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# *Europe, Time to Wake Up!*

## *Change of monetary policy instruments – reduction of public debt (interest burdens), system of fiscal and monetary objectives – central bank independence*

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**SUMMARY:** The economic crisis arising in 2008 has severely limited the options of economic policy in Hungary. The absence of fiscal expansion, and deficiencies in the coordination of fiscal and monetary policy have had a negative impact on the effectiveness of measures in economic policy to boost economic growth. This paper highlights the drawbacks and contradictions inherent in the goals, instruments and principles of monetary policy which are regarded as axioms today. Our conclusions suggest that (1) the central bank's participation in the secondary market of government securities could be a viable way to reduce the interest burden on public debt; (2) the system of inflation targeting is not suitable for Hungary (an exchange rate channel would be more efficient); and (3) the central bank's independence is only justified with the appropriate degree of accountability.

**KEYWORDS:** central bank, monetary policy, inflation targeting, central bank independence, open-market operation

**JEL CODES:** E02, E42, E43, E52, E61, G18, G21, G28, H39, H63, O23

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The European Union has imposed institutional limits on budget deficit and cumulated budget deficit, i.e. government debt, at a respective 3 per cent and 60 per cent, which the financial markets have come to sanctify as benchmarks. In the event of default, the dilemma of national governments is extremely simple: they need to raise taxes and/or cut government expenditures. Is it possible to satisfy, or at least approximate, the requirements of the European Union and the financial markets, whether or not they are reasonable, without raising taxes or cutting expenditures? Yes, it is. It may come as a surprise, but it is indeed possible through a choice of monetary policy, or the ends thereof.

This paper aims to highlight the necessity of coordinating monetary and fiscal policies, as well as the drawbacks and contradictions inherent in the goals, instruments and principles of monetary policy which are currently regarded as axioms.

The paper follows three arguments. The first part explains the necessity of coordinating fiscal and monetary policy, and a possibly new but familiar element of monetary policy instruments. The second part points out the drawbacks of the inflation targeting system, and the last part examines central bank independence.

Our recommendation primarily concerns the countries of the European Union that are outside the Euro area, where the interest costs of financing public debt can be reduced in favour of internal economic growth.

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## NEW GOALS AND INSTRUMENTS IN FISCAL AND MONETARY POLICY

### A new but familiar measure by the central bank: open-market operations in the market of government securities

In our opinion, there are no grounds for the thinking and practice in European finance that a central bank cannot be a typical player in either the primary or the secondary market of government securities, and that it should be allowed to announce temporary measures of purchasing government securities only in exceptional cases. On the contrary, we find it demonstrable that as a player in at least the secondary market of government securities, by means of open-market operations and a regulated monetary policy, the central bank could bring direct and indirect benefits to the national economy, and ultimately to the society as a whole, in comparison with current European practice.

Let us take a look at the immediate benefits. First, the interest on the government securities held by the central bank is a revenue of the central bank, and, as it were, a revenue of public finances through the consolidation of public finances, and as such, part of the funds to finance government debt. In other words, even though the government securities held by the central bank are the funds financing public debt; the actual public debt can be considered as being reduced by the current central bank government securities portfolio, because the financing costs of public debt are reduced by the interest on the government securities held by the central bank.

The second directly measurable benefit is that the open-market operations on the market of government securities, recommended in place of the previously introduced and since then continuously applied money mar-

ket sterilisation instruments (central bank securities or deposits)<sup>1</sup> also have a sterilising effect, because the sales of central bank government securities can at the same time also be commercial bank sales, which in the case of a commercial bank purchaser narrows liquidity. Sterilisation is needed to neutralise the impact of creating money for the central bank, on the one hand, of mandatory intervention by the central bank in the currency market, and, on the other hand, of so-called carry trade transactions resulting from the interest rate spread of domestic and foreign rates. If the instrument of sterilisation is a short-term central bank bond (deposit), the central bank pays interest to commercial banks, the rate of which is the base rate set by the Monetary Council.<sup>2</sup> The purchase of central bank securities and deposits with the central bank both provide commercial banks with risk-free returns, while representing expenditures for the central bank and as such reducing its profits, therefore they fail to reduce general government deficit after the consolidation (as they do not add to the surplus).

Immediate benefit number three is the possibility of reducing reserves. The government securities in the central bank portfolio are a legally accepted part of public debt. As this portion is not financed from the capital market, the reasonable level of monetary reserves can be reduced.

In addition to the above, open-market operations in the market of government securities also bring indirect benefits. First, the risk to financing government debt is reduced as the central bank's sovereign holdings reduce the need for market financing. Another benefit is that the market impact of country risk ratings by credit rating agencies becomes less severe with a reduced need for market financing, while, as a result of increasing or decreasing central

bank financing<sup>3</sup>, the returns of government securities also become more predictable. Last but not least, the central bank may also act as a sort of lender of last resort, although not to an unlimited extent, meaning that its extraordinary intervention in the primary market of government securities is an option and it is extraordinary only to the same extent as ensuring solvency to commercial banks as the lender of last resort.

*Choice of goals  
and instruments in monetary policy*

Compatible fiscal and monetary policy require different instruments of monetary policy in countries that apply inflation targeting. At the moment, the central bank base rate is the interest rate of the relatively long-term (e.g. two-week) central bank instrument (deposit, bond) that aids sterilisation, which interest is set by the highest-level decision-making body of the central bank (Monetary Council). Instead, we recommend that the highest-level decision-making body of the central bank, based on the information available, determine the target value, which may be the same as the applicable rate (in this case, the central bank has not changed the target) or the new rate may be lower or higher (in this case, the central bank has cut or raised the target accordingly) (Labonte, 2012).

The target value, not the effective interest rate. The effective interest rate is a market rate; the interbank rate which the central bank regulates by means of open-market operations (purchasing or selling government securities) so that there are no major deviations in the effective interest rate from the central bank's base rate in either direction, only fluctuations around the base rate.

Through open-market operations, involving the purchase and sale of government securities, the central bank would influence, on the one hand, the reserves of the banking system (the

monetary base), which, assuming no changes in the mandatory regulation of reserves, will determine money multiplication, i.e. the maximum capacity of commercial banks to create money, while on the other hand, would also influence, in addition to the base rate, the interest rates and returns of assets in money and capital markets.<sup>4</sup>

The objective function of the state  
(government) for economic policy

The governments and opposition parties of developed and emerging countries think in terms of cycles. Before elections, in order to maximise votes, the emphasis between possible future government objectives is shifted at best, or unfounded promises are made at worst. Meanwhile, the supposedly independent central bank tries to bring the rate of inflation down to a level proclaimed to correspond to price stability, or once there, to keep it there. Decision-makers of fiscal and monetary policies view each other from a distance, although fiscal and monetary policies must (should) work together in perfect harmony to achieve objectives that represent the interests of society.

In our opinion, the objective function of the state (or more precisely, of the government) for economic policy should concurrently capture the expected employment rate and the permissible rate of inflation. An inflation rate with an upward deviation from the inflation level of 1–2 per cent, assumed as a price stability, cannot be proven to cause a larger loss to society than it suffers from unemployment while price stability is maintained, providing it does not reach a level which would trigger hyperinflation. Consequently, we think that the government should define the levels of employment and inflation to be achieved over a reasonable time horizon (e.g. 8 quarters). It is the task of the government because the level

of employment that can be achieved depends on the complex economic policy within the competence of the government, and also because the attainable and permissible level of inflation is not independent of the level of employment.

Each year, the government may change general government expenditure and consequently, general government balance in order to achieve or maintain the expected level of employment; however, changes are restricted by the legal environment (Maastricht criteria) as well as the requirement of the market that finances the deficit. There is a similar restriction on the growth of government debt.

Responsibility, however, varies. The expectation for general government balance may meet disapproval at political (government) level or may even be challenged on grounds of economic policy, but the burden of adjustment lies with the same government that budgeted the excessive deficit. By contrast, the limit on the capacity to finance government debt — the rate of which is not independent of the economic policy decisions of former administrations — is the market itself (assuming a reasonable and appropriate regulatory environment). The willingness of the market to finance could fluctuate for a number of reasons that cannot be assessed in advance, which could lead to emergency situations. The decision required is one of economic policy, but is also political, because the level of public debt (which the market considers excessive and is willing to finance only at a high premium) can only be reduced through a positive balance of public finances (apart from the possibility of privatisation revenues), the changing of the state's revenue (tax) and expenditure policies, however, will unavoidably result in income and wealth redistribution in the whole of society.

## BAD PRACTICE IN EUROPE: BADLY CHOSEN GOALS, DISADVANTAGEOUS INSTRUMENTS, MISINTERPRETED CENTRAL BANK INDEPENDENCE

### Monetary policy astray: inflation targeting

The application of inflation targeting has made monetary policy excessively simple, or even primitive. In the worst case, the central bank will set the inflation target (so-called goal independence); at best, the government and the central bank will agree on the inflation target, which the central bank will try to achieve using the means it autonomously chooses (so-called operational independence). The central bank prepares the quarterly reports on inflation, which, deducing from a model, describes the inflation rates expected in the time horizon of inflation targeting. Once a month the monetary decision making body evaluates the relationship between the inflation target and the projected inflation, together with the already received actual figures, then raises or reduces the interest rate depending on the direction of the deviation from the inflation target. This is the basic scenario, from which deviations are possible in both directions.

What is wrong with inflation targeting? First: what should the inflation target be for the given period, assuming that the ultimate goal is to achieve and maintain price stability, the extent of which cannot be precisely determined? Second: what should the time frame for achieving price stability be? Third: is interest rate policy an adequately efficient means to attain the target? Fourth: should price stability enjoy priority over all other macroeconomic indicators irrespective of place (country) and time?

Price stability can be the ultimate inflation target (although its level does not necessarily have to be the same in a developed or in an

emerging country). In theory, three situations are possible:

① the country applying inflation targeting has already achieved the level of price stability and aims to maintain it;

② the current rate of inflation is higher than the agreed level of price stability, and the goal can be attained as the outcome of a disinflationary process;

③ the rate of inflation is already lower than the price stability requirement, allowing monetary policy (primarily the base rate) to be eased. This last, scenario however, could also result in a higher inflation rate.

In the second case, the time frame for attaining the ultimate goal requires a decision. This period may vary, depending on the efficiency of monetary policy instruments, the inflationary/disinflationary effects of national economic policy and on external shocks. It is conceivable that the disinflationary process is not very long, and the ultimate inflation target can already be met within the realistic time horizon of monetary policy, which is usually estimated to be eight quarters. Otherwise, the level of the inflation target may be lower every year, but the ultimate goal (the level of price stability) will only result from a disinflationary process of several years. If the process is hastened and an unfounded target is announced, it has to be admitted every year that the target has not been met. And the reason is not that the monetary policy of the central bank was wrong; in fact, the target was unfounded. The situation may even be worse if the central bank wants to achieve the target literally at any price. For example, by repeatedly raising the interest rate, so that, as a result of the increasing interest rate spread, the inflow of short-term funds will strengthen the domestic currency to an extent that leads to a spectacular decline in import prices. Thus, although the target that can be considered unfounded is met, the interest rate level, which was raised too high, and the other

negative effects of the overvalued currency exchange rate burden the national economy.<sup>5</sup> Growth decelerates, export orientedness declines, while import orientedness increases. The most serious consequence of the negative processes is the decline in employment and labour market activity.

There is no explicit proof that interest rate is the most efficient tool for attaining the inflation target. It is especially true of small, open economies, where we assume the exchange rate channel to be a more efficient instrument compared to the interest rate channel. What we can state with great certainty is that in small, open economies the import price increase resulting from the depreciation of the exchange rate exerts its effect directly, without transmissions, whereas the reduction of the central bank base rate can have an effect on global demand through several transmissions, through which it may stimulate inflation.

In Hungary and many other small, open economies, through the revaluation of the assets and debts held in foreign exchange, the indirect effect of the exchange rate has a much more significant impact on domestic demand than the interest rate.

The disinflationary effect of the appreciation of the exchange rate is conditional and depends on the importer's decision: whether he wants to realise the increase in his sales revenue instead of a price reduction or wants to attain an increase in profits by generating additional demand by reducing his prices. A step corresponding to exchange rate appreciation is the raising of the central bank interest rate level, which can also only have a disinflationary effect through several transmissions. It can also be stated with great certainty that any instrument has more effect on the inflationary than on the disinflationary process.

It is not a good idea to undervalue the social impact of inflation; however, overvaluing it

would also be a mistake. If the inflationary process can be kept under control, an inflation rate that is higher than price stability or price stability defined as a higher-level inflation rate, which is practically the same, is acceptable, provided that in the economy it is triggered by a decline in unemployment and inactivity, i.e. an increase in employment.

The system of inflation targeting is disputable in itself, even at a theoretical level, because it explains the dynamics, and cannot be interpreted for the levels. If the expected inflation is below or above the set target, the reduction or the increase of the interest rate, respectively, is justified. However, it is not possible to answer and justify what interest rate level belongs to a specific inflation rate and vice versa, what inflation rate a specific interest rate level corresponds to.<sup>6</sup>

If the possible interest rate cuts fail to be carried out repeatedly, and then – even due to external reasons – the central bank is compelled to raise the interest rate, a significant difference in interest rates evolves compared to other countries in spite of the identical inflation rates, which – in case of a liberalisation of short-term monetary movements – results in speculative monetary movements and volatile exchange rates. The statement then can be made, based not on a theoretical objection, but on practical experience, that central bank decision makers are more flexible when there is an opportunity to raise the interest rate compared to the situation when there is an opportunity to cut the interest rate.

## CENTRAL BANK INDEPENDENCE

### Inherently, the central bank was independent of the state

The privilege of the central bank did not stem from the organic development of the economy,

but was a matter of government decision.<sup>7</sup> One of the banks was invested with the right (monopoly) to issue bank notes, in exchange for which the selected bank undertook to be a lender to the state (the Treasury). The original method (technique) of lending was similar to today's practice: the state issued so-called government securities representing its debt, which the bank appointed to be the central bank purchased (subscribed). Government securities had maturities and yielded interest. The state repaid the central bank by redeeming the government securities, including the interest applicable upon maturity. Payment required a revenue surplus on the state's part, i.e. on maturity, the state was required to have a surplus from revenues (taxes, duties, leases) corresponding to its debt (nominal amount plus interest) to the bank promoted to be the central bank. This condition was normally not met, causing the state to issue additional government securities, the nominal value of which was not less than that of the previously issued and matured government securities plus interest. The new issue was again subscribed by the central bank, and the revenue was used to repay the state's matured debt. The state used new debt to finance its old debt, and naturally, new interest charged to maturity was added to the debt. Old debt can only be financed with new debt as long as the state is unable and unwilling to cut its expenditures so that it can repay its debt, in part or in full, from its revenue surplus. Generally, the state was unable to obtain a sufficient revenue surplus to repay its debt, which allowed government debt and the claim of the lending bank (the central bank) to grow. Precisely in order to ensure that the central bank was willing to purchase additional government securities time and again, the state granted privilege to the central bank for a definite term only, making its renewal conditional on the purchase of new issues of government securities.

### The central bank's 'quasi' legal independence and dependence on economic policy

The process that started hundreds of years ago continued until the end of WWI essentially in the same form and following the same principles, meaning that the central bank was a dependent institution. Then, the Reparation Commission established by the Allies, concerned that fulfilment of the reparations claimed was at risk on account of the total collapse of Germany's economy and public finances, exploiting the German government's request in 1922 for a moratorium on reparation payment, made the Imperial Bank's autonomy a condition to the moratorium, also stipulating a prohibition on the Imperial Bank's providing funds for public finances.<sup>8</sup>

Similar rules also came to be followed elsewhere in Europe, and after WWII, presumably owing to the roots of 1922, were revived most markedly in the case of the German central bank. From the 1980s, the International Monetary Fund and, as a result of German dominance, the European Union and the European Central Bank made a very strong point of the notion and practice of central bank independence.<sup>9</sup>

### The central bank's political independence

The concept of independence is best approached through the arguments concerning its violation (endangerment) as known from practice. Known cases of the violation or endangerment of central bank independence involve changes in government where the mandate of the president (vice-presidents, members of the Monetary Council) appointed by the previous government overlapped with the term of the new government. It appears that the longer the overlap, the more vulnerable independence becomes, at least in the view of the opposition. In this approach, the

concept of central bank independence is much rather a politological issue than an economic one, because what it involves is no more than the current debate of the governing parties and the opposition. Differences of opinion are not caused by economic dilemmas but by personal conflicts, which could ultimately endanger so-called central bank independence.

### The central bank's dependence on economic policy

A central instrument of governance in national economy is financial policy, the two main disciplines of which are fiscal and monetary policy. Based on the widely accepted distribution of powers, the government of a given country defines, implements and is responsible for fiscal policy, while the central bank (national bank) is concerned with monetary policy. We are not aware of any proposition (in stronger terms, evidence within the science of economics) according to which the interest of the national economy would not be the most perfect harmony possible between the two disciplines of financial policy. For the opposite, there are plenty of highly damning conclusions to be drawn from practical experience. To offer a simple argument in plain terms: the disharmony of fiscal and monetary policy is unacceptable as it interferes with the interests of the national economy, hurts the performance of the economy, and lowers the quality of life for society (the population of the country).

### An independent central bank is accountable without responsibility

Central banks, or more precisely, central bankers fight with all their might for their independence, for the maintenance of their *imperium in imperio* status. Invented in New

Zealand, inflation targeting was uncritically adopted by a great many developed and emerging countries which either neglected or ignored New Zealand's specificities.<sup>10</sup> However, they have not adopted, probably by no accident, the keystone of the central bank's inflation targeting system, the rule concerning the responsibility and sanctioning of the Central Bank Governor, where the Central Bank Governor works with the government to define the inflation target and the time horizon for achieving the target, and once the agreement is set in writing, takes a personal decision on the application of the instruments required to achieve the target. If the agreement is not fulfilled for the interim dates specified, the government may recall the Central Bank Governor. That is to say, the central bank, or more precisely, the Central Bank Governor was not granted independence without responsibility and sanctions: independence and responsibility apply in symmetry.

The central banks of other countries demand independence and apply the monetary policy technique developed for the special situation of a special country, but the need to adopt responsibility and sanctions has not even been raised. Accordingly, the independent leader of an independent central bank may not hit the inflation target even once during their term of presidency, and their report may not be approved even once at the annual hearing in parliament, and yet, when their mandate expires, as a reward for a "successful career", they have a well-deserved pension or the lucrative world of business waiting for them. The system is hypocritical, dishonest and antisocial.

### An independent and responsible central bank

In each country, the independent central banker of the independent central bank is nominated and delegated by the premier

(head of the state) and/or the parliament. The only interpretation of the independence of the Central Bank Governor is that the government (premier, parliament) has no means to instruct them in a legal form or verbally pursuant to a legal form. However, it is unreal that the professional identity and human loyalty of a Central Bank Governor appointed by the government (premier, parliamentary majority) would allow monetary policy decisions which are fundamentally different or contrary to the views and interests of the government.

The European Central Bank could be an exception if its Governor were to be elected by Member States by secret ballot from a number of candidates nominated by them. Instead, the premiers (heads of state) of dominant countries privately agree on the nationality of the new governor, obviously giving pointers for national governments' nominations.

If the political affiliation of a president elected in a referendum is not the same as that of the majority in the independently elected parliament (congress), or the party (coalition) nominating and delegating the Central Bank Governor is succeeded, during the Governor's term, in parliamentary elections by a former opposition party or coalition, then central bank independence will become a real issue, revealing the fact that the conflict is essentially political and not economic in nature.<sup>11</sup>

The Central Bank Governor and thus the central bank may be independent if the confines of independence are clearly defined. Through the Central Bank Governor, the central bank is responsible for attaining the central bank's goals, and their responsibility may be sanctioned (they may be recalled).

The central banks of EU Member States are members of the European System of Central Banks, which at the same time supervises the European Central Bank, while requiring compliance by the central banks of countries outside the Euro area. The notion of central



bank independence has become a European doctrine so that criteria for independence could be outlined by collecting specific cases where independence is supposed to have been violated, which is not exactly a sound basis for a strict compliance requirement.

The task of an independent central bank (Central Bank Governor) is to achieve the inflation target and, ultimately, price stability. The task is specified, but neither responsibility, nor sanctions are associated with achievement of the target set.<sup>12</sup> Thinking in realistic terms and using sound judgement (in general but especially with respect to a small, open economy), the central bank (or the Central Bank Governor) cannot be held responsible for achieving the inflation target, as most causes cannot be influenced by the instruments available to central banks.

▶ The higher the ratio of imports to domestic production, the greater the impact of imported inflation, which generally cannot be prevented by appreciating the currency to drive up the exchange rate. This is especially true at times when the prices of energy (oil, gas, coal, electricity) and mining commodities (copper,

iron, aluminium, etc.) rise in the world market. In addition, exchange rate policy cannot be the sole decision-making competence of the central bank, independently of government.

▶ Food prices are largely dependent on the cyclical character of agricultural production, and the growth in global demand.

▶ Disinflationary processes may also be triggered which are independent of the central bank (such as the fall in the global market prices of the products of the textile and leather industries and mechanical engineering due to low wage levels in Asia).

If responsibility cannot be expected, then sanctions are not appropriate either, in which case the notion of independence is nothing more than an empty political slogan.

However, the notion of central bank independence can be given economic substance if the task (goal) of the central bank can be specified and the central bank can be held accountable for that task. This requires that the goal set should be reasonable over the time horizon specified, and that the central bank should have the instruments needed to achieve its goal.

## NOTES

<sup>1</sup> The Hungarian Central Bank's standard instrument was the central bank deposit before 2007 and the so-called MNB bond after 2007 (MNB, 2012).

<sup>2</sup> The Hungarian Central Bank's standard instrument was the central bank deposit before 2007 and the so-called MNB bond after 2007 (MNB, 2012).

<sup>3</sup> Increased central bank financing: purchase of government securities; Decreased central bank financing: sale of government securities.

<sup>4</sup> Akhar (1997) provides a detailed discussion of US practice.

<sup>5</sup> Although in a different approach, Erdős (2007) and Erdős (2011) hold similar views.

<sup>6</sup> The exclusive dynamic relationship between the two variables assumes that neither has any impact in any other direction. If they had, it would make a difference to know what degree of increase or cut (if any) is applied at what level of interest to influence the inflation path estimated according to the model.

- <sup>7</sup> There is an extensive body of literature to refer to in both English and German, to which references are also made in Hungarian literature where account is given of events. See dr. Zoltán Óvári Papp: *Central Banks and the State...* Budapest, 1926; Farkas Homonnai: *Bank History*. Budapest, 1946; *Encyclopaedia of Economics*. Budapest, 1929
- <sup>8</sup> Dr. Georg Schanz: *Finanz-Archiva*. Vol. XXXIX. 1922. p. 290.
- <sup>9</sup> An extremely detailed description of the process is provided in dr. Ágnes Sipos: *A study of the development of central bank independence from the 18th century to the present. A summary of the eastern and western development through the examples of nine EU Member States*. PhD thesis. Miskolc, 2007 (manuscript)
- <sup>10</sup> Among other things, there are no illegal imports and exports, electricity is produced by hydroelectric and geothermal plants, the country is potentially self-sustaining for food, and the leading industries of the economy are agriculture and tourism.
- <sup>11</sup> Unfortunately, there is an extensive body of literature on central bank independence. This is unfortunate because it makes the issue appear to be a real dilemma of economics. An analysis of central bank independence may be appropriate in the sciences of law and politics. A detailed example is dr. Ágnes Sipos: *A study of the development of central bank independence from the 18th century to the present*. PhD thesis. Miskolc, 2007. The approach of the “science” of economics also ranges from simple administrative aspects to inventions verging on humour (observing, for example, that the turnover rate of Central Bank Governors is inversely proportional to central bank independence).
- <sup>12</sup> Mishkin (2001) refers to inflation targeting as an obstacle to the accountability of central bank activity.

#### LITERATURE

- AKHTAR, M. A. (1997): *Understanding Open Market Operations*. FED. New York
- ERDŐS, T. (2007): *Árfolyam-politika és inflációs cél követése Magyarországon (Exchange rate policy and inflation targeting in Hungary)*. *Közgazdasági Szemle (Economic Review)*, vol. LIV. pp. 853–875
- ERDŐS, T. (2011): *Számít-e a valutaárfolyam? (Does foreign exchange rate count?)* *Közgazdasági Szemle (Economic Review)*, vol. LVIII. pp. 445–459
- HOMONNAI, F. (1946): *Banktörténet (Bank History)*. Officina Kiadó. Budapest
- SIPÓS, Á. (2007): *A jegybanki függetlenség fejlődéstörténetének vizsgálata a XVIII. századtól napjainkig. A keleti és nyugati fejlődési út összegző bemutatása kilenc európai uniós tagország példáján keresztül (A study of the development of central bank independence from the 18th century to the present. A summary of the eastern and western development through the examples of nine EU Member States)*. PhD thesis. Miskolc
- MISHKIN, S. Fr. (2001): *Inflation targeting*, in *Encyclopedia of Macroeconomics*. Edward Elgar. London
- LABONTE, M. (2012): *Monetary Policy and the Federal Reserve: Current Policy and Conditions*. Congressional Research Service
- ÓVÁRI PAPP, Z. (1926): *Central Banks and the State, with Special Regard to Conditions in Hungary*

*(A jegybankok viszonya az államhoz különös tekintettel a magyar állapotokra)*. Benkő Kiadó, Budapest

SCHANZ, G. (1922): *Finanz-Archiv*, vol. XXXIX. p. 290

SZTERÉNYI, J. (ed.) (1929): *Közgazdasági Enciklopédia* (Encyclopaedia of Economics). Budapest

MNB (2012): *Az MNB monetáris politikai eszköztára* (Monetary policy instruments of the National Bank of Hungary), Magyar Nemzeti Bank, Budapest. Online: [http://www.mnb.hu/Root/Dokumentumtar/MNB/Monetaris\\_politika/mnbhu\\_eszkoztar/mnbhu\\_eszkoztar\\_tanulmányok/mnbhu\\_Kezikonyvek/eszkoztar\\_reszletes.pdf](http://www.mnb.hu/Root/Dokumentumtar/MNB/Monetaris_politika/mnbhu_eszkoztar/mnbhu_eszkoztar_tanulmányok/mnbhu_Kezikonyvek/eszkoztar_reszletes.pdf)