"The Five Basic Truths of Anti Inflation Policy and the Stability Oriented Strategy of the European Central Bank (ECB)"

NUMBER OF REFERENCES

0

NUMBER OF FIGURES

0

NUMBER OF TABLES

0

The Five Basic Truths of Anti Inflation Policy and the Stability Oriented Strategy of the European Central Bank (ECB)[1]

Dietrich Schönwitz[2]

Abstract

The article contributes to the ongoing debate on the definition and the ranking of price stability in context with targets of economic policy in market economies and reflects the role of monetary policy in a medium-term and a long-term oriented view. Refering to Milton Friedman's basic truths about inflationary processes five main elements of a stability oriented monetary policy are derived and compared with the strategy of the European Central Bank (ECB) – especially with its liquidity management and the liquidity oriented refinancing tools of European monetary policy. It is shown that in May 2003 confirmed and clarified strategy of the ECB is still a policy of monetary control, but that the role of money is not as prominent as before. In the so called two pillar approach the economic analysis is now the pillar mentioned firstly and the monetary analysis is the pillar mentioned as second one. In this context the discussion on monetary targeting versus inflation targeting is judged as somewhat exaggerated. As possible future concept components of a developed targeting are considered, with its roots on the insight that inflation is a monetary phenomenon and that a monetary policy coping with empirical complexity should not be based mechanically on inflation forecasts.

Key words: European Central Bank (ECB), Liquidity Management, Monetary Policy, Money Stock, Price Stability, Targeting (inflation/monetary), Taylor-rule, Tender Operations.

1. Foundation of the strategy and agenda

In October 1998 the Governing Council of the European Central Bank (ECB) announced the main elements of its stability-oriented monetary policy as single monetary policy for the Euro Area (ECB, 1999). This strategy follows the understanding that inflation endangers the achievement of high ranking targets of economic policy such as growth, employment and social balance of society and that inflation – as Milton Friedman phrased it four decades ago – is a "monetary phenomenon" (Friedman, 1963). With its announcement of May 2003 – after more than four-year experience – the Governing Council confirmed, clarified and gradually adjusted the ECB's monetary policy strategy. In the press release "... the ECB has also ensured that price stability is maintained in a credible and lasting manner in the Euro Area" (ECB, 2003b)[3]. All in all, the policy of the ECB was very successful in achieving its main objective.

First, this article deals with the definition, the feasibility and the justification of price stability as a high ranking target not only of monetary, but also of economic and social policy (parts 2-4).

In a second step the ECB's adjusted monetary strategy and its core operational element, the liquidity management, is explained by considering basic truths of anti inflation policy according to Milton Friedman. By additional using the Taylor-rule the ECB's policy is assessed with regard to its accommodation of economic developments in the Euro Area (parts 5-8).

The third and last step refers to the discussion on inflation targeting as a recipe for monetary policy and future improvement of the concept (parts 9-10).

---

[1] This article is based on a lecture given at the Ukrainian Academy of Banking, Kharkiv Branch, in May 2004.

[2] Rector of the University of Applied Sciences of the German Central Bank, Germany.

[3] The term Euro Area refers to the area comprising those EU Member States that have adopted the Euro. The term Eurosystem denotes the ECB and the national central banks that have adopted the Euro. The European System of Central Banks (ESCB) consists of the ECB and all national central banks of the EU Member States.

Table 1

Definitions of price stability

Country	Indicator	Definition[1]	Time-Horizon[2]
Euro Area	HICP[3]	below but close to 2 %	over medium term
Norway	CPI[4]	2.5 % with a fluctuation margin of ± 1 percent point	focus on 2-year ahead inflation forecast
Sweden	CPI[4]	2 % with a fluctuation margin of ± 1 percent point	focus on 1 to 2-year ahead inflation forecast
Switzerland	CPI[4]	below 2 %	medium term with a focus on three-year ahead inflation forecast
United Kingdom	RPIX[5]	2.5 %	medium term with a focus on 2 year ahead inflation forecast
Australia	CPI[4]	2 – 3 %	medium term
Canada	CPI[4]	midpoint 1 – 3 %	medium term with focus on six to eight quarters ahead
Japan	CPI[4]	no numerical value, qualitative definition[6]	
New Zealand	CPI[4]	1 – 3 %	medium term
United States	not specified, focus on several measures	no numerical value, qualitative definition[7]	

1) As in Norway, Sweden, United Kingdom, Canada and New Zealand very low inflation targets are announced these can be seen as operational definition of the ultimate objective of price stability too.
2) Horizon over which the central bank will try to achieve price stability or re-establish it.
3) Harmonised Index of Consumer Prices.
4) Consumer Price Index.
5) Retail Price Index.
6) Environment where economic agents can make decisions without being concerned about the fluctuation of the general price level (Board of the Bank of Japan).
7) Price stability obtains when people do not consider inflation a factor in their decisions (Alan Greenspan).
Source: Castelnuovo, 2003.

2. The definition of price stability of the European Central Bank (ECB)

The public announcement of quantitative definitions for price stability is an important device to influence inflation expectations and in a wider economic perspective to anchor wage and price setting behaviour. Over the past two decades there has been a growing tendency among central banks to announce numerical definitions for their objective of price stability. If the definition of price stability is not only given in qualitative terms as in the United States and Japan definitions in the form of point respectively ranges for acceptable increases of the level of prices can be distinguished. Sometimes the quantitative definition of price stability is combined with inflation forecasting and inflation targeting as monetary policy strategy.

Table 1 shows different definitions for price stability, depending obviously on economic circumstances in the countries and assessments by the central banks. In 1998 the Governing Council of the ECB announced: "Price stability shall be defined as a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the Euro Area of below 2 %" (ECB, 2001b). In textbooks this rate is characterized as "headline inflation" and distinguished from the "core inflation" (Table 2).

As result of the above mentioned evaluation of its monetary policy in 2003 the Council clarified that "... it aims to maintain inflation rates below but close to 2 % over the medium-term" (ECB, 2004a). So the clarification brought a focus on the upper limitation of the range. The definition of the ECB has two dimensions: time and quantity. Medium-term considers not only the time-horizon over which the ECB will try to achieve or re-establish price stability but also that single fluctuations of prices are not necessarily inflation because inflation is always a lasting process. In ferms of quantitative dimension Paul de Grauwe mentioned that in the 1950s Milton Friedman formulated the view that the optimal rate of inflation is equals to zero because of maximising the total utility of holding money by avoiding decreases of buying power (De Grauwe, 2000). From a pure theoretical view this is true. But in practice of monetary policy – not only of the ECB – considering an appropriate quantitative definition, whether as range or as point, firstly the possibility of deflationary developments and secondly measurement problems must be considered. Therefore "close to 2%" in the adjusted concept means that there is "...a sufficient safety margin to guard against the risks of deflation" (ECB, 2003b). In addition, the ECB is realistic and willing to tolerate rates up to "close to 2%" because – as empirical research shows – non-inflationary price increases are always possible: quality improvements for example may justify higher prices, shifts of demand and supply on markets can cause price movements or measurement errors may be responsible for an increase of the HICP. A restrictive monetary policy aiming to stop such price increases could easily lead to too tight a money supply in relation to possible growth.

Table 2

The concept of a core inflation-rate – the ten most volatile components of the HICP from 1997 to 2000 [1)]

1.	Liquid fuels
2.	Heat energy
3.	Fuels and lubricants for personal transport equipment
4.	Gas
5.	Coffee, tea and cocoa
6.	Vegetables
7.	Oils and fats
8.	Passenger transport by sea and inland waterway
9.	Insurance connected with transport
10.	Fruit

When temporary or volatile developments occur, they may have a significant short-run impact on the headline inflation measured by HICP. In order to identify the lasting trends on the general level of prices a number of "underlying" or "core" inflation measures have been proposed.

The methodological problem of all these approaches is to determine when a price change can be considered as "erratic" or "persistent". Exclusion based concepts are until now the most commonly used measures of core inflation. Based on volatile developments fuels, gas and energy are often selected as components to be removed. In order to remove erratic fluctuations associated with weather conditions vegetables and fruit are also often excluded from the headline index. The ranking above shows the components of the HICP proved to be most volatile in the Euro Area. The components shown in bold are those excluded by the "excluding energy and unprocessed food" measure of core inflation.

The objective of the ECB is defined in terms of the headline HICP, because this is the most homogeneous statistic that most closely approximates the consequences of decreases of buying power for private households.

1) Ranking according to the standard deviation.
Source: ECB, 2001a.

As table 1 also shows the ECB is not the only central bank using a time-horizon for price stability which is not exactly numerically fixed. In this context the Council of Economic Advisers in Germany (Sachverständigenrat) mentions the opinion, that a fixed time-horizon may be not the

best solution, because the horizon depends on the economic circumstances of the economy and the dimension and type of shocks disturbing price stability (Sachverständigenrat, 2003). Anyway: very often "medium term" means up to two years.

As far as indicators are specified the ECB and other central banks concentrate on consumer prices. This means that asset prices as house or stock prices are not included. Since some years the question whether central banks should declare the stabilisation of asset prices as target was lively discussed in context with so called bubbles which could threaten financial stability (Meltzer, 2003). Of course, a central bank has to consider the impact of asset prices on demand, supply and other prices and therefore to analyse their development – and might even signal concerns about unexpected asset price valuation. For example, asset market developments can have some consequences for consumption demand and investments because of risen stock prices the economic actors got wealthier: "Higher wealth ... encourages people to spend more because they feel richer" (Calvery, 2002). This may endanger price stability. The continuing scepticism of central banks in context with asset price stabilisation as target results firstly from – as Hermann Remsperger (2003) emphasizes – uncertainty with regard to identifying speculative bubbles and assessment of the fundamental value of asset prices and secondly from doubts – as Alan Greenspan is quoted – that central banks can use their monetary tools to efficiently avoid or prick bubbles, which is a matter of feasibility of targets. For these reasons "... central banks around the world agree that they must not target asset prices" (Issing, 2004b). The feasibility of targets is essential for the central bank's reputation and credibility.

3. What monetary policy can do: Price stability as a feasible target

The question "What can central banks do?" is related to feasibility too. Thinking generally about this two distinctions are helpful: first, the analytical distinction between the real sector and the monetary sector of the economy, and second, the distinction between an up to medium-term and a long-term time horizon for results of monetary policy actions (Schönwitz, 2004).

The real sector consists of supply and demand of goods and services and regularities of human behaviour in this context, the monetary sector of regularities with respect to supply and demand of money. As for the monetary sector central banks are generally accepted to influence the money stock and that maintaining price stability in the medium-term is a feasible objective for monetary policy. For the real sector price stability is a vital prerequisite for the smooth functioning of the market economy, and hence of sound economic growth and a high level of employment. This position that to maintain price stability is a foundation for the achievement of other targets of economic policy was a core conviction of the monetary policy of the Deutsche Bundesbank until the ECB came to existence (Deutsche Bundesbank, 1994).

With respect to going a step further and assigning monetary policy directly an objective for real growth and employment in the long-term the ECB refers to "the long-run neutrality" (2004a) of money. This means, that a direct responsibility and activist monetary policy would have been misguided, since monetary policy has very limited scope to have lasting impact on real variables. "Real income or the level of employment in the economy are, in the long run, essentially determined by real (supply-side) factors. Those are technology, population growth, the preferences of the economic agents and all aspects of the institutional framework of the economy (notably property rights, tax policy, welfare policy and other regulations determining the flexibility of markets and incentives to supply labour and capital and to invest in human capital). In the long-run the central bank cannot influence economic growth by changing the money supply" (Hämäläinen, 2003). In this view it is the task of fiscal and structural policy and – having power on the labour markets – those involved in the collective wage bargaining process to preserve and, if necessary, in addition to market mechanisms, to develop and improve the growth potential of the economy.

Therefore the ECB concentrates on the feasible objective of price level stability. This does not exclude that in an up to medium-term oriented view the ECB considers real economic aspects and accommodates – not initiates – economic developments; for example by varying interest rates in order to smooth economic cycles. In the Eurosystem such an up to medium-term oriented support of targets of the general economic policy of the governments is a prescription if –

and politicians often tend not to mention this precondition – the main task to guarantee price stability and safeguard the currency is not in danger.

In context with the question "What monetary policy can do?" it is very interesting that Jean-Claude Trichet, after coming into office in 2003 as president of the ECB and successor of Wim Duisenberg, emphasized repeatedly that structural reforms are necessary to solve Europe's economic problems. This fits not only to the view of many economists but also to the position that a central bank cannot improve the growth potential of the economy in the long-run simply by measures of monetary policy. Assigning such an objective to the ECB would not be a feasible task and in the last consequence would mean a loss of credibility.

Sirkka Hämäläinen (2003), former member of the Executive Board of the ECB, mentions another danger: "If monetary policy is believed to be able to fix the structural and real economy problems, both the private sector and political decision makers would feel tempted to shirk their responsibilities." In the history of the European Union this is a very acute topic because suggestions to oblige the ECB directly to additional targets equal to price stability, as growth and employment and demands for an activist monetary policy come up again and again. The result may be a type of "coordination" between governments and monetary authorities which "... can easily become an euphemism for pressuring the central bank" (Alesina, 2003). Then inflation will be a very real danger, not only being possible but waiting in the wings.

4. Price stability why? – Not only an economic but also a high ranking social target!

In an article on the value of monetary stability in the world today Hans Tietmeyer, former president of the Deutsche Bundesbank, refers to Nikolaus Kopernikus who recorded an interesting experience as early as 1529: "He had observed that in countries with good money the arts and business flourish, and there is wealth everywhere, while laziness, idleness and indifference prevail in countries where bad money is in circulation" (Tietmeyer, 1996). There is a good reason to believe that this statement still holds true nearly five hundred years later.

In literature the positive economic consequences of price stability for economic growth are broadly accepted, mainly by (Motley, 2002 and Rodriguez-Palanzuela, 2003):

- improving the transparency of relative prices and thereby helping the market via price functions to guide resources to where they can be used most productively and efficiently;
- reducing inflation risk premia in interest rates, uncertainty of economic prospects and thereby increasing the incentives for firms to invest;
- avoiding unnecessary hedging activities for example by stockpiling real goods since they retain their value better in inflationary circumstances than financial assets;
- supporting the acceptance of currency, increasing the benefits of holding cash and thereby avoiding transaction costs of transforming currency in circulation to near money assets vice versa.

But it is very important to recognize, that price stability is not only a high ranking economic target but also a social target in developed market economies. Such market oriented economies try to establish social balance and effective social protection of the members of society. To achieve this programme they rely not only on social insurance but also – according to the principle of subsidiarity – on self precaution and self protection of the people.

Inflationary processes endanger these principles of socially balanced economies (Schönwitz, 1995):

- The money for state or privately financed social protection does not come out of the blue. Only efficiently organised and working economies can guarantee sustainable social security mechanisms. Therefore the contribution to economic efficiency and growth by price stability is a social benefit.
- By inflationary processes the buying power of money is eroded and by this the motivation for self precaution is endangered. In a life cycle oriented view even moderate

inflation rates reduce the value of money saved e.g. for old age purposes considerably. For example, in the half century of existence of the Deutsche Mark this "stable" acknowledged currency lost about two thirds of its buying power.

- First of all inflation concerns those members of society who in a social market economy need state support at first: the so called "minor saver" who has only his savings account with not high enough interest rates to compensate inflationary effects, who has not the wealth for stockpiling real goods and who cant afford professional advisors for portfolio optimizing.

- Inflation triggers off distribution conflicts plus social imbalance because groups and influence, with power on the markets, try to hold their share by demanding higher wages or higher prices in case of inflationary expectations. In textbooks on economics such dynamic spiral effects are discussed as supply side reasons of inflation (Issing, 2003).

Considering all these economic and social arguments it is very clearly justified to judge price stability as a very high ranking not only economic but also social target for politicians as well as central bankers which is connected very closely to other high ranking targets such as economic growth and employment. It is very clearly not only a "technical" target.
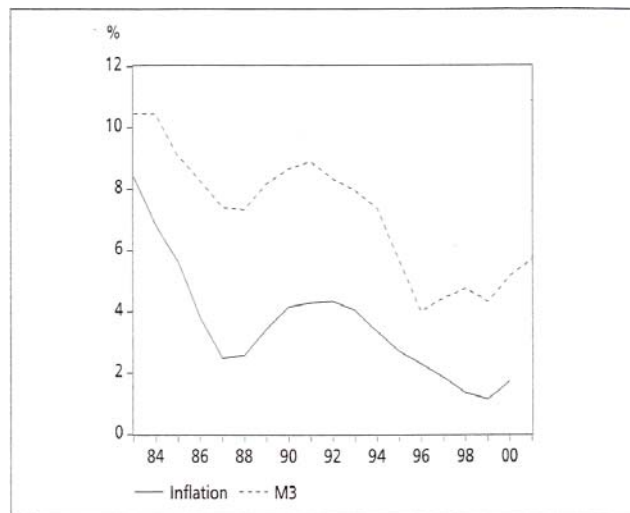
5. Tribute to Milton Friedman: Basic truths of anti inflation policy

Milton Friedman concludes that five basic truths incorporate nearly everything known about inflationary processes (Friedman, 1992):

1. Inflation is always and everywhere a monetary phenomenon. Inflationary processes are caused by an increase of the money stock quicker than the increase of the output (but there may exist many reasons for the increase of the money stock).
2. The development of inflationary tendencies needs time. As well it needs time and firmness to cure inflation.
3. There is one appropriate strategy for inflation therapy: to reduce the speed of the expansion of money stock.
4. In our world today state institutions influence the money stock or are able to influence the money stock.
5. Side-effects of consequent inflation therapy, as transitory unemployment, may be inevitable.

During the last years there was some discussion about Friedman's core conviction of the strong relation between money stock and prices. Recent empirical research confirmed this relation very impressively. Manfred J. M. Neumann (2003) did this for the Euro Area from the middle of the 80s until 2002 and W. G. Dewald (2003) in a long-term cross-country study for 13 industrial nations from 1880 to 2001. Dewald concludes that cross-country average wide money stock growth trends "... closely correspond with cross-country average inflation and nominal GDP growth trends in both amplitude and frequency ... Such evidence tends to confirm Milton Friedman's dictum, that inflation is always and everywhere a monetary phenomenon." Therefore tribute to Friedman in order to derive an appropriate monetary policy strategy is justified. Even in a global view – so the results of a study of the ECB (2004b) – "... overall there is a positive correlation between global inflation and global monetary growth ..." since 1986, the relation becoming less clear from mid 1995 onwards. But it should be noticed, that uncertainties in the world, especially since September 11th 2001, caused disturbances in the relation of some macroeconomic variables, hence a – maybe transitory – much higher liquidity preference.

A somewhat closer look at the relation between the development of a broad money stock and the price level in the Euro Area (Figure 1) shows that so far the second dictum of Milton Friedman also holds true in a longer term view: In the Euro Area there is a time lag between the money stock curve M_3 and the inflation curve of minimum one year.

Inflation measured by consumer prices. M_3 shifted forward one year.
Source: Görgens, 2003.

Fig. 1. Money stock-price relation for the Euro Area

With respect to "unpopular side-effects" of inflation therapy Friedman (1992) mentions a "popular" wrong "logic" of economic policy: That politicians have to choose between inflation or unemployment as alternative. In reality he argues, the correct conclusion is that there is a difference between firstly higher and lasting unemployment coming from inflationary processes and secondly higher rates of unemployment as transitory side-effect of a therapy which cures the inflation at its roots. Even this insight was empirically stated: firstly by the empirical death of the so called modified Phillips-curve (Issing, 2003) and secondly recently by William A. Niskanen who found for the United States, that "... in the long-term the unemployment rate is a positive function of the inflation rate"(Niskanen, 2002) – with a time lag between inflation rate and unemployment rate of two years.

Therefore the five basic truths on inflationary processes are a solid foundation for the derivation of an appropriate strategy of monetary policy with also five main elements:

1. The strategy of monetary policy should be a strategy of monetary control with a prominent role of money.
2. In its achievement of price stability the strategy should be medium-term oriented not only because of time lags between money stock and price development but also because of time lags between actions of monetary policy and consequences for the money stock due to intermediation of monetary impulses via the banking system.
3. In developed market systems not only the central bank but also the private banks can produce money via multiple bank deposit creation. Therefore the tool box for monetary policy must contain efficient instruments for influencing the liquidity of the banking system and conducting a flexible liquidity management as core part of monetary policy.
4. A firewall against influence of state institutions and political pressure to influence the money stock because of such wishes is central bank independence from government. Empirical research for western countries shows that the higher the degree of independence is the lower the inflation rate is.
5. Because of unpopular transitory side effects of consequent anti inflation policy a very careful communication between central bank and the public is very important – not only to foster economic insight but also to establish central bank accountability, credibility and acceptance of on the first view unpopular measures.

6. The ECB's confirmed strategy: Inflation as a monetary phenomenon - the still prominent role of money

Central bank independence has a tradition of more than a half century in Germany, not at least because of political pressure on the former Reichsbank and as a consequence the detoriation of the currency. The idea of independence was accepted by European Governments for the ECB and the Eurosystem too: Independence from government as a protection against political influence is a precondition to join the Euro Area.

Nearly half a decade after the implementation of its medium term oriented monetary policy strategy the ECB (2003) stated that the economic foundations on which the prominent status of money was based remain solid. The status of money is signalled by the M_3 growth and the conclusion that present growth of the money stock exceeding the path of aggregate growth of the economy is the inflation potential of the medium-term future holds true. This is the justification of the still prominent role of money as one of the still two pillars of the ECB's monetary policy strategy. As Figure 2 demonstrates, the two pillar structure consists of an analysis of economic dynamics and shocks as one pillar and of an analysis of monetary trends as another pillar. Monetary trends are mainly represented by the development of M_3 and its components.

Source: ECB, 2003.

Fig. 2. The clarified two pillar strategy

M_3 is a broad money stock definition with the analytical intention to identify the buying power of non-banks because this spending power in relation to the development of real GDP and velocity of money is relevant for inflationary processes. Therefore as components of M_3, apart from currency in circulation and overnight deposits, so called "near money assets" are included (Table 3, position 3 to 7). Near money assets there are liabilities of the banking system which can be transformed by non-banks without too much delay to currency in circulation or overnight deposits as generally accepted means of payment (M_1).

The non-banks – especially firms – hold such assets in order to optimize their cash holding by getting a rate of interest. The definition of M_3 may change and has changed due to developments on financial markets. Some years ago, for example, repurchase agreements with agreed maturity of non-banks with banks as buying-bonds-and-selling-them-back-contracts, had no importance. If not included as extended cash holding such transactions reduced M_3 which would be a wrong signal for monetary authorities because the potential buying power remains at the same level.

Table 3

Broad money stock M_3 used by the ECB as reference value for the Eurosystem

Liabilities [1]	Position	Money stock definition
Currency in circulation	1	
Overnight deposits	2	M_1
Deposits with agreed maturity up to two years	3	M_2
Deposits redeemable at notice up to three month	4	M_3
Repurchase agreements	5	
Money market fund shares/units	6	
Money market paper and debt securities up to two years	7	

1) Liabilities of the money-issuing sector (banks) held by the money holding sector (non-banks); near money assets included (pos. 3 to 7).
Source: ECB.

The analysis of monetary trends is cross checked by the mentioned economic analysis as an additional pillar. The variables being subject of this analysis include, for example: developments in overall output, aggregate demand and its components, fiscal policy, the formation and cost of capital, labour market conditions, a broad range of price, interest and cost indicators, plus developments in the exchange rate.

In the ECB's strategy since the announcement of May 2003 the role of money is still prominent but not as prominent as before. This is the main aspect of the adjustment. A comparison with former statements of the ECB (2001b) shows that until then money was undisputedly the first pillar of the strategy. Now (Figure 2) it is one of two pillars and in the picture used by the ECB lately even the second one. This may have something to do with the overshooting of M_3 in comparison to the stipulated value of 4.5% in the first years of the 21st century. This overshooting was not necessarily completely inflationary because of very low interest rates and uncertain expectations non-banks tended to hold more near money assets than they would normally do and were more reluctant to invest in longer-term financial assets, as stocks, bonds or mutual funds which would have been capital formation and not (extended) cash holding. Under such special circumstances the overshooting of M_3 does not indicate the real development of the buying power.

The consequence for monetary policy decision-making is that an additional economic analysis and cross checking become more important. This is not really a "new" strategy as some central bank watchers phrased it (Hefeker, 2003) but an adjustment of the monetary strategy inherited from the Deutsche Bundesbank, developed to a two pillar approach by the ECB and represented by Otmar Issing, former chief economist of the Bundesbank and afterwards member of the board chief economist of the ECB (Issing, 2002a and 2004b). So the prediction of Paul de Grauwe (2000) in context with the monetary control of the ECB came true only partly. He assumed "... that it will use the money stock as one of the many indicators of future inflation without giving it the privileged position it has now." And the theoretical roots of the still prominent status of money very clearly refer to the insights of Milton Friedman on basic truths on inflationary processes and not only to the Deutsche Bundesbank and its representatives.

For the ECB accountability and thereby transparency as element of monetary policy derived from Friedman's basic truths is the reverse side of central bank independence: "Granting such a decision making authority to an independent central bank, in a democracy, means that the central bank must assume responsibility for its use of this authority" (Issing, 2002b). From its beginning the Governing Council and the Board of the ECB invested much time and many resources explaining its concept and gaining credibility and accountability for the single monetary policy in

Europe (ECB, 2002b). Regularly used and well accepted devices of the communication policy of the ECB are as follows: annual reports, monthly bulletins, monthly press conferences, special publications and research papers, speeches, lectures and articles from the members of the Governing Council, quarterly hearings in the European Parliament and a professional use of the internet as communication device.

7. Operational aspects: The liquidity management of the ECB

A still prominent role of money means stipulating monetary values by estimating firstly real economic growth, secondly the development of velocity of money and thirdly tolerable price increases. Using the "quantity equation" in log-linear form this means in differences[1]:

$$\Delta m + \Delta v = \Delta \rho + \Delta y$$

with
Δm = money stock,
Δv = velocity,
Δp = price level,
Δy = real GDP;
and after rearranging:

$$\Delta m = \Delta p + \Delta y - \Delta v.$$

For the future growth of GDP the ECB used until now 2 %, for Δv a decline of – 0,5 % per year. Considering the inflation rate as below 2 % but close to 2 % the result for monetary control is an annual increase of 4,5 % of M_3 in medium term.

The ECB doesn't speak of "targets" for M_3 but of "reference values". This indicates that deviations – which should be explained – are possible and that the ECB conducts a medium-term approach. In context with the adjustment of its strategy the ECB made the decision in future not to check the reference value on a year-to-year basis in order to underline the medium-term orientation of the achievement of price stability. The ECB will "... continuously monitor the validity of the conditions and assumptions underlying the reference value and communicate any changes to the underlying assumptions, as soon as they become necessary" (ECB, 2003b).

Figure 3 explains the basic logic of monetary control as a sequence of relations. By using tools of monetary policy the central bank influences the price for central bank money and thereby firstly the behaviour of commercial banks in context with demand and supply of central bank money (base money) and secondly the price of liquidity offered by the banking system for non-banks. Central bank money or high-powered base money is currency in circulation and deposits held with the central bank. When the non-banks demand liquidity from the banks for example by taking out loans multiple bank deposit generation via the bank lending channel starts and the money stock M_3 is influenced. Hopefully this is in accordance with the reference value for M_3 – which must not hold true all over the time because of uncertainties in the reactions of banks and non-banks (Arestis, 2003). Therefore monetary control is an ambitious concept.

---

[1] Since changes of logarithms are used the following differences can be interpreted as growth rates in percent from one year to the other.

```
┌─────────────────────────────────────────────┐
│           Tools of monetary policy           │
└─────────────────────────────────────────────┘
                       ↕
┌─────────────────────────────────────────────┐
│      Focus on short-term interest rates:     │
│   influencing price for central bank money   │
└─────────────────────────────────────────────┘
 Money market          ↕
┌─────────────────────────────────────────────┐
│  ┌───────────────────────────────────────┐  │
│  │ Link between central bank and         │  │
│  │ commercial banks:                     │  │
│  │ demand and supply of central bank     │  │
│  │ money                                 │  │
│  └───────────────────────────────────────┘  │
│                   ↕                          │
│  ┌───────────────────────────────────────┐  │
│  │ Link between commercial banks and     │  │
│  │ non-banks:                            │  │
│  │ demand and supply of liquidity        │  │
│  └───────────────────────────────────────┘  │
└─────────────────────────────────────────────┘
                       ↕
┌─────────────────────────────────────────────┐
│            Control of money stock            │
│       according to reference value for M₃    │
└─────────────────────────────────────────────┘
                       ↓
┌─────────────────────────────────────────────┐
│   Safeguarding the currency by stability of  │
│                    prices                    │
└─────────────────────────────────────────────┘
                       ↓
┌─────────────────────────────────────────────┐
│   Support of other high ranking economic     │
│   targets (economic growth, employment)      │
└─────────────────────────────────────────────┘
```
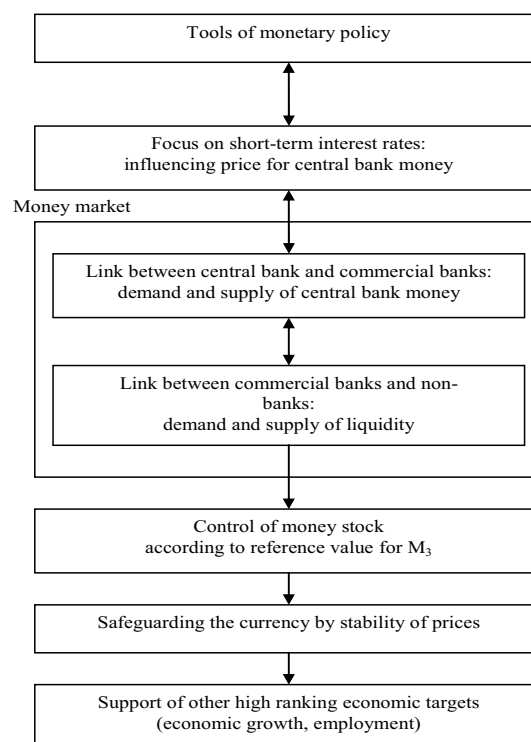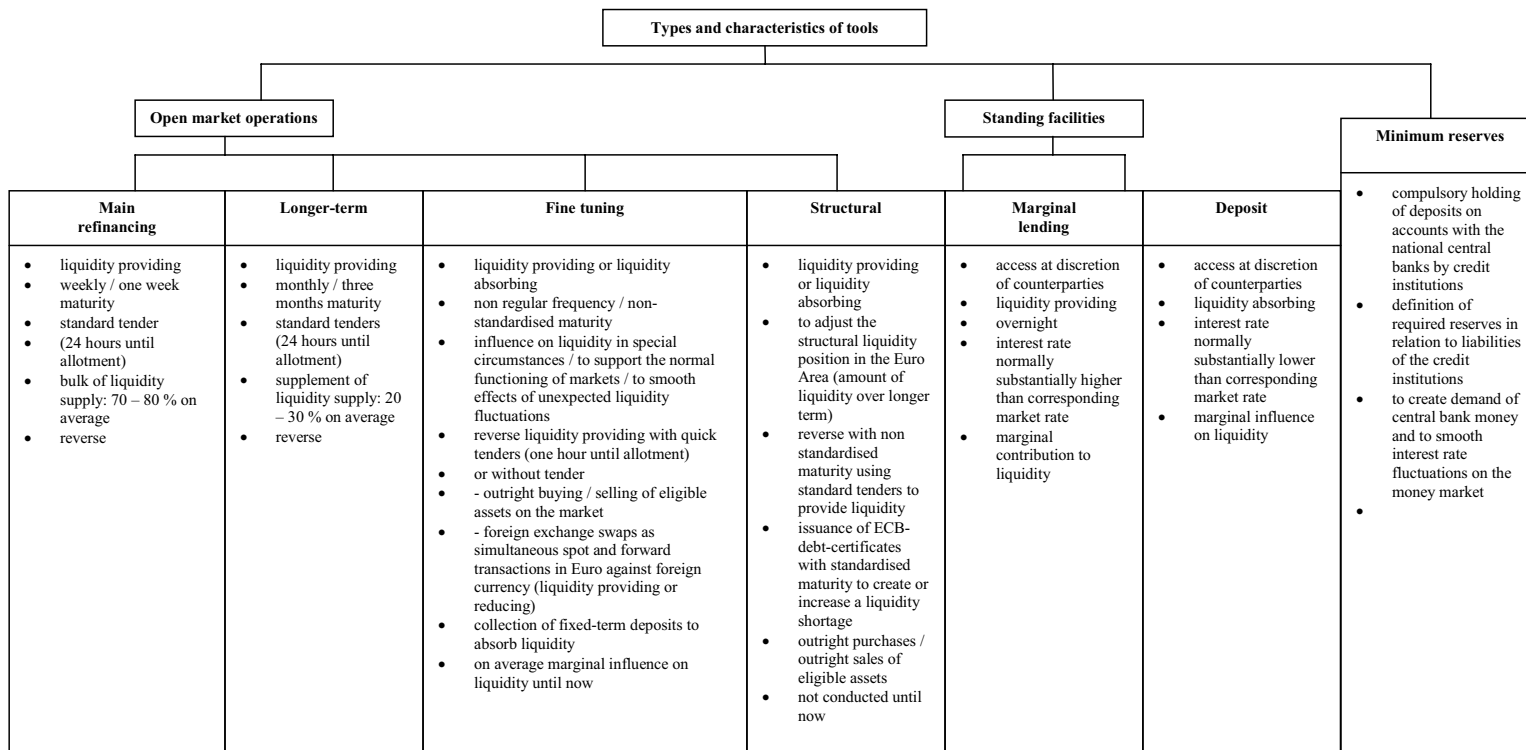
Fig. 3.   Basic logic of ECB's monetary control

The ultimate intention of the strategy is – as Figure 3 indicates, too – to safeguard the currency and by achieving this to support the achievement of other high ranking targets of economic policy. As already explained in the view of the ECB the main contribution to economic growth and employment is an indirect one through price stability.

The regularly used tools of liquidity providing monetary policy of the ECB are open market operations dealing with a fixed range of assets as collateral or under a repurchase agreement. These reverse transactions are conducted as main refinancing operations on a weekly basis with a maturity of one week and as longer-term refinancing operations on a monthly basis with a maturity of three months (ECB, 2004a). Figure 4 gives an overview on the tools of ECB's policy.

The longer-term refinancing operations are organized as pure variable rate tenders with pre-announced allotment volumes satisfying the bids at the individual bid rates.

The main-refinancing operations can be executed as tenders in the form of a fixed rate or variable rate tender and the ECB decides on the amount of liquidity provided. In a fixed rate tender the interest rate is specified in advance and the banks bid the liquidity they wish to get at the fixed rate. In variable rate tenders the counterparties bid both the amount of money and the interest rate and the ECB may set a minimum bid rate in order to give a hint on the monetary policy stance. The bids with the highest interest rate are satisfied first, followed by bids with successively lower rates. The lowest accepted rate is the marginal rate of allotment. For each individual allotment, the interest rate is equal to the interest rate bid. Since 2000 the ECB prefers variable rate tenders with minimum bid rates as more market oriented tool.

Types and characteristics of tools

Open market operations

Standing facilities

Minimum reserves

Main refinancing	Longer-term	Fine tuning	Structural	Marginal lending	Deposit
• liquidity providing • weekly / one week maturity • standard tender • (24 hours until allotment) • bulk of liquidity supply: 70 – 80 % on average • reverse	• liquidity providing • monthly / three months maturity • standard tenders (24 hours until allotment) • supplement of liquidity supply: 20 – 30 % on average • reverse	• liquidity providing or liquidity absorbing • non regular frequency / non-standardised maturity • influence on liquidity in special circumstances / to support the normal functioning of markets / to smooth effects of unexpected liquidity fluctuations • reverse liquidity providing with quick tenders (one hour until allotment) or without tender • - outright buying / selling of eligible assets on the market • - foreign exchange swaps as simultaneous spot and forward transactions in Euro against foreign currency (liquidity providing or reducing) • collection of fixed-term deposits to absorb liquidity • on average marginal influence on liquidity until now	• liquidity providing or liquidity absorbing • to adjust the structural liquidity position in the Euro Area (amount of liquidity over longer term) • reverse with non standardised maturity using standard tenders to provide liquidity • issuance of ECB-debt-certificates with standardised maturity to create or increase a liquidity shortage • outright purchases / outright sales of eligible assets • not conducted until now	• access at discretion of counterparties • liquidity providing • overnight • interest rate normally substantially higher than corresponding market rate • marginal contribution to liquidity	• access at discretion of counterparties • liquidity absorbing • interest rate normally substantially lower than corresponding market rate • marginal influence on liquidity

Minimum reserves

• compulsory holding of deposits on accounts with the national central banks by credit institutions
• definition of required reserves in relation to liabilities of the credit institutions
• to create demand of central bank money and to smooth interest rate fluctuations on the money market
•

Source: ECB, 2004a.

Fig. 4. The Eurosystem's tools of monetary policy

Under both forms of open market operations it regularly happens that the banks want more central bank money than the ECB is willing to offer and bids are satisfied pro rata in line with the ECB's decision of the total amount of liquidity to be allotted. This guarantees that central bank money is not an affluent liquidity. For example, in the six months, from October 2003 to March 2004, the aggregate allotment ratio for main refinancing operations was about 80%.To assist the counterparties in preparing their bids for the forthcoming main refinancing operation the ECB announces each week the estimated central bank money liquidity needs of the banking system for the period until the day before the settlement of the next main refinancing operation.

The ECB judges that the Eurosystem's framework for liquidity management has been functioning well since the start in 1999 and has generally allowed the ECB to steer liquidity conditions and short-term interest rates in a smooth fashion. The marginal rate of allotment of the main refinancing operations has a clear leading function for the overnight interest rate EONIA.[1] This framework – so the ECB – has also proved to be robust when faced with a series of extraordinary challenges such as the transition to the year 2000 and the terrorist attacks on September 11, 2001.

8. Does the ECB accommodate economic developments properly? – An assessment by the Taylor-rule

As mentioned in an up to medium-term view in the Eurosystem support of targets of the general economic policy of the governments by the central banks, e.g. to smooth economic cycles by interest rate variations, is a prescription if the main task of price stability is not endangered. This implies that the ECB should fulfill its task at the lowest possible interest rate in order to facilitate the general economic policy of the European Community (Schönwitz, 2002). But very often politicians expect more from the central bank than to accommodate economic developments and therefore it is not astonishing, that from time to time having in mind an activist monetary policy the central bank is accused to do not enough for economic recovery.

In order to trace if the ECB considers real economic developments in its monetary interest rate policy the Taylor-rule can be used (Fendel, 2002; Sachverständigenrat, 2003 and Scheide, 2001). Reduced to the main message the Taylor-rule is rather simple: Considering interest rate variations the central bank should react firstly on output gaps as gaps between increase of real GDP and trend increase of GDP and secondly on differences between acceptable inflation rate and existing inflation rate:

$$i_t = (p + \bar{\pi}) + \alpha \cdot (\pi_t - \bar{\pi}) + \beta(\gamma_t - \bar{\gamma})$$

$i_t =$ short-term interest rate influenced by the central bank,

$p =$ short-term equilibrium real interest rate,

$\bar{\pi} =$ medium-term acceptable inflation rate,

$\alpha =$ inflation coefficient,

$\pi_t =$ existing inflation rate,

$\beta =$ output gap coefficient,

$\gamma_t =$ existing increase of GDP,

$\bar{\gamma} =$ trend increase of GDP.

The Council of Economic Advisers (Sachverständigenrat) of Germany used the Taylor-rule for empirical research on the monetary policy of the ECB from 1999 to 2003 in its last expertise, specifying the components of the rule as follows (Sachverständigenrat, 2003):

$p = 2\ \%,$

$\bar{\pi} =$ as reference value of the ECB $1 - 2\ \%,$

---

[1] The Euro Overnight Index Average (EONIA) is an average interest rate for the money market of the Euro Area stemming from selected banks.

$\alpha = 1.5$,
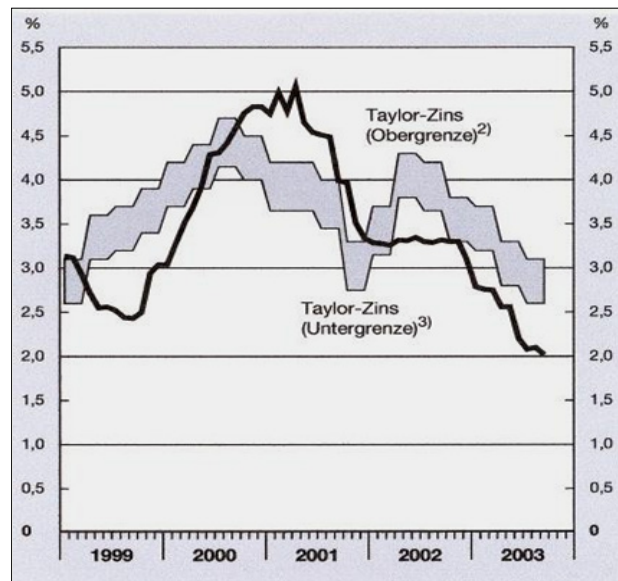
$\beta = 0.5$,

$\bar{\gamma} = 2.5\,\%$.

The Taylor-rate prescribes that a central bank should reduce the short-term interest rate when existing inflation rate is lower than the medium-term acceptable inflation rate and when the output gap is negative (= increase of real GDP is lower than trend increase of GDP).

As the overnight interest rate EONIA follows the marginal rate of allotment of the main refinancing operations in comparison with the Taylor-interest rate its development can be used to assess the monetary policy of the ECB. According to the a "rule of thumb" an EONIA above the Taylor-interest rate indicates restrictive monetary policy, an EONIA below – an expansive monetary policy. Figure 5 shows a mixture of both from 1999 until 2003 with more impact of an expansive orientation in these five years.

Therefore the Council of Economic Advisers (Sachverständigenrat) concludes, that the criticism of not paying enough attention to real economic developments is not justified. On the contrary: Compared with Taylor-rule interest rates the monetary policy of the ECB was clearly expansive in the last two years of recessive tendencies in the Euro Area and support for economic recovery, which did not come in the expected strength because obviously of other "structural" reasons of sluggish development (Becker, 2002).

9. Monetary targeting versus inflation targeting: A somewhat exaggerated dispute

Recently there has been some lively dispute about "monetary targeting" versus "inflation targeting". This discussion seems to be a bit exaggerated and sometimes the opponents seem to stress differences which are not so remarkable in reality – especially when reality of monetary policy decision making is considered.

[1] The shaded range of the Taylor-rate results from the assumptions $\bar{\pi} = 1$ as upper borderline and $\bar{\pi} = 2$ % as lower borderline. The bold curve shows the development of the EONIA.

Source: Sachverständigenrat, 2003

Fig. 5. Interest rate policy of ECB and Taylor rule – development of EONIA and Taylor-rule rates for 1999-2003[1]

If inflation targeting (Neumann, 2003) means to keep inflation stable over the medium-term, so that over the medium-term the actual inflation rate moves at the level of the inflation target even the Bundesbank, following explicitly monetary targeting, had inflation targets by using an "unavoidable inflation rate" as one component for the derivation of the monetary target band width. And the still monetary oriented ECB, with its definition of price stability "below 2 %, but in the medium-term close to 2 %", has an inflation target, too. The difference may be the degree of dependence on inflation forecasts. Otmar Issing (2004a) made this clear: "We have a quantitative definition for our primary objective ... so we are in that sense an inflation targeter. If you think inflation targeting means a strategy where you aim for low inflation, then we are an inflation targeter! The real point at issue is that according to a different meaning of 'inflation targeting', interest rate decisions should be made more or less mechanically on the basis of forecasts. We are certainly not an inflation targeter in that sense." However, thinking about the decision-making behaviour for example of the Bank of England it would be very big surprise if in an explicitly inflation targeting central bank like the Bank of England the discussion differed much from the discussions inside the ECB Governing Council and money stock growth is not taken into account, as a key variable by the insiders.

Considering this, it is not astonishing that a cross-country study for 20 industrial, moderate-inflation economies promoted by the International Monetary Fund (IMF) argues, that there are on average no "discernible benefits" from inflation targeting monetary policy in comparison with a performance without any inflation targets (IMF, 2003). So it seems to be an acceptable conclusion to reduce the dispute to a discussion on appropriate communication devices of monetary policy and the question: What is the best recipe for communication with the public in order to bring or keep inflation expectations down? The answer to this question might differ from central bank to central bank. "But one should always stress the role of money. ... The money link has to be communicated to the public." And – with reference to the discussion about the ECB's concept and the demand to abandon the stipulating of monetary reference values – " … one shouldn't change concepts or models too quickly as you can damage credibility for nothing" (Neumann, 2003). To accept that inflation is a monetary phenomenon and price stability as dominant objective implies that the central bank should not give up target or medium-term reference growth rates of money which they believe will over time result in promoting price stability (Sprinkel, 2004).

10. Further discussion on monetary strategy: Developed Monetary Targeting

Therefore it is a reasonable way, as the ECB stated in its announcement in May 2003, to clarify and then confirm the concept of monetary policy for public and open discussion. This is not a "too rapid change" of the concept but a gradual adjustment based on the experience of some years under circumstances which were one of the biggest challenges for economic and monetary policy in the history of modern Europe: to manage a single monetary policy for the Euro Area since January 1999 and launching the Euro as common currency in circulation at the beginning of 2002.

In the process of public and open discussion further development of the monetary strategy can be expected, especially as additional contribution to transparency and predictability. In this context and with the focus on the last amendment three aspects may be considered:

1. It could be made more transparent how the cross-checking between economic analysis and monetary analysis really works, which information from the economic and monetary analysis is considered, in which way and how a consistent assessment of the economic situation in the Euro Area results from cross-checking (Sachverständigenrat, 2003).
2. Until now half-yearly prognoses of inflation and growth play only a minor part in the ECB's strategy. More emphasis on such prognoses – not mechanically use – could improve transparency and predictability of decision making without giving up monetary control. On the contrary such supplement could establish a developed form of monetary targeting, with focus on: first, money stock; second, on inflation forecast; and third on interpersonally practicable cross-checking.
3. For the US Federal Reserve and the Bank of England it is common to publish the minutes and the votes of decision making. Even with the enlargement of the Euro-

pean Union, the ESCB and later the Eurosystem waiting as next challenge with respect to the voting behaviour of new Governing Council members the ECB could trust in the integrating power of the meanwhile more mature institution. Helmut Schlesinger, one of the Presidents of the Bundesbank spoke of a "Thomas-Becket-effect" (Schlesinger, 1993) and kept in mind the integration of persons of different political origin in an independent and stability oriented monetary policy. Following this, voting will mean voting strictly on a single monetary policy for Europe and publication of voting would not endanger predictability.

References

1. Alesina, A. The Coordination of Monetary and Fiscal Policies in Europe: A Sceptic's View // Deutsche Bundesbank – Auszüge aus Presseartikeln, 2003.-. No. 6.- pp. 24-27.
2. Arestis, P., M. Sawyer. Does the Stock of Money Have Any Causal Significance? // Quarterly Review, Banca Nazionale del Lavoro, 2003.-.Vol 56.- pp. 113 – 125.
3. Becker, G.S. Is Europe Starting to Play by U.S. Rules? // Business Week, 2002.-.April 22. – p. 13.
4. Calvery, J. The Power of Asset Prices // The International Economy, 2002.-.Vol 16. – pp. 56-62.
5. Castelnuovo, E., S. Nicoletti-Altimari, D. Rodriguez-Palenzuela. Definition of Price Stability, Range and Point Inflation Targets – The Anchoring of Long –Term Inflation Expectations // ECB Working Paper, Frankfurt am Main, 2003.-.No 273.
6. De Grauwe, P. Economics of Monetary Union. - Oxford, 2000.
7. Deutsche Bundesbank. The Monetary Policy of the Bundesbank. - Frankfurt am Main, 1994.
8. Dewald, W.G. Bond Market Inflation Expectations and Longer-Term Trends in Broad Monetary Growth and Inflation in Industrial Countries // ECB Working Paper, Frankfurt am Main, 2003.-.No 253.
9. ECB. The Stability-Oriented Monetary Policy Strategy of the Eurosystem // Monthly Bulletin, 1999.-.No 1- pp. 39-50.
10. ECB. Measures of Underlying Inflation in the Euro Area // Monthly Bulletin, 2001a.-.No 7. – pp. 49-59.
11. ECB. The Monetary Policy of the ECB. - Frankfurt am Main, 2001b.
12. ECB. The Liquidity Management of the ECB // Monthly Bulletin, 2002a.-.No 5. – pp. 41-53.
13. ECB. Transparency in the Monetary Policy of the ECB // Monthly Bulletin, 2002b.-.No 11. – pp. 59-66.
14. ECB. Annual Report 2002. - Frankfurt am Main, 2003a.
15. ECB. The Outcome of the ECB's Evaluation of its Monetary Policy Strategy // Monthly Bulletin, 2003.-.No 6. – pp. 79-92.
16. ECB. The Monetary Policy of the ECB. - Frankfurt am Main, 2004a.
17. ECB. Worldwide Trends in Monetary Aggregates over Recent Years // Monthly Bulletin, 2004b.-.No 1. – pp. 10-12.
18. Fendel, R., M.Frenkel. Taylor-Regel und direkte Inflationssteuerung // Wirtschaftsstudium, 2002.-.No 8/9. – pp. 1139-1142.
19. Friedman, M. Inflation – Causes and Consequences. - New York, 1963.
20. Friedman, M. Geld regiert die Welt. - Düsseldorf, 1992.
21. Görgens, E., K. Ruckriegel, F. Seitz. Europäische Geldpolitik. - Stuttgart, 2003.
22. Hämäläinen, S. The Role of Monetary Policy and the Central Banks in Global Financial Stability // Economic and Financial Review, 2003.-.Spring. – pp. 29-35.
23. Hefeker, C. The ECB's "New" Strategy // Intereconomics, 2003.-.May/June. – pp. 114-115.
24. IMF. Inflation Targeting. The Ideal Framework for Monetary Policy? // IMF-Survey, 2203.-.No 13. – pp. 210-212.
25. Issing, O. Monetary Policy in a World of Uncertainty // Economie Internationale, 2002a.-.Vol 92. – pp. 165-180.
26. Issing, O. Should We Have Faith in Central Banks? // Occasional Paper, The Institute of Economic Affairs, London, 2002b.
27. Issing, O. Einführung in die Geldtheorie. - München, 2003.

28. Issing, O. Interview // Deutsche Bundesbank – Auszüge aus Presseartikeln, 2004a.-.No 8. – pp. 10-14.

29. Issing, O. Should Central Banks Burst Bubbles? // Deutsche Bundesbank – Auszüge aus Presseartikeln, 2004b.-.No 7. – pp. 5-6.

30. Meltzer, A. Rational and Irrational Bubbles // Central Banking, 2003.-.Vol 13. – pp. 36-45.

31. Motley, B. Growth and Inflation – a Cross-Country Study // Economic Review, Federal Reserve Bank of San Francisco, 2002.-.No 1. – pp. 143-148.

32. Neumann, M.J.M. Interview // Central Banking, 2003.-.Vol 13. – pp. 15-24.

33. Niskanen, W.A. On the Death of the Phillips Curve // The Cato Journal, 2002.-.No 22. – pp. 193-198.

34. Remsperger, H. Geldpolitik – was wird von ihr erwartet und was kann sie leisten? // Deutsche Bundesbank – Auszüge aus Presseartikeln, 2003.-.No 26. – pp. 5-8.

35. Rodriguez-Palanzuela, D., G. Camba-Mendez, J.A. Garcia. Relevant Economic Issues Concerning the Optimal Rate of Inflation // ECB Working Paper, Frankfurt am Main, 2003.-.No 278.

36. Sachverständigenrat. Staatsfinanzen konsolidieren – Steuersystem reformieren, Jahresgutachten 2003/2004. - Wiesbaden, 2003.

37. Scheide, J. Die Strategie der Fed: Ein gutes Beispiel für die EZB? // List-Forum, 2001.-.Vol 27. – pp. 335-345.

38. Schlesinger, H. Hoffen auf den Thomas-Becket-Effekt // Frankfurter Allgemeine Zeitung, 1993.-.No 73. – p. 13.

39. Schönwitz, D. Monetäre Stabilität und Notenbankverfassung – sozial gesehen // Soziale Ausgestaltung der Marktwirtschaft, Berlin, 1995.-. – pp. 117-129.

40. Schönwitz, D. Arbeitsteilung zwischen Geld- und Wirtschaftspolitik – Das Konzept der Europäischen Zentralbank // Orientierungen zur Wirtschafts- und Geldpolitik, 2002.-.No 91. – pp. 11-14.

41. Schönwitz, D. What Monetary Policy Can Do – Considerations Based on the Confirmed and Clarified Concept of the ECB // Economic Review, 2004.

42. Sprinkel, B.W. Target the Quantity of Money // The International Economy, 2004.-.Vol 18. – p. 29.

43. Tietmeyer, H. The Value of Monetary Stability in the World Today // Währungstabilität für Europa, Baden-Baden, 1996. – pp. 29-43.