Productivity, Structural Change and Informality: The Case Of Russia

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Paper Abstract: This study considers the influence of structural change to aggregate labour productivity growth of the Russian economy. The term “structural change” refers to labour reallocation both between industries and between formal and informal segments within an industry. Using Russia KLEMS and official Rosstat data we decompose aggregate labour productivity growth into intra-industry (within) and between industry effects with four alternative methods of the shift share analysis. All methods provide consistent results and demonstrate that total labour reallocation has been growth enhancing though the informality expansion has had the negative effect. As our study suggests, it is caused by growing variation in productivity levels across industries.

Extended abstract

Technology backwardness creates opportunities of acceleration of productivity growth with adaptation of better available technologies(Gerschenkron 1962). However, many backward countries do not demonstrate the ability to catch up, showing moderate economic growth (Rodrik 2011). What waists the convergence potential of these economies?

We contribute to this debate, focusing on fast expansion of the informal sector of the Russian economy in 2000-s. As it has been shown by Timmer and Voskoboynikov (2014), outstanding growth of the Russian economy before the crisis of 2008 was mostly not technology-driven. The most substantial contribution was provided by investments to oil and gas, and low skills intensive services and MFP in financial intermediation. The latter effect was explained by the initial backwardness in financial intermediation even in comparison with other post-transition economies. Now all these sources are less sound. At the same time, the informal economy is expanding in Russia. What are consequences of this expansion for labour productivity performance?

De Vries et al (2012) applied the traditional (Fabricant 1942; Denison 1962) shift share analysis (TRAD) and evaluated the effect of informality on labour productivity growth in Brazil and India, comparing standard breaking down by industries with the case of split of them into formal and informal segments. They found that the shrinkage of informality in Brazil made structural change more growth enhancing, while the expansion of informality in India made structural change of this economy growth reducing.

However, Dumagan (2013) showed that the traditional shift share analysis could be misleading because of the problem of fixed weights of the base year. Moreover, its interpretation in some
cases is questionable (De Avillez 2012). For example, the contribution of expanding low productive industries to total reallocation remains positive. Finally, the traditional shift share analysis assumes fixed relative prices, which could be wrong not only for developed economies with fast changes in relative prices on ICT goods, but also in economies with the substantial share of export of natural resources, such as Russia.

The present study addresses all these issues, applying recent versions of the shift share analysis, known in the literature, to the Russian industry-level data. We split the Russia KLEMS series (www.worldklems.net) of value added and hours worked into formal and informal segments. Novelty of this paper is in (i) developing new sectoral data of value added and hours worked, which includes informality for the Russian economy; (ii) applying exactly additive chained-indices based methods of the shift share analysis (Tang and Wang 2004; Diewert 2014) of structural change, including informality. We take into account changes in relative prices and, using the approach of Diewert (2014), split the reallocation term into effects of relative prices and employment structure change.

We find that in case of expanding informality (i) the reallocation effect becomes less growth enhancing, if more accurate methods of the shift share analysis are used; indeed, (ii) if we take into account changes in relative prices for Russia, the contribution of oil and gas in labour reallocation is much more modest in comparison with the literature.

Bibliography


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