Analysis on the Indicators related to the structuring of the Monetary Mass in Romania after the adhesion to the European Union

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Abstract

The forecasted target of this article was to achieve an analysis on the role, structure and evolution of the monetary mass as well as on the outcomes recorded by the main monetary indicators in Romania, after the adhesion to the European Union. The changes occurring as a consequence of the decisions taken by the monetary authorities from our country, in the context of the integration within the EU as from January 1st, 2007, as to defining, structuring and setting up the monetary aggregates according to the Methodology of the European Central Bank and the classification of the financial instruments by institutional sectors ESA 95 (the European Accounts System) have generated influences between both the components of the monetary aggregates and their counterparties. Meantime, as from this date on, it was necessary to harmonize the monetary indicators with those being utilized by the monetary practice of the other member countries.

Keywords: monetary mass, monetary aggregates, structuring indicators, the currency speed of circulation, the monetary basis.

1. Introduction

The monetary mass is representing the totality of the existing money means within one country economy at a given time or as an average over a certain period. In order to establish the quantity of the currency existing within the economy, the monetary authorities are proceeding to its structuring as monetary aggregates, published by the periodical reports. A monetary aggregate is a homogeneous ensemble of assets which can be used as payment mean. According to the specialists, in the case of the countries of developed market economy, the monetary indicators are divided in indicators which are generating the evolution of the monetary mass and indicators which are estimating the effects of the monetary policy on the economy.

2. The analysis of the monetary aggregates in Romania

From the very moment Romania entered the European Union, The National Bank of Romania defined, calculated and submitted the monetary aggregates in accordance with the Methodology of the European Central Bank which uses the structure as developed below.

The restricted sense monetary mass. The restricted sense monetary mass, M_1 , is formed by the cash in circulation and overnight deposits which can be immediately converted in cash or used for payments through banking transfer,

which category is including the current accounts and the deposits at sight. At its turn, the cash in circulation is composed of banknotes and coins, exception to be pointed out being the cash from the pay offices of the financial-monetary institutions which is not included in this category. *The intermediary monetary mass*, M_2 , is formed by the restricted sense monetary mass to which the deposits of an initial duration up to 2 years inclusively and the deposits reimbursable after notification at maximum 3 months inclusively are to be added. *The extended sense monetary mass*, M_3 , is including the intermediary monetary mass M_2 to which the negotiable financial instruments issued by the sector of the financial and monetary institutions as well as the instruments of the monetary market (units of the monetary funds and loans out of report operations) are to be added.

| Table no. | 1. The monetary aggregates in Romania |
|-----------|---------------------------------------|
| | during the period 2007 - 2014 |

| Year | M_1 | ΔM1 (%) | M ₂ | ΔM2 (%) | M ₃ | Δ M _{3('07)} * (%) | Δ M ₃ ** (%) |
|------|----------|------------|-----------------------|------------|-----------------------|---------------------------------------|-----------------------------------|
| 2007 | 78817.6 | - | 147918.4 | - | 147990.3 | - | - |
| 2008 | 92548.5 | 17.42 | 173628,8 | 17.38 | 174027.8 | 17.59 | 17.59 |
| 2009 | 79361.5 | -14.25 | 188013.0 | 8.28 | 189630.3 | 28.14 | 8.97 |
| 2010 | 81592.3 | 2.81 | 199572.1 | 6.15 | 202772.6 | 37.02 | 6.93 |
| 2011 | 85834.1 | 5.20 | 212058.9 | 6.26 | 216207.9 | 46.10 | 6.63 |
| 2012 | 89020.2 | 3.71 | 221829.6 | 4.61 | 222017.7 | 50.02 | 2.69 |
| 2013 | 100310.6 | 12.68 | 241251.0 | 8.76 | 241547.1 | 63.22 | 8.80 |
| 2014 | 118146.7 | 17.78 | 260073.4 | 7.80 | 260331.9 | 75.91 | 7.78 |

* The percentage variations of the extended sense monetary mass of the current year as against the year 2007

** The percentage variations of the extended sense monetary mass of the current year as against the previous year

The absolute values of these monetary aggregates are expressed in millions of lei, by the end of the period and taken over from the Monthly Bulletins for December 2007 - 2014, published by the site of the National Bank of Romania, while their variations as against the previous period have been calculated by the author applying in this respect the following relation:

$$\Delta M(\%) = \frac{M_{(N)} - M_{(N-1)}}{M_{(N-1)}} \cdot 100$$

where:

 ΔM (%) = the variation of the monetary aggregate (M₁, M₂, M₃);

- $M_{(N)}$ = the absolute value of the monetary aggregate (M_1 , M_2 , M_3) recorded for the current year N;
- $M_{(N-1)}$ = the absolute value of the monetary aggregate (M₁, M₂, M₃) recorded for the previous year, N- 1;

For the period making the object of the analysis, a constant increase of the extended sense monetary mass is stated out so that by the year 2014 an increase of

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75.91% as against the reference year 2007 has been reached. In this context, the causes which generated such an evolution must be identified. A particular attention must be directed towards the credits granted by the central bank or the banking companies since a credit, after being granted, may lead to the increase of the monetary mass several times, playing a significant role to its increase. It must be emphasized that the main way to increase the monetary mass consists of granting credits by the central bank to the state or to other banks and by the other banks of the system to individuals or legal persons. The monetary issue, an operation achieved by the central bank only, is representing another cause which generates the increase of the monetary mass, accomplished actually through crediting operations as well only that, in this situation, the credits source does not consists of the money availabilities of the economic agents but of money issuing. One last cause is given by the foreign exchange of the convertible foreign currencies against national currency, operation done basically by the banks. By the end of the day, the offer for convertible foreign currency is bought by the central bank which concedes national currency at an agreed rate.





3. The analysis of the monetary mass structuring indicators in Romania during the period 2007 – 2014

The monetary basis (M_0) is an indicator which structure includes the cash of the pay offices of the banks, the cash out of the banking system and the availabilities of the crediting institutions with the NBR, being calculated as a daily average as well as by the end of the period. In the conditions where the money quantity is not *constant*, being permanently renewed through operations of creating and destructing money, the monetary basis is representing an indicator which evolution reflects the increase of the economic and monetary dimensions of the activity.

| <i>during the period 2007 – 2014</i> | | | | | | million lei | |
|--------------------------------------|---|------------------------|---|-------------------|---------------------------------------|-----------------------------------|--|
| Year | Cash with pay offices of the crediting institutions | Cash in circulation | Current account of the crediting institutions | Monetary basis | Δ M _{0('07)} * (%) | Δ M ₀ ** (%) | |
| 2007 | 2219.4 | 23100.0 | 23427.8 | 48747.2 | - | - | |
| 2008 | 3761.0 | 25286.8 | 21420.1 | 50467.9 | 3.53 | 3.53 | |
| 2009 | 3528.3 | 23973.0 | 24160.6 | 51661.8 | 5.98 | 2.37 | |
| 2010 | 3143.4 | 26793.6 | 25166.4 | 55103.4 | 13.04 | 6.66 | |
| 2011 | 3615.9 | 30610.3 | 27339.4 | 61565.6 | 26.30 | 11.73 | |
| 2012 | 4535.2 | 31476.7 | 21296.0 | 57307.9 | 17.56 | -6.92 | |
| 2013 | 5532.3 | 34784.4 | 28349.3 | 68666.0 | 40.86 | 19.82 | |
| 2014* | 6431.4 | 39906.0 | 22015.0 | 68352.5 | 40.22 | -0.46 | |

Table no. 2. The monetary basis in Romania

Self-systematization

Monthly Bulletins NBR December 2007 - December 2014

*For the year 2014, data are provisional

* Percentage variation of the extended monetary basis of the current year as against the year 2007

** Percentage variation of the extended monetary basis of the current year as against the previous year

Until now, the bigger increase has been recorded for the year 2013, both as against the reference year 2007 (+ 40.22%) and comparatively with the previous year (+ 19.82%).





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The money speed of circulation, known also as the rotation speed, signifies the number of transactions intermediated by a monetary unit over one year. Although this indicator can be set up in connection with various components of the monetary mass, the most frequently it is the extended sense monetary mass in taken into account, underlining thus its most dynamic element, namely the cash, the calculating formula being the following:

$$V_{c} = \frac{GDP}{M_{3}}$$

where:

 V_c = circulation speed of the money PIB = Gross Domestic Product

FIB – Gloss Dollesuc Floude

 $M_3 = extended sense monetary mass$

A significant aspect of the analysis is also represented by the number of days relating to a rotation, which is set up by applying the following relation:

$$d_z = \frac{360}{V_c}$$

where:

 d_z = duration of a rotation, expressed in number of days

| during the period 2007 – 2014 | | | | | | |
|-------------------------------|----------|------|--------------|---------------------|--------------|--|
| Year | GDP | Vc | ΔV_c | Duration in days | ΔD_z | |
| 2007 | 418257,9 | 2.83 | - | 127.38 | - | |
| 2008 | 524388,7 | 3.01 | 6.62 | 119.47 | -6.21 | |
| 2009 | 510522,8 | 2.69 | -10.65 | 133.72 | 11.93 | |
| 2010 | 533881,1 | 2.63 | -2.20 | 136.73 | 2.25 | |
| 2011 | 565097,2 | 2.61 | -0.73 | 137.74 | 0.74 | |
| 2012 | 596681,5 | 2.69 | 2.83 | 133.95 | -2.75 | |
| 2013 | 637583,1 | 2.64 | -1.78 | 136.39 | 1.82 | |
| 2014 | 666637,3 | 2.56 | -2.99 | 140.59 | 3.08 | |

Table no. 3.The evolution of the circulation speed during the period 2007 – 2014

Self-calculations

In the frame of this analysis, the values of the gross domestic product are established based on the expenses method, expressed in current prices, SEC 2010 and are taken over from the site of the National Institute for Statistics. Meantime, to point out that the GDP value for the year 2013 is semi-final while the one relating to the year 2014 is a provisional one.

The decrease of the circulation speed of the monetary mass signifies an increase of the population confidence in the national currency, leu, and its

preference to hold the currency, as a saving mean, indicating meanwhile a slower rhythm of the intermediation for the performed transactions.

The reverse of the circulation speed is given by the *degree of monetization* of the economy which is expressing the of the monetary mass in the gross domestic product, namely the degree of supplying the economy with monetary mass.

$$g_m = \frac{M_3}{GDP} \cdot 100$$

where:

 g_m = degree of monetization of the economy

Another indicator being utilized when analysing the monetary mass is the *monetary multiplier* which represents the variation of the extended sense monetary mass as against the increase by one unit of the monetary basis, the calculating relation being the following:

$$m_m = \frac{M_3}{M_0}$$

where: $m_m = monetary multiplier$ $M_0 = monetary basis$

| Table no. 4. The evolution of the indicators monetization degree and moneta | ry |
|---|----|
| multiplier in Romania during the period 2007 – 2014 | |

| Year | Monetization | ΔG_m | Monetary | Δm_m |
|------|--------------|--------------|------------|--------------|
| | degree | (%) | multiplier | (%) |
| 2007 | 35.38 | - | 3.04 | 13.58 |
| 2008 | 33.19 | -6.21 | 3.45 | 6.45 |
| 2009 | 37.14 | 11.93 | 3.67 | 0.25 |
| 2010 | 37.98 | 2.25 | 3.68 | -4.57 |
| 2011 | 38.26 | 0.74 | 3.51 | 10.32 |
| 2012 | 37.21 | -2.75 | 3.87 | -9.20 |
| 2013 | 37.88 | 1.82 | 3.52 | 8.27 |
| 2014 | 39.05 | 3.08 | 3.81 | 13.58 |

Self-calculations

Analysing the outcomes, we state out that there is an evolution relatively uniform of the monetization degree of the Romanian economy, with slight alterations from one year to another, the maximum level being recorded in the year 2014. In order to achieve a comparison with the western countries situation, it must be pointed out that these ones are recording values exceeding 100%, which is absolutely normal is considering the higher level of diversification of the financial instruments being dealt with. As the monetization degree represents the reverse of the circulation speed, the following graphical representation is submitting the circulation speed and monetary multiplier indicators only.



Graph no. 3. The evolution of the currency circulation speed and the monetary multiplier in Romania during the period 2007 – 2014

Conclusions

2007

2008

2009

2010

0,50

0,00

Defining the monetary aggregates according to the methodology of the European Central Bank allowed a basic correction of the composition of the monetary mass defined in a restrained sense – the mass of the payment means, as well as the monetary mass defined in an extended sense – the mass of the means to hold wealth. In order to avoid misrepresenting the outcomes of the monetary analysis, publishing the monetary indicators implied as compulsory that the National Bank of Romania secures the comparability in time of the data.

2011

2012

2013

2014

In order to perform a relevant and pertinent analysis of the monetary mass structure and evolution, it is necessary to take into consideration the influence of the effects involved by inflation, unemployment, foreign exchange rates as well as of the economic crisis. The fundamental role of the currency, instruments and monetary circulation, consequently of the monetary mass, in the frame of the economic life must be recognized their influence being expressed through the monetary indicators which calculation is based on the evolution and the correlation of/between the economic processes, respectively the goods and services production, the pries level, the foreign exchange operations, the trade, the foreign payments balance.

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