

A Note on Romania's Public Debt¹

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Main Findings:

GDP growth is the main factor that influences the path of the debt/GDP ratio. Romania would need an annual average growth rate of at least 2%, over the next two decades, to keep debt/GDP ratio on a sustainable path.

Higher **short and medium term interest rates** would initially increase the debt/GDP ratio. A raise by 100 basis points of the real interest rate would add an additional 1.1% to the debt to GDP ratio. Eventually public debt would come back on a sustainable trajectory due to the assumed high GDP growth rate of 3%.

Given the existing currency composition structure of public sector debt, the **exchange rate risk** is relatively high. A 10% depreciation of the RON against the EUR would add more than the equivalent of 2% of GDP to the debt/GDP ratio. Clearly, there would be opposite effects on the debt/GDP ratio if the RON appreciates, as it is expected to happen over the medium and long term. In the short term, however, the risk is that a depreciation of the RON is accompanied by higher interest rates and/or lower GDP growth and/or higher budget deficit. In such circumstances the increase in debt/GDP ratio could materialise very rapidly up to a point from where, bringing it down, would require a significant more effort.

If the current market conditions prevail, delays to bring the **primary deficit** into surplus over the next 3-4 years would increase the debt/GDP ratio to over 46% by 2016. And, if annual average GDP growth stays at 2% by 2030, the debt/GDP ratio would fail to fall quickly enough so that the stability's ratio is ensured. Under this scenario, further cumulative negative shocks to either exchange or interest rates, or even a lower GDP growth, could push public debt on an unsustainable trajectory.

1. Is the Current Growth Rate of Romania's Public Debt Sustainable?

Romania's public debt has been growing rapidly over the last years. At the end of June 2012 the public debt to GDP ratio stood at over 38%, below the Maastricht criteria ceiling of 60%. Although it grew at a very fast pace over the 2007-2010 period, the initial low level of public debt to GDP ratio was salutary in preventing the path of public debt to become unsustainable.

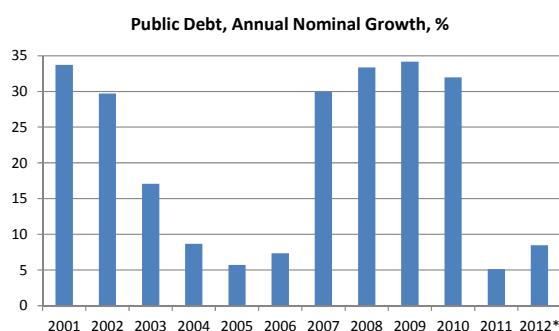
The path of public debt offers a long-term perspective of the sustainability of public finances. In the long term a country is perceived as being solvent as long as the rate of growth on public debt remains lower than the interest rate. Otherwise, public debt will be growing fast up to a point where the government will fail to find a buyer for any yield it would be willing

¹ This note builds on a section from an earlier paper entitled 'Euro Plus Pact Adoption – Implications for Romanian Fiscal Policy', co-authored with Daianu D and Kallai E, published by IER under its SPOS2011 series.

to offer on its debt². Moreover, given demographics, the size of future contingent liabilities in Romania is quite large. As they are not priced in at the moment, pressures on public finances are likely to grow larger in the future.

In December 2006 this condition was largely fulfilled but, in subsequent years the growth rate of public debt rose dramatically. Between 2007 and 2010 the rate of growth of public debt advanced at annual rates between 30-34%, reaching a peak of 48% in May 2010. These rates were far above that the interest rate prevailing at the time. Moreover, the funds borrowed were used extensively to cover current expenditure, i.e. pensions, wages and government consumption and to a far less extent they have been diverted towards capital expenditure.

In 2011 public debt annual growth rate fell to 5%, a level close to its sustainable level, but it picked up again in 2012 reaching 8% at the end of June, largely due to the effects of the RON depreciation.



Source: Ministry of Finance; * - end June 2012

In the current debate it is often argued that Romania has a low public debt to GDP ratio and that it can build it up towards the 60% limit set by the Maastricht criteria without a fear of being penalised by the markets. But different countries have different levels of debt tolerance³. In the light of its recent history of public debt evolution, the 60% limit might be well too high for Romania⁴. This happens because the current structure of government spending leaves little room for fiscal adjustment and the rising costs of servicing public debt could soon force the government to run primary budgetary surpluses.

Different countries and governments have different levels of debt intolerance. In theory, the inter-temporal solvency constraint should ensure the sustainability of public sector debt and non-expansive paths for primary fiscal balances. One factor that greatly influences the solvency condition is the initial level of public debt. Starting from this, one could project the trajectory of public debt. The debt path would be determined by the path of the overall fiscal balances, that is primary balances and the interest payments.

More generally, the main recursive equation governing the dynamics of the debt ratio is:

$$d_t = k * [(1 + r_t) / (1 + g_t)] * d_{t-1} - PS_t, \text{ where}$$

² For a lengthier discussion on this please see Lungu L. (2011) "Fiscal Sustainability in Romania", published in a volume edited by the National Bank of Romania.

³ See Carmen M. Reinhart and Kenneth Rogoff 'This Time Is Different: Eight Centuries of Financial Folly', 2009.

⁴ See Lungu L. (2011) "Fiscal Sustainability in Romania" for a more detailed discussion.

d_t is the public debt to GDP ratio at time 't' (In the above equation 't' is the time subscript so d_{t-1} represents public debt to GDP ratio over the previous period)

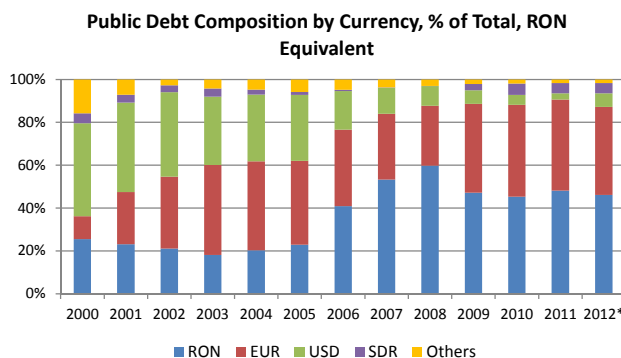
r_t is the average real rate of interest at time 't'

g_t is the real rate of economic growth at time 't'

PS_t is the primary surplus, expressed as percentage of GDP at time 't'

Here $k = w + (1-w) * e$, where 'w' represents the share of domestic denominated public debt in total public debt and 'e' measures the appreciation/depreciation of the RON against the basket currencies in which foreign owed debt is denominated. 'e' is taken to be 1 if there is no appreciation/depreciation of domestic currency. If 'e' > 1 the RON depreciates (for instance if $e = 1.05$ this is the equivalent of a 5% depreciation of the RON) which in turn increases the cost of financing foreign denominated debt. Conversely, if 'e' < 1 the RON appreciates.

Over the last decade there has been a significant shift in the currency composition of public debt:

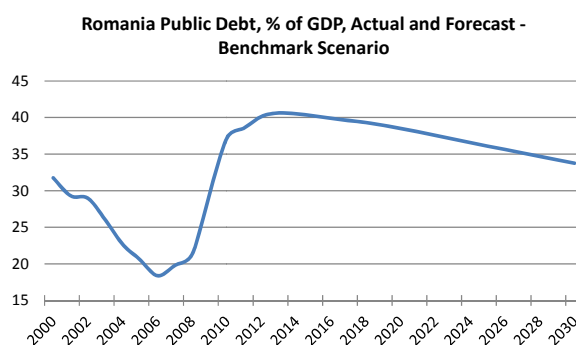


Source: Ministry of Finance; * - end June 2012

At the end of June 2012, 46% of total public debt was RON denominated, 41% EUR denominated while the remaining was split among USD (6%), SDR (5%) and 'Other' currencies (2%). It follows that fluctuations in RON/EUR exchange rate play the largest role in the dynamics of foreign denominated share of public debt.

2. What Do Projections of Public Debt Tell Us?

Under a benchmark scenario to 2030, the path of public sector debt to GDP ratio could gradually trend downwards from the current level of 38%. However, under this scenario fiscal efforts would need to be considerable. The primary budget (i.e. before interest payments) surplus would need to be 0.3% of GDP starting with 2014 and long run economic growth would need to average 3% per year. Moreover, the average real interest rate on public debt would need to come down gradually from an implied 3.7% in 2011 to 2.5% in the long run. In the benchmark scenario the exchange rate is assumed to remain at the current level.

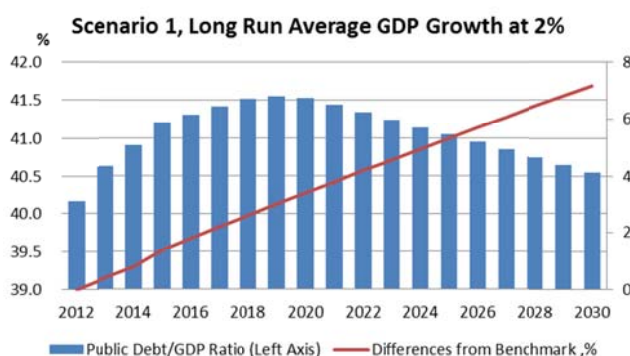


Source: Author's calculations. Historical data from Ministry of Finance and INSSE
Actuals: 2000-2011; Forecasts: 2012-2030

As it can be seen from the graph above, in the benchmark scenario the path of public debt to GDP ratio should fall gradually from a peak of 41% in 2013 to 32% by 2030. For the purpose of this analysis⁵ a sensitivity test would offer some insights over the potential paths the debt to GDP ratio could take if changes in inflation, nominal interest rate, the economy's growth rate or the currency composition of debt were to take place⁶. Obviously the results of these simulations do not replace those of a macroeconomic model, which would capture the inter-linkages among economic variables. However, they give a glimpse on the expected path of the public debt to GDP ratio and, to some extent, to the expected changes in magnitude.

Changes in GDP Growth Rates

The first set of simulations refer to the case in which GDP growth is lower by one and two percentage points respectively compared to the benchmark scenario, all other variables remaining at their 2011 values. As it can be seen from figures below the public debt to GDP ratio would increase under both scenarios.

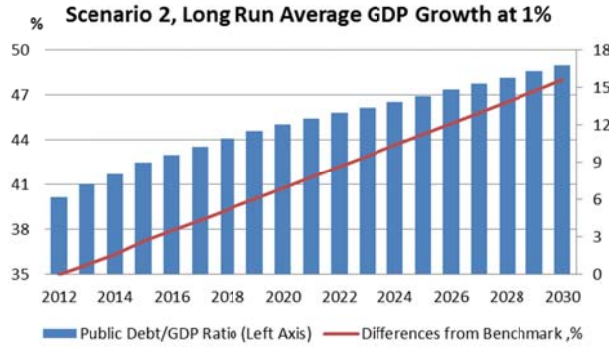


Source: Author's calculations

However, while under the first scenario the path of public debt to GDP ratio is sustainable, after reaching a peak of 41.5% in 2019-2020, under the second scenario of sluggish growth, the trajectory of public debt becomes explosive.

⁵ One can also easily calculate the required government balance that would generate a given debt ratio in a given time period or the government balance that is compatible with a constant debt ratio.

⁶ Changes in debt maturity could also play a role but this aspect is not specifically modelled here.

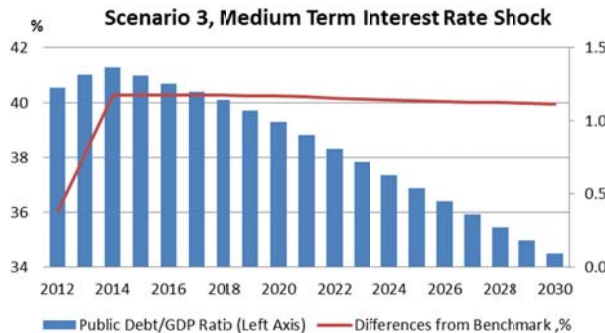


Source: Author's calculations

This outcome is to be expected since real economic growth rate is lower than the real interest rate and the adjustment in primary balance is not large enough to prevent public debt becoming unsustainable. The economic growth plays a crucial role in the sustainability of public sector finances.

A Medium Term Interest rate Shock

A second set of simulations assumes further stress on international capital markets for the next three years. As a consequence, real interest rates are assumed to increase by 100 basis points in 2012 and remain at that level until 2014. After that period they return to their benchmark values.



Source: Author's calculations

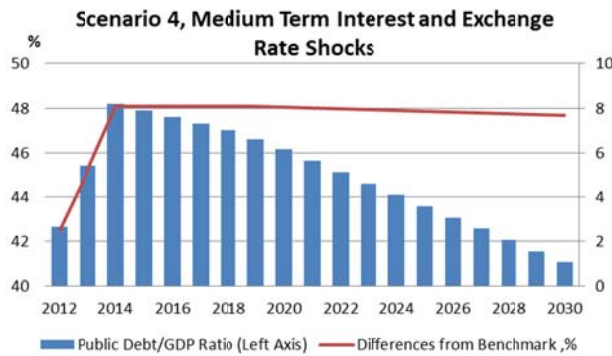
As it can be seen, an increase by 100 basis points of the real interest rate would add an additional 1.1% to the debt to GDP ratio. Public debt would initially shoot up but after the effects of higher interest rates disappear, the 3% GDP growth rate is high enough to bring public debt on a sustainable trajectory.

Exchange Rate Shocks

This section contains two simulations. The first assumes that the 1% interest rate increase over the 2012-2014 period is accompanied by an annual depreciation of 10% of RON against the EUR⁷. Under this scenario the increase in public debt ratio becomes more substantial. Public debt to GDP ratio would peak to 48% in 2014 almost seven percentage points higher compared to the interest rate scenario. Given the existing currency composition structure of public sector debt, the exchange rate risk is relatively high. A depreciation of the RON would

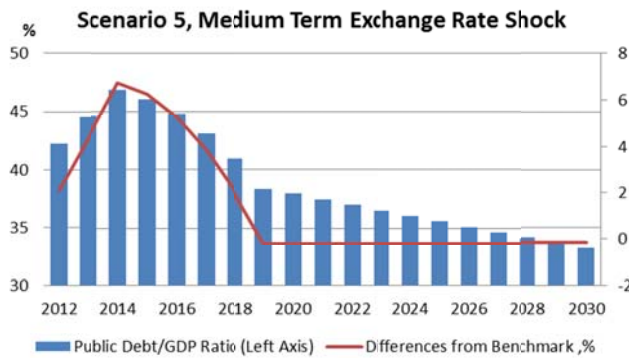
⁷ Undoubtedly the likelihood of an annual 10% RON depreciation against the EUR over the next three consecutive years is rather small.

need to be accompanied by either higher economic growth or higher levels of primary balance to reduce public sector debt more quickly.



Source: Author's calculations

The second simulation assumes that tensions in the domestic capital markets persist between 2012 and 2014 but afterwards the economy follows its convergence course. Thus, the RON is assumed to fall by an annual 10% against the EUR and then appreciate by 2% per annum until 2019.

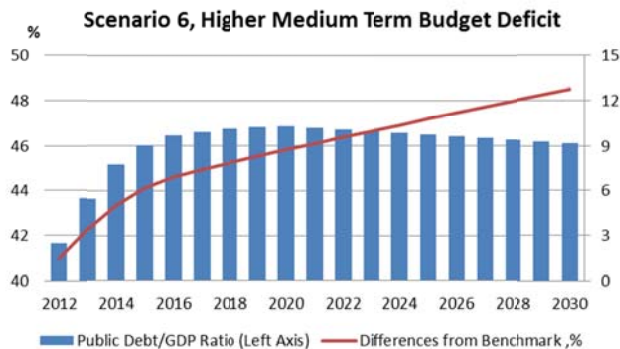


Source: Author's calculations

The public debt to GDP ratio increases rather rapidly to over 46% but then tails off gradually to below 30% in 2030. The main driver behind the fall in debt/GDP ratio is economic growth.

A Higher Budget Deficit

This simulation assumes that GDP growth is lower by one percentage point compared to the benchmark scenario. At the same time it assumes that it takes a longer period for the primary balance to switch into surplus. This is taken to fall by the equivalent of 0.5% of GDP per annum, from -2% of GDP in 2012 to zero in 2016 and then remaining into a surplus of 0.3% of GDP from 2017 onwards. This scenario would be likely if the current political tensions fail to be resolved quickly, public sector arrears keep accumulating, budget revenues fall below forecast and/or the economy grows rather slow.



Source: Author's calculations

Under this scenario the debt/GDP ratio increases over the period when the primary balance is negative after which it remains rather constant, at 46% of GDP. The reduction in public debt proceeds painfully very slow, between 2020 and 2030 the debt/GDP ratio drops by a meagre 0.8% of GDP.

3. Concluding Remarks

The on-going financial crisis has brought back into attention the sustainability of public finances. The access to international finance of small open economies with low value added exports and low innovation capacity, like Romania, could become restricted if the health of public sector finances deteriorates. At the moment Romania cannot afford to run a debt/GDP ratio close to the Maastricht criteria because financing such a debt, and preventing it spiralling out of control, would be extremely difficult. As the simulations above have shown, the trajectory of Romania's public sector can be influenced by a series of factors. Based on those, and given the existing public debt composition, a number of remarks can be made:

- Obviously, GDP growth is the main factor that influences the path of the debt/GDP ratio. Romania would need an annual average growth rate of at least 2%, over the next two decades, to keep debt/GDP ratio on a sustainable path.
- Higher short and medium term interest rates would initially increase the debt/GDP ratio. A raise by 100 basis points of the real interest rate would add an additional 1.1% to the debt to GDP ratio. Eventually public debt would come back on a sustainable trajectory due to the assumed high GDP growth rate of 3%.
- Given the existing currency composition structure of public sector debt, the exchange rate risk is relatively high. A 10% depreciation of the RON against the EUR would add more than the equivalent of 2% of GDP to the debt/GDP ratio. Clearly, there would be opposite effects on the debt/GDP ratio if the RON appreciates, as it is expected to happen over the medium and long term. In the short term, however, the risk is that a depreciation of the RON is accompanied by higher interest rates and/or lower GDP growth and/or higher budget deficit. In such circumstances the increase in debt/GDP ratio could materialise very rapidly up to a point from where, bringing it down, would require a significant more effort.
- If the current market conditions prevail, delays to bring the primary deficit into surplus over the next 3-4 years would increase the debt/GDP ratio to over 46% by 2016. And, if annual average GDP growth stays at 2% by 2030, the debt/GDP ratio would fail to fall quickly enough so that the stability's ratio is ensured. Under this

scenario, further cumulative negative shocks to either exchange or interest rates, or even a lower GDP growth, could push public debt on an unsustainable trajectory.

- Public sector debt management should pay more attention not only to debt maturities but also to the currency composition debt structure so that debt risk is minimised.