THE EFFECTS OF GLOBALIZATION ON SAVING IN CURRENCIES

Oana OPRIȘAN [1], Cosmin TILEAGĂ [2]

[1] "Ovidius" University, Constanta, Romania
[2] "Lucian Blaga" University, Sibiu, Romania

Abstract
Currency savings accounts are accounts maintained by commercial banks, savings and loan associations, credit unions, and mutual savings banks that pay interest but can not be used directly as money. These accounts let customers set aside a portion of their liquid assets that could be used to make purchases while earning a monetary return.
So, it can be said that: the saving in foreign coin is negative related with real randament of actives in lei, this variably being seen as an estimation of option price for the renunciation at the realization of saving through the possession of actives in lei; the saving in foreign coin is positive related with the dynamic of nominal change course, this variably being considerated an estimation randament associated to saving of actives in this coin.

Key words: saving, invest, inflation rate, deposits

1. The determinants factors of saving in currency

The start point in the analise of saving process in Romania can be represented by the next relations:

$$Y = (C_0 + cY) + \left[I_0 - a\left(i - \pi^*\right)\right] + G_0 + \left(E_0 - mY\right) \quad (1)$$

$$S = Y - (C_0 + cY) = sY - C_0 \quad (2)$$

where: Y represents the nominal level of the income, C_0 , I_0 are the "autonome" components (reporting to the income level and the interest level)

[1] Associate professor, PhD, Faculty of Economics, , E-mail: oana.oprisan@yahoo.com
[2] Associate professor, PhD, Faculty of Economics, E-mail: cosmin_tileaga@yahoo.com

of consume, respectively to the investements, ***c*** is the inclination to consume, ***s = 1 – c*** represents inclination to saving, ***a*** represents the investements elasticity reporting to the nominal level of interest rate, π^* and i represent the anticipated rate of inflation, G_0 represents the level (autonomily determinated) of public expenditures, E_0 is the level of exports, and ***m*** represents the inclination to import.

In relation (1):

- C_0 , I_0 represent minimal levels ("of subsistence"of the consume, respectively to the investements);
- it was took into consideration the role played by the real rate of interest in determination of investements volume effectuated in an economy in which persist inflationists tensions;
- it was considerated that the effectuation of public expenditures it is not sensitive at the nominal/real interest rate;
- it was took into consideration the existence of a maximal level of exports volume ("exportability threshold") and it was adopted the hypothesis of the effective level situation of the exports "around" this maximal level;

Relation (2): is "defining" relation of saving (understood in Keynesian manner as a surplus of income over the consume).
Through manipulation of relation (1), results:

$$Y = \frac{(C_0 + I_0 + G_0) + E_0 - a(i - \pi^*)}{s + m} \quad (3)$$

Through the substitution of relation (3) in relation (2) results that:

$$S = \frac{\left(I_0 + G_0 - \frac{m}{s} C_0\right) + E_0 - a(i - \pi^*)}{1 + \frac{m}{s}} \quad (4)$$

or:

$$S = \alpha\underbrace{\left(I_0 + G_0 + E_0\right) - \beta C_0}_{\mathrm{K}_0} - \gamma\left(i - \pi^*\right) = \mathrm{K}_0 - \gamma\left(i - \pi^*\right) \quad (4.1.)$$

where: $\alpha = \dfrac{1}{1 + \dfrac{m}{s}}$, $\beta = \dfrac{\dfrac{m}{s}}{1 + \dfrac{m}{s}}$, $\gamma = \dfrac{a}{1 + \dfrac{m}{s}}$.

From ***structural*** viewpoint , the saving can be structured in:

- the saving realized through the possession of libelated actives in ROL (S_{ROL});
- the saving realized through the possession of libelated actives in currency ($S_{\$}$);

It could be supposed that the evolution of saving in ROL is described by the next functional relation:

$$S_{ROL} = B_0 + r_1\left(i - \pi^*\right) - r_2 e \quad (5)$$

where e represents the modification of nominal exchange course.

In relation (5) it was considerated that :

- the saving in lei has a "autonome" component (reporting to the incomes/interest level);
- the saving in lei is positively correlated to the real productivity of libelated actives in lei[1];
- the saving in lei is negatively correlated to the dynamic of nominal course of exchange, this variable being seen as an estimation of option cost for the renouncing of saving realization through the possession of libelated actives in currency.

Through the combination of the relations (4.1.) and (5) with the ***structural*** defining of saving results that:

$$S_{\$} = S - S_{ROL} = \underbrace{(K_0 - B_0)}_{\Omega_0} - \underbrace{(\gamma + r_1)}_{r_3}\left(i - \pi^*\right) + r_2 e =$$
$$= \Omega_0 - r_3\left(i - \pi^*\right) + r_2 e \quad (6.)$$

In conformity to the relation (6):

- the saving in currency has an "autonome" component (reporting to the income/interest level);
- the saving in currency is negatively correlated to the real productivity of libelated actives in lei, this variable being seen as an estimation of option cost for the renouncing to the realization of the saving through the possession of libelated actives in lei;
- the saving in currency is positively correlated to the dynamic of exchange nominal course, this variable being seen as an estimation of the productivity associated with the possession of libelated actives in this coin. We mention that we don not interpret relation (6) in sense of "residual" determination of a currency saving (as a variable resulting after the previous determination of saving in lei); *per a contrario*, we tend to watch relation (5) and (6) as a system solved "simultaneously" by the economic suspects. Also, here is a detailed representation of relation (6):

$$S_{\$} = \Omega_0 - \left(\frac{a}{1 + \frac{m}{s}} + r_1\right)\left(i - \pi^*\right) + r_2 e \quad (6.1.)$$

that permits the relevation of the fact that the saving in currency depends (besides constant) on:

- the elasticity of investements reporting to the real interest rate;
- the inclination to import, respectively to the saving;
- the elasticity of saving in lei reporting to the real interest rate;
- the nominal rate of interest and the anticipated inflation rate;
- the elasticity of saving in lei reporting to the nominal exchange course and, respectively, level of this course[2].

2. The saving in currency: an empirical analyse

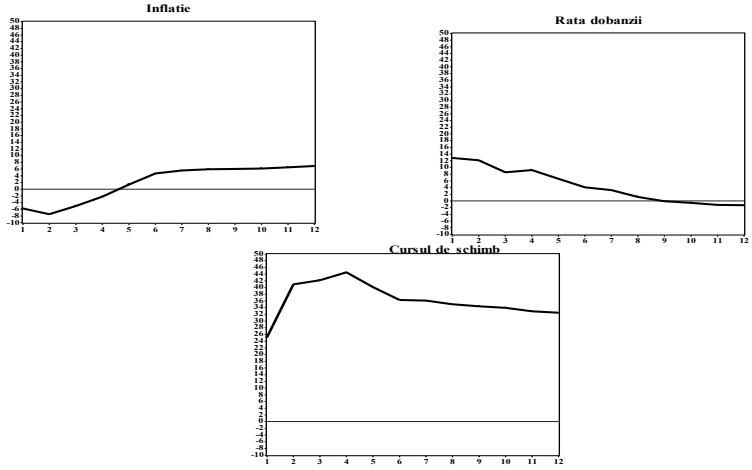
Based on the above results, it can be effectuated an empirical analyse of the determinants of the dymanic of currency saving (approximated through the

intermedium of currency deposits constituted in bancary system (***dv***) – doing abstraction of the sums in currency holded "in mattress") with the help of a model type SVAR (*Structural Vector Autoregression Model*) where the variable endogenous vectors $X = \left[dv \; i_p \; \pi \;\; e \right]$ includes the dynamic of currency deposits, medium rate of afferent deposits attracted by the commercial banks from the not-bankary clients, inflation rate and the dynamic of nominal exchange course ROL/USD[3].

The analyse period took into consideration is January 1993 – December 2001, in order to make evident only the correlations on long term and the variables involved are took into consideration as a level and not as differences of order one.

The obtained results are:

Grafic 1: The effects of a shock in the currency saving determinants over of its dynamic (structural decomposing of the factors – cumulated effects):



It can be easily remarked that:

- an inflationist shcok deteminates initially (in an interval of 1-2 months) a diminution a raising rhythm of currency saving, and after, in an interval of 3-6 months, this shock is at the origin of an acceleration of constituting rhythm of the deposits in currency (the effects settling after the whole period of two trimesters);

$x_t = 1200 * \ln\left(\frac{X_t}{X_{t-1}}\right)$. The matrix of restrictions on long term taken into consideration is:

$$C = \begin{bmatrix} c_{11} & 0 & c_{13} & c_{14} \\ 0 & c_{21} & 0 & c_{24} \\ 0 & 0 & c_{33} & c_{34} \\ 0 & 0 & 0 & c_{44} \end{bmatrix}$$

- a raising of the nominal interest rate determinates an "immediate" diminution of the currency saving rhythm, its effects being absorbed in an interval of approximately two trimesters;
- an extern shock involve an "immediate" adjustement of currency deposits (adjustement that, in an interval of 1-2months exceeds 25% [4]), its effects diminishing in the same interval of two trimesters. Also, can be evidenciated with the help of this model the determinants factors of the volatility of currency deposits evolution:

Table 1: the contribution of the shocks appeared in determinants factors at the variation of estimation error of the currency deposits (structural decomposing of the factors):

Perioadă (luni)	**1**	**2**	**3**	**4**	**5**	**6**
Rata nominală a dobânzii	**15.57**	**12.12**	**12.87**	**12.62**	**12.74**	**12.89**
Rata inflației	**3.12**	**2.63**	**3.02**	**3.51**	**4.31**	**4.95**
Cursul nominal ROL/USD	**59.85**	**64.70**	**63.83**	**62.84**	**62.49**	**62.07**

Note: in percentage

It can be remarked that the factor with the higher contribution in the explaining of the volatility of currency saving (over 60%) is represented by the modification of nominal exchange course, followed by the nominal interest rate and only in a limited measure of inflation rate.

The current saving represents a financing source of consume and subsequently investements. We consider that for the presentation of the effects of modification in the previous periods of saving about consume and current investements is useful this defalcation depending on the sectorial criterion, in economies of their firms (S_f) and, also, of house keeping (S_g). The main hypotesis of work is that if, the realized savings of firms in foreign coin are destinated to the scroll of their next import operations, (while the savings in lei serve for financing the next expansion of investements through the acquisitions of resources and consume goods of indigene capital), the economies in lei and in foreign coin help the acquest of consume goods, indigenes and foreigners, acquested in main in lei (otherwise said, doing abstraction of the phenomenon of **dolarization**[3], is supposed that just a fraction detracted from expenditures of house keepings are accomplished in direct way in currency – speaking in main about some durable consumers goods (e.g. cars, electronics products, luxurious goods etc.), due to in main reduced mobility of the population, of custom and legislative barriers and imperfectly integration of economy in international transactions).

To illustrate the factic suport of the last part of this hypothesis, is interesting to analize the structure of house-keeping consume. Thus, is can be remarked that as part of this, there is prevailed the incident to expenditures of the acquest of alimentary goods (over 50%) and the ones associated to the houses acquest (about 20%).

If this hypothesis is, reasonably, living, than, the most important testably consequence is the existence of some connections in double sense between dynamics of the warehouses in currencies and dynamics of inflation:

[3] 1. Which permits, for example, the saving explication in the current period through the possession of foreign paying methods destinated for the acquisition of some consume goods from informal market.

not only from the inflation rate, via real interest rate, to variation of the deposits in currencies, but also from the modification of the deposits in currencies, via the expenditures of consumptions of ware houses, to the inflation rate.

Or, this connection between dynamics of the deposits and the inflation rate can be pictured:

a) with the help of a model type VEC (*Vector Error Correction Model*) to comprise a reformatory mechanism of type $vecm_{\pi} = \pi - dv$

The co-integration test JOHANSEN (without trend in dates; constant (without trend) only in relations of co-integration, not in VAR; 4 lags):

Number of co-integration relations (to 5%)	(Log) Probabililty function	Informational criterium Akaike	Informational criterium Schwarz
0	**-890.8306**	**17.95704**	**18.37132**
1	**-876.2460**	**17.76725***	**18.31098**
2	**-871.7553**	**17.77733**	**18.45053**

(*) Semnificative result for 5%

It can be remarked that, according to the criterion AKAIKE, between these two variables exists a relation of co-integration on long term. At that rate:

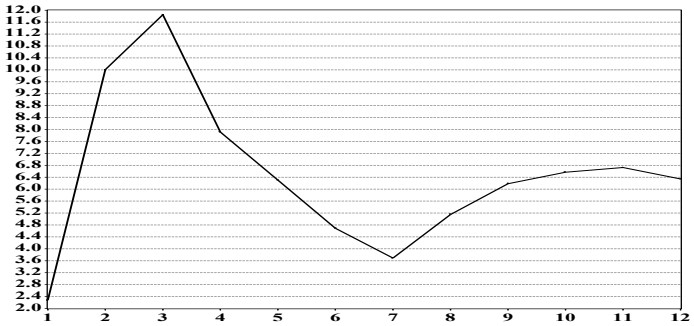


Fig nr. 1 – Inflation's answer to a modification of raising rythm of deposits volume in foreign coin (Generalized One S.D. Innovation)

It can be remarked that inflation rate reacts "immediately" to a shock supervened to deposits level in currencies; this effect touches a "peak" after a quarter (of 12% - annual values), he knows a moderation in 2-3 quarters and is stabilized after this period.

b) With the help of testing the existence of some causality relation of GRANGER type based on relation as:

$$\Delta\pi_t = \alpha_0 + \sum_{i=1}^{r} \beta_{yi}\Delta\pi_{t-i} + \sum_{j=0}^{s} \beta_{xi}\Delta dv_{t-1} + \delta_1\pi_{t-1} + \delta_2 dv_{t-1} + \varepsilon_t \quad (7)$$

If as part as the relation (7) the parameters δ_1, δ_2 are semnificatives, differents of 0, then there exists a long-term relation between the inflation rate and the dynamics of deposits in currencies (with this dynamic as "determined").

Regresion	$\delta_1 = \delta_2 = 0$	**Number of *lags*** (r,s)	**Conclusion**

$dv \rightarrow \pi$	**Nu*** **F-statistic=31.51** **P=0.00000** $\chi^2 = 63.02$ **P=0.00000**	(1,1)	$dv \Rightarrow \pi$

***Based on** WALD test.

c) With help of the next regretion type:

$$\pi_t = \delta_1 \pi_{t-1} + \delta_2 dv_{t-1} + \varepsilon_t \quad (8)$$

	Coeficient	**Standard error**	**Statistica z**	**Probability**
δ_1	0.504163	0.029407	17.14453	0.0000
δ_2	0.343258	0.026201	13.10100	0.0000

	Final level	**RMSE**	**Test z**	**Probability**
ε_t	**0.000000**	**15.09124**	**0.000000**	**1.0000**

Nivel maxim al funcţiei (log) de probabilitate:	**-433.9613**	Informational criterium Akaike	**8.323073**
		Informational criterium Schwarz	**8.398900**
		Informational criterium Hannan-Quinn	**8.353800**

It can be remarked that, according to these results, a growth (decalated with a period) of constitute rythm of the deposits in currencies goes, in *caeteris paribus* conditions, to an important rainsing (~35% - annualized values) of inflation rate, this result being (according to z-test) significantly from statistical viewpoint.

Conclusively, all these methods of testing show that, from statistical viewpoint, there exists a significant correlation between deposits in currencies dynamics and inflation rate which seems to support the theoretical postulated correlation.

Thence:

It can be argued that, because the deposits' dynamics in currencies exercise an important effect, via house-keeping consuming, on inflation rate dynamic, is useful the exertion of some influention form of these hold over of to the monetary authority (inclusively through the application of compulsory reserves – especially in this argumentation over the currencies deposits of house-keepings[4] , without being useful in our opinion of renunciation to the mechanysm of compulsory reserves in case of the deposits in currencies – excepting some other unmentioned considerents).

References:

[1] Angus Deaton - *„Saving in Developing Countries"*, World Bank Economic Review, 1995.
[2] Baye / Jansen - *"Money, Banking and Financial Markets – an economics approach"*, USA, 1995.
[3] Bayoumi Masson, and Samiei - *"Saving Behavior in Industrial and Developing Countries"*, International Monetary Fund, 1996.
[4] Borensztein Eduard and Montiel Peter - *„Savings, Investment and Growth in Eastern Europe"*, IMF Working Paper, No.91/61, 1991.

[4] The advanced analyse ignores the possibility of manifestation of an indirect effect of the deposits in currencies over the inflation exercised through the exchange course: the modification of volume of deposits in currencies goes to the modification of the demanding and bid situation from on sale market currency and affects the level of exchange course. Or, this variably is one of the most important determinant of intern prices ($\Delta dv \rightarrow \Delta e \rightarrow \Delta \pi$). Taking into consideration of this aspect would permit the modification of the conclusion in sense of larging recommendation to the global check of the deposits in currencies.

[5] Ciupagea Constantin, Atanasiu Isabela, Câmpeanu Virginia, Ţurlea Geomina - *„Analiza şi evaluarea evoluţiilorîn plan economic, social legislativ şi instituţionalîn cazul noilor state membre ale Uniunii Europene”,* Institutul European din România, Studii de impact III, Studiul nr. 9

[6] Comisia Naţională pentru Statistică - *„Aspecte privind calitatea vieţii populaţiei în anul 2000”*, 2001.

[7] Fondul de Garantare a Depozitelor în Sistemul Bancar - *„Buletin Trimestrial”,* Anul I, nr.1, 2006.