Vector error correction model in explaining the association of some macroeconomic variables in Romania

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Abstract

The purpose of this article is to empirically analyze the long and short runs association of some macroeconomic variables in Romania. Variables used across regression include foreign direct investments (FDI), imports, exports, GDP and labour and we also take into account some economic and financial crisis’ influence on these. In order to establish this influence, a dummy was used for the 2008–2012 interval. Then, all variables were found to be integrated of order one I(1). Cointegration was performed under Johansen test and a VECM was applied according to its result. Our model results point on the association between variables on both long and short runs. Then, Granger test under VECM was equally applied in order to establish the uni- or bi-directional causality between variables. We found that the economic crisis actually caused significant influence on FDI, imports, exports and GDP and rather no influence on labor, as reliable resource.

1. Main text

Here introduce the paper, and put a nomenclature if necessary, in a box with the same font size as the rest of the paper. The paragraphs continue from here and are only separated by headings, subheadings, images and formulae. The section headings are arranged by numbers, bold and 10 pt. Here follows further instructions for authors.

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Two significant periods are to discuss about for Romania, as regarding the FDI story. The first one includes nearly the whole 90ies decade. It was a period of what is today called insignificant FDI and investors; the other was the opposite and the year 2000 of it was conclusive, together with contemporary development. FDI was also more tightly connected to home investments. Top multinationals world-wide were finally present in Romania as well and Romania’s FDI-related landscape radically changed (Andrei, 2008). Then, ten years later, in 2009 and next 2010 the FDI inflow changed once more, but this time in the negative way due to crisis, but maybe not only.

Back to the 2003-2010 interval, the Romania’s FDI inflow met a relatively stable growth up to 2004, then speeded up on 2004-2007, as concomitantly with EU’s important two waves extension. Actually, the country succeeded on multinationals’ interest later one decade later than its neighbour countries. In 2004-2005 the country that had missed FDI ten years earlier was receiving the highest inflow in the region. It was a moment in which FDI inflow and economic growth were really going hand in hand for Romania (Andrei 2008). But there also was the moment of EU and especially Euro-zone member investor countries’ domination in Romania. However, there was no individual investor country’s domination in this case (Andrei 2002-2010). Then the 2010 decline of FDI (after having performed 2004, 2006 and 2008 peaks) was reducing the inflow by some 22%, as compared to the previous 2009. Then, FDI seem to meet a certain recovery in recent years 2011 and 2012, but the heights of before crisis are yet expected to come back.

Source: UNCTAD Statistics
Fig.1: FDI evolution 1991-2012

See nearly the same for GDP growth in Figure 2 about the end of period:

Source: UNCTAD Statistics
Fig. 2. Real GDP growth evolution 1991-2012
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