

Cross-country Interaction of Business Cycles in Statistical Modeling of Economic Growth

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Economic growth as the percent rate of the increase in real gross domestic product is significantly determined by the stage of the macroeconomic business cycle. The analysis of the developed econometric models of the European country's economic growth for the period 2000-2012 shows that at the same stages of business cycles the rate of the economic growth is very different. This rate depends on the structure of economy that among other factors is determined by the factor of the influence of the economic cyclicity of other European countries – the main trade and economic partners. The result of this analysis was the matrix of «cyclicity export»-the table of the time periods of cyclicity influence of all EU countries on the rates of the economic growth of every European country. The same results were got for the EU countries and the Russian Federation on the quarterly databases of Eurostat and Rosstat. The model of the economic growth of every country includes the factor of economic structure dynamics - the aggregate index of structural differences, and this factor is determined by the regression function with the arguments of cross-country export cyclicity. The estimation of the aggregate index of structural differences of every country was obtained with the help of quarter database of economic activities additional value in fixed prices. The analysis of the model parameters shows that the predicted rates of the Russian Federation economic growth are determined by the different factors in short-term and mid-term periods. In short-term period (1-2 years) the meaningful factor is the share of natural resources mining in gross domestic product. In the mid run (3-5 years) business cyclicity in real sector of European countries positively influences Russian economic growth according to the statistical estimation and calculated statistical regularities. This conclusion is very important for evaluating the consequences of the Russian Federation joining the World Trade Organization. The forecast with the application of the developed models for the European countries has shown that the impact of the cyclicity of the Russian oil and gas price production indices could be decreased if the European countries economic structure changed quite significantly. The quantitative assessment of the required change in the economic structure was obtained for every European country with the calculation of cyclicity export.

Key Words: Economic structure, export cyclicity, statistical regularity, forecast