14. Sustainability of Public Finances

Summary

The sustainability of public finances involves issues such as whether the present generations are creating conditions to ensure the sustainability of a social security system that guarantees satisfactory pensions in the future, if the stock of public debt accumulated over the years is sustainable or it tends to trigger an explosive debt creating a need for substantial sacrifices for future generations by higher taxes. It is therefore an issue that is of interest, first of all, for each country but also for other countries integrated in the same economic and monetary union (EMU) by the external effects that would be create by unsustainable public finances in a single country. This is the reason why in the Maastricht Treaty, was agreed to established financial rules that the deficit-product ratio should not exceed 3% and the debt-product ratio should not exceed 60%, being product measured by Gross Domestic Product at market prices (GDPmp).

This chapter begins with a conceptual clarification of what is meant by debt, discusses the concept of Ricardian equivalence under which the debt today is the same as deferred taxes tomorrow, examines the dynamics of debt relating it to the budget balances, the rate interest, inflation and output growth, and finally examines a set of indicators for assessing debt sustainability.

Budget deficits in the EMU countries, ie, negative balances of non-financial transactions, can only be funded by surpluses in financial operations, in essence or issuance of debt (revenue from financial liabilities) or selling of financial assets (for example, resulting from privatizations).

Public debt in a given year is equal to the value of all securities issued by government in the capital market, mainly to raise funds to finance budget deficits and not yet amortized. Most of the debt gives the owner a periodic fixed or variable remuneration, is redeemable after a certain number of years and is negotiable (bonds and Treasury bills). There are also not redeemable securities and non-tradable (savings certificates, etc..) and minor (no longer issued) not redeemable securities that give their holders annuities.

The increase in public debt from one year to another, reflects the existence of *net borrowing requirement* (NFL). These are the sum of the budget deficit, the net acquisition of financial assets, debt settlements and the assumption of liabilities to which they deduct any proceeds from privatizations. However, the *gross financing requirements* (NF) are the emissions of new public debt in a given year and equals the sum of the NFL and the amortization of debt having its maturity this year (the principal must be repaid in that year).

Apart from the need of public debt, a different issue is its effects. Some authors, starting with David Ricardo, argued that the effect of debt on household consumption would be neutral. That is, under a set of simplifying assumptions, financing public spending with debt or with lump sum taxes (lump sum) would have the same effect. The assumptions are, however, very demanding: agents with rational expectations and infinite horizons, consumers without liquidity constraints and deciding on the basis of permanent income, efficient capital markets, perfectly flexible prices and governments abiding with long term budget constraints. These hypotheses, however, are quite unrealistic for the so-called "Ricardian equivalence" to hold.

The analysis of debt dynamics can be made from the government budget constraint (assuming no money supply or income from selling financial assets). That constraint is given by equality of the change in the debt stock (Bt) with symmetrical overall budget balance, ie, everything else constant, the *deficit* causes an increase in the *debt stock* and a surplus reduces it. It can easily be seen that when the primary balance is zero (sp = 0) the growth rate of the stock of the debt equals the real interest rate *(r)* (i.e. $Bt = (1 + r) Bt\text{-}1$) and when there is a primary deficit the growth rate of the debt stock is greater than the real interest rate. It can also be demonstrated that the long term deficit-product ratio *(d)*, which allows stabilizing the debt-output *(b)*, for an economy with sustainable real growth (y) and an inflation rate (π) is given by (1) $d \text{ }^*= (y + \pi) b$. That is, the deficit-product ratio should equal the product of the nominal growth rate of the economy by the debt-product ratio. If the values predicted in October 2008 in the State Budget (OE2009) for inflation and real output growth

(respectively 2.1%, 2.4%) remained in the future it would be possible to maintain the current ratio debt-product in 65% with permanent deficits (% of GDP mp) of 2.925%.

Another interesting result is the relationship between the real interest rate, r, the rate of real output growth, y, and the ratio of primary balance in the product sp. Ignoring the seigniorage revenues, it is shown that, if (2) $sp=(r-y)b$ the debt-product ratio (b) is stable, but if $sp <(r-y)b$ the debt dynamics become explosive. Using previous data, with an interest rate of 2.2% the primary balance should be equal to -0.13% of GDP (= (2.2% -2.4%) * 0.65) to maintain the debt-output ratio stable at 65%. If the primary balance is smaller, than the growth of debt becomes unsustainable.

If the nominal interest rate implicit in the debt is given by i, then the expenditure on interests are given by (3) $j = ib$. In turn the primary balance (sp) is equal to the overall balance ($sg=-d$) excluding the interests, or (4) $sp=(-d)+j$. The relations (1) and (4) allow for determining, from the macroeconomic forecasts about the rate of real output growth *(y)*, inflation rate *(π)* and the nominal interest rate implicit in public debt *(i)* , pairs of values (public revenues and primary expenditures) consistent with debt sustainability. In fact, one can calculate first the budget deficit consistent with debt sustainability (1) and then through the calculation of interests (3), the corresponding primary balance (4). As the primary balance consists of revenues less primary expenditures, setting one magnitude it is possible to obtain the other. For each level of government spending (primary or de facto), and debt stock, there is a level of revenue which would ensure the sustainability of long-term debt, understood here as to maintain stable the level of the debt-product ratio. Blanchard presented a simple indicator of sustainability that is the difference between this level of public revenue "sustainable" and the actual level of revenue. For a satisfactory level of debt-product ratio, the ideal is that this difference is zero. If positive, the debt will have an explosive behavior, if it is negative it would be possible to reduce taxes or increase spending while maintaining debt sustainability.