Oil Price Dynamics' Impact on Russian Economy

Mikhail Golovnin
Moscow School of Economics, MV Lomonosov Moscow State University, Russia
Institute of Economics of Russian Academy of Sciences
mgecon@mail.ru

Vladimir Zubkov
Moscow School of Economics, MV Lomonosov Moscow State University, Russia
Institute of Economics of Russian Academy of Sciences
msczvv2009@yandex.ru

It is a common wisdom that oil price dynamics effect Russian economy. It is based on the role of energy sector in Russian economy and external trade. Though oil and gas extraction and oil-refining accounted for 10 per cent of GDP in 2013, oil and gas export was equal to 67 per cent of total export in 2013 and 65 per cent in 2014, and oil and gas relating state revenues amounted for 10.5 per cent of GDP, or more than 51 per cent of total revenues of federal budget. Periods of abrupt fall of oil prices (1998, 2008 and 2014) corresponded with economic crises in Russian economy. Thus significant impact of oil prices and oil export dynamics on key Russian macroeconomic variables should be expected.

We estimated VAR model for key Russian macroeconomic variables (GDP, investments, consumption, budget expenditures, oil and non-oil exports, CPI) and exogenous variables (oil price Brent, real exchange rate of the ruble to USD) using quarterly data from the first quarter of 2001 to third quarter of 2014. All variables are estimated as growth rates to the same quarter of previous year. Correlation analysis shows high level of correlation (coefficients higher than 0.66) between oil price dynamics and GDP, oil and non-oil exports. All correlations are positive.

Main results of equations' estimation include: 1) positive, but not very substantial positive impact of oil prices on GDP dynamics; 2) negative impact of oil exports on non-oil exports and vice versa (which may be explained as substitution between both kinds of exports); 3) positive impact from oil price dynamics on non-oil exports dynamics (oil price can be treated as an indicator of overall conditions in global economy); 4) negative impact of real exchange rate of the ruble (not oil prices) on budget expenditures.

Impulse-response functions analysis reveals substantial positive reaction of GDP dynamics on oil price positive shock (especially within first two quarters), negative impact of oil price shocks on non-oil exports and positive impact on CPI (rise of inflation, especially within 4-11 quarters after the shock). Thus we find out some confirmation of oil price positive impact on Russian GDP dynamics, though its impact on investments and consumption is less clear, and for non-oil exports it leads to negative results.

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