Monetary Policy: The Specific Features of Its Implementation in the Current Phase of Economic Development

by

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Abstract

The article examines the specific features that characterize central banks' monetary policies under current conditions in the context of evolution of their goals and objectives during different phases of economic development. The author substantiates the statement that the choice of goals and objectives is determined by objective factors, and on this basis comes to the conclusion that the global financial and economic crisis, which revealed the challenges to and constraints on the choice of monetary policy directions, became the next starting point in its evolution.

Key words: monetary policy regime, monetary authorities, features of macroeconomic development, targeting, developed and developing countries.

JEL: E52, E66, F33.

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Introduction

The world financial and economic crisis and its consequences marked a new phase in the evolution of goals and objectives set by monetary authorities, its trajectory being determined by many factors - not only economic, but also political ones.

The specific feature of the period of post-crisis economic development, with its close trade and financial links and low rates of economic growth not only in the developed countries, but also in major developing ones, has been the increasing role and broadening powers of monetary authorities. During that period, the potential and flexibility of monetary policy became fully obvious, thus giving rise to a rather heated discussion of the priorities to be set by monetary authorities. Nevertheless, as demonstrated by global experiences, one of their major goals under present conditions - if not the only one - has remained that of ensuring price stability. The achievement of this goal can be secured in the framework of four monetary policy regimes, which differ not only in the ultimate objectives set by the regulator, but also in the choice of intermediate objectives, as well as monetary policy targets and instruments. These are: (1) monetary targeting, (2) exchange rate targeting, (3) inflation targeting, and (4) monetary policy with multiple objectives and without an explicit nominal anchor. The most significant differences between these monetary policy regimes have to do with their intermediate objectives. Thus, for monetary targeting, these are monetary aggregates, while in the framework of exchange rate targeting these would be the national currency's specific exchange rate or its specific movement pattern. When resorting to inflation targeting, monetary authorities base their decision-making on the estimated movement pattern of consumer prices and its compliance with or deviation from its target trajectory, which corresponds to the intermediate monetary policy objectives. In this study, the author focuses on the objective preconditions that determine not only the choice of monetary policy objectives and targets, but also the specific features of its implementation during the current phase of economic development.

1. The Choice of a Monetary Policy Regime: The Theoretical Aspects

The specificities of monetary policy implementation during various phases of economic development have been addressed by many theoretical and empirical studies, where the authors have come to the conclusion that the choice of a particular monetary policy regime depends on a number of economic factors, which include not only the actual size and structural properties of an economy, but also the degree of its financial system's development. In the study by [Batini, Laxton, 2007], these factors are as follows: the specific features of pricing processes (the degree of price regulation by the government, the role of the exchange rate pass-through effects), the degree of dollarization in the economy, and the degree of development of the banking sector and the financial market. The IMF experts [International Monetary Fund, 2006] have come to the conclusion that the choice of a particular monetary policy regime depends not only on a country's macroeconomic development parameters and the specific features of its financial market, but also on the regulatory abilities of its monetary authorities. For countries — exporters of raw materials, as shown in the study by [Drobyshevsky et al., 2004], one of the significant factors responsible for their choice of monetary policy goals and the mechanisms to be applied in the course of its implementation is the movement pattern of prices for raw materials, which in its turn determines the foreign currency inflow/outflow in/from its current account, and consequently, the movement patterns of its national currency exchange rate and major monetary indices.

Besides, the specific features of a particular economic policy are largely determined by the financial sector's development parameters. Thus, Ross Levine [Levine, 1997], when studying the mechanisms through which the financial sector can influence a country's economic development parameters, identified five basic functions of financial systems. Specifically, financial systems should (1) facilitate the trading, hedging, diversifying and pooling of risks; (2) allocate resources; (3) monitor managers and exert corporate control; (4) mobilize savings, and (5) facilitate the exchange of goods and services. In the course of his study, the author focuses on the statistically significant relationship between the level of a country's financial development and the rate of long-run economic growth (GDP), capital accumulation and productivity growth. According to Levine, the parameters and development potential of financial intermediary functions, in their turn, depend on the degree of financial liberalization. As testified to by world experiences, financial liberalization, which implies free access of foreign capital to domestic financial markets followed by increased competition, produced rather controversial influences on the financial sector's development parameters and economic development in general. This fact

has been further confirmed by the currency and banking crises occurring not only in the developing, but also in the developed countries (for example, in the UK, Spain, Italy, Canada). Overall, the period 1973—2007 saw 81 currency crises[1], more than 50 debt crises, and 23 banking crises [Ulyukaev, 2014]. The consequences of the economic crises triggered by financial liberalization were studied in detail on the basis of the experience of 90 countries, both developed and developing, over the period from the second half of 1970s through 1995 [Caprio, Klingebiel, 1996].

2. The Specific Features of Monetary Policy Implementation in the Current Phase of Economic Development

The monetary policy regime that is now most commonly applied in order to achieve price stability is that of exchange rate targeting. This regime is maintained by the central banks of 46.6% of the IMF member countries. In 2014, they accounted for 20.2% of world GDP in current prices and for 28.5% of GDP PPP. At the same time, the inflation targeting principles are adhered to by the monetary authorities of the larger economies — these are 17.8% of the IMF member countries. In 2014, they produced a total of 31.8% of world GDP in current prices, and 27.2% of world GDP PPP. In other words, 46.6% of the IMF member countries (with exchange rate targeting regimes) currently produce 20.2% of world GDP, and 17.8% of the IMF member countries (with inflation targeting regimes) – 31.8% of world GDP (Table 1).

Table 1

Monetary Policy Regime Implemented De Facto by Monetary Authorities (%)

	Exchange rate anchor				Monetary aggregate targeting	Inflation-targeting framework	other regimes
	USD	Euro	Currency baskets	Other currencies			
2008	33.0	14.4	8.0	3.7	11.7	22.9	6.4
2009	28.7	14.4	7.4	4.3	13.3	15.4	16.5
2010	26.5	14.8	7.9	3.7	13.2	16.4	17.5
2011	25.3	14.2	7.4	4.2	15.3	16.3	17.4
2012	22.6	14.2	6.8	4.2	15.3	16.8 20.0	
2013	23.0	14.1	6.8	4.2	13.6	17.8	20.4
2014	22.5	13.6	6.3	4.2	13.1	17.8	22.5
For reference: as % of world GDP in current prices							
	16.0	2.0	2.1	0.1	1.2	31.8	46.5
по PPP							

[1] A currency crisis is understood as depreciation of the national currency by not less than 25% per annum in nominal terms.

	23.5	1.4	3.5	0.1	2.0	27.2	41.5

Sources: International Monetary Fund, *Annual Report on Exchange Arrangements and Exchange Restrictions*, Washington D.C., 2014; own calculations.

The least frequently applied monetary policy regime is that of targeting monetary indices. It is followed by the monetary authorities of 13% of the IMF member countries, and their input in world GDP is negligible — 1.2% of world GDP in current prices and 2.0% of GDP PPP.

Monetary Targeting

According to data released by the IMF, monetary indices are currently being targeted by the monetary authorities of only 14 countries, including Malawi, Mozambique, Papua New Guinea, and Rwanda. The leaders in economic development within that group are the Republic of Seychelles and Uruguay, with per capita GDP of $ 16,185.9 and $ 16,350.7 respectively, while in the majority of other countries in that group this index is below $ 722 (low income level).

In these countries, monetary targeting regimes are combined with a flexible exchange rate regime. In most cases, their national currencies' exchange rates are determined by market factors in the framework of a floating exchange rate. This is true not only of the countries with high and medium income levels (the Republic of Seychelles and Kenya), but also of those with low income (Madagascar, Sierra Leone and Tanzania). Managed float regimes, where monetary authorities may intervene in order to influence the exchange rate and where a currency corridor exists in order to reduce the amplitude of exchange rate fluctuations, while not eliminating the influence of fundamental factors, are applied in countries like The Gambia, Nigeria, Myanmar and Rwanda (Table 2).

Table 2

Exchange Rate Regimes in the Countries Applying Monetary Targeting[2]

Floating exchange rate regime	Managed float regime
Afghanistan	Gambia
Kenya	Myanmar
Madagascar	Nigeria
Malawi	Rwanda
Mozambique	
Papua New Guinea	
Republic of Seychelles	

[2] In case of a managed float regime, the amplitude of the exchange rate fluctuations over a period of six or more months is not more than 2%, and it is allowed to officially establish a currency exchange rate (operational) corridor. The trajectory of the exchange rate's movement pattern is shaped by the effects of the following market factors: the balance of payments and international reserves, the situation in the global economy, and the economies of the country's partners in trade.

Sierra Leone	
Tanzania	

Source: International Monetary Fund, Annual Report on Exchange Arrangements and Exchange Restrictions. Washington D.C., 2014.

Under current conditions, it is the financial isolation of the underdeveloped countries that makes it possible for their monetary authorities to maintain relatively flexible exchange rate regimes. By restricting the effects of financial market fluctuations produced by changes in the global situation on the movement of their national currency exchange rate, monetary authorities protect the domestic market, thus reducing the probability of currency and banking crises, as well as a balance of payments crisis, its risk being highest for the economies with an undeveloped financial sector. The financial sector depth of 31.7% of GDP[3] was observed in 2010 in Papua New Guinea, while the average index for this group of countries is only slightly above 22% of GDP.

However, in the early 1970s the monetary targeting regime was still applied in the leading developed countries: the USA, Germany, and the UK. The US Federal Reserve first adopted the growth rates of monetary aggregates as an intermediate target in the early 1970s, and then in 1975 began to openly publish their indices [Bernanke, Mishkin, 1992]. In 1974, the decision to introduce the monetary targeting principles in its policy was adopted by the Deutsche Bundesbank, and then in 1977 by the Bank of England, although the latter had been *de facto* using these principles since 1974.

The monetary regulators in the major developed countries began to distance themselves from the strategy of targeting monetary indices because of the increasingly widespread availability of financial intermediary services associated with the rapid growth in transnational capital flows. In the late 1970s and early 1980s, London already acquired the status of an international financial center; in 1978, the London Traded Options Market opened, in early 1980 the market for derivative financial instruments and Eurobonds began to develop rapidly, and the London International Financial Futures and Options Exchange was established. These financial innovations not only triggered growth of the volatility of the money multiplier, but increased the velocity of monetary mass circulation. Then the weakening correlation between the movement patterns of monetary aggregates and the targeted macroeconomic variables translated into the generally weaker effects of monetary policy [Drobyshevsky, 2011]. As a result, in 1987,

[3] An indicator that describes the degree of financial sector development and is calculated as the ratio of the amount of domestic lending of the sector of financial corporations to GDP (World Development Indicators. http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators).

the Bank of England officially departed from the use of monetary indices as an intermediate monetary policy target. Meanwhile, in was during the 1980s, when the international financial market in the UK was developing at the highest rate, the annual velocity of wide monetary mass jumped to 29%, thus rising tenfold over the corresponding indices for Germany (2.9%) and the USA (2.4%). Nevertheless, both the Deutsche Bundesbank, whose monetary targeting policy is considered to be one of the most successful [Clarida, Gertler, 1997; Mishkin, October 2001], and the US Federal Reserve were likewise forced to abandon the targeting of monetary indices, albeit at a much later date (in 1999 and 2001 respectively).

In addition to the rapid development of their financial sectors, it becomes critically important for the major economies to be able to pursue an independent monetary policy. In the framework of the 'Impossible Trinity' hypothesis, monetary authorities must choose between three goals: to implement an independent monetary policy, to preserve a fixed exchange rate, or to secure capital mobility [Obstfeld et al., 2005; Aizenman, Chinn, 2009]. By abandoning the opportunity for pursuing an independent monetary policy, monetary authorities obtain another one — that of targeting the exchange rate through capital account liberalization. This policy is being implemented by some smaller countries — for example, Ecuador, Jordan, Qatar, Kuwait, or Denmark.

Exchange Rate Targeting

At present, exchange rate targeting has remained the most widely applied monetary policy regime. However, only smaller economies — in accordance with the 'Impossible Trinity' hypothesis — can afford not to choose an independent monetary policy. The only exception is China, whose input in world GDP in 2013 was as high as 12.5% of world GDP in current prices, or 15.7% of world GDP PPP. Moreover, with the increasing globalization of the world economy the number of countries practicing exchange rate targeting is continually shrinking (Table 1). This trend became fully pronounced and stable after the collapse of the Bretton Woods system, which had imposed restrictions on cross-border capital movement, and the exchange rates of national currencies were fixed and pegged to the US dollar.

The monetary policy evolution led to a continually increasing flexibility of the exchange rate policies, through a transition from rigid fixed exchange rates towards intermediate and then flexible exchange rate regimes. The developing countries abandoned their policies of exchange rate targeting only in the second half of the 1990s. The so-called 'fear of floating' caused by the risks of reduced export competitiveness is one of the factors that induce the monetary authorities

in the developing countries to continue their active interventions in their domestic currency markets.

The developing countries are faced with the challenge of the inevitable surge in the volatility of their national currencies' exchange rates after their switchover to more flexible exchange rate regimes. The importance of this factor is highest for those economies where the bulk of foreign debt is denominated in foreign currencies. Besides, some serious risks to the developing countries are posed by the exchange rate pass-through effects, which are especially painful to them [Ponomarev et al., 2014]. Nevertheless, in response to their integration into world economic processes and the increasing transnational capital flows, the monetary authorities of the developing countries were forced to abandon the principles of exchange rate targeting in favor of more flexible exchange rate and inflation targeting mechanisms. And so, while in 1975 only 10% of the developing countries used flexible exchange rates of their national currencies, in 1985 their relative share had increased to 25%, and in 1996 it was already as high as 52%. Meanwhile, the US dollar still retains its leading position in the world currency market, and so an overwhelming majority of central banks peg the exchange rates of their national currencies to the US dollar. In 2014, this was practiced by 48.3% of the central banks that relied on targeting exchange rate, while 29.2% of them pegged their national currency exchange rate to the Euro, 13.5% - to a currency basket, and no more than 9% - to other currencies.

In this connection, the fact that the dominant position of the US dollar is objectively determined by its role in global trade and financial operations is of tremendous importance. The USA is primarily one of the world's biggest economies: in 2013, US GDP accounted for 22.2% of world GDP in current prices and 16.3% of GDP PPP. For reference: the Eurozone produced only 17.4% of world GDP in current prices and 12.3% of GDP PPP. The US dollar also enjoys a leading position in the daily turnover structure of the global foreign exchange market, and it could not be seriously undermined even by the introduction of the Euro. Thus, in 2013, the share of the US dollar was 83%, while that of the Euro was only slightly more than 33.4%. For reference: in 2001, their relative shares were as follows - 89.9% taken up by the US dollar, and 37.9% by the Euro (Table 3).

Table 3

The Daily Turnover Structure of the Global Foreign Exchange Market

	1995		1998		2001		2007		2010		2013	
	%	place	%	place	%	place	%	place	%	place	%	place
US dollar	83.3	1	86.8	1	89.9	1	85.6	1	84.9	1	87.0	1
Euro					37.9	2	37.0	2	39.1	2	33.4	2

Japanese yen	24.1	2	21.7	2	23.5	3	17.2	3	19.0	3	23.0	3
UK pound			11.0	3	13.0	4	14.9	4	12.9	4	11.8	4
Australian dollar			3.0	6	4.3	7	6.6	6	7.6	5	8.6	5
Chinese yuan			7.1	4	6.0	5	6.8	5	6.3	6	5.2	6
Canadian dollar			3.5	5	4.5	6	4.3	7	5.3	7	4.6	7

Source: Bank for International Settlements. Triennial Central Bank Survey. 2013, www.bis.org.

One should not forget the role of the US dollar as a reserve currency, either. And, although its share in the structure of foreign exchange reserves held by monetary authorities shrank from 71.5% in late 2001 to 63.8% as of Q2 2015 respectively, it still more than three times exceeds the share of the second major reserve currency — the Euro (20.5%). In the final analysis, the use of the US dollar as a nominal anchor for monetary policy under present conditions makes it possible not only to reduce the transactions costs, but also to hedge foreign exchange risks.

However, in the deeply integrated global economy, exchange rate targeting can only be afforded by small economies. In contrast to the countries that target monetary indices, these are predominantly economies with medium ($ 1,045 - $ 12,736) to high (above $ 12,736) per capita income[4], sufficiently deeply integrated into the world economy. This is true not only of trade, but also of financial relations. Only in nine countries among those where the monetary authorities target their exchange rates (Argentina, Venezuela, Egypt, Cameroon, China, the Central African Republic, Eritrea, Ethiopia, South Sudan) the aggregate volume of exports and imports of goods and services does not exceed 50% of GDP. At the same time, the openness index of most countries in that group is 'strong' or 'critical'[5], which is indicative of their deep integration in global economic processes. The massive inflow of financial resources into the markets of the developing countries was increasing the exchange market pressure, thus also increasing their vulnerability and the probability of currency crises. In the end, the increasing capital mobility, coupled with the liberalization of the current, and then the financial accounts in the balances of payments of the developing countries created objective preconditions for their switchover from the policy of exchange rate targeting to that of inflation targeting. This happened in countries

[4] In the group of countries with low per capita income levels, this monetary policy regime has been adopted by Liberia, Cambodia, Haiti, Ethiopia, Yemen, Guinea, the Democratic Republic of Congo, Burundi, Bangladesh, Nepal, the Central African Republic, Togo, Niger, Mali, Guinea Bissau, Burkina Faso, Benin, Comoros Islands, Eritrea and Zimbabwe.

[5] The openness index of an economy is calculated as the ratio $(x + m)$ / GDP, where x and m are the volumes of exports and imports respectively. The openness index is weak if not more than 30% of GDP; moderate if between 30% and 50%; strong if between 50% and 70%; and critical when above 70% of GDP (IMF, 2012)

like Chile, Mexico, Colombia, Brazil and Thailand. Moreover, the adoption of inflation targeting in the majority of developing countries was preceded by a succession of currency and banking crises, which confirms the impossibility of maintaining, in an open economy, a fixed nominal exchange rate, let alone managing its movement pattern in real terms (Table 4). As a result, the frequency of currency crises in the 1990s, while being below that of the 1980s, surged significantly above the indices observed in the 1970s [Serven, Montiel, 2006].

Table 4

Currency Crises in the Countries that Adopted Inflation Targeting

	Currency crisis	Onset of inflation targeting, year
Australia	1976, 1983, 1985	1993
Brazil	1976, 1979, 1983, 1986, 1991, 1999, 2002	1999
UK	1976, 1992	1992
Hungary	1995	2001
Israel	1977, 1983	1992
Indonesia	1978, 1983, 1986, 1997, 2000	2005
Iceland	1975, 1978, 1981, 1984	2001
Canada	1981, 1986	1991
Colombia	1985, 1997	1999
South Korea	1980, 1997	1998
Mexico	1976, 1982, 1985, 1994	1999
New Zealand	1975, 1978, 1980, 1984, 1988	1990
Norway	1986	2001
Peru	1976, 1978, 1980, 1982, 1985, 1990	2002
Russia	1998	2014
Romania	1990, 1995	2005
Serbia	2000	2006
Thailand	1996	2000
Turkey	1977, 1981, 1984, 1988, 1994, 1999, 2000	2006
Uruguay	1974, 1982, 1987, 1990, 2002	2007
Philippines	1997	2002
Chile	1974, 1976, 1982, 1985	1990
Switzerland	1977	2000
Sweden	1992	1993
SAR	1975, 1981, 1984, 1989, 1996, 2001	2000

Sources: [Gourinchas, Obstfeld, 2011; Trunin et al., 2015].

At the same time, the monetary authorities in the majority of developed countries chose inflation targeting to replace directly their previous policies of targeting monetary indices or

monetary policy with multiple objectives without an explicit nominal anchor, thus overshooting the phase of exchange rate targeting. It is for this category of countries that the option of an independent monetary policy is of critical importance, and that is why most of them abstained from any attempts at exchange rate targeting. The developed countries that joined the Eurozone at a later stage, like Spain and Finland, are an exception from this rule. In the UK, the exchange rate targeting regime *de facto* lasted only two years. In October 1990, the UK entered the European Exchange Rate Mechanism [Cobham, 2001], and as early as October 1992 the Bank of England adopted inflation targeting.

Inflation Targeting

The widespread use of inflation targeting regimes not only in the developed, but also in the developing countries could be explained by the rising volume of transnational capital flows, as well as the development and diversification of financial intermediary services. Studies of international experience in this field have shown that there were no specific necessary requirements either to the baseline level of an an economy at the start of this particular monetary policy regime, or to its flexibility [Ulyukaev et al., 2008; Trunin et al., 2015; Stone et al., 2009; Petursson, 2010]. Overall, inflation targeting is being practiced in 31 countries, or in only 17.8% of IMF member countries. However, the inflation-targeting countries taken together account for 31.8% of world GDP in current prices and 27.2% of world GDP PPP, thus coming second only to the input of countries with multiple objectives, the latter including the giants like the USA and the countries of the Eurozone.

The flexibility of inflation targeting mechanisms makes them attractive to the monetary authorities of countries that differ significantly by the level of their economic development. On the one hand, these are developed countries like the UK, Canada or Japan, and on the other — Ghana and Paraguay. Besides, while at the start of their inflation targeting they dramatically differed by their target inflation rates, now there has emerged a distinct trend towards their convergence. For the developed countries, the target is an average annual CPI growth rate of 1—3%, while for the developing countries the targets vary within a wider interval of 2—7 %. Moreover, in these countries the target spread is also broader, being +/– 3 pp — like, for example, in the SAR. Such an approach allows the regulators greater freedom of maneuver, and so they can avoid an excessive toughening of their monetary policy when the desired target is achieved, thus reducing price volatility and associated political risks. Among the developed countries, a broad target spread was resorted to only in the initial phase of switching over to inflation targeting, for example by the Bank of England in 1992—1995 (Table 5).

Table 5

Quantitative Anchors set by the Monetary Authorities of Select Countries

Developed countries			Developing countries		
Israel 1992: 14–15%	1995: 7–10%	Chile	1991: 18%	1997: 5.5%	
	1993: 10%	2000: 3–4%		1992: 15–20%	1998: 4.5%
	1994: 8%	2001: 2.5–3.5%		1993: 10–12%	1999: 4.3%
	1995: 8–11%	2002: 2–3%		1994: 9–11%	2000: 3.5%
	1996: 8–10%	from 2003 to present: 1–3%		1995: 8% 2001—2006: 2–4%	
				1996: 6.5%	
Canada	December 1992: 2–4%; June 1994: 1.5–3.5% December 1995 to present: 1–3%		Peru	C 2002: 2.5% +/–1 pp	2007—2015: 2% +/–1 pp
Australia	from 1993 to present: 2–3%		Brazil	1999: 8% +/–2 pp	2003: 4%+/–2.5 pp
				2000: 6% +/–2 pp	2004: 5.5% +/–2.5 pp
				2001: 4%+/–2 pp	2005—2016: 4.5% +/–2.5 pp
				2002: 3% +/–2 pp	2017: 4
New Zealand	1990: 3–5%	1993–1996: 0–2%	Mexico	1995: 19%	2000: 10%
	1991: 2.5–4.5%	from Dec. 1996: 0–3%	1996: 10%	2001: 6.5%	
	1992: 1.5–3.5%	from Sept. 2002: 1–3%		1997: 15%	2002: 4.5%
				1998: 12%	2003: 3%
Sweden	From 1995: 2% +/–1 pp		SAR	from 2002 to present: 3–6%	
UK	1992–1995: 1–4%		Indonesia	2001: 4–6%	2008: 5% +/–1 pp
From 1996: 2.5%			2002: 9–10%	2009: 4.5% +/–1 pp	
	from June 2003 to present: 2%			2003: 9% +/–1 pp	2010–2011: 5% +/–1 pp
				2004: 5.5% +/–1 pp	2012–2014: 4.5% +/–1 pp
				2005: 6% +/–1 pp	2015: 4% +/–1 pp
				2006: 8% +/–1 pp	
				2007: 6% +/–1 pp	

Sources: [Schaechter et al., 2000]; official websites of central banks.

Much less frequently the monetary authorities, when targeting inflation, launch the mechanisms capable of expanding the target horizon, that is, the time interval during which the quantitative inflation targets must actually be achieved. This is necessary, firstly, in the presence of sufficiently significant and stable effects of external shocks, and secondly, in case of financial or credit shocks. The need to expand the target horizon may also arise during the evolution of an external shock, when it affects the links between different sectors of the economy and gives rise to systemic risks. Under these condition, the expansion of the time horizon needed for the actual inflation indices to slide back into the target corridor enables the regulator to avoid excessive volatility of both inflation and output. Such a mechanism for adapting the inflation targeting methods to existing realities was applied, for example, in Canada, where the economy strongly depends on the behavior of the world raw materials market[6]. Thus, in 2014, according to WTO data, raw materials accounted for 48.1% of Canadian exports (including 33.8% taken up by exports of fuel and mineral resources). However, it should be noted that in the course of more than 20-year-long period of inflation targeting, the Bank of Canada resorted to expanding the time horizon only nine times.

Another mechanism of adapting the inflation targeting principles to current realities is the direct adjustment of the target itself. However, this approach is only very rarely applied by monetary authorities. Thus, for example, the Bank of Brazil did this only twice during the entire inflation targeting period. In 2003, the target was raised by 0.25 pp — to 4%, with a simultaneous expansion of the admissible symmetrical deviation of the actual inflation index from its target value to 2.5 pp. In 2004, the target was upwardly adjusted by 1.75 pp — to 5.5% per annum, while the width of the target spread remained the same, which ultimately did improve the efficiency of inflation targeting by the Bank of Brazil. Thus, during the 16.5 years of inflation targeting in Brazil, the actual inflation index moved beyond the established inflation target corridor 72 times (in 36% of the total number of observations), of which in 46 cases (23% of the total number of observations) it deviated by more than 1 pp; and then from 2004 it deviated only 29 times (21%), and by more than 1 pp — in 9 cases (6%).

In addition to these facts, as demonstrated by the results of studies by [Ball, Sheridan, 2004; Gonçalves, Salles, 2008; Trunin et al., 2015], successful inflation targeting can be confirmed by a slower movement of the consumer price index and a lower price and output

[6] *Tiff M.* Flexible Inflation Targeting and "Good" and "Bad" Disinflation. 2014 URL: http://www.bankofcanada.ca/2014/02/flexible-inflation-targeting-good-bad-disinflation/

volatility. The changes in the values of these indices observed in Brazil have confirmed a significant increase in the efficiency of inflation targeting after 2004. Thus, the average monthly growth rate of the consumer price index over the period 2004—2007 slumped to 5.3% in per annum terms, while price volatility plunged to 30.8%. For reference: in 1999—2003, price growth was as high as 8.7% in per annum terms, and its volatility was above 42.5% (Table 6).

Table 6

Inflation and Output Volatility (%)

	January 1981 — March 1999	April 1999 — December 2003	January 2004 — December 2007	January 2008 — June 2015
CPI				
Average monthly growth rate, relative to corresponding period of previous year	717.6	8.7	5.3	5.9
standard deviation	1209.9	3.7	1.6	1.0
volatility	168.6	42.5	30.8	16.5
GDP*				
average quarterly growth rate, relative to corresponding period of previous year	2.2	2.2	4.5	2.9
standard deviation	3.8	2.0	1.5	3.2
volatility	171.9	90.6	34.5	113.6

* Data from Q1 1996.

Sources: International Monetary Fund. International Financial Statistics, 2015, www.imf.org ; own calculations.

However, the farthest deviation of the actual inflation index from its target value was noted in 2014—2015, and according to the Bank of Brazil's experts, this happened due to the influence not only of domestic, but also of external factors — i.e., those that were beyond the regulator's control[7]. In this connection it is noteworthy that the Bank of Brazil makes its decisions concerning changes in its interest rates primarily on the basis of an analysis of the movement pattern of the consumer price index. The upshot of this approach was that, in spite of production decline in response to an increased inflation pressure, in 2014 and 2015 the Bank of Brazil toughened its monetary policy. In October 2014 and July 2015, the benchmark interest rate (*Selic rate*) was raised to 11% and 14.25% respectively, and has remained at the latter level since then, although the industrial production volume has continued to decline.

The Specific Features of Monetary Policy in the Post-crisis Period

[7] Central Bank of Brazil. Minutes of the 192nd Meeting of the Monetary Policy Committee (Copom). 13.08.2015, http://www.bcb.gov.br/?MINUTES.

A characteristic feature of the post-crisis period has been the increasing focus of the monetary authorities in the developing and developed countries alike on those parameters of economic development that impose constraints on monetary policies. With this approach, not only the risks associated with the achievement of price stability are set against the risk of a slowdown or acceleration in the rate of economic growth, but also the possibilities for implementing a stimulatory monetary policy are weighed against the inflation risks.

This is typical not only of the monetary authorities implementing monetary policies with multiple objectives without an explicit nominal anchor — for example, the US Federal Reserve, the European Central Bank (ECB), or the Reserve Bank of India, but also of those that have adopted inflation targeting policies. Thus, e.g., the Bank of Japan, in its decision-making in the framework of its monetary policy whose main goal is to ensure price stability, relies on a variety of macroeconomic risk estimates, including those that have to do with the expected rate of economic growth. Meanwhile, the Bank of England in its monetary policy is striving to achieve price stability, which means low inflation, and so it creates proper conditions for achieving the economic goals set by the government regarding economic growth and employment. This assumption is also confirmed by the implementation of non-standard monetary policy measures not only by the US Federal Reserve and the ECB, but also by the Bank of England and the Bank of Japan [Goryunov, Trunin, 2013; Zamaraev, Kiyutsevskaya, 2015].

Moreover, in December 2012, the US Federal Reserve began to apply the unemployment rate as one of its monetary policy targets. It was planned that the key interest rate should be kept at the extremely low level of 0—0.25% per annum at least until that index drops below 6.5%. In August 2013, this example was followed by the Bank of England, which set as its target the unemployment rate of 7%. These measures, undertaken not only by the US Federal Reserve with its monetary policy without an explicit nominal anchor, but also by the Bank of England that relies on inflation targeting, are designed to lower the uncertainty and risks associated with the inevitable increase of the key interest rates. Nevertheless, the US Federal Reserve's decision to raise its targets was adopted only as late as December 2015, with due regard for the effects of multiple factors, including the movement patterns of consumer and investment activity, and consumer price inflation. In this connection it is noteworthy that the US unemployment rate dropped below its target level in April 2014, when the relative number of unemployed was 6.2%.

In addition to all these circumstances, given the increasingly important role of the financial sector, the powers of monetary authorities presently include those of ensuring not only price stability, but also the financial system stability that extends beyond the boundaries of the banking sector and encompasses the activities of other financial corporations and the financial

market as a whole At the same time, as confirmed by the results of study by [Bean, 2003; Detken, Smets, 2004], the price and financial stability goals set in the framework of monetary policy may not only supplement one another, but run counter one another. This is also confirmed by the trends that became visible, for example, during the post-crisis period (2010—2015) in the countries of the Eurozone, when the soaring prices of financial assets and the growing financial market bubble came in conflict with the goals of overcoming deflation risks and stimulating the economy. A somewhat similar situation is typical of China's economy, where the implementation of 'stimulatory' measures produced a bubble in the financial market [Kiyutsevskaya, Trunin, 2015]. The contradiction between the goal of achieving price stability, on the one hand, and that of achieving financial stability on the other, may also arise in the event of a substantial accumulated government debt. Under such conditions, the efforts of monetary authorities to bring down the debt servicing costs and reduce interest rates in the economy trigger excessive demand (among other things, for risky assets), thus destabilizing the situation in the financial markets even in the absence of negative inflation trends (Japan). At the same time, considerable risks are also associated with determining the fundamentally substantiated level of prices for financial assets, the deviation from which would be indicative of the emergence of a financial market bubble [Borio, Lowe, 2002]. However, the consequences of the world financial and economic crisis, which started in the US housing market and only later spread into other sectors and acquired a global scale, clearly demonstrated that stability in the financial system that extends beyond the banking sector proper, is a necessary but by no means sufficient condition for sustainable and balanced economic growth. That is why the typical features of the post-crisis period were, firstly, the endowment of central banks with the powers to ensure the stability of other financial corporations and the financial market as a whole, and secondly, the acknowledgement of the necessity to strengthen the regulatory and supervisory functions of monetary authorities.

While traditionally the evolution of goals and objectives pursued by monetary authorities is subdivided into three phases, marked by the Great Depression of the 1930s and the Great Inflation of the 1970s [Singleton, 2010], at present it would be legitimate to identify the fourth phase, its onset being the world financial and economic crisis of 2008–2009:

– during the first phase, the goals of monetary authorities were determined by the gold standard rules, whereby the main 'public' function of private central banks was to ensure that national bank notes could be converted into gold, to maintain the payment system stability, and to lend money to state administration bodies;

– the consequences of the Great Depression — large-scale price deflation and massive production decline — set as the cornerstone goal the necessity to maintain employment and price stability, a sustainable balance of payments and a stable exchange rate against the US dollar;
– during the period the Great Inflation of the 1970s, some of the powers of monetary authorities begin to be independent of government control, and their principal function became that of ensuring price stability;
– the world economic crisis posed two key problems for central banks, the first having to do with the need to improve the mechanisms of banking regulation and financial supervision, and the second being the necessity to ensure financial stability in addition to price stability.

Thus, the world financial and economic crisis, which revealed the specificities of the modern global economy (with close trade and financial links, widespread use and diversification of financial intermediary services, these no longer being limited to banking services), also resulted in broader powers being granted to monetary authorities and outlined their new goals. The possible options for achieving these goals have clearly indicated the feasible directions for further improvement of monetary policies and the overall development of the world economy.

Conclusion

The specific features of monetary policy are determined by objective factors, which include not only the structural features of an economy and the level of economic development, but also the degree of an economy's integration in global economic (and primarily financial) relations. In the final analysis, the choice of their goals and objectives by the monetary authorities of each country is limited to a rather narrow set of options. For large developed economies, it is critically important to be able to implement an independent monetary policy, which in combination with lifted restriction on capital flows can be achieved in the framework of either inflation targeting, or a monetary policy without an explicit nominal anchor. However, the mechanisms employed in the implementation of monetary policy and its targets can also be significantly influenced by the specific features of global economic development. At the same time, as demonstrated by the world financial and economic crisis of 2008—2009, one of the specific features of monetary policy implementation during the current phase of economic development is monetary policy flexibility, which makes it possible to give consideration to the strong interrelations existing not only in the field of trade, but also in the financial sphere. Under these conditions, one of the core goals of monetary authorities becomes that of achieving and maintaining stability in the financial system that extends beyond the banking sector.

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