Consolidation of price and financial stability goals in the monetary policy of central banks

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Introduction

- Recent global trends indicate the expansion of central banks functions.
- Practically all of them are now in charge of not only price stability, but also financial stability, as well as of ensuring economic growth.
- Price stability is connected to “monetary rule” in performing monetary policy.
- Meanwhile, the indicator of financial stability is not present in an explicit form in modern models of monetary policy. This fact creates the need for its further development.

Related Research

- **The relation between the level of interest rates and inflation**

  Fisher I., Tymoigne E., Sargent T. , Ireland P., Kandel S., Ofer A., Sarig O., Asgharpur H., Kohnehshahri L., Karami A., Cochrane J.

- **Relation between the level of interest rates and financial stability**

  Arteta C., Kose A., Stocker M., Taskin T., Pshenichnikov V.V. ,Kuttner K. ,Ajello A., Dvoretskaya, Laubach T., Lopez-Salido D., Nakata T., Pshenichnikov V.V. , Palley T., Brunnermeier M., Schnabel I.

- **Relation between the level of interest rates and economic growth**

  Jonsson M., Reslow A. ,Drobyshevsky S.M., Trunin P. V., Bozhechkova A. V., Sinelnikova-Muryleva E.V., Sodikova S.Sh.,Sazhina M.A. ,Krutko V.V., Mankov V.V., Litunova A.A., Podkolzina IA.

Motivation

The paper is aimed to suggest a mechanism for consolidating financial stability goals with the price stability goals in the monetary policy of central banks.
It includes:

- Development of financial stability indicator at the macro level
- Development of a methodology for the formation of financial stability goals in correspondence with the provision of economic stability
- Development of criteria for consolidating goals on price and financial stability
- Formalization of the developed methodology in the form of a monetary rule.

Theoretical Approaches to the Diagnosis of Financial Stability

Definitions Based Primarily on Information Characteristics

- *Authors: Chant J., Crockett A., Ferguson R., Rosengren E., Kovalev M., Paseko S.I., Stanik N., Korol'kov V., Yakushin A.*
- *Methodology:* Oriented towards the volatility of financial markets
- Level of financial markets and their sectors reflecting the volatility of financial markets

Institutionally Oriented Definitions

- *Authors: Padoa-Schioppa T., Shinasi G., Moiseev S., Lobanova M., Lunyakov O., Kadomtseva S., Israelyan M.*
- *Methodology:* Oriented towards the sustainability of institutional units
- Level of individual sectors of the economy, reflecting its institutional structure, including the banking system

Index of Financial Stability (IFS)

IFS = RR = RN – IP

IFS - the real interest rates of debt financial instruments (IFS)

RR - the real average weighted cost of debt financial instruments (borrowings) in percent per year

RN - the nominal average weighted cost of money (borrowings) in percent per year;

IP - index of price increase in the economy in percent per year;

Nominal Average Weighted Cost of Money (RN)

$$RN = (RNC*C + RNB*B)/ (C + B)$$

RN - the nominal average weighted cost of money (borrowings) in percent per year

RNC - the nominal average weighted interest rate on the loan market in percent per year

C - the volume of outstanding loan on the credit market, bln.rubles

RNB - the nominal average weighted interest rate on the bond market in percent per year

B - capitalization of the bond market, bln.rubles

Index of Price Increase in the Economy

$$IP = (Ip * Q + In * N + Ia * A)/(Q + N + A)$$

Ip - consumer price index in percent per year

Q - the volume of real GDP, billion rubles

In - index of consumer prices in the real estate market in percent per year

N - the volume of the real estate market, bln.rubles

Ia - index of stock prices in percent per year

A - capitalization of the share market, billion rubles

Formation of Strategic Goal for the Price Stability

Due to the complexity of assessing the optimal level of inflation, most central banks choose the level of the inflation target without a strictly econometric justification, based on the characteristics of the country's economy.

In order to determine the target level of CPI for the medium term, central banks use one of the following options:

- the specific (point) value of the goal
- a target point with a range of permissible deviations
- target range

Formation of Strategic Goal for Financial Stability

The scale of qualitative assessment of financial stability.

The proposed criteria n should be formed on the basis of analysis IFS for a number of years

Assessment of financial stability	**General Index of Financial Stability (IFS)**
High	3n< IFS
Good	3n≥ IFS >2n
Satisfactory	2n≥ IFS >n
Questionable	n≥ IFS >0%
Low	IFS<0%

The Scale of Qualitative Assessment of Price Stability

Evaluation of price stability	**CPI (Ip)**
Low	3m < Ip
Questionable	3m $\geq$ Ip > 2m
Satisfactory	2m $\geq$ Ip > m
Good	m $\geq$ Ip > 0%
High	Ip < 0%

The proposed criteria n should be formed on the basis of analysis CPI for a number of years

Consolidation Matrix of Strategic Goals on Price and Financial Stability

Financial Stability \ Price Stability	High (Ip ≤0%)	Good (m ≥ Ip >0%)	Satisfactory (2m ≥Ip >m)	Questionable (3m ≥ Ip >2m)	Low (3m< Ip)
High (3n< IFS)	X				
Good (3n≥ IFS >2n)		X			
Satisfactory (2n ≥IFS >n)			X		
Questionable (n≥ IFS >0%)				X	
Low (IFS≤0%)					X

Interest-Oriented Policies Aimed at Achieving the Goals of Price and Financial Stability

$$RN = IFS + IP$$

$$RN = RNF + RNR$$

$$\mathbf{r = IFS + IP – RNR}$$

RNF - nominal risk-free rate

RNR - risk premium

r - key rate

Data sources

MICEX Corporate Bond Index MICEXCBITR – historical data http://moex.com/en/index/MICEXCBITR/archive/

MICEX Municipal Bond index MICEXMBITR – historical data http://moex.com/en/index/MICEXMBITR/archive/

Russian Government Bond Index RGBITR – historical data http://moex.com/en/index/RGBITR/archive/

Russian Federation state domestic debt – monthly data by Ministry of Finance http://minfin.ru/ru/document/?id_4=93479

Moscow Exchange stock market capitalization data http://moex.com/a3882

Stock market free-float coefficient data http://moex.com/ru/listing/free-float.aspx

Reality price statistics for Moscow city http://www.irn.ru/gd/

Federal Service for State Registration, Cadaster and Cartography statistics https://rosreestr.ru/site/open-service/statistika-i-analitika/statisticheskaya-otchetnost/

Practical Application Aspects

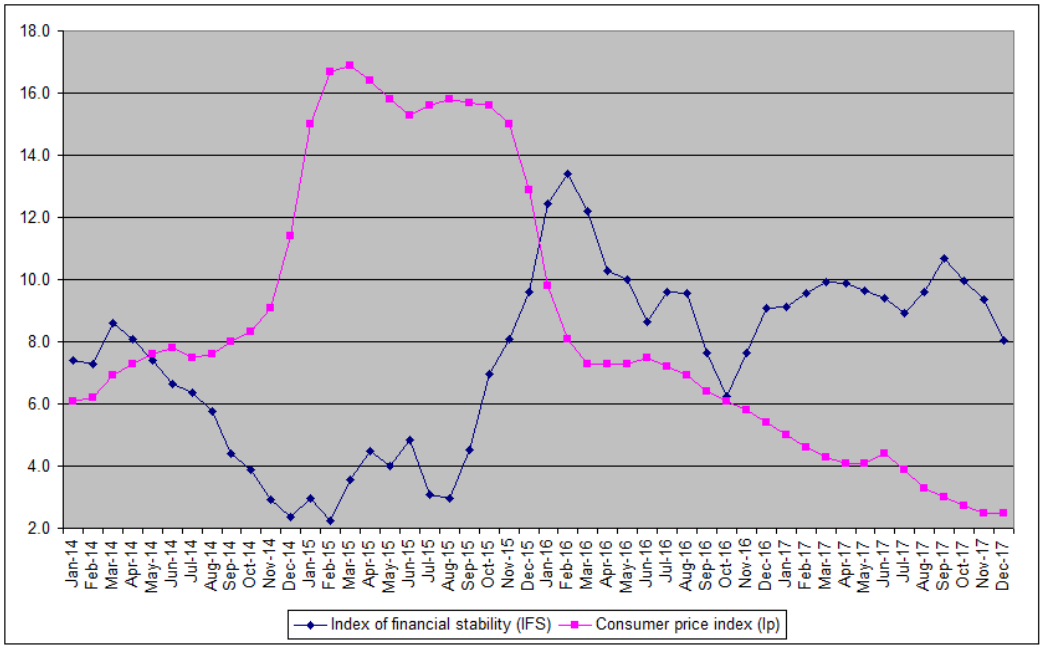

Fig.1 Dynamics of IFS and CPI in Russia 2014-2017

Price Stability Assessment Scale (Applicable to the Russian Economy)

Evaluation of price stability	General Index of Price Stability (Ip)
High	Ip ≤0%
Good	4%³≥ Ip >0%
Satisfactory	8%³≥ Ip >4%
Questionable	12%³ ≥Ip >8%
Low	Ip >12%

Financial Stability Assessment Scale (Applicable to the Russian Economy)

Assessment of financial stability	General Index of Financial Stability (IFS)
High	6%< IFS
Good	6%³ ≥IFS >4%
Satisfactory	4%³ ≥IFS >2%
Questionable	2%³ ≥IFS >0%
Low	IFS≤0%

The Strategic Objectives for Financial Stability in the Form of Specific Index Values IFS

Price Stability / Financial Stability	High (Ip ≤0%)	Good 4%≥ Ip >0%	Satisfactory. 8% ≥ Ip > 4%	Questionable 12% ≥ Ip > 8%	Low 12% < Ip
High **6% < IFS**	X				
Good **6% ≥ IFS >4%**		X			
Satisfactory. **4% ≥IFS >2%**			X		
Questionable **2% ≥ IFS >0%**				X	
Low **(IFS≤0%)**					X

The Operational Objectives of Monetary Policy in the Form of Given Key Rate Values

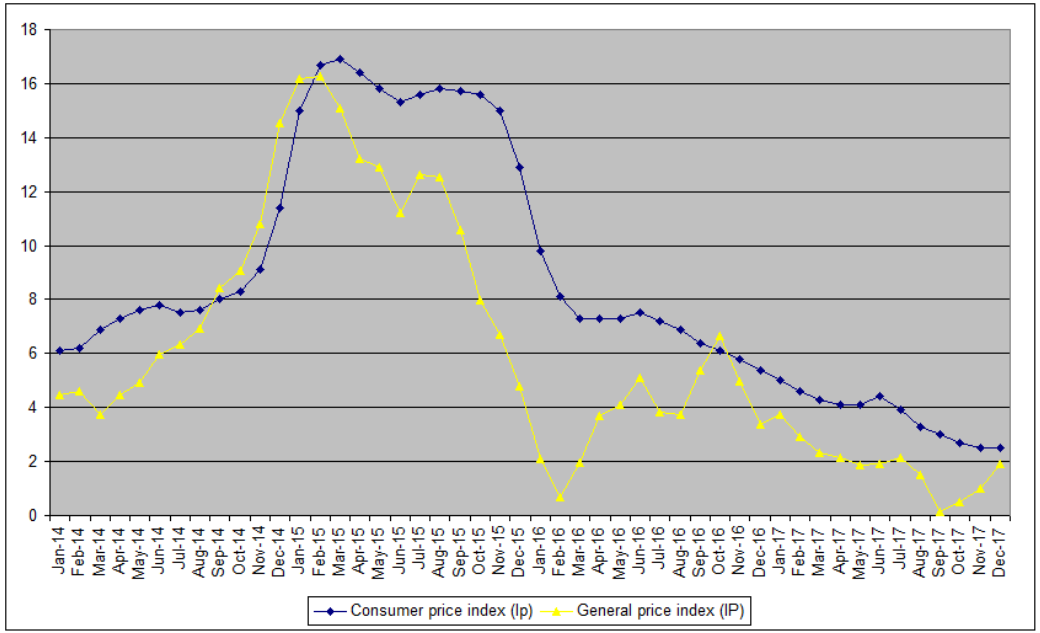

Fig. 2. Dynamics of the general inflation index (IP) and the CPI (Ip)

The Risk Allowance RNR

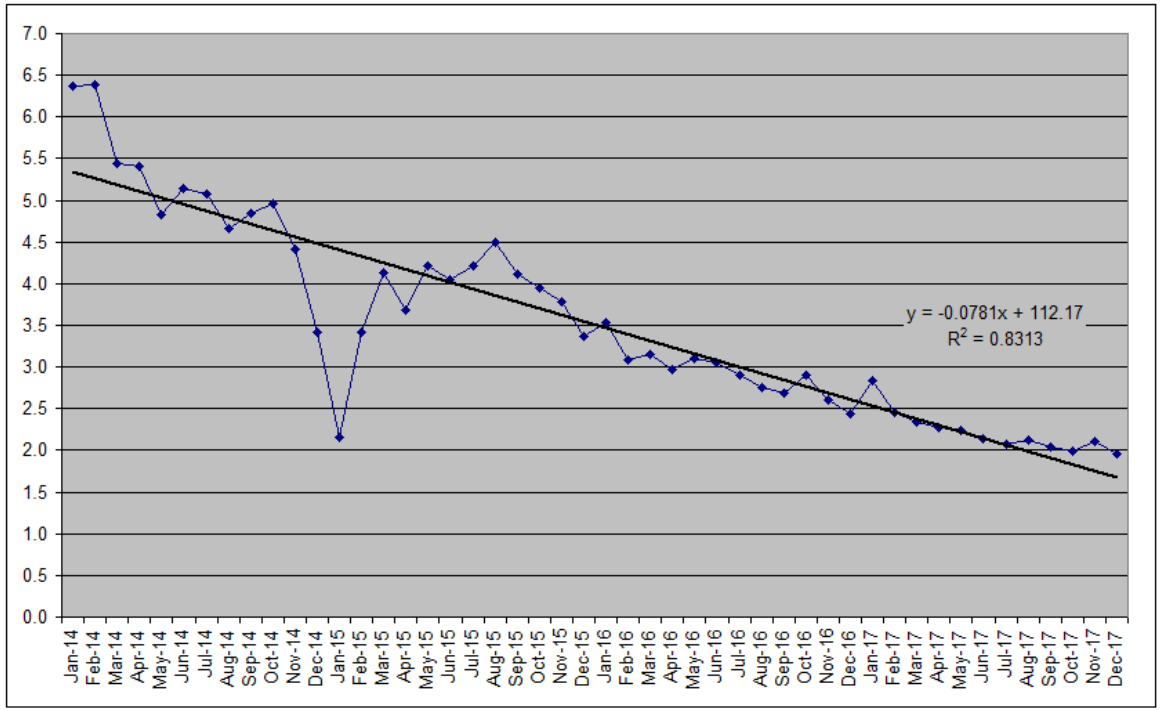

Fig. 3. Risk premium in Russia in 2014-2017.

Operational Goals of Monetary Policy 2018-2020

- Goal of price stability (Ip): 4,0
- Goal of financial stability (IFS): 4,0%
- Index of Price stability (IP): 4,0%
- Risk premium (RNR): 2,0
- **Key rate: 6,0%**
- Target range of financial stability (IFS): 6,0%≥ IFS ≥ 4,0%
- **Target range of key rate: 8,0% ≥ r > 6,0%**

The Results of Approbation

The results of approbation of the proposed mechanism for coordinating strategic goals on price and financial stability, using the example of the monetary policy of the Bank of Russia, confirm its applicability to the practical operations of central banks.

Summary

We suggest:

- using the real interest rates of debt financial instruments as an indicator of the financial stability, which can be used to establish the financial stability goals at the macro level
- using a matrix of these goals, formed by combining scales of qualitative assessment of the price and financial stability
- using the matrix as a basis for the formation of the strategic goals of the financial stability, taking into account the target inflation values established by central banks
- modifying the monetary rule by including in it the target value of the IFS indicator to achieve the goals of price and financial stability simultaneously

Thank you for attention!