MONETARY AGGREGATES - INSTRUMENT OF THE POLICY PROMOTED BY THE NATIONAL BANK OF ROMANIA

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ABSTRACT: *A summary analysis of the economic theory and practice indicates the fact that the attempts to establish and delimit the importance of the economic-financial last resorts to the effects produced in macro and micro-economy have not lead to infallible truth. The goal of these last resorts is to organize an economic system in difficulty, to try to minimize its imperfections and non-functionalities. The society development has brought along the need to improve these attempts, so that together with other administrative methods to produce viable and productive solutions for the economy progress. This paper aims at emphasizing the advantages of using monetary aggregates, as well as their limitations under the direct influence of monetary factors, considering that these indicators are commonly used in many models of monetary analysis, especially in Neo-Keynesian ones.*

KEY WORDS: *monetary aggregates; monetary policy; NBR; monetary policy interest rate.*

JEL CLASSIFICATION: *E52; E43.*

1. INTRODUCTION

The drawing up of monetary policy should consider the past, present and future evolutions of economy and for this purpose, both economic models and economic indicators are used. In order to achieve the ultimate goal of ensuring the stability of the power of purchasing of national currency, the Central Bank must go through many steps. Otherwise we should set intermediate objectives as well as how to achieve them.

The national economies respond differently to various stimuli used by the central bank so there is great importance attributed to the way these intermediate objectives are conceived. Depending on the degree and timing for completion of intermediate objectives, the central bank is informed of the possibility of achieving or

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not the final objective proposed, having also the opportunity to take measures to fulfil or maintain it. The literature, as well as recent practice of many central banks confers a special role to currency and monetary analysis in drafting and fulfilling the main objective of monetary policy.

The academic interest in connection to the above mentioned issue dates back to Milton Friedman writings, when he accepted the importance of monetary aggregates and he tried to achieve relevant analyses by using several database of significant size. However, the choice of role and content of each monetary aggregate represents a permanent source of discussion in the vast literature devoted to this area. The monetary practice of developed countries in the last decades uses interest rate and monetary aggregates as the main indicators of monetary policy management.

Even though the use of monetary aggregates is considered a priority, it does not exclude the use of interest rate in the evaluation of monetary policy in economy. The potential unbalances between real economy and monetary supply are felt equally by economic agencies and population, a fact that made the central bank keeping a close control on the evolution of monetary supply with major implications in achieving the balance with the quantity of goods and services existent on the market.

2. MONETARY AGGREGATES - EVOLUTION AND INFLUENCES

Monetary aggregates represent combinations of different elements that are part of money supply. A very important thing is the choice of that monetary aggregate that can meet efficiently the objectives of monetary policy in a certain period of time. The composition of monetary aggregate is the one that determines also its efficiency.

The use of monetary aggregates as an intermediate objective of monetary policy has its origins in Fisher's equation:

$$M*V = P*Q \tag{1}$$

The multiplication between P (Price level) and Q (real income) may show both the value of all goods that were traded in a certain period of time, as well as GDP on the market price. Also the rotation speed of money (V) is used to determine the trading potential of money. In the utopian situation where the speed of money circulation and the quantity of goods and services in economy are constant or they are varying in the same way and with the same value, the monetary supply becomes a directly proportional size with the price level of goods and services.

The structure of monetary aggregates varies from one economy to another and even from one period to another. Although their structure is established according to general ideas that dominate the economic and political life of a state, there are also common features.

The Central Bank gets through very important steps in choosing the monetary aggregate used:
- firstly, a special importance should be given to the structure of monetary aggregates;
- secondly we should seek the results of a certain monetary aggregate obtained in relation to GDP(gross domestic product);

- finally an important role is assigned to appropriate aggregation of selected categories of assets.

Taking into account all the aspects mentioned above we can present a clear image on the monetary aggregates used by National Bank of Romania (BNR) to reach the objective of the monetary policy promoted. The structure of these instruments was altered over time; the changes were due to internal elements as well as to external factors of influence (creating the European System of National and Regional Accounts (ESA 95). Therefore, until 2007 there were only two monetary aggregates symbolically called M1 and M2.

The monetary aggregate M1 represents a narrow monetary supply and it is constituted of currency in circulation (banknote and coins) and demand deposits in Lei, while the monetary aggregate M2 represents the monetary supply in a broad sense and it comprises besides the monetary aggregate M1, the quasi-money. January 2007 brought significant changes in the structure, number and consistency of monetary aggregates, when the monetary aggregate M3 appeared and the M2 lost the name of broad money.

Therefore, the monetary aggregate M1 (narrow monetary supply) comprises besides currency in circulation (banknotes and coins) also demand deposits in Lei as well as public savings at sight in Lei and sight deposits in foreign currency of population and economic agents. The monetary aggregate M2 becomes intermediate money and it will comprise deposits of a maturity of up to two years and deposits redeemable at a period of notice of up to three months.

The new monetary aggregate - M3 (broad money) comprises the elements of M2 and marketable instruments, monetary market instruments, in particular money market fund shares/units and repurchase agreements are included in this aggregate(a high degree of liquidity makes the instruments close to substitutes for deposits.

Broad money (M3) recorded on 31 December 2011 the value of 216.208,1 mil lei, up from December 2010 and December 2009 when it recorded 202.763,4 mil lei, respectively 189.634,5 mil lei. Therefore, we can notice the upward trend of M3 and therein, the overnight deposits have an important place and also the deposits with an initial maturity up to two years and including two years.

We can notice that repurchase agreements, money market fund shares/units and debt securities up to two years, although they have a very dynamic growth rate, because of their insignificant value they don't have an important influence on M3.

The growth rate of M3 in the period September – November, + 2.9 % compared to– 1.2% in the period June – August 2011, however it remains low if we consider the historical point of view. The sign changing of M3 expressed both temporary growth of inflation in July 2010 following the increase of VAT, and the statistical influence of the modification of Leu –Euro exchange rate, but also the relative stimulation of private sector credit.

All main components of M3 have contributed to its dynamic growth, but the defining role was of that of term deposits up to two years. Their sign changing is due to the growth of placements made by the population. The monetary aggregate M1 passes from negative to positive following the positive evolution of currency in

circulation, as well as *overnight deposits,* their growth rate remaining however negative, due to the evolution of short-term deposits of the population.

Table 1. Monetary aggregates*

INDICATORS	31/12/2009 (mil. lei)	31/12/2010 (mil. lei)	31/12/2011 (mil. lei)
M1 (narrow monetary supply)	**79 369,3**	**81 604,8**	**85 835,0**
Currency in circulation	23 973,0	26 792,9	30 608,7
Overnight Deposits	55 396,3	54 811,9	55 226,3
M2 (Intermediate money)	**188 017,3**	**199 586,4**	**212 059,3**
M1	79 369,3	81 604,8	85 835,0
Deposits with maturity up to two years and including two years (deposits redeemable at a period of notice up to three months are included)	108 648,0	117 981,6	126 224,3
M3 (broad money)	**189 634,5**	**202 763,4**	**216 208,1**
M2	188 017,3	199 586,4	212 059,3
Other financial instruments (repurchase agreements, market fund shares/units, debt securities up to 2 years)	1 617,2	3 177,0	4 148,8

* Preliminary data;
Source: BNR, Press release - Monetary indicators – December 2009, 2010, 2011, www.bnro.ro

In case we would try an analysis of net foreign assets and net domestic assets we can notice slight fluctuations upward and downward. If in case of net domestic assets the trend is obviously an upward one, the net foreign assets represent variations both upward and downward. Therefore, if we report to the balance at December 2010 we will see a growth of 6, 6% towards December 2010 and a decrease of cu 12, 8% towards December 2011.

Table 2. Monetary supply and its counterpart*

Indicators/Years	2009(mil. lei)	2010(mil. lei)	2011(mil. lei)
Monetary supply(M3)	189 634,5	202 763,4	216 208,1
Net foreign assets**	22 208,4	23 682,9	20 925,8
Net domestic assets***	167 426,1	179 080,5	195 282,3

** Preliminary data; ** it is calculated by subtracting the foreign assets from the foreign liabilities Allocations of SDR from IMF.
*** It is calculated by subtracting domestic liabilities from domestic assets (except elements of M3).
Source: BNR, Press release - Monetary indicators – December 2009, 2010, 2011, www.bnro.ro

Looking through the monetary supply counterparties we can say that their positive dynamics reflected first of all the growth of dynamics for both private sector credit and central public administration, trying to eliminate the negative effect that the dynamics of net external assets had and enhancing the growth rate of financial liabilities on long-term.

The value of non-government loans at 31 December 2011 increased significantly compared to the same period of 2010, their balance went up from 209.298,0 million Lei to 223.033,6 mil lei, and this trend should be kept if we report it to 31 December 2009 when it recorded a value of 199.881,9 million Lei.

Lei denominated loans increased to 5, 6 % (increase due to non-government loans granted to legal persons), while foreign currency loan expressed in Lei increased by 7, 2 % (if we keep reporting in euro, foreign currency loan increased by 6, 3%). As well as in the non-government loan in Lei, also in the foreign currency loan the growth is due to the facilities granted to legal entities.

The two main categories of customers (individuals and legal) have recorded an upward evolution in case of credit dynamics. In case of individuals the positive evolutions are determined by the growth of overdrafts, credit cards and home loans. Legal entities reached the maximum in the last two years in the second half of 2011 primarily due to boosting of the component on short-term.

Table 3. Non-government loan*

INDICATORS	31.12.2009 (mil. lei)	31.12.2010 (mil. lei)	31.12.2011 (mil. lei)
Non–governmental credit (total)	**199 881,9**	**209 298,0**	**223 033,6**
Non–governmental credit in lei:	**79 710,9**	**77 351,0**	**81 655,2**
- households	38 808,9	35 914,0	35 047,4
- legal entities (non-financial companies and non-monetary financial institutions)	40 902,0	41 437,0	46 607,8
Non –governmental credit in foreign currency:	**120 171,0**	**131 947,0**	**141 378,4**
- households	61 407,3	66 185,5	69 210,6
- (non-financial companies and non-monetary financial institutions)	58 763,7	65 761,5	72 167,8

* Preliminary data;
Source: BNR, Press release - Monetary indicators – December 2009, 2010, 2011, www.bnro.ro

Non-resident deposits increased in December 2011 by 5, 6% compared to December 2010, until the level of 187.291,3 million Lei. **Residents Deposits in LEI** increased in December 2011 by 9, 75 compared to 2010 reaching 124.533,5 million Lei. Unlike non-governmental loans, in which growth was due to legal entities, in case of savings we notice a more pronounced tendency of individuals.

Household deposits in LEI rose by 12, 1 %, until 72.101,8 million lei at 31 December 2011. If we analyse the component of M3 owners, we can notice an improvement of deposit dynamics of both player categories on the economic market.

For the population this improvement is due to the positive evolution of real annual growth of income from salaries and also to the lower interest in money market funds. In case of legal entities, the decrease of inflation played a key role in the growth of dynamics.

Deposits for legal entities in LEI (non-financial companies and non-monetary financial institutions) increased by 6, 6%, until 52.431,7 million lei at 31 December 2011.

Foreign currency deposits of resident household and legal entities (non-financial companies and non-monetary financial institutions), expressed in lei, have recorded a decrease of 1, 9 per cent, until the level of 62 757, 8 million Lei (expressed in euro, deposits in foreign currency decreased by 2, 1 per cent). As we mentioned previously, the decrease is due to the downward trend related to savings in case of legal entities. If the foreign currency deposits of households expressed in Lei increased by 2, 1 per cent in December 2011 compared to December 2010, the foreign currency deposits of legal entities declined 8, 4 per cent towards the same period. Thus we can see an improvement of M3 due to the share increasing of loans denominated in Lei.

Table 4. The deposits of the residents non-governmental clients*

INDICATORS	31 December 2009 (mil. lei)	31 December 2010 (mil. lei)	31 December 2011 (mil. lei)
The deposits of the residents non-governmental clients (total)**	**167 742,1**	**177 438,7**	**187 291,3**
Deposits in Lei of residents:	**102 691,1**	**113 486,5**	**124 533,5**
- households	59 197,2	64 228,2	72 101,8
- legal entities (non-financial companies and non-monetary financial institutions)	43 493,9	49 261,3	52 431,7
Deposits in foreign currency of residents:	**65 051,0**	**63 949,2**	**62 757,8**
- households	38 107,9	39 786,3	40 651,7
- legal entities (non-financial companies and non-monetary financial institutions)	26 943,1	24 162,9	22 106,1

* Preliminary data; ** Current accounts, demand deposits and all term deposits, regardless of maturity
Source: BNR, Press release - Monetary indicators – December 2009, 2010, 2011, www.bnro.ro

The data presented in table no.5 sustain the connection between the values of the three indicators of monetary supply and inflation rate for the period analysed.

Therefore we can notice that, although the monetary base decreases by 14,2% in 2009, we assist to a growth of 9% of monetary supply and a price growth by 5,59%. The evolution of M3 reflects in a very eloquent manner, the influences exerted by the decline of economic activity over the monetary supply.

Therefore, while narrow money continued contraction also in 2009 compared to the previous period, the annual growth rate of term deposits under 2 years knew a new record, which led to a positive growth of Broad Money.

The evolution of monetary supply in 2010 continues the trend from 2009 represented by the contraction of economic activity that, together with the VAT, will lead to the increase of inflation. As far as the 2011 is concerned, we can notice a modification of monetary supply trend, this sign change of M3 dynamics reflected firstly the evolution of inflation (5, 79%), but also a boosting of the private sector through the growth of credits granted.

Table 5. Correlation of final and intermediary objectives pursued by BNR in 2009 – 2011

Indicators/ years	M1 (% compared to the end of previous years)	M2 (% compared to the end of previous years)	M3 (% compared to the end of previous years)	Inflation rate (% - annual average level)
2009	-14,2	8,3	9,0	5,59 %
2010	2,8	6,2	6,9	6,09
2011	5,2	6,3	6,6	5,79

Creation: author
Source: BNR, Press release - Monetary indicators – December 2009, 2010, 2011, www.bnro.r; INSSE, Annual indices of consumer price and inflation rate in the period 1971-2011.

3. CONCLUSIONS

The structure of monetary aggregates is permanently pursued by economic analysts because it reflects the amount of money economy needs to function properly.

Practically, in economic terms through the stability of the currency we aim price stability, which is a certain level of inflation. This is also the direction of monetary policy promoted by NBR, but for an efficient result we should consider and monitor other components of economic life: interest rate, exchange rate.

The relations that cannot be denied between monetary aggregates and the instruments of the monetary policy promoted by NBR intend to provide indicative predictions on changes occurred in the economic life and the evolution of inflation.

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