LAPSE OF TIME

SM/20/73
Correction 1

March 25, 2020

To: Members of the Executive Board

From: The Secretary

Subject: **Belgium—Selected Issues**

Board Action:	The attached corrections to SM/20/73 (3/19/20) have been provided by the staff:
Evident Ambiguity	**Page 5**
Factual Errors Not Affecting the Presentation of Staff's Analysis or Views	**Pages 2 (chapeau) and 3 (para. 6, lines 1, "75", 6, 10)**
Typographical Errors	**Pages 2 (para. 1), 3 (para. 6, lines 1, "Belgian" and 9), 9**
Questions:	Ms. Velculescu, EUR (ext. 37728) Mr. Vermeulen, EUR (ext. 30324) Mr. Kemoe, EUR (ext. 30612)

THE APPROPRIATE FISCAL STANCE: A MODEL ASSESSMENT

Public debt in Belgium has fluctuated between ~~80~~ 75 and 140 percent of GDP over the last four decades. This has constrained the ability of policymakers to use fiscal policy to smooth business fluctuations. Lowering public debt would give more space to the government to offset shocks in the future. This note uses a theoretical model that explicitly accounts for the trade-offs between the short-term cost of fiscal tightening and the long-term gains associated with higher fiscal buffers. The medium-term analysis suggests that once the on-going global outbreak of COVID-19 fades out, a gradual consolidation would strike the right balance.

A. Introduction

1. This paper analyzes Belgium's fiscal stance using a structural stochastic model. Section B~~A~~ shows, using Belgium's past fiscal stance, that high debt can reduce the propensity to use fiscal policy to smooth fluctuations. Section ~~B~~ C provides a medium-term model-based advice for the fiscal stance and shows that the long-term gains of restoring buffers outweigh the short-term cost of fiscal tightening.

B. High Public Debt Restricts the Ability to Smooth Shocks

2. The fiscal policy stance is assessed with a "Buffer-Stock" model of the government in which a forward-looking government maximizes utility under a debt constraint (Fournier, 2019).[1] In this model, the government strikes a balance between the objectives of economic stabilization and debt sustainability. For this purpose, it chooses the fiscal stance, defined as a change in the structural primary balance, singling out the discretionary policy choices. Economic output is affected by exogenous shocks, which can persist for some time. The government can loosen the fiscal stance to boost output at the cost of eroding its fiscal buffers, or tighten it to build buffers, but this will come at some cost for output. Recessions reduce potential output, reflecting human and physical capital losses due to economic downturns (hysteresis effect). Fiscal policy is constrained by adverse effects of higher debt such as higher interest rates, a risk to lose market access and a one-year implementation delay. Low debt enables the government to borrow during bad times, like an asset from which the government can draw down to stabilize output in bad times. In other words, low debt is similar to a buffer.

3. This Buffer-Stock model of the government shows that a government should react to both debt and short-term economic fluctuations. The utility maximization framework provides a normative view on the fiscal stance. It recommends higher fiscal surplus at higher debt levels to preserve sustainability, and counter-cyclical fiscal stance to smooth fluctuations. Rising interest rates reinforce the motive to reduce debt. At low debt levels, hysteresis reinforces the motive to counter

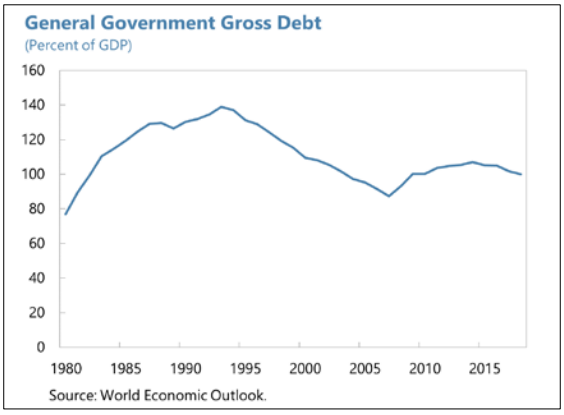
[1] This section provides a brief description of the main features of the model. For a more detailed discussion, see Appendix I and Fournier (2019).

negative shocks. The model provides a recommendation that is consistent with a given assessment of future growth and interest rate prospects, the output gap and the capacity of the government to offset shocks (fiscal multiplier). As assessments are surrounded by uncertainties, policy makers also need to exert judgments on these assumptions. To guide the judgment, the model can describe the extent to which recommendations are sensitive to the main assumptions.

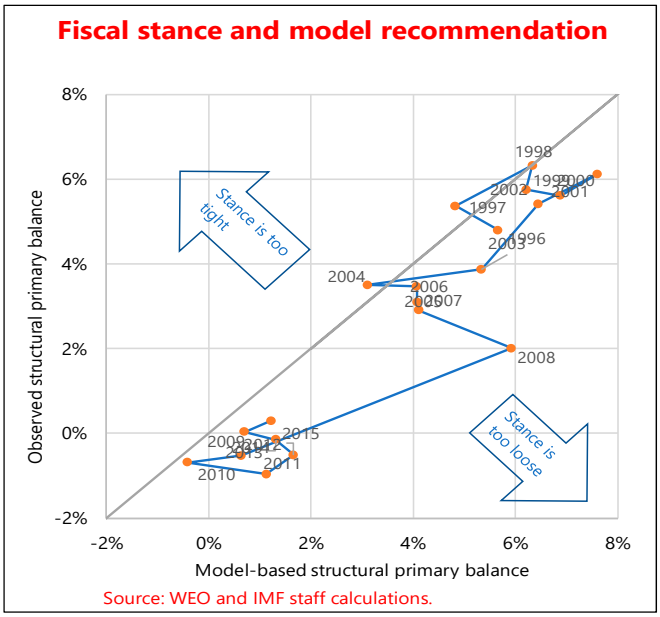
4. Highly indebted governments should react less to shocks. The debt buffer (the difference between the current debt level and levels at which sustainability is at risk) has an insurance value—it is the "reserve" of debt that the government can issue to smooth shocks. When the buffer is small, the probability of market stress is high and the marginal value of an extra unit of buffer is large. This provides an incentive to preserve buffers to guard against future shocks. As a result, when debt is high, the optimal policy response to offset a negative shock is smaller than when debt is low.

5. The fiscal stance in Belgium is analyzed through the lens of this model. The links between fiscal stance and both debt and economic fluctuations are thus explored. As shown in the next paragraphs, fiscal policy over the last 40 years in Belgium illustrates the case of a highly indebted government which reacted to debt but did not use discretionary fiscal decisions to smooth the business cycle much.

6. Belgi~~an~~an~~um~~ public debt has fluctuated between ~~80~~ 75 and 140 percent of GDP over the last 40 years. Following the substantial increase in the primary deficits, which started in 1974 to reach more than 8 percent of GDP in 1981, debt reached around 80 percent of GDP and continued to rise through the 1980s. Following a multi-year tightening program encompassing a structural tightening close to 10 percent of GDP between 1981 and 1987 (see Devries et al., 2011 for more details), debt stabilized, albeit at a high level, close to ~~130~~ 140 percent of GDP. A second wave of fiscal consolidation in the mid-90s ahead of euro-entry—a structural tightening of more than 5 percent of GDP during 1992-98 allowed debt to decline to around 8~~7θ~~ percent of GDP by 2007. Following the global financial crisis, public debt rose again, concomitantly with risk premia. Subsequently, the government stabilized debt with a gradual tightening of the structural primary balance of 1¾ percent of GDP between 2011 and 2017, but debt remained high (around 100 percent) even as borrowing costs declined considerably.



9. A retrospective model-based analysis suggests that both the large fiscal surpluses before joining the euro and the sharp easing during the global financial crisis were appropriate. The "Buffer-Stock" model of the government described in Appendix I and in Fournier (2019) provides a benchmark to assess past choices. The model is calibrated to Belgium following Fournier and Lieberknecht (Forthcoming) (Table 1). The model used here is the same as the one used for the 2019 Article IV consultation for France.[2] The approach to calibrate the parameters is also similar, and reflects country-specific features such as higher openness and hence lower fiscal multiplier in Belgium. Overall, a comparison between the observed fiscal stance and the model recommendation illustrates the extent to which the government struck a balance between stabilization and debt objectives. Debt sustainability concerns dominate in the case of a high-debt country, and as discussed above, the government did react to rising debt. As a result, government behavior is broadly consistent with the model recommendation.



C. Restoring Medium-Term Fiscal Buffers

10. Model-based simulations are used to compute the optimal fiscal stance over 2020–25. Simulations take 2019 as given and an optimal fiscal path is calculated over 2020–25. A negative shock is assumed in 2020 to reflect the unfolding global outbreak of COVID-19.[3] One-off COVID-19 related spending is excluded from the structural primary balance discussed here. The model-based solution is adjusted to consider the ongoing low interest rate environment, in line with staff's baseline projections over 2020–25. Beyond 2025, the interest rate-growth rate differential is assumed to increase linearly over fifteen years to reach a long-run historical average (see Table 1 on model calibration).

11. In the current context of high public debt and a negative on-going shock, the model recommends an improvement of the overall and structural primary balances of 1½ and ¾ percent of GDP, respectively, by 2025 relative to their 2019 levels. The recommended medium-term adjustment is slightly frontloaded, which would strengthen its credibility. As Belgium is a small open economy, the fiscal multiplier is likely more moderate, enabling a relatively larger fiscal consolidation (especially if focused on improving spending efficiency) with moderate output

[2] See the Selected Issues Paper "The Appropriate Fiscal Stance in France: A Model Assessment".

[3] This reflects information available on 6 March 2020 and is consistent with an expected output loss of about ½ percentage point of GDP in 2020 embedded in staff's baseline projections for Belgium.

Appendix I. Model Details[1]

1. The government maximizes household utility by choosing a change in structural primary balance to stabilize output fluctuations intertemporally under constraints. The value function of the government is

$$V_t(d_{t-1}, gap_{t-1}, pb^{st}_{t-1}) = \max_{\Delta pb^{st}_t} E_t[u(c_t, L_t) + \beta V_{t+1}(d_t, gap_t, pb^{st}_t)]$$

where t is the year, d_t is the gross government debt to potential GDP ratio, gap_t is the output gap, pb^{st}_t is the structural primary balance, c_t is aggregate consumption[2], L_t is labor, u(.,.) is the instantaneous utility function and $\boldsymbol{\beta}$ is the discount factor. The state of the economy is summarized by three variables: government debt, the output gap and the structural primary balance. The optimization is subject to the structure of the economy and the government budget constraint that takes the form of a risk to lose market access rising in debt (see below).

2. The value function consists of the per-period utility function u(.) and the expected continuation value discounted by β. The per-period utility function is:

$$u(c_t, L_t) = \frac{{c_t}^{1-\sigma}}{1-\sigma} - \xi {y_t^*}^{1-\sigma} \frac{L_t^{1+\eta}}{1+\eta}$$

which is a standard constant relative risk aversion utility function in consumption and labor where $\boldsymbol{\rho}$ is the parameter of risk aversion. Households enjoy consumption, but also face labor disutility. Utility peaks at an equilibrium output for which the marginal income gain of work equates the marginal loss of utility due to labor. ξ is calibrated so that utility peaks when output is equal to its potential. In other words, utility declines not only if output decreases below its potential, but also if output increases above potential, consistent with the view that positive output gap can be associated with costly distortions. This gives the government a motive to counter output deviations from this potential.

3. The model features rising market pressure when debt is rising. First, the interest rate increases in public debt, with a calibration in line with empirical evidence (Gruber and Kamin 2012; Poghosyan 2012; D'Agostino and Ehrmann 2014; Fall and Fournier 2015; Henao-Arbelaez and Sobrinho, 2017). This sensitivity of the interest rate to debt reflects a higher risk premium, it can be regarded as the consequence of an excess of supply of government bonds. Furthermore, the risk premium increases in the change in debt; investors are more likely to be concerned if debt is rising. Symmetrically, even at high debt level, risk premium may be moderate if the government shows its capacity to reduce it. Second, a risk to lose market access rules out unbounded debt paths. The probability to lose market access also depends on the level and the change of government debt:

[1] This appendix follows closely Fournier (2019).

[2] Public and private consumption are not distinguished, and hence assumed to provide the same utility.