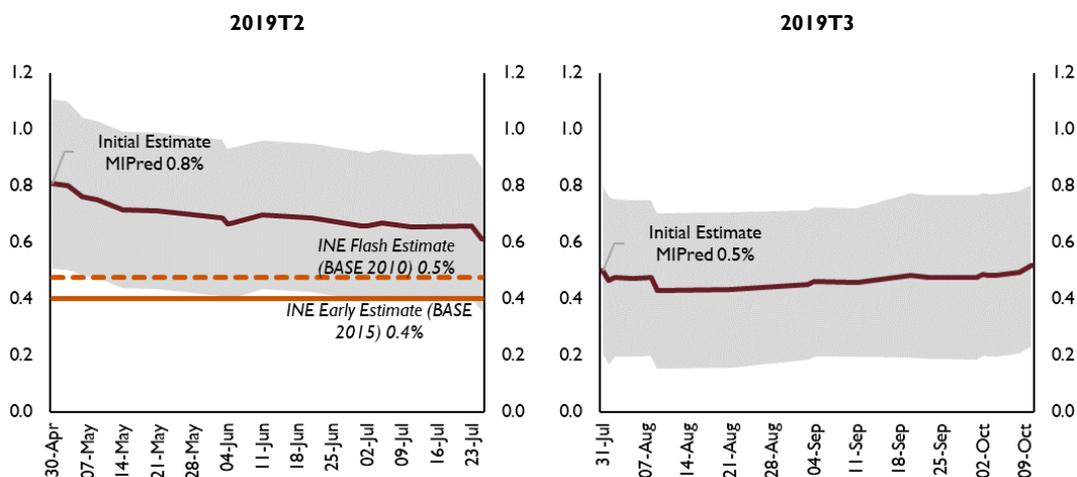
During 2019 the short-term indicators are confirming the signs and maturation of the business cycle. The high-frequency data available for the first 9 months of 2019 confirm the gradual moderation in the pace of growth of the Spanish economy. AIReF's model for forecasting the real time GDP of the third and fourth quarter confirms the signs from the first half, a growth around 0.5% (see chart 2 for the evolution of the forecast in real time for the second quarter - already observed- and for the third quarter). These estimates incorporate the effect of the statistical revision of the National Accounts series until the second quarter of 2019, which have altered the growth pattern at the beginning of 2019, lowering growth in the first quarter and, consequently, generating a possible forward carryover effect.

The dynamics for 2019 notably include the negative evolution of the indicators most closely tied to the industry against those related to production in the services sector, which present a more stable behaviour. The behaviour during 2019 is far from homogeneous between the different branches of production, as it is clearly reflected in the PMI for the manufacturing industry and the services sector, which since mid-2018 has already been showing a gradual decoupling, partly motivated by supply factors linked to the automotive sector in the euro area.

The latest updates of the estimates from national and international organisations also reflect a downward adjustment, for both 2019 and 2020. While not all international organisations have adjusted their estimates to the new National Accounts series, there is a gradual downward revision of the growth forecasts for 2019 and 2020 from the main study centres. In October, the forecast census has started to include downward adjustments, in part stunted by less favourable behaviour of national demand, affected by both the statistical revision and the maturity of the cycle.

CHART 1. YEAR-ON-YEAR VARIATION RATE OF GDP


Source: National Statistics Institute

CHART 2. EVOLUTION OF THE REAL TIME GDP FORECAST FOR 2019 Q2 AND 2019 Q3 (QUARTER-ON-QUARTER RATES)


Source: AIReF's estimate

2.1.1.2 Revision of National Accounts

In 2019, the INE has revised the National Accounts series. Within the framework of an exercise carried out in a coordinated manner by 18 Member States of the European Union and Norway, the INE has revised the National Accounts in 2019. The publication of the revision was carried out in two phases. In the first place, on 16 September the INE presented a preview of the Quarterly National Accounts data until the second quarter of 2019 and the Annual National

Accounts until 2018, although it did not publish the Non-financial Accounts of the Institutional Sectors (NFAIS) according to this revision (which reduced the effectiveness of the publication of the preview). Finally, the complete statistical data, including the NFAIS, was published on 30 September.

The statistical revision of the series has had important consequences for the analysis and understanding of the Spanish economy. The changes made by the INE in the main National Accounts series have greatly modified the estimated historical patterns and relationships between variables that are the basis of our understanding of the functioning of the economic system. It also revealed changes in the relationship between National Accounts and other sources, such as the records of tax bases and the labour market.

However, despite the scope of the revisions, there has not been an active communication policy of the methodological developments and their impact on historical series. Although this revision has been carried out in compliance with the requirements and quality criteria of statistical production established in the framework of the European Statistical Programme, it should be noted that their dissemination does not fully meet two basic principles in the operation of any statistical producer: user orientation and transparency in communication. The proximity of the publication of the data of this statistical revision to the preparation of the Budgetary Plan that the Government must send to the EU authorities together with the lack of transparency in the communication of the impact of the methodological changes have made it more difficult to prepare the basic macroeconomic forecasts (which should incorporate the most up-to-date statistical information relating to the National Accounts). In fact, any forecasting must start with the understanding and modelling of economic relations. If these relations have been affected by statistical changes (sources, techniques, models, assumptions), it is necessary to know the detail and its impact in order to draw any type of inference for the future.

Main changes from the revision¹

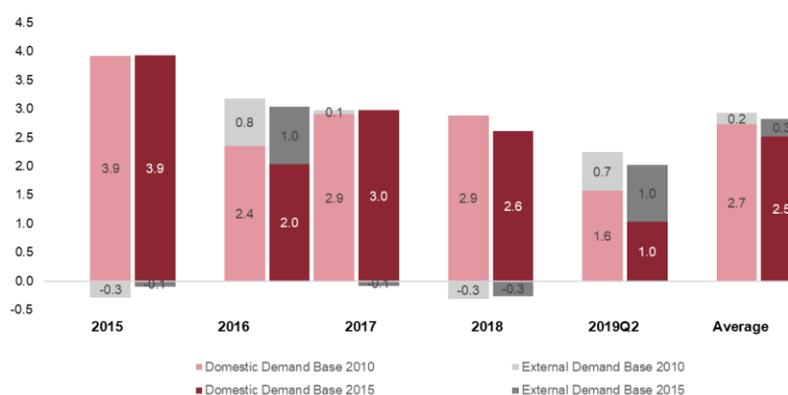
The impact of the statistical revision on GDP in terms of volume and in nominal terms has been concentrated in the last period and the effect on the main aggregates has been mixed. In this way, although the average revision of the variation rate of real GDP for the period 1996-2018 has been -0.04 p.p. (for the period 2015-2018 -0.15 p.p.), other demand aggregates have experienced larger revisions in some cases. Two clear examples are those of the variation rate of real investment in other buildings and constructions (-0.8 p.p. in the

¹ For more details on the main changes, see Annex 7.2

period 1996-2018 and -0.8 p.p. between 2015 and 2018) or real investment in other machinery and equipment (-0.8 p.p. in the period 1996-2018 and -1.1 p.p. between 2015 and 2018). To the contrary, the average growth rate in terms of volume of exports of goods and services has been revised upward (+0.1 p.p. for the complete series and 0.2 p.p. between 2016 and 2018) and imports of goods and services has remained virtually unchanged on average, although with alterations in its evolution. In current terms it is worth noting the upward revision in household consumption (+3.732 million higher than in 2018 at the level observed in the previous series), as well that of the PAs (+1.176 million euros), and net exports of goods and services (+8.008 million euros), which have practically offset the significant downward revision of the components of gross fixed capital formation (-22.787 million euros), with the exception of products of intellectual property and cultivated biological resources. This has changed the pattern and the composition of growth, as well as the evolution of the respective deflators, with particular relevance toward the end of the series.

The new National Accounts series show an economy that in the past four years has been characterised by a more balanced growth, with a lower momentum of domestic demand. According to the new series, the growth in the last five years has relied less on the contribution of consumption and investment, a fact that has been offset by a greater contribution of external demand. This behaviour is especially marked in recent quarters, where the contribution of external demand achieves figures similar to those observed at the beginning of 2016 (see chart 3).

CHART 3. COMPARISON OF THE CONTRIBUTIONS TO GDP GROWTH 2015-2019Q2 (P.P. OF GDP)



Source: National Statistics Institute

The loss of weight of productive investment as a driver growth is particularly significant. In the dynamics of the new National Accounts series, the lower contribution of investment compared with the one previously estimated is noteworthy. A case of special relevance is investment in transport equipment

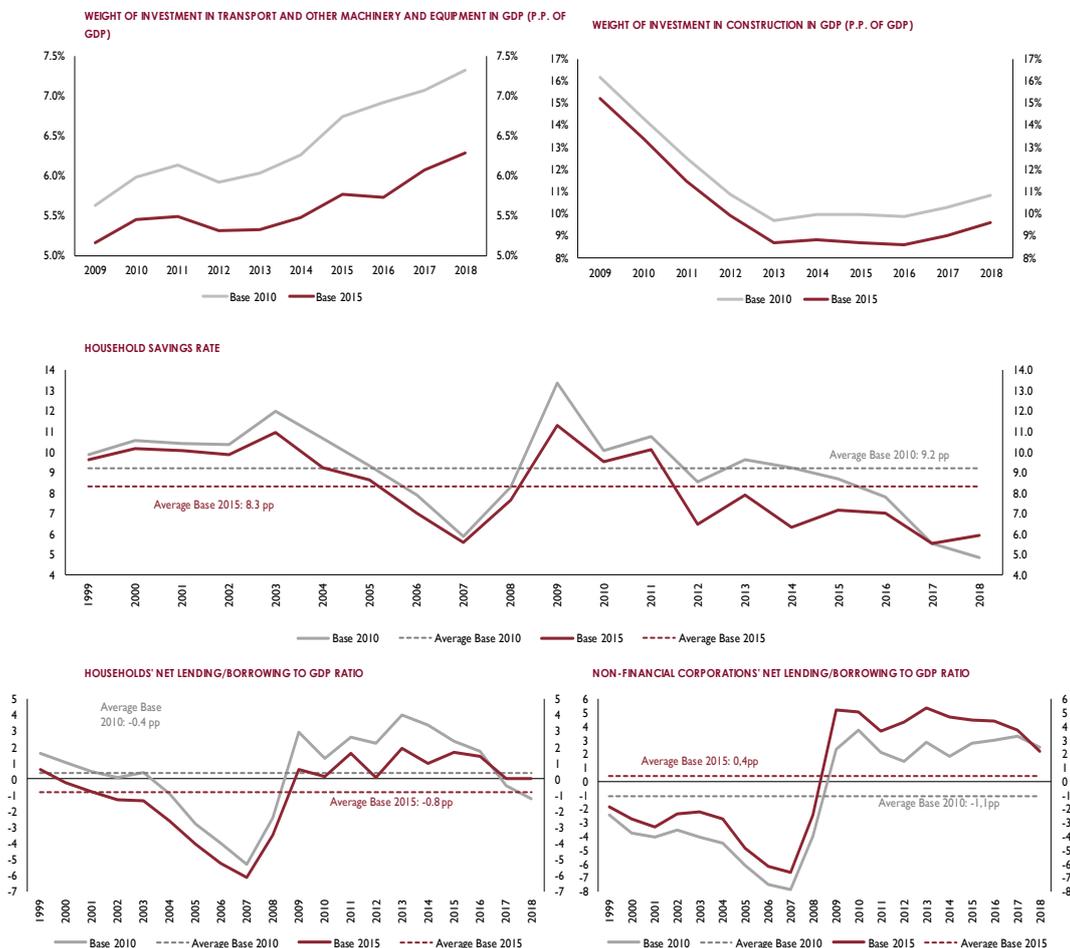
and in machinery and equipment, whose weight, in current terms, over GDP drops in the new estimates of the SR2019 by more than one percentage point, from 7.3% to 6.3% GDP (see chart 4). This reflects a less buoyant investment in transport and other equipment, whose weight barely reaches the level of 1995. The relative decline of the weight of investment in construction over nominal GDP is equally important, which at the end of 2018 stood at 9.6% GDP, instead of the 10.8% estimated prior to the statistical revision (see chart 4).

The deflators have been barely revised in the full period of information, with some exceptions at the end of the period. The revision of the series of deflators of the main components of demand has only just had a significant impact, with a few exceptions such as investment in construction and intellectual property, which has been revised 0.2 p.p. downwards. In the last period (2015-2018), the public consumption deflator has been revised 0.4 p.p. upward. Significant changes can mainly be observed in mid-2018 and the first half of 2019, such as, for example, the gross capital formation in dwellings, which now records rates well above those observed in the data with base 2010.

The variation rate of employment has suffered a decline of 0.1 p.p. with the SR2019, mainly in the private sector. It should be noted, however, that in the 2015-2018 period, the variation rate of public employment has been reduced by 0.5 p.p. with the statistical revision.

Also, another of the most important changes in the new National Accounts series comes from the ratios of the institutional sectors. The Lending (+)/Borrowing (-) (L+B) of households and NPISH, as well as households' rate of savings are the main exponents of the changes introduced in the sector accounts. With regard to the first magnitude the SR2019 shows, on average, a worsening of the position of families, particularly marked between 2009 and 2014 and a better position than previously observed for the years 2017 and 2018. For its part, in the ratio of household savings there has been a change of pattern in the series, particularly visible in 2018, where prior to the revision, it had slowed down in 2018 compared to 2017, and after the statistical revision, this behaviour reversed, presenting a growth in 2018 compared to 2017, potentially attributable to precautionary motives (see chart 4). On the other hand, the L+B of non-financial corporations over GDP has been revised in the opposite direction to that of households, raising the average lending capacity over the entire horizon. This healthier dynamic would be consistent with less recourse to external financing (see chart 4).

CHART 4. EVOLUTION OF VARIOUS RATIOS OF NATIONAL ACCOUNTS. COMPARATIVE BASE 2010 VS 2015



Source: National Statistics Institute

2.1.2 Impact of the statistical revision on structural relations

The statistical revision provided by the INE has led to a misalignment of the National Accounts with respect to other statistical sources, affecting some historical relations of the Spanish economy. As pointed out throughout the report, the revision of the National Accounts has entailed retrospective changes in the series that analysts use to understand the functioning of the economy. These changes are even more marked in the most recent period, substantially affecting any forecasting exercise. In effect, the econometric models used to predict the evolution of the main macroeconomic magnitudes have their foundation in the existence of structural relations and historical regularities, which in some cases have varied, implying an added difficulty both in the analysis of the current situation and forecasting the future.

The main examples reflecting the misalignment caused by the revision of the National Accounts are:

- **Loss of explanatory capacity of the models estimated for the Spanish economy**

To make medium-term forecasts for the Spanish economy, based on structural relations suggested by economic theory, AIReF uses a set of estimated equations for the components of demand, prices and labour market. These behavioural equations are modelled using error correction, which include long-term stable relations and a short-term dynamic.

The estimation of the equations for demand, prices and labour market with the new National Accounts series revised in 2019 has generally meant a loss of explanatory power of these models. In this way, the coefficient R^2 has dropped especially in the case of relations estimated for variables such as private consumption and GDP deflator, series that have experienced a greater revision, particularly at the end of the period.

The following figure shows how in most of the variables the value of the coefficient R^2 of the equations estimated has dropped.

- **Reduction in the growth threshold needed to create jobs (Okun's law)**

One of the main variables of analysis for the labour market consists of valuing the pace of growth that allows a reduction in unemployment, through the estimation of the well-known Okun's law, which relates the changes in unemployment with the evolution of real GDP.²

The revision of the National Accounts involves a reduction of 0.1% in the pace of growth from which lower unemployment is achieved, rising from 0.5% to 0.4% per annum.³ For a given evolution of the active population, this change implies that the cost of reducing unemployment in terms of GDP growth has been reduced as a result of the statistical revision.

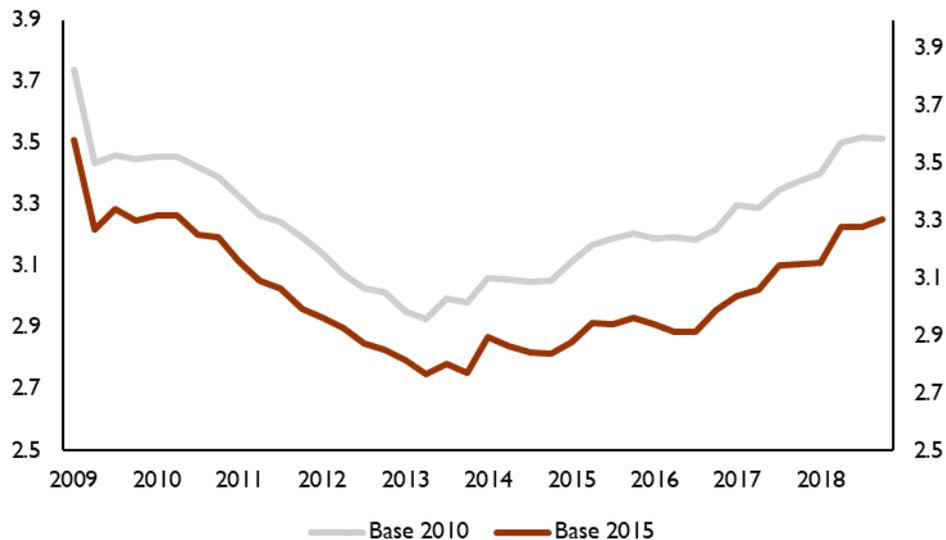
- **Changes in the factorial intensity of investment**

With the revision of the National Accounts, investment per full-time equivalent employee has dropped.

² $\Delta U_t = \alpha + \beta \Delta PIB_t + \varepsilon_t$. The GDP growth that entails a threshold from which the rate of unemployment begins to reduce is defined by the ratio between the constant and the slope or elasticity of unemployment to GDP ($-\alpha/\beta$).

³ Estimated through a regression with time-varying coefficients.

CHART 5. EVOLUTION OF THE RATIO OF GROSS FIXED CAPITAL FORMATION TO FULL-TIME EMPLOYEE



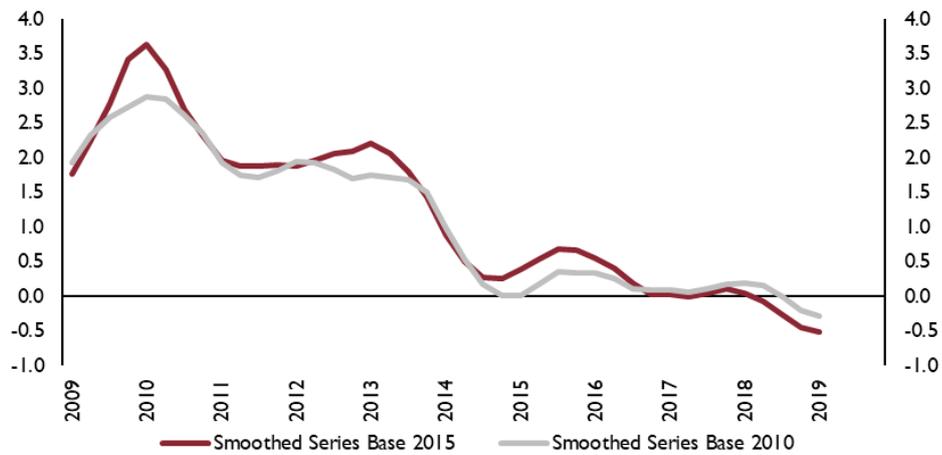
Source: National Statistics Institute

This loss of weight of investment occurred in conjunction with a lower intensity in the use of the labour factor, measured in full-time equivalent jobs. With all this, less investment has not fully translated into lower productivity per employee.

- **Abnormal evolution of productivity per employee**

The growth rate of productivity per employee has been revised upwards throughout most of the period, significantly so during the worst years of the crisis. This is the result of the upward revision of GDP in these periods, thereby exacerbating one of the most well-known and abnormal stylised facts of the Spanish economy: the strong growth in apparent labour productivity in the moments of greatest destruction of employment. Once again, the revision of National Accounts has a particular relevance at the end of the period, introducing ambiguity in the relationship between production and employment.

CHART 6. EVOLUTION OF PRODUCTIVITY PER EMPLOYEE



Source: AIReF's calculations based on National Statistics Institute data.

- **Elimination of the relationship between unemployment and wages (Phillips curve)**

Another economic relationship of a more or less structural or 'atheoretical' nature is the positive empirical relationship between the unemployment rate and some measures of growth of prices or nominal wages, called the Phillips Curve. Although this relationship is not particularly strong for the Spanish economy, the revision of the National Accounts has further weakened it, making it essentially non-existent in recent years.

CHART 7. PHILLIPS CURVE (UNEMPLOYMENT RATE VS COMPENSATION OF EMPLOYEES)

Source: AIR^eF's calculations based on National Statistics Institute data.

- **Loss of relationship between the components of demand and tax bases**

The tax bases of the different taxes have not changed, but having done so retrospectively means that collection in terms of GDP has varied, and more specifically, this implies that the sensitivity of the collection of the different taxes to GDP is different than what was formerly believed.

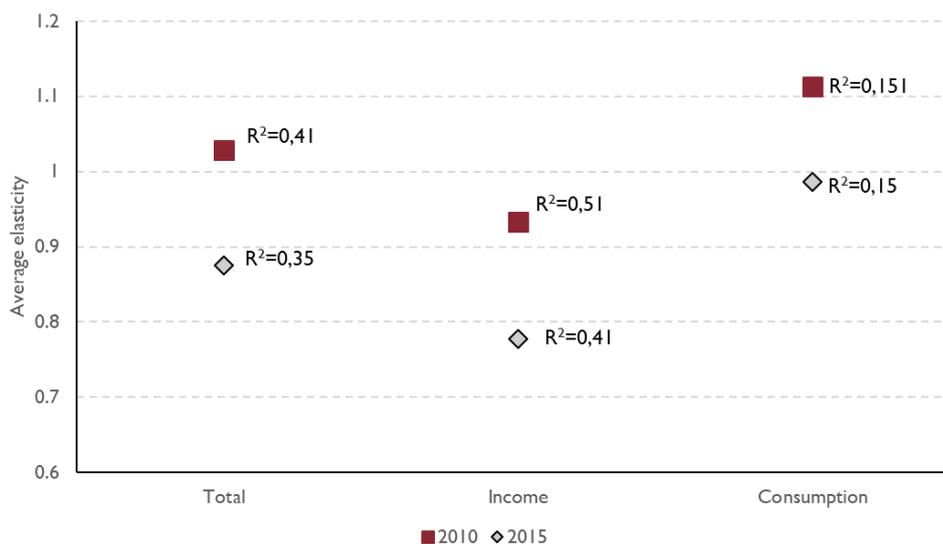
Thus, chart 8 represents, for example, the average elasticity of tax bases of the different taxes - which have not been revised - with respect to nominal GDP for the period 2010 - 2019. It is noted how the estimated elasticity of tax bases on income and consumption in relation to GDP is lower for the new series of GDP, following the revision of 2019. In the same way, the estimated elasticity of the total tax base (sum of the bases for income and consumption) to GDP has also declined.

In short, the statistical revision has weakened the relationship between the tax bases and the accounting aggregates, introducing biases in the estimate and

reflecting a lower sensitivity of collection to changes in GDP that was estimated with the previous data⁴.

All of these changes have led to revisions of greater or lesser significance in the revenue forecast models used by the AIReF, making it difficult to discriminate between the effects of short-term situation, of the revision and of the models.

CHART 8. RESPONSE OF THE TAX BASES TO CHANGES IN GDP



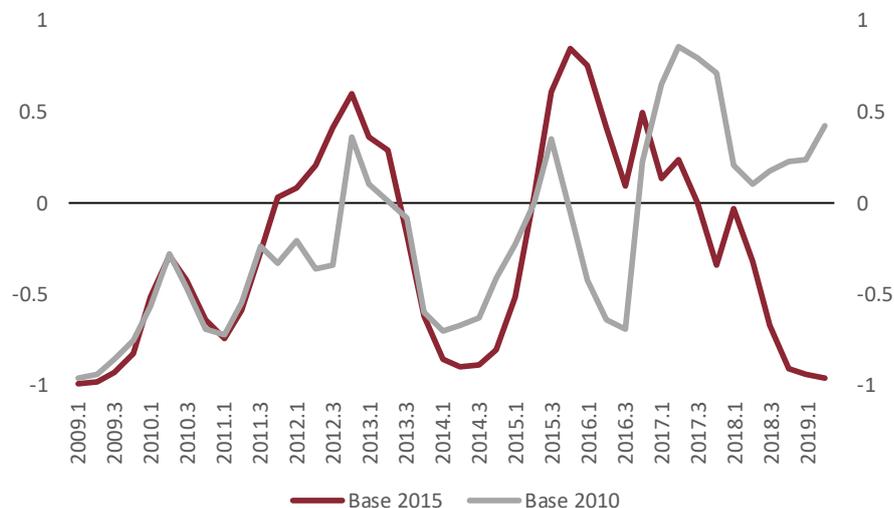
Source: AIReF's calculations based on data from the INE and the Tax Agency.

- **Change in the historical relationship between savings and private consumption.**

The household savings decisions and their consumption are closely linked, as they are two sides of the same coin, and closely follow the dynamics of the economic cycle and its behaviour patterns. This fact is reflected in a correlation between both components with predictable ups and downs, anchored in the consumption cycle, as can be seen in chart 9, with the falls especially pronounced during periods of contraction in private consumption. As a result of the statistical revision, this relationship has been completely distorted in the last period, reflecting conflicting signals for the evolution of consumption in the coming years.

⁴ This loss of sensitivity could also reflect a higher level of noise in the series observed that would skew this estimated elasticity toward zero.

**CHART 9. CORRELATION BETWEEN PRIVATE CONSUMPTION AND HOUSEHOLD SAVING RATE
%GROSS DISPOSABLE INCOME**



Source: AIR^eF's calculations based on INE data.

2.1.3 Impact on the forecasts for 2019

The forecasts for 2019 have been updated downwards in response to the impact of the two factors noted: the revision in the historical National Accounts series and the evolution of the short-term economic situation. In aggregate terms, the baseline scenario for real GDP growth is revised downwards by 0.2% in 2019, from 2.3% to 2.1%. This review is consistent with the forecast of the MIPred model for the third and fourth quarter of 2019, which translates into an average variation rate for the whole year of 2.1%. At the level of the various components on the demand side, the downward revision is widespread, with the exception of productive investment (see chart 10). Among the changes in the forecast for 2019 it is worth noting, due to their magnitude, the corrections in private household consumption and imports.

At the aggregate level, half of the downward adjustment is due to the statistical revision and the other half to new short-term information, although this distribution varies greatly for each component. An exercise was carried out to determine which part of the change in the forecast of each of the components of GDP on the demand side is due to each of these two elements. To do this, firstly, the quarterly forecasting models were re-estimated with the new National Accounts series, without incorporating the new short-term information, thus obtaining the impact attributable to the SR2019, considering that the rest of the difference in the forecast model for 2019 can

be explained by the evolution of the short-term situation (new data)⁵. From this exercise it can be concluded (chart 10) that half of the change in the forecast for GDP growth in 2019 would be explained by the INE's revision, while the other half would be due to the new short-term information. This division of the impact is not as balanced when we consider the different components of GDP.

The component, which has been most affected by the SR2019 in terms of impact on its forecast, would have been investment in construction with 1.7p.p. of the total fall of 2 p.p. attributable to the statistical revision. The change in the exports forecasts is also explained more by the change in the historical series than by the latest information. On the contrary, in the case of imports, more than 85% of the revision can be explained by the short-term situation just as, although to a lesser extent, private consumption forecasting has been more affected by the worse short-term information than by the SR2019, which would explain 34% of the change. The only component whose forecast has not been altered has been productive investment in which the positive impact of the historical revision has been offset almost entirely by the negative impact of the short-term situation.

CHART 10. CHANGE IN THE FORECAST OF GDP AND ITS COMPONENTS IN 2019, BREAKDOWN OF EFFECTS

	SPU Forecasts	Revision Impact	New data effect	DBP Forecasts	Total change
GDP	2.3	-0.1	-0.1	2.1	-0.2
Private Consumption	2.2	-0.5	-0.9	0.8	-1.4
Productive Investment	2.5	0.1	-0.1	2.5	0.0
Construction and IP	4.7	-1.7	-0.3	2.7	-2.0
Exports	3.1	-0.5	-0.4	2.2	-0.9
Imports	2.9	-0.4	-2.4	0.1	-2.8

Source: AIReF's calculations.

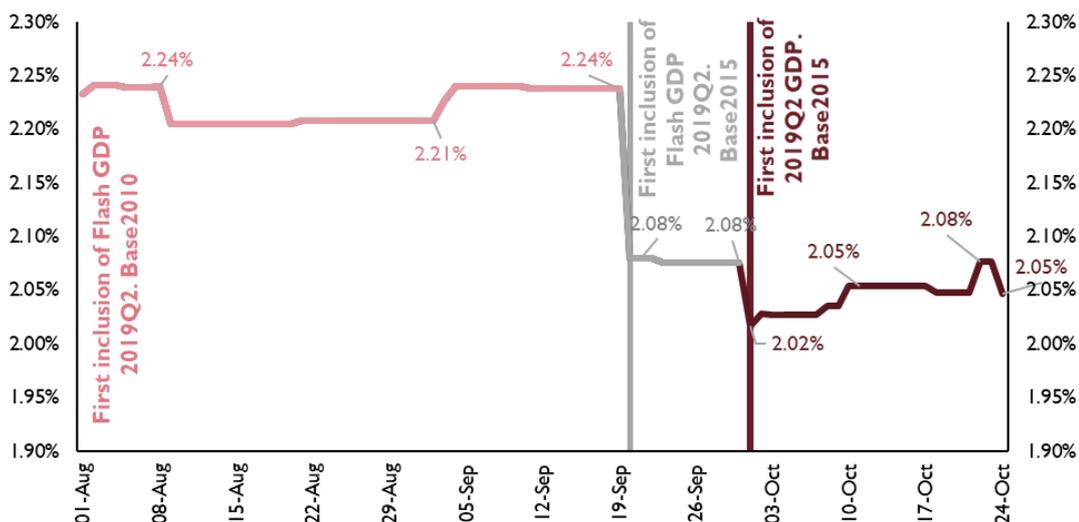
This exercise is used to isolate the statistical component in the revision of the forecast for 2019, focusing the forecast for 2020 on the short-term evolution or contribution of the main determinants. The separation of the statistical and short-term effects on the revision of our starting point or forecast for 2019 allows us to draw clearer inference for 2020, focusing on the fundamental

⁵ See Annex 7.3.

determinants of each component of demand, without replicating the statistical effect that occurred in 2019.

An exercise of robustness of these results carried out with the information obtained by MIPred reflects an image compatible with behaviour models, integrating the effect of the short-term situation and the revision (see chart 11).

CHART 11. EVOLUTION OF THE GROWTH FORECAST FOR 2019 RESULTING FROM MIPRED.



Source: AIReF's calculations.

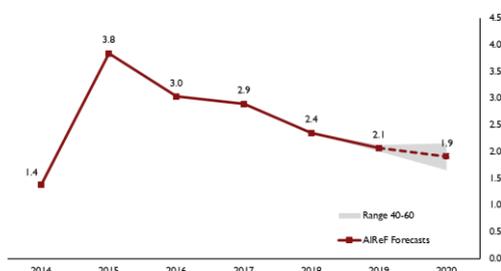
Note: The figure reflects, for the period between 1 August 2019 and 24 October, the estimate of the year-on-year variation rate of GDP for the year as a whole, depending on the estimate for the third and fourth quarter of 2019, which results from the short-term MIPred model.

2.2 Inertial reference macroeconomic scenario

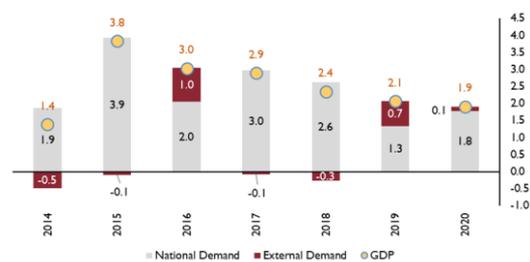
The GDP growth forecast for 2019 (2.1%) and 2020 (1.9%) remains robust, although more moderate than in previous years, supported by domestic demand, which continues its progressive cyclical maturation, based on its main determinants. The growth path envisaged by AIReF for 2019 and 2020 maintains a profile of progressive deceleration, in line with an economic cycle that reaches a higher degree of maturity and is approaching its growth potential. This dynamic is anchored in the positive but slowed contribution of the external sector to GDP growth in 2019, as a result of the factors discussed above. Furthermore, the contribution of national demand is expected to recover in 2020, more in line with a gradual exhaustion of the main determinants as the output gap continues to grow and we gradually approach the cyclical peak.

CHART 12. MACROECONOMIC SCENARIO: MAIN FEATURES

- ❶ The GDP forecast for 2019 and 2020 maintains a more moderate growth path...
- ❷ ... with a positive, although decreasing, contribution of external demand.



Source: INE and AIReF

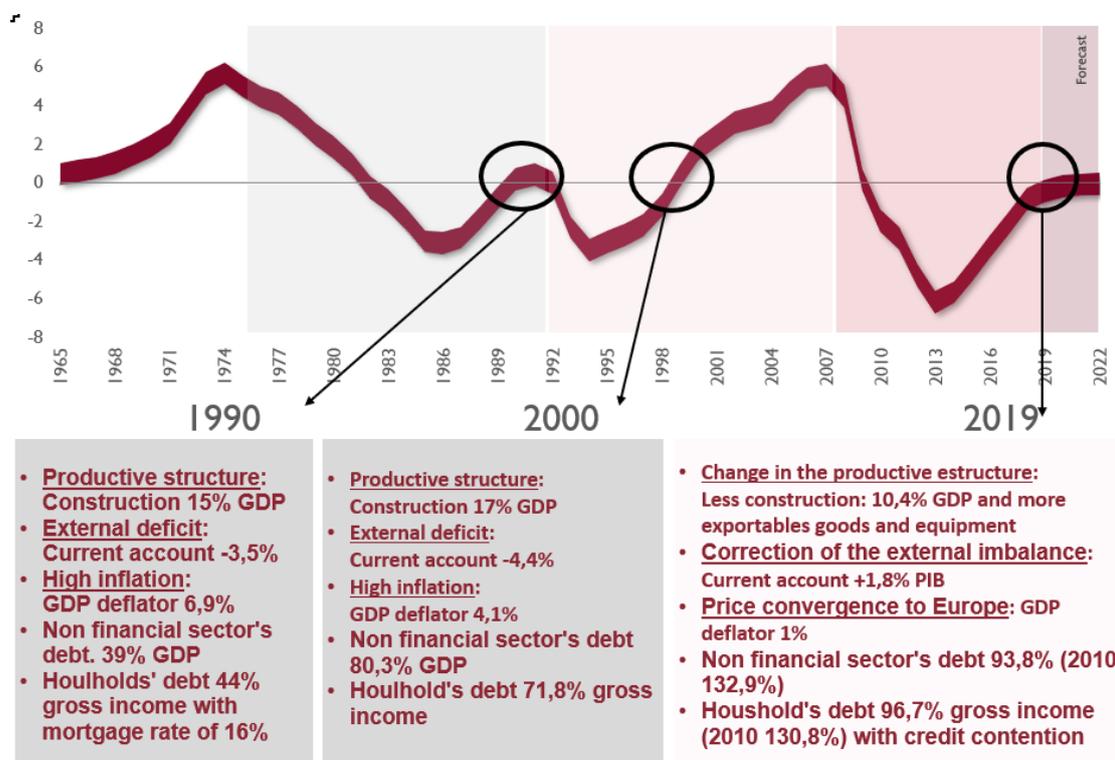


Source: INE and AIReF

2.2.1 Cyclical analysis

AIReF's updated estimates slightly delay the closure of the output gap until 2020, as a result of the new National Accounts data as well as the updated estimates for 2019 and 2020. According to AIReF's updated estimates, the last contractionary period would not have closed, still maintaining a negative output gap in 2019 (that is, the potential GDP would still be above observed GDP), and projecting its closure in 2020. The revision of the National Accounts and the downgrade of the growth forecast explain the change in AIReF's view of the cyclical position with respect to the one previously laid out in the SPU 2019-2022, which considered the economy at a cyclically neutral point already in 2019. As can be seen in chart 13, this estimate is subject to uncertainty.

The Spanish economy faces the closure of the economic cycle, from a more balanced position than on previous occasions. In response to AIReF's estimates for the output gap, in the upcoming 2019-2020 period the output gap will close. The current cyclical moment (closed output gap) can be compared to the same situation in two recent moments; at the beginning of the '90s and at the beginning of the century, both also marking the start of a cycle. Benchmarking against historical data is proof of a more sound current position, when comparing the main macroeconomic balances, with less weight in the construction sector, a current account surplus and fewer inflationary pressures, albeit the legacy of the recent economic crisis in terms of debt, both private and public, should be noted.

CHART 13. HISTORICAL EVOLUTION OF THE ECONOMIC CYCLE IN SPAIN.


Source: AIReF

The estimated evolution of the cycle and the macroeconomic balances imply a growth potential slightly below 2%. The estimate of the output gap of the Spanish economy takes into account the evolution of the main macroeconomic balances and their comparison with previous cycles. The current sound context involves earnings in terms of potential or long-term growth estimated to be around 1.7% for the forecasting period.

In the medium-term, this sound position facilitates support for growth, in particular, in domestic demand. The composition of growth over the last few years, with a positive contribution of domestic and foreign demand, a progressive deleveraging of the private sector and less dependency on unproductive sectors, underpinned by several structural reforms, have made a positive impact on the potential growth of the Spanish economy. This starting point provides a solid base for the medium-term growth forecasts, in particular for domestic demand. The forecasting horizon foresees the cycle maturing, with a real GDP that would tend towards converging to its long-term or potential growth rate.

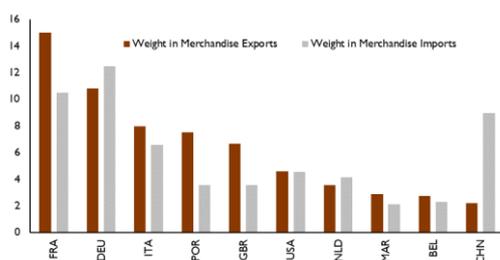
2.2.2 External assumptions and risks

Having growth forecasts been revised downward, it should be noted that, as a whole, the panorama of external risks has improved compared to May. A risk identified in May has materialised: the slowdown in the growth of our main trading partners. However, risks whose impact would have been important, such as the contagion of the Italian institutional crisis or an abrupt no-deal Brexit, have moved further away. However, the risk of weaker trade growth has increased, due to the trade war, among other reasons.

2.2.2.1 Growth in the trading partners

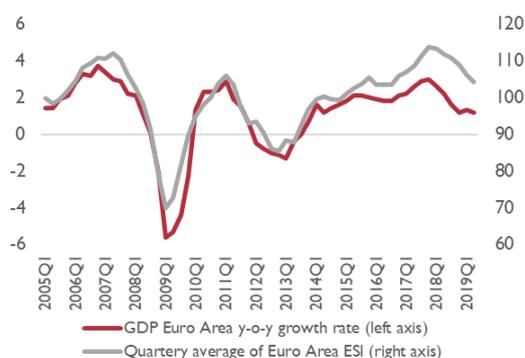
The growth of the euro area has been slowing since the first quarter of 2018, when the rates of quarter-on-quarter GDP growth fell from around 0.8% to rates of around 0.4%. Now, in the second quarter of 2019 it stands at a weak 0.2%. The euro area is the first destination for Spanish exports (France and Germany occupy the first positions, as seen in chart 14). To the extent that the growth forecasts partially depend on the contribution of external demand, the slowdown in our trading partners is an element of risk which it is to be noted.

CHART 14. MAIN COUNTRIES WITH SYSTEMIC IMPORTANCE TO SPAIN



Source: DATACOMEX

CHART 15. ECONOMIC GROWTH AND INDICES OF ECONOMIC SENTIMENT, EURO AREA



Source: AIReF's calculations with data from Eurostat and DG ECFIN (European Commission)

Looking to the immediate future, indicators of economic sentiment in the euro area prepared by the European Commission have continued to worsen in the third quarter of this year, as shown in chart 15. However, the index is still above its average since 2005 (102.3). As indicated by DG ECFIN (2019 a), the trend is negative in Germany, where the index has fallen below the historical average this quarter. Confidence has worsened in several sectors, but industry and services present the worst evolution. In France, however, the indicators of economic sentiment have been stable above their historical average.

The dynamics of the global slowdown point to a normal cyclical movement. At the moment, it is concentrated in industrial manufactures. The world Purchasing Managers' Index of IHS Markit, correlated with the evolution of world production, has been declining over the last year (chart 16), but judging by the historical dynamics it does not anticipate a recession, but a cyclical downturn. The contraction is limited for now to the manufacturing sector, although there is also a downward trend in services.

CHART 16. OECD GDP AND PMI INDEX OF MANUFACTURES AND SERVICES

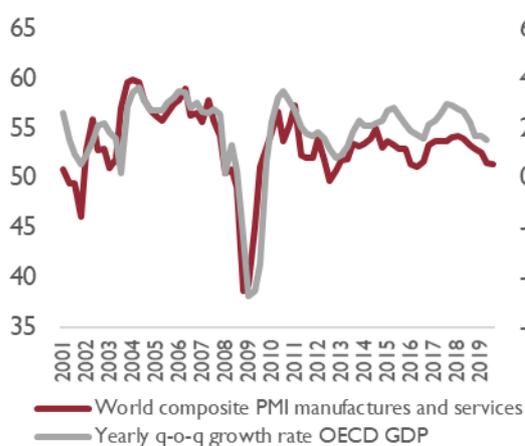
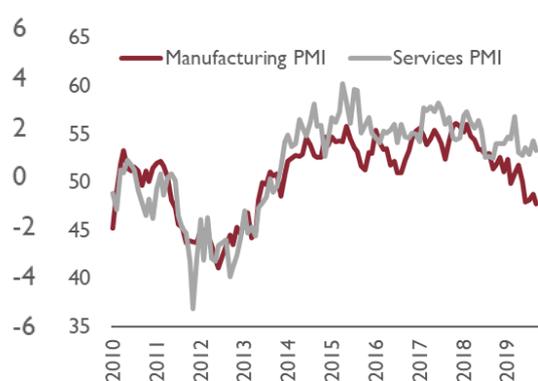


CHART 17. PMI INDEXES SPAIN



Source: AIReF's calculations with data from OECD and Markit.

Note: the PMI index indicates a contraction when it is below 50.

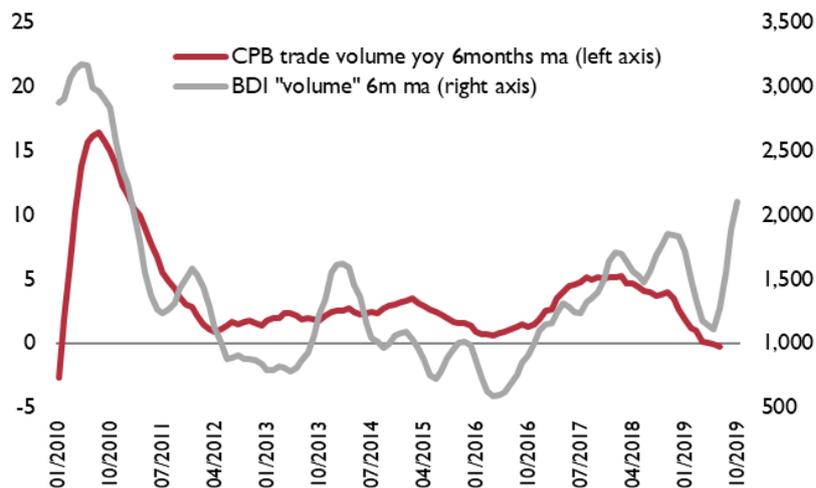
2.2.2.2 Developments in international trade and the trade war

The slowdown in the manufacturing sector is associated with the forecasted weakness of international trade, whose growth forecast has drastically cut the IMF in October. International trade is expected to grow by 1.1 % in 2019 compared to 3.6% in 2018. It is possible that this fall is a result of the tariff increases and that, once the immediate impact has passed, it will recover again, as expected by the IMF (which has presented a forecasted growth of this variable of 3.2% for 2020).

Looking to the immediate future, an advanced indicator of international trade, such as the Baltic Dry Index (BDI), has recently improved, which would support the forecast that trading will recover in the short term. This indicator of prices in the market of maritime goods transport is relatively volatile but is considered a useful ingredient to forecast trends in international trade. The comparison of the evolution of this indicator, deflated with international trade prices, presents sufficient temporal coincidences with the rate of growth of international trade (by volume), as noted in chart 18. It is noted that the BDI has improved in

recent months, which would lead to ruling out the forecast of a decline in trade in the short term.

CHART 18. EVOLUTION OF THE VOLUME OF INTERNATIONAL TRADE AND BDI DEFLATED BY TRADE PRICES



Source: AIR eF's calculations with data from the CPB and Datastream.

On the other hand, the risk of lower trade growth due to the escalation of the trade war has increased. The tariff increases that are already in force between China and the United States have become pronounced in a short space of time: the average tariff on exports from China to the United States has jumped from 3.1% to 21% and from the United States to China from 8% to 21.1% since January 2018 to the present (Bown, 2019). If the agreement to slacken the relations between the two countries is confirmed in November, some of the additional planned price increases would not enter into force. In any case, the IMF (2019) estimates that, while the direct impact of tariff escalation on economic growth is not negligible, the main impact comes from the increase in uncertainty, which weighs on investment decisions.

Furthermore, the United States has imposed tariffs on certain exports to European countries, including Spain. Following the decision of the World Trade Organization (WTO) on state aid to Airbus, on October 18 the Trump Administration has imposed tariffs of a value of 6,900 M€ (USTR, 2019). Beyond the direct impact on growth, this decision increases the uncertainty, because it is a prelude to a possible transatlantic tariff escalation. The next step in this escalation would be the European response when the WTO decision on US subsidies to Boeing is published, which will also be declared incompatible with WTO rules. And beyond these responses, a unilateral United States decision on the tariff applied to imports of cars based on national security arguments is pending, which might damage this sector at the global level, and especially

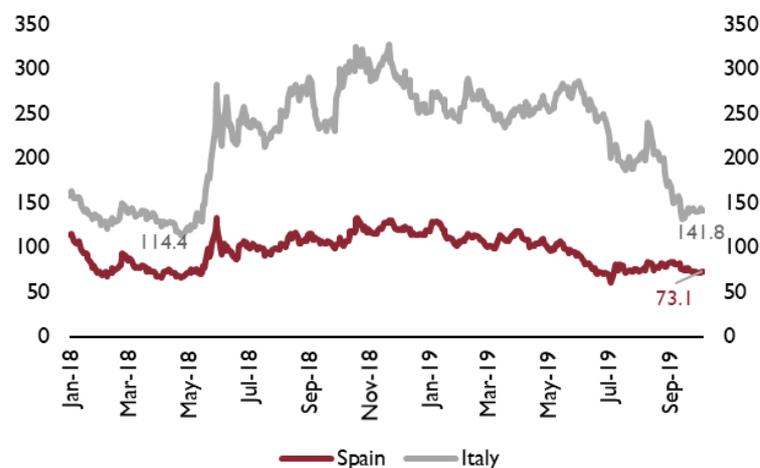
Germany, where the sector is already affected by the regulatory changes. Therefore, there is also an increase in uncertainty in the context of trade tensions that directly affect the euro area, which translates into downside risks to growth forecasts.

2.2.2.3 Easing of tensions from Italy

In May, the Italian institutional crisis was in full swing. There was a risk of contagion through the risk premium, which, while not high, would have had a considerable impact. Despite the fact that the interest rate levels were already very low, public debt is still high, so the impact on our economy of a rise in the cost of financing would have been significant, and still more if it resulted in an contagion to the risk premium, and therefore difficult to control.

The virtual disappearance of the risk of contagion from Italy eliminates the main external threat of abrupt changes to Spanish growth. As noted in chart 19, at the beginning of June the two risk premiums decoupled. After the summer, public acceptance of the rules of the EU game by the new Italian government allows us to affirm that this risk has virtually disappeared (regardless of the bad news of the continued weakness of Italian economic growth). The importance of the Italian issue for Spain is significant, so the near disappearance of the probability of this risk, by itself, improves the overall picture of external risks for the Spanish economy. At the end of October an element of uncertainty appeared, since Italy has sent a Budgetary Plan to the EU institutions that seems not to comply with the requirements of fiscal consolidation, therefore the evaluation of the European Commission could be a source of tension. However, it is considered that the risk of this tension transferring to the Italian risk premium is lower than in May.

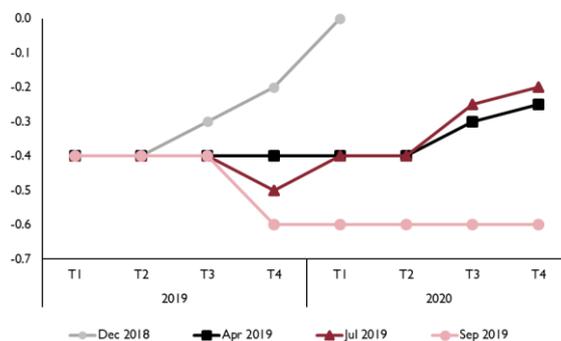
CHART 19. UNLINKING OF RISK PREMIUM AND IMPROVEMENT OF ITALIAN PREMIUM



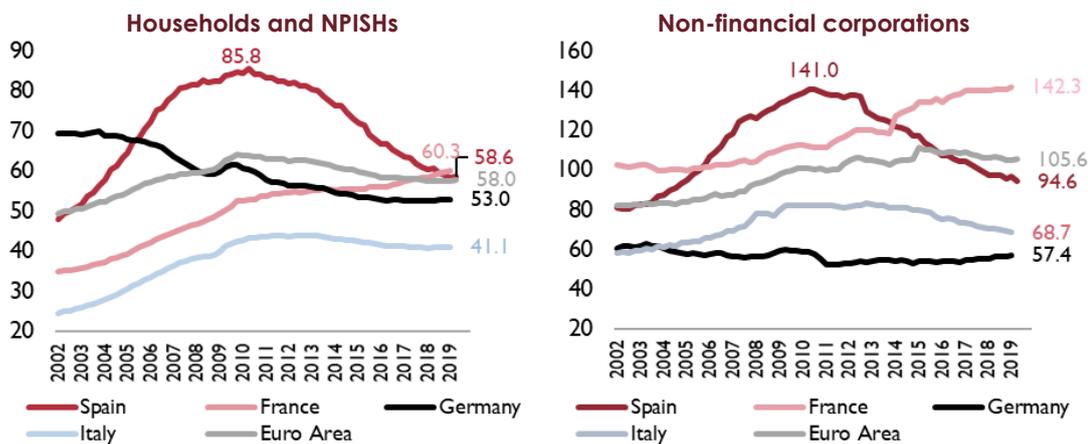
Source: Datastream.

2.2.2.4 Tail winds from monetary policy

In addition, a favourable risk identified in May has materialised: the change in monetary policy stance is postponed, which will continue to be very expansive in the short and medium term. As noted in chart 20, the expected increase in interest rates has been delayed in the first half of the year and in September expected rates have once again begun to fall. In addition to the favourable impact on private investment, the postponement of this rise in interest rates has a positive impact on indebtedness dynamics, in particular, public indebtedness. As noted in chart 21, the private sector indebtedness in Spain is not particularly high, but in line with the average of the euro area, both in the household sector and among non-financial companies. However, the debt-to-GDP ratio continues to be at high and stable levels.

CHART 20. EVOLUTION OF MARKET EXPECTATIONS IN THE DEPOSIT INTEREST RATE


Source: Datastream.

CHART 21. PRIVATE SECTOR INDEBTEDNESS IN SPAIN (% GDP).


Source: AIReF's calculations with data from Banco de España and Eurostat

2.2.2.5 Brexit

The risk of a no-deal Brexit has declined since May. On 19 October, the British Government has again requested the extension of the deadline for withdrawal until 31 January 2020. It is expected that the European Council will approve it. Although the combination of opposing groups on domestic policy issues and relations with the EU in the United Kingdom yields increasingly complex results, there is, again, a possible withdrawal agreement that satisfies the EU's red lines and that is acceptable to the British government. This possibility involves the rupture of the internal market of the United Kingdom, keeping Northern Ireland in the European internal market. The United Kingdom would leave the EU within the deadline of 31 January with an agreement that opens a transition period during which the future relationship between the two would be negotiated. There will still be a negative impact in the medium and

long term, though not comparable to what would happen without a deal, whose quantification for Spain is yet to be studied.

2.2.2.6 Oil prices

With regard to the evolution of oil prices, the poor response of crude oil to recent events should be noted, remaining at levels in line with that foreseen at the beginning of the year. They have returned to lower levels than those reached after the recent attack on the largest oil well in Saudi Arabia, which demonstrates both that the geopolitical instability in the Middle East continues to be a source of risk and that there is spare capacity in the productive system at the global level to cope with unforeseen events.

CHART 22. OIL PRICE TRENDS AND PROSPECTS



Source: Datastream.

2.2.2.7 Long-term trends

Finally, mention should be made of two long-term trends, which, if continued, may accentuate the impact of potential negative risks: population ageing and climate change. With regard to the ageing of the population, AIReF (Opinion 1/2019) has studied the impact on the sustainability of the Social Security system. There is no certainty about the possible effect of future demographic changes on labour productivity. With respect to climate change, even in the case of compliance with the Paris Agreement, the increase in the global mean surface temperature between 2030 and 2052 would be limited to 1.5 degrees, according to the Intergovernmental Panel on Climate Change of

the United Nations. However, the geographical distribution of this increase in temperature is uneven, with a greater concentration expected, for example, in southern Europe. The macro-fiscal impact of this phenomenon through the effect on the growth potential and the increased frequency of extreme climatic events in the case of Spain has still not been studied enough.

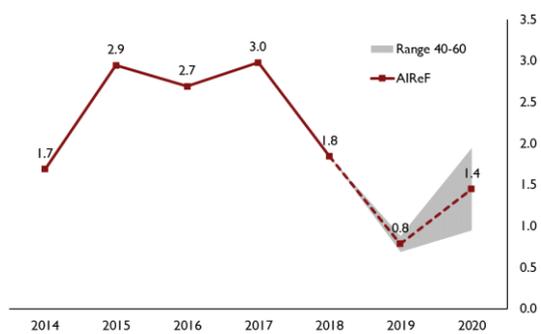
2.2.3 Demand components

Private consumption will grow at a rate of 0.8% and 1.4% for 2019 and 2020 respectively, according to AIReF's forecasts, remaining as the main contributor to growth. chart 23 presents the projection of private consumption of AIReF's inertial scenario. It is somewhat below the projections of major national and international institutions for 2019 and in line for 2020. Private consumption continues to be the main contributor to growth in the economy, while its contribution in the forecasting period will be lower than that of the recovery phase of 2014-2018.

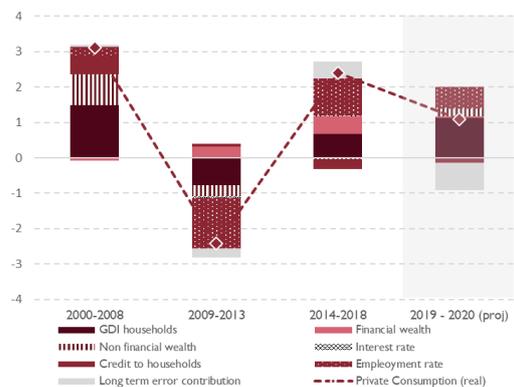
CHART 23. PRIVATE CONSUMPTION

① The contribution to GDP is expected to be around 0.6 p.p., much lower than in the time of recovery...

② ...supported by disposable income, while the positive contribution of employment loses weight



Source: INE and AIReF



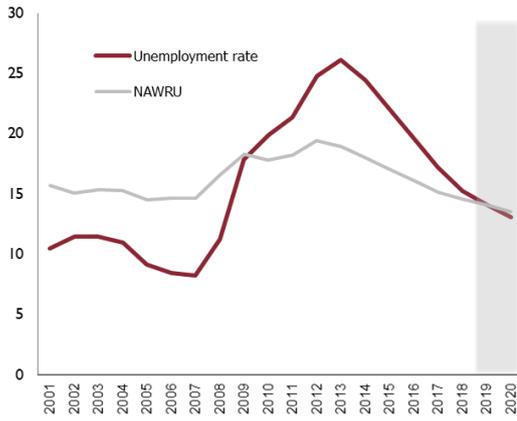
Source: INE, Banco de España and AIReF.

The good behaviour of the labour market, the expected increase in wages along with the improvement in the financial situation of families are the main supporters of private consumption. The private consumption forecasts and, in particular, the recovery of momentum in 2020, are backed by their main determinants, notably the good behaviour of the labour market and the increase in wages in a context characterised by the persistence of favourable financial conditions and the improvement in the financial situation of households. In any case the relevance that the error correction term presents for the two years predicted should be noted, with a particularly negative contribution in 2019 that is explained by the deviation of the data observed in the first two quarters with respect to their bases as a result of the statistical revision discussed above.

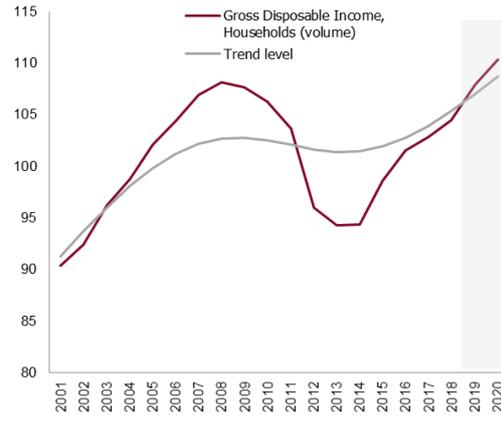
CHART 24. SUPPORTS TO PRIVATE CONSUMPTION LABOUR MARKET

① It is expected that the unemployment rate will continue to decline in the medium term, albeit at a slower pace, partially influenced by the dynamics of the active population

② Gross Disposable Income increases, becoming the largest lever for consumption



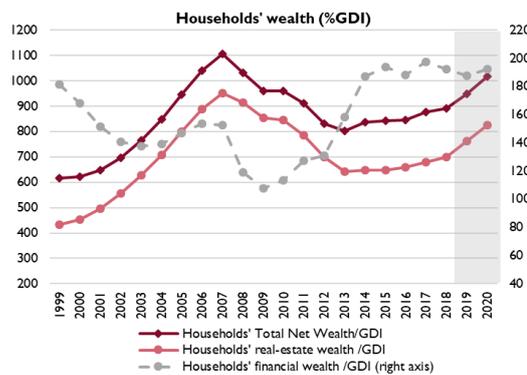
Source: INE and AIReF



Source: INE and AIReF

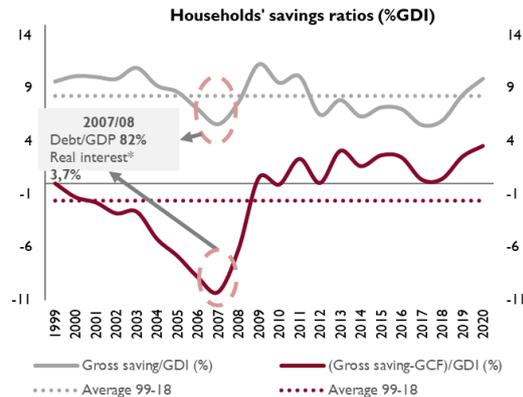
CHART 25. SUPPORTS TO PRIVATE CONSUMPTION WEALTH AND CREDIT

1 Households appear somewhat less exposed to the real estate sector, but with greater balance in their wealth



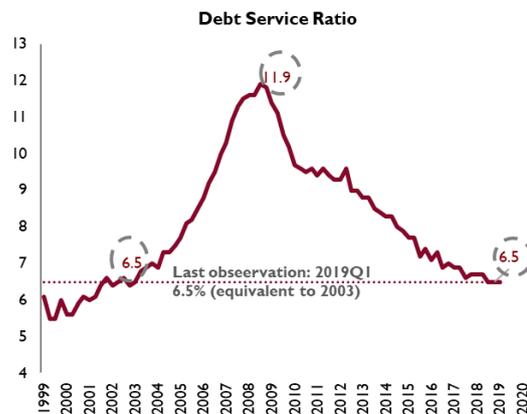
Source: INE, Banco de España and AIRf.

2 Savings rate increases, but the different context leaves space for the consumer...



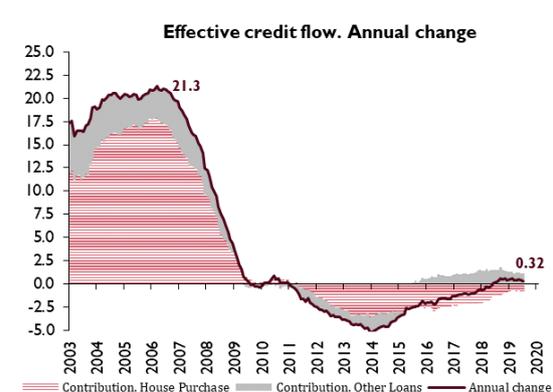
Source: INE, Banco de España and AIRf.

3 The percentage of disposable income devoted to payment of principal and interest on debt has reduced by almost 45% since 2008



Source: Bank for International Settlements.

4 Credit continues to recover very slowly with positive growth rates but very close to zero



Source: Banco de España.

The evolution of public consumption, framed in a context of relative stability, is growing at rates close to those of GDP (2.0% for 2019 and 1.9% for 2020).

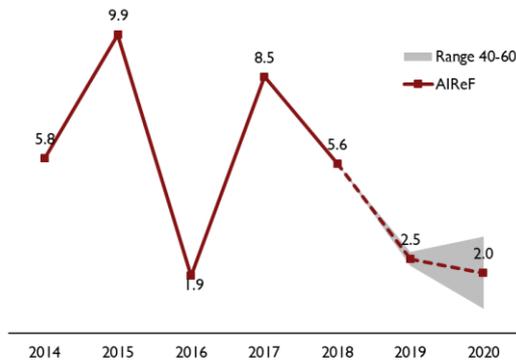
Public consumption is estimated iteratively from a double perspective, in the first place, a top-down macroeconomic forecast as an inertial reference, which pointed to higher expenditure on public consumption which, however, was adjusted downward according to the other bottom-up perspective, consisting of disaggregated estimates of the main government expenditure items of different agents and units that integrate the sub-sectors of the PAs.

Productive investment is expected to slow in 2019 and 2020 according to AIRf's forecasts (growing to 2.5% and 2.0%, respectively) in a context of

international uncertainty and progressive deterioration of the financing capacity of non-financial corporations. chart 26 projects a slower evolution of gross productive capital formation (i.e., equipment, machinery and weapons systems plus cultivated biological resources). This is marked by a context of international uncertainty, as well as by the progressive deterioration of the financing capacity of non-financial corporations (which has manifested itself since the beginning of 2018). However, the lower level of leverage of non-financial corporations supports a dynamic, although decelerated, evolution in line with what is foreseen for the overall economic activity in the medium term. In this context, it should be noted that the flows of foreign direct investment may decrease due to the context of uncertainty in international trade and as a result of Brexit. As with the forecasting model for private consumption, the short-term error correction vector presents a significant negative contribution. This deviation between the observed variable and its long-term relationships comes chiefly from the statistical revision.

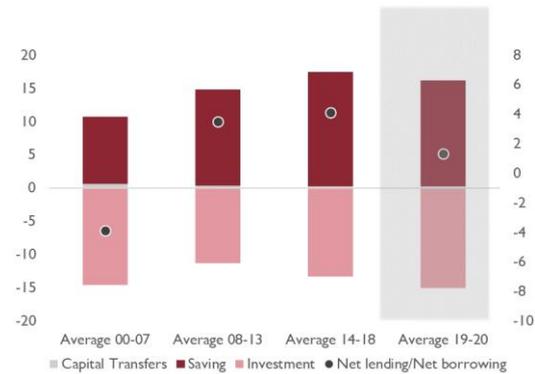
CHART 26. GROSS PRODUCTIVE CAPITAL FORMATION

1 Slower evolution in a context of international uncertainty...



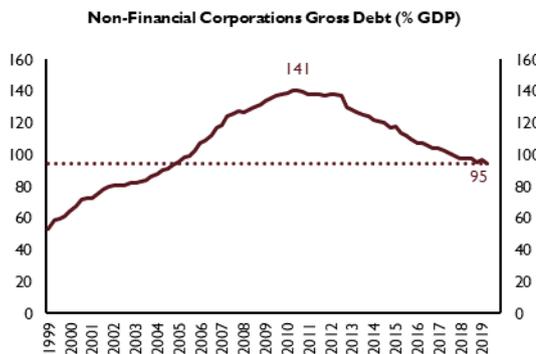
Source: AIReF.

2 ... and gradual deterioration of the financing capacity of non-financial corporations...



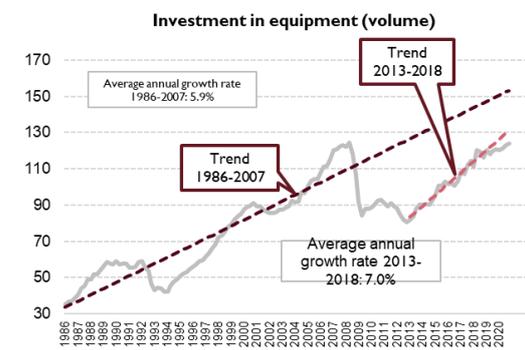
Source: INE and AIReF

3 ... although supported by the healthier financial position of non-financial corporations.



Source: Banco de España and AIReF.

4 Forecasts grow below the 2013-2018 trend, although this is higher than that of the 1986-2007 period.



Source: INE and AIReF

In the case of the aggregate composed of gross formation in construction and intellectual property, a growth rate of 2.7% in 2019 and 3.4% in 2020 is expected. This aggregate is supported by the expected evolution of the unemployment rate, as well as the price of housing. Household recourse to credit also operates in this way, which is expected to maintain behaviour of progressive recovery (see chart 27).

The gradual slowdown both in the pace of reduction in the unemployment rate and growth in house prices observed half-way through 2019, as well as the stability in the variation of credit to households for house purchases, determine a path less favourable than expected at the beginning of the year.

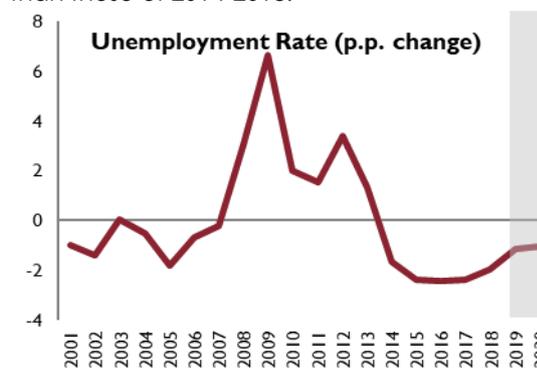
CHART 27. GROSS FORMATION IN CONSTRUCTION AND INTELLECTUAL PROPERTY

① Investment in construction and intellectual property is expected to progress in 2020 at a higher rate than shown in 2019.



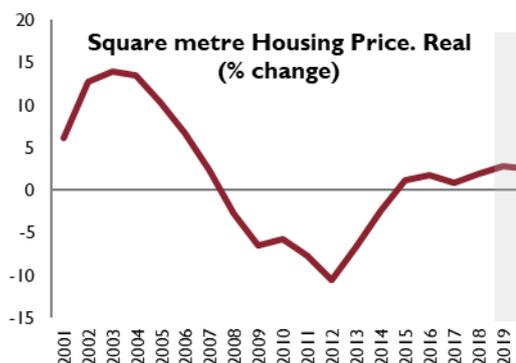
Source: AIRcF.

② One of the main supports is expected to come from the expected reduction in the unemployment rate, although at rates lower than those of 2014-2018.



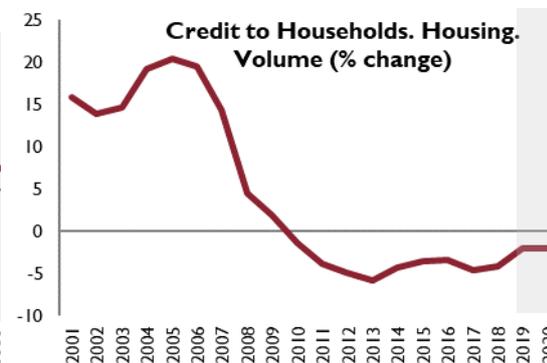
Source: INE and AIRcF

③ The price per square metre of housing is expected to grow at rates similar to those for 2018 and early 2019...



Source: Ministry of development.

④ ... while the credit to households for house purchases, in terms of volume, is expected to decrease at rates lower than those observed from 2010.



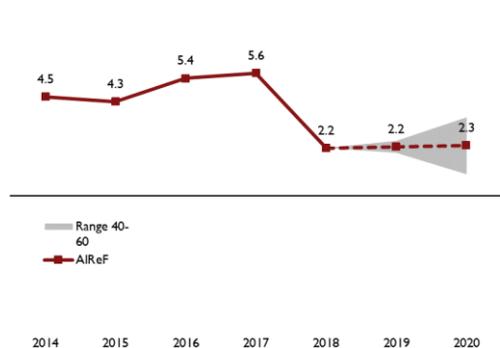
Source: Banco de España and AIRcF.

Finally, for the external sector a positive contribution to growth is expected, around 0.7% which will fall to a minimum contribution of 0.1% in 2020. AIRcF's baseline forecasts put the growth of exports at 2.2% in 2019 and 2.3% in 2020, generally aligned with the forecasts of the main institutions, although there is a lot of disparity with respect to this aggregate. Global trade in goods appears to be the main driver of recovery in 2020, with slight positive contributions from both relative unit labour costs and the effective exchange rate. In turn, it is expected that imports, after a very moderate growth in 2019 of 0.2% in year-on-year terms, will recover in 2020 due to the momentum of domestic demand and the recovery of world trade in goods, reaching an annual growth of 2.1%, returning to contributions from the external sector to more moderate growth.

However, the components of external demand are the most vulnerable to the risks identified in the previous section, especially to a resurgence of tensions and the slowdown in GDP growth in the euro area.

CHART 28. EXPORTS

❶ Exports of goods and services are expected to maintain a steady path



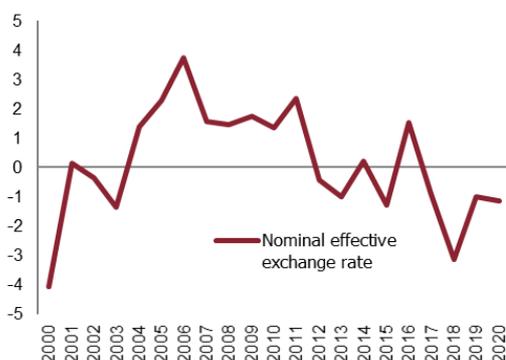
Source: AIReF.

❷ Global trade in goods will have a moderate growth in 2019 and will rebound in 2020



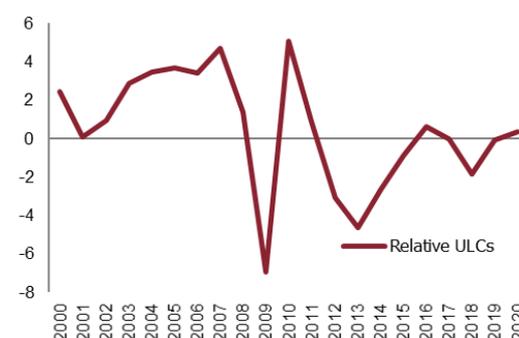
Source: CPB Netherlands and AIReF.

❸ Nominal effective exchange rate will continue showing gains in competitiveness



Source: Banco de España and AIReF.

❹ Relative unit labour costs will maintain almost zero growth



Source: Banco de España and AIReF.

2.2.4 Labour market

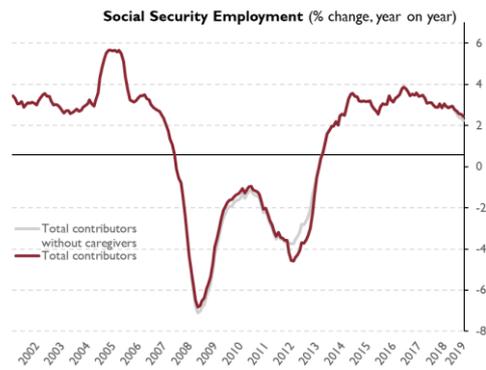
During 2019 the labour market has been characterised by a positive behaviour, with high rates of employment growth that have been slowing down in recent months and that will continue in the short term, according to various leading indicators. So far, in 2019 job creation has shown sustained growth comparable to that of most of the recovery phase. However, since the beginning of the year, it has been showing signs of a gradual slowdown,

consistent with lower economic growth. In particular, the annual growth rate of affiliation to Social Security has been slowing since the beginning of 2019, going from a year-on-year rate of 2.93% in January to 2.44% in September. If the effect of the incorporation of non-professional carers, whose contributions are paid by the Central State Administration (AGE), was discounted, the annual growth rate would have stood at 2.22% in September.

This slowdown is also observed in secondary indicators of the situation of the labour market, such as the voluntary withdrawals from the Social Security which are a slightly leading cyclical indicator of employment (consistent with a theoretical model of the labour market).

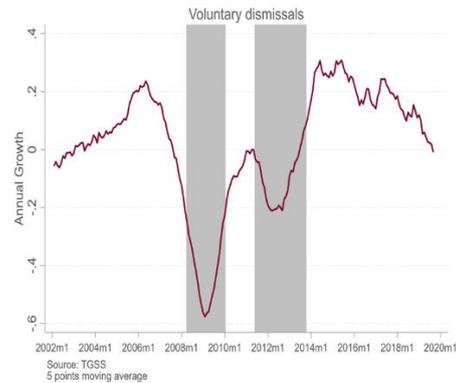
CHART 29. LABOUR MARKET

1 Job creation, in terms of affiliation to Social Security, is slowing down.



Source: Social Security.

2 This is confirmed by the leading indicators of the employment situation and voluntary withdrawals.



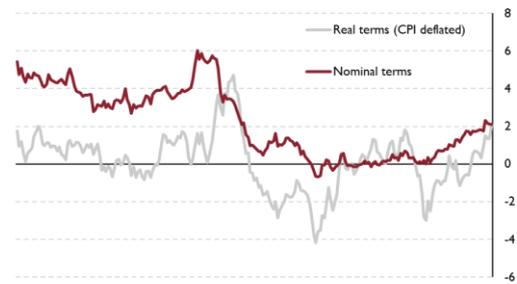
Source: Social Security.

3 Wage pressures have moderated in recent months...



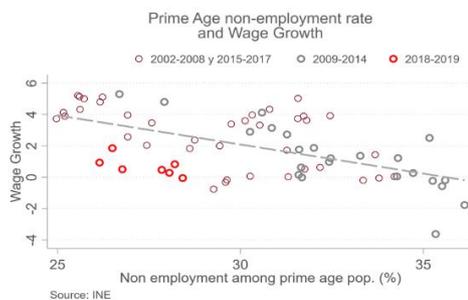
Source: Social Security; Ministry of Labour, Migration and Social Security, AEAT (State Tax Administration Agency) and Ministry of Economy and Business. Moving average of order 5.

4 ...as shown by the common factor of wage growth (see RECUADRO 1)



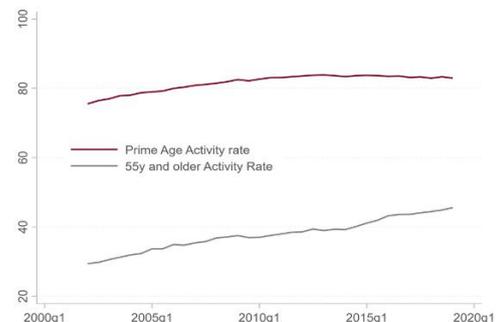
Source: AIReF processing.

5 Wage growth is lower than the long-term level compatible with the unemployed prime age population



Source: INE and Social Security.

6 Policy changes in pensions seem to influence the evolution of the activity rate.



Source: INE

Equivalent employment will grow at a rate of 2.2% in 2019 and 2% in 2020 according to AIR^eF's forecasts, in line with GDP growth estimated for the forecasting horizon, also driven by the stabilisation of the active population.

The evolution of wages, measured through the various available sources of information on the short-term wage situation, shows a tendency towards recovery, since the beginning of 2017, consistent with the improvement of the labour market. This recovery still appears to be ongoing, as shown in the Phillips Curve for the prime age population (conventionally population between 20 and 55 years), which reflects that wage growth is still below the historical trend for the level of employment among this group. However, the most recent data show a relative easing of wage growth in recent months, in line with the slowdown in job creation. The analysis of the wage situation by estimating a factor common to the evolution of wages contained in the different statistical sources (see RECUADRO 1), confirms this stagnation in the wage increase that is more difficult to detect in the various sources.

AIR^eF's baseline forecast foresees an increase in the real compensation per employee of 1.9% in 2019 and 2020, in line with recent developments in the labour market, in the context of a moderation of inflation and wage growth.

At the moment, the effects of the increase in the minimum wage by over 22% in 2019 have not been sufficiently significant so as to detect a relevant impact on aggregate employment data. The absence of micro data, requested by the Ministry of Labour and, for now, not available, has not allowed an exhaustive analysis of the potential effects on segments of the population most exposed to the minimum wage. Despite this, from the analysis of aggregate data, it is evident how the loss of dynamism of the labour market has occurred in all sectors and Regions, or that the evolution of affiliation to the Regime for Self-employed Workers, not directly affected by the rise in the minimum wage, shows a worse evolution than that of the General Regime. All these indications point to the fact that the main reason for the slowdown in the growth of employment is cyclical and even demographic, with a gradual decline in the prime age population (conventionally, the population between 20 and 55 years) and, therefore, the activity rate.

The activity rate is expected to stabilise in the more immediate horizon mainly due to demographic factors. Primarily, as a result of the strong increase in the rate among the population over 55 years of age and weight of this group in the population as a whole. The activity rate is critically dependent on demographic factors, the contribution of the comparatively small cyclical component and even this being conditioned by the demographic component (mainly due to the interaction between unemployment benefits and retirement benefits). The recent trend in the activity rate is characterised

by a stabilisation at a value above 80% for the prime age population and strong growth in the activity rate among persons over the age of 55 years, driven by the reforms in the pension legislation. Therefore, the information provided by demographic forecasts - practically predetermined in the short-term, is very useful to help predict the behaviour of the activity rate. The increase in the weight of those older than 55 years in the composition of the Spanish population, along with the trend described above, explain the increase in the active population in the coming years.

RECUADRO 1.

Wage evolution factor:

The evolution of average wages is a critical element in the analysis of the labour market. The wage data recorded monthly by the Social Security for the calculation of the contribution base would be the most adequate source to measure wage evolution in the Spanish economy. Since these data are not published, analysts should try to use different imperfect indicators to analyse the wage dynamics in the labour market. The existence of different short-term indicators for the same underlying variable always involves the possibility that they sometimes offer different or even contradictory signals. A common solution to that problem is pulling a common factor to the different indicators, which combines information contained in each of them on the underlying phenomenon in the most efficient way possible.

AIReF has followed this approach to construct a wage evolution indicator from four of the most widely used series available for monitoring wage growth, such as the average contribution bases to Social Security, the average wages of large companies, published by the Tax Agency, compensation per employee, published by the INE and the evolution of wage growth in agreed in collective agreements, published by the Ministry of Labour.

These indicators are sufficiently similar as to think that their evolution depends on a same common factor, that we can identify with the growth of wages in general, but, at the same time, show enough differences so that the combination of the information contained in each one of them is not trivial.

Thus, they differ in frequency (compensation per employee is published quarterly, the other indicators are monthly), timeliness (each indicator has its own publication schedule) or completeness (compensation per employee is obtained from sample data, the other three indicators are from records, but every one of them leaves different groups out of their scope of coverage).

The technique applied for their combination is known as dynamic factor model, which consists in applying the dynamics of each of the series of a

common factor, which cannot be observed, that represents the true object of study: in this case we identify it with the behaviour of wages. Based on the model postulated for this common factor and the empirical behaviour of the indicators, it is possible to estimate this common factor through the application of the so-called Kalman Filter.

Thus, it is assumed that each of the indicators, i =(compensation per employee, average wages of large companies, collective agreement wages, contribution bases of Social Security), can be modelled by a linear relationship with the common factor of wages:

$$w_t^i = \lambda_i f_t + \varepsilon_t^i$$

Where:

ε_t^i represents the idiosyncratic component of the series i that follows an AR(2) process: $\varepsilon_t^i = \psi_1^i \varepsilon_{t-1}^i + \psi_2^i \varepsilon_{t-2}^i + \mu_t^i$.

f_t represents the common factor of wages that also follows a process AR(2): $f_t = \phi_1 f_{t-1} + \phi_2 f_{t-2} + \omega_t$.

2.3 Evaluation of the budgetary plan

2.3.1 Exogenous assumptions and risks

The basic assumptions underlying the macroeconomic scenario for 2019 and 2020 of the Draft Budgetary Plan are considered feasible. The scenario presents a few plausible assumptions, in line with those envisaged by the European Central Bank (ECB), and in line with those of other international agencies. With respect to the 2019-2022 Stability Programme Update, the external assumptions have been revised downward, in line with the deterioration of world economic growth and, in particular, the euro area countries, intensively affecting export markets in Spain. To the contrary, the Government's assumptions for the short and long-term interest rates pose a greater support to growth. Thus, the downward revision of interest rates is in accordance with the evolution of the forward curve, although the existence of a negative differential with respect to market expectations in the long-term rates should be noted. Expectations about the evolution of the price of oil are conservative, standing above the most recent forecasts of various international agencies, as well as crude oil quotes on the futures markets. Although during 2018 the price of crude oil showed an accelerated path linked to tensions in producer countries such as Venezuela and Iran and as a

result of the reduction of production in Canada and Libya, during 2019 it has behaved in a more stable manner.

The Government forecasts a slowdown in the growth of world GDP and in the euro area, in line with the main international agencies. Global activity continues to grow, although less strongly. The Government expects that world growth, excluding the euro area, will stand at 3.1% in 2019 and 3.4% in 2020, in line with the ECB's forecast. The downward revision corresponds with a variety of effects; i) the gradual slowdown of the cyclical momentum of advanced economies, ii) the slowdown of economic growth in China, in conjunction with trade tensions with the US, and iii) the low growth in emerging countries throughout 2019 - partly linked to the first two factors. The weakening of world trade will impact on the Spanish exports markets and the Government assumes that they will grow by 2.2% in 2019 and a 2.6% in 2019, with an intense downward revision compared with forecasts for April 2019, when it was expected that they would grow at rates of 2.6% and 3.2%, respectively.

In the first nine months of 2019 the price of the Brent barrel has remained, on average, at about 65 dollars per barrel, slowing since May. The futures and options markets expect prices will remain below the barrier of 60 dollars per barrel, both at the end of 2019 and throughout 2020. The expected drop in oil prices will have a slight impact in terms of cheaper imports, lower inflation and higher real disposable income.

In line with what has been observed in the secondary debt markets and with the evolution of the forward curve, the Government's assumptions regarding the performance of the values of long-term public debt have been revised downwards in relation to those contained in the SPU 2019-2022. However, the existence of a negative differential with respect to market expectations should be noted. Thus, for 2019 the document forecasts that the interest rates on debt at 10 years will stand, on average, at 0.4% and 0.3% in 2020, while the expectations in the futures market seem to indicate toward slightly higher rates, around 0.5% in 2020. In addition, both the Government and the ECB expect short-term interest rates will remain in negative terrain in the next two years, as a result of the monetary policy measures announced in September.

2.3.2 Ex-ante assessment of forecasts

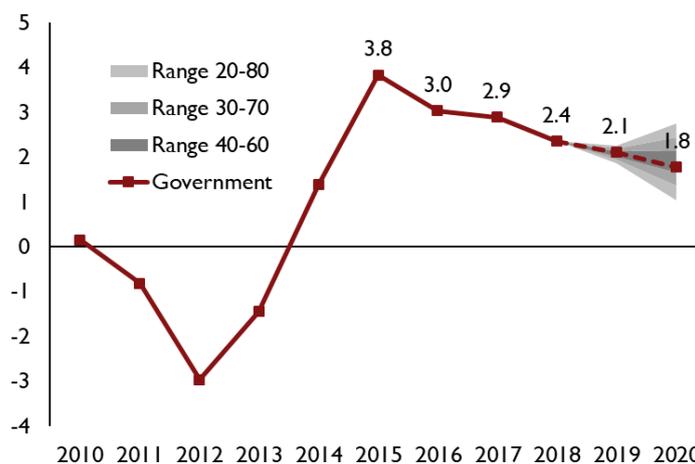
AIReF expects a sustained growth in the coming years in line with the maturation of the economic cycle, growing by 2.1% in 2019 and 1.9% in 2020. While the information provided by short-term economic indicators over the second quarter gave rise to a sign of reduction in growth expectations, during the third they have shown signs of relative stability. This implies that one would expect an average growth similar to that observed in the first half of 2019, with

quarter-on-quarter rates of close to 0.5%, and points to an annual rate of around 2.1%. These forecasts are placed in a context of global uncertainty and moderation of growth prospects for various countries in the euro area, an effect partially offset by the more expansionary tone of the ECB's monetary policy since September. In the absence of additional disruptions to economic growth and the external environment they would provide a growth rate of 1.9% for 2020.

The growth composition forecasted for 2019 and 2020 presented in the Budgetary Plan are considered to be plausible The forecasts of the Budgetary Plan are lower than the projections of the previous SPU from April, where a growth of 2.2% in 2019 and 1.9% in 2020 was expected. This is in line with the revision of the national accounts data, which reveals a greater contribution of external demand to aggregate growth than initially anticipated, the growth path is characterised by a progressively dominant contribution of domestic demand, and a positive contribution, although slow, of the external sector. For 2020 the Budgetary Plan incorporates a growth pattern in line with previous years, supported by domestic demand as the main driver and with a progressive maturation of the cycle.

The statistical revision of the national accounts aggregates means that some institutions and international agencies have not yet incorporated the new series in their forecasts, which makes it impossible to establish homogeneous comparisons.

CHART 30. REAL GDP FORECASTS (% VAR)

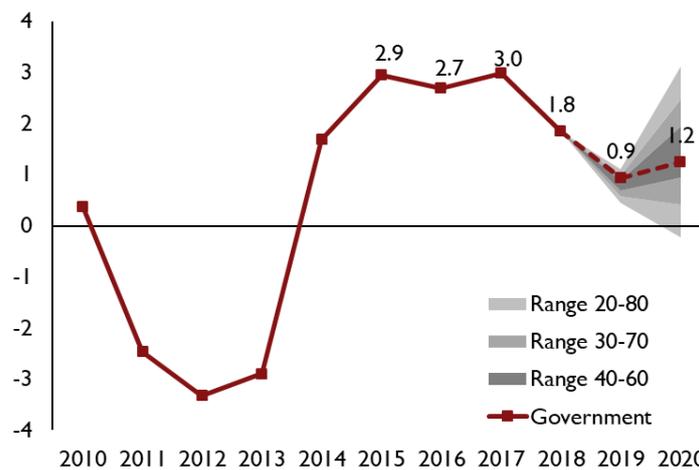


Source: Ministry of Economy and Business (dashed line) and AIR^eF's estimates

In the case of private consumption, a remarkable moderation of growth is expected. After the slackness of consumption in the first two quarters observed of 2019, the official outlook foresees a growth rate of private consumption of

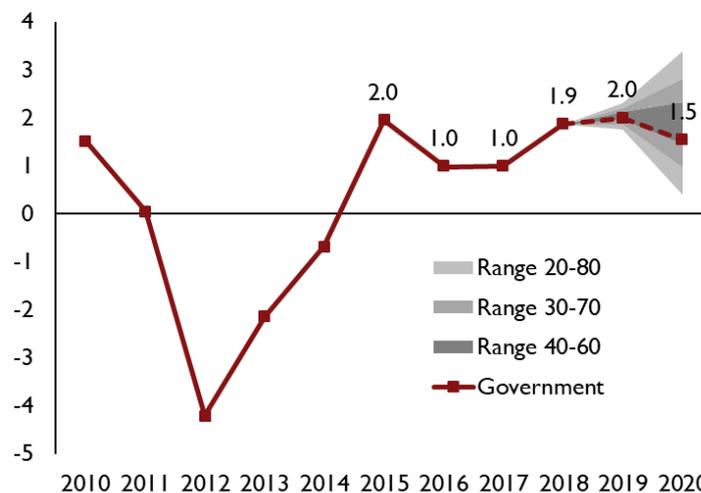
0.9% for the whole year, followed by a slight acceleration in 2020 up to 1.2%. The causes of this different behaviour in 2019 would first be determined by the slower pace of job creation associated with the slowdown of production and secondly by the evolution of the household saving rate. In this sense, the revision of the Non-financial Accounts of the Institutional Sectors shows a rising trend of the household saving rate. This implies that the increase in gross disposable income experienced over the past months will not be translated fully to the evolution of the aggregate. It is foreseeable that the savings rate will continue the evolution observed in 2019 in the future, which means that margin arises for households to increase their consumption in this way.

CHART 31. PRIVATE CONSUMPTION FORECASTS (% VAR VOLUME)



Source: Ministry of Economy and Business (dashed line) and AIReF's estimates

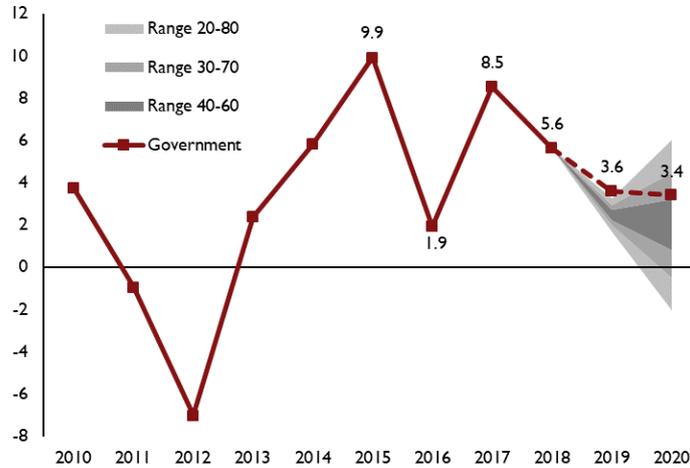
For 2019, the Draft Budgetary Plan revises the forecast of public consumption growth upwards to 2.0%, leaving its forecast for 2020 unchanged at 1.5%. Both figures are within AIReF's confidence interval, although at the lower limit of the 40-60 range.

CHART 32. PUBLIC CONSUMPTION FORECASTS (% VAR VOLUME)


Source: Ministry of Economy and Business (dashed line) and AIReF's estimates

Regarding capital formation, the official 2019 forecast has been revised downward with respect to the SPU, from 4.0% to 3.1%. In terms of productive investment, the Government envisages a 3.6% advance in 2019 and 3.4% in 2020. The favourable financial position of companies and the innovation of monetary policy that would move toward the maintenance of a context of low interest rates will determine its dynamism. Although the official forecasts for 2019 fall outside of the confidence interval provided by AIReF's models, the forecasts for 2020 fall within the 30-70 range of the confidence intervals, both estimates being optimistic. In any case, a reduction of its growth with respect to 2019 is forecasted, mainly due to the lower momentum of domestic demand.

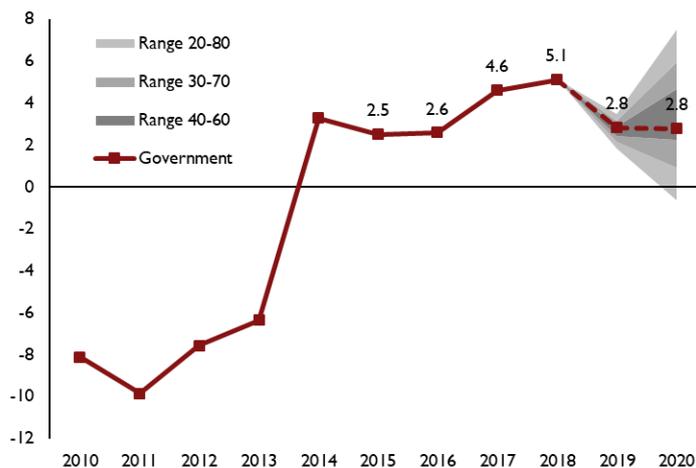
CHART 33. FORECASTS FOR INVESTMENT IN EQUIPMENT AND CULTIVATED ASSETS (% VAR VOLUME)



Source: Ministry of Economy and Business (dashed line) and AIReF's estimates

In the case of the aggregate formed by investment in construction and intellectual property the Government's prognosis revises the forecast for 2019 and 2020 downwards, from 4.2% and 3.3% initially forecasts to place the evolution of this aggregate on a steady path, like that expected by AIReF. The mortgage financing conditions and the reduction in the unemployment rate, although less than that observed in recent years, will continue to be decisive.

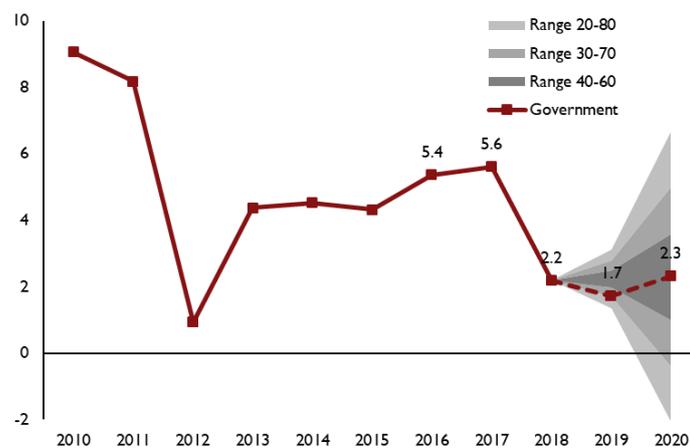
CHART 34. INVESTMENT IN CONSTRUCTION AND INTELLECTUAL PROPERTY FORECASTS (% VAR VOLUME)



Source: Ministry of Economy and Business (dashed line) and AIReF's estimates

Regarding exports of goods and services, its contribution to growth in 2019 and 2020 has been revised downward. Government figures put its progress at 2.3% for 2020, which falls in the central part of AIReF's confidence interval. This fact has been conditioned by the deterioration in expectations of world trade linked to trade tensions between the U.S. and the People's Republic of China, as well as to the growth of numerous countries in the euro area.

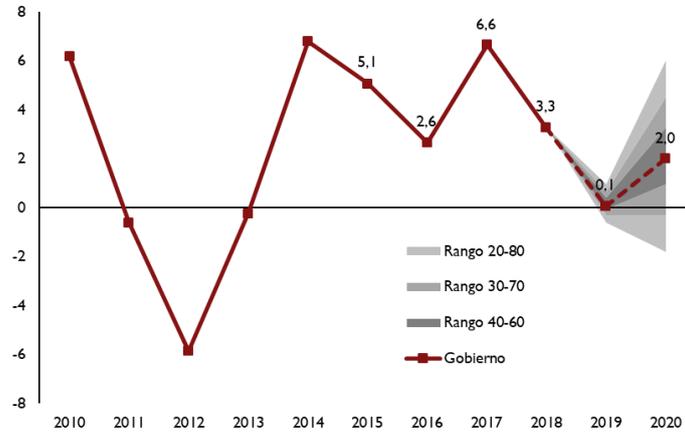
CHART 35. EXPORTS OF GOODS AND SERVICES FORECASTS (% VAR VOLUME)



Source: Ministry of Economy and Business (dashed line) and AIReF's estimates

As a result of the combination of the statistical revision and the deterioration of the short-term world trade situation - predominantly the latter factor- in 2019 imports see their prognosis reduced from 3.1% to 0.1%, while for 2020 they fall from the 2.8% expected in April to 2.0% today. This figure falls precisely in the middle of the intervals estimated by AIReF.

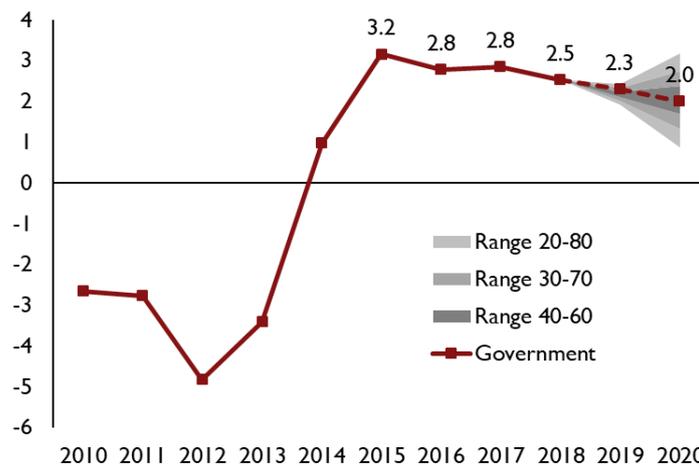
CHART 36. IMPORTS OF GOODS AND SERVICES FORECASTS (% VAR VOLUME)



Source: Ministry of Economy and Business (dashed line) and AIReF's estimates

Despite the slowdown in economic growth expected for 2019 and 2020, the employment forecast has been revised upwards by 0.2% for both years up to 2.3% in 2019 and 2% in 2020. Taking into account the forecast for GDP, this would mean recording a productivity around -0.2%. The rate of increase in employment falls in the middle of the interval of AIReF's models. In any case, the behaviour of employment, along with the advance of the active population would enable a reduction in the unemployment rate to around slightly less than 14% as envisaged by the Government.

CHART 37. EMPLOYMENT FORECASTS (% VAR. FTE)

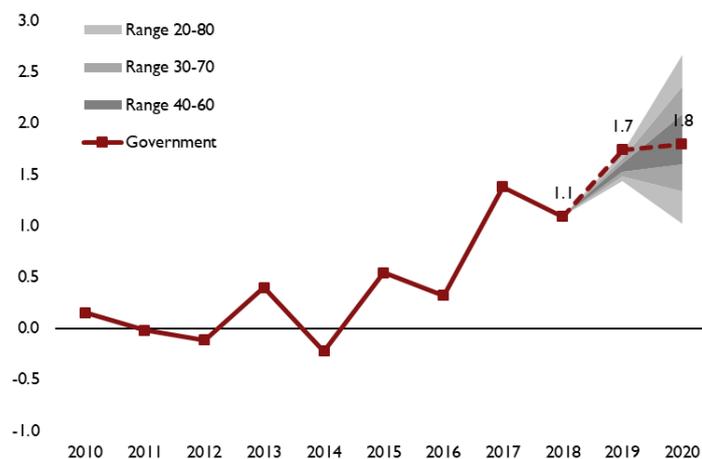


Source: Ministry of Economy and Business (dashed line) and AIReF's estimates

With regard to prices, a gradual convergence to the target reference level in the euro area is still expected. In line with revised national accounts data, the Government revises the GDP deflator upwards in 2019 and 2020, raising the

progress expected in both years by 0.1%. This evolution is plausible and similar to that obtained by AIReF's internal models. For its part, the prognosis for the private consumption deflator in 2020 (1.6%) is very close to the evolution of the GDP deflator. Considering the growth in volume and prices of GDP, these are translated into an advance of nominal GDP of around 3.6% for 2020, lower than expected for 2019, which stands at 3.9%.

CHART 38. GDP DEFLATOR FORECASTS (% VAR)



Source: Ministry of Economy and Business (dashed line) and AIReF's estimates

The official projection of wages remains on a stable path in both years of the forecasting horizon. Finally, the evolution of compensation per employee for 2020 is considered to be above that expected by AIReF, slightly above the growth of the general price level. This higher compensation growth will partially be due to the impact of the collective bargaining agreements signed and the proposed increase of the national minimum wage.

2.3.3 Ex-post bias analysis

2.3.3.1 Analysis methodology

National and European legislation requires that the official macroeconomic forecasts do not present significant biases in the last 4 years. At European level, regulations require that budgetary planning is carried out on the basis of macroeconomic projections that do not present significant biases at least during the past four years.⁶ At national

⁶ [Directive 2011/85/EU of the Council](#) of 8 November 2011 on the requirements applicable to the budgetary framework of the Member States.

level, the legislation is more demanding, since this requirement also extends to the budgetary forecasts.⁷ In addition, national legislation also requires AIReF to identify the existence of significant biases in the estimates of past years.⁸ This analysis should be included in each report on the macroeconomic forecasts.

It is considered that a bias is significant if the Government's forecasting error is large, unjustified and systematic. The methodology developed by AIReF compares the Government's forecasting errors (G) with those made by the Consensus contained in the FUNCAS panel of forecasts (C) nearest in time.⁹ For each variable, the forecasting error is defined as its forecast minus the value observed (R) in the first publication of the Annual National Accounts. An error is regarded as large if it falls outside of the panel's distribution of forecasts. In addition, a large error is considered unjustified when the Government's absolute forecasting error is greater than that of the Consensus (or, if $|G-R| > |C-R|$). The presence of large and unjustified errors for four years implies the existence of a serious bias in the estimates.¹⁰

This section discusses the existence of significant biases in the autumn macroeconomic forecasts for the 2015-2018 period. The last four years for which there is a first publication of the closing national accounts data at annual frequency correspond to the period 2015-2018. Therefore, in order to calculate the forecast errors the information contained in the macroeconomic forecasts made in autumn of the period 2014-2018 is used (i.e. made between 2015 and 2018 in the case of the estimates for the current year and between 2014 and 2017 in the case of the forecasts for the following year). However, AIReF's analysis is not limited to the past four years, but within the possibilities given by the information available, is extended to the beginning of the decade. The forecasts for real GDP growth and its main items on the demand side, as well as job creation and the evolution of the unemployment rate are studied.

⁷ [Royal Decree 337/2018](#), of 25 May, on the requirements applicable to the macroeconomic and budgetary forecasts.

⁸ Article 14.4 of the [Organic Law creating AIReF](#).

⁹ The Consensus for each variable is defined as the arithmetic mean of the forecasts of analysts in the panel. Banco de España, the Organization for Economic Cooperation and Development, European Commission and International Monetary Fund are excluded from the Consensus due to time lags in the formulation of their macroeconomic forecasts.

¹⁰ A detailed description of the methodology can be found in the [Report on the Macroeconomic Forecasts of the Draft General Government Budget 2015](#)

2.3.3.2 Evaluation of the forecast for the 2015-2018 period

In the 2015-2018 period a little over half of the forecasting errors were large. Over the past four years, 56% of the forecasting errors for the current year and 66% for the following year fell outside the interquartile range of the FUNCAS panel. The distribution of large errors is concentrated in the variables of GDP, investment, imports and unemployment rate in the case of the estimates for the current year and in private consumption, unemployment rate, exports and public consumption when observing the estimates for the following year. These figures are similar to those observed in the period 2014-2017 but quite different from the historical pattern observed between 2002 and 2014, where large errors in the current year were concentrated in the variables of investment, imports, public consumption and exports.

However, two-thirds of the large errors were justified ex-post, and no significant biases were identified in any of the variables analysed. In the past four years, only 25% of the forecasting errors for the current year and 41% for the following year were not justified by the observed data. This implies that, as for the 2014-2017 period, for the 2015-2018 period no important biases were identified in any variable. However, there are some particular cases that deserve continuous monitoring. In the case of the estimates of imports for the current year and exports for the following year unjustified errors are identified consecutively for the past three years. In addition, in the case of public consumption, after the improvement in forecasting accuracy observed in 2017, an unjustified error was once again observed in the forecast for the following year in 2018. In aggregate terms, the forecasting for the 2015-2018 period implies a relative improvement compared to the historical performance (i.e. average 2002-2014) for the current year (i.e. unjustified errors are reduced from 42% to 25%) and is in line with what has been observed in the forecasting errors for the following year.

2.3.3.3 Monitoring of recommendations

The regulations require that measures be taken and published in the case of identifying significant biases. At both national and European level, regulations require that the Government carries out an ex-post evaluation at least once a year. At the national level, legally the Government is also required to publish this assessment. If significant biases are identified, steps must be taken to correct them and avoid them in the future. In addition, such measures must be published.

In October 2017, AIR^eF identified a significant bias in the public consumption forecasts and recommended that the Government take measures in that

regard. In its report on the macroeconomic forecasts of the Draft Budgetary Plan 2018, of 16 October 2016, AIReF identified a significant bias in the public consumption forecasts for the following year, observing large and unjustified errors consecutively between 2013 and 2016. Therefore, it was recommended that the Government take corrective measures and publish them.¹¹

Although no significant biases have been identified since, AIReF is still waiting for the Government to publish the measures to improve their forecasting tools.

Since the bias identified in 2013-2016, AIReF's analysis has not identified any further presence of significant biases in any variable, both in the forecasts made in spring and in autumn. However, AIReF is still waiting for the Government to publish the methodological improvements, to which it referred in its response to AIReF's recommendation of 4 May 2018.¹²

TABLE 1. LARGE AND UNJUSTIFIED ERRORS

	DBP	2013	2014	2015	2016	2017	2018	2019
GDP	T	NO	NO	NO	NO	YES	NO	NO
	T+1	YES	NO	NO	NO	NO	YES	-
Private Consumption	T	YES	NO	NO	NO	NO	NO	NO
	T+1	YES	NO	NO	NO	YES	YES	-
Public Consumption	T	NO	NO	NO	YES	NO	YES	NO
	T+1	YES	YES	YES	YES	NO	YES	-
Investment	T	YES	NO	NO	NO	YES	NO	NO
	T+1	YES	NO	NO	NO	NO	YES	-
Exports	T	YES	NO	YES	NO	NO	NO	NO
	T+1	YES	NO	NO	YES	YES	YES	-
Imports	T	YES	NO	YES	NO	YES	YES	YES
	T+1	NO	NO	NO	NO	YES	NO	-
Employment	T	YES	NO	NO	NO	NO	NO	NO
	T+1	YES	NO	YES	NO	NO	NO	-
Unemployment	T	NO	NO	YES	NO	NO	NO	YES
	T+1	YES	NO	NO	NO	NO	YES	-

Source: Based on the INE and the *Ministry of Economy and Business*

¹¹ [Report on the Macroeconomic Forecasts of the Draft Budgetary Plan.](#)

¹² [Response of the Ministry of Industry, 4 May 2018](#)

3 ANALYSIS OF THE 2020 BUDGETARY PLAN

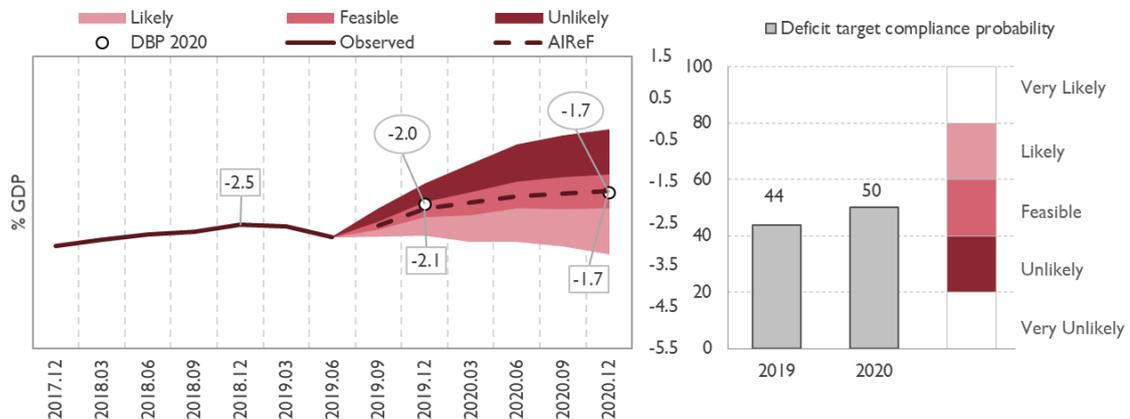
AIReF estimated a deficit for 2020 of 1.7% GDP in line with that included in the Budgetary Plan. This result would imply a reduction in the deficit of 0.8% in the 2019-2020 period in line with AIReF's baseline scenario, although there are differences in the distribution of the correction throughout the period.

TABLE 2. NET LENDING/BORROWING AND ADJUSTMENT PATH (%GDP)

Lending (+) Borrowing (-) as % GDP	2018	Government forecast		AIReF's baseline scenario	
		2019 2nd EC Notification	2020 Budgetary Plan	2019	2020
Central Government (CG)	-1.3	-0.8	(.)	-0.7	-0.6
Social Security Funds (SSF)	-1.4	-1.4	(.)	-1.3	-1.3
Regions	-0.3	-0.3	(.)	-0.5	-0.2
Local Governments (LGs)	0.5	0.4	(.)	0.4	0.4
General Government (GG)	-2.5	-2.0	-1.7	-2.1	-1.7
Non-recurrent operations	0.3	0.2	0.1	0.5	0.2
GG without non-recurrent operations	-2.2	-1.8	-1.6	-1.6	-1.5

(.) Not available

AIReF considers the Government's path for the 2019-2020 period to be feasible, while lowering the probability of achieving the forecasts for 2019 with respect to previous pronouncements. AIReF revises its deficit forecast for the PAs for 2019 upwards by 0.1% of GDP. In this way, AIReF's baseline scenario expects to close the year with a deficit of 2.1% GDP, raising the forecasts of the report on expected compliance with the targets, published in July, which pointed to 2% GDP.

CHART 39. NET LENDING/BORROWING 2019-2020 GENERAL GOVERNMENT (% GDP)


Like the Budgetary Plan, AIReF's estimate assumes a “no-policy-change” scenario. As a result, this figure is not directly comparable with that of the report on the SPU published in May, that included measures for an amount of around 0.5% GDP. However, this “no-policy-change” scenario includes a revaluation of pensions with the CPI, a rise of public employees' salaries according to the agreement with the unions and the implementation of some of the recommendations arising from the Spending Review announced last April in the 2019-2022 SPU. In connection with these expected savings, both in terms of expenditure on pharmacy costs and hiring incentives, it should be noted that AIReF considers the Government's quantification of the effects of these recommendations to be tight, while it has doubts about the final impact, which would depend on the speed with which the necessary procedural and policy changes can get off the ground. In addition, in its annexes the Budgetary Plan includes a broad list of measures already in force and, therefore, incorporated into AIReF's baseline scenario.

3.1 Closing forecasts for 2019

AIReF estimates that the PAs will close 2019 with a deficit of 2.1% GDP. In the report on expected compliance with the targets, published in July, AIReF placed its baseline deficit scenario around 2% GDP, slightly below the 2.1% estimated in the reports on the initial budgets and on the SPU. In this report, AIReF updates its closing forecast by 0.1% GDP to incorporate the statistical revision of the national accounts, the new macroeconomic scenario and available information of the PAs which, as a whole, have led to an increase of both revenue and expenditure, although to a greater extent for the latter.

AIReF considers achieving the 2% notified by the Government to be feasible but difficult. As has been indicated in previous reports, it is highly unlikely to

achieve the budgetary stability target approved in July 2017, of 1.3% GDP, and the Government stated this on the occasion of the deficit notifications to the European Union. In this sense, the second notification, sent on 30 September, maintains the closing forecast for the GG at 2% GDP, to which AIReF has assigned a probability of 44%, as shown in the figure above. This notification presents changes in the distribution by sub-sectors in relation to the first notification in April. The Government expects the 0.2% GDP reduction of the deficit in the CG to offset the deterioration of the balance of the territorial administrations, the greater deficit in the Regions and the lower surplus of the LGs.

TABLE 3. BUDGETARY STABILITY TARGETS AND CLOSING FORECASTS (%GDP)

Lending (+) Borrowing (-) as % GDP	2016	2017	2018		2019			
			CM Agreement July 2017	Close	CM Agreement July 2017	1st EC Notific.	2nd EC Notific.	AIReF
Central Government	-2.6	-1.9	-0.7	-1.3	-0.3	-1.0	-0.8	-0.7
Social Security Funds	-1.6	-1.5	-1.1	-1.4	-0.9	-1.4	-1.4	-1.3
Regions and LGs	-0.3	0.3	-0.4	0.2	-0.1	0.4	0.1	-0.1
Regions	-0.9	-0.3	-0.4	-0.3	-0.1	-0.1	-0.3	-0.5
Local Governments	0.6	0.6	0.0	0.5	0.0	0.5	0.4	0.4
General Government	-4.5	-3.1	-2.2	-2.5	-1.3	-2.0	-2.0	-2.1

The revision of the PAs accounts alters the starting point for the estimates for 2019. In 2018 the deficit increased by 513M€, remaining around 2.5% GDP (from 2.48% to 2.54%), while it fell from 2014 to 2017, with the most significant revision being that of 2016, 2,043M€. In 2018, revenue increased by 1,464M€ and expenditure increased by 1,977M€. For 2019, the net effect of revisions results in a slightly negative balance over the deficit. These changes are explained by both changes in the methodology of some headings of the statistical revision and the incorporation of more definitive information on the end of the accounting period learned between the publication of the preview (April) and provisional figures (September).

The changes in the macroeconomic scenario, together with the statistical revision of its variables, also have an impact on the estimates for 2019. On the one hand, the new macroeconomic scenario implies a lower collection, assuming a deterioration of the deficit forecast by less than 0.1% GDP. On the other hand, the statistical revision has reduced GDP in nominal terms for the entire series. In addition, in 2019 the nominal growth forecast is slightly lower. As a result, there is a denominator effect that raises the weight of revenue and expenditure over GDP by around 0.3%. However, the impact of this denominator effect on the deficit figure is limited.

AIReF's forecasts incorporate new information published since July, as well as those sent by the different administrations. Since AIReF's last report in July, along with the statistical revision, the public administrations' accounts for the second quarter of 2019 has been published. Furthermore, national accounts data for July of the CG, SSF and Regions, as well as those of the State for August and the cash collection of the AEAT for August, have also been published. The definitive financing that the State will pay the Regions in 2019 through the financing system has also been published. Although the changes with a positive and negative effect on the deficit tend to be offset, the net result is a deterioration of the deficit by less than 0.1% GDP.

TABLE 4. AIREF FORECASTS 2019 (%GDP)

GENERAL GOVERNMENT	2014	2015	2016	2017	2018		2019	
					Forward (April)	Provisional (Sept.)	Report Jul-19	Lines 20 Oct-19
A. GENERAL GOVERNMENT REVENUE	39.2	38.7	38.1	38.2	38.9	39.2	39.1	39.5
1. Total taxes	22.1	22.3	22.0	22.2	22.9	22.8	22.9	22.8
1.1. Taxes on production and imports	11.5	11.7	11.6	11.6	11.7	11.7	11.8	11.7
1.2. Current taxes on income and wealth	10.1	9.9	9.9	10.1	10.7	10.6	10.7	10.7
1.3. Taxes on capital	0.5	0.6	0.6	0.5	0.5	0.5	0.4	0.4
2. Social security contributions	12.5	12.2	12.2	12.3	12.4	12.4	12.8	12.8
3. Property income and other revenues	4.6	4.2	3.9	3.7	3.6	4.0	3.4	3.8
B. GENERAL GOVERNMENT EXPENDITURE	45.1	43.9	42.4	41.2	41.3	41.7	41.1	41.6
1. Compensation of employees	11.1	11.1	10.9	10.6	10.5	10.6	10.6	10.7
2. Intermediate consumption	5.4	5.4	5.2	5.1	5.0	5.1	5.0	5.1
3. Social transfers in kind	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.6
4. Social transfers in cash	16.5	15.8	15.6	15.3	15.3	15.4	15.6	15.7
5. Interest	3.4	3.0	2.8	2.5	2.5	2.4	2.3	2.3
6. Gross capital formation	2.2	2.5	2.0	2.0	2.1	2.1	2.0	2.0
7. Subsidies and other expenditure items	3.7	3.4	3.4	3.1	3.4	3.4	3.1	3.2
Net lending (+) / Net borrowing (-)	-5.9	-5.2	-4.3	-3.0	-2.5	-2.5	-2.0	-2.1

With respect to the July report, revenue has increased its weight over GDP by 0.4% due to the statistical revision, which is partially offset by the deterioration of the macroeconomic scenario. Almost 0.3% of the variation in the revision of GDP is due to the effect denominator. In addition, the methodological review of the accounts of the PAs would explain a further 0.1%. These two effects are partially offset by the reduction in the collection forecasts for special taxes, VAT and, to a lesser extent, personal income tax (PIT). This decline in collection is explained by the most recent collection data that were lower than initially expected, as well as by the revision of the macroeconomic scenario which would affect the forecasts in the last quarter of the year. On the contrary, the forecast for other taxes on production has been increased according to the latest collection data.

Expenditure has increased its weight over GDP by 0.5% due both to the statistical revision and the latest execution data. As in revenue, the revision of GDP also explains 0.3% of the increase in the weight of expenditure. On the

other hand, the revision of the accounts of the PAs, both due to updating the closing data and due to methodological changes, the starting point is raised by a little less than 0.2%. Finally, the incorporation of the latest execution data has a net effect of increasing expenditure less than 0.1% GDP. The behaviour by heading is uneven depending on the impact of the different factors, these being the main changes in the estimates compared to the previous report:

- Increase of public consumption, mainly by updating the closing data for 2018 in the territorial administrations, the statistical revision and, to a lesser extent, the convocation of the general elections
- Decline in interest expenditure due to the statistical revision and the recent evolution of interest rates
- Reduction of capital transfers due the absence of payment requests on tax credits due to the administration
- In the rest of expenditure increased gross capital formation due the methodological changes, as well as other minor revisions, should be noted.

3.2 Analysis of the GG budgetary scenario for 2020

AIR^eF estimates a deficit for 2020 of 1.7% GDP in line with that included in the Budgetary Plan. This implies a reduction in the deficit of 0.4% GDP compared to 2019, of which 0.3% correspond to a reduction of the non-recurring items in 2020 compared to 2019. The rest of the reduction is explained by the cyclical evolution of revenue and expenditure and, with a smaller impact, the saving measures incorporated in the Budgetary Plan.

The non-recurring items are reduced by 0.3% GDP in 2020 compared to 2019. The 2019 deficit includes 0.5% of non-recurring items. Some of these items are not reproduced in 2020, such as the impact of the court rulings on corporate income tax and on the exemption of maternity benefits from personal income tax, the temporary suspension of tax on the value of electricity production and the return of the non-recurrent revenue for corporate income tax that occurred in 2018. On the other hand, lower payments for the Asset Protection Schemes (APS) are also estimated.

The impact of expenditure on natural disasters included in Royal Decree - Law 11/2019 is incorporated into AIR^eF's estimates. This expenditure was not referred to in the July report, as it is estimated that it will have a greater impact in 2020 than in 2019. The Royal Decree - Law contains CG expenditure in the amount of 774M€. Of this amount, 540 M€ will be destined to co-finance 50% of expenditure incurred by single-province LGs and Regions, so the total impact on the public accounts would be increased to 1,314M€. To the extent that the work to ameliorate the damage have already started in 2019, but are

expected to continue in 2020, AIReF has made a provisional allocation in both years according to the information received from the various administrations.

TABLE 5. NON-RECURRING ITEMS 2019 AND 2020 (%GDP)

GENERAL GOVERNMENT	2017	2018	2019	2020
Deficit (%GDP)	-3.0	-2.5	-2.2	-1.7
Toll motorways		1,800	120	0
Tax credits payable	512	1,073	0	
APS Payments	797	1,849	1,793	1,267
Financial aid	509	70		
Ruling on Corporate Income Tax			702	
Maternity rebate		622	885	
Suspension of tax on the value of electricity			750	
Non-recurrent revenues from Corporate Income Tax		-1,600	1,600	
Non-recurrent expenditure in Regions (various rulings)	238	1,452	538	346
Non-recurrent revenue in Regions	-11	-1,271	-441	-22
Non-recurrent expenditure LGs (reclassification app and other)	108	84		
Total effect of Royal Decree 11/2019 DANA (AC, Regions and LGs)			350	980
Non-recurrent items (*)	2,153	4,079	6,296	2,571
Non-recurrent items (% of GDP)	0.2	0.3	0.5	0.2
PA deficit without non-recurrent items (% GDP)	-2.8	-2.2	-1.7	-1.5

* When positive, greater deficit; when negative, lower deficit

Source: AIReF estimate based on information published by the IGAE

AIReF estimates a level of revenue over GDP slightly higher than included in the Budgetary Plan. AIReF's baseline scenario is slightly higher, reaching 39.7% GDP in 2020. AIReF's estimates are based on the new macroeconomic scenario, which assumes a slowdown from the previous report, deducting a little over 0.1% GDP from the revenue estimate. The differences with the Budgetary Plan can also be observed by heading, with AIReF's estimates for taxes on production and imports and other revenue being higher, and lower in the case of taxes on income and wealth. For its part, the weight of social security contributions is similar in both cases.

AIReF also estimates slightly higher expenditure than the Budgetary Plan. In both years, AIReF's estimate of 41.6% in 2019 and 41.4% GDP in 2020, is higher than the Budgetary Plan. However, the differences are greater in 2019 than in 2020. The most significant differences in 2020 are in compensation of employees, in intermediate consumption and gross capital formation, partially offset by AIReF's lower estimate for capital transfers as well as interest, to a lesser extent.

TABLE 6. COMPARISON OF AIREF'S FORECASTS WITH BUDGETARY PLAN (% GDP)

GENERAL GOVERNMENT	2018	2019		2020	
		AIReF	Budgetary Plan	AIReF	Budgetary Plan
Taxes on production and imports	11.7	11.7	11.5	11.7	11.6
Current taxes on income and wealth	10.6	10.7	10.7	10.8	10.9
Taxes on capital	0.5	0.4	0.4	0.4	0.4
Social security contributions	12.4	12.8	12.8	12.9	12.9
Property income	0.7	0.6	0.7	0.6	0.6
Other	3.3	3.2	3.1	3.2	3.1
Total Revenue	39.2	39.5	39.3	39.7	39.6
Compensation of employees	10.6	10.7	10.7	10.8	10.7
Intermediate consumption	5.1	5.1	5.0	5.1	5.0
Social transfers	18.0	18.3	18.2	18.3	18.3
<i>of which unemployment benefits</i>	<i>1.4</i>	<i>1.5</i>	<i>1.5</i>	<i>1.5</i>	<i>1.5</i>
Interest	2.4	2.3	2.3	2.1	2.2
Subsidies	1.0	1.0	1.0	1.0	1.0
Gross capital formation	2.1	2.0	2.0	2.1	2.1
Capital transfers	0.9	0.7	0.7	0.5	0.6
Others	1.5	1.5	1.5	1.5	1.5
Total Expenditure	41.7	41.6	41.3	41.4	41.3
Net lending/borrowing	-2.5	-2.1	-2.0	-1.7	-1.7

RECUADRO 2. 2019 STATISTICAL REVISION OF THE ACCOUNTS OF THE PUBLIC ADMINISTRATIONS

The statistical revision of the Spanish National Accounts, with regard to the sector of the PAs under the responsibility of the IGAE, dates back to the year 1995. However, for the years 2017 and 2018, the data published on 30 September 2019 incorporate two effects: (1) update of information sources that takes place every year and (2) the effect arising from the statistical revision that takes place every five years. This data revision is of great importance when making future forecasts to the extent that they change the starting point. In this regard, the methodological changes usually tend to be neutral, while updating the data with new information usually has an impact on the level for the following year, except in the case of non-recurring operations. The changes have been significant, especially in 2018, and have altered the forecasts for 2019 and 2020. In 2018 the deficit increased by 513M€, remaining around 2.5% GDP (from 2.48% to 2.54%), while it fell from 2014 to 2017, with the most significant revision being that of 2016, 2,043M€. In 2018, revenue increased by 1,464M€ and expenditure by 1,977M€, to which we must add the effect of nominal reduction of GDP.

On the revenue side, the main changes were the following:

- 1. Elimination of the concept of uncertain collection.** The new methodology is more transparent as it reconciles national accounting data with the actual cash data compared to the previous methodology that followed an accrual model, which was later adjusted with an econometric model on uncertain collection. As a result, there is a reduction in current revenue and an increase in capital resources, which represent a net increase in revenue.
- 2. Changes in the output headings of the PAs** The net result is an increase in income from production (738M€), though there is also a re-composition that reduces Market output (P.11) and increases the Output for own final use (P.12) and Payments for other non-market output (P.131). These changes are mainly due to revisions of the criteria for allocation of revenue between headings and the revision of the activation of expenditure in R+D+i.

On the expenditure side, the main changes have been the following:

- 1. Change in the methodology of the Financial Intermediation Services Indirectly Measured (FISIM).** This change represents a neutral impact on the deficit. On the one hand, it reduces the interest expenditure, which is considered as FISIM, increasing the intermediate consumption and revenue.

2. **Increase in the compensation of employees and intermediate consumption of the LGs** in 2017 and 2018, 492M and 911M€. In this case, the main reason is the updating of data.
3. **Social benefits not in kind** for 2018, there is an increase in SSF benefits of 402M€, partly offset by a reduction in the Regions of 284M€. However, for the rest of years, only the benefits of the Regions are revised downwards. While the change in the SSF is due to new data, in the Regions it is due to reclassifications between headings.
4. **Increase in Gross Capital Formation and Investment aid**, 478M€ in 2018 due to both factors.
5. **Increase in Other current transfers and Social transfers in kind**, 356M€ in 2018. The increase is mainly in the Regions due to reclassifications between expenditure items.

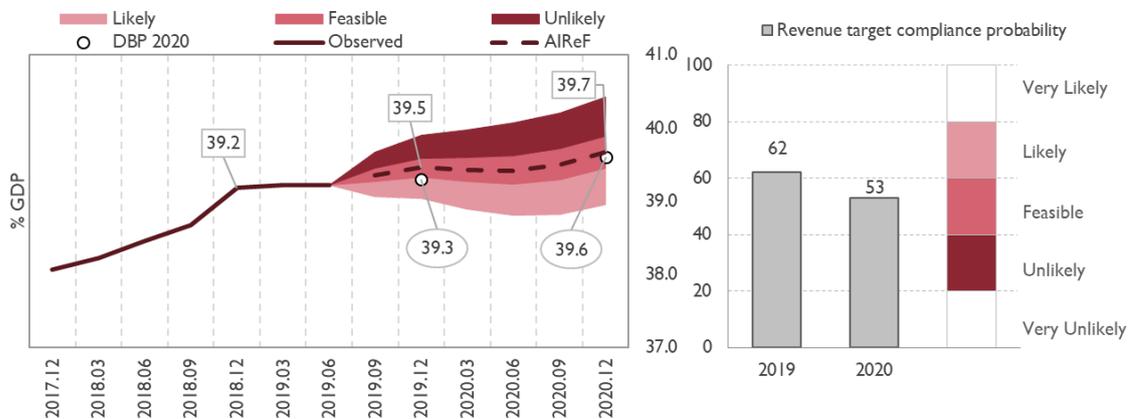
By sub-sectors, there have also been very significant changes, which resulted in the following in 2018:

Cambios por subsectores (2018)			
	Ingresos	Gastos	Cap./Nec. financiación
AC	420	-36	456
FSS	141	422	-281
CCAA	1.539	2.055	-516
CCLL	650	822	-172
AAPP	1.464	1.977	-513

3.2.1 Revenue forecast

The revenue forecast incorporated in the Budgetary Plan for 2020 is considered likely for 2019 and feasible for 2020. According to the Government's Budgetary Plan revenue has increased its weight in relation to GDP by 0.4% since 2018, reaching 39.6% GDP, 0.1% less than in AIReF's scenario.

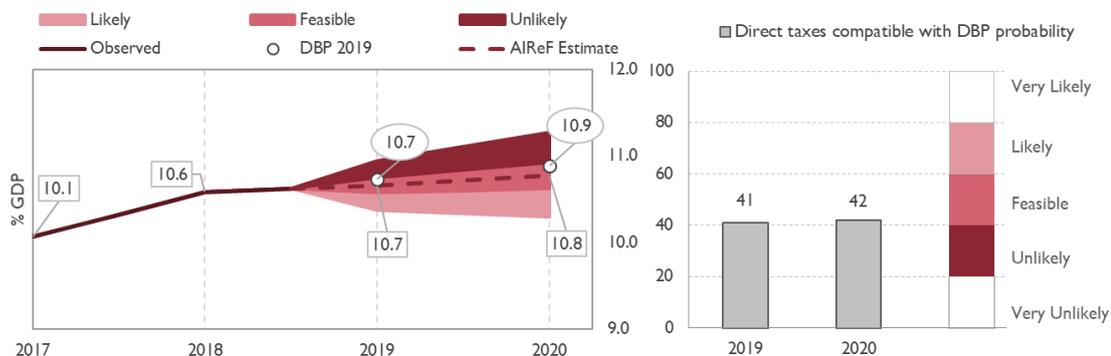
CHART 40. REVENUE 2018-2019. GENERAL GOVERNMENT % GDP



The main change with respect to the other reports is the absence of new measures relating to revenue in the scenario of the Budgetary Plan for 2020, except for the territorial administrations. This simplifies the analysis as the valuation is reduced, on the one hand, to the feasibility with respect to the closure of 2019, and on the other hand, to the effect that the cycle has on revenue for the year 2020. The closing estimate for tax revenue in 2019 incorporates the information available from almost three quarters. This period is sufficient to consider all the impact of policy changes from previous years to have been applied, as well as other circumstances such as the execution of certain rulings that involve lower collection. For the remaining months of 2019 and the whole of 2020, collection has been forecasted using the new macroeconomic scenario developed by AIReF, which implies a slowdown of the bases with respect to previous reports.

Direct taxes

AIReF considers it feasible to reach the level of direct taxes of the Budgetary Plan, finding significant differences in corporate income tax. The direct taxes forecasted in 2019 in the Budgetary Plan increase by 0.1% GDP in 2019 and a further 0.2% in 2020, reaching 10.9% GDP. The rest of direct taxes, paid by households, are aligned at the end of the period in both scenarios. The detail of the main figures of these taxes are analysed below: Personal income tax (PIT) and corporate income tax (CIT).

CHART 41. DIRECT TAXES 2018-2019. GENERAL GOVERNMENT % GDP


The closing estimate for PIT in 2019 compared to the previous report is revised slightly downwards in cash terms. AIReF's closing estimate for 2019 has incorporated the collection data for the year so far published by the AEAT. On the one hand, these data include the higher impact than initially expected from the 2018 income tax campaign. On the other hand, they incorporate the returns for the ruling concerning the taxation of maternity/paternity benefits, quantified as 1,600 M€ less collection. Finally, they also feature the negative effect in terms of collection of those measures implemented following the adoption of the GSB 2018 and valued at approximately 1,110 M€. With respect to AIReF's last pronouncement (see table 4) there have only been a few substantial changes. The expected impact of regulatory changes and other circumstances such as the execution of rulings is maintained, section (1) of the table, but the rate of change of the tax is revised slightly downwards by 0.1 p.p. due to the slowdown of the bases, and 0.5 p.p. downwards due to the data observed for the income tax campaign. However, growth above nominal GDP continues to be expected.

TABLE 7. BREAKDOWN OF THE CHANGE IN PIT IN CASH (%VAR)

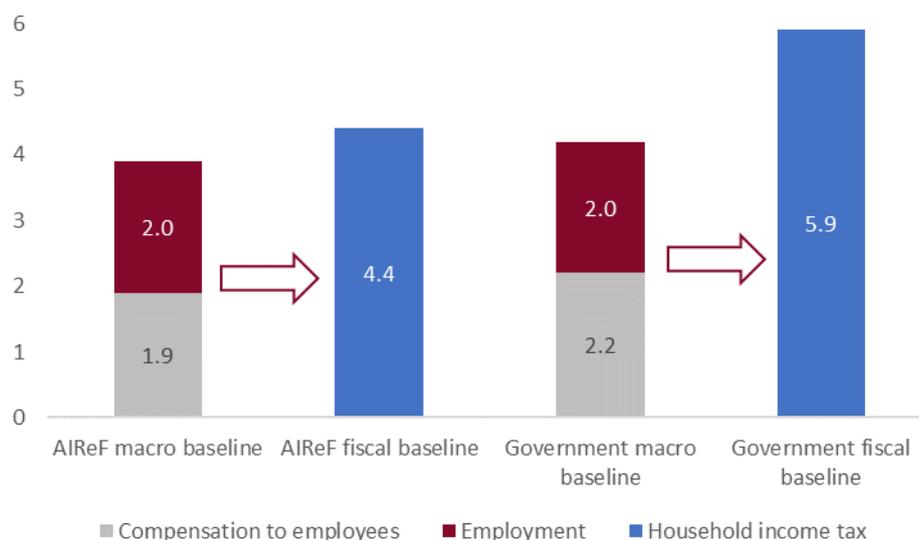
PIT	2018 year-end	AIReF estimate 2019 (report 15 July)	AIReF estimate 2019 (current)
Total (% var.)	7.6	5.7	5.1
<i>Breakdown of growth:</i>			
(1) Regulatory effect	-0.5	-3.3	-3.3
(2) Effect without policy changes (a)+(b)	8.1	9.0	8.4
Evolution bases and rates (a)	7.9	5.6	5.5
Effect of collection mechanism (b)	0.2	3.4	2.9

In national accounting terms, the growth of PIT is higher than in cash terms, due to non-recurring items and measures charged as expenditure in national accounts. To translate the closing estimate for 2019 from cash terms to national accounting terms two specific circumstances should be taken into account:

that the returns due to the court ruling on maternity benefits are recorded as expenditure, being charged as a capital transfer that the PAs grant to households and that the new family deductions, quantified at 470 M€, are recorded in national accounts as expenditure within Social benefits in cash. Both facts explain that the growth rate of PIT in national accounts grows approximately 2.5 p.p. more than in terms of collection. This increase is offset with higher non-financial expenditure, therefore not having an effect on the deficit.

The expected evolution of PIT for 2020 depends on the behaviour of the macroeconomic variables underlying the tax bases. Although the earnings taxed by PIT are diverse in nature, 70% come from earnings from work, with its evolution still being linked to the progress of employment and wages (see chart 42). The result of the modelling of this tax implies an elasticity slightly higher than one with regard to compensation of employees, observing a somewhat higher elasticity in the scenario of the Budgetary Plan, which could be explained by its macroeconomic scenario containing a higher wage growth than in AIReF's scenario. In conclusion, the starting point for 2019, higher in AIReF's scenario, approaches the scenario of the Budgetary Plan in 2020 due to the higher expected growth for the year, leaving both scenarios with the same weight over GDP.

CHART 42. TAX RATE HOUSEHOLD INCOME GENERAL GOVERNMENT % VAR.



AIReF has revised its forecasts for 2019 for CIT slightly downwards compared to the previous report. The data observed during 2019 already included the quota of the 2018 tax campaign, recording a greater increase than expected, in both the amount to be collected and the returns to be made. This confirms AIReF's assumption that the extraordinary increase of the second instalment

payment of 2018, from 5 large companies, would have been partially returned between 2019 and 2020 and would not have been consolidated in future instalment payments. Information is not yet known on the second and third payments that represent 50% of the collection, therefore the level of uncertainty is very high in this tax. Compared to the last report (see table 8) there is a downward revision due to a slowdown of the bases, estimated at 1.7 p.p, offset by an upward revision of 1.4 p.p. of the collection mechanism of the tax derived from better than expected tax revenue.

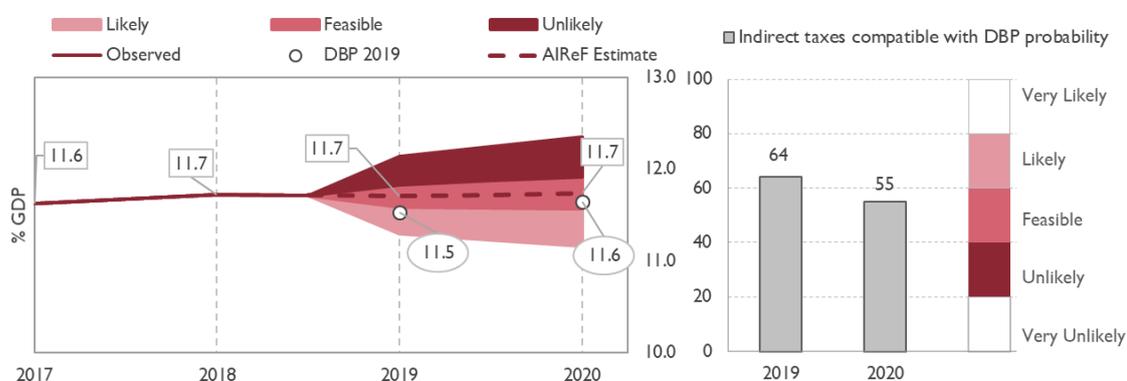
TABLE 8. BREAKDOWN OF THE CHANGE IN CIT IN CASH (%VAR)

Corporate Income Tax	2018 year-end	2019 AIReF estimate (report 15 July)	AIReF estimate 2019 (current)
Total (% var.)	7.3	-1.8	-2.1
<i>Breakdown of growth:</i>			
(1) <i>Regulatory effect</i>	0.0	-3.3	-3.3
(2) <i>Effect without policy changes (a)+(b)</i>	7.3	1.5	1.2
Evolution bases and rates (a)	4.5	9.2	7.5
Effect of collection mechanism (b)	2.8	-7.7	-6.3

For 2020, AIReF estimates a growth rate higher than the Budgetary Plan, but insufficient to offset the differences of 2019. Therefore, in 2020 the scenario of the Budgetary Plan entails 0.1% more weight over GDP in relation to AIReF's scenario. Although the growth rate envisaged by AIReF, approximately 7%, is greater than that referred to in the Government's scenario, 2.3%, the lower starting point for 2019 means that the level envisaged in the Budgetary Plan will not be reached in 2020. On the other hand, in addition to the effect of the cycle, the growth rate is affected by the exceptional execution of a ruling, quantified at about 700 M€ in 2019.

Indirect taxes

The estimate of indirect taxes contained in the Budgetary Plan is likely in 2019 and feasible in 2020. According to the Budgetary Plan, the weight of indirect taxes over GDP is expected to decline by 0.2% in 2019 compared to 2018, recovering by 0.1% in 2020. Indirect taxes include VAT, special taxes and others with less effect on collection. AIReF's scenario involves the maintenance of the weight over GDP of the revenue from this type of tax.

CHART 43. INDIRECT TAXES 2018-2019. GENERAL GOVERNMENT % GDP


AIReF has revised the VAT collection estimates for 2019 downwards, according to the most recent data known and the new macroeconomic scenario. The incorporation of new collection data results in a downward revision of 0.3 p.p. in the growth rate compared to AIReF's last report. On the other hand, the slowdown in the growth of real private consumption during the first quarter of the year, higher than expected, has also led to a downward revision of 1 p.p. in the collection growth rate for 2019 (see table 9). When we put the figure in national accounting terms the rate of variation improves as the effect of the higher rate of returns paid compared to those requested is eliminated, assimilating its evolution to the growth of the bases, and expecting a growth of national demand in nominal terms of 3.4 % in 2019.

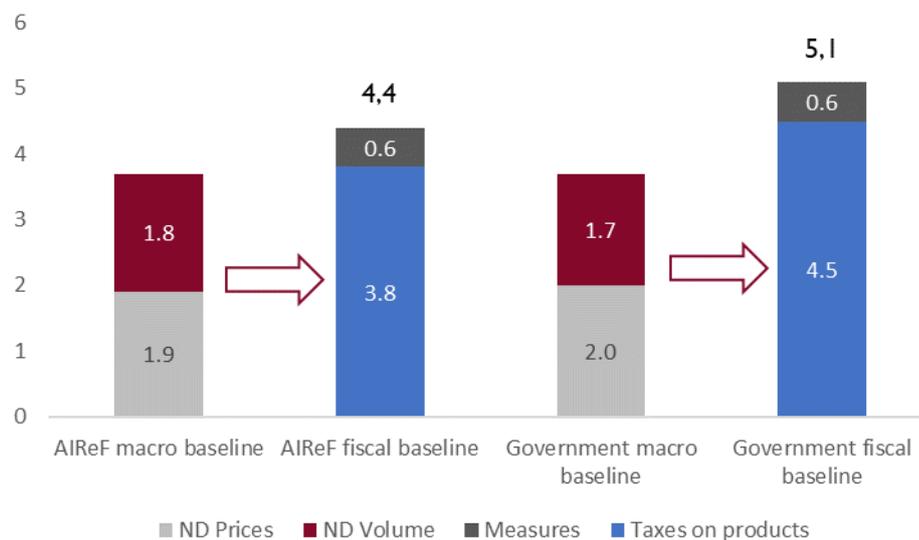
TABLE 9. BREAKDOWN OF THE CHANGE IN VAT IN CASH (%VAR)

VAT	2018 year-end	AIReF estimate 2019 (report 15 July)	AIReF estimate 2019 (current)
Total (% var.)	10.3	3.5	2.2
<i>Breakdown of growth:</i>			
(1) Regulatory effect	5.8	-0.1	-0.1
(2) Effect without policy changes (a)+(b)	4.8	3.6	2.3
Evolution bases and rates (a)	5.7	4.4	3.4
Effect of collection mechanism (c)	-1.0	-0.8	-1.1

In 2020, the Budgetary Plan envisages an evolution of taxes on products slightly more favourable than AIReF. To understand this evolution, we must consider, in addition to the evolution of VAT, which is growing at a rate similar to its bases (see chart 44), a double opposed effect. On the one hand, special taxes present a slow evolution with elasticities below one with respect to nominal GDP. On the other hand, there is a positive effect on the rates caused

by the temporary suspension for two quarters, quantified at nearly 750 M€, of the tax on the value of electricity production in 2019.

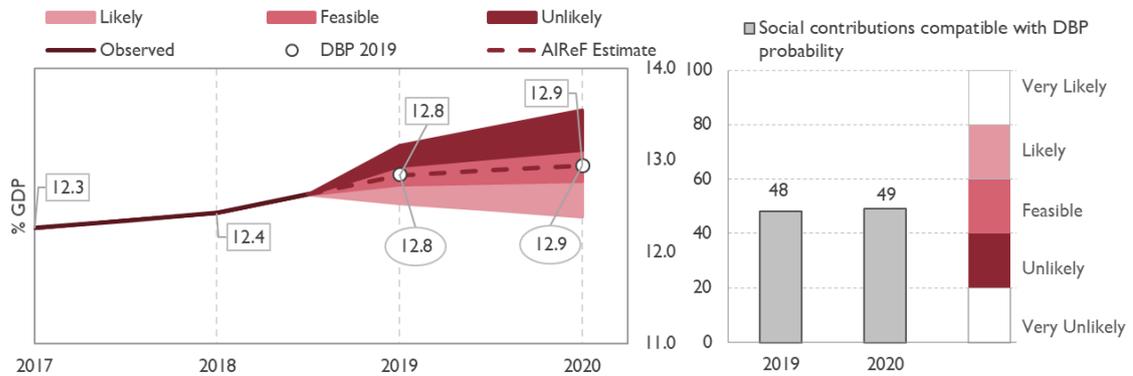
CHART 44. TAXES ON PRODUCTS 2020. GENERAL GOVERNMENT % VAR.



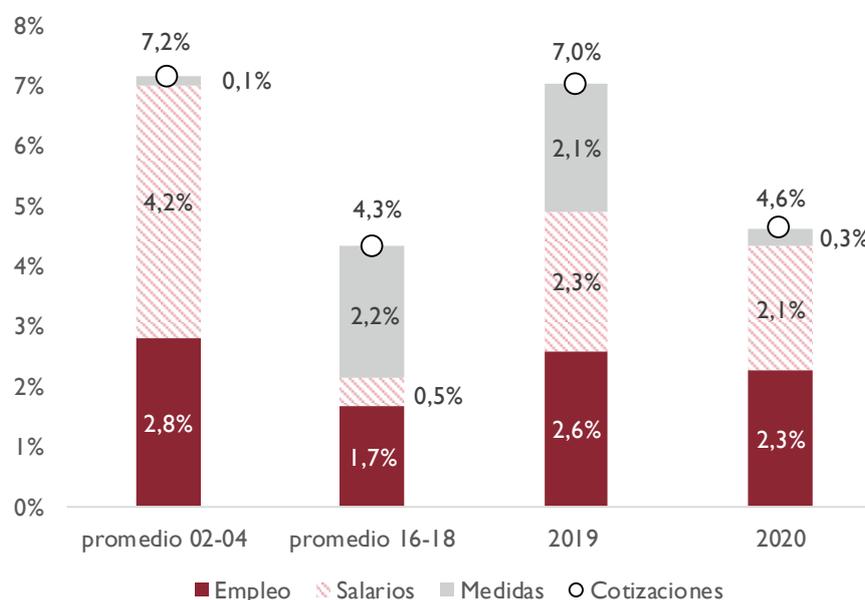
Social security contributions

The forecast for social contributions is considered feasible, taking into account the measures proposed. In 2019, this is the most dynamic revenue heading, with an increase of 0.4% GDP. For 2020 it increases an additional 0.1%, stabilising at 12.9 points. AIRcF's estimates are in line with those contained in the Budgetary Plan for the two years.

CHART 45. SOCIAL CONTRIBUTIONS 2019-2020. GENERAL GOVERNMENT % GDP



For 2020, the measures include those already approved and the reduction of incentives for hiring, in line with the Budgetary Plan. AIReF estimates that the impact of measures already adopted and implemented in 2019, such as the rise in the contributions of non-professional carers and beneficiaries of the subsidy for those aged over 52 years and the rise of the contribution maximum bases, is 0.2% GDP. The other 0.2% of growth are justified by the evolution of the cycle, in particular the expected increase of the contribution bases marked by improving wages and employment. The 0.1% GDP increase in contributions in 2020 is justified by both the measures included and additional improvements of the contribution bases due to the positive evolution of the cycle. For both years wages provide a somewhat greater contribution to growth than employment, although much more equitable than in previous years.

CHART 46. BREAKDOWN OF THE GROWTH OF SOCIAL SECURITY CONTRIBUTIONS.


Source: Budgetary Plan, IGAE and AIReF's estimates

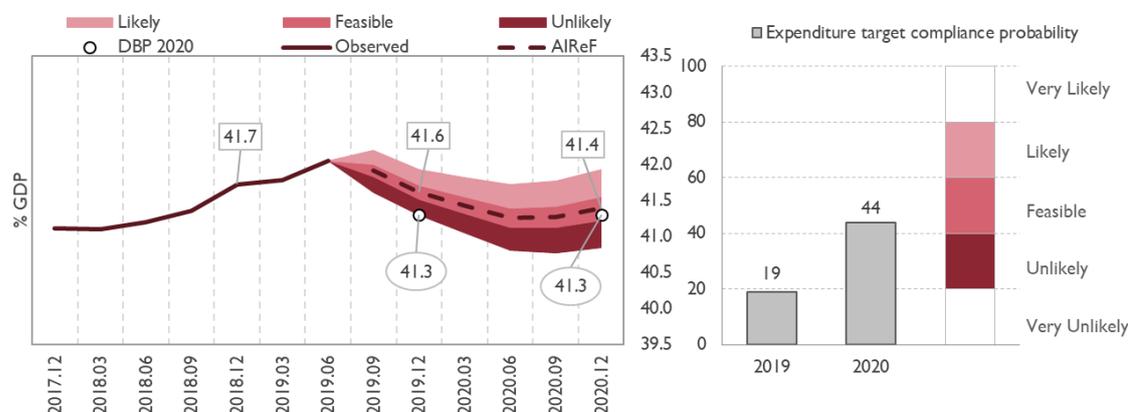
Other revenue

AIReF estimates a greater weight over GDP of property income and other current revenue than the Budgetary Plan. The Budgetary Plan considers that these headings will grow slightly below nominal GDP, as in AIReF's case. However, AIReF's estimates are somewhat more favourable, resulting in 0.1% GDP more for these concepts in 2020.

3.2.2 Expenditure forecast

AIReF considers it very unlikely in 2019 but feasible in 2020 to reach the non-financial expenditure path envisaged in the Budgetary Plan. The expenditure path of the Budgetary Plan does not expect any adjustment in the expenditure, maintaining a level of 41.3% GDP in 2019 and 2020. The greater expenditure expected in the Budgetary Plan for social benefits in kind and gross fixed capital formation is offset by a decrease in expenditure on interest and other capital expenditures. AIReF estimates 0.3% GDP higher expenditure for 2019 than in the Budgetary Plan, which will drop by 0.2% in 2020, slightly above but in line with that foreseen in the Budgetary Plan.

CHART 47. 2019-2020 NON-FINANCIAL EXPENDITURE PATH. GENERAL GOVERNMENT % GDP.

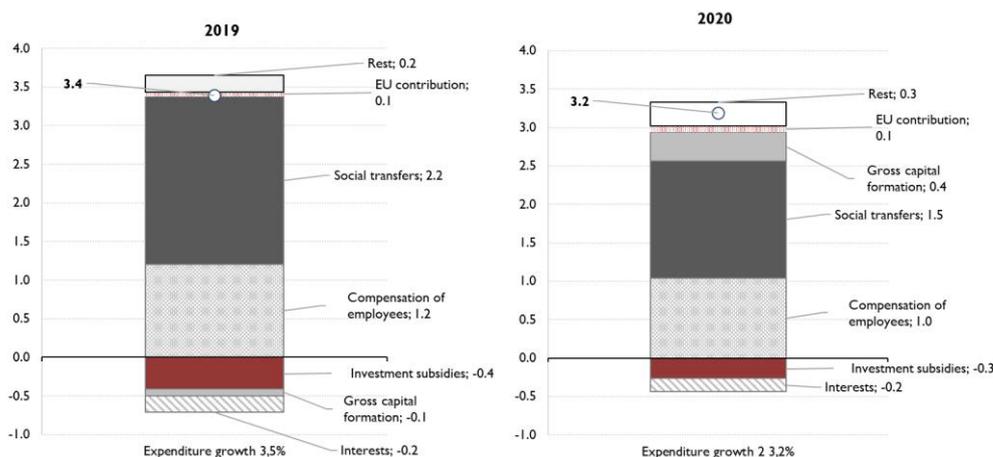


Source: Budgetary Plan, IGAE and AIReF's estimates

AIReF estimates a deceleration in the growth of expenditure in 2019 and 2020.

Against the 4.8% growth in 2018, AIReF estimates 3.4% and 3.2% for 2019 and 2020 respectively, which is partially explained by the budgetary carryover in the CG. Social benefits in cash, which reflect the impact of the revaluation of pensions, continue to be the heading that most contributes to the growth of expenditure, with a lower contribution in 2020. Although to a lesser extent, the evolution of compensation of employees explains another percentage point of the growth of expenditure. On the contrary, the fall in expenditure on interest and investment aid offset part of the growth of the rest of the headings.

CHART 48. EXPENDITURE GROWTH 2019-2020. GENERAL GOVERNMENT % GDP



Main components of public consumption expenditure

With regard to compensation of employees, the Budgetary Plan maintains its weight over GDP in both years, while AIReF estimates an increase of 0.1% for

2020. AIReF predicts a growth of 4.7% in 2019 compared to the 4.4% envisaged in the Budgetary Plan. The Agreement with the trade unions, which is included in the Budgetary Plan by considering that it would be adopted in any scenario, expects a growth of 2.53% for 2020, compared to 2.75% of 2019 (without taking into account the possible additional rise of 0.1% for the TAs with a surplus), which is derived from a rise of 2.23% consistent with GDP growth of 2.1% in 2019, and an additional growth of the wage bill of 0.30% for 2020. In the case of the CG 310 M€ are included for both years for the wage equalisation of the State law enforcement agencies. For the Regions, the estimated impact of their own measures is included (return of extra pay and others). In terms of the number of employees, AIReF expects an increase of around 1.5% in 2020, reflecting the effect of the provisions on the replacement rate contained in the GSB for 2018 and that began to emerge in 2019. As a result, AIReF's estimates would imply a slight increase of 0.1% in 2020, reaching 10.8% of the weight of compensation of employees over GDP.

AIReF expects a slightly higher expenditure for intermediate consumption in both years, with social transfers in kind standing in line with the forecasts of the Budgetary Plan. The fundamental difference in public consumption between AIReF's forecasts and the Budgetary Plan is presented under the heading of intermediate consumption, with AIReF expecting a growth rate of 3.6% compared to the 1.9% of the Budgetary Plan. AIReF's forecasts reflect higher expenditure expected for the general elections in November and the observed budgetary execution data known until August. With regard to social transfers in kind, a moderate growth is maintained in both years, in line with the forecasts of the Budgetary Plan. This heading is expected to reflect the impact of the recommendations of the Spending Review on pharmaceutical expenditure, on which there is some risk of implementation.

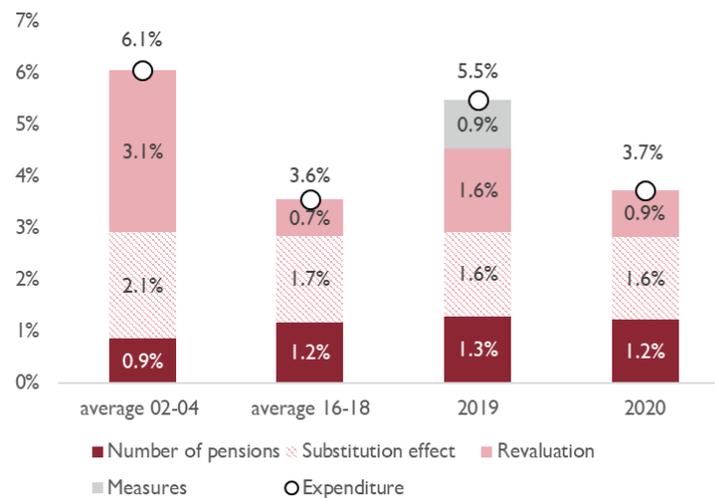
Social transfers in cash

According to AIReF social transfers in cash will increase 0.4% GDP in the 2019 - 2020 period up to a total of 15.8%. This estimate is in line with the Budgetary Plan. This heading includes the effect of most expenditure measures such as increased pension expenditure, the extension of parental leave, improved dependency and the unemployment subsidy for those aged over 52 years. These measures, which were approved in 2019, prolong their effects into 2020.

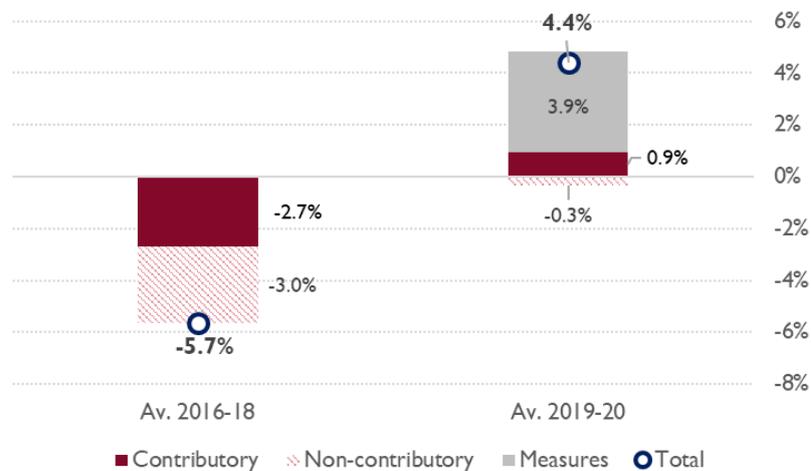
AIReF estimates an increase in pension expenditure of 5.5% for 2019, while for 2020 it slows to 3.7%. This lower growth is mainly explained by the absence of new measures and a lower revaluation resulting from a lower CPI forecast. AIReF estimates that the number of pensions will increase by 1.3% in 2019 and 1.2% in 2020, while the substitution effect derived from some new pensions that are higher than the former ones will be 1.6% in both years. The impact of the

measures already approved will contribute 1.2% to growth in 2019, in line with the estimates of the Budgetary Plan. In addition, the revaluation approved by the Government was 1.6% in 2019 and a 0.9% revaluation is expected in 2020 in accordance with the Government's CPI forecast.

CHART 49. GROWTH IN PENSION EXPENDITURE. AIREF'S FORECASTS



Unemployment benefits stabilise at 1.5% GDP in line with the Budgetary Plan, 0.1% more than in 2018. AIREF's forecasts are in line with the Budgetary Plan, with expenditure on benefits close to 18,300M€ for 2019 and almost 19,000M€ in 2020. The decline in this item recorded in previous years slows in 2018 and begins to grow in 2019 due to the increase in expenditure on contributory benefits and by the foreseeable slowdown in the expenditure drop on subsidies, the result of long-term unemployment after the crisis. The coverage rate will be recovered by the accumulation of entitlements to the benefit derived from a normalisation of the labour market by increasing the weight of beneficiaries of contributory benefit versus non-contributory subsidies. In addition, this heading covers the impact of the measures adopted in 2019, mainly the recovery of the unemployment subsidy for those over 52 years of age.

CHART 50. GROWTH OF EXPENDITURE ON UNEMPLOYMENT. AIREF'S FORECASTS


Interest

AIReF forecasts a greater reduction in expenditure on interest than that of the Budgetary Plan. While in 2019, both AIReF and the Budgetary Plan assume a reduction of 0.1%, in 2020 AIReF estimates a greater reduction to stand at 2.1% GDP. The latest developments in the field of monetary policy, as well as market expectations, have led to a further lowering of interest rates along the curve. Also, the risks of changes in monetary policy that could raise the rates have also distanced themselves. The savings in terms of interest expenditure are felt as the Public Treasury issuance portfolio is renewed, and some issues are replaced by others with lower marginal rates. For this reason, although the new situation has already translated to debt issues in 2019, the impact will be greater in 2020.

Gross capital formation

The Budgetary Plan foresees an increase in gross capital formation in 2020 up to 2.1% GDP in line with AIReF's estimates. After a decline in 2019 due to the effect of non-recurring items such as the bailout of toll motorways or the end of the AP-1 concession, investment growth is primarily driven by the territorial administrations, including financially sustainable investments. In this regard, the CG maintains its level of investment of the previous year due to the budgetary carryover. In addition, the evolution of the heading is also affected by the actions to mitigate the effects of natural disasters in 2019.

Other expenditure

AIReF estimates a greater reduction in capital transfers than the Budgetary Plan, while the evolution of the rest of expenditure is very similar. The capital transfers heading is strongly influenced by non-recurring items. In particular, the decrease in 2020 is due to the fact that, among others, PIT rebates due to

the ruling on the exemption of maternity benefits are not reproduced and the estimate of payments for the Asset Protection Schemes are reduced. In addition, part of the difference may be due to the criteria of accounting for expenditure on natural disasters, mainly the DANA (upper-level isolated depression) storm, the impact of which is entirely included in other capital expenditure in the Budgetary Plan and in AIReF's scenario it is partially found in gross capital formation.

3.3 Analysis by sub-sectors

Forecasts for 2019

The Government has amended its balance forecasts by sub-sectors for 2019 in the second debt and deficit notification to the European Union. Although the Budgetary Plan does not contain a breakdown by sub-sector, the Government sent the second deficit and debt notification to the European Commission in which it maintains the deficit forecast for the Regions but amends the distribution by sub-sectors. In particular, it reduces the deficit of the CG by 0.2%, while it increases the deficit by the same amount in the Regions and reduces the surplus of the LGs by 0.1%.

In the CG, the projected deficit in relation to the July report increases 0.1%, up to -0.7% due to a worse than expected evolution of expenditure. The improvement in revenue by 0.1% is offset by an increase of 0.2% in expenditure. This increase is mainly concentrated in the transfers between PAs, including 303M€ from the Energy Efficiency Fund which, for the first time, this year is divided between the Regions and the definitive impact of the regional financing system which increases with respect to the July report by 600M€ (400M€ if PIT is also considered). This increase in financing is due to AIReF having estimated financing for 2019 based on the collection forecasts for taxes affecting the financing system in 2019 that existed in July, however those that will be paid according to Royal Decree-Law 13/2019 are above and similar to those reported to the Regions in July 2018 and they served as the basis for the preparation of their budgets. Electoral expenditure also increases due the elections planned for November 2019. The lower expenditure on interest and materialisation of deferred tax assets (DTA) with respect to what was expected in July, do not offset the increases described above. On the revenue side, the positive impact of the statistical revision is offset with a lower evolution of the cycle than expected. The second notification sent to the European Commission in October communicates a deficit for the CG of 0.8% GDP, above AIReF's forecasts and 0.2 points less than expected in the first notification in April. The difference is due to the compensation of the VAT

Immediate Information System to the territorial administrations which was considered to be the baseline scenario at the time.

AIR^eF maintains the closing forecast for the regional sub-sector considered for the July report, with a slight improvement. This is mainly derived from the reported update of the instalment payments of the 2019 financing system, greater than that estimated in July by AIR^eF, which in general has not meant greater real revenue for the Regions since these amounts were already included in their forecasts. Most of the increase in real revenue has meant a parallel increase in expenditure, both resulting from reclassification operations due to the revision of the national accounts data (taxes of the Economic and Fiscal Regime of the Canary Islands, uncertain collection, activation of R+D+i expenditure...), and the larger transfers affected by expenditure incurred (National Energy Efficiency Fund). Therefore, AIR^eF's improvement of the July deficit was essentially due to the indicated increase in instalment payments of the financing system above those envisaged by AIR^eF in the previous report (about 400M€). On the expenditure side, there has only been a significant upwards revision in compensation of employees due to the execution observed to date, which slightly offsets the improvement of system resources and others of lesser amounts.

In the case of the LGs AIR^eF revises its surplus forecasts for 2019 included in the July report slightly downwards. This reduction in the surplus is mainly due to three factors: the updating of the closing data for 2018 carried out by the IGAE in September that worsened the surplus for that year, due to the revision of recurrent expenditure items with an impact in future periods and revenue, although to a lesser extent; the publication of the execution of the second quarter of 2019 which showed a deficit for the first time since 2011; and AIR^eF's estimate of the impact of the damage caused by natural disasters listed in Royal Decree-Law 11/2019.

The SSF reduce their deficit to 1.3% GDP in 2019. Intense growth of revenue and expenditure is expected due to the measures adopted at the end of 2018 and start of 2019. The dynamism of the contributions is driven by the effect of the increase in the national minimum wage on the contribution bases. On the expenditure side, a return to revaluation with the CPI and the growth of expenditure on unemployment, after the stabilisation of 2018, are worth noting.

Forecasts for 2020

Unlike in previous years, the Budgetary Plan does not include estimates for net lending/borrowing of the sub-sectors of the PAs. The fiscal scenario outlined in the Budgetary Plan was defined exclusively for the GG, detailing the main revenue and expenditure headings in National Accounts. In previous years,

although there was a breakdown by heading, at least the Budgetary Plan included the targets or forecasts by sub-sector compatible with the forecast of the GG. On this occasion, the Budgetary Plan only contains the breakdown by sub-sector of the targets approved in July 2017 for a GG deficit of 0.5% GDP in 2020 and the forecasts of the Stability Programme for a deficit of 1.1% GDP. In previous reports AIReF has underlined the need to include a breakdown by sub-sector and greater detail on the main revenue and expenditure headings, placing emphasis on the assumptions on which their evolution is based.

The projected deficit for the CG in 2020 is 0.6% GDP, slightly below the deficit of 2019, with a reduction of both revenue and expenditure as a percentage of GDP. The lower revenue is expected to be concentrated in PIT and the lower transfers received between PAs. The taxes will grow slightly with higher growth of indirect taxes than direct taxes. Expenditure is expected to reduce its weight over GDP, essentially due to the lower transfers to the TAs, the evolution of interest rates which are maintaining their declining trend and a lower impact of non-recurrent operations.

Expenditure is expected to grow very moderately due to the budgetary carryover and the lower impact of non-recurrent operations. The main increase in expenditure will be in transfers between PAs, which includes the impact of Royal Decree-Law 11/2019 on urgent measures for damage caused by storms and other catastrophic situations and the impact of the financing system in 2020. Regarding compensation of employees, it continues to reflect the agreement with the unions with a rise higher than 2% but lower than that of 2019, the expected growth for civil servants' pensions updated to 0.9% moderates with respect to 2019. These increases are offset by the reduction in expenditure on interests, electoral expenditure and other capital transfers. This heading is reduced because in 2019, 885 M€ were rebated due to the PIT withholdings from maternity and paternity benefits with no equivalent in 2020 and due to a lower impact of Asset Protection Schemes with respect to 2019.

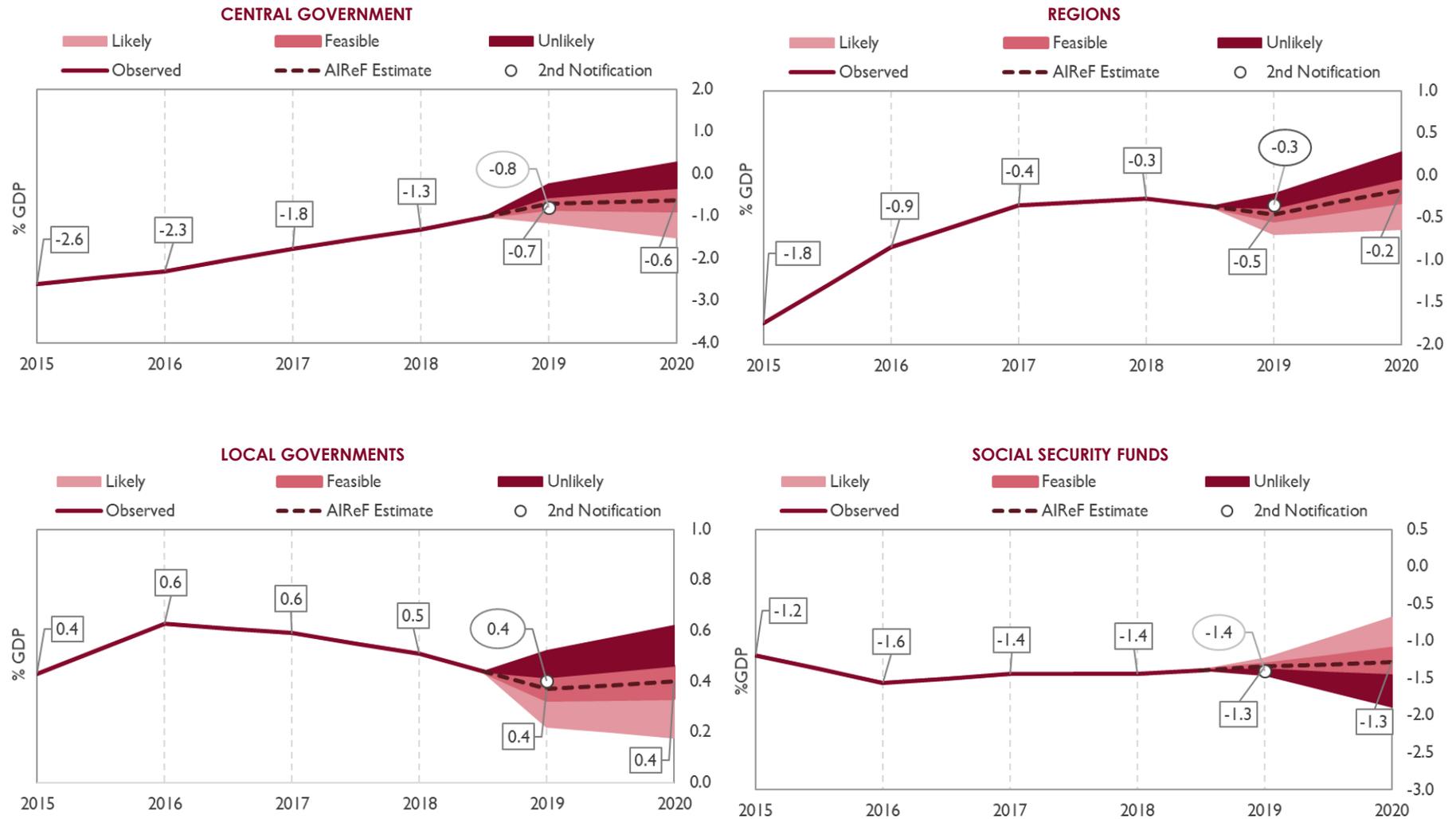
AIReF expects that the Regions can reach a deficit of -0.2% GDP in 2020, 0.3% less than in 2019. There is currently no information on the regional forecasts for 2020 in most Regions, as their draft budgets are being prepared and some have not sent the main budgetary lines. In this context, based on the estimated close for 2019 and taking the most updated 2020 information provided by the Regions on measures, AIReF has made its forecasts, which will be updated with the publication of the upcoming individual reports on the Regions. The deficit reduction of 0.3% GDP is essentially due to the expected growth of the financing system's resources, affected in 2019 by the negative settlement of VAT as a result of the Immediate Information System (IIS). It is estimated that the sub-sector's revenue could grow by around 6% overall (7% the system's resources and 3% the rest of revenue). This would increase its

weight over GDP by 0.3%. On the expenditure side, it is expected that there will be overall growth close to 4%, more moderate than expected for 2019, conditioned by the staff measures planned and the possible impact of the actions to be implemented in the context of expenditure on healthcare and subsidies.

AIReF estimates that the LG sub-sector could close 2020 with a surplus around 0.4% GDP in line with 2019. AIReF's current forecast considers, among other factors, the State measures adopted on staff and investments affecting the LGs, the estimation of the effect in 2020 on expenditure and revenue of Royal Decree-Law 11/2019 and the closing forecast for 2019.

In 2020 the SSF will maintain a similar deficit to that of the previous year. Total expenditure is expected to grow in line with nominal GDP, while revenue will grow at a slightly higher rate, mainly due to social contributions, which results in a 0.1% drop in the deficit.

CHART 51. NET LENDING/BORROWING BY SUB-SECTORS

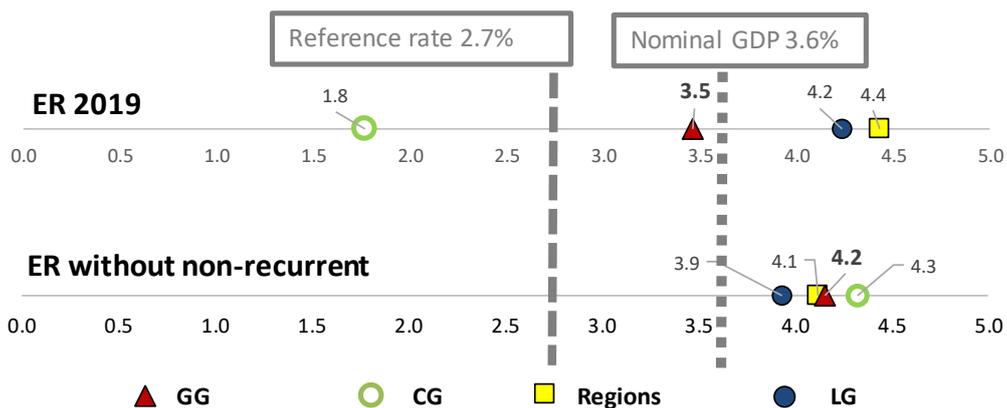


3.4 Expenditure rule

The Budgetary Plan makes reference to compliance with the EU expenditure rule but does not include information about the national expenditure rule envisaged in the Organic Law on Budgetary Stability and Financial Sustainability (LOEPySF for its Spanish acronym). The Budgetary Plan foresees a growth of computable expenditure of 3.5% in 2019 and 5.1% in 2020 following the methodology of the European Commission. The section on Fiscal Policy Stance of this report makes reference to AIRCF's forecasts regarding compliance with the EU expenditure rule.

Compliance with the national expenditure rule is similar for 2019 to that foreseen in the July report, with the CG being the only administration to comply due to the effect of non-recurring expenditure. In the CG the increase in compensation of employees, intermediate consumption due to an increase in electoral expenditure and expenditure on civil servants is offset by the reduction of non-recurring operations that affect gross capital formation and other capital transfers, such as the financial responsibility derived from toll motorways or the disappearance of tax credits due to the administration in 2019. The Regions and LGs present a similar growth of computable expenditure, with a slightly greater effect of non-recurring operations in the Regions than in the LGs. Neither sub-sector is expected to comply with the expenditure rule in 2019.

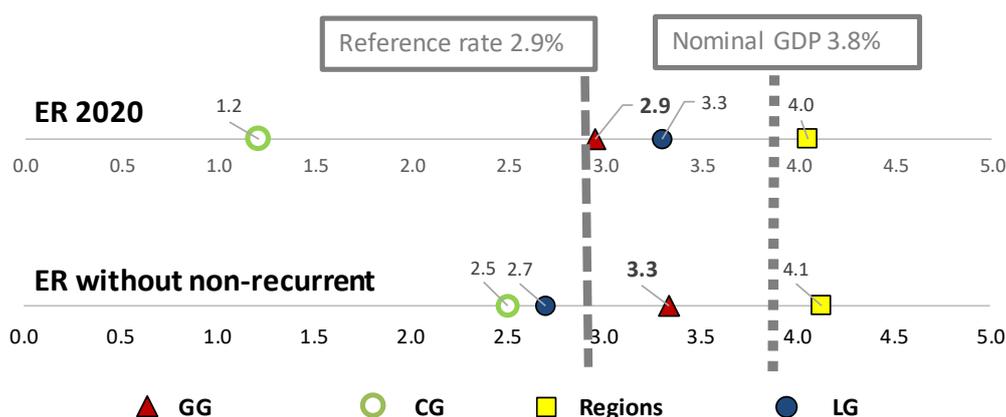
CHART 52. REFERENCE RATE OF THE EXPENDITURE RULE 2019



For 2020, compliance improves, with all the sub-sectors CG, Regions and LGs growing at the reference rate envisaged in the status report on the Spanish economy. For the CG the increase in compensation of employees and expenditure on civil servants is less than in 2019, and the higher expenditure on subsidies due the compensation of the tariff deficit derived from the recovery of the tax on electricity is more than offset by lower non-recurring

operations such as the return of PIT withholdings from maternity benefits or the lesser amount of Asset Protection Scheme payments. The reference rate used by AIReF was the 2.9% envisaged in the report on the situation of the Spanish economy that accompanied the Agreement of the Council of Ministers of 7 December 2018 that sets forth the budgetary stability targets for the period 2019-2020 and was finally rejected in the Spanish Parliament.

CHART 53. COMPLIANCE WITH THE EXPENDITURE RULE IN 2020.



Approximating the EU expenditure rule to the national expenditure rule, computable expenditure would grow 4.3% in 2019 and 3.5% in 2020. If computable expenditure was considered to include the expenditure of the SSF, considering only non-cyclical expenditure on unemployment, replacing the year's Gross Capital Formation not financed by the EU with the average of the last 4 years and eliminating non-recurring operations, the growth rate for the GG would be 4.5% in 2019 and 3.6% in 2020.

3.5 Contingent liabilities and fiscal risks

The Budgetary Plan only includes the total value of the guarantees granted by the GG and each sub-sector for 2018. The single guarantees granted to units that are not PAs are detailed, therefore it does not include, for example the guarantees of the Fund for Orderly Bank Restructuring (FROB) or the Electricity System Deficit Securitization Fund. The total value reaches 5.6% GDP in 2018. The guarantees are broken down by public corporations and financial corporations, but no more detail is provided.

The detailed information is available in other reports, but in a scattered and incomplete manner. In the annual accounts of the SGA and public business and foundation sector entities detail is published of the guarantees granted by beneficiary, together with the corresponding provisions. The account of the SGA for 2018 contains the sureties, maturity dates, the outstanding amount, the year's movements, the reserves, the sureties executed and the refunds. The main sureties are concentrated in the *Consorcio de Valencia*, Electricity System Deficit Securitization Fund, European Financial Stability Facility, Sareb and European Investment Bank, reaching a total of 100,700M€, with a provision of 225M€ for the surety of the *Consorcio de Valencia*. It also contains an annual projection of the 5-year maturities. In addition to the sureties other guarantees are granted, although for smaller amounts, for works on loan from museums in the amount of 1,125M€.

The Budgetary Plan does not include information on other potential contingent liabilities that may have an effect in 2019 and 2020. This information is not included in the GSB, but is only found in scattered and partial manner in the PAs' accounts. In particular, the General Account of the SGA for 2018 reports contingent liabilities close to 11,000M€ related to the State's Financial Liability for companies awarded concession for ACESA toll motorways (2,000M€), the collaboration agreements concluded with the Illes Balears Region, international energy arbitrations by the support schemes for renewable energies (8,870M€) and the exclusion of financing borne by the EAGF and the EAFRD of certain expenditure items (135M€)

The judicial process for the claim for financial liability against the State for the compensation paid for the closure of the Castor gas storage is ongoing. The closure of the platform in 2013 was accompanied by a compensation decree processed urgently, to be paid the promoter company in the amount of 1,350M€. This compensation was paid by ENAGAS and financed by CaixaBank (450M€), Bankia (200M€) and Banco Santander (700M€) in exchange for the right to receive payment that would have an effect on the gas bill for a period of 30 years. This compensation decree was declared void by the Constitutional Court in 2017 due to its urgent processing, therefore this right to

receive payment remains without effect. The banks are claiming the 1,350M€ advance payment from the Government. The National Commission on Markets and Competition (CNMC) and the Council of State have recognised the right to repayment of the amounts advanced for the compensation, so that, unless it was regulated again, the State might have to assume responsibility for the 1,350M€.

Beyond contingent liabilities, AIReF has identified a series of fiscal risks that could make the reduction of the structural deficit difficult. These risks derive from both non-recurring items and pressures on certain headings, as well as risk of implementation of the measures. First, as noted above, the materialisation of savings resulting from the recommendations of the Spending Review will depend on when they are implemented. Furthermore, a worse than expected macroeconomic evolution as the baseline scenario also poses a fiscal risk as previously mentioned.

The Budgetary Plan does not indicate the amount envisaged for 2020 in the accounts of the Deposit Guarantee Fund) of expected payments due to Asset Protection Schemes. During 2019 payments have been made for a total of 1,793M€ for this concept. The *Deposit Guarantee Fund* allocate 3,600M€ for the Asset Protection Schemes of CAM and Unnim, which will be settled in a period of 3 years in accordance with the agreement reached in December 2018.

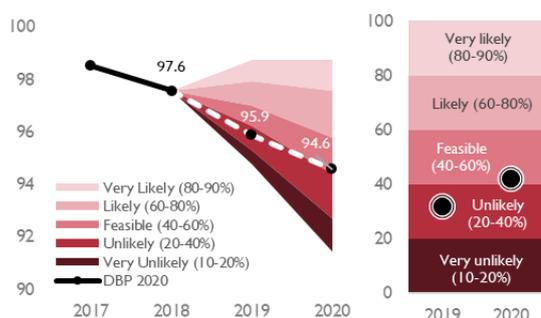
There are other operations that may pose a risk in the medium term for the expected deficit path, such as military investments, on which no information is provided. Investments in defence modernisation programs are already in the process of implementation and represent a significant volume of expenditure and will have a significant impact on the deficit in the coming years. However, no information is published about the planning of these military payments and their impact on the public deficit. No information is available on the possible impact of the risks assumed by public-private collaboration contracts or loans granted by public administrations that may be doubtful.

4

DEBT SUSTAINABILITY ANALYSIS:

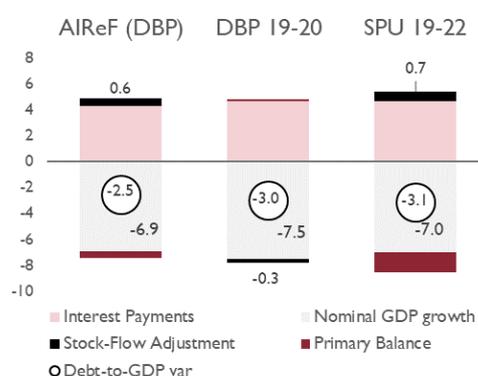
AIReF considers the debt forecast of the budgetary plan to be unlikely for 2019 and feasible for 2020. The Budgetary Plan projects a debt path of 95.9% and 94.6% GDP for 2019 and 2020. According to AIReF's analytical models, this projection is considered unlikely in the case of 2019, and feasible for 2020, as can be seen in chart 54.¹³

CHART 54. BUDGETARY PLAN DEBT FORECASTS 2019-2020 AND STOCHASTIC ANALYSIS



Source: AIReF's calculations

CHART 55. CONTRIBUTION TO THE ACCUMULATED VARIATION OF THE DEBT-TO-GDP RATIO IN THE 2019-2020 PERIOD



Source: AIReF's calculations

As in the past four years, the Budget Plan foresees a reduction in the debt-to-GDP ratio based exclusively on the nominal growth. The accumulated debt correction expected by the Government for the period 2019-2020 barely reaches 0.3% GDP (2.5 p.p. according to AIReF's forecasts). This decrease is based on the impact of the nominal growth (denominator), with little input from an improvement in the primary balance. In strictly legal terms, the pace of debt reduction does

¹³ The probability ranges have been updated to reflect the latest changes published in the Quarterly National Accounts.

not comply with the requirements laid down in the LOEPySF. The LOEPySF requires that the debt-to-GDP ratio decrease by at least 2% GDP in the event that the economy or employment grow at annual rates above 2%. From 2015 to 2018, the Spanish economy and employment have increased by more than 2% in year-on-year terms. However, the debt-to-GDP ratio has not decreased by the minimum required by the LOEPySF in any year. In 2019, the projections in the Budgetary Plan again fail to comply with such legal prerogative, considering a debt reduction of 1.7% GDP, although the economy and employment will grow above 2%.

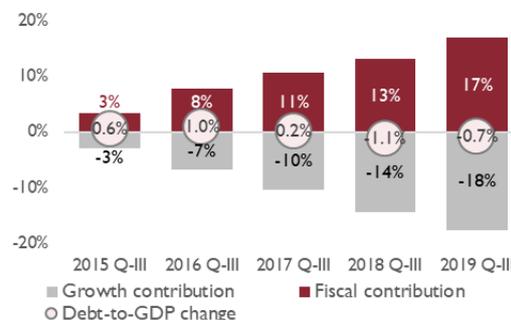
The debt forecasting scenarios without new measures or in a “no-policy-change” situation imply unsustainable debt growth paths. Given the current stock of debt, practically stabilised at values near 100%, and the maturation of the economic cycle (increasingly lower GDP growth), the current pace of debt reduction needs to be strengthened to avoid generating doubts about sustainability, particularly in the long term. In effect, the correction of the structural deficit, estimated to be around 1.5% GDP (according to AIReF’s estimates) would support the correction of the debt levels beyond the effect of growth. The generation of future buffers could be key to responding to challenges such as demographic ageing and its impact on the public accounts, for example through increased pension expenditure.

4.1 Sustainability analysis

After five years of strong economic growth and historically low interest rates, the debt-to-GDP ratio has practically not decreased. The debt-to-GDP ratio of the PAs stood at 98.9% in the second quarter of 2019. In the last 20 quarters the debt-to-GDP ratio has only declined by 0.8%. This is mainly due to the effect of two opposing factors. On the one hand, the growth of the economy has contributed to reducing the debt-to-GDP ratio by 18 points. On the other hand, budget deficits have contributed to increasing the ratio by 17 points. The latter has been in spite of the substantial drop in interest rates observed in the period.

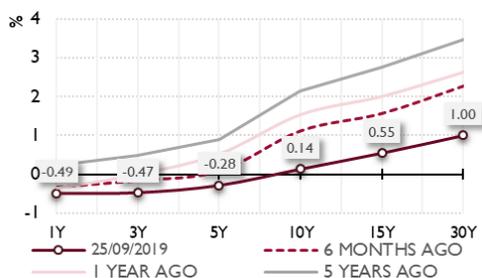
CHART 56. DEBT (% GDP), EVOLUTION IN THE SECOND QUARTER OF EACH YEAR


Source: Banco de España

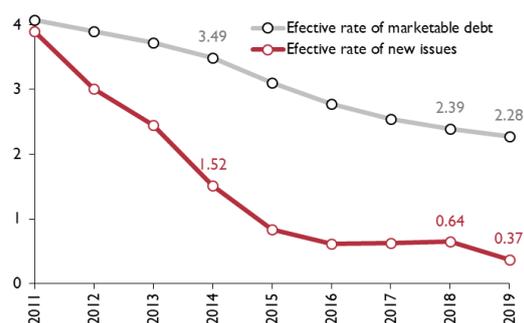
CHART 57. CONTRIBUTION TO THE CUMULATIVE CHANGE IN DEBT FROM 2014 Q-II (5 YEARS)


Source: AIReF's calculations

The observed decrease in interest rates has allowed a significant reduction in the debt burden. Since mid-2012 the effective cost of debt financing of the PAs has been systematically reduced by almost 180 basis points (4.20% in 2013 vs. 2.4% projected for 2019). In the case of the State, which represents most of the PAs' debt, the dynamics has been similar. Although the debt-to-GDP ratio has remained relatively stable over the past 5 years, the lowering of interest rates has allowed a reduction in the interest burden of approximately 1.2 percentage points (up to 2.3% GDP projected for 2019).

CHART 58. INTEREST RATE CURVE OF SOVEREIGN DEBT


Source: Datastream

CHART 59. AVERAGE COST OF STATE DEBT AND NEW ISSUES


Source: Spanish treasury

In the face of a level of public indebtedness close to total GDP, this savings implies a great opportunity to accelerate the pace of deleveraging. In the long term, it is expected that the interest burden will decline to average 1.6% GDP (something not seen since the expansionary phase of the past decade). In this way, AIReF's regulatory

scenario projects that the debt-to-GDP ratio of the PAs will drop below 60% in the mid 2030s. This scenario envisages a more demanding fiscal policy than that observed in recent years and aimed at achieving the reference debt levels included in the LOEPySF. However, even if current expectations about the evolution of the debt financing rates, if the primary balances do not improve, the debt-to-GDP ratio will grow in the long term. Under this assumption, toward 2050 the PAs' debt would exceed 90% GDP.¹⁴

¹⁴ A more detailed analysis will be published following this report in AIReF's Debt Monitor.

5

FISCAL POLICY STANCE

In July 2019, the ECOFIN Council agreed to the closure of the Excessive Deficit Procedure (EDP) that Spain had open since 2009. After checking that the deficit for 2018 had been less than 3% GDP (specifically, in 2018 the deficit was 2.5%) and that it was not then expected to exceed that limit, in July the ECOFIN Council agreed to remove Spain from the corrective arm of the Stability Pact. In fact, in 2017, the public deficit would already have reached 3% (compared to the 3.1% observed before the INE's Statistical Revision).

After the closure of the EDP, the GG is no longer subject to the corrective arm but rather the preventive arm, which is more demanding in terms of the fiscal effort required. After the closure of the EDP, the GG is no longer subject to the corrective arm but rather the preventive arm, which is more demanding to the extent that it does not allow governments to support the consolidation so much on the effect of the economic cycle, because the consolidation requirements are expressed in terms net of the cycle. Each country must set a medium-term objective (that in Spain is set in the LOEPySF¹⁵) and is subject to the following rules: achieving a minimum annual structural fiscal consolidation toward that objective, limiting the growth of public expenditure in accordance with a reference rate and ensuring that the ratio of public debt to GDP, which is above 60%, maintains a downward trend.

The forecasts of the Budgetary Plan expect non-compliance with the first criterion, annual fiscal consolidation, which in 2019 and 2020 should be 0.65% GDP. The Budgetary Plan submitted by the Government has been prepared under the assumption of no policy change. The absence of measures is validated by the fact that the correction of the deficit for 2020 is left in the hands of the economic cycle and possible one-off or temporary measures. The calculated effort by the Government in the Budgetary Plan is, therefore, of zero.¹⁶ According to the figures included in the Budgetary Plan, the

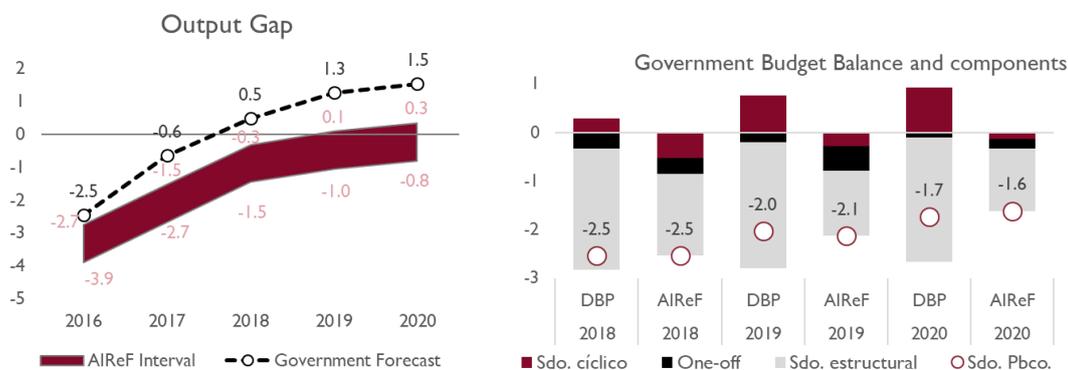
¹⁵ This is the structural balance, net of exceptional and temporary measures, with an exception for cases of reforms of the pension system.

¹⁶ Calculated according to the top-down methodology of the European Commission.

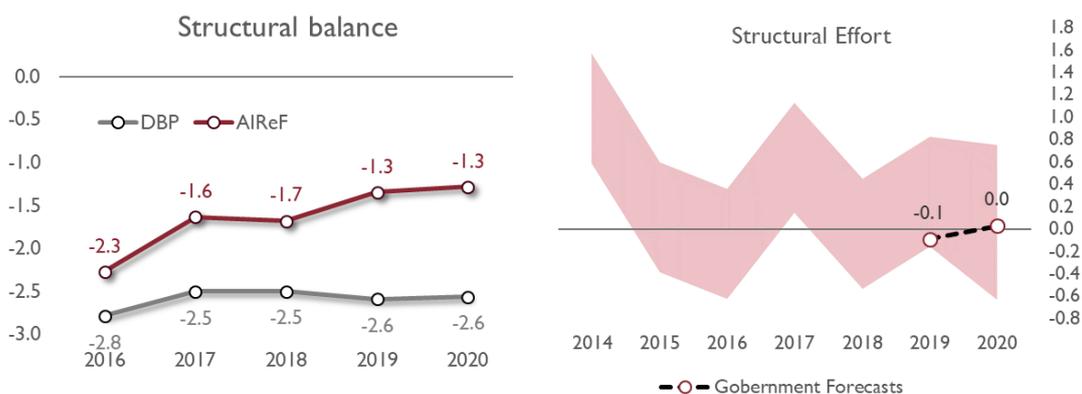
contribution of the cycle to the closure of the deficit is positive both in 2019 (0.5 p.p.) and in 2020 (0.1 p.p.) thanks to the improvement of the output gap (see chart 60). The structural balance (excluding the one-off measures in addition to the effect of the cycle), remains constant over the forecasting period at -2.6% GDP, consistent with a zero effort. The deviation of this expected effort from the effort required (0.65% GDP) can be considered significant as it exceeds 0.5 p.p. In this case, the decision to open a significant deviation procedure (a reflection of the PDE, but in the preventive arm of the Stability and Growth Pact) would depend on the assessment of compliance or non-compliance with the expenditure rule.

Following AIReF's methodology, the structural deficit is less than estimated in the Budgetary Plan, but non-compliance with the effort required of 0.65% is maintained. As noted in previous reports, AIReF makes its own estimate of the output gap, as well as the potential output of the economy, with confidence bands, incorporating considerations of uncertainty.¹⁷ AIReF's estimate of the output gap offers a more delayed cycle than the Government, reaching neutral positions in 2020. These estimates, together with the quantification of one-off measures, entail a structural deficit of around 1.5% GDP, below what was estimated with data from the Government and the European Commission's methodology. In terms of structural effort, the contribution of the cycle required to improve the output gap is lower than calculated by the Government, which, in order to reach AIReF's deficit forecasts, the PAs would be making structural effort of 0.3% in 2019, although it would be below what is required by the Council's recommendation, therefore non-compliance with this criterion would continue. chart 60 shows the contributions of the various factors (cycle, one-off measures and structural change) to the variation of the deficit both in the Government's and AIReF's forecasts.

¹⁷ See [Working Paper 2/2018. Estimating Output Gap: a beauty contest approach.](#)

CHART 60. OUTPUT GAP AND FISCAL EFFORT OF THE PUBLIC ADMINISTRATIONS


Source: AIReF's calculations with its own and the Government's estimates.



Source: AIReF's calculations with its own and the Government's data.

The forecasts of the Budgetary Plan, as well as AIReF's scenario, also anticipate non-compliance with the second criterion, of expenditure growth. The difficulty of precisely estimating the structural effort made it advisable to develop expenditure control rules, a variable that today supports the structural balance in the determination of compliance with the Council's recommendations. The requirement for Spain is that computable expenditure, net of discretionary revenue measures, should not grow above a rate of 0.6% in 2019 or above 0.9% in 2020. The Government expects that, in the inertial scenario of the Budgetary Plan, this variable will grow above the reference limit. In the original publication of the Budgetary Plan an error appears in the reference growth rate. Having corrected this error, the reference rates would be of 2.9% for 2019 and 3.6% for 2020, according to AIReF's calculation. It should be noted that the publication of this outlook by the Government is an exercise in transparency that facilitates analysis, which is particularly relevant now that Spain has moved to the preventive arm of the Stability Pact and given the complexity of calculating the reference rate of the expenditure rule. For its part, AIReF, applying the Community rule, but using its own models and

estimations, also estimates that the growth of this variable of public expenditure would be above the reference rate in 2019 and 2020.

Spain is currently enjoying a transitional period for compliance with the third criterion, that of the debt rule, which is evaluated based on the annual fiscal effort required. Three years after the closure of the EDP, it should be considered that the debt-to-GDP ratio that exceeds 60% is reduced to a satisfactory pace, or the EDP will be re-opened for debt rather than excessive deficit. For this reason, the difference between the ratio observed at a moment in time and the reference value of 60% must be reduced (or be expected to be reduced) at a rate of 0.05 per year on average over the last three years (or during the current year and the following two, provided that the forecast of non-compliance cannot be attributed to the influence of the cycle). Spain is currently enjoying a transitional period for compliance with this criterion, during which it is not exempted from making an adjustment, but compliance with the debt criterion is evaluated based on the annual structural fiscal effort. If this effort is made, estimated by the Commission, at the end of the transitional period there should be compliance with the debt rule. As has been indicated, the inertial Budgetary Plan fails to comply with the structural effort required, both under the methodology of the EU and under that of AIR^eF.

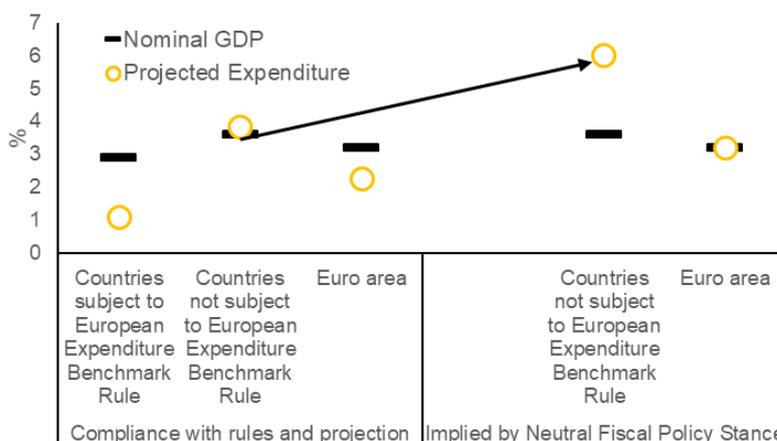
In addition, the Council Recommendation on the use of windfall revenues to reduce the debt would apply only in the case of growth above 2.1%. The Council Recommendation stipulates that windfall revenues, from an economic growth with upside surprises, are not intended to finance additional expenditure but to emit less public debt. This limitation would be restrictive in 2019 only if the growth presented an upside surprise above the 2.1% forecasted in May by the Commission.

5.1 Some implications of the expenditure rule

The individual application of the EU expenditure rule for the countries subjected to it in the euro area is inconsistent with the European institutions' target of achieving a neutral aggregate fiscal policy. The application of the EU expenditure rule generates certain rigidities that could result in an undesirable inconsistency between the declarations of intent on the fiscal policy stance in the euro area as a whole and the reality of the fiscal policy defined as an aggregation of the stance of the Member States. chart 61 shows that the countries that have not achieved their medium-term objective (including Spain) and are therefore subject to the expenditure rule, foresee an average growth of their primary public expenditure significantly less than their GDP growth in nominal terms. However, those who have complied with the objective foresee an approximately equal growth. On the whole, for the euro

area the growth of primary expenditure is lower than that of GDP in nominal terms, giving rise to a restrictive policy. This contractionary tone diverges from the statement of intent by Mario Centeno, President of the Eurogroup, following the meeting on 9 October, moving the conclusion of the Eurogroup to a neutral stance, which would imply an expenditure that grow at rates similar to nominal GDP.¹⁸ The simulation performed indicates that, for that to happen, maintaining the behaviour of the countries subject to the EU expenditure rule, the countries that are not subject to the rule should increase their primary expenditure very substantially, even doubling the nominal GDP growth expected.

CHART 61. FORECAST AND COMPLIANCE WITH THE EXPENDITURE RULE AND SIMULATION OF A NEUTRAL FISCAL POLICY STANCE



Source: AIReF's calculations based on the spring forecasts of the European Commission.

Note: the euro area countries subject to the European expenditure rule are Spain, Belgium, Estonia, Finland, France, Ireland, Italy, Latvia and Portugal. Countries not subject: Germany, Austria, Cyprus, Greece, Lithuania, Luxembourg, Malta, Netherlands.

¹⁸ " We agreed on the importance of avoiding pro-cyclicality [of the fiscal policy] in the euro area: if there is a more marked downturn, we should not tighten our policies and make it worse. Where possible, fiscal stance should be more accommodative if downward risks materialise". The statement is available [here](#).

6 RECOMMENDATIONS AND SUGGESTIONS FOR BEST PRACTICE

6.1 New recommendations

6.1.1 On the publication of statistical revisions

In 2019, the INE has revised the National Accounts series within the framework of an exercise carried out in a coordinated manner by 18 Member States of the European Union and Norway. The publication of the revision was carried out in two phases. In the first place, on 16 September the INE presented a preview of the Quarterly National Accounts data until the second quarter of 2019 and the Annual National Accounts until 2018, although it did not publish the Non-financial Accounts of the Institutional Sectors (NFAIS) according to this revision (which reduced the effectiveness of the publication of the preview). Finally, the complete statistical data, including the NFAIS, was definitely published on 30 September.

Although this revision has been carried out in compliance with the requirements and quality criteria of statistical production established in the framework of the European Statistical Programme, it should be noted that their dissemination does not fully meet two basic principles in the operation of any statistical producer: user orientation and transparency in communication.

In fact, the proximity of the publication of details of this statistical revision to the preparation of the Budgetary Plan that the Government must send to the Community authorities represents an added difficulty to preparing the base macroeconomic projections (which should incorporate the most up-to-date statistical information relating to the National Accounts).

In addition, the lack of transparency in the communication of the impact of methodological changes in the main macroeconomic aggregates has meant an added complexity for all analysts in making forecasts. In fact, any forecasting must have the understanding and modelling of economic relations as its starting point. If these relations have been affected by statistical

changes (sources, techniques, models, assumptions), it will be necessary to know the detail of the same and its impact in order to draw any inference in the future.

The revision of the National Accounts series has had important consequences for the analysis of the Spanish economy, largely amending the estimated historical patterns and relations between variables that are the basis of our understanding of the functioning of the economic system. However, despite the scope of the revisions, there has not been an active communication policy of the methodological developments and their impact on historical series.

For this reason, and having reviewed the European experience and best practices, AIR^eF considers that the INE's action must go beyond strict compliance with the minimum established by the European regulations of the data transmission programme of the ESA2010 and the quality criteria in statistical production established by Eurostat.

The INE must use the margins of flexibility that allowed the calendar set by Eurostat in order to facilitate the work of the Government and of the main institutional actors in the preparation of the macroeconomic outlook and the fiscal scenario that serve as the basis of the main budgetary documents.

In addition, the INE must conduct itself with much greater transparency in its procedures for the revision and publication of the National Accounts data and adopt an approach designed to facilitate the work of the users, as indispensable elements to ensure the most efficient use of its statistics. This need becomes even more evident in a time like the present, given the significant impact that the latest revision of the National Accounts has had.

As a result, **AIR^eF recommends that the INE:**

1. According to the general principles of the INE's revision policy, in particular principle 15, it should fulfil its own requirements of transparency and information to users by implementing a transparent communication policy and an active policy for the revision of National Accounts data, which reflects the European best practices, through:

- **the publication and dissemination of the existing methodological guides on the procedure for the preparation of the National Accounts;**
 - **the adaptation of the dissemination of the data revision to the national and European budgetary calendars;**
 - **improved communication of the revisions, including comparative exercises that allow the final user of the statistics to understand the motivation and scope of the revision.**
-

In the case of the accounts of the PAs, under the competence of the IGAE, the data published on September 30 incorporate two effects in the data for 2017 and 2018: (1) update of information sources which is carried out every year by all countries within the framework of the procedure for sending information to the EU and (2) the effect arising from the statistical revision which has been carried out within a five-year revision calendar.

In this regard, the IGAE has stated its intention to publish a detailed methodological note in the next few weeks, which leads to AIR^eF to formulate a recommendation given its importance to the replicability of the data and projections.

In this sense, and in general, it is considered desirable that any change introduced by the IGAE, either by a statistical revision or the introduction of new data, including any changes arising from moving from preview to provisional data, should always be accompanied by an explanatory note on the changes made in the interest of greater transparency and to facilitate the use of these series.

AIR^eF recommends to the IGAE:

- 1. In general, any changes, either by a statistical revision or the introduction of new data, should always be accompanied by the issue of an explanatory note on the changes made.***
- 2. In particular, the methodological note on the statistical revision published should include a description and quantification of the effect of the changes, breaking down those arising from the update of information sources caused by the application of the methodological changes of the statistical revision of this year.***

6.2 Live recommendations

6.2.1 On setting the stability targets (made in the Report on the Initial Budgets of the Public Administrations published on 5 April)

Once Spain leaves the excessive deficit procedure and moves to implementing its fiscal policy within the framework of the preventive arm of the Stability and Growth Pact, the need to define a plausible medium-term fiscal strategy arises.

On a number of occasions AIR^eF has recommended the need to design a strategy that considers a medium-term view underpinned by a realistic debt reduction path, that enables pre-empting future expenditure pressures that, in

turn, improves financial sustainability. The basis for the credibility of this medium-term scenario is the setting of consistent targets with sufficient backing that facilitates the monitoring of the budgets at the different levels of administration. At the same time effort needs to be made to ensure that the budgets of each administration are prepared in National Accounting terms as an additional budgetary classification to existing ones.

On the other hand, the return to the preventative arm of the Stability and Growth Pact means that special attention needs to be paid to the path of convergence towards the MTO set for Spain; a path that must be clearly identified in the medium-term fiscal strategy. The Organic Law on Budgetary Stability and Financial Sustainability (LOEPySF for its Spanish acronym) also places limitations on the structural deficit that should be verified in the information published on stability targets and their distribution by sub-sectors.

For this reason, **AIR^eF recommends that:**

- 1. As the starting point of the budgetary process, the setting of stability and debt targets for the 2020-2022 period should be underpinned by a government debt reduction path, which translates into a fiscal strategy that includes an analysis of the evolution of the structural balance in the medium term.**
- 2. The analysis and information that serves as a basis for determining the path of the stability targets and debt for the GG and for each of the sub-sectors should be published.**
- 3. The fiscal strategy should consider the European framework and offer information relating to compliance.**

6.2.2 On the dissemination of data to assess the impact of the increase in the minimum wage

The rise in the minimum wage for 2019 by over 22% has been one of the potentially most relevant economic policy decisions in recent years. Its importance comes from the large number of workers directly affected, in many cases from vulnerable groups, and the academic uncertainty about the effects of an increase like this, especially on employment.

An Administration committed to evidence-based policies must undertake a strict evaluation of its effects on the various relevant dimensions, such as employment, poverty, inequality or public revenue, and also make it easier for others to carry out their own assessments by making the necessary data available to institutions and researchers.

AIReF, in compliance with the Recommendation 2. b) of the Report on the Budgetary Plan for 2019, has requested the Ministry of Labour, Migrations and Social Security to assess the administrative data necessary for the rigorous evaluation of the measure. As such data are not available to AIReF and other researchers, AIReF recommends that:

- 1. The Ministry of Labour, Migrations and Social Security and the Ministry of Economy and Business should conduct an assessment of the effects of the rise in the minimum wage for 2019 based on the most rigorous methodologies and if necessary using the collaboration of external evaluators and publishing the results and the methodology used.***
- 2. They should make the administrative data needed to replicate this and perform other evaluations available to researchers and institutions, always safeguarding the necessary confidentiality of the personal data of the subjects.***

El Presidente de la AIReF



José Luis Escrivá

7 ANNEXES

7.1 Forecasting errors Biases

CHART 1. FORECASTING ERRORS OFFICIAL FORECASTS INTERQUARTILE RANGE OF THE PANEL

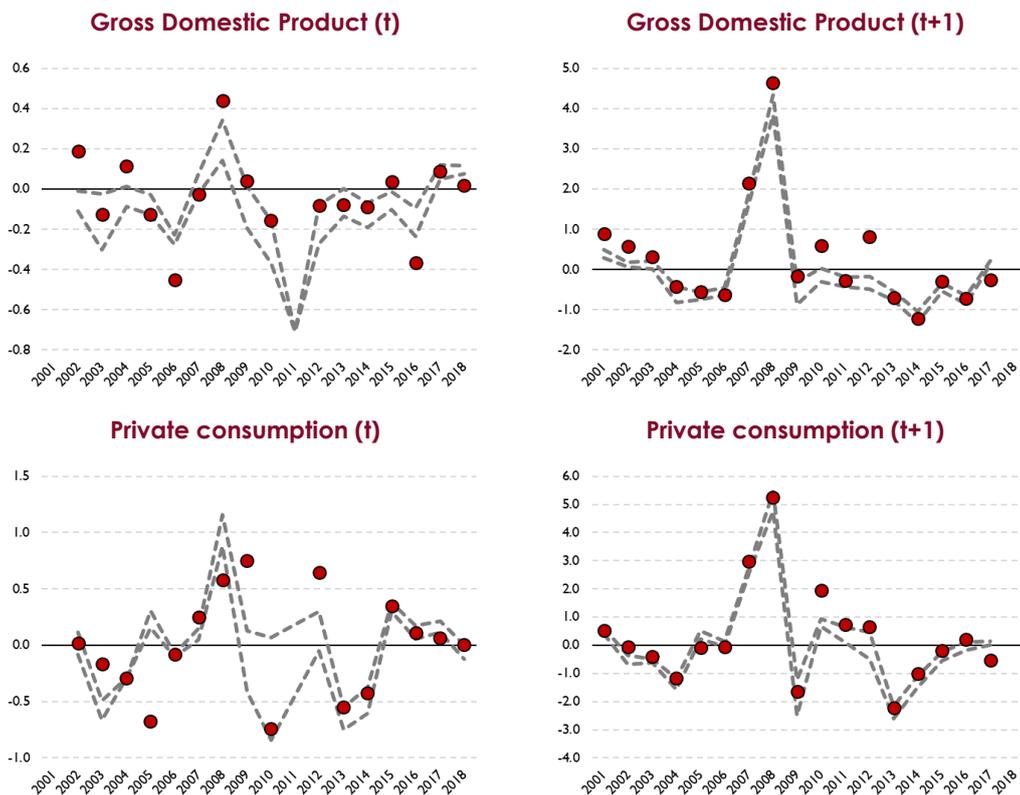


CHART 2. FORECASTING ERRORS OFFICIAL FORECASTS INTERQUARTILE RANGE OF THE PANEL (CONTINUED)

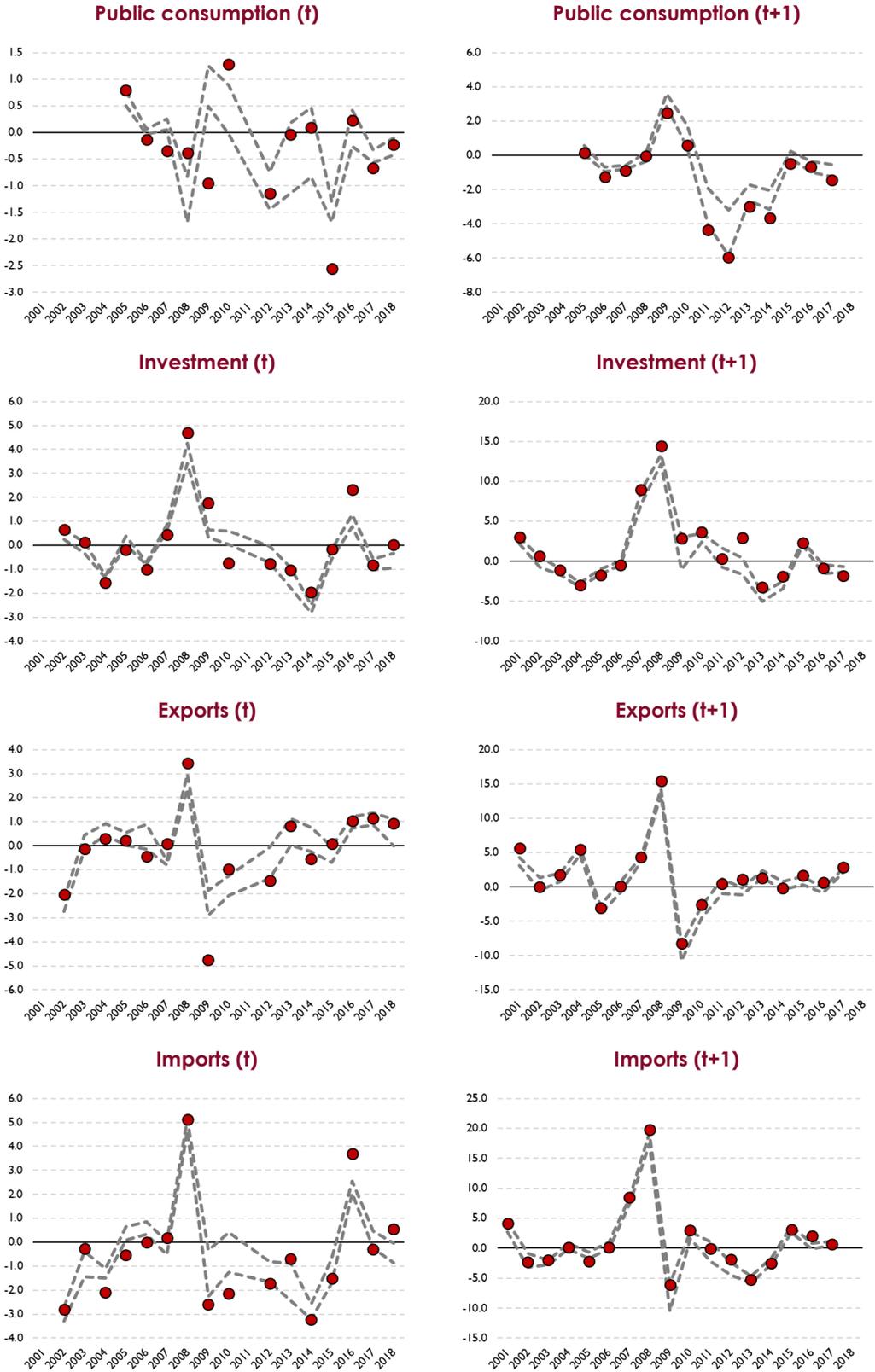


CHART 3. FORECASTING ERRORS OFFICIAL FORECASTS INTERQUARTILE RANGE OF THE PANEL (CONTINUED)



TABLE 1. OFFICIAL MACROECONOMIC SCENARIO AND VARIATIONS WITH RESPECT TO THE STABILITY PROGRAMME UPDATE

	DBP 2020		SPU 2019-2022		DBP 2020 vs SPU 2019-2022		
	2019	2020	2019	2020	2019	2020	Cumulated 2019-2020
GDP (real var)							
- Private Consumption (a)	0.9	1.2	0.9	0.8	0.0	0.4	0.4
- Public Consumption	2.0	1.5	2.0	1.5	0.0	0.0	0.0
Gross Capital Formation			0.0	0.0			
Construction	3.6	3.5	3.6	3.5	0.0	0.0	0.0
Equipment, machinery and cultivated assets	3.6	3.4	3.6	3.4	0.0	0.0	0.0
Domestic demand (contribution to GDP growth)	1.5	1.6	1.5	1.4	0.0	0.2	0.2
Exports	1.7	2.3	1.7	2.5	0.0	-0.2	-0.2
Imports	0.1	2.0	0.1	1.6	0.0	0.4	0.4
Foreign Demand (contribution to GDP growth)	0.6	0.2	0.6	0.4	0.0	-0.2	-0.2
			0.0	0.0			
GDP	2.1	1.8	2.1	1.8	0.0	0.0	0.0
Nominal GDP: thousands of millions of euros	1249	1294	1249	1294	0	0	0
Nominal GDP: annual variation (%)	3.9	3.6	3.9	3.6	0.0	0.0	0.0
			0.0	0.0			
			0.0	0.0			
PRICES (% var)							
GDP deflator	1.7	1.8	1.7	1.8	0.0	0.0	0.0
Private Consumption Deflator	1.5	1.6	1.5	1.6	0.0	0.0	0.0
			0.0	0.0			
			0.0	0.0			
LABOUR COSTS AND EMPLOYMENT (% var)							
Compensation per Employee	2.1	2.2	2.1	2.2	0.0	0.0	0.0
Total Employment (b)	2.3	2.0	2.3	2.0	0.0	0.0	0.0
Productivity growth per worker (b)	-0.2	-0.2	-0.2	-0.2	0.0	0.0	0.0
Unit Labour Costs	2.3	2.4	2.3	2.5	0.0	0.0	0.0
			0.0	0.0			
<i>Pro memoria</i>			0.0	0.0			
Unemployment rate (% Labour Force)	13.8	12.3	13.8	12.3	0.0	0.0	0.0
(a) Households and NPISH							
(b) Full-time equivalent employment							
Source: INE & Ministerio de Economía y Empresa							

TABLE 2. FORECASTS BY INTERNATIONAL ORGANISATIONS

		Last update	2018	2019	2020
Short-term interest rate	AIREF				
	Central Government	April	-0.3	-0.3	-0.2
	ECB	September	-0.3	-0.4	-0.6
	IMF	October	-0.3	-0.4	-0.6
	European Commission	July	-0.3	-0.3	-0.5
Long-term interest rate	AIREF				
	Central Government	April	1.4	1.3	1.4
	ECB	September	1.1	0.4	0.1
	IMF	July	0.4	-0.2	-0.2
	Expectativas mercado	October	-	1.0	0.9
Exchange rate (\$/€)	AIREF				
	Central Government	April	1.2	1.1	1.1
	ECB	September	1.2	1.1	1.1
	European Commission	July	1.2	1.1	1.1
Nominal effective exchange rate	AIREF				
	ECB	September	5.2	-0.6	0.5
	European Commission	July	4.8	-0.9	0.3
	OECD	May	105.6	105.3	105.3
World's GDP	AIREF				
	Central Government (exclud	April	3.9	3.6	3.8
	ECB	September	3.8	3.1	3.4
	IMF	October	3.6	3.0	3.4
	European Commission	May	3.6	3.2	3.5
	OECD	September	3.5	2.9	3.0
Euro Area GDP	AIREF				
	Central Government	April	1.8	1.2	1.6
	ECB	September	1.9	1.1	1.2
	IMF	October	1.9	1.2	1.4
	European Commission	July	1.9	1.2	1.4
	OECD	September	1.9	1.1	1.1
Spanish export markets	AIREF				
	Central Government	April	3.0	2.8	3.3
	Bank of Spain	September	3.0	1.9	2.5
Brent Crude Oil Price (USD per barrel)	AIREF				
	Central Government	April	71.5	65.5	65.0
	ECB	September	71.1	62.5	57.0
	IMF	October	71.1	64.4	60.5
	European Commission	July	71.5	64.7	61.5
	OECD	May	71.0	68.4	70.0
	Market expectations	04/10/2019	-	61.5	56.2
World Trade Volume (goods and services)	AIREF				
	ECB	September	4.6	0.4	2.2
	IMF	October	3.6	1.1	3.2
	OECD	May	3.9	2.1	3.1

7.2 Detail of statistical revision of National Accounts

Below are the most significant changes of the SR2019 (see table 1), both for the whole period, and for the period from 2015 to 2018.

The technical project of the INE¹⁹ listed the following as the main changes included in the statistical revision:

- Preparation of non-financial asset balances by institutional sector and branch of activity and their integration into the central accounts system.
- Review of the statistical sources in relation to the measurement of the economy not observed.
- Review of the compilation process of the source and destination tables at current prices, input output tables and statistical improvements in the aggregates.
- Preparation of the source and destination tables at the prices of the preceding year.
- Statistical revision in the accounts of the General Government Sector (S.13).
- Statistical revision in the accounts of the rest of the world.
- Statistical revision in the accounts of the Financial Institutions.
- Revision of the accounts of non-profit institutions serving households.
- Possible implications of the results of the Table of Pensions in the compilation of the accounts of the institutional sectors.
- Review of the sources of information and methods for calculation of the expenditure and revenue variables.

¹⁹ See INE

ESCENARIO MACROECONÓMICO						
VOLUMEN (% var. real, salvo indicación contraria)	Promedio	Promedio	Promedio	Promedio	Promedio	Promedio
	1996-2018 (Base 2010)	1996-2018 (Base 2015)	1996-2018 (diferencia)	2015-2018 (Base 2010)	2015-2018 (Base 2015)	2015-2018 (diferencia)
PIB	2.2	2.2	▼ 0.0	3.1	3.0	▼ -0.1
Consumo total (contribución al crecim. del PIB)*	1.6	1.6	▲ 0.0	1.9	1.8	▼ -0.1
Consumo privado	1.9	1.9	▲ 0.0	2.7	2.6	▼ -0.1
Consumo público	2.7	2.7	▼ 0.0	1.8	1.4	▼ -0.3
FBCF Bienes de Equipo y Recursos biológicos	4.5	3.9	▼ -0.6	7.1	6.5	▼ -0.6
FBCF Construcción y Propiedad Intelectual	1.6	1.5	▼ -0.1	3.8	3.7	▼ -0.1
Demanda nacional (contribución al crecim. del PIB)*	2.2	2.1	▼ -0.1	3.0	2.9	▼ -0.1
Exportaciones	4.8	4.8	▲ 0.0	4.2	4.4	▲ 0.2
Importaciones	4.5	4.5	▲ 0.0	4.3	4.4	▲ 0.1
Saldo Exterior (contribución al crecim. del PIB)*	0.1	0.1	▲ 0.0	0.1	0.1	▲ 0.1
Output gap (% PIB Potencial)						
PRECIOS (% var. real, salvo indicación contraria)						
PIB	2.1	2.1	▲ 0.0	0.8	0.8	▲ 0.1
Consumo privado	2.2	2.2	▼ 0.0	0.8	0.8	▲ 0.0
Consumo público	1.8	1.8	▲ 0.1	0.7	1.1	▲ 0.4
FBCF Bienes de Equipo y Recursos biológicos	1.0	1.0	▲ 0.0	0.9	1.2	▲ 0.3
FBCF Construcción y Propiedad Intelectual	2.3	2.1	▼ -0.2	1.7	1.7	▲ 0.1
Exportaciones	1.6	1.7	▲ 0.0	0.9	0.7	▼ -0.1
Importaciones	2.1	2.1	▲ 0.0	1.2	1.1	▼ -0.1
NOMINAL (% var. real, salvo indicación contraria)						
PIB	4.4	4.3	▼ 0.0	3.9	3.9	▲ 0.0
Consumo privado	4.1	4.1	▲ 0.0	3.4	3.4	▼ 0.0
Consumo público	4.6	4.6	▲ 0.0	2.5	2.5	▲ 0.1
FBCF Bienes de Equipo y Recursos biológicos	5.6	5.0	▼ -0.6	8.1	7.8	▼ -0.2
FBCF Construcción y Propiedad Intelectual	4.1	3.8	▼ -0.3	5.5	5.5	▼ 0.0
Exportaciones	6.5	6.6	▲ 0.1	5.1	5.1	▲ 0.0
Importaciones	6.3	6.2	▼ 0.0	5.6	5.6	▲ 0.0
NOMINAL (miles de millones de €)						
	Promedio	Promedio	Promedio	Promedio	Promedio	Promedio
	1995-2018 (Base 2010)	1995-2018 (Base 2015)	1995-2018 (% var Base 2010)	2015-2018 (Base 2010)	2015-2018 (Base 2015)	1995-2018 (% var Base 2010)
PIB a precios corrientes	892	889	▼ -0.4	1,144	1,139	▼ -0.4
Consumo privado	518	521	▲ 0.5	659	664	▲ 0.8
Consumo público	164	165	▲ 0.1	215	216	▲ 0.4
FBCF Bienes de Equipo y Recursos biológicos	62	57	▼ -7.4	82	71	▼ -14.0
FBCF Construcción y Propiedad Intelectual	152	146	▼ -4.0	151	140	▼ -7.1
Exportaciones	252	255	▲ 1.1	385	393	▲ 1.9
Importaciones	260	259	▼ -0.2	356	355	▼ -0.3

EMPLEO						
Empleo (%var. Salvo indicaciones en contra)	Promedio	Promedio	Promedio	Promedio	Promedio	Promedio
	1996-2018 (Base 2010)	1996-2018 (Base 2015)	1996-2018 (diferencia)	2015-2018 (Base 2010)	2015-2018 (Base 2015)	2015-2018 (diferencia)
Empleo total EETC	1.5	1.4	▼ -0.1	2.9	2.8	▼ -0.1
Del sector privado	1.4	1.2	▼ -0.1	3.1	3.2	▲ 0.0
Del sector público	1.9	1.9	▼ 0.0	2.2	1.7	▼ -0.5
Remuneración por asalariado EETC (miles de €)*	2.4	2.4	▲ 0.0	0.4	0.4	▲ 0.0
Del sector privado	2.5	2.7	▲ 0.2	0.7	1.4	▲ 0.7
Del sector público	2.3	2.3	▼ -0.1	0.3	0.1	▼ -0.2
Productividad por ocupado*	0.8	0.8	▲ 0.1	0.2	0.2	▲ 0.0
Coste laboral unitario nominal (CLU)*	1.6	1.6	▼ -0.1	0.2	0.2	▲ 0.0

CUENTAS DE LOS SECTORES INSTITUCIONALES (miles de millones de €)						
	Promedio 1999-2018 (Base 2010)	Promedio 1999-2018 (Base 2015)	Promedio 1999- 2018 (% var Base 2010)	Promedio 2015-2018 (Base 2010)	Promedio 2015-2018 (Base 2015)	Promedio 2015- 2018 (% var Base 2010)
Producción y explotación						
Valor añadido bruto	882.1	879.8	▼ -0.3	1,036.6	1,032.6	▼ -0.4
Sociedades no financieras	508.6	493.9	▼ -2.9	620.2	590.4	▼ -4.8
Instituciones financieras	38.5	37.8	▼ -1.9	39.7	39.5	▼ -0.4
Administraciones públicas	125.5	125.7	▲ 0.2	151.2	151.6	▲ 0.3
Hogares e ISFL	209.4	222.5	▲ 6.2	225.5	251.1	▲ 11.4
Remuneración de los asalariados	468.2	455.2	▼ -2.8	540.0	516.2	▼ -4.4
Sociedades no financieras	305.1	293.3	▼ -3.9	351.5	330.4	▼ -6.0
Instituciones financieras	19.4	19.6	▲ 0.8	19.6	19.9	▲ 1.6
Administraciones públicas	102.7	102.6	▼ 0.0	122.7	123.0	▲ 0.2
Hogares e ISFL	40.9	39.6	▼ -3.2	46.2	42.9	▼ -7.0
Resto del mundo	1.4	1.4	▲ 0.3	2.6	2.6	▼ -0.1
Excedente de explotación bruto	408.7	419.5	▲ 2.6	484.9	504.7	▲ 4.1
Sociedades no financieras	203.5	200.7	▼ -1.4	267.1	258.3	▼ -3.3
Instituciones financieras	17.8	17.0	▼ -4.7	16.8	16.5	▼ -1.8
Administraciones públicas	22.5	22.8	▲ 1.1	28.0	28.1	▲ 0.5
Hogares e ISFL	164.9	179.1	▲ 8.6	173.0	201.9	▲ 16.7
Asignación de la renta primaria						
Remuneración de asalariados RE Hogares e IS	469.1	456.2	▼ -2.8	542.3	518.4	▼ -4.4
Saldo rentas primarias bruto	960.1	955.8	▼ -0.4	1,142.7	1,140.1	▼ -0.2
Sociedades no financieras	157.4	157.3	▼ -0.1	227.8	223.1	▼ -2.1
Instituciones financieras	27.0	26.9	▼ -0.6	31.8	30.3	▼ -4.8
Administraciones públicas	104.7	103.4	▼ -1.2	126.5	126.8	▲ 0.3
Hogares e ISFL	671.0	668.3	▼ -0.4	756.6	759.9	▲ 0.4
Distribución secundaria de la renta						
Renta disponibles bruta	949.7	945.8	▼ -0.4	1,131.4	1,128.9	▼ -0.2
Sociedades no financieras	127.1	130.8	▲ 2.9	198.4	195.6	▼ -1.4
Instituciones financieras	22.5	20.8	▼ -7.4	26.9	24.2	▼ -10.0
Administraciones públicas	183.8	179.3	▼ -2.4	198.2	196.2	▼ -1.0
Hogares e ISFL	616.2	614.8	▼ -0.2	707.9	712.9	▲ 0.7
Utilización de la renta						
Ahorro bruto	208.9	201.8	▼ -3.4	257.5	249.0	▼ -3.3
Sociedades no financieras	127.1	130.8	▲ 2.9	198.4	195.6	▼ -1.4
Instituciones financieras	22.2	21.7	▼ -1.9	28.2	27.2	▼ -3.7
Administraciones públicas	3.9	-0.7	▼ -118.6	-16.5	-19.4	▼ -17.7
Hogares e ISFL	55.7	50.0	▼ -10.3	47.3	45.6	▼ -3.6
Tasa de ahorro hogares (% sobre RBD)	9.2	8.3	▼ -0.9	6.7	6.4	▼ -0.3
Operaciones de capital						
Cap.(+)/Nec. (-) s/PIB	-2.5	-2.3	▲ 0.3	1.9	2.9	▲ 0.9
Sociedades no financieras	-1.1	0.4	▲ 1.5	2.9	3.7	▲ 0.8
Instituciones financieras	1.8	1.8	▼ 0.0	2.2	2.1	▼ -0.1
Administraciones públicas	-3.6	-3.6	▼ 0.0	-3.8	-3.8	▲ 0.1
Hogares e ISFL	0.4	-0.8	▼ -1.2	0.6	0.8	▲ 0.2
Saldo de las operaciones corrientes con el exterior	3.2	2.8	▼ -0.4	-1.5	-2.5	▼ -0.9

7.3 Methodological detail

For a Report on Macroeconomic Forecasts, a range of econometric tools have been used, covering a relatively broad methodological spectrum. This note provides a summary of their main characteristics with the aim of describing the methodology supporting the report.

The first section presents the single-equation structural models and their design methods. These models have served as a basis on which to examine the consistency of official forecasts for the behaviour of their macroeconomic determinants. The technique applied uses quarterly data and error correction models.

The second section describes the employee reduced-form multivariate model. This model shows the dynamics for the main aggregates for real activity in the macroeconomic outlook and allows quarterly confidence intervals for the envisaged trends in these aggregates, with very little a priori conditioning. The methodology is included in the autoregressive vector models with exogenous variables and also uses quarterly data.

The third and last section briefly details the dynamic factorial models used for short-term (2 quarters) forecasts of GDP and its components, that permit the impact of the present time information on said aggregates to be reflected.

7.3.1 Single-equation structural models

For a quantitative assessment founded on a structural formula suggested by economic theory, several behavioural equations have been used based on the representation of error correction. A simplified presentation using Excel spreadsheets is available on the AIReF website for use by analysts.

The general principle of this approach is, first, to define a behavioural relationship between a given variable and its determinants, as suggested in economic theory. This theoretical relationship is quantified by means of a linear relationship characterising the long-term behaviour between the variable that is being described and its conditioning factors. This equation defines what is known as the “equilibrium relationship”, acting as a point of attraction toward which the variable under analysis should converge, but this is not always the case period-on-period. This deviation or error between the value compatible with the theoretical and the observed fundamentals mainly reflect shocks that distort long-term relations between the variable and its fundamental properties.

The short-term dynamic, usually characterised by the trend in the quarterly growth rate, results from combining two elements. The first of these is the partial

correction of the error arising in the long-term relationship. This adjustment quantifies the rhythm in which the variable closes the gap with the level compatible with its fundamentals in the long term. The second is a purely statistical, short-term dynamic that is complementary to the first and that defines the empirical relationship between the growth rates for the variable being described and the rates that apply to its determinants.

This equation, known as error correction, is supported by the econometric method known as co-integration analysis, that conducts comparative checks on any stable, well-defined long-term relationships for the quantification, in a second step, of the short-term dynamic.

Below is a brief description of the equations used herein: in all the equations, the frequency of observation was quarterly, the data were adjusted to seasonality and the calendar, and the sampling interval ranged from 1995:II to the most recent quarter observed.

Final household consumption

The equation describing the demand for final household expenditure considers that the trend depends on the gross real income available to households, their financial and real estate (taken separately) wealth, the unemployment rate, the value of real credit available for consumer goods and the real interest rate of consumer loans.

Investment in fixed capital: capital assets and cultivated assets

Companies are expected to determine their investment in capital goods according to the evolution of the aggregate demand, the envisaged profitability of their investment projects, the price of the labour factor, the user cost of capital and the use of the productive capacity. Aggregate demand is approximated in volume by means of the Gross Domestic Product. The expected profitability measure is determined from Tobin's Q, estimated as the quotient of the IBEX-35 over the productive capital stock. The price for the work factor will be given by the compensation per employee.

Fixed capital investment in construction and intellectual property

The determinants of gross fixed capital formation in construction included in this equation are the real available gross income, financial wealth and real estate wealth in the household sector, the flow of credit for housing purchase and refurbishing in real terms, relative prices of freehold property, deflated by

the price index for expenditure in final household consumption and the construction sector confidence indicator.

Exports of goods and services

The volume of exports in goods and services is set to depend on a variable that approximates external demand for goods and services, and on prices relative to exports of products that are substitutes for said goods, produced and exported by the rest of OECD countries and relative labour costs.

The variable that approximates the external demand for goods and services is global trade in goods by volume, provided by the Dutch Central Planning Bureau (CPB). In addition, as a variable for relative prices, the competitiveness trend index is taken, calculated through a comparison of domestic consumer price indices with those of the OECD, adjusted for changes in nominal exchange rates. Finally, relative labour costs are the relative labour costs of manufactures compared to developed countries.

Imports of goods and services

Demand for imports of goods and services is set to depend on the capacity for expenditure by the units residing within the economic domain, and on prices of imported goods in relation to their domestic substitutes. Thus, imported goods and services compete with those produced internally in the overall expenditure and the euro/dollar exchange rate.

As the variable representing the demand for imported goods and services, an index is designed that ponders each component in the final demand (Consumption, Investment and Exports) according to the share of imports. The indicator applied for relative prices is the quotient of the deflator of imports and goods and services over the deflator of domestic demand.

Private-sector employees

Activity level, represented by GDP in volume, the active population, private capital stock and real compensation per employee are considered determinants of private employees.

Compensation per private-sector employee

The evolution of the compensation per private-sector employee will be conditioned by the trend of the price levels, reflected in Overall CPI, the

productivity per employee, obtained as the ratio between GDP in volume and total full-time equivalent employment and the compensation per public-sector employee.

Underlying inflation

Underlying inflation will depend on unit labour costs, GDP in volume, the unemployment rate, the effective VAT rate and a dummy variable introduced as of the fourth quarter of 2012 that reflects the impact of the labour reform.

7.3.2 Reduced-form multivariate model

The Bayesian Vector of Autoregressions (BVAR) with exogenous variables was used for the assessment of the projections given in the macroeconomic outlook.

This type of models offers both flexibility and objectivity. Flexibility is achieved through allowing a high degree of adaptability to the dynamic observed. Objectivity is assured since, having determined the set of variables to model, estimates for the model parameters are conducted according to statistical, objective and replicable criteria.

The Bayesian component in the model has been incorporated to improve its predictive performance and captures purely statistical interactions of the variables with the dynamics, in part or in whole of the series analysed. Likewise, specifically included in this extra-sample information component are behavioural traits of the economy in the medium term.

In the BVAR model with exogenous variables, the level of any variable at a given moment is expressed by the linear combination of four parameters: lagged values of the variable itself (dynamic), offset values for the remaining variables involved in the model (crossed dynamic), contemporary values of exogenous variables, and a purely random innovation that captures any other aspect that is not attributable to the variables taken into account in the system.

The weight of each component is determined empirically by finding the best sampling fit and the Bayesian elements offset the effects of over-rating that may exist due to the high number of parameters being estimated.

Projecting the aforementioned BVAR model forward gives both specific prediction values and their associated confidence intervals. In particular, the confidence intervals quantify the degree of uncertainty attributable to the predictions of different variables for different horizons.

The endogenous variables included in this model are: the GDP deflator, the GDP volume index, the full-time employment equivalent, real credit (financing to business and households deflated by the core CPI) and net incomes with cyclical sensitivity (defined as the sum of taxes on production and imports, current taxes on income and wealth and social contributions, from which unemployment benefits are deducted) as a percentage of GDP. The exogenous variables considered are the exchange rate of the euro, the dollar price of oil, the EU GDP, interest rates (loans requested by companies of up to 1 million euros) and a constant term.

A secondary BVAR model is also used to represent the joint dynamic of five series that describe the breakdown of GDP from the viewpoint of demand. The variables studied are: final consumption by households and not-for-profit institutions at the service of households (ISFLSH); consumption by Public Administrations; gross fixed capital formation; exports of gross fixed capital formation and imports of goods and services.

7.3.3 Dynamic Factor Models

For short-term (2 quarters) predictions of GDP and its main components of demand (private consumption, public consumption, investment in equipment, investment in construction, exports and imports of goods and services), dynamic factorial models are used, synthesized on the model known as MIPReD. The joint estimates for GDP and its components provide a more comprehensive and detailed perspective of the economy, allowing the composition of growth to be identified, its external and domestic origins. These in turn lead to determining the composition of Final Consumption and Investment in Domestic Demand.

Technically, estimates are made in two stages:

In the first, GDP and each of its components are predicted independently, following the dynamic factorial model methodology for real time forecasting. Forecasts are based on a combination of short-term information, issued at different frequencies (quarterly and monthly), using the respective dynamic factorial models. This combination allows forecasts to be updated as new information becomes available for the indicators in the model, providing a real-time or permanently updated vision of the aggregate status of Spanish economy.

The methodology used in each of the models consists of the following stages:

1. Seasonal and calendar adjustments for all indicators in the system.
2. For quantitative indicators, the variation rates are calculated for the immediately preceding period, in order to obtain a short-term growth signal.

Qualitative indicators are not transformed, as these offer an immediate (directional) interpretation of growth.

3. All the indicators, whether qualitative or quantitative, are typified rendering their mean as zero and their variance as one.

4. The series thus obtained are combined into a dynamic factorial model, breaking down its temporal evolution into a part attributed to elements that are common to all and another part that is specific to each.

5. The dynamic factorial model is represented in the space of states, combining a transition equation (that describes the system dynamic) and a measure equation (that defines the connection between the observed series and their underlying factors).

6. Estimates for the parameters in the model are made maximising their feasibility. Such maximisation takes into account both the presence of series with a different sampling frequency (monthly or quarterly) and asymmetrical series lengths among those included in the panel of data, either because they do not all commence at the same time or because they do not all end in the same period.

7. Having estimated the dynamic factorial model, its representation in the space of states permits, by means of Kalman filtering, both the forward projection of the series comprised in the model and the calculation of the typical deviations from said projections, thus obtaining a measure of the uncertainty surrounding them.

8. One of the series making up the set of series used is the aggregate, for which forecasts are obtained simultaneously with those of the remainder of indicators. In this manner, the internal consistency of forecasts is assured.

9. Whenever new data becomes available for any of the indicators in the model, the above steps are repeated, reviewing all forecasts depending on the sign and magnitude of the innovation. This continuous updating process defines the real-time nature of the system.

In the second stage, individual forecasts are reconciled with those for GDP, by means of the balancing method proposed by Van Der Ploeg (1982), in which individual forecasts are combined with the accounting restriction that establishes that GDP growth should be equal to the aggregation of contributions to its growth from its components. Final forecasts are the result of adjustments to the individual forecasts according to the discrepancies observed between the sum of the corresponding contributions to GDP growth, and GDP growth foreseen in its own model, bearing in mind the historical correlation among the series for contributions to growth. The initial forecasts are thus modified, taking into account their discrepancies when incorporating

accounting restrictions. These discrepancies are weighted according to their precision, that is, inversely to the uncertainty associated with initial estimates.

This procedure has several desirable properties:

1. The greater the variance in the initial forecast, the greater the magnitude of the revisions, as an absolute value. In other words, the greater the uncertainty regarding the initial forecast, the greater the amount in the modification it may be subject to.
2. If a given preliminary estimate is considered to be known with absolute precision, no adjustments are made in the corresponding forecast.
3. When the historical correlation between two components is positive, their revisions are made in the same direction: both upward or both downward. If, on the contrary, they correlate negatively, adjustments will take opposite directions: one upward and the other downward, or vice-versa.

7.3.4 References

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