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Cash Turnover: Construction Models and Progress Prospects

Abstract. In all countries with market relations the organizers and the active participants of cash turnover are central banks which take complete responsibility for its organization and regulation. The authors consider the modern models of cash turnover in the world and its organization. Classification of monetary cash turnover models by criterion of the basic functions and responsibility distribution between central and commercial bank and other participants is presented. Main tendencies and ways of cash turnover reforming in Russia have been analyzed, and they are directed to solving of such major problems as expenses reducing and risk minimization connected with cash turnover organizing. Analysis of monetary turnover's basic parameters has shown that there are specific features of cash and non-cash money usage in each country. Conclusions are drawn by results of fundamental factors and cash-monetary turnover models research. Thus, the central banks, the credit organizations, the manufacturers of the bank equipment will always have interest in cash-monetary turnover conservation. In order to increase the level of automation processing, life cycle of banknotes and coins, cleanliness of monetary circulation, it is necessary to delegate a part of power of the central bank connected with processing and storage of monetary cash to commercial structures.

Keywords: Central Bank; Cash Turnover; Cash Turnover Models; Banknotes; Coins

JEL Classification E02; E42; G21

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Налично-денежное обращение: модели построения и перспективы развития

Аннотация. Во всех странах с рыночными отношениями организатором и активным участником налично-денежного обращения являются центральные банки, которые по законодательству должны нести всю полноту ответственности за его организацию и регулирование. Авторами представлена классификация моделей налично-денежного обращения по критерию распределения основных функций и ответственности между центральным и коммерческими банками, другими участниками. Кроме того, анализируются основные тенденции и пути реформирования налично-денежного обращения в России, которые направлены на решение таких важнейших задач, как снижение затрат и минимизация рисков, связанных с организацией налично-денежного обращения.

Авторский анализ основных показателей денежного оборота показал, что в каждой стране имеются специфические особенности расчетов и границы использования наличных и безналичных денег. По результатам проведенного исследования основополагающих факторов и моделей налично-денежного обращения сделаны выводы о том, что центральные банки, кредитные организации, производители банковского оборудования всегда будут заинтересованы в сохранении наличного денежного оборота. Для повышения уровня автоматизации обработки, жизненного цикла банкнот и монет, чистоты денежного обращения следует делегировать часть полномочий центрального банка, связанных с обработкой и хранением денежной наличности, коммерческим структурам.

Ключевые слова: центральный банк; налично-денежное обращение; банкноты; монеты.

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Готівково-грошовий обіг: моделі побудови та перспективи розвитку

Анотація. У всіх країнах із ринковими відносинами організатором та активним учасником готівково-грошового обігу є центральні банки, які за законодавством мають нести всю повноту відповідальності за його організацію і регулювання. Авторами подано класифікацію моделей готівково-грошового обігу за критерієм розподілу основних функцій і відповідальності між центральним та комерційними банками, іншими учасниками. Крім того, аналізуються основні тенденції і шляхи реформування готівково-грошового обігу в Росії, які спрямовані на вирішення таких найважливіших завдань, як зниження витрат та мінімізація ризиків, пов'язаних із організацією готівково-грошового обігу.

Авторський аналіз основних показників грошового обороту показав, що в кожній країні є специфічні особливості розрахунків і межі використання готівкових та безготівкових грошей. За результатами проведеного дослідження основоположних чинників і моделей готівково-грошового обігу зроблено висновки про те, що центральні банки, кредитні організації, виробники банківського устаткування завжди будуть зацікавлені у збереженні готівкового грошового обороту. Для підвищення рівня автоматизації обробки, життєвого циклу банкнот і монет, чистоти грошового обігу слід делегувати частину повноважень центрального банку, пов'язаних з обробкою та зберіганням готівки, комерційним структурам.

Ключові слова: центральный банк; готівково-грошовий обіг; банкноти; монети.

1. Introduction

Nowadays, in spite of numerous forecasts about reducing of cash turnover connected with the development of non-cash payment, the volume of cash turnover is constantly increasing in most of the countries. According to the estimation of experts, the annual quantity of banknotes exceeds 160 billion and its annual increase is 5% in the past decade [1].

Priority guidelines of bank system's activity in the field of cash turnover are cost cutout, connected with handling of cash and providing safe cash delivery, improvement of quality and protective properties of banknotes and coins.

2. Brief Literature Review

The fundamental researches in the field of monetary problematic are the works of foreign scientists J. M. Keynes [2], I. Fisher [3], M. Freedmen [4], L. Harris [5], R. Haycock [6] etc. The issues of money turnover have been considered by the Russian authors L. I. Abalkin, G. E. Alpatov, S. V. Anureev, M. P. Berezina, V. M. Ionov, G. I. Luntovskiy, O. I. Lavrushin, L. N. Krasavina, Yu. V. Pashkus, G. G. Silaste, V. M. Usoskin etc.

3. Purpose

To analyze of modern models, tendencies of cash turnover and to develop trends for directions of its modernization with the aim of risk reduction and activity optimization for the basic participants and organizers.

4. Results

In the theory and practice of cash turnover organizing, there are three types of models and they are based on distribution of basic functions of responsibility between the central bank and other major participants (centralized, decentralized and partially decentralized models), see Table.

According to the centralized model, all functions in organization of cash turnover are realized by the central bank. It has the primary responsibility for printing banknotes and coins, storage and distribution of cash balance, its processing for guaranteeing quality, authenticity and liquidation of banknotes. The mints print banknotes and coins by order of the central bank.

In contrast to the centralized, in partially centralized model of cash turnover the central banks realize analogous functions and they take the secondary responsibility for their realization. The mints take the primary responsibility for printing banknotes. Commercial banks and the collector companies have the secondary responsibility for storage, distribution, processing of cash for guaranteeing of its quality and authenticity, and trading organization is responsible for processing of banknotes.

The decentralized model of organization of cash turnover assumes establishment of the primary responsibility for mints in printing banknotes and coins. The commercial banks are responsible for liquidation of banknotes not suitable for cash turnover; the collector companies are responsible for storage and distribution of the monetary cash and its processing. In this model the central bank has the secondary responsibility in storage, distribution and processing of the monetary cash. The commercial banks are responsible for storage, distribution of banknotes and trading companies are responsible for processing of banknotes and coins.

In recent years, there is the growth of quantity of cash turnover in many countries. It may be caused not only by fundamental economic factors, but also by subjective preference of participants of settlement operations. In spite of application of remote bank service in retail payments, private persons always use the bank account for payment of small expenses because of more complex mechanism of settlement operations, its costs and security. These things confirm advantages of cash in comparison with the noncash transaction in everyday life.

The world statistics determines that in spite of slowdown in cash volume growth in some countries, the cash volume in general is increasing. By the estimation of experts, FRS the USA, the Bank of England, the central banks of China, Turkey, Indonesia are facing cash volume growth. This tendency is peculiar both for developed and for developing countries. They demonstrate an average 5% increase of cash volume a year [6].

The cash sufficiency level in Russian economy at the beginning 2014 was 10%. In comparison, in the USA this parameter was 6.7%, in China – 10%, in Japan – 17%, in Kazakhstan – 4.5%, in Belarus – 1.9%.

The comparative data on the level of cash sufficiency in Russia and abroad is shown on Figure 1.

The level of cash payment in Russia is still enough high. About 90% of retail payments in 2013 were cash payments (by the quantity of transactions). For the last five years, the quantity of cash in turnover has grown 1.9 times and is equivalent to 7.7 trillion rubles (about \$236 billion). As on 01.01.2014, the sum of money in circulation was equivalent to 8 315.3 billion rubles (about \$254.6 billion), that includes 8 246.6 billion rubles (about \$252,5 billion), including the banknotes. 45 banknotes and 399 coins were accounted for one inhabitant of Russia [9].

The assertion concerning convenience and security of noncash transaction using payment card (as alternative to cash payment) has been discredited by the statistics about the attacks to bank payment systems. According to the estimation of the

Table: The basic models of cash turnover

The classical (centralized) model	Mints	The central bank	Commercial banks	Collector companies	Trading organizations
1. Printing of banknotes and coins	X	X			
2. Storage and distribution of monetary cash		X			
3. Processing of cash for guaranteeing its quality and authenticity		X			
4. Liquidation of banknotes, not suitable for turnover		X			
Partially centralized model	Mints	The central bank	Commercial banks	Collector companies	Trading organizations
1. Printing of banknotes and coins	X	X			
2. Storage and distribution of monetary cash		X	X	X	
3. Processing of cash for guaranteeing its quality and authenticity		X	X	X	X
4. Liquidation of banknotes, not suitable for turnover		X			
The decentralized model	Mints	The central bank	Commercial banks	Collector companies	Trading organizations
1. Printing of banknotes and coins	X				
2. Storage and distribution of monetary cash		X	X	X	
3. Processing of cash for guaranteeing its quality and authenticity			X	X	X
4. Liquidation of banknotes, not suitable for turnover			X		

	Primary responsibility
	Secondary responsibility

Source: Authors' compilation based at Ionov, 2014 [7]

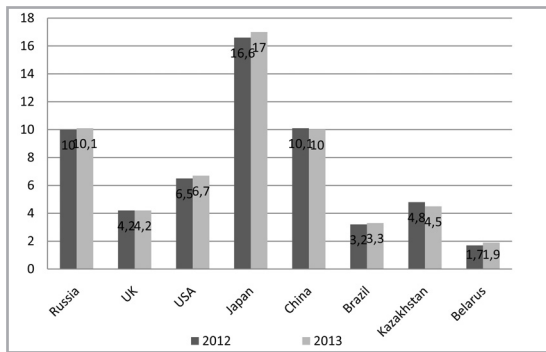


Fig. 1: The cash sufficiency level in some countries, %
Source: Authors' compilation based at Luntovsky, 2013 [8]

experts in 17 countries, 27% of card holders have suffered a loss from swindlers' actions for the last 5 years [6]. As a result of the losses risks from cheating operations and high commissions, payment card expenses exceed operations with cash. Payment scheme does not depend on one payment instrument, and «the black market» actively uses alternatives to cash and adapts technological innovations.

In every country there is specific character of the monetary turnover organization and cooperation of the participants, mechanisms and ways of transferring money resources. It is reflected in the national legislation [10].

The role of the central banks in the organization of cash turnover is changing in the world. It is connected with high level of expenses for its service (in Russia it is about \$300 billion, in the USA it is about \$200 billion a year) [6, 9].

In our opinion, the central bank always aimed to find balance between cost improvement and risks of money loss during transportation, storage and liquidation, as well as losses from swindle.

Characterizing modern trends of cash turnover in Russia, the slowdown in growth rates of cash volume together with increase of their quantity can be noted (see Figure 2 and Figure 3).

The increase rate of cash turnover was 8.3%, in comparison with 11.2% in 2012. The percentage of cash at the beginning 2014 on unit M0 in a total stock of money M2 has not changed in comparison with the same period of the last year (23.5%) and it is 22.2% [11, 12]. In the whole, growth dynamics of cash money in Russia is left behind the rate of GNP growth and commodity turnover.

The consumer prices growth on goods and services has caused the structural change and banknotes denomination in turnover. The relative share of banknotes of high denominational values has increased. At the beginning of 2014, the volume of banknotes in the total money volume increased at about 10%, coins – 90% [11, 12].

The problem of cash turnover in Russia is the usage and processing of coin. At the present level of prices, the largest quantity of small coins is not used in retail payment and it is rarely returned to the cash department of the credit companies. In order to prevent extra expenditures, the credit organizations prefer to receive coin in the Bank of Russia and they eliminate their processing and storage.

In spite of the recommendations of the Bank of Russia, many cash machines are not well equipped with the protective devices. In September 2013, in some Russian banks the banknotes of 5000 rubles denomination were found in the cash machines. The swindlers managed «to extract» information about the protective elements that can read out validator in the cash machines.

In 99% cases the multiplying equipment is used for producing fakes. More than half of fakes come from the south regions of the country (Dagestan, Ingushetia). Among the false coiners there is a «specialization» in printing the certain types and denomination of false banknotes, and not only Russian but also foreign.

For providing the storage and processing of the monetary cash, the priority problems have been solved in recent times.

Firstly, the Bank of Russia organizes centralization of processing and storage of money and transfers these operations into large automated cash processing centers in St. Petersburg, Krasnodar, Voronezh cities. For the last five years the number of cash processing centres has been reduced in 1.5 times and now accounts 505 divisions. By the end of 2015, it is planned to liquidate 300 subdivisions. The credit organizations are given the right to carry out the cash service of other commercial organizations and their subdivisions and organize their own cash centres.

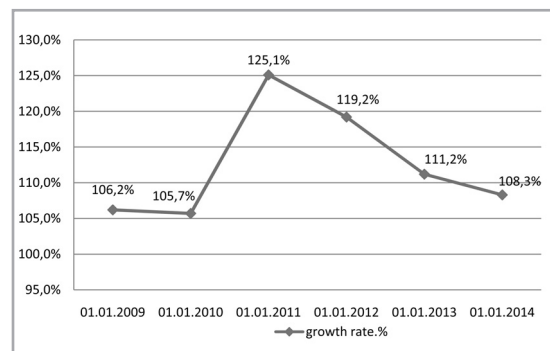


Fig. 2: Dynamics of cash turnover growth rate
Source: Compiled by the Authors according to the annual reporting statistics of the Bank of Russia, 2009-2013

Secondly, for decreasing the expenses in cash monitoring processing in the Bank of Russia, the modern aggregate complexes on the basis of counting-and-sorting machine are now being used. It made possible to increase the labour productivity of the cash workers in 1.5 times, to carry out the monitoring of the decrepit banknotes liquidation, to optimize the distribution of the monetary cash stocks. The Bank of Russia modernizes the packing of banknotes with the code identification. It also organizes automated storehouses and standardizes the information.

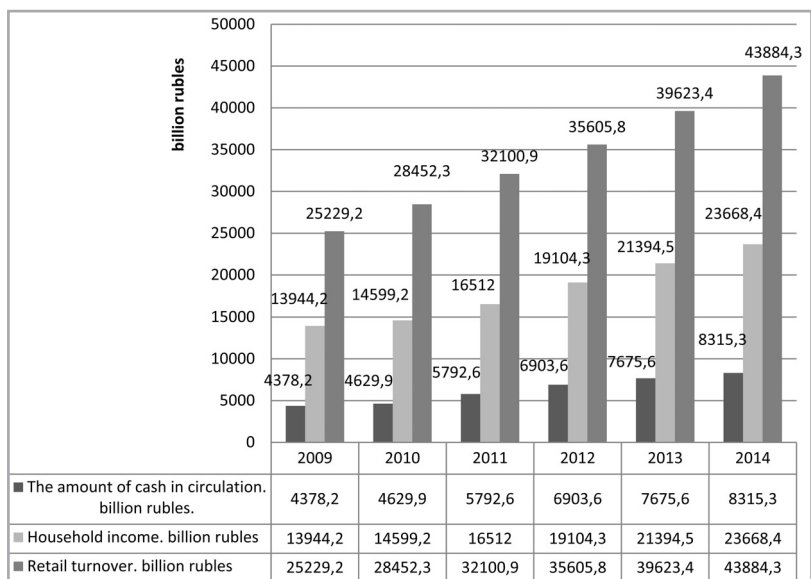


Fig. 3: Dynamics of cash turnover in circulation, household incomes and retail turnover in Russia (2009-2013)

Source: Made by the Authors according to the annual reporting of the Bank of Russia

Thirdly, in 2012, in order to provide integrity of the cash turnover, the Bank of Russia has created the 20-scale sorting of banknotes for the decrepit banknotes elimination to 5-10%, and providing the bank with the safe cash turnover. The usage of the coin-collecting devices in the credit organizations on the territory of the large retail and office centres can solve the problem of the coins processing. The Bank of Russia takes actions of the cash turnover protection against the false coiners. In 2010-2011, the modifications of the banknotes by the denominations of 500, 1000 and 5000 rubles with the reinforced protective complex were organized. In the perspective, the innovative protective signs introduction within nanotechnologies is planned.

Fourthly, Goznak of the Russian Federation must organize the database of the banknotes and the banknotes for the liquidation. The similar system is formed in 22 Cash settlement centres of the Bank of Russia and in the perspective they will be formed in all commercial banks.

Thus, for the last five years the total quantity of the counterfeit denominations has decreased in 1.5 times and the cost savings from the innovations in the sphere of the cash monetary turnover has reached 40% in 2014 in comparison with the previous year [9].

5. Conclusions

The carried out research has shown that the noncash and cash transactions form the whole unit in the monetary turnover and historically were orientated to the various spheres of service. Nowadays, the priorities of the cash and cashless transactions usage are quite relative and the security of transactions by cash may be much higher. For this reason, the central banks in the whole world, the credit organizations, and producers of the bank equipment show interest in the conservation of cash turnover and they will aim for the reduction of the risks and the cost of the operation with cash.

The multidirectional factors influence on the cost value of cash monetary turnover organizing, but the major objectives of the central banks in this area are increase of the automation level and control over these processes as well service life of the banknotes and coins and purity of the cash monetary turnover.

Thus, every country considers the problem of the payments rational structure definition as the system problem. It is necessary to solve it in complex, taking into account the best practices and to build the most appropriate model of cash management. The central bank would assume delegating some parts of the functions to the commercial and other organizations, connected with the processing and storage of monetary cash.

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