

THE IMPACT OF INNOVATIONS ON ECONOMIC DEVELOPMENT IN SMALL OPEN ECONOMIES

Foreign knowledge and experience, and the absorption of it by small economies through international trade plays an important role with investment in domestic R&D, innovations and growth. The question is: how a small and open economy should form its policy strategies for stimulating long-term productivity growth.

Speaking of innovation and growth policy in small open economies, there are a lot of different policies, methods and models that can be used for achieving positive and effective results.

First, the absorption of foreign knowledge has the strongest effects within the trade-intensive final goods and the export-intensive industries, because the export engine is empirically the strongest. Absorption effects through export are self-enforcing. Higher level of export increases absorption, which feeds back into higher export by improving the productivity and competitiveness of domestic firms (Bye, Hen and Grünfeld, 2011).

The foreign knowledge influences the domestic knowledge. It affects the domestic knowledge with advantages and disadvantages. A positive effect is the expansion of knowledge intensive sectors through knowledge diffusion. A negative effect is the constraining of expansion through technological competition. The fact is that foreign and domestic knowledge are both complements and substitutes (Padoan, 1996).

Second, R&D refers to innovative activities undertaken by corporations or governments in developing new services or products, or improving existing services or products. The cycle of R&D consists of processes: synthesize and theorize, explore, hypothesize and clarify, design, develop and test, implement, study efficacy and improve. R&D is crucial for acquiring larger shares of the market through the marketization of new products. According to the OECD data R&D spending by countries in 2016 were 750,7 millions of US dollars in South Korea, 242,7 millions of US dollars in Canada, 203,7 millions of US dollars in Australia, 102,2 millions of US dollars in Mexico and 19,8 millions of US dollars in New Zealand (OECD, 2016).

A positive correlation between the research and development and firm productivity across all sectors is much stronger in high-tech firms than in low-tech firms. The problem is that researchers and development are uncertain in the way how to create a new product. It can be reduced by buying the license for a franchise. But firms must continually revise their design and range of products for growth, so it acquires R&D.

Third, innovation can become a catalyst for growth. Economic growth in innovation economics is the end-product of knowledge. Growth is stimulated by knowledge and technology with a use of patents, R&D expenditures, licenses. According to the Bloomberg Innovation Index in 2016 South Korea had 91,31 points, Canada had 73,44 points, Australia had 73,42 points and New Zealand had 72,09 points (Bloomberg L.P., 2016).

Lastly, export promotion is considered a relatively strong impetus for absorbing foreign knowledge, it could still be strategic to promote export in small open economies (Bye, Hen and Grünfeld, 2011).

For example, innovation policy in South Korea gave a great result in economic growth. In 1950's, American aid was vital for the reconstruction and industrialization of South Korea after Korean War (El Fakir, 2016).

In the 1960's, South Korea firms supplied the U.S. military in the region with construction services, machinery and some finished products. This improved management, organizational and technical skills in South Korea. Until 1961, 70% of public investments were funded by USA's aid. South Korea had three major handicaps: a small local market, lack of natural resources and low technological capabilities to compete locally or abroad. The Korean government switched rapidly from import substitution to export promotion to encourage the acquisition of production capabilities in many new industries. In this period, the learning spaces were dominated by foreign sources of technology. Large firms imported technologies to acquire production capabilities and small firms preferred imitative reverse engineering (El Fakir, 2016).

During the 1970's, the Korean companies improved rapidly their technological capabilities in production and product design. Interactions with foreign customers enhanced the know-how of local companies and new technologies, some mature and some growing, were acquired. The output of large production facilities set-up in many industries to achieve economies of scale economies was larger than the local market could absorb, so Korean firms had to open new markets. The mastery of production technologies progressed during this phase through "learning by doing" and "learning by using" as well as by adaptations of the foreign technologies (El Fakir, 2016).

At the beginning of the 1980's, South Korea faced a dramatic change. The economic crisis pressed the USA and Europe to set up protectionist measures against new industrialized countries. Large Korean firms had to increase their reliance on indigenous resources in R&D with government assistance through exportations subsidies, technology monitoring, financial assistance. Korean companies moved to international cooperation and local R&D to acquire the knowledge associated with the emerging industries (El Fakir, 2016).

In the 1990's foreign investors' confidence was re-established, many large companies were restructured and currency was re-stabilized. Favorable global demand, and information and communication technology expansion encouraged Korean firms to increase their efforts towards more creativity and inventiveness in order to take advantage of new innovation-intensive industries (El Fakir, 2016).

The success in manufacturing in Asia shows 2 main characteristics: firms are able to integrate and evolve from an interactive learning space to another to get the technological capabilities required for each stage of development, institutional framework and organizational arrangements supported the technological effort.

South Korea imitated and integrated the existing technological systems. South Korean strategies were particularly effective in the assimilation, adaptation and improvement of technologies developed outside Korea (El Fakir, 2016).

How Ukraine can use the experience of South Korea to stimulate economic growth? Firstly, if Ukraine takes South Korea as an example, it means Ukraine will absorb the foreign knowledge.

Increasing the level of investment would be crucial for economic development. Foreign companies could open new filial branches in Ukraine, encouraging to create new workplaces and professional experience expansion. Ukraine has manufacturing industries that could develop new

products with a help of investments and by imitating the existing examples of technological systems. New and better law for investors in Ukraine could establish their confidence and reassure them that it's safe to invest in this country.

The support of small and medium business can stimulate the productivity of firms in Ukraine. Further it will lead to export promotion and access to the global market for more of Ukrainian companies.

Educational reforms can improve the quality of knowledge and qualification itself. Learning soft skills will increase the effectiveness and productivity of the companies. Expansion of knowledge in scientific branch may lead to creating and developing new products.

Restrictions for corruption will help Ukrainian economic structure to become more transparent as a whole.

In conclusion, the foundation of economic growth is the optimization of the utilization of factors and the measure of success is how well the factor utilization is optimized. In the future, it is possible that small open economies might become large open economies. Innovations and supporting the most productive and developing sectors will help to stimulate the economic growth in small open economies.

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