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REGIONAL BALANCE MODEL OF FINANCIAL FLOWS BASED ON THE SECTORAL APPROACH OF THE SYSTEM OF NATIONAL ACCOUNTS

The main goal of the study, the results of which are reflected in this article, is the theoretical and methodological substantiation of possibilities to build a regional balance model of financial flows consistent with the principles of the international standard System of National Accounts. The paper summarizes the international experience of building regional accounts in the System of National Accounts, and describes the advantages and disadvantages of existing methods used for building the Social Accounting Matrix. The authors propose their own approach to building a regional balance model of financial flows based on disaggregated tables of formation, distribution, and use of territory's value added by institutional sector of the System of National Accounts (corporations, public administration, households). When addressing the problem of transferring the value added from industries to sectors, the authors proposed their own approach to the accounting of formation, distribution, and use of the value added within the institutional sectors of territories. The proposed methods of calculation are based on publicly available information of statistical and federal agencies. The authors presented the diagram of relationship between the indicators of regional balance model of financial flows, which allows to relate the movement of regional resources across such sectors as Corporation, Public Administration, and Households, while relating the regional cash flows by sectors and areas of use. As a result, they constitute a single account of formation and distribution of the financial resources of the territory, which represents a regional balance model of financial flows. This matrix shows the distribution of financial resources by income sources and sectors, where the components of formation (remuneration of labor, taxes, and gross profit), distribution (transfers and payments), and use (final consumption, accumulation) of the value added are mutually related by sector (corporations, public administration, households) based on the principle of double entry. The balancing indicators describing the movement of financial resources are represented by the balance of net lending/borrowing of institutional sectors, which shows the excess (deficit) of financial resources in individual sectors during their use.

Keywords: System of National Accounts, model of financial flows, region, institutional sectors, corporations, households, public administration, regional accounts, net lending, net borrowing

Introduction

Amid the widespread use of the principles of national accounting in all countries, the regional (sub-national) accounts in the System of National Accounts (SNA) are underdeveloped, because foreign economic science has not yet addressed the methodological and theoretical problems of transferring the principles and methods of assessing the economic activity under SNA to the lower level of regional (territorial) entities.

In most cases, in the absence of registration of flows within the national economy, it is impossible to create for a territory a full-fledged matrix for formation and distribution of value added on the basis of strict SNA methodology. At the same time, the development of a statistical base of the Russian Federation for regional and local territories, improvement of its quality and availability allow to build a comprehensive model of financial flows at the regional (and possibly municipal) level of administration. At the same time, although the formation of a regional balance model of financial flows has its own specific aspects, it should be based on the conceptual approaches of SNA, which predetermines the need to build new approaches to the presentation of financial flows at the regional level.

Theory

The international experience of building regional accounts in SNA is fairly diverse, and the most elaborate system of regional accounts in terms of theory and practice is presented by the countries of the European Union, which currently has a sufficiently complete and structured system for assessing the regional disparities that have been implemented in practice in all EU countries[1]. A special attention is deserved by the system of regional accounts of Canada, where the statistical agency is the only

[1] European Regional and Urban Statistics Reference Guide. (2010). Eurostat. Methodologies and Working Papers, 263. European Commission. Retrieed from: http://ec.europa.eu/eurostat/ramon/statmanuals/files/KS-RA-10–008-EN.pdf (date of access: 8/7/2016).

one in the world that calculates interregional Input—Output tables[2]. Overall, when considering the territorial level of formation of the Systems of National Accounts, it may be noted that in most countries (including Russia) the statistical agencies bring the methodology of their formation closer to the national standards of SNA by using the gross regional product or gross income of the population as the basis [1–8].

Another study area in terms of "binding" the methodology of the formation of SNA to the regional level is the development of Social Accounting Matrix (SAM)), which in the opinion of researchers allows to systematically analyze the circulation of financial resources in the regional reproduction system. A critical area for using SAM is the medium-term forecasting and modeling the relationship between financial results obtained by institutional sectors (households, public administration sector, non-financial and financial corporations), and the final demand in the economy [9–11]. The formation of the balance model of financial flows is based on the methodology used for building the SNA and the Input—Output balance method being, in fact, a derivative of the matrix of sectoral and production-based approach in the national accounts.

Accordingly, the theoretical foundations for developing the model (matrix) of financial flows have been laid by the researchers of the balance method in economics (W. Leontief, L.V. Kantorovich), as well as the founders of the matrix approach in economic analysis (G. Pyatt, E. Thorbecke et al.) [12, 13].

From the theoretical point of view, the existing scheme for building a matrix of financial flows is based on the use of aggregated SNA data brought into a single matrix, where the main aggregates are the goods and services account, production account, income generation account, income use and capital operations account, income and expense accounts of institutional sectors of economy, accounts of formation, and use of tax and non-tax income and expenses in budgets of various levels.

In practice, bringing the heterogeneous aggregates of SNA into a single matrix, as well as a lack of information on the movement of financial flows at the territorial level, cause a number of shortcomings in the current approach to using the matrix of financial flows:

1) Difficulties in disaggregating the indicators of financial balance: when the matrix is expanded to its component parts, this results in the loss of the balance principle in the formation of tables;

2) Limited application: the use of aggregated indicators of financial flows limits the use of the model to determine the relationships in the financial development of the region;

3) Balance principle underlying the methodology of building SAM involves zeroing the accounts by balancing them through the indicators of export/import, which (given the conditional character of regional statistics) reduces the analytical capacity of this approach.

Therefore, in our opinion, the regional balance model of financial flows in its core, first, should be based on disaggregated tables of formation, distribution, and use of value added of the territory and, second, should be as close as possible to SNA in terms of methodology.

Theoretically, the System of National Accounts uses two types of territory income generation accounts: by economic activity responsible for providing the sectoral structure of income generation and by the sectoral division of economic activities of the territories [14–17]. From our point of view, the main purpose of the second approach is to define the structure of economic development of the national (territorial) economy in the ratio of the formation of value added across the sectors of economy (private sector including financial and non-financial sector, public authorities including the provision of services to public and transfers) and the structure of final consumption (private and public). This structure determines the entire system used for building the accounts, their relationship and opportunities for analysis.

Also, the methodology of building SNA is in general not aimed at a static representation of distribution and use of the value added of the territories, but at the formation of balances of the movement of financial resources between "producing," "distributing," and "consuming" sectors, as well as sources of income (taxes, wages, transfers) and expenses (consumption, savings, collective services and subsidies), and at the net lending/borrowing between the sectors (sub-sectors) of the economy.

[2] Guide to the Income and Expenditure Accounts. (2008, June). Statistics Canada System of National Accounts — Ottawa, 297. Retrieved from: http://www.statcan.gc.ca/pub/13–017-x/13–017-x2008001-eng.pdf (date of access: 8/7/2016); Wilkinson, J., Salem, M., Laurent, A., Messinger, H. & Bugge, B. Trends in provincial and territorial economic statistics: 1981–2002. (2003, November). Income and Expenditure Accounts technical series . Ottawa, 34. Retrieved from: http://publications.gc.ca/collections/Collection/Statcan/13–604-M/13–604-MIE2003043.pdf (date of access: 8/7/2016).

If for the national level of administration, the main task of which is to maintain macroeconomic stability and balanced distribution of income between the territories, the internal transfer of resources is of no importance, for regional level of administration the directions of financial flows are a criterion of the effectiveness of the territory, while cash balances are the basis for sustainable development of the region. Therefore, the definition of the sources of financial development of regions within a sectoral review of the territory allows to determine the internal and external factors and the risks of its development.

Methods

When applying the sectoral principle of formation and use of the regional income, the most difficult task is to allocate the value added from economic activities to the sectors. It is known that there are different sectors of the economy in the industries (economic activities). For example, corporations (in the form of agro-businesses), the state (as a unit of state entities), and households (in the form of individual entrepreneurs and natural persons) can be involved in the agriculture. In the recent years, the Russian Federal Statistics Service (Rosstat) has been publishing reports on the ratio of economic activities and institutional sectors for a number of indicators at the level of the national economy, including output, gross value added, gross mixed income, and remuneration of labor. Such information is not provided at the regional level and, therefore, we need to use the adjustment methods to determine the value added in institutional sectors.

There are several ways to address this problem, but any system used for transferring the value added from industries to sectors is fairly controversial and conditional (as well as at the national level). This is why, when generating the Systems of Territorial Accounts and regional balance model of financial flows, we proposed an original approach to the accounting of generated value added within the institutional sectors of territories.

It is based on the following assumptions and postulates:

1. Including the value added of territories under sections A–K of the Russian National Classifier of Economic Activities (OKVED) entirely into the Corporation sector along with separation of section J into a financial section. As a matter of fact, according to methodological explanations of their authors, the regional tables used in the formation of GRP contain information on the value added only for large and medium-sized enterprises. In the structure of the national tables used for allocation of value added by industry and sector, the public sector has no significant weight for these types of economic activity. At the same time, from the methodological point of view, the concept of SNA provides for the inclusion of self-employed people (individual entrepreneurs and natural persons) engaged in the production of goods and services into the household category as an unincorporated business. The reason is the inability to identify the complete set of accounts for such business unit and, therefore, the income (value added) from such activities are considered part of the household (item 24.6, 2008 SNA). Therefore, when using the proposed approach to determine the value added of the territory for Corporation sector, we do not contradict the SNA concept.

2. The inclusion of subsections L, M, N of Public Administration sector into the value added. The first sub-section is fully referred to the sector; in education and health care, about 10 % of value added is generated in other sectors. To mitigate any possible data distortion, we propose to adjust the actual costs (which are fully recorded as the value added) and Rosstat data on the relevant sections when calculating the costs of the consolidated budget of the region and direct federal financing of budget-funded education and health care institutions. Accordingly, the balances of value added for these sections will be included in the corporate sector for the relevant areas.

3. Significant difficulties were encountered in allocating section O (“Provision of Other Utility, Social and Personal Services”) to the value added of the Corporations sector, in which according to the national tables half of the value added is generated in the non-financial corporations; one third in the public administration; and the rest in the households and non-commercial entities providing services to households. In this case, we propose to allocate the half of the region’s value-added from this section to Non-Financial Corporations sector, and the rest will be calculated in the same way as for public administration.

4. The formation of value added for the Households sector is the least studied subject and an issue, which is the least represented in the databases. If we proceed from theoretical assumptions of SNA on inseparable nature of household income and the income of unincorporated businesses, then, in fact, it

would be necessary to supplement GRP of the territory with the data on small businesses by including the income and tax payments of small forms of entrepreneurship. Therefore, to build the accounts of households for unincorporated businesses, we can use the tax statistics on income and tax payments of small businesses, which would actually be another primary source for generating the Gross Product of the territory that was not previously accounted for in the official statistics.

Corporations sector. Based on the above method of determining the gross value added of the sector, we identified the key parameters of resource and use the account to determine the required balances.

1. In our opinion, the resource-related part of the account does not reflect fairly enough the taxes on production and imports. According to 2008 SNA Guidelines, taxes on production and imports (VAT, excise taxes, etc.) are reported only for the economy in general, since they are not paid out from the value added generated by domestic producers (i.e., not "owned" by them initially). At the same time, while this is true for the export-import operations (the so-called "tax on external operations"), there are different points of view with regard to taxes levied from enterprises at the level of the national economy. The same Guidelines indicate that the taxes on products are viewed by many economists as taxes on consumption (item A 4.26, 2008 SNA) (excise taxes on tobacco, alcohol, petrol, etc.), which are exempt from the value added of enterprises. The situation is more complex with the value added tax, since it is not reported even in the output, as it is hard to "allocate" between enterprises and territories given the particular aspects of its calculation and return. In this case, VAT is, in fact, a tax on the performance of enterprises, i.e. on the "increment" of value. Therefore, by using this approach, we propose to include the expenditure of the Corporations sector on the payment of VAT and taxes on products in the balance model of financial flows of the territories in order to generate a complete source matrix for the origin of financial flows in the region, especially since the data on territories are publicly available.

2. In accordance with the methodology used for building SNA, the financial flows of Corporations sector are used under such items, as wages of employees (with charges to social funds), other production taxes and gross mixed income. If the first two elements of income use do not give rise to doubts about their calculation and mandatory payment, the economic content of such indicator as the gross mixed income at the regional level raises questions. First, it is assumed (and this is reflected in 2008 SNA) that the primary income allocation account is not the "final" for generating the income of enterprises, because it may also include the property income (received and transferred), which can substantially change the disposable income (value added) of enterprises. Second, in the case of transfer pricing adopted in almost all areas of economic activities in the Russian Federation, the mixed-income of enterprises can be modified depending on operating conditions of regional enterprises (desires of their owners). Third, as noted by Rosstat in its methodology, the value added of multiregional units is virtually not reported in the regional accounts, which leads to even greater data distortions. Moreover, in 2008 SNA, the amount of disposable income (after including the balances of property income) is approximately equal to the amount available to enterprises for investment.

Therefore, given all the difficulties arising with the determination of mixed income flows of the corporate sector, we propose to assume its replacement by the investment indicator, which would show the actual capability of enterprises to use their profits.

3. The final balancing indicator of the Corporation sector is the indicator of net lending/borrowing, which reflects the relationship between the sector and the rest of the world. In fact, the outflow (or inflow) of value added occurs in the ratios of gross income and investment, while the further expansion of the range of accounts (with the property income) will allow to generate the balances more accurately.

Public Administration sector. The reporting of flows in the Public Administration sector at the national level is rather adequately studied in the global practice [18–20], but there are differences in the approaches to reporting the flows [21–22].

When building the regional balance model, we identified a number of fundamental issues with regard to understanding the purpose of financial flows in the Public Administration sector based on the methodology used for building the SNA.

1. In contrast to the commonly accepted view on tax payments by levels of the budgetary system (federal, regional, local), we propose to rely on the general flow of payments generated by the region, since the allocation of income by the levels of the budgetary system is currently of notional nature. A

more significant role is played by the power transfer schemes and their financing at different budgetary levels.

2. Based on the SNA methodology, in the regional matrix of financial balance, the income of the public sector is recorded in the context of taxes, social insurance contributions, other current (non-tax) income and capital transfers.

Tax payments are the main source of income in the Public Administration sector, therefore we use the SNA classification to separate them: these are taxes on products (not included in the region's value-added, but in fact withdrawn from it in the form of VAT, excise taxes, mineral extraction tax), other production taxes (considered in the calculation of GRP), as well as income taxes (households and enterprises).

According to the SNA methodological guidelines, it is possible to separate the social security programs as a stand-alone institutional unit (sub-sectors), if they are organized separately from the state provision sector. In our opinion, this is exactly the case of the Russian Federation, and therefore we separate the income from (and expenditure on) social insurance contributions into a stand-alone unit of social security funds (compulsory health insurance, social insurance, and pension fund), which is a structural part of the Public Administration sector.

3. In addition to the social insurance funds, in the balance model of financial flows of the territories, we separate another sub-sector, including direct federal expenditures in the territory, which are not recorded in the consolidated expenditures of the subject of the Russian Federation (i.e., expenditures of the regional and municipal budgets). In fact, these expenditures are indirectly reported in the account of the Gross Regional Product by presenting the data in sections L, M, N of OKVED (for example, section L includes the expenditures on public administration at the regional and municipal levels, and the same applies to other sections but with the adjustment for "private" services), i.e. in this case, the recorded expenditures are public expenditures directly financed by the federal authorities. Accordingly, in the sub-sector of federal expenditures, it is necessary to find the amounts of direct financing of such entities (this includes the administrative personnel at the federal level, police, federal health care, law enforcement, science, etc.), especially since such data are provided by the Federal Treasury of the Russian Federation. This allows both to clarify the expenditures of the public administration for a specific territory and record more accurately the contribution of the Corporations sector to the formation of value added by economic activities, primarily, education, and health care.

4. The expenditures on the production of goods and services (i.e., the expenditures on collective services), the main expenditure item of the Public Administration sector, includes the remuneration of labor, intermediate consumption, and consumption of fixed capital (item 22.70 of 2008 SNA). In our view, for creating a balance model of financial flows, it would be appropriate to use the indicator of value added of the public sector, excluding the intermediate consumption as its economic meaning is to report the public expenditures associated with the formation of value added (wages, taxes, and investments).

Therefore, for the institutional sector Public Administration, we formed a number of inter-related accounts that record both the structure of tax proceeds from the territories in accordance with the SNA classification, and expenses incurred by all structural units of the sector in the context of the formation of value added. In fact, the difference between the proceeds of all payments from other sectors and the expenditures incurred on all sources constitute the indicator of net lending/borrowing of the institutional sector Public Administration.

Households sector. According to the SNA developers, the Households sector, is a "consuming" sector for goods and services produced in the economy. From this point of view, the main items of household expenditures are final consumption of households (i.e., consumption of goods and services acquired by the households), public consumption (i.e., not paid but used by the households) and savings (the accumulation and redemption of debt), and various transfers. The greatest difficulties arise in the grouping of income of the Households sector. The main parameters of the approach used by the authors are presented below.

1. The separation of sub-sectors of households is based on the goals set by the researchers. In the 2008 SNA, these approaches are specified in the context of production, consumption, and income. In our case, the most preferable option would be to use the classification of households in the context of their income types: these include the income received by the owners of unincorporated households

(with or without employees), remuneration of labor, property income, and transfers (item 24.37, 2008 SNA).

2. The remuneration of employees is formed on the basis of data calculated for Corporations sector and Public Administration sector (let's remember that this includes social insurance contributions), while the employee income received from unincorporated businesses (small businesses) is allocated to the category of mixed income of self-employed because it is impossible to separate such employee income.

3. Therefore, in the household income, we separate a notional sub-sector of small businesses, which includes the income of unincorporated household businesses and their employees. In this case, we apply the so-called "income rerouting" used in the SNA when the value added of unincorporated businesses with employees is recorded as income received by the owners. The data source here is publicly available tables of the Russian Federal Tax Service. Accordingly, when using the household account in this sub-sector, we should record the tax payments of individual entrepreneurs.

4. The main flow of income in the transfers of households comes from reallocation operations from the Public Administration sector made in the form of cash payments and capital transfers conducted directly or through specialized funds (direct federal expenditures). There are also transfers from the Corporations sector (recorded in the tax reporting) and from "external" households (they are almost impossible to record and therefore are not represented in the regional matrix).

5. The savings are, in fact, a balancing item in the accounts of income use, but there is one problem since, in the regional accounts, it is impossible to establish the "flow" of goods and services from one territory to another, which may significantly affect the indicator of final consumption and, accordingly, the indicator of savings. Therefore, given the possibilities offered by SNA, the savings should mean the "pure" change in stocks within the regional economy, i.e. the purchase of housing and change in the liabilities of credit institutions. Accordingly, the difference between household income and expenditures on final consumption and savings can be defined as the inflow/outflow of cash to/from the economy of the region (or net lending/borrowing).

Model and results

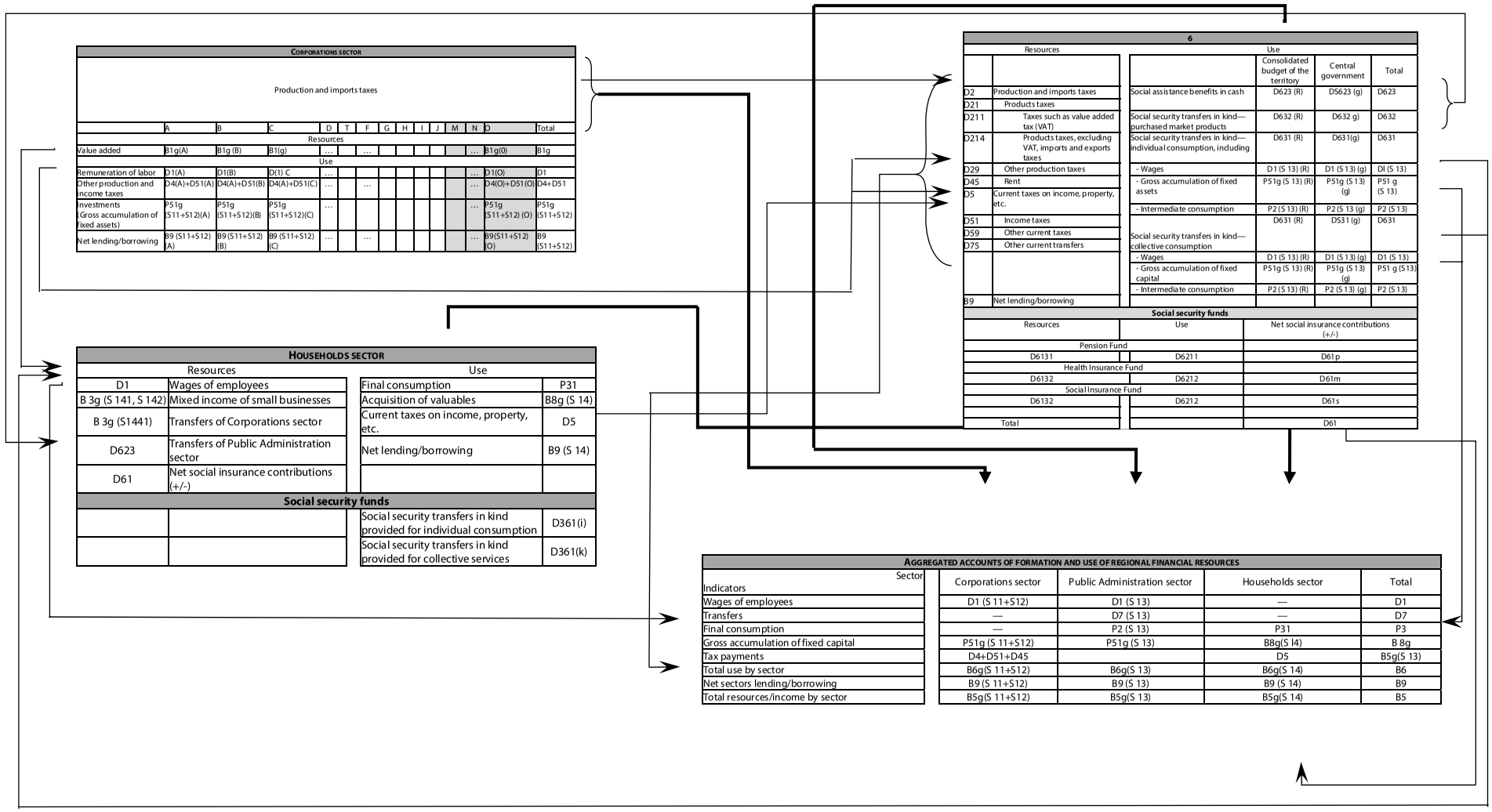
As already mentioned, in the Russian statistics the data sources for indicators of the regional balance model of financial flows are presented in fragmented and sometimes non-comparable form. To address this issue, we consolidated all indicators, methods of their adjustment, and information sources presented in the balance model into a single system arranged in the authors' table. In addition, to visualize the dependencies, it displays the codes for each indicator matching the central SNA classification, as well as the relationship of indicators both within the sectors and with the account of the formation and use of financial resources of the region.

The most critical technical issue in preparing the regional balance model is to select and validate data. We use the variety of sources ranging from aggregated data of Rosstat to "manual" selection of individual indicators[3]. As our priority data sources, we consider the "primary" sources such as the Russian Federal Tax Service, which makes publicly available the income tables of territories in the context of different taxes and different codification. When using the Rosstat data, it is necessary to validate the methodology of their calculation (which is rarely disclosed), as this determines the adequacy of data and the possibility of using them to build the balance model.

However, in general, the information array provided by official authority should be considered sufficient for calculating the regional balance model of financial flows.

As a result, after finding the ratios of indicators we prepared the diagram of relationships between the indicators of the regional balance model of financial flows (see the figure below). This diagram allows to establish the relationships in the movement of region's resources between such sectors as the Corporations, Public Administration and Households, and identify the cash flows of the region by sectors and areas of use. As a result, they constitute a single account of formation and distribution of financial resources of the territory, which represents, in essence, the regional balance model of financial flows. This matrix shows the distribution of financial resources by income sources and sectors, where the

[3] Federalnaya sluzhba gosudarstvennoy statistiki [Federal State Statistics Service].Retrieved from: http://www.gks.ru (date of access: 8/7/2016); Federalnaya nalogovaya sluzhba RF. Razdel "Statistika i analitika" [The Federal Tax Service of the Russian Federation. Section Statistics and Analytics]. Retrieved from: https://www.nalog.ru (date of access: 8/7/2016); Federalnoye kaznacheystvo RF [The Federal Treasury of the Russian Federation]. Retrieved from: http://www.roskazna.ru/ (date of access: 8/7/2016) et al.



CORPORATIONS SECTOR

Production and imports taxes

	A	B	C	D	T	F	G	H	I	J	M	N	O	Total
Resources														
Value added	B1g(A)	B1g (B)	B1g(g)	…		…						…	B1g(0)	B1g
Use														
Remuneration of labor	D1(A)	D1(B)	D(1) C	…								…	D1(O)	D1
Other production and income taxes	D4(A)+D51(A)	D4(A)+D51(B)	D4(A)+D51(C)	…		…						…	D4(O)+D51(O)	D4+D51
Investments (Gross accumulation of fixed assets)	P51g (S11+S12)(A)	P51g (S11+S12)(B)	P51g (S11+S12)(C)	…								…	P51g (S11+S12) (O)	P51g (S11+S12)
Net lending/borrowing	B9 (S11+S12) (A)	B9 (S11+S12) (B)	B9 (S11+S12) (C)	…		…						…	B9(S11+S12) (O)	B9 (S11+S12)

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Resources		Use	Consolidated budget of the territory	Central government	Total
D2	Production and imports taxes	Social assistance benefits in cash	D623 (R)	DS623 (g)	D623
D21	Products taxes				
D211	Taxes such as value added tax (VAT)	Social security transfers in kind—purchased market products	D632 (R)	D632 g)	D632
D214	Products taxes, excluding VAT, imports and exports taxes	Social security transfers in kind—individual consumption, including	D631 (R)	D631(g)	D631
D29	Other production taxes	- Wages	D1 (S 13) (R)	D1 (S 13) (g)	DI (S 13)
D45	Rent	- Gross accumulation of fixed assets	P51g (S 13) (R)	P51g (S 13) (g)	P51 g (S 13)
D5	Current taxes on income, property, etc.	- Intermediate consumption	P2 (S 13) (R)	P2 (S 13 (g)	P2 (S 13)
D51	Income taxes	Social security transfers in kind—collective consumption	D631 (R)	D531 (g)	D631
D59	Other current taxes	- Wages	D1 (S 13) (R)	D1 (S 13) (g)	D1 (S 13)
D75	Other current transfers	- Gross accumulation of fixed capital	P51g (S 13) (R)	P51g (S 13) (g)	P51 g (S13)
		- Intermediate consumption	P2 (S 13) (R)	P2 (S 13) (g)	P2 (S 13)
B9	Net lending/borrowing				

Social security funds

Resources	Use	Net social insurance contributions (+/-)
Pension Fund		
D6131	D6211	D61p
Health Insurance Fund		
D6132	D6212	D61m
Social Insurance Fund		
D6132	D6212	D61s
Total		D61

HOUSEHOLDS SECTOR

Resources		Use	
D1	Wages of employees	Final consumption	P31
B 3g (S 141, S 142)	Mixed income of small businesses	Acquisition of valuables	B8g (S 14)
B 3g (S1441)	Transfers of Corporations sector	Current taxes on income, property, etc.	D5
D623	Transfers of Public Administration sector	Net lending/borrowing	B9 (S 14)
D61	Net social insurance contributions (+/-)		
Social security funds			
		Social security transfers in kind provided for individual consumption	D361(i)
		Social security transfers in kind provided for collective services	D361(k)

AGGREGATED ACCOUNTS OF FORMATION AND USE OF REGIONAL FINANCIAL RESOURCES

Sector / Indicators	Corporations sector	Public Administration sector	Households sector	Total
Wages of employees	D1 (S 11+S12)	D1 (S 13)	—	D1
Transfers	—	D7 (S 13)	—	D7
Final consumption	—	P2 (S 13)	P31	P3
Gross accumulation of fixed capital	P51g (S 11+S12)	P51g (S 13)	B8g(S l4)	B 8g
Tax payments	D4+D51+D45		D5	B5g(S 13)
Total use by sector	B6g(S 11+S12)	B6g(S 13)	B6g(S 14)	B6
Net sectors lending/borrowing	B9 (S 11+S12)	B9 (S 13)	B9 (S 14)	B9
Total resources/income by sector	B5g(S 11+S12)	B5g(S 13)	B5g(S 14)	B5

Fig. *The diagram of relationships between the indicators of the regional balance model of financial flows*

components of formation (remuneration of labor, taxes, and gross profit), distribution (transfers and payments) and use (final consumption, accumulation) of the value added are mutually related by sector (corporations, public administration, households) based on the principle of double entry. The horizontal level of the account records the structure of expenditures in institutional sectors, which is generally represented as labor costs, transfers, final consumption, gross fixed capital accumulation, and tax payments. The vertical level of the account defines the disposable incomes of institutional sectors in the region, i.e. their ability to use resources.

The originality of approach used in the provided regional balance model also lies in the use of indicators of net lending/borrowing of institutional sectors, which shows the surplus/deficit of financial resources in use in the individual sectors.

Given the complexity of representing the net lending/borrowing for different sectors, we will define the economic content of this indicator:

1. Corporations sector. The excess of created value added over expenditures means that a part of income remains at the disposal of corporations of the territory (+); if more is "spent" than "earned," this points out to the use of external sources of financing (–).

2. Public Administration sector. The excess of collected taxes over the use of funds means the inflow of budgetary funds to the system (–); while spending less than collected means, on the contrary, the outflow of funds from the territory (+).

3. Households. If any freely available resources remain at the disposal of households after the payment for all needs, this results in savings (+); if there are not enough freely available resources, this results in the inflow of income (–).

As a result, after adjustment for net lending/borrowing in the account of the formation and use of financial resources of the region we can see the extent, to which the "expenses" of the region are secured by its "income," and the value of total deficit/surplus of financial resources.

Conclusion

This study is an initial step in the development of the methodology for assessing the financial flows of the region and its main goal is to establish the relationship between the indicators of regional balance sheet matching the SNA. The future work on the subject of the study involves the calculations of financial flows of the subjects of the Russian Federation included in the Ural Federal District, and it will allow to assess the contribution of each institutional sector (Corporations, Public Administration, Households) to the formation and use of the value added of the territories, the amount and direction of the outflow/inflow of the financial resources in each region. The results can provide the basis for determining the trends of financial development in the studied territories, as well as the degree of sustainability of proportions existing in the formation and use of income by the institutional sectors amid the macroeconomic instability of financial development of the Russian Federation.

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