

Do economic conditions support the public finances in Morocco?

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Abstract

Fiscal policy has provided significant support to the activity during the post-crisis, owing to the increase in public investment and relevant expenditures of support for the price. This had affected public finances, since the combined effect of higher spending treasury and slow-down in revenues had pushed up the overall fiscal deficit at high levels in 2012 and 2013. The Moroccan economy is now facing major fiscal imbalance, which may not be resolved over time, especially as the ratio of public debt is accelerating over again. Public authorities are called to implement credible strategies that will promote a rapid restoration of their finances. For this purpose, it is necessary to examine whether economic conditions can support public finances and to identify, at the same time, changes in underlying structural budget deficit. This paper aims at examining and comparing two methods for estimating structural budget balance in Morocco. Rather, and in order to capture the relationship between public finances and the output gap, we refer to the primary public balance as measure of structural budget. The first method is the two-stage technique, commonly used by most international organizations. We will estimate in the first place the output gap and the potential production according to Hodrick-Prescott's filter and then we will calculate revenue and government expenditure sensitivities during the period from 1980 to 2013. The other method inspired by the work of Audenis, Menard and Prost (2001), refers to VAR models to specify the joint dynamics of primary balance and growth. The non structural balance includes the impact of past and present economic growth as well as the average response of fiscal policy to a shock on the activity. The results of both methods show, overall, a sizeable contribution of structural primary balance. The support provided to public finances by the economic situation remains weak, although it is most appreciated in the second method. We conclude that the restoration of the Moroccan public finances depends primarily on the structural reforms implemented by governments.

Key words: public finances, budget balance, structural public balance

JEL Classifications: E62, H62

Introduction

The Moroccan economy had shown great resistance to the effects of the recent global economic crisis, thanks to the consolidation of domestic demand and the succession of medium and good harvests. The annual average GDP growth maintained his strong pace, reaching 4.2% for the period spanning from 2008 to 2013. The unemployment rate had continued its slowing descent from 9.6% to 9.2 % during the same period. In addition, and despite the fluctuations that marked international commodity prices, inflationary pressures remained under control, because of the importance of expenditures of support for the price and an accommodative monetary policy. The resilience of the Moroccan economy was also due to the support of fiscal policy. The importance of public spending was boosted by 0.6 percentage point the economic growth compressed to 2.7% in 2012. In against part, the deterioration of public finances increased and the overall fiscal deficit peaked at 7% in 2012, then at 5.5% and 5% in 2013 and 2014 respectively. The Moroccan economy is thus confronted to a large-scale fiscal imbalance, which may not be resolved over time, especially as the ratio of public debt is again accelerating. Public authorities are expected to implement credible strategies that will promote a rapid restoration of their finances. To do this it is necessary to identify the underlying orientation of public finances and to determine whether the economic conditions in Morocco can support the public finances.

Overall, changes in the budget balance arose from two primarily sources: one is directly related to cyclical fluctuations in activity and the other significant structural changes to discretionary policies. The distinction between the two sources is crucial for appropriate macroeconomic policies and for the management of public finances. Specifically, it allows warning about the implementation of a deficit adjustment when it is already on a downward trend, because of improved economic conditions. Conversely, government intervention is always

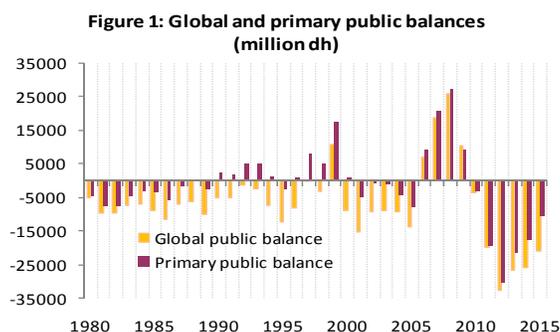
recommended to curb a growing structural deficit widening, despite its positive effects to support the economy or to limit the recessions.

The methods of identifying the public balance components are very varied, but generally in agreement on the estimate of the cyclical fiscal balance from the fluctuations of the output gap. In this paper, we are especially interested in the application of two-stage technique, used by international organizations to determine two components of the public balance. We will estimate in the first place the output gap and the potential production according to HODRICK-PRESCOTT's filter and then we will calculate revenue and government expenditure sensitivities during the period from 1980 to 2013. We will also explore the VAR model-based approach, clarified by AUDENIS, MÉNARD and Prost (2001) and examine the convergence of orientation estimates from the two methods.

The paper is organized as follows: the first part will provide a brief analysis of the situation of public finances in Morocco over the last thirty years. Decomposition methods of the public balance will be presented in the second part. Third part concludes.

I- Moroccan Public finances since 1980

The Moroccan public finances have been marked in the last thirty years by profound changes and major reforms. Its goals and priorities have changed over the years, in line with trend development of activity and shaped by the changes that have affected the economic choices of successive governments. However, and overall, they were permanent deficit since 1980. The year 1982, characterized by a budget deficit that reached 7.8% of GDP, marked the beginning of the phase of fiscal consolidation, particularly following the implementation of structural adjustment plan. This phase lasted around 8 years and has seen the implementation of most of the major fiscal reforms, including the reformulation of value added tax VAT (1986), the introduction of the corporate tax (1987) and income tax (1990). Fiscal consolidation was also focused on public expenditure reduction policies, allowing a contraction of the budget deficit, from 9.2% of GDP in 1983 to 2.2% of GDP in 1992. From 1993 to 2005, the budget deficits were relatively under control, although this control was fragile. More recipes have been mobilized since 1993, thanks to privatization, which contribute to maintain the deficit below 3% throughout the period. Thus, despite the strengthening of budgetary pressures such as declining revenues from customs duties, higher expense of support prices of energy and the impact of social agreements on wages revaluations, morocco's fiscal position was part of a more general context of control of public finances, making slight budget surpluses in 2007 and 2008. From 2009, public finances have gradually deteriorated, due, firstly, to the consolidation of compensation and operating expenses, which increased from 18.5% to 23.6% between 2009 and 2012. In addition, the phase of slower growth, which affected the non-agricultural activities in the same period, resulted in sharp deceleration of tax revenues. The mobilization of revenues didn't follow the rapid increase in spending and the budget deficit has gradually widened, reaching 7% in 2012.



The Financial degradation path was also confirmed by the study of the fluctuations of the fiscal balance excluding interest debt (Figure 1). The primary balance provides, in fact, better lighting of public finances orientation, since it does not include interest payments whose relationship to the activity and the dynamics may differ from revenues and other expenses. It is also one of the key factors that control the stability of the Treasury debt ratio. The following graph, illustrating its evolution over the last thirty years, distinguishes three main periods: a period of accumulation of financial imbalances (1980-1984), a period of recovery budget surpluses (1985-1992), and finally the period of frantic return of deficits that is engaged in 2010. The extension of the last phase would affect heavily the sustainability of public debt, since the primary balance

does not even honor the primary expenses. Note that the highly indebted countries are expected to focus their fiscal policies, so primary surpluses and stop the feeding process of escalating public debt (snowball).

In order to identify more clearly the orientation of the Moroccan budget finances, particularly in recent years and its prospects in the short term, it is necessary to determine whether changes in fiscal variables is due to changes in economic conditions or discretionary public actions. Such an exercise is performed from several techniques, namely the two stage methodology.

II- Methodology of Calculating the Structural Budget Balance

The estimate of the cyclically-adjusted budget balance is related to the determination of potential GDP, which represents the maximum of production that an economy could achieve if all resources are used without proliferation of inflationary pressures. The concept of the output gap refers to the difference between actual GDP and potential GDP. This is an unobservable indicator to assess the position of the economy in the cycle.

II.1. Measuring the output gap

A variety of methods can be used to estimate potential or trend GDP and its corresponding output gap, including: Statistical techniques that attempt to estimate potential GDP smoother and close enough the actual GDP (Hodrick Prescott filter, Baxter-King, etc), structural methods, based on the estimation of a production function and the determination of overall productivity gains, which requires further analysis of the economy, particularly the market for goods and labor and semi-structural methods attempting to use statistical techniques while integrating economic information. This is the case of multivariate filters.

In this study, we chose to use the statistical method of the HODRICK PRESCOTT's filter to estimate the output gap for the Moroccan economy. The use of this filter is quite common in many empirical studies of national and international institutions, thanks to its satisfactory statistical properties.

To estimate the potential output in Morocco by Hodrick-Prescott technique, we used national account data from 1980 to 2013. We extend the GDP series beyond 2013 using the prognostics of the high commission for Planning of Morocco for 2014 and 2015.

The analysis estimates provided for the national economy for the period from 1980 to 2014, shows an economic slump that characterized the periods from 1987 to 1993 and from 2003 to 2006, and induces a negative output gap of more than 3% of potential GDP. On the other hand, in the prosperity stage in the business cycle, especially in the period from 1994 to 1999 or between 2007 and 2009, the output gap peaked at more than 2% of GDP trend.

II.2. Estimating budget balances component

II.2.1 Two stage method: elasticity estimation

The methodology employed consists of estimating the structural balance from two equations, which highlight theoretical specifications of structural tax (T*) and expenditure (G *) as follows:

$$\frac{T^*}{T} = \left(\frac{Y^*}{Y}\right)^\alpha \qquad \frac{G^*}{G} = \left(\frac{Y^*}{Y}\right)^\beta$$

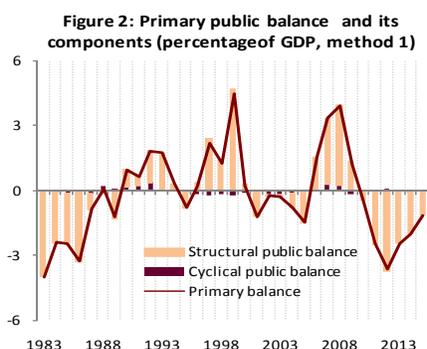
Y output, Y* potential output α and β are the respective elasticity of budget revenues and expenditures compared to nominal GDP.

International organizations do not use the effective tax variations to estimate the fiscal elasticity, but opt for an appropriate econometric approach to each category of revenue. As for public expenditure, they use the approach based on Okun's law so to calculate the structural unemployment rate, which would be adjusted expenditure fluctuations. A significant fraction of public expenditures is devoted in some European countries, to unemployment benefit during adverse cyclical phases. In Morocco, the unemployment benefits system is not implemented across the study period. The determination of structural expenditure will be based on the same approach of estimating structural revenues, excluding structural expenses as those of staff. The structural balance is defined as follows:

$$S_{str} = T \left[\frac{Y^*}{Y}\right]^\alpha - G \left[\frac{Y^*}{Y}\right]^\beta$$

The data used came from annual national accounts and public finance. Potential growth is an estimate based on the HP filter. The estimation period is from 1980 to 2015.

The first decomposition of the change in the primary budget balance reveals a predominance of its structural component (figure 2). The structural budget balance appears to be closest to the primary budget balance, because of the incompressible nature of some public expenditure categories like the staff expenses. Overall, the structural balance showed the same trend in the primary balance profile. The application of a fiscal package, as part of the structural adjustment program, including the reduction of public spending on price support and expansion of the tax base had placed the structural primary balance on a positive slope in the period 1990 to 2000. It went into a deficit amid an expansive fiscal policy during 2001-2005. After a period of euphoria that lasted four years, the structural balance was in deficit again, reaching down at -2.46% and -3.72% in 2012 and 2013 respectively. Conversely, the impact of economic conditions on the primary balance remained weak throughout the estimation period, except in 2009 which was recorded a relatively significant contribution cyclically (-0.7 point) to the degradation of 3.3% of public primary balance.



The insignificant effect of economic conditions on the Moroccan public finance may be due to, inter alia, the methodology employed which assumes that government revenues are instantly indexed to economic activity, while such property is not checked in Morocco in the short term. The estimation methodology is theoretically true, but it raises other reviews related to the determination of the elasticity of structural budget items. Potential growth does not seem to present a relevant reference to isolate the structural component of non-tax revenue and some expenses.

Moreover, the method assumes an instantaneous correlation between the cyclical balance and activity and neglects the dynamic links. However, the slowdown in economic growth strengthened in Morocco since 2009, due in part to the weak economy, had not only affected the revenue of the current year, but seems to hang over those years followed.

II. 2.2 Structural balance and VAR model

Another estimate of the structural balance approach is to measure the impact of the economic cycle on the budget primary balance without the need to introduce the elasticity of each revenue or expenditure. More explicitly, it consists of estimating VAR models and using its specification to perform the calculation of structural primary balance.

For the case of two stationary variables, namely, the growth rate of the activity and the primary balance, the model formulation takes the following form:

$$\begin{cases} d\ln Y_t = a_1 * d\ln Y_{t-1} + \dots + a_p * d\ln Y_{t-p} + b_1 * s_{t-1} + \dots + b_p * s_{t-p} + \varepsilon_{ty} & (1) \\ s_t = c_1 * d\ln Y_{t-1} + \dots + c_p * d\ln Y_{t-p} + d_1 * s_{t-1} + \dots + d_p * s_{t-p} + \varepsilon_{ts} & (2) \end{cases}$$

With Y: output and s: Primary public balance, ai, bi: coefficients to be estimated and ε : innovation vectors, P: lag order..

The economic growth rate depends negatively on the primary balance of the previous period. A deterioration of the balance (expansionary fiscal policy) influences, indeed, positively the activity. The fluctuations of primary balance affect positively the economic growth rate.

The estimated VAR model can be reduced to a single equation that expresses the public balance in terms of three effects: the influence of past balance, the growth rate of the past period and finally a residual term representing a built contemporary independent shock cyclically past. To calculate the primary balance that would have existed if growth had not deviated from its potential value (structural balance or trend), we will replace the real GDP by potential GDP in the equation derived from the VAR model:

$$s^{str}_t = \alpha * dlnY^{pot}_t + \beta * dlnY^{pot}_{t-1} + \delta * s^{str}_{t-1} + c + \varepsilon_{ts}$$

The cyclical balance is determined by difference from the actual primary balance. It could also be deduced from the following formulation:

$$s^{conj}_t = \alpha * (dlnY_t - dlnY^{pot}_t) + \beta * (dlnY_{t-1} - dlnY^{pot}_{t-1}) + \delta * s^{conj}_{t-1}$$

The second method of estimating the public primary balance components reveals an improvement in the contribution of economic conditions, particularly due to the inclusion of delayed and coincident effects of economic conditions. The recursive equation that links the public primary balance to the economic situation is as follows:

$$S^{pram} = \underset{(-0,33)}{-0.0032} + \underset{(9,9)}{0.6355} * S^{pram}_{-1} + \underset{(0,58)}{0.0777} * \Delta ln Y + \underset{(1,9)}{0.2325} * \Delta ln Y_{-2} + \underset{(10,5)}{0.0416} * (trend=1999) - \underset{(-3,98)}{0.0248} * ((trend > 1999) * (trend < 2002)) + \varepsilon$$

$$R^2 = 0,68 \quad Dw = 1,5$$

In accordance with the expected signs, the inflections of the activity during the current period, and particularly those delayed by two years explain variations of the primary balance. They generally depict the systematic response of governments to the economy, implying that an increase in economic growth typically results in an improvement in the primary balance of public finances. The results of estimates also attest to the importance of the coefficient and the significance of the term Sprim-1 (0.63); inertia balance being high reflecting the lingering effects of past shocks on the primary balance. The trend variables capture the effects of assignment of the second GSM line in 1999 and the impact of the severe drought and moderate that marked the years 2000 and 2001. Finally, the constant term directly related to the average primary balance during the estimation period is negative and weak. This result traces the contrasting developments in the primary balance in good times (1988-2009) and unfavorable (1980-1987) and (2010-2014).

Figure 3: Primary public balance and its components (method 2)

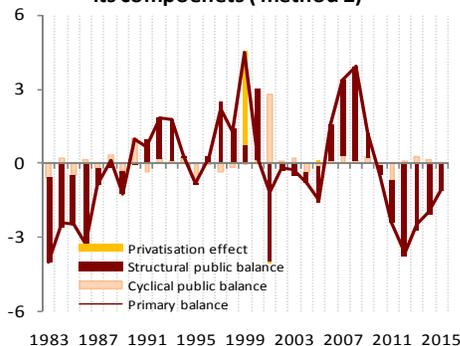
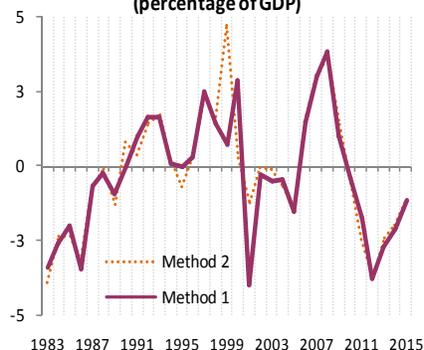


Figure 4: Structural public balance (percentage of GDP)



The second calculation of the components of the primary budget balance shows an improvement in the contribution of economic conditions in explaining fluctuations in public primary balance (see figure 3). Thus, it was found that during periods ranging from 1990 to 1994 and from 2006 to 2008, primary surpluses had been made, drawn mainly by structural factors (see graph 3), but also due to the strengthening had marked non-agricultural activities during the same period. In 2011, the primary government balance was in deficit again, for economic reasons, and to a lesser extent structural, and from 2012, the primary deficit had become mainly structural. In addition, the model distinguishes exceptional events that affected the public balance in some years and the effect is not considered permanent. This is the case of exceptional revenues from one-off measures initiated in 1999 as the cancellation of past deficits and deferred depreciation and recoveries in

respect of tax arrears and payments of large privatizations carried out in the telecommunication sector in the years 2001 and 2005.

Estimates of the structural primary balance established by the two methods are broadly similar for the whole period of observation (Figure 4), except in 1999, marked by a primary surplus of 17.4 billion dirham. This surplus was considered largely, structural in nature at the approach based on the calculation of elasticity, while that inspired the VAR model was entirely attributed to factors outside the cyclical nature of the fact including major privatization transactions that have marked this year. Overall, the estimates derived from the first approach exceeds by nearly 97 million dirham on average, those calculated from the second.

Based on the prospects published in January 2015 by the High Commission for Planning, the economy will continue its cyclical tightening in 2014 and 2015, without exceeding its trend long term. Moreover, according to the conclusions of the economic and social report published by the Ministry of Finance for 2015, the primary deficit is expected to drop to 1.1% of GDP. The Moroccan structural primary balance will be reduced to 0.8% of GDP in 2015 instead of 2.1% in 2014. This reduction will be mainly due to the suspension of fuel price subsidies made in 2015, likely to reduce significantly compensation expense that have monopolized nearly 31% and 25% of revenue respectively in 2012 and 2013. The economic situation favorably oriented in 2015 would support 125 million dirham, against 1.1 billion in 2014.

Conclusion

In this article, we recalled two of the main methods of decomposition of the primary public balance. Particular attention was paid to the methodology inspired by the VAR models whose the results differ significantly from the two-stage method, in particular because of taking into account relatively higher effect of economic conditions. Overall, the two main conclusions are highlighted by two methods can be summarized as follows:

- With respect to the overall sensitivity of the primary public balance relative to the level of the output gap, the results of the first approach do not suggest the importance and validity of the coefficient: governments seem not base fiscal policy by reference to the economic position in the cycle. In contrast, the primary balance sensitivity is relatively more apparent from the actual economic growth outside agriculture conducted during two years earlier. For each additional point of growth of non-agricultural GDP, public primary balance of Morocco tends to increase 0.07 percentage of points in the current year and 0.23 percentage of points in the second year following. This sensitivity remains below estimates in European countries like France (0.5).

- The economic climate provides little support to the Moroccan public finances. The public primary balance is mainly structural in nature, which suggests a lower contribution of the mechanisms of automatic stabilizers in the Moroccan economy. It should be noted in this regard that the Moroccan tax system is not quite proportional and that the tax base is not wide enough to induce a significant response taxes following the fluctuations of the business cycle. Thus, the primary deficit reduction policies can take place only through structural measures to make fundamental changes in economic structures. These measures will aim to get back on a sustainable path of growth of public spending and to promote an environment conducive to business and household investment.

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