

Policy Brief



Politických vězňů 7, P.O. Box 882, III 21 Prague 1, Czech Republic ■ phone (+420) 224 005 123, fax (+420) 224 211 374 ■ www.cerge-ei.cz, office@cerge-ei.cz

What forces Russian firms to increase product variety: FDI or Competition from Import?

SERGEY KADOCHNIKOV, USU; PAVEL ESSINE AND SERGEY SLOBODYAN, CERGE-EI

Summary

There is a large theoretical and empirical literature that investigates the spillover effects from foreign-owned firms on the productivity of domestic companies. At the same time there are few theoretical and no empirical papers that consider their influence on the product variety of domestic firms.

We focus on product variety in our theoretical model and assume that domestic firms' productivity depends on their R&D expenditures. Firms compete by differentiating their product lines. Our theoretical model allows us to identify the factors important to the market structure, in particular the number of different goods produced by the foreign-owned (FDI), domestic, and importing firms. Our empirical findings support the theoretical prediction about the positive influence of FDI and importers on product variety of the domestic firms. The two most important factors of this increase are the competition pressure from other firms and the appearance of new market segments. In our opinion, the discovery of new market segments by the foreign-owned firms is the most important source of FDI spillovers in the Ural region, even though the amount of FDI is very low. To improve the capacity of the domestic firms to absorb these FDI spillovers, we recommend an increase in R&D activity by establishing new or improving the existing links between research institutes and firms.

What is known

The basic model of Markusen and Venables considers two sectors, where the

market for finished goods is monopolistically competitive with horizontally differentiated products. The demanded quantity of every finished good depends on the number of firms on the market. FDI firms and importers can drive domestic companies off the market (negative effect) but the presence of foreign-owned firms also induces an increase in the number of intermediate goods (positive spillover) which, in turn, leads to a higher number of domestic firms offering more varieties of finished goods. The authors analyze the conditions under which a negative or positive effect is dominant.

The model was empirically tested using Irish data on the firms' entry and was supported by the data. However, the model's predictions regarding product variety have not been tested yet.

Predictions of our theoretical model

We develop a model that differs in several respects from the one described above. First, we consider only one sector and focus on product (reduced entry cost) and technological (higher productivity) spillovers. Second, we introduce R&D as a factor influencing domestic firms' ability to absorb the spillovers. Third, technological spillovers directly improve domestic firms' productivity and depend only on the number of foreign-owned firms and technological gap.

In our model, the product spillovers operate through the fixed cost that domestic firms have to incur to introduce a new product. The cost falls if more foreign-

owned and importing firms are present on the market. This specification of cost function reflects easiness of the new product creation and was not considered previously.

The model predicts the number of domestic firms as a function of the number of foreign-owned and importing firms present on the market, the technological parameters of the three types of firms, and R&D expenditures of the domestic companies.

Based on the model we can identify the following factors that determine the magnitude of the effect generated by FDI and importing firms:

- technological gap between domestic companies and foreign firms;
- total demand;
- elasticity of the total demand in the industry;
- R&D expenditures of the domestic companies.

Empirical findings

We interviewed managers of 53 industrial enterprises and trading companies of the Sverdlovsk region with an average labor force of 1000 employees. These were private domestic companies without foreign- or state-owned assets. The questions concerned innovation activity at the enterprises, incentives to innovate and firm performance. The interview covered the period 1999–2002.

We examined the links between the innovation types and the incentives to innovate. We summarize our results in the following table:

Types of innovation undertaken by a firm and incentives to innovate, by percent ¹

	Technological innovations	Product innovations	Marketing innovations	Management innovations
Competition from domestic companies	61	71	67	57
Competition from importers	15	29	17	13
Competition from the FDI companies	12	21	17	13
Change in demand, new segments	39	54	33	30
Export activity	9	12	10	68

¹ The numbers show the percent of the firms in our sample that implemented a particular innovation in response to a particular stimulus. The firms could mention several stimuli and implement several types of innovations as a response, therefore rows and columns are not required to sum to 100%.

Technological innovations: technology and equipment modernization;

Product innovations: creation of completely new products, product proliferation, creation of new packaging, improvement of after-sale services;

Marketing innovations: marketing research, new advertisement and selling methods;

Management innovations: new structure of the management, new organizational structure, new methods of corporate governance, new methods in human resource management.

We find that the most important factor inducing all types of innovations is competition from domestic companies. The second most important reason for innovation activity is the change in demand and appearance of new segments on the market. The competition pressure from the foreign companies has minimal importance. However, how do the new segments appear? Who discovers them? We believe that the foreign-owned firms introduce ideas about products, new technologies of production, product provision and new organizational forms, thus vastly expanding the market and creating new segments for domestic firms.

To understand how crucial the innovation process is for the domestic firms, we looked at firms that reported improved

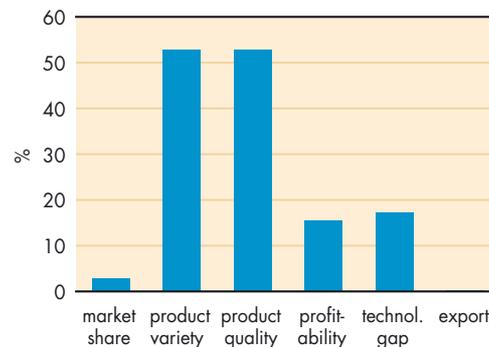
market performance as the result of innovations and compared them to those that reported improvement for other reasons. The results are presented in the chart above.

As shown on the chart, the innovations contribute significantly to the improvement of the firm's performance. The product variety and product quality are the most sensitive to the innovations. This is not surprising given that innovations are directed at these indicators. However, we note that profitability and technological level also improve more for innovators.

Policy recommendations

To conclude, the protection policy will not decrease competition pressure on the Russian companies because they experience pressure from domestic companies mainly.

Difference in the share of firms that improved their market performance due to innovations and for other reasons²



² The chart shows the percentage of the firms reporting improvement in their market characteristics as result of innovations minus the percentage of the firms reporting improvement for reasons not related to innovative activity. A positive change in all characteristics except "technological gap" means an increase of the corresponding indicator. A positive change in "technological gap" implies a decrease in this indicator.

On the other hand, decreased activity of the foreign firms can lead to a decrease in the innovation level which might have detrimental effect on the degree of competition and consumers' welfare as a result.

To increase the percentage of the innovations borrowed from the foreign firms Russian firms should invest in R&D. Taking into account that investments in R&D are usually cumbersome it would be impossible for the middle-size and small domestic firms to support their own research centers. One possible solution could be the establishment of closer cooperation with already existing research institutes where the firms could place their orders.

The research was supported by the U.S. Agency for International Development s SEGIR EP Contract No. PCE-I-00-00-00014-00, reference Russia Task Order No. 803 Improvement of Economic Policy Through Think Tank Partnership Project. The opinions, findings, and conclusions or recommendations expressed herein are those of the participants and do not necessarily reflect the views of the U.S. Agency for International Development.

Principal Investigators:

Pavel Essine, M.A.
Pavel.Yesin@cerge-ei.cz
Junior Researcher at CERGE-EI

Sergey M. Kadochnikov, C.Sc.(Econ.), Lic.oec.int.,
s.kadochnikov@go.ru
Associate Professor, and Dean of the School (Faculty) of Economics
Urals State University (Yekaterinburg, Russia)

Sergey Slobodyan, M.A, B.Sc., Ph.D.
sergey.slobodyan@cerge-ei.cz
Assistant Professor at CERGE-EI



The views expressed in this Policy Brief are those of the authors and are not necessarily those of the trustees, officers, or other staff members of the CERGE-EI or supporting institutions. © CERGE-EI, 2003

The Center for Economic Research and Graduate Education (CERGE) of Charles University is a research and educational institute with independent legal status. Its main purpose is to provide top quality Ph.D.level graduate education in theoretical and applied economics. Economic research, focused on the theoretical problems of economic transition and European integration, represents an important component of CERGE activities.

The Economics Institute (EI) of the Academy of Sciences of the Czech Republic is a center for modern economic research. The EI is primarily oriented towards theoretical and applied economics, econometrics and game theory. It also takes part in important economic policy debates. CERGE-EI is a joint work-place of the two organizations, incorporating all of their activities into a single entity. CERGE-EI has been awarded US accreditation in the year 2000. This make it the first non-US educational institution in Central and Eastern Europe and the former Soviet Union to receive such an endorsement of its doctoral education program.



Politických vězňů 7, P.O. Box 882, 111 21 Prague 1, Czech Republic
phone (+420) 224 005 123, fax (+420) 224 211 374 • www.cerge-ei.cz • office@cerge-ei.cz