FOREIGN DIRECT INVESTMENT AND GLOBAL VALUE CHAINS IN THE CENTRAL AND EASTERN EUROPEAN COUNTRIES

A dissertation

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by

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Summary

Over the last four decades foreign direct investment (FDI) and global value chains (GVCs) have gradually transformed international trade and significantly enhanced the economic growth of the world economy. Central and Eastern European (CEE) countries have participated in GVCs led by multinational enterprises (MNE's) and have received significant inflows of foreign investment. FDI and GVCs have played a critical role in promoting the exports and the economic growth of those countries.

This study investigates empirically three interrelated sets of questions: 1). What are the main drivers of inward foreign direct investment in Central and East European countries? 2). FDI is stipulated as a means of integrating host countries into GVCs, led by foreign MNEs. Has FDI significantly improved the GVC participation of Central and Eastern European countries? 3). Exports via GVCs typically contain imported intermediate inputs. Only domestic value added embedded in exports represents the true contribution of a country to its exports. Revealed comparative advantages of Central and Eastern European countries measured as trade in value added (TiVA), is significantly different with calculations based on gross exports? To what extent, has participation in international fragmentation of production (IFP) affected each country's trade pattern and revealed comparative advantages?

The research questions are addressed in three core chapters. Chapter four reports the first empirical analysis, investigating FDI determinants, and focusing on the impact of European Union (EU) membership. Empirical analysis is conducted on panel data retrieved from various sources, such as Eurostat, World Bank, WTO and UNCTAD, covering five years from 1995 to 2015. The methodological approach follows Bormann, Jungickel & Keller (2005) and includes several independent variables of interest: GDP, GDP growth rate, unit labor cost and regional trade

agreement (RTA). The estimated coefficient of EU dummy variable is 0.574 and 0.608, for fixed effect and random effect estimations, respectively, which implies that EU membership increases FDI inflows. The other dummy variable, RTA, which captures entry of CEE countries in bilateral trade agreement, also has impact on investment inflows, but the impact is significant for random effect estimations, and insignificant for the fixed effect estimations.

In chapter five, I measure the GVC participation rate of CEE countries over the period 1995-2009. The participation index is the sum of forward and backward participation, metrics proposed by Hummel and Koopman (2011). Forward participation in the GVCs measures domestic value added embodied in foreign exports, as % of total gross exports of the source country. Backward participation in the GVCs measures foreign content, embodied in exports, as % of total gross exports of the exporting country (OECD, 2016).

Foreign direct investment is argued as one of the most important channels through which GVCs operate. I use regression analysis to test empirically the relationship between FDI inflows and index of participation in GVCs. The regression estimations employ 1) panel data from Eurostat for the main independent variable, FDI stock inflows and 2) OECD TiVA data, from 1995-2009. The study employs the methodology proposed by Kowalski, P. et al, (2015) controlling for country structural characteristics. The estimation coefficient of FDI stock is 1.140 and statistically significant, which implies that foreign investment increased the level of CEE countries' participation in the GVCs. Further, high tariffs are impediments to participation in the international fragmentation of production (IFP), as a one % tariffs increase results in 0.008 decreases in participation in the global value chains. The result supports the hypothesis that foreign direct investment promotes GVCs participation, but trade barriers such as tariffs, quotas and other protective measures undermine production network involvement.

Also, participation rate, which indicates the degree of involvement in GVCs, suggests that CEE countries have increased significantly its engagement in the GVCs since 1995. On average, participation rate of CEE countries in the global value chains was 38% in 1995, with Slovakia having the highest participation rate, 56%, and Poland with the lowest, 32%. On average global value chains participation rate in CEE countries was 53% in 2009, which is 16% points higher than that in 1995.

In chapter six, I employ TiVA from Organization for Economic Development and Cooperation (OECD), for CEE countries to estimate reveal comparative advantage by sectors. Then I compare the estimates with the results based on gross exports. The data covers 42 manufacturing industries, for the period from 1995-2015 and is retrieved from the OECD's TiVA database (2013 edition and 2018 edition). The comparison shows clear reversals in various manufacturing sectors. In the transport equipment sector, the revealed comparative advantage indexes based on gross exports (RCA1) in 2000 suggest that Bulgaria, Estonia and Lithuania all had comparative advantages in the sector, because the corresponding RCA indexes of those three countries were 2.65, 2.31 and 3.44, respectively and were all much greater than one. However, the RCA2 indices estimated with the domestic value added of exports were 0.69, 0.72 and 0.94, respectively, all smaller than one (indicating that those three countries had no comparative advantages in the sector). In the motor vehicle sector, the RCA1 indices of Poland and Romania were 0.76, and 0.66, respectively based on 2011 gross exports, but changed to 1.16 and 1.01 respectively when domestic value added of exports was used (RCA2). Clearly, calculations based on gross exports and domestic value added of export had contradictory comparative advantages patterns. In the electrical machinery sector for 2015 the RCA1 indices of Bulgaria and Estonia were 0.66 and 0.34, respectively in terms of value added, compared to 1.00 and 1.78 in gross exports values (RCA2). The reversed trade patterns suggested by the RCA indexes measured with trade in value added show that gross export data is not an inappropriate indicator of a country's competitiveness. In the age of GVCs, to a large extent the comparative advantages of foreign countries, that provide critical intermediate inputs, determines the competitiveness of Eastern European countries' exports.

This dissertation makes several main contributions to the knowledge of global value chains and foreign direct investment: 1) Estimation of RCA with TiVA for CEE countries, first study on the issue, which improves understanding of the importance of TiVA, with implications for industrial, trade and investment policy. Revealing the current pattern of revealed comparative advantages, it improves knowledge about the distortion of trade statistics on country competitiveness. A high foreign content of exports (backward participation) in CEE countries leads to reversal of trade competitiveness. 2) Further, this is the first empirical study to link GVC participation with FDI in the context of CEE countries. As shown for the transport equipment and electrical machinery sectors, through foreign investment and GVC engagement countries can change their trade specialization and engage in sectors for which do not have revealed comparative advantages. 3) Measuring and comparing the indices of CEE's countries individual participation in GVCs, foreign content of exports and index of production stages contribute to an better understanding of the position of transition economies' in the GVCs. 4) Lastly, this study contributes to the investigation the foreign direct investment determinants, the result for which results for CEE countries are not conclusive. The political factors of particular cases of European membership are mostly understated but they do have a significant impact on the increase of foreign direct investment inflows.