

Eviction effect analysis of government credit on private credit in Romania's last decade

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Abstract

Given that in the last 20 years in Romania there were budgetary executions recording yearly deficit, together with the fact that public expenditures that exceed the public revenues are mainly oriented towards consumption; these two phenomena generate significant inflationary pressures and financial crowding produced by the public sector on the private one. However, this situation indicates a possible lack of coordination of fiscal policy designed and implemented by government authorities in monetary policy designed and implemented by the monetary authority - NBR. In this context, government action to reduce the public budget deficit towards reducing public expenditure consumption may be a factor likely to increase monetary policy effectiveness on financial eviction reduction.

Keywords: public loans, financial eviction, government credit.

1. Introduction

Financing budget deficit is an unconditional and irrevocable obligation of the state, meaning the service pay equity, interest and commissions and other related costs incurred by the state. Also, the associated costs and services include rating agencies for assessing country risk. All these expenses are funded through the consolidated budget, specifically through the state budget.

Public credit is made of bond loans, using government securities as instruments traded on capital markets on one hand and; state loans, which are the result of state loan contracts.

Current funding of budgetary deficit in Romania is made by issuing *short-term government securities*, in order to cover temporary shortfalls of General Account of Treasury; its funding is obtained at the expense of *short-term loans* granted by Romanian National Bank. These techniques are mainly used to cover temporary cash gaps and current budget deficits.

Currently, these loans bear interest at the interest rate on the interbank market, on account of expenses incurred by the state budget. The advantage of using this financing method is that it is fast achieved

increasing Treasury cash instantly, but with the disadvantage that it provides a short-term current account balance of Treasury and it should be repaid within 180 days.

For longer-term financing, especially in the case of public debt, as financial instruments of public credit, there are used *medium or long term SS, benchmark (reference)* sold at par, with discount or premium and the issuer pays interest annually, under the terms of the emission prospectus.

Eurobonds issuance is another way of financing budget deficit and public debt via loans. Eurobonds issue in recent years in Romania, had matured to 5 years and a yield of between 5 and 6.5%, which means higher interest if we consider the neighbouring countries.

In conclusion, in Romania, in order to attract economic resources to finance the budget deficit, a limited number of public credit instruments is used, characterized by lack of variety in terms of the features they carry. They are represented by: *short-term loans* granted by the National Bank of Romania, especially to cover temporary cash gaps and current budgetary deficits; *fixed-rate treasury bills*; *government bonds, benchmark or floating rate type*; *loans* contracted by Treasury through *banks or businesses*, sums cashed by the Ministry of Finance from *sub-loaned*, under certain agreements; *loans contracted by Romania from international financial organizations through NBR*; *Eurobond issues*.

2. Literature Review

Theoretical predictions regarding the existence of financial eviction exerted by public credit on private credit were highlighted by a number of studies and articles that have approached this phenomenon.

A recent empirical study conducted on the case of Pakistan by Khan and Gill (Khan R. E. A., Gill A. R. - Crowding Out Effect of Public Borrowing: A Case of Pakistan, Munich Personal RePEc Archive, January, 2009) , revealed that lack of eviction effect of public credit on private credit is due to targeting public spending to private sector through contractors, politicians and bureaucrats and not through government investment projects on one hand and; granting subsidies and transfers on the other. Another study (Abbas and Christensen (Abbas A., Christensen J. E. - The Role of Domestic Debt Markets in Economic Growth: An Empirical Investigation for Low-Income Countries and Emerging Markets, IMF Staff Papers, 57, 209–255, 2010) performed on the case of 93 underdeveloped and developing countries for the 1975-2004 period, showed that crowding out of public credit to private credit, only takes place in the case of economies in which bank deposit rate does not exceed 35%.

Referring on strictly financial component of eviction of public credit to private credit, Aisen and Hauner (Aisen A., Hauner D. - Budget Deficits and Interest Rates: A Fresh Perspective, IMF Working Paper No. 08-42, International Monetary Fund, Washington, D.C., 2008) have empirically proved that budget deficits are positively correlated with economy interest rates, but the influence magnitude depends on the transmission channels and is significant only if one of the following conditions is at least achieved: deficit is high, mainly internally financed or is accompanied by a strong domestic public debt, financial openness of the economy is low and interest rates are liberalized.

Using methodological tools offered by co-integration tests (*maximum eigenvalue, trace and likelihood ratio*), Cebula (Cebula, R. J. - Budget Deficits and Interest Rates in Germany, International Advances in Economic Research, Vol. 9, No. 1, pp. 64-68, 2003) showed the existence of a long-term relationship between budget deficit and nominal interest rate, in the case of Germany.

Several empirical studies focused on the group of European countries, such as Bernoth et al. (Bernoth K., von Hagen J., Schuknecht L. - The determinants of the yield differential in EU government bond market, Mimeo, Center for European Integration Studies, Bonn University/European Central Bank, 2003) , Codogno et al. (Codogno L., Favero C., Missale A. - Yields spreads on EMU government bonds, Economic Policy, 2003) or Afonso and Strauch (Afonso A., Strauch R. - Fiscal Policy Events and Interest Rate Swap Spreads:

Evidence from the EU, European Central Bank Working Paper No. 303, 2004) proves the existence of financial crowding out of private credit to public credit through transmission channel represented by interest rate that is statistically significant, but small in terms of quantity. A lower impact was estimated for the case of United States in Gale and Orszag (Gale W., Orszag P. - The economic effects of long term fiscal discipline, Urban Brookings tax Policy Center Discussion paper, 2002) and Laubach (Laubach T. - New Evidence on the Interest Rate Effects of Budget Deficits and Debt, Finance and Economics Discussion Series 2003-12, Board of Governors of the Federal Reserve System, May, 2003) .

3. Material and Methods

To the extent that governments resort to public borrowing to finance the budget deficit a crowding out can be recorded. In addition to real crowding out (public expenditure represent the use of a part of financial funds of the economy; thus they are no longer available for use in the private sector), there may be a financial crowding, engaging public loans can negatively affect credit on private economic subjects, because it absorbs some of the financial resources available for loans in the economy, contributing to a rise in interest rates.

To highlight, in Romania's case, the existence of a determination relationship between non government credit and public values, the following equation will be econometrically tested via simple linear regression, taking into account the non-government credit in domestic dependent variable in lei and the independent variable credit in domestic government:

$$CNL_t = \alpha + \beta CGL_t + \varepsilon_t$$

where:

CNL - governmental credit in lei;

GLC - government credit in lei;

ε - stochastic variable;

α, β - scaling coefficients;

t - time.

The time series used for the two variables in the model, consist of monthly data for the period January 2000 - March 2011, taken from the National Bank of Romania.

The results obtained from econometric estimates achieved by using the software package E-Views 5 are shown in the table 1.

The result obtained indicates the fact that on a statistical significance level of 5%, government credit in lei is positively correlated to non-government credit in lei. The standard error, lesser than the estimated coefficient for the independent variable, the corresponding value of t-statistic test, the extremely low probability that the value for this coefficient is estimated incorrectly (only 0.03%) indicate that the coefficient is correctly estimated.

The existence of a financial crowding out of private credit to public credit in our country can be tested through a simple regression between the average interest rate on loans and the interest rate on public loans in two specific forms of manifestation: interest rates on bonds with interest and the interest rate on treasury bills.

In case of financial crowding out occurrence, the interest rate on government borrowing should be positive, if correlated to the average interest rate on loans to the private sector by commercial banks.

First, we econometrically test the following equation, considering as dependent variable the average lending rate (interbank interest rate-cf-Annex 1) and as independent variable interest rate of bonds with interest:

$$RMDC_t = \alpha + \beta RDOSD_t + \varepsilon_t$$

where:

RMDC - average interest rate on loans;

RDOSD - the interest rate on government bonds with interest;

ε - stochastic variable;

α, β - scaling coefficients;

t –period of time.

The time series used for the two variables rate of the model consists of monthly data for the January 2000 - March 2011 period, taken from the National Bank of Romania.

The results obtained through econometric estimation achieved by using the software package E-Views 5 are shown in the table 2.

The result indicates that the interest rate on interest-bearing bonds is positively correlated with the average interest rate on loans. Standard error significantly lower than the estimated coefficient for the independent variable, the corresponding value of t-statistic t-test, the null probability that the value for this coefficient is estimated incorrectly, indicate the fact that the coefficient is correctly estimated.

Thus, taking into account the estimated coefficient for the independent variable (interest rate bonds with interest), a 1% increase in interest rates on interest-bearing bonds will increase the average lending rate by 0.75%.

However, it is worth mentioning the fact that determination coefficient R^2 is quite high (0.72), which indicates that the average interest rate on loans has other significant determinants but less important than the interest rate bonds with interest.

This result confirms that public credit in Romania exercises financial crowding out on private credit, by increasing the average interest rate on loans to the private sector.

It is expected that a similar result to be obtained in the case of correlation between the average interest rate on loans and the interest rate on treasury bills issued by the Romanian state. To confirm this prediction, we econometrically test the following equation, considering as dependent variable the average lending rate and the independent variable the interest rate on treasury bills:

$$RMDC_t = \alpha + \beta RDCT_t + \varepsilon_t$$

where:

RMDC - average interest rate on loans;

RDCT - the interest rate on treasury bills;

ε - stochastic variable;

α, β - scaling coefficients;

t - time.

The time series used for the two variables of the model consist of monthly data for the January 2000 - March 2011 period, taken from the National Bank of Romania.

The results obtained from econometric estimations performed by using the software package E-Views 3.5 are shown in the table 3.

As expected, the results obtained confirm the theoretical prediction according to which, the interest rate on treasury bills is positively correlated to the average interest rate on loans. Standard error significantly lower than the estimated coefficient for the independent variable, the corresponding value of t-statistic test, the null probability that the value for this coefficient is estimated incorrectly, indicate that the coefficient is correctly estimated.

Noteworthy is the fact that compared to the previous model, which used as independent variable the interest rate bonds with interest, the estimated coefficient for the independent variable has a lower value (only 0.46 to 0.75).

Compared to the previous model, and the overall statistical relevance of the model is more reduced, the coefficient of determination R^2 was only 0.52 (compared to 0.72).

4. Results and Discussion

The impact test results of the interest rate on government bonds on the average interest rate on loans in Romania confirm that during the past decade, public credit exercises financial crowding out on private credit, by increasing the average interest rate on loans to the private sector.

Also a similar result was obtained for the correlation between the average interest rate on loans and the interest rate on treasury bills issued by the Romanian state, using as a research method the simple linear regression, indicating that in this case the coefficient of determination R^2 was lower by only 0.52 (compared to 0.72), indicating a lower impact of interest rate on treasury bills on the average interest rate on bank loans.

5. Conclusion

Crowding out is highlighted, particularly in countries where budget deficits are recorded and have concomitant problems regarding economic development level. It is the case of lesser developed countries and developing countries.

In the case of budget constructions that target deficits, the laws that consider their approval, in Romania, do not explicitly establish their program and the financial resources which will cover them, in which case the task to solve these financing and refinancing, exclusively goes the Public Treasury, and when balance of payments needs and resources established breaks down, it invariably resorts to state loans, often to the detriment of the private sector. However, it is not irrelevant or nor effectiveness the case of these loans both in the public and private sectors. From this point of view, in recent years, Romanian public sector finances consumption expenditure and not capital that better meet efficiency in public spending.

According to the statistical figures presented by the staff coordinated by prof. Văcărel Public Finance (Văcărel I. și coautorii (2006) *Finanțele publice* Ed.V, Editura Didactică și Pedagogică, R.A.București, pg.144), results that the emerging states budgets allocate about 20% of investment costs, the transitional ones like Romania allocate around 10%, which is not enough to achieve prosperity. However, small amounts compared to previous years, of capital expenditures bound were allocated through the budget in 2010, a year of crisis, which needed a number of measures to reduce certain categories of consumer expenditure, such as reducing wages, layoffs in the public system, merging national agencies, reduction or cancellation of certain categories of allowances for retirees such as sickness allowance retiring, allowance for disabled companions; some tax categories growth, the minimum tax introduced in 2009 and maintained in 2010, VAT rate increased to 24%. These measures proved insufficient, the national GDP in 2009 and 2010 registering a contraction, they did not contribute to economic recovery based on public sector investment, while the state has resorted to borrowing from domestic financial market and proved to be a serious competitor to the private segment in access to finance via loans and causing a phenomenon of financial crowding as representatives prefer business with the state financial system as it provides secure operations, and on the other hand it simplifies the management of such loans being about one client, the state and not more. Therefore, at least for the last two years we can say that public sector crisis has passed its own system to private. In august this year a financial incentive has been taken, meant to stimulate the financial-monetary circuit of economy by implementing legal act providing for liability for VAT collection.

Only in this context can be estimated the negative impact that budget deficit can exercise on reducing future financial possibilities of the country; given the need to access the normal financing of the economy and ensure adequate social protection.

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Table 1. Estimation results of the relationship between non-government credit in lei and government credit in lei

Dependent Variable: CNL

Method: Least Squares

Sample (adjusted): 1 45

Included observations: 45 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CGL	0.302712	0.076939	3.934469	0.0003
C	66321.26	2422.280	27.37969	0.0000
R-squared	0.264706	Mean dependent var		74068.50
Adjusted R-squared	0.247607	S.D. dependent var		10910.22
S.E. of regression	9463.596	Akaike info criterion		21.19172
Sum squared resid	3.85E+09	Schwarz criterion		21.27202
Log likelihood	-474.8137	F-statistic		15.48005
Durbin-Watson stat	0.029965	Prob(F-statistic)		0.000300

Results generated by E-Views 5

Table 2. Estimation results of the relationship between the average interest rate on loans and the interest rate on government bonds with interest

Dependent Variable: RMDC

Method: Least Squares

Sample (adjusted): 2 45

Included observations: 41 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RDOSD	0.748239	0.073799	10.13893	0.0000
C	8.391448	0.689329	12.17336	0.0000
R-squared	0.724961	Mean dependent var		15.22415
Adjusted R-squared	0.717908	S.D. dependent var		1.748032
S.E. of regression	0.928420	Akaike info criterion		2.736885
Sum squared resid	33.61657	Schwarz criterion		2.820474
Log likelihood	-54.10614	F-statistic		102.7979
Durbin-Watson stat	0.168573	Prob(F-statistic)		0.000000

Rezultate generate cu E-Views 5.

Tabel 3. Estimation results of the relationship between the average interest rate on loans and the interest rate on government bonds with interest

Dependent Variable: RMDC

Method: Least Squares

Sample (adjusted): 1 45

Included observations: 43 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RDCT	0.462106	0.069088	6.688681	0.0000
C	10.99276	0.648968	16.93883	0.0000
R-squared	0.521802	Mean dependent var		15.15279
Adjusted R-squared	0.510138	S.D. dependent var		1.736131
S.E. of regression	1.215120	Akaike info criterion		3.272958
Sum squared resid	60.53719	Schwarz criterion		3.354874
Log likelihood	-68.36860	F-statistic		44.73846
Durbin-Watson stat	0.735650	Prob(F-statistic)		0.000000

Results generated by E-Views 5.