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Analysis of the level of currency in circulation in the Republic of Macedonia and the reasons behind its high level

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National Bank of the Republic of Macedonia
Research Department



Working Paper No.11

**Analysis of the level of currency in circulation in the Republic
of Macedonia and the reasons behind its high level**

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Introduction

The analysis presented in this working paper is primarily motivated by the fact that for a longer period of time the currency in circulation in the Republic of Macedonia has been maintained at a relatively high level. High level of currency in circulation is linked with certain costs, i.e. costs both from the point of view of the Central Bank related to its issuance and distribution, and from the point of view of the holders of currency in circulation, because of the opportunity cost (loss of income from those assets in the form of interest as if they were put in a bank). The practice in the world also showed that the cashless manner of payment is cheaper, faster and safer. For these reasons, the Republic of Macedonia should aim at reducing the share of the currency in circulation in the execution of transactions in the economy, i.e. at larger use of cashless ways of payment.

The working material is consisted of five parts. The first part pertains to a comparative country-by-country analysis of the level of currency in circulation. The second part presents the main factors that cause a high level of currency in circulation in the Republic of Macedonia. The difference in the level of use of instruments for cashless payment in various countries is subject of the analysis in the third part of this paper. The fourth part provides a more detailed review of individual factors that encourage or discourage the currency in circulation in the Republic of Macedonia. The last part of the paper contains the concluding remarks from the analysis.

1. Comparative country-by-country analysis of the level of currency in circulation

Currency in circulation, together with the demand deposits (transaction deposits) represents a component of M1, the narrowest definition of money supply. Use of currency in circulation is traditionally linked with the transactions in the consumption. Therefore, the currency in circulation represents a sort of an indicator of the volume of transactions and of the future consumption in the economy. One should have in mind that in modern times new financial instruments emerge as substitutes for currency in circulation, thus reducing its indicative importance for the volume of consumption.

Relevant indicators of the relative importance of currency in circulation in every economy are considered to be: 1/ the share of currency in circulation in the money supply, and 2/ the ratio of currency in circulation and the nominal gross domestic product. The comparison of the first indicator in the Republic of Macedonia with the adequate indicators in other countries points out the fact that the execution of cash transactions in our country substantially exceeds the degree of use of currency in circulation for commercial transactions in other countries.

Table 1

Share of currency in circulation in the money supply M1 in the Central and Eastern European countries

Currency in circulation/Money supply M1								
	1997	1998	1999	2000	2001	2002	2003	2004
Czech Republic	28,5	31,6	35,3	34,5	30,9	24,0	23,0	23,1
Slovakia	29,5	33,9	37,5	36,1	35,9	34,4	26,0	24,9
Slovenia	34,0	32,8	34,5	31,3	30,9	21,2	19,6**	16,5**
Poland	44,2	42,2	43,3	41,3	42,4	37,4	37,0	34,8
Bulgaria	42,1	48,9	51,7	52,6	53,5	51,1	49,0	47,3
Romania	51,4	54,5	61,1	58,0	57,8	54,4	53,9	51,7
Croatia	38,7	42,3	43,0	36,8	35,9	31,4	31,2	31,7
Macedonia*	51,0	47,0	41,5	43,1	55,8	53,9	51,8	51,3

Source: IFS, November 2005

*In order to obtain comparability, having in mind the differences in the reach of M1 by countries, money supply M1 for the foreign economies is defined as a sum of currency in circulation outside the banking system and demand deposits.

**In September 2003, the Bank of Slovenia revised the monetary aggregates in accordance with the definition of the European Central Bank, so that the data for Slovenia for 2003 and 2004 are in compliance with ECB's standards and originate from the Bank of Slovenia.

In the period 1997-2004, the average share of the currency in circulation in the money supply M1 in the Republic of Macedonia equaled 49.4%, which is by 10.8 percentage points above the average for the group of countries from Central and Eastern Europe that are included in the comparative analysis. Analyzed individually within the group, in the same observed period Bulgaria and Romania also registered high degree of use of currency in circulation for execution of commercial transactions (49.5% and 55.3% of M1, respectively, on average in the analyzed period). In the last two years (2003 and 2004), however, the use of cash in this countries registered faster decline compared to the Republic of Macedonia.

In the countries within the analyzed sample that registered permanent and significant decline of the share of currency in circulation in the monetary aggregate M1, a high degree of substitution of cash with payment cards is evident. In this regard the Republic of Macedonia is in the initial stage, just starting certain substitution of cash, contrary to the more developed countries in the group that already register expansion of payment cards. This means that the lower share of currency in circulation in the narrowest monetary aggregate M1 is due to the shift in the structure of M1 in favor of an increase in the share of demand deposits, which include the payment cards.

In the analysis of Slovenia, which had the most impressive result regarding the reduction of the share of currency in circulation in M1, it is necessary to point out that in Slovenia the decrement in the share of currency in circulation in M1 is due, apart from the substitution effect, also to changes in the methodology for compiling the monetary aggregates in September 2003, because of the harmonization of the national definition of the monetary aggregates in Slovenia with the definition of the European Central Bank. In the case of the aggregate M1, sight deposits are added to the demand deposits with banks.

Table 2

Share of currency in circulation and money supply M1 in the gross domestic product in the countries from Central and Eastern Europe

Currency in circulation/gross domestic product								
	1997	1998	1999	2000	2001	2002	2003	2004
Czech Republic	6,7	6,5	7,7	8,0	7,8	8,2	8,7	8,6
Slovakia	6,8	6,4	6,8	7,2	8,0	7,7	7,6	7,6
Slovenia	2,5	2,7	3,2	2,8	3,0	2,7	2,7**	2,7**
Poland	5,4	5,1	5,8	4,7	5,0	5,4	6,1	5,7
Bulgaria	7,6	7,8	8,2	8,9	10,4	10,3	11,2	12,2
Romania	3,6	3,1	3,2	3,2	3,0	3,0	3,0	3,1
Croatia	4,3	4,2	4,2	4,4	5,1	5,4	5,5	5,3
Macedonia*	3,8	3,7	3,9	4,0	6,0	5,8	5,6	5,4
Monetization degree (M1/gross domestic product)								
	1997	1998	1999	2000	2001	2002	2003	2004
Czech Republic	23,3	20,5	21,9	23,2	25,2	34,1	37,7	37,2
Slovakia	23,2	18,8	18,1	19,9	22,3	22,3	29,4	30,4
Slovenia	7,3	8,2	9,2	8,9	9,6	12,6	13,8**	16,4**
Poland	12,2	12,2	13,5	11,4	11,9	14,5	16,4	16,5
Bulgaria	17,9	15,9	15,9	16,9	19,4	20,2	22,9	25,8
Romania	7,1	5,6	5,2	5,5	5,3	5,5	5,7	6,0
Croatia	11,1	9,8	9,8	11,8	14,3	17,2	17,6	16,7
Macedonia*	7,5	7,8	9,4	9,3	10,8	10,7	10,9	10,4

Source: IFS, November 2005

** In September 2003, the Bank of Slovenia revised the monetary aggregates in accordance with the definition of the European Central Bank, so that the data for Slovenia for 2003 and 2004 are in compliance with ECB's standards and originate from the Bank of Slovenia.

The other indicator for comparison - the share of currency in circulation in the gross domestic product indicates somewhat different conclusion. In the 1997-2004 period, in the Republic of Macedonia the average share of currency in circulation in the gross domestic product equaled 4.8% and is by one percentage point lower than the average of the group of analyzed countries. Compared to Croatia and Slovenia (being republics from the former federation) the Republic of Macedonia is at the same level as Croatia, whereas compared with Slovenia the share of the currency in circulation in GDP in the Republic of Macedonia was higher by two percentage points. In the analysis of this indicator by countries it is very important whether cash is used for speculative purposes or for transaction purposes. It is evident that the countries in which there is a substantial use of cash for speculative purposes traditionally have higher shares of cash in GDP¹. According to this indicator, Czech Republic and Slovakia are countries in which the use of cash for speculative purposes (i.e. in the channels of the informal sector) is still of great importance, although at the same time these countries have relatively low share of currency in circulation in M1, which is due to the more advanced process of substituting cash with payment cards and other highly liquid instruments for cashless payment. If the degree of monetization of the national economies from the sample is included in the analysis, shown through the share of the money supply M1 in GDP, it is evident that Romania and the Republic of Macedonia, being countries with the lowest level of monetization, have the highest share of currency in circulation in the monetary aggregate M1.

Mentioned indicators that are based on the share of currency in circulation stress the substitution effect (Currency in circulation / M1), and the income effect (Currency in circulation / GDP), respectively, because of what they have a limited power as an analytical tool. Consequently, emphasis is being put on the indicators that show the dynamics of the substitution of cash with instruments for cashless payment, predominantly payment cards, as a direct substitute for cash, while at the same time

¹ Source: Bank of Finland, Discussion Papers 1/2000, Substitution of Noncash Payment Instruments for Cash in Europe, Jussi Snellman-Jukka Vesala-David Humphrey.

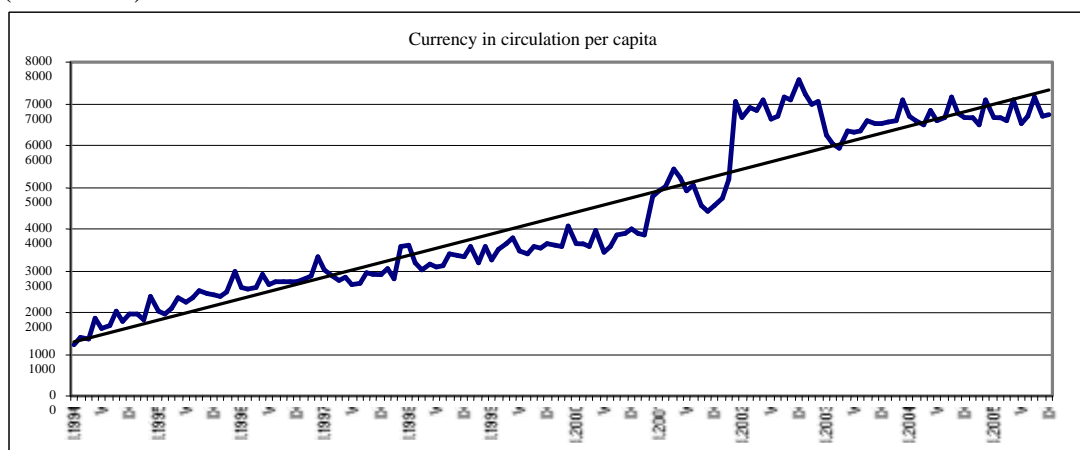
efforts are made to make assessment of the grey economy as accurately as possible, including an assessment of the level and currency structure of the cash that circulates in the informal sector.

2. Main factors that cause a high level of currency in circulation in the Republic of Macedonia

Several key factors may be differentiated that contribute to maintenance of a high level of currency in circulation in the Republic of Macedonia. In the period that followed the introduction of a regime of targeting the Denar exchange rate (October 1995) until 1998, there was an upward trend in the level of currency in circulation (banknotes and coins) per capita in the Republic of Macedonia. There is no doubt that the credibility of the fixed exchange rate regime recovered the demand for Denars through the effect of reducing the inflation and suppressing the inflationary expectations. Consequently, the demand for cash increased, aimed at holding money for transaction purposes.

Figure 1

Currency in circulation per capita in the Republic of Macedonia
(in Denars)

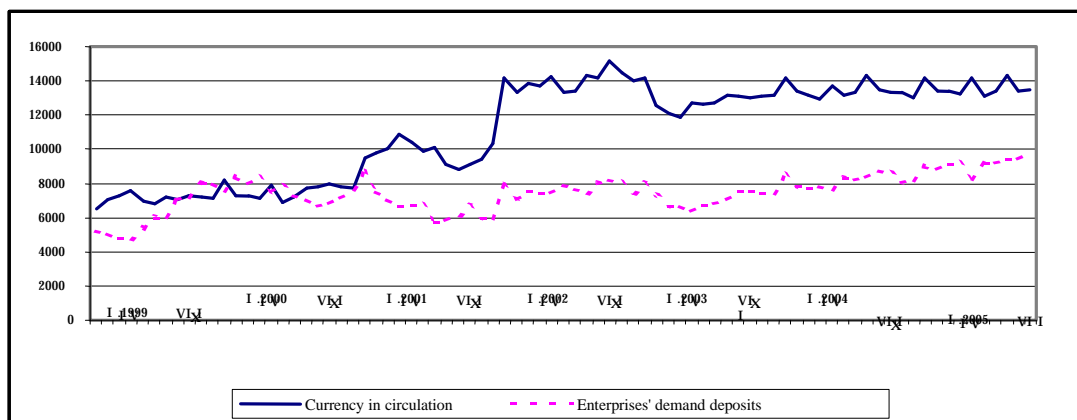


In the period from 1998 until the end of 1999 the higher level of Denars in circulation per capita was caused by the influence of the following specific circumstances:

1. In 1998 there were announcements in the public about destabilizing activities in the northern neighboring country;
2. In January 1999 military actions started in the former FR Yugoslavia;
3. There was a spill-over effect from the military conflict in FR Yugoslavia to the Republic of Macedonia in the form of a refugee crises.

All these factors were of psychological nature, motivating the economic agents to keep a higher level of liquidity. Similar level of currency in circulation per capita was maintained also in the course of 2000. From December 2000 until the end of 2002, there was a trend of a faster increase in the level of banknotes and coins outside of the banking system, in parallel to the increase in the ratio of currency in circulation and enterprises' transaction deposits. These movements represent a possible indicator for certain reduction in cashless payments in favor of use of cash, as a consequence of the increased presence of grey economy in conditions of uncertainty. Since the beginning of 2003 currency in circulation per capita has stabilized, but at a relatively high level.

Currency in circulation and transaction deposits (demand deposits) of enterprises in the Republic of Macedonia
(in millions of Denars)



Since the beginning of 2001 until the beginning of 2003 the following factors affected the extraordinarily high level of Denars that circulated:

1. Transformation of the Payment Operations Bureau that included a transfer of the giro accounts of the economic agents to the commercial banks not later than December 2001 resulted in an increase in the level of currency in circulation mainly due to the uncertainty about the new way of executing the payment operations. Nevertheless, it was a factor of a systemic nature that does not have a long term reflection on the level of currency in circulation.
2. The second extraordinary factor for the high level of currency in circulation is the security crisis in 2001. Due to the security crisis, the Macedonian real sector suffered one of the largest contractions. Under such conditions overdue claims among the enterprises started to accumulate, i.e. the indebtedness among the firms started to grow. On the other hand, the debt of the economic agents to the public sector enterprises increased. On the one hand, the high level of overdue claims reduces the need for transaction money in the economy, while on the other, the decline in the economic activity in the country caused an expansion of the grey economy. Such an environment, in addition to the psychological inclination of the economic agents to hold higher liquidity, because of the military operations in the country, caused an increase in the level of currency in circulation.
3. In the period when it was used, the tax on financial transactions ("war tax"), that was used from July 2001 until December 2002, was also considered to be one of the factors acting in the direction of increasing the level of the currency in circulation.
4. Conversion of German Marks into the new currency - Euro (physical introduction of the Euro on January 01, 2002) created a certain amount of uncertainty with regard to the future exchange rates of the Euro and other leading international currencies, which caused at the end of 2001 part of the households' savings in German Marks and in other European currencies to be

converted into Denars, of which a significant portion remained currency in circulation afterwards. In addition, it is assumed that at the end of 2001 the exchange bureaus for speculative reasons kept higher amounts of cash in order to purchase as much as possible "in-currencies" from the households at a lower exchange rate and to generate income from foreign exchange gains.

Apart from the grey economy and the influence of certain extraordinary factors, the preference of households to keep cash arises from their insufficient confidence in the banking sector, although this condition continuously improves. At the same time, an important factor is also the promptness and finality of the cash transactions, as well as the anonymity that is guaranteed by the cash.

On the other hand, the drawbacks of the existing legal regulation for operating with cash are pointed out as an element that leaves room for a wide spectrum of possibilities for cash transactions. In the Republic of Macedonia this issue used to be regulated with the Law on Financial Operations (Official Gazette of the Republic of Macedonia No. 42/93 and 32/97) and the Manual on the conditions and manner of collection, disposal and payment in cash (Official Gazette of the Republic of Macedonia No. 76/93).

The Manual on the conditions and the manner of collection, disposal and payment in cash stipulates that the entities (legal persons and individuals who engage in economic activity and are tax payers of profit tax) may make payments in cash for the following: payment of salaries and pensions; payment of other personal income; payment of royalties to foreign authors through an agency for payment of royalties; payment of agricultural, dairy and livestock products, woodland products and secondary raw materials purchased from farmers and citizens; advance payments for travel costs and per diem; consular and legation fees; purchase of foreign cash, travelers' and bank cheques of foreigners and nationals (currency exchange operations); products, services and other obligations of the entities in the case when the individual payment at the moment of payment is not higher than the Denar countervalue of DM 200, using the NBRM's exchange rate list. For the executed payment the entities are obliged to issue appropriate receipt (receipt, receipt/bill of debt, voucher etc.). At the same time this Manual treats in more detail the setting of the maximum cash in vault, as an issue that is under competence of the entities, while the amount depends on the nature of their operations, the distance from the institutions that do payment operations (a bank, a post office) and other conditions not specified in the Manual. The entity may withdraw funds from its account for cash payments and keep cash in vault up to the maximum amount of cash in vault. The maximum cash in vault does not include cash withdrawn from the account for advance payment of travel costs and per diem, unless it is kept in the vault longer than five working days.

Law on Financial Operations is no longer valid as of June 30, 2001. In the very act by which this law is declared void it is not specified whether the legal power of the by-laws also ceased, which deviates from the usual legislative practice. Consequently, the legal power of the mentioned Manual is unclear. In consultations with the Secretariat for legislation and the Ministry of Finance in the actual case it is a void and an obsolete by-law, having in mind that it refers to a law that is not valid and the issue is regulated with

other, new legal regulations. Thus, in the actual Law on Payment Operations there is an article (Article 7-a) that regulates the cash payments, reading as follows:

"For cash payment purposes, the participant in the payment operations may withdraw cash from its accounts and keep it in the vault in the amount of the maximum cash in vaults.

The amount of the maximum cash in vault shall be determined by the participant in the payment operations by a general act.

The cash payment for goods and services may not exceed EUR 100 each in Denar equivalent by the middle exchange rate of the National Bank of the Republic of Macedonia as of the payment day.

The Minister of Finance shall prescribe the terms and conditions for collecting, managing cash and making cash payments.

The Minister of Defense shall prescribe the terms and conditions for cash payment for the Army units, institutions and organizations."

The Law on Payment Operations does not contain provisions for the grounds upon which the economic agents may withdraw cash from the giro-accounts for execution of transactions (which was previously covered by the Manual). Paragraph 4 of Article 7-a allows for the possibility to regulate the cash payments with by-laws, but for the time being adequate by-laws in this field are missing. Experiences of other countries (Slovenia, Croatia, Serbia) show that a usual practice is to regulate cash payments with by-laws under competence of the Ministry of Finance or the Central Bank, based on the laws that regulate payment operations in the respective country. The Law on Payment Operations stipulates that legal entities and individuals doing registered activity will be fined if they do not put the cash on their account within the prescribed period, as well as in the case when they keep cash above the maximum cash in vault amount and act contrary to the conditions and manner of payment with cash prescribed in the Article 7-a. The participant in the payment operations is obliged to put on its account all cash received, regardless of the ground, on the same day, or on the next working day at the latest. Nevertheless, the issue about the effectiveness of the prescribed penalties remains open.

3. Review of the current use of different instruments of cashless payment by countries

The analyses of the cashless payment by countries indicate that there is no widely accepted and globally preferred instrument for cashless payment yet, although the fast changes in the payment instruments applied within the economy are common for all countries. The dynamic nature of the instruments for cashless payment originates also from the continuous innovation in this area. The dominant use of certain instrument (or mix of instruments) in certain country is determined by legal, business and technological conditions, as well as from the historical development of the payment systems in the countries. Besides these aspects, also the demographic factors are deemed a significant determinant in the selection of the payment method. Thus a group of American scientists analyzed the use of different payment instruments within the

households (Stavins, 2001), determining that the income, property, age and the education influence on the selection of the payment instruments. Also, in 1999, a survey among the buyers of motor oils was conducted, in order to determine the factors influencing on the purchasers' decisions whether to pay in cash or by using credit or debit cards. The survey's results disclose that middle-aged undereducated buyers, having lower income, and having smaller number of payment cards prefer cash when paying, in comparison with the rest of the respondents in the sample.

The payments in the economy are generally classified as payments in cash and cashless payments. The cashless payments are categorized as paper-based payments and electronic payments. Contrary to the cash payments, the cashless payments usually encompass transfer of the value among the financial institutions, with one or both institutions, or their correspondent institutions should be specified. The cashless payment instruments may be classified as check payments, direct funds transfer and payment cards. Also, each of these classes may include more than one specific type of instruments, different payment mechanism, as well as different market arrangement in providing payment services to the end-users.

The main purpose of the check is to instruct the payer's financial institutions to debit the payer's account for a specific amount, either to transfer the value to the payee's financial institution for credit to the payee's account, or to pay out cash. The check can be used for distance payments, or on the point of sale, with the acceptance of the check usually depending on the valid identification and proof for the credit worthiness of the check issuer.

The direct transfers of funds include both credit and debit transfers (direct debiting) and they are used in case of distance payment (remote payments). They commence with the payer or payee's instruction, directly to the institution - payment services provider, for the purpose of transfer of funds from the payer's account, opened in its financial institution, to the payee's account in its financial institution. Such transfers are mostly used by individuals for performing recurring payments to enterprises and government agencies. *Credit transfers* are payments initiated by the payer, such as giro payments, and which can be processed in either paper or electronic form. For individuals, the credit transfers mostly refer to submitting an order with the financial institution. The credit transfers that are recurring in certain interval are used by enterprises and government payment agencies, having strictly determined dynamics and the users of which are individuals. However, the direct credit transfers are usually used for payments without strictly determined dynamics. *Direct debiting* is initiated by the payee, on the basis of preauthorized agreement concluded with the payer (i.e. on the basis of previously agreed commitments between the two parties of the payment), with they are usually being processed in electronic form. In some countries, the direct debiting is used for remote payments without strictly determined dynamics.

Table 3

Relative meaning of the use of the cashless payment instruments

	Checks	Credit / debit cards	Credit transfer s	Dire ct debiting	Electronic money based on cards
	(% of the total cashless payments)				
Belgium	1,4	36,1	45,1	11,2	6,2
Canada	20,8	60,7	10,5	8,0	nav
Franc e	29,7	32,8	19,6	17,8	0,1
German y	1,0	16,9	42,6	39,3	0,3
Italy	15,6	30,4	31,6	22,3	neg
Jap an	4,3	63,3	32,4	nav	nav
The Netherlands	neg	33,7	35,4	27,8	3,1
Sweden	neg	57,6	32,4	9,9	neg
Switzerland	0,4	33,9	58,5	5,3	2,0
Great Britain	18,6	42,9	18,3	20,1	nav
USA	45,3	45,4	5,2	4,1	nav
Macedoni a	22,5	9,3	51,6	16,6	nap

Source: Committee on Payment and Settlement Systems, Statistics on payment and settlement systems in selected countries, Prepared by the Committee on Payment and Settlement Systems of the Group of Ten Countries, Mar. 2005. The data on the foreign countries pertain to 2003, while the data on Macedonia refers to the volume of transactions executed in the January - October 2005 period, by appropriate instruments for cashless payment.

neg=negligible amount

nav=not available datum

nap=not applicable.

Within this analysis, the most apparent divergence among the countries is registered in their division to countries primarily leaning on the check in the cashless payments and countries with dominant participation of the credit transfers. The largest users of check payments are France², the USA, Canada and the Great Britain. On the other hands, Switzerland and several European countries are using credit transfers as primary instrument in the cashless payment. It is simultaneously confirmed that the countries registering the lowest application of check are the largest users of credit transfers.

The different use of individual instruments for cashless payment by countries can be explained with the differences as follows:

- Absence of diversification of the market supply of payment instruments;
- Different financial aspects related to the execution of the debit and credit transfers; and
- The nature of the risk in the value transformation process with these two types of payment. Namely, the credit transfers are initiated by the payer's financial institution payer and they are not included in the clearing, until the deduction of the value of the authorized payment from the payer's account. The primary risk of the settlement arises from the danger of a bankruptcy of the payer's institution before completion of the transfer of funds to the payee's account. In that case, depending on the agreement, the risk falls either on the payee's burden, or on the

² In France, the extensive use of the check was stimulated through the introduction of numerous legal measures. Some of the measures include obligatory use of the check in certain transactions, strengthening of the security in the use of the check through introduction of legal penalties for issuance of non-guaranteed checks, providing tax advantages to the retailers for accepting the checks, etc.

burden of the payees' financial institution. On the other hand, regarding the check, besides the institutional risk, there is also a risk that the payer will not have sufficient funds on its account for covering the check's value at the moment it is presented by the payee. Such differences in the risk may favor the use of credit transfers compared to the direct debiting within the financial institutions in different national economies.

In the January - October 2005 period, 22.5% of the total cashless transactions in the Republic of Macedonia was performed in checks. It shows that in our country the share of the transactions by cheques is significantly lower in comparison with the developed countries, which use the cheque to great extent (USA and France). It is due to the numerous restrictions in the operating with checks which are not so large in other countries using this cashless payment instrument. Namely, in order to reduce the possibility for registering negative balance by the current accounts users (deemed as forced crediting), given decreased financial discipline of the owners of the current accounts partially as a result of lowering the living standard, they are protecting by limiting the number of issued checks on the basis of the available balance on the current account. In conditions of limited number of checks, the households act more rationally, using cash for everyday smaller payments. On the other hands, restraining from the actual function of the check is apparent, which apart from its use as a payment instrument, is becoming more frequently used as a credit instrument, for the purpose of acquiring certain preferential payment conditions, i.e. possibility for deferred payment. Simultaneously, there is also limitation of the minimal amount in which one check can state in the retail network, which once again acts in direction of use of cash for smaller payments. Inability of a bank to pay in checks to other bank or by mail (if possible, such transactions are subjected to a commission) dampens down the development of the operating with checks in the Republic of Macedonia.

Table 4

Correlation between the currency in circulation and cashless payments in the Republic of Macedonia

	Total cashless payments	Currency in circulation	Total payments	CC/total payments
2005	in millions of Denars			in %
January	85.376	13.364	98.740	13,53
February	93.426	13.362	106.788	12,51
March	105.432	13.207	118.639	11,13
April	104.841	14.191	119.032	11,92
May	97.084	13.086	110.170	11,88
June	107.086	13.390	120.476	11,11
July	123.248	14.331	137.579	10,42
August	102.528	13.385	115.913	11,55
September	106.513	13.490	120.003	11,24
October	107.442	13.528	120.970	11,18

Source: NBRM

The analysis of the movement of the volume of the cashless payment and the currency in circulation in the Republic of Macedonia by months in 2005 points to a positive trend towards gradual increase in the cashless payment and simultaneous decrease in the share of the currency in circulation in the total payments. Namely, in

January 2005 the share of the currency in circulation in the total payments reduced from 13.5% to 11.2%, representing a decrease of 2.3 percentage points².

The higher use of payment cards in the world reflects the development of the network technology. Namely, the new networks enabled the payment services providers to divide the initial costs regarding the overall infrastructure necessary for functioning of payment cards, simultaneously enabling them a platform for developing new procedures and instruments. Thus, for example, the point of sale terminals developed from the ATMs. One of the key factors acting towards increased use of payment cards, generally, in the world, is also the emergence and the development of the standards for interoperability among different card network. The development of the interoperability standards commenced in early '80, generating associations (alliances) of different payment cards systems. For example, Visa and MasterCard, which were then well established payment cards systems f in North America, initiated negotiations for global association (alliances), having networks in almost all countries and regions in the world. In this regard, the relations between MasterCard and EuroCard, as well as Visa and MasterCard are noticeable. Although such international payment cards in global terms emerged in early '80, the Republic of Macedonia introduced its first international payment card in the mid-1997, when Komercijalna Banka - Skopje introduced EuroCard-MasterCard card, both domestic and international, followed by Stopanska Banka - Skopje which introduced Visa card for domestic and international payments in May 1998. In 2005, the use of the payment cards by the households in the Republic of Macedonia registers certain increase. This trend is caused primarily by the higher availability and the simple use of the new payment instruments and the favorabilities they enable (time saving, costs saving, etc) and to smaller extent, by the emergence of catalogue sale, telephone sale, internet sale, etc.).

Table 5
Number and types of payment cards in the Republic of Macedonia

	Payment cards with cash function	Payment cards with debit function	Payment cards with credit function	Payment cards with combined function	Total number of cards	ATMs	Retailers accepting bank cards
2005	per 1000 inhabitant					per 1.000.000 inhabitant	per 1000 inhabitants
January	1,4	37,6	19,1	6,7	64,9	65,5	1,9
February	1,7	37,9	20,2	6,9	66,7	67,5	2,0
March	2,2	38,8	20,9	7,1	69,0	67,5	2,0
April	2,7	36,1	25,6	7,4	71,8	69,0	2,0
May	3,0	35,4	27,4	7,7	73,4	67,0	2,1
June	3,3	35,5	30,4	9,5	78,6	69,0	2,2
July	3,6	36,6	31,3	10,1	81,5	73,0	2,1
August	3,9	35,1	31,6	10,4	81,1	73,5	2,1
September	4,3	36,0	31,4	10,8	82,6	75,0	2,2
October	2,9	37,3	32,6	11,3	84,1	76,5	2,3

Source: NBRM

Besides the commitments of the Macedonian banks, it can not be discusses for more serious affirmation of the payment cards as a cashless payment instrument. Namely, in the January - October 2005 period, less than one transaction per inhabitant (0.8 transactions per inhabitant) was registered through the ATMs in the Republic of

² In the calculation, it is assumed that a certain amount of cash will be used for executing only one transaction (single payment). In practice, the number of transactions (payments), which may be executed by a certain amount of cash depends on the velocity of money.

Macedonia. However, 65.7% of the transactions with payment cards are realized for the purpose of withdrawing cash from ATM, while only 34.2% of the transactions were realized on the points of sale. Simultaneously, the debit function cards (37.3 cards per 1000 inhabitants) are slightly more represented than cards with credit function (32.6), which probably arises from the banks' perception for a credit risk with the households in the Republic of Macedonia. For illustration, the representation of the credit cards in the USA is higher by 4 times than the debit cards.

As of October 2005, there are 76 ATMs per million inhabitants in the Republic of Macedonia, which is a very small number in comparison with the developed countries. Thus in Sweden there are 299, while in Canada there are 1,393 ATMs per million inhabitants (these data pertains to 2003).

In the January - October 2005 period, only 1.3 transactions with payment cards per inhabitant were registered in the Republic of Macedonia. Simultaneously, the participation of these cards in the total volume of cashless transactions in the Republic of Macedonia equals only 9.3%. The introduction and the promotion of the use of the payment cards with the households and in the retail network is investment requiring investment of significant funds. From the aspect of the bank, it is an investment in the right to issue renowned cards, in accordance with the generally accepted international standards pertaining to operating with payment cards, investment in hardware and software, ATMs, protection system from hackers' intrusions, forgeries, etc. With respect to the retailers, the investment refers to posting sale terminals. The complete affirmation and intensive use of payment cards in the Republic of Macedonia, except to the implementation of expensive technological and financial innovations, means also elimination of certain factual situations in the banks' payment cards operating area. Namely, the banks act partially at the market, i.e. each bank participates on the market individually, having own card and own companies with which it concluded agreements for utilization of the card. Namely, in October 2005, the number of companies accepting payment cards of the banks equals 4,520, meaning only 2.3 companies per 1000 inhabitants. It dampens down the clients' interest for using payment cards.

4. Review of certain factors stimulating or dampening down the circulation of cash

4.1. Gray economy

One of the reasons for the relatively high level of the currency in circulation is the existence of the gray economy, within which the payment is realized exclusively in cash (Denar or foreign currency). The share of the gray economy in the total economy can not be determined precisely, although it is estimated that a significant part of the economic activity in the Republic of Macedonia is performed within the gray economy. Assessment of the size of the gray (non-observed) economy is made by the State Statistical Office of the Republic of Macedonia, when calculating GDP according to production method (starting from 2001) for the needs of the GDP exhaustiveness.

GDP exhaustiveness adjustments

When calculating the GDP according to the production method, the State Statistical Office makes adjustments to the data received from different sources, in order to

encompass the part pertaining to the gray (non-observed) economy. Adjustments to two types of gray economy are made:

- *Economic underground* (underreporting), which includes covering up of the sale's value, overestimation of the intermediate consumption and hiding the real value of the paid wages, in order to avoid payment of taxes (value added tax, profit tax, personal income tax and contributions for social insurance);
- *Informal sector* (unregistered employees, underreporting);

The assessments for GDP exhaustiveness refer to the legal entities from the sector "non-financial enterprises" and the sector "households".

The exhaustiveness adjustments to the sale of commodities is performed on the basis of the difference between the stocks presented in the closing accounts of the enterprises and the trade's gross value, calculated on the basis of the total supply and demand for goods, which pass through the trade channels, augmented by appropriate percentage of the trade network.

The exhaustiveness adjustments to intermediate consumption and the paid wages are made on the basis of the identified difference among net wages stated in the annual accounts and those arising from the research of the average wages and employment, multiplied by the number of registered employees.

The adjustment to the unregistered employees is made on the basis of the comparison of data on the registered number of employees from the annual accounts and those received from the Labor Force Survey.

The largest part of the informal activities is concentrated in the construction of individual buildings by citizens, processing industry and in services. The assessment of the value of the production referring to the construction of houses and other buildings in private ownership is made on the basis of the Construction Department with the State Statistical Office, data on the construction enterprises and additional analyses.

After the adjustments to the individual types of gray economy, adjustment to the value added, total and by individual categories is also made.

Source: State Statistical Office.

According to the available data of the State Statistical Office (as of 2003), continuing increase in the percentage share of the gray economy in the Republic of Macedonia in 2001 - 2003 period is evident (average share of 14.5% during the period). Such movements correspond to the upward trend of the currency in circulation in 2001 and 2002. The year 2003 is an exception, when stabilization of the currency in circulation, compared to the continuing increase in the share of the gray economy was registered. Having in mind that in terms of gray economy the payments are made not only in Denars, but in foreign exchange, as well (convertible foreign currency, mostly in Euros or US Dollars), it can be assumed that such movements result from the change in the preferences of the participants in the gray economy towards larger propensity for

foreign currencies (mainly for the Euro) relative to the domestic one, having in mind the appreciation of the Euro on the international stock exchange regarding the US Dollar in 2003. However, it should be ascertained that it is an intuitive statement, since the quantity of the foreign currency in circulation can not be determined precisely.

Table 6

Share of the gray economy and movements of the currency in circulation in the Republic of Macedonia

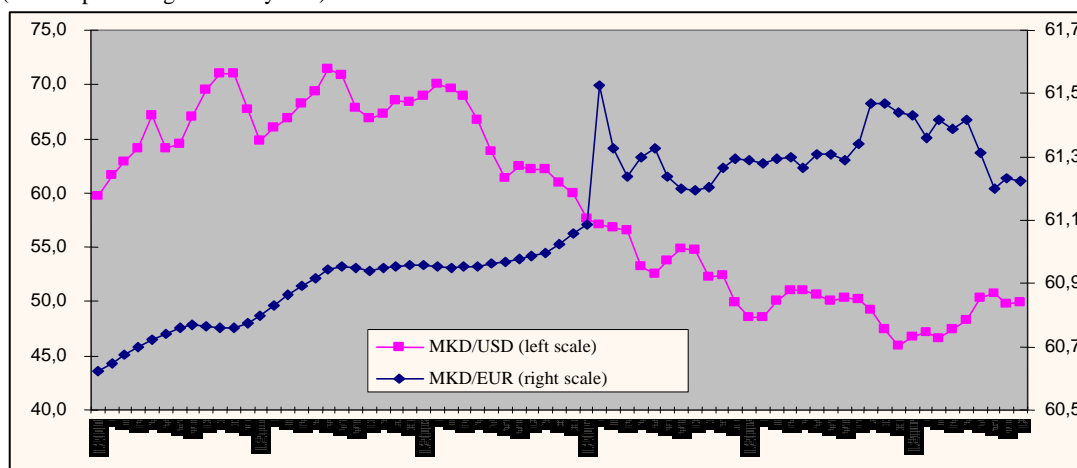
	Adjusted value added in % of GDP			Currency in circulation	
	Economic underground	Informal sector	Total gray economy	% of M1	% of GDP
1997	12,4	2,0	14,4	51,0	3,8
1998	13,0	3,2	16,2	47,0	3,7
1999	10,6	3,1	13,7	41,5	3,9
2000	n.a.	n.a.	n.a.	43,1	4,0
2001	9,6	3,2	12,9	55,8	6,0
2002	9,7	4,7	14,4	53,9	5,8
2003	11,3	5,0	16,3	51,8	5,6

Source: State Statistical Office and NBRM.

Figure 3

Denar exchnage rate relative to the Euro and the US Dollar on the foreign exchange market

(Denars per foreign currency unit)



Source: NBRM

Another indicator for the level of the gray economy is the participation of the banknotes with the largest denomination value in the total currency in circulation. It is analysis of the scope of the gray economy from the aspect of the denomination structure of the cash circulating in the trade³. The approach is largely intuitive and it is based on the assumption that the banknotes with the highest denomination value (in our country,

³ Nikolay Nenovsky, Kalin Hristov "Currency Circulation after Currency Board Introduction in Bulgaria (Transactions Demand, Hoarding, Shadow Economy), BNB 2000 and Rogoff, K (1998) "Blessing or Curse? Foreign and Underground Demand for Euro Notes" Economic Policy 26.

banknotes in denomination of Denar 5,000) circulate mainly in the gray economy. Namely, in the Republic of Macedonia, in the 2001 - 2003 period, uncommonly high level of banknotes in denomination of Denar 5,000 was registered.

Additional assumption is that, besides the domestic currency, there are foreign currencies circulating in the channels of the gray economy. In our environment, we assume that the ratio of banknotes in largest denomination-to-foreign currencies equals 30%:70%. The assumed ratio results from: a/ the degree of currency substitution of the economy, estimated as a share of the foreign currency deposits in the banks' total deposits (so called asset substitution), which ranges from 60.4% in 2001 to 53.3% in 2004, or 54.2%, on average and b/ the assumption that the actual degree of currency substitution (so called currency substitution) is larger, since the estimation under (a.) does not include the foreign currencies in circulation³.

Table 7

Denomination structure of banknotes in circulation in the Republic of Macedonia

Date	5,000 den	1,000 den	500 den	100 den	50 den	10 den	Total
	pieces	pieces	pieces	pieces	pieces	pieces	
31.12.1997	50.263	4,046.247	3.874.010	6.037.685	3.266.337	11.629.014	
amount	251.315.000	4.046.247.000	1.937.005.000	603.768.500	163.316.850	116.290.140	7.117.942.490
31.12.1998	53.184	4.318.241	3.592.539	6.005.013	3.279.421	11.145.017	
amount	265.920.000	4.318.241.000	1.796.269.500	600.501.300	163.971.050	111.450.170	7.256.353.020
31.12.1999	62.494	5.281.213	2.754.680	6.594.165	3.285.124	12.630.234	
amount	312.470.000	5.281.213.000	1.377.340.000	659.416.500	164.256.200	126.302.340	7.920.998.040
31.12.2000	73.231	6.291.650	4.075.965	7.163.631	3.855.680	14.491.864	
amount	366.155.000	6.291.650.000	2.037.982.500	716.363.100	192.784.000	144.918.640	9.749.853.240
31.12.2001	139.904	9.457.524	7.107.106	7.812.663	4.546.173	15.876.503	
amount	699.520.000	9.457.524.000	3.553.553.000	781.266.300	227.308.650	158.765.030	14.877.936.980
31.12.2002	145.265	8.707.821	6.713.368	7.677.099	4.376.298	16.799.226	
amount	726.325.000	8.707.821.000	3.356.684.000	767.709.900	218.814.900	167.992.260	13.945.347.060
31.12.2003	123.443	9.173.608	6.069.372	7.778.004	4.456.232	17.802.744	
iznos	617.215.000	9.173.608.000	3.034.686.000	777.800.400	222.811.600	178.027.440	14.004.148.440
31.12.2004	72.684	9.585.485	5.822.804	7.754.347	4.495.279	19.147.734	
amount	363.420.000	9.585.485.000	2.911.402.000	775.434.700	224.763.950	191.477.340	14.051.982.990

Source: NBRM.

The results of the analysis, under this approach, indicate 13.2% estimated share of the gray economy, on average, in the 1997-2004 period. In the 2001-2003 period, the gray economy accounted for 15.9%, on average, which is a slightly higher percentage compared to the SSO estimation, also exceeding the set average of 13.2%.

³ One type of indicator for the degree of currency substitution was determined in 2001, when the NBRM conducted a Survey of the households so as to assess the amount of foreign currency "under mattress" on the eve of the Euro-conversion. The amounts estimated on the basis of the information from the survey ranged from 44% to 60% of the money supply M4, i.e. from 65% to 90% of the total deposits in 2001. The 2002 data show that one third of the funds deposited for the conversion purposes were withdrawn from the banks, and two thirds remained within the banks as foreign currency deposits.

Table 8

Estimated scope of the gray economy (informal sector)

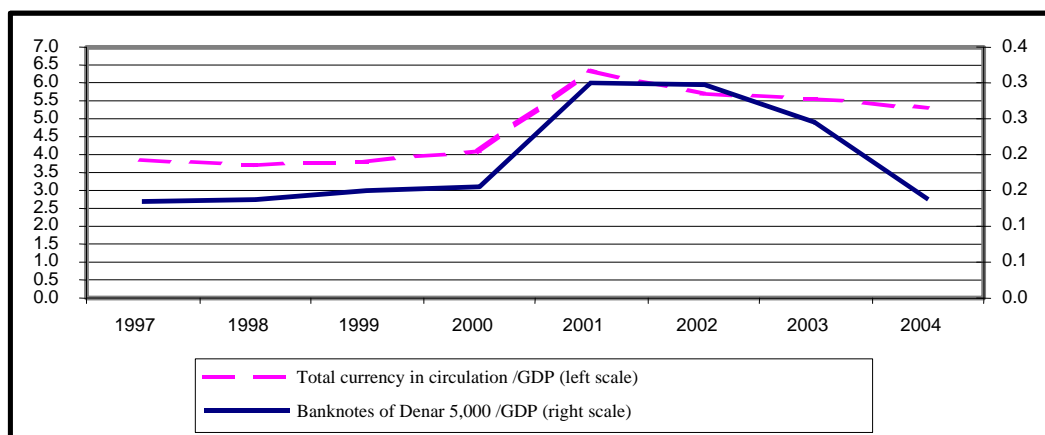
Date	5,000 den pieces	Total currency in circulation	Estimated scope of gray economy
31.12.1997	50.263		
amount	251.315.000	7.117.942.490	11,8
31.12.1998	53.184		
amount	265.920.000	7.256.353.020	12,2
31.12.1999	62.494		
amount	312.470.000	7.920.998.040	13,1
31.12.2000	73.231		
amount	366.155.000	9.749.853.240	12,5
31.12.2001	139.904		
amount	699.520.000	14.877.936.980	15,7
31.12.2002	145.265		
amount	726.325.000	13.945.347.060	17,4
31.12.2003	123.443		
amount	617.215.000	14.004.148.440	14,7
31.12.2004	72.684		
amount	363.420.000	14.051.982.990	8,6

Source: NBRM.

The 2004 estimations show considerably lower scope of gray economy (8.6%). Such indicator could be interpreted in two ways: first, in 2004, the share of the gray economy reduced twice, even though few factors support such an ascertainment, taking into account that the gray economy is not a notion which extinguishes by itself, without applying drastic legal measures; or second, there is a likelihood of movement in the denomination structure of currency that circulates within the gray economy, having a Euro appreciation, that is, the applied 30%:70% ratio most probably does not correspond to the real situation. If we assume that in 2004 the share of the gray economy is at the average level of 13.2%, the ratio between the banknotes with largest denomination and the foreign currencies, estimated inversely, would be 20%:80%. The figure below clearly shows the reduction in the currency in circulation with the largest denomination, compared to the relatively stable level of the total currency in circulation.

Figure 4

Share of currency in circulation and banknotes with largest denomination in the GDP

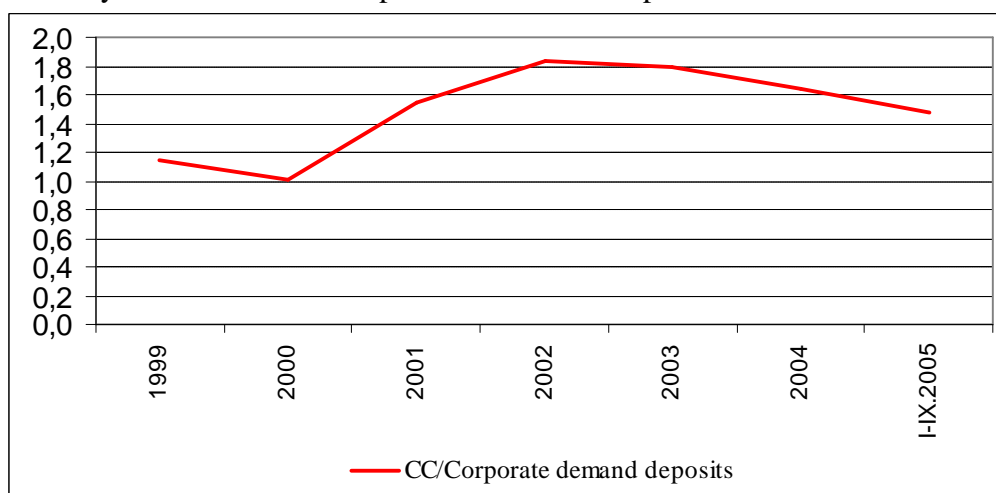


Source: NBRM and SSO.

The existence of the gray economy and its influence towards increasing the presence of cash payments could also be seen through the ratio of the currency in circulation to the corporate transaction deposits. This ratio significantly grew in 2001, and culminated in 2002 and 2003, which corresponds with the period of security crisis and the post-crisis period and the intensification of the gray economy. Even though such ratio registered a downward trend in 2004 and the first nine months of 2005 owing to the increase in the corporate transaction deposits, yet it remains relatively high, indicating that the companies in the Republic of Macedonia still execute most of the transactions by the means of cash.

Figure 5

Currency in circulation-to-corporate transaction deposits ratio



Source: NBRM.

Additional aspect of the effect of the gray economy on the level of currency in circulation is the operations of the companies with blocked accounts. The total number of blocked accounts in the Republic of Macedonia in 2001 equaled 20.735. This number has been declining steadily, and as of September 30, 2005 it equals 16.275⁴. It is assumed that the firms with blocked accounts primarily operate in cash, since the potential new inflows on the blocked accounts would be used for payment to the creditors, in order of precedence (yet there is a possibility that such companies hold active accounts in some bank, since the innovations in the Payment Operations Law allow the companies to hold unlimited number of accounts).

4.2. Effects of the Anti-Money Laundering Law

The Anti-Money Laundering Law is a special factor within this analysis, having a double effect on the currency in circulation level. Although the major benefit of this law is its influence towards reducing the cash payments, yet, in the period immediately prior to its effectiveness (March 1, 2002), the natural persons and the legal entities withdrawn large amounts of cash from the bank accounts to avoid the sanctions based

⁴ Until December 31, 2001, the blocked account records in the Republic of Macedonia were kept at the POB, from 2002 to 2004 at the Blocked Account Agency, and afterwards, at the Public Revenue Office (ERP - Records of Sequence of Payments).

on the transactions which are to be subject to monitoring as specified by this law after its introduction.

It is hard to determine whether this law gives the expected positive effects since even after its enforcement, the currency in circulation remained relatively high. In the meantime, however, permanent efforts were made for its improvement. Thus, on July 12, 2004, a new Anti-Money Laundering Law was adopted ("Official Gazette of the Republic of Macedonia" no. 46/2004), which became effective on July 20, 2004 which was adjusted to the relevant international regulations for the respective area. On October 1, 2004, an electronic exchange of data and reports was introduced between the Anti-Money Laundering Directorate⁵ and the banks, creating a database for processing of data and information. A List of indicators for recognizing suspicious transactions was developed in January 2005, as instructions in the everyday operations of the entities required to report suspicious transactions. In July 2005, the Government of the Republic of Macedonia adopted the National Strategy for anti-money laundering and combat against financing the terrorism, and the Decision on establishing a Council of anti-money laundering and combat against financing terrorism, as an advisory body for monitoring the achievement of the objectives specified by the National Strategy was adopted on August 18, 2005.

The new **Anti-Money Laundering Law** became effective on July 20, 2004, ("Official Gazette of the Republic of Macedonia" no. 46/2004). The new Law expands the scope and precisely defines the entities required to take measures specified by the Law, and the deadlines and activities which are to be undertaken by the competent bodies against money laundering. This Law also considers the financial institutions (banks, savings houses, companies that provide economic and financial consulting, financial leasing, factoring, insurance-related operations, operations with securities for its account and for the account of a client, storing and managing cash, securities and items of precious metals and other financial activities defined by law) to be competent bodies. As specified by the Law, the financial institutions are required to identify their clients when opening account or saving book account, placing shares, bonds or other securities as deposits, using safe boxes; assets management or effectuating or receiving payment from third party.

The new Law rose the amount above which the entities are required to identify the client at each transaction. It also forbids cash payments to be made for amount exceeding Euro 15,000, for the purposes of reducing cash payment of larger amounts and distinguishing the responsibilities of the institutions combating money laundering.

The new Law binds the exchange offices and the money transfer service providers to identify the client prior to the execution of any transaction in the amount exceeding Denar equivalent of Euro 2,500.

The Anti-Money Laundering Directorate, as a body operating within the Ministry of Finance is responsible for collecting, processing, analyzing, keeping and

⁵ The Anti-Money Laundering Directorate operates within the Ministry of Finance and is responsible for collecting, processing, analyzing, keeping and communicating the data obtained from the entities bound to apply the measures and actions for money laundering detection and prevention.

communicating the data obtained from the entities bound to undertake measures and actions for money laundering detection and prevention. Also, the National Bank of the Republic of Macedonia is also stated, among others, as an entity the Anti-Money Laundering Directorate cooperates with and which can submit written reports in the case of suspicion of money laundering.

Observing the practical implementation of the Anti-Money Laundering Law, total of 106,167 reports⁶ were submitted to the Anti-Money Laundering Directorate in the period between March 1, 2002 and October 1, 2005. Of the total received reports, the Directorate has submitted 15 suspicious transaction reports to the competent bodies, 3 of which to the Public Prosecution Office, 11 to the Interior Ministry and 1 to the Financial Police. In August 2005, the Directorate initiated adoption of a decision on terminating a transaction and seizure of funds or property by the competent investigative judge, and in June 2005, the Trial Court in Kavadarci announced a verdict of money laundering⁷.

All foregoing activities related to this law are expected to have more evident positive effect in the future on the reduction of the cash payments and on the steady decrease in the level of currency in circulation.

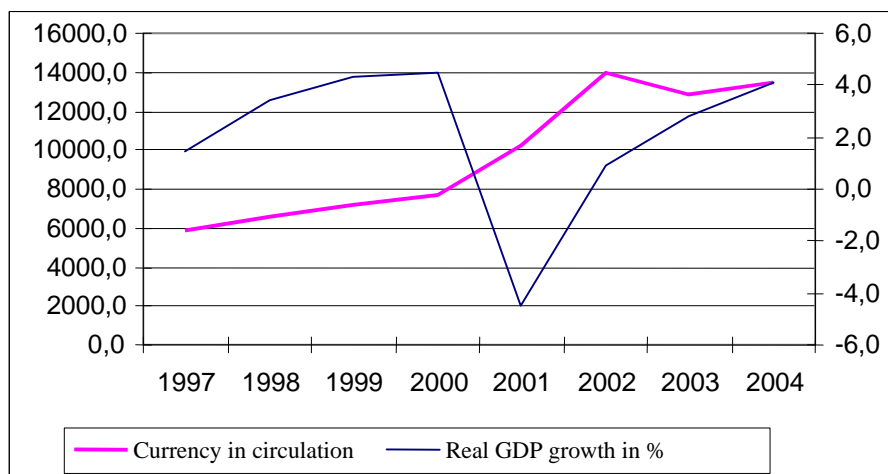
4.3. Cyclical factor

The stage of the economic cycle of the economy is also considered a factor, which influence the nature of the household consumption and the money velocity. It is considered that in recession, the households restrict the non-essential costs and only satisfy the most necessary needs. Considering the low value of the essential spending, it is strictly made by cash payment, leading to higher demand for money as a means of transaction, relative to the lower demand for the money as an asset. Observing the 1997-2004 period, we witnessed a substantial increase in the currency in circulation in the Republic of Macedonia during the security crisis in 2001, when the Macedonian economy suffered a 4,5% fall of the GDP. The upward trend of the currency in circulation, however, carried on in 2002, since when it has been maintained at high level, owing to other factors (Euro-conversion, reform of the payment operations, etc.).

⁶ 103,531 of them are regular reports submitted by banks on cash transactions exceeding EUR 15,000, 2,593 are reports submitted by the Customs Administration on taking cash in and out of the Republic of Macedonia exceeding the permitted maximum and 97 are suspicious transaction reports.

⁷ Source: Ministry of Finance - Anti-Money Laundering Directorate.

Figure 6
Currency in circulation and GDP growth in the RM
(in millions of denars)



Source: NBRM and SSO.

4.4. Purchase of agricultural products and payment of wages and pensions

In the Republic of Macedonia, the purchased agricultural products are still paid in cash, such as the purchase of grapes and tobacco, contributing to the maintenance of high level of currency in circulation. It is also a result of the payment of wages and pensions, mostly paid in cash. Positive changes were, however, made in the public administration, where the wages are exclusively paid through bank accounts. Nevertheless, this is not the case with the corporate sector entities, arising from the frequent payment of wages to unregistered employees and tax evasion, indicating the necessity of strengthening the legal system and the inspections. Positive trend was also registered in the payment of pensions. The share of the portion of the total pensions paid through money payment order (in cash) steadily drops, making up 50% at the moment (roughly 70% in 1998).⁸

4.5. Bank lending activity

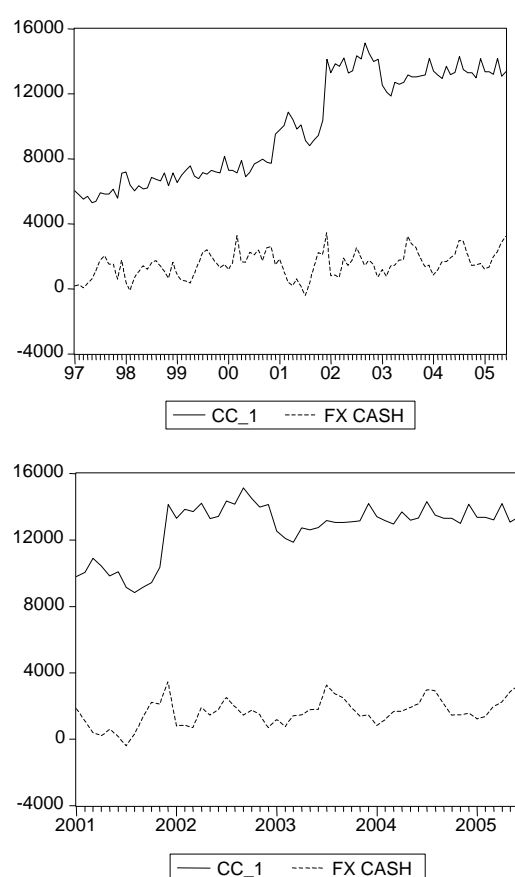
Recently we have witnessed an upward trend of wholesale lending by the banks, keeping up with the permanent increase in their deposit potential and savings. This process respectively affects the level of currency in circulation, owing to the increasing credit to the households by the banks by approving wide range of small-value consumer loans. Such loans are easily accessible, and the funds are mainly used for consumption purposes (most frequently for purchase of high-value retail goods) The loans are mostly made by depositing the approved funds on individual accounts which are then withdrawn in cash and entered in the trading channels.

⁸ Source: Pension and Disability Insurance Fund.

4.6. Currency exchange market

The currency exchange market developments additionally affect the level of currency in circulation in the Republic of Macedonia. The purchase of foreign currency in the currency exchange operations increases the level of currency in circulation, since the payments are made in cash. Over the past years, the net-purchase of foreign currency in the Republic of Macedonia was conducted on the currency exchange market. The econometric analyses show relatively weak, though positive correlation between the currency in circulation and the net-purchase on the currency exchange market of 0.32. The analyses refer to the January 1997 to July 2005 period, taking the average monthly amounts of currency in circulation in millions of denars and the value of the "cash, net" category of the balance of payments (in millions of denars) which captures the currency exchange operations of the banks, savings houses and private exchange offices. Stronger correlation of 0.44 was registered between the mentioned categories for the period from January 2001 to June 2005, when the currency exchange market registered more significant amounts of net-purchase of foreign currency, and higher level of currency in circulation.

Figure 7
Currency in circulation and net-purchase on the currency exchange market

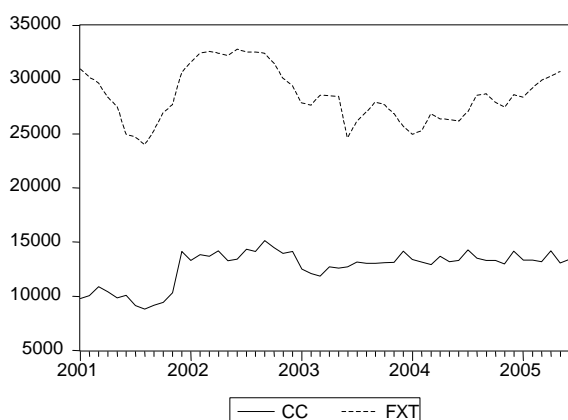


Similar correlation of 0.43 was determined between the amount of the currency in circulation and the amount of the foreign exchange transactions from the Monetary

Base (the stock at the end of the month in millions of denars are taken for the two variables).

Figure 8

Currency in circulation and foreign exchange transactions



5. Conclusion

Based on the elaborated aspects, one can conclude that many factors contribute towards maintaining high level of currency in circulation in the Republic of Macedonia. At the same time, positive changes are evident in certain aspects, which are insufficient to reduce the level of currency in circulation essentially. The analyses lead to the conclusion that major hindering factor is the gray (informal) economy. Therefore, the measures for strengthening the legal anti-gray economy system are necessary precondition for channeling the financial transactions within the banking sector and more frequent use of giro money. It should be noted, however, that this process could also have advantages in opposite direction, i.e. the measures for phasing out the cash transactions would act towards narrowing the room for the gray economy.

The strengthening of the regulations governing the conditions and possibilities for cash operations, directed towards dampening down the use of cash can have essential contribution in the filling the gap now evident in this area. As specified by Article 7-a (paragraph 4) of the Law on Payment Operations, the Ministry of Finance needs to prepare respective by-laws regulating the cash operations.

The banks in the Republic of Macedonia could make their contribution towards reducing the level of currency in circulation by making greater efforts to stimulate the households and the retailers to use cashless payment instruments (payment cards and checks, in particular), by following the world trends, more organised appearance of the banks on the market and further strengthening of the confidence of the households in the banking sector.

Relevant aspect in the phasing out the cash from the payment operations is the replacement of the cash payment for the purchase of agricultural products with cashless payment, by transferring funds on bank accounts, and the intensification of the trends of payment of the pensions through bank accounts.

Why the foregoing activities are necessary and what are the effects thereof? The low level of currency in circulation has myriad economic advantages. Taking into account that the currency in circulation are autonomous factor, i.e. factor beyond the control of the Central Bank, its lower level will facilitate the liquidity forecasting process. On the other hand, it would mean easier liquidity management by the banks. Equally important aspect in our environment is the effect of money channeling, i.e. their inclusion in the banking system, which will then be used, through the financial intermediation process, for supporting the real sector of the economy. The channeling of the cash and the anti-gray economy process are also significant from the tax aspect, having in mind their positive tax implications.

What is the lowest limit of the CC? What determines the level of CC? Notwithstanding the development of cashless payment instruments, many analysts forecast that the cash will be used for transaction purposes for a very long time, primarily owing to the unique feature of the cash, i.e. the anonymity when used. More precisely, the gray economy and all other categories of "bad behavior" will certainly continue preferring cash and its reduction will be contingent upon the progress in the anti-gray economy process. Observing the formal sector, however, the government needs to establish a framework, which will create opportunity for larger use of the benefits from the cashless payments, considering the high costs of holding cash.