

## Cash flows and national accounts (Need new satellite account)

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### INTRODUCTION

The questions related to cash flows deserve greater attention than the one devoted on this subject nowadays. The reasons for such a conclusion are at least two circumstances. On the one hand this is their complexity, but on the other - the fact that they are an integral part of any micro- and macroeconomic activity. Studies show that these questions have long engaged for both theoreticians and practitioners. Today they are again relevant. The need for their resolution is even higher in today's turbulent economic development. For this purpose, however, it is necessary to find a reliable tool for the presentation of cash flows. Expectations that this is possible by the information contained in more widely used national accounts (Generalised System of National Accounts - SNA 2008 and the European System of National Accounts - ESA 2010) found no practical application. This is due to the fact that there is not reliable definition nor reliable coverage of cash flows. It is obvious that in this situation there is a need to create another satellite account to the national accounts to cover this gap. This is the main objective of the proposed material. In its **first part** issues about the definition and presentation of cash flows in the national accounts are discussed. The **second part** is dedicated to the opportunities to establish new satellite account to the national accounts for cash flows. The content of the **third part** is about ideas how to use the new satellite account.

**Part One**  
**DEFINITION AND PRESENTATION OF CASH FLOWS**  
**NATIONAL ACCOUNTS**

**The Generalised System of National Accounts (SNA 2008)** argues that "the majority of flows represent operations." (3.50) and "monetary operation - it's such an operation in which one institutional unit makes payment (received payment) or accept obligations (receives an asset), expressed in monetary units. "(3.55) and that " ... all money transactions are bilateral. "(3.56)

The **European System of National Accounts (ESA 2010)** confirms the view that "operations are cash when the units involved make or receive payments, or accrue liabilities or receive assets which are expressed in monetary units." (1.70)

Based on all this and the overall content of the systems of national accounts we can make the following important conclusions: *f i r s t*, cash flows are associated not only with the movement of money in the form of currency and deposits between perceived aggregate economic subjects but also with all other changes in financial assets and liabilities; *s e c o n d*, it is neglected the fact that each cash flow is the movement of the known in theory and practice monetary aggregates M1 (narrow money), M2 and M3 (broad money); *t h i r d*, it is underestimated the fact that individual cash flows are part of domestic money turnover for a period of time and *f o u r t h*, for the national accounts cash flows do not represent a priority item.

In the **Generalised System of National Accounts (SNA 2008)** financial assets and liabilities are presented by **financial account** (Table 11.1), which account for currency and deposits (F.2) is as follows:

*Table 1 \**

OPERATIONS	S.11	S.12	S.13	S.14	S.2	TOTAL
1. Net acquisition of currency and deposits (F2)	39	10	- 26	66	11	100
2. Net provision currency and deposits (F2)	0	65	37	0	- 2	100
3. Balance: net accumulation of assets (+) or liabilities (-)	39	- 55	- 63	66	13	0

\* *S.11 Non-financial business corporations, S.12 Financial Institutions, S.13 Government, S.14 Households and S.2 External subjects*

The presentation of currency and deposits (F2) in **the European System of Accounts (ESA 2010)** is also done through **financial account** (Annex A - Table 24.2). In parallel, however, in this system is shown also a **model of financial account "from whom to whom"** (Table 5.1), which for currency and deposits (F.2) might look like this:

*Table 2*

Sectors debtors Sectors creditors		Net acquisition of currency and deposits (F2) from:					
		S.11	S.12	S.13	S.14	S.2	TOTAL
Net provision currency and deposits (F2) to:	S.11	0	2	10	8	-20	0
	S.12	25	0	15	20	5	65
	S.13	9	8	0	22	-2	37
	S.14	0	0	-28	0	28	0
	S.2	5	0	-23	16	0	-2
	TOTAL	39	10	-26	66	11	100

Based on all this, for the presentation of cash flows in the national accounts can be made the following major conclusions: *f i r s t*, the national accounts used at present do not pay enough attention to presentation of cash flows between economic subjects; *s e c o n d*, the attention in these accounts is focused on establishing the changes that occur in financial assets and liabilities within which are also treated the currency and deposits (F.2); *t h i r d*, even the orientation of the use of financial account "from whom to whom" is related only to the net presentation of the movement of money between economic subjects; *f o u r t h*, there is not even an attempt to connect the cash flows in a particular period of time with the movement of money in previous and subsequent periods and *f i f t h*, it is not provided a relevant connection with general money supply that serves the economic subjects, measured in monetary aggregates M1, M2 and M3.

Taking in mind the significant not only macroeconomic but microeconomic importance of cash flows that penetrate all activities related to the economy, the **general conclusion** is that it is necessary to develop and introduce another satellite account to the national accounts item, i.e. **satellite account for the movement of money between economic subjects**. This account will supplement the now adopted satellite accounts to SNA 2008 and ESA 2010 for tourism, ecology, health, cottage industries, agriculture and so on.

## Part Two

### NEW SATELLITE ACCOUNT OF CASH FLOWS TO THE NATIONAL ACCOUNTS

For the construction of the new satellite account to the national accounts various **models** could be used. When choosing a model, however, we must take into account the needs for information related to cash flow, as well as the opportunities for its provision. For this purpose the following must be taken into account: *f i r s t*, the content of the cash flows, i.e. that they present a set of moving cash (coins and notes) and deposits with banking institutions; *s e c o n d*, the subjects among which is preformed this movement of money, i.e. for aggregate economic subjects that are used in national accounts; *t h i r d*, the relationship of cash flow over a period of time with the movement of those funds in previous and subsequent periods and *f o u r t h*, the relationship of cash flows with the money supply, which serves economic subjects, i.e. monetary aggregates M1, M2 and M3. These requirements can be met if the composition of the new satellite account of cash flows to the national accounts is done through the following **exemplary model**:

*Table 3*

Cash outflows (i) →		SB (Y)	S.11	S.15	S.14	S.1311 + S.1313	S.1314	S.125	S.123 + S.124	S.121 + S.122	S.2	SUMS
Cash inflows (j) of ↓		0	1	2	3	4	5	6	7	8	9	10
Non-financial business corporations (S.11)	1	20	150	14	24	20	8	2	5	10	15	248
Non-profit organizations (R.15)	2	5	10	1	5	2	1	1	0	2	0	22
Households (R.14)	3	20	25	1	1	5	1	3	0	2	2	40
Government (S.1311 + S.1313)	4	5	20	2	5	1	1	2	1	1	1	34
Social security funds (S.1314)	5	3	7	1	1	1	0	1	1	1	2	15
Insurance companies and pension funds (S.125)	6	2	5	2	1	3	1	0	0	0	0	12
Other financial institutions (S.123 + S.124)	7	1	5	1	0	1	0	0	0	0	1	8
Banking Institutions (S.121 + S.122)	8	0	8	1	3	0	1	0	0	2	10	25

External subjects (S.2)	9	0	5	0	1	3	1	1	1	2	0	14
SUMS	10	56	235	23	41	36	14	10	8	20	31	418
	11	SE (Z)	33	4	19	3	4	4	1	+ 5	- 17	68 + 12

The following main conclusions could be made on the basis of the above model: *f i r s t*, it shows that at the beginning of the selected time period the total value of cash, representing a major component of the monetary aggregates, located outside banking institutions and foreign entities is 56 units, *s e c o n d*, the sum of all cash flows during the selected time period is 418 units, and between the amount of outflows and the amount of cash inflows there is equality; *t h i r d*, by taking into account the funds in each of the aggregate subjects without banking institutions and foreign entities and totals of their incoming and outgoing cash flows the remains of cash at the end of the selected time period is found, the total amount is 68 units; *f o u r t h*, when comparing balances of cash at the end and beginning of the selected time period we find that money supply that serves the aggregate economic subjects increased by 12 units and *f i f t h*, the increase in money supply is the result of an increase in cash in the banking institutions with 5 units and additional inflow of money from foreign entities amounted to 17 units.

There is no need for specific evidence to connect the reliability of the proposed model here with opportunities for its **information provision**. Studies show that for this purpose can be used the reporting form which represents an annex to the **accounting standard 7** i.e. to the statement of cash flows. For the needs of this model, the application can have the form shown in the following table:

**Statement of cash flows  
the "x" in s.11 of 20 ...year**

*Table 4*

№	Cash outflows (i) → INDICATORS ↓	S.11	S.15	S.14	S.1311 + S.1313	S.1314	S.125	S.123 + S.124	S.121 + S.122	S.2	SUMS
0	01	1	2	3	4	5	6	7	8	9	10
1	Stock at the beginning of the "X"	x	x	x	x	x	x	x	x	x	...
2	Cash inflows (j) the "X"	...	...	...	...	...	...	...	...	...	...

3	Outflows (i) - a total of "X"	...	x	x	x	x	x	x	x	x	x
4	Cash inflows (j) of S.2	...	x	x	x	x	x	x	x	x	x

The orientation of individual economic subjects to cash inflows has as its basis the greater attention which is being paid to them in the current practice and the fact that each inflow corresponds outgoing cash flow. The inclusion in this report form information and total cash outflows of the economic subject having the need to make verification of data about them that will be incurred by the relevant accounts of other economic subjects. There is an obvious need for inclusion in this form of information on inflows of foreign entities because the data for them can not be collected from these subjects and hope that they are available within the balance of payments is negligible. It is necessary to underline that the extraction of information for this report form from the accounts of individual economic subjects should use a specially developed for this purpose **software products**. The opportunities in this field are limitless.

Based on the information received from the proposed here annex to Accounting Standard 7, again by a suitable software product, must be made summary of cash flows in a way that is shown in the following table:

**Summary statement of cash flows  
s.11 for over 20 ... year  
(example)**

*Table 5*

№	Cash outflows (i) → INDICATORS ↓	S.11	S.15	S.14	S.1311 + S.1313	S.1314	S.125	S.123 + S.124	S.121 + S.122	S.2	SUMS
0	01	1	2	3	4	5	6	7	8	9	10
1	Stock at the beginning of S.11	x	x	x	x	x	x	x	x	x	20
2	Cash inflows (j) the "S.11"	150	14	24	20	8	2	5	10	15	248
3	Cash outflows (i) - a total of S.11	235	x	x	x	x	x	x	x	x	x
4	Cash inflows (j) of S.2	5	x	x	x	x	x	x	x	x	x

The information provision of the new satellite account of cash flows of the national accounts can be ensured by appropriate **expertise evaluations** for the availability of cash at the beginning and end of the selected period of time and for the outgoing and incoming cash flows of every aggregate economic subject. When choosing such an approach it the opportunities of subjective methods should be used, to which methods it could be counted the "DELPHI" and the "BRAIN ATTACK" ones. The success of this approach will depend primarily on the quality of the experts and the availability of sufficient and reliable for their work existing cash flow information. Unfortunately the second condition is still missing. This is the reason not to pay more attention in this paper to the expert approach to information assurance model treated here.

### **Part Three**

## **SCOPE FOR NEW SATELLITE ACCOUNT CASH FLOWS**

### **3.1 The new satellite account as an instrument for structural analysis of money**

It is known that in the analysis of all economic subjects, which represent aggregates, the structural analysis has primarily importance. This is because it gives an indication of the weight of each one of the elements of the aggregate. From this point of view for the cash money and cash flows also there are necessary prerequisites for their treatment as aggregates. This applies both to the common values of cash money at the beginning and end of the selected period of time and to the amounts of outgoing and incoming cash flows, giving an idea of the domestic money turnover. The structural analysis of cash money gives opportunity for the establishment of their distribution between the aggregate economic subjects, while for the cash flows – it displays the beneficiaries of outflows and the origin of the cash inflows.

In this situation there are sufficient grounds to assert that the new satellite account cash flow creates a lot of great opportunities to perform both vertical and horizontal structural analysis. By **vertical structural analysis** it is possible to ascertain first how the money supply is distributed outside the banking institutions and foreign entities among other economic entities at the beginning of the selected period of time. In parallel with this analysis it can be established for each individual aggregate economic subject how the total amount of his cash outflows is distributed, i.e. how much of it is provided to the other entities included in the model.

Similarly, through the new satellite account of cash flows to the national accounts it

can be made and **horizontal structural analysis**. In this direction firstly it comes to its ability to show where the cash inflows come from for each of the selected aggregate economic subject. Then with the help of this analysis the structure of the cash money at the end of the chosen period of time can be established, i.e. to determine what changes have occurred in them after this period of time has elapsed. In this case, again it comes to the structure of of cash outside the banking institutions and foreign entities. Some idea of the treated here vertical and horizontal structural analysis can be obtained from the content of the following table:

**Table 6**

Cash outflows (i) →		SB	S.11	S.15	S.14	S.1311 +	S.125	S.1314	S.123 +	S.121 +	S.2	SUMS
Cash inflows (j) of		(Y)				S.1313			S.124	S.122		
↓												
		0	1	2	3	4	5	6	7	8	9	10
<b>Non-financial business corporations (S.11)</b>	<b>1</b>	35,7 -	63,8 60,5	60,9 5,6	58,5 9,7	55,6 8,1	57,1 3,2	20,0 0,8	62,5 2,0	50,0 4,0	48,4 6,0	59,3 100,0
<b>Non-profit organizations (R.15)</b>	<b>2</b>	8,9 -	4,3 45,5	4,3 4,5	12,2 22,7	5,6 9,1	7,1 4,5	10,0 4,5	0,0 0,0	10,0 9,1	0,0 0,0	5,3 100,0
<b>Households (R.14)</b>	<b>3</b>	35,7 -	10,6 62,5	4,3 2,5	2,4 2,5	13,9 12,5	7,1 2,5	30,0 7,5	0,0 0,0	10,0 5,0	6,5 5,0	9,6 100,0
<b>Government (S.1311 + S.1313)</b>	<b>4</b>	8,9 -	8,5 58,8	8,7 5,9	12,2 14,7	2,8 2,9	7,1 2,9	20,0 5,9	12,5 2,9	5,0 2,9	3,2 2,9	8,1 100,0
<b>Social security funds (S.1314)</b>	<b>5</b>	5,4 -	3,0 46,7	4,3 6,7	2,4 6,7	2,8 6,7	0,0 0,0	10,0 6,7	12,5 6,7	5,0 6,7	6,5 13,3	3,6 100,0
<b>Insurance companies and pension funds (S.125)</b>	<b>6</b>	3,6 -	2,1 41,7	8,7 16,7	2,4 8,3	8,3 25,0	7,1 8,3	0,0 0,0	0,0 0,0	0,0 0,0	0,0 0,0	2,9 100,0
<b>Other financial institutions (S.123 + S.124)</b>	<b>7</b>	1,8 -	2,1 62,5	4,3 12,5	0,0 0,0	2,8 12,5	0,0 0,0	0,0 0,0	0,0 0,0	0,0 0,0	3,2 12,5	1,9 100,0
<b>Banking Institutions (S.121 + S.122)</b>	<b>8</b>	0,0 -	3,4 32,0	4,3 4,0	7,3 12,0	0,0 0,0	7,1 4,0	0,0 0,0	0,0 0,0	10,0 8,0	32,3 40,0	6,0 100,0
<b>External subjects (S.2)</b>	<b>9</b>	0,0 -	2,1 35,7	0,0 0,0	2,4 7,1	8,3 21,4	7,1 7,1	10,0 7,1	12,5 7,1	10,0 14,3	0,0 0,0	3,3 100,0
<b>SUMS</b>	<b>10</b>	100,0 -	100,0 56,2	100,0 5,5	100,0 9,8	100,0 8,6	100,0 3,3	100,0 2,4	100,0 1,9	100,0 4,8	100,0 7,4	100,0 100,0
	<b>11</b>	SE (Z)	- 48,5	- 5,9	- 27,9	- 4,4	- 5,9	- 5,9	- 1,5	- -	- -	- 100,0

### 3.2 Satellite account and chain dependencies on cash flows

Chain dependencies of cash flows are associated with changes in their aggregate after the emergence of changes in a particular cash flow. This is a result of changes in existing regulations (laws, decrees, ordinances, regulations, etc.). Studies show that both in domestic and in the world practice there is not yet a reliable tool for their tracing. The reason for this should be sought in the lack of tools for reliable representation of cash flows. On this basis, it can be concluded that through the proposed new satellite account to the national accounts such possibilities will be



created. This account will provide prerequisites for a more limited but also for a more advanced traceability of the chain dependencies. The limited tracking can establish only changes in the initially affected aggregate economic subject. On the other hand the advanced tracking can monitor changes within the totality of cash flows. It is necessary to recognize, however, that the more extended targets for tracking chain dependencies are, the less reliable are the results. This is because in the above extension there will have to be used less accurate approaches, such as the case with the probability calculations.

On the other hand the whole range of chain dependencies could be divided into two main groups: *f i r s t*, dependencies which do not affect the money supply that serves economic subjects and *s e c o n d*, dependencies that cause such change. The first group includes all chain dependencies caused by changes in cash flows which do not affect the banking institutions and external entities, and the second group - chain dependencies that affect these two aggregated subjects. Following these conditions the case where there is an increase of payment of tax on profits of non-financial business corporations (S.11) with 10 units could be classified in the first group, for example, while in the second group - the case in which households (S.14 ) receive less interest on their deposits in banking institutions by 1 unit. Some ideas of the limited form of these two chain dependencies can be acquired from the content of Table 7.

It is obvious the fact that if the obligation of non-financial business corporations (S.11) is increased by 10 units as **corporate tax** this will cause an increase with the same units of the total amount of their cash outflows and the total amount of domestic money turnover, as well as a decrease with the same units of their cash at the end of the chosen period of time. In parallel, the total amount of the incoming cash flows and the cash money for the Government (S.1311) will increase with the same units at the end of the chosen period of time. If there is **decrease in interest on deposits** for Households (S.14) with 1 unit this will cause a reduction for them with the same amount of the total value of their incoming cash flows and cash money at the end of the chosen period of time, accompanied by a corresponding reduction in the total value of domestic money turnover. This change for the Banking institutions (S.122) will cause a corresponding reduction in their cash outflows and an increase in their cash money at the end of the chosen period of time. That change, however, will be accompanied also by a decrease of 1 unit of the money supply which is serving the economic subjects without Banking Institutions (S.121 + S.122) and external entities (S.2).

*Table 7*

Cash outflows (i) → Cash inflows (j) of ↓		SB (Y)	S.11	S.15	S.14	S.1311 + S.1313	S.125	S.1314	S.123 + S.124	S.121 + S.122	S.2	SUMS
		0	1	2	3	4	5	6	7	8	9	10
Non-financial business corporations (S.11)	1	20	150	14	24	20	8	2	5	10	15	248
Non-profit organizations (R.15)	2	5	10	1	5	2	1	1	0	2	0	22
Households (R.14)	3	20	25	1	1	5	1	3	0	2 <i>1</i>	2	40 <i>39</i>
Government (S.1311 + S.1313)	4	5	20 30	2	5	1	1	2	1	1	1	34 44
Social security funds (S.1314)	5	3	7	1	1	1	0	1	1	1	2	15
Insurance companies and pension funds (S.125)	6	2	5	2	1	3	1	0	0	0	0	12
Other financial institutions (S.123 + S.124)	7	1	5	1	0	1	0	0	0	0	1	8
Banking Institutions (S.121 + S.122)	8	0	8	1	3	0	1	0	0	2	10	25
External subjects (S.2)	9	0	5	0	1	3	1	1	1	2	0	14
SUMS	10	56	235 245	23	41	36	14	10	8	20 19	31	418-428 418-417
	11	SE (Z)	33 23	4	19 18	3 13	4	4	1	+5 +6	-17	68 67

### 3.3 Satellite account as a tool for forecasting cash flows

The need for forecasting cash flows is undisputable. It is imperative to develop multiple options for their future condition and then to choose the right one. The information that will be contained in the new satellite account for cash flows creates the prerequisites for achieving this goal. This is because on the basis of the outgoing and incoming cash flows, which are contained in it, first, it is possible to build the **matrix of coefficients**. For this purpose each cash flow should be divided on the total amount of the cash flows. Some ideas for the matrix of coefficients can be obtained from the data which is placed on the next table:

Table 8

Cash outflows (i) → Cash inflows (j) of ↓		SB (Y)	S.11	S.15	S.14	S.1311 + S.1313	S.125	S.1314	S.123 + S.124	S.121 + S.122	S.2	SUMS
		0	1	2	3	4	5	6	7	8	9	10
Non-financial business corporations (S.11)	1	20	0,357	0,033	0,057	0,048	0,020	0,005	0,012	0,024	0,036	0,592
Non-profit organizations (R.15)	2	5	0,024	0,002	0,013	0,005	0,002	0,002	0,000	0,005	0,000	0,053
Households (R.14)	3	3	0,020	0,002	0,002	0,002	0,000	0,002	0,002	0,002	0,005	0,037
Government (S.1311 + S.1313)	4	2	0,013	0,005	0,002	0,007	0,002	0,000	0,000	0,000	0,000	0,029
Social security funds (S.1314)	5	1	0,013	0,002	0,000	0,002	0,000	0,000	0,000	0,000	0,002	0,019
Insurance companies and pension funds (S.125)	6	0	0,020	0,002	0,007	0,000	0,002	0,000	0,000	0,005	0,024	0,060
Other financial institutions (S.123 + S.124)	7	0	0,013	0,000	0,002	0,007	0,002	0,002	0,002	0,005	0,000	0,033
Banking Institutions (S.121 + S.122)	8	56	0,569	0,053	0,098	0,085	0,032	0,023	0,018	0,048	0,074	1,000
External subjects (S.2)	9	0	0,013	0,000	0,002	0,007	0,002	0,002	0,002	0,005	0,000	0,033
SUMS	10	56	0,569	0,053	0,098	0,085	0,032	0,023	0,018	0,048	0,074	1,000
	11	SE (Z)	33	4	19	3	4	4	1	+ 5	- 17	68

In the presence of such a matrix it must be done a **prediction about the total value of the future cash turnover**, i.e. for the future set of cash flows. This can be accomplished by the use of subjective (expert) methods, methods of extrapolation, causal (causal effect) methods and extremal methods. The variety of such methods is very large. They are well known, so it is not necessary to give more information about them here. It is necessary to be emphasized that for greater certainty it should be used not just one but a set of those methods. The final stage within this procedure is the **establishment of future cash flows between economic subjects**. For this purpose, the estimated total value of the future set of cash flows must be multiplied by each element of the matrix of coefficients.

If it is assumed that the projected future value of the set of cash flows will be not 418 units but 500 units and if the coefficients of the matrix remain the same, the future status of cash flows in this case can be seen from the data on next table:

*Table 9*

Cash outflows (i) →		SB (Y)	S.11	S.15	S.14	S.1311 + S.1313	S.1314	S.125	S.123 + S.124	S.121 + S.122	S.2	SUMS
Cash inflows (j) of ↓		0	1	2	3	4	5	6	7	8	9	10
Non-financial business corporations (S.11)	1	33,0	178,5	16,5	28,5	24,0	10,0	2,5	6,0	12,0	18,0	296,0
Non-profit organizations (R.15)	2	4,0	12,0	1,0	6,5	2,5	1,0	1,0	0,0	2,5	0,0	26,5
Households (R.14)	3	19,0	30,5	1,0	1,0	6,0	1,0	3,5	0,0	2,5	2,5	48,0
Government (S.1311 + S.1313)	4	3,0	24,0	2,5	6,5	1,0	1,0	2,5	1,0	1,0	1,0	40,5
Social security funds (S.1314)	5	4,0	10,0	1,0	1,0	1,0	0,0	1,0	1,0	1,0	2,5	18,5
Insurance companies and pension funds (S.125)	6	4,0	6,5	2,5	1,0	3,5	1,0	0,0	0,0	0,0	0,0	14,5
Other financial institutions (S.123 + S.124)	7	1,0	6,5	1,0	0,0	1,0	0,0	0,0	0,0	0,0	1,0	9,5
Banking Institutions (S.121 + S.122)	8	0,0	10,0	1,0	3,5	0,0	1,0	0,0	0,0	2,5	12,0	30,0
External subjects (S.2)	9	0,0	6,5	0,0	1,0	3,5	1,0	1,0	1,0	2,5	0,0	16,5
SUMS	10	68,0	284,5	26,5	49,0	42,5	16,0	11,5	9,0	24,0	37,0	500,0
X. <i>ij</i> = ΣDMT1* K. <i>ij</i>	11	SE (Z)	44,5	4,0	9,0	10,0	6,5	7,0	1,5	+ 6,0	- 20,5	82,5 + 14,5

### 3.4 The satellite account and the velocity of money

The questions that are related to the velocity of money should not be underestimated, since *ceteris paribus* it determines the amount of money that serves economic subjects. This means that the acceleration of the velocity of money leads to a reduction of that amount, but its delay - to increase it. In the foreground within these issues stands the choice of indicators of measurement of the velocity of money and how to calculate them. It is accepted for this purpose to use the **number of turnovers of money (NTM) and the duration of a turnover, measured in days (D)**. Not only in theory but also in practice it is suggested that the first indicator is

calculated by dividing the gross domestic product (GDP) with money supply which is serving the economic subjects. On the other hand the second indicator is calculated by dividing the number of days for the selected period with already calculated number of turnovers.

However, this approach can hardly be considered as fully successful, because the use of GDP gives no idea about the actual value of set of cash flows, which corresponds to the velocity of money. It does not include all outgoing and incoming cash flows because it represents the cash value of manufactured, distributed or consumed new goods and services during the period. This money equivalent besides the fact that it is a consequence of numerous objectively existing cash flows between economic subjects, it is connected with the function of money as a measure of value, not with functions where there is movement of money and which stand in the core of cash flows. For example, GDP does not include the cash flows related to buying and selling of goods and services, cash flows related to lending, etc. This gives sufficient grounds to assert that in the calculations related with the velocity of money **GDP should not be used, but domestic money turnover (DMT)**, which represents a set of all cash flows during the selected period of time. It is obvious that for this purpose we can use the information contained in the proposed new satellite account to the national accounts.

Some ideas of the ability to use new satellite account to establish the **number of turnovers of money (NTM)** and the **duration of a turnover, measured in days (D)** can be obtained from the information contained in the following table:

*Table 10*

Cash outflows (i) → Cash inflows (j) of ↓		SB (Y)	S.11	S.15	S.14	S.1311 + S.1313	S.125	S.1314	S.123 + S.124	S.121 + S.122	S.2	SUMS
		0	1	2	3	4	5	6	7	8	9	10
Non-financial business corporations (S.11)	1	20	150	14	24	20	8	2	5	10	15	248
Non-profit organizations (R.15)	2	5	10	1	5	2	1	1	0	2	0	22
Households (R.14)	3	20	25	1	1	5	1	3	0	2	2	40
Government (S.1311 + S.1313)	4	5	20	2	5	1	1	2	1	1	1	34
Social security funds (S.1314)	5	3	7	1	1	1	0	1	1	1	2	15
Insurance companies and pension funds (S.125)	6	2	5	2	1	3	1	0	0	0	0	12
Other financial institutions (S.123 + S.124)	7	1	5	1	0	1	0	0	0	0	1	8
Banking Institutions (S.121 + S.122)	8	0	8	1	3	0	1	0	0	2	10	25
External subjects (S.2)	9	0	5	0	1	3	1	1	1	2	0	14
SUMS	10	56	235	23	41	36	14	10	8	20	31	418
418 NTM = ----- = 6,7 (56 + 68) : 2 360 D = ----- = 54 6,7	11	SE (Z)	33	4	19	3	4	4	1	+5	-17	68

### 3.5 Satellite account and monetary policy

It is known that the monetary policy has central role within the economic policy of a country or a community of states. This policy covers two main segments - **policy related to the demand of money and policy related to the supply of money**. There is an objective need for synchronization of these two segments of monetary policy which must have as its main objective compliance of the money supply with demand for money. The successful implementation of this synchronization, however, largely depends on the ability to obtain quantitative information primarily to the demand for money, since the information for the money supply exists. The

allegation about money supply is fully confirmed by the observations that are made by the monetary statistics of central banks. It is primarily about the observations related to the well known monetary aggregates M1 (narrow money), M2 and M3 (broad money). The new proposed satellite account for cash flows to national accounts also creates conditions for the establishment of the status of money supply both at the beginning and at the end of the selected period of time. This can be seen from the content of the following table:

*Table 11*

Cash outflows (i) →		SB (Y)	S.11	S.15	S.14	S.1311 + S.1313	S.125	S.1314	S.123 + S.124	S.121 + S.122	S.2	SUMS
Cash inflows (j) of ↓		0	1	2	3	4	5	6	7	8	9	10
Non-financial business corporations (S.11)	1	20	150	14	24	20	8	2	5	10	15	248
Non-profit organizations (R.15)	2	5	10	1	5	2	1	1	0	2	0	22
Households (R.14)	3	20	25	1	1	5	1	3	0	2	2	40
Government (S.1311 + S.1313)	4	5	20	2	5	1	1	2	1	1	1	34
Social security funds (S.1314)	5	3	7	1	1	1	0	1	1	1	2	15
Insurance companies and pension funds (S.125)	6	2	5	2	1	3	1	0	0	0	0	12
Other financial institutions (S.123 + S.124)	7	1	5	1	0	1	0	0	0	0	1	8
Banking Institutions (S.121 + S.122)	8	0	8	1	3	0	1	0	0	2	10	25
External subjects (S.2)	9	0	5	0	1	3	1	1	1	2	0	14
SUMS	10	56	235	23	41	36	14	10	8	20	31	418
	11	SE (Z)	33	4	19	3	4	4	1	+ 5	- 17	68 + 12

There are enough reasons that it could be claimed that until now not only in theory but also in practice, an adequate solution to the problem of establishing of the amount of the money demand has not been found. The practical value of the ideas in this connection is small i.e. for the

amount of money demand by Karl Marx, for the equation of exchange by Irving Fisher, for the equation of preferences for liquidity by John Maynard Keynes and the equation of demand for assets of Milton Friedman. It is also accepted that it is possible to conduct a successful monetary policy related to the supply of money without knowing what is the demand of money. This approach, however, creates prerequisites for an oversupply of money or insufficient money supply. All this is due to the insufficient information for the cash flows that are very heavily dependent on the behavior of the economic subjects within a given period of time, behavior which is associated with the demand for money. This is because neither one separately taken economic subject nor single aggregated economic subjects are able to make cash outflow without being subject of the demand of money.

On this basis it can be assumed that over a period of time the amount of the demand of money is in close connection with the total amount of all cash outflows of the economic subjects. This total amount can be considered as a minimum quantity for money demand. It is obvious, however, that its maximum level is significantly greater than the total amount of cash outflows in a given period of time. This means that the total amount of the cash outflows can serve only as a guide in the conduction of monetary policy which is related to the money supply.

The information that will be included in the proposed new satellite account for cash flows to national accounts creates the necessary preconditions for the establishment of an indicative amount of money demand. This is because it represents the cash outflows of aggregate economic subjects during the selected time period. For the achievement of this goal, however, we have to take into account the velocity of money, calculated not by the **gross domestic product (GDP)** but by using **domestic money turnover (DMT)**. On this basis, the **quantity of demanded money (QDM)** will be equal to the total amount of cash outflows divided by the number of turnovers of money.

All of this can be traced from the data contained in the following table:



*Table 12*

Cash outflows (i) → Cash inflows (j) of ↓		SB (Y)	S.11	S.15	S.14	S.1311 + S.1313	S.125	S.1314	S.123 + S.124	S.121 + S.122	S.2	SUMS
		0	1	2	3	4	5	6	7	8	9	10
Non-financial business corporations (S.11)	1	20	150	14	24	20	8	2	5	10	15	248
Non-profit organizations (R.15)	2	5	10	1	5	2	1	1	0	2	0	22
Households (R.14)	3	20	25	1	1	5	1	3	0	2	2	40
Government (S.1311 + S.1313)	4	5	20	2	5	1	1	2	1	1	1	34
Social security funds (S.1314)	5	3	7	1	1	1	0	1	1	1	2	15
Insurance companies and pension funds (S.125)	6	2	5	2	1	3	1	0	0	0	0	12
Other financial institutions (S.123 + S.124)	7	1	5	1	0	1	0	0	0	0	1	8
Banking Institutions (S.121 + S.122)	8	0	8	1	3	0	1	0	0	2	10	25
External subjects (S.2)	9	0	5	0	1	3	1	1	1	2	0	14
SUMS	10	56	235	23	41	36	14	10	8	20	31	418
418 QDM = ----- = 62,4 6,7	11	SE (Z)	33	4	19	3	4	4	1	+ 5	- 17	68

### 3.6 Satellite account and public sector economy

The estimates for the state owned sector in market conditions are still subject of lively discussions. Within all discussions there is unanimous opinion that in any economy there must be both private and public sector. Problems in this area are related to the search for the best distribution between these two sectors. Liberal economists and specialists advocate for a greater share of the private sector while the rest - to maintain a significant share of the public sector. The solution of this problem is very difficult. This verbal presentation, however, is hardly to be satisfactory. On this basis the need for finding the most appropriate way to quantify the two components of this ratio arises. For this purpose different variants can be used. They include the present calculations for the participation of these two sectors in the creation of GDP, for the

separation of the property between the two sectors and so on. Their importance should not be underestimated. In parallel, however, there could be found and other approaches to measure the ratio treated here. For this purpose it could successfully be used the information for money supply, serving subjects and the aggregate of all cash flows, also known as turnover, contained in the proposed new satellite account of cash flows to the national accounts.

For example, based on this information, the respective rates may be calculated which gives an idea about the volume of money owned by the state economic subjects outside the banking institutions and also the external entities at the beginning and the end of the selected period of time. In this connection we should not underestimate the public opinion that "who owns the money he manages the economy." On this basis we can support the opinion that the more money has the state the greater share it has in the economy and vice versa. This is because depending on how much money has the state it may be more active or more passive in solving emerging economic problems.

From the information that will be contained in the proposed new satellite account of cash flows to the national accounts it will be possible to establish and the corresponding percentages for the participation of the state in both the outgoing and the incoming cash flows. On the other hand based on the percentages of cash outflows it will be able to make the relevant conclusions about its activity in relation to the financing of the other aggregate economic subjects, and based on percentages of cash inflows - conclusions about the concentration of funds in the state.

The practice shows that in both areas there is not sufficient and detailed information at present for objective judgments. They can not be made neither by the statistics of the National Statistical Institute nor by the data of the specialized institutions such as the Bulgarian National Bank and Ministry of Finance. For this purpose it is not possible to use existing national accounts.

Some ideas of the possibilities to make assessments of the public sector based on the information that will be contained in the proposed new satellite account of cash flows to the national accounts can be obtained from the content of next table:

*Table 13*

Cash outflows (i) → Cash inflows (j) of ↓		SB (Y)	S.11	S.15	S.14	S.1311 + S.1313	S.125	S.1314	S.123 + S.124	S.121 + S.122	S.2	SUMS
		0	1	2	3	4	5	6	7	8	9	10
Non-financial business corporations (S.11)	1	20	150	14	24	20	8	2	5	10	15	248
Non-profit organizations (R.15)	2	5	10	1	5	2	1	1	0	2	0	22
Households (R.14)	3	20	25	1	1	5	1	3	0	2	2	40
Government (S.1311 + S.1313)	4	5 8,9%	20	2	5	1	1	2	1	1	1	34 8,1%
Social security funds (S.1314)	5	3 5,4%	7	1	1	1	0	1	1	1	2	15 3,6%
Insurance companies and pension funds (S.125)	6	2	5	2	1	3	1	0	0	0	0	12
Other financial institutions (S.123 + S.124)	7	1	5	1	0	1	0	0	0	0	1	8
Banking Institutions (S.121 + S.122)	8	0	8	1	3	0	1	0	0	2	10	25
External subjects (S.2)	9	0	5	0	1	3	1	1	1	2	0	14
SUMS	10	56	235	23	41	36 8,6%	14 3,3%	10	8	20	31	418
	11	SE (Z)	33	4	19	3 4,4%	4 5,9%	4	1	+ 5	- 17	68

### 3.7 Satellite account and misuse of money

In Bulgaria and globally misuse of money has become a dangerous phenomenon for the society. This is due to many reasons, but the most important are two of them. First is the fact that in modern conditions it has become possible to acquire everything with money. In the core of this reason stands not only the ability of money to be a universal equivalent, but also the fact that there are no reliable public protection systems and sanctions. Parallel to this, the abuse of money is due to the inherent greed for more and more money of some individual persons and entities. In the core of this reason stands not only the first reason, but also the insufficient moral of the persons concerned.

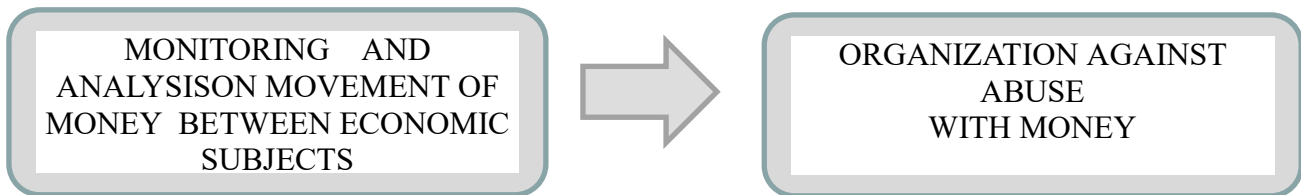
On the other hand the possibilities for abuse of money are unlimited and they find

different forms of expression - money laundering, terrorism, drug traffic, human traffic and other similar phenomena.

The opportunities to use the new satellite account cash flow to national accounts in this area can be divided into two main groups. In the **first group** are included the opportunities to analyze the information contained in that satellite account in order to identify unusual cash flows, i.e. those cash flows that show deviations from their normal appearance. This analysis must take into account the fact that the cash flows between economic subjects which are included in each aggregated economic entities stand in the basis of aggregated cash flows. The **second group** includes the possibilities of taking various measures to penalize those persons and entities that misuse money. On this basis it can be built the corresponding set of measures to prevent similar abuses.

A schematic picture of the opportunities from the information contained in the proposed satellite account against the abuse of money can be acquired by the following scheme:

**Scheme 1**



**CONCLUSION**



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