The Influence of Cross-Country Technological Transfer on Economic Profit Formation

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Abstract: The article covers the influence of transfer of technologies and export of ideas on development of economy and international competition. The surplus profit in innovative economy is provided at the expense of use of intangible assets. Innovations and technologies provide competitive advantage in the market. The countries, which produce an innovative product, have additional effect of economic growth because of fixing of a bigger value added as economic profit in the import prices.

Key words: Intangible assets • Transfer of technologies • Export of ideas • McDonaldization • Economic Value Added • Cost of disparities

INTRODUCTION

Tendency of innovative economy development. A general economic regularity of the national economy, that is pursuing innovative ways of development, is gradually shifting industrial sector goods to economies of cheaper resources. Enterprise (country) specialization at different stages of business administration rises the efficiency of manufacturing and management [1]. In recent years with mass industry-oriented production there has been forming a multi-functional project making and high technology employment, development and realization of marketing and financial strategies, information disclosure, often functioning in exterritorial diffusion of responsible for these functions performers. In innovative economies by means of cross-country transfers of material and labor-intensive technologies a strategy of pre-emptive relief of a growing tightening of raw material limitations in the near future.

The ideological advantage of the countries transferring their raw material technologies abroad is connected to technology transfer export of ideas that provides the worldwide influence on the economic behavior and creates for the exporting country necessary material grounds of realization of a social and institutional kind. Intangible assets activate human conscience that was unable to perceive it on the ‘material’ level and forced to build up some virtual arena for its practical cognition [3]. Innovative technology, creative marketing, promotion campaigns advance, with the help of psychological influence, necessary innovative economy stereotypes of economic behavior. The perception of intellectual ideas, that are virtually active, conditions the necessary way of thinking and content of production relations of the reproduction of this asset. The ideas realized in intangible assets, in business goodwill, for example, project the assigned relations first-hand by instilling appropriate regulations of the applied financial accounting and reporting standards.

Influence of Transfer of Technologies and Export of Ideas on the Inter-country Competition: Transfer of the virtual space of intangible assets, however, may bring to distorted forms of globalization, that an American sociologist G. Ritzer called “macdonaldization” of society. It is when “the principles of fast food restaurants begin to determine the functioning of a bigger amount of segments of the American society and the rest of the world” [1].

A technological transfer like this can be defined as a modern form of a rather unregulated cross-country competitive struggle. The absence of international institutions that would regulate the cooperation of countries in the general interest a priori creates a practically uncontrollable development, as a result of which the winner is the receiver of intellectual rent. The copies of intangible assets with an a priori high price are exchanged for rare material and intellectual resources, that promotes a wider reproduction of gross value added in innovative economies and enforces the technological dependence of the economies that accept replicated
copies. The solution of the problem of unequal price exchanges lies in the effort integration of developing countries in the coordination of cooperation with innovative economies.

**Distribution of Economic Profit Between Technologically Developed and Developing Countries**: According to the conception of economic profit (Economic Value Added, EVA), a new price is created when a factual gain of advanced capitals exceeds the expected return from the investments with analogical risks. In innovative economies, economic profit is represented in GVA on a larger scale. Surplus profit is created due to the use of intangible assets, the price of which is set rather high.

The economic profit of firm $j$ is calculated according to the formula:

$$p^e_j = p^o_j - WACC_j \cdot K_j$$  \hspace{1cm} (1)

where $p^o_j$ - net (excluding profit tax) operational profit of firm $j$; $WACC_j$ - margin cost of capital of firm $j$ and $K_j$ - price of invested capital of firm $j$.

Using the method of gross domestic product (GDP) calculation of profits:

$$Y = w + p + I + R = \lambda p$$  \hspace{1cm} (2)

where $\lambda > 1$, $w$ - wages, $p$ - gross business profit, $i$ - yield interest of physical interest, $R$ - rental income. Supposing an entrepreneur is an owner of capital and natural resources, moreover:

$$p = p^o, \hspace{1cm} (3)$$

where $p^o$ - total net operational profit (excluding there is no governmental sector in the economy).

In a technologically advanced country, the share of productive capital (including human) in the aggregate factors of production is more significant in comparison with the booming economy[2]. Therefore, international trade and international flows of capital between the countries will fix large values of economic profits of firms of advanced economy [6]. While the economic profits of firms of developing economy participating in foreign economic relations will be much less. Extraction of profit and its assignment is reflected in the balance sheets of the enterprises by increasing equity and as a result the capitalization of enterprises and the economy as a whole grows.

Therefore, a strong international position of the country due to better capital resource will provide additional effect of economic growth by securing more of added value in the form of economic profit in the import prices. Countries which applied new production knowledge (technologies) first and then fortified it in the form of productive capital taking advantage of this in foreign trade receive additional benefits as a result.

Consider the equation (1) in an aggregate form, i.e. for all firms participating in the international exchange provided equality and the constancy of the WACC for all firms and the constancy of the $i$ and $R$:

$$p^e = p^o - WACC \cdot K$$  \hspace{1cm} (4)

Differentiate the equation (4) under the argument of capital:

$$\frac{dP^e}{dK} = \frac{dP^o}{dK} - \frac{WACC}{\lambda} \frac{dY}{dK} - WACC$$  \hspace{1cm} (5)

**This Expression Sets the Following Dependencies:**

- There is an effect of positive feedback, first of all, for the innovative economy. The increment of economic profit stimulates the macroeconomic dynamics which in turn leads to the further growth of the economic profit.
- Growth of WACC reduces economic profit, but this is accompanied by the increase of the $i$ and $R$, which means that there is only the redistribution of income to the factors of production. The increase in the cost of capital resources of the innovation economy reduces its competitiveness in the traditional goods markets. It is becoming more profitable for the population to purchase cheaper imported goods, so the volume of national production in these sectors is gradually reduced and subsequently terminated. The burden of the increased cost of capital resources are reallocated to the world economy which consumes exported by innovative economies knowledge-rich products. This partly explains the high level of income on labor and human capital forming a qualitatively different standard of life of the population of developed countries.
- Redistribution of income between the owners of the factors of production occurring as a result of the growth of value of capital and natural resources, accompanied by a decline in the standards of
business profits reduces the share of the primary and secondary sectors in the structure of national production. As a consequence of it social and institutional structure of the society changes [8].

Sector structure of the extended reproduction of GVA in the innovation economy has clearly defined priorities. The within-sector innovations are selective and provide income growth and reduction of costs primarily in new industries. Moreover, as it has been proved, a source of support of the process of creation of value added in innovative economy is partly the growing demand of developing economies on imported products with a high share of the contribution of intellectual labor.

To the present time sufficient statistical material is collected, testifying to the fact that in developed economies, it is more invested in knowledge and technology, while the share of investments directed at the improvement of the basic production assets is being reduced. Today there is a strong belief that the technology (the production knowledge) is or precisely the development of technology (increasing the level of production knowledge) is the determining factor of the positive economic dynamics. So M. Christensen defines technology as "the processes by which the organization transforms inputs of labor, capital, raw materials and information to the products and services of a higher value" [4] and innovation as a change in technology.

Without a technological development the economic growth can only occur to a certain level treated by the neoclassical tradition as a steady-state condition. The way the cooperation institutions of developing countries effectively manage to oppose to imposed exchange format in terms of the cost of disparities influences the efficiency of the technological investments in the process of cross-country.

REFERENCES