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### The effect of internationalization on innovation in the manufacturing sector

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#### OBJECTIVE

One of the Russia's principle economic goals is to develop into diversified modern economy integrated into the global world with productive manufacturing and services rather than with primary resources. This will involve significant structural transformations and shifts in economic base, including investments in productivity growth and competitiveness, greater openness to trade and foreign investments. The existing government policies in Russia do not create sufficient incentives for investments in innovations. Barriers to competition, regulatory risks, restrictions on trade and FDI remain high in spite of WTO membership. The challenge for the political agenda is to make internationalization – both trade and investments – have more pronounced positive impact on the efforts to achieve the main economic goals and stimulate innovations.

The main goal of the research is to understand the mechanisms of technology diffusion, upgrading and new product development caused by increased participation of manufacturing firms in international trade. The way to generate incentives to innovate via trade has become an important issue for policy makers in Russia. It is equally important for the national, subnational and EU policy framework. There is much reason to believe that the quality of economic growth in Europe depends on the qualities of all trade and investment partners involved.

#### MAIN RESULTS

We found strong evidence that, as predicted by the theory, the Russian manufacturing firms self-select for export and import by size and productivity. Moreover, productivity advantage prior to international trade entry is much stronger for exporters than for importers. Respectively, the self-selection effect is found to be higher for importers of machinery than for importers of intermediary inputs – raw materials and components.

The econometric analysis of the panel survey data indicates the relevance of the learning effects for continuous exporters: the probability of a firm to start financing R&D and introducing new product/technology is significantly higher for this group than for new entrants and for non-exporting firms. We also found that the learning effects for importing firms are higher than for exporters and seem to be higher for those firms which import technological machinery than for importers of raw materials. These results are consistent with the empirical research for other countries, and show that in general the relationship between import and innovations for Russian firms is similar to what is observable in other market economies.

We found some evidence of complementarity between import of raw materials and import of technology. The probability for a firm to introduce new product is higher for firms which had initially high share of imported raw materials and entered import of machinery. Thus, we see that the import of machinery provides the quickest and the strongest impact on innovations which may have implications for economic policy of Russian government.

### **POLICY IMPLICATIONS**

The working paper proposes that Russia should reveal the potential of internationalization to stimulate industrial innovations through effective policy making and institutions building. Business is interested not only in direct and indirect incentives to innovate. It wants political frameworks in which it can efficiently profit from reduced global and local uncertainty, reduced barriers to innovations and trade, and integrated international production and trade. Government could play an active role in promoting innovation via internationalization avoiding, however, discriminatory practices.

We may suggest several findings from the survey results and empirical assessment of the link between trade and innovations relevant for the policy design:

- There is clear evidence that lowering trade costs can increase firm productivity gains in manufacturing.
- Intermediate inputs and machinery import are particularly significant for productivity gains and incentives to launch technological innovations. So far import of capital equipment and input was significantly mistreated by the policy. Custom's duties and their administration were reported in our 2009 survey as a serious constraint to business by 46% of continuous R&D spenders as compared to 27% among non-spenders.
- The policy should also consider the disadvantages and risks associated with increased international participation of the Russian manufacturing firms. Greater openness to trade and investment may become disruptive for the underperforming firms staying far from technological frontier. Therefore it is important to make trade and innovation policy interrelated and consistent with the broader economic objectives.