



By: [Emre Alkin](#)

# Economics is dynamic - an ever-changing subject



By the end of the last century, budget deficits and major public debt have become a big problem for countries, creating parameters of top importance in analysing the economic situation.

For example, "primary balance" is an important parameter indicating a country's fiscal state, excluding net interest payments on government debt.

The primary balance actually shows that countries that need to borrow can find funds as long as they remain disciplined in public spending.

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If a country runs a primary deficit, it might become unable to pay its debts after a while, or find itself in a debt spiral out of which it cannot escape.

As with every parameter in economics, there is a formula to calculate primary balance as well. As an equation:

$\text{Real Interest Rate} = \text{Growth Rate} + \text{Primary Surplus/GDP}$

This means that if the real interest rate offered in a country exceeds its GDP growth and primary surplus/GDP, that country may become insolvent.

From another perspective, when we take the GDP rate as source data, we see that a satisfactory primary surplus/GDP ratio must be achieved in order not to remain below the real interest rate.

So, the most rational course of action that

governments should undertake is to increase budgetary discipline as real interest rates rise. However, in many countries this is not the case.

## Mathematics Alone Won't Help Solve the Problems

Unfortunately, some say, "The real interest rate is already negative and we have fairly good GDP figures. Some primary deficit won't hurt anyone", without paying attention to the fact that the parameters in the formula are absolute numbers.

It is considered healthy for emerging economies to run a surplus of 3% of their GDP. But, if a government lets the primary deficit continue to grow unchecked just because real interest rates have turned negative, the economy would inevitably face serious problems, possibly leading the country to risk defaulting on its debt.

What are the factors that determine the real interest rate? Let's remember this simple equation:

$\text{Nominal Interest Rate} - \text{Inflation Rate (expected or actual)} = \text{Real Interest Rate}$

Sometimes my colleagues calculate the real interest rate by subtracting the current inflation from the market rate, which is completely wrong because the current inflation rate indicates inflation of the last year, and the market interest indicates the next year's income.

Utmost attention must be paid when making these calculations. So what is interest formula?

$\text{Interest Rate} = \text{Risks} + \text{Inflation}$

This simple formula shows that as risks and inflation rate decrease, the interest rate decreases as well.

Actually, interest is the result and a dependent variable. For this reason, the above equation must be understood correctly.

Equations in economics do not contain perfect symmetry, just as they do not in engineering.

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It is possible to lower interest rates by reducing inflation and risks, but it is not possible to do it by reducing interest rates.

If we try to force it, there will be many complications like the ones we are struggling with today.

Failing to fully grasp the primary balance and interest rate formulas, and the definition of the real interest rate, therefore failing to accept the dynamic relationship between them, and most importantly, being unaware of the following characteristic of the economy, sadly leads to major problems.

Economies cannot be analysed with a single-equation instantaneous model, but with a multi-equation dynamic model. It would be beneficial for both citizens and governments accurately to comprehend the relationship amongst economic parameters, and manage their economies accordingly.