BancoBM

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Inflation, Interest Rate and the Nominal Tax Code

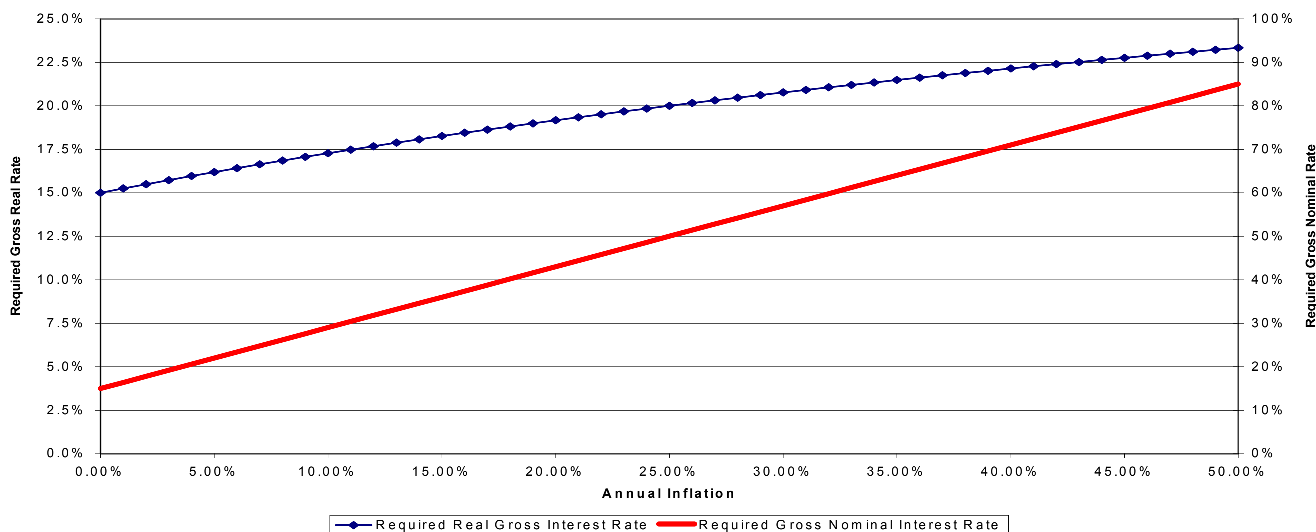
One of the most difficult achievements of the Real Plan was to do away with short-term indexation. Without the elimination of the indexation of wages, exchange rate, taxes and many other economic variables, inflation would not have been conquered. The Brazilian economy today needs low inflation to function properly, since the indexation mechanisms of the past have been removed.

One example of the harm caused by the current levels of inflation (10 to 20% per year) may be found in the interaction of the current nominal (i.e., not indexed to inflation) tax code, the inflation rate and the interest rate.[1] As those who are old enough to have lived through the high inflation of the seventies in the US remember, the fact that the IRS taxes nominal income, not real income, may cause important distortions when inflation breaches the 10% threshold. The higher the inflation, the higher the tax collected in real terms. This is because the "inflationary gains", i.e., the increase in nominal value that merely keeps the real value constant is also taxed. In an inflationary environment, nominal wages have to be raised to maintain the same real wages. If the tax brackets do not change, a higher tax rate will be applied to the same real wage.

A similar effect happens to most types of income, including interest income. The taxing of the inflation part the nominal interest rate increases the real interest rate. Investors care about net real interest rates, i.e., the amount actually received after adjusting for taxes and inflation. Since investors can freely move their funds to the most profitable investment, when real taxes on the interest rate increase, it is probably the gross real interest rate that adjusts, while the net real interest rate remains fixed, given by the net returns in competitive investments.

The Chart shows the effect of inflation on the real and nominal interest rates. It assumes that investors require a 12% annual net real interest rate,[2] and that the income tax on interest revenues is 20%.[3] When there is no inflation, the required 12% annual net real interest rate translates into a 15% annual gross rate (both real and nominal).[4]

However, when inflation reaches 25% per year, the same 12% net real return is equivalent to a 20% gross real interest rate, or a 50% gross



[1] I thank Fabio Giambiagi for pointing out this effect to me.

[2] While this high return may seem exaggerated, it is reasonable for Brazil.

[3] This is the withholding tax rate in Brazil for interest income.

nominal interest rate. If the government is the one paying the interest, it does not make much difference, because the extra 5% real interest payments will be taxed.[5] However, since the rates on government debt set a floor for all other rates, the extra 5% will push up all the other real interest rates in the economy.

The resumption of economic growth in Brazil significantly depends on the lowering of the extremely high real interest rates. With high inflation, this task becomes much harder. That renders even more important the role of the Central Bank in enforcing the inflation-targeting regime, when inflation has been booted by the exchange rate depreciation of the last two years.

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[4] Since 20% of the 15% is taxed away, the investor is left with the required 12%.

[5] This neutrality result is not quite true in Brazil, since states and municipalities are entitled to a share of federal tax revenues. Therefore, while the extra real interest payment is completely charged to the federal government, the equivalent extra revenues are shared by the sub national entities.

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