

THE AFTERMATH OF THE CRISIS  
LESSONS FOR THE EUROPEAN MONETARY POLICY  
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# **The Aftermath of the Crisis**

## **Lessons for the European Monetary Policy**

### **Abstract**

*The world financial crisis of 2007-2009 highlighted the fundamental weaknesses of the financial sector of the advanced economies both in Europe and in the USA.*

*Errors in the measurement and pricing of financial risk by rating agencies and credit institutions, high inducement to indebtedness by households and firms, excessively long financial leverages in banks and other financial institutions were stimulated by too low official interest rates and great amount of liquidity allotted by Central Banks in order to fight economic recession and promote recovery in the first seven years of the present century.*

*A great amount of risky securities has been accumulated by the banking system, but the fall in the value of these securities entailed by the crisis has induced the governments to come to the rescue of many collapsing credit institutions. On the other hand, public debt issued to save credit institutions was partly purchased by the banking system: an interlocking between public and banking sector's debt has arisen in many Countries.*

*The aim of the present paper is to analyze the policy conducted by the European Central Bank (ECB) during and after the crisis, the role of credit institutions in the transmission of this policy and the relationship between the monetary base and the supply of money.*

*The outcome of this analysis allows to point out the shortcomings of the strategies adopted in the recent past in the light of the world financial and economic crisis, the danger that the prolonged expansionary monetary policy implemented after the crisis may entail a new and heavier crisis, the need to define an "exit strategy" founded on the gradual reduction of the financial leverages obtained by increasing reserve requirement ratios or other prudential measures on loan terms, like loan-to-value (LTV) and debt service to income ratios, side by side with more general capital requirements, so to plan and implement a preventive control of monetary flows in the economy, in order to achieve a greater degree of monetary and financial stability.*

*Given the diversity of economic situation among different Countries of the euro area it might be helpful to allow a certain differentiation of some parameters of the ECB's monetary policy among these Countries: for example, raising reserve requirement ratios or interest rates on*

*marginal lending facilities only in the Countries showing excessive credit expansion or increase in housing or financial assets prices.*

*But, above all, an efficient exit strategy should require a reduced creation of liquidity coupled with measures aiming to foster credit demand in order to promote the growth of production and employment in the framework of a noninflationary environment.*

Keywords: Money Aggregates, Monetary Base, Inflation, Financial Leverages, Financial Markets, Macroprudential Measures.

## **1. Introduction**

The world financial crisis of 2007 – 2008 shows a clear divergence with other financial and economic crises of the past.

While other crises, such as the that of 1929, marked a sudden and deep slump in the level of economic activity following a period of great expansion and boom (the “Roaring Twenties”), the crisis of 2007 – 2008 followed a long period of very low economic growth or even stagnation which began at the beginning of the century.

In fact, the expansionary policy, conducted in the preceding years and conceived in order to fight the state of low growth and stagnation in the first years of the present century, seems undoubtedly one of the factors placed at the root of the crisis, because the low market interest rates induced by this policy introduced a growing wedge between the private and the social cost of indebtedness.

In a state of economic depression, the huge amount of liquidity created by Central Banks, nominal interest rates at an historically minimum level, zero or even negative real short term rates constitute a powerful inducement to public and private indebtedness and to speculative investments, while productive investments are hindered by the existence of unused productive capacity and low profit prospects.<sup>1</sup>

The growing inequality of income distribution which we can observe in many advanced countries, owing to a declining public intervention in the economy and to

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<sup>1</sup> In the United States the real federal funds rate remained below 1 % from mid 2001 to the end of 2005 and even negative in much of this period., while in Europe in the same period the European Central Bank held real short-term interest rates below 1 %. In Japan real short-term interest rates fluctuated between 0 and 1 % in the last ten years

the operation of an unregulated market mechanism and the growing share of national income accruing to higher income receivers (who have a low propensity to consume) probably contributed to depress private demand for consumption goods and services and to entail the stagnation of the economy in these countries. More than by an increase in real disposable incomes, the increase in private consumption, in the last years preceding the crisis, has been supported by an increase in the propensity to consume, by the wealth effect due to the higher value of real and financial assets and by the growth of private indebtedness.

But this growth, which is physiological in periods of economic expansion (when, on the contrary, public indebtedness should decline) appears somewhat pathological in the last few years, because it happened not in the framework of an expansion in the real economy, but in the framework of low real growth or substantial stagnation and has been mainly promoted by financial innovations and speculative operations.

Securitization of various kinds of loans has acted as a true multiplier of private indebtedness. The buyers of securities issued by the Special Purpose Vehicles (SPVs) financed their purchases by the issue of new securities or by borrowing from banks and other financial institutions. The mountain of private debt has been growing at an ever faster rate but the great increase in the outstanding stock of securities has brought out an unavoidable reduction of their quality.

The rating agencies have not rightly evaluated the risk of many securities not having a true market value, while a true pyramid of derivatives has been erected on these securities, mainly through *Over the Counter (OTC)* bilateral operations.

The situation of surplus in the capital account of the US balance of payments favoured the sale of American assets – among which many securities deriving from securitizations – to foreign investors in Europe and elsewhere, so the ownership of these assets was spreading from the United States all over the world.

The risk of default of some credit institutions which have accumulated a huge stock of securities representing non performing loans (especially subprime

mortgage loans) aroused a climate of mutual distrust among the institutions themselves.

Therefore the banks and the interbank deposit markets were the epicentre of the crisis, which severely hampered the functioning of the money markets and markedly reduced the flow of liquidity to credit institutions: in Europe this fact had a particular importance given the fundamental role of banks in the financing of small and medium sized enterprises which constitutes the very backbone of the economy: in these circumstances the necessity to satisfy the needs of liquidity of banks became the primary target of the policy of the ECB.

The role and the behaviour of the banks appear of fundamental importance in the transmission process of the impulses of monetary policy given by the ECB and in determining the effects of this policy on the evolution of the real economy.

But this role has been crucial also for the transmission of the crisis from private to public debt, for this latter was expanded when some Governments ought to come to the rescue of some credit institutions.

In the analysis of the development of the crisis it became necessary to investigate more deeply the proper role of money and of monetary aggregates and the relationship between the monetary base and the supply of money.

The shortcomings of the strategies adopted in Europe before the crisis, but pursued and enhanced after the crisis in order to improve the financial situation of credit institutions and to promote a recovery are evident, because the conditions of the real economy are still far from a full recovery while the danger for the stability of public finances in many Countries of the euro area is increased. So there is a need to build a more efficient strategy of monetary policy with the aim to plan and implement a preventive control of monetary and financial stability and to define an exit strategy from the crisis, able to avoid at the same time the bankruptcy of the banking systems and the start of a general process of galloping inflation.

## 2. The Crisis and after

Since the beginning of the financial turbulence in August 2007 the flow of liquidity in the money markets in Europe and in the US was severely hampered. A sharp reduction in the volume of exchanges in the interbank deposits markets and a rise in interest rates, especially on longer maturities, were the most prominent signals of the crisis.<sup>2</sup>

The ECB reacted altering the size and maturity of its liquidity providing operations, both in euro and in foreign currencies as well as the level of interest rates on these operations.

Following the bankruptcy of the great American investment bank Lehman Brothers (15 September 2008) a global loss of confidence arose on the financial markets and a growing number of financial institutions were facing the risk of default.

A strong pressure was quickly exerted on Governments and Central Banks to run to the rescue of the financial systems and in the two meetings of the ECB Governing Council held on 8 and 15 October 2008 the strategy of the ECB underwent a radical change which implied not only a significant variation in the quantitative parameters of monetary policy, but also a net change in the same structure of its operational framework.

From October 2008 to May 2009 the ECB's minimum bid rates on Main Refinancing Operations (MROs) were reduced by 325 basis points from 4.25 %, to 1 % while the rates on Marginal Lending Facilities (MLFs) were reduced by 350 basis points from 5,25 % to 1,75 % and the rates on Deposit Facilities by 300 basis points from 3,25 % to 0,25 %.

Furthermore the Governing Council adopted a set of nonstandard measures focused on the banking system and able to improve the functioning of the money market to facilitate the transmission of monetary policy impulses and to support the supply of credit by banks to business enterprises and households.

Among these measures it is worth noting the provision to euro area banks of unlimited liquidity in euro at a fixed rate in main and longer term refinancing operations against the provision of eligible assets (collateral); the lengthening from three months to

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<sup>2</sup> For a rapid overview of the policy conducted by the European Central Bank during the crisis see: European Central Bank: The ECB's monetary policy stance during the financial crisis; in: ECB: *Monthly Bulletin*, January 2010, pp.63 – 71.

one year of the maximum maturities of Longer Term Refinancing Operations (LTROs); the extension of the list of assets accepted as collateral in monetary policy operations; the provision of liquidity in foreign currencies, especially US dollars, but also Swiss francs and Swedish kronor, by means of currency swap agreements with the respective Central Banks, the outright purchase of Covered Bonds at issue and on the secondary market and the outright purchase of government securities.

From May 13, 2009 to April 13, 2011, that is for almost two years, the interest rate on MROs and LTROs was maintained at the historical minimum of 1 % with fixed rate tender and full allotment of total bid; the rate on marginal refinancing has been maintained at 1,75 % and the deposit rate at 0,25 %. The interest rate corridor on the interbank deposit market was fixed at 150 basis points.

These imposing expansionary measures soon influenced short term interest rates on the monetary market, as can be seen in Table 1.

Particularly meaningful for its importance as a reference rate for mortgage loans is the EURIBOR 3 months rate. This rate reached the exceptional level of 5,11 % on the average of October 2008, with a maximum of 5,39 % on October 9, but quickly declined in the following months, reaching 1,28 % in May 2009 and going under 1 % in the following month of July.

But the crisis entailed also an extraordinary downfall in the rate of inflation, which partly offset the effects of the reduction of nominal interest rates on the level of real rates.

In the month of December 2008, after many years, the rate of inflation fell under the target value of less but close to 2%, while after June 2009, negative inflation rates are signalling a situation of true deflation.

However, the rapid and strong reduction of short-term interbank interest rates did not entail a parallel reduction in retail rates, which mostly influence the economic situation of households and firms. As we see from Table 8, also retail rates, following often with a certain slowness<sup>3</sup> the variations in wholesale money market

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<sup>3</sup> On the relationship between retail bank interest rates and money market rates see: European Central Bank: Recent Developments in the Retail Bank Interest Rate Pass-through in the Euro Area; *Monthly Bulletin*, August 2009, pp. 93 – 105.

rates (in the euro area EURIBOR rates) which measure the marginal cost of funding for banks, were somewhat reduced, but less than interbank rates.

The financial crisis and the outlook of a downturn in the world economy entailed an increase in the default risk of enterprises and a tightening of terms and conditions for obtaining bank loans, causing a further slowing down in the process of adjustments of retail rates to the decrease of interbank rates.<sup>4</sup>

So it has been observed that “As the economy gradually improves, banks’ capital bases are reinforced and their risk-taking behaviour normalizes, it will be essential for banks to increase their lending activity”.<sup>5</sup>

Since the liquidity shortage has been more acute on longer maturities of the money market, the ECB has further enhanced the role of LTROs – already enlarged in the months immediately preceding the burst of the crisis, by lengthening the maturities of the operations and increasing the amount of liquidity allotted.

By means of these operations, the monetary policy of the ECB has been able to improve the general economic situation of credit institutions and to partly overcome the difficulties encountered by them on the interbank money market, particularly relevant because the crisis was displayed first of all with an increase in interest rates and a reduction of the volume of exchanges on this market.

Less effective has been the policy of credit support to the banking system in order to expand the volume of bank loans to nonfinancial corporations and households. Only in part this increase has been realized and often there has been no increase at all. So the expansionary impact of this policy on the economic system as a whole has been reduced. Clearly this policy cannot produce an expansionary effect similar to the effect of traditional fiscal policy which acts directly on the level of total demand for goods and services.

The banking system, receiving great amounts of liquidity from the Euro-system at a very low fixed rate of interest (presently around 1 %) even for maturity until three years, buys great amounts of low risk securities (especially government

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<sup>4</sup> Sometimes the increase in the spreads applied to loans accorded to customers has, at least partly, offset the reduction in the EURIBOR rates.

<sup>5</sup> European Central Bank: Recent Developments in the Retail Bank Interest Rate, p.105.

securities) which produce yields greater than 1 % and so gets very high profits. More risky loans to Non-financial Corporations and Households are discouraged and do not expand, as is shown in Table 9 and 10 for the years 2009 and 2010; loans to Non-financial Corporations are sensibly and continuously reduced all over the year, while for households the reduction is smaller and lasts until the month of May and a slow recovery appears in June.

For Non-Financial Corporations the amount of loans outstanding in November and December 2009 is, respectively, about 163 and 198 billion smaller than the amount outstanding in the preceding month of January and the annual growth rates are always decreasing and becoming negative in September. For households the amount in August is only 1,4 billion greater than the amount in January while the growth rates are decreasing until April and becoming negative in May and again in August and September. Only in November there is a more sensible growth which bring the outstanding amount to a level higher by 32,4 billion euro than in January, while in December the increase over the preceding January is 44,6 billion.

Even during the year 2010 the outstanding amount of loans accorded to non-financial corporations marked an absolute decrease until April and after June; in the month of December the amount was 20,1 billion euro lower than in the preceding January and 219,2 billion lower than in January 2009, while the % growth rates on the corresponding month of the preceding year remained negative all over the year and marked the maximum negative values (- 2,7 % and - 2,6 %) respectively in the months of January and April.

While in the first ten years of its activity the ECB and the Euro-system conducted only temporary open market operations, in the field of nonstandard measures an important though controversial step toward a more extensive use of monetary policy was undertaken by the ECB in June 2009, when, for the first time, a programme of outright purchases of securities with high rating issued by credit institutions (Covered Bonds), both at issue and on the open market, was launched (Covered Bonds Purchasing Programme or CBPP).

In May 2010 a similar programme, the Securities Markets Programme (SMP) was launched for the outright purchase of government securities of euro area Countries. So a new task, though not clearly defined as a new target of policy, was assumed by the ECB: the task of limiting the increase of interest rates on the Public Debt of some Countries and so improving the stability of their public finances.

But this target could not be explicitly assumed by the ECB, owing to the potential conflict with the main target of price stability and with the principle of independence of the Bank.

The Covered Bonds (CB) were purchased by the National Central Banks of the euro area, in proportion with their participation to the capital of ECB, for a total amount of 60 billion euro of nominal value. The programme was not intended as a simple means of increasing the liquidity of the system, but rather to improve the conditions of the Covered Bonds market and so to give a further financial support to the banking system.

This support appears particularly meaningful if we note that a substantial share of the purchases was performed at issue on the primary market, given the more penetrating and selective effects of these purchases as a means to support the issuers.

The implementation of this programme ended on June 30, 2010. In total, 422 different bonds were purchased, 27% in the primary market and the remaining 73% in the secondary market. The Euro-system mainly purchased bonds with maturities of three to seven years, which resulted in an average modified duration of 4,12 years for the portfolio, as of June 2010.

The Euro-system intended to hold the bonds until maturity and has been lending some of them to counterparties who wished to borrow such bonds against eligible collateral.

The total value of all Covered Bonds purchased by the Euro-system since the inception of the programme on 2 July 2009 reached the announced nominal amount of €60 billion exactly on 30 June 2010, thereby marking the completion of the programme.

The outright purchases of Covered Bonds, conducted following the programme launched in June 2009, as well as the purchases of government bonds in the framework of the Securities Markets Programme (SMP) launched in May 2010, were settled on the basis of bilateral transactions between the ECB or the NCBs and selected counterparties. But the ECB did not make known which bonds were purchased and which counterparties were involved.

Overall, over the 12 months from 1<sup>o</sup> July 2009 to 30 June 2010, there were 148 new CBPP-eligible Covered Bonds issued and 48 tap issuances of already outstanding CBPP-eligible Covered Bonds.

The total amount of these issues reached around €150 billion. Since the announcement of the CBPP, one new Covered Bond jurisdiction, namely Greece, saw its first publicly placed Covered Bond; and, overall, 24 inaugural issuers entered the covered bond market in various euro area Countries.<sup>6</sup>

Furthermore, from May to December 2010, the ECB purchased about 75 billion euro of Government bonds, mainly of Greece, Portugal and Ireland, while until November 2011 about 110 billion euro of Government Bonds from Italy and Spain were purchased following the SMP, with maximum amount of 20 billion per week.

Given the importance of these operations in the field of monetary policy, as well as in the field of a more general European economic policy and in order to ensure their transparency, impartiality and competitiveness, it would have been necessary to follow the same rules applied to temporary open market operations and purchasing the bonds through ordinary tender auctions open to a great number of counterparties, not through bilateral transactions only with counterparties directly selected by the ECB.

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<sup>6</sup> Some national markets, such as that in Italy, saw a significant increase in the number of issuers and outstanding amounts, and thus a deepening and broadening of their covered bond market. See: *European Central Bank: Final Monthly Report on the Euro-system's Covered Bonds Purchase Programme*, June 2010

### 3. The Monetary Base and the Supply of Money

An expansionary policy similar to that which led to the world financial crisis of 2007-2008 has been conducted and even enhanced by the ECB after the crisis, but this policy seems unable to achieve a satisfying and abiding recovery of the economy. This outcome is partly due to a non performing transmission of the monetary policy impulses and partly to an excessively risk averting behaviour on the part of the banking system.

Despite the huge allotment of liquidity by the ECB to the banking system since October 2008 the supply of money, as measured by aggregate M3, shows little increase and sometimes also a decrease over preceding months. Furthermore the long-term declining trend of the velocity of circulation of M3, as expressed by the ratio of nominal Gross Domestic Product (GDP) to M3, appears accentuated by the crisis.

In order to elucidate some hindrance that hamper the transmission of monetary policy it is important to clarify more deeply the relationship between the monetary base and the supply of money: these variables are generally not connected by a constant monetary multiplier.<sup>7</sup>

Monetary policy operations, carried out by Central Banks as open market operations, or performed on demand of counterparties using marginal lending and deposit facilities, influence the amount of reserves held by the banking systems with their National Central Banks - which are the main component of the monetary base  $M_0$  (composed by currency and bank reserves with the Central Banks) - but not directly the supply of money.

When liquidity is released by the Central Banks the supply of money, as measured by the money aggregates M1, M2 or M3<sup>8</sup> can increase only as a

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<sup>7</sup> For a recent critique of the traditional monetary multipliers and a deeper analysis of the relationship between liquidity produced by Central Banks and the supply of money (or *outside* and *inside* money) see:

The Supply of Money – Bank Behaviour and the Implications for Monetary Analysis, in: European Central Bank: *Monthly Bulletin*, October 2011, pp. 63 – 79.

<sup>8</sup> The European Central Bank defines three concepts of money aggregates: a narrow aggregate M1, an intermediate one M2 and a broad one M3, differing with regard to the degree of liquidity of the assets they include. M1 is defined as the sum of currency in circulation (banknotes and coins) and overnight deposits; M2 comprises M1 and deposits with an agreed maturity of up to two years or redeemable at a period of notice of up to three months; M3 comprises M2, repurchase agreements, money

consequence of further operations carried out by credit institutions, which lend a part of the reserves borrowed from the Central Banks to business firms, nonfinancial corporations or households, thereby increasing their current bank accounts or the amount of currency in circulation.

Instead, if credit institutions lend funds to other credit institutions through the interbank deposit markets or bilateral transactions or maintain in their reserve or deposit accounts with the Central Banks the funds obtained through open market or marginal lending operations, the transfer of funds allotted by Central Banks to credit institutions entail only an increase in the monetary base  $M_0$ , while the supply of money does not increase.

Because a great part of interbank transactions, as well as bank transactions with Governments which hold their accounts with Central Banks, are settled in monetary base, the amount of this base and its velocity of circulation can greatly influence short term interest rates and the prices of assets traded by banks, even without an appreciable increase in the supply of money, while the supply of money influences the quantities and prices of real consumer and investment goods and services bought by business firms or households.

So it may happen that even in case of a great allotment of monetary base to the banking system the supply of money, during a downturn of the business cycle does not increase sensibly, being very low the demand for credit by nonfinancial firms and households. This demand can rise when it appears a better outlook of the conditions of the economic system and there is the risk that a great part of the monetary base previously accumulated becomes money: in this case a rapid and strong increase in the supply of money can increase the rate of inflation.

In analyzing the growth of money supply in the euro area, as is evident from Table 11, we note a sustained growth in the first half of year 2007. In only four months, from April to August, the broad monetary aggregate  $M_3$ , which is the reference aggregate for the monetary policy of the ECB, rises by more than 300 billion euro.

In the second half of the year the rate of growth of M3 becomes even greater and achieves its maximum value of 12,3 % in the months of October and November.

Very high is also the rate of growth of aggregate M1, which is the more liquid component of M3. But, as we note from Table 1, the rate of growth of M3 is sensibly higher than the rate of M1, so that the share of M1 in M3 tends to decrease over time.)

Quite different is the development of the money supply during year 2008 and in the first and second quarter of 2009; a constant reduction in the rate of growth is portrayed in Table 12

The average quarterly rate of growth of M3, which was 9,2 % in July 2008, decreases to 7,0 % in the following month of December, to 4,5 % in April 2009 and to 3,7 % in May 2009.

In this last month, therefore, the growth rate of M3, for the first time after many years, decreases under the level fixed as its reference value since the beginning of the operation of the Eurosystem, namely an annual rate of 4,50 %.

In the fourth quarter of 2008, despite the huge amount of monetary base provided by the Eurosystem, the quantity of money as measured by aggregate M3 does not increase, but, on the contrary, undergoes a small reduction in November, while there is a great increase in the amount of funds deposited by credit institutions on reserve and deposit accounts held with the respective National Central Banks. Therefore these funds maintain the nature of monetary base and do not become money.

The rate of increase of M3 remains very low even in year 2010, as can be seen from Table 3. This rate, which was negative or zero until the month of May, rises to 1,2 % in August, and to 1,7 % in the following month of December.

Enormous and anomalous is the amount of overnight deposits held by credit institutions with the Eurosystem in the first months of 2009, reaching 238,5 billion euro in the reserve maintenance period ending on 20 January 2009, as can be seen in Table 3, especially considering that, in normal times, this amount fluctuates between 300 and 600 million euro only. In June 2010 these deposits reach the maximum amount of 288,8 billion euro.

Deposits held by credit institutions with the Eurosystem show a high and growing level until June 2010. Being at 1 % the rate on MROs and LTROs and at 0,25 % the rate on the deposit facility, this decision shows a growing preference on the part of credit institutions to obtain and maintain liquidity from the Eurosystem at a total cost of 0,75 % (1 % – 0,25 %), rather than obtain it in the interbank market, despite the low level of the EONIA rates during this period.

From the beginning of October till the end of December 2008 the liquidity supplied to the banking system through Long Term Refinancing Operations (LTROs)– and still existing at the end of December – reached the huge amount of 583,4 billions euro while, in the same time, the money aggregate M3 grows only by 158,2 billions and at the end of November was 6 billion lower than at the end of October.

In the first and second quarter of year 2009 the amount of liquidity provided to the banking system of the euro area through longer term refinancing operations (LTROs) and existing on June 30 2009 has been 717,9 billion euro but, despite this enormous increase in the amount of liquidity, the amount of M3 in June 2009, as can be seen in Table 2, was only 39 billion higher than in December 2008, while the amount outstanding in the following month of July was only 62 billion higher than in December 2008.

The ratio between the increase in the monetary aggregate M3 and the increase in the monetary base  $M^B$ , that is the marginal ratio  $dM3 / dM^B$ , or monetary multiplier of the monetary base, is an important variable in the analysis of monetary policy; it tends to decrease in the downturn and to increase in the upturn of the business cycle. In the last quarter of 2008 its value was approximately 0,27.

Divergent developments between the monetary base and the supply of money in the course of the financial crisis can be found also in the United States but the difference is lesser than in Europe. While from July 2008 to January 2010 the monetary base grew by about 865 billion dollars, the money supply, as measured by aggregate M2, grew from August 2008 to January 2009 by 528 billion.<sup>9</sup> Probably in the US a greater share of the

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<sup>9</sup> Source: US Federal Reserve System. In the US M1 consists of (1) currency outside the U.S. Treasury, Federal Reserve Banks, and the vaults of depository institutions; (2) traveler's checks of nonbank

monetary base than in Europe flew from the financial network into the real economy, so becoming money.

On Table 8 is reported the ratio  $GDP / M3$  since the beginning of the present century to year 2010, which may be interpreted as the velocity of circulation of M3 in the euro area.

This ratio shows a long – term declining trend since year 2001, but the crisis enhances this decline and for the first time in year 2008 the velocity of circulation of M3 falls below unity.

The relationship between the growth rates of the monetary aggregate M3 and those of the Harmonized Index of Consumer Prices HICP from 2007 to 2010 is worth noting and can be seen in Figures 3 to 6.

The growth rate of M3 attains the highest values (over 12 %) in October and November 2007; then it declines continuously in year 2008 and 2009, falls under the reference value of 4,50 % in May 2009 and becomes negative in the following months of November and December; still negative in February and March 2009, it becomes positive in April and shows a growing trend for the rest of the year.

The % growth rate of HICP, which was nearly stable around the statutory value of 2 % until September 2007, begins to rise in October and reaches 4 % between June and August 2008. Then it declines sharply after the climax of the crisis in October 2008 and becomes negative in July 2009. Then it remains well below the statutory value of 2 % in year 2010 and attains 2 % only in December 2010.

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issuers; (3) demand deposits at commercial banks (excluding those amounts held by depository institutions, the U.S. government, and foreign banks and official institutions) less cash items in the process of collection and Federal Reserve float; and (4) other checkable deposits (OCDs), consisting of negotiable order of withdrawal (NOW) and automatic transfer service (ATS) accounts at depository institutions, credit union share draft accounts, and demand deposits at thrift institutions. Seasonally adjusted M1 is constructed by summing currency, traveler's checks, demand deposits, and OCDs, each seasonally adjusted separately.

M2 consists of M1 plus (1) savings deposits (including money market deposit accounts); (2) small-denomination time deposits (time deposits in amounts of less than \$100,000), less individual retirement account (IRA) and Keogh balances at depository institutions; and (3) balances in retail money market mutual funds, less IRA and Keogh balances at money market mutual funds. Seasonally adjusted M2 is constructed by summing savings deposits, small-denomination time deposits, and retail money funds, each seasonally adjusted separately, and adding this result to seasonally adjusted M1.

Both variables appear sensibly affected by the crisis and do not react to the policy conducted by the ECB in order to achieve a conspicuous enlargement in the liquidity of the system.

The crisis turned upside down the relationship between the growth of M3 and that of HICP.

While in year 2007 the growth of M3 varied between 10 % and 12 % and that of HICP dwindled around 2 % and grew to 2,5 % only in December, in year 2010 the growth of M3 was below that of HICP except in November, being negative from February to April and growing to 1 % in October, while HICP was 1 % in January and grew over 2 % in December.

In May 2009, for the first time after many years, the growth rate of M3 fell below the Reference Value of 4,50% established at the beginning of the operational activity of the European Central Bank in 1998.

The risk of a true deflation appeared then in May 2009 and it is not a coincidence, perhaps, that in that same month the ECB reduced the fixed rate on MROs to the historical minimum of 1%.

#### **4. Which Price Stability?**

The maintenance of price stability is always a fundamental target of the monetary policies conducted by Central Banks all over the world and an inflation target is often precisely determined in official documents.<sup>10</sup>

But what is the real meaning of stability and which prices must be stabilized?

As is well known, the European Central Bank (ECB) has defined the concept of “price stability” as an annual increase of the Harmonized Index of

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<sup>10</sup> The first Country to set an inflation target as a fundamental target of monetary policy was New Zealand in 1988. Followed Canada, the United Kingdom and Sweden, this last Country in 1993.

Consumer Prices (HICP) for the Countries of the euro area lower but close to 2 % over the medium term.<sup>11</sup>

Also other Central Banks, such as the Bank of England, the Central Bank of Sweden (Sveriges Riksbank), the Reserve Bank of Australia, the Reserve Bank of New Zealand set as fundamental target of their monetary policies the stability of prices measured by an index of consumer prices.

But on some other prices it should now be necessary to draw the attention of policymakers, in particular to prices of financial assets traded on the Stock Exchange and especially equities, prices of land, housing and precious metals, especially gold.

The trend of the price of gold from 2006 to 2011 is portrayed in Figure 5. The path of the curve becomes steeper after the climax of the crisis in September 2008, just when we had a sharp decline in the rate of inflation and even a period of deflation.

The evolution of prices of the three kinds of goods formerly defined, as well as that of prices of raw and auxiliary materials appear somewhat different from the evolution of prices of consumption goods and services.

In fact the former prices, in the course of the business cycle, show much greater fluctuations than consumer prices and these fluctuations are, at the same time, cause and effect of the formation of speculative supply and demand movements, side by side with ordinary supply and demand functions.

So in the analysis of the movements of prices and production in the market for financial assets the effects of variations in the ordinary supply and demand functions should be distinguished from those of speculative ones.

Only if speculative supply and demand remain low (generally no more than 10 % to 15 % of total supply and demand) and formulated by a small number of operators can speculation perform its useful function to afford thickness and liquidity to markets and to stabilize prices and production of assets.

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<sup>11</sup> The HICP for the euro area is a weighted average of the National Harmonised Indexes of the Countries of the area, the weights being defined by the proportion of the value of the consumption of households in each Country on the total consumption of households in the area.

But this is not an equilibrium position; expected profits from speculative activity draw more and more operators to speculation so that the prices of assets become determined mainly by speculative operations.

An expansionary monetary policy, conducted in a period of stagnation or recession of the economy with the aim to promote recovery, but unable to achieve this target owing to a too low inducement to undertake real investments on the part of private entrepreneurs which face a vast amount of unused productive capacity, tend to promote many kinds of financial investments, even of a speculative nature, which entail a rise in assets and non-consumption goods prices, without sensible effects on the production and prices of real consumption goods and services and hence on the rate of conventional inflation.

Therefore, it would be very useful a continuous monitoring and control of the outstanding monetary base, even without setting for its growth a “reference value” similar to that one set for monetary aggregate M3.

## **5. Some teachings that may be drawn from the crisis**

The world economic and financial crisis of 2007-2008 should induce a certain revision in the foundations of the traditional theory of inflation.

It may be questioned, of course, if the inflationary phenomenon can be entirely and exactly defined by reference to an index of consumer prices, or, better, if Central Banks should not attempt to overview also the level and growth of other prices, very important for the economy of a country, but different from consumer prices, such as the prices of financial assets, or housing.

The main target of monetary policy of the ECB is the stability of prices, but in the statute of the Bank is indicated neither the real meaning of stability nor which prices must remain stable.

The problem of the inclusion of prices of financial assets in a price index apt to measure the rate of inflation was discussed many years ago, but the prevailing orientation of economists was negative.

In his important book *The Art of Central Banking*, first published in 1932, R.G. Hawtrey, answering to the question whether the prices of financial assets should be considered, side by side to the prices of consumer goods and services, in order to calculate the rate of inflation, observes: *securities are not really objects of expenditure at all. The true objects of expenditure are the capital goods over which the securities confer rights. The investment market is an intermediary between the outlay of investors on the one side and the production of capital goods on the other.*

*When an investor buys securities he pays their price to the seller. But the money is not by that transaction spent, it is simply passed on to await investment in the hands of the new owner. It may pass repeatedly from hand to hand and still be in the same condition. But as soon as it is applied to the purchase of a new capital issue, it really is spent on the creation of fixed capital.*<sup>12</sup>

The economic features of the financial markets are very different from those of the markets for real consumer or investment goods and services. Quite different are the subjects who participate to the transactions and the objectives of their decisions. They are mainly markets for *stocks* and not for *flows*: only for transactions involving newly issued securities there can be a certain connection with demand and supply of real goods and services. As mainly markets for stocks they are more subject to speculative operations and price fluctuations owing also to variations in the level of interest rates.

While on markets for consumption goods and services fluctuations in demand are often faced with adjustment in supply owing to depletion of stocks or use of unused productive capacity, which reduce fluctuations in prices, on the markets for real or financial assets the amount of supply can be considered generally fixed, at least in the short run, so that the equilibrium between supply and demand is nearly wholly determined by the rise or downfall of prices.

Therefore transactions on asset markets generally do not reflect phenomena of economic production or consumption, and often neither indicate a transfer of ownership, because most transactions are reversed before maturity and only the balances between original and final prices are settled.

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<sup>12</sup> R. G. Hawtrey: *The Art of Central Banking*, Frank Cass & Co Ltd, 1970, p. 326.

But if it would be wrong to include prices of financial assets in the index of prices of consumer goods and services, it would be equally wrong to ignore them totally in the definition and implementation of the strategies of monetary policy.

In fact, expansionary monetary policies, undertaken by Central Banks in period of economic stagnation or depression and justified also by the stability of prices of consumer goods and services may give rise, owing to low interest rates and the increase of liquidity of the banking system, not to an expansion of productive investments in the agricultural, industrial or service sectors of the economy, which prospect too low yields or losses owing to the presence of unused productive capacity, but to the financing of mergers, acquisitions, securitizations and other financial operations which cause strains of prices on the financial markets, on the housing markets or on the markets for precious metals and some raw materials, where more easily develop speculative operations undertaken in view to get profits in the form of capital gains.

Furthermore, bigger institutions created by such operations are often affected by diseconomies of scale caused by more difficult and costly internal controls, reduce the degree of competition in the financial markets and raise the level of systemic risk, because many other institutions are exposed to them.

With very low interest rates banks and other financial institutions, looking for higher profits, are often induced to undertake a too high number of risky investments, so enhancing the overall level of risk taking in the economy.

Often, in the framework of an economic system with excess capacity, real investments induced by low interest rates are made in order not to increase production, but rather to activate labour-saving production processes, so reducing the employment of workers and consequently the level of private consumption and therefore exert a depressing and not an expanding effect on the real economy. Also many financial operations, such as mergers and acquisitions, often imply reduction in the number of dependent workers.

Moreover productive investments are often crowded out by an outlook of higher profits obtainable by speculative investments.

The low level of interest rates induces financial and nonfinancial institutions to increase indebtedness in order to finance the purchase of assets and produces a lengthening of the financial leverage of the banks and of other financial intermediaries which gives rise to a true “multiplier of the debt”.

When a growing number of dealers is attracted by the prospect of profits and raise speculative supply and demand, prices are influenced more by speculative than by ordinary supply and demand.

The increase in the prices and in the ratios between prices and incomes of assets tend to reduce ordinary demand and stimulate ordinary supply so exercising an equilibrating function on the markets, but speculative supply and demand may act in opposite direction at least until a certain level of prices. But if the increase proceeds for a certain time, some doubts can arise about the probability of further increase.

The attempts to realize through the sale of the assets, the conspicuous capital gains matured during the upturn tend to check the process of rising prices and frequently open the way to a downturn.

Often, in consequence of even small increases in official interest rates, the downfall in asset prices becomes quick and violent and is transmitted among the various sectors of the economy, especially between financial and housing markets and eventually entails the well known phenomenon of the burst of speculative bubbles and sometimes a general financial crisis that may be transmitted to the real economy.<sup>13</sup>

The upturn and downturn of business fluctuations are emphasized by the procyclical rise and fall of default risks of firms and corporations, which decrease during the upturn and increase during the downturn; so are reduced or increased the prices of derivatives that cover such risks (*credit default swaps or cds*), entailing an excessive

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<sup>13</sup> *Capital gains* may become real income only if timely realized by a few market operators, but if new operators induced by profit expectations enter the market attempting to realize the gains by selling their assets, the prices of assets decrease and capital gains also decrease or completely vanish; therefore, in many cases, capital gains may be compared to a mirage. On the connection between financial and housing markets and on the spreading of speculative bubbles see: Robert J. Shiller: *Irrational Exuberance*, Broadway Books, New York, 2009, p. 41.

inducement to risky investments in the upturn of the cycle while such investments are discouraged during a depression, enhancing the fluctuations of total demand.<sup>14</sup>

Owing to the decreasing marginal efficiency of the application of every economic policy instrument, a mix of different countercyclical measures is clearly preferable to the implementation of only one kind of measures.

But in the recent crisis fiscal policy has been implemented mainly in order to rescue some banks and other financial institutions on the edge of collapse, raising the capital stock or supplying extraordinary loans to them with little direct effects on the level of total demand for goods and services and on the general economy.

This form of fiscal intervention was probably unavoidable because the banking systems were at the epicentre of the world financial crisis and of its international spreading.

The huge amount of risky securities, especially in the form of *Asset Backed Securities* (ABSs), *Collateralized Debt Obligations* (CDOs) and OTC derivatives constituted a major threat to the stability of the whole financial system.

Government debt has been issued in order to afford a financial support to the banking system, but a great deal of government debt has been acquired by the banks themselves so creating a real interlocking between government's and banking sector's debt.

A substantial share of public debt which appears on the *liabilities side* of the Governments' balance sheets appears at the same time on the *assets side* of the balance sheets of the banking systems, in part offsetting the debt of the banking systems themselves towards the Governments.

So it appears that some banks have financed the rescue of other banks through the intermediation of Governments, but a vicious circle has been created, connecting the crises both of the banking systems and of Government finances.

A stop to the acquisition and a gradual liquidation of risky securities appear the only sure, though costly, way to stabilize the financial system.

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<sup>14</sup> The pro-cyclical profile of default risks, considered *ex post*, contributes to the idea of a general undervaluation or *underpricing* of risk, which has been frequently signalled after the burst of the crisis.

Voluntary agreements between the Governments and the banking systems, with the assistance of the IMF and the EU, in order to lengthen maturities or reduce interest rates on government bonds should be important measures for disentangling the interlocked crisis of public and banking sector debt, with losses lower than the substantial haircut of the nominal value of the debt as that one recently imposed on Greece.

## **6 - Concluding Remarks**

An enormous amount of low quality debt securities has been issued in the years preceding the crisis, partly deriving from securitization processes and issued by the so called *Special Purpose Vehicles* (SPVs) often not bound by prudential rules and not subjected to oversight by monetary and financial Authorities. So a great increase in the level of systemic risk has occurred, which entailed the outbreak of the world financial crisis.

To counteract the effects of the crisis and reduce the mutual distrust between credit institutions owing to the increase in counterparty risk which reduced exchanges and raised interest rates on the interbank deposit markets, a virtually unlimited volume of credit at very low nominal short-term interest rates has been granted by the Central Banks to the banking systems by standard and nonstandard monetary measures. The phasing-out of nonstandard measures, many times announced by the ECB, has not yet been accomplished.<sup>15</sup>

On the contrary, further expansionary measures were taken by the ECB in November and December 2011 with the reduction of the minimum bid rates on MROs and LTROs which were raised in the preceding months of April and July 2011; an extraordinary LTRO has been launched on 21 December 2011 for an amount of 489 billion euro at the interest rate of 1 % and a maturity of 36 months which means an extraordinary provision of funds and reduction in the cost of funding for credit institutions. For the first time the reserve requirement ratio has been reduced from 2 % to 1 %.

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<sup>15</sup> See: European Central Bank: The ECB's Monetary Policy Stance during the Financial Crisis, *Monthly Bulletin*, January 2010, p. 70.

The main Central Banks of the world have extended their balance sheets to an unprecedented level; for the Federal Reserve System, the Bank of England and the Eurosystem total assets have arisen until around 20 % of GDP, while the Bank of Japan reached 30 %.<sup>16</sup> The ECB has been compelled to follow the expansionary strategy of the Federal Reserve System and of the Bank of England also in order to prevent an overvaluation of the euro.

However, this policy - which in some measure counteracted restrictive fiscal actions undertaken by Governments - constitutes a powerful source of speculation and very easy profits for credit institutions, which can invest enormous sums in the purchase of government and private long term bonds and other low risk securities, or temporarily deposit with the same ECB the funds received, while scarce resources are being addressed to satisfy the credit needs of households and business firms.

So the expansionary monetary policy conducted in the years preceding the crisis and which is partly at the root of the crisis, has been pursued and even enhanced after the crisis, especially through the outright purchase of Covered Bonds and Government securities, so following a policy similar to that previously conducted by the Federal Reserve System and by the Bank of England in the purchase of government securities<sup>17</sup>.

But these operations did not entail a parallel increase in the supply of money, because restrictive fiscal measures limit the expansion of the economic activity and money creation in the euro area.<sup>18</sup>

However, the outcome of the expansionary policy of the ECB has not been satisfactory in order to achieve the recovery which remained weak; the increase in liquidity has been employed by the banking sector more to buy government and other securities, through the system of *carry trade*, or to deposit it with the Eurosystem than to finance the credit needs of business firms and

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<sup>16</sup> Bank for International Settlements: *81st Annual Report*, Basel 26 June 2011, p. 50.

<sup>17</sup> The Federal Reserve System owns about 1.500 billion dollars of US Treasury securities.

<sup>18</sup> In order to restrain the increase in liquidity the ECB could finance the purchase of government bonds through the sale of its own bonds with the same maturity and likely with interest rates lower than those on the government bonds purchased.

households. The strategy of monetary policy adopted by the European Central Bank seems unable to induce the banking system to expand credit in a satisfactory measure to the private sector of the economy and so foster the recovery of the European economy.

Clearly, the danger of an inflation process entailed by an excessive increase of liquidity cannot be excluded and an effective non-inflationary exit strategy from the crisis has not yet been outlined.

In many official and non-official documents the ECB for many years proclaimed that the main contribution that monetary policy may give to growth of domestic product and employment in the Countries of the euro area is the maintenance of price stability, that is stability in the level of consumer prices.

However, if price stability can avoid the damage inflicted on growth by inflation, it is unable to promote growth; quite different approaches should be taken in monetary and other countercyclical policies in order to promote growth and prevent the outbreak of a new financial crisis.

Monetary policy can greatly influence the *supply of credit*; but the problem is a too low *demand for credit* and a higher counterparties' risk owing to depression and the growing risks of default.

A set of policies aiming to influence directly the supply of and the demand for goods and services appears at the moment the best device to do the job.

The need for the production of a large amount of real goods and services is particularly evident in the framework of a policy of environmental protection, in order to substitute old equipment and machinery and reduce their effects on the level of pollution.

But the negative effects of too expansionary monetary measures could be reduced in the framework of a more general macroprudential policy whose broad goal is to limit systemic risk, that is the risk of financial system disruption that can destabilise the whole economy.

Systemic risk in the operation of the financial systems derives from two specific externalities: the possibility of joint failure of financial institutions because

of interlinkages and common exposure to the same risk and the procyclical effects of the behaviour of market participants during the upturns and the downturns of the business cycle.

The financial crisis has shown that a great amount of liquidity, provided by the Eurosystem in order to foster the expansion of credit, has been used by the banks to settle interbank operations in monetary base or was deposited in their accounts with the Eurosystem.

The variation of an index of consumer prices is no more satisfactory as a target of monetary policy; also the prices of financial assets and housing should be controlled in order prevent excessive expansion of credit and the burst of a crisis.

The instruments of monetary policy should cooperate with the instruments of micro and macroprudential policy framework in order to address the systemic risk and the procyclical effects of the behaviour of market participants during the upturn and the downturn of business cycles.

The traditional microprudential instruments should be extended in order to maintain the stability of the financial system as a whole or of the general economy so to implement a true *macroprudential* policy.

Quite apart from specific microprudential measures that may be taken to reinforce the financial stability of dealers or the regulation of some market transactions, as limits to the ratio of bond issue to equity capital not only for credit institutions but also for other financial entities, as Special Purpose Vehicles and other subjects which constitute a true *shadow financial system*, other measures should be set in order to confer greater stability to the financial system as a whole, such as greater capital or reserve requirement ratios for “systemically important financial institutions” (SIFI), in order to face the systemic or macroeconomic risk of their defaults, , the build-up of capital buffers in the upturn of the cycle that may be reduced in the downturn, the setting of at least temporary rules aimed to forbid or limit short selling, or to transfer some bilateral *over the counter transactions* or *OTC* to regulated markets with a centrally established counterparty.(CCP)

Furthermore, the general management of monetary policy should be profoundly changed and should be directed not only to achieve the stability of consumer prices, but also to forestall the growth and burst of speculative bubbles and this implies a more cautious policy in the setting of official interest rates, of the amount of liquidity allotted in open market operations and of the level of reserve requirements.

Often very low interest rates induce an excessive lengthening of the financial leverage with an unavoidable marginal worsening of credit quality.

Furthermore, low interest rates in the advanced economies may stimulate a flow of capital toward emerging economies affecting the balance of international payments with an appreciation of the currencies and an overheating of these economies.

Therefore even an expansionary policy designed to contrast a state of recession or depression of the economy in the euro area should not reduce real short term interest rates below a positive value which may be approximately determined in the range of 1,50 % - 2 %, in order to prevent or restrain an excessive level of private indebtedness, financial leverages and speculative operations.

Interest rates should regain their fundamental task of instruments for a correct allocation of risk-taking among the various sectors of the economy.

In order to restrain the growth of excessive private indebtedness raising reserve requirement ratios of credit institutions seems preferable to the increase of capital ratios as foreseen by the Basel 3 Agreement, since while the former is a temporary decision which can easily be reversed, the latter is an element of the structural discipline of the banking system which cannot easily be modified, at least in the short run.

Since the growth in the monetary base can be very different from the growth in the supply of money the size and the velocity of circulation of the monetary base can influence short- term interest rates and the prices of financial assets owing to the fact that a large part of interbank transactions are settled in monetary base,

while the supply of money and the prices of real goods and services may show no meaningful variations.

The policy implemented by Central Banks since the burst of the crisis, with policy nominal interest rates between zero and 1 % and real rates even negative, with unlimited allotment of liquidity to the banking systems through temporary and outright open market operations and marginal lending facilities seems more likely to entail the growth of speculative bubbles in the financial markets and in the markets for real estate, for commodities and for precious metals than to promote the recovery of real economies and to build a satisfactory “exit strategy” from the crisis.

The increase in the overall level of liquidity is balanced by restrictive fiscal measures which, at the same time, reduce the level of money demand and supply. So the increased liquidity does not produce a parallel increase in the quantity of money or in the level of total income and employment.

Yet a real danger may follow if the fiscal measures, pushed to an excessive level, become unable to offset the effects of liquidity on the supply of money: the start of a process of depressionary inflation (stagflation) which can spread all over the world, likely in the framework of a process of competitive devaluation of the main world currencies. This process can be welcome by governments and business firms because it reduces (at least temporarily!) the real burden of public and private debts, but – quite apart from the iniquitous kind of income redistribution that this process entails - risks to perpetuate a situation of worldly depression and inflation.

Instead, we need more forward-looking strategies of monetary policy: strategies aimed to prevent excessive expansion of credit and rise in asset prices, to limit speculation and the profits of the banking systems to attain moderate but stable growth of the real economies should be conducted by Central Banks by maintaining real short-term interest rates not below a small but positive value.

Given the diversity of monetary and credit developments among different Countries of the euro area it might be helpful to allow a certain differentiation of some parameters of monetary policy among these Countries: for example, reserve requirement ratios or interest rates on marginal lending facilities could be raised only

in the Countries where an excessive credit expansion or increase of housing or financial asset prices occur, in order to prevent the formation of housing or financial bubbles and the risk of a future collapse of the banking systems.

A well designed macroprudential policy framework, with the use of instruments outlined above, can greatly improve the performance of monetary policy. A more resilient financial system reduces the amplitude and frequency of shifts in monetary and fiscal policy parameters and so the volatility of assets prices.

In order to enhance the transparency of the financial system, data on amounts and kinds of securities traded on the financial markets, possibly even on OTC operations, as well as the greatest possible number of data on the structure of financial institutions (especially Special Purpose Vehicles) should be registered on electronic independent registrars and put at the disposal of the public, while the ECB, as well as other Central Banks, should disclose specific data on the structure of their government securities portfolios; for securities acquired through outright purchases on the financial markets also the purchase prices should be made known. A greater transparency should greatly reduce uncertainty and so the room for purely speculative operations.

However, the recovery of the economy cannot be attained by monetary policy only; the *decreasing marginal efficiency shown by monetary policy when the use of its instruments is increased set a limit to the implementation of this policy.*

A more balanced approach in the planning and implementation of countercyclical public policies, namely monetary, fiscal and budget policies, may be more helpful to achieve a fast recovery of the world economy and to promote economic growth with monetary and financial stability<sup>19</sup>, but measures aiming to increase total demand should be matched by a reduction in the rate of increase of liquidity, in order to avoid the start of an uncontrollable inflationary process.

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<sup>19</sup> Bank for International Settlements: *79<sup>th</sup> Annual Report*, Basel, 29 June 2009, p. 136.

**Table 1. Short Term Rates on Interbank Money Markets (May 2008 –July 2009)**

<b>Month</b>	<b>EONIA</b>	<b>EURIBOR 1 Month</b>	<b>EURIBOR 3 Months</b>
<b>May 2008</b>	<b>4,01</b>	<b>4,39</b>	<b>4,86</b>
<b>June</b>	<b>4,01</b>	<b>4,47</b>	<b>4,94</b>
<b>July</b>	<b>4,19</b>	<b>4,47</b>	<b>4,96</b>
<b>August</b>	<b>4,30</b>	<b>4,49</b>	<b>4,97</b>
<b>September</b>	<b>4,27</b>	<b>4,66</b>	<b>5,02</b>
<b>October</b>	<b>3,82</b>	<b>4,83</b>	<b>5,11</b>
<b>November</b>	<b>3,15</b>	<b>3,84</b>	<b>4,24</b>
<b>December</b>	<b>2,49</b>	<b>2,99</b>	<b>3,29</b>
<b>January 2009</b>	<b>1,81</b>	<b>2,14</b>	<b>2,46</b>
<b>February</b>	<b>1,26</b>	<b>1,63</b>	<b>1,94</b>
<b>March</b>	<b>1,06</b>	<b>1,27</b>	<b>1,64</b>
<b>April</b>	<b>0,84</b>	<b>1,01</b>	<b>1,42</b>
<b>May</b>	<b>0,78</b>	<b>0,88</b>	<b>1,28</b>
<b>June</b>	<b>0,70</b>	<b>0,91</b>	<b>1,23</b>
<b>July</b>	<b>0,36</b>	<b>0,61</b>	<b>0,97</b>

**Table 2 - Growth Rates of the Harmonized Index of Consumer Prices (HICP) from July to December 2008**

July	2008	4,0
August	“	3,8
September	“	3,6
October	“	3,2
November	“	2,1
December	“	1,6

**Table 3 - Growth Rates of the Harmonized Index of Consumer Prices (HICP) in years 2009 and 2010**

January 2009	1,1	January 2010	1,0
February “	1,2	February “	0,9
March “	0,6	March “	1,4
April “	0,6	April “	1,5
May “	0,0	May “	1,6
June “	- 0,1	June “	1,4
July “	- 0,7	July “	1,7
August “	- 0,2	August “	1,6
September “	- 0,3	September “	1,8
October “	- 0,1	October “	1,9
November “	0,5	November “	1,0
December “	0,9	December “	2,2

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**Table 4. - Retail Interest Rates ( % )**

Month	Bank Overdrafts	Consumer Credit (Over 5 years)	Lending for House purchase (Over 10 years)	Loans to Nonfinancial Corporations (Over 5 years)
April 2008	10,53	8,46	5,12	5,20
May	10,57	8,44	5,13	5,25
June	10,63	8,44	5,20	5,43
July	10,65	8,58	5,34	5,53
August	10,75	8,69	5,27	5,49
September	10,80	8,70	5,37	5,64
October	10,83	8,69	5,37	5,57
November	10,78	8,69	5,28	5,41
December	10,46	8,39	5,13	5,32
January 2009	10,13	8,63	5,00	5,24
February	10,14	8,49	4,89	4,96
March	9,94	8,31	4,72	4,75
April	9,71	8,27	4,67	4,60
May	9,62	8,17	4,58	4,52
June	9,54	8,03	4,58	4,49
July	9,31	8,04	4,54	4,32

**Table 5. - Loans to Non-financial Corporations and Households**

(EUR billions and % annual growth rates over the corresponding period of the preceding year)

Month	Corporations		Households	
	Outstanding amounts	% growth rates	Outstanding amounts	% growth rates
January 2009	4.884,6	9,0	4.898,9	1,2
February	4.880,0	7,8	4.899,2	0,7
March	4.848,3	6,3	4.889,6	0,4
April	4.840,8	5,2	4.888,1	0,0
May	4.827,3	4,4	4.887,2	- 0,2
June	4,789,6	2,8	4.891,2	0,2
July	4.764,5	1,6	4.892,7	0,0
August	4.766,5	0,7	4.900,3	- 0,2
September	4.751,5	- 0,2	4.909,9	- 0,3
October	4.730,4	- 1,2	4.918,9	- 0,1
November	4.721,5	- 1,9	4.931,3	0,5
December	4.686,0	- 2,2	4.943,5	1,3

**Table 6. Loans to Non-financial Corporations and Households**

(EUR billions and % annual growth rates over the corresponding period of the preceding year)

Month	Corporations		Households	
	Outstanding Amounts	% Growth Rates	Outstanding Amounts	% Growth Rates
January 2010	4.685,7	- 2,7	4.954,2	1,6
February	4.689,9	- 2,4	4.959,4	1,8
March	4.680,5	- 2,4	4.971,6	2,1
April	4.667,6	- 2,6	4.980,6	2,5
May	4.688,3	- 2,1	5.014,0	2,6
June	4.689,5	- 1,7	5.087,4	2,7
July	4.664,7	- 1,4	5.087,4	2,7
August	4.686,3	- 1,1	5.107,4	2,9
September	4.699,6	-0,6	5.108,2	2,8
October	4.685,1	- 0,5	5.123,1	2,9
November	4.698,3	- 0,1	5.141,0	2,8
December	4.665,2	- 0,2	5.157,9	3,0

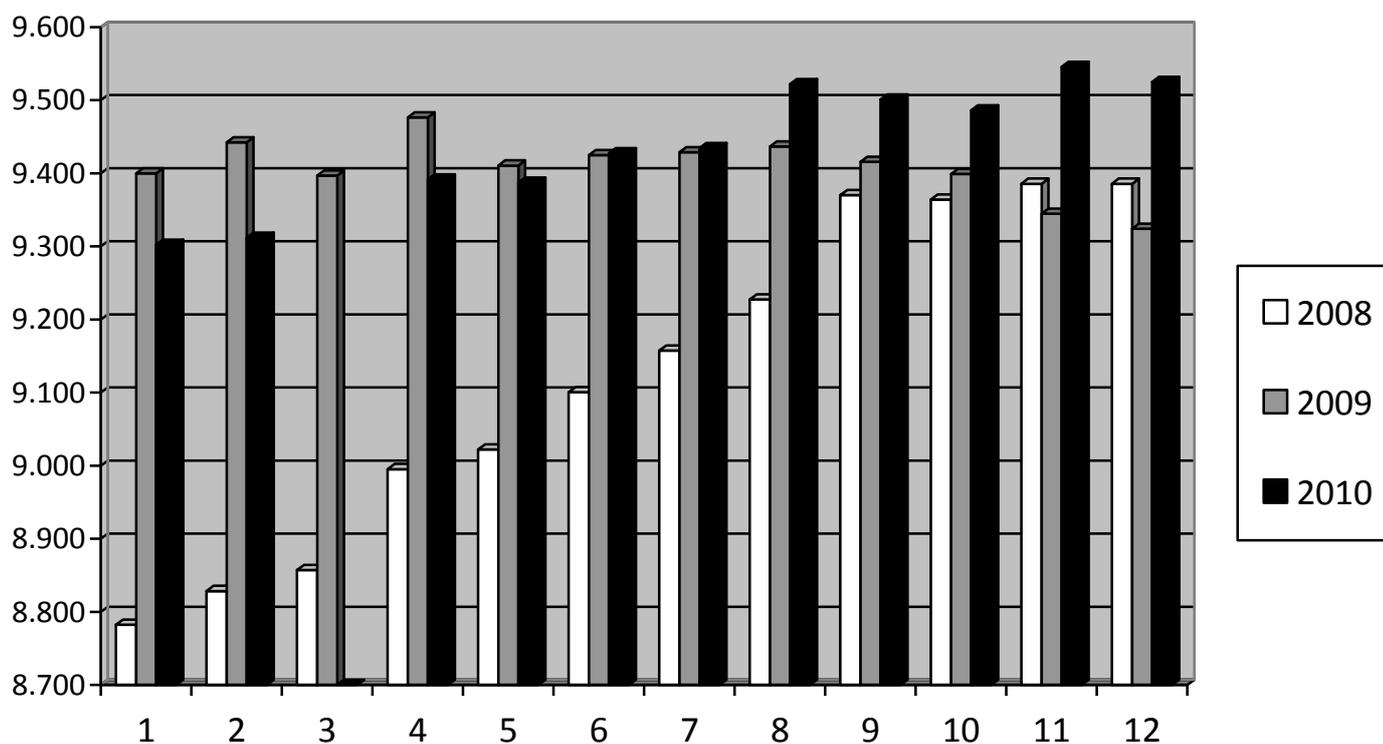
**Table 7. Evolution of money aggregates M1 and M3 from April to December 2007**

Month	Outstanding Amounts (billions euro)		Ratio % M1 / M3	% Growth Rates on the corresponding Month of the preceding Year	
	M1	M3		M1	M3
April	3.740,10	8.036,90	46,5	6,0	10,3
May	3.768,70	8.113,90	46,4	5,9	10,6
June	3.784,40	8.183,00	46,2	6,1	10,9
July	3.809,30	8.296,60	45,9	7,0	11,7
August	3.823,50	8.344,10	45,8	6,7	11,5
September	3.821,20	8.398,00	45,5	6,1	11,3
October	3.836,20	8.530,40	45,0	6,4	12,3
November	3.859,70	8.620,30	44,8	6,3	12,3
December	3.826,50	8.642,20	44,3	4,0	11,5

**Table 8. Velocity of circulation of M3 from 2001 to 2010**

(GDP at current market prices in million euro)

Year	M3	GDP at current market prices	GDP / M3
2001	5.390,8	6.844,2	1,27
2002	5.751,1	7.070,8	1,23
2003	6.141,6	7.489,9	1,22
2004	6.533,0	7.774,6	1,19
2005	7.072,0	8.051,9	1,14
2006	7.731,8	8.440,7	1,09
2007	8.664,6	9.045,7	1,04
2008	9.386,0	9.259,4	0,99
2009	9.334,2	8.968,1	0,96
2010	9.523,9	9.192,2	0,97

**Figure 1****Evolution of M3 in years 2008-2009-2010 (billion euro)**

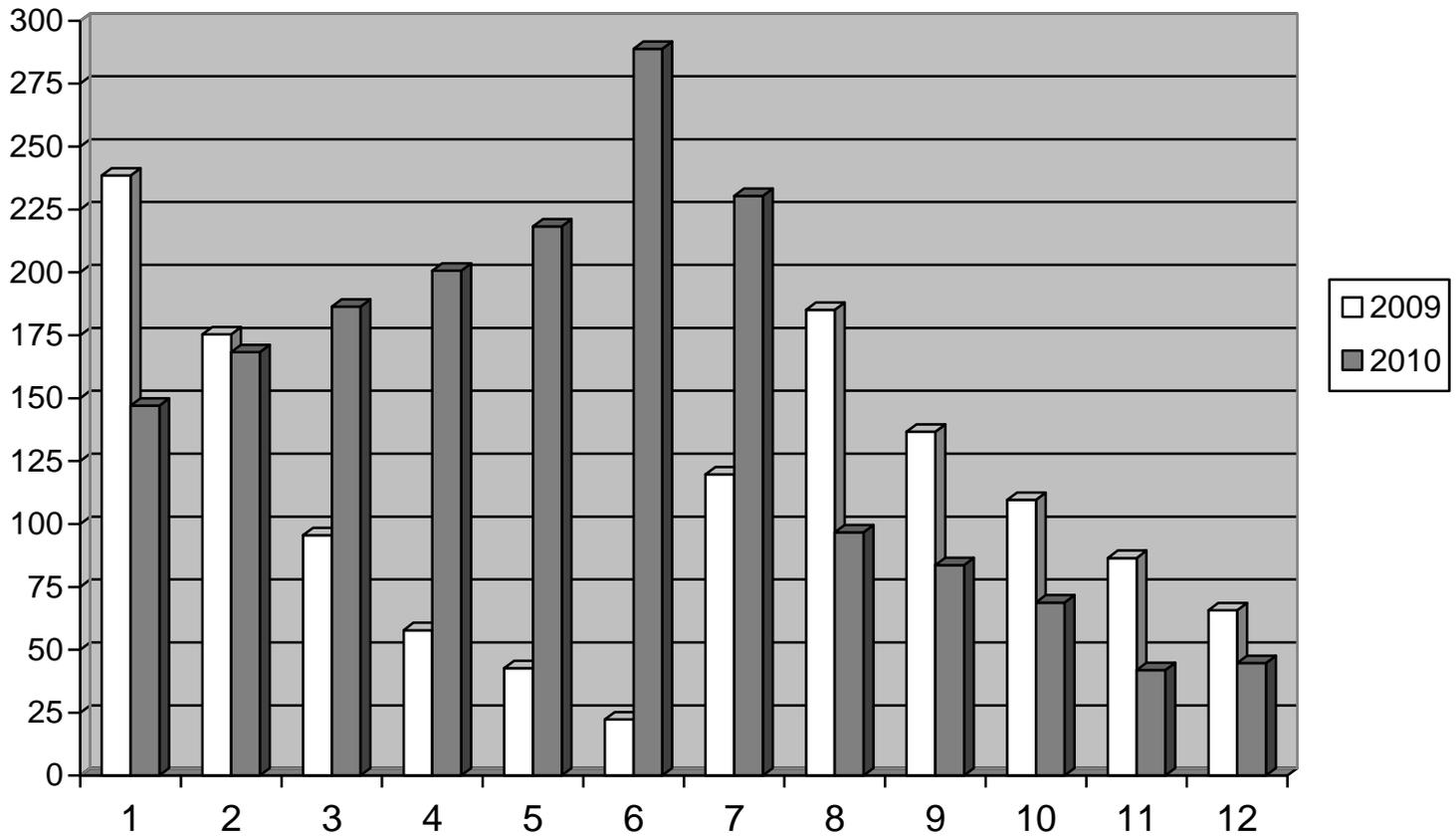
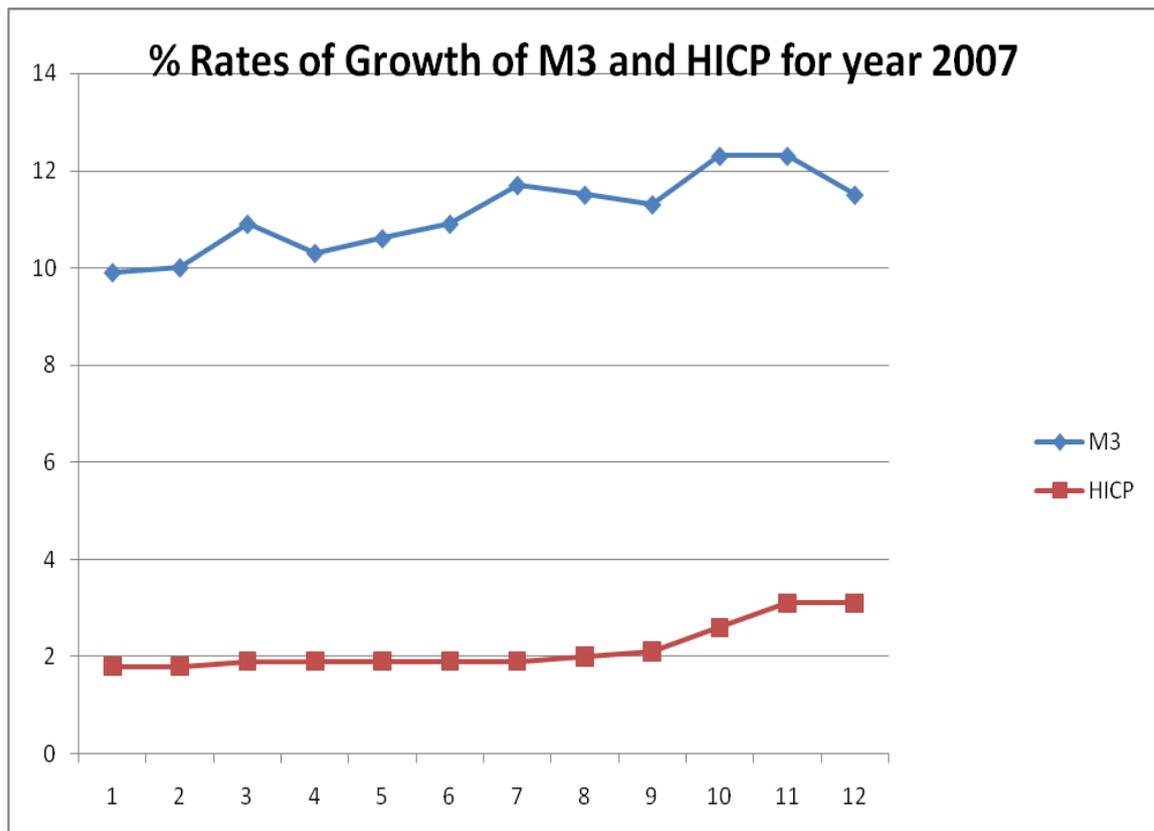
**Figure 2****ON Deposits of Credit Institutions with the Euro-system in years 2009-2010****Figure 3**

Figure 4

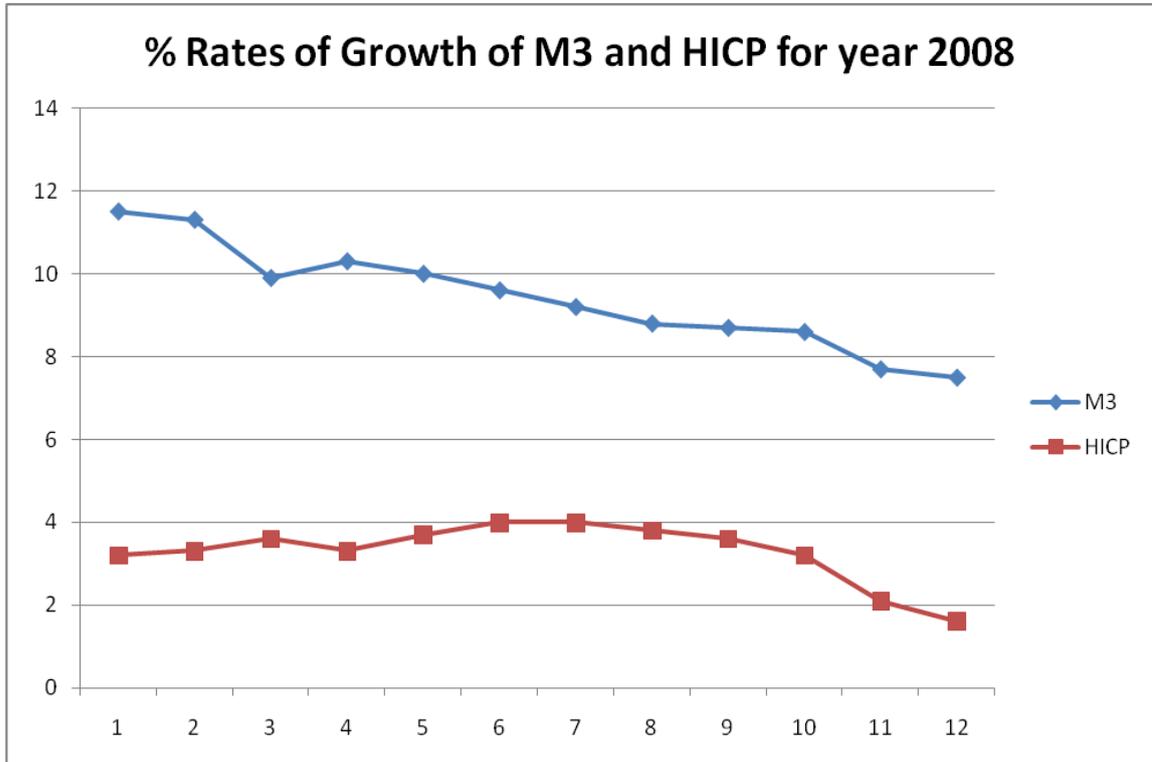
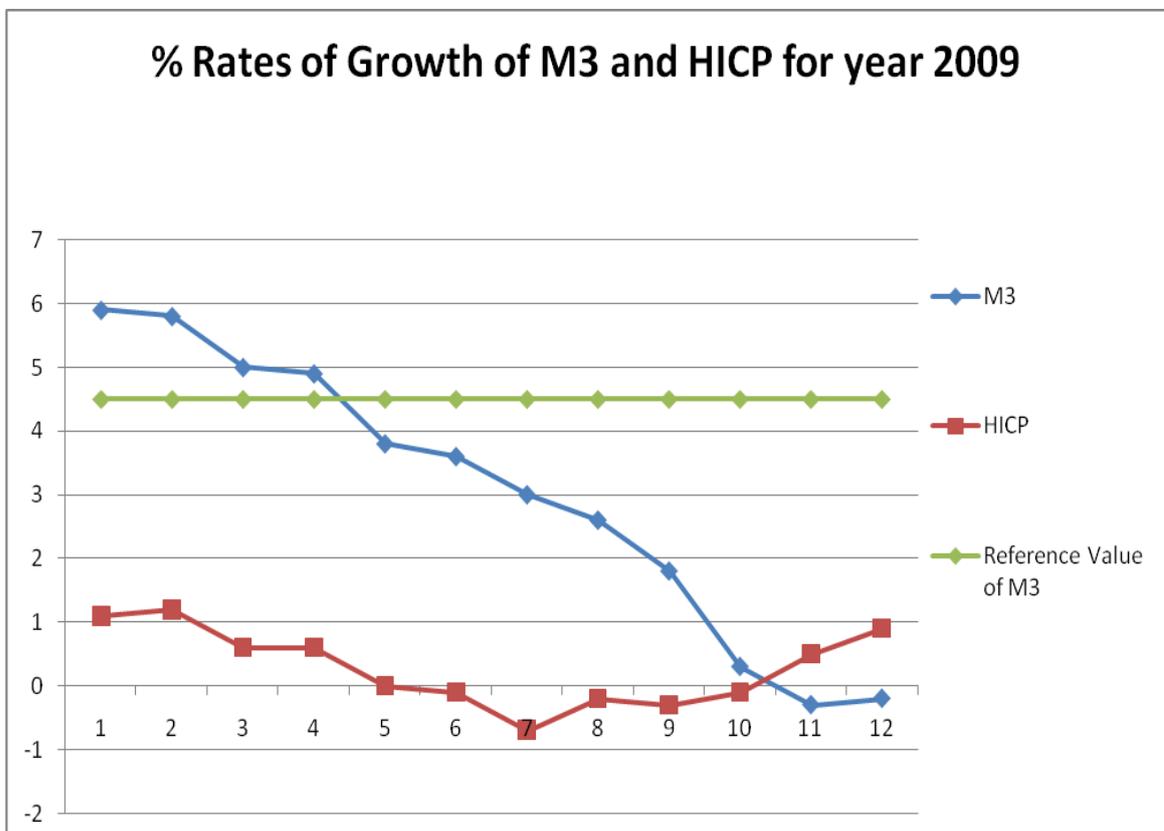
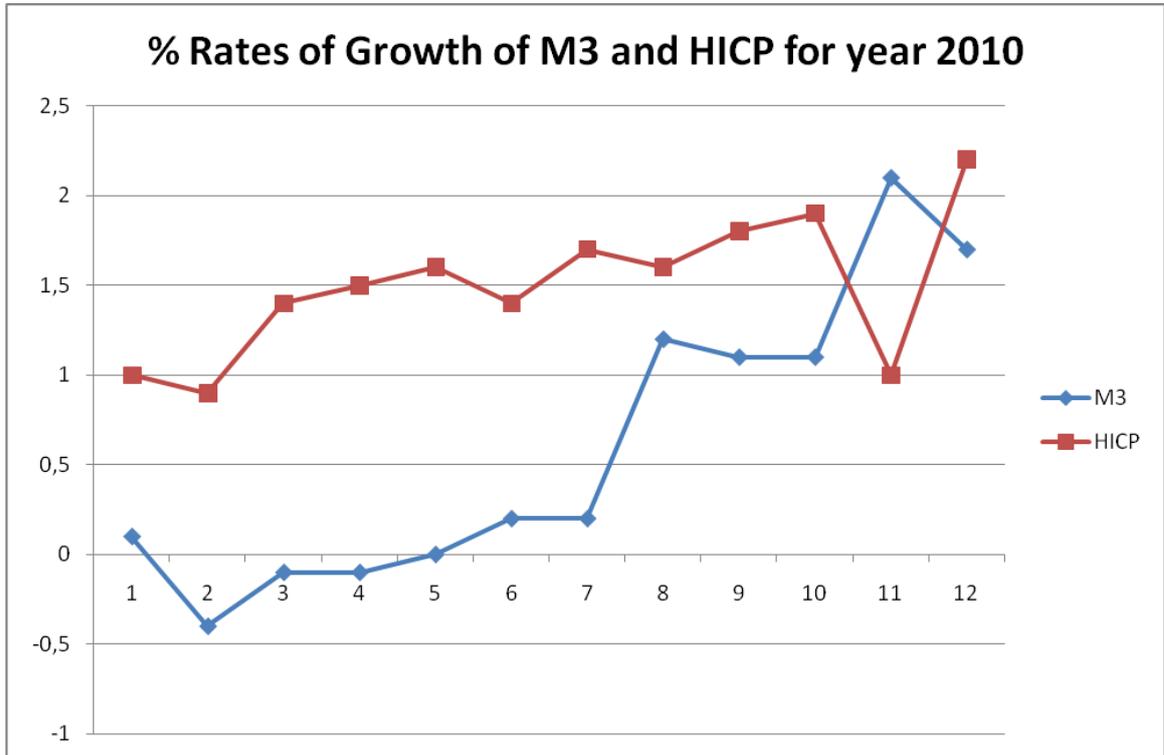


Figure 5



**Figure 6**



**Figure 7**

**Gold price chart: U.S. dollars per troy ounce**



Source: Compiled by mongabay.com using figures from World Bank Commodity Price Data.