Fiscal policy, investment and employment in Spain after the reform of the Stability and Growth Pact[1,2]

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1. Introduction.

The concept of "structural fiscal balance" continues to play an essential role in fiscal policy discussions in Spain and is frequently used to justify the need to implement a fiscal consolidation plan to eliminate the "structural deficit" which, according to estimates by international organisations such as the European Commission and the International Monetary Fund, is around 4% of GDP.

For example, the White Paper on Tax Reform written at the request of the Spanish government by a Committee of Experts states that "the Spanish public sector suffers from a chronic problem of structural deficit" (Comité de Personas Expertas, 2022, p. 76) and describes as an "urgent task" the implementation of a "credible and rigorous medium-term fiscal consolidation strategy" of which tax reform should form part. In the same vein, the European Commission (2023a, p. 8) proposes a fiscal consolidation strategy for 2024 that guarantees an improvement of at least 0.7 percentage points in the structural balance, or the Bank of Spain (2023, p. 113) states that "the Spanish economy must embark in 2023 on a fiscal consolidation process that gradually reduces the structural deficit in its public finances" and suggests an annual reduction of 0.5 points of the primary structural deficit each year until 2034.

However, sentences such as the above take for granted two statements that are questionable:

- The first is that Spain does indeed have a chronic structural deficit of around 4% of potential GDP. As is well known, the structural deficit is an unobservable variable, and experience shows the difficulty of having a reliable estimate of potential GDP and the structural budget balance that can be used as a real-time guide to orient fiscal policy[3]. Moreover, it is necessary to take the discussion beyond a mere question of improving estimation techniques to the conceptual realm: the structural deficit is derived from a prior theoretical definition of what should be considered as potential GDP, which in turn depends on the model used to explain the behaviour of the economy. In our view, the conventional definition of potential GDP faces significant theoretical problems that bias

[3] There is great variability between estimates of potential GDP, the output gap, and the structural balance made by different institutions simultaneously, and they undergo frequent and sizeable revisions. The estimation method also has a pro-cyclical bias, generating fiscal policies that tend to amplify demand fluctuations rather than neutralise them. See, for example, Palumbo, 2013; Heimberger, 2019; Heiberger and Kapeler, 2017; Efstathiou, 2019; Darvas, 2015; Truger, 2015; Fatás, 2019. The European Commission has reacted to these criticisms by introducing successive technical modifications to the methodology used to estimate the output gap and the structural balance (Buti et al., 2019). Moreover, it has also implicitly recognised the difficulty of using its estimates in the design and evaluation of fiscal policies by introducing the concept of "limited discretionality" to resolve those cases in which there is an evident lack of correspondence between the estimated values and other observable indicators (Hristov et al., 2017).

its estimation, and we will propose an alternative definition based on the full utilisation of productive resources, particularly labour.

- ▪ Secondly, the White Paper also assumes that the structural deficit is a "problem" that Spain is "suffering." Our approach also departs from this, based on two main arguments. On the one hand, economies may "need" a structural budget deficit for long periods to ensure an adequate level of economic activity. Full resource utilisation and a balanced budget coincide only occasionally (Sawyer, 2012), and attempts to achieve the last may end up depressing not only current production and employment but the value of potential output as well. On the other hand, this need not be a problem. It is not the actual deficit figure that is relevant but the sustainability of public debt over time, and this condition can be met perfectly well at the same time as a structural government deficit.

Moreover, the debate on the appropriate fiscal policy strategy for the following years should consider other relevant aspects that characterise the Spanish economy and that public policies should address. Specifically, we can underline two of them. Firstly, there is a historically higher unemployment rate. In the last 25 years, our unemployment rate only came close to the European average from 2005 to 2007, at the end of the expansionary period that accompanied the real estate bubble. In 2022, the unemployment rate in Spain stands at 12.9%, almost double the European average. Therefore, one of fiscal policy objectives in the coming years should be contributing to reducing this unemployment rate. Secondly, Spain also suffers a public investment deficit. In the pre-pandemic recovery period (2014-2019), public investment averaged 2.1% of GDP, compared with an EU average of 2.9%. Consequently, Spain should maintain a significant investment effort in the coming years, especially considering the much-needed energy and digital transitions.

Therefore, we can see two alternative fiscal policy approaches in Spain in the coming years once the European fiscal rules are reinstated. The first alternative would be focused on the conventional concept of "structural deficit" and its reduction. On the contrary, the second one would focus on unemployment reduction and assuring a minimum level of public investment.

This paper aims to address this debate. To this end, in the second section, we will offer an alternative estimate of the structural budget balance. It will be based on a definition of potential GDP which identifies it with the level of production that ensures the full use of resources, and on the application of the Updated Okun Method proposed by Fontanari, Palumbo, and Salvatori (2020, 2022). Using these results and a simulation exercise, in the third section, we will compare the economic and fiscal finance sustainability consequences of the two alternative strategies mentioned above. Our main conclusion will be that the strategy focused on employment offers better results both from the point of view of economic variables and from the perspective of the sustainability of public finances. Finally, in the fourth section, we will discuss these results in the context of the ongoing reform of fiscal rules.

2. An alternative estimation of the structural deficit for the Spanish economy.

As is well known, the "structural" budget balance is defined as that which would be recorded if the effect of the business cycle on both public expenditure and revenue and those budgetary measures that are considered exceptional and non-recurrent ("one-off") were eliminated. In this definition, the "cyclical position" of the economy should be understood as the gap between actual GDP and potential GDP, which is the maximum that could be achieved with the available productive resources.

The fundamental problem is that potential GDP is not directly observable, and two questions must inevitably be answered before to estimate it: how potential GDP is defined theoretically and the most appropriate methodology for estimating it empirically and obtaining the structural balance. How these questions are resolved determines whether the consequent estimates are helpful in guiding the fiscal policy to be implemented by governments.

Under European fiscal rules, potential GDP is defined as that level of output that can be achieved as a maximum without causing inflationary pressures, given available resources and their

productivity (installed capital, available labour, and total factor productivity). These inflationary pressures arise if the unemployment rate falls below the NAIRU, thus becoming a key variable for estimating potential GDP.

This approach assumes a stable and symmetric relationship between inflation stability and the unemployment rate. An excessive demand impulse that reduces unemployment below a specific rate causes inflation to accelerate (continuously) and vice versa.

It is also pointed out that the NAIRU and potential GDP are variables that are basically determined by the economy's supply side and are independent of fluctuations in aggregate demand. Factor accumulation, technical progress, and the functioning of markets determine the medium-term trend of the economy, while changes in demand explain the short-term deviations around the NAIRU and potential GDP (the business cycle). The role of fiscal policy is to help minimise these fluctuations (counter-cyclical policy), although assuming that the economy has sufficiently strong self-regulatory mechanisms to ensure its return to the medium-term trend determined by the supply side[4].

This theoretical framework is critical to understanding what functions are attributed to fiscal policy and estimating potential GDP, the value of which is then used to calculate the structural balance. The fact that the condition that the economy cannot deviate in a lasting way from its equilibrium path (defined by the NAIRU and potential output) is imposed *a priori* means that the trend recorded by the economy in the past is very relevant for estimating this equilibrium. In other words, the estimated NAIRU *must* approximate the trend observed by the real unemployment rate.

This concept of potential GDP, however, can be criticised from the point of view of demand-led growth theory, for which the principle of effective demand is valid in both the short and the long run. Palumbo (2013) summarises these criticisms in the following questions[5]:

- The empirical evidence is inconclusive on the existence of a stable relationship between the output gap and changes in the assumed inflation rate (acceleration). Attempts to estimate the NAIRU have been unsuccessful without finding a stable value for this variable. Moreover, when it has been admitted that it varies over time, its evolution does not correspond to the changes on the supply side that should explain it according to theory.

- Once this is recognised, symmetric fluctuations around potential GDP are no longer observed. Instead, the economy is typically constrained on the demand side and below the maximum output that could be achieved. In this context, the relevance of fiscal policy is much higher than only "minimising" cyclical fluctuations.

- These situations of "structural" lack of demand to reach the "full utilisation of productive capacity" end up having - if not corrected - effects on the evolution of productive capacity itself (lower capital accumulation, outflow of part of the labour force, lower incentives to innovate). Effective GDP growth, determined by demand, permanently affects the accumulation of factors and their efficiency and, therefore, the potential or maximum GDP that can be achieved in the future.

This change in perspective has important implications for how "potential" is defined and estimated, which has led to the search for a theoretical and empirical alternative that does not rely on the notion of NAIRU. This alternative must necessarily involve the interpretation of potential GDP as that which indeed corresponds to the full utilisation of productive factors, which would be underestimated by imposing a constraint (the NAIRU) that is dependent on the very existence of unemployment (and lack of demand) in the past. Based on this idea, Fontanari, Palumbo, and Salvatori (2020) propose an adaptation of the method initially developed by A. Okun to estimate

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[4] However, prolonged recessions, such as that between 2009 and 2013, may eventually lead to hysteresis processes.
[5] For a critique of the theoretical foundations of NAIRU and the attempts to estimate its value, see also Gechert, Rietzler and Tober (2015) and Heimberger, Kapeller and Schütz (2017).

potential GDP, starting from an "employment target" that is considered "compatible with its full utilisation." Therefore, it can be better said that the output gap is an "employment gap," which gives us a measure of the degree of underutilisation of resources observed in the economy.

Next, we present the results obtained by Uxó et al. (2023) by applying this method (known as the Updated Okun Method, UOM) to the case of Spain, and their implications for the estimation of the structural deficit.

The potential GDP of the Spanish economy according to the Updated Okun Method[6]

Potential output is identified as the production that should be achieved in each period, given the actual state of technology and installed capacity, to ensure full employment of the labour force. To estimate its value, the UOM consists of three steps:

1. Defining a "target" unemployment rate that represents this situation of full employment.

2. Estimating the Okun curve, which gives us a regular relationship between changes in unemployment and the rate of GDP growth.

3. Calculating, based on the previous results, the output needed to bring unemployment to the desired level. This output is potential GDP.

Concerning the former, one of the possibilities proposed by Fontanari, Palumbo, and Salvatori (2020) was to identify the target unemployment rate with the minimum of the historical series, also closing the gender gap. In the case of Spain, the lowest unemployment rate was 7.9% in the second quarter of 2007. However, the minimum unemployment rate for men occurred a few quarters earlier and was 6% (the historical minimum for the women's unemployment rate was 10.3%). We will, therefore, adopt 6% as the target unemployment rate for both sexes.

Once the target unemployment rate has been identified, the next step is to estimate the Okun curve, which links the year-on-year change in the unemployment rate (Δu), in percentage points, to the real GDP growth rate (g), in percent change:

$$\Delta u = \alpha - \beta g \qquad\qquad\qquad [1]$$

In this equation, the constant (α) shows the increase in unemployment that occurs when the economy neither grows nor contracts. In turn, β is the slope of the Okun curve and shows how many percentage points the unemployment rate falls for every 1% increase in GDP.

To estimate it, Uxó et al. (2023) use an ARIMA model that captures the fact that part of the dependent variable is explained by its own behaviour in previous quarters (coefficient ϕ), reflecting the inertial behaviour of most economic series, especially unemployment:

$$\Delta u_t = \alpha + \beta_t \cdot g_t + \sum_{i=1}^{n} \phi \cdot \Delta u_{t-i} \qquad\qquad\qquad [2]$$

The best-fitting model resulted to be an AR(2) without lags in the explanatory variable. Table 1 shows the main results of the estimation[7].

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[6] In this section we summarise the main results obtained in Uxó et al (2023, chapter 4). The Okun Curve estimates were performed by Luis Cárdenas (Complutense University of Madrid).

[7] It was necessary to carry out an intervention analysis to deal with numerous cases of outliers. On the other hand, the estimated model passes the usual tests of normality, autocorrelation, homoscedasticity, stationarity, and structural change and exhibits a satisfactory fit and a high capacity to predict the observed behaviour, with non-significant errors. Details can be found in Uxó et al. (2023).

Table 1: Estimated coefficients in Okun's law in Spain (1987-2022)

Parameter	Estimation
α	0.438***
Δu(-1)	1.066***
Δu(-2)	-0.263***
g	-0.178***
adj. R2	0.97
F	559.72
P	0
AIC	160.95
BIC	193.07
N	137

*** p<0.001

Source: Uxó et al. (2023)

Although β_t captures the contemporaneous effect of GDP growth on unemployment, it is also necessary to consider the inertia of this variable (which in the preceding quarters depended in turn on the GDP growth rate at that time) to obtain the total effect of GDP growth on the change in unemployment, or long-run effect. With the estimated coefficients, the value of this long-run β is -0.904.

Assuming that Δu=0 and clearing the growth rate in the expression [1], we can also obtain the minimum threshold of GDP growth necessary for unemployment not to increase (g^u):

$$g^u = \frac{\alpha}{\beta} \qquad\qquad [3]$$

To calculate this threshold, the constant must also be transformed to account for the lags and dummies introduced in the empirical analysis so that this minimum growth rate takes a value of 2.03%.

Our third step is to obtain an estimation of potential GDP (Y*), or the level of output that allows reaching the unemployment rate we have defined as "full employment" (u*, which is equal to 6%). Expressed differently, the necessary GDP growth to close the gap between this target rate and the effective unemployment rate is given by this expression:

$$u - u^* = \beta \frac{Y^* - Y}{Y} \qquad\qquad [4]$$

Operating on it, we can estimate the potential GDP for each period using the historical series of GDP (Y) and the unemployment rate (u) and the estimated coefficient β of the Okun curve:

$$Y^* = Y \left[1 + \frac{1}{\beta}(u - u^*) \right] \qquad\qquad [5]$$

Finally, the output gap (OG) is the percentage difference between observed and potential output ($\frac{Y - Y^*}{Y^*}$). Figure 1 represents the annual results of this alternative output gap estimate for 1987-

2019, and its comparison with the output gaps estimated by the European Commission and the IMF:

- On average, there has been a negative output gap for the whole period of -11%. This result can be interpreted as a structural lack of demand that makes GDP usually "below potential," which gives fiscal policy a more relevant role than merely reducing cyclical fluctuations "around potential."
- The Spanish economy has never recorded a positive output gap when estimated by this procedure. At the same time, both the European Commission and the IMF series show that periods below and above potential GDP have been alternating. This is necessarily so since these estimates are based on the a priori assumption that the economy fluctuates cyclically around its potential GDP.

Figure 1: Output gap for the Spanish economy (UOM, European Commission and IMF)
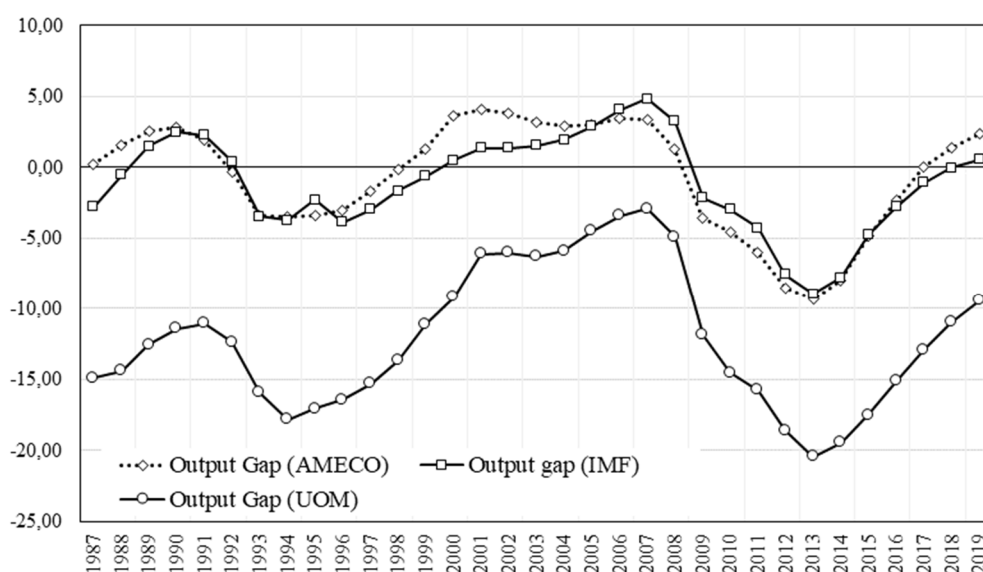
Source: Uxó et al. (2023), AMECO and World Economic Outlook.

New estimates of the Spanish structural deficit

From a fiscal policy perspective, the above estimates have two implications. The first one is that the Spanish economy has faced a structural deficit in aggregate demand in the past, almost permanently, reflected in an output gap that has always been negative. This confirms the relevant role that fiscal policy should play in correcting it. The second one is that, as the potential GDP is higher than estimated by other institutions, these institutions are systematically overestimating the Spanish economy's structural deficit. In this section, we address this second issue, offering the estimate of the structural balance (in this case, the cyclically adjusted one) derived from the alternative estimate of potential GDP[8].

Disregarding the one-off measures, the structural balance (SB) would be achieved if the output gap were zero. The difference between the structural and observed fiscal balance (BF) is called the cyclical component (CC). It arises from the influence of the difference between actual and potential GDP on revenue and government expenditures (mainly transfers). Expressed in percentages over potential GDP, we have:

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[8] See Carnazza et al. (2021) for a similar methodology applied to the Italian case.

$$\frac{SB}{Y^*} = \frac{FB}{Y^*} - \frac{CC}{Y^*} \tag{5}$$

To calculate the cyclical component, and thus the structural balance, it is necessary to have a measure of both the output gap (obtained using the UOM) and the impact that these deviations from potential GDP have on expenditure and revenue. In this second case, we will use the semi-elasticities of expenditure and revenue to GDP provided by the European Commission (Mourre, Poissonnier, and Lausegger, 2019). By calling ε_T and ε_G the semi-elasticities of revenues and expenditures, respectively, the cyclical component of the budget can be calculated as:

$$CC = \varepsilon \cdot OG = (\varepsilon_T - \varepsilon_G) \cdot \frac{Y - Y^*}{Y^*} \tag{6}$$

Given the values of the semi-elasticities of income (0.006) and expenditure (-0.591) and previous estimations of the output gap, we obtain the structural balance[9] represented in Figure 2, where we also compare it with the estimates by the European Commission and the IMF.

The difference is evident and entirely consistent with the differences observed in the output gap in the previous figure. If we take the potential output obtained using the UOM, the structural balance of the Spanish economy was in surplus between 1987 and 2019, except for the brief period of fiscal expansion in 2008-2009[10]. However, the European Commission and the International Monetary Fund estimate structural deficits, even large ones, throughout the period.

Figure 2: Structural balance for the Spanish economy (UOM, European Commission and IMF)
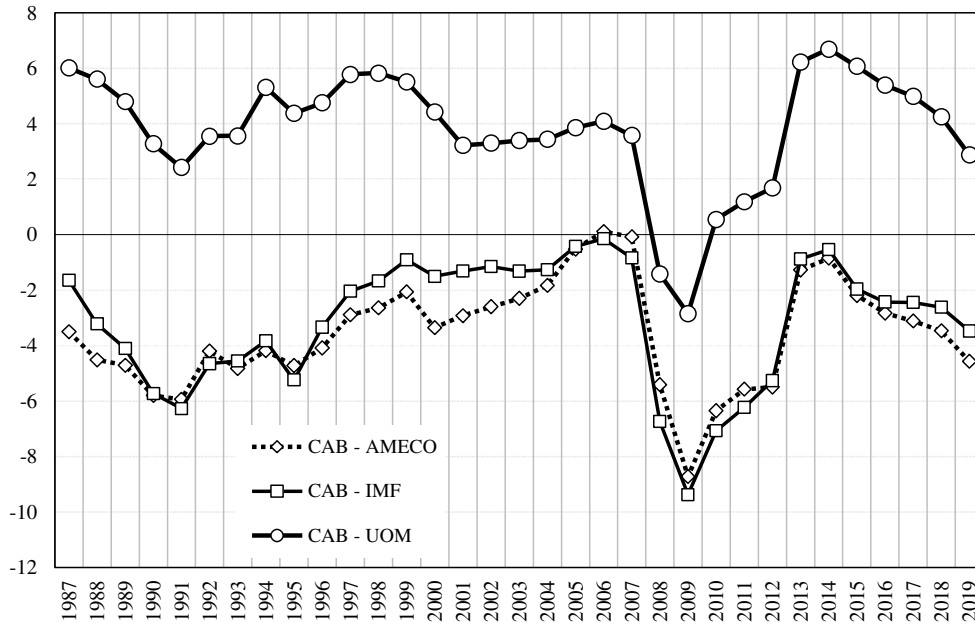
Source: Uxó et al. (2023), AMECO and World Economic Outlook.

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[9] In this case, the cyclically adjusted balance, or CAB.

[10] Although not shown in this graph, the same occurred during the pandemic.

3. Alternative scenarios for fiscal policy in Spain: unemployment reduction or elimination of the structural balance.

To some extent, Spain is facing a dilemma in the coming years regarding its fiscal policy. On the one hand, as we have pointed out, international organizations estimate a high structural deficit and recommend its reduction through a fiscal consolidation programme (although we have already pointed out the weaknesses of these estimates). The Spanish economy's high debt-to-GDP ratio (111% in 2022) is another reason mentioned to argue in favour of these plans, even though they could negatively affect employment and economic growth. On the other hand, however, we also mentioned above that Spain has, historically, a higher unemployment rate than the European average (12.9% in 2022, compared to 6.8% in the euro area) and an investment deficit that needs to be addressed. Moreover, empirical evidence casts significant doubts on fiscal consolidation plans' effectiveness in reducing the debt/GDP ratio (Fatas and Summers, 2018; IMF, 2023a). Therefore, according to this second view, a fiscal policy focused on fostering public investment and assuring the aggregate demand growth required to reduce the unemployment rate substantially would be more appropriate.

In this section, we present a simulation exercise of two alternative fiscal policy strategies that would correspond to these two approaches and evaluate their results in terms of their impact on the unemployment rate, on the one hand, and on the debt-to-GDP ratio[11], on the other. We aim to show the possibility of designing a fiscal policy strategy that, *simultaneously*, allows for a more rapid reduction in the unemployment rate and in the debt-to-GDP ratio. Conversely, we will also see that the opposite alternative, which consists of implementing a fiscal consolidation plan aimed at reducing the structural deficit estimated by the European Commission, would be counterproductive from the point of view of the unemployment rate without improving the results in terms of the evolution of the debt/GDP ratio obtained from the first alternative.

For this purpose, the estimation of potential GDP, the Okun curve, and the structural balance in the previous section has two important advantages:

1. We can use the Okun coefficients to calculate the growth rate needed to achieve the unemployment rate targeted by the fiscal authorities. Through the fiscal multipliers, we can, in turn, define the fiscal policy that allows that growth rate to be achieved. Alternatively, it also serves to measure the effect that a restrictive fiscal policy has on the unemployment rate.
2. We can use the re-estimated value of the structural balance according to our definition to question the claim that the Spanish economy has a high structural deficit that urgently needs to be reduced.

Methodology and alternative scenarios

We will use a two-step methodology to compare the outcomes of different fiscal policy strategies[12]:

- The first is establishing the trajectory the Spanish economy could follow in the coming years if none of the fiscal policy changes we wish to analyse are implemented. This path is defined as the "baseline scenario." It will allow us to isolate the changes in the evolution of the Spanish economy that could be attributed exclusively to the changes in fiscal policy we simulate, because, in all other scenarios, the rest of the assumptions implicit in these forecasts (e.g., the evolution of the external sector or the interest rate) are held constant.

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[11] The evolution of this variable (not its level) would give us an approximation of the sustainability of public finances. It is often argued, with solid arguments (for example, Furman and Summers, 2020), that using the weight of interest on GDP for this purpose is preferable. In our case, however, given that the implicit interest rate on debt is the same in all the scenarios we will simulate, the results would be the same.

[12] See Uxó and Álvarez (2017) and Uxó, Álvarez and Febrero (2018).

- The second step is to establish different paths for public expenditure and revenue (which we will call "alternative scenarios" of fiscal policy) and then see how the evolution of the variables we are interested in (unemployment rate and public debt) would change related to the baseline scenario. To do this, all we need to use are the equations that link, on the one hand, these fiscal variables to the evolution of GDP and, on the other hand, GDP growth to changes in the unemployment rate. The former depends on the expenditure and revenue multipliers, while the latter depends on the coefficients of the Okun equation that we have already estimated. Since we also know what happens to government expenditure and revenue in each case, we can also know how the debt-to-GDP ratio changes.

As a base scenario, we will use the forecasts in the International Monetary Fund's World Economic Outlook for 2023-2028, published in April 2023 (IMF, 2023b). Without assessing their plausibility in comparison with other international organisations, they offer us a sufficiently long series to make our comparisons. A second advantage for our purposes is that, in the period 2023-2028, the IMF does not foresee an improvement in either the unemployment rate or the structural balance. Both variables would remain practically constant at their 2022 values in the forecast period. This makes it easier to visualise the two fiscal policy alternatives we want to compare:

- In scenario 1, the government sets as the target of its fiscal policy a reduction of one percentage point each year in the unemployment rate so that, by 2028, it has converged with the European average (7%). Changes in public revenue and expenditure are therefore designed in such a way as to boost aggregate demand sufficiently to achieve this. At some extent, we could identify this approach with that of "functional finance" (Lerner, 1943; Blanchard, 2022).

- In scenario 2, the government sets a fiscal policy objective of reducing the structural deficit at a prescribed pace. Changes in revenue and expenditure are designed to this end, and we then observe their consequences on the unemployment rate. We could identify this approach with that of "sound finances."

A common element of both scenarios is that the authorities carry out a tax reform to progressively eliminate the difference in tax revenues that characterises the Spanish economy related to the European average, placing the percentage of revenues over GDP at 46% compared to the current 42%. The difference is that these revenues are used to finance new public investment in the first scenario[13]. In contrast, in the second scenario, they are used (totally or partially) to reduce the structural deficit, following the recommendation of the Committee of Experts mentioned at the beginning of this article.

Baseline scenario

Table 2 shows the situation in 2022 of the main variables of interest for our exercise and the evolution forecast by the IMF between 2023 and 2028[14]. We can highlight the following:

- The IMF forecasts that the unemployment rate, which in 2022 was 12.9% on annual average, will only fall to 12.1% in 2028. Since the output gap is also projected to be zero from 2025 onwards, this implies that the NAIRU is estimated to be around 12%[15]. Real GDP growth is projected to average 1.7% from 2023 to 2028.

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[13] In Uxó, Álvarez y Febrero (2018) we called this strategy as "the use of the (partially) balanced-budget multiplier".

[14] The National Statistics Institute revised upwards in September 2023 its previous estimates of GDP for 2020 to 2022, after the publication by the IMF of its forecasts from 2023 onwards.

[15] The NAWRU estimates offered by the European Commission for Spain are also close to 12%. The IMF is slightly above and the Commission slightly below. Before the pandemic, the EC estimated that the NAWRU was 13.4%, and in 2016 it was 16%.

- After the pandemic, the share of public revenues in GDP increased from 39% to 42.4% in 2022[16], but this ratio is expected to fall again to 41.4% in 2028. This is 4.6 points below the euro area average (47% in 2022 and 46% in 2028). On the other hand, expenditure reached 47.1% in 2022[17] and is also expected to fall to 45.4% in 2028. Again, this would be lower than the European average (47.9%). With this evolution of revenues (down 1 point by 2028) and expenditure (down 1.7 points), the total deficit would be reduced by 0.7 points (from -4.7% in 2022 to -4.0% in 2028).

- The structural deficit would stand at -4.2% this year, and from 2026 onwards, it would also remain constant at -4.0%. This is consistent with the assumption that Spain converges to its potential GDP that year.

- Public debt increased by 20 GDP points during the pandemic but has already been reduced by almost 9 in 2021 and 2022. By 2028, the IMF forecasts a further 2 points fall to 109%.

Therefore, as we have said, this baseline scenario is characterised by the fact that neither the unemployment rate nor the structural balance would improve. However, the debt/GDP ratio would continue to decrease.

Table 2. Projections for the Spanish economy in the baseline scenario

	2022	2023	2024	2025	2026	2027	2028
GDP, real growth	**5.8**	1.2	2.0	2.0	1.7	1.7	1.6
GDP delator, rate of growth	**4.4**	3.1	3.4	2.0	1.8	1.7	1.7
Output gap, % potential GDP	**0.9**	-0.5	-0.2	0.0	0.0	0.0	0.0
Unemployment rate	**12.9**	12.6	12.4	12.1	12.1	12.1	12.1
Public revenues, % GDP	**42.4**	44.2	43.5	42.7	41.4	41.4	41.4
Public expenditure, % GDP	**47.1**	48.7	47.0	46.5	45.4	45.4	45.4
Public balance, % GDP	**-4.7**	-4.5	-3.5	-3.8	-4.0	-4.0	-4.0
Primary balance, % GDP	**-2.4**	-2.4	-1.3	-1.4	-1.5	-1.5	-1.5
Structural balance, % potential GDP	**-4.2**	-4.2	-3.4	-3.8	-4.0	-4.0	-4.0
Public debt, % GDP	**111.6**	110.5	108.3	107.9	108.3	108.7	109.3
Interest payments, % GDP	**2.4**	2.1	2.2	2.4	2.5	2.5	2.5
Implicit interest rate, public debt	**2.1**	1.9	2.1	2.2	2.3	2.3	2.3

Source: INE and Eurostat for 2022, IMF for the period 2023-2028.

Scenario 1: reduction in the unemployment rate

In this first scenario, fiscal policy aims at boosting aggregate demand sufficiently for the unemployment rate to fall by 1 percentage point per year so that by 2028, it reaches 7%, practically converging with the current average for the euro area. To find out how much the economy should grow to ensure this downward trajectory in the unemployment rate, we can use the estimation of the Okun curve presented in the previous section. Specifically, by calling ΔU^{OBJ} the change in the unemployment rate that we want to achieve, we can obtain the necessary growth (g^{OBJ}) operating in the expression [1]:

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[16] Including Next Generation Funds, which are deficit-neutral, as they are counted simultaneously as revenue and expenditure. Specifically, in the period 2021-2023 these funds account on average for 1.7% of GDP.

[17] Again, including Next Generation Funds.

$$\Delta U = \alpha - \beta g \tag{1}$$

$$g^{OBJ} = \frac{\Delta U^{OBJ} - \alpha}{-\beta} \tag{7}$$

Using the estimated values for α (1.8347) and β (0.9036), we obtain that the economy should grow at an annual rate of 3.1% between 2023 and 2028, compared to the 1.7% forecast by the IMF. An ambitious target but achievable.

Once we have defined the target in terms of the unemployment rate and its equivalent in terms of GDP growth, it is necessary, in turn, to determine how fiscal policy should change to achieve it. To do so, we define the following fiscal policy strategy:

- On the revenue side, the objective is to converge to the average of eurozone countries projected for 2028, which is 46% of GDP. This will be achieved through a tax reform that will progressively raise this ratio from the 44.2% forecast by the IMF for Spain in 2023.

- This increase in tax revenues would harm the growth rate of the economy. For this reason, public expenditure must also increase. We calculate how much using the value of the revenue and expenditure multipliers according to this expression:

$$\Delta g = \lambda_G \cdot \Delta \frac{G}{GDP} - \lambda_T \cdot \Delta \frac{T}{GDP} \tag{8}$$

Where Δ represents, in this case, the increase to the baseline scenario, and λ_G and λ_T are the multipliers of government expenditure (G) and revenue (T), respectively. They express how much the growth rate changes for each point increase in the expenditure-to-GDP or revenue-to-GDP ratio.

Given that we know the desired increase in the growth rate relative to the baseline scenario ($g^{OBJ} - g^{IMF}$) and the increase in the ratio of revenue to expenditure in each period derived from the tax reform ($\Delta \left(\frac{T}{GDP}\right)^{TR}$), we can obtain the required increase in the expenditure-to-GDP ratio relative to that predicted by the IMF:

$$\Delta \frac{G}{GDP} = \frac{(g^{OBJ} - g^{IMF}) + \lambda_T \cdot \Delta \frac{T}{GDP}^{TR}}{\lambda_G} \tag{9}$$

For these calculations, we have used multiplier values like those used by the European Commission in its simulations (Carnot and de Castro, 2015; Orseau et al., 2022): 1.25 for expenditure and 0.6 for revenue. Especially in the case of expenditure, these are cautious multipliers and are in the low range of the literature (Gerchert and Rannenberg, 2018).

The result we obtained is that Spain would have to maintain public expenditure at 48.9% in 2028 to reach the projected target regarding the unemployment rate, instead of reducing the ratio to 45.4%, as projected by the IMF.

The reason why we propose this strategy in which both revenue and expenditure increases are combined, instead of only expenditure increases, is twofold. On the one hand, thanks to the difference in expenditure and revenue multipliers, this strategy is expansionary but, simultaneously, allows for a further reduction in the debt ratio. On the other hand, given Spain's lag in some public policies in terms of per capita spending, this strategy allows the same reduction in the unemployment rate while financing a more significant increase in spending without the need to issue more debt.

Once we have the evolution of expenditure and revenue, public deficit and debt paths can be obtained directly, all as a percentage of GDP.

Scenario 2: reduction in the structural deficit

In this second scenario, the fiscal authorities take the estimates of potential GDP and the structural balance provided by the IMF as good and focus their fiscal policy on reducing it. As in the previous case, a tax reform is also carried out, but instead of using the additional revenues to finance new public policies, they are used to reduce the deficit as long as the target set for the structural balance is not reached.

In this respect, we distinguish two proposed paces of structural deficit reduction, depending on their ambition:

- In scenario 2.1, the resources obtained through the tax reform are entirely earmarked to reduce the structural deficit. Once eliminated (this would occur in 2026), the remaining revenues are used to finance higher spending.

- Scenario 2.2 is similar but more gradual. New tax revenues are used to reduce the structural deficit by 0.6 percentage points each year, with the remainder used to finance new public policies.

In both cases, the evolution of macroeconomic variables (unemployment rate and GDP growth) is not an explicit objective of budgetary policy. It is derived from the change in fiscal variables needed to reduce the structural deficit. Specifically, equation [8] gives us the effect on GDP growth (relative to the baseline scenario) derived from the path of public revenue and expenditure required to reach the planned reduction in the structural deficit, and equation [1], in turn, allows us to know the consequences on the unemployment rate. Finally, the joint effect of fiscal policy on public deficit and GDP growth determines the change in the debt-to-GDP ratio.

The evolution of the unemployment rate and the sustainability of public finances in the alternative scenarios

Figure 3 presents the main results of the simulations:

- The top two graphs show the differences in our simulated fiscal policy strategies. A tax reform is implemented in all of them that raises the ratio of government revenue to GDP to 46%. In comparison, this ratio is projected to fall to 41.4% in 2028 in the baseline scenario. The difference is that while in scenario 1, these revenues are devoted to increasing spending (to strengthen public investment and, above all, to ensure the growth in demand needed to reduce the unemployment rate to 7%), in scenario 2, the priority is to use these additional revenues to reduce the structural deficit. Still, in 2028, there would be room for a higher share of expenditure over GDP compared to the baseline scenario, albeit lower than in scenario 1.
- The main difference is found in the following two graphs, where we plot the growth and unemployment rates. The fiscal policy strategy in scenario 1 is clearly expansionary because the expenditure multiplier is higher than the revenue multiplier. Economic growth rises to 3.1%, compared to 1.7% in the baseline scenario, and this allows the unemployment rate to reach the authorities' target. On the other hand, the strategies focused on reducing the structural deficit are restrictive: the Spanish economy would grow until 2028 at an average rate of 1.2% in scenario 2.1 and 1.5% in scenario 2.2. Consequently, the unemployment rate would rise from 12.9% to 17.2%, when fiscal policy completely eliminates the conventionally estimated structural deficit, or to 15.7% if the reduction is to -0.6% of potential GDP.

- In the third row of graphs, we plot the implications of these alternative strategies for the government deficit and the debt-to-GDP ratio. The most important result is that strategy 1, in addition to having an expansionary effect on GDP and making it possible to achieve the desired objective in terms of the unemployment rate, does so with a lower public deficit than that forecast by the IMF (-2.8% in 2028, compared with -4%) and a lower debt-to-GDP ratio (99.1% compared with 109.3%)[18]. Moreover, although the other two scenarios also allow for a faster debt reduction than in the baseline scenario, the strategy focused on reducing the unemployment rate is the one that corresponds to a lower debt ratio and to a lower total deficit in 2028 of all the scenarios we have compared. Therefore, scenario 1 improves public finance sustainability.

Figure 3: Evolution of the main macroeconomic and fiscal variables in the alternative scenarios and the baseline scenario

Source: Own elaboration and IMF.

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[18] Using the same implicit interest rate as projected by the IMF in the baseline scenario, this result would allow the debt interest burden on GDP to remain constant over the period at around 2.3% of GDP, whereas in the baseline scenario it is expected to increase slightly to 2.5%.

The evolution of structural deficit in scenario 1: an alternative view

By construction, the structural deficit in scenarios 2.1 and 2.2, as defined by the European Commission and the International Monetary Fund, will have been reduced since this is the objective that defines the fiscal policy strategy applied by the authorities.

We can also investigate what would be happening with the structural balance in scenario 1, although with two necessary clarifications:

- The variable that we consider relevant to assess the sustainability of these three strategies is not the structural deficit but the change in the public debt ratio (which would be reduced by more than what the IMF foresees in scenario 1). The structural balance has no interest in measuring the available "fiscal space." Actually, it is only an indicator of the insufficiency of private demand to reach the level of economic activity compatible with the full utilisation of productive capacity. In other words, it is the demand "gap" to be filled by the public sector.
- To calculate the evolution of this "structural" balance, we will use the estimation method developed in the second section of the article: potential output corresponds to an unemployment rate of 6%, and the structural balance is the difference between public revenue and expenditure that would persist even if GDP were at its potential level.

Therefore, the first thing to do is estimate potential GDP between 2023 and 2028.

Defining g* as the growth rate that permits bringing GDP to potential in each period, reducing the unemployment rate from its value in the previous period to 6%, we can calculate it using the expression [7] above:

$$g^* = \frac{(6\% - U_{t-1}) - \alpha}{-\beta} \qquad [10]$$

And by applying this growth rate to the real GDP of the previous period, we obtain the value of potential GDP for each period:

$$Y^* = Y_{t-1} \cdot g^* \qquad [11]$$

Once we have this estimate, we can obtain the value of the output gap and, from there, obtain the structural budget balance using the expressions [5] and [6] above and the same semi-elasticities of expenditure and revenue on GDP offered by the European Commission (0.006 for revenue and -0.591 for expenditure, which means that for each point of positive (negative) output gap, the budget balance improves (worsens) by 0.597 points, always as a percentage of potential GDP):

$$\frac{SB}{Y^*} = \frac{FB}{Y^*} - \frac{CC}{Y^*} = \frac{FB}{Y^*} - (\varepsilon_T - \varepsilon_G)\frac{Y - Y^*}{Y^*} \qquad [12]$$

Figure 4 shows the structural balance estimated by the IMF between 2022 and 2028, and the one we would estimate, which is different for two reasons: because we use the alternative value of potential GDP estimated with the UMO, and because fiscal policy is also different.

According to our estimate, the Spanish economy would not register a structural deficit of 4% in 2022 but would practically be in a position of structural balance. This is because this year's unemployment rate was 13%, 7 points higher than the full employment rate. The observed deficit, therefore, has a strong cyclical component. In contrast, as the IMF estimates that almost all the unemployment observed in 2022 corresponds to the NAIRU, most of the observed deficit is considered structural.

The implementation of the fiscal policy we propose, on the other hand, would raise this structural deficit to -2.2%. This is the expected outcome since the structural deficit is nothing more than the deficit needed to cover the lack of aggregate demand in the economy to reach the 6% target. More importantly, we have seen that this deficit is sustainable in terms of the evolution of the debt-to-GDP ratio, so it should not necessarily be seen as a "problem" to be solved by the authorities through fiscal consolidation policies.

Figure 4: Estimated structural balance (% potential GDP)
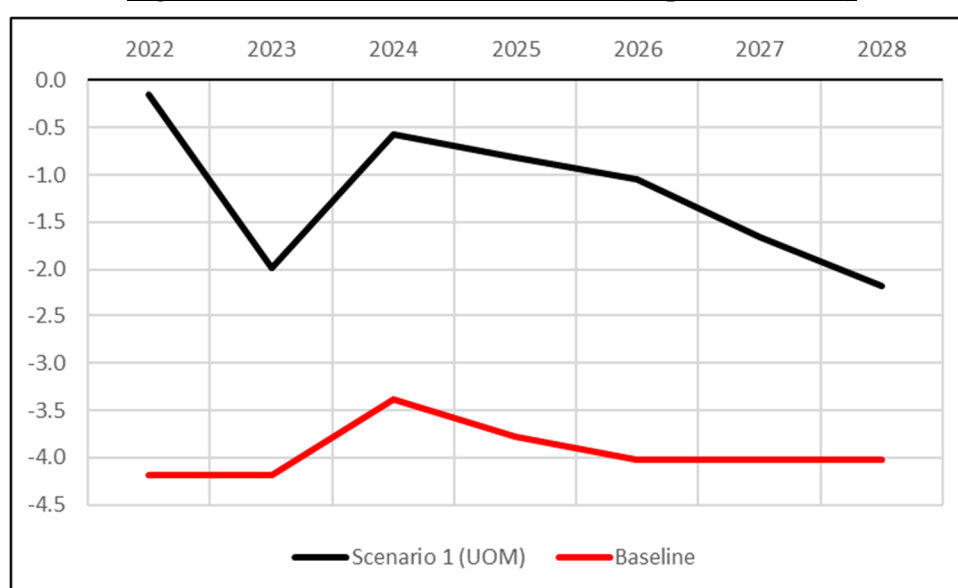
Source: Own elaboration and IMF.

4. Would the new fiscal rules allow the implementation of the best fiscal policy strategy for the Spanish economy?

The results we have been presenting show that strategy 1 would offer the best results for Spain if it were applied in the coming years: it would contribute to the objective of reducing unemployment, it would foster new public investments, and it is compatible with fiscal sustainability. Indeed, the debt ratio would not only be reduced, but it would be the lowest of all the alternatives we have simulated.

Debt would decrease even beyond 2028. If we assume that over the next ten years, the economy grows at a nominal rate of 4% (2% inflation plus potential growth of 2%, which we calculate using the expression [3]) and that the ratios of expenditure and revenue to GDP remain at similar values to those in 2028, so that the deficit stabilises at 2.8% after that, by 2038 the debt ratio would have fallen to 89% of GDP.

The reform of the European fiscal framework states that its main objective is to ensure debt sustainability while preserving growth and public investment. This strategy satisfies these conditions and should be enough for the European fiscal framework to welcome its implementation.

However, inappropriately, the European Commission's proposal introduces some additional requirements to be met by the fiscal plans submitted by governments for approval by the Council. We can now ask ourselves whether these additional requirements would force us to modify our proposed strategy.

We warn of an important nuance: We do not interpret the answer to this question as a way to evaluate our proposal (we already know that it is adequate) but, on the contrary, to evaluate the proposed reform of the rules itself[19]. If they prevent the implementation of beneficial strategies for the economy that ensure fiscal sustainability, the rules should be changed (not the fiscal policy).

According to Annex 1 of European Commission (2023b), fiscal plans of countries with a fiscal deficit above 3% or debt above 60%, like Spain, must meet the following requirements[20]:

- The debt to GDP ratio must be lower at the end of the adjustment period than in the year before its start, and this adjustment is not postponed to the final years of this period. Scenario 1 fulfills this requisite.
- As long as the deficit remains above 3%, an annual adjustment of at least 0.5 percentage points of GDP will be necessary unless the deviation is small and can be considered transitory. Between 2024 (when this strategy really starts to be implemented) and 2026 (when the 3% deficit is reached), the average annual reduction would be 1 percentage point.
- On average, net expenditure growth should be kept below GDP growth over the medium term. Net expenditure is obtained by subtracting interest payments, EU-funded programmes, cyclical unemployment expenditure, and discretionary revenue increases from the increase in total expenditure. If we subtract interest payments and tax reform revenues from total public spending (we have no information on the other two components), we would be left with an average growth between 2024 and 2028 of 4%. Over the same period, nominal GDP would have grown at 5.4%, and the potential growth of the Spanish economy from 2028 onwards could be around 4%. We therefore believe that this condition would also be met.
- In the ten years following the adjustment process, the debt-to-GDP ratio must continue to fall or remain at prudent levels, and the deficit must be kept below 3% in the absence of new budgetary policies. As mentioned above, if the economy grows at an average rate of 4% and the deficit remains at 2.8%, both conditions will have been met. Of course, if a crisis occurs in that period and the economy starts to grow below that rate, the deficit will rise above 3% for some periods. In our view, this should be the case because this is one of the functions of fiscal policy, and it would not make sense to maintain an overly restrictive policy every year to avoid such an eventuality.

5. Conclusions.

1. The estimation, by conventional procedures, that Spain has a high "structural deficit" is not sufficient justification for implementing a fiscal consolidation plan to eliminate it. Firstly, because this estimate is theoretically biased by the assumption that the economy fluctuates around potential GDP and the NAIRU. Secondly, because a structural deficit may be necessary when there is also a "structural lack of demand", and the economy remains permanently below full employment output. The key criterion should not be that the deficit should be zero but that it should be sustainable.

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[19] For a deeper analysis of the reform proposal by the European Commission, see Uxó (2023).

[20] Interestingly, the new fiscal rules do not include structural deficit as an indicator to evaluate fiscal policies or any specific requisite regarding its evolution during the adjustment period. This does not mean, however, that the need for medium-term equilibrium has been abandoned as a strong principle of "sound public finances."

2. In fact, using the Updated Okun Method to estimate potential GDP and, from it, to obtain an alternative estimate of the structural deficit, we see instead that the Spanish economy has been characterised by the existence of a negative output gap regularly (an average of 11% in the three decades analysed) and, consequently, a structural fiscal surplus.
3. It is possible to recover the "full employment" objective for economic policy in Spain. Substantially reducing the unemployment rate in the coming years so that it converges with the European average requires a feasible growth rate, and the fiscal policy that would allow this to be achieved is sustainable (it would be compatible with a higher reduction in debt). It would also help to meet other objectives, such as boosting public investment, which is necessary to meet the challenges of the climate crisis or digitalisation, for example.
4. There is no trade-off between debt sustainability and unemployment reduction. The strategy that brings unemployment down to the European average is also the one that reduces public debt the most (Figure 5):

Figure 5: Trajectory of the unemployment rate and debt-to-GDP ratio under employment- or structural deficit-focused fiscal policy
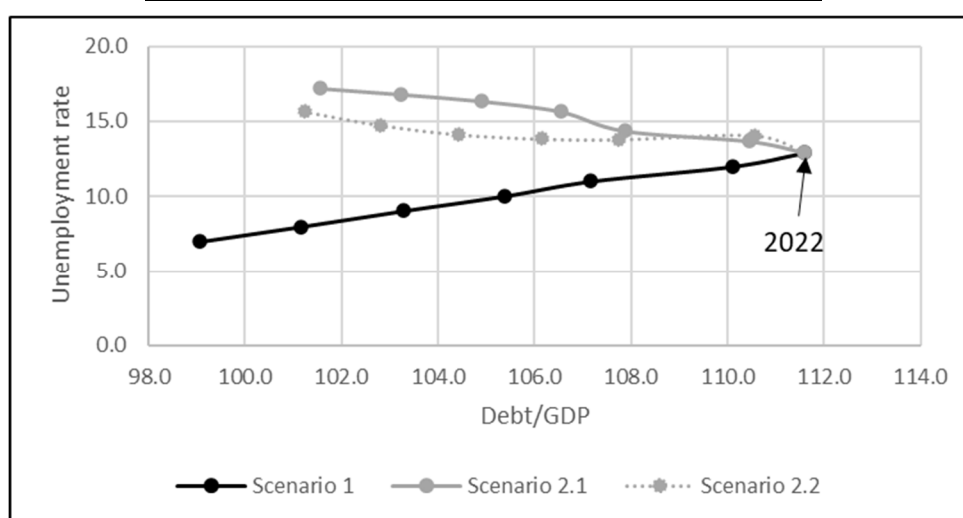
Source: Own elaboration.

5. Strategies focused on reducing the structural deficit do not improve the debt trajectory (compared to scenario 1) and worsen the unemployment trajectory. This "sacrifice" to reduce the structural deficit, whose value is also highly uncertain, is not justified. In fact, once we have estimated the structural balance with an alternative definition of potential GDP, we find that even in the fiscal strategy that allows convergence with the European unemployment rate, it would reach a moderate value, equivalent to 2% of potential GDP.
6. Given that the reform of the fiscal rules is primarily aimed at ensuring medium-term debt sustainability and scenario 1 ensures this, it should be sufficient for such a fiscal plan to be accepted under the new fiscal rules. However, the European Commission's proposal includes other requirements, which would also be met.
7. Strategy 1 does not make the structural deficit zero, but it performs better than those strategies that meet this criterion. This only confirms our initial approach: it is simply not a good indicator for fiscal policy, nor is it justified as an objective of budgetary policies.

References.

BANK OF SPAIN (2023): *Annual Report 2022*.

BLANCHARD, O. (2022): *Fiscal Policy Under Low Interest Rates*, MIT Press.

BUTI, M. et al (2019): "Potential output and EU fiscal surveillance", *Voxeu.org*, 23 September.

CARNAZZA, G., FONTANARI, C., LIBERATI, P., PALUMBO, A. (2021): "From Potential GDP to Structural Balance: A Theoretical Reassessment and New Evidence for Italy", *Review of Political Economy*, 23 (2), 510-540.

CARNOT, N., DE CASTRO, F. (2015): "The Discretionary Fiscal Effort: An Assessment of Fiscal Policy and its Output Effect", *Economic Papers 543*.

COMITÉ DE PERSONAS EXPERTAS (2022): *Libro Blanco sobre la Reforma Tributaria*, Instituto de Estudios Fiscales.

DARVAS, Z. (2015): "Mind the gap (and its revision)!", *Bruegel Blog*, 20 mayo.

EUROPEAN COMMISSION (2023a): *Council Recommendation on the 2023 National Reform Programme of Spain and delivering a Council opinion on the 2023 Stability Programme of Spain*, COM (2023) 609 final.

EUROPEAN COMMISSION (2023b): *Annexes to the Proposal for a Regulation of the European Parliament and of the Council on the effective coordination of economic policies and multilateral budgetary surveillance and repealing Council Regulation (EC) No 1466/97*, COM (2023) 240 final.

FATÁS, A. (2019): "Fiscal Policy, Potential Output, and the Shifting Goalposts", *IMF Economic Review*, 67, 684–702.

FATÀS, A., SUMMERS, L.H. (2018): "The permanent effects of fiscal consolidations", *Journal of International Economics*, 112, 238-250.

EFSTATHIOU, K. (2019): "The campaign against 'nonsense' output gaps", Bruegel Blog, 17 junio.

FONTANARI, C., PALUMBO, A., SALVATORI, C. (2020): "Potential output in theory and practice: a revision and update of Okun's original method". *Structural Change and Economic Dynamics*, 54, 247–266.

FONTANARI, C., PALUMBO, A., SALVATORI, C. (2022): "The updated Okun method for estimation of potential output with alternative measures of labor underutilization", *Structural Change and Economic Dynamics*, 60, 158-178.

FURMAN, J., SUMMERS, L. (2020): "A Reconsideration of Fiscal Policy in the Era of Low Interest Rates", *Working Paper, Brookings Institution*.

GECHERT, S., RANNENBERG, A. (2018): "Which Fiscal Multipliers are Regime-Dependent? A Meta-Regression Analysis", Journal of Economic Surveys, 32 (4), 1160-1182.

GECHERT, S., RIETZLER, K. TOBER, S. (2015): "The European Commission's new NAIRU: Does it deliver?", *Applied Economics Letters*, 23 (1), 6-10.

HEIMBERGER, P. (2019): "Output gap nonsense: Understanding the budget conflict between the EC and Italy's government", *Vienna Institute for International Economic Studies*, 17 junio.

HEIMBERGER, P., KAPELLER, J. (2017): "The performativity of potential output: procyclicality and path dependency in coordinating European fiscal policies", *Review of International Political Economy*, 24 (5), 904-928.

HEIMBERGER, P., KAPELLER, J., SCHÜTZ, J. (2017): "The NAIRU determinants: What's structural about unemployment in Europe?", *Journal of Policy Modeling*, 39 ,883–908.

HRISTOV, A., RACIBORSKI, R., VANDERMEULEN, V. (2017): "Assessment of the Plausibility of the Output Gap Estimates", *Economic Brief 023*, Comisión Europea.

IMF (2023a): "Coming Down to Earth: How to Tackle Soaring Public Debt", *World Economic Outlook*, April.

IMF (2023b): *World Economic Outlook Database*, April.

LERNER, A. (1943), "Functional finance and the Federal debt", *Social Research*, 10, 38-51.

MOURRE, G., POISSONNIER, A., LAUSEGGER, M. (2019): "The Semi-Elasticities Underlying the Cyclically-Adjusted Budget Balance: An Update & Further Analysis", *European Economy Discussion Paper 098*.

ORSEAU, E., VAN NOTEN, H., AREVALO, P., CEPPARULO, A., MOURRE, G., PAMIES, S. (2022): "How to ensure debt sustainability in a growth-friendly manner?", *Quarterly Report on the Euro Area*, Volume 21, No 4.

PALUMBO, A. (2013): "Potential Output and Demand-Led Growth", en Levrero, E., Palumbo, A., STIRATI, A. (eds), *Sraffa and the Reconstruction of Economic Theory: Volume Two*, Capítulo 4, Palgrave Macmillan.

SAWYER, M. (2012): "The Contradictions of Balanced Structural Government Budgets", *SSRN Electronic Journal*.

TRUGER, A. (2015): "The Fiscal Compact, Cyclical Adjustment and the Remaining Leeway for Expansionary Fiscal Policies in the Euro Area", *Panoeconomicus*, 62 (2), 157-175.

UXÓ, J. (2023): "The reform of fiscal rules: learning from experience and addressing new challenges", *Rivista Giuridica del Lavoro*, forthcoming.

UXÓ, J., ÁLVAREZ, I. (2017): "Is the end of austerity feasible in Spain? An alternative plan to the current Stability Programme (2015-2018)", *Cambridge Journal of Economics*, 41 (4), 999-1020.

UXÓ, J., ÁLVAREZ, I., FEBRERO, E. (2018): "Fiscal space on the Eurozone periphery and the use of the (partially) balanced-budget multiplier: The case of Spain", *Journal of Post Keynesian Economics*, 48 (1), 99-125.

UXÓ, J., GUTIÉRREZ-FRANCO, Y., FEBRERO, E., RUIZ, J., CÁRDENAS, L., VILLANUEVA, P., AYALA, I., BORDÓN, M. (2023): *Saldo presupuestario estructural y espacio fiscal: una aportación al debate sobre las reglas fiscales europeas con implicaciones para la política fiscal en España*, Instituto de Estudios Fiscales.