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The Scheme of the Budget Block in the QUMMIR and the RIM models.

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The Russian budget

Tax revenues
Non-tax revenues

Expenditures


Surplus(+)/Deficit(-)

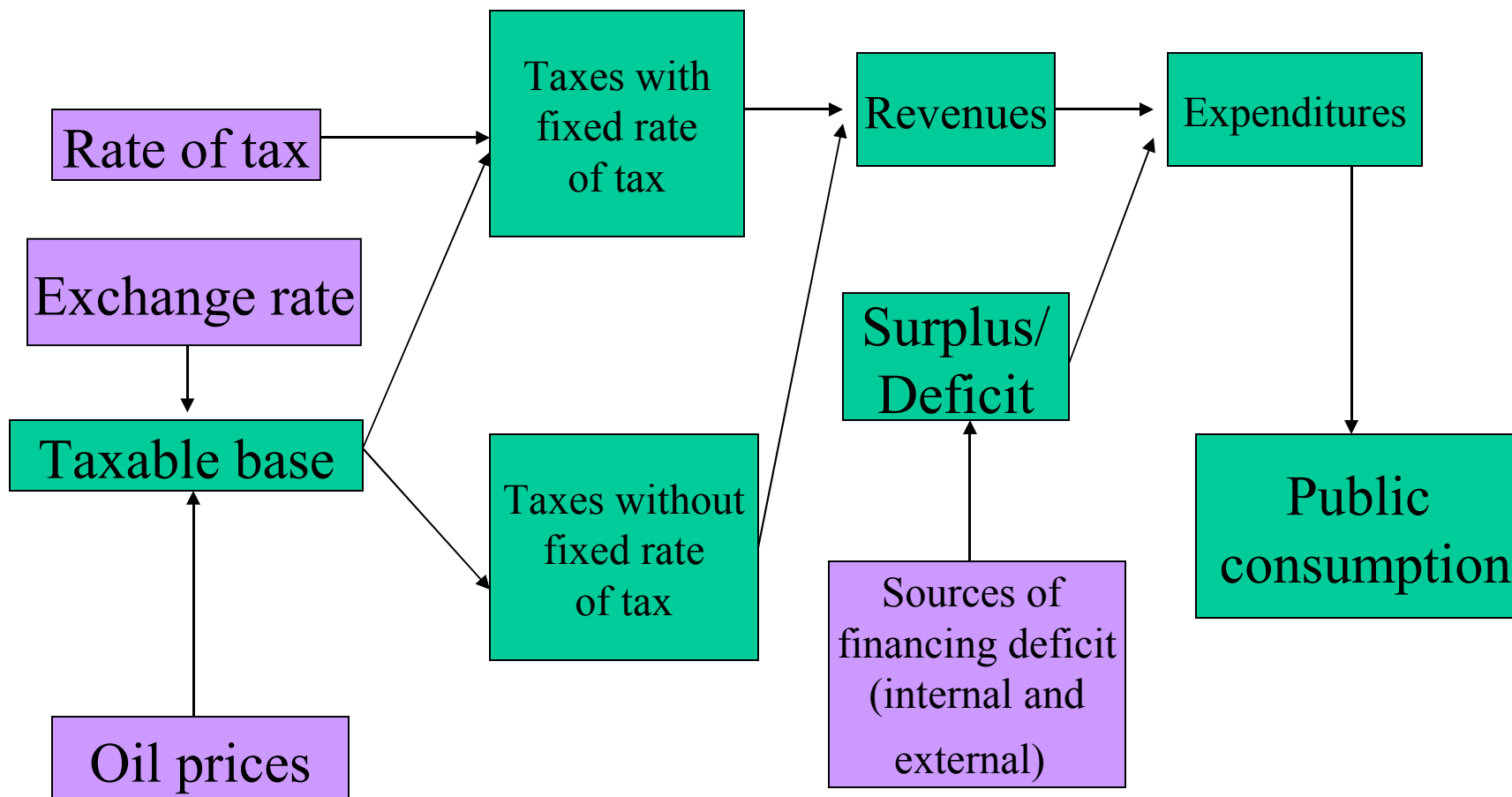
Internal financing of surplus
(including Stabilization fund)
External financing of surplus

Revenues – Expenditures = Surplus/Deficit = - Financing of surplus

The principal scheme of the budget block

 - Endogenous parameters

 - Exogenous parameters



The main equations of the budget block

Revenues:

$$\mathbf{r \text{ Tax revenues} = \text{taxable base} * \text{tax rate} \text{ (1)}}$$

$$\mathbf{r \text{ Tax revenues} = \text{coefficient of tax collectability} * \text{taxable base} * \text{tax rate} \text{ (2)}}$$

$$\mathbf{r \text{ Tax revenues} = \text{taxable base} \text{ (3)}}$$

The main equations of budget block

$$r \text{ infinK} = \text{govpaperKnom}, \text{ostatokK}$$

infinK - internal surplus financing

govpaperKnom - government securities' issue - refund internal debt

ostatokK - value of funds left on government accounts

```
SEE      =      35.71  RSQ      = 0.9816  RHO =      0.29  Obser  =      14  from 2003.400
SEE+1    =      34.78  RBSQ     = 0.9783  DW   =      1.41  DoFree =      11  to   2007.100
MAPE     =      18.12  Test period:  SEE      20.05  MAPE    2004627000.00  end 2011.400
Variable name      Reg-Coef  Mexval  Elas  NorRes  Mean  Beta
0 infinK           - - - - - - - - - - - - - - - - 58.06 - - -
1 intercept        20.04627  3.3    0.35  54.37  1.00
2 govpaperKnom     0.31182  1.6    0.21  54.36  39.65  0.025
3 ostatokK        0.95327  637.3  0.44  1.00   26.91  0.991
```

The main equations of budget block

$$\mathbf{r \ outfinK = outdebTK}$$

outfinK – external surplus financing

outdebTK - repayment of accumulated Soviet and Russian external debt

SEE = 34.63 RSQ = 0.9696 RHO = -0.14 Obser = 14 from 2003.400
 SEE+1 = 34.27 RBSQ = 0.9670 DW = 2.28 DoFree = 12 to 2007.100
 MAPE = 75.95 Test period: SEE 4.02 MAPE 401648250.00 end 2011.400

Variable name	Reg-Coef	Mexval	Elas	NorRes	Mean	Beta
0 outfinK	-	-	-	-	-139.73	-
1 intercept	-4.01648	0.5	0.03	32.87	1.00	
2 outdebTK	-0.95355	473.4	0.97	1.00	142.32	-0.985

The main equations of budget block

$$r \text{ defKstr} = (\text{infinK} + \text{outfinK})$$

defKstr – the budget surplus without the Stabilization fund

outfinK – external surplus financing

infinK - internal surplus financing

```
SEE      =      10.27  RSQ      = 0.9970  RHO =      0.43  Obser  =      14  from 2003.400
SEE+1    =      10.71  RBSQ     = 0.9968  DW  =      1.14  DoFree =      12  to   2007.100
MAPE     =           6.42  Test period:  SEE      3.07  MAPE    307315600.00 end
2011.400
```

Variable name	Reg-Coeff	Mexval	Elas	NorRes	Mean	Beta
0 defKstr	- - - - -	- - - - -	- - - - -	- - - - -	77.82	- - -
1 intercept	-3.07316	3.7	-0.04	338.50	1.00	
2 (infinK+outfinK)	-0.99055	1739.8	1.04	1.00	-81.67	-0.999

The main equations of budget block

$$\mathbf{r \ expK = !incK, defKcom, sezexp}$$

expK – the budget expenditures

incK – the budget revenues

defKcom – the budget surplus

sezexp – the expenditures seasonality

```
SEE    =      20.17  RSQ    = 0.9986  RHO = -0.35  Obser  =   14 from 2003.400
SEE+1  =      18.13  RBSQ   = 0.9983  DW   =   2.69  DoFree =   11 to   2007.100
MAPE   =       0.99  Test period:  SEE    0.00  MAPE   17892.09 end  2011.400
```

Variable name	Reg-Coef	Mexval	Elas	NorRes	Mean	Beta
0 expK	- - - - -	- - - - -	- - - - -	- - - - -	1580.05	- - -
1 incK	0.97175	2699.5	1.21	128.32	1965.36	
2 defKcom	-0.99616	855.2	-0.24	2.02	373.33	-0.491
3 sezexp	179.94531	42.2	0.03	1.00	0.24	0.028

The main equations of budget block

$$\mathbf{expK} = \mathbf{expK} - \mathbf{stdebdK} - \mathbf{naecexpK} - \mathbf{transfF}$$

$$\mathbf{rexprusK} = \mathbf{expusK} / \mathbf{dpub}$$

$$\mathbf{sumexppub} = (\mathbf{rexprusK} + \mathbf{rexprusK}[1] + \mathbf{rexprusK}[2] + \mathbf{rexprusK}[3]) / 4$$

$$\mathbf{r pubexVT} = \mathbf{sumexppub}, \mathbf{fdVT}, \mathbf{time}$$

expK – the budget expenditures

stdebdK – the debt service

naecexpK – the budget expenditures for the national economy (capital expenditures)

transfF – the transfers from the Federal budget to the Pension fund

dpub – the public consumption deflator

pubexVT – the public consumption in constant prices

fdVT – the GDP in constant prices

```
SEE      =      4.40 RSQ      = 0.9651 RHO =      0.43 Obser  =      29 from 2000.100
SEE+1    =      3.98 RBSQ     = 0.9609 DW  =      1.14 DoFree  =      25 to   2007.100
MAPE     =      0.61
```

Variable name	Reg-Coeff	Mexval	Elas	NorRes	Mean	Beta
0 pubexVT	- - - - -	- - - - -	- - - - -	- - - - -	622.35	- - -
1 intercept	431.71279	722.5	0.69	28.66	1.00	
2 sumexppub	0.10875	46.0	0.11	13.07	623.51	0.252
3 fdVT	0.01125	18.2	0.06	3.03	3369.27	0.241
4 time	1.66479	74.1	0.14	1.00	51.00	0.592

The main exogenous variables

(the first line – base scenario, the second line – investment scenario)

	2006-2010	2011-2015	2016-2020
<i>Variables of external conditions</i>			
Brent oil price, \$/bl *	63.9	67.7	71.2
Cut-off price, \$/bl *	27	27	27
Oil export, million t	1321.6	1358	1311
	1321.6	1353	1330
Gas export, billion m ³	1052.0	1174.4	1271.3
	1057.4	1277.5	1513.6
External debt service, \$ billion	16.3	13.5	13.5
Principal payments, \$ billion	50.3	20	20
<i>Exchange rate variables</i>			
Ruble to dollar rate *	26.5	27.4	28.8
	26.5	28.2	31.2
Euro to dollar rate *	1.33	1.36	1.36
<i>The share of non-raw export, %*</i>			
	59	64	68
	60	68	75

* - the average annual index

The main exogenous variables

(the first line – base scenario, the second line – investment scenario)

	2006-2010	2011-2015	2016-2020
<i>Parameters of the consolidated budget</i>			
Growth rate of costs of the economy, %*	1.17	1.14	1.09
	1.17	1.17	1.15
Growth rate of funds left on government			
Cash Balances, %*	0.80	1.00	1.00
Growth rate of government securities' issue, %*	1.48	1.20	1.20
	1.85	1.20	1.17

* - the average annual index

The main results of forecasting

(the first line – base scenario, the second line – investment scenario)

	2006-2010	2011-2015	2016-2020
<i>GDP (dynamics in constant prices, %)*</i>			
GDP	5.1	3.9	3.5
	7.4	7.9	7.8
Household consumption	9.2	5.8	4.6
	10.7	8.9	8.1
Public consumption	1.6	1.4	1.4
	2.3	2.2	2.4
Investment	11.0	6.7	4.9
	13.8	10.9	9.5
Export	4.4	3.8	3.4
	6.2	6.3	7.0
Import	12.2	6.3	4.2
	13.0	7.5	6.1

* - the average annual index

The main results of forecasting

(the first line – base scenario, the second line – investment scenario)

	2010	2015	2020
<i>Parameters of the consolidated budget (% of GDP)</i>			
Revenues	33.0	31.3	30.6
	32.5	30.5	29.7
Expenditures	29.9	29.9	30.9
	31.9	32.2	33.3
Surplus(+)/Deficit(-)	3.1	1.4	-0.3
	0.6	-1.7	-3.6
<i>Share of public consumption in GDP</i>	14.3	12.6	11.4
	13.5	10.3	7.9