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Development of Budget Block in RIM model

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Budget block in RIM consists of:

- ✓ ***Consolidated budget*** **incomes and expenditures balance**
- ✓ ***Extra-budgetary funds*** **incomes and expenditures balance**
- ✓ **Institutional Accounts (Government sector)**
- ✓ **Government consumption in current and constant prices (as part of I-O tables, final demand)**
- ✓ **Industry deflators of Government consumption**

The statistical base:

1. budget indicators (budget revenues, budget expenditures, values of internal and external sources of budget deficit financing), 1980 - 2008

2. extra-budgetary indicators (incomes, expenditures, surplus/deficit), 1990-2008

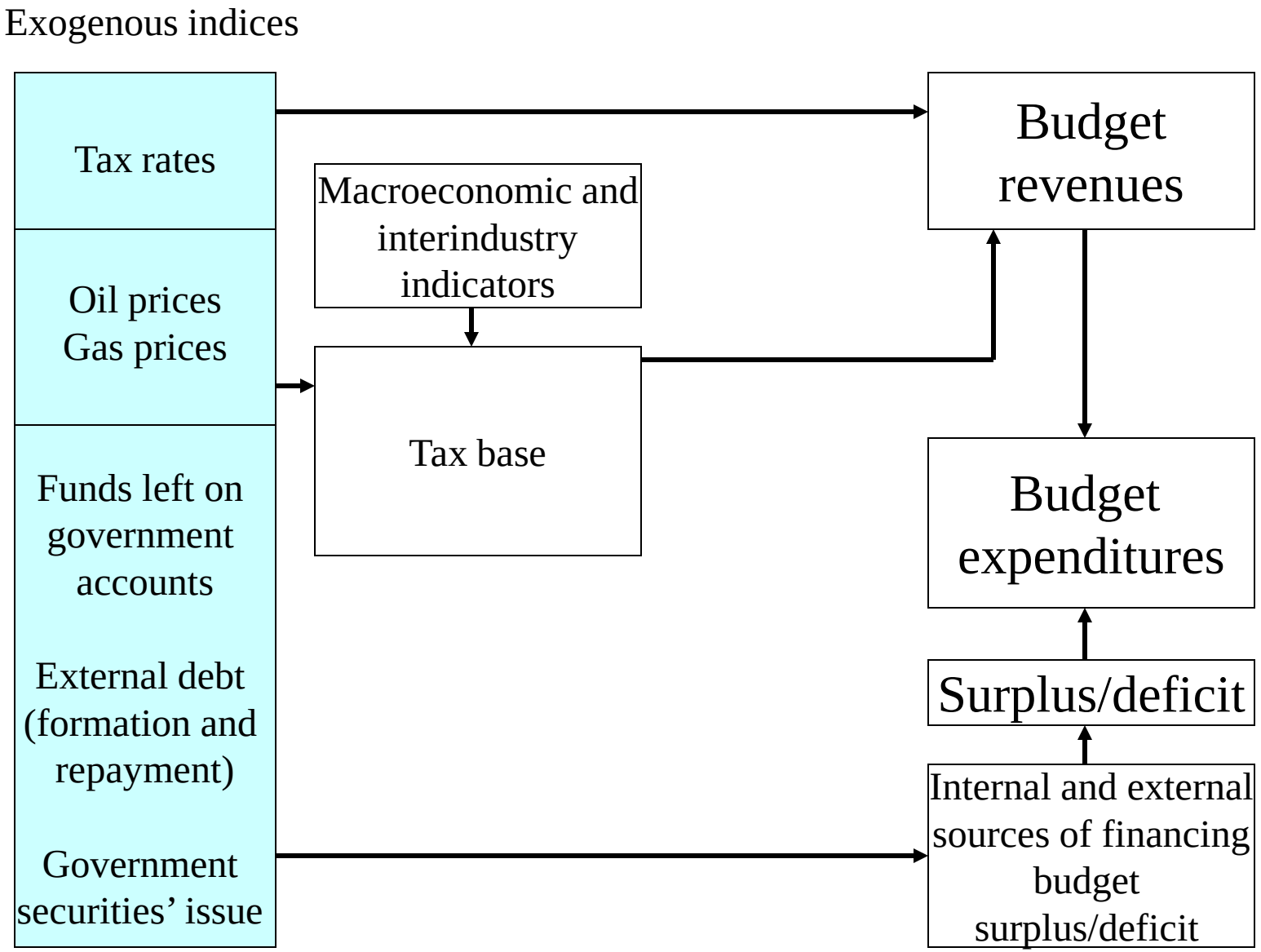
3. interindustry and macroeconomic indicators, 1980 - 2008

4. indices of institutional accounts (including the sector "Government"), 1999 - 2006

1. Consolidated budget

Incomes	**share,% (2008)**	**Expenditures**	**share,% (2008)**
Total	**100**	**Total**	**100**
Tax incomes, including:	**86**	State and municipal debt service	1
Company profit tax	16	General and local government	6
Personal income tax	11	National defense	8
Single social tax	3	Law enforcement and state security guarantee	7
VAT	14	**National economy, including:**	**25**
Excises	2	construction, fuel and electricity	0.3
Resources payments	13	agriculture and fishery	2
Export duties	18	transport, communication	7
Import duties	4	housing - communal utilities	8
Non-tax incomes, including:	**14**	environmental protection	0.2
Revenue from use of government property	3	**Social-cultural arrangements, including:**	**30**
Surplus/deficit	**100**	education	12
Internal financing of surplus/deficit	**92**	public health	8
government paper issue (net)	-14.5	social policy	8
funds left on government accounts	124.7	culture	2
External financing of surplus/deficit	**8**	Scientific researches	1
repayment of external debt	10	Inter-budget transfers	13

The principal scheme of the budget block



The main equations of the budget block

Revenues:

Tax revenues = regression coefficient * tax base * tax rate (1)

(for the taxes with the fixed rate: VAT, profit and income taxes, single social tax)

VAT = 0.376219*fdT*rvat
fdT – value-added in current prices
rvat – VAT rate

Single social tax = -537.1962 + 0.035*wagesT + 2137.1933*rESN
wagesT – labor compensation in current prices
rESN – single social tax rate

Company profit tax = -332.262191 + 0.744554*profitT*rtaxprofit
profitT – corporations profit in current prices
rtaxprofit – profit tax rate

Personal income tax = -56.757871 +0.001469*wagesT*rtaxinc
rtaxinc – personal income tax rate

The main equations of the budget block

Tax revenues = regression coefficient * tax base (2)

(for the taxes without fixed rate: excises, payments for natural resources usage, tax duties)

Excises = 169.739365* +0.039844*out7

out7 – output of industry “Food, tobacco, beverages” (in current prices)

Payments for natural resources usage = -192.856679+0.606730*out2

out2 – output of industry “Petroleum extraction” (in current prices)

Export duties = -562.468913 + 0.244079*exT

exT – export in current prices

Import duties = 0.050637*imT

imT – import in current prices

The main equations of the budget block

Budget surplus/deficit:

surplus/deficit = - (internal + external sources of financing budget surplus/deficit) (3)

Expenditures:

expenditures = (revenues – surplus/deficit) + oil-and-gas transfer (4)

Incomes – Expenditures = Surplus (+)/Deficit (-) = - Sources of financing surplus/deficit

2. Extra-budgetary funds

Incomes	**share,% (2008)**	**Expenditures**	**share,% (2008)**
Total	**100**	**Total**	**100**
Tax incomes, including	**45**	**Social-cultural arrangements**	**94**
Single social tax	44	social policy	78
Non-tax incomes, including	**55**		
Inter-budget transfers from consolidated budget	54		

The main equations of the extra-budgetary funds block

Revenues:

Tax revenues = regression coefficient * tax base * tax rate (5)

(for the taxes with the fixed rate: single social tax)

Single social tax = 366.4582 +0.2366*(wagesT)*rESN - 139.6333*dummy

wagesT – labor compensation in current prices

rESN – single social tax rate

dummy = 1 for 2005 and 0 for others (social tax reform)

Expenditures:

expenditures = regression coefficient * number of retired * average pension (6)

Expenditures = -280.730970+0.021822*pension*retired

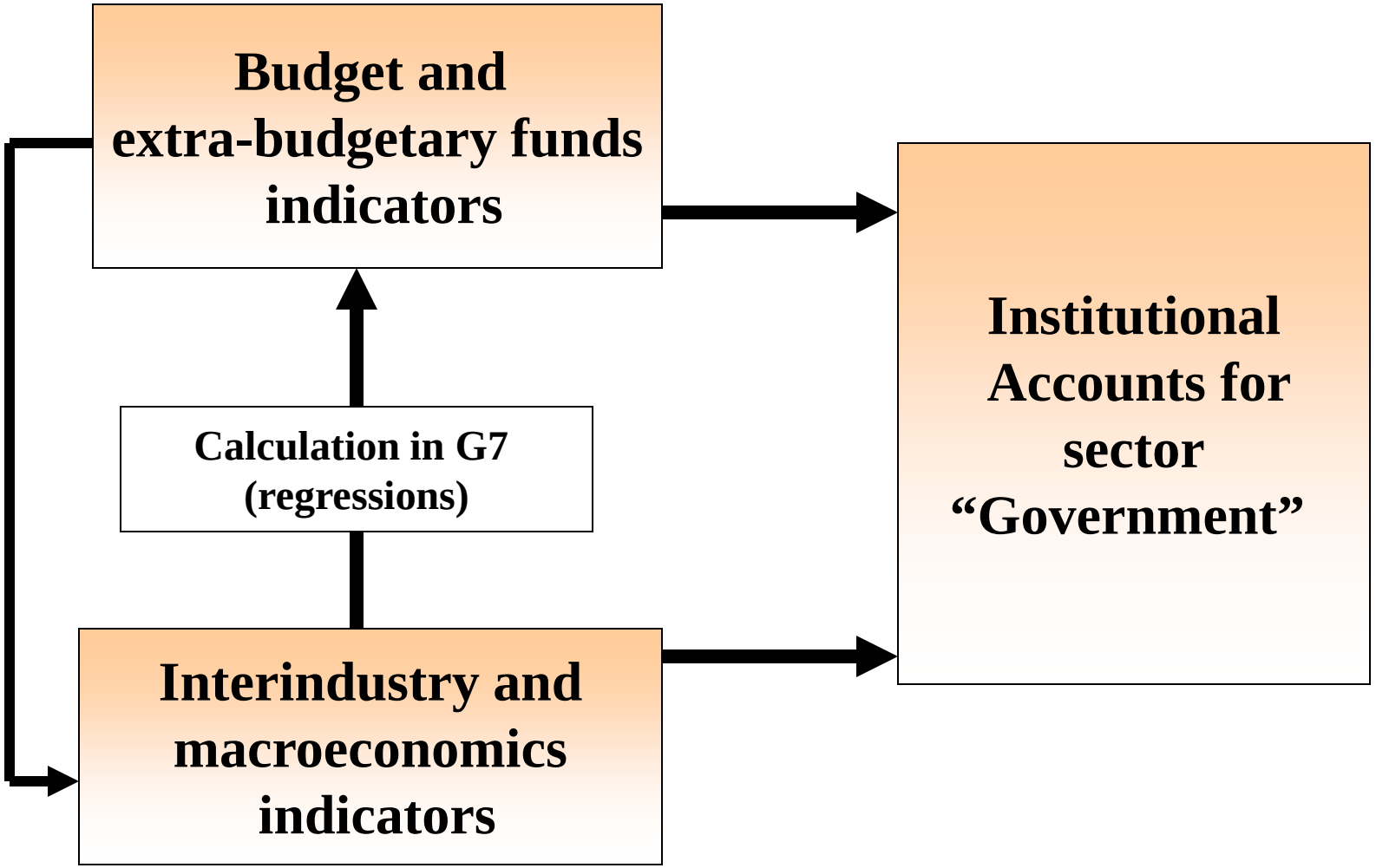
pension – average pension

retired – number of retired

necessary transfers from consolidated budget =

- (revenues – expenditures) (4)

3. Institutional Accounts (Government sector)



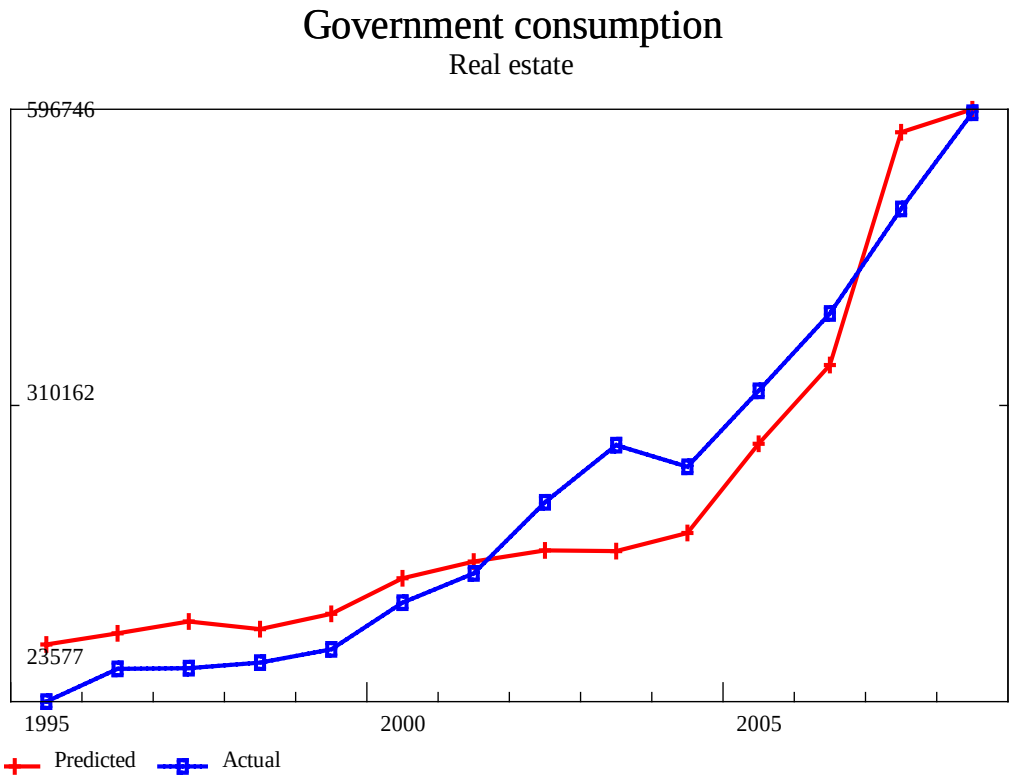
Budget Parameters and Institutional Accounts ("Government" sector)

	Institutional Accounts		***Budget and Inter-industrial Indicators***
1	**Gross value-added (+)**	->	va (41) + va (42) + va (43)
2	Wages (-)	->	wages (41) + wages (42) +wages (43)
3	Taxes-subsidies on production paid (-)	->	not estimated yet
4	Taxes-subsidies on production received (+)	->	property tax + regular payment for natural resources usage
5	Taxes on products (+)	->	VAT + excises + export and import duties
6	**Cross Primary Income**	=	1 + 2 + 3 + 4 + 5
7	Using-up of fixed capital (-)		not estimated yet
8	**Net Primary Income**	=	6 + 7
9	Property incomes paid (-)	->	expenditures for state and municipal debt service
10	Property incomes received (+)	->	revenue from use of state and municipal property
11	**Net Institutional Income**	=	8 + 9 + 10
12	Income and Property taxes (+)	->	profit tax + income tax + aggregate income tax
13	Social Insurance taxes (+)	->	single social tax + social insurance contributions
14	Social Benefits (-)	->	expenditures for social policy + financing of pensions
15	Other current transfers paid (-)		not estimated yet
16	Other current transfers received (+)		not estimated yet
17	**Net Disposable Income**	=	11 + 12 + 13 + 14 + 15 + 16
18	Government purchases (-)	->	budget expenditures–transfers–interest expenditures+2 + 3
19	**Net Saving**	=	17 + 18
20	**Gross Saving**	=	17 - 7

4. Government consumption (I-O tables, 2nd quadrant)

Government consumption in current prices	structure, %, 2008
Agriculture	0.3
Food, beverages, tobacco	0.002
Textiles, apparel, leather	0.1
Pharmaceuticals	0.1
Automobiles, highway transport equipment	0.4
Recycling	0.1
Electric, gas, and water utilities	1.1
Wholesale and retail trade	0.0
Hotels and restaurants	0.2
Transport and storage	0.8
Finance and insurance	0.4
Real estate	**8.9**
Equipment rental	0.0
Computing service	0.0
Research and development	6.9
Government, defense, social insurance	**37.9**
Education	**13.9**
Health services	**17.8**
Other social and personal services	**11.2**

The main equations of the Government consumption block

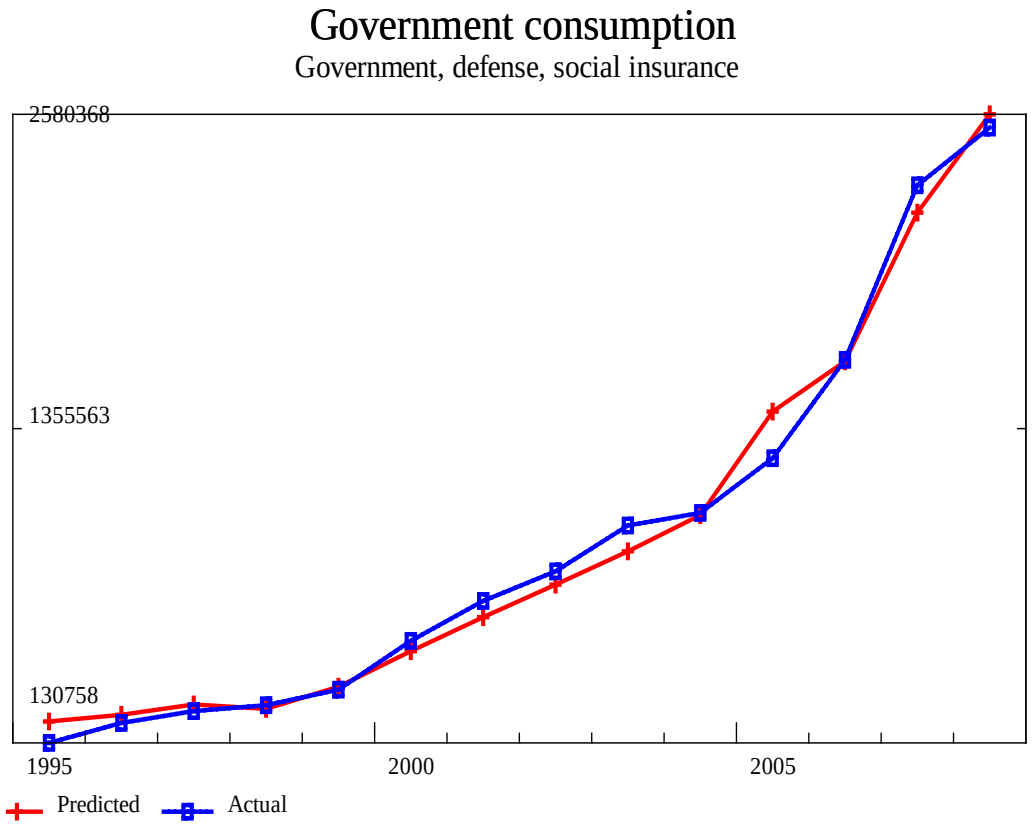


R^2	0.9133
$\bar{R}^2$	0.9061
Durbin-Watson	0.80
RHO	0.60

gov36 = 47182 + 0.47820 * hcuK

gov36 – government consumption in current prices of Real Estate
hcuK – consolidated budget expenditures on housing-communal utilities

The main equations of the Government consumption block

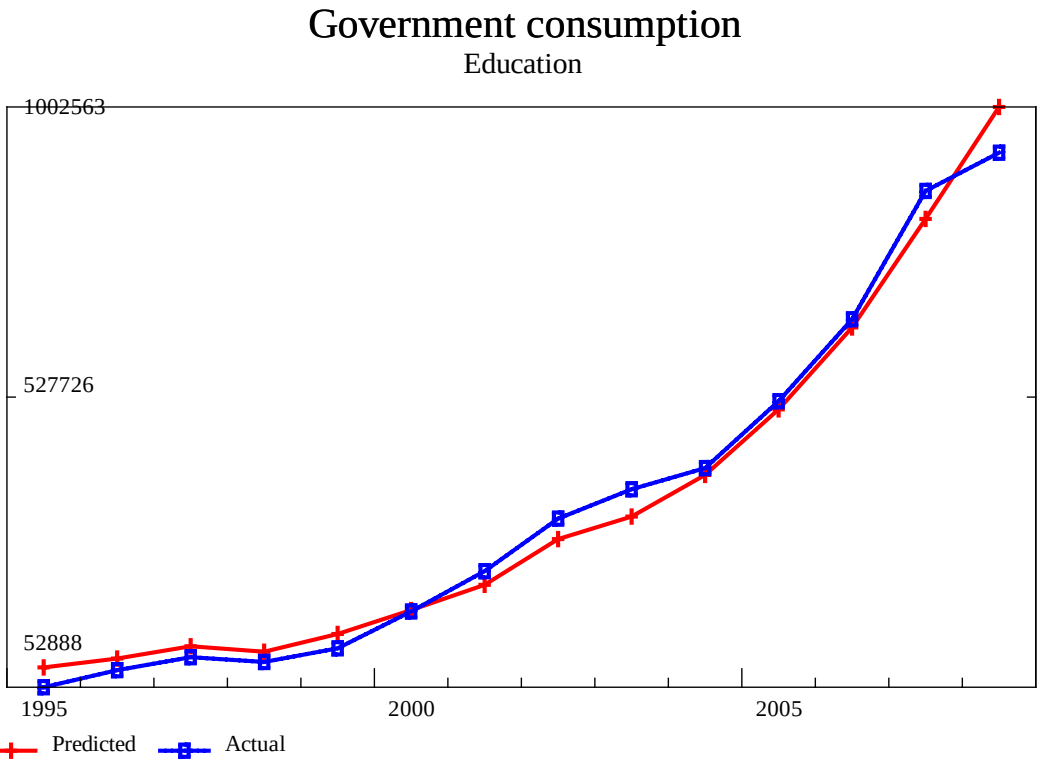


R^2	0.9799
$\bar{R}^2$	0.9763
Durbin-Watson	1.39
RHO	0.31

gov41 = -63877.50340 + 0.36305* upravK + 2.32081* oboronK

gov41 – government consumption in current prices of Government, defense, social insurance
upravK – consolidated budget expenditures on general and local government
oboronK – national defense

The main equations of the Government consumption block

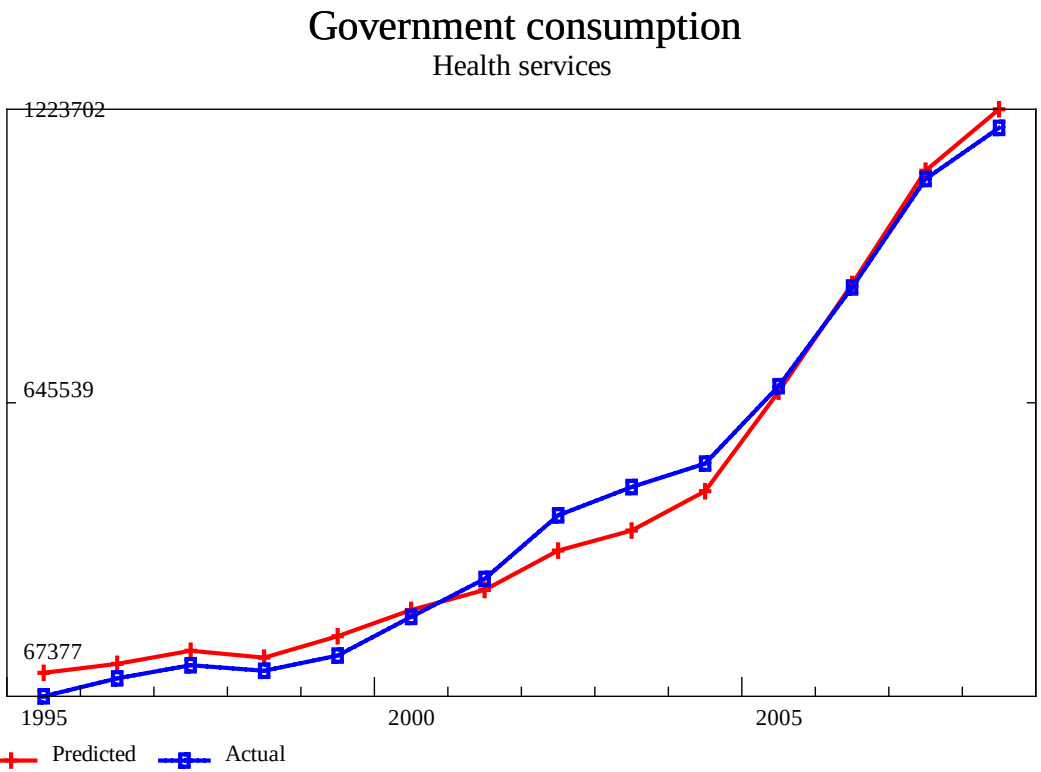


R^2	0.9679
$\bar{R}^2$	0.9652
Durbin-Watson	0.69
RHO	0.66

gov42 = 7523.55750 + 0.62784* educatK

gov42 – government consumption in current prices of Education
educatK – consolidated budget expenditures on education

The main equations of the Government consumption block

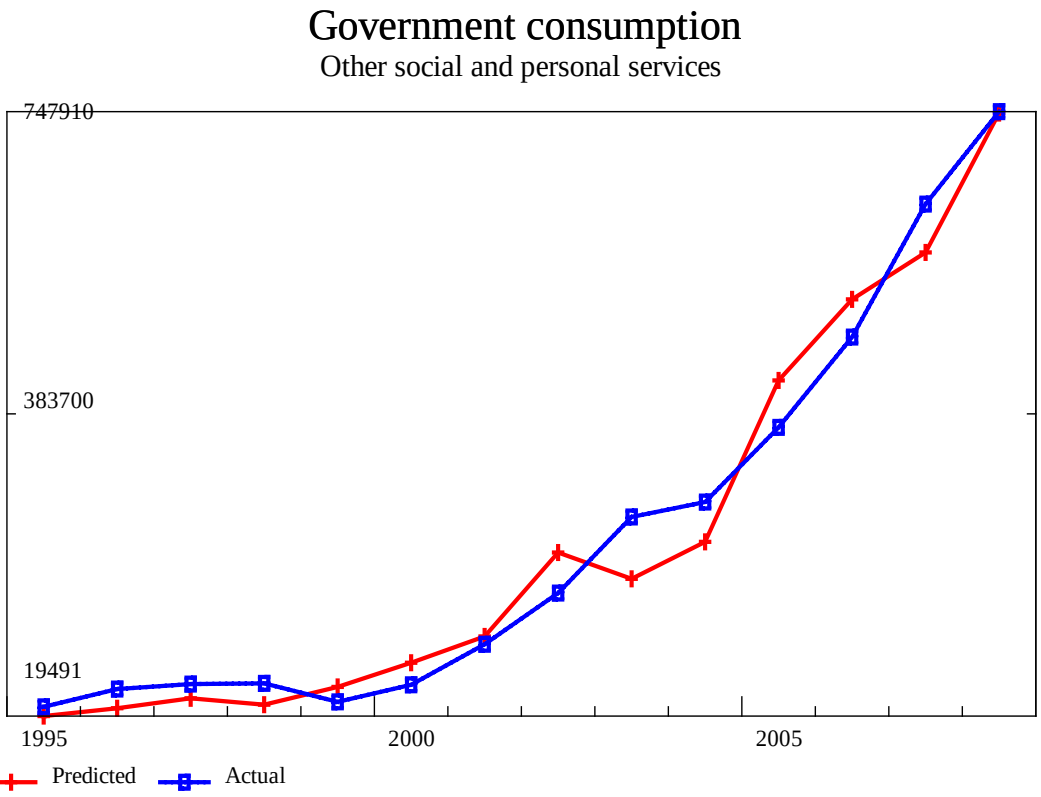


R^2	0.9664
$\bar{R}^2$	0.9636
Durbin-Watson	0.31
RHO	0.85

gov43 = 16661.45676 + 1.15155* pubhealK

gov43 – government consumption in current prices of Health services
pubhealK – consolidated budget expenditures on public health

The main equations of the Government consumption block



R^2	0.9701
$\bar{R}^2$	0.9677
Durbin-Watson	2.08
RHO	-0.04

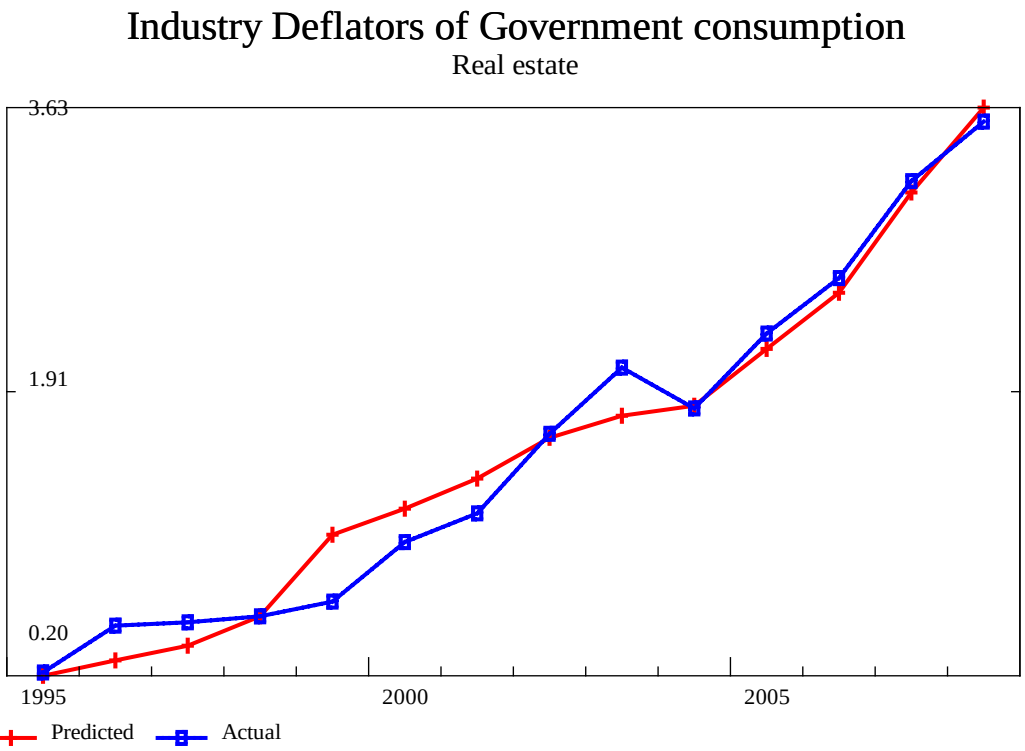
gov44 = 2.20684* culK + 0.16033 * socpolK

gov43 – government consumption in current prices of Other social and personal services
culK – consolidated budget expenditures on culture
socpolK – consolidated budget expenditures on social policy

5. Deflators of Government consumption

Industry deflators of Government consumption	value, 2008 (2000=1)
Agriculture	3.6
Food, beverages, tobacco	4.5
Textiles, apparel, leather	3.3
Pharmaceuticals	6.2
Automobiles, highway transport equipment	2.9
Recycling	4.7
Electric, gas, and water utilities	4.0
Wholesale and retail trade	4.0
Hotels and restaurants	2.9
Transport and storage	3.5
Finance and insurance	3.0
Real estate	**3.5**
Equipment rental	3.6
Computing service	4.0
Research and development	3.0
Government, defense, social insurance	**4.3**
Education	**5.4**
Health services	**5.5**
Other social and personal services	**4.6**

The main equations of the deflators block

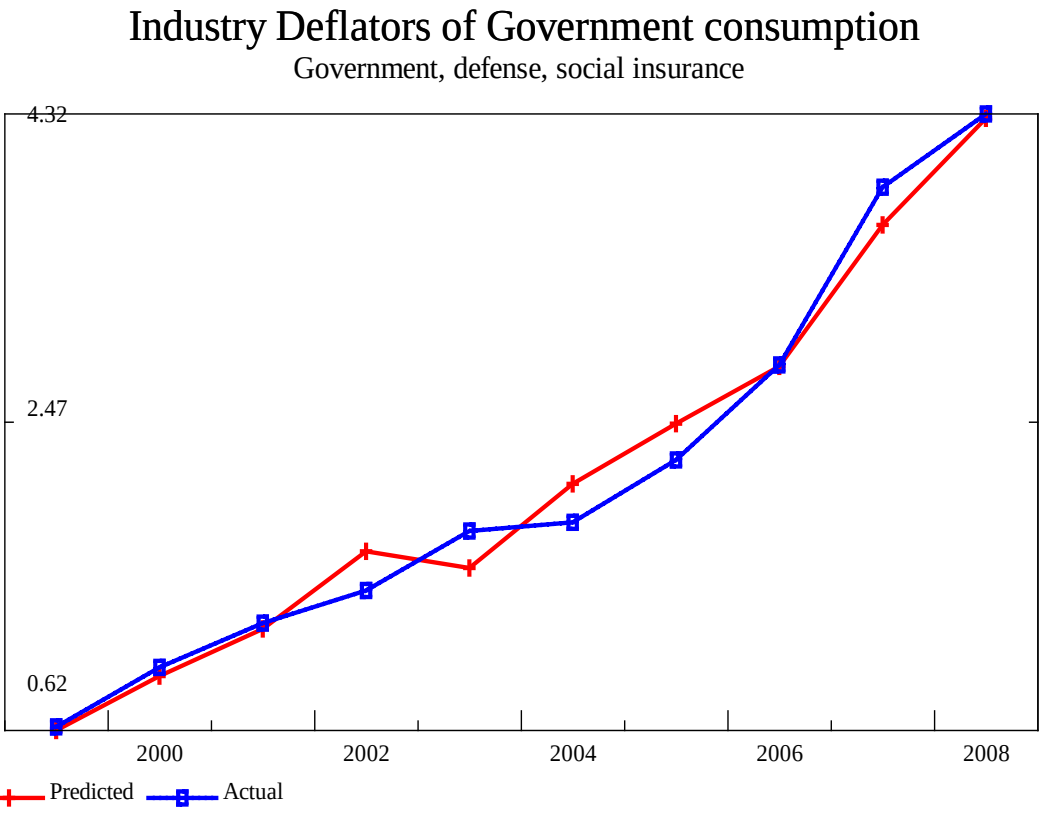


R^2	0.9706
$\bar{R}^2$	0.9653
Durbin-Watson	0.87
RHO	0.56

dpub36 = -0.12936+0.08309*(hcuK/hcuK[1]) + 1.07105* dpce36

dpub36 – deflator of Government consumption of Real Estate
hcuK – consolidated budget expenditures on housing-communal utilities
dpce36 – deflator of Household consumption of Real Estate

The main equations of the deflators block

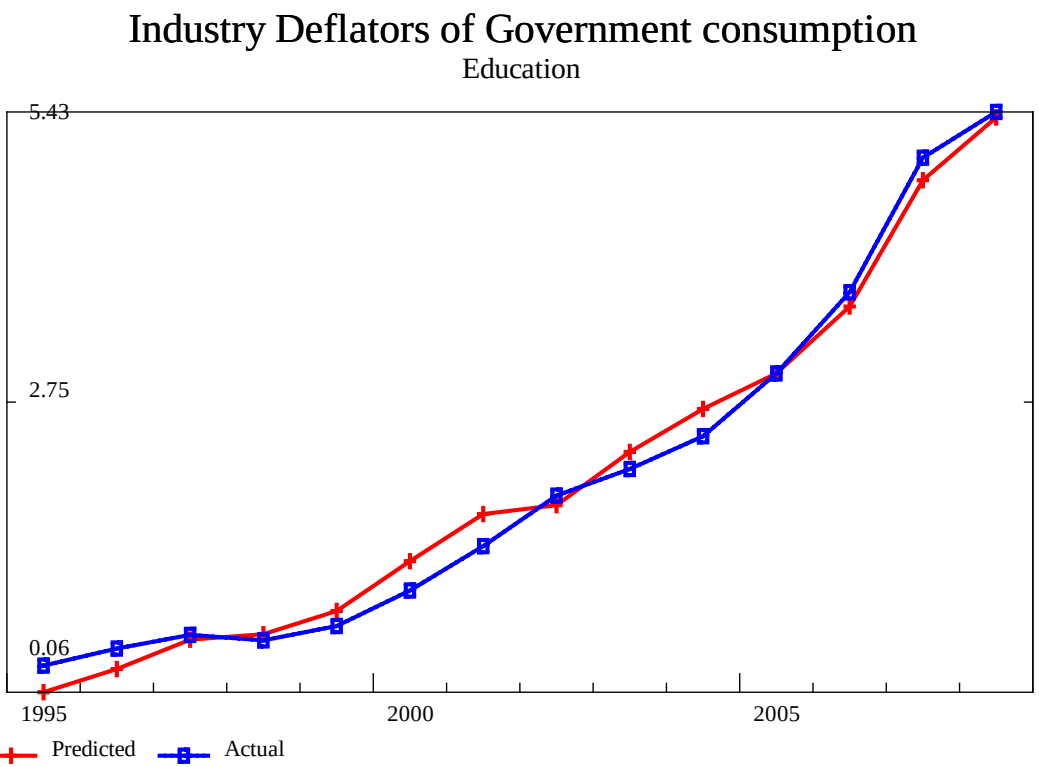


R^2	0.9342
$\bar{R}^2$	0.9154
Durbin-Watson	1.06
RHO	0.47

dpub41 = 0.08242* (gov41[1]/gov41[2]) + 3.14307* (wages41/wages41[1] + 1.08453* dfd

dpub41 – deflator of Government consumption of Government, defense and social insurance
gov41 – Government consumption in current prices of Government, defense and social insurance
wages41 – wages in Government, defense and social insurance
dfd – GDP deflator

The main equations of the deflators block

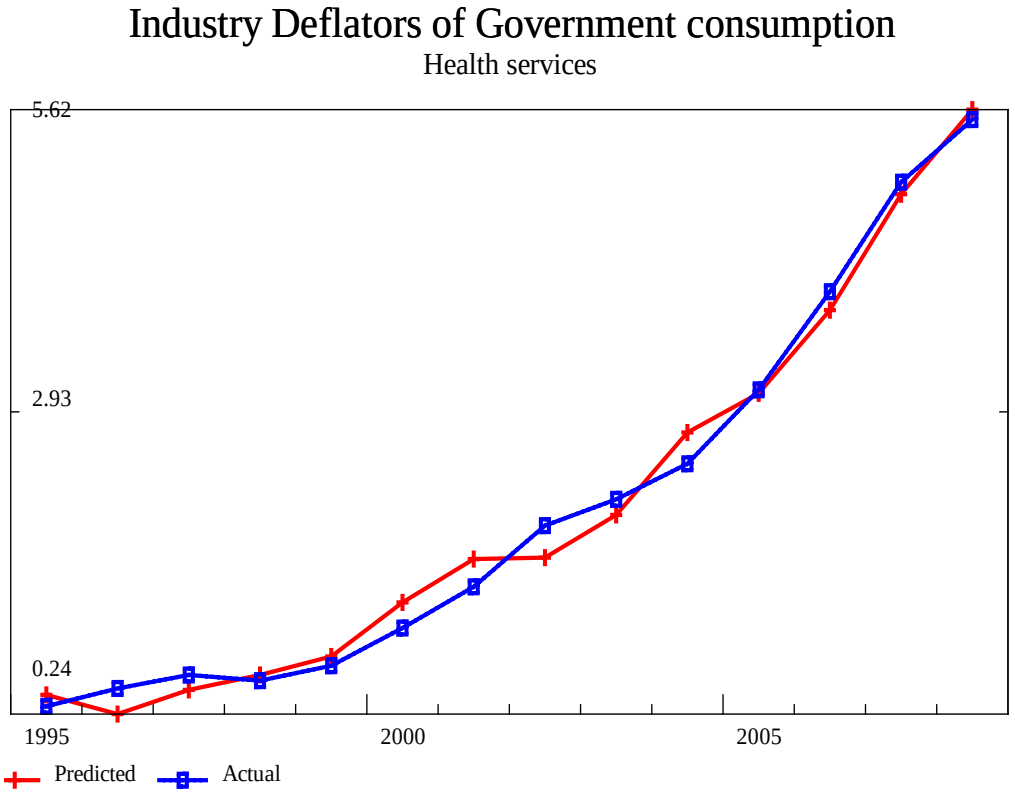


R^2	0.9805
$\bar{R}^2$	0.9770
Durbin-Watson	1.32
RHO	0.34

dpub42 = 0.14186* (educatK[1]/educatK[2])+2.75882*dpce42+0.40289*dpub36

dpub42 – deflator of Government consumption of Education
educatK – consolidated budget expenditures on education
dpce42 – deflator of Household consumption of Education
dpub36 – deflator of Government consumption of Real Estate

The main equations of the deflators block

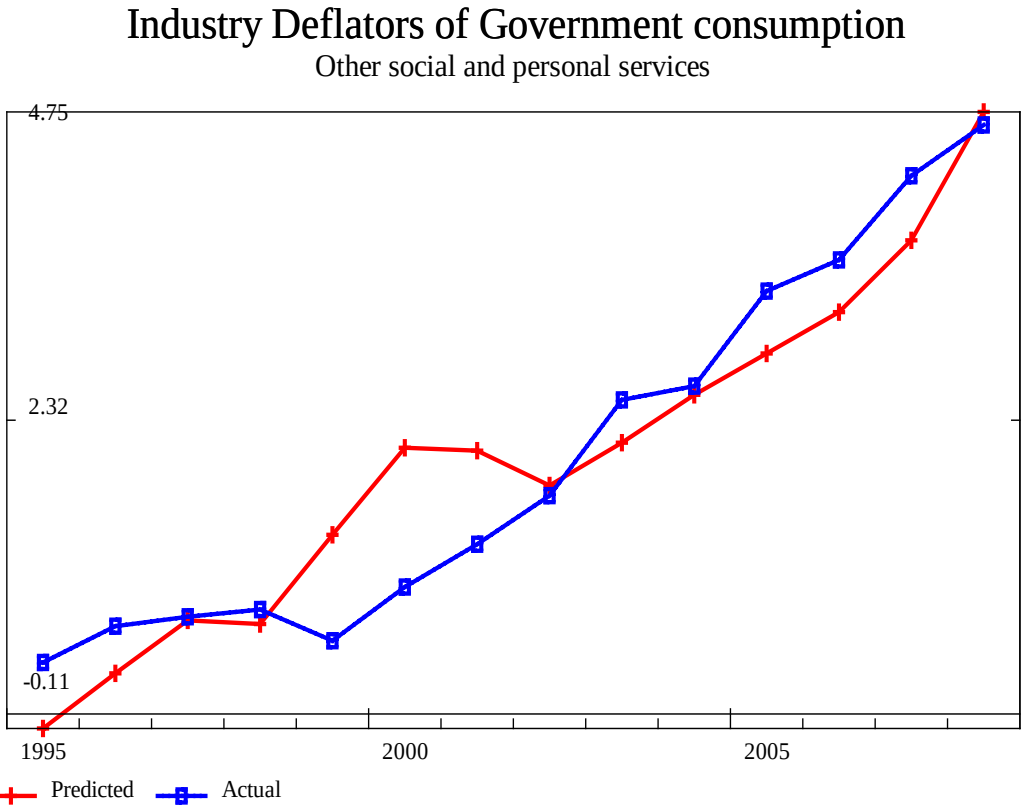


R^2	0.9842
$\bar{R}^2$	0.9795
Durbin-Watson	2.68
RHO	-0.34

dpub43=-0.12227+0.48104*dpub13+0.01349*(gov43/gov43[1])+0.67363*dpce43

dpub43 – deflator of Government consumption of Health services
dpub13 – deflator of Government consumption of Pharmaceuticals
gov43 – Government consumption in current prices of Health services
dpce43 – deflator of Household consumption of Health services

The main equations of the deflators block



R^2	0.9712
$\bar{R}^2$	0.9659
Durbin-Watson	0.87
RHO	0.57

dpub44= -0.35543* (culK[1]/culK[2]) + 0.32128* (socpolK/socpolK[1])+
+1.11718*dfd44

dpub44 – deflator of Government consumption of Other social and personal services
culK – consolidated budget expenditures for Culture
socpolK – consolidated budget expenditures for Social policy
dfd44 – deflator of output of Other social and personal services

Forecast results (base scenario)

	2008	2009	2010	2011	2012	2013
Brent price, $/bbl.	97.6	60.3	76.3	84.8	93.3	102
Consolidated budget indicators						
Income, trln.rubles	15.5	12.9	15.1	17.5	20.0	22.7
oil-and-gas incomes share, %	28.9	26	30.9	31.4	31.8	32.1
Expenditures, trln.rubles	13.8	16.4	18.1	20.5	22.2	23.3
Deficit(-)/Surplus(+), trln.rubles	1.7	-3.5	-3.0	-3.0	-2.1	-0.6
Incomes, % to GDP	37.1	31.5	29.3	29.6	29.2	28.8
Expenditures, % to GDP	33.2	40.0	35.0	34.7	32.3	29.5
Deficit/Surplus, % to GDP	4.0	-8.5	-5.8	-5.1	-3.1	-0.7
Net government papers issue, % to GDP	0.6	1.2	1.1	1.3	1.2	0.9
Net foreign financing of deficit, % to GDP	-0.3	-0.4	1.1	1.0	0.9	-0.2
Oil-and-gas transfer, % to GDP	0.0	7.4	4.7	1.3	1.1	0.0
Reserve Fund and NWF, trln.rubles	6.6	4.3	2.1	1.5	0.8	2.7

Forecast results (base scenario)

	2008	**2009**	**2010**	**2011**	**2012**	**2013**
Population, mln.persons	141.9	141.6	141.7	141.6	141.4	141.0
Retired, mln.persons	29.8	29.9	30.2	30.6	30.8	31.1
Average pension, rubles	4200	6000	7500	8250	8670	9100
Pension fund						
Incomes, trln.rubles	3.6	3.7	3.8	4.5	4.8	5.0
Expenditures, trln.rubles	3.2	4.0	5.1	5.6	5.9	6.1
Deficit(-)/Surplus(+), trln.rubles	0.4	-0.3	-1.3	-1.1	-1.1	-1.1

Thank you!

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