The Transmission of Economic Fluctuations Between Russia, Europe, Asia and North America

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1 Introduction

Business cycles within individual countries have been studied for almost a century (Schumpeter, 1927). Particularly since the late 1960s, sophisticated statistical methods for detecting and measuring business cycles have been developed, such as spectral analysis of economic time series (Granger/ Hatanaka, 1964), Hodrick-Prescott filtering (Hodrick/ Prescott, 1997), and many others. Most of these studies focused on the U.S. and developed European economies. Later, the progressively growing Asian countries became topical for exploring business cycles. Links among emerging economies have been comparatively less explored, and therefore, a need for more research in this area exists. During the last two decades the question for the transmission of cycles among economies has been moved to the center of interest. Globalized economies are becoming increasingly integrated. The U.S. is dominant and influences other economies. Useful econometric tools for the purpose of analyzing these relationships proved cross correlation analysis, cross-spectral analysis and vector autoregressive models (Gjerde/ Saettem, 1999). The extension of the European Union to Central/Eastern Europe has caused initiatives for studying the transmission of business cycles into transition countries (Tamla, 2003). Growing economic links create faster transmission channels such as foreign trade, foreign direct investment and financial markets.

Our first intention was to analyze the transmission of business cycles from Europe and North America to Russia. But soon we found that the time series available from Russia was not suitable for detecting more or less regular business cycles. The time span only 9 years because after the dissolution of the Soviet Union not only the output collapsed but so did the statistical and monetary system for measuring it (Strohe/ Faber, 2000). Furthermore, they are affected by the singular event of the financial crisis in 1998 that exceeded any possible developing cycle.

Therefore, this paper examines only the dynamic links among the output of some economies of international importance, including Russia between 1995 and 2003, using correlation analysis, Granger causality and VAR models. The primary focus is on the phenomenology of the transmission of shocks from one economy to another. The main methods used for this purpose are the forecast error variance decomposition and the impulse response function. These methods have reached their limits of applicability with data from six countries in only nine years.

Chapter 2 is concerned with the definition and presentation of the data used, its transformation and description. As the first results of a preliminary analysis, we present their descriptive statistics. Chapter 3 explains the theoretical framework and provides a short introduction to the methods used for later analyzing the data. Chapter 4 explains the results of the econometric analysis. The dynamic interactions among GDP growth rates will be examined by the use of estimated vector autoregressive models. Therefore, it includes a number of diagrams and tables, such as those of the impulse response functions that will be interpreted as conditional answers to the question of how rapidly shocks in a single economy are transmitted, particularly to Central/East European countries.