NOVA IMS Information Management School

MEGI

Mestrado em Estatística e Gestão de Informação

Master Program in Statistics and Information Management

Implementation of new standards in statistics production, in countries in transition

Ion Veverita

Project Work presented as the partial requirement for obtaining a Master's degree in Statistics and Information Management

NOVA Information Management School
Instituto Superior de Estatística e Gestão de Informação

Universidade Nova de Lisboa

NOVA Information Management School

Instituto Superior de Estatística e Gestão de Informação

Universidade Nova de Lisboa

Implementation of new standards in statistics production, in countries in transition

by

Ion Veverita

Project Work is presented as partial requirement for obtaining the Master's degree in Information Management, with a specialization Information Analysis and Management

Advisor: *Andrei Rotaru*, PhD

May, 2019

DEDICATION

Looking back to the time I was thinking about improving my knowledge in Central Bank statistics, I saw a strong support from my wife, telling me that I need to focus on some valuable and to find a recognized experience, if I want to enlarge my vision and knowledge in statistics, produced by the Central Bank.

Now I can say that her support and positive vision were main factors for me to follow the master study at NOVA IMS. It was very productive to discuss potential solutions and to identify issues that can promote to an affordable result.

Saying that, I would like to say to my wife thank you for your support and motivation. I want you to know that you are inspiring me to move forward and to believe that I can do more than I think. I was filling all your enormous effort, to let me concentrate on my study at classes or writing of my project work, even if it was done in the period of time when I used holidays.

Special thanks to my son Ion and my daughter Xenia, I know that I lost some common activities that were passed without me, but I believe that we can recuperate some of this time. You need to know that we can study all our live and even think that some more knowledge is needed.

ACKNOWLEDGEMENTS

I wish to thank my supervisor Dr. Andrei ROTARU for his advices, support and valuable inputs as well as comments and suggestions provided. I am appreciating his patience and constructive approach for identifying the optimal solution to be described in present work.

Distinguish thanks to my colleagues involved in this project, and for all who believe that the financial accounts production is some real and achievable goal that can be finished with success.

Last but not the least, I want to express my gratitude to Mrs. Filipa Lima, for interesting and comprehensive presentation at the seminar held at Istanbul School of Central Banking. I want to mention the effort in the common project between the Central Bank of Portugal (CBP) with NOVA IMS. It is an excellent model of cooperation between academia and Central Bank, especially because international students can follow the well-defined program, provided by professionals from the CBP.

ABSTRACT

During the last decade, the Republic of Moldova as a country in transition faced many issues, including financial crises impact and one more specific event – bank fraud that leaded to closure of three banks that at the closing date counted 34.2% share of total assets of banking system. As a consequence, it was a trigger to reassess the supervision approach for banks and it was decided to implement BASEL III framework in order to have a best conformity with the latest supervision standards.

Another needs that were identified – is identification of the reaction of the market to such a big event (closure of three banks) in the mater of financial asset and liabilities distribution between sectors. The question was focused on distribution part, because all financial liabilities of closed banks were repaid by loans provided by the National Bank of Moldova (NBM) by reallocating of deposits to other banks (loans were reallocated by mutual agreements).

I this regards, as the National Bank of Moldova tried to reassess the reasons that lead to closure of banks, the process of qualitative changes begun. Were identified many loans provided to affiliated parties, and as a result started an immense investigation on the compliance to all required legal framework for loan activity of closed banks.

The year 2014 was a very significant for the financial market, because other financial corporations (non-banking sector) start to increase its market share in loans provided to customers (individuals and corporates) very accelerated.

At the moment, the National Bank finalized implementation of Monetary and Financial Statistics Compilation Guide 2016 (International Monetary Fund, 2016), in producing of monetary and financial statistics. Starting with 2014, external statistics is produced according to Balance of Payment Manual version 6 (International Monetary Fund, 2009). Current project will be focused on the experience of the Republic of Moldova in implementation of the financial accounts statistics based on a consequence of environmental factors that I believe can contributed to successful implementation of such valuable and useful statistics. I will try to note some experiences from mentioned activities, which I think are important things that can be considered a problems and will underline ways we used to solve some difficult situations. The structure of Project Work will be as a step-by-step description of actions and strategy approves in order to have financial accounts statistics at a final stage.

KEYWORDS

Financial accounts; National accounts; Monetary and Financial Statistics; Balance of payments; International Investment Position; Households; Non-Financial Corporations, From-Whom-to-Whom

INDEX

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS AND ACRONYMS

AI	Artificial Intelligence
BoP	Balance of Payments
BPM6	Balance of Payments and International Investment Position Manual, sixth edition
CDIS	Coordinated Direct Investments Survey
CPIS	Coordinated Portfolio Investments Survey
CSD	Central Securities Depositary
DC	Depositary Corporations
DSG1	First G-20 Data Gaps Initiative
DSG2	Second G-20 Data Gaps Initiative
ED	External Debt
ESA2010	European System of Accounts 2010
FA	Financial accounts
FSI	Financial Soundness Indicators
GDP	Gross Domestic Product
HH	Households
IIP	International Investment Position
IMF	International Monetary Fund
MOU	Memorandum of Understanding
NBCI	Non-banking Credit Institutions
NBFS	Non-banking financial subsectors
NBM	National Bank of Moldova
NBS	National Bureau of Statistics
NCFM	National Commission for Financial Markets
NFC	Non-Financial Corporations
NPISH	Non-Profit Institutions Serving Households

ODC	Other Depositary Corporations
PSP	Payment Service Providers
SNA2008	System of National Accounts 2008
SSO	Swedish Statistical Office
TA	Technical Assistance
1SR	Standardized Reporting Forms – Central Bank
2SR	Standardized Reporting Forms – Other depository Corporations
4SR	Standardized Reporting Forms – Other financial Corporations
AI	Artificial Intelligence

1. INTRODUCTION

The National Bank of Moldova (NBM), in addition to its fundamental objective (maintaining the price stability) and key attributions (licensing, regulation and supervision of banks, as well as production of data and information in the area of competence) periodically informs the public on the macroeconomic analysis results, the financial market dynamics and statistical information, including on money supply, the balance of payments, international investment position, external debt and the situation within the foreign exchange market.

At the same time, within the national statistical system, the National Bank of Moldova shall develop and produce official statistics in its area of competence according to the Law no.548/1995 on the National Bank of Moldova (National Bank of Moldova, 1995) and in line with the fundamental principles of official statistics provided by Law no.93/2017 on official statistics (National Bureau of Statistics, 2017).

Being a SDDS subscribed country, and evaluating the ultimate developments in data requested by the SDDS Plus, I managed an assessment of effort needed to adhere to the SDDS Plus (International Monetary Fund, 2013). As a result, from nine data categories that are requested by SDDS Plus comparing with SDDS, six are directly in the competence of the NBM, two are in the responsibility of Government and one was undefined. The case of undefined is for Sectoral balance sheets, and it was a long discussion with the National Bureau of Statistics (NBS) in order to define the responsible agency for compiling sectoral balance sheets for financial assets and liabilities.

In this regards, acting on the legal mandate and having the strategic plan as a guideline which cover main areas of activities and responsibilities and taking into consideration the high priorities actions that are established for medium period (financial stability improvement and performing a macro-prudential analysis, optimization of the monetary policy framework, increase financial intermediation)[1], was started the project of preparation of all actions needed in order to produce financial accounts.

[1] According to the strategic Plan of the National Bank of Moldova for 2018-2020 (http://www.bnm.md/en/content/strategic-objectives-2018-2020)

2. BACKGROUND

One of most important development in recent two decades were development of new requirement in building more transparency and standardization of economic and financial statistics. That ask for increasing responsibility for accuracy and trust of reported data. We can say that it is very important to understand the market expectation for a good/bad news about any country, because nowadays the it is very easy by wrong dissemination of data to undermine confidence and deploy drain capital from any economy (of course with developed capital market).

In this regards, in order to define some common framework for data convergence and to identify major financial and economic information gaps that needed to be filled at international level, in April 2009, the G20 Finance Ministers and Central Bank Governors called on the International Monetary Fund (IMF) and the Financial Stability Board (FSB) to work on those identifications. So as a result, in September 2009, the IMF and the FSB presented the report that would launch the Data Gaps Initiative (DGI), along with the set of recommendations to be implemented (FSB, 2009).

In other hand, it was needed to update existing standards for data production for BoP, IIP, ED, so having consistence and convergence as a main idea, System of National Accounts (European Commission et al., 2009), BPM6 and OECD Benchmark Definition of Foreign Direct Investment (OECD, 2008) were updated in parallel. Last years, other manuals/guides were updated and we can say that all major reporting (guides/manuals used for data compilation) framework were converged to be more consistent and harmonized. Of course, the future update was scheduled and is in process of diagnostic the impact of updates needed.

If we discuss about former Soviet Union republics that now are countries in transition, there were some fundamental changes in economy structure and international relations, starting from independences declared. The positive change from former statistical system is now clear identification of a separate country ant the role/relationship with other countries, but a negative aspect is the exposure to crisis and relatively short independence period for building a strong macroeconomic ecosystem. I can say that the classical approach to collection of statistical data used before was an isolated request by interested authority, but now, with the increasing access to digital services, one of big transformational work is assessing of the reporting burden supported by reporting entities, that is direct proportional to the quality of data reported.

As a result, in order to be able to understand better economies behaviors and to prevent big deviations from let say “normal” economy evolution, many authorities as a response to crises that affect world economies last 10 years, request more and more granular data, that is used for production not only official statistics, but for supervising purposes. So it is a natural that reporting burden on business increased and if it is needed to keep involved business in good reporting shape, a revision of concentration or duplication facts/information is exactly what will encourage businesses to react with all responsibility and retain good statistics back for their internal analysis (Tissot, 2016).

3. PROBLEM DEDEFINITION

Being a small country, and having an insignificant (at European level) size of the economy, the Republic of Moldova is trying to be very agile and reactive to all new approaches in the mater of financial stability, supervision, statistics, other.

In this regards, despite inexistent market of actively traded financial instruments (only shares of joint stock companies, National Bank's Certificates and state securities) in order to prevent some critical impact on the financial market, financial accounts define the best source of data that can be used by authorities in order to understand the financial wealth of resident sectors and its exposures to the rest of the world sector.

Other issue is understanding of potential of non-banking financial subsectors (NBFS) that during last 10 years tried to compete with banks for customer loans, and only in the period when banking system faced with some difficulties, register a sharp increase of main activities. Additional factor that fueled the development of NBFS was lack of regulation on supervision, compliance and prudential reporting. In this regards, authorities benefited by support from the European Union in form of Twinning project, and starting with the third quarter 2019 new regulatory framework will be in place.

Existing statistics on loans provided by banks and deposits accepted are insufficient to understand the wealth of each sector and at the same time to see the interconnections and exposures assumed.

Financial accounts seem to be the best proxy for understanding of wealth and exposure, as well as track the changing in preferences during some exceptional events (crises, embargos, external impact, others). Only some parts of this statistics are present in such form, and are disseminated for different purposes but not compiled as a whole picture.

I think that now is a good time to implement financial accounts, having very granular data implementation on loan-by-loan portfolio of banks, and being in a process of implementation of a Central Security Depository (CSD) – will have security-by-security data.

The result of implementation will be a valuable input for other areas of competency of the National Bank of Moldova – supervision, financial stability, monetary policy, research, external sector statistics (balance of payments, international investment position, external debt). On the other hand, implementation of financial accounts will ensure the small but robust step for implementation of SDDS Plus.

I believe that all circumstances that are present now in the statistics production, especially in the area of competence of the National Bank of Moldova, as well as knowledge obtained during my post-graduated study at NOVA Informational Management School can be considered as an essential starting point to mobilize my effort in order to have a good statistics and to be able to produce financial accounts.

Implementation will lead to identification of reasons that explain the behavioral actions that are specific to countries in transition:

- in case of financial crisis, more deposits migrate from domestic currency to foreign currency;

- in case of withdrawn of licenses of three banks, a part of deposits migrates to other banks and do not keep the currency distribution and the amount registered before (part of money migrate from domestic currency to foreign currency).

For the next level, we can elaborate on extension of financial accounts production by currency distribution.

4. PROJECT OBJECTIVES

One of the main purpose of present project will be identification of best way to increase quality data production according to recent issued standards (or recently entered into force). At the same time, it will contain some ideas how to succeed in situations when from the one side reporting burden increase but from the other side the new information is necessary in order to fulfill all requirements that are imposed by time or by any official engagement.

In order to conclude the project, it will be based, but not limited, on following objectives:

1. Assessing of necessity of implementation of a unique classification into institutional sectors of all resident/nonresident units or defining an alternative method of sectorisation at the national level;

2. Define sources of data available at the moment and the future sources;

3. Elaborate on level of detail that can be used in production of financial accounts (“minimum” or “encouraged”)

4. Evaluate the distribution of effort between contributors with data to compilation of financial accounts (authorities that possess data used for compilation);

5. Identification of vulnerabilities and constrains that should be solved or mitigated their effect on compilation process;

6. Propose concrete and realistic actions that can improve and support production of financial accounts on stocks with quarterly frequency.

7. Assessment of activities needed to be done for production of financial accounts flows on quarterly basis.

5. PROJECT RELEVANCE AND IMPORTANCE

One of drivers for financial accounts production is the strategic objective – to adhere to the SDDS Plus framework. At the same time, regular compilation of financial accounts can be impulsive moment for comprehensive assessment of non-financial sectors interconnectivities, and to trace the exposure between sectors in order to understand potential evolutions in case of stress testes or unusual economic conditions. As an example can be reaction to embargos, imposed by our major external partners, implementation of some interstate agreements related to sanctions, others).

The project work will be based on following domains and principles:

Reporting burden vs Necessity – Data used for production of official statistics usually comes from direct reporting, indirect reporting or administrative sources. Some initiatives for new data or new frequency of data production impose revision of current situation and choose new source creation or extending current data sources. In any case, it is appropriate to have a cost-benefit analysis, and to have a feedback from entities that will have to report more data.

This analysis is needed because increasing the reported burden is not only to have better data, but creation of premises for lose some quality. That is why reporters have to understand the purpose of new data requirements and to react by clear understanding or arguments for acceptance or rejection of changes.

Recent developments in data processing – Last evolutions in the world economy and in some economic sector in special (financial) increase granularity of data accumulated in supervision authorities' databases. As an example can serve Ana Credit[2] used in European Union, and covered by his granularity many of data needs. We need to have in mind that many transactions provided between countries for international trade payments are through SWIFT[3] chain.

Defining of entities and their roles in compilation of financial accounts – Identification of entities (authorities or holders of administrative data) that are able to contribute with inputs for financial accounts production is a part of work, because the essential assumption is assuming of distinct role in that process.

Issues in compiling of data – Some very classical and good method to understand if data production is a consistent, is to compare data with other statistics or in case of external sector statistics – by mirror checking with major partner countries. In this case, existence of some territories that are not controlled by state official authorities impose the partial coverage of national data and as a result – impossibility to do a mirror checking. In this case, it is needed to have stated clear rules for compilers of official statistics, because for many partners' countries the entire territory of a country will be seen as a whole, but the statistics produced will may have some gaps in data understanding.

Derivate importance – In addition to declared importance for analysis of financial accounts (interconnections, exposures, reaction to some unusual scenarios, instruments reallocation), the net

[2] https://www.ecb.europa.eu/stats/money_credit_banking/anacredit/html/index.en.html
[3] https://www.swift.com/about-us/discover-swift

result will help to see how behave non-financial accounts, inclusive will be possible to compare results, and if there will be some discrepancies – to elaborate on causes and if needed – to review all data sources or set the priority in data used. This is very important, because only after a qualitative assessment and result examination can be done some very valuable proposals for update the framework that have some gaps or overlap some provisions.

As a main target is obtaining of financial accounts that are produced based on recommendations of IMF[4] and having some best practices in this regards, as well as application of personal knowledge and all available already published data (may data already are produced in separate statements, but I will try to merge available data and to compile the entire financial accounts on stocks).

In general, this project work will have as a center of interest examination of implementation of new standards in data production having the Republic of Moldova as a main study case, but I think that some issues are common with other countries in transition that will have the same challenge.

[4] Templates and some explanatory information are available on the IMF webpage, at the following link: https://www.imf.org/external/np/sta/templates/sectacct/index.htm

6. LITERATURE REVIEW

Talking about financial accounts in countries where this type of statistics does not exist, usually is mentioned as a trigger point the last financial crisis. In case of Republic of Moldova, the effective impact of Global Financial Crisis (GFC) was minimal, because of relative small interconnections of our banking system and non-existent market of derivatives (as well as the access to this market). What we have let say in common is the housing boom – in part of increasing of prices on the real estate market (from 2001 till 2014 prices were more than 4 times bigger).

Another factor that is characteristic to the Republic of Moldova is big amount of remittances that comes from our residents that work abroad (during the last 7 years the average value of annual remittances was 1.7 bn USD, or about 22% of yearly average GDP).

At the same time, evolution of financial market in the area of instruments and technologies used, suggest us to be ready to implement latest frameworks in the area of data production and to try to understand the impact of risks that are associate to this recent evolution.

Being a full sequence of accounts that records transactions between institutional units, financial accounts does not have a balancing item that carried forward to another account, as has been in the case with other components of national accounts (SNA2008). That somehow imply a more attention in compilation, because the entire equality should be respected – financial assets to be equal with financial liabilities.

After the GFC, one of the first enforcement of financial accounts was mentioned in the first progress report (FSB, 2009) as a necessity for monitoring the vulnerability of domestic economy to shocks by promote data production on sectoral coverage in national balance sheet and flows of funds. This proposal was stated in the fifth recommendation (out of twenty) and included inter alia a proposal to include more sectoral balance sheet in SDDS. At the same time, was mentioned that the experience of the Eurostat and European Central Bank (ECB) in this area should be considered. Here we can mention existence since 2002 a Guideline[5] issued by ECB regarding statistical reporting requirements of the ECB in the field of quarterly financial accounts, replaced by an updated Guideline[6] (that include new requirements on from-whom-to-whom information)

In the case of the Republic of Moldova, as far as at the moment the financial accounts are not produced, many sources of literature can be used as a fundamental, and I will consider the following groups of sources as relevant to my project:

6.1. International standards setters (IMF, WB, FSB, BIS, UN, OECD)

Manuals and guidelines issued by international standard setters are very valuable, because of their expertise an approach used in preparing such a documents, as well focus group and assistance that can be offered to adherent. In this regards, I can mention the Data Gap Initiative (DGI), launched in April 2009 by the Group of Twenty Finance Ministers and Central Bank Governors Working Group on

[5] Guideline of the European Central Bank of 21 November 2002 (ECB/2002/7)
[6] Guideline of the European Central Bank of 25 July 2013 (ECB/2013/24)

Reinforcing International Cooperation and Promoting Integrity in Financial Markets asked the IMF and FSB to elaborate and propose appropriate measures for improvement of data availability in order to cover the gaps identified. As a result, DGI was endorsed in November 2009, and twenty recommendations were established.

Existed manuals for Financial Soundness Indicators (International Monetary Fund, 2006), Monetary and Financial Statistics (International Monetary Fund, 2016), Balance of Payments and International Investment Position (International Monetary Fund, 2009), were updated and the convergence applied to be consistent with SNA System of National Accounts 2008 (European Commission et al, 2009), and consequent application by all authorities in the Republic of Moldova (in their area of competency) should lead to a step forward in production of harmonized statistics.

Sectoral accounts and balance sheet were identified in the first progress report of DGI2 (FSB, 016) as high-priority areas, unfortunately not realized by all G-20 countries during first DGI. That mentioned, DGI2 transpose that in its content in the recommendation no.8, with the deadline for implementation of sectorial accounts till 2021. Additional, is needed to be mentioned that other recommendations (no.7, no.9, no.12, no.14, no.15)[7] are connected to the good production of financial accounts.

I would like to mention that publishing of progress reposts (even the Republic of Moldova has no direct tangency wit DGIs) is a good source of information in the area of implementation or updating of statistics in a NBM' competence, because of underlining the critical issues faced during implementation of recommendations.

An important topic localized in the third progress report on DGI2 (FSB, 2018) synergies identified with other initiatives in data production. Here are listed measuring of digital economy and use of Big Data for policymaking, enhancement of the public debt transparency, issuing of SDDS Plus, implementation of Legal Entity Identifier initiative.

I can underline the comprehensive and user friendly (with concrete examples) approach applied by the project leaded by OECD in Understanding Financial Accounts publication (Peter van de Ven et al., 2017). One of main idea expressed in this publication is that it shows the richness of information that can be seen in financial accounts and balance sheets and that information can be very useful for researches analysis and policy formulation

6.2. Regional standard setters (ECB)

ECB issued a guideline (European Central Bank, 2013), that is in force now and replaced the old version. This guideline represents the main normative act for quarterly financial accounts, which should be transmitted to the ECB by national central bank of euro area. I underline that the guideline in its introductory part have two very important statements: one is about the increasing use of financial accounts for macro-prudential analysis and for monitoring of excessive imbalances; another statement is about the necessity to contain in quarterly financial accounts counterpart sector information (from-whom-to-whom) for financial assets and liabilities. I can mention that the par.2 of article 5, which mention the case when central bank does not receive enough information from

[7] No.7 - Security Statistics, no.9 – Households Distributional Information, no.12 – Coordinated Portfolio Investment Survey, no.14 – Cross-Border Exposures of Nonbank Corporations, no.15 – Government Finance Statistics

competent authority, stated that action should be taken in order to achieve the goal of compiling on time financial accounts by country. This article was extensive discussed between the NBM and NBS, in order to convince the NBS that data are needed on regular base. In order to formalize that cooperation, I initiated a draft amendment to the MOU between NBM and NBS, and included the cooperation in production of financial accounts, and the responsibility to send by NBS to NBM annual financial statements of all agents that send reports to the NBS.

MOU between ECB and EUROSTAT (European Central Bank and European Commission,2016) for the agreement of financial accounts production, with designation of responsible agency at national level. We can identify three approaches in sharing responsibility at the national level in the European Union, in compilation of financial accounts:

1. Central bank is responsible for quarterly and annual financial accounts compilation;
2. National Statistical Office is responsible for quarterly and annual financial accounts compilation;
3. Shared responsibilities between Central bank and National Statistical Office.

The approach to be applied in the Republic of Moldova, I think should be conditioned by the share of data contribution to production of financial accounts comparing to the result (financial accounts)[8].

European statistics code of practices for the national statistical authorities and Eurostat, with principles defined to be as a fundamental in all statistical production will be mainly applied as a quality assessment framework, that enforce the optimal and sound quality of the statistical output (financial accounts).

6.3. International Experiences (inclusive experts' opinion)

Being one of last country in the region with no financial accounts, I used to identify some leaders in implementation of financial accounts. In this regards, I considered three central banks that produce financial accounts – Romania, Portugal and Turkey. It is very important that the selected countries were carefully selected, and reasons were following:

- Romania – Existence of comprehensive and detailed compilation of financial accounts period available (from 1993)[9] Close cooperation in many areas, existence of Memorandum of Understanding in different domain of activities of central banks. Another factor is using the same language (Romanian) as a state language in Romania and Republic of Moldova.
- Portugal - One of the first nine countries adhered to the SDDS Plus at November 2014, and the first country that was covering all SDDS Plus additional informational requirements comparing with SDDS. Comprehensive data available on a web page (from 1994)[10]. At the same time, enough information was provided during classes at NOVA IMS by professors that are directly involved in this area at the Banco de Portugal. Excellent contribution to seminars that discuss topics related to financial accounts.

[8] The answer for this approach will be in the conclusion of my project work
[9] https://bnr.ro/PublicationDocuments.aspx?icid=9706
[10] https://www.bportugal.pt/en/comunicado/statistical-press-release-national-financial-accounts-4th-quarter-2018

- Turkey – Recent implemented financial accounts[11], open to share experience during annual seminar on financial accounts production, existence of Memorandum of Understanding in different domain of activities of central banks.

Dembiermont et al. (2013) enforces that the monetary transmission mechanism and financial stability are impacted when no data are available about total borrowing of private sector, as history shows unusual behavior in private sector borrowing that precede systemic crises. In this regard limited information on entire private sector lead researchers to do a restoring of statistics on bank statistics, that do not include loans from non-banks or foreign lenders.

Tissot (2016) identify three policy areas that were covered by information used for financial accounts production: monitoring of post-crisis deleveraging patterns, identification of non-banking financial intermediation services provided by shadow banks, propagation of liquidity conditions across countries. The short period after the global financial crisis, was identified a phenomenon that gave an impulse to shadow banking entities. I can mention that in the Republic of Moldova, after an systemic shock in 2014 the evolution of non-banking lending activity was sharply increase, inclusive because of under-regulated sector.

Heath (2013) mentioned that the sectoral accounts in the process of understanding of interactions macro-prudential and macro-economic policies, provide an overview of the whole economy along with current, capital, non-financial and financial accounts. At the same time, sectoral accounts allow for construction of many indicators of vulnerability that the global financial crisis identified (household debt to income ratio, the shift in activity of financial institutions such as from banks to non-banks, identify the link between the real and financial sectors).

6.4. Personal judgment

Here I would like to mention three main aspects (listed in a consecutive steps) that were used as a base for deciding to start the incipient work on financial accounts production:

1. Knowledge accumulated in postgraduate program during my study at NOVA IMS. During my classes, I realized that financial accounts are some useful statistics, but are not available in my country. In this regards I start to learn how it is done in other countries and as well to understand why so valuable information is not produced in the Republic of Moldova.
2. Assessment of effort needed in order to perform all new data that are in the area of competence of NBM if the Republic of Moldova want to adhere to the SDDS Plus. Here was an additional positive moment that fortify my opinion about financial accounts, because one of new dataset required by SDDS Plus was quarterly sectoral balance sheet for financial assets and liabilities.
3. The wish of assuming new statistics production and continuous necessity in changing requirements at the worldwide level, lead to assuming of a new responsibility, and doing a trial compilation for assessing the effort resources needed for production of financial accounts.

[11] https://www.tcmb.gov.tr/wps/wcm/connect/EN/TCMB+EN/Main+Menu/Publications/Reports/Financial+Accounts+Report/

All mentioned above, sustained by tracing a new challenge in my professional area, were a trigger that I hope will have a sound and real application in the benefit of all interested parties and specially in supporting NBM to have a real understanding better the financial wealth of any sector of our economy.

7. METHODOLOGY

The initial assumption for current project work is the description of financial accounts compilation process, that was done in the Republic of Moldova in 2018, and this project work will be followed (in case when financial accounts will be included as official statistics) by extension to quarterly stock data and at the end to flows. The consolidation was applied.

At the stage of initiation of compilation of financial accounts on annual basis for stocks, the methodology will be focused on positivism paradigm, but the pragmatism paradigm will be applied in areas where mainly result will be as a derivate from expert review of data mining.

For the case of positivism paradigm, that suggest that events can be observed empirically and explained on logical analysis, I will use all available sources of data from authorities, as well as data reported by banks to the NBM for different purposes (supervision, external sector statistics). For that purposes, the following authorities were identified as a possessor of valuable data: National Bank of Moldova, National Commission for Financial Market, National Bureau of Statistics, Ministry of Finance, Ministry of Justice, and Public Services Authority. At the same time, the Central Security Depositary is considered as a valuable private owner of granular data on security-by-security statistics. The primary estimation of data available in mentioned authority suggest that the NBM possess not only S12 sector data but also the entire S2 (rest of the world) is compiled only in the NBM. Here we can add the Central Credit Registry, where loan-by-loan information is available (no threshold is applied).

Data reported by S12 is in general considered most trustful, mainly because these data (financial assets and liabilities) represent their main activities, and supervisor used to verify significant values or do some validations and consistency checks. Saying that, for cases where values can be different because of separate sources, the S12 will have more priority. In addition, based on MFSCG (International Monetary Fund, 2016) the S12 sector contain all financial assets and liabilities on banks in liquidation. It is need to be mention that at the end of 2015 number of active banks were 11, but banks under liquidation procedure 15 (the big share of which were banks with withdrawer licenses in October 2015).

Only data for S14 sector is less available, but here will be applied pragmatism paradigm in that area, mainly because the assessment of financial assets and liabilities for S14 are residual, but will be needed an expert opinion on the allocation between S14 and other sectors.

I will elaborate regarding the optimization of sector classification, that is not centralized and do not have a formalized description in order to be implemented by all entities for reporting purposes.

As a trial compilation, and evaluation of volume of data needed to be processed for production of financial accounts, will be used MS Excel, but for the future, I will try to do an effort estimation to move to the SAP Business Object, MS Power BI or Oracle BI, all available already in the NBM. All this will depend on the final decision and agreement at the national level on designation of responsible authority for production of financial accounts.

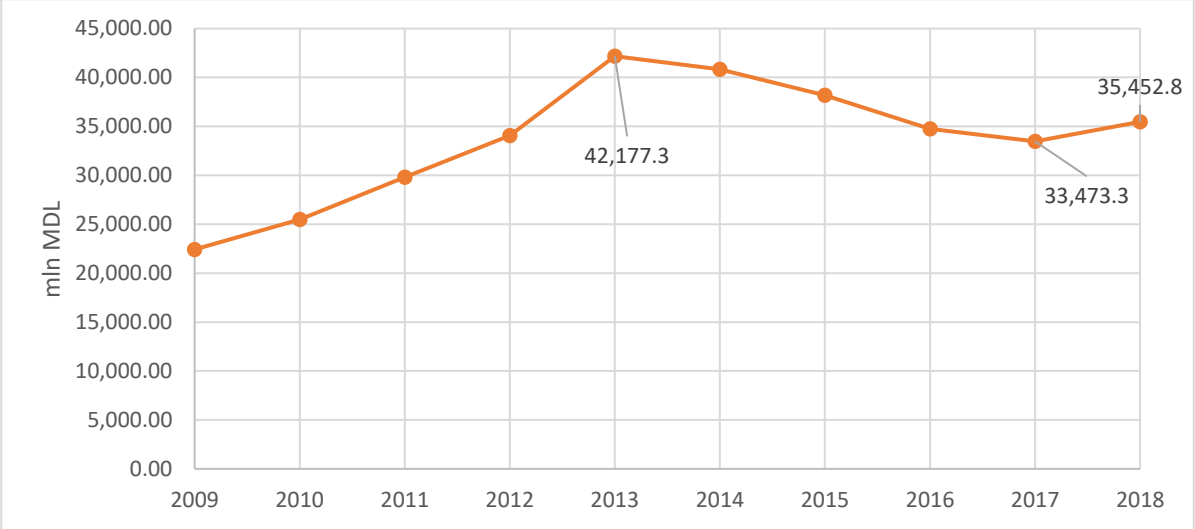
8. IMPELEMNTATION AND RESULT EVALUATION

8.1. Acknowledgement of necessity

Year 2014 was remarkable for the banking system or the Republic of Moldova mainly because of major fraud was discovered in the activity of three banks[12] (out of fourteen). One of identified reasons of fraudulent activity was related parties lending, and here I can mention the lending between mentioned banks and their huge exposure to external sector and other related parties. In mentioned year, as a first assessment of potential causes of illegal activities were identified a big lack of regulation and supervision of banks, as well as the quality of data reported by banks to the NBM.

In order to solve the problems on regulation and supervision and at the same time to implement all requirements stated in the Association agreement with the European Union[13]the NBM request an assistance from the European Union (EU). As a result, the Twinning project "Strengthening the National Bank of Moldova's capacity in the field of banking regulation and supervision in the context of EU requirements" was launched on June 30, 2015 and successful finished in May 30, 2017.

One of main data driven initiative that pointed on the lack of data on inter-sectoral distribution of funds (financial assets and liabilities) was the quick scan of lending market, that according to the NBM's data was in decreasing pattern for banking sector since 2014. In this regards, a simple plotting of loan portfolio of banks distribution. Figure 8.1 shows the evolution of total loans portfolio provided by banks to the real sector. First think about such evolution can be that real sector is contracting consumption, and we have to deal with a short stagnation in the economy.



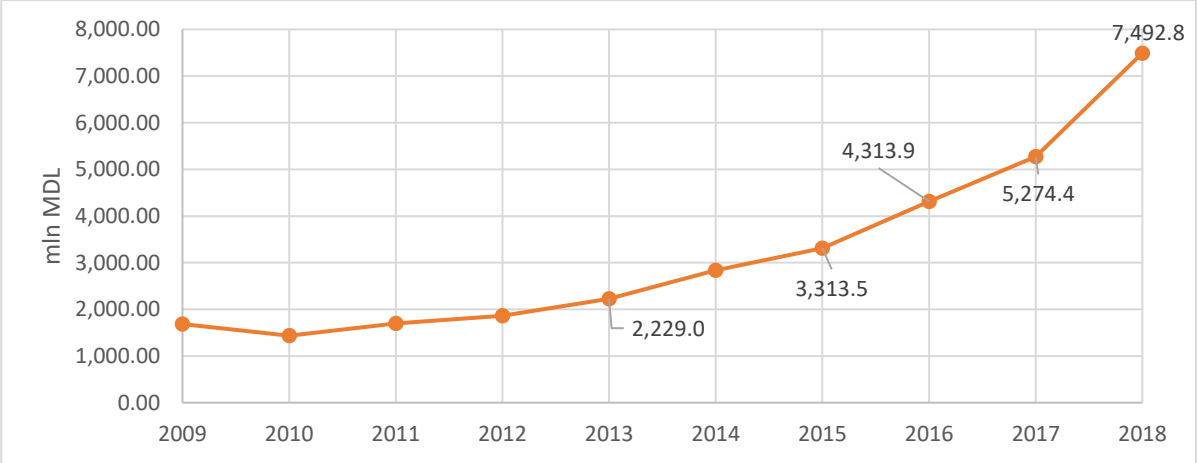
Source: www.bnm.md/bdi

Figure 8.1 Loans provided by banks (mln MDL)

Retail turnover and evolution of houses market were totally different then first idea regarding the factors that may influence the decrease in loan portfolio of banks. Internal explanations, that were available only in the NBM was a cession of a part of portfolio of non-performing loans to third party,

[12] Banca de Economii, Unibank, Banca Sociala – licenses were withdrawn on October 15, 2015.
[13] Signed at

and write-offs registered by banks for doubtful exposures. At the same time, the decreasing of loan portfolio of banks was partially covered by NBCI activity, that during the period 2013-2018 has increased on year-over-year basis on more than two digits' figure. Saying that, during last five years NBCI enlarged their loan portfolio more than three times (Dec.2013 – 2 226 mln MDL, Dec.2018 – 7 493 mln.MDL). Figure 8.1 describe the total loan portfolio of NBCI during last 10 years.

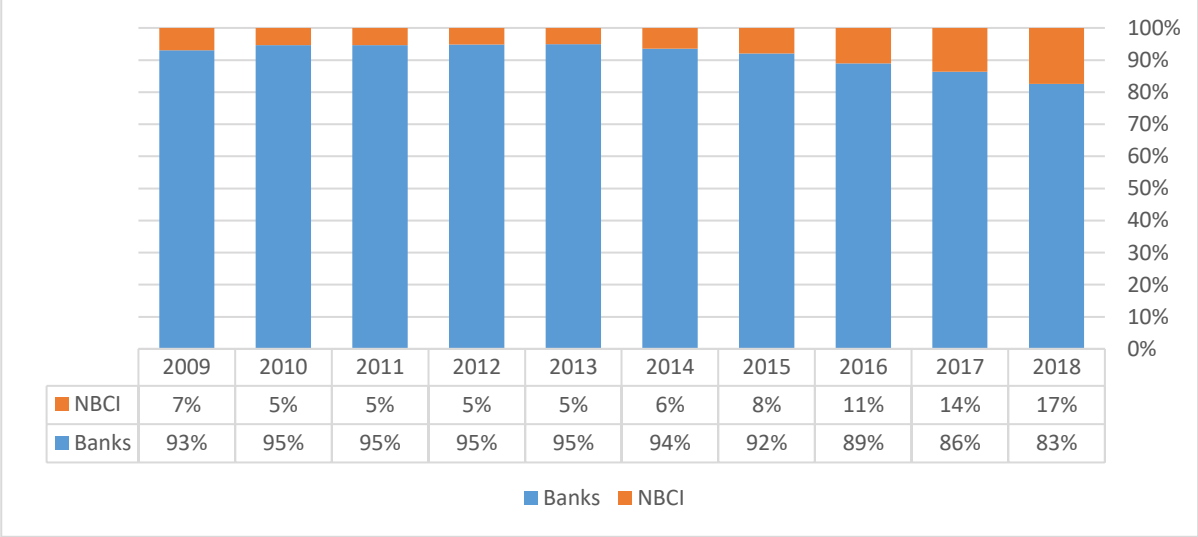


Source: www.cnpf.md

Figure 8.2 Loans provided by NBCI (mln MDL)

As a result, we can see the redistribution of shares of loan market between banks and NBCI, and the figure 8.3 shows remarkable increase from 5% in 2013 to 17% in 2018.

It is needed to mention that loans provided by NBCI are mainly for households (S14) and usually are for consumption. It represents a short and medium term loans (up to three years) and average value is about 1 000 EUR (equivalent in MDL). Traditionally this type of loans is for consumption purposes.



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
NBCI	7%	5%	5%	5%	5%	6%	8%	11%	14%	17%
Banks	93%	95%	95%	95%	95%	94%	92%	89%	86%	83%

Source: www.bnm.md/bdi, www.cnpf.md , **author calculations**

Figure 8.3 Share of loans to real sector (by lender type)

Having all mentioned above, and in addition the necessity of having a good data on sectorial distribution of financial assets and liabilities in order to understand reaction of sectors to the policy measures that were provided by authorities in recent period (fiscal amnesty, starting the program of

supporting young families to buy their first house, other) and as well the understanding of utility of financial accounts in other area of competence of the NBM (financial stability, monetary policy, supervision, research and analysis, other) the necessity of production of financial accounts were acknowledged and activities that should lead to a successful implementation started by assessment of current availability of resources.

8.2. Comprehensive assessment

Exploring the normative framework for financial accounts compilation, and trying to have a good understanding of distribution of competences at the national level, during our regular meeting with the NBS was discussed about their vision and opinion for starting production of financial accounts of the Republic of Moldova. At that time, NBS has a very consistent assistance from the Swedish Statistical Office (SSO) in various domain of activity, so we request a study visit to Sweden in order to see the entire process of compilation of financial accounts. During the study visit, in February 2016, we identified that financial accounts in Sweden are compiled in the SSO but not in the Central Bank, and this approach was not only with regards financial accounts statistics, but some more, that usually are produced in the central bank. The next step was a one-week mission to the Republic of Moldova provided by consultants from SSO on compiling of financial accounts, and it was limited in a common meeting with authorities that potentially possess data that can be used to produce financial accounts. The report of mentioned mission was issued in draft, and it stated some additional steps to be performed by mission team and national authority in future and with that the process of assistance was stopped.

It was a starting point in scheduling concrete actions that we can perform in order to try to produce the trial financial accounts and to evaluate the effort needed from all participant authorities, especially from the NBM.

As far as the framework of financial accounts cover flows and stocks, in assessing of the impact of implementation (methodologies to be used/created, regulations, human resources, applications need to be used) is necessary to have in mind how useful are data produced, and the cost-efficiency impact.

Another issue is the linkage and inter-relations with other major statistics, usually produced by official producers. Here the common way to have an explicit distribution of responsibilities is to have separate MoU between authorities, or to have explicit statements in the national legislation. The first option is less costly and more dynamic in case if an adjustment is needed. That will be default approach in our case, and only in case of impossibility to succeed with MoUs will be formulated an amendment to our legislation.

The **first step** was defining of framework to follow, and we decided to try to do it step by step, using the IMF's templates[14] and try to apply a graduated approach - from generic (annual) stock to detailed (quarterly) flows. Having that, and agreed with initial step in production of financial accounts – as annual stocks data (end or 2015), we start to define the level of distribution by sectors and to identify potential sources of data.

[14] https://www.imf.org/external/np/sta/templates/sectacct/index.htm

Having the generic distribution on sectors, the first decision was to compile the trial financial accounts only at two-digit level of national economy, and the rest of the world sector. As a result, the following hierarchy was established:

S1 – National economy
    S11 Non-financial corporations
    S12 Financial corporations
    S13 General government
    S14 Households
    S15 Non-profit institution serving households
S2 Rest of the world

The **next step**, was to identify comprehensive sources of data, for stocks at the end of year, and those are following:

Direct data sources – financial statements (mainly for the S11, S12 and S15 sectors) I need to mention that S12 sector in addition to annual financial statements for almost all subsectors (Other deposit-taking corporations and Other financial corporations) present to regulators some comprehensive reports that are used to compile Special reporting forms (SR2 and SR4). Central bank used SR1 for reporting to the IMF detailed data on monetary purposes. Another direct data sources are required regular surveys; those role is to disclosure some financial data from financial statements (reporting of external debt, reports for S13, compiled by the Ministry of Finance in order to fulfill the *Government Finance Statistics Manual* (International Monetary Fund, 2014) requirements. For S14 there are missing any direct reports, because this sector compilation is presumed in my project work to be a residual in terms of amount of financial assets and liabilities from data reported by other sectors. At the date of preparing pf present project work, more than 10 thousand of public servants are obliged to send annual declaration of properties and financial assets and liabilities (with the cumulative value of 5 000 USD).

Indirect sources – data derived from other sources, and used mainly in case of S2, S14 and S15 sectors. Here I should mention data reported to Central Credit Registry, Central Security Depositary, National Public Services Agency, National Bank of Moldova, others. In indirect sources are very granular data sets, collected in order to perform some very extensive tasks and the granularity was seen as an excellent step in reducing reporting burden by using these data instead asking new datasets from reporting entities. I do not expect any difficulty to access mentioned data sources, if the reason and access will be limited only to some information direct linked to needs of compilation of financial accounts.

All mentioned above, the identification of sources of data were summarized but not limited to the following:

- Financial statements of non-financial corporations (FS)
- Financial statements of NPISH (FSN)
- Standardized Reporting Forms – Central Bank (1SR)
- Standardized Reporting Forms – Other depository Corporations (2SR)
- Standardized Reporting Forms – Other financial Corporations (4SR)
- International accounts statistics (IAS)
- Government finance statistics (GFS)

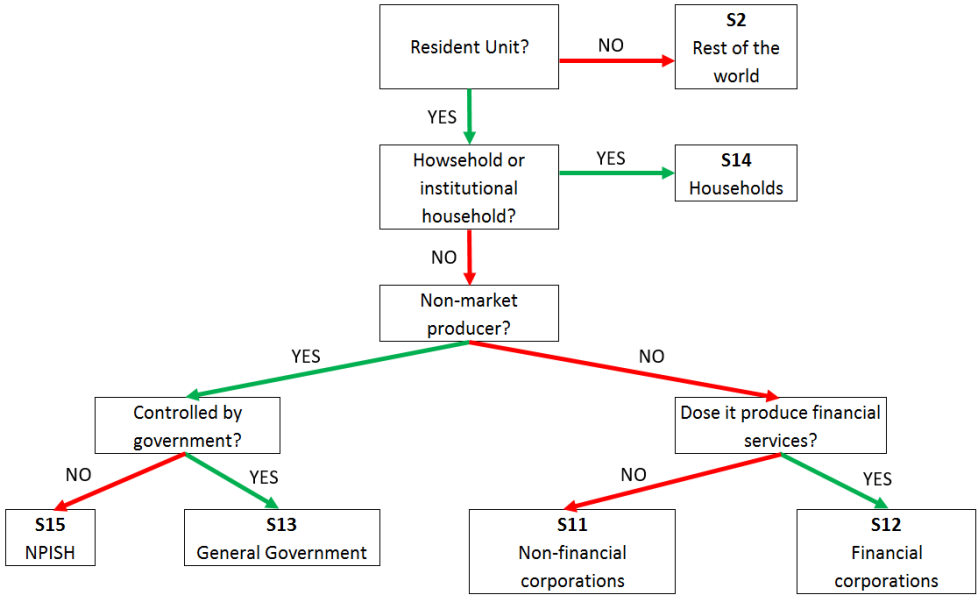
- Database of the Central Security Depository (CSD)
- Database of Central Credit Registry (CCR).

Moving to **next step**, we identify some potential difficulties in valuation of financial asset and liabilities. Specially the reason that accounting approach used by S12 was according to the International Financial Reporting Standards (IFRS) but all other sectors followed the national reporting standards. The good news was rebuilding of national standards in order to converge to IFRS framework starting with year 2019. Regarding the market value of equity instruments, S12 and S2 have already values at the market value (is expected that from the financial statements of S11 will be possible to obtain the market value), for other sectors, the CSD will ensure this for shares issued for resident company.

The **last step** in the assessment was the effort estimation in term of resources (human, technological) available and evaluation of utility of data that will be produced. In the area of resources, as far as continuous effect of development is in place at the NBM, I assumed that production at the initial stage of annual financial accounts only on stocks will not be a big burden for the staff. After an brainstorming, we decided that at least we need to perform the trial compilation, and after – will decide how to succeed and if NBM will have the mandate to compile financial accounts or NSO will do it.

8.3. Systematization and compilation

Starting with the highest level of systematisation, for repartisation to institutional sectors orescribed by the SNA2008, the following decision tree was applied:



Source:SNA2008

Figure 8.4 – Allocation of units to institutional sectors

In order to define the allocation by sector, all data identified as a sources for financial accounts, should be clasified based on following:

- Reporting source sector (sector of the entity thet filed in the report);
- Unit of presentation (USD, MDL, other);
- Counterparty sector reported.

Instrument clasification applied, compared the IMF' framework is presented in table 8.1

Framework for minimum and encouraged classifications		Instruments clasiffication used in the trial compilation of financial accounts
F1	Monetary gold and SDRs	F1 Monetary gold and SDR
	F11 Monetary gold	
	F12 SDRs	
F2	Currency and deposits	F2 Currency and deposits
	Of which: Domestic currency	
	F21 Currency	F21 Currency
	F22 Transferable deposits	F22 Deposits, transferable
	F221 Interbank positions	
	F229 Other transferable deposits	
	F29 Other deposits	F29 Deposits, other
F3	Debt securities	F3 Securities
	Of which: Domestic currency	
	F31 Short-term	F31 Securities, short term
	F32 Long-term	F32 Securities, long term
	With remaining maturity of one year and less	
	With remaining maturity of more than a year	
F4	Loans	F4 Loans
	Of which: Domestic currency	
	F41 Short-term	F41 Loans, short term
	F42 Long-term	F42 Loans, long term
	With remaining maturity of one year and less	
	With remaining maturity of more than a year	
F5	Equity and investment fund shares	F5 Equity
	F51 Equity	F51 Equity
	F511 Listed shares	F511 Listed shares
	F512 Unlisted shares	F512 Unlisted shares
	F519 Other equity	F519 Other equity
	F52 Investment fund shares/units	F52 Funds
	F521 Money market fund shares/units	
	F522 Non MMF investment fund shares/units	
F6	Insurance, pension and standardized guarantee schemes	F6 Insurance, pension and standardised guarantee schemes
	F61 Non-life insurance technical reserves	F61 Non-life insurance technical reserves
	F62 Life insurance and annuity entitlements	F62 Life insurance and annuity entitlements
	F63+F64+F65 Retirement entitlements	F63 Pension entitlements
	F63 Pension entitlements	F64-66 Claims of pension funds on pension managers, Entitlements to non-pension benefits and Provision for calls under standardised guarantees
	F64 Claim of pension fund on pension managers	
	F65 Entitlements to non-pension benefits	
	F66 Provisions for calls under standarized guarantees	
F7	Financial derivatives and employee stock options	F7 Financial derivatives and employee stock options
	F71 Financial derivatives	F71 Financial derivatives
	F711 Options	
	F712 Forwards	
	F72 Employee stockoptions	F72 Employee stock options
F8	Other accounts receivable/payable	F8 Other accounts receivable/payable
	Of which: Domestic currency	
	F81 Trade credits and advances	F81 Trade credits and advances
	F89 Other accounts receivable/payable	F89 Other accounts receivable/payable excluding trade credits and advances

= Minimum
= Encouraged

Green color represents applied classification

Table 8.1 Comparative analysis of instruments classification

As a result, some sources of data (mentioned in para.8.2) from the beginning were separated according to sector which repored, as following:

Sector of reporter	Data reported (main sources)
S11	Financial statements of non-financial corporations (FS)
S12	Standardized Reporting Forms – Central Bank (1SR)
	Standardized Reporting Forms – Other depository Corporations (2SR)
	Standardized Reporting Forms – Other financial Corporations (4SR)
	Central Credit Registry
S13	Government finance statistics (GFS)
S14	None
S15	Financial statements of NPISH (FSN)
S2	International account statistics (IAS)

Notes: *until June 2016 CCR was in MS Excel format, after June 2016 - Oracle Database
Central Security Depository (CSD) start to be operational in 2019 no sources were before

Table 8.2 Clasification of data sources by reporter sector

Of course all data surces were with breakdown by sector, that is why the howseholds (S14) sector as a residual at the end was with numbers.

After clasificationof sources, the template for compilation were multiplied for each sector. The short model of template for each sector was elaborated:

Financial instrument	S11	S12	S13	S14	S15	S2
F1 Monetary gold and SDRs	-	1SR, IAS	GFS	-	-	1SR, IAS, GFS
F2 Currency and deposits	FS, 1SR, 2SR, IAS	1SR, 2SR, 4SR, IAS	1SR, GFS, IAS	1SR, IAS	FSN, 1SR, IAS	FS, 1SR, 2SR, GFS, IAS
F3 Debt securities	FS, IAS, GFS	1SR, 2SR, 4SR, IAS,	1SR, 2SR, GFS	FS, 2SR, 4SR, IAS	FSN, 2SR, 4SR, IAS	FS, IAS, GFS, 1SR, 2SR, 4SR
F4 Loans	FS, 2SR, IAS, CCR	1SR, 2SR, 4SR, CCR, IAS	1SR, 2SR, CRR, GFS	FS, 2SR, 4SR, CCR, IAS	FSN, 2SR, 4SR, CRR, IAS	FS, 1SR, 2SR, 4SR, CCR, IAS, GFS
F5 Equity and investment fund shares	FS, IAS	1SR, 2SR, 4SR, IAS,	GFS, IAS	IAS	FSN, IAS	FS, IAS, GFS, 2SR, 4SR
F6 Insurance, pension and standardized guarantee schemes	FS, 4SR, IAS	1SR, 2SR, 4SR, IAS	-	4SR, IAS	-	4SR, IAS
F7 Financial derivatives and	FS, IAS	1SR, 2SR, 4SR, IAS	-	FS, 2SR, 4SR, IAS	-	FS, 1SR, 2SR, 4SR, IAS

employee stock options						
F8 Other accounts receivable/payable	FS, 1SR, 2SR, 4SR, IAS	1SR, 2SR, 4SR, IAS	GFS, IAS	FS, 1SR, 2SR, 4SR, GFS, IAS	FSN, FS, 2SR, 4SR, IAS	FS, 1SR, 2SR, 4SR, GFS, IAS

Table 8.3 Clasification of data sources by instrument

At the next stage, financial instruments colunm was multiplied in order to represent in the first part financial assets, and the second part – financial liabilities.

It sould be noted, that even the initial decission was to compile at least minimum sectorisation that is requiret bu the IMF template, S12 was at that time with incomplete data set available (lease companies were missing), it was decided to compile the S12 sector by separate subsectors. So was a separate subsectors for: S121 – Central Bank (CB), S122 – Other deposit-taking corporations (ODTC) and S12* - other than CB and ODTC. The merged S12* subsector was created with only available data on NBCI and insurance corporations data (we do not have Money Market Funds and active Investment Funds).

On the other hand, for the trial compilation we enlarge sector distribution by changes from the minimum sector classification, as folowing:

- For S13 minimum sector distribution is General government, but after sistematisation of data, we identify three subsectors available, so we do separate column for S1311 – Central government and S1313 – Local government
- Instead to use S14+S15 as a one column (as is required in minimum set by IMF) we separated it, as far as according our assumptions, we have enough data to compile data separate for each mentioned sectors, so the S14 and S15 were prezented in distincrt column.

An important approach defined in order to prevent awrong sectoral distribution was incudint of one additional column with sector mining, but with “Undefined” name.

Next stage was sistematization of instruments according to minimum requirements, and we identified several financial instruments that were not present in our data sources (mainly because are not aplicable) - *F63+F64+F65 Retirement entitlements* and *F72 Employee stockoptions*, for both assets and liabilities side.

The pre-final stage, compilation financial ccounts for each sector, woth allocation of by instrument and by counterparty sector. It is need to be noted that all values were in MDL except for data from the international accounts statistics (international investment position and external debt statistics). In this case a simple converton was applied, because of stocks, that were reprezented in UDS, so the official exchange rate MDL:USD reflected the sinchronised amount in MDL.

As a process, distribution of stock data was done in three steps:

- Primary distribution of data by instrument and counterparty;
- Secondary distribution;
- Final allocation.

Primary distribution – repartisation of data from sources as were reported/clasified bu source formator. In this case the ammount with no clear sector identification was placed in “Undefined” column. As a result we obtain for all sector its table with distribution of financial instruments by counterparty cestor. Only for households (S14) no data were included in the table.

Secondary distribution – this was the most complex process, because it consist of convergency of data from primary sources of sector and data reported by the counterparty. In this regards, the templates were designd to contan two values for each cell, one was for data from primary sources and the second vor value from counterparty data source. Durring this distribution were applied assumption that data provided by the S12 and S13 sectors are on high quality and if any discrepancy were identified, diferentes from data sources from other sectors were placed in “Undefined” column. At the end of this this secondary distribution, we had as a resitual - complited households (S14) data table.

The last step (final allocation) was with the lot of expert estimations, mainly for distribution of “Undefined” column on appropriate sectors.

Compilation process was finalized by merging of al individual sectoral templates in one common. As the financial account do not have a balancing item, the procedure we select to use a “Undefined” column identified some undistributed values. The reasons of appearing such values and possible clarification scenarios will be extended in para 8.5.

8.4. Results evaluation

The first looking at compiled financial accounts for stocks at the end of 2015, was somehow expected in sense of following aspects:

- position of total economy (S1) comparing to the rest of the world (S2) is for many years as a net debtor;
- non-financial corporations (S11) is a net debtor, and that result was anticipated, because of big non-financial assets that are on their balance sheets;
- households (S14) is a net creditor;
- Non-profit institutions serving households (S15) have an insignificant share in total financial assets and liabilities.

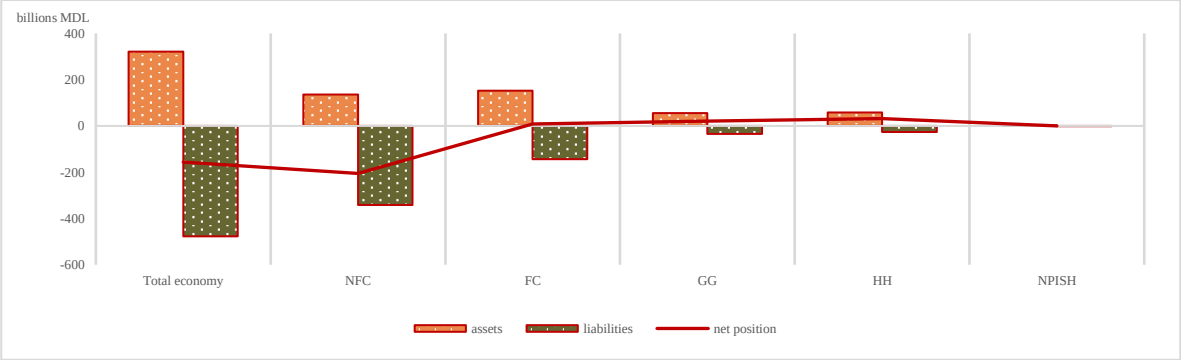


Figure 8.5 – Total financial assets, financial liabilities and net position for each institutional sectors of the national economy

For more general interpretation, the so called “Star presentation” was designed (Figure 8.6). Here is clear shown the approximate size and value of net position of sectors and subsectors (for purposes of present diagram, values for S14 and S15 sectors were merged).

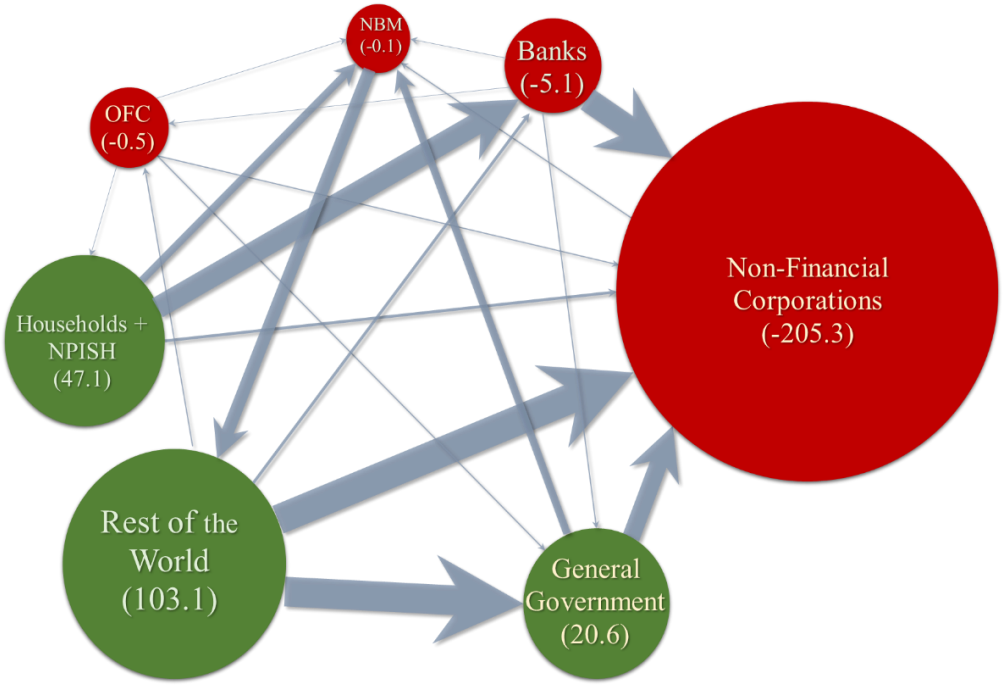


Figure 8.6 – Net positions for each institutional sectors (“Star presentation”)

As the net position presented below can lead to general understanding one of result of financial accounts compilation, the structure by sector and instruments is more valuable for result analysis and comprehensive understanding of sectorial behavior.

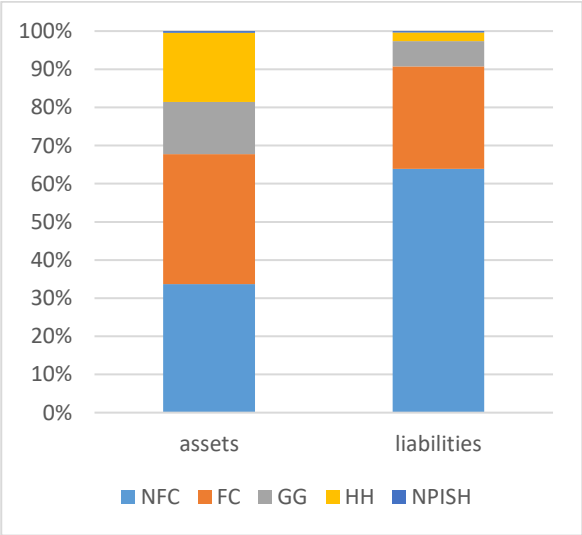


Figure 8.7 – Share of each sector in the total financial assets and liabilities

A relative structure of financial assets and liabilities (Figure 8.7) give us a deep understanding of the dimension of each sector contribution, and underline four (out of five) major sector of the national economy that contribute as a net debtor/creditor to the financial accounts interpretation.

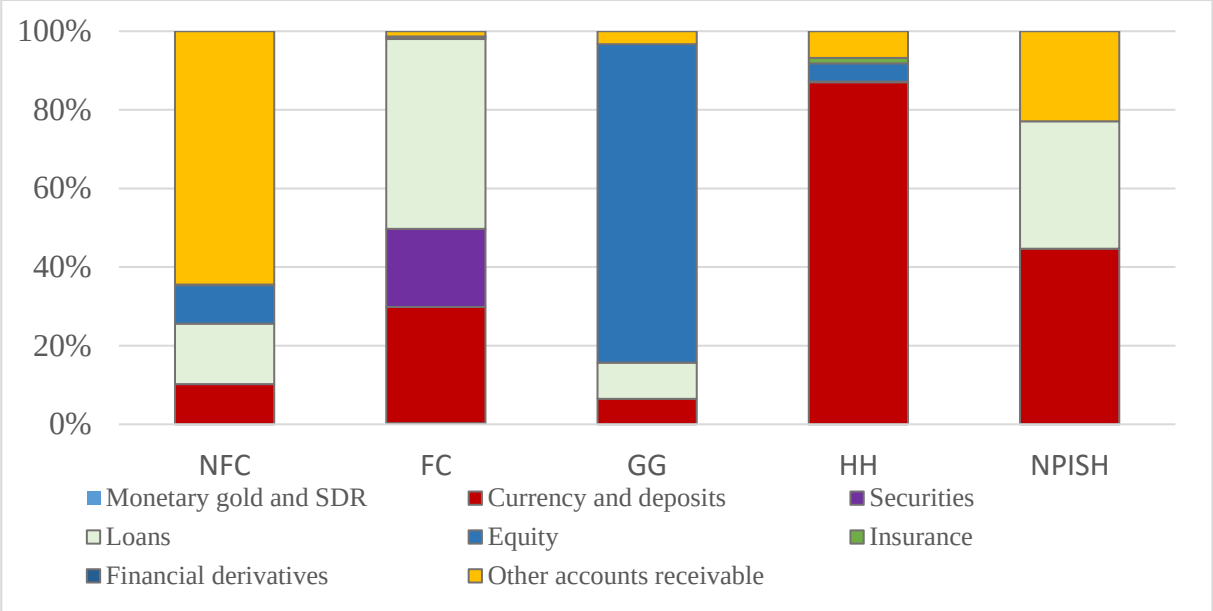


Figure 8.8 – Financial assets structure each institutional sectors

The Figure 8.8 represent the relative distribution of financial assets by institutional sector of the national economy.

If we will start to look by sector, that the non-financial corporations (S11) for the Republic of Moldova is not common to invest in securities by S11. In general securities market is almost inactive for corporate securities, and mainly securities instruments that appear in financial accounts for stocks at 2015 are treasury bonds (issued by the Ministry of Finance). Usually the main holder of those bonds are financial corporations. NBM issue Certificates that are available only for banks and in our case, the position presented in S12 sector is netted (consolidated).

Structure of financial assets for financial corporations (S12) indicate the biggest part as a loans (it is presumed to be in line with their main activities), but in part of currency and deposits – the decomposition will lead to official reserves essential contribution, and after will follow cash in S12. Securities are represented mainly by treasury bonds.

Distribution in general government (S13) sector of financial assets is dominated by state participation in State Owned Enterprises (SOE). Here is needed to be mentioned that during last four years, the authorities tried to sell some strategic SOE, but the economic conjuncture existed (after bank fraud some reticence was for the investments in the Republic of Moldova) postpone the effective privatization process.

Households (S14) financial assets composition is dominated by currency and deposits (it is according to general expectation), but here we can see some inexplicable low share of equity in the households (S14) sector. This is due to a lack of data reported by sector, and it will be an issue that we need to

address for the future. Using granular data from the CSD will be a good proxy for understanding of estimated value of equity instruments hold by S14.

Finally, the Non-profit institutions serving households (S15) hold their financial assets mainly as currency and deposits, and loans (financial investments – according to presented FSs).

The structure of financial liabilities by sector is presented in Figure 8.9.

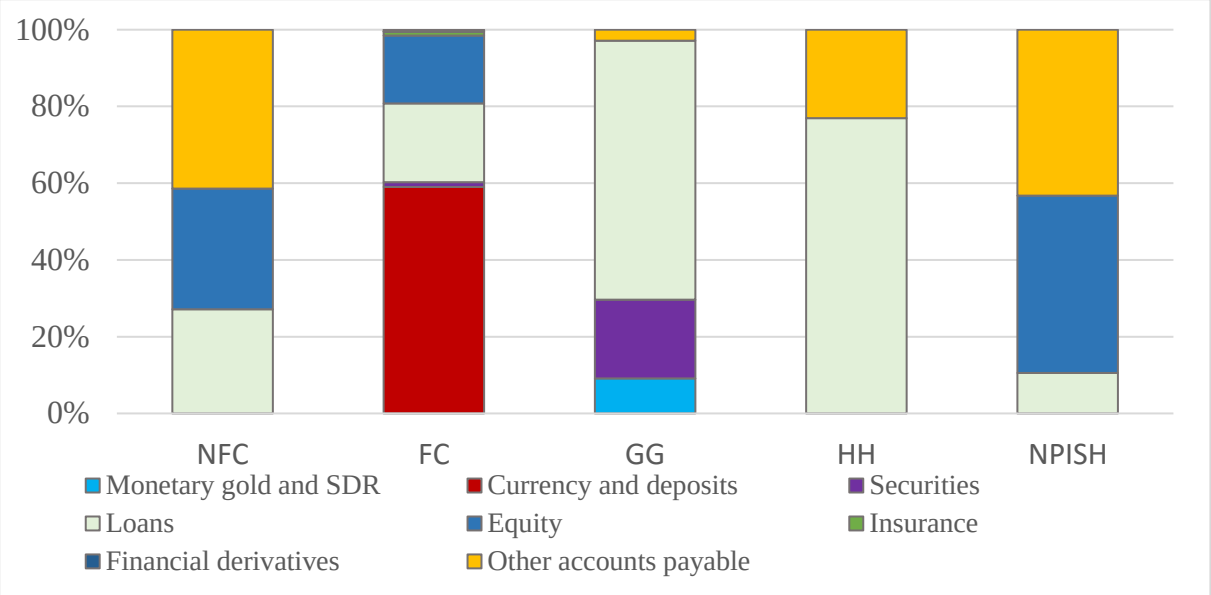


Figure 8.9 – Financial liabilities structure each institutional sectors

Financial liabilities distribution by sector show two major sources of financing for non-financial corporations (S11), one from equity side and another loans. Both represent more than half of financial liabilities and I noted that for the future will be very interesting to have as well currency distribution. This will more accurate describe the quality of liabilities from the exposure to the exchange rate risk and to identify the potential imbalances and prevent the losses in case of a sharp depreciation.

Financial corporations (12) as is predictable, have more than half of their financial liabilities from deposits, and two other instruments that finance financing activity are loans and equity. Here NBM have enough data for currency distribution, mainly because financial corporations are imposed (if it is the case) or try to maintain a balanced position on foreign currency assets and liabilities.

Loans, and specially originated from the rest of the world (international organizations) are the main part of financial liabilities for general government (S13). Other sources of financing are represented by treasury bonds and SDR allocation. Here is needed to be noted, that in 2016 the S13 sector issued treasury bonds in order to cover the banking fraud. Despite the urgency loans were provided by NBM to banks that were in difficult situation in 2014, for the 2015 there was has no impact on stocks at S12 sector level, because the NBM provided loans to three liquidated banks, so after consolidation it was no effect on S12 sector assets/liabilities. But in the year 2016 the Ministry of Finance issued treasury bonds (to convert loans provided by NBM), and at the end of year the S12 (S122) has a liability (loans) to the Ministry of Finance and Ministry of Finance has a liability (debt securities) NBM.

Regarding the households (S14), three quarters of total liabilities are represented by loans, and the rest as other accounts payable. This situation is expected because for the case of the Republic of Moldova no other options can be available.

Last but not the least, the structure of financial liabilities for non-profit institutions serving households (S15) derived from their financial statements are in a small part represented by loans and other two positions are equally divided in equity and other account payable. I would like to mention that the share of S15, in total financial liabilities represent less than two percent.

I want to mention that entire process of trial compilation was not reviewed as a whole by an external expert (the process of review was not finished by the SSO) and at the moment, we are in preparation to summarize all our work with working files and will try to have an expert opinion on consistency (inclusive will be asked a Technical mission assistance from the IMF).

It is notable that using a dynamic evolution of instruments distribution by sector will be a best way to understand the financial behaviors of each sector, and will be possible to have a comprehensive implication on national economy and for each sector apart. The first publication of financial accounts will be more valuable if it will be accompanied by the brief description of compilation process.

8.5. Identification of vulnerabilities

The entire process of production of financial accounts was considered successful, as a new exercise realized by NBM. Especially because data were in line with the general perception, but not in a consolidated (merged together) form.

Discrepancies in data that were referred to the column “Undefined” other pragmatic judgment lead to following vulnerabilities, considered to be used in the future compilation of financial accounts:

1. Different sectorization
2. Write-offs by S12 on loans
3. Lack of data on financial assets/liabilities of S14, from sources
4. Foreign-currency-linked assets
5. Synchronization of available sources
6. Coverage of national economy sectors

Different sectorization

Sectorization is considered one of fundamental and with big impact on from-whom-to-whom compilation of financial accounts.

The inconsistent sectorization according to the institutional unit sectors from SNA2008(ESA2010) is in place because there is not present any central classificatory for all entities by sectors. That can be as explanation of some discrepancy in compilation of financial accounts. As an example, I can say that for the purpose of supervision, at the end of 2015 and now, the household with production activity is classified in S11 sector. As a result, data on deposits and loans are classified different. In addition, were identified the fact that banks classified wrong their assets and liabilities by sectors.

Nowadays there are several on-line available data about company name, main activities, managers, but no data on sectorization.

Usual, the decision tree is applied (as is mentioned in the Figure 8.4), but this case is applicable for separate individual counterparty operation/transaction. I think that in order to have consistent and unique classification is more acceptable and less effort consuming from reporting agents to use some centralized data sources.

During some evaluation of possible ways to optimize the process of sector clarification, I think that two approaches can be applied:

- Long run – implementation of centralized registry at the national level, where will be possible to access (by state ID number) the sector to which the agent is belonging. This solution is complex in term of establishing the responsible authority, the update procedure, the maintenance, and the quality assurance. As an example can be examined the Portuguese experience in this area (SICAE portal, where everybody can get information on the economic classification of any Portuguese company).

- Short run - easiest way to have a proper sectorization for entities of national economies is to do it step by step, applying exclusions from all sectors in following steps if we assume that at the beginning we have the entire S1:

1. From all population of entities separate General Government entities (all entities included in this sector (S13) mostly are included in the special list of the Ministry of Finance).
2. After, S12 (financial corporations) can be excluded from entities that remain after step 1 (because their activities are provided by the licenses issued by the National Bank of Moldova or National Commission for Financial Market)
3. The next step is exclusion from the result remaining after step 2, of S15 (NPISH) that are registered in special registry of the Ministry of Justice.
4. From the resulted entities after step 3, we exclude all non-financial corporations that ate available on a quarterly base on open data platform of our authorities.
5. The resulted number of entities will form S14 (HH).

Write-off by S12 of loans

Having in mind the provisions of a SNA2008 framework, and in order to define the treatment of most mentioned problem in the past 10 years – non-performing loans (NPL) treatment, it is almost clear that despite banks with sufficient resources clear their balance sheets by write-off compromised loans no counterparty registration is done. As an example can be in case of impossibility to renegotiate the maturity or other conditions of a loan, according to prudential requirements the bank should write-off the loan, and try to recuperate the collateral value in order to cover the registered loos. In this case the compilation of financial accounts will have an additional issue (bank will have a less loans but the counterparty sector will not erase the amount of liability to bank).

But the Annex 3, in para A3.9 (European Commission et al., 2009) provide a treatment that can be interpreted in a different manner, because it recommends that the non-performing loan should continue to be recorded at nominal value in the main accounts and interest should be shown accruing until a loan is repaid or the principal in written off by a mutual agreement. Here the delicate word is “mutual”, because the bank does not agree on write-off of loan, bank do it because of prudential requirement.

I can understand that even the bank wants to clear the loan portfolio in its balance sheet from NPL it cannot do that only on its decision. It should be written-off in a simultaneous way with the debtor, because it does not meet conditions mentioned above - “is not repaid” and is not “written off by a mutual agreement”. In most of cases, the debtor does not know that the creditor (bank) written off the loan from his balance sheet.

Having a projection of mentioned above to the situation in the Republic of Moldova, it is difficult to assess the rule to be followed in order to have a concordance for mirror data (sector-vs-sector, instrument vs instrument) and to define the rule applied on a continuous way as a working procedures.

In mentioned case, if we want to maintain the synchronized and mirror available data, I see the only way – to have some memorandum positions, which will show the amount of written-off loans, with counterparty sector nominalization. In this case, the adjustment of amount from other sectors will be done through other changes positions, and the written-off loans provided by financial sector will be equivalent with their counterparties. At the next stage, only after the financial institution will close (finish) the loan agreement (by mutual agreement, by receiving of repayment, by selling of pledged guarantee, or other) will be possible to erase the value of loan from both sides (creditor’s and debtor’s balance sheets).

This issue will be partially solved at the moment we will implement flows of financial accounts, as in flows for S12 write-offs will be mentioned as “other changes”, but will remain the question about consistency with the Annex 3 of SNA.

Lack of data on financial assets/liabilities of S14, from sources

As was mentioned before, the S14 is only one sector that do not provide any data on their financial assets of liability. This lack was partially covered by a mandatory statement of legal framework, that public servants are obliged to declare annually their financial assets and liabilities for amounts exceeded 5 000 USD. We will try to estimate the S14 sector using this as a proxy in addition to data provided by S12 sectors S2 as well as granular data from CCR.

One important question is availability of data on ownership of entities (share or contribution to the capital). Here the CSD (with data for end of 2019) will clarify a part of lack of data – shares of resident Joint Stock Companies will be available in full, but contributions to the capital (Limited Liabilities Partnership) will need to be deducted.

Here I see as the optimal solution, to do on technical level a junction of financial statements database with data from public registry of entities. This will allow to define the value of net assets from balance sheet and after, applying the share of contribution of founders will be calculated the value of S14 financial assets in equity at the end of period. In this case, an aspect need to be taken into consideration is the possibility that one S11 entity can be as founder to another S11. For that case, the iteration of junction should be ruled till the ultimate beneficiary owner as S14.

Mentioned vulnerability were not applicable for S12, because all shareholders were obliged to have a permission from the NBM for significant shareholders (for more than 1% ownership) and the rest are reported regularly to regulator.

Foreign-currency-linked assets

In assessing possible level of details to be implemented for stocks of financial accounts, was evaluated the potential impact of providing details of some instruments by currency. Here was identified an issue, that at the end of 2015 in theory and practice foreign-currency-linked assets were treated different.

This was because the presentation of data about foreign-currency-linked assets was divided in interpretation between Monetary and Financial Statistics and Financial Soundness Indicators Compilation Guide (International Monetary Fund, 2006).

In this regard, the para.4.90 of the FSI compilation guide (IMF, 2006) states the treatment by deposit takers, of foreign currency loans and foreign currency liabilities as those assets and liabilities that are payable in a currency other than the domestic currency and those that are payable in domestic currency but with the amounts to be paid linked to a foreign currency (foreign-currency-linked). In addition, is mentioned that foreign-currency-linked assets are classified according to MFSM as domestic-currency-denominated.

Perhaps at the moment of preparing of the monetary and financial statistics frameworks (International Monetary Fund, 2000) foreign-currency-linked loans weren't very meaningful and important share of loans markets, but nowadays this type of loan (foreign-currency-linked) is one that have a stabile share on market (other type of loans decreased constantly in last years) especially because the risk of fluctuation of foreign currency is one that banks in RM want to pass to the debtor.

In this regards, data on foreign-currency-linked financial assets were compiled as domestic-currency-denominated for monetary and supervision purposes.

This type of foreign-currency-linked loans is usually coming from banks that have their funding sources from abroad and from NBCI.

The Figure 8.10 reflect the impacts on S122 balance sheet of reclassification of foreign-currency-linked loans from local currency loans to loans in foreign currency.

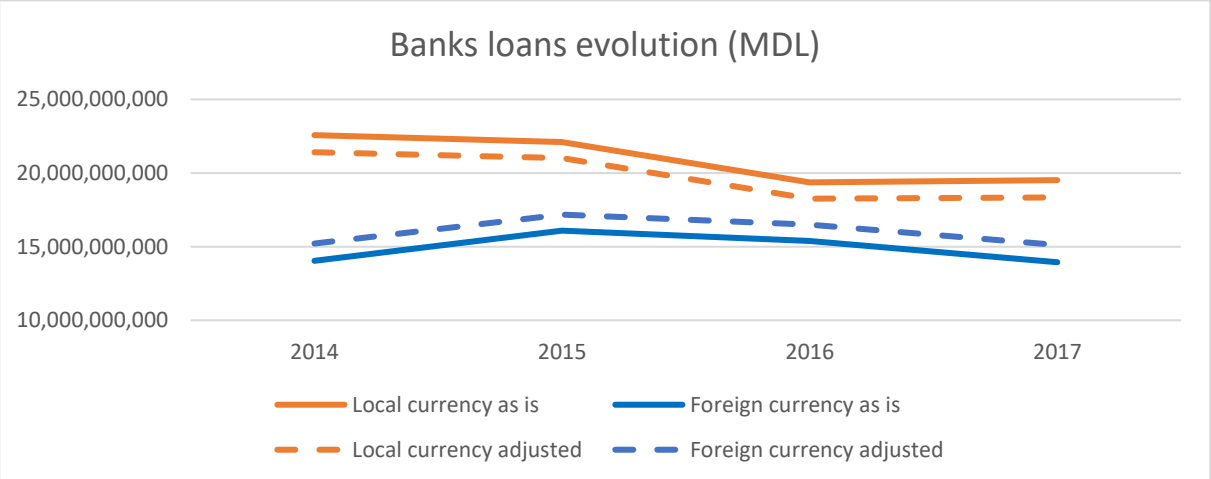


Figure 8.10 – Yearly evolution of loans portfolio of banks (S122)

Dotted lines represent the values with application of the updated (adjusted) methodology, that will be applied to data sources starting with 2016 end of year.

The impact is significant, because the amount of such a loans is about 1,1 bn MDL at the end of 2015 and it is growing. The evolution of foreign currency denominated loans is presented in the Figure 8.11

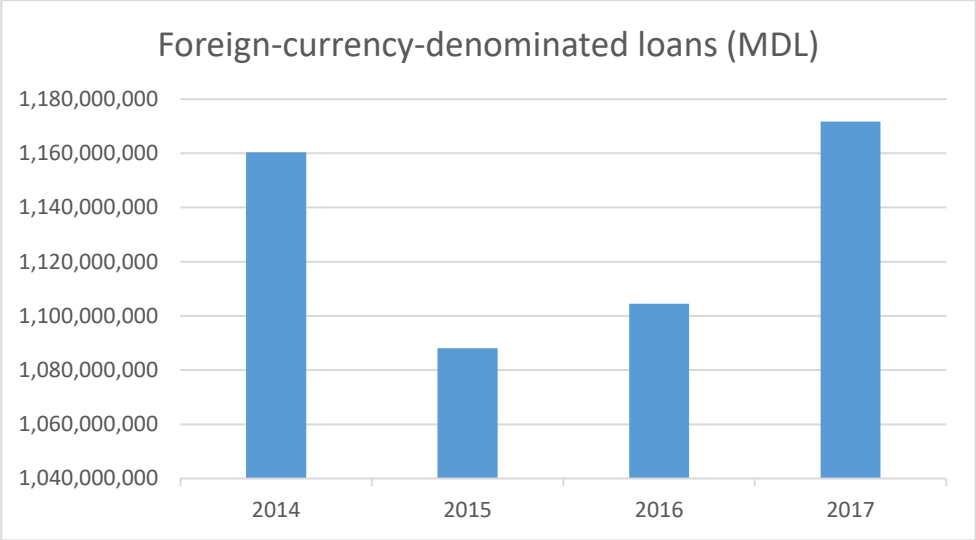


Figure 8.11 – Yearly evolution of foreign-currency-denominated provided by banks (S122)

Another related vulnerability was identified for data on rates for new loans. Mixture of foreign-currency-linked loans with local currency in 2015 influenced the value of average interest rate, because the same classification was applied for calculations of interest rates for new businesses for loans in foreign and local currency.

As is obviously, rate for pure local currency loans is high than for foreign-currency-linked loans, so the presence of foreign-currency-linked loans in local currency loans “artificially” decreased the average rate.

From the other side, in order to avoid the “artificially” increase the average rate of FC loans, if foreign-currency-linked loans will be included into foreign currency loans, we decide to have separate values reported by banks, and thus have a distinct interest reported.

One more factor that will result from the change of treatment of foreign-currency-linked loans is the impact on rates provided by banks.

In this regard, it is very important to have a clear disclosure policy, including the metadata adjusted to have a clear explanation for adjusted numbers and basic for doing that.

Synchronization of available sources

Sources of data, identified for financial accounts production for the end of 2015 were available in with different frequencies, different formats of data and based on different methodologies.

Compilation of the trial financial accounts on stocks for the 2015, were used data sources with monthly, quarterly and annually reporting frequency and date of availability (Appendix 1). That was acceptable as a stocks for annual data compilation, but the availability of annual financial statements (for S11 and S15) and government finance statistics were T+6M. Quarterly international accounts statistics were available on T+3M, others statistics were available in the interval from T+15d to T+4M.

In addition, different formats (MS Excel and TXT) were identified as a constrain that increase the data processing. That is why the normalization was done before proceed to compilation.

A major challenge was understanding conceptual differences of data from sources, because of different accounting standards were used for different sectors. An example: a values of loans in financial statements of S12 sector were shown as a carrying amount according to IFRS ("principal" + "interest" - 'loan loss provisions") but in counterparty reports (S11 sector) were in different ways or only principal with separated line for interest, or both in one number ("principal" + "interest"). Another difference was in debt securities presentation. Fortunately, I can say that now this issue is partially solved, because if in 2015 S11 sector applied national accounting standards that have had different from IFRS approach treatment of financial assets and liabilities, from the 2019 national standards were transformed in order to converge as much as possible to IFRSs.

Now, comparing with the end of 2015 we have in place two new online sources of data CCR and CSD, and a new governmental program for e-platforms. The later will include a special service for interconnection between authorities in order to ensure reusing of data, and to facilitate the access for verified and trustful data. In that direction, at the beginning of 2019 was created a special interdepartmental working group with the main scope – to do a systematization of data reported by entities in statistical purposes. One important subject proposed to be discussed was creation of a common dictionary of reported indicators, in order to have an explicit nomenclature with description of responsible authority and the necessity of such indicators.

This will lead to synchronization of many data requested and will promote an common understanding by reporting entities of the meaning of data requested and as a result the quality will be better.

Coverage of national economy sectors

The Republic of Moldova has in its componence a territory (east part of the Republic of Moldova), that is uncontrolled by our government. This issue is a big problem for statistics purposes, especially in classification and completeness of data and information that authorities hold on financial assets and liabilities by sectors. The issue is more visible on non-financial corporations' data, because entities from uncontrolled territory are registered in the national registry, so they are identified as a resident units and can access loans from financial corporations, but extremely rare report to central authority their financial reports. Thus appear discrepancies in data, and will be needed additional effort to revise data in "Undefined" column.

Another issue is a non-response rate on financial reporting of S11 (about fifteen percent), but on that direction were took concrete actions and one of it is special fee for non-responding (it is not so big, but the intention is to increase it in time). In addition, banks tend to have a different approach for entities that avoid to report their financial statements for authorities, by applying higher risk profile (as a result rates can be high than regular). The highest rate of non-response is for S11 that are under liquidation procedure, and usually it is dictated by lack of funds.

9. VISION FOR THE FUTURE WORK

The production of trial version of financial accounts was a comprehensive and very interesting process. It was possible only in coordination with other authorities and dedication from the NBM.

As a common vision for the future I can say that the NBM should start to produce yearly financial accounts on stocks, and after setting an optimal process of compilation, it will be the case to assess flows implementation and reduce the frequency to quarterly data.

A sub step I think that at least a working group should be created in order to discuss the scope, necessity, effort needed from all interested parties and to mutually agree on roles of every authority.

The next can be a revision of all sources of data sources and timeliness, as well as by taking into consideration the recent evolution on development of granular data in the country (CCR and CSD).

It is very important to have an expertise provided by a distinguished and experienced professional, in order to be sure about a comprehensive and correct understanding of the framework on production of financial accounts. At the same time, for questions and difficult moments we faced during the trial production of financial accounts, maybe there are already some smart solution.

Starting with 2016, the National Bank of Moldova launched collection of loans-by-loans data through the Central Credit Registry, without any threshold. Data are collected on daily basis and allow seeing the real-time picture (with one-day delay).

Central Depository of Securities is operational now, and the statistics for security-by-security base will be available in real time starting with June, 2019[15]. This will allow increasing the trust in registration of any issuance of new security and will provide the final clearing of rights between seller and buyer of security issued in the Republic of Moldova.

At the same time, the decision on implementation of a single registry at the national level, with inclusion of sectoral classification number for all entities will be an excellent step forward. Here I can say that existence of mentioned register, with web access will facilitate avoiding of mistakes in counterparts' identification and will lead to implementation of interactive connection of internal

In order to decrease the non-responding rate for the S11 sector, electronic reporting system should be operational and allow some validations to be applied at uploading of reports by reporting entities. This will increase the quality of data and will allow authorities to apply only some complex validation rules. The reporting system for S12 sector (except for S121 and S122 sub-sectors) is in the process of redesign, and since July 2019 will be in place a new one that will allow to cover more reporting entities (and reduce non-responses) with increasing of quality and accuracy of data.

Digitalization of reports receiving process will allow to apply automatic processing, without any manual intervention.

[15] http://bnm.md/en/content/single-central-securities-depository-which-will-develop-financial-market-republic-moldova

Implementation (or extension of current used solution) of a processing solution instead of using MS Excel files. Some mandatory functionalities in this case should be at least a multy-layer structure – that will allow to transform data from raw to the final stage by doing some professional assumptions and logic distribution; versioning; log identification and tracking; supporting of rolling back procedure, integration with web services. An example will be a possible junction of data from CSD and individual financial statements. In this case, will be possible to have an explicit distribution of net assets of companies registered in CDS across their shareholders (preferably till the ultimate beneficiary owner, if it is applicable).

As a long term target, of course production of quarterly financial accounts on flows and stocks is desirable, but the process will be more complex and will be needed more data sources. In addition, in order to have separated transactions, revaluations and other changes, some integrations with external sources (exchange rates, market prices) will be needed.

We need to have I mind the current speed of evolution of data available in the market, inclusive "BIG DATA" concept, FinTech and Artificial Intelligence (AI) products and other actions that impose a very agile concept in data processing and interpretation. International Transactions Reporting System[16] can be used along with national Automated Interbank Payment System[17], for processing real flow transactions, with a big challenge of ensuring the sufficient capacity to process periodically (quarterly or annually) huge amount of data.

Defining the reporting authority and roles of others in production of financial accounts, we will do an evaluation of the possibility to produce backward time series (if it is possible).

As a final step in implementation of financial account will be dissemination and information of data consumer about new time series, about methodology, about assumptions and estimations that are included as base elements.

[16] Reporting system used by NBM to receive all transactions between resident sectors and the rest of the world, on a monthly basis (no threshold exist)- monthly average to banking system is about 500 thousand registries
[17] National payments system, operated in real time.

10. PROJECT CONCLUSION

First conclusion, which I should mention is the strong believe in promotion of financial accounts compilation in the National Bank of Moldova, collaborating with other authorities, and explicitly define responsibilities. This is based, but not limited on the following:

- Legal mandate for collection of data from any entities in order to perform all activities that arise from the mandate (Law,1995);
- Possession of Central Credit Registry;
- Less exposure to financial constrains for acquisition or extend the area of using of performant software and hardware;
- Expertise for compilation of International Accounts Statistics, as well as monetary and financial statistics compilation;
- Access to the Central Security Depository, as owner and supervisor;
- Deep understanding of financial instruments and financial market evolution;
- First line of research and economic analysis;
- Access to big amount of data for time series;
- Regulatory manager and direct supervisor of banking activities;
- Lack of pressure on personal allocation;
- Access to seminars and best practices according to participation in international institutions (IMF, World Bank) or based on bilateral, MoUs.

Having all mentioned above, the decision to produce financial accounts of the Republic of Moldova will be a remarkable step forward in extension of our statistic outputs, as well will be a valuable input for other areas (than statistics) in the NBM as financial stability, supervision, research, monetary policy, other.

Another reason is the reducing the gap of data, that need to be produced by NBM (from its competency area) in order to adhere to SDDS Plus.

Of course other entities than NBM will be interested in financial accounts. Here I can mention the National Bureau of Statistics, as it will remain responsible for national account compilation (non-financial); Government – to see the net wealth of households and non-financial corporation as well as their total exposure by counterpart.

I think that the success of “consuming” of such statistics by external parties (public, experts, and academics) is in clear and sound metadata, as well as trustful interpretation of evolution.

Gradually implementation of financial accounts, from annual stocks to quarterly stocks and flows (that is the final goal) should be well prioritized and communicated to all interested parties. This will lead to a predictive reaction of interested parties and will create preconditions for balanced resources allocation from compiler side and from other parties that will provide input data to the compiler.

The actuality and necessity of financial accounts are something that do not need to be demonstrated, and acceleration of FinTech and AI in last three years imply the more dynamic reaction by authorities in order to regulate all new type of transaction or even to have enough information about new type of transactions and thus be able to anticipate potential systemic risks or contagion propagation of risks.

Here I want to mention that the evolution of some new subsectors will imply revision and enlarging of data required from those entities (payment service providers, Central Security Depositary, issuers of electronic money).

It was and will be in the future, a dilemma with more data needed but no reporting burden to increase for reporting entities. In this regards, a comprehensive analysis of using of administrative data is needed. Having many data available in different administrative databases lead to reassess the conceptual reasons of purposes of requested information in conjunction with cost efficiency of collecting, processing and storing.

One more specific point is that many of our statistic at the national level is influenced by the region of country that is not official controlled by central Government. This situation is present in some former Soviet Union countries (Moldova, Georgia, Ukraine) and create some obstacles in mirror statistics at national level and at cross-country checking.

As an additional action that can lead to accumulation of some sound best practices in compilation of financial accounts I see the adherence as a member to the Irving Fisher Committee on central Bank Statistics (IFC) - a forum of central bank economists and statisticians that discuss all recent and future issues that can improve the quality of data produced by ensuring timelines and comprehensiveness of data.

Last but not the least, calculated contribution of NBM to the trial production of financial accounts were estimated on more than 75% of total information processed. This can be one of deciding factor in designation of authority at the national level for production of financial accounts.

11. BIBLIOGRAPHY

Blaise Gadanecz, Bruno Tissot, Mariagnese Branchi, M. A. (2016). *Irving Fisher Committee on Central Bank Statistics IFC Report The sharing of micro data-a central bank perspective 2016 Survey conducted by the Irving Fisher Committee on Central Bank Statistics (IFC) The sharing of micro data-a central bank perspective Contributors to the IFC Report 1 BIS Blaise Gadanecz Bruno Tissot (IFC Secretariat)*. Basel: Irving Fisher Committee. Retrieved from https://www.bis.org/ifc/publ/ifc-report-microdata.pdf

Bull, P. (2013). *Statistics for Economic and Monetary Union*. Frankfurt am Main. Retrieved from https://www.ecb.europa.eu/pub/pdf/other/statisticsforeuropeanmonetaryunion2013en.pdf

Dembiermont, C., Drehmann, M., & Muksakunratana, S. (2013). *How much does the private sector really borrow? A new database for total credit to the private non-financial sector 1*. *BIS Quarterly Review*. Retrieved from https://www.bis.org/publ/qtrpdf/r_qt1303h.pdf

Department of Economic and Social Affairs, Statistics Division, U. N. (2003). *National Accounts: a Practical Approach*. New York. Retrieved from https://unstats.un.org/unsd/publication/SeriesF/seriesF_85.pdf

Europäische Kommission Statistisches Amt. (2017). *European statistics code of practices for the national statistical authorities and Eurostat (EU statistical authority) : adopted by the European Statistical System Committee, 16th November 2017*. Luxembourg. Retrieved from https://ec.europa.eu/eurostat/documents/4031688/8971242/KS-02-18-142-EN-N.pdf/e7f85f07-91db-4312-8118-f729c75878c7

European Central Bank. (2012). Handbook on Quarterly Financial Accounts for the Euro Area Sources and Methods, 206. Retrieved from https://www.ecb.europa.eu/stats/pdf/eaa/Handbook_on_quarterly_financial_accounts.pdf?d9fa13bbde3707372af0ac6ae0afd016

European Central Bank. (2013). Guideline of the ECB of 25 July 2013 on the statistical reporting requirements of the European Central Bank in the field of quarterly financial accounts (recast) (ECB/2013/24). Retrieved from www.ecb.europa.eu.

European Central Bank and European Commission. (2016). MOU between the ECB and EUROSTAT. Frankurt and Luxembourg. Retrieved from https://www.ecb.europa.eu/ecb/legal/pdf/en_mou_between_the_ecb_and_eurostat_november2016_f_sign.pdf

European Commission, International Monetary Fund Print, Organisation for Economic Co-operation and Development, United Nations, W. B. (2009). *System of National Accounts 2008*. *System of National Accounts 2008*. https://doi.org/10.18356/4fa11624-en

Eurosystem Household Finance, T., & Network, C. (2009). *Survey data on household finance and consumption - research summary and policy use, January 2009*. Frankfurt. https://doi.org/ISSN 1725-6534 (online)

FSB. (2009). *The Financial Crisis and Information Gaps: Report to the G-20 Finance Ministers and Central Bank Governors; Prepared by the IMF Staff and the FSB Secretariat -- October 29, 2009.* Retrieved from https://www.imf.org/external/np/g20/pdf/102909.pdf27

FSB. (2016). *The Financial Crisis and Information Gaps Second Phase of the G-20 Data Gaps Initiative (DGI-2) First Progress Report Prepared by the Staff of the IMF and the FSB Secretariat*. Retrieved

from https://www.fsb.org/wp-content/uploads/Second-phase-of-the-G20-Data-Gaps-Initiative-DGI-2-First-Progress-Report.pdf

FSB. (2018). *The Financial Crisis and Information Gaps Second Phase of the G20 Data Gaps Initiative (DGI-2) Third Progress Report Prepared by the IMF Staff and FSB Secretariat*. Retrieved from https://www.imf.org/external/np/g20/pdf/2018/092518.pdf

Governing Council of the European Central Bank. (2013). Regulation (EU) No 1071/2013 of the European Central Bank of 24 September 2013 concerning the balance sheet of the monetary financial institutions sector. *Official Journal of the European Union*, *L 297*(1071), 1–50.

Heath, R. (2013). *Why are the G-20 Data Gaps Initiative and the SDDS Plus Relevant for Financial Stability Analysis? Why are the G-20 Data Gaps Initiative and the SDDS Plus Relevant for Financial Stability Analysis? 1*. Retrieved from https://www.imf.org/~/media/Websites/IMF/imported-full-text-pdf/external/pubs/ft/wp/2013/_wp1306.ashx

Institute for Capacity Development, I. M. F. (2014). *Volume I Financial Programming and Policies*. Washington, D.C.

Inter-Agency Group on Economic and Financial Statistics. (2017). Update on the Data Gaps Initiative and the Outcome of the Workshop on Data Sharing, (March). Retrieved from http://data.imf.org/api/document/download?key=61400076

International Monetary Fund. (2000). *Monetary and financial statistics manual*. Retrieved from https://www.imf.org/external/pubs/ft/mfs/manual/pdf/mmfsFT.pdf

International Monetary Fund. (2006). *Financial Soundness Indicators Compilation Guide 2006*. Washington, D.C. Retrieved from https://www.imf.org/external/pubs/ft/fsi/guide/2006/pdf/fsiFT.pdf

International Monetary Fund. (2007). *The system of macroeconomic accounts statistics: an overview*. *Statistics*. Retrieved from https://www.imf.org/external/pubs/ft/pam/pam56/pam56.pdf

International Monetary Fund. (2009). *Balance of payments and international investment position manual*. Retrieved from https://www.imf.org/external/pubs/ft/bop/2007/pdf/bpm6.pdf

International Monetary Fund. (2013). *The Special Data Dissemination Standard Plus Guide for Adherents and Users*. Washington, D C. Retrieved from http://www.imf.org/external/pubs/ft/sdds/guide/plus/2015/sddsplus15.pdf

International Monetary Fund. (2016). *Monetary and Financial Statistics Manual and Compilation Guide*. Washington, DC. Retrieved from https://www.imf.org/en/~/media/87F002A9CC784DF786797A6526A98D54.ashx

International Monetary Fund. (2017). *Government Finance Statistics Manual 2014*. *Government Finance Statistics Manual 2014*. International Monetary Fund. https://doi.org/10.5089/9781475592634.069

International Monetary Fund Staff. (2018). *G20 Surveillance Note*. Buenos Aires. Retrieved from https://www.imf.org/external/np/g20/pdf/2018/112818.pdf

International Monetary Fund Staff and the FSB Secretariat. (2009). *The Financial Crisis and Information Gaps*. Retrieved from https://www.imf.org/external/np/g20/pdf/102909.pdf

Irving Fisher Committee. (2013). Integrated management of micro-databases. In *Porto Workshop, 20–22 June 2013* (p. 201). IFC Bulletin No 37. Retrieved from

https://www.bis.org/ifc/publ/ifcb37.pdf

National Bank of Moldova. (1995). Law on the National Bank of Moldova. Chisinau: National Bank of Moldova. Retrieved from http://bnm.md/en/content/law-national-bank-moldova-no548-xiii-july-21-1995

National Bureau of Statistics. (2017). Law on Official Statistics. Chisinau: National Bureau of Statistics. Retrieved from http://statistica.gov.md/public/files/despre/legi_hotariri/Law_on_official_statistics__2017.pdf

OECD. (2008). *OECD Benchmark Definition of Foreign Direct Investment – FOURTH EDITION – 2008*. Retrieved from https://www.oecd.org/daf/inv/investmentstatisticsandanalysis/40193734.pdf

Peter van de Ven, & Fano, D. (Eds.). (2017). *Understanding Financial Accounts*. OECD. https://doi.org/10.1787/9789264281288-en

Tissot, B. (2016). *Development of financial sectoral accounts*. *Irving Fisher Committee on Central Bank Statistics Working Papers* (Vol. 15). Retrieved from https://www.bis.org/ifc/publ/ifcwork15.pdf

United Nations, ECB (2015). *Financial Production, Flows and Stocks in the System of National Accounts United Nations European Central Bank*. New York. Retrieved from https://unstats.un.org/unsd/nationalaccount/docs/FinancialHB.pdf

Peter van de Ven (2015). New standards for compiling national accounts: what's the impact on GDP and other macro-economic indicators? *OECD Statistics Breif*

12. APPENDIXES

12.1. General information about data sources used for financial account compilation

No.	Data Source	Responsible authority	Frequency of production	Timeline
1	Financial statements of non-financial corporations (FS)	National Bureau of Statistics	Annually	T+6M
2	Financial statements of NPISH (FSN)	National Bureau of Statistics	Annually	T+6M
3	Standardized Reporting Forms – Central Bank (1SR)	National Bank of Moldova	Monthly	T+15d
4	Standardized Reporting Forms – Other depository Corporations (2SR)	National Bank of Moldova	Monthly	T+20d
5	Standardized Reporting Forms – Other financial Corporations (4SR)	National Bank of Moldova	Quarterly	T+4M
6	International accounts statistics (IAS)	National Bank of Moldova	Quarterly	T+3M
7	Government finance statistics (GFS)	Ministry of Finance	Annually	T+6M
8	Database of the Central Security Depository (CSD)	Central Security Depository	By request	Real Time
9	Database of Central Credit Registry (CCR)	National Bank of Moldova	By request	Real Time

NOTE:

M- months

d- days

12.2. Currency and deposits - financial assets and liabilities (from-whom-to-whom) – working table

F2 currency and deposits

liabilite / asset side	S1	S11	S12	S121	S122+S123	S124-S129	S13	S14	S15	S2	undefined	total
S1		0.00	66824.76	33178.64	49530.56	0.00	0.00	0.00	0.00	25022.00	0.00	91846.76
		0.00	66824.76	33178.64	49530.56	0.00	0.00	0.00	0.00	25022.00	0.00	91846.76
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S11	13774.87		13774.87	2181.85	11593.02	0.00				113.63		13888.50
	13774.87		13774.87	2181.85	11593.02	0.00				113.63		13888.50
	0.00		0.00		0.00	0.00				0.00		0.00
S12	0.00	0.00		14393.32	1491.12	0.00	0.00	0.00	0.00	24908.37		24908.37
	0.00	0.00		14393.32	1491.12	0.00	0.00	0.00	0.00	24908.37		24908.37
	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
S121	0.00		0.00		0.00			0.00		14706.50		14706.50
	0.00		0.00		0.00			0.00		14706.50		14706.50
	0.00		0.00		0.00			0.00		0.00		0.00
S122+S123	14329.65	0.00	14329.65	14329.65		0.00	0.00	0.00	0.00	10196.71		24526.36
	14329.64	0.00	14329.64	14329.64		0.00	0.00	0.00	0.00	10196.71		24526.36
	0.00	0.00	0.00	0.00		0.00		0.00	0.00	0.00		0.00
S124-S129	1554.79	0.00	1554.79	63.67	1491.12			0.00		5.16		1559.95
	1554.79	0.00	1554.79	63.67	1491.12			0.00		5.16		1559.95
	0.00	0.00	0.00	0.00	0.00			0.00		0.00		0.00
S13	3621.79		3621.79	3311.79	310.00							3621.79
	3621.79		3621.79	3311.79	310.00							3621.79
	0.00		0.00	0.00	0.00							0.00
S14	48668.39		48668.39	13291.62	35376.77	0.00						48668.39
	48668.39		48668.39	13291.62	35376.77	0.00						48668.39
	0.00		0.00	0.00	0.00	0.00						0.00
S15	759.71		759.71	0.06	759.64							759.71
	759.71		759.71	0.06	759.64							759.71
	0.00		0.00	0.00	0.00							0.00
S2	2048.88		2048.88	0.14	2048.74	0.00						2048.88
	2048.88		2048.88	0.14	2048.74	0.00						2048.88
	0.00		0.00	0.00	0.00	0.00						0.00
undefined	0.00									-2293.73		-2293.73
	0.00											0.00
	0.00									-2293.73		-2293.73
Total	153631.72	0.00	68873.64	33178.78	51579.30	0.00	0.00	0.00	0.00	22728.27	0.00	
	153631.71	0.00	68873.64	33178.78	51579.30	0.00	0.00	0.00	0.00	25022.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-2293.73	0.00	

12.3. Loans - financial assets and liabilities (from-whom-to-whom) – working table

F4 loans

liabilite / asset side	S1	S11	S12	S121	S122+S123	S124-S129	S13	S14	S15	S2	undefined	total
S1		41222.30 41222.30 0.00	3486.09 3486.09 0.00	0.00 0.00 0.00	17316.44 17316.43 0.00	1742.98 1742.98 0.00	394.42 394.42 0.00	9121.06 9121.06 0.00	3.50 3.50 0.00	3151.70 3151.70 0.00	0.00 20491.55 -20491.55	57379.08 56880.03 499.05
S11	82.95 82.95 0.00		82.95 82.95 0.00		9.67 9.67 0.00	73.29 73.29 0.00				2890.19 2890.19 0.00	18017.46	2973.14 20990.60 -18017.46
S12	50741.29 50741.29 0.00	41222.30 41222.30 0.00			14056.66 14056.66 0.00	1516.66 1516.66 0.00	394.42 394.42 0.00	9121.06 9121.06 0.00	3.50 3.50 0.00	261.51 261.51 0.00		51002.80 51002.80 0.00
S121	14039.06 14039.06 0.00		14013.11 14013.11 0.00		14013.11 14013.11 0.00			25.95 25.95 0.00				14039.06 14039.06 0.00
S122+S123	49566.30 49566.30 0.00	40306.00 40306.00 0.00	1516.66 1516.66 0.00			1516.66 1516.66 0.00	394.42 394.42 0.00	7345.71 7345.71 0.00	3.50 3.50 0.00	178.64 178.64 0.00		49744.93 49744.93 0.00
S124-S129	2709.25 2709.25 0.00	916.30 916.30 0.00	43.55 43.55 0.00		43.55 43.55 0.00			1749.40 1749.40 0.00		82.88 82.88 0.00		2792.13 2792.13 0.00
S13	3250.11 3250.11 0.00		3250.11 3250.11 0.00		3250.11 3250.11 0.00						1851.09	3250.11 5101.20 -1851.09
S14	153.03 153.03 0.00		153.03 153.03 0.00			153.03 153.03 0.00						153.03 153.03 0.00
S15	0.00 0.00 0.00		0.00 0.00 0.00								623.00	0.00 623.00 -623.00
S2	89775.75 89775.75 0.00	56005.69 56005.69 0.00	10367.76 10367.76 0.00	6673.32 6673.32 0.00	2575.83 2575.83 0.00	1118.61 1118.61 0.00	23402.30 23402.30				-11872.69	89775.75 77903.06 11872.69
undefined	-4372.19 0.00 -4372.19	-4551.59							179.40	0.00		-4372.19 0.00 -4372.19
Total	169058.10 173430.29 -4372.19	92676.40 97227.99 -4551.59	13853.85 13853.85 0.00	6673.32 6673.32 0.00	19892.26 19892.26 0.00	2861.59 2861.59 0.00	23796.72 23796.72 0.00	9121.06 9121.06 0.00	182.90 3.50 179.40	3151.70 3151.70 0.00	0.00 8618.86 -8618.86	

12.4. Debt securities - financial assets and liabilities (from-whom-to-whom) working table

F3 debt securities

liabilite / asset side	S1	S11	S12	S121	S122+S123	S124-S129	S13	S14	S15	S2	undefined	total
S1		0.00	0.00	394.65	0.00	1.21	7247.94	0.00	0.00	19448.95	0.00	**26696.89**
		0.00	0.00	394.65	0.00	1.21	7247.94	0.00	0.00	19448.95	0.00	**26696.89**
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
S11	0.00		0.00		0.00	0.00				0.00		**0.00**
	0.00		0.00		0.00	0.00				0.00		**0.00**
	0.00		0.00		0.00	0.00				0.00		**0.00**
S12	7247.94	0.00		394.65	0.00	1.21	7247.94	0.00	0.00	19448.95		**26696.89**
	7247.94	0.00		394.65	0.00	1.21	7247.94	0.00	0.00	19448.95		**26696.89**
	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		**0.00**
S121	2118.56		0.00		0.00		2118.56			19431.91		**21550.47**
	2118.56		0.00		0.00	0.00	2118.56			19431.91		**21550.47**
	0.00		0.00		0.00	0.00	0.00			0.00		**0.00**
S122+S123	4837.42	0.00	395.86	394.65		1.21	4441.56			17.04		**4854.46**
	4837.42		395.86	394.65		1.21	4441.56			17.04		**4854.46**
	0.00	0.00	0.00	0.00		0.00	0.00			0.00		**0.00**
S124-S129	687.82	0.00	0.00		0.00		687.82			0.00		**687.82**
	687.82	0.00	0.00		0.00		687.82			0.00		**687.82**
	0.00	0.00	0.00		0.00		0.00			0.00		**0.00**
S13	0.00		0.00									**0.00**
	0.00		0.00									**0.00**
	0.00		0.00									**0.00**
S14	0.00		0.00									**0.00**
	0.00		0.00									**0.00**
	0.00		0.00									**0.00**
S15	0.00		0.00									**0.00**
	0.00		0.00									**0.00**
	0.00		0.00									**0.00**
S2	1124.93		1124.93		1124.93	0.00						**1124.93**
	1124.93		1124.93	0.00	1124.93	0.00					35015.13	**36140.06**
	0.00		0.00	0.00	0.00	0.00					-35015.13	**-35015.13**
undefined	0.00	0.00					0.00		0.00	1321.70		**1321.70**
	0.00											**0.00**
	0.00						0.00			1321.70		**1321.70**
Total	9893.66	0.00	1124.93	394.65	1124.93	1.21	7247.94	0.00	0.00	20770.65	0.00	
	9893.66	0.00	1124.93	394.65	1124.93	1.21	7247.94	0.00	0.00	19448.95	35015.13	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1321.70	-35015.13