THE FISCAL POLICY AND THE STABILITY OF THE NOMINAL SECTOR: THE ROMANIAN CASE

Ioan Talpos and Bogdan Dima and Mihai Mutascu

West University of Timisoara, West University of Timisoara, West University of Timisoara

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Ioan Talpoş
West University of Timişoara, Faculty of Economics, Timişoara, Romania
ioan.talpos@fse.uvt.ro

Bogdan Dima
West University of Timişoara, Faculty of Economics, Timişoara, Romania
bogdan.dima@fse.uvt.ro, bogdandima2001@yahoo.com

Mihai Mutaşcu
West University of Timişoara, Faculty of Economics, Timişoara, Romania
mihai.mutascu@fse.uvt.ro, mmutascu74@yahoo.com

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Abstract: *the fiscal policies in the contemporaneous economic systems heavy influence both the real and nominal sectors. These effects could be located at the primary distribution of the social resources as will as at level their redistribution one.*
The aims of this paper are: (1) to review the literature of the main conceptual frameworks which link the fiscal policy and the dynamic of real sector, especially on the inflation side (2) to advance an empirical analyze of these link for the Romanian case and (3) to draw some conclusion about desirable framework of the fiscal policy for the current period in the perspective of Romanian access to European Union.

1. INTRODUCTION

Specialized International economic literature identifies two types of theoretical approaches regarding the link between inflation and fiscal policy: on one side an approach promoted by Sargent and Wallace (1981) known as „The Theory of inflationary fiscal deficit", on the other side an approach formulated by Leeper (1991), Woodford (1995, 1997, 1998) and Sims (1994) known as „The Theory of fiscal determination of the level of prices".
The theory of the inflationary fiscal deficit tries to explain, on long term, to what extent do big and persistent deficits determine the in the increase of price indexes and which are the precise ways to counteract their negative effect.
The theory of fiscal determination of the level of prices introduces in equation the effects emitted over the inflation by the adjustments of fiscal policy and evaluates the measure in which these can be quantized using empirical investigations. Moreover, it is considered that the level of price must correspond with that point because the real value of public debt equalizes the present value of future budget excess, ensuring this way an intertemporal budget balance.

2. THEORETICAL FUNDAMENTS

Knowing the monetary nature of the inflation, economic literatures study the relations between fiscal and monetary policy, as well as the results on their impact over inflation. We

remark, as a matter of fact the interaction between the powers of two characteristic authorities: on one side the Govern as a principle promoter of fiscal policy and on the other side the Central Bank, as a forum of conceiving and applying monetary policy. However, if there is a high level of govern implication in monetary policy

There's a big probability that the Central Bank will use its power this way. In such circumstances the Govern can force the Central Bank to accept direct financing of the budget deficit or to maintain the refinancing installment at a low level, so that the cost for public credit remains low.

Thus, according to Barro and Gordon (1983), a high level of independence of the Central Bank can induce a high level of price indexes when the bank tries to maintain fiscal sustainability in the economy with cost levels as small as possible.

Cotarelli et al. (1998) sums up the fact that there is a big impact of fiscal deficit over the inflation, especially in countries in which money markets aren't highly developed, suggesting limited access of governs on those markets and their propensity to ask for help from the Central Bank.

3. METHOD AND RESULTS

In order to test the links between the inflation and some budgetary macro-variables (public revenues and public expenditures) a *Vector Error Correction* (**VEC**) could be involved. The **VEC** methodology presents several advantages. In particular, it allows building a model of the connections between some co-integrated variables, being extremely useful in the study of the economic fluctuations.

A **VEC** model is a particular restricted *Vector Error* (**VAR**) model designed for use with non-stationary series that are known to be co-integrated. The **VEC** has co-integration relations built into the specification so that it restricts the long-run behavior of the endogenous variables to converge to their co-integrating relationships while allowing for short-run adjustment dynamics. The co-integration term is known as the error correction term since the deviation from long-run equilibrium is corrected gradually through a series of partial short-run adjustments.

To take the simplest possible example, consider a two variable system with one co-integrating equation and no lagged difference terms. The co-integrating equation is:

$$y_{2,t} = \beta y_{1,t} \qquad (1)$$

The corresponding **VEC** model is:

$$\begin{aligned} \Delta y_{1,t} &= \alpha_1 \left(y_{2,t-1} - \beta y_{1,t-1} \right) + \varepsilon_{1,t} \\ \Delta y_{2,t} &= \alpha_2 \left(y_{2,t-1} - \beta y_{1,t-1} \right) + \varepsilon_{2,t} \end{aligned} \qquad (2)$$

In this simple model, the only right-hand side variable is the error correction term. In long run equilibrium, this term is zero. However, if y_1 and y_2 deviate from the long run equilibrium, the error correction term will be nonzero and each variable adjusts to partially restore the equilibrium relation. The coefficient α_i measures the speed of adjustment of the i-th endogenous variable towards the equilibrium.

The vector of the endogenous variables has the following representation:

$$Y_t = [IFP_t\ VP_t\ CHP_t] \qquad (3)$$

where: *IFP* - variations in the level of inflation, *VP* - variations in the level of public revenues, *CHP* - variations in the level of public expenditures and *t* represent the current period t. Variations that can be expressed as:

$$x_t = ln\left(\frac{X_t}{X_{t-1}}\right) * 100 \qquad (4)$$

For presenting how such a model can be applied in approaching the inter-connections between inflation, public revenues and their allocation, in an instable economic system, as in Romania, we propose an analysis made for September 1998 - February 2006 period, which was shaped by important changes in the fiscal policy. The seasonal effects are drawn from the original data by the usage of an *X12-ARIMA* procedure in order to preserve the main linkages between the involved variables.

The estimation of the general model parameters described by the relation (3) leads to following results (Table 1):

Table 1

The estimation of the general model parameters

Vector Error Correction Estimates			
Sample (adjusted): 1998M09 2006M02			
Included observations: 90 after adjustments			
Standard errors in ( ) & t-statistics in [ ]			
Co-integration Equations:	CointEq1	CointEq2	
IFP_SA(-1)	1.000000	0.000000	
VP_SA(-1)	0.000000	1.000000	
CHP_SA(-1)	-0.121268	-0.987180	
	(0.15076)	(0.04532)	
	[-0.80437]	[-21.7811]	
Error Correction:	D(IFP_SA)	D(VP_SA)	D(CHP_SA)
CointEq1	-3.484849	0.339747	0.417828
	(0.65697)	(0.40320)	(0.47844)
	[-5.30443]	[0.84263]	[0.87331]
CointEq2	0.707002	-1.539876	3.783575
	(1.93197)	(1.18570)	(1.40698)
	[0.36595]	[-1.29870]	[2.68915]
D(IFP_SA(-1))	1.776156	-0.261404	-0.297071
	(0.60261)	(0.36984)	(0.43886)
	[2.94742]	[-0.70680]	[-0.67692]

D(IFP_SA(-2))	1.250112	-0.086798	-0.033489
	(0.52170)	(0.32018)	(0.37993)
	[2.39623]	[-0.27109]	[-0.08814]
D(IFP_SA(-3))	0.829707	0.044485	0.097809
	(0.42754)	(0.26239)	(0.31136)
	[1.94067]	[0.16954]	[0.31414]
D(IFP_SA(-4))	0.565959	0.194190	0.208546
	(0.32927)	(0.20208)	(0.23980)
	[1.71882]	[0.96094]	[0.86968]
D(IFP_SA(-5))	0.280116	0.178092	0.170884
	(0.22334)	(0.13707)	(0.16265)
	[1.25419]	[1.29925]	[1.05061]
D(IFP_SA(-6))	0.109537	0.110427	0.159296
	(0.11776)	(0.07227)	(0.08576)
	[0.93014]	[1.52788]	[1.85741]
D(VP_SA(-1))	-0.749446	0.274743	-2.912283
	(1.79659)	(1.10262)	(1.30838)
	[-0.41715]	[0.24917]	[-2.22586]
D(VP_SA(-2))	-0.483834	0.079978	-2.338285
	(1.55060)	(0.95165)	(1.12924)
	[-0.31203]	[0.08404]	[-2.07067]
D(VP_SA(-3))	-0.393756	0.034259	-1.585941
	(1.24430)	(0.76366)	(0.90618)
	[-0.31645]	[0.04486]	[-1.75015]
D(VP_SA(-4))	-0.224125	-0.006198	-0.984099
	(0.91252)	(0.56004)	(0.66455)
	[-0.24561]	[-0.01107]	[-1.48084]
D(VP_SA(-5))	-0.309432	0.026622	-0.434388
	(0.58661)	(0.36002)	(0.42721)
	[-0.52749]	[0.07395]	[-1.01681]
D(VP_SA(-6))	-0.462769	0.005969	-0.224912
	(0.28386)	(0.17421)	(0.20672)
	[-1.63028]	[0.03426]	[-1.08799]
D(CHP_SA(-1))	0.323032	-1.220108	1.993025
	(1.76780)	(1.08495)	(1.28742)
	[0.18273]	[-1.12458]	[1.54808]
D(CHP_SA(-2))	0.168435	-0.950095	1.416570
	(1.53023)	(0.93914)	(1.11440)
	[0.11007]	[-1.01166]	[1.27115]

D(CHP_SA(-3))	-0.304227	-0.675289	0.993805
	(1.22347)	(0.75088)	(0.89100)
	[-0.24866]	[-0.89934]	[1.11538]
D(CHP_SA(-4))	-0.383627	-0.416561	0.587370
	(0.89551)	(0.54960)	(0.65216)
	[-0.42839]	[-0.75794]	[0.90065]
D(CHP_SA(-5))	-0.057684	-0.195213	0.380009
	(0.56026)	(0.34385)	(0.40801)
	[-0.10296]	[-0.56773]	[0.93136]
D(CHP_SA(-6))	-0.010279	-0.044648	0.185624
	(0.24374)	(0.14959)	(0.17750)
	[-0.04217]	[-0.29847]	[1.04574]

R-squared	0.829071	0.581438	0.772351
Adj. R-squared	0.782676	0.467829	0.710560
Sum sq. residuals	146216.9	55074.22	77547.85
S.E. equation	45.70354	28.04950	33.28403
F-statistic	17.86979	5.117862	12.49952
Log likelihood	-460.3911	-416.4527	-431.8523
Akaike AIC	10.67536	9.698949	10.04116
Schwarz SC	11.23087	10.25446	10.59668
Mean dependent	-0.885597	0.237035	0.017577
S.D. dependent	98.03825	38.45027	61.86670

Determinant residuals covariance (degree of freedom adj.)	6.99E+08	
Determinant residuals covariance	3.29E+08	
Log likelihood	-1265.645	
Akaike information criterion	29.59210	
Schwarz information criterion	31.42530	

Based on these results we could consider that this model satisfactory describes the connection between implicated variables. Its use allow us to make an approximation of the impulse function form, which estimates the inflation evolution caused by a shock in the revenues level (Chart 1) or in the public expenditures level (Chart 2).

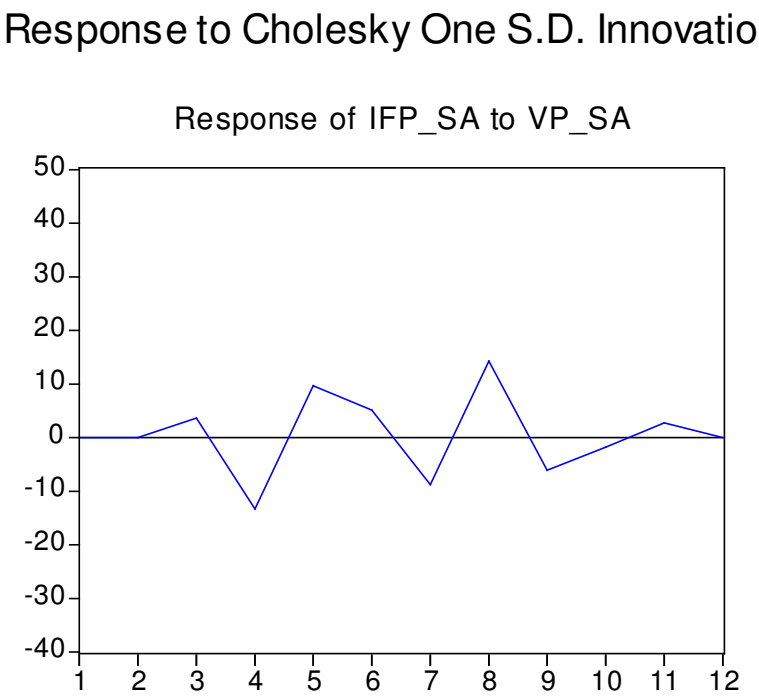

Chart 1 - Effects on inflation caused by a shock in public revenues level

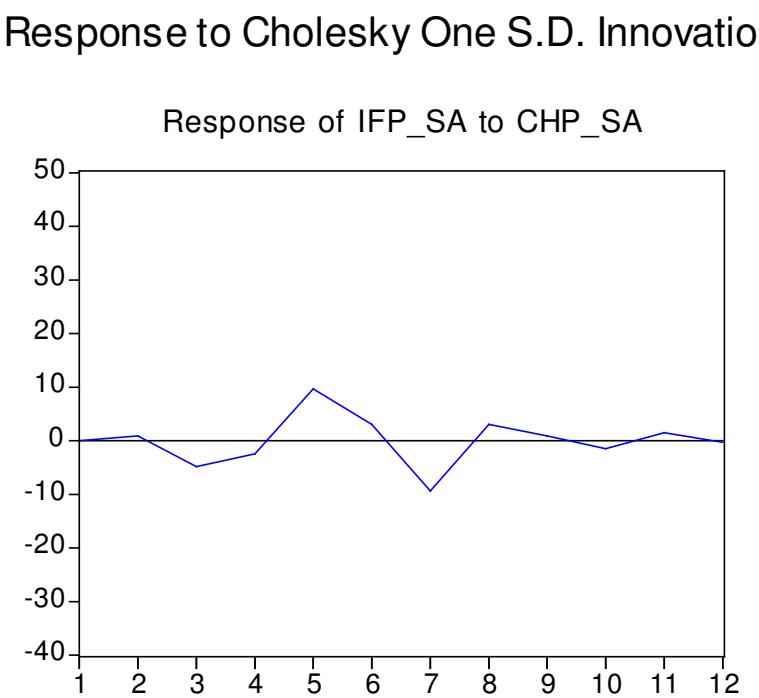

Chart 2 - Effects on inflation caused by a shock in public expenditures level

4. DISCUSSIONS

As the impulse function shows, a shock in the public revenues exercises initially a week response of the inflation, followed in a two period interval by a "down" adjustment, and after that the inducted effects reach a "peak" in two quarters and are slowly absorbed after that. A similar set of effects could be observed for the effects of the public expenditures on the inflation behaviour.
It is important to remark that the ensemble of these effects is "short-termed", reaching maximal levels in first two post-impact quarters. In other words, changes in the configuration of public decision mentioned determinants are fast and instable rebounded upon the dynamic of revenues and expenditures flows, determining frequent inter-correlated adjustment and exerting a "fast" reaction on the prices formation mechanisms.

5. CONCLUSIONS

The analysis presented in this paper had in mind to envisage the way of manifestation of the correlation between public resources, their allocation and the prices evolution.

Results obtained suggest the existence of some "fast" adjustment processes inducted by the intrinsic characteristics of the fiscal policy, by the specific behaviour of the public authorities, particularities that are active in adoption and application of the public decision and also by the imperfect correlation between the fiscal and monetary policies. In other words, the impact of the fiscal policy on the costs levels, the modalities chosen by the public authorities to finance the public deficit as well as the inflationary expectations induced to the economic subjects could "counter-balance" the effects of a restrictive monetary policy.

The main analytical development directions are:

- Widening of conceptual framework taken into consideration explicitly determinant factors of correlation between public revenues and public expenditures;
- Adoption of some alternative methodologies for empirical testing of these determinants way of manifestation;
- Taking into consideration the case of other emerging economic systems.

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