BENKOUAR Mélissa

Numéro étudiant : 21803487

Théorie de la firme – Essay on Economic complexity

The word "complexity" is taken from the Latin word "complexus" which means "entwined or twisted together (source: the free dictionary). A system is defined as complex when the economic agents that composed it are linked together by connections. (In the economic world, a complex system is characterized by a diversified economy as soon as it is specialized in the production of different goods and services). However, in traditional economic theories, the concept of absolute advantages of Britain economist David Ricardo, defines specialization as the solution to economic development. According to this theory, a country is well advised to specialize its production in the good which it is the most competitive and to exchange those that it does not produce. Even so, economic diversification is considered an important concern of economic growth. It is defined by the process of stirring an economy from a single source of income to a multiple source. "Economic diversification is very relevant for poorer developing countries to create jobs and foster economic development" (Department of Economic & Social Affairs, Economic diversification: Explaining the pattern of diversification in the global economy and its implications for fostering diversification in poorer countries, August 2017). By definition, a country with a diversified economy is defined as a complex system thanks to this diversification, since it is the result of interactions between the agents that compose it. Unlike David Ricardo's theory of absolute advantages, it is proven that countries with a complex economy are richer than countries that are specialized in the production of a single product. Indeed, according to the studies available on the Atlas of Economic Complexity, countries with a diversified economy are among the countries which are considered as rich. For example, Bangladesh come 108th among the richest economy and 105th among the countries with a complex economy, while the United States ranks 5th among the richest economy and 11th among the countries with a complex economy. According to the examples cited above, it is right to argue that a country's economic wealth is directly linked to the complexity of its economy. Diversified its economy is, therefore, necessary in order to develop. However, diversifying also implies to be able to innovate. Those innovations are the result of collaboration between agents and the mix of savoir-faire. By mixing savoir-faire and innovations, it is possible to be able to diversify in the productions of several goods and services, consequently to switch from a single source of income to several sources.

Studying the concept of economic complexity begs the following question: do we live in a winner-takes-all economy? The first part of this essay will deal with the role of diversification in the evolution of an economy and the relationship between diversification and economic development. The second par will tackle with the role of savoir-faire and innovations and with the principle of relatedness.

Diversification is a structural change in economy. It allows a country to transfer its resources to a larger type of productions, particularly technological ones, and therefore to increase the quantity and the quality of its jobs. This change would make possible the fact to move from low-productivity jobs, such as agriculture, to higher-productivity jobs, such as manufacturing. Higher-productivity jobs increases purchasing power and purchasing power, allows people's consumption. Technological sectors are less-exposed to the fluctuation and to the instability of prices than raw materials such as oil. The poorest countries, that are generally small or geographically isolated, highly dependent on raw materials, minerals or primary agriculture, have a most specialized economy and then, they are exposed to sector shocks such as oil shock or price fluctuation on global markets. For example, oil represented 84% of the exportation of Venezuela (Atlas of Economic Complexity). The demographic growth of poor countries can be an asset for these countries since they have a large amount of workforce available to work. Diversification is essential to move from low-productivity jobs to high-productivity jobs concentrated in urban areas. This implies increasing the number of exportation and the nature of the products exported, but, also, the action of the public authorities.

Diversification allows to insure stable economic growth. For example, the future dynamics of economic growth for France, that is a country with a diversified economy, is about 2.8% over the next 10 years, according to the Atlas of Economic Complexity. "France has added 5 new products since 2004 and these products contributed $34 in income per capita in 2019 (Atlas of Economic Complexity). On the other hand, a country such as Bangladesh, which ranks 105th among the countries the most complex, has added 12 new products in the last 15 years and its economy is expected to growth by 3.6% per year over the next 10 years (Atlas of Economic Complexity). This example clearly demonstrates the relationship between diversification and economic growth. The economic growth forecasts for a more specialized country than a country like France, which is increasingly diversifying, are higher.

To insure growth stability, it is necessary to diversify its economy, but, to be able to produce more and more complex products, it is necessary to have knowledge and savoir-faire. How can savoir-faire allow producing more?

Know-how is "knowledge of the methods or techniques of doing something, especially something technical or practical". (Collins dictionary). Previously, it was emphasized that diversification is necessary to ensure economic growth. The more sophisticated is the basket of export of a country, the more the country's economic interactions on global market increase. Hidalgo, Klinger, Barbassin and Hausmann has pointed out that the products with a high complexity were grouped together while the products with low complexity, therefore which require less knowledge, were more space out. Knowledge complexity allows specialization of individuals that can interact together. But, to interact individuals have to be regrouped in "knowledge hub" such as cities. Knowledge complexity drives space divide but it also allows countries to diversify their production and thus to ensure economic growth. For example, the biggest technological innovations of the few past years have come from the same technological innovation hub, the Silicon Valley in the San Francisco Bay Area. In addition, near this techno pole, there are universities of Stanford and UC Berkeley. This hub brings together knowledge and know-how. Know-how, in addition to allow the production of complex products, can also be even more efficient when it is mixed with others. Within the same country, making the link between different regions specialized in the production of a specific product can lead to the production of more complex products and therefor to diversify its economy. Connecting regions that have complementary capabilities can allow diversification opportunities that can upgrade the economy. Mastering several skills makes it possible to combine them to create new ones. What allows innovation is the diversity and proximity of the different know-how. Finally, the countries which know how to preserve a great diversity and great complementarity in their production are the most successful.

In conclusion, diversifying its production enables a country to ensure the creation of higher productivity jobs and to increase its basket of exports. A country therefore production is diversified has a richer economy than countries specializing in the production of a single good. In addition, even if knowledge and know-how is concentrated in specific areas and this leads to spatial disparities, making cities richer than rural areas, the connections that can take place in these hubs ensure the mix of know-how and therefore creates innovation.

Since knowledge and know-how become more concentrated, innovating is possible. Innovating allows to produce technologies, to export more and to consume more. In that case, products are distributed more efficiently in the world or in national space and the GDP can increase. Looking at this information, it is safe to say that we live in a winner-takes-all economy, since even if more and more countries try to diversify, the richest countries, whose economy is already diversified, hold 60% of global wealth. As soon as a country diversified, it ensures the stability of its economic growth and increases the connections between its agents. The complexity of its economy therefore allows it to be considered as a “winner”.