



Federal State Statistics Service (Rosstat)

***The experience of Rosstat  
concerning recalculating time  
series of gross domestic product  
(GDP)***

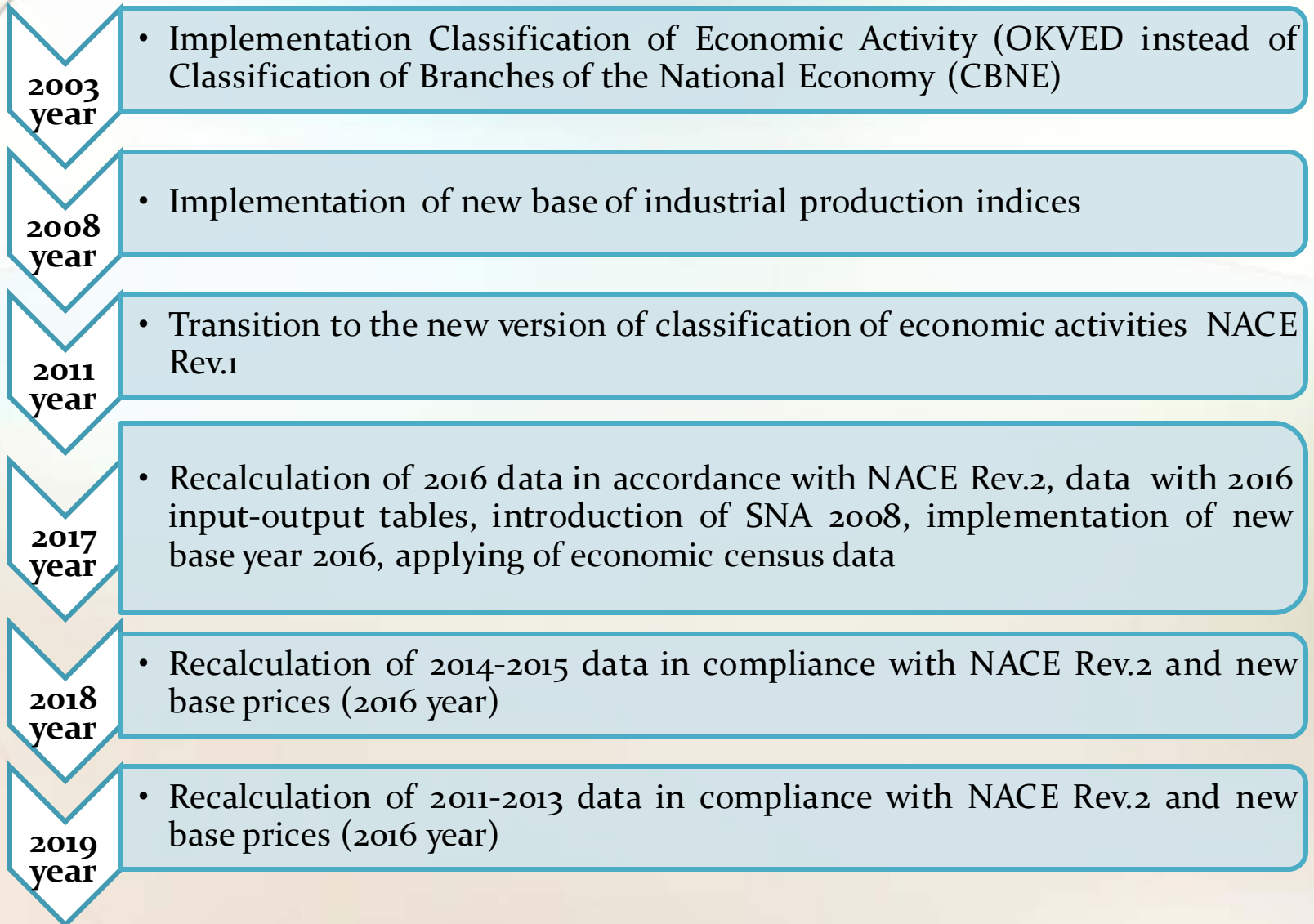
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# Reasons for recalculation of GDP time series

- Introduction of new versions of classifications of activities and products (NACE Rev.2 и CPA 2008)
- Clarification of certain provisions of SNA 1993 and implementation of SNA 2008
- Introduction of economic census data as an additional source of information for calculation
- Implementation of price indices of new base year
- Harmonization of various sectors of macroeconomic statistics: SNA, BoP, GFS
- Use of the basic input-output tables for 2011 fiscal year and annual supply and use tables for 2012-2015 years

# Stages of GDP time series revisions



# Methodology of recalculation of time series

- ❖ Implementation of transition keys applied for the classification of economic activities NACE Rev. 1.1 to NACE Rev. 2. using the coefficients of branch allocation in compliance with the new classification
- ❖ Extrapolation of time series at base year prices with the use of chain indices
- ❖ Reconciliation of production, generation of income and use of income accounts with annual supply and use tables
- ❖ Estimation of accounts indicators according to the SNA 2008 methodology

# Implementation of new versions of classifications

**The classification of types of economic activity harmonized with Statistical classification of economic activities in the European Community (NACE Rev. 1.1)**



**The classification of types of economic activity harmonized with Statistical classification of economic activities in the European Community (NACE Rev.2)**

**The classification of production by type of economic activity harmonized with Statistical Classification of Products by Activity in the European Economic Community, 2002 version (CPA 2002)**



**The classification of production by type of economic activity harmonized with Statistical Classification of Products by Activity in the European Economic Community, 2008 version (CPA 2008)**

**The classification of fixed assets partially adapted to SNA 1993 standard**



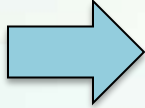
**The classification of fixed assets complying with SNA 2008 standard and harmonized with Statistical Classification of Products by Activity in the European Economic Community, 2008 version (CPA 2008)**

## Problems of transition to the classification of economic activities Rev.2

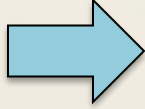
- ❖ There is no 1-to-1 correspondence between the classification of economic activities NACE Rev.1.1 and NACE Rev.2
- ❖ Absence of information necessary for developing indicators in accordance with NACE Rev.2
- ❖ There is no transition period for monitoring branches in the new classification of economic activities NACE Rev.2
- ❖ Retrospective recalculation of sectoral statistics indicators applied for the national accounts framework is not implemented in full

# Comparison of the classification groups in NACE Rev.1.1 and NACE Rev.2

A direct correspondence between NACE Rev.1.1 and NACE Rev.2

SNA industry name	NACE Rev.1.1 code		SNA industry name	Код NACE Rev.2 code
Hunting and wild animals breeding including related services	01.5		Hunting and wild animals breeding including related services	01.7

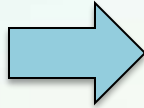
NACE Rev.2 comprised of NACE Rev.1.1

SNA industry name	Код NACE Rev.1.1 code		SNA Industry name	Код NACE Rev.2 code
Logging including related services	02.01.1 + 02.02.2		Forestry and logging	02
Collection of wild non-wood forest products	02.01.2			
Forestry, forest nursery including related services	02.01.5 + 02.01.6 + 02.02.01			

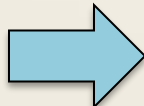


# Comparison of the classification groups in NACE Rev.1.1 and NACE Rev.2 (continuation)

NACE Rev.1.1 is divided into several NACE Rev.2

SNA industry name	NACE Rev.1.1 code		SNA industry name	NACE Rev.2 code
Mining, processing and sintering of brown coal	10.2		Mining and processing of coal	05
			Oil production, sintering of coal, hard coal and brown coal (lignite), thermo coal production	19.2+19.3

Impossible to compare NACE Rev.1.1 with NACE Rev.2

SNA industry name	NACE Rev.1.1 code		SNA industry name	NACE Rev.2 code
Activity to ensure timber-rafting (excluding ship's draft timber floats)	61.20.4		No correspondence	



# Scheme of recalculation of time series into the classification of activity Rev.2 (illustrative example)

## First stage

Output of goods and services					➔	Output of goods and services				
NACE Rev.1.1 industries	Goods and services produced	Industry 1	⋮	Industry j		NACE Rev.1.1 industries	Goods and services produced	Industry 1	⋮	Industry j
NACE Rev.1.1 activities	$\sum_{ij} a_{ij}$	$\sum_i a_{i1}$	...	$\sum_i a_{ij}$	NACE Rev.2 activities	$\sum_{ij} a_{ij}$	$\sum_i a_{i1}$	...	$\sum_i a_{ij}$	
Goods and services produced	$\sum_j a_{1j}$	Output matrix			Goods and services produced	$\sum_j a_{1j}$	Output matrix			
Activity i	...				Activity i	...				
...	$\sum_j a_{ij}$				Activity j	...				
Activity Γ	...				Activity Γ	...				

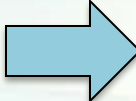
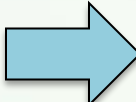
# Scheme of recalculation of time series into the classification of activity Rev.2 (illustrative example)(continued)

## Second stage

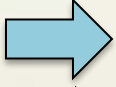

Output of goods and services					➔	Output of goods and services				
NACE Rev.1.1 industries	Goods and services produced	Industry 1	⋮	Industry j		NACE Rev.2 industries	Goods and services produced	Industry 1	⋮	Industry j
NACE Rev.2 activities	$\sum_{ij} a_{ij}$	$\sum_i a_{i1}$	...	$\sum_i a_{ij}$	NACE Rev.2 activities	$\sum_{ij} a_{ij}$	$\sum_i a_{i1}$	...	$\sum_i a_{ij}$	
Goods and services produced	$\sum_j a_{1j}$	Output matrix			Goods and services produced	$\sum_j a_{1j}$	Output matrix			
Activity i	...				Activity i	...				
...	$\sum_j a_{ij}$				Activity l	$\sum_j a_{lj}$				
Activity l										

# Development of transition keys for NACE Rev.1.1 and NACE Rev.2

Implementation of transition keys

Industry name	NACE Rev.1.1 code	Coefficient		Industry name	NACE Rev.2 code
Crude oil and oil-associated gas production	11.10.11 + 11.10.12	0,9929		Crude oil, oil (bituminous) shale, sand and ozokerite production	06.10.1 + 06.10.2
		0,0071		Oil-associated gas, natural and condensed gas production	06.10.3 + 06.2

Analysis of transition keys

Industry name	NACE Rev.1.1 code		Industry name	NACE Rev.1.1 code
Crude oil production	11.10.11		Crude oil production	06.10.1
Oil-associated gas production	11.10.12		Oil-associated gas production	06.10.3

Calculation of transition keys

Industry name	NACE Rev.1.1 code	Value (thousands of roubles)
Crude oil production	11.10.11	6 230 385 967,7
Oil-associated gas production	11.10.12	44 663 801,9
<b>Share of crude oil in total, %</b>		<b>0,9929</b> <small>11</small>

# Absence of information necessary for developing indicators of implementation of NACE Rev.2

SNA industry name	NACE Rev.1.1 code		SNA industry name	NACE Rev.2 code
Processing of brown coal	10.20.21	→	Processing of brown coal (lignite)	05.20.2
Sintering of brown coal	10.20.22		Sintering of brown coal (lignite)	19.33

SNA industry name	NACE Rev.1.1 code	Value (thousands of roubles)
Processing and sintering of brown coal	10.20.2	25 232,4
Processing of brown coal	10.20.21	0,00
Sintering of brown coal	10.20.22	0,00

Expert assessment

No information required for calculation of transition coefficients (expert assessment)

## Differences in GDP structure according to classification of economic activities NACE Rev.1.1 and NACE Rev.2 (at basic prices of 2016)

Section	Share of 2007 OKVED section (Rev.1.1.), %	Share of OKVED 2 section (Rev2.), %	Section	Share of 2007 OKVED section (Rev.1.1.), %	Share of OKVED 2 section (Rev2.), %
A	4,4	4,6	K	18,2	4,2
B	0,3	9,5	L	8,1	10,1
C	9,5	13,3	M	2,5	4,9
D	13,4	2,9	N	3,7	2,5
E	3,1	0,5	O	1,7	8,1
F	6,4	6,4	P	0,7	2,6
G	14,7	14,6	Q	-	3,6
H	0,9	6,9	R	-	0,9
I	8,2	0,9	S	-	0,5
J	4,2	2,3	T	-	0,7
			Total	100	100

# Development of the 1993 SNA and introduction of SNA 2008

## ***Extension of assets boundary***

- Results of research and development are estimated as an asset and included into gross fixed capital formation
- Military equipment taken into account

***Calculation of investment in fixed assets is harmonized with SNA 2008 assets boundary, the estimate of investment in fixed assets is calculated in terms of institutional sectors of economy***

***Foreign economic operations are accounted in compliance with the methodology of the Sixth Edition of the IMF Balance of Payments and International Investment Position Manual***

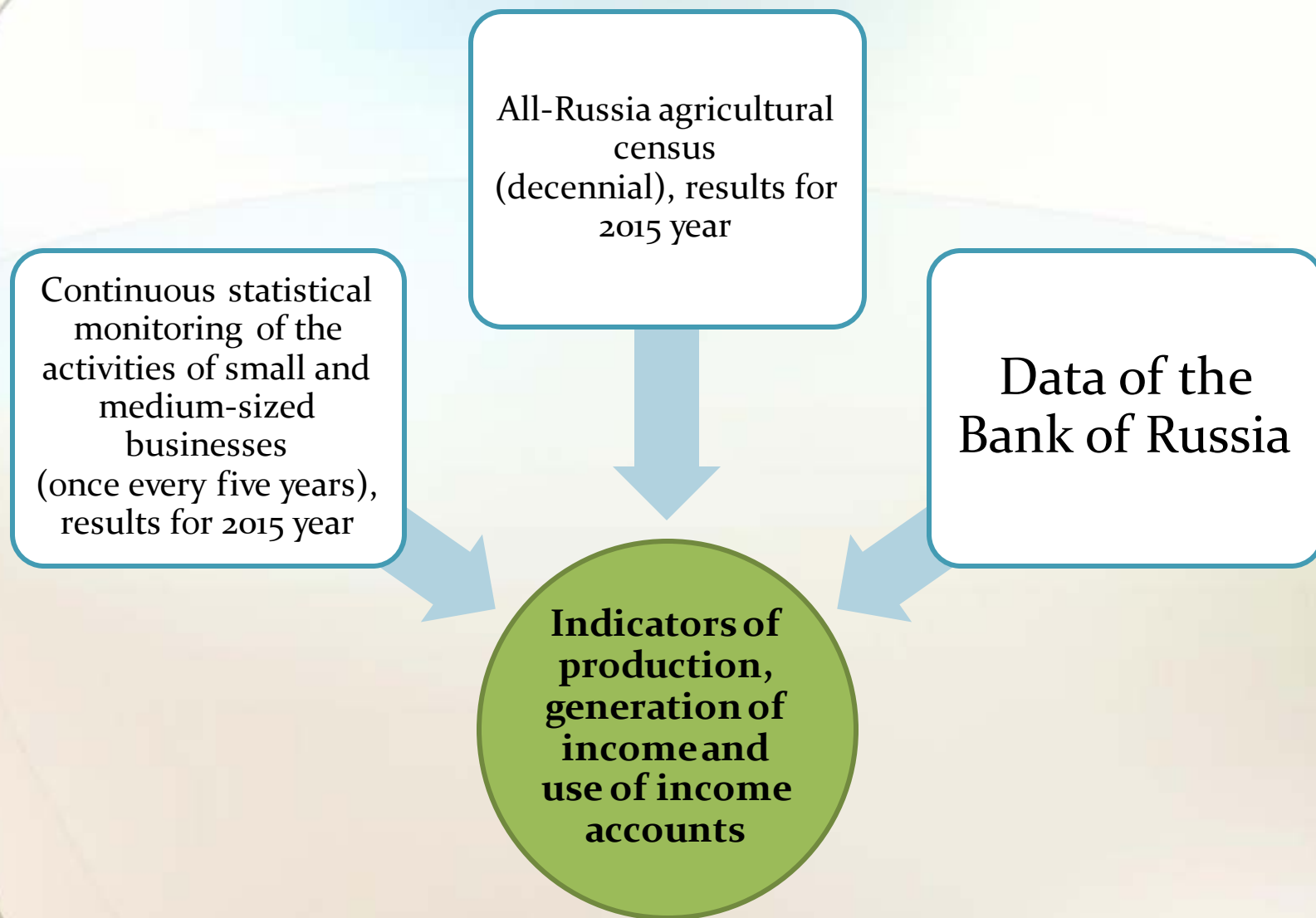
- Accounting of goods sent for processing without change of ownership
- Accounting of goods imported for resale

***Calculation of several production indicators formerly accounted not entirely is harmonized with the SNA requirements***

- Calculation of the cost of housing services provided and consumed by homeowners is revised
- Cost of work carried out by domestic workers is included in calculation

***The estimation of hidden compensation of employees and mixed income is clarified on the basis of financial account of households developed by Bank of Russia***

## Additional sources of information for calculation

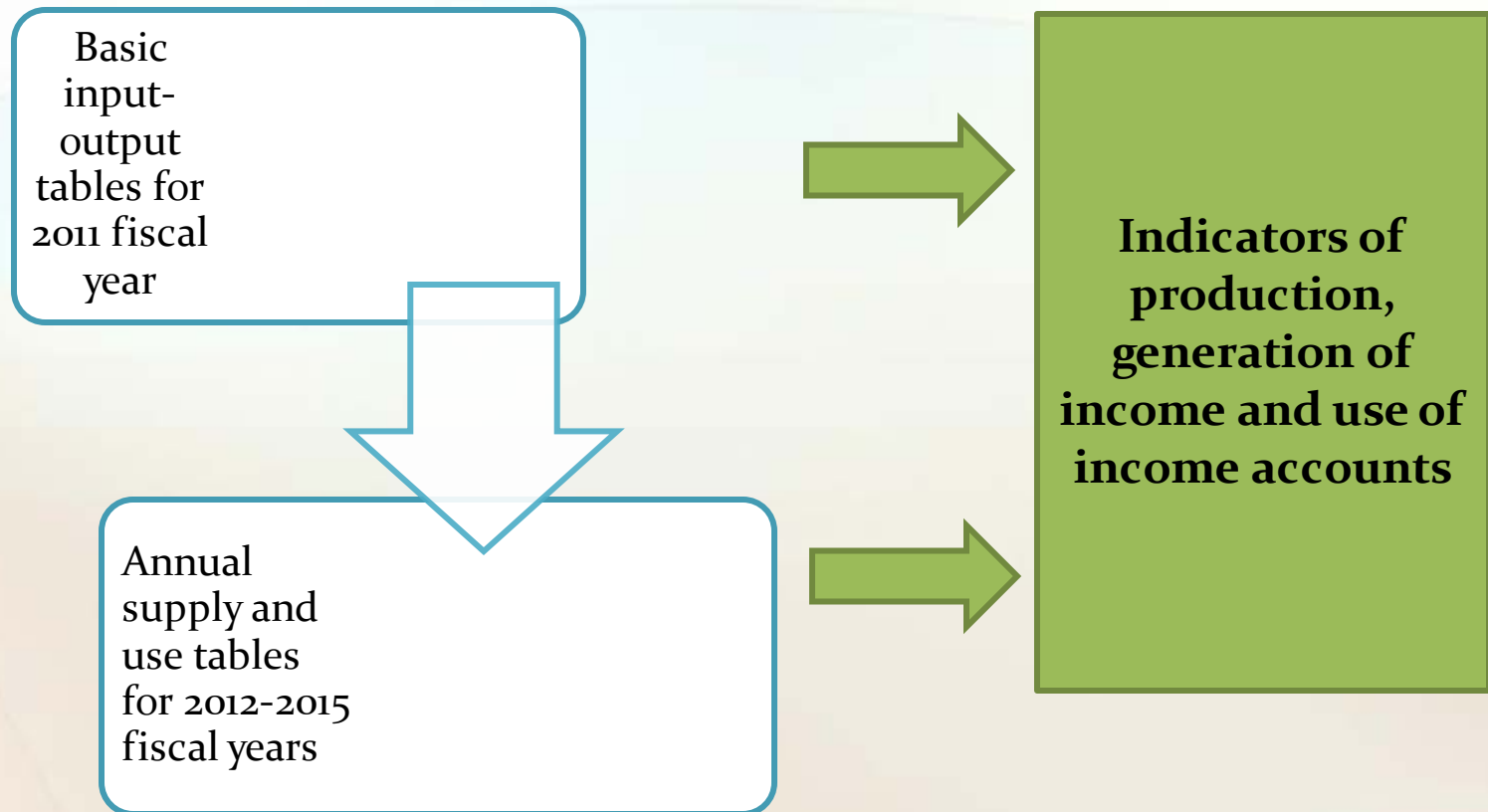




## Harmonization of various sections of macroeconomic statistics

- ❖ Agreement with the Bank of Russia about boundaries of financial sector
- ❖ Cooperation with Ministry of Finance of Russia and The Russian Federal Treasury concerning the boundaries of general government sector and classification of operations of general government sector
- ❖ Compilation of assets balance sheets
- ❖ Agreement on outcome SNA indicators (including Financial account), balance of payments, government finance statistics

# Using data of basic input-output tables for 2011 fiscal year and supply and use tables for 2012-2015 fiscal years



# Time series of production account indicators

(At current prices, RUR bln)

<b>Indicator name</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b><i>Output of goods and services (after revision)</i></b>	<b>100 960,4</b>	<b>113 092,2</b>	<b>123 165,5</b>	<b>133 110,2</b>
Output of goods and services	97 681,7	108 581,7	116 831,2	126 186,3
<b><i>Intermediate consumption (after revision)</i></b>	<b>48 876,3</b>	<b>54 095,9</b>	<b>59 296,0</b>	<b>64 202,7</b>
Intermediate consumption	49 962,8	55 598,7	59 935,1	65 096,9
<b><i>Gross value added (after revision)</i></b>	<b>52 084,1</b>	<b>58 996,2</b>	<b>63 869,4</b>	<b>68 907,5</b>
Gross value added	47 718,9	52 982,9	56 896,1	61 089,4
<b><i>Gross domestic product (after revision)</i></b>	<b>60 282,5</b>	<b>68 163,9</b>	<b>73 133,9</b>	<b>79 199,7</b>
Gross domestic product	55 967,2	62 176,5	66 190,1	71 406,4

(per cent of the previous year's figure)

<b>Indicator name</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b><i>Output of goods and services (after revision)</i></b>	<b>103,9</b>	<b>102,1</b>	<b>100,8</b>
Output of goods and services	103,8	101,8	100,8
<b><i>Intermediate consumption (after revision)</i></b>	<b>104,1</b>	<b>102,3</b>	<b>100,6</b>
Intermediate consumption	104,1	102,1	100,8
<b><i>Gross value added (after revision)</i></b>	<b>103,7</b>	<b>101,8</b>	<b>100,9</b>
Gross value added	103,5	101,4	100,7
<b><i>Gross domestic product (after revision)</i></b>	<b>103,7</b>	<b>101,8</b>	<b>100,9</b>
Gross domestic product	103,4	101,3	100,6

# Time series of the components of use of gross domestic product

(At current prices, RUR bln)

<b>Indicator name</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b><i>Final consumption expenditure (after revision)</i></b>	<b>40 692,2</b>	<b>46 895,8</b>	<b>52 274,3</b>	<b>56 510,7</b>
Final consumption expenditure	37 529,4	42 950,3	47 957,5	52 251,4
<b><i>of households (after revision)</i></b>	<b>29 939,5</b>	<b>34 492,4</b>	<b>38 465,2</b>	<b>42 015,8</b>
of households	27 192,5	31 018,8	34 671,9	38 037,2
<b><i>of general government (after revision)</i></b>	<b>10 527,4</b>	<b>12 156,0</b>	<b>13 551,9</b>	<b>14 207,0</b>
of general government	10 102,8	11 675,3	13 020,2	13 932,3
<b><i>of non-profit institutions serving households (after revision)</i></b>	<b>225,3</b>	<b>247,4</b>	<b>257,2</b>	<b>287,9</b>
of non-profit institutions serving households	234,1	256,2	265,3	281,9
<b><i>Gross capital formation (after revision)</i></b>	<b>14 735,9</b>	<b>16 730,2</b>	<b>16 915,8</b>	<b>17 614,6</b>
Gross capital formation	13 982,4	15 459,2	15 104,6	14 520,2
<b><i>gross fixed capital formation (after revision)</i></b>	<b>12 953,0</b>	<b>14 689,2</b>	<b>15 925,6</b>	<b>16 828,1</b>
gross fixed capital formation	11 950,2	13 639,4	14 460,2	14 706,4
<b><i>exports (after revision)</i></b>	<b>16 865,2</b>	<b>18 324,8</b>	<b>18 863,4</b>	<b>21 425,9</b>
exports	16 940,9	18 365,3	18 944,9	21 437,3
<b><i>imports (after revision)</i></b>	<b>12 010,8</b>	<b>13 786,9</b>	<b>14 919,6</b>	<b>16 351,5</b>
imports	12 164,4	13 853,2	15 022,6	16 331,4

# Time series of the components of use of gross domestic product

(per cent of the previous year's figure)

<b>Indicator name</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b><i>Final consumption expenditure (after revision)</i></b>	<b>106,5</b>	<b>104,1</b>	<b>100,9</b>
Final consumption expenditure	106,4	103,9	100,9
<b><i>of households (after revision)</i></b>	<b>107,9</b>	<b>105,2</b>	<b>102,0</b>
of households	107,8	105,0	101,3
<b><i>of general government (after revision)</i></b>	<b>102,6</b>	<b>100,9</b>	<b>97,9</b>
of general government	102,6	101,1	99,9
<b><i>of non-profit institutions serving households (after revision)</i></b>	<b>99,0</b>	<b>98,8</b>	<b>100,0</b>
of non-profit institutions serving households	98,7	98,5	98,5
<b><i>Gross capital formation (after revision)</i></b>	<b>104,4</b>	<b>94,4</b>	<b>93,9</b>
Gross capital formation	103,1	92,9	92,7
<b><i>gross fixed capital formation (after revision)</i></b>	<b>105,0</b>	<b>101,3</b>	<b>98,2</b>
gross fixed capital formation	106,7	100,9	98,0
<b><i>exports (after revision)</i></b>	<b>101,4</b>	<b>104,6</b>	<b>100,5</b>
exports	101,1	104,6	99,9
<b><i>imports (after revision)</i></b>	<b>109,7</b>	<b>103,5</b>	<b>92,7</b>
imports	108,7	103,8	92,1



*Thank you for attention!*