2020

36th IARIW General Conference

Paper Prepared for the 36th IARIW General Conference, Oslo, Norway, August 24-28, 2020

Analysis of the Development of the Automotive Cluster by Network Analyses Methods and its Impact on Employment Between 2015 and 2019

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The multinational enterprises' (MNE) activity influences the receiving economies differently depending on the division and position in the global value chain and their ownership (domestic or foreign). The divisions operate by different labour and capital (physical capital or intellectual property) intensive technology. Moreover, the enterprises in the different levels of global value chain can be characterized by different labour intensive production.

It is particularly interesting from point of view of income and wealth distribution in the case when the MNE has foreign ownership. Therefore, it is important to analyse which is the proportion of wages and salaries and operating surplus in the gross value added (GVA) from income side. If the employment of MNEs is significant, then the wages and salaries increase the domestic consumption and saving. We have the assumption that the labour intensity grows moving down in the supplier chain. Therefore, the MNEs decisions influence the GVA and the employment differently depending from their supplier chain and technology. This hypothesis is proved in our research for the Hungarian automotive supplier chain.

To test this hypothesis, we applied the next method and data. From the VAT databases, we detect the supplier chain of Hungarian automotive industry, we identify the OEMs, the TIER1 and TIER2 enterprises and their suppliers. We analyse these enterprises from network aspect, identify the important nodes from point of view of GVA and employment. The embeddedness and the inventory management method determine the impact of OEM's decision on supplier chain relating to speed of spread and measure of effect.

The effects of exogenous shocks on employment which are arisen by the decision of OEMs, can be forecasted by network analyses method. Our latest research focused on the spread of exogenous shock in Hungarian automotive industry relating to GVA. We drew an analogy between the spread of diseases in society and spread of economic shocks in economic

transactions. In this paper, we extend the developed model for automotive network to employment.

The exogenous shock has a greater impact on employment than GVA in Hungarian automotive industry. It is important because the change of income through employment cause a different adjustment process, as the level shift in GDP. The main objective with this project is to improve the knowledge about the large automotive companies and their value chains in order to understand and forecast their complex effects on national accounts, which is particularly important nowadays, when the automotive industry faces a turning point of global trends and new technological challenges.