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## The Transmission Mechanism of Monetary Policy

*Deployment of crisis phenomena in the world economy revealed the problem issues in realization of monetary policy, which reduce its effectiveness as an instrument of macro-stabilization and economic development. The article investigates the implementation of a mechanism of monetary policy by the central bank and ensuring its positive impact on the GDP and level of inflation.*

**Keywords:** *monetary policy, central bank, commercial banks, transmission mechanism, reserve requirements, interest rate, open-market operations, price stability, inflation, risks, macroprudential policy.*

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## Трансмiсiйний механiзм монетарної полiтики

*Розгортання кризових явищ у свiтовiй економiцi виявило проблемнi питання в реалiзацiї монетарної полiтики, якi знижують її ефективнiсть як iнструмента макро-стабiлiзацiї i розвитку економiки. У статтi досліджено шляхи використання механiзму грошово-кредитної полiтики центрального банку i забезпечення його позитивного впливу на ВВП та рiвень iнфляцiї.*

**Ключові слова:** *монетарна полiтика, центральний банк, комерцiйнi банки, транс-мiсiйний механiзм, норма обов'язкового резервування, процентна полiтика, операцiї на відкритому ринку, цiнова стабiльнiсть, iнфляцiя, ризики, макропруденцiйна полiтика.*

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## Трансмиссионный механизм монетарной политики

*Развертывание кризисных явлений в мировой экономике выявило проблемные вопросы в реализации монетарной политики, которые снижают ее эффективность как инструмента макростабилизации и развития экономики. В статье исследованы пути использования механизма денежно-кредитной политики центрального банка и обеспечения его положительного влияния на ВВП и уровень инфляции.*

**Ключевые слова:** *монетарная политика, центральный банк, коммерческие банки, трансмиссионный механизм, норма обязательного резервирования, процентная политика, операции на открытом рынке, ценовая стабильность, инфляция, риски, макропруденциальная политика.*

### ***Stating science problem***

The key to ensuring economic growth in the country is the effective implementation of monetary policy, the importance of which in the system of state regulation of the economy in the modern conditions is significantly increasing.

Stability of the national monetary unit, controllability of inflation, lowering interest rates, proper functioning of the banking system and maintaining financial stability form the basis for economic growth, as it will facilitate the intensification of financial and economic activity in the real sector and restore confidence in the financial sector. Although regulatory measures of monetary policy are carried out directly in the monetary sphere, its effect is not limited to this sphere, but also manifests itself in the real economy due to the influence of monetary changes on production, investment, employment etc.. Consequently, there is an objective need for the formation and development of a holistic view of the risk taking channel of influence of monetary policy on the country's economic growth.

### ***Research analysis of this problem***

The main theoretical, methodological and practical aspects of the monetary policy are reflected in the works of domestic and foreign scientists, including: Edwin G. Dolan, Rosemary G. Campbell, Colin D. Campbell [3], Frederic S. Mishkin [7], Trichet J.-C. [14], Trydid O.M., Vyadrova I.M. [15], Hovorushko T.A. [16].

Plantier C. [8] explores the appropriate time horizon for monetary policy, proposes a measure of the monetary policy stance based on the difference between the actual and nominal interest rate. Kovalenko V.V. [5] considers the problem of efficiency of instruments of monetary policy of the central bank, describes features of monetary regulation of the national economy in the context of the transformation process. However, the issues of the continuity and quality of modern monetary instruments remain insufficiently studied and require further research. The next author in his economic research offers guidance regarding the choice of measures of inflation, money turnover and financial stability in Ukraine [10].

### ***Unsolved part of the general problem***

The issues related to clarification of the theoretical foundations of monetary policy in the context of influence a transmission mechanism on the dynamics of the country's economic system and the development of practical recommendations on promotion of monetary policy for the economy growth in the country require further research.

### ***Purpose***

The aim of the article is to determine the interaction between the transmission mechanism of monetary policy and macroprudential policy tools taking into account economic risks in different sectors of the financial system.

### ***Main research material***

Monetary policy is an important instrument of state regulation of the economy in order to ensure a stable development of the country. The main elements of monetary policy are monetary mass, monetary institutions and the central bank, which is the only issuing and regulating body.

Monetary policy has taken the main place in the mechanism of state regulation of the economy. The success of the implementation of monetary policy and its positive impact on the development of the national economy largely depend on the availability of an effective system of public administration, the coordination of actions of state regulators, both at the level of developing a common economic strategy, and at the level of tactical decision-making.

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The primary function of monetary policy is to maintain price stability, while keeping in mind the objective of growth. Price stability is a necessary precondition to sustainable growth [16, p. 198]. The relative emphasis assigned to price stability and growth objectives in the conduct of monetary policy varies from time to time depending on the evolving macroeconomic environment.

Central banks have three main monetary policy tools [16, p. 205]:

- open market operations;
- the discount (interest) rate;
- the reserve requirement.

Open market operations take place when central banks buy or sell securities. These are bought from or sold to the country's private banks. The second instrument for conducting monetary policy is to raise or lower the discount rate. If the central bank raises the discount rate, then commercial banks will reduce their borrowing of reserves from the central bank, and instead call in loans to replace those reserves. The third tool of conducting monetary policy is for the central bank to raise or lower the reserve requirement, which is the percentage of each bank's deposits that it is legally required to hold either as cash in their reserves or on deposit with the central bank.

Banking is a transmission link of monetary policy. Through the system of public administration through the use of appropriate tools, which include monetary policy instruments of the central bank, the state regulates the national economy, ensuring its development and resistance to external risks or threats.

The use by the central bank the monetary policy instruments affects the volume and structure of the money supply, the rate of inflation. Central banks normally conduct monetary policy by setting a nominal interest rate, the central bank's instrument rate.

Let us investigate how monetary policy can lead to buildups of vulnerabilities through an endogenous increase in risk-taking, and the efficacy of monetary policy or macroprudential policies to mitigate in sectors of the financial system. The financial system, as a system that allows the exchange of funds between lenders, investors, and borrowers, is comprised of four sectors: asset markets, banking sector, shadow banking, nonfinancial sector.

Monetary policy can be a time-varying macroprudential tool, but cannot be targeted, since it will affect funding conditions for all intermediaries, regulated and unregulated, and all sectors. The monetary policy transmission channels in the four sectors of the financial system can be summarized as follows:

1) Asset markets: easier monetary policy improves financial conditions by lowering the risk-free term structure, but also compresses risk premiums. The term structure reflects expectations of market participants about future changes in interest rates and their assessment of monetary policy conditions.

2) Banking sector: easier monetary policy increases the loan supply, but also contributes to higher leverage of banks and broker-dealers and greater risk taking (more credit to riskier firms).

3) Shadow banking: easier monetary policy increases the dealer-intermediated leverage that facilitates maturity and credit risk transformation, and securitization, without an explicit government backstop, but contributes to higher leverage and lower risk premiums.

4) Nonfinancial sector: easier monetary policy eases borrowing constraints and boosts credit growth, but reduces underwriting quality and increases debt burdens of riskier borrowers.

Monetary policy affects real and nominal variables through a number of channels, together referred to as the transmission mechanism of monetary policy [12]. The

monetary policy transmission on financial conditions and financial stability in different sectors of the financial system are summarized in Table.

Table

**Monetary policy transmission on financial conditions and financial stability in different sectors**

Sectors of the financial system	Financial conditions	Financial stability
Asset markets	Risk free term structure Higher asset prices Lower risk premiums	Compressed risk premiums: - Reach for yield because of nominal targets - Supported by leverage from an external finance premium, asymmetric information - Asset managers that prefer yield income or are evaluated based on relative performance  Low volatility and low risk premiums: - Procyclical risk management practices - Mismeasurement of risk
Banking sector	Credit channel	Procyclical leverage of banks and dealers: - Procyclical risk management practices and inflated collateral values  Risk-shifting channel reduces the quality of credit: - Low bank capital
Shadow banking	Securitization Liquidity creation Maturity transformation by nonbank intermediaries	Procyclical dealer intermediated leverage: - Procyclical risk management practices  Excessive maturity transformation: - Short-term funding fragilities  Regulatory arbitrage
Nonfinancial sector	Borrowing conditions Balance sheet channel Credit growth (credit/GDP)	Deterioration in underwriting standards  Excess leverage: - Fire sale externalities - Negative demand externalities

Source: [13, p. 34].

The mechanism of monetary policy allows the central bank to influence various sectors of the economy, using specific instruments of monetary regulation. Therefore, the effective use of these will depend on how well the main macroeconomic tasks of the state will be realized.

Macroprudential tools that can be used to mitigate the vulnerabilities in above mentioned four sectors include capital, liquidity, and risk weight requirements, as well as supervisory guidance and exposure limits for regulated firms, margins and haircuts for securities, and loan-to-value (LTV) and debt-to-income (DTI) ratios for borrowers [13, p.3].

Monetary policy has an influence on aggregate demand in the economy and determines the nominal or money values of goods and services – that is the general price level (see Figure 1).

In the present circumstances, the policy must adapt as much as possible to conditions of financial globalization for the purpose of prevention crisis phenomena and the possibility of overcoming their consequences with the least losses for the banking system in particular for the general economic situation of the country as a whole.

Innovation and deregulation in finance sphere cause transformations of the business models and change the ways of their stimulation. Stabilizing the value of currency

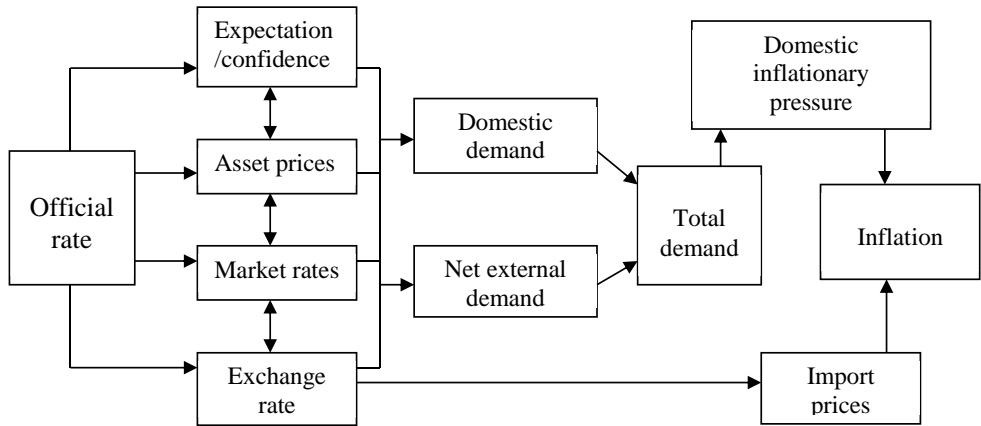


Figure 1. The transmission mechanism of monetary policy

Source: based on [www.bankofengland.co.uk](http://www.bankofengland.co.uk)

in terms of a broad price index (rather than a single commodity price) must be accomplished via monetary policy and cannot be achieved merely by issuing a legal edict.

Indeed, in a market economy, it is logically impossible to define the value of the currency in terms of the general price level, because the prices of individual goods and services are set by businesses operating in specific markets rather than determined by a central planner [1].

As well as macroeconomic and competitive factors, these changes affect such aspects as corporate management, recourse to non-interest income, revenues, the volume, financing practices etc. [11, p. 93].

One of the main lessons from the global financial crisis of 2008 year is that price stability is not sufficient to guarantee financial stability. The course of monetary policy is to ensure price stability in the real economy, and doesn't include potential instability in financial markets. Financial stability should be the part of macro-prudential policy, with the objective of safeguarding the stability of the financial system.

The aim of macroprudential policy is to identify and limit of a systemic risk, i.e., the risk of widespread disruptions to the provision of financial services. Its focus is on the financial system as a whole, including the interactions between the financial and real sectors, as opposed to its individual components [2, p. 20].

Macro-prudential policy has been used to enhance the resilience of the banking system. Most of these measures were adopted in response to the global financial crisis. New Zealand, for instance, moved quite quickly and imposed gradually increasing liquidity requirements to contain bank funding risks. Sweden did the same in 2013, as its banks rely heavily on wholesale funding. Countercyclical capital buffers took effect in Sweden late in 2015 and in Hong Kong SAR in phases beginning 2016. Furthermore, systemically important institutions must have to hold additional capital buffers in Switzerland, Sweden, Hong Kong SAR and the Netherlands.

For central banks seeking to ease financial conditions still further, the most obvious policy lever is more than three centuries old: changing the price of money by adjusting the interest rate [15, p. 196].

Financial stability can be viewed as transcending disruptive financial crises. Central banks operate different policy instruments during financial crises and at other times, but their tasks are similarly related to financial stability; this could be summarized as in Figure 2.

To pursue its objectives, the central bank might have two types of policy tools

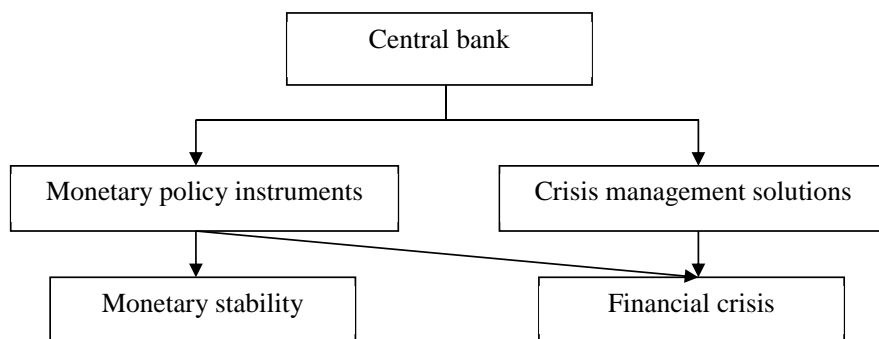


Figure 2. The role of central bank in maintaining financial stability

Source: [6, p. 35].

at its disposal. One set of instruments may be labelled monetary policy and includes the central bank's short-term interest rates on loans to banks, but possibly also other conditions for such lending. Another set of instruments may be the recently introduced macroprudential policies. One example of a macroprudential policy tool is a counter-cyclical capital adequacy requirement for banks; other examples are liquidity requirements for the banks, as well as restrictions on household debt in relation to pledged assets (LTV ratios) or in relation to income (DTI ratios). In such a setting, economic theory offers some guidance as to connecting monetary policy and financial stability, as opposed to a complete division of those responsibilities among separate authorities.

In one scenario, monetary policy and macroprudential policy are coordinated. Thus, both types of policy tools (policy interest rate and macroprudential policies) are used together to pursue all three objectives (stabilising inflation and economic activity and maintaining financial stability). In another scenario, by contrast, the responsibilities for different objectives are assigned to separate authorities. In the financial system, central banks steer interest rates through the interbank market [9, p. 9-10].

Before the crisis (2008 year), most central banks in advanced economies aimed primarily at achieving and maintaining price stability (defined in various ways in individual jurisdictions) and to achieve this goal they used a single instrument, i.e., short-term interest rates. During and after the crisis, their focus on output and employment increased, partly as a result of very low or even negative inflation [2, p. 18].

In the conduct of monetary policy, there exists a risk-return tradeoff between financial conditions and financial stability, which complements the traditional inflation-real activity tradeoff of monetary policy. The tradeoff exists even if monetary policy does not target financial stability independently of inflation and real activity goals, as the buildup of financial vulnerabilities from persistent accommodative monetary policy when the economy is close to potential increases risks to future financial stability [13]. In traditional monetary policy settings, the inflation-real activity tradeoff determines the stance of financial conditions, without giving consideration to financial vulnerabilities.

The role for financial-stability policy arises because the private choices of unregulated banks with respect to money creation are not in general socially optimal [4, p. 3]. When banks issue cheaper short-term debt, they capture its social benefits, namely the monetary services it generates for households. However, they do not always fully internalize its costs. In an adverse «financial crisis» state of the world, the only way for banks to honor their short-term debts is by selling assets at prices far below their fair market value. Thus left to their own devices, unregulated banks may engage in excessive money creation, and may leave the financial system overly vulnerable to costly crises.

There are a variety of ways for a regulator to address this externality. One possibi-

lity is the use of conventional monetary-policy tools, i.e. open-market operations. When the central bank injects reserves into the system, it effectively increases the number of permits for private money creation. And the nominal interest rate, which captures the cost of holding reserves, functions as the permit price. Thus open-market operations that adjust aggregate reserves in response to changes in short-term nominal rates can be used to achieve the cap-and-trade solution [4, p. 5].

### **Conclusions**

The conduct of monetary policy should be systematic and transparent, thereby facilitating the effectiveness of the monetary transmission mechanism as well as the central bank's accountability to elected officials and the general public.

The monetary policy is not fully neutral from a financial stability perspective. This is of interest to both monetary and supervisory authorities. It is important that monetary authorities learn how to factor in the effect of their policies on risk-taking, and that prudential authorities be especially vigilant during periods of unusually low interest rates, particularly if they are accompanied by other signs of risk-taking, such as rapid credit and asset price increases.

The objective of financial stability, including a well-functioning payment system, can conveniently be considered as a restriction on monetary policy that does not bind in normal times, but does bind in times of financial crises.

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