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Causality relationship between economic development and fertility in Romania on regional level

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Abstract

The purpose of this paper is to evaluate the existence of a causality relationship between fertility and economic growth in Romania, on regional level. By using the VAR methodology and the Granger method we intend to highlight the type of causality between economic growth and fertility. The empirical results show that between fertility and economic growth exists a bi-dimensional causality relationship and that the innovation of each variable has a long term impact on the other one.

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1. Introduction

For Romania, the literature studying the relationship between economy and demographics and namely between economic growth and demographic transition, is not that rich. The types of approaches in the literature usually follow two directions: a theoretical one, concerning the theory of demographic transition (Rotaru, 2006; Mureşan 2007), and aiming at the explanatory models such as the growth models, Altar et al (2008); an empirical one, having as a goal the evaluation of certain hypotheses formulated in the literature (Jemna, 2011, 2012; Mureşan et al, 2008). Romania's situation is analyzed as well in studies that focus on the demographic and economic changes occurred after 1989 in the ex-communist countries from Central and East Europe. These studies attempted to

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highlight different explanatory theories for the negative demographic evolution as well as for the nature of the relationship between economic and demographic evolution. Thus, some studies explained the demographic decline as a natural evolution of the demographic transition phenomenon resembling the Western European states (J. Józwiak, I.E. Kotowska, 2008; Zakharov, 1997; Zakharov and Ivanova, 1996; Sobotka et al., 2003), in compliance with the theory of demographic transition. Other studies identified a more or less significant connection between economic growth in the post-communist countries and the accelerated demographic changes that took place here (Ranjan, 1999, Cornia and Panicià, 1996, Sobotka, 2003, Billingsley, 2010). In some papers (Jemna, 2011, 2012), we advanced the hypothesis that after 1990 Romania's demographic situation has not changed dramatically from the previous period but it has preserved the dynamics started several decades ago.

If demographic transition is a consequence of the process of modernization of the society, consisting in social and economic changes generally promoted by the industrial revolution, then the studies concerning the demographic trends use as independent variables some of the macro-social factors in order to measure the degree of modernization of the society: the education level, urbanization, economic growth, production structure, secularization etc. (Solsona i Pairó, 1997). These changes also took place in the communist countries, starting from the second half of the XXth century through massive processes of industrialization and urbanization. The social and economic transformations generated a powerful drive for the subsequent modification of the population's demographic behaviour in the Central and East European countries (Sobotka, 2003). In this respect, the debates between the followers of the Malthusian theory and those of the neo-classical theory show the crucial connection between fertility, mortality and economic growth. Some recent studies (Hondroyannis and Papapetrou, 2002 for Greece, Savaş, 2008, for the Central Asian countries for instance) have investigated the dynamic interaction between demographic changes and economic growth with the aim to systematically explain the process of economic growth and the associated demographic changes.

The use of certain specific methods of analysis of the correlations between the economic variables and the demographic ones, such as co-integration and causality, highlighted that the fertility changes should be considered as endogenous for the infant mortality, the labour market and the economic growth process (Hondroyannis and Papapetrou, 2002). The infant mortality, the labour market and the economic growth are more precisely responsible for the variations of fertility rate.

In the case of the ex-communist countries from Central and East Europe, Billingsley (2010) ascertained that the GDP changes are positively correlated with the fertility rates for all age groups above 20 years, in a model where the independent variables were inflation, wage growth and labour force occupation. The author also highlighted that an increase in the GDP is positively correlated with the postponement of marriage age and the birth of the first child. A similar result was obtained within an extended analysis model of the fertility rate performed for Hungary (Aassve et al. 2006).

In the approach of fertility and economic growth, the literature develops theories regarding the implications of unemployment, shaping thus the thesis which states that unemployment has different psychological influences on men and women (Sobotka et al., 2010). Thus, in the case of men, unemployment is perceived more acutely and represents a factor of postponement for a child's birth, considering that the man is the main supporter of the family, while, for women, unemployment is not necessarily seen as a postponement factor for making a family and giving birth to a child. Thus, in numerous studies the relationship between unemployment rate on one hand, the formation of couples and the fertility rate on the other hand is quite tight (Sobotka et al., 2010).

Based on the hypotheses elaborated in the literature, this paper aims to analyze the relationship between fertility and economic growth for Romania during the post-communist era at regional level in order to assess some of these hypotheses. From a methodological viewpoint, we use the methods of dynamic analysis based on causality relationships. The approach of this paper implies the following directions: the presentation of several empirical evidences of the economic growth and fertility in Romania after 1990; the presentation of certain methodological aspects regarding the causality analysis; the presentation of the results of the time series analysis by means of specific econometric methods.

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