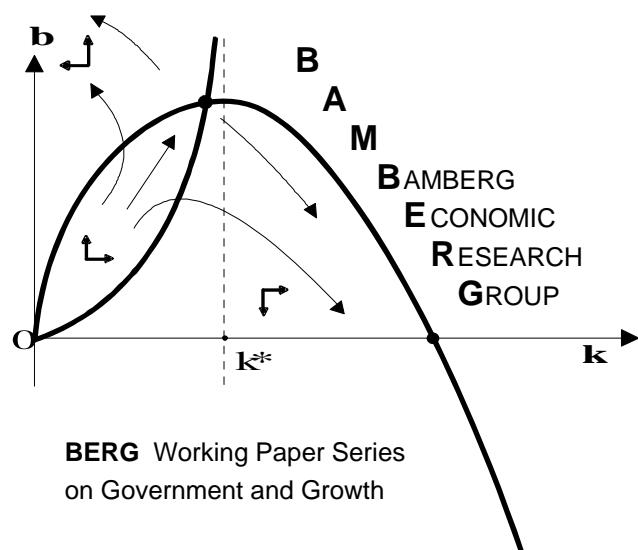


# Economic Implications from Deficit Finance

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# Economic Implications from Deficit Finance

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## Abstract

The paper enlightens popular part of the budget policy – deficit finance. In the process of securing economic conditions to surpass the current economic crises, the governments all over the world incline towards debt deficit finance. The intention is to describe the implications such as multiplier effect, crowding out effect, correlation between budget and trade deficit. One of them are positive, they increase the aggregate demand and national income, other negative in term that they crowd out the private sector from the capital market under increased demand for loanable funds.

**Keywords:** Budget deficit, Crowding out, Twin deficits, Exchange rates

**JEL Classification:** H30, H62, H63

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# 1 Introduction

In the past as today, the deficit budget policy is famous instrument of fiscal policy used to increase the rate of economic growth of the country. That way of financing was established after the two world wars, oil crises and current financial and economic crises. There are three ways to finance the deficit – taxes, borrowing and monetization (inflation tax). The most popular model of deficit finance is borrowing, which is usually done by issue of government bonds. When the government is over indebted tends through national bank to buy government bonds which increases the money flow and reduces the interest rate pressure. However, it diminishes the real value of money and makes the future unpredictable for the economic actors. Therefore, it is positive to conclude the debt deficit finance effects and implications that will be separately reviewed in the paper.

It's known that nowadays the current public debt growth is larger than the growth rate of the economy for most of the industrial countries. It's expected that the growing public debt will cause problems in perspective related to its service. The channels for public debt effect on the economy are the following: 1) direct effect on the interest rates accompanied with the necessity to sell larger supply of bonds. As the supply of bonds intended for sale increases, their prices tend to fall, and the market interest rates go up; except if credit offer is timelessly elastic and the private borrowing is reduced. The interest rate increase can be temporary limited from the capital inflows; 2) interest rate component of the public expenditure will tend to rise, and consequently raise future fiscal deficits; 3) correlated with the previous two effects, the effect on the investment and expenditure and thus on the perspective economic performance; 4) exchange rate effect and therefore trade flows and capital movement; 5) high risk of something that may go wrong. This risk tends to rise when the total need for government borrowing caught substantial part of the total financial transactions. In that case the psychological element will have immense impact on the financial market and further on the financial stability.<sup>1</sup>

Another interesting perspective of the deficit finance effects can be seen through the work of Lehman and OECD: 1) *crowding out effect* – it's conventional wisdom that big and sustainable debt financed deficits raise the real interest rates under given level of savings and crowd out the private investments. The deficits can be

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<sup>1</sup> DE LAROISERE (1984), p. 22

financed through decline in money balance in the private sector triggered with the higher interest rates. Therefore, at lower level than full employment, the economic activity can be increased but at expense of declining interest rate sensitive investment demand; 2) *Exchange rate crowding out* – interest rate pressure – especially in little open economy – will lead towards larger international capital inflows, which reduce the effect of deficit consumption on interest rate. However, in that case the domestic currency - *ceteris paribus* – will potentially appreciate, and on that way impact the demand for tradable domestic goods and services. This effect is explained in the part for “Twin Deficits”; 3) *Portfolio crowding out* – when the government bonds participate with raising part in the private portfolio, the possession of private assets must be reduced and again puts pressure on interest rates. In other words, wealth effect has a growing influence on the fiscal effectiveness. When the saving raises, the demand for private asset (capital) and/or money balance may increase and bring to recomposition of the portfolio. Which one of these two effects will prevail, depends upon the question: Are the bonds closer portfolio substitute for money or capital? This issue is only matter of financial mix choice. According to Friedman (1978), government bonds are close substitutes for private assets, and subsequently reduce the demand for those assets. Opposite of that, short or medium term security mainly has money characteristics, which point out that potential portfolio adjustments can have beneficial impact for private investments. At balance, that may result with “crowd in” and thus reflecting the importance of public debt management.<sup>2</sup>

These ways of finance, where the borrowing prevails, had created some doubt about the real debt condition of the countries, i.e. a lot of countries over borrowed and now are faced with the consequences. As it is familiar, IMF has the main role in implementing of desired adjustment through classical measures. The expectations are that there will be active collaboration between creditors and debtors, as the implementation of real policies of indebted countries will significantly improve their economic condition.

However, in the need to secure better economic conditions, often the government is forced to implement expansive fiscal policy, which aim is to stimulate economic actors on the market and accomplish higher level of economic growth. That kind of fiscal policy creates certain economic implications that were previously mentioned. The initial positive effect in term of economic growth is the multiplier effect, which is partially neutralized with the secondary – “crowding out” effect.

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<sup>2</sup> FRIEDMAN (1978), p. 593-641

Also, in the text below will be look into the correlation between budget and trade deficit - “twin deficits”, reviewed through the exchange rate intermediary effect.

## 2 Multiplier effect

The fiscal policy represents strong instrument which through public expenditure and taxes can have an influence on the aggregate demand of goods and services in the economy. The budget deficit policy, excessive public expenditure upon collected public revenues, is initiated because of economic growth impact. Through the household and firm decisions that change the money supply or level of taxes, there is indirect impact on the aggregate demand curve. But with public expenditure intervention from the government, there is direct effect on the aggregate demand curve.

If we assume that the government made a purchase of some public good, for example plains, it will increase the aggregate demand. But is the amount of change the same as the initial public expenditure? Therefore, we are faced with two macroeconomic effects. The first, multiplier effect suggests that the movement in the aggregate demand will be bigger than the purchase, but the second one – “crowding out” suggests that the aggregate demand change will be smaller than the initial public expenditure that can be seen latter.

However, increased demand contributes with larger engagement of work force and higher profits of the company. That kind of progressive influence is transferred to the employee wages and other firm profits, which results with increase of consumption of different goods and services. So the state demand for planes increases the demand for other firm’s products in the economy. Because the increase in the aggregate demand is larger then the initial government expenditure, it is said that the government spending has *multipling effect* on the aggregate demand. This implies that there is a feedback between the higher aggregate demand and the income which continuously leads towards higher demand, then again to higher income etc. All these effects imply that the total impact on demanded goods and services will be larger in respect to starting point of the government expenditure.

Also, that could initiate response from the investment side as reply to the increased demand of goods and services. That would mean additional investment in the plain company for new plant, equipment and so on. In this case, the higher government spending generates higher investment goods demand. This is known as *investment accelerator*.

Multiplier effect could be achieved from the consumer spending multiplier where the marginal propensity to consume (MPC) is the crucial element – the part of the extra income that the household consumes instead of saving it. The multiplier =  $1+MPC+MPC^2+MPC^3+\dots=1/(1-MPC)$ . It demonstrates the demand for goods and services created upon 1 Euro of government expenditure.

The multiplier logic implies to any component of the GDP, and not only to government expenditure, as consumer spending, investment and net export. So, if there is a decline in the net export of some country, for example, in amount of 1 million Euro, the decline in countries goods will put pressure on the national income and subsequently will reduce the domestic consumer spending. With MPC=4, the net export decline of 1 million Euro will mean contraction in aggregate demand from 4 million Euro.

This is only the first instrument of the fiscal policy, public expenditure, but there is another – taxes, which also can have impact on national income. That can be seen through the personal income tax. Reduction in this tax will increase the household income that the persons take home. One part is saved and the other is consumed. Because of consuming changes, there is movement in the aggregate demand curve to the right. Opposite, tax increase will reduce spending and move the aggregate demand curve to the left<sup>3</sup>.

Therefore, the multiplier and crowding out effect are also normal for the second instrument of fiscal policy. When the country rises spending and cuts the taxes, it causes increase in the earnings and profits, thus further is additional incentive for expenditure. That's the multiplier effect. On the other side, higher income leads to bigger demand for money that provokes higher interest rate movement. High interest rates make the borrowing more expensive and lead toward decline in investment activity. That's the second, crowding out effect. However, when it comes to the taxes, it's important to take in consideration the perception of the households regarding the timely duration of tax change. In case of permanent decline of taxes, the first reaction will be larger spending caused by extra income influence and therefore larger aggregate demand. In contrary, when there is a temporary change in taxes, it will result with small impact on aggregate demand.

### **3 “Crowding out” effect**

The previous discussion is positive for the economic growth, but this effect has negative implication. This effect appears when the government borrowing steps

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<sup>3</sup> MANKIW (2009), p. 513.

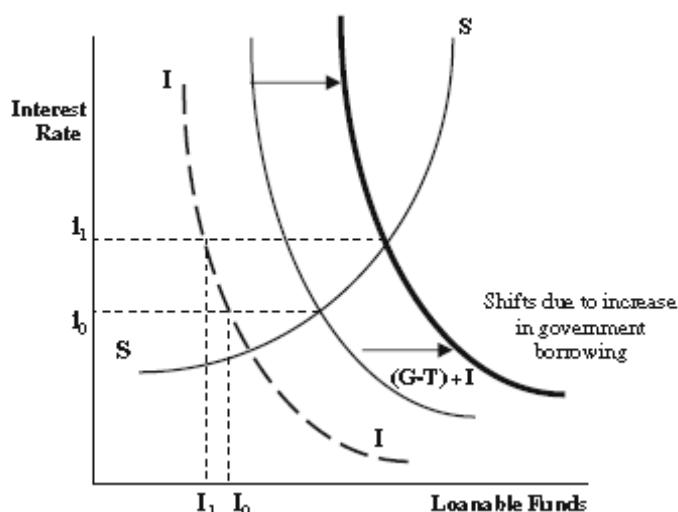
into the capital market with immense appetit for loanable funds which crowds out private capital investments. In the elaboration of this effect will be used national savings identity (NSI) with exemption of the foreign sector,

$$(G-T) = (S-I), \quad \Rightarrow \quad [(G-T) + I] = S$$

The left side from the equation represents total demand for borrowing. It's constituted from two elements: 1) government demand for loanable funds ( $G-T$ ); and 2) private sector demand for loanable funds intended for capital investment ( $I$ ). On the other side of equation is situated the supply for loanable funds, i.e. national savings ( $S$ ).

Equilibrium interest rate is set on  $i_0$ , crossing point of demand and supply for loanable funds. At this interest rate level (supposable 7%) the private capital level is  $I_0$ . That represents private demand for loanable funds under existing interest rates of  $i_0$ .

**Figure 1.** “*Crowding out*” effect



Source: LANGDANA (2009), P. 32

Therefore, under increased government borrowing for deficit finance, the total demand for capital moves to the right as it's shown on Figure 1. That initiates interest rate to set on higher level (in the example 8, 25%). However, the higher interest rate contributes for lower private demand for capital and forming the private demand at level  $I_1$ . So the private capital is crowded out by the immense government appetite for borrowing loanable funds. The amount for which the private capital is crowded out is  $(I_0 - I_1)$ .

Some economists, who favor the debt deficit finance, consider it justifiable that the capital flows linked with trade deficits should be taken into consideration,

because the capital flow will lower the interest rates and the crowding out effect would become bearable or ruled out. That was the case with the USA from 1984-'87 when the deficits were financed from abroad. That situation attributed to more relaxed monetary policy beside the large budget deficit in that period of time. However, it is sure that the Treasury can not always hope to finance the deficit from abroad and look forward for loose monetary policy.<sup>4</sup>

According to Krugman, there is no doubt that the debt deficit finance in normal economic conditions will cause fiscal burden (public debt increase followed with higher taxes in the future) and put pressure on the private sector. However, the government expenditure does not increase public debt one-to-one, because higher spending increases GDP and revenues, which reduce the initial cost. He says that in current economic terms (recession), the main determinant of the investment is the condition of the economy, i.e. everything that makes the economy better, among which fiscal stimulations that lead to more investments and raises the future potential of the economy. That means in times of crises the deficit budget policy will not lead towards crowding out, but opposite to crowding in. After some time the liquidity will be achieved again and the rules for normal economic prudence will be reactivated. Anyway, one thing is sure that the countries must be aware not to favor substantial budget deficits.<sup>5</sup>

## 4 “Twin Deficits”

For explanation of the correlation between the budget and trade deficit –known as “Twin Deficits” – it would be used the identity for national savings. This identity is found by putting into equation two sides of the national income. The first one is the distribution of the output,  $Y=C+I+G+(Exp-Imp)$ , and the share of the income realised with the output sale,  $Y=C+S+T$ .

Therefore,  $C+I+G+(Exp-Imp)=C+S+T \Rightarrow$

$$(G-T)=(S-I)-(Imp-Exp)$$

The symbols are: C-consumption; I-investment; S-savings; T-taxes.

The difference between  $(G-T)$  – government expenditure and national tax revenues – represents the national budget balance. If it is positive, there is budget deficit. If the balance is negative, there is surplus in the national budget.

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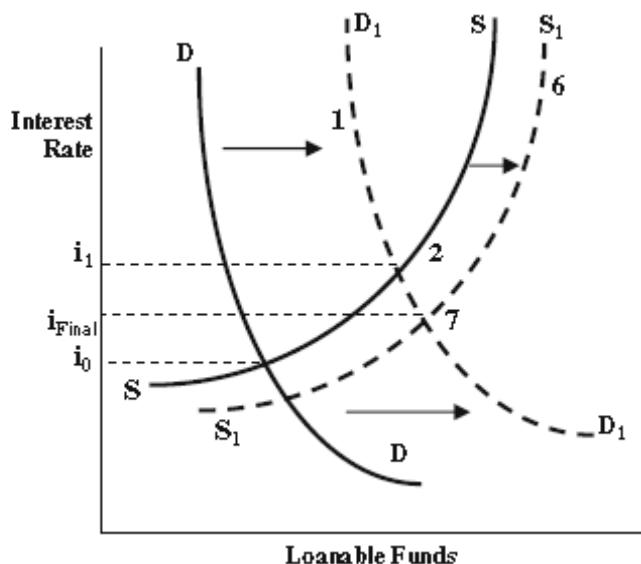
<sup>4</sup> SANTOW (1988), p. 140

<sup>5</sup> KRUGMAN (2009)

Distinction between (Imp-Exp) is the balance of the trade account. If this is positive, then there is deficit, but if negative - surplus in the trade account.

In the effort to describe the connection between budget deficit and trade deficit it is assumed that the financing is made through issue of bonds, and that the monetary and fiscal credibility are stable. In other words, the central bank has a long reputation of sustainable monetary discipline, and will not back off in case of monetisation and irresponsible government spending that trigger deficits. However, the national debt is risk free or with a low risk issue.

**Figure 2. “Twin Deficits”**



Source: LANGDANA (2009), P. 32

The Figure 2 is described the capital market funds with initial interest rate  $i_0$  where the demand is met by the supply of loanable funds. That interest rate is endogenously determined equilibrium interest rate that prevails in the economy. The interest rate of risk free short term domestic government bonds could serve as good representative for  $i_0$ .

The connection between the “Twin Deficits” for certain borrowing cycle will be described in 7 steps. The first step is the increase in demand for loanable funds by the government in order to finance the budget deficit. That action moves the demand curve for loanable funds to the right from DD to  $D_1D_1$ . The second step is new equilibrium interest rate  $i_1$  at a higher level. In the next moment the higher interest rate of the safe domestic government bonds attracts domestic and foreign

investors in desire to earn higher rates of return.<sup>6</sup> Than will follow higher demand for domestic currency in order to buy those securities that ultimately will make it more expensive on respect to the foreign currency on the global exchange rate markets. In one word, the domestic currency appreciates in respect to the foreign (for example, from 1 \$ =50 den to 70 den). In the 4 step, the stronger domestic currency makes the import “cheaper” for the domestic residents and the export “expensive” for foreign consumers which will have to put aside more units of their currency for one unit of domestic currency. Therefore, the higher import in respect to the export deteriorates the trade account and the economy with absorption of the budget deficit. Under that kind of scenario it’s clear the correlation between the two deficits. Finally, budget misbalance (G-T) has an influence on the national saving identity and through him on the interest rate and exchange rate diversities, and at the end worsens the trade account deficit. However, this is the case of flexible exchange rate regime. Under fixed exchange rate, the central bank intervention to absorb the exchange rate pressure will result in direct increase of monetary flow, inflationary tendencies and normally negative “crowding out” effect.

These connections between the twin deficits were familiar for USA in the 1980 decade and 2002 and for Germany in the early 1990. Both countries were forced to issue a large amount of bonds in order to finance their budget deficits. The Americans had financed their enormous deficits and huge household consumption, while the Germans financed the outlays generated from the necessity for infrastructure projects in the former Eastern Germany.

In the 6-th step the bigger import the export creates deficit in the current account, but the domestic currency units are reinvested by the foreigners in securities with high rates of return. Afterwards creates capital inflow that increases the supply for loanable funds and moves the curve from SS to S<sub>1</sub>S<sub>1</sub>. Thus, capital inflow contributes for achieving a new lower level of interest rate equilibrium i<sub>Final</sub>.

Capital inflows replenish the domestic savings (supply of loanable funds) and have more satisfactory influence on the interest rate level. Almost 40-60% from the deficits in USA and virtually 100% of debt service costs had been financed through immense capital flows accompanied with current account deficits. In the early 2000, for illustration, enormous net capital inflows form Asia - especially

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<sup>6</sup> The distinction between interest rates is not the only factor for initiating capital movement in global frame. Another important component for attracting capital is the macroeconomic outlook of the country in the long run.

China and Japan - had financed car factories, real property investments, mortgaged securities and bigger part from highly trained labour intensive production sector.

Therefore, deficit budget policy implies current account deficit, but in the same time makes benefits from capital inflow that keeps low interest rates. How long can be sustained this method of bond finance?

In that kind of situation, “sustainable” bond financed deficit is defined as something that can be repeatedly achieved through additional issue of bonds when the current bonds are due. Until the inflation corrected (real) rate of government bonds is smaller than the growth rate of the economy, the deficits are defined as sustainable and the model of national savings identity financed with bonds can be continuously implemented without problems. However, “unsustainable” deficit is the one that explode and can not be financed anymore by government bonds. In other words, the domestic and foreign investors refuse to absorb a larger part of public debt in their portfolios. Then the massive monetisation is inevitable step, i.e. the “lost” of the interest rate real value of public debt exceeds economic growth rate.<sup>7</sup>

In order to achieve a sustainable budget deficit, the larger G-7 economies prefer 5% rate of budget deficit from GDP. But far more strict condition is set with the Stabilisation Pact of the EU, which requires 3% budget deficit in respect to GDP for every country to become qualified for membership.

## 5 Conclusion

Since the past, the governments used the fiscal policy in order to achieve the planned projects in their political programs. In that process, they are keen to implement deficit fiscal policy to increase the economic growth rate. These fiscal measures are most justifiable in terms of economic crisis as the current one and wars. Although, most governments intend to use deficit policy for unreasonable objectives like unproductive government expenditures. What is inevitable in this kind of budget finance is the future tax burden that will fall upon the next generations. That's not argumentable but should be taken into consideration when the government loses orientation in the budget policy. But if the fiscal policy is prudent and coordinated with the monetary policy, this move will produce economic growth and improve the economic condition of the country. In deficit finance the multiplier effect is bigger than the initial change in government expenditure but obviously it's partly declined cause the crowding out effect which

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<sup>7</sup> SARGENT AND WALLACE (1985)

reduces the private demand for loanable funds because the private investments are considered as more efficient than the government. Also at the end is reviewed the potential correlation between the budget and trade deficit in spite all other factors that can have an impact of capital movement.

The conclusion from the previous description is that the fiscal stimulations play important role in the economic growth of the country, especially if the monetary policy of that country is restrictive and doesn't help with creating better economic conditions for the firms in order to improve their productivity. That's why the intervention from the fiscal policy can be crucial for the economy, normally if it is used in productive way.

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