Principle scheme of the monetary block in the RIM Model.

My report is intended to explain the monetary block construction in the macroeconomic model. As a matter of fact, today I've only a little experience of this block development in the quarterly macroeconomic model QUMMIR. But half year ago at our institute we began the work concerning the RIM model renewal. In this model we are also planning to introduce the monetary block. At my opinion, one can save the principles and foundations of this block construction in transition from one to another model, because there we have a deal with the financial resources distribution through the banking system, which depend on the aggregate, gross incomes of population, business and government.

At the same time of course there will be a problem to divide business credits by sector credits, or credits by activity category, because in the RIM model we need to forecast sector investments which directly depend on sector banking credits. As for population credits, one must to forecast at least three credit groups: automobiles, house and consumer goods. Now we calculate only gross population credits and business credits.

But the main block logic will remain the same. Now I'd like to present it for you.The principle monetary block target is to reflect the banking system activity and its influence on the whole macroeconomic situation as full as it possible. To reach it I made an attempt to model the main assets and liabilities items of commercial banks and Central Bank.

It's known, that the main central banks instruments of monetary policy realization are refinancing rate and required reserves ratios. The last one is used quarterly, whereas refinancing rate is intended to control the daily money flow from the CB to the banks and through the banks to the economy. But this situation is common for developed countries. As for Russia, there is another way. The CB credits to banks are negligible. Money supply in our economy has been caused by the monetary reserves growth during latest ten years. These monetary reserves growth resulted from the oil and gas export growth. So, the CB work was only to buy the foreign currency flow at fixed exchange rate on the open market and thus to issue the ruble money supply. Since last year the situation has some changed. The foreign currency supply exceeds the demand on the market and this lead to the ruble reinforcement regarding to the dollar and ruble stability regarding to euro. Because of this fact and also because of stable GDP and economic subjects incomes growth which result in increase of investment rating, there were the beginning of foreign borrowings huge growth. This is the banking sector which demonstrates the striking foreign loans growth, which has reached more than 139 $milliards at the beginning of April (whereas the foreign debt of non-financial private organizations is about 181 $, of government is 45$). Its worth to say that more than 40% of bank domestic credits are ensured by foreign money. So, today we see the changing in the sources of foreign currency inflow into the country. Instead of export money we have the borrowed money.

But in fact the CB monetary policy remains the same and constitute of buying the foreign currency on the open market. The only difference is the raising of foreign loans required reserve ratios (for to rise the foreign debt price) and the raising of Central Bank Bonds and Central Bank deposits rates (for to gather the free bank assets). But there is a reverse of the medal, because these rates increase can result in the new short-term capital for the speculations with reliable CB bonds and deposits because of ruble reinforcement. The simple computation shows the 11% yield in dollars if we take into account 5% yield of CBB, about 7% of nominal ruble reinforcement and 4.5% of required reserves.

Otherwise, changing in the sources of foreign currency inflow reveals the huge demand on money from the national economy. Enormous bank foreign liabilities growth and the growth of some successful corporations' external loans demonstrate the lack of domestic money, and the economy fills up this lack with the external money.

Note that the borrowed money banks mainly transfer to the population as the consumer credits. Among external borrowings banks-leader one can see the banks specialized on the retail credits. Because of the huge population credits growth there is a change in the banks assets structure, it means that since the middle of 2004 the business credits share dropped from 52% up to 50%, whereas the population credits share doubled and rose from 10% to 19%.

This banks preference regarding to population credits can be explained with extremely large yield. The effective consumer credits rates are still very high and it's hardly believed, but even a year ago they sometimes reached 75%. There are also the credits on the securities that did the strong impact on the population credit evolution, and nowadays the automobiles credits and mortgages rapidly occupy the market.

One must to say that it's small- and middle-scale business that suffers from the lack of the money sources. From the one side, the banks estimate these types of business very risky and the credit prices for it is too high. From the other side, we haven't enough developed financial market for the small-scale business can borrow there something. For issue the papers to our market, the minimal level of corporation trade turnover must be about 50 millions dollars. And also there is still a strong capitalization concentration at the financial market – about 70 companies generate 90% of market capitalization.

At the same time, the large-scale business can enter the external market independently or with its representative banks and borrow with respectively low rates which are in average 5-6% or LIBOR + 3% in dollars by issuing eurobonds or by syndicated credits.

As for commercial banks, the transferring of financial resources from abroad inside to the country gives a high yield for a few years already because of ruble reinforcement and high rates of Russian economy development. This situation resulted in the dangerous ratio between banks foreign assets and liabilities, which declined up to the crisis level of 1998. Any changing in dollar exchange rate in this instable position can provoke a banks capital loses because of a great exchange rate risks accumulated in the banking system. And now one can see a gradual augmentation of this ratio. Banks borrowings slowed down after the recent dollar rate reinforcement on the world markets, because this reinforcement made the dollar external loans more expensive. Dollar increase were arisen from the financial mortgage crisis in USA and following Europe and Japan CB domestic currency interventions with the purpose of support its banking systems.

It's likely that in short-term outlook the foreign borrowings will reduce because of world markets instability and possible dollar reinforcement. If no, the huge currency risk in the banking system remains, and it can lead to the banks capital loses. For eliminate this risk the CB can to slow down the ruble reinforcement growth for to reduce the external borrowings and at the same time to provide the economy with domestic money. This way the CB can gradually change the banks behavior scheme which implies "foreign borrowings – population credits" to the scheme which implies "domestic money – business credits". It can be done by improving the refinancing system, when CB provide the financial support to the banks and thus stimulate its credit activity regarding to domestic business. Now the credits to banks from the CB are less than 1% in the CB assets structure. Of course there are another ways to increase the money in the economy and turn it to the business credits. For example, our government has about 100 $ milliards savings invested to the American and European papers, which theoretically could work to our economy.

Using our model we can estimate the additional volume of monetary base, which directly depends on CB policy, for provide the economy with money sources and reach the definite GDP growth.

As all the blocks, monetary block has definite set of exogenous parameters. It consists of the share of consumer purchases which paid with credits, the business credits volume, the banks capital, the banks foreign liabilities, exchange rate, required reserves ratios. Besides, the budget block exogenous parameters have a considerable influence, these are stabilization fund formation and government papers issue.

After formation of exogenous parameters dynamics we make a forecast of each item of assets and liabilities of CB and commercial banks. As a result as usually the assets aren't equal to liabilities. And our task to choose the exogenous parameters so that we'll have the balance and assets will coincide with liabilities. Of course, with the remaining of reasonable structure of assets and liabilities. For the commercial banks the balance means that we have find the maximum possible level of credits at this level of economy development and we can introduce the possible sources to provide these credits. For CB these balance means that the demand on money is coincide with money supply, that is whole monetary system is in equilibrium and there are now money deficit or surplus.

Banks assets.

The most important task is to define the volume of credits to population and to business. These parameters are very significant because of its influence to the goods and services market expansion, to the improvement of investment activity, to the level of debt burden and volume of required payments. The population and business credits are chosen so, that by the end of 5-year forecast period (t.e.2011) they will have reached 26% and 55% of GDP. The choice of credit dynamics is mainly guided on the expected GDP growth rates. For example, if we want the remaining of high 7% rates of GDP growth for nearest 4-5 years, it's necessary to invest the economy with 15-16% real rate of growth and support personal consumption rate at 10% in average. This dynamics is unbelievable without adequate level of financial intermediation and especially confident and powerful banking system. Its because this reason that we assume 25-30% year rate of population and business credits growth in our scenario for forecast the economy development on the period from 2007 to 2011. At the same time the for the credit dynamics is been reasonable, we need to carry out the inter-country comparison by looking at the income per capita that will be reached by the end of forecast period. For example, in our latest forecast the income per capita in 2011 is about 7.500 $, that is 4 times less than in Germany. Whereas in Germany the population and domestic business credits are more than 62% and 120% of GDP. So it's early for us to have this level of credits because of low standard of life.

Free banks reserves in CB which consist of correspondent accounts, banks deposits and CB bonds, mainly depends on companies payment turnover. Turnover relies on GDP at market prices, tax payments, people wages, current and capital external operations. Required reserves augment with population and business bank deposits and accordingly to the exogenous required reserves ratios.

The foreign assets increase is coincide with banks capital increase. The reason may lie on banks profit distribution, when some part of profit goes to the capital rise and could be used for reliable and liquid foreign holdings. These holdings mainly consist of current banks accounts in the foreign-banks (which take up 45%) and short-term loans (22%), while direct and portfolio investments occupy 2.5% and 11.7%.

Banks government papers holdings are defined with exogenous gross government papers issue and with the taking into account that 70% of these papers market are hold by commercial banks.

Banks liabilities.

Population deposits depends on population disposable incomes, goods and services purchases expenditures, ruble exchange rate regarding to euro and dollar basket as a factor of preference between domestic and foreign currency deposits. There is also foreign cash among explaining equation variables as an alternative type of savings. Although this parameter has fallen twice times since 2002 (from 37 up to19$milliards) because of ruble reinforcement and partially because of population growing preference to save their money in the banks rather than in cash.

Business settlement accounts reflect the remaining profit at the end of the quarter, which can be computed as GDP minus taxes and wages payments, and also one must take into account the external current and capital financial sources. Long-term business deposits depend on companies possibilities to save money for future investments, that is finally depends on business profitability rate. Business foreign currency deposits reflect external operations.

Banking system capitalization risen with 35-40% and surpass in the gross capitalization dynamics. Nevertheless for middle-term forecast we fixed banks capital at current 14% GDP level. It can be explained by the others industries relative growth in the gross capitalization structure. Because 7% GDP rate will rely on rapid growth of the others industries, first of all the investment sector (mechanical engineering, building) and thus adequate growth of its companies capitalization.

Foreign liabilities are modeled as the balancing item for bank assets and liabilities to be equal. We based on the assumption that whole bank credits must be provided by domestic money market sources, or by external sources. There is no other way.

Let's proceed to the CB balance.

CB assets.

Foreign assets or gold and exchange currency reserves constitute more than 97% of assets. This parameter is modeled according to changing in gross monetary reserves which depends on payment balance items increase. In our forecast the current operations gradually decrease (from 60$milliards up to 2 in 2007-2011) because of export slowing down and import rising. While the capital operations remain at the 60 $milliard year level. And of course while modeling the most important role belongs to exogenous exchange rate chosen in our scenario.

The Treasury accounts in CB constitute 47% and describe the budget incomes – expenditures flows, reflect inpayments to the budget from external financial sources and take into consideration the budget reserve fund formation.

Demand on money consists of currency in circulation and population and business deposits. Currency is estimated according to population goods and services expenditures and consumer price index.

Credits to the banking system are chosen for there will be a balance between money supply and money demand.

Monetary block variables influence on the model.

Currency in circulation influences the consumer price index.

Population bank deposits and gross population savings can be used for estimate alternative population savings (papers) by subtraction.

Population credits influence the personal consumption expenditures and define the debt burden or population required payments.

Business credits influence the investment activity.