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Impact of technology-intensive exports on GDP of Western Balkan Countries

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Abstract

This paper aims to determine, by means of regression analysis, which exported product groups, categorized according to their technological intensity, have the greatest effect on the movements in the volume of GDP p/c of the Western Balkan Countries (WBCs). The analysis, based on statistical-econometric methodology, includes 16 commodity groups per each WBC (Albania; Bosnia and Herzegovina; Croatia; FYR Macedonia; Montenegro; Serbia). The data were collected and presented in accordance with the HS4 system classification, which is also used for development of the ITC's Trade Map. The results of the analysis show that those commodity groups produced by medium-low and low technology industries have the greatest effect on the change in the volume of GDP p/c in all WBCs in the period 2005–2015.

JEL classification: C12; O39; P27

Keywords: Product groups; Technological intensity; GDP p/c; WBCs (Western Balkan Countries)

1. Introduction

A nation's standard of living is determined by the productivity of its economy which is measured by the value of goods and services produced per unit of the nation's human capital and natural resources (Porter, Schwab, Sala-i-Martin, & Lopez-Claros, 2004). Productivity depends on the

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value of a nation's products and services, measured by prices on the free market, the ability of the economy to mobilize human resources and etc. (Paraušić, 2007).

Modern technology has brought about a change in terms of strategies aimed at improving the productivity commonly implemented by many companies, which represents one of the most important factors for increasing the export potential of a country and improving its competitiveness in the global market. Back in 1989, Porter pointed out that the strategies relying on low labor costs, i.e., low-skilled labor and export of raw resources, were rapidly losing their importance and were about to be replaced by the strategies based on the scientific and technical development, as well as the advanced infrastructure. Namely, more technology-intensive industries, i.e. those industries that made above-average investments in research and development (R & D), show higher growth compared to other industries (Lall, 2003, chp 2). However, it is important to be thorough when deciding on the technology which is to contribute to the incorporation of science and technology into a socio-cultural value system which is the recipient of such a technology (Radonjić, 2003). The development of science and technology requires adaptable modes of governance combined with flexible funding and spending mechanisms (OECD, 2015).

In modern terms, productivity is the result of greater efficiency; moreover, when joined with proper strategy and temporary monopoly based on low costs or differentiation, it is converted into a permanent monopoly based on innovation (Djuričin & Petraković, 2003). Hence, developed countries maintain their competitive position by fostering the internal factors, such as knowledge, information, cutting-edge technologies and favorable business environment; however, this is not the case with the WBCs (Cvetanović, Ilić, Despotović, & Nedić, 2015). The WBCs are characterized by a number of issues in various segments of the economy and the society, as evidenced by the data published by the official national and international statistical offices and the research of many authors (Bastian, 2008; Gabrisch, 2015; Payne, 2002; etc.).

According to the most recent data published by the World Bank, investments in R & D in Serbia and Croatia, which are both Western Balkan Countries, is currently lower than it was in 1999, when the share of such investments amounted to 1.04%, i.e. 0.85% of GDP, respectively. In 2014, the mentioned countries invested almost equal percentage of funds in R&D in respect to the GDP — 0.8% of the GDP. Other WBCs allocate very small amounts of funds for R&D development, while Albania has generally invested the least funds — between 0.01 and 0.25% of GDP in the last ten years.

If we look at the micro competitiveness of the WBCs, which is based on relative prices and product quality, there is only a small number of companies that can be competitive in terms of prices and quality of their products. Inadequate economic policy often impedes competitive pricing of national high-quality products in terms of the world market. Therefore, it is difficult to attain price competitiveness, especially in relation to certain Asian countries. This points to the conclusion that macro competitiveness is practically unattainable without micro competitiveness and implementation of adequate economic policy.

The research conducted in 2003, in cooperation with Jefferson Institute and the National Bank of Serbia, was intended to show that Serbia, as one of the WBCs, was able to significantly increase its exports; however, the lack of competitiveness not only in relation to the EU, but also in relation to other countries in the region, was identified as the major problem (Despotović, Cvetanović, & Nedić, 2014; Presnall, 2003). More than a decade ago, it was pointed out that the increase in the value of the goods being sold on the international market requires investment in the devastated economy of Serbia; this implied investing in equipment and technology, improved export competitiveness and conquering of new markets. In addition, it was estimated that Serbian economy could not sustain large budget expenditures and ongoing consumption and at the same

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