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THE INFLUENCE OF INNOVATION SPILLOVER ON ECONOMIES

Innovation as a key part of current economic development is influenced by a number of factors and driving forces. As an economic phenomenon the complexity of innovations pursue their ability to influence not only industries but also countries' economies and even regions.

Undoubtedly, it is difficult to claim that the innovation level of the country as a whole is not related to the level of innovation activity of local economic entities. Since innovation is often implemented firstly on the level of enterprises it is therefore important to understand how innovations influence all actors of the global economy, starting at the level of national and multinational corporations and in turn how these organizations can influence economies of countries as a whole.

Innovation as a multifaceted economic category has been established by authors differently, using a variety of research instruments. Schumpeter, who is credited as being the creator of the economic notion of innovation, defined it as the application of novel combinations of already-existing productive forces to address business challenges [1].

On the other hand, if we look at innovations as a part of corporate strategy, then, according to Twiss, innovation is a process that combines economics, management, science, and technology in order to produce an original product. This process, therefore, starts with the creation of an idea and continues through its commercialization through production, exchange, and consumption [2].

As has been suggested above, innovations cannot be identified using one approach and therefore the measurement of innovations and their influence on economies is also a complex matter. Many indicators that

are used to determine the level of innovativeness of economies, directly and indirectly, depend on both individual economic actors and transnational corporations.

Although many people think of startups when they consider innovation and adaptation, large corporations aren't far behind in terms of invention production. Even though 52% of small firms are regarded as innovation leaders, 43% of large corporations now still find themselves having stable innovation indicators [3].

In fact, larger companies frequently have an advantage when it comes to research and development and the establishment of programs centered on innovation because they typically have greater access to resources and labor than smaller companies. Thus, TNCs have significant advantages in the global innovation market due to a simplified system of access to financing, however, since innovation is not the main area of activity of most corporations thus the risks from the implementation of innovations are hedged activities of TNCs.

Historically, as industries restructured in the wake of the new economy boom and bust in the early 2000s, TNCs began to shift R&D resources to countries with fast-growing markets that offered low-cost access to highly skilled talent and technology. Such countries as China, India, Brazil, Israel, Ireland, and others attracted investments in R&D from TNCs with headquarters in the countries of the so-called "innovation enclave": Europe, North America, and Japan. This has created a phenomenon of innovation spillover.

Innovation spillover (interchangeable with technology spillover) is a process of an innovative push through innovation creation that "spillovers" through movements of capital, technologies, and employees.

Grossman and Helpman defined technological spillovers as an occurrence when:

- firms can acquire information created by others without paying for that information in a market transaction;
- the creators (or current owners) of the information have no effective recourse, under prevailing laws, if other firms utilize information so acquired [4].

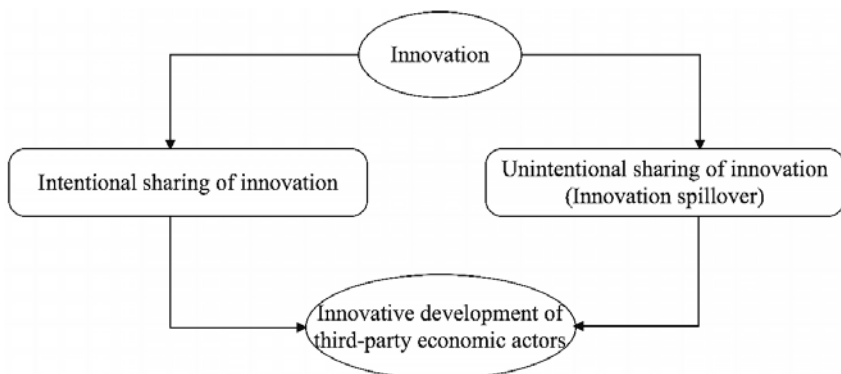


Figure 1. Ways of allocation of innovations

Source: created by the author

In essence, as shown in Figure 1, innovation spillover can be summed up as the unintentional sharing of innovation by the creator of the innovation to another economic actor that was not involved in the creation of the innovation itself. After the spillover takes place however the recipient of innovation spillover reaps the benefits of said innovation and uses the advantages for its own further innovative development.

There has been a noticeable geographic movement in where US multinational corporations' R&D centers are located. TNCs were able to relocate their manufacturing starting in the 1980s in order to benefit from the low cost of labor and the lax social, environmental, and safety requirements provided by emerging economies.

According to The Peterson Institute for International Economics in 1989, just five nations: the United Kingdom, Germany, Japan, France, and Canada, were the locations of 74% of all international R&D carried out by US TNCs. By 2014, that percentage had decreased to 43%. China, India, and Israel are just a few of the new R&D hubs that have lately transitioned from being developing nations [5].

United Kingdom, Germany, Japan, France, and Canada were prominent R&D locations because of their historical importance as global centers of scientific research and are referred to as traditional hubs. However, by 2014 it is clear that the growing importance of new locations has been given to nontraditional hubs: China, India, and Israel.

This caused an interrelated decline in the relative importance of traditional R&D hubs.

As a result, the shift in R&D investment away from traditional innovative hubs appears to challenge conventional conceptions of comparative advantage and economic progress, as most economists would consider only the most advanced industrial countries to have a comparative edge in innovation. g paradox disappears.

For this reason, similar to how multinational corporations have established international value chains that supply low-wage developing nations with the cutting-edge materials they require to produce and export technology-intensive goods, US multinational corporations have established an innovation value chain that combines the raw engineering talent present in developing nations with the sophisticated, specialized knowledge required to produce frontier innovations for the global market. These countries in turn in the long-term perspective can use the presented innovations in the form of new technologies for their own benefit by copying them or using the skills they earned while creating their own unique innovations.

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