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Trade, FDI, and Human Development: An Analysis of Developing Countries

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Abbreviation

ASEAN:	Association of Southeast Asian Nations
Ex:	Export
EU:	European Union
FDI:	Foreign Direct Investment
GDP:	Gross Domestic Product
GNP:	Gross National Product
HD:	Human Development
HDI:	Human Development Index
ICE:	Import Content of Exports
Im:	Import
IIT:	Intra-industry Trade
MERCOSUR:	South American Common Market
MNE:	Multi National Enterprises
NAFTA:	North American Free Trade Agreement
OECD:	Organisation for Economic Co-operation and Development
RCA:	Revealed Comparative Advantage ()
TRI:	Trade Restrictiveness Index
UN:	United Nations
UNDO:	United Nations Development Organization
UNDP:	United Nations Development Program

1. INTRODUCTION

Trade is essential to economies, facilitating the exchange of goods and services to promote economic growth and efficiency while simultaneously helping countries leverage competitive advantages to develop products with which they have an edge, leading to more efficient use of resources (Simon, 1955). Export, one of the components of the trade, plays a vital role in a country's economy by generating revenue, balancing trade, and creating employment opportunities. Furthermore, export helps to enhance a country's competitiveness by exposing domestic companies to advanced technologies and international business methods. Another component of the trade is import. The ability to import goods and resources from other countries is crucial as it provides access to a wider variety of products, increasing competition and driving down prices for consumers (Ghymn, 1983). Additionally, it can also help countries to stay with new technologies and advancements by accessing them through imports. Maintaining a balance between the value import and export is crucial for a country's economic stability and growth. Positive trade balance, in which exports exceed imports, demonstrates a robust domestic economy and can lead to economic expansion. By contrast, negative balance, where imports exceed exports, can signal dependence on foreign goods and services and put additional pressure on domestic economies. A country's trade balance also impacts its exchange rate as well as global markets - therefore keeping an equilibrium between import and export activities is vital to its economic prosperity (Lane & Ferretti, 2002).

FDI is vital to developing country economies because it offers important capital, innovation, and employment opportunities. FDI may drive economic growth by increasing demand for domestic goods and services, resulting in greater employment and a higher quality of life. (Razzaq et al., 2021). By reducing the demand for imports and promoting exports, it can also help strengthen the balance of trade. Additionally, FDI may help the host nation by transferring skills and expertise and fostering the development of new sectors. Additionally, FDI might increase local market rivalry, which could result in lowered consumer costs and higher product quality. FDI may, in general, significantly contribute to the growth and development of underdeveloped nations (Schneider et al., 2022).

Conventional development strategies have not been effective in closing the gap between developing and developed countries, leading to the emergence of people-centered approaches in the 1970s. These approaches and policy plans prioritize human welfare over income growth. This shift in thinking led to the creation of Human Development Index. UNDP created an index value

in 1990 to calculate the human development index of countries, based on Amartya Sen's work in the field of development (Sen, 1979). With this index value called "Human Development Index" the development of countries in three main fields (education, health, income) is analyzed and makes international comparisons possible. Other than having a high level of wealth, the most common characteristic of countries at the top of the Human Development Index ranking is that their income distribution is comparatively more equal than other countries (Sharps et al., 2008). In addition, the countries in this category draw interest with their balanced population growth, developed health facilities, stronger gender representation in all sectors. On the other hand, developing countries has high population growth rate, low schooling and health facilities and low human development rate (Foster & Alkire, 2010).

By analyzing how institutions, such as laws and regulations, affect economic activity, institutional economics plays a crucial role in the growth of economies. Therefore, it is essential to comprehend how institutional policies and practices affect economic growth if it is aimed to promote economic development in developing countries (Bradley, 2021).

We can better understand how trade agreements and regulations may impact how the advantages of trade are distributed within a society by using institutional economics. For instance, trade liberalization can improve economic growth and overall prosperity, but it can also result in job loss and income inequality if measures aren't put in place to mitigate these negative effects. (Edwards, 1993). Institutional economics can assist decision-makers in creating trade agreements and policies that support both economic growth and the equally distribution of trade benefits. (Ferri, 2003).

Concentrating on developing economies might have a few advantages. One advantage is that it is possible to observe rapid economic growth and development. Research can lead to fascinating topics like understanding what hinders growth, the economy's structure and impact of institutions on it. Furthermore, developing economies offer insights into the effectiveness of various economic institutions and policies; by identifying those which encourage economic development while simultaneously decreasing poverty levels this research may have an enormous effect on their economic growth and development.

Scope and Limitation of the Study: The scope of the thesis is based on the investigation of the relationship between international trade and FDI and HDI. The study was also limited to developing countries with a time period covering years 1990- 2018 (28 years). The time frame of

1990 to 2018 was selected because it covers the range of the oldest and most recent HDI data available at the time of preparing this study.

In this thesis, it was focused on developing countries. Because focusing on developing countries may offer various advantages. These include the opportunity to observe rapid economic growth and development, which can provide fascinating research topics like development obstacles, shifts in the economic structure, and the impact of institutions (Hausmann & Rodrik, 2002). Additionally, authors found that the variety of economic policies and systems in developing nations can provide useful information regarding the effectiveness of various economic institutions and policies. (Acemoglu et al., 2001). Besides, the study may have a significant impact on these nations' economic development by locating policies and institutions that may promote economic growth and alleviate poverty (Easterly, 2002).

2. OBJECTIVES TO ACHIEVE

By thinking about how exports affect economies and the ways that a robust economy might draw foreign investment. It is possible to comprehend the relationship between exports, FDI, and HDI. Exports can boost income and generate employment, which can increase economic growth. Foreign investors could find a country more alluring as it develops economically because they can see the potential for lucrative opportunities. Foreign investors may find a countries with a broad export structure more alluring since it is less likely to be impacted by changes in demand for a particular good or service. By giving people the chance to earn higher incomes, exports can also aid in the reduction of poverty and inequality.

Briefly, foreign investment can also boost exports by providing companies with the resources and technology needed to improve their production processes and expand into new markets. In addition, robust economy can foster human development by enabling the government to allocate more resources towards education, healthcare, and other social initiatives.

The connection between imports, HDI and FDI can be explained by analyzing how imports affect a country's economy and how access to various goods and services can enhance human development. Imports can provide a country with access to a variety of inputs for production and a diverse consumer base which can help to drive economic growth and improve living standards. Imports can provide a country with access to inputs for production, which can boost the productivity and competitiveness of domestic firms. Additionally, a diverse import structure can also make a country more attractive to foreign investors as they can see the potential for profitable opportunities.

For emerging economies, it is crucial to explain the connections between international trade, foreign direct investment, and the human development index because these three variables are interdependent and can have a big impact on a overall development and economic progress (Michie, 2001). New technology, capital, and expertise can be introduced through trade and FDI, which can raise productivity and income and ultimately improve human development metrics like health, education, and living standards. (Yusuf et al., 2020). Nevertheless, in the absence of appropriate regulations and institutions, these flows can have undesirable implications such as rising inequality. Understanding the connections between these three criteria might thus assist policymakers in developing countries in establishing effective policies that promote sustainable and inclusive growth. (Stern, 2002).

Despite a significant number of studies on the factors that influence trade, there has been minimal focus on the impact of HDI (Human Development Index) on trade. By considering all above, in this study, it was aimed to examine the economic, FDI, and non-economic, HDI, factors affecting trade and to investigate the role of public institutions in this aspect.

In this thesis, research questions were determined as follows;

- Is there any relationship and causality among the variables Export; HDI and FDI?
- Is there any relationship and causality among the variables Import; HDI and FDI?
- What kind of strategy should be implemented to boost trade?

By considering research questions, the hypothesis was set as follows;

H_{0a}: There is a significant causality and relationship between exports and HDI

H_{0b}: There is a significant causality and relationship between exports and FDI

H_{0c}: There is a significant causality and relationship between imports and HDI

H_{0d}: There is a significant causality and relationship between imports and FDI

3. LITERATURE REVIEW

This part begins by providing information about development economics and development economics is a field of study that concentrates on enhancing the economic and social well-being in underdeveloped nations. Examining topics like poverty, economic growth and inequality as well as ways to establish sustainable progress, this book also touches on human development index which is used as a statistical measure to rank countries by their level of human development. It continues by covering foreign trade theories that attempt to explain patterns of international trade and the factors that influence it. Next, foreign direct investment, which refers to when a company or individual from one country invests in and establishes operations in another country, is discussed. Before moving to empirical results, institutional economics is discussed. Institutional economics is a field of economics that explores the role of institutions, such as laws, regulations and social norms in shaping economic behavior and outcomes. Institutional economists believe these non-market factors play a fundamental role in shaping performance; understanding them is integral to understanding economic phenomena. Institutional economics emphasizes understanding how institutions develop over time as well as interact with each other - this may involve legal systems, financial systems or political systems shaping outcomes as well as economic actors adapting to their institutional environments in which they operate.

3.1 Development Economics

Development economics is an area of economics studying on the processes and factors that lead to economic growth and development. It checks how economic, social and political elements impact a country's economic expansion, such as poverty, inequality, and economic growth. Development economists use various theories and models to investigate these issues and formulate policies and programs aimed at promoting economic development. Additionally, they check the effects of trade, investment and technology on economic development, and how institutions, governance, and culture shape economic outcomes. In this part of study, development economics will be discussed.

3.1.1   The Emergence of Development Economics and the Development Evolution

The development economy, put forward by the developing countries that proclaimed their independence after the Second World War and the developed countries that tried to repair their economies that collapsed after the war, was adopted by many economic-political decision-makers and practitioners in the time of its inception and has had a wide variety of applications (Koilo, 2020).

Development Economics, which has found an important position in the economic field with various policy initiatives at some time periods, has experienced major shifts in terms of the theories set forward for development and the policies adopted. In addition, an important process has been undergone from a meta-centric approach to development, where progress is necessary for development and industrialization, to a human-centered approach to development (Banerjee & Duflo, 2008). Although some economists claim that the idea of development economics originated with discussions following the Second World War, most economists agree that the advent of development economics as a sub-discipline was due to the "Great Depression" and the economic crisis and shocks that happened between 1930 and 1945. This time, in which the causes for underdevelopment and remedies were pursued, was known as the Conventional Development Economics. Standard development models (1940-1970) have been applied for a long time, industrial growth has been associated with development, no difference has been made between development and economic growth. For this cause, development was calculated with national income growth up to the 1970s; it was correlated with industrialization-based economic growth (Bardhan, 1993). During this time, it was often agreed that the models for the economic development of the less developed countries have been put forward by the developed countries.

The major criticism of the Traditional Development Approach, which identifies development with economic growth, focuses on the issues that economic growth cannot reduce poverty and cannot solve the various social problems that arise. In the 1970s, countries whose economies managed fast growth momentum encountered negative consequences such as political instability, rising unemployment rates, income distribution gaps, rising crime rates, and environmental issues. Underdeveloped countries were at a negative level in terms of humanitarian welfare, while structural adjustment programs implemented under supervision from International Monetary Fund (IMF) or World Bank were being carried out at such high costs in terms of both human welfare and economic costs. This fact caused development models to be revisited and revised; additionally it was important that certain developing economies were performing relatively better when

measured against average (Sen, 1995). Taking these aspects into account, it was shown that in the 1980s alone, high wealth levels or increasing production rates did not mean avoiding poverty or a high quality of life. In the views of a paradigm of human-oriented economic growth started to be conveyed.

3.1.2 Economic Growth Theories

Different growth theories have emerged due to the fact that it occurs at different periods and speeds between countries. In this section, the historical development of growth theories is discussed.

Mercantilist Growth Theories: Mercantilists are mostly interested in accumulating gold and precious metals. To put it another way, precious metals serve as a proxy for national capital in their views (Haus, 1991). It is also obvious that neither country will benefit from international trade if global wealth stock is constant. In this case, they argue that imports should be limited and exports should be increased to boost the country's income. Thus, it will be possible to increase the money supply by allowing limited precious metals to enter the country.

In this view, it was aimed to increase the precious metal stock in order to ensure economic growth, countries need to implement policies to ensure the realization of foreign trade surplus (Dales, 1955). In short, mercantilists are representing the view that economic growth is possible under state control and they attach importance to state policies. In this framework, the mercantilist view is gathered around basic assumptions such as strict state policies, the increase in precious metals and the necessity of foreign trade and the removal of barriers to foreign trade.

Physiocracy: The physiocracy (Quesnay et al., 1972) approach is based on the view that the driving force of growth is not the industrial sector, but the agricultural sector. According to Quesnay, the value added of the labor and capital are zero, and land determines the production (Albertone, 2020).

The basic idea of physiocrats is that the economy would naturally balance itself over time. As a result, they concluded that, contrary to the mercantilist belief, the economy would naturally stabilize itself, state interference was therefore unnecessary (Meek, 1951)

Classical Growth Theories: Classical economics is based on the theory that state intervention is unnecessary under the assumption that there is an invisible hand in the markets and thus the economy is always in equilibrium (Rima, 2004). But this theory has been criticized in terms of the fact that perfect competition conditions are not always possible in the economy and that the established theories are insufficient to explain the growth processes.

Based on the investment saving equation, Classical economists consider the savings rates as source of growth, as savings will lead to investments. In other words, economies can achieve economic growth if they have sufficient saving rate (Letiche, 1959).

(Smith, 1776)'s growth model argues that economic growth will be achieved by increasing the productivity per labor force. Smith explains that the increase in labor productivity leads to an increase in production for three reasons. Firstly, as a result of the division of labor, instead of concentration of all production process, workforce concentrates on one of production process during production, so workforce gain experience in that part of production and provides more output in a short period of time. Secondly, the time that the workforce would lose in moving from one job to another is saved. Thirdly, if workers focus on a single field, they develop ideas for faster and efficient production, and this case also leads technological developments.

Thanks to the division of labor and specialization in a country, productivity is increased and national income rises (Gilles, 2019). Smith assumes that there is a positive relationship between market size and division of labor, it means that if market size increases the division of labor will also increase. The increase in national income causes the growth of the market size. In Adam Smith's theory, wage increase is considered as a reward for labor, labor force whose wage increased works more efficiently (Depetris & Özak, 2020).

In the long run, the economy may go through two phases: stagnation or growth. These stages are formed by the change in the shares of production factors from income.

Due to high profit margins during the growth process, savings will rise, resulting in an increase in capital accumulation. Consequently, production and employment will both increase. In the short run, as employment rises, the real wage level will rise above the minimum wage level. This wage increase is expected to increase the population and increase demand for agricultural products in accordance with Malthus law. This condition would stimulate production and economic growth (Malthus, 1807).

During the stagnation period, production should be increased further because the growing population will increase the demand for food. However, due to the country's limited fertile lands, inefficient lands will be opened to production, and rents will rise. Profit rates will begin to fall as labor and capital yields decline, and the economy will enter a recession. Wages, on the other hand, will fall to the level of subsistence in the long run as a result of population growth, and the population will tend to fall again (Malthus, 1798).

In the growth model of Malthus, the growth rate depends on the savings and investment equality within the framework of the assumptions of the classical theory. Malthus explains this equality based on the theory of population. The situation where the population growth rate is very high causes the per capita income to decrease and thus the amount of savings decreases. The decrease in the amount of savings causes a decrease in investments and decreases the output level (Unat, 2020). In other words, Malthus states that the increase in population will threaten human life in the future and cause a decrease in economic welfare (Kar, 2005)

According to Malthus, the law of diminishing returns is valid for agricultural production, and while the population increases geometrically, food production increase arithmetically (Szabo, 2014). According to Malthusian growth theory, improvement in income distribution, developments in health and technological advancement do not contribute to the growth of the country, and even cause a decrease in welfare in the country. If governments implement policies related to income distribution, the per capita income of individuals would increase, and this situation leads to that people would obtain better nutrition opportunities. As this situation causes a decrease in mortality, the population will exceed the output level and decrease the output per capita, and therefore there will be a loss of welfare in the country. The improvements in the field of health are also explained by the decrease in per capita income in line with the decrease in mortality rates. Finally, Malthus thinks that technological progress will increase the output level and so the population (Loschky, 1976).

There have been criticisms of classical growth theories ignoring the demand side of the economy and these criticisms have helped to develop the Marxist and Harrod-Domar models. (Güvel, 2011).

Marxist Growth Theory: Karl Marx's growth model is based on the labor-value theory (David, 1987). Karl Marx explains the labor-value theory as "the value of a good will be determined by the units of labor-time spent for the production of that good" (Palley, 2019).

$W = C + V + S$

W is the value of the product in the certain period

C: constant capital of materials

V variable capital (Labor)

S: surplus value

The constant capital (C) and variable capital (V) are necessary for the production process, but they do not generate profit on their own. It is only through the exploitation of labor that surplus value is created, and hence profit is realized. According to this equation, what creates value here is not fixed capital but variable (labour capital). The difference between total value and total expenditures are considered as surplus value. In addition, there are three important ratios in Marx's growth model. These are rate of surplus (s/v), rate of profit (s/v) + C and organic composition of capital (c/v). He asserts that while there is a negative relationship between organic composition of capital (c/v) and (s/v) + C, there is a positive relationship between rate of surplus (s/v) and rate of profit (s/v) + C. (Berber, 2011).

As a result of technical advances that emerged from the redistribution of profits from surplus values, the capital accumulation has increased. These increases cause the profit rates to decrease over time. This is called the theory of Falling Rate of Profit. However, as total profit rises, so does competition among capitalists. All of the capital is concentrated in the hands of the capitalists as a result of the efforts to increase the profit rate. As a result, capitalists gain more because the surplus value they gain as a result of employing more workers and not providing the wage increase they deserve. In other words, they pay less money to labour and accumulate capital. Marx asserted that to stop labour exploitation, this system should be terminated (Brackett, 1968).

Schumpeterian Growth: Schumpeter stresses the importance of the concepts of innovation and entrepreneurship while discussing the economic growth theory. At the same time, he mentions the fluctuations in the economy during recovery, prosperity and depression phases. According to him, increased investments in the economy as a result of technological progress would result in growth during the recovery and welfare phases (Aghion & Festré, 2017).

An entrepreneur can raise profits by introducing creativity to the economy and creating a monopoly in any sector. Other entrepreneurs may apply similar innovation introduced by other

entrepreneurship. Furthermore, Schumpeter describes the competitive environment among businesses using a specific growth model referring to it as "creative destruction." According to the creative destruction model, the weakened sectors vanish and new sectors emerge instead of their place. Schumpeter's growth theory reveals three important results.

- ➢ Technical progress is needed to achieve economic development.
- ➢ As a result of innovation and expansion, the monopolistic market arises.
- ➢ Entrepreneurs are the source of technological progress.

According to the theory, the capitalist system can be effectively maintained by economic development (Foster, 2015).

Schumpeter argues that the capitalist system can be successfully sustained as a result of economic growth, furthermore he claims that if an increase in income has a positive impact on workers' incomes, the level of social welfare would rise (Bazhal, 2019).

Exogenous Growth Theories: Exogenous growth (modern growth) is explained/applied in the Harrod Domar growth model (Post Keynesian growth model) and the Solow growth model (Neoclassical growth model).

In the (Solow, 1957) growth model, the economy is always considered at full employment level, a closed economy under the assumption that a single good is produced. As technology improves, workers become able to produce more output per unit of time - leading to higher labor productivity and faster economic growth. It should be noted that the Solow model assumes labor productivity growth is exogenous - uninfluenced directly by factors like education or training; though such influences could indirectly have an impact through technological progress or other channels, these aspects of influence are not explicitly modelled in its framework. While decreasing return to scale is valid for factors of production, constant returns to scale is valid for technology and it is considered as exogenous (D. Romer, 2019). The increase in the saving rate does not affect the steady growth rate and population growth is also considered exogenous. In addition, a potential change in labor productivity is not taken into account. Finally, the theory considers state intervention at the minimum level (Acemoglu, 2009).

The savings rate that maximizes the steady-state level of consumption growth is known as the Golden Rule savings rate. In addition, Solow model assume that the only source of growth is technological progress.

Harrod investigated the conditions of the economy's transition from underemployment to the full employment income level. Domar, on the other hand, examined how to ensure conditions of steady growth in an economy that has reached the full employment level. The main starting point of the two economists is how to reach from underemployment to full employment level and how to maintain this level (1939).

Although both the Harrod and Domar models consider investment as a source of development, there are some differences between them. While Harrod is interested in how income increases affect investments, Domar is interested in how investment increases the income level in the next period. The second difference is that, while Harrod discusses three types of development which are warranted growth, actual growth and natural rate of growth, Domar only discusses actual growth. While Harrod emphasizes that in order to achieve balanced growth, warranted growth must be equal to actual growth, Domar, says that in order to achieve balanced growth as a result of investment, there should be a balance between income level and production capacity (1946).

The Harrod-Domar model is an economic model that ignores state intervention. Model assumptions have been criticized because it is not appropriate for real life. On the other hand, it has been criticized that the model is only dealing with the problems of developed economies and ignoring the developing economies (Sen, 2019).

Endogenous Growth Theories: In this part of the study several endogenous growth models are discussed.

AK Model: (Rebelo, 1991)'s AK Model, which he created in 1991, indicates that economic growth will occur even in the absence of technological progress. In addition, Rebello argues that since there is a human capital factor in physical capital, physical capital has increasing returns scale. The AK model is formulated as in Equation below.

$$Y = AK$$

Y: the total production in an economy

A: technology level

K: is capital

As seen in the equation, the technology level of is considered to be constant. Therefore, there is a positive relationship between the capital factor and the output level.

During his research (Arrow, 1962) found "learning model by doing model" and he asserted that some industries have reduced their costs over time, resulting in higher quality and faster output. Thanks to technological progress, Romer emphasized on cost reduction and an increase in efficiency in production sectors. He considers knowledge as a kind of free input in production and this free input both increase production and decrease cost.

Technology is considered as endogenous in Romer's model. Because Companies need technological advancement to reduce investment costs and production costs and this situation causes both an increase in capital accumulation and an increase in productivity. While producing technology, producer will face one-off cost. By benefitting externalities, other relevant companies find the opportunity to use this technology and increase the output level (1993).

Human Capital Model: The Human Capital Model, which was put forward by Lucas in 1988, included human capital as one of the production factors such as physical capital, as in Robello's AK Model. It evaluates the opportunity cost of time spent in education as an investment in human capital. This is because human capital first emerges with education and then occurs with the effect of learning method by doing in business life (Grossman, 2000).

In the Lucas model, externality is not needed for endogenous growth to occur. So, it is close to the neo-classical model. On the other hand, he argues that technology will contribute to economic growth through human capital. In other words, labor productivity increases thanks to technology and labor force becomes the engine of economic growth. It increases the marginal productivity of capital according to the ratio of human capital to physical capital and the state of externality. Therefore, the human capital level is also increasing. Increasing the marginal productivity of capital may cause the differences between countries to increase. For example, the increase in capital accumulation may cause a labor migration from underdeveloped countries to developed countries. As a result, economic growth may increase faster in rich countries than in poor countries (Parasiz, 2013).

Public Policy Model: (Barro, 1984) developed the Public Policy model in 1990. First and foremost, Barro's model has been extensively studied, as have previous endogenous growth models. Human capital, in other words, is included in the capital level. Barro, on the other hand, emphasizes productivity and technology for economic development, as well as government spending in his model.

(Becker & Barro, 1988) examined the relationship between the share of government spending in GDP and GDP growth rate per capita in 98 countries from 1973 to 1985. According to his findings, public consumption expenditures and growth rate have a negative relationship, while public investments and growth have a positive relationship. He believes that government spending will have a positive impact on economic growth if it is implemented with policies that maximize the utility function of households. Taxes cover the majority of government spending, and the reduction in private savings, as a result of taxation policies, may affect welfare and economic growth negatively.

The technology that emerges as a result of investments in R&D activities is not exogenous as in exogenous models, and technology is free. Since no additional payment is made for this technology, the value of production is determined by capital and labor. In the R&D model, there is no cost to transfer and disseminate knowledge. The knowledge causes externalities to other companies and leads them to operate the increasing returns in capital (Nobelius, 2004).

Income differences between countries are observed with the increase of investments in R&D activities. R&D activities reveal technological progress and innovation, firstly reducing the internal costs of companies and causing quality products to be produced. Later, companies or countries become competitive in the foreign market by increasing their economic growth thanks to R&D activities. Countries not allocating resources for R&D activities lose their competitive power in foreign markets and experience economic welfare loss (Pandit et al., 2011).

The Traditional Development Approach methods, known as the Conventional Growth Strategy, are summarized under four major headings (Taranova et al., 2015).

I. Industrialization: Traditional development was considered as the most critical issue of economic growth by conventional development economists. They have also used economic growth

and industrialization in the same manner. They concluded that the share of the manufacturing sector in the Gross National Product (GNP) should increase as a requirement for economic growth.

II. Mobility of labor: According to the traditional approach to development, economists who defend industrialization as a requirement for economic development must complete the phenomena of secret unemployment chronically found in the agricultural sector. It has proposed moving labor and other production factors from agriculture to the market and many economists too have endorsed the theses regarding the liquidation of peasantry.

III. Rapid Accumulation of Capital: Accumulation of capital is at the heart of economic development. The growth in capital stock is possible by not absorbing any of the net profits obtained but by translating it into a net profit by investing. In the Conventional Planning Approach, investment and physical resources are recognized as a requirement for development.

IV. Active and planning state: according to the Traditional Development Economics, no matter which development model is chosen, the state must be active and decisive. In other words, the state must interfere in the economy. The economy can be efficiently strengthened by accumulation of resources (physical capital). Concluding that the economy is more competitive with a productive and successful state to be a primary objective of the central government.

Traditional Development Economics was developed with the goal of achieving a simple need for industrialization, growth, and development. Traditional growth economics have historically examined the idea of development as too much demand, and now they must now think and evaluate development from a demographic level (Ingham, 1993). As known, the conventional approach has become the mindset of mere importance on the production of agricultural commodities, disregarding the wellbeing of both humans and the environment. However, it has started change and move on to a more commodity-centric approach, which seeks to maximize the production of agricultural commodities continuously. Owing to the fact that this device only focuses on the economic component of the idea of growth, it lacks other essential dimensions of development, such as culture and values (Doorn, 2012).

The Importance of Keynesian Policies During the Economic Crisis: This Classical Economic Theory effect still continues in the global economy. In reaction to the Great Depression, another school of thinking came to the forefront. The "New", or Keynesian perspective on economics contends that state action is an appropriate policy to reverse the crisis. It is assumed that reforming

the conventional models of development and applying the policies put forward by the Traditional Development Strategy would lead to a situation of stable growth for developed countries. Thus, there will not be a vicious cycle where the developing countries are in a situation of hardship and the developed countries worry about migrant workers taking jobs. While these growth recipes put out for less developed countries that have freed from colonization or have recently achieved their independence, their applicability in this timeframe creates dispute, the macroeconomic policies and theories introduced in developed countries are called Keynesian (Greenwald & Stiglitz, 1987). This was a remarkable and exceptional time for Capitalism. The Bretton Woods Deal was outlined and formed in 1944. This period continued for nearly sixty years. The culmination of the golden age in 1971 preceded the Oil Crisis that occurred in the mid 1970's. This period ended with the 1973 Oil Crisis. It has often been aptly titled the Golden Age of Capitalism. The Keynesian methods involved in developed non-OECD countries (for example, in the United States) have developed faster and more successfully than elsewhere. Developments after the reforms of Fordism contributed to high profits and welfare state politics in industrialized countries. The welfare state satisfies the workers with the policies that have been adopted by the state. Economic conditions contribute to a good economy of a country, competing nations (for example, U.S.A.) and more security in the world (Davidson, 2011).

At a certain point in time the government did not participate much in business choices. This was the age of Keynesian economics, where capitalist businesses are able to make their own decisions. Great recovery was possible under these kinds of policies, and it brought out a great deal of wealth, especially to the United States (the US). However, there was a great loss in magnitudes of income as well, so it was never fully recognized as a free market economy. This is because it required big government decisions for the business sector to take. Since the Second World War, the Keynesian understanding has won out in both Europe and third world countries emerging out of the colonies and countries. The key explanation why Classical Economic Theory did not concern the government is that it was a product of uncontrolled market. Keynes also touched on a new idea called animal instinct to describe the cyclical aspect of the economy. In this definition, investors displayed self-interest only, and this drove other asset values to crash (Boyer, 2012).

Alternative Approaches to Traditional Development Approach: The main objective of the policy ideas put out by traditional development economics in the 1950s and 1960s was to bridge the divide between less developing and developed countries. The divide between less-developed and developed countries in the 1970s increased, apart from achieving this goal. The lack of response

from orthodox economics to deal with the high open world poverty rate has driven economists to pursue new approaches.

These searches for new policies led to the revival of Neoclassical Economics. Neoclassical economics did not criticize the fact that conventional development economists had the sort of GDP growth theory that everybody did a meta-centrist calculation to arrive at, particularly the Eurocentric part of where the growth came from (Goodland & Ledec, 1987). Pro-neoclassical economists have claimed that the policy measures put forward by the Traditional Development Strategy to ensure sustainable development and consistent growth are incorrect. Particularly within the neoclassical school of economic thinking, the growth-deflecting and growth-limiting nature of the command management approach has been recognized and was regarded as a problematic and division training aspect. It is possibly related to the dynamics. The more conservative reactionaries, who claimed that the meta-centrist approach and the radical approach to capitalism induced people to become unemployed in the labor market by raising the amount of capital and creating a reduction in the number of workers, and that the drop in the number of workers caused a global economic depression by reducing the benefit (Lawson, 2013).

It was suggested that the political strategies and policy initiatives of the Traditional Planning Approach should be differentiated from the meta-centric growth approach and that the specific needs approach should have two goals. In this sense, the need to eliminate poverty is another aim of progress apart from economic growth. In other words, it has been suggested that growth that cannot address the issue of poverty cannot be matched to production. A modern approach in architecture called the Essential Needs Approach has replaced the Endogenous Development Approach (Millar, 2014).

Sustainable Development Approach: The concept of sustainable development, which was popularized by the 'environmental revolution' in the 70s, does not have an agreed upon meaning. It depends on its environment, societal trends, and new needs. The opinions that capitalists would create environmental issues have been shared by some thinkers in the past. There are a number of environmental concerns over the last 60 years that have drawn interest from organizations. Sustainable Development Strategy shifts have occurred from the 1972 Stockholm Conference to the 1992 Rio Conference. Issues such as environmental concerns and depleted natural resources were largely tackled at the state and local level. The Copenhagen conference focused on sustainable development criteria, involving a wide variety of human rights such as minorities, gender inequalities, women's rights, and environmental concerns (Vornholz, 1994).

Especially with the industrial revolution and the rise in the pace of industrialization, the excessive usage of natural resources has caused people to try new ways to eradicate new challenges and issues. A correlation exists that links environmental issues, degradation of habitat, air pollution and economic problems. For this purpose, maintaining the dignity of the global biodiversity, regulating the detrimental consequences generated by the increased use of non-renewable energy and environmental issues as well as economic problems are often considered under the Sustainable Development Policies. Other economic challenges besides poverty, such as wealth distribution, relevant technologies and policy measures for resolving these issues are also discussed. Around the same time, due to the heavy use of fossil fuel sources (coal, gas, oil), which is one of the serious problems created by the overuse of common areas (sky, oceans, etc.), the volume of carbon dioxide in the environment has been rising and the greenhouse effect has been increasing (Duran et al., 2015).

Although the increase in marine levels as a result of warming causes habitats to deteriorate or destruction in some regions due to varying and poor climatic conditions, problems like water risk, dams drying, flooding in certain areas and the cultivation of less fertile soil have also arisen. At the same time, it causes detrimental consequences such as hunger, health, a rise in certain forms of pathogens, acid rain that kills wetlands, lakes and even the cultural and architectural heritage of nations. Owing to the extreme exploitation of the capital of the world in which we exist, the option of future generations will be limited. That, if environmental and economic issues that cannot be prevented in time are generated and solutions are not discovered, the problems that they will never be able to fix will be left to future generations (Kelly, 1998).

Basic Needs Approach: At the beginning of the 1970s, the basic needs approach, which proposed that the issue of poverty should be overcome in order to be able to speak about growth in its entirety and that there are some needs that are common to all people, became very popular. It was discussed in the context of specific material-needs placed on the agenda by some international organizations and split into two classes. The first of these; although needs such as nutrition, shelter and clothes that allow individuals to replicate physiologically, the second; critical resources are needs such as hygiene, schooling, transport and drinking water (Baskaya, 1997). The Fundamental Needs Method, opposed by many economists, has been seen as insufficient in terms of human phenomena. As a consequence, some welfare economists proposed that this approach, which restricts fundamental needs to material needs, should be called "Basic Material Needs Approach".

This has been opposed by economists as well as the basic needs ethical approach, which views and measures cultural growth and cultural needs as basic human needs.

Basic Needs Ethics Approach and Amartya Sen's Talent (Competencies) Approach: Since the 1970s, the consensus of many politicians, foreign organizations and scholars has been argued that the key aim of development economics is to identify and incorporate policy recommendations about how to address basic human needs. While there is a shared view in the sense of the universality of this goal, there is no agreement about the meaning and nature of essential human needs. However, a modern approach to evaluating essential human needs through a wider and more efficient context has been explored since the 1990s. In this approach called Fundamental Human Needs Ethics, development economics has dealt with critical topics such as human rights, democracy, identity, local history, minority rights, local traditions and universal values. Thanks to this approach, there has been an effort to identify fundamental essential human needs that take into account local principles and variations (Sen, 1973).

In order to talk about economic developments, people living in society should be able to take advantage of their future prospects and abilities, which is the skills approach of the Nobel laureate Indian economist Amartya Sen in 1998. In other words, in order to be able to speak about economic growth, people need to conduct and improve their personal roles, such as doing what they can and accessing opportunities (Sen, 1976). Furthermore, within the context of this approach, the collection of roles of entities is not defined independently of the society or community in which they exist. Depending on the aims and purpose-values that the person decides on the basis of his or her own metrics and values, taking into account different considerations, his or her demands for goods which differ depending on the society in which he or she resides, the community of which he or she belongs, individual identity and time. In other words, the fundamental needs that ensure human growth or the relationship between goods and talent can differ from culture to culture, from society to society and from individual to individual. (Sen, 1993) discussed the principles of economic growth and human progress on a stand-alone basis, stressed that the ultimate goal of all activities is people and that development should be based on people's liberties, successes and skills. The important point is; it is the livelihood of the person, not the products or profits of the individual. This methodology has formed the philosophical and conceptual basis of the Human Development Index (HDI) published by the United Nations Development Program (UNDP) since 1990.

Nordhaus Growth Theory: The Nordhaus growth model is an economic theory that explains how investments in human capital and technology drive economic growth. It suggests that growth is not only a result of physical capital accumulation but also investments in human capital and technological advancements which leads to increasing returns and higher growth rates. The model also highlights the role of government policies, such as education and R&D subsidies, in promoting growth (Samuelson & Nordhaus, 2001).

The Nordhaus model is an extension of the Solow-Swan model, it includes a more detailed understanding of the drivers of technological progress and economic growth. While the Solow-Swan model assumes that technological progress is determined externally, the Nordhaus model suggests that it is determined internally by investments in R&D. The Nordhaus model posits that investments made by firms and individuals in R&D leads to the development of new technologies and subsequently increased productivity and growth (Nordhaus, 2008).

The Nordhaus model also takes into account the concept of human capital, which is the aggregate of knowledge, skills, and abilities held by individuals. The model suggests that human capital plays a vital role in not only labor productivity but also in technological progress. According to the Nordhaus model, investments in education and training lead to an increase in human capital, resulting in higher productivity and economic growth.

The Nordhaus model also considers the impact of government policies on economic growth. The model posits that government subsidies for R&D and education can lead to more investments in these areas, resulting in higher levels of economic growth (Nordhaus, 2015).

The Nordhaus model also includes the idea of "learning by doing" which states that as more of a good is produced, the cost of producing it decreases. This means that as firms produce more, they become more efficient, resulting in lower costs and higher profits. This can lead to a self-sustaining cycle of economic growth. Overall, the Nordhaus model offers a more comprehensive and realistic understanding of the drivers of economic growth and emphasizes the significance of human capital and technological advancement in driving growth (Nordhaus, 2001).

3.2 Human Development Index (HDI)

The Human Development Index is an invaluable tool for measuring the overall well-being of a population. It considers a variety of factors including demographics, employment inequality,

socioeconomic sustainability, access to technology and communication networks, environmental sustainability trade finance poverty education health gender equality as well as access to resources (Masduki et al., 2022). In the figure 1 below, the dimensions, indicators and dimension index of HDI was demonstrated.
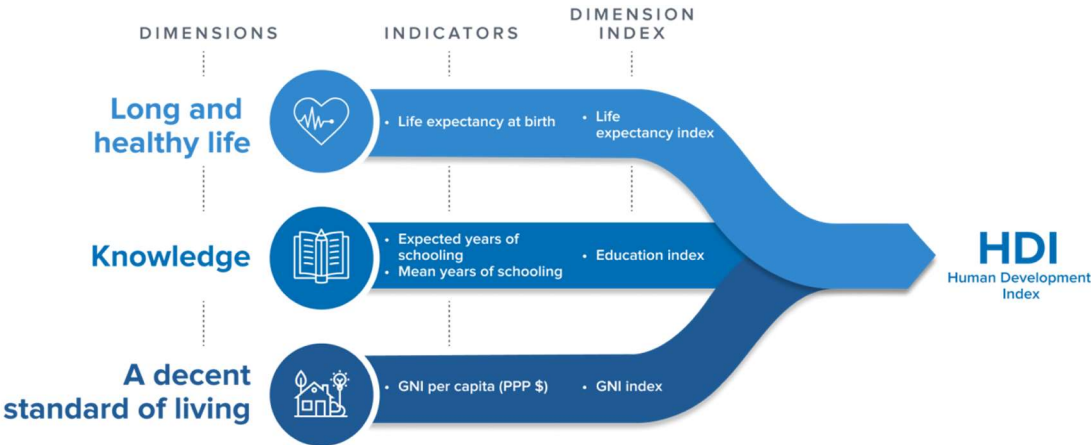
Figure 1: The component of HDI. Source: (Human Development Index (HDI), 2022)

The idea of human development encompasses the improvement of people's overall well-being and quality of life. The Human Development Index (HDI) is utilized to evaluate this advancement. A country's categorization as a highly developed nation signifies that its inhabitants usually live long, healthy, and successful lives. However, the emphasis on increasing resources and financial prosperity often overlooks the significance of human development. In other words, development is often equated only with a country's income, but income is just one aspect of development and should not be the sole indicator of a country's progress (Resce, 2021).

In the figure 2 below countries having higher HDI can be seen. In the 2018, Norway has the higher HDI score. Ireland, Switzerland, Hong Kong and other countries follows Norway. The majority of industrialized countries have an HDI score of 0.9 or higher, putting them in the top tier of human development. These countries have stable governments, broad inexpensive education and healthcare, high life expectancy and quality of life, and robust economies that are rising.
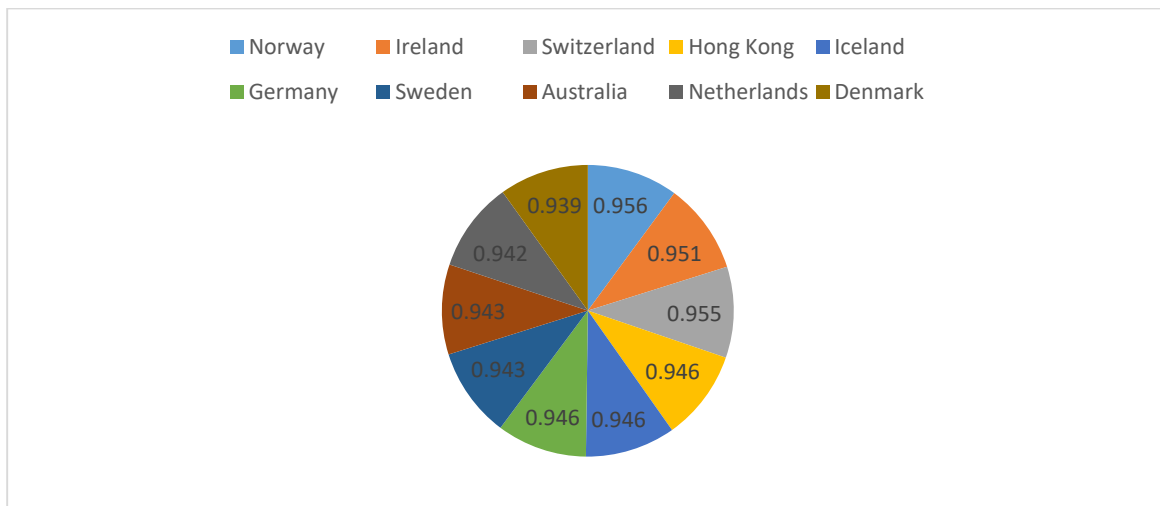
Figure 2: 10 countries having higher HDI in the World. **Source**: Own edition based on data
(Human Development Index Trends, 2022)

Inadequate human development is often accompanied by deprivation, which refers to poverty. In literature, there are many definitions of poverty, some of which are as follows. (Townsend, 1985, 667) defines poverty as "not only the commodities which are indispensably necessary for the support of life, but whatever the custom of the country renders it indecent for creditable people, even of the lowest order, to be without." Poverty is defined by (Scherbov & Stuart, 2020) as the inability to reach the minimum standard of living or meet basic needs that are generally accepted by society. This definition includes not only a lack of income or resources, but also situations such as a lack of education, social security, and participation in social activities. The concept of "capability," introduced by (Sen, 2004), expands on this definition by emphasizing that poverty is not just a lack of income, but rather a lack of certain basic capacities, such as the ability to avoid hunger, lack of education, poor health, and lack of social security. These capabilities are important for a good quality of life and should be considered when evaluating poverty. In addition, poverty as a lack of capabilities (or deprivation) can occur even when there is no shortage of income In fact, having sufficient income is a means to achieve the end goal of ending poverty, but it is not the end goal in and of itself, according to (Shome & Tondon, 2010). Therefore, having enough income can help people escape poverty and meet basic needs; however, income alone does not define poverty status; other aspects like education, healthcare and access to resources play an equally critical role when evaluating poverty levels. Simply having a certain level of income does not automatically guarantee quality of life or avoidance of poverty.

The fact that the national income increase is high in a country is not enough for that country to be defined as a developed country. When it was seen that social problems could not be solved in many

economically developed countries, the need to establish a better relationship between economic growth and human development emerged. Therefore, development has been transformed into an understanding that will include whether people should increase their options as well as physical development (Haq, 1991). Accordingly, in the Human Development Report (IGR), which was first published by the United Nations Development Program (UNDP) in 1990, a number of indices based on non-income indicators aiming to measure human development as well as income have been published. The basic understanding in these indices is that human development is the process of increasing individuals' freedoms and options. These options can be infinite and variable. Access to education, health, employment, social security services, clean water, and participation in social activities are examples of these options. However, it can be challenging to identify a metric that accurately captures human development and has readily available data for assessing living standards. In reality, several comprehensive indicators must be considered when determining the standard of living. However, due to data limitations, certain indicators may need to be omitted. One of the primary reasons why income is frequently used as a measure of well-being is that it is a measurable and easily accessible data point (Ranjan & Panda, 2022).

Because the conventional models of development fall out of favor, new theories have been established. human-oriented development approaches based on individuals have come to the fore. Human growth began becoming an accepted part of development economics during the 1990s thanks to UNDP. Their Human Development Index measures development across countries using individuals as key criteria rather than economic data alone. Human Development Index seeks to answer this question of why countries with display different human development statistics, or why those with higher wages relative to another have lower data on human development index. As an index that takes into account education, health, wealth, and population aspects of countries' development - it measures these three key fields with statistics on policies prioritized by governments that have been prioritized using various metrics - the Human Development Index can also help in answering this query (Sagar & Najam, 1998). In addition to wages, various social metrics are often listed in the human development strategy. The HDI, which came to the agenda after the conventional approach to growth, is one of the reasons that only physical wealth and income awareness have been abandoned when calculating development, is that only income-oriented thinking masks broad differences within its body. This perception will mask the differences between rich and poor, male and female, rural and urban (Haq, 1992). Revenue is an important dimension of growth. However, it is not right to understand growth by restricting it to the revenue dimension alone (Haq, 1990).

As pointed out in the first Human Development Index, development, which has offered people a long, stable and prosperous existence, assuming that people are the true wealth of nations, has been attempted in the past to calculate the size of national incomes. Dividing growth into two significant and distinct groups, such as economic development and human development, Amartya Sen considers economic development based on income and consumption and describes development by growing national income per capita and places human development at the center of development (Sen & Anand, 1994). As a result, social progress can be seen as an increase in the quality of life of all people living in the community. If the money earned by the state is not allocated in a balanced and equal way in the social sector, the income difference between citizens would be established. While some of them will become wealthy, a large number of them will continue to fight poverty.

There are several considerations involved in assessing a country's growth stage. There are several considerations such as basic needs such as clean water and food, the right to engage in social and political affairs, the degree of access to knowledge, equality between women and men, a long and stable life and a reliable life (Chowdhury, 1991).
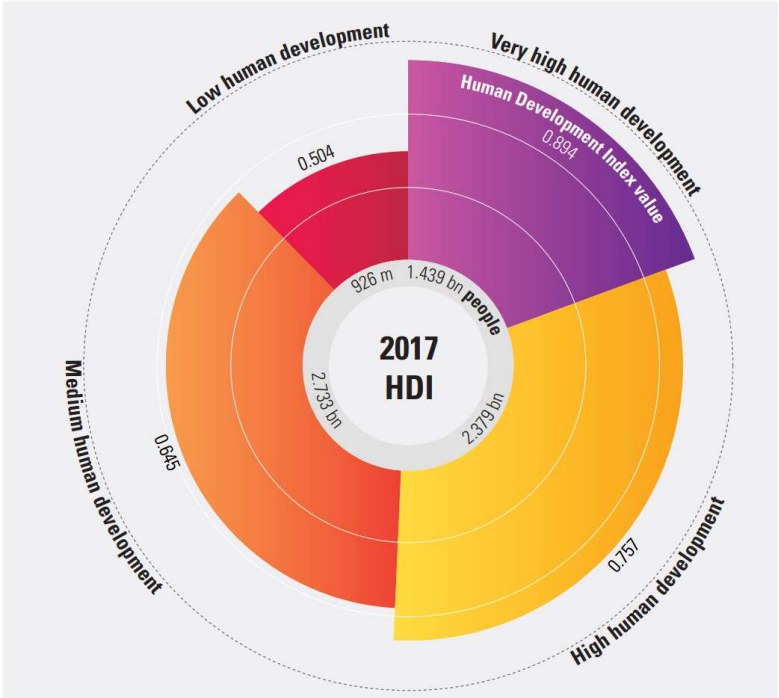
Figure 3: Change in Human Development from 1990 to 2017. **Source:** (Jahan, 2019)

The figure 3 shows the change in human development from 1990 to 2017 as measured by the Human Development Index (HDI) and the number of people in four different levels of human

development. The inner ring of each section represents the population in that level of development, and the height of the section represents its HDI value. The graph illustrates that despite the global population increasing from 5 billion to 7.5 billion during this period, the number of people in low human development decreased from 60% to 12% of the global population, while the number of people in high and very high human development more than tripled from 24% to 51% of the global population.

3.2.1 Examples of Government Contributions to Human Development

South Korea stands as an outstanding example of government policies and public institutions helping to promote human development across many nations. Recent decades have witnessed incredible gains made towards improving human development there.

South Korea once stood out as a poor nation with low levels of education, high poverty rates and subpar health outcomes. Beginning in the 1960s however, its government took steps to improve these conditions by implementing economic and social policies focused on investing in education, healthcare and infrastructure; combined with strong economic growth through exporting goods this allowed South Korea to rapidly advance human development - now considered a middle-income nation boasting high education levels, low poverty rates and positive health results.

South Korea is not alone when it comes to government policies and public institutions' contribution to human development; Japan, Taiwan and Singapore all demonstrate this. Their governments have implemented programs and policies designed to strengthen education, healthcare and infrastructure - leading to economic growth as well as improvements in human development.

Improving human development involves multiple components, including economic growth, education, healthcare and infrastructure. While government policies and public institutions can promote human development, other elements like private sector development, civil society interaction and international cooperation also play a crucial role.

3.2.2 Human Development Report

The United Nations Development Program (UNDP) publishes an annual Human Development Report which is widely recognized and respected globally as an evaluation of progress towards human development for every nation on Earth. Since 1990 under Mahbub-ul Haq's direction, this

annual publication highlights living conditions of marginalized populations (Dervis & Klugman, 2011). HDRs aim to emphasize the need for human-centric development policies at both national and global levels, drawing attention to individuals' quality of life in international society. HDRs are used by governments, non-governmental organizations, academics and media as a way of creating development policies, comparing countries based on levels of development as well as emphasizing human development understanding. The data obtained within the scope of classification activities are explained with HDRs (Haq & Jolly, 1996).

The HDRs, which have been published by UNDP with a new theme every year since 1990, are prepared as intellectual independent and experience-based analysis studies on issues such as development-related issues, trends, realized progress and policies. The 2014 Human Development Report was published with the theme "Maintaining Human Progress: Reducing Vulnerabilities and Building Resilience" (Malik, 2014).

As well as the global reports of the HDRs, there are also versions prepared by local and national teams that include the adaptation of the human development approach to the regional, national and sub-national level. Global reports address a serious problem in the world each year. These reports evaluate the issues that pose a threat to the world and aim to draw attention to a global problem against the dangers that may arise if the necessary measures are not taken. Regional reports show progress in a particular region. It provides recommendations aimed at promoting regional cooperation and partnership to countries and individuals in that region. National reports, on the other hand, contain the expectations of the people in that country from the government, non-governmental organizations, other institutions and themselves in order to improve national capacity and welfare (Hou et al., 2015).

Having a global and local evaluation in line with the concept of human development, HDRs have enriched the studies on this subject with their different perspective on development and poverty since 1990. Reports evaluating human development at the country level make a number of analyzes as a result of detailed examinations on a subject determined for each year. With the thematic policy analyzes it has developed, it not only reflects the current economic situation, but also provides comprehensive country-specific data on the individual's welfare level. The indicators created as a result of the joint efforts of many individuals and organizations reflect international data in a very rich and regular manner. IGRs have made a significant contribution to the multidimensional perception of development and poverty in the international arena. In determining development policies, it is important not only to expand economic opportunities, but also to expand social,

political and cultural opportunities that will increase the quality of life of the person (Sen & Anand, 2000).

3.2.3 General Structure and Purpose of the United Nations Development Program

The UNDP works towards poverty reduction and attaining Millennium Development Goals through democratic governance, crisis prevention and recovery, sustainable energy activities, women's empowerment programs and capacity-building activities. Through its efforts, it prioritizes human rights protections including those for women, minorities and vulnerable populations (Ilcan & Phillips, 2010).

The UN recognizes global poverty as an urgent matter and has organized multiple meetings on it, such as the Millennium Summit held in 2000. At this gathering, countries outlined eight Millennium Development Goals with the objective of halving poverty in less developed nations by 2015 (Robert et al., 2005). These goals include alleviating hunger and poverty, providing basic education, combating gender discrimination, protecting maternal health, combatting epidemics, promoting environmental sustainability, safeguarding natural resources and creating global partnerships for development. These goals were monitored and updated over time, with the target number increasing to 21 and the indicator number to 50 by 2008. The overall objective of these goals is to improve human development and contribute to global development (Lomazzi et al., 2014).

UN supports communities in their national and global development efforts by helping them with the solutions they find themselves (Sachs & McArthur, 2005). Those are;

Poverty Alleviation: The UNDP assists developing nations in developing their own strategies for reducing poverty by considering local needs and priorities (UNDP, 2015). It supports the implementation of these strategies through pilot projects, and connects these countries with global best practices and resources. Additionally, the UNDP works to empower women in development and facilitates coordination among governments, NGOs, and other organizations to invest in development projects (Fehling et al., 2013).

Democratic governance includes the way citizens and other stakeholders express their opinions, assert their rights, exercise responsibilities, and resolve disputes. It is characterized by principles such as inclusiveness, responsiveness, transparency, accountability and empowerment (Sachs,

2005). The UN's approach to addressing poverty centers around empowering the poor to assert their rights. Over time, UNDP's strategies for combatting poverty have evolved over time. At first, their strategies involved supporting grassroots and social movements led by those living in poverty; more recently however, emphasis has shifted towards supporting good governance by aiding developing countries' leaders and national political processes - thus shifting away from bottom-up approaches towards good governance and poverty reduction (Fukuda, 2004). In line with this focus on democratic governance, UNDP supports democratic governance by helping nations improve electoral and legislative systems, access to justice systems and public administration processes as well as increasing capacity to provide basic services (UNDP, 2015).

Preventing and Avoiding Crises: UNDP prioritizes helping countries recover quickly from conflicts and disasters as another key aspect of its work. It works to prevent armed conflicts, mitigate the effects of natural hazards and disasters, and establish more resilient systems during crises. In times of crisis, UNDP ensures that humanitarian efforts prioritize saving lives and that recovery efforts are aligned with long-term development goals, in an approach called early recovery (Hou et al., 2015).

Other Fields of Activity: UNDP works with countries to address the development dimensions of HIV and health, recognizing that non-health interventions can have a significant impact on outcomes. It also focuses on gender equality and women's empowerment, not only from a human rights perspective but also because of the crucial role of women in achieving the Millennium Development Goals and sustainable development. UNDP provides capacity-building support to national governments, NGOs, independent institutions, and other stakeholders through advocacy, policy advice, and implementation services (UNDP, 2015).

3.2.4   The Impact of Imports and Export on Human Development

The Impact of Imports on Human Development: There are various influences of imports on human development. Not all but some imports may help increasing the quality of the transfer system and substructure, so these may increase the amount of trade. While some imports are encouraging exports with lower benefits some imports promote export and provide strong benefits in terms of humanity. As some kind of imports help reducing unemployment, increasing domestic trading volume and enhance educational quality, some kind of imports can endanger employment (Myers & Sussangkarn, 1992). Some kind of imports, for instance cell phone, may facilitate reaching any

information, so people can improve themselves easily. To access information easily will also help improve the educational system (Sisouphanthong & Myers, 2006).

While talking about import, it should be discussed not only as regards the import of products but also as the import of services. For instance, by importing institutions may increase service quality and make it easier to reach banking material and promote trade.

Another example may be given from the tourism sector. To increase service quality, make hotels more comfortable, employing qualified personnel; bus, minibus, automobile e.g. imports lead to better transit and improve comfort in travel, consequently, boost tourism both domestic and international.

Importing health services or health products enhances the quality in health sector which may decrease mortality, the price of material related to health, and make it easier to access them, as a result, to contribute positively to human development (Sisouphanthong & Myers, 2006).

Final goods and services imported into the country can boost consumption and human development by reducing prices and making affordable goods and services for many people.

The Impact of Imports and Export on Human Development: Export can have a significant impact on human development. When countries export goods and services, they earn foreign exchange, which can be used to finance investments in education, healthcare, and other social services. This can lead to improvements in human development indicators such as literacy rates, life expectancy, and access to basic necessities like clean water and sanitation.

Export-oriented strategies can create jobs and improve labor standards. This can increase the economic and social wellbeing of individuals and communities. Export growth can also spur technological advances and innovation, increasing productivity and competitiveness. This can lead to economic growth and further development.

Exports can have a limited impact on human development if they are heavily dependent on low-skilled workers or natural resources. The negative environmental effects of export-oriented transportation and production can also have adverse health and wellbeing impacts.

The Impact of Imports on Export: With trade liberalization, international competition has become more critical. So, it is essential to produce a product cheaper and of higher quality. In production, it is important to use modern methods to produce faster and more efficiently, and to import raw materials or intermediate goods cheaper than with traditional methods. By importing that kind of material which provides benefit in export will increase welfare and revenue, consequently human development (Myers, 2001).

3.3 Foreign Trade Theories

In this part of the study, foreign trade theories such as theories before the classical theories, classical theories and traditional theories are discussed.

3.3.1 Foreign Trade Theories before the Classical Period

In this section, the Mercantilism that originated in the 16th century and the physiocracy movements that arose in the beginning of the 1700s century in reaction to the Mercantilists will be discussed.

Mercantilism and Foreign Trade: In 1500-1800 years, Mercantilism originated in Europe. In these three hundred years, the mercantilist sought to find solutions to overcome the challenges of everyday life and to improve the wealth of themselves and their countries. Mercantilists, who put considerable emphasis on precious metals and international trade, accepted that the only source of prosperity was gold and silver. Therefore, the ruler's primary objective was to expand the treasure. The way to increase their wealth is to have a foreign trade balance in favor of their country. (Beuve, et al 2017).

Mercantilists, who reflect a mechanism focused on state interference, claim that state actions on domestic and international economic activities are essential in order to create trade surplus and maximize gold stocks and that it is appropriate to give priority to the increase in exports and to specifically limit the import of finished products except raw material and intermediate goods imports. (Gaido, 2016).

Another way of thinking of the mercantilists is that the world's wealth stock, stock, which is precious metal stock gold e.g., is constant. Because of this, if a country's economy weakens, other

countries will prosper. So, Mercantilists defend the idea that it would not be possible to improve the welfare of all countries participating in international exchange (Veebel, 2015).

Physiocracy and Foreign Trade: The roots of Physiocracy, a founder in economic populism, were laid at the late decades of 17th century and appeared as a school with Quesnay in France in the early decades of 18th century. In physiocratic economic systems founded on the fundamental principles of natural order and individual rights, every person is rational and the economic structure is based on this rationality. (Quesnay, et al 1972). According to the physiocrats, the free individual knows, uses and protects his benefits and behaves in the favor of society economically. Laissez faire, laissez passer is the most important slogan of physiocrats and they are against state intervention (Masne & Sabbagh, 2018).

While the economic ideologies of industrial capitalism and monarchism were embodied by mercantilism, the physiocracy was a reformist effort to put to the forefront the entrepreneur, producer and the peasant. (Blaug, 1985). Unlike the Mercantilists, Physiocrats asserted that production was the source of wealth, not trade. Physiocrats have also made a significant contribution to the liberal doctrine.

3.3.2 Classical Trade Theories

The key factor for the emergence of the Classical School is the deficiency of the Mercantilists' approaches to explain intensive production and trade accompanying the Industrial Revolution. (Rancan 2005). The fundamental principles of classical foreign trade theory is as follows. There are two goods, and the production factor is labor, which has no mobility between countries and has mobility between sectors within the country. Countries sell their goods in order to afford the products they need.

Adam Smith, the founder of Classical Liberalism, stated that, unlike the Mercantilists, free trade would contribute positively to increasing the prosperity of countries involved in international trade. Smith clarified foreign trade focused on absolute cost disparities among countries. The Principle of Absolute Advantages Theory as embodied by Adam Smith, a supporter of free market economics, would imply that international trade would provide a nation with more advantages than a closed economy (Smith, 1776). According to the theory if a country produces products cheaper, they should produce those goods and sell those products and purchase other goods from abroad.

As a result, division of labor and specialization will arise and countries will increase their welfare. (Schumacher, 2012).

The key argument, according to Ricardo, is not to measure the total advantage of certain countries in certain goods, that is, the degree of advantage in production. Consequently, the country should specialize in which products in their production have a stronger advantage over other countries. (Ricardo, 1817).

Classical economic philosophies promote trade, since trade would favor all nations. Free trading is important, however, certain restrictions are required to make it not completely free, because the principle of competitive advantages includes certain deficiencies. Deficiencies are;

- There are two countries and two factors, which are technology and efficiency, in the theory of Ricardo. However, it was not mentioned whether the theory would be correct if more than two countries or more than two factors were included in a model. (Bahar et al., 2019).

- The theory of competitive advantages does not consider positive or negative economic externalities. However, sectors have effect, such as a cost-reducing or demand increasing effect, on each other because some sectors are connected to each other.
- while the labor factor had perfect mobility within the country, the labor factor had imperfect mobility among the countries
- the model did not consider the demand side and only considered supply side;
- It is a static model
- It is based on fixed costs and full specialization (Kang, 2018)

3.3.3   The Neoclassical Trade Theories

In classical trade philosophies, the doctrine of free trade is discussed within the scope of labour theory of value, in which the value of the goods is determined by the amount of labor used in the production. In the 19th century, firstly, labor theory of value was revised, and then it lost its importance until the present day (Zhang, 2018).

Instead of the labor-value theory, neoclassical economists developed innovative ideas and added novelty to classical theory. Neoclassical economists, such as Walras and Menger, introduced a

number of producer and consumer-oriented theories to economic literature. In the competitive market economy, it was believed that prices would lead consumers and provide the most effective distribution of resources to increase the society's profits. (Campagnolo, 2009). Neoclassical economists have also used mathematics and formulas to clarify the practical relationship between variables such as price and demand. (Jäkel & Smolka, 2017).

Instead of labor cost, concept of opportunity cost was introduced to literature by neoclassical economists. Opportunity cost is firstly used to measure the value of goods by (Haberler, 1936). While analyzing the terms of trade for only one country, many economists have used the concept of opportunity cost. But he is the first economist to define the country's maximum output set for two goods graphically, not only under fixed opportunity cost conditions, but also under the assumptions of increasing and decreasing costs, while supply factors are constant.

3.3.4 Modern Trade Theories

By the 1930s, the dominant methodology in trade theories was the comparative advantage theory, which did not focus on the sources of differences in international labor productivity and could not explain the reasons for the domestic price difference between countries. However, these fundamental deficiencies were tried to be overcome by the contributions of Heckscher and Ohlin (Lloyd, 2011).

There are two fundamental assumption of Heckscher-Ohlin (H-O) Theory. The first assumption is that factor endowment of the countries is different, and the second assumption is that the factor intensity of goods or comparative factor prices are different. In theory, it is assumed that the wage and rent rates will be equalized between the two industries as a result of the mobility of the labor and capital factors after trade. However, in order to reach the basic target of H-O theory, factor density should not be reversed. In other words, the labor-intensive commodity should not come to the status capital-intensive; capital-intensive goods should not come to the status of labor-intensive goods (Moroney & Walker, 1966).

(Stolper & Samuelson, 1941) theorem states that there is a positive relationship between the changes in the price of the good and the payment to the factor used in the production. According to the theory, for instance, if the price of the capital-intensive good increases for any reason, the price of capital increases and the wage rate paid to labor will decrease. Similarly, if the price of

labor-intensive goods increases, the rent rate will decrease, and the wage rate will show an upward trend.

(Leontief, 1953) proved that the United States actually has a relative advantage over labor-intensive goods rather than capital-intensive goods. Leontief explained this with the productivity of the American worker, who is three times more productive than the labor productivity in other countries.

According to the (Rybczynski, 1955) theorem, which examines the relationship between the supply of factors and the production outputs in an economy under the conditions two products, two production factors and full employment conditions, the production will increase in the sector which uses that factor intensively, if one of the factor prices decreases. The theorem states that there was a positive relationship between the changes in the factor endowment and the changes in the output of the final goods within the framework of the H-O model. In other words, if factor endowment increases in a country, it will cause an increase in the output of goods that use this factor intensively, while decreasing the output of other goods.

3.3.5   Intra-Industry Trade

Today, the majority of international trade is realized between developed countries with similar technology, preferences and cost structures. Therefore, it is necessary to examine the intra-industry relationship between developed countries, which have similar factor equipment (Grubel & Lloyd, 1971). Intra-industry trade is defined as the type of international trade in which a country can both export and import a product belonging to the same industry. Intra-industry specialization is especially important for countries with similar levels of development through the change of consumer goods and decreases in product diversity (B. Balassa, 1986).

Economies of scale are an important factor in international trade because it is not easy for small enterprises in certain sectors to compete with big enterprises. As a result, these products are produced by the big companies instead of the small companies. The extent to which Economies of scale can provide advantage to big companies depends on whether these economies are internal economies or external economies. Internal economies of scale means that when a firm's own production scale increases, its average costs decreases. The costs changes of firm as a result of the events in the industry refers to the external economy. This, in other words, is referred to as an external economy when cost decrease or increase happens as a result of changes in the market.

Economies of scale have some effect for international trade. First of all, economies of scale encourage to specialize in industries. Instead of manufacturing small quantities of the vast number of products it specializes in a few sectors with economies of scale and imports the goods they need from outside. Thus, economies of scale provide competitiveness and profitability and cost reduction even between countries similar to each other in terms of production. Economies of scale affects consumers positively. For instance, consumers, who love product diversity, are benefitted from different types of a particular good to be offered in international trade (Greenaway & Milner, 1983).

International trade has traditionally been thought of as buying and selling goods produced in different industries. This is called cross-industry trade. But today, the main part of international trade is the purchase and sale of differentiated goods belonging to the same industry or product group. In this context, trading of differentiated products in the same industry is called two-way trade or intra-industry trade (Davis, 1995).

An expanding literature on this topic emerged after Balassa's 1966 comparison of intra-industry trade and non-industrial trade in his study (B. A. Balassa, 1966). Theoretical models in which product differentiation is a prerequisite for intra-industry trade were established by (P. R. Krugman, 1979). Balassa showed in his study in 1978 that integration efforts after the Second World War increased intra-industry trade between developing countries. After the removal of tariffs in the Central American Common Market, specialization in intra-industry trade has occurred in almost all commodity groups in the manufacturing sector.

The two-way trade of industrial goods with economies of scale is explained by the monopolistic competition theorem. In the manufacturing sector, most companies operate under the principle of increasing return to scale. Monopolistic competition markets arose as a consequence of this situation. Under the monopolistic competitive market system, (P. R. Krugman, 1979) illustrated that internal economies of scale can be the source of international trade. Findings of the (Krugman, 1980) model showed that in the event of product differentiation between economies of scale, the transport costs of trade between the two countries would not affect the number of companies and the number of companies in production (Krugman, 1980). However, as costs of freight increase the price of imported goods, it will cause a decrease in trade volume.

In his analysis, (Lancaster, 1980) pointed out that equipment and technology trade between countries with similar preferences was a fact in modern trade theory. In the Lancaster study the

intra-industry trade among the developed economies was demonstrated. He also stressed that if the output of the countries were similar, trade would be higher, and if the production were different the trade would be lower. (Lancaster, 1980) examined a totally monopolistic competitive market within the scope of intra-industry trade and found that a high rate of intra-industry trade can be anticipated even among almost equivalent economies where there would be no trade on the basis of comparative advantages. It has also shown that similar economies can trade more than others, and tariffs can sometimes boost intra-industry trade (Lancaster, 1980). Intra-industrial trade is definitely going to take place if the economies in all respects are the same, and will continue under conditions of comparative advantage. However, if the differences in comparative advantage, technology or factor equipment are large enough, such a situation may eliminate intra-industry trade in the production dimension. Intra-industry trade may therefore not only take place between similar economies. However, the volume of trade may be much higher than the comparative advantage in similar economies.

(B. Balassa, 1986) carried out a study investigating 37 countries having trade with the U.S.A. In his study, he concluded that intra-industry trade has a positive relationship with product differentiation, marketing costs. On the other hand, the conclusion has been reached that there is a negative relationship between economies of scale, foreign direct investment and transportation costs.

The empirical analysis by (Sharma, 2000) focused on intra industry trade in Australia after the late 1970s. The goal of the study was to decide the direction of recent trends in intra-industry trade in the Australian production sector. He also wanted to find out what factors affected intra-industry trade before and after liberalization. Intra-industry trade increased significantly from 28% in the late 1970s to 38% in the early 1990s, according to the study's findings. This substantial rise, according to Sharma, can be due to the liberalization program that began in the mid-1980s. According to the findings, since the mid-1980s, there has been a sharp rise in intra-industry trade as a result of the introduction of an outward-oriented strategy. The decline in protectionism has resulted in high intra-industry trade in these sectors (textiles, garments, plastics, machinery and equipment), according to an industry-level analysis. In the pre-liberalization period, the results of the study revealed that intra-industry trade has a positive relationship with product differentiation and economies of scale, but a negative relationship with protection and foreign ownership levels. However, in the post-liberalization period, economies of scale are the element that explains the changes in intra-industry trade. It was seen that intra-industry trade experienced in industries benefiting from economies of scale has higher levels.

3.3.6   Terms of Trade and Developing Countries

Since many years, the issue of who can benefit and who cannot benefit from trade between developed and developing countries has been a source of debate among the economists (Blattman et al., 2003). The debate is sparked by the fact that developed countries export manufactured products while developing countries export agricultural and raw materials. A group of economists proposed that the terms of trade would work against developed countries and therefore in favor of developing countries. The approach that argues that terms of trade work against the less developed countries is another point of view in the foreign trade. This approach is based on the work of (Singer, 1950) (Prebisch, 1958) and known as a "Singer-Prebisch Thesis".

The View That Terms of Trade Will Be in Favor of Developing Countries: Some economists like Keynes, Ricardo and Mill claimed that terms of trade developed in favor of raw material producers and agricultural products in the long run and therefore against developed countries producing industrial goods, and that this trend developed during the 19th century. Their claims were based principally on the following arguments:

First of all, since the world's fertile land is limited, the steady population growth, declining returns in the production of raw materials and agricultural products will increase the price of these goods in the long run compared to industrial goods, and the terms of foreign trade will develop in favor of the developing countries. This claim was pointed out by Ricardo and was accepted by A. Marshall and Keynes in the early 20th century (Salette, 1966).

The second point is that developed countries specialize in the production of industrial goods, while developing countries in the production of agricultural products. As a result, terms of trade will be in favor of less advanced developing countries exporting agricultural products, whose prices are rising due to the demands of developed countries, and terms of trade will be against the developed countries (Kaneko, 2000).

The third point is that, because the price indices do not represent improvements in the quality of the goods, the quality of the manufactured goods is significant and the quality can ultimately affect prices, while the terms of trade would increase in favor of the countries producing and exporting agricultural products, as the price indices do not reflect this situation.

Furthermore, calculating the terms of trade using only the export and import price indexes can lead to confusion. Since current account items include both visible and intangible items such as transportation costs, interest received from short-term capital flows, income transferred as a result of foreign direct investments, and unrequited transfers, current account items may be confusing. Developing countries that export agricultural products and raw materials may benefit from a decrease in invisible goods, as the terms of foreign trade shift in their favor (Findlay, 1980).

During the twentieth century, there were arguments that contradicted this viewpoint. As a result, the viewpoints expressed above were inadequate to justify the developed countries' continuous decline in terms of trade. (Singer, 1950) (Prebisch, 1958) conducted more in-depth investigations into this subject.

The Opinion That Terms of Trade Will Be Against Developing Countries: (Singer, 1950) (Prebisch, 1958) found in their first investigation that the terms of trade between agricultural and industrial products are evolving in the long run against countries that export agricultural products and import industrial products. These two authors, who share similar viewpoints, revealed that the terms of trade have developed against the developing countries that export intermediate goods and raw materials. Their thesis was based on the following points.

The first point is that the income elasticity of industrial goods demand is greater than one, while the income elasticity of agricultural product demand is less than one. As mentioned in the barrier rule, as real income rises, the proportion of income spent on basic needs like food decreases, while the proportion spent on finished products rises. As a result of global income flows, trade terms will deteriorate in favor of agricultural product exporting countries, as demand for industrial products grows faster than demand for agricultural goods (Bhagwati, 1958).

The second point of debate is the use of artificial materials in place of natural ones. Developing countries generally export agricultural products. With the advancement of technology, the use of synthetic products rather than natural products, as well as the gradual decrease in the rate of raw materials among final goods, both reduce the demand for the raw material and intermediate good produced and sold by the developing countries, and causes a decrease in the prices of these products (Kindleberger, 1958).

According to the third point, developed countries offer subsidies to their farmers for some purposes, both to protect this class and to reduce agricultural imports, thus demand decreases for raw materials, intermediate goods and agricultural products, which has a large share in the exports of less developed countries (Hadass & Williamson, 2003)

The fourth point is that international trade is not carried out under free market competition. There are various competitive dynamics in developed and development countries. Exporters from industrialized countries may form cartels and they work together and control price as they want. In addition, bargaining power of developed countries is greater than that of developing countries. However, agricultural producers whose numbers are represented in thousands in developing countries work almost in a perfect competition order. One explanation for this is that they are unable to organize themselves in almost every sector in developing countries, and another is that the products they produce are rarely strategic products. As a result, while developing countries don't have power to raise the prices of agricultural products they sell, developed countries have power to raise the prices of finished goods (Parikh & Stirbu, 2004).

The fifth point is that technological progress in agriculture increases fertility and the supply of agricultural products. Prices can fall as a result of a company's inability to work cooperatively while determining prices. Nonetheless, competition among small companies may result in lower export prices (Prebisch, 1958). This situation works differently in developed countries. While the increase in productivity in developed countries should cause the supply of agricultural products to be abundant and decrease the prices, because of the collaboration of the companies, for example establishing a union, the price decrease is prevented.

The sixth point is that during business cycles, agricultural product and raw material prices fluctuate more than industrial goods. If the economic conjuncture goes well, the prices of agricultural products and raw materials will rise faster than the prices of imported goods, and the terms of trade will shift in favor of developing countries. If the economic conjuncture enters a depression period, the terms of trade do not shift in favor of developing countries because the prices of agricultural products and raw materials fall significantly compared to the prices of other products. Actually, neither developing countries only export agricultural products nor developed countries only industrial goods. As a result, it would be incorrect to assert that fluctuations in agricultural product prices merely worsen the terms of trade of developing countries (Diewert & Morrison, 1985).

The seventh point is that developed countries would focus on agricultural goods where they have a competitive advantage in foreign trade. As a result of this situation, developing countries will shift away from the production of industrial goods which create more added value than agricultural products (Eicher et al., 2008).

Some of the criticisms directed to the Singer-Prebisch thesis are as follows:

The explanation for the criticism is the methodology used to calculate trade terms. The decrease in the prices of food and raw materials imported by developed countries from developing countries may be due to the decrease in transportation costs. Due to the developing technology, transportation costs per unit are gradually decreasing, as a result, the prices of imported goods, ie agricultural products, seem to have decreased over time. This phenomenon leads to incorrect conclusions in calculations regarding the terms of trade of less developed. So, it needs to be investigated deeply what reasons cause the price decrease (Harvey et al., 2010).

The second criticism is on the drawbacks of not considering the change in the quality of industrial products exported by developed countries. There is no significant change in the number and quality of products exported by developing countries over time. However, there are big changes in both the quality and the type of industrial products imported by developing countries. While calculating price indices, the difficulty to understand whether the increase in price is the result of the improvement in the quality of product or not shows that the results obtained in terms of trade are not very reliable (Lutz, 1999).

The third criticism is that efficiencies are not taken into account while calculating terms of trade. In order to accurately calculate whether terms of trade have developed in favor of or against developing countries, it is necessary to calculate "factor terms of trade". This term considers productivity while calculating price. However, in the Singer-Prebisch thesis, net terms of trade are taken into account. It should be noted that the difficulties in estimating the degree of productivity in the industrial and agricultural sectors in developing countries make it impossible to calculate the factor terms of trade (Sarkar, 1986).

Much research was conducted in the literature on the validity of the Singer-Prebisch thesis. (Arezki et al., 2014) examined this research and categorized them based on their results. In the first category are those who argue that trade terms would be in favor of developing countries such as studies of (Viner, 2016), in the second group belong 33 studies such as those who argue that terms

of trade would be against developing countries (Porter, 1970) and in the third group are those which claim that the studies have insignificant results.

3.4 The Trade Complexity and Import Content of Exports

Trade complexity refers to the level of sophistication involved in the production and export of goods and services by a country, typically measured by both their export products and level of technology and expertise necessary for producing them (Hoekman & Mavroidis, 2019).

Countries with high trade complexity typically export more technologically complex, advanced products that require specific knowledge and expertise for production such as high-tech machinery or pharmaceuticals; conversely, those with lower levels tend to export simpler labor-intensive items like agricultural produce or textiles (Melitz et al., 2018).

Trade complexity is of immense significance as it often correlates with increased levels of economic development and growth. Nations that feature high trade complexity often have more diverse, resilient economies with increased levels of productivity and innovation. However, achieving a high level of trade complexity can also be challenging, as it requires investments in education, research and development, and infrastructure, among other factors ((Salvatore, 2019).

The Import Content of Exports (ICE): This ratio is a way to measure how much a country's exports rely on imported intermediate goods and services. It is determined by dividing the value of imported inputs used in the production of exports by the total value of exports. A high ICE ratio means that a country heavily relies on imported goods and services in producing their exports (Giersch & Hatten, 1981).

ICE ratios can differ greatly between countries and industries. Developed countries often have higher ICE ratios compared to developing countries, as their production processes tend to involve more complicated supply chains and a greater reliance on imported inputs. Similarly, industries that heavily depend on technology and specialized inputs, such as computer hardware and pharmaceuticals, are likely to have higher ICE ratios than those that rely more on labor (Baier et al., 2004).

An ICE ratio can be applied in various ways:

- The ICE ratio provides an effective measure for assessing a country's level of integration into global economy. Calculated by dividing its exports by its GDP, its calculations reveal whether a nation's economy is more trade dependent and more integrated, while lower ratios indicate less integration (Baldwin, 1998).

- The ICE ratio can be used to assess the degree of trade interdependence among countries. Comparing trade performance across nations using their ICE ratios reveals one country's dependence on another for trade - higher ratios indicate greater interdependence (Melitz et al., 2018).

- The International Competitiveness Index Ratio (ICE Ratio) can be used as a measure of trade openness in a country. It's calculated by dividing exports by GDP. A higher ratio indicates an economy which is more open for trade while lower ratios indicate economies which are less welcoming (Maddison, 2001)..
- The ICE ratio can be used in combination with other indicators, such as Revealed Comparative Advantage (RCA) index, to assess trade competitiveness and diversification in a country. A high combination of an increased ICE ratio with high RCA value indicates a country has a dynamic and diversified export sector (Giersch & Hatten, 1981).

The Import Content of Export (ICE) is often used as a way to measure the openness of a country's trade. Countries with a high ICE are considered more open to trade, as they heavily rely on imported inputs in the production of their exports.

In summary, Import Content of Exports (ICE) ratio is a metric which measures the extent to which exports from a country depend on imported inputs, providing insight into its level of integration and interdependence with global economic processes, the openness and competitiveness of trade practices in that nation and diversification within its export sector. (Maddison, 2001).

3.5 Foreign Direct Investment

Lack of capital is one of the most important problems faced by developing countries. To solve this problem, developing countries have considered foreign capital as a solution. Countries provide

capital inflow by attracting FDI instead of external borrowing. In addition, FDI has many advantages such as providing technology transfer, creating employment and triggering exports.

(FDI) is a long-term investment in which a company establishes a new company in a foreign country or acquires and merges an existing company, resulting in significant opportunities in areas such as technology, entrepreneurship, know-how, marketing, and export knowledge (Karluk, 2013).

The primary goal of policies aimed at increasing FDI is to boost growth rates. FDI boosts exports by providing capital, know-how, management skills, technology, and most importantly, access to global markets (Nguyen, 2020).

In the figure 4 FDI inflow in the world was shown. As seen in the figure, since 1970 FDI increases. While the FDI is around 12 billion $ in 1970 it reached its maximum level which is around 3.13 trillion $ in 2007. In 2018 FDI inflow in the world was around 917 billion $.
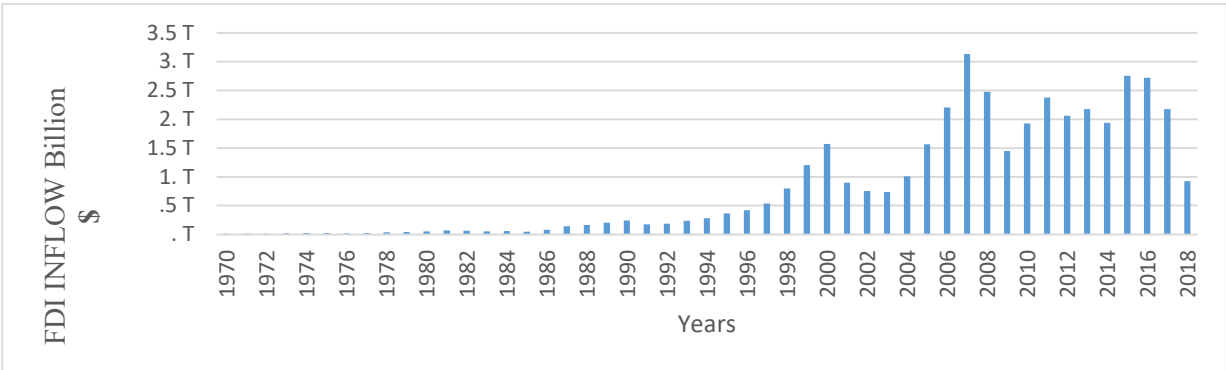
Figure 4: FDI Inflow in the World (1970-2018) **Source:** Own edition based on data (Foreign Direct Investment, Net Inflows (BoP, Current US$) | Data, 2022)

In the figure 5 below, the most attractive 10 countries in terms of FDI was shown. As seen in the figure, China was the most attractive country in terms of FDI. Other countries are United States, Germany, Singapore, Brazil, France, Ireland, Australia, Spain and Italy. While China attracted 235,4 billion **$** FDI, Italy attracted 44,2 billion **$** FDI.
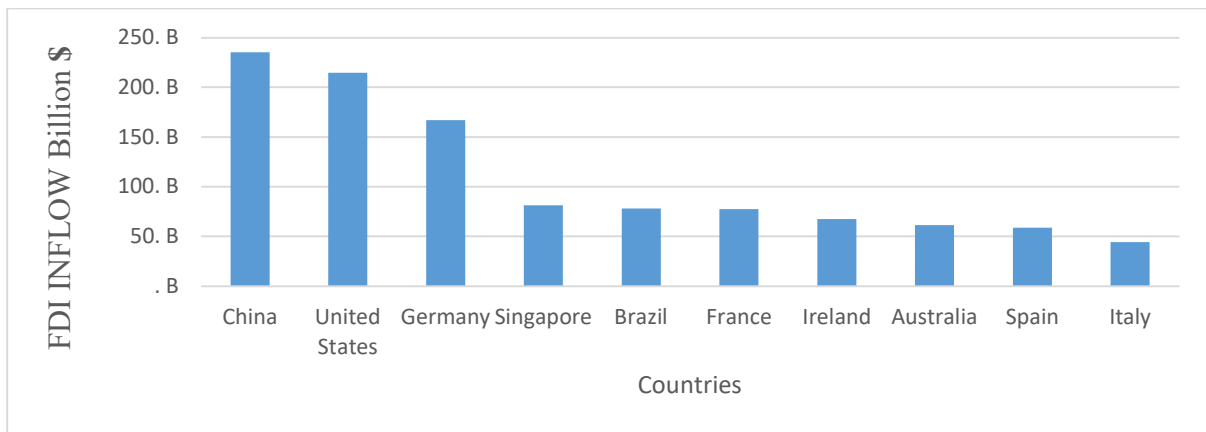
Figure 5: The most Attractive 10 Countries in terms of FDI in 2018 Source: Own edition based on data (Foreign Direct Investment, Net Inflows (BoP, Current US$) | Data, 2022)

3.5.1   Foreign Direct Investment Types

FDI enters the host countries in different ways. Investors can make new investments, joint venture and invest through mergers and acquisitions. According to literature, there are four different types of foreign direct investments which are Greenfield investments, joint ventures, mergers and acquisitions and strategic mergers.

Green Field Investments: All financial transfers from MNEs to subsidiaries are considered greenfield investments. This form of investment is known as green field investment since it produces new companies in the host country.

This type of investment intensifies in developing countries where there are downs in business life. In this type of investment, the aim of the investor is to open a new business with its own technology, production method. In this type of investment, it is aimed to maximize profit.

Green field investments are investments that directly increase host country stocks, capital efficiency and employment. In this type of investment, the investor creates a new organization in line with his own wishes and needs. However, it should be considered that it will take longer time compared to acquisitions and mergers in terms of market entry and gains. Green field investments require the use of local land, local employment, technology and know-how. Local transactions become integrated with international transactions through the foreign investors.

Joint Ventures: A joint venture is an agreement between two or more partners to form a company, either permanently or temporarily, to carry out a specific business while continuing their own

activities, and to offer technical, financial and commercial assistance to this company from their own enterprises.

Joint venture, two or more companies come together for common purposes and form a company. It is an economic enterprise in the field of international business in which ownership and control is shared between a foreign firm and a host countries' firm.

Each investor agreeing on partnership may have the advantage on some production factor such as advanced production technology, some financial resources and some human capital. Thus, investors can reach their target easily although they cannot do it alone. Investors prefer joint ventures because they lower the high risk and cost of beginning a new business, allow small enterprises to compete with and live among major corporations.

Mergers and Acquisitions: Mergers occur when two or more companies bring their resources together in order to enhance market share, market power, and efficiency while losing their legal assets and forming a new company. Company acquisitions are the acquisition of all or most of the assets or shares of a firm in the host country by a foreign investor. Mergers and acquisitions are the easier way to enter a foreign market compared to other ways.

In this investment method, instead of establishing a new company or branch in a foreign country, companies can either merge with an existing local company or buy the entire company. In a merger, one company dissolves into another or two companies create a new entity and companies are dependent of each other.

Strategic Mergers: The purpose can be listed as sharing R&D activities, entering the market with the right timing, and benefiting from the benefits of joint marketing and service provision.

Strategic mergers can emerge in three ways. The first is when two firms exchange their stocks with each other. However, this is not a foreign direct investment, but a portfolio investment. In the form of a broader strategic merger, both companies exchange their stocks and establish a joint venture for the purpose of producing goods and services. This type of investment can be seen in the automobile, aircraft industry, electronics, and telecommunication fields. As it is understood from these sectors, strategic mergers are common in high technology sectors where R&D expenses are high and timing is important for market entry. In a third method of cooperation, joint marketing and cooperation agreements are made and one party represents the other in the markets.

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3.5.2 The Determinant of Foreign Direct Investments

The main aim of FDI is the profit expectation, but the profitability alone is not enough investment. The investor should know more about the country in which they will invest. If they know some factors about market, they can manage the investment process more effectively. According to literature these factors are economic factors, political factors, institutional factors and cultural factors. These factors are considered as the factors that ensure security of income, income transfer, future and current investment.

One of the important factors for FDI is the size of the market and market demand. In this context, an FDI investor expects the host country to have a high purchasing power and a growth potential of the economy. MNEs aiming at profit maximization will more easily reach their targets in larger markets. Market growth and the increasing demand have a positive effect on foreign direct investments (Wheeler & Mody, 1992).

The real exchange rate is a variable that affects the welfare level and labor costs. The appreciation of the host country's currency may increase the inflow of foreign direct investment towards the local market, as it will increase the purchasing power of consumers in the host country. A depreciation of the host country's currency may decrease labor cost, so MNEs desire to take advantage of the cheaper labor force. Economic factors can be listed as natural resources, tax payment and trade openness.

Natural Resources: In order to avoid import and transportation costs, MNEs may prefer to make FDI to the country where the raw materials and natural resources are abundant.

The well-developed infrastructure in a country that is considered as an encouraging factor for potential investments in production to flow to these countries. The availability of quality physical infrastructure indirectly reduces the total investment costs of investors and increases their profitability. FDI investors pay attention to this issue in the countries where they will invest, because developed infrastructure will provide much higher quality communication, transportation and production services. Therefore, developing countries should give importance to their infrastructure in order to attract more FDI.

The goal of MNEs is to maximize profits and increase company revenues, so they expect economic stability in the country where they invest. Since the strategies of MNEs are generally long-term, it is very difficult to see the future and set the target in an instable economy. On this basis, it would be correct to say that there is a positive relation between economic stability and FDI.

Tax Payment: Tax payments are one of the major expenses for MNEs operating in many countries. Many governments pursue policies that enable MNC tax payments in order to attract FDI. To provide advantages to MNCs, host country and home country enter into an agreement. Lower corporate tax rates, exempting non-resident employees from income tax or imposing lower tax rates will attract more FDI.

Trade Openness: The degree of openness is measured by the trade volume/GDP. It is accepted that countries with high openness will attract more FDI. In economies with a high level of openness, it is easier for the investor to import and export. In addition, the easy entry and exit of capital into the country is also another important determinant of FDI. Countries that implement capital-restrictive trade policies receive less foreign direct investment than countries that implement liberal policies.

Non-economic factors such as the political stability, corruption, legal system, and education level, the effectiveness of the government, institution and bureaucracy affect FDI inflows.

One of the important issues for MNEs is the economic and political stability of the country they will invest in, because political stability affects economic stability. So, MNEs are reluctant to invest in countries without political stability. Political instability negatively affects the implementation policies such as structural reforms, the management of fiscal and monetary policies, and economic growth.

Corruption reduces the efficiency of government policy, raises public expenditures, reduces competitiveness, raises risk and affects FDI negatively inflows. Government should implement more transparent policies and develop an anti-corruption strategy.

The legal system, including laws, rules, regulations, institutions, plays important role in determining FDI. A well-functioning system eliminates uncertainty in the economy and ensures the protection of property rights and capital outflow or inflow which are critical concern for FDIs.

The education level of a country reflects the quality of its labor force. A well-educated workforce makes the country more appealing to investors.

The efficiency of the government can be evaluated by how smoothly the bureaucracy operates and how consistent and stable its policies are. A favorable environment allows for easy and quick market entry.

Goods and services offered to local markets should meet local needs. If MNEs enter a foreign market without considering consumer's preferences, laws etc., they will put themselves at great risks. That's why MNEs enter in a country where they know the people, are familiar with their civilization, know their habits.

One of the important elements shaping the culture of a country is religion. In addition, religion affect economic performance and the effect of religious belief has effect on FDI. Investors tend to invest in countries which have less religious diversity. Because the difference in religious beliefs causes cultural differences between the home country and the host country.

3.5.3 Foreign Direct Investment and Export Relationship

FDI have two effects on the host country's exports. The direct effect, which is expressed as exports of multinational businesses' foreign subsidiaries, is the first of these elements. The indirect effect, which is stated as the impact of FDI on domestic companies' exports is the other factor (Zhang, 2005).

According to the new trade theory, the direct impact of FDI inflows on host economy's exports is dependent on the FDI type. FDI is categorized into horizontal, vertical, and export platforms in these regards. Horizontal investments are market-seeking investments and not expected to have an impact on exports because the aim of this investment is to enter the local market. Vertical investments known as resource-seeking investments because the intermediate or final goods trade between Multi-National Enterprise (MNE) headquarters and subsidiaries is expected to positively impact the host country's exports. The export platform FDI explains that MNEs export a majority of their production, which is produced in the host country, to the other countries instead of selling them to the host countries (Kastratović, 2020).

The export platform FDI has components of both vertical (resource seeking) and horizontal (market seeking) FDI. Export platform FDI emphasizes the importance of free trade agreements, proximity to major markets and production costs as a whole for companies' investments abroad. In this context, the export platform FDI creates export-enhancing effects for the host country (Ekholm et al., 2003).

FDI affects the exports of local firms of the host country through various channels (Zhang & Song, 2001). These are;

Observation and imitation: Local companies can increase their exports by observing and imitating the MNE's export activities, production activities, and management and marketing activities.

Labor Transfer: Employees working at MNEs know more about exports process and this information might be passed on to local businesses if MNE employees work for local businesses or start their own.

Competition effect: The entry of MNEs into the local market drives local businesses to invest in innovation, R&D and more efficient resource allocation in order to maintain market share. As a result, FDI can help local businesses become more efficient by allowing them to adopt new technologies.

Externalities: Local firms can get information about foreign markets from MNEs. In addition, subsidiaries in the host country increase the local companies' export by helping to improve the necessary infrastructure to provide access to foreign markets and by making their own financial services, communication and transportation infrastructure available to local companies.

Linkages: By demanding raw materials and intermediates from the host counties, MNEs create backlink. So, new local firms establish and the existing local firms benefit from scale economies. MNEs also cause local suppliers comply with standards such as quality product, on-time delivery and low defects. In addition, MNEs have another effect on the local companies and this is called as forward link. Thanks to this effect, MNEs provide the cheap, high-quality inputs to the local companies.

Lobbying: MNEs can help local enterprises grow their exports to the MNEs home country by lobbying of import restrictions from the host economy they operate.

The flying geese model, new growth theories, product life cycle theory explain the impact of FDI inflows on the host country's exports. According to those three models, FDI affects the host country's exports directly or indirectly (Kojima, 2000). While direct effects are emphasized in flying geese and product life cycle models, indirect effects are emphasized in new growth models theories. The concept of "flying geese" suggests that as countries develop and improve their capital assets, technological capabilities, and workforce skills, they will transfer their production processes to less developed countries, creating an international production cycle (Ginzburg & Simonazzi, 2005). This model proposes that investments are made in other countries in order to lower production costs, such as labor costs. According to this theory, FDI shifts over time based on the level of industrialization in the host country. As a result, the proportion of this type of product in the host country's total exports will increase (Driemeier & Nayyar, 2019).

The product life cycle theory is based on the idea that innovations drive changes in a country's production composition over time through FDI and imitation. According to this theory, every product goes through four stages: introduction, growth, maturity, and decline. Horizontal FDI typically takes place during the introduction stage of a product's life cycle (Wells, 1968). As the product reaches the maturity stage, subsidiaries of American multinational corporations (MNEs) may replace exports from the home country due to differences in labor costs and increase the host economy's exports by exporting to both the home country and third countries, this is known as global export platform FDI (Gao & Tisdell, 2005). Companies, including the original innovator, invest in developing economies to take advantage of low-cost labor, with the final product being exported by the developing economy. In this way, the product life cycle theory highlights the role of imitation in the export spillovers of FDI (Tyulin & Chursin, 2020).

Modern growth theories suggest that FDI is critical in promoting domestic company investments and technological progress. These theories posit that externalities and the existence of human capital enhance the marginal productivity of physical capital, leading to increased economic growth and exports (Nair-Reichert & Weinhold, 2001).

3.6 The History of Institutional Economics

Although the institutional economics theory was founded by Veblen literally, the institutional economics term firstly was introduced by Walton Hamilton to the literature in 1919. In the definition of Hamilton, it was emphasized that the basis of the economic theory was formed by

institutions and the economy was not only in balance but also in process (Hamilton, 1919). The characteristics of institutional economics can be listed as follows;

- Institutional economics argues that the economy should be considered as a whole, not individual and independent from each other. Institutional economics give a union as an example about that, and they say that it is not possible to explain the behavior of a union, for example, by examining its members one by one.
- Institutional economics say that economies were affected by other things which have an effect on human life such as politics, history, ideology, culture and tradition.
- Institutional economics thought asserts that an institution means more than an institution created for a particular purpose. The institutions include culture, thought, behavior, tradition and lifestyles. So, economic life is governed by institutions rather than economic rules. Moreover, the institutional economics argues that the important element in economic analysis is the way of social thinking and behavior rather than individualism.
- In contrast to traditional economic theory, institutional economics argue that there is a conflict of interest in economic life instead of aiming economic stability. So, they say that the political power should have an objective perspective among the interest groups while it uses its regulatory role (Hamilton, 1919).

According to (Veblen, 1904), the economy is the theory of process and order. Institutions have an important role in shaping this process. By emphasizing the institutional aspect of economic behavior of individuals, Veblen asserts that traditional economics mainly focus on individual benefit, so economics lose its function.

(Veblen, 1898) defines institutions as dominant ideas in terms of the specific relations of individuals and society, because of the wish to have high status of individuals. So, he says that the habits of thinking of individuals should change for institutional change.

Commons, another representative of institutional economics, defines the institution as a collective action that frees, controls and extends individual behavior. With this definition, Commons says that economic problems can not only be solved through competitive markets and institutional intervention is needed to reach the desirable social level (Eroğlu 2018).

(Mitchell, 1914) argued that economic theories would vary depending on the variability of economic structures and processes and that economic theories were dependent on time and space. From this point of view, Mitchell has used historical records and statistical measures to create a theory that takes into account the diversity and complexity of institutional structures.

(Mitchell, 1969) made important contributions to the business cycle theory. According to Mitchell, the main reason for fluctuations in economic life is the reaction of businessmen against the change in the rate of profit. Therefore, instead of creating a single business cycle theory, it has been suggested that it would be appropriate to examine each fluctuation within its own conditions as a result of each of the economic fluctuations having their own conditions.

The fact that the new institutional economics has a variety of branches such as property rights, transaction costs, and is intellectually linked to law, politics, sociology, organization theory as well as economics, has given it a multidisciplinary character. In particular, the scientific contributions of (North, 1991) on the institutions, and their studies on the transition economies, brought out considerable importance to the new institutional economics. In this way, the new institutional economics made an important contribution to explaining the developments in the transition countries and the economic performance differences between the countries

The new institutionalists argue that government intervention is necessary for the economy. The reasons are;
- there is no efficient distribution of resources
- there are externalities
- the prices are not equal to marginal costs (North, 1991).

According to new institutional economics, in an economy, deviations from pure competition conditions will lead to imperfect competition (Spithoven, 2018).

According to the new institutional economics, the foundations of economics are based on unreal assumptions such as perfect or imperfect elasticity of demand, costless market information. They claim that there is an important dilemma between the economic theory and the economic system (Atkinson & Reed, 1990).

One of the differences between The New Institutionalist economists and Old Institutionalist economists is that New Institutionalists use methodological individualism while explaining

individuals' goals, plans and behaviors. According to methodological individualism, analysis is based on the individuals considered as the decision-makers. Individuals can be effective in changing the structures they are involved in. According to this approach, the individual takes into account the social relations and others' benefit as well as his own benefit in making any decisions, so their decision cannot be independent from others. From this perspective, it is possible to predict human decisions through game theory. It is a formulation of methodological individualism and opportunistic behavior based on game theory, a method frequently used by new institutionalists (Hodgson, 2003).

(North, 1991), one of the pioneers of the new institutional economics, defined institutions as the community that organized human interaction. In another definition of him, institutions are defined as rules of the game in a society, and he told that institutions are guides for human life.

Another explanation of the institutions was made by (Coase, 1937). Coase was an economist who first dealt with the concept of transaction costs. In his article he mentioned the institutions as a factor that reduces transaction costs. According to Coase, the main aim of institutions is to reduce the transaction costs such as market survey, contract costs in the market. Coase proposes that trading on the market involves a cost, so that some of the economic activities must be done through firms.

3.7 Methodological Tools of Institutional Economics

Institutional economics includes important points while analyzing the effects of institutional structures on the economic activities of individuals (Hodgson, 1998). In this context, the seven important concepts mentioned below constitute the main theoretical tools of institutional economics. Those are Asymmetry of information, Transaction costs, Bounded rationality, Property rights, State interference, Technology, Market.

In contrast to the neo-classics, institutional economics has not adopted a system in which knowledge has been fully acquired and known by everyone and pointed out the existence of information asymmetry. Knowledge asymmetry means that one does not have enough information about the other in the economic relations (Hodgson, 1998).

Institutional economics has adopted bounded rationality by opposing the rationality of the individual accepted by the Neo-classics. Although bounded rationality aims at rational decision-

making, defines this as a condition of bounded information processing and communication capabilities and cannot assess all possible decision alternatives (Simon, 1955). Therefore, according to institutional economics, the decision-maker who confronts bounded rationality, selects the most appropriate one of the bounded alternatives by using bounded information.

Transaction cost was first discussed by (Coase, 1937) in the article whose name is The Nature of the Firm. Standard growth theories, which do not include the cost of trading according to Coase, do not make a realistic assumption. Coase defined the concept of transaction costs as the cost of using the price mechanism.

Transaction cost is one of the most important methodological tools used by the new institutional economics. The concept of transaction costs in the new institutional economics is one of the concepts emphasized. However, there is no similarity between the two schools regarding the use of transaction costs as an analysis tool. In the new institutional economics approach, transaction costs constitute the basis of the principle of economic behavior. The former institutional economics approach is based on the logic that firms should reduce this cost rather than the basis of economic behavior (Fan et al., 2019).

Similarly, (North, 1991), another institutional economics, used the concept of transaction costs in his analysis. According to North, institutions lead the economy with their effects on costs. North stated that the transaction costs are included in the total production cost. He defined the cost of the transaction as the cost of determining the properties of the goods and the protection of the property rights.

Property rights define what individuals can do in social life, the limits of their responsibilities and freedoms. Property rights are defined as the rules of the game in institutional economics, and there is a consensus that it will reduce conflicts among individuals (North, 1991).

Property rights can be divided into economic property rights and legal property rights. In the economic sense, property rights means the rights which individuals strive to achieve, while legal property rights means a set of instruments that the individual uses to get economic property rights (Lin et al., 2018).

Although individuals have legal rights on assets, it does not mean that they can benefit from these rights economically. Because there is a transaction cost in economic life while using rights on an

asset. This link between economic rights and legal rights is the corner stone of the Coase Theory which has an important place in economic science. Coase theory is a theory that examines the difference between economic feasibility and legal feasibility in the context of transaction costs and externalities. Externalities is defined as the benefit or the cost from one to another without any pricing. Classical theory and Coase theory offer different ways to solve the problem of externality (Zhou, 2018).

Classical theory defines externality as a market failure and offers the need for state interference as a solution. While classical economics offers direct control and punishment, for instance taxation, of the activities which cause externalities, (Coase, 1960) offers another solution. According to Coase, the cost caused by externalities is the result of agreement of the two sides. Coase says the taxation is not economically necessary, and it may lead to negative results. So, the problem should be solved through bilateral agreement.

In the institutional economics approach, technology is considered as an important determinant of the institutional structure and social activity. Therefore, the institutional economics tradition emphasizes the necessity of including the technological progress that they place as an important variable in the growth process (K. J. Arrow, 1962). Institutionalists claimed that the main factors that determine R & D activities and human capital accumulation during the technological progress process are variables such as property rights, the policies of the institutions which are theoretical tools of institutional economics.

According to North, institutions are constantly changing under the conditions encountered. In some periods, some events may cause the change faster. The main factors that accelerate this change are the demographic structure, knowledge and technology (North, 1991). Therefore, a significant share was given to technology as a determinant of this rapid change in institutional economics.

The state and its interventions have an important place in institutional economics. However, it is also claimed that there should be some limitations on the role of the state in economic life.

(Roy, 1995) stated that the presence of the state in the market will facilitate complex processes that will lead to higher income and welfare, but if this presence is used in favor of certain groups,

this will affect the economy negatively. Therefore, the new institutional economics put forward views on the restriction of the role and functions of the state in economic life.

In the institutional economics, it is assumed that the main functions of the state are to protect and implement property rights. The role of the state is the definition of property rights (legislative function), interpretation (judicial function) and finally, the implementation (use of power) function. Therefore, the state is seen as an important institution in the formation. So, the political, legal and bureaucratic structure of the state has significant effects on economic performance, especially in the economic growth process (Kohli, 2009).

In institutional economics, the market is considered from different perspectives compared to the neo-classical economy. According to institutional economics, the market is shaped by institutions. The market interacts with other institutions in society. In institutional economics, it is argued that, unlike the neo-classical school, the market cannot allocate resources and thus institutions do the allocation of resources. Institutionalists argued that the market is not formed by the preferences of the individuals and so institutionalists refuse individualism (Runst, 2014).

3.8 Literature on Empirical Results

According to (Chakrabarti, 2001) there is a strong correlation between political stability and foreign direct investment (FDI). As political stability improves, FDI in the host country also increases. Additionally, he found that lower tax rates, greater trade openness and economic growth are positively associated with FDI, while higher wages, import tariffs, net exports, and real exchange rate are negatively associated with FDI.

(Mencinger, 2003) checked the link between FDI and economic growth. By conducting the Granger causality test it was discovered that while FDI creates growth, growth does not cause FDI.

(Mina, 2007) used a panel data analysis with data from 1980 to 2002 to study the influence of locational determinants on FDI. The study found that trade openness, market volume, per capita GDP, infrastructure, and institutional reform all had a positive impact on FDI inflows.

(Demirtaş, 2005) analyzed cross-sectional data to check the impact of institutional variables on FDI in developed and developing countries between 1995 and 2002. He discovered a positive

association between FDI and institutional elements such as voice and accountability, political stability, bureaucratic efficiency, rule of law, regulatory quality, and anti-corruption efforts.

(Hasanov, 2013) evaluated the effect of taxation on foreign direct investment in the context of Azerbaijan. He made an empirical analysis on the effect of taxation on foreign direct investments in Azerbaijan in the period 1994-2011. In this context, the effect of some economic variables related to the investment climate, including the corporate tax rate as the main variable, on foreign direct investment in non-oil sectors in Azerbaijan has been analyzed empirically. The findings obtained from the analysis reveal that the corporate tax has an effect on foreign direct investment in non-oil sectors in Azerbaijan and this effect is negative. In addition, according to other findings, real exchange rate, inflation and budget deficit/GDP ratio affect foreign direct investments negatively, while GDP growth rate affects positively.

In another study, (Corekcioglu, 2018) found that exchange rates have a significant effect on inflation and other macroeconomic factors. To prevent inflation, the central bank must regulate the money supply and avoid policies that cause inflationary pressure on the economy. Additionally, the country should focus on producing and exporting high-value products, increasing spending on research and development, and attracting foreign investment. This is because foreign investors not only bring their capital, but also their technology and innovation to the host country.

On the other hand, (Çeştepe & Mistaçoğlu, 2010) examined the impact of foreign direct investments on economic integration. This study compared the impacts of belonging to four regional integrations, namely: the European Union (EU), North American Free Trade Agreements (NAFTA), South East Asian Union of Nations ASEAN and South American Common Market MERCOSUR. A study of the effects of regional economic integration on foreign direct investors was carried out after the development and growth of foreign direct investing in addition to other factors that influence their entry into the host country.

(Özcan & Ari, 2011) used dynamic panel data analysis to examine the determinants influencing FDI in 27 OECD countries from 1994 to 2006. According to the study's conclusions, the growth rate, infrastructure level, and inflation all have a beneficial impact on FDI. The factors of openness and current account balance were found to be negatively associated to FDI, contrary to what was expected in principle.

Between 1976 and 2011, (R. Sharma & Kaur, 2013) examined the causal link between direct foreign investments, exports, and imports in India & China, from 1976-2011. According to the researchers' findings, they found that foreign direct investors and exports are causally related in China. According to their findings, there is a one-way causative association between foreign direct investments and exports and imports for China, but a two-way causal relationship between foreign direct investments and exports, foreign direct investments and imports, and exports and imports for India. According to these findings, more foreign direct investment in the Chinese economy means more imports and exports, however, in the Indian economy, growing exports means an increase in imports, in addition to the increasing influence of foreign direct investment on exports and imports.

(Rodrik, 1998) used panel data analysis methods and the Granger causality test to investigate the connection between investments and foreign trade in four countries (Korea, Taiwan, Chile, and Turkey) between 1950 and 1992. The analysis concluded that while there is a causal association between investments and international trade in Korea and Taiwan, there is none in Turkey and Chile.

(Hejazi & Safarian, 1999) used panel data analytic methods to look at the relationship between foreign direct investments and exports in 52 countries from 1982 to 1994. According to the findings of this study, which divided foreign direct investments into investments in and out of nations, foreign direct investments entering countries have a favorable influence on exports, while the effect of foreign direct investments leaving countries on exports is stronger.

(Mafusire, 2001), on the other hand, used the cointegration test to evaluate the link between foreign direct investment and exports in the Zimbabwe economy between 1967 and 1994. As a consequence of the investigation, it was discovered that foreign direct investment in Zimbabwe aided in the growth of exports, while export growth prompted more foreign direct investment.

Using a quarterly data set from 1980 to 1999, (Alguacil et al., 2002) investigated the causation between foreign direct investment and exports in Mexico. According to the findings, there is a positive causal association between foreign direct investments and exports in Mexico.

(Camarero & Tamarit, 2004) used a quarterly data set from 1981 to 1998 to analyze the link between foreign direct investment and exports and imports for 13 nations. With the liberalization measures established throughout the mentioned time, the importance of international trade and

foreign direct investment performance has been underlined. According to the findings of the study, which used panel data analysis methodologies, there is a complementary link between foreign direct investments, exports, and imports.

Between 1996 and 2002, (Rothmuller, 2003) looked into the impact of foreign direct investment on exports and imports in Brazil. Foreign direct investments in the Brazilian economy had a beneficial influence on exports, according to the report. The report stressed the importance of foreign direct investments, emphasizing that multinational enterprises' operations are a vital instrument for the country's economy.

(Pacheco-López, 2005) used cointegration and causality tests on annual data sets from 1970 to 2000 to analyze the link between foreign direct investment, export, and import in Mexico. It has been determined that the variables have a long-term link and that bidirectional causality exists.

(Yilmazer, 2010) investigated the causality between GDP, foreign direct investments, imports and exports in Turkey with the quarterly data set for the period 1991 – 2007. As a result of the analysis, there is no causality from foreign direct investments to exports and from exports to foreign direct investments; It has been observed that there is a one-way causality from imports to foreign direct investments. In addition, it has been concluded that there is a mutual causality between imports and exports and economic growth and a unilateral causality from imports to exports. In this respect, it is stated in the study that the finding that foreign direct investments follow the development in exports and imports, albeit weakly, will help revive production and foreign trade in Turkey through the conversion of foreign capital into beneficial investments.

In the (Sunde, 2017) essay, she looked at economic growth in South Africa as a function of FDI and exports. For the long-term link between economic growth, FDI, and exports, the paper used the autoregressive distributed lag model, also known as the ARDL bounds testing approach. The short run dynamics were investigated using the error correction model, and the direction of causality was investigated using the VECM Granger causality approach. The cointegration of economic development, FDI, and exports was validated in the article. In contrast to certain research that claim that FDI does not drive economic growth, the article claims that both FDI and exports spur economic growth. The VECM Granger causality analysis discovered unidirectional causality between economic growth and foreign direct investment, going from foreign direct investment to economic growth, as well as bidirectional causality between economic growth and exports. The FDI-led growth hypothesis for South Africa is confirmed in this article. On the policy front, the

government might encourage FDI by providing incentives to investors, creating a favorable macroeconomic environment, and using loose monetary policy sparingly to build the economy.

(Corekcioglu, 2019) found that the current account balance is an important aspect of macroeconomic stability for a country's economy. To maintain stability, a sustainable current account balance is necessary. This is particularly an issue for developing countries like Turkey. While addressing this issue may be challenging, it is important to find solutions. Possible solutions include increasing the production of goods with high value-add, producing technology-intensive commodities, and attracting foreign direct investment, which would help reduce the deficit.

According to (Kastratović, 2020), research conducted in the field international business (IB), has shown that foreign companies' presence in a particular country can be beneficial for domestic firms, as it creates connections between them. This study uses data from Vietnam's Manufacturing Sector to examine how these connections in the form horizontal and vertical links (backwards and forwards) between domestic and foreign companies impact (1) the decision for domestic firms exporting and (2) the share of exports of domestic firms. Only transactional links are taken into account. The study concluded that the presence and horizontal and forward links of foreign firms, in Vietnam, have a significant influence on the exporting decision and the export share of local firms. This conclusion is valid when you consider factors like the technology level of domestic companies, ownership structure of domestic companies, direction of foreign businesses, and proximity of foreign enterprises.

It is widely believed that rising worker productivity stimulates macroeconomic instruments such as exports, foreign direct investment, and economic development. The relationship between labor productivity, exports, and foreign direct investments was investigated in the study of for nations in transition from 2005 to 2019. There was no causation relationship between labor productivity and exports in the study, which employed Dumitrescu and Hurlin panel causality analysis, however there was a one-way causality relationship from labor productivity to foreign direct investments. The findings of the study show that labor productivity is the driving force behind foreign direct investment in these nations (Mete, 2021).

(Karaca et al., 2022) research aims to examine the connection between trade openness, foreign direct investment, and economic growth in a group of emerging market economies known as BRICS-T (Brazil, Russia, India, China, South Africa, and Turkey) over the period of 1992-2019 using panel data analysis techniques. The study found a bidirectional relationship between trade

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openness and growth and a one-way relationship from growth to foreign direct investment. However, causality between trade openness and foreign direct investment was only found in India and South Africa. Additionally, one-way causality from growth to trade openness and from growth to foreign direct investment was found for Turkey. The results suggest that trade openness may have an indirect impact on foreign direct investment through economic growth.

In another research, the author emphasized on the role for the central bank. He says that Central banks play a vital role in keeping the economies of countries stable, particularly maintaining price stability. The stability of the economy will reduce uncertainty and increase investments (Corekcioglu, 2019d).

In the view of (Sabra, 2021) increased exports as a result of FDI is one of the most important motivations for attracting direct investment. The product life cycle, the flying geese model, and new growth theories all explain the positive effect of direct investment inflows on the host country's export performance. Following the global financial crisis of 2008, instability in FDI and exports spread throughout the world economy, including the Turkish economy. In light of this, determining the long-term impact of inbound FDI on exports in the Turkish economy has become critical. Cointegration and causality approaches were used to evaluate the effect of inward foreign direct investment on exports for the Turkish economy between 1980 and 2019. Inward FDI has a beneficial effect on export in the Turkish economy, according to the conclusions of the investigation.

(Altomonte & Bekes, 2009) used a combination of Hungarian company data and product-level trade information from 1992-2003 to investigate the relationship between a firm's trading practices (importing, exporting, or both) and productivity. They found that the most productive firms tend to self-select based on the varying costs of trade, which are linked to the specific nature of trade activities, such as technological and organizational complexity. They also found that not taking into account a firm's importing activity can result in an overestimation of the productivity advantages for firms that only export.

Standard growth theories differ from each other in terms of the importance of economic factors that play a role in the growth processes of countries. According to North, institutional incentive structures play an important role in the different performance of countries in development and growth processes (North, 1991).

The institutional factors, which are out of economic factors, and improve investment conditions with political factors such as changing rules and regulations that facilitate the market conditions for investors, the operation of foreign partnerships and market functions are the whole of the administrative structure. On the other hand, institutional factors include investment incentives, developments that facilitate business transactions (Kuklin & Kryvoruchko, 2019).

The main objective of policies aimed at increasing foreign direct investment is to foster the domestic economy and to ensure sustainable growth. Export is also one of the important channels for realizing this purpose. It is expected that the diversity of export products, which are seen as important factors in the economic growth processes of the countries, competitiveness and innovations in foreign markets will contribute to the foreign capital inflow to the country in the form of a new production technique, a new product or a new organization method. Therefore, it is obvious that there is a relationship between foreign trade and foreign capital flow (Spithoven, 2019).

Another thing is that increase in technology transfer through foreign direct investments will increase efficiency and competition in the industrial sector and these will increase the production level by decreasing the production cost. So, information sharing will be easier and export performance of countries will increase. While foreign direct investment increases, labor supply will also increase in the market, and this will lead to a decline in real wages, thus domestic and foreign firms will employ labor force with lower cost. So, it can be said that foreign direct investments will lead export-oriented production (Akhavan, et al 2010).

In another study the relationship between technological progress and competitiveness were analyzed by using panel co-integration method with annual data covering the period 2006-2016. As a country group, eleven countries which are Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, Philippines, Turkey, South Korea and Vietnam were chosen. As a result, a positive relationship was found between technological progress and competitiveness (Corekcioglu, 2019b).

While investigating the impact of the institutional structure on exports, an indirect link can be seen from the relationship between the institutional structure and economic growth. The role of international trade, especially the exports volume, in economic growth processes of countries, was shown in many empirical studies. The institutional structure affects economic growth in terms of the amount of expenditure on transaction costs in the production process. Because it is possible to

encounter higher transaction costs in a country that does not have trustworthy property rights or legal rules. Due to the failure to implement contracts or agreements, costs may increase, and this means that companies are less efficient and less competitive. Therefore, the institutional structures of the countries have important effects on economic growth (Aron, 2000).

It is stated that the positive developments in the elements constituting the institutional quality will increase the physical and human capital investments in the methodological connection between institutional quality and economic growth and this will lead to a more effective use of these elements. Therefore, it is expected that a higher institutional quality in countries will reduce macroeconomic fluctuations and crises (Xu, et al 2019).

When the empirical studies which include institutional factors in econometric analysis are examined, it is seen that institutional factors have effect on economic growth and foreign direct investments. In the econometric analysis section of the study, the effects of institutional factors on exports will be investigated by considering the link between economic growth and export and foreign direct investment and export. Therefore, in the literature review, empirical studies dealing with the relationship between institutional quality and foreign direct investments and institutional quality and export-growth relationship will be included.

In the literature, it can be seen that there are bidirectional relationships between growth and international trade. In other words, while international trade affects growth, growth also affects international trade. Some of the effect of export on growth are;

- The increase in exports increases the division of labor and cooperation
- Export growth increases productivity and production. In addition, exports lead to an increase in product quality as a result of lower costs.
- Export increases competition and while competition increases advanced technology use in production is needed.
- Export growth increases domestic savings and domestic investment (Meijers, 2014).

(Kravis, 1970) examined the connection between export and growth over the period of 1835 to 1966. His research found that there is a relationship between economic growth and export.

(Smallwood, 2019) examined the relationship between export and growth for 41 countries for 1994-2017 and his empirical findings showed that the effect of exports on growth in developed countries is larger than other countries.

(Darku & Yeboah, 2018) examined the relationship between openness and growth for 19 Asian countries. At the end of the study, it was found that there was a positive relationship between economic growth and openness in Hong Kong, Iran, Israel, Myanmar, Pakistan, China, Singapore and Iraq.

(Munir & Ameer, 2018) studied on the relationship between openness and economic growth for the period of 1970-1989 for 57 countries. The empirical findings of the study showed that the effect of open trade on economic growth was positive (Munir & Ameer, 2018).

(Seyoum, 2004) investigated the effect of human capital and technology on export performance in high technology industries by using cross-sectional data analysis in 1996-1998 and 54 countries. He analyzed the effect of numerous explanatory variables such as foreign direct investment, exchange rate, demand conditions and institutional structure, number of researchers working in R & D, level of mathematics and scientific education, level of university-industry cooperation and on high technology export. According to empirical findings, all variables except exchange rate had a positive effect on high technology exports. The effect of exchange rate on exports was statistically insignificant.

(Marjit & Ray, 2017) examined the determinants of advanced technology exports in his study for 99 countries for the years. Human capital, openness, foreign direct investments, fixed capital investments, exchange rate was found to be the most important factors affecting the performance of a country's high technology product exports.

(Altuntas et al., 2018) examined the effects of innovation, work life quality, education, technology level, infrastructure, economic freedom and commercial freedoms on the export of high technology products in 120 countries. According to the empirical findings, the export of high technology products of a country is affected positively by the innovation capacity.

Another study, (Gökmen & Turen, 2013) tested the relationship between high technology exports, foreign direct investments, the Economic Freedom Index and Human Development Index for 15 European countries for 1995-2010 with panel cointegration and Granger causality methods.

According to the findings of the study, there is a causality between high technology exports and foreign direct investments, economic freedoms and human development index in the short and long term. In the short-term, there was a bi-directional relationship between the variables, and it was concluded that there was unidirectional relationship from foreign direct investments to high-tech product export and there was bidirectional relationship between human development and high-tech product exports in the long run.

Another study aimed to investigate the relationship between foreign direct investment and research and development spending by using panel co-integration methods for upper middle-income and high-income economies. The results of the panel co-integration test, which examines the long-term relationship, indicated that R&D spending has a greater impact on foreign direct investment. The paper's findings emphasize that the accumulation of capital and foreign direct investment are crucial for the development of countries (Corekcioglu, 2019c).

(Villanueva, 1994) argued that it would be impossible to understand the reason for the rapid growth of East Asia without evaluating the effect of government policies on stimulating private investments. Rodrik argues that there was a strong correlation between institutional factors and Asian economic growth. In his study, the institutional factors were included such as the quality of the bureaucracy, the rule of law, and the low risk of rejection of state contracts. According to Villanueva the quality of institutional factors played an important role in the growth of the Asian economy.

(Sabir, et al 2019) investigated the effect of the accountability variable on FDI inflows in a cross-sectional model, which was formed with data for 114 countries. According to the results, accountability improves in a country it will increase foreign direct investments inflow into the country.

In the another study, the article examines the connection and significance of foreign direct investment, economic growth, and economic freedom by reviewing existing literature, and specifically analyzes the long-term relationship between foreign direct investment and economic freedom in Turkey from 1996 to 2018 using time series analysis. The analysis found that the variables are co-integrated and move in the same direction in the long term (Corekcioglu, 2020).

(Nizam & Hassan, 2018) found that improvement in accountability affect foreign direct investments positively.

(Larraín & Tavares, 2004) investigated the effects of corruption on foreign direct investments, which is one of institutional variables for 58 countries. It was concluded that the prevention of corruption in a country increased the amount of foreign direct investment entering the country.

(Delgado et al., 2014) used the corruption index obtained from the Global Competitiveness Report in a cross-sectional study covering 102 countries. It was found that the impact of the corruption on foreign direct investment inflows was positive.

(Abotsi & Iyavarakul, 2015) showed that prevention of corruption is one of the most important factors for attracting foreign direct investment in African countries.

Most of the empirical findings do not support the view of the literature that corruption will accelerate the functioning of the economy by evaluating the obvious aspects of the bureaucracy. In this case, countries that want to obtain more foreign direct investment need to take measures to reduce corruption.

(Zvika, et al 2008) examined the impact of corruption on foreign direct investment flows using the cross-sectional data in the study of 111 countries. According to empirical findings, foreign direct investment inflows are positively affected if corruption decreases in a country.

(Knack & Keefer, 1995) concluded that the increase in the level of corruption in the country would decrease the foreign direct investment inflows (Knack & Keefer, 1995).

(Asiedu & Esfahani, 2003) used political stability or country risk as four different variables, including assassination attempts, military and coup attempts, the number of riots, and the number of revolutions, involving 22 Saharan African countries. In the Asideu study, a cross-sectional model was formed with the panel data of the years 1984-2000 belonging to 22 countries. The sign of 4 variables including political stability was found statistically significant. As a result, foreign direct investment increases in countries where political instability constitutes a small number of assassinations, assaults, riots and revolutions.

Another study involved in political risk analysis is the work of (Morrow, et al 1998). However, the authors failed to support the hypothesis that the foreign direct investment flows into the country will decrease as the political risk increases in Latin American countries. It was also stated that the

seven countries used in the study could not be very different from each other in terms of political risk.

(Türedi, 2018) conducted analysis in the cross-sectional study in the country with twelve transition economies which are candidate or full members to the EU and border with the EU. The empirical model includes institutional variables such as freedom, corruption index, political rights and citizenship rights affecting the foreign direct investment per capita. The study showed that there is relationship between variables.

(Blanton & Blanton, 2012) studied on a cross-sectional model for 154 countries. According to the findings of the study, improvements in institutional factors lead to increased foreign direct investments.

(Izotov, 2018) investigated the effects of foreign trade on economic growth. He concluded that a well-functioning institutional structure and high foreign trade volume would accelerate growth further.

(Brunetti, 1997) examined the effects of variables such as political stability, property rights, justice, transparency, reliability of legal regulations, credibility on foreign direct investments. In the study, data for the period of 1993-1995 were used. According to the findings, the effect of the reliability of legal regulations on FDI was found weak and the effect of the other institutional variables used in the study which are political stability, the property rights justice, transparency on FDI were found statistically significant and positive.

(Akpan & Atan, 2016) investigated the effect of openness and institutions on economic growth. In the study it was found a positive relationship among variables.

In his study, (Chen, 2017) investigated the impact of intellectual property rights protection on R & D products. His study showed that there is positive relationship between them.

(Barro, 1989) examined the relationship between property rights and economic growth with a cross-sectional study. He showed that human capital efficiency and investment rates decreased when property rights were not protected, and that when the rights of the property were protected, human capital efficiency and investment rates would increase and economic growth would be increased.

(Law & Azman, 2012) examined the relationship between commercial openness and institutional quality. Empirical results suggest that commercial openness is a significant determinant of institutional quality.

(Larrain B. & Tavares, 2007) discussed the relationship between corruption and one of the institutional variables. As a result of the study, it has been found that commercial openness decreases corruption.

(Kunsch, et al 2014) studied the relations between openness, rule of law, democracy and income. His empirical findings showed that commercial openness has a negative effect on the variable of democracy but has a positive effect on the variable of rule of law.

(Viddy et al., 2019) studied on the success of the economy demonstrated by its economic performance, and economic performance is driven by a number of factors, such as the human development index, the national income, export. The aim of the study was to determine whether foreign debt and export have detrimental effects on Indonesia's human development and economic development. The conclusion of the research indicate that a country's foreign debt has a significant impact on human development. However, export does not have a significant impact. The country's foreign debt has a negative influence on the economy but does not substantially affect economic development. The human development index has a positive impact on the Indonesian economy, but the effect is not statistically important. It was shown that both indirect foreign debt and export are responsible for social and political problems.

This research explores the three-way link among human development, economic growth and trade openness for Asian emerging economies. It was found that, while human development has a positive effect on economic growth, economic growth has no effect on human development and unbalanced growth with underdeveloped institutions may decelerate human development. In addition, development is sustainable only if followed by human development and liberalization policies which have a beneficial impact in both growth and human development (Mustafa et al., 2016).

(Redmond & Nasir, 2020) studied on economic growth in a modern environment covers a diverse variety of criteria. Panel data analysis of 30 countries uses two single-equation models to analyze the impacts of natural resource abundance, foreign trade, financial sustainability, global

transparency and institutional efficiency on development mechanisms – economic growth and the human development index. The data covers years between 1990 and 2016 and the effect is measured in both aggregate and country level of growth in three categories which are Lower, Upper, High Income Countries. Although natural resources affected economic growth positively, it affected mainly negatively and insignificantly human development. Interestingly, foreign trade and large-scale money have a huge negative effect on economic growth. The beneficial impact of trade transparency is stronger than that of institutional efficiency. The results indicate that factors have a greater effect on economic growth relative to human progress. While foreign trade and large-scale money have a negative effect on economic growth, the beneficial impact of trade transparency is stronger than that of institutional efficiency. The results also indicated that factors have a greater effect on economic development and human development.

(Sarkodie & Adams, 2020)'s paper investigated the relation among the variables which are access to electricity, human development index, income inequality and income level for Sub-Saharan Africa countries between 1990 and 2017. Findings showed that if the quality of the political system increases income inequality decreases. By ensuring a fair distribution in income, the number of poor people will be reduced, and so human development level will increase. The authors also pointed out that the successful promotion of labour markets and the enhancement of socio-economic capacity to handle unemployment would secure fair income distribution thereby foster human development.

This research explores the effect of numerous fiscal, environmental and social indicators on economic development in the countries of South Asia. Including data over the years 1990–2017, a panel data estimating system was used for analysis. The findings obtained suggest a long-term positive impact of human development index, biological ability, income inequality, financial development on economic growth, while the effect of energy consumption is the reverse. The results of the paper indicate that government institutions must foster financial sustainability, human development and renewable energy in order not only to achieve long-term economic growth but also to discourage ecological footprint and income inequality (Bansal et al., 2021).

(Çoban, 2019) carried out empirical examination on the basis of data from 1995-2014. The study contained the dependent variable which is a Human Development Index and an independent variable which is trade openness (Export + import / GDP). The study also contained explanatory variables such as the proportion of public health expenses to GDP, foreign direct investment, GDP share of public education, demographic growth, inflation rate, the rate of economic development.

Consequently, for V4 countries which are Hungary, Poland, Czech, Slovakia, the study showed that free trade positively influences human development

(Şengür & Sanjar, 2019)'s paper extends the literature by analyzing the threefold relationship between Exchange rate, trade and poverty in Afghanistan's economy for the period 1996-2006. For the long-term relation a negative and significant export-exchange-rate link was found, a positive and significant exchange-rate correlation between the human development index and the growth indicator, and a long-term association between import and the exchange-rate vector. In this way, while the relationship was negative between exports of goods and exchanges rates, the relation between poverty and rates of exchanges was found to positive. In the short-term analysis, it was concluded that there were no relationships between the three explanatory factors and the exchange rates.

(Anderson Joan B., 2010) investigated the impact of increased trade and investment between the US and Mexico on population growth and quality of life in border regions of both countries. The researchers used data from 1990 and 2000 censuses to measure changes in quality of life using a Border Human Development Index. The researchers found that an increase in trade and investment was a major factor for population growth and migration. This was especially true of border communities. Both sides reported improvements in quality of living, although the improvement in Mexico was more closely related to trade and investment. The results show that the increased investment and trade had a larger impact on border towns in Mexico than they did in the US.

The paper (McMahon, 1984) examines the relationship between the growth of labor productivity and education, more specifically, the scientific and technological knowledge gained from research and development. The paper is unique because it uses a total-capital approach, which includes both private and public human, physical, and knowledge capital. It also uses a model that examines the demand and supply effects of productivity growth. The study examines data from 14 OECD nations, including the US, from 1955 to 1980. It finds that education has a major impact on productivity, measured by average education levels of the workforce and percentage of workers who have advanced degrees in technology related fields. Investment in physical capital, higher utilization rates, and the transfer of technology into areas with lower productivity levels can also help to transmit the benefits from R&D.

(Grossmann, 2007) discusses the positive effects of two alternative policies to foster R&D-based economic development: Providing R&D support to companies and providing education and

training to improve scientific activities. According to the findings, R&D subsidies can be harmful to both development and productivity. In the analysis it was also found that R&D grants causes inequalities among the companies or people. But if education and training related to R&D provided to by government, this causes welfare, development and growth.

(Eid, 2012) analyzed the relation of higher education research and development activities and development and productivity. In his analysis, he included 17 OECD countries by considering 25 years. What he found in his analysis that lagged higher education R&D activities have a positive effect on development and productivity.

In another paper, authors studied on the relationship among the variables which are (R&D), information and communications technology (ICT), economic development and education. In his analysis he found that cellphone and education cause economic growth, internet usage and cellphone cause R&D and education. In the analysis a bidirectional relationship was also found among some variables and they are internet usage and development, R&D and growth, internet usage education and cellphone. The study found that in the short-term, there is a mutual influence between internet users and economic growth, between research and development and economic growth, and between education, internet users, and mobile cellular telephone. Additionally, there is also a reciprocal relationship between education, internet users, and mobile cellular telephone. However, in the long-term, the study found that there is a one-way relationship from internet users to economic growth and research and development, and from mobile cellular telephone to economic growth and research and development. (Saidi & Mongi, 2018).

(Smith et al., 2002) discusses the impact of R&D in Danish companies' export actions. They studied 3500 companies. At the end of the study, it was found that R&D is a crucial parameter for exporter companies.

According to (Neves et al., 2016) analysis, Complementarity exists between R&D and exports that will improve the company's likelihood of engaging in exporting activities by participating in R&D activities. Moreover, export activity increases the likelihood of R&D engagement. The findings further support the theory that more profitable companies choose themselves for their export operations and support the learning by export hypothesis. The learning by exporting hypothesis refers to the idea that exporting can improve a country's innovation and technological capacity. This idea is supported by (Ahmad & French, 2011) technology-gap model, which shows that external demand, or exporting, can increase the rate of innovation through the accumulation of

knowledge and its impact on the growth of a company. The model suggests that exports have a positive influence on a firm's ability to innovate and advance technologically. In conclusion, based on a panel model, it was also found that research and development and exports have a positive impact on growth.

Using VEC and VAR techniques, (Ahmad & French, 2011) examined the relationship between human capital stock and actual GDP per capita in Bangladesh. The findings demonstrated that GDP has a positive effect on capital stock. It means that if human capital stock increases income also increases. They also found that innovation in school has impact on real GDP in both the short period and the medium period. So, they emphasized on the importance of education to increase real GDP.

The purpose of (Solaki, 2013)'s paper is to check the long-term and short-term relationships between human capital and economic development. The study conducted in Greece covering years from 1961 to 2006. The empirical findings indicate that there is a relationship between gross domestic product (GDP) and education and this relationship is positive.

(Bougheas et al., 2000) based his findings on data from the United States Census of Manufactures. They demonstrated that infrastructure may encourage specialization and long-run growth. According to the results, there is a positive relationship between specialization and infrastructure. On the basis of cross country regressions, They also demonstrated that Infrastructure and growth have a nonlinear relationship.

The literature has discussed the impact of institutions on trade in several papers. For example, (Corekcioglu, 2021) conducted research to investigate the effect of institutions on trade. In his analysis, the effect of KOSGEB, SME Development Organization in Turkey, on trade was investigated. According to the findings, firms face issues such as accessing markets, financial difficulties and lack of qualified personnel, language barriers, and high costs for personnel, raw materials and production. KOSGEB's efforts, including market research, customer identification, financial assistance, support for qualified personnel salaries, promoting and funding R&D activities, and providing consultation, are crucial in addressing these problems. Similarly, examined the region-based impact of public institutions. He found out that institutions has important role in the economy (Çörekçioğlu et al., 2021).

(Immurana et al., 2023) examines the relationship between population health and foreign direct investment (FDI) in Africa. It uses data from 1997 to 2017 for 35 African countries and looks at life expectancy and death rate as indicators of population health. The study applies two different statistical methods, IVFE and GMM, and finds that both indicate that life expectancy has a positive impact and death rate has a negative impact on net FDI inflows. The results suggest that improving population health, for example by increasing access to healthcare, clean water, and vaccinations, could be an effective strategy for attracting more FDI to Africa.

Herzer's Study examines the connection between openness to trade and population in 74 different countries for 50 years. From 1960 to 2010, This study, which uses panel time-series, discovered that the international trade in general has a strong positive impact, as evidenced by life expectancy rates and infant mortality. This impact is greater in developing countries, where there are higher taxes on capital gains, profits and income. The study shows that there is a reciprocal relationship between trade, health, and life expectancy. It suggests that an increased trade level can be both a direct result and a contributing cause of an increased life span (2014).

In another study the author used macroeconomic estimates for the effect of GDP per capita on health based on microeconomic estimations of the impact on health of individual outcomes. Different methods of estimating the value health are used, combined with data from countries and historical periods on height, adult survivorship rates, and age when menarche. According to the preferred estimate of the author, if health disparities between countries were eliminated, log GDP per workers would decrease by 9,9 percent. And the ratio between GDP per worker in the 90th and GDP per worker in the 10th percentiles would drop from 20,5 down to 17,9. The effect is not as large, but it is comparable to the estimates of how health affects economic growth, which are based in cross-country statistical regression analysis (Well, 2007).

The authors of this paper estimate a production-function model of aggregate growth in the economy that includes two variables regarded as key components of Human Capital: Work experience and Health. They find that a good level of health impacts overall output in a substantial and statistically significant way, even when the experience of workers is taken into account. They argue that the previous studies' relationship between growth and life expectancy is actually a labor productivity impact, and not just life expectancy used as a proxy of worker experience.(Bloom et al., 2004).

In another paper expands on production function models of economic growth by incorporating two additional variables that are considered important components of human capital: work experience and health. The main finding is that good health has a positive, substantial, and statistically significant impact on overall output. The research also shows that there is little variation among countries in average work experience, so differences in work experience do not explain much of the variation in economic growth rates. Additionally, the study finds that the effects of average schooling on national output are in line with microeconomic estimates of the effects of individual schooling on earnings, suggesting that education does not have any discernible externalities (Bloom et al., 2001).

(Mustafa et al., 2017) examines the relationship between economic growth, human development, and trade openness in a group of developing Asian economies. Using a system of simultaneity equations, this study shows that human development positively influences economic growth. However, for the Asian sample economic growth doesn't appear to have any positive influence on the human development. The study suggests uneven economic development and lack of institution development may inhibit human development over the short to middle term. This study, in accordance with literature indicating that growth is only sustainable when accompanied by human progress, confirms the importance of trade-liberalization policies for both economic and human development.

(Gulcemal, 2020) aims to understand the impact of human and physical capital on GDP by using gross fixed capital formation as a measure of physical capital and education expenditures and life expectancy as indicators of human capital. The study uses panel data for 16 developing countries over the period of 1990-2018. The study examines the relationship between GDP, Human Development Index (HDI), Inflation, Government Capital, Official Development Assistance, Foreign Direct Investment, and Labor as independent and control variables. The study uses random and fixed effects estimation techniques to analyze the data. The results show that human progress has a positive influence on the economic growth of developing countries. The study also found that inflation and economic progress have a negative relationship. However, the positive relationship between economic progress and labor is revealed. A study has also shown that capital from the government can positively and significantly impact growth. The study recommends the government should focus on building human capital through better healthcare policies, health insurance and facilities for all citizens.

(Hoa et al., 2016) examines the relationship between the Human Development Index (HDI) and economic growth in nations. The study uses data from the World Bank for 30 countries over the period of 1999-2014 and applies theories of Solow (1956), Chiu, Hsu, & Wang (2006) and Ferreira-Lopes Sequeira (2011). The study finds that HDI has a positive impact on economic growth. Based on the study results, recommendations are proposed to promote sustainable growth and ensure harmony between economic growth and social development goals.

(Akar et al., 2021) examines the relationship between human development and economic growth using panel data from 25 transition economy countries over the period 2002-2018. The study establishes two different models, in the first model, the independent variable is only human development and in the second model, the independent variables are human development and unemployment. The results show that in both models, economic growth increases as human development increases. Additionally, the second model finds an inverse relationship between unemployment and economic growth.

The relationship between GDP per capita and the Human Development Index (HDI), as measured by (Elistia & Syahzuni, 2018) in 10 ASEAN countries from 2010 to 2016 was studied. The countries include Indonesia, Singapore Malaysia, Thailand Brunei Darussalam Philippines Laos Vietnam Myanmar Cambodia and Cambodia. The results show that HDI and the GDP per capita are strongly correlated in each country. The study concluded that HDI can have an impact on GDP per capita, and that economic growth may lead to higher levels human development. The study also suggests that economic growth and human development have a reciprocal influence. Human development can be improved by economic growth and vice versa. This relationship can be seen in the GDP per person, which is a measure of a nation's welfare.

(Damanik et al., 2021) aim to determine the influence of population and the Human Development Index (HDI) on economic growth in Pematangsiantar City. The study uses secondary time series data for the period of 2004-2019. The data analysis method employed is multiple regression analysis with ordinary least squares (OLS). The results show that the population has a significant impact on the economic growth of Pematangsiantar City when considered alone. However, HDI was found to have no significant effect on economic growth when considered alone. When both factors are considered together, the study found that population and HDI have a significant effect on economic growth in Pematangsiantar City.

4. MATERIALS AND METHODS

4.1 General Research Methodology

There are several methodologies that could be used to confirm the relationship between HDI and trade activity. Some potential methodologies include:

i. Cross-country regression analysis: This methodology involves estimating the relationship between HDI and trade activity using data from multiple countries. This can help control for other factors that may affect HDI and trade activity, such as economic growth and political stability (Pomfret, 2014).

ii. Time-series analysis: This methodology involves analyzing data from a single country over time to examine how changes in trade activity affect HDI. This can help control for other factors that may affect HDI and trade activity, such as education levels and infrastructure (Box et al., 2015).

iii. Case studies: This methodology involves in-depth analysis of the experiences of a specific country or group of countries. This can be useful for understanding the complexities of the relationship between HDI and trade activity and for identifying potential causal mechanisms (Yin, 2013).

Panel data analysis is a statistical technique which involves the examination of data compiled from multiple cross-sections of individuals or entities over time. It can be an effective means for exploring relationships among variables as well as controlling time-invariant ones such as individual characteristics or country-specific factors (Lee, 2002). There are several reasons why it may be chosen to use panel data analysis instead of other techniques, such as cross-country regression analysis, time-series analysis, or case studies analysis:

i. Control for time-invariant variables: Panel data analysis allows to control for time-invariant variables, such as individual characteristics or country-specific factors, which can help to reduce omitted variable bias and improve the accuracy of results.

ii. Improve statistical power: Panel data analysis can improve the statistical power of the analysis by increasing the sample size and allowing researcher to examine changes over time.

iii.   Capture dynamic relationships: Panel data analysis can help researcher capture dynamic relationships between variables by allowing to analyze changes over time.

iv.   Better suited to certain research questions: Panel data analysis may be more appropriate for certain research questions, such as those that involve examining changes over time or controlling for time-invariant variables.

In the thesis, a panel data analysis will be conducted to examine the relationship between variables. This type of analysis combines time series observations of economic units in a cross-sectional format, providing a more comprehensive econometric analysis than either cross-sectional or time series analysis alone (Baltagi, 2005). The basic model for the panel data can be expressed as follows:

$$Y_{it} = \rho_i Y_{it-1} + \delta_i X_{it} + \varepsilon_{it} \tag{1}$$

In the equation, the variables $i = 1, ..., N$ and $t = 1, ..., T$ to represent the cross-sectional units and points of observation, respectively. The variable N represents the number of units in the model and T represents the number of observations for each unit. The error term for each unit at a given time, ε_{it}, is assumed to be a white noise disturbance. If the absolute value of ρ_i is less than 1, the variable Y_i is considered stationary, and if the absolute value of ρ_i is equal to 1, Y_i has a unit root. X_{it} is an explanatory variable. It represents a factor that is believed to have an impact on the dependent variable Y_{it}. The parameter δ_i represents the effect of X_{it} on Y_{it}. It shows how much Y_{it} changes for a unit change in X_{it}. The variable X_{it} is included in the equation to capture the influence of any additional factors on the dependent variable Y_i.

In panel data analysis, two commonly used methods for testing for unit roots are the Levin-Lin-Chu (LLC) test and the Im-Pesaran-Shin (IPS) test. These tests have been proposed by (Im et al., 2003; Levin et al., 2002). The LLC and IPS unit root tests are different in terms of the assumptions and test statistics used to evaluate the ρ_i coefficient in equation 1. The LLC test assumes that the ρ_i coefficients are identical for all cross-sections of the panel data, or $\rho_i = \rho$ for all i. On the other hand, the IPS test assumes that the ρ_i coefficients vary among the cross-sections of the panel data. Both LLC and IPS unit root tests are based on the ADF (Augmented Dickey-Fuller) principles, where the basic equation can be represented as $\alpha = \rho - 1$:

$$Y_{it} = \alpha_i Y_{it-1} \sum_{j=1}^{p_i} \beta_{ij} \Delta Y_{it-j} + X_{it}\delta + \varepsilon_{it} \qquad \textbf{(2)}$$

Null and alternative hypotheses of the model for the LLC unit root test can be seen below.

$H_{0:}$ $\alpha_i = 0$

$H_{0:}$ $\alpha_i = \alpha < 0$ $\qquad\qquad$ **(3)**

The LLC unit root test is used to determine if the time series of each cross-sectional unit in the panel includes a unit root or not, and therefore, if the time series of each cross-sectional unit is stationary or not. In other words, it tests for the presence of a unit root in the time series of each cross-sectional unit.

The hypotheses for the IPS unit root test are:

$H_{0:}$ $\alpha_i = 0$, $\forall_i$

$\qquad\qquad$ **(4)**

H_A: $\alpha_i = 0$ i $= 1,2,\ldots,N_1$

$\qquad$ $_:$ $\alpha_i < 0$ i $= N +1, N +2,\ldots,N$

The null hypothesis states that all of the cross-sectional units of the panel have a unit root, indicating that none of the time series are stationary. The alternative hypothesis, on the other hand, posits that not all of the cross-sectional units have unit roots, meaning that some or all of the time series are stationary.

In the LLC unit root test, the standard t statistic is applied to the normal distribution of the standard α_i coefficient. In contrast, the IPS unit root test employs the arithmetic mean of the t statistics, which is calculated for each cross-section.

The co-integration relationship indicates that there is a long-term relationship between the series, even with the presence of external shocks that may impact the variable series. When testing the correlation between the two variables, it will also be examined if there is a common co-integration among the variables or if there are any deviations. If the series are not stationary, they must be

transformed. One way to do this is by using the co-integration analysis developed by (Pedroni, 1999, 2004). This can be represented as follows.

$$Y_{it} = \alpha_i + \delta_{it} + \beta_i X_{it} + e_{it} \qquad \textbf{(5)}$$

Y_{it} and X variables are found to be stationary when taking the first difference. The α_i and δ_i parameters indicate the unique impact of each cross-section.

The Pedroni co-integration analysis examines whether there is a co-integrating relationship between variables Y and X by conducting stationarity tests on the e_{it} error terms. These stationarity tests of the error terms are as follows.

$$e_{it} = \rho_i e_{it-1} + u_{it} \qquad \textbf{(6)}$$

$$e_{it} = \rho_i e_{it-1} + \sum_{j=1}^{p_i} \psi_{ij} \Delta e_{it-j} + u_{it} \qquad \textbf{(7)}$$

The hypothesis tests aim to determine if the ρ_i coefficient is equal to 1 or not. As such, the null hypothesis for Pedroni co-integration asserts that there is no correlation between Y and X variables. The alternative hypothesis has two scenarios: the first being that the ρ_i coefficients are different for all cross-sections. The null and alternative hypotheses for the ρ_i coefficient in the 8th equation of the Pedroni co-integration analysis can be represented as follows.

$H_{0:} \rho_i = 1$

$$\textbf{(8)}$$

$H_{a:} \rho_i = \rho < 1$

In the second scenario, some of the ρi coefficients are not the same. This situation requires examination of whole-panel co-integration. The null and alternative hypotheses for the ρ_i coefficient can be represented in the 9th equation of Pedroni's co-integration analysis.

$H_{0:} \rho_i = 1$

$$\textbf{(9)}$$

$H_{a:} \rho_i < 1$

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In the (Pedroni, 1999) co-integration analysis, there are seven test statistics which are divided into two categories. The first category, intra-group test statistics, includes the variance ratio, non-parametric Phillips and Perron type ρ, nonparametric Phillips and Perron type t, and Dickey-Fuller type t statistics. The null and alternative hypotheses shown in equation 9 can be applied to this category. The second category, between-groups test statistics, includes the Phillips and Perron type ρ, Phillips and Perron type t, and (Dickey & Fuller, 1979) type t statistics. The null and alternative hypotheses shown in equation 9 can be applied to this category.

The co-integration analysis makes it possible to examine the long-term relationship between the variables. The analysis of the short-term causality relationship between economic variables is carried out by causality tests. The causality in economics is used to express the causal relations between economic variables with delay. In addition to the traditional Granger causality test, an alternative method developed by (Holtz-Eakin et al., 1988a) is used in panel causality analysis. The Granger causality can be estimated as it follows.

$$\Delta X_{it} = \alpha_{it} + \sum_{l=1}^{m} \beta_{it}\Delta y_{it-1} + \sum_{l=1}^{n} \delta_{it}\Delta x_{it-1} + u_{it} \tag{10}$$

$$\Delta Y_{it} = \alpha'_{it} + \sum_{l=1}^{P} \gamma_{it}\Delta y_{it-1} + \sum_{l=1}^{q} \varphi_{it}\Delta x_{it-1} + v_{it} \tag{11}$$

In the equation 10, it is tested that the variable Y is the dependent and the variable X is the independent variable. In the equation 11, it is tested that the variable X is the dependent and the variable Y is the independent variable. So, by calculating the F statistics, it is examined if βit and ϕit are different from zero as group. If there is a correlation between Y and X variables, error correction parameter is added to the models. In this case, for example, the change in X is affected by deviation from the long-term relationship between X and Y in the previous period.

In the panel data analysis, two different models can be applied due to the characteristics of α_{it} and α'_{it} in equation 10 and 11. These models are panel data fixed effects and panel data random effects models. The fixed effects model assumes that the individual differences between units can be seen by differences in the constant term. In this case, each economic unit will have a constant term which does not change by time. Constant terms show the effects of omitted variables that are

excluded from the model. In the fixed effects model, the fixed term takes a different value for each unit in the panel.

In the model of random effects, it is assumed that the constant term is changed randomly for units. In other words, it is assumed that individual effects arise randomly. The constant term is assumed to be independent of the model's error term. Both terms are assumed to be independent at all times and for all units.

In the estimation of the panel data according to the standard OLS method, it is assumed that the constant term is the same for all units in the panel.

In the literature, there are tests to choose fixed effects and random effects models in panel data estimation. These are the Hausman and Breusch-Pagan tests. However, there is no clear explanation whether only one of the models which are fixed effects or random effects models should be used. Making a choice between these models may result in incorrect estimates. In another study, (Erlat, 2006) stated that the results of the Hausman test do not provide a certain choice between the fixed effects and the random effects model.

Causality test developed by (Holtz-Eakin, et al 1988) is as follows;

$$y_{it} = \alpha_0 + \sum_{j=1}^{m} \boldsymbol{\alpha}_j y_{it-j} + \sum_{j=1}^{m} \boldsymbol{\delta}_j x_{it-j} + f_i + u_{it} \qquad (12)$$

The difference of the model was taken to remove the constant effects indicator in the model and the new form of the model is as follows;

$$y_{it} - y_{it-1} = \sum_{j=1}^{m} \boldsymbol{\alpha}_j (y_{it-j} - y_{it-j-1}) + \sum_{j=1}^{m} \boldsymbol{\delta}_j (x_{it-j} - x_{it-j-1}) + (u_{it} - u_{it-1}) \qquad (13)$$

As it is seen from the equation, there is a relationship problem between the error terms and the dependent variable. Therefore, the panel causality test which was proposed by Holtz-Eakin et al is based on the two-stage OLS method. To see causality, it is tested whether the δ **j** are equal to zero as a group in equation 13. Thus, it is examined if x causes the y. Another aspect of causality is about how y's cause x or not, it has been tested in equation 13 by changing places of x's and y's by turn.

In this study, the existence of a causality relationship between series was investigated by the method developed by (Dumitrescu & Hurlin, 2012). Causality analysis, first developed by Granger (1969), allows to investigate whether variables other than that variable provide useful information in predicting the future value of a variable (Holtz-Eakin et al., 1988a). Many new techniques have been used in recent years for the panel causality relationship, which has been examined within the framework of panel data. The main advantage of the (Dumitrescu & Hurlin, 2012) test compared to other tests is that it tests the absence of homogeneous Granger causality relationship under the basic hypothesis against the alternative hypothesis that accepts the existence of this relationship in at least one cross section. The Pedroni co-integration test considers the interdependence between countries within the panel. Additionally, it is robust to variations in the ratio of time periods to the number of countries in the panel, meaning it is able to produce accurate results regardless of whether the time dimension is larger or smaller than the cross-section size.

(Dumitrescu & Hurlin, 2012) examined the causal relationship between γ and χ by using the linear model described below.

$$\gamma_{i,t} = \infty_i + \sum_{k=1}^{K} \gamma_i^{(k)} \gamma_{i,t-k} + \sum_{k=1}^{K} \beta_i^{(k)} + x_{i,t-k} + \varepsilon_{i,t} \tag{14}$$

Here K denotes the length of lag, which is identical for all horizontal sections, while $\beta_i = (\beta^{(1)}_i, \ldots, \beta^{(K)}_i)$. The basic and alternative hypotheses established for the above equation are as follows (Dumitrescu & Hurlin, 2012):

H₀: $\beta_i = 0$
H₁: $\beta_i = 0$ $\forall_i = 1, \ldots, N$
$\beta_i \neq 0$ $\forall_i = N_1+1, N_1+2, \ldots, N$

(Dumitrescu & Hurlin, 2012) calculated individual Wald statistics ($W_{i,T}$) for cross-section units in order to test the basic and alternative hypotheses and obtained the Wald statistics ($w_{N,T}^{HNC}$) for the panel by taking the average of these statistics. In other words $(w_{N,T}^{HNC}) = 1/N . \sum_{I=1}^{N} W_{i,T}$. (Dumitrescu & Hurlin, 2012) recommend using the $Z_{N,T}^{HNC}$ statistic, which has an asymptotic distribution when

the time dimension is larger than the cross-section dimension, while it is recommended to use the Z_N^{HNC} statistics if the cross-section size is larger than the time dimension. $Z_{N,T}^{HNC}$ and Z_N^{HNC} test statistics were calculated as below. In the equation 15 and 16 d denotes divergences.

$$Z_{N,T}^{HNC} = \sqrt{\frac{N}{2K}}(W_{N,T}^{HNC} - K) \xrightarrow[N \to \infty]{d} N(0,1) \tag{15}$$

$$Z_N^{HNC} = \frac{N^{1/2}[w_{N,T}^{HNC} - N^{-1}.\sum_{i=1}^{N} E(W_{i,T})]}{\sqrt{N^{-1}.\sum_{i=1}^{N} Var(W_{i,T})]}} \xrightarrow[N \to \infty]{d} N(0,1) \tag{16}$$

In this study, panel causality test was applied to the stationary series and the results obtained are presented in equation 16. In the study, the directions of the causality relations between the series were determined based on the results of the $Z_{N,T}^{HNC}$ test statistics suggested by (Dumitrescu & Hurlin, 2012) because the time dimension is larger than the cross-section dimension.

In their study, (Dumitrescu & Hurlin, 2012) applied a panel causality test to stationary series and presented the results in equation 16 The direction of causality between the series was determined by using the $Z_{N,T}^{HNC}$ test statistics suggested by Dumitrescu and Hurlin as the time dimension is greater than the cross-section dimension.

4.2 Material of the Study

There are various control variables available that could help verify the relationship between human development index (HDI) and trade activity. One such control variable would be gross domestic product (GDP). GDP is a measure of total goods and services produced in any one country and it provides a handy measure that is tightly connected to both HDI and trade activity. Political stability can affect both HDI and trade activity, so it could be useful to control for this variable. Infrastructure, such as transportation networks and communication systems, can facilitate trade and impact HDI. Higher education levels are often associated with higher HDI and increased trade activity, so controlling for education levels could be useful. Another variable may be natural resources. Countries with abundant natural resources may have higher trade activity and higher HDI, so controlling for this variable could be useful. Population size may also be used as control variable. Larger population size may be associated with higher trade activity and higher HDI, so controlling for population size could be useful.

In the thesis, the relationship between exported goods as % of GDP, FDI % of GDP and HDI and was examined, as well as the relationship between imported goods as % of GDP, FDI as % of GDP and HDI. By examining the relationship between these variables, it is possible to identify patterns or trends that can help explain the relationship between trade activity and human development. It's important to note that the relationship between these variables may not be simple or straightforward. For example, higher levels of trade activity may be associated with higher HDI, but this relationship may be influenced by other factors such as economic and political stability, infrastructure, education levels, and natural resources.

It may be helpful to control for these and other potential confounding variables in order to more accurately assess the relationship between exports of good as percent of GDP, import of good as percent of GDP, FDI as a percentage of GDP, and HDI.

Developing countries as they typically encounter distinct difficulties and opportunities when it comes to economic growth and poverty elimination. These nations tend to have lower levels of economic growth, weaker institutions, and more inequality compared to developed countries. These characteristics make them more vulnerable to economic disturbances and harder to advance sustainably. On the other hand, developing countries provide opportunities for fast economic growth and poverty elimination through economic development. By analyzing these countries, economists can understand the factors that enhance or impede economic development and discover policies and methods that can support sustainable and inclusive growth.

Countries were selected from developing countries, and these countries are Argentina, Belize, Botswana, Brazil, Bulgaria, China, Colombia, Costa Rica, Dominican Republic, Ecuador, Gabon, Guatemala, Guyana, Indonesia, Jamaica, Jordan, Malaysia, Mexico, Namibia, Paraguay, Peru, South Africa, Thailand, Tonga and Turkey. Time interval is 29 years and covers the 1990-2018 period. Countries having missing data were removed from the analysis. Analysis covered 29 years from 1990-2018 period; countries without data were removed prior to analysis; results are provided via well-known resources like United Nations Development Program database World Bank database and OECD Database.

5. RESULTS AND THEIR DISCUSSION

In this section test results are discussed. For testing, different techniques were applied in EViews-9. These techniques are unit root test, co-integration test and panel data analysis.

5.1 Unit Root Test Results

In this part, unit root test results were given both at the level and at the first difference of variables and results were given in table 1 and table 2.

Table 1 Augmented Dickey Fuller Test Results at Level (Levin-Lin-Chu)

Order of integration	Variables	Intercept	Trend and intercept	None
Level	L Ex	-2.03659**	-2.43619*	-0.79404
Level	L FDI	-7.78012*	-7.02697*	-4.41818*
Level	L Imp	-3.36027*	-3.79309*	0.13075
Level	L HDI	-3.55903*	-3.36782*	25.0310

Source: Own calculation based on data

Notes: Values with * indicates significant at 1%

Values with ** indicates significant at 5%

Values without * indicates insignificant

None: No intercept and no trend

Table 2 Augmented Dickey Fuller Test Results at First Difference (Levin Lin Chu)

Order of integration	Variables	Intercept	Trend and intercept	None
First difference	Δ Ex	-21.8464*	-19.1791*	-24.3750*
First difference	Δ FDI	-26.6961*	-23.2369*	-29.3425*
First difference	Δ Imp	-24.3069*	-18.4002*	-26.5030*
First difference	Δ HDI	-13.7960*	-15.1684*	-7.27984*

Source: Own calculation based on data

Notes: Values with * indicates significant at 1%

Values with ** indicates significant at 5%

Values without * indicates insignificant

None: No intercept and no trend

The unit root test of Liu Chu indicates that some of the variables have unit roots at their own level, but no unit root is present at the first differences. On the first difference, it can be inferred that all series are stationary.

To make sure, if the variables are stationary Im Peseran Shin test was also applied to variables at level and first difference. Results were shown in table 3 and table 4 below.

Table 3 Augmented Dickey Fuller Test Results at Level (Im Peseran Shin)

Order of integration	Variables	Intercept	Trend and intercept
Level	L Ex	-1.10737	-1.74615
Level	L FD	-8.20523*	-6.71286*
Level	L Imp	-2.56557*	-3.44983*
Level	L HDI	2.73222	-0.42297

Source: Own calculation based on data

Notes: Values with * indicates significant at 1%

Values without * indicates insignificant

As seen in the table 3, while some variables are significant, other variables are insignificant at the level.

Table 4 Augmented Dickey Fuller Test Results at First Difference (Im Peseran Shin)

Order of integration	Variables	Intercept	Trend and intercept
First difference	Δ Ex	-20.8164*	-18.4847*
First difference	Δ FDI	-26.0989*	-23.7488*
First difference	Δ Imp	-22.5375*	-18.6341*
First difference	Δ HDI	-14.3726*	-14.3180*

Source: Own calculation based on data

Notes: Values with * indicates significant at 1%

As seen in the table 4, when Im Peseran Shin test were applied to variables at the first difference, it was seen that variables are significant.

Using non-stationary series in analysis can give results as if there is a relationship between series, although there is no relationship between them. Therefore, in order to eliminate the possibility of such a false or spurious regression, it is necessary to test whether the series are stationary or not.

After taking the first differences of the series, although some variables are stationary at level, all variables were found stationary at the first difference, in other words it was seen that there was no unit root in the test results. At the end, it was concluded in the test result that variables, Export import FDI and HDI, can be used in analysis and will not give spurious results.

5.2 Johansen Co-Integration Test

As it is usually accepted, a minimum of six statistically significant results out of 11 are sufficient to support the existence of co-integration relationships among time series(Enders, 2004). This reasoning comes from Johansen co-integration test's purpose in testing against its null hypothesis that there are no co-integration relationships among them According to statistical theory of hypothesis testing, if the test statistic falls outside of its critical region (defined according to your level of significance - typically 0.05 or 0.01) then the null hypothesis can be rejected and tested further. If six or more test statistics fall outside the critical region, one may draw the inference that the null hypothesis is unlikely to hold and there is enough evidence supporting the co-integration relationship among time series. The exact number of statistically significant results required to provide evidence for co-integration can vary based on context and characteristics of time series being examined; however, six statistically significant results out of 11 is often used as an indicative number (Enders, 2004).

Table 5 Pedroni Intra Dimension Results-Intercept **(**Export, FDI, HDI)

Variables	Statistics	Probability	Weighted Statistics	p-value
Panel v	1.327695	0.0921	0.741167	0.2293
Panel rho	-2.178905	0.0147	-1.740666	0.0409
Panel PP	-4.113615	0.0000	-3.150972	0.0008
Panel ADF	-3.801976	0.0001	-3.053962	0.0011

Source: Own calculation based on data

Table 6 Pedroni Inter Dimension Results **(**Export, FDI, HDI)

Variables	Statistics	p-value
Group rho-Statistic	0.278417	0.6097
Group PP-Statistic	-2.201891	0.0138
Group ADF-Statistic	-2.095883	0.0180

Source: Own calculation based on data

As seen in the table 5 and 6, for intra-dimension results, six out of eight statistics' probability are significant and Inter Dimension results, two out of three statistics' probabilities are significant. It means that four of seven statistics are significant. According to the Pedroni co-integration test for model, the H_0 hypothesis (no co-integration between the series) in which the long-lasting effect of HDI and FDI as % of GDP was rejected, hence H_1 was accepted. It can be concluded that there is long term relationship between variables for those countries.

Table 7 Pedroni Intra Dimension Results-Intercept and Trend (Export, FDI, HDI)

Variables	Statistics	Probability	Weighted Statistics	p-value
Panel v	-1.024118	0.8471	-1.696752	0.9551
Panel rho	-0.439442	0.3302	0.064711	0.5258
Panel PP	-3.595612	0.0002	-3.012300	0.0013
Panel ADF	-3.587800	0.0002	-3.234895	0.0006

Source: Own calculation based on data

Table 8 Pedroni Inter Dimension Results (Export, FDI, HDI)

Variables	Statistics	p-value
Group rho-Statistic	1.501352	0.9334
Group PP-Statistic	-2.693116	0.0035
Group ADF-Statistic	-2.180860	0.0146

Source: Own calculation based on data

Table 7 and table 8 showed that for intra-dimension results, four out of eight statistics probability are significant and for Inter Dimension results, two out of three statistics probabilities are significant. It means that four of seven statistics are significant. According to the Pedroni co-integration test for the model, the H_0 hypothesis (no co-integration between the series) in which the long-lasting effect of HDI and FDI as % of GDP was rejected, hence H_1 was accepted. It can be concluded that there is long-term relationship between variables for those countries.

Table 9 Pedroni Intra Dimension Results-None (Export, FDI, HDI)

Variables	Statistics	p-value	Weighted Statistics	p-value
Panel v	0.294365	0.3842	0.372045	0.3549
Panel rho	0.774466	0.7807	-0.242151	0.4043
Panel PP	0.262493	0.6035	-1.176480	0.1197
Panel ADF	0.274589	0.6082	-0.991460	0.1607

Source: Own calculation based on data

Table 10 Pedroni Inter Dimension Results (Export, FDI, HDI)

Variables	Statistics	p-value
Group rho-Statistic	1.505878	0.9340
Group PP-Statistic	-0.430554	0.3334
Group ADF-Statistic	-0.402656	0.3436

Source: Own calculation based on data

According to results indicated table 9 and table 10 above, there is no significant result. Overall, two out of three tests are significant, so it can be said that there is long run relationship among the variables.

Table 11 Pedroni Intra Dimension Results-Intercept (Import, FDI, HDI)

Variables	Statistics	p-value	Weighted Statistics	p-value
Panel v	2.269724	0.0116	-0.120118	0.5478
Panel rho	-3.075988	0.0010	-2.677787	0.0037
Panel PP	-5.159730	0.0000	-5.368228	< 0.001
Panel ADF	-6.552478	0.0000	-7.256953	< 0.001

Source: Own calculation based on data

Table 12 Pedroni Inter Dimension Results (Import, FDI, HDI)

Variables	Statistics	p-value
Group rho-Statistic	-0.898247	0.1845
Group PP-Statistic	-4.553907	< 0.001
Group ADF-Statistic	-6.735272	< 0.001

Source: Own calculation based on data

Table 9 and table 10 demonstrated that for intra-dimension results, six out of eight statistics probability are significant and Inter Dimension results, two out of three statistics probabilities are significant. It means that four of seven statistics are significant. According to the Pedroni co-integration test for model, the H_0 hypothesis (no co-integration between the series) in which the long-lasting effect of HDI and FDI of% GDP was rejected, hence H_1 was accepted. It can be concluded that there is long term relationship between variables for those countries.

Table 13 Pedroni Intra Dimension Results-Intercept and Trend (Import, FDI, HDI)

Variables	Statistics	p-value	Weighted Statistics	p-value
Panel v	-0.522819	0.6995	-2.901709	0.9981
Panel rho	-0.523990	0.3001	-0.106210	0.4577
Panel PP	-3.897681	< 0.001	-5.152285	< 0.001
Panel ADF	-5.704060	< 0.001	-7.897944	< 0.001

Source: Own calculation based on data

Table 14 Pedroni Inter Dimension Results (Import, FDI, HDI)

Variables	Statistics	p-value
Group rho-Statistic	1.532080	0.9372
Group PP-Statistic	-4.090806	< 0.001
Group ADF-Statistic	-7.043799	< 0.001

Source: Own calculation based on data

According to table 11 and 12, for intra-dimension results, four out of eight statistics' probability are significant and Inter Dimension results, two out of three statistics' probabilities are significant. It means that four of seven statistics are significant. According to the Pedroni co-integration test for model, the H_0 hypothesis (no co-integration between the series) in which the long-lasting effect of HDI and FDI as % of GDP was rejected, hence H_1 was accepted. It can be concluded that there is long term relationship between variables for those countries.

Table 15 Pedroni Intra Dimension Results-None (Import, FDI, HDI)

Variables	Statistics	p-value	Weighted Statistics	p-value
Panel v	0.900455	0.1839	-0.755868	0.7751
Panel rho	0.122498	0.5487	-0.165426	0.4343
Panel PP	-0.551923	0.2905	-1.304568	0.0960
Panel ADF	-0.707677	0.2396	-1.663201	0.0481

Source: Own calculation based on data

Table 16 Pedroni Inter Dimension Results (Import, FDI, HDI)

Variables	Statistics	p-value
Group rho-Statistic	0.660116	0.7454
Group PP-Statistic	-2.082903	0.0186
Group ADF-Statistic	-3.114966	0.0009

Source: Own calculation based on data

According to results in table 15 and table 16 above, there is no significant result. In total, two out of three tests are significant, so it can be said that there is long run relationship among the variables.

Co-integration analysis is used to establish whether there is an ongoing relationship between two or more variables. Before initiating co-integration tests in this study, first differences of series were taken and checked to see if they were stationary; some tests were then run to verify this determination - the series indeed proved stationary! In any event, co-integration analysis is then carried out to establish long-term relations between co-integrated vectors and series.

Empirically, co-integration analysis was utilized to assess whether there is any long-term correlations between export-FDI-HDI and import-FDI-HDI. Co-integration analyses are often used as an approach for establishing long-term relationships among variables.

The variables used in the co-integration analysis are Export - FDI and HDI, import - FDI and HDI. As a result of the test, a long-term relationship was found between export FDI and HDI.

Similarly, test results show that there is a long-term relationship between import FDI and HDI. In other words, if there is an increase or decrease in any of the variables, which are Export - FDI and HDI, in the long term, the other variables will be affected by this situation. Similarly, if there is an increase or decrease in any of the variables, which are import - FDI and HDI, in the long term, the other variables will be affected by this situation.

In sum, this test is one of the key points to see long run relationship. At the end, the test result showed that there is co-integration among the variables, it means that variables move together in the long run.

5.3 Causality Test

Causality test result of the analysis were shown below.

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Table 17 Dumitrescu Hurlin Panel Causality Tests

			W-Stat.	Zbar-Stat.	p-value
HDI	→	Export	3.86117	3.41497	0.0006
Export	→	HDI	3.14268	1.93792	0.0526
FDI	→	Export	1.84306	-0.73379	0.4631
Export	→	FDI	2.86401	1.36504	0.1722
FDI	→	HDI	3.50418	2.68109	0.0073
HDI	→	FDI	3.79141	3.27156	0.0011

Source: Own calculation based on data

In table 17 causality test result showed that there is a unidirectional relationship between export and HDI. In this causality relationship, Export doesn't cause HDI significantly (at 5% significance level), although HDI affects export. While there is a unidirectional causality relationship between HDI-export and FDI-HDI, there is no causality relationship between FDI- Export or Export- FDI.

Table 18 Dumitrescu Hurlin Panel Causality Tests

			W-Stat.	Zbar-Stat.	p-value
HDI	→	Import	5.44905	3.31538	0.0009
Import	→	HDI	5.70257	3.71638	0.0002
FDI	→	Import	3.65803	0.48256	0.6294
Import	→	FDI	4.29455	1.48933	0.1364
FDI	→	HDI	5.25997	3.01633	0.0026
HDI	→	FDI	5.05672	2.69485	0.0070

Source: Own calculation based on data

Table 18 showed that while there is a bidirectional causality relationship between HDI-import and there is a unidirectional FDI-HDI. In addition, there is no causality relationship between FDI-import or import - FDI.

(Granger, 1983; Engle & Granger, 1987) showed in their studies that if the variables are integrated at the first difference, if there is a co-integration relationship between the variables, there may be unidirectional or bidirectional causality in the variables. In addition, in this case, the regression in which the existence of co-integration predicted will be free from the factors that cause false or spurious regression. Therefore, causality test can be applied for variables that have a co-integration relationship between them.

As a result of the tests applied, no significant causality was found between export and FDI. When the relationship between export and HDI was examined, it was seen that HDI affects export, but export doesn't affect HDI. In other words, there is a one-way causality relationship between those variables. For example, although an increase or decrease in HDI causes an increase or decrease in export.

Tests result showed that there was no significant causality between import and FDI. When the relationship between import and HDI was checked, it was seen that HDI affects import and import affects HDI. In other words, there are a two-way causality relationship between them. For example, an increase or decrease in import causes an increase or decrease in HDI. Similarly, an increase or decrease in HDI causes an increase or decrease in import. Briefly, analysis showed that the two variables affect each other.

In sum, the Causality test result showed that while there is a unidirectional causality relationship between HDI-export, there is a bidirectional relationship between HDI-import and there is a unidirectional relationship between FDI-HDI. Test results also indicated that there is no causality relationship between FDI- import, import- FDI and FDI- export, export- FDI.

5.4 Panel Data Analysis

Table 19 Panel Data Analysis(Export)

Variable	Coefficient	Std. Error	t-Statistic	p-value

Variable	Coefficient	Std. Error	t-Statistic	p-value
C	17.62730	3.894209	4.526541	< 0.001
FDI	0.121609	0.089274	1.362201	0.1736
HDI	15.04304	5.797737	2.594639	0.0097

Effects Specification Cross-section fixed (dummy variables)

R-squared	0.855712	F-statistic		159.2132
Adjusted R-squared	0.850337	Prob (F-statistic)		0.000000

Source: Own calculation based on data

As seen table 17 above, R square is very high, so the model is fit.

According to the Panel model estimation results, while the probability of HDI and C are significant at %1, the probability of FDI is insignificant. The co-efficient of HDI was found positive and it is (λ) 15.04. Normally, the interpretation would be like the model showed that 1 unit increase in HDI cause 15.04 unit increase in export. However, since HDI is measured on a scale between 0 and 1, it is more accurate to say that a 1% increase in HDI is associated with a 15.04% increase in exports, rather than a 15.04 unit increase.

Table 20 Panel Data Analysis (Import)

Variable	Coefficient	Std. Error	t-Statistic	p-value
C	14.68683	3.700529	3.968845	0.0001
FDI	0.746393	0.084834	8.798296	0.0729
HDI	25.85248	5.509385	4.692444	< 0.001

Effects Specification Cross-section fixed (dummy variables)

R-squared	0.879641	F-statistic		196.2045
Adjusted R-squared	0.875158	Prob(F-statistic)		0.000000

Source: Own calculation based on data

As seen table 18 above, R square is very high, so the model is fit.

According to the Panel model estimation results, the probability of FDI, HDI and C are significant at %1. The co-efficient of HDI was found positive and it is (λ) 25.85. Since HDI is measured on a scale between 0 and 1, it is more accurate to say that a 1% increase in HDI is associated with a 25.85% increase in import.

In this section, panel data analysis has been carried out using data from the period 1990-2018. In the analysis, export was used as dependent variable, Human Development Index published by UNDP and FDI was used as independent variables. In the analysis, as in the causality analysis, a significant relationship between FDI and export has not been detected. However, contrary to this situation, a significant relationship has been found between export and HDI, and this relationship is positive.

When developed countries' economies are investigated, it is seen that countries with high export volumes also have a high level of welfare. Therefore, export is important for countries. When the literature is reviewed, HDI was generally used as the dependent variable in the studies, and export was used as the independent variable. So, the aim of this analysis was to make a contribution to eliminate this deficiency, therefore the export was used as dependent variable and HDI was used as independent variable.

Based on the literature, it was inferred that export and import are important to increase the development and welfare levels. In order to increase exports and human development level, regulations must be made by public institutions in developing countries.

In the research HDI and FDI were used as independent variables while export and import used as dependent variables.

HDI is calculated based on three key elements: health, knowledge and income level. These elements are essential to a high quality of life and play a key role in human development. The study shows that these factors not only contribute to human development but also contribute to export. As a result, increasing HDI is also important for export, and public institutions play an important role in this case.

One of the components of HDI is health and another is knowledge. Improving those conditions may be beneficial in terms of trade. Another dimension of HDI is a decent standard of living and measured by GNI per capita. Raising GNI and fair income distribution within the country are important for welfare. It should be done by the government, that is, by the public institutions, to spread the wealth throughout the country and to increase the income.

In order to increase GNI per capita, it is important to reach high level education. Trained, educated and qualified employees is also another crucial point, because trained workforce will work with

higher productivity. High productivity will reduce both costs and increase profitability. Another issue may be strengthening the infrastructure, for example improving transportation facilities, providing facilities during production, improving telecommunication services such as internet service. Startup companies should be supported by the government. This support may be provided as consultancy service or economic support.

5.5 Hypothesis Result

This section of the thesis provides summary of the study results, specifically in relation to the hypotheses that were developed at the outset of the research.

a-   The initial stage of the analysis involved performing unit root tests to determine whether the variables were stationary at the first difference. The findings of the thesis indicated that after taking the first differences of the variables, there was no unit root in the series, indicating that the variables (export, import, FDI and HDI) could be utilized in the analysis without yielding spurious results.

b-   To identify the long-term relationship between the variables, a co-integration test was conducted. The test indicated a long-term relationship between export and FDI, as well as between export and HDI, and similarly, between import and FDI and import and HDI.

c-   Causality tests were performed in the third step. The literature suggests that unidirectional or bidirectional causality may exist in the variables if a co-integration relationship exists between them. The results of the tests showed that there was no significant causality between export-FDI and import-FDI.

d-   The causality test result between export-HDI and import-HDI revealed that HDI had an effect on export, but export did not have an effect on HDI. Regarding the relationship between import and HDI, it was discovered that HDI had an effect on import, and import also had an effect on HDI.

e-   In the final step, panel data analyses were conducted. The results showed that there was no significant relationship between FDI-export and FDI-import.

f-   The panel data analyses revealed a significant positive relationship between HDI-export and HDI-import.

The results presented in sections a through f provide a comprehensive analysis of the relationships and causality among the variables under investigation. These findings serve as the basis for the evaluation and acceptance/rejection of the hypotheses proposed at the outset of the research, as discussed in (i) and (ii).

i.   Hypotheses H0b and H0d, which claim there is significant causality and relationship between export and FDI and import and FDI respectively, were rejected based on findings presented in section c that demonstrated no causality between these factors; similarly in section e which used panel data analyses demonstrated no meaningful relationships between FDI-export and FDI-import relationships.

ii.   H0a: There is a significant causality and relationship between export and HDI and H0c: There is a significant causality and relationship between import and HDI hypothesis are accepted. Because as mentioned in d, there is causality relationship between export – HDI and import – HDI. As mentioned in f, panel data analyzes supports causality analysis. Because result indicated significant relationship between HDI - export and HDI – import.

6. CONCLUSION AND RECOMMENDATION

International trade involves buying and selling of goods and services between different nations, which involves activities like importing/exporting of products/services, foreign investments, labor migration across national boundaries and labor force mobility. Global trade has historically been an engine of economic development; giving countries access to new markets, resources and production capacities they could otherwise never access or focus on producing competitive products/services in which their economies excelled. Through globalization and technological progress however, its scale has exponentially grown as countries become interdependent on one another and more interdependent in recent years than ever before - both interdependence increases trade volumes significantly among nations involved and dependency among them all involved parties involved.

While economies are growing it is seen that economic growth alone does not bring prosperity to the people. It has been noted that countries that are productive and closely track technological progress and invest in their growth are at the top of the human development index rankings. There are significant gaps in both humanitarian and economic factors between developing and developed countries. No high levels of human development can be expected in countries with factors such as inequality and other unfavorable circumstances. Therefore, economic growth, economic development and human development should be considered together to reach high level welfare.

Development economics and institutional economics are similar in that they aim to explain the growth differences among the countries.

In general, institutional economics is an approach which attempts to express economic processes, focusing on government institutions and by considering social factors. According to the institutional economics models, the source of welfare differences among the countries is emerged from differences in social structures and therefore the structures of institutions. The institutional economics approach indicates the economic and social systems are different and the various institutional structures are linked to this situation. In the institutional economics approach, organizations are influenced by the structure of society, and these institutions form the behavioral habits of individuals and communities.

Development economics is a field of study that concentrates on the economic growth and reduction of poverty in low-income nations. It looks into the factors that lead to these developments and determines policies and methods to achieve sustainable and inclusive progress. This field covers a

variety of topics including poverty and inequality, trade and investment, education and health, infrastructure and institutions, and the environment and natural resources.

Researchers seek to clarify the discrepancies between developing and developed countries on a number of economic and non-economic factors. There have been several opinions on understanding the differences in development among countries and with several studies, this situation has been explained in various ways.

In this aspect the purpose of this study is to investigate the economic factors such as foreign direct investment and non-economic factors like human development index on trade and to explore the role of public institutions in relation to it. While export and import variables were used as dependent variable, FDI and HDI were used as independent variables in the analysis. Panel data analysis was used to evaluate the relationship of the data collection.

In the analysis developing countries were used because studying developing countries is important in development economics as these nations often face challenges and opportunities in terms of economic growth and poverty reduction. They usually have lower levels of economic development, weaker institutions, and greater inequality than developed countries. These characteristics make them more susceptible to economic shocks and harder to develop sustainably. Developing countries also offer potential for rapid economic growth and poverty reduction through economic development. By examining these countries, economists can gain understanding of the factors that promote or hinder economic development and identify policies and strategies that can support sustainable and inclusive growth. Countries that did not have data were excluded, resulting in a total of 25 developing countries being included. The period of 1990 to 2018 was chosen as the time frame for analysis as it encompasses the range of the oldest and most recent Human Development Index (HDI) data available at the time the study was conducted.

To begin the analysis, unit root tests were performed to see whether the variables were stationary at the first difference. When using non-stationary series in analysis may produce results which indicate a relationship between series even there is none. To avoid the possibility of a false or spurious regression, it is crucial to verify if series are stationary. According to the results in this thesis, there was no unit root in the series after taking the first differences of the variables. In other words, the test results showed that the variables export, import, FDI and HDI can be used in the analysis without producing spurious results.

Following stationarity tests, the co-integration test was used to see the long-term relationship. Co-integration analysis is used to establish whether two or more variables possess long-term relationships. Before conducting the co-integration test in this analysis, first differences of series were taken and tested against their stationarity status. The series have been found to be stationary. The co-integration analysis was then performed to evaluate the long-term relationship among those co-integrated vectors.

It was empirically investigated whether there is a long-term relationship among export and FDI or HDI, as well as import and FDI or HDI. The test revealed a long-term relationship between export and FDI and export - HDI. Similarly, test results show that import and FDI and import and HDI have a long-term relationship. In other words, when any of the variables, including export, FDI and HDI increases or decreases in magnitude, other variables will be influenced in the long term. If either import variables FDI and HDI increase or decrease significantly over time, other variables could also be adversely impacted.

At the third step causality tests were applied. According to the literature, there may be a unidirectional or bidirectional causality in the variables if there is a co-integration relationship between them and the variables are integrated at the first difference. It means that the regression model will be free of the factors that lead to incorrect or spurious regression, so the causality test can be used for the estimation.

Test results demonstrated no significant causal relationship between export and FDI. When considering the relationship between HDI and export, it becomes apparent that while HDI has an influence over export but none on HDI. Thus there exists a uni-directional relationship between variables; an increase or decrease in HDI causes an equivalent rise or decline in exports.

Analysis results showed that there was no significant causality between import and FDI. When the relationship between import and HDI was examined, it was found that HDI has an effect on import and import has an effect on HDI. In other words, variables have a bidirectional relationship. A change in import, for example, causes a change in HDI. In the same way, an increase or decrease in HDI causes an increase or decrease in import. In summary, variables import and HDI have a bidirectional causality relationship.

At the final step, panel data analyzes were performed by using data from 1990 to 2018. Export and import were used as a dependent variable, while human development index and foreign direct

investment were used as independent variables. According to the analysis, there was no significant relationship between FDI - export and FDI - import, in the study, as it was in the causality analysis. In contrast to that, a significant relationship was discovered between HDI - export and HDI - import, and it was a positive relationship.

According to the test results, while 1% increase in HDI is associated with a 15.04% increase in exports, 1% increase in HDI is associated with a 25.85% increase in import. Thus, if countries desire to positively impact their exports and import, they should increase human development level. Since import as one the well-being indicator and exports have a particular significance in the development and strengthening of the economy, the government should strive to increase HDI as an activity.

The HDI is measured using three main factors: health, knowledge, and income. These components are essential for a high quality of life and play an important role in human development. These factors, according to the report, not only contribute to human development but also to import power. As a result, rising HDI is critical for trade, and public institutions play a key role in this respect.

Institutional and development economics asserts that when there is a correlation between human development index (HDI) and import/export ratios and imports/exports rates, that implies nations or regions with higher levels of human development can import more goods and services, while regions or nations with high HDI levels tend to have businesses capable of exporting these same goods/services more likely. This underscores human development's significance in economic growth and international commerce by linking positively to enterprises' capacity for import/export of products/services between import/export capacities of enterprises based on HDI values.

In sum, investing in human development by promoting education and healthcare, which can increase productivity and competitiveness in international trade; Prioritizing poverty reduction and economic stability by implementing policies that increase purchasing power are crucial in terms of trade and HDI. Institutions should monitor and analyze the connection between HDI and trade regularly to understand the changing dynamics of the relationship and to adapt policies accordingly. It is also important for governments to cooperate and coordinate their efforts in order to address the different aspects of human development and ensure that everyone has the opportunity to succeed. This includes working together to address issues related to education,

health, economic development, social welfare, and the environment, among other areas. By working together and coordinating their efforts, governments can more effectively address the needs of individuals and communities and promote the overall well-being and prosperity of society.

7. NEW SCIENTIFIC RESULTS

This research has made a contribution to existing knowledge and introduced a new perspective on the topic of trade HDI and FDI. To make the study's findings more relevant to many countries, data from multiple countries was utilized rather than just data from one country, thus making the results of the study applicable to a larger number of countries. So, the study offers valuable insights into factors that influence decision maker in challenging markets, specifically focusing on developing countries.

Using the different database and different statistical methods, it was analyzed that effects of HDI and FDI on trade variables import and export by countries.

Developing countries often struggle to achieve a high level of welfare due to various difficulties, one of the ways to overcome these difficulties is through exports. State interventions and support are sometimes necessary to boost exports, and these supports are typically provided to sectors directly linked to the economy. However, this study considered non-economic variables that also have a direct impact on the economy, such as the Human Development Index (HDI) which includes dimensions like long and healthy life, knowledge, and decent standard of living. Through analysis, it was found that an increase in HDI had a positive effect on exports.

Import levels can provide an indication of a country's level of economic development. Countries that import at high rates generally enjoy strong economies and higher standards of living as they can purchase goods from other nations at relatively affordable prices. But import levels alone do not indicate this fact - high importers may have high trade deficits, current account deficits or other economic problems which require attention as well. A country with low import levels could indicate less development; alternatively it could indicate domestic production powering the economy or an effective protectionist trade policy that restricts access to foreign markets - this study explored positive aspects associated with imports while finding that an increase in HDI had a direct positive effect on imports as a positive influencer on imports overall.

My thesis focused on exploring the relationships among human development, foreign direct investment (FDI) and international trade in developing countries. My aim was to gain valuable insight into factors affecting decision makers in challenging markets within developing nations; furthermore providing new perspective into international trade and investment processes and

complexity. Through data from multiple countries and various statistical methods I was able to make some new scientific findings that are listed below.

1- I have discovered that an increase in Human Development Index (HDI) had a positive influence on exports in developing countries, suggesting that non-economic factors play an integral part in stimulating economic development via international trade.

2- The International Institute has found that increasing HDI had a beneficial impact on imports, suggesting that increased access to knowledge and technology can facilitate accessing foreign markets as well as increasing domestic consumption.

3- In spite of my expectations, my findings showed no conclusive relationship between Foreign Direct Investment (FDI) and import/export trade, thus emphasizing the complex and multidimensional nature of international trade/investment and necessitating further research to comprehend factors driving trade patterns in developing nations.

4- Utilizing data from multiple countries and applying various statistical techniques, I provided insightful analyses into the key factors affecting decision makers in challenging markets - specifically developing countries - while offering fresh perspectives on HDI, FDI and trade relations.

8. SUMMARY

Globalization has led to increased interconnection of economies and an ever-evolving trade environment, making trade an essential driver of economic development across both developing and developed nations alike.

Exporting is crucial for any country's economy as it generates income, creates employment opportunities, and increases competitiveness by providing access to new technologies and business practices from around the globe.

Importing is another essential element of trade. One advantage is access to goods and services not produced locally - these could include raw materials for manufacturing, finished products for consumption, or specialized equipment or technology that cannot be produced domestically. Imports also help increase competition within domestic markets which in turn results in lower prices and improved quality products for consumers, driving economic growth by creating demand for domestic goods and services and thus driving economic expansion; high import levels also signal strong economies with access to international resources and products.

FDI can play a vital role in any country's economy by providing capital, technology and job opportunities. FDI can drive economic growth by stimulating domestic consumption of goods and services while simultaneously improving balance of trade by decreasing reliance on imports while increasing exports. Furthermore, FDI contributes to new industries being established within host countries and the transference of knowledge and skills transference resulting in reduced prices and better quality products being made available for consumers.

Economic growth alone cannot provide an accurate assessment of population welfare; that's why the Human Development Index (HDI) has become such an invaluable indicator. Therefore, to achieve high levels of welfare in a society it is crucial that economic development and human welfare be examined together as key metrics of well-being.

Institutional economics is essential when considering trade and human development; its studies show how trade regulations, political systems, and broader economic systems of a nation all impact economic growth as well as citizen welfare.

Few studies have examined the effect of HDI on trade, yet many factors impacting it have been studied extensively. With that in mind, this thesis explores the relationship among trade, foreign direct investment, economic growth, human development, institutional economics and developing countries; specifically developing nations. Focusing on developing nations offers several advantages; such as opportunities to observe high economic growth and development revealing interesting aspects such as obstacles to it or shifts in its structure or the impact of institutions.

The analysis includes 25 developing countries, after removing countries with missing data. The time frame for the analysis is 1990 to 2018, as it covers the range of the oldest and most recent HDI data available at the time of conducting the study.

To analyze the data, the Augmented Dickey-Fuller Test was first applied to determine if the variables were stationary. The results showed that the variables were stationary at the first difference, indicating that the data would not produce inaccurate results in further analysis. Next, the Johansen co-integration test was applied and the results indicated that there is co-integration among the variables, meaning that the variables move together in the long run. Thirdly, the Dumitrescu Hurlin causality test was applied to the variables. The results of these tests indicated a unidirectional relationship between HDI and export, and bidirectional between HDI and import. Furthermore, causality relationships were observed between FDI and HDI but none between export/import.

Panel data effect analyses confirmed the positive relationship between export and HDI. Unfortunately, however, no significant relationship was revealed between FDI investments and import/export activities; this may be caused by various reasons, including sectors not directly connected with import/export or consumption being directed at domestic consumption rather than exports and imports. Conversely, import and HDI were discovered to share an association.

In conclusion, non-economic variables like HDI, which encompasses factors such as long and healthy life, knowledge, and a decent standard of living, have a positive impact on trade. Improving these conditions will lead to increased trade activity Institutions, both economic and non-economic, all play an essential role in society and its economy. No single institution can claim to be superior at fostering human development across various aspects; each plays an essential part. Each institution should collaborate closely in order to be most effective.

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APPENDICIES

Appendix 1: GDP Data of Developing Countries (current US$)

	Argentina	Bulgaria	Belize	Brazil	Botswana	China	Colombia	Costa Rica
1990	141.4 B	20.6 B	.5 B	390.7 B	3.8 B	360.9 B	47.8 B	5.7 B
1991	189.7 B	10.9 B	.6 B	342.6 B	3.9 B	383.4 B	49.2 B	7.2 B
1992	228.8 B	10.4 B	.7 B	328.2 B	4.1 B	426.9 B	58.4 B	8.6 B
1993	236.7 B	10.8 B	.8 B	368.3 B	4.2 B	444.7 B	66.4 B	9.6 B
1994	257.4 B	9.7 B	.8 B	525.4 B	4.3 B	564.3 B	81.7 B	10.5 B
1995	258. B	19. B	.8 B	769.3 B	4.7 B	734.5 B	92.5 B	11.6 B
1996	272.1 B	12.3 B	.9 B	850.4 B	4.8 B	863.7 B	97.2 B	11.7 B
1997	292.9 B	11.3 B	.9 B	883.2 B	5. B	961.6 B	106.7 B	12.6 B
1998	298.9 B	15. B	.9 B	863.7 B	4.8 B	1029. B	98.4 B	13.7 B
1999	283.5 B	13.6 B	1. B	599.6 B	5.5 B	1094. B	86.2 B	14.3 B
2000	284.2 B	13.2 B	1.1 B	655.4 B	5.8 B	1211.3 B	99.9 B	15. B
2001	268.7 B	14.2 B	1.2 B	560. B	5.5 B	1339.4 B	98.2 B	16. B
2002	97.7 B	16.4 B	1.2 B	509.8 B	5.4 B	1470.6 B	98. B	16.6 B
2003	127.6 B	21.1 B	1.3 B	558.2 B	7.5 B	1660.3 B	94.6 B	17.3 B
2004	164.7 B	26.2 B	1.4 B	669.3 B	9. B	1955.3 B	117.1 B	18.6 B
2005	198.7 B	29.9 B	1.5 B	891.6 B	9.9 B	2286. B	145.6 B	20. B
2006	232.6 B	34.4 B	1.6 B	1107.6 B	9.9 B	2752.1 B	161.6 B	22.7 B
2007	287.5 B	44.4 B	1.7 B	1397.1 B	10.6 B	3550.3 B	206.2 B	26.9 B
2008	361.6 B	54.5 B	1.7 B	1695.8 B	10.7 B	4594.3 B	242.2 B	30.8 B
2009	333. B	52. B	1.7 B	1667. B	10.1 B	5101.7 B	232.4 B	30.7 B
2010	423.6 B	50.7 B	1.7 B	2208.9 B	12.6 B	6087.2 B	286.6 B	37.7 B
2011	530.2 B	57.7 B	1.8 B	2616.2 B	15.1 B	7551.5 B	334.9 B	42.8 B
2012	546. B	54.3 B	1.9 B	2465.2 B	13.9 B	8532.2 B	370.9 B	47.2 B
2013	552. B	55.8 B	2. B	2472.8 B	14.3 B	9570.4 B	382.1 B	50.9 B
2014	526.3 B	57.1 B	2.1 B	2456. B	15.5 B	10475.7 B	381.1 B	52. B
2015	594.7 B	50.8 B	2.2 B	1802.2 B	13.5 B	11061.6 B	293.5 B	56.4 B
2016	557.5 B	54. B	2.3 B	1795.7 B	15.1 B	11233.3 B	282.8 B	58.8 B
2017	643.6 B	59.2 B	2.3 B	2063.5 B	16.1 B	12310.4 B	311.9 B	60.5 B
2018	524.8 B	66.4 B	2.3 B	1916.9 B	17. B	13894.8 B	334.2 B	62.4 B

Note: M denotes million and B denotes billion $

Appendix 2: GDP Data of Developing Countries (current US$)

	Dominican Republic	Ecuador	Gabon	Guatemala	Guyana	Indonesia	Jamaica	Jordan
1990	7.1 B	15.2 B	6. B	7.7 B	.4 B	106.1 B	4.6 B	4.2 B
1991	9.8 B	17. B	5.4 B	9.4 B	.3 B	116.6 B	4.1 B	4.3 B
1992	11.6 B	18.1 B	5.6 B	10.4 B	.4 B	128. B	3.5 B	5.3 B
1993	13.1 B	18.9 B	4.4 B	11.4 B	.5 B	158. B	5.4 B	5.6 B
1994	14.6 B	22.7 B	4.2 B	13. B	.5 B	176.9 B	5.5 B	6.2 B
1995	16.6 B	24.4 B	5. B	14.7 B	.6 B	202.1 B	6.6 B	6.7 B
1996	18.2 B	25.2 B	5.7 B	15.7 B	.7 B	227.4 B	7.4 B	6.9 B
1997	20. B	28.2 B	5.3 B	17.8 B	.7 B	215.7 B	8.4 B	7.2 B
1998	21.7 B	28. B	4.5 B	19.4 B	.7 B	95.4 B	8.8 B	7.9 B
1999	22.1 B	19.6 B	4.7 B	18.3 B	.7 B	140. B	8.9 B	8.1 B
2000	24.3 B	18.3 B	5.1 B	19.3 B	.7 B	165. B	9. B	8.5 B
2001	25.6 B	24.5 B	5. B	18.4 B	.7 B	160.4 B	9.2 B	9. B
2002	27.1 B	28.5 B	5.3 B	20.4 B	.7 B	195.7 B	9.7 B	9.6 B
2003	21.4 B	32.4 B	6.5 B	21.6 B	.7 B	234.8 B	9.4 B	10.2 B
2004	22.3 B	36.6 B	7.8 B	23.6 B	.8 B	256.8 B	10.2 B	11.4 B
2005	35.8 B	41.5 B	9.6 B	26.8 B	.8 B	285.9 B	11.2 B	12.6 B
2006	37.9 B	46.8 B	10.3 B	29.7 B	2.4 B	364.6 B	11.9 B	15.1 B
2007	44. B	51. B	12.5 B	33.6 B	2.7 B	432.2 B	12.8 B	17.1 B
2008	48.1 B	61.8 B	15.6 B	38.5 B	3. B	510.2 B	13.7 B	22.7 B
2009	48.3 B	62.5 B	12.1 B	37.1 B	3.2 B	539.6 B	12.1 B	24.5 B
2010	53.9 B	69.6 B	14.4 B	40.7 B	3.4 B	755.1 B	13.2 B	27.1 B
2011	58. B	79.3 B	18.2 B	46.9 B	3.7 B	893. B	14.4 B	29.5 B
2012	60.7 B	87.9 B	17.2 B	49.6 B	4.1 B	917.9 B	14.8 B	31.6 B
2013	62.7 B	95.1 B	17.6 B	53. B	4.2 B	912.5 B	14.3 B	34.5 B
2014	67.2 B	101.7 B	18.2 B	57.9 B	4.1 B	890.8 B	13.9 B	36.8 B
2015	71.2 B	99.3 B	14.4 B	62.2 B	4.3 B	860.9 B	14.2 B	38.6 B
2016	75.7 B	99.9 B	14. B	66.1 B	4.5 B	931.9 B	14.1 B	39.9 B
2017	80. B	104.3 B	14.9 B	71.7 B	4.7 B	1015.6 B	14.8 B	41.6 B
2018	85.6 B	107.6 B	16.9 B	73.3 B	4.8 B	1042.3 B	15.7 B	43.4 B

Note: M denotes million and B denotes billion $

Appendix 3: GDP Data of Developing Countries (current US$)

	Malaysia	Namibia	Peru	Paraguay	Thailand	Tonga	Turkiye	South Africa
1990	44. B	2.8 B	26.4 B	5.8 B	85.3 B	.1 B	150.7 B	126. B
1991	49.1 B	3. B	34.3 B	7. B	98.2 B	.1 B	150. B	135.2 B
1992	59.2 B	3.4 B	36. B	7.2 B	111.5 B	.1 B	158.5 B	147. B
1993	66.9 B	3.3 B	34.8 B	7.2 B	128.9 B	.1 B	180.2 B	147.2 B
1994	74.5 B	3.7 B	44.9 B	7.9 B	146.7 B	.2 B	130.7 B	153.5 B
1995	88.7 B	4. B	53.3 B	9.1 B	169.3 B	.2 B	169.5 B	171.7 B
1996	100.9 B	4. B	55.3 B	9.8 B	183. B	.2 B	181.5 B	163.2 B
1997	100. B	4.2 B	58.1 B	10. B	150.2 B	.2 B	189.8 B	169. B
1998	72.2 B	3.9 B	55.5 B	9.3 B	113.7 B	.2 B	276. B	153. B
1999	79.1 B	3.9 B	50.2 B	8.8 B	126.7 B	.2 B	256.4 B	151.5 B
2000	93.8 B	3.9 B	51.7 B	8.9 B	126.4 B	.2 B	274.3 B	151.8 B
2001	92.8 B	3.6 B	52. B	8.5 B	120.3 B	.2 B	201.8 B	135.4 B
2002	100.8 B	3.3 B	54.8 B	7.2 B	134.3 B	.2 B	240.3 B	129.1 B
2003	110.2 B	4.9 B	58.7 B	7.7 B	152.3 B	.2 B	314.6 B	197. B
2004	124.7 B	6.6 B	66.8 B	9.6 B	172.9 B	.2 B	408.9 B	255.8 B
2005	143.5 B	7.2 B	76.1 B	10.7 B	189.3 B	.3 B	506.3 B	288.9 B
2006	162.7 B	8. B	88.6 B	13.4 B	221.8 B	.3 B	557.1 B	303.9 B
2007	193.5 B	8.8 B	102.2 B	17.9 B	262.9 B	.3 B	681.3 B	333.1 B
2008	230.8 B	8.6 B	120.6 B	24.6 B	291.4 B	.3 B	770.5 B	316.1 B
2009	202.3 B	8.9 B	120.8 B	22.4 B	281.7 B	.3 B	649.3 B	329.8 B
2010	255. B	11.4 B	147.5 B	27.3 B	341.1 B	.4 B	777. B	417.4 B
2011	298. B	12.5 B	171.8 B	33.8 B	370.8 B	.4 B	838.8 B	458.2 B
2012	314.4 B	13. B	192.6 B	33.3 B	397.6 B	.5 B	880.6 B	434.4 B
2013	323.3 B	12. B	201.2 B	38.5 B	420.3 B	.5 B	957.8 B	400.9 B
2014	338.1 B	12.4 B	200.8 B	40.4 B	407.3 B	.4 B	939. B	381.2 B
2015	301.4 B	11.3 B	189.8 B	36.2 B	401.3 B	.4 B	864.3 B	346.7 B
2016	301.3 B	10.7 B	191.9 B	36.1 B	413.4 B	.4 B	869.7 B	323.6 B
2017	319.1 B	12.9 B	211. B	39. B	456.4 B	.5 B	859. B	381.4 B
2018	358.8 B	13.7 B	222.6 B	40.2 B	506.8 B	.5 B	778.5 B	404.2 B

Note: M denotes million and B denotes billion $

Appendix 4: Foreign Direct Investment Data of Developing Countries, (current US$)

Note: M denotes million and B denotes billion $

	Argentina	Bulgaria	Belize	Brazil	Botswana	China	Colombia	Costa Rica
1990	1.84 B	4. M	.02 B	.99 B	.1 B	3.49 B	.5 B	.16 B
1991	2.44 B	.06 B	.01 B	1.1 B	-.01 B	4.37 B	.46 B	.18 B
1992	4.43 B	.04 B	.02 B	2.06 B	-1.56 M	11.16 B	.73 B	.23 B
1993	2.79 B	.04 B	.01 B	1.29 B	-.29 B	27.52 B	.96 B	.25 B
1994	3.63 B	.11 B	.02 B	3.07 B	-.01 B	33.79 B	1.45 B	.3 B
1995	5.61 B	.09 B	.02 B	4.86 B	.07 B	35.85 B	.97 B	.34 B
1996	6.95 B	.11 B	.02 B	12.55 B	.07 B	40.18 B	3.11 B	.43 B
1997	9.16 B	.5 B	.01 B	18.99 B	.1 B	45.44 B	5.56 B	.41 B
1998	7.29 B	.54 B	.02 B	28.86 B	.1 B	45.64 B	2.83 B	.61 B
1999	23.99 B	.82 B	.06 B	28.39 B	.04 B	41.01 B	1.51 B	.62 B
2000	10.42 B	1. B	.03 B	32.99 B	.06 B	42.1 B	2.44 B	.72 B
2001	2.17 B	.81 B	.06 B	23.23 B	.03 B	47.05 B	2.54 B	.62 B
2002	2.15 B	.9 B	.03 B	16.59 B	.41 B	53.07 B	2.13 B	.72 B
2003	1.65 B	2.1 B	-.01 B	10.12 B	.42 B	57.9 B	1.72 B	.77 B
2004	4.12 B	3.07 B	.11 B	18.16 B	.39 B	68.12 B	3.12 B	1.08 B
2005	5.27 B	4.1 B	.13 B	15.46 B	.42 B	104.11 B	10.24 B	1.53 B
2006	5.54 B	7.87 B	.11 B	19.42 B	.49 B	124.08 B	6.75 B	1.8 B
2007	6.47 B	13.88 B	.14 B	44.58 B	.49 B	156.25 B	8.89 B	2.24 B
2008	9.73 B	10.3 B	.17 B	50.72 B	.52 B	171.53 B	10.56 B	2.44 B
2009	4.02 B	3.9 B	.11 B	31.48 B	.21 B	131.06 B	8.03 B	1.61 B
2010	11.33 B	1.84 B	.1 B	82.39 B	.22 B	243.7 B	6.43 B	1.91 B
2011	10.84 B	2.1 B	.1 B	102.43 B	.29 B	280.07 B	14.65 B	2.73 B
2012	15.32 B	1.79 B	.19 B	92.57 B	.15 B	241.21 B	15.04 B	2.7 B
2013	9.82 B	1.99 B	.09 B	75.21 B	.07 B	290.93 B	16.21 B	3.21 B
2014	5.07 B	1.09 B	.14 B	87.71 B	.52 B	268.1 B	16.17 B	3.24 B
2015	11.76 B	2.22 B	.06 B	64.74 B	.38 B	242.49 B	11.62 B	2.96 B
2016	3.26 B	1.49 B	.03 B	74.29 B	.14 B	174.75 B	13.86 B	2.62 B
2017	11.52 B	2.01 B	.03 B	68.89 B	.26 B	166.08 B	13.7 B	2.92 B
2018	11.72 B	1.81 B	.12 B	78.16 B	.29 B	235.37 B	11.3 B	3.01 B

Appendix 5: Foreign Direct Investment Data of Developing Countries, (current US$)

	Dominican Republic	Ecuador	Gabon	Guatemala	Guyana	Indonesia	Jamaica	Jordan
1990	.13 B	.13 B	.07 B	.05 B	.01 B	1.09 B	.14 B	.04 B
1991	.15 B	.16 B	-.05 B	.09 B	.01 B	1.48 B	.13 B	-.01 B
1992	.18 B	.18 B	.13 B	.09 B	.15 B	1.78 B	.14 B	.04 B
1993	.19 B	.47 B	-.11 B	.14 B	.07 B	2. B	.08 B	-.03 B
1994	.21 B	.58 B	-.1 B	.07 B	.11 B	2.11 B	.08 B	2.85 M
1995	.42 B	.45 B	-.2 B	.08 B	.07 B	4.35 B	101.8 M	.01 B
1996	.13 B	.5 B	-.29 B	.08 B	.06 B	6.19 B	.14 B	.02 B
1997	.41 B	.72 B	-.11 B	.63 B	.05 B	4.68 B	.16 B	.36 B
1998	.67 B	.87 B	.13 B	1.35 B	.04 B	-.24 B	.32 B	.31 B
1999	1.34 B	.65 B	.09 B	.92 B	.05 B	-1.87 B	.47 B	.16 B
2000	.99 B	-.02 B	.28 B	-.79 B	.07 B	-4.55 B	.42 B	.91 B
2001	1.09 B	.54 B	-.1 B	-.94 B	.06 B	-2.98 B	.58 B	.27 B
2002	.93 B	.78 B	. B	-1.02 B	.04 B	.15 B	.44 B	.24 B
2003	.62 B	.87 B	.1 B	.02 B	.03 B	-.6 B	.68 B	.55 B
2004	.93 B	.84 B	.31 B	.32 B	.03 B	1.9 B	.56 B	.94 B
2005	1.12 B	.49 B	.33 B	.54 B	.08 B	8.34 B	.64 B	1.98 B
2006	1.53 B	.27 B	.27 B	.64 B	.1 B	4.91 B	.84 B	3.54 B
2007	2.25 B	.19 B	.65 B	.86 B	.15 B	6.93 B	.81 B	2.62 B
2008	2.73 B	1.06 B	.69 B	.73 B	.18 B	9.32 B	1.38 B	2.83 B
2009	1.7 B	.31 B	.64 B	.5 B	.16 B	4.88 B	.49 B	2.41 B
2010	1.82 B	.17 B	.52 B	1.1 B	.2 B	15.29 B	.19 B	1.69 B
2011	2.2 B	.65 B	1.12 B	.88 B	.25 B	20.56 B	.17 B	1.49 B
2012	3.42 B	.57 B	.68 B	1.4 B	.28 B	21.2 B	.41 B	1.55 B
2013	1.6 B	.73 B	.32 B	1.52 B	.2 B	23.28 B	.54 B	1.95 B
2014	2.39 B	.77 B	1.26 B	1.41 B	.24 B	25.12 B	.58 B	2.18 B
2015	2.23 B	1.32 B	.04 B	1.2 B	.14 B	19.78 B	.92 B	1.6 B
2016	2.52 B	.76 B	1.24 B	.85 B	.16 B	4.54 B	.93 B	1.55 B
2017	3.6 B	.63 B	1.31 B	1. B	.33 B	20.51 B	.89 B	2.03 B
2018	2.74 B	1.39 B	1.38 B	.92 B	1.18 B	18.91 B	.77 B	.95 B

Note: M denotes million and B denotes billion $

Appendix 6: Foreign Direct Investment Data of Developing Countries, (current US$)

	Mexico	Malaysia	Namibia	Peru	Paraguay	Thailand	Tonga	Turkiye	South Africa
1990	2.63 B	2.33 B	.03 B	.04 B	.08 B	2.44 B	.1 M	.72 B	-.08 B
1991	4.76 B	4. B	.12 B	-.01 B	.09 B	2.01 B	.2 M	.81 B	.25 B
1992	4.39 B	5.18 B	.12 B	-.08 B	.12 B	2.11 B	1.24 M	.84 B	3.36 M
1993	4.39 B	5.01 B	.06 B	.76 B	.08 B	1.8 B	.35 M	.68 B	.01 B
1994	10.97 B	4.34 B	.1 B	3.29 B	.14 B	1.37 B	2.49 M	.61 B	.37 B
1995	9.53 B	4.18 B	.15 B	2.56 B	.09 B	2.07 B	1.03 M	.89 B	1.25 B
1996	9.19 B	5.08 B	.13 B	3.47 B	.14 B	2.34 B	.28 M	.72 B	.82 B
1997	12.83 B	5.14 B	.09 B	2.14 B	.23 B	3.89 B	-.01 M	.81 B	3.81 B
1998	12.76 B	2.16 B	.1 B	1.64 B	.34 B	7.31 B	.05 M	.94 B	.55 B
1999	13.94 B	3.9 B	.05 B	1.94 B	.09 B	6.1 B	.96 M	.78 B	1.5 B
2000	18.38 B	3.79 B	.2 B	.81 B	.11 B	3.37 B	.01 B	.98 B	.97 B
2001	30.06 B	.55 B	.38 B	1.14 B	.1 B	5.07 B	.01 B	3.35 B	7.27 B
2002	20.16 B	3.19 B	.15 B	2.16 B	.09 B	3.34 B	4.69 M	1.08 B	1.48 B
2003	18.18 B	3.22 B	.07 B	1.34 B	-.06 B	5.23 B	.18 M	1.7 B	.78 B
2004	25.16 B	4.38 B	.22 B	1.6 B	.09 B	5.86 B	.01 B	2.79 B	.7 B
2005	25.42 B	3.92 B	.39 B	2.58 B	.01 B	8.22 B	.01 B	10.03 B	6.52 B
2006	22.14 B	7.69 B	.61 B	3.47 B	.19 B	8.92 B	.01 B	20.19 B	.62 B
2007	31.11 B	9.07 B	.67 B	5.49 B	.11 B	8.63 B	.02 B	22.05 B	6.59 B
2008	29.78 B	7.57 B	.75 B	6.92 B	.3 B	8.56 B	.02 B	19.85 B	9.89 B
2009	19.66 B	.11 B	.83 B	6.43 B	.14 B	6.41 B	.25 M	8.59 B	7.62 B
2010	30.53 B	10.89 B	.29 B	8.45 B	.69 B	14.75 B	4.66 M	9.1 B	3.69 B
2011	23.84 B	15.12 B	.8 B	7.68 B	.58 B	2.47 B	.01 B	16.18 B	4.14 B
2012	18.22 B	8.9 B	1.04 B	14.18 B	.73 B	12.9 B	-.84 M	13.74 B	4.63 B
2013	50.83 B	11.3 B	.78 B	9.57 B	.31 B	15.94 B	.01 B	13.56 B	8.23 B
2014	28.66 B	10.62 B	.45 B	4.26 B	.82 B	4.98 B	.01 B	13.34 B	5.79 B
2015	36.22 B	9.86 B	.84 B	7.34 B	.51 B	8.93 B	.01 B	19.26 B	1.52 B
2016	38.87 B	13.47 B	.36 B	6.81 B	.58 B	3.49 B	.01 B	13.84 B	2.22 B
2017	33.13 B	9.37 B	.28 B	7.41 B	.5 B	8.29 B	-.01 B	11.19 B	2.06 B
2018	37.84 B	8.3 B	.23 B	5.87 B	.19 B	13.19 B	.02 B	12.51 B	5.57 B

Note: M denotes million and B denotes billion $

Appendix 7: Export Data of Developing Countries, (current US$)

	Argentina	Bulgaria	Belize	Brazil	Botswana	China	Colombia	Costa Rica
1990	12.4 B	5. B	.1 B	31.4 B	1.8 B	62.1 B	6.7 B	1.4 B
1991	12. B	3.8 B	.1 B	31.6 B	1.8 B	71.9 B	7.1 B	1.6 B
1992	12.2 B	3.6 B	.1 B	35.8 B	1.7 B	84.9 B	6.9 B	1.8 B
1993	13.1 B	3.6 B	.1 B	38.6 B	1.8 B	91.7 B	7.1 B	2.6 B
1994	15.7 B	4. B	.2 B	43.5 B	1.9 B	121. B	8.5 B	2.9 B
1995	21. B	5.4 B	.2 B	46.5 B	2.1 B	148.8 B	10.1 B	3.5 B
1996	23.8 B	4.9 B	.2 B	47.7 B	2.4 B	151. B	10.6 B	3.8 B
1997	26.4 B	4.9 B	.2 B	53. B	2.8 B	182.8 B	11.5 B	4.3 B
1998	26.4 B	4.3 B	.2 B	51.1 B	2.1 B	183.7 B	10.9 B	5.5 B
1999	23.3 B	4. B	.2 B	48. B	2.6 B	194.9 B	11.6 B	6.7 B
2000	26.3 B	4.9 B	.2 B	55.1 B	2.7 B	249.2 B	13. B	5.9 B
2001	26.5 B	5.1 B	.2 B	58.3 B	2.5 B	266.1 B	12.3 B	5. B
2002	25.7 B	5.7 B	.3 B	60.4 B	2.4 B	325.6 B	11.9 B	5.3 B
2003	29.6 B	7.5 B	.3 B	73.2 B	2.8 B	438.2 B	13.1 B	6.1 B
2004	34.6 B	9.9 B	.3 B	96.7 B	3.5 B	593.3 B	16.2 B	6.3 B
2005	40.4 B	11.7 B	.3 B	118.5 B	4.4 B	762. B	21.2 B	7. B
2006	46.5 B	15.1 B	.4 B	137.6 B	4.5 B	969. B	24.4 B	8.2 B
2007	55.8 B	18.5 B	.4 B	159.8 B	5.2 B	1220.5 B	30. B	9.3 B
2008	70. B	22.4 B	.5 B	195.8 B	5. B	1430.7 B	37.6 B	9.5 B
2009	55.7 B	16.3 B	.4 B	151.8 B	3.5 B	1201.6 B	32.9 B	8.8 B
2010	68.2 B	20.6 B	.5 B	200.4 B	4.7 B	1577.8 B	39.7 B	9.4 B
2011	84.1 B	28.2 B	.6 B	253.7 B	5.9 B	1898.4 B	56.9 B	10.4 B
2012	80. B	26.7 B	.6 B	240. B	6. B	2048.7 B	60.1 B	11.4 B
2013	76. B	29.6 B	.6 B	232.5 B	7.9 B	2209. B	58.8 B	11.5 B
2014	68.4 B	29.2 B	.6 B	220.9 B	8.5 B	2342.3 B	54.9 B	11.3 B
2015	56.8 B	25.4 B	.5 B	186.8 B	6.3 B	2273.5 B	35.7 B	9.4 B
2016	57.9 B	26.6 B	.4 B	179.5 B	7.4 B	2097.6 B	31.8 B	10.4 B
2017	58.6 B	31.4 B	.5 B	215. B	5.9 B	2263.3 B	36.9 B	10.8 B
2018	61.8 B	33.6 B	.5 B	231.9 B	6.6 B	2486.7 B	41.8 B	11.5 B

Note: M denotes million and B denotes billion $

Appendix 8: Export Data of Developing Countries, (current US$)

	Dominican Republic	Ecuador	Gabon	Guatemala	Guyana	Indonesia	Jamaica	Jordan
1990	2.2 B	2.7 B	2.2 B	1.2 B	.3 B	25.7 B	1.2 B	1.1 B
1991	2.4 B	2.9 B	2.2 B	1.2 B	.2 B	29.1 B	1.1 B	1.1 B
1992	2.8 B	3. B	2.1 B	1.3 B	.3 B	34. B	1. B	1.2 B
1993	3.2 B	2.9 B	2.3 B	1.3 B	.4 B	36.8 B	1.1 B	1.2 B
1994	3.5 B	3.8 B	2.4 B	1.6 B	.5 B	40.1 B	1.2 B	1.4 B
1995	3.8 B	4.3 B	2.7 B	2. B	.5 B	45.4 B	1.4 B	1.8 B
1996	4.1 B	4.9 B	3.2 B	2.1 B	.5 B	49.8 B	1.4 B	1.8 B
1997	4.6 B	5.3 B	3. B	2.4 B	.6 B	56.3 B	1.4 B	1.8 B
1998	5. B	4.2 B	1.9 B	2.6 B	.5 B	50.4 B	1.3 B	1.8 B
1999	5.1 B	4.5 B	2.4 B	2.5 B	.5 B	51.2 B	1.2 B	1.8 B
2000	5.7 B	4.9 B	2.6 B	2.7 B	.5 B	65.4 B	1.3 B	1.9 B
2001	5.3 B	4.7 B	2.5 B	2.5 B	.5 B	57.4 B	1.2 B	2.3 B
2002	5.2 B	5. B	2.4 B	4.2 B	.5 B	59.2 B	1.1 B	2.8 B
2003	5.5 B	6.2 B	3.1 B	4.5 B	.5 B	64.1 B	1.2 B	3.1 B
2004	5.9 B	7.8 B	3.7 B	5. B	.6 B	70.8 B	1.4 B	3.9 B
2005	6.1 B	10.1 B	5.1 B	5.4 B	.6 B	87. B	1.5 B	4.3 B
2006	6.6 B	12.7 B	5.5 B	6. B	.6 B	103.5 B	1.9 B	5.2 B
2007	7.2 B	14.3 B	6.3 B	6.9 B	.7 B	118. B	2.3 B	5.7 B
2008	6.7 B	18.8 B	9.6 B	7.7 B	.8 B	139.6 B	2.4 B	7.9 B
2009	5.5 B	13.9 B	5.4 B	7.2 B	.8 B	119.6 B	1.3 B	6.4 B
2010	6.8 B	17.5 B	8.7 B	8.5 B	.9 B	157.8 B	1.3 B	7. B
2011	8.5 B	22.3 B	9.8 B	10.4 B	1.1 B	203.5 B	1.6 B	8. B
2012	9.1 B	23.8 B	9.5 B	10. B	1.4 B	190. B	1.7 B	7.9 B
2013	9.7 B	24.8 B	10. B	10. B	1.4 B	182.6 B	1.6 B	7.9 B
2014	9.9 B	25.7 B	8.3 B	10.8 B	1.2 B	176.3 B	1.5 B	8.4 B
2015	9.4 B	18.3 B	5.1 B	10.7 B	1.2 B	150.4 B	1.3 B	7.8 B
2016	9.8 B	16.8 B	4.3 B	10.4 B	1.4 B	144.5 B	1.2 B	7.5 B
2017	10.1 B	19.1 B	5.2 B	11. B	1.4 B	168.8 B	1.3 B	7.5 B
2018	10.6 B	21.6 B	6.2 B	10.8 B	1.3 B	180.1 B	2. B	7.8 B

Note: M denotes million and B denotes billion $

Appendix 9: Export Data of Developing Countries, (current US$)

	Mexico	Malaysia	Namibia	Peru	Paraguay	Thailand	Tonga	Turkiye	South Africa
1990	40.7 B	29.5 B	1.1 B	3.3 B	1. B	23.1 B	11. M	13. B	23.5 B
1991	42.7 B	34.4 B	1.2 B	3.4 B	.7 B	28.4 B	13. M	13.6 B	23.3 B
1992	46.2 B	40.8 B	1.3 B	3.6 B	.7 B	32.5 B	12. M	14.7 B	23.4 B
1993	51.9 B	47.1 B	1.2 B	3.4 B	.7 B	37. B	16. M	15.3 B	24.2 B
1994	60.9 B	58.8 B	1.3 B	4.4 B	1.8 B	45.3 B	14. M	18.1 B	25.3 B
1995	79.5 B	73.9 B	1.4 B	5.5 B	2. B	56.4 B	14. M	21.6 B	27.9 B
1996	96. B	78.3 B	1.4 B	5.9 B	2.2 B	55.7 B	11. M	23.2 B	29.2 B
1997	110.4 B	78.7 B	1.3 B	6.8 B	2.4 B	57.3 B	10. M	26.3 B	31. B
1998	117.5 B	73.3 B	1.2 B	5.8 B	2.3 B	54.5 B	7. M	26.9 B	26.4 B
1999	136.4 B	84.6 B	1.2 B	6.1 B	2. B	58.5 B	12. M	26.6 B	26.7 B
2000	166.4 B	98.2 B	1.3 B	7. B	2.2 B	69. B	9. M	27.8 B	30. B
2001	158.5 B	88. B	1.2 B	7. B	2.4 B	65. B	7. M	31.3 B	29.3 B
2002	160.7 B	94.1 B	1.1 B	7.7 B	2.3 B	68.1 B	15. M	36.1 B	29.7 B
2003	165.4 B	104.7 B	1.3 B	9.1 B	2.6 B	80.3 B	18. M	47.3 B	36.5 B
2004	188. B	126.6 B	1.8 B	12.8 B	2.9 B	96.2 B	15. M	63.2 B	46.1 B
2005	214.2 B	141.6 B	2.1 B	17.4 B	3.2 B	110.9 B	10. M	73.5 B	51.6 B
2006	250. B	160.7 B	2.6 B	23.9 B	3.5 B	129.7 B	10. M	85.5 B	58.2 B
2007	271.8 B	176. B	2.9 B	28.2 B	4.7 B	153.9 B	8. M	107.3 B	69.8 B
2008	291.3 B	199.4 B	3.1 B	30.8 B	6.4 B	177.8 B	9. M	132. B	80.8 B
2009	229.7 B	157.2 B	3.1 B	27.3 B	5.1 B	152.4 B	8. M	102.1 B	61.7 B
2010	298.3 B	198.6 B	4. B	36. B	6.5 B	193.3 B	8. M	113.9 B	91.3 B
2011	349.6 B	228.1 B	4.4 B	46.8 B	7.8 B	222.6 B	14. M	134.9 B	108.8 B
2012	370.8 B	227.5 B	4.4 B	45.9 B	7.3 B	229.1 B	16. M	152.5 B	99.6 B
2013	380. B	228.3 B	4.6 B	42.6 B	9.5 B	228.5 B	17. M	161.5 B	96.2 B
2014	396.9 B	233.9 B	4.6 B	38.6 B	9.6 B	227.5 B	19. M	166.5 B	93. B
2015	380.6 B	200. B	4.1 B	33.5 B	8.4 B	214.3 B	18. M	151. B	81. B
2016	373.9 B	189.7 B	4.1 B	36.5 B	8.5 B	215.4 B	21. M	149.2 B	76.2 B
2017	409.4 B	218.1 B	5.2 B	43.5 B	8.7 B	236.6 B	19. M	164.5 B	88.9 B
2018	450.7 B	247.5 B	7.5 B	48. B	9. B	253. B	13. M	177.2 B	94. B

Note: M denotes million and B denotes billion $

Appendix 10: Import Data of Developing Countries, (current US$)

	Argentina	Bulgaria	Belize	Brazil	Botswana	China	Colombia	Costa Rica
1990	4.1 B	5.1 B	.2 B	22.5 B	1.9 B	53.3 B	5.6 B	2. B
1991	8.3 B	3.8 B	.3 B	22.9 B	1.9 B	63.8 B	5. B	1.9 B
1992	14.9 B	4.2 B	.3 B	23.1 B	1.9 B	80.6 B	6.6 B	2.4 B
1993	16.8 B	4.9 B	.3 B	27.6 B	1.8 B	104. B	9.8 B	3.5 B
1994	21.5 B	4.6 B	.3 B	36.2 B	1.6 B	115.6 B	11.9 B	3.8 B
1995	20.1 B	5.7 B	.3 B	54.1 B	1.9 B	132.1 B	13.9 B	4.1 B
1996	23.8 B	5.1 B	.3 B	57. B	1.7 B	138.8 B	13.7 B	4.3 B
1997	30.5 B	4.9 B	.3 B	64.2 B	2.3 B	142.4 B	15.4 B	5. B
1998	31.4 B	4.9 B	.3 B	60.7 B	2.3 B	140.2 B	14.6 B	6.2 B
1999	25.5 B	5.5 B	.4 B	51.8 B	2.2 B	165.7 B	10.7 B	6.4 B
2000	25.2 B	6.5 B	.5 B	58.6 B	2.1 B	225.1 B	11.5 B	6.4 B
2001	20.3 B	7.3 B	.5 B	58.4 B	1.8 B	243.6 B	12.8 B	6.6 B
2002	9. B	8. B	.5 B	49.7 B	1.8 B	295.2 B	12.7 B	7.2 B
2003	13.8 B	10.9 B	.6 B	50.9 B	2.4 B	412.8 B	13.9 B	7.7 B
2004	22.4 B	14.5 B	.5 B	66.4 B	3.2 B	561.2 B	16.7 B	8.3 B
2005	28.7 B	18.2 B	.6 B	77.6 B	3.2 B	660. B	21.2 B	9.8 B
2006	34.2 B	23.3 B	.7 B	97. B	3.1 B	791.5 B	26.2 B	11.5 B
2007	44.7 B	30. B	.7 B	128.1 B	4.1 B	956.1 B	32.9 B	13. B
2008	57.5 B	36.9 B	.8 B	183.9 B	5.2 B	1132.6 B	39.7 B	15.4 B
2009	38.8 B	23.5 B	.7 B	135.4 B	4.7 B	1005.9 B	32.9 B	11.4 B
2010	56.8 B	25.5 B	.7 B	193.2 B	5.7 B	1396.2 B	40.5 B	13.6 B
2011	74.3 B	32.6 B	.8 B	238.7 B	7.3 B	1743.5 B	54.2 B	16.2 B
2012	68. B	32.7 B	.9 B	235.4 B	8. B	1818.4 B	59. B	17.6 B
2013	74.4 B	34.3 B	.9 B	252.3 B	8.4 B	1950. B	59.4 B	18.1 B
2014	65.7 B	34.7 B	1. B	240.8 B	8.1 B	1959.2 B	64. B	17.5 B
2015	60.2 B	29.2 B	1. B	180.5 B	7.2 B	1679.6 B	54.1 B	16.3 B
2016	55.9 B	28.9 B	1. B	145.2 B	6.1 B	1587.9 B	44.9 B	15.5 B
2017	66.9 B	34.2 B	.9 B	165.9 B	5.3 B	1843.8 B	46.1 B	16.8 B
2018	65.5 B	37.9 B	1. B	192.8 B	6.3 B	2135.7 B	51.2 B	18.3 B

Note: M denotes million and B denotes billion $

Appendix 11: Import Data of Developing Countries, (current US$)

	Dominican Republic	Ecuador	Gabon	Guatemala	Guyana	Indonesia	Jamaica	Jordan
1990	3. B	1.9 B	.9 B	1.6 B	.3 B	21.8 B	1.9 B	2.6 B
1991	3.1 B	2.4 B	.8 B	1.9 B	.3 B	25.9 B	1.7 B	2.5 B
1992	3.9 B	2.5 B	.7 B	2.5 B	.4 B	27.3 B	1.7 B	3.3 B
1993	4.7 B	2.6 B	.8 B	2.6 B	.5 B	28.3 B	2.1 B	3.5 B
1994	4.9 B	3.7 B	.8 B	2.8 B	.5 B	32. B	2.2 B	3.4 B
1995	5.2 B	4.2 B	.9 B	3.3 B	.5 B	40.6 B	2.8 B	3.7 B
1996	5.7 B	3.9 B	1. B	3.1 B	.6 B	42.9 B	3. B	4.3 B
1997	6.6 B	5. B	1.1 B	3.9 B	.6 B	51.3 B	3.1 B	4.1 B
1998	7.6 B	5.6 B	1.1 B	4.7 B	.5 B	35.3 B	3. B	3.8 B
1999	8. B	3. B	.8 B	4.6 B	.5 B	33.3 B	2.9 B	3.7 B
2000	9.5 B	3.7 B	1. B	5.2 B	.6 B	43.6 B	3.3 B	4.6 B
2001	8.8 B	5.4 B	1. B	5.6 B	.6 B	37.5 B	3.4 B	4.9 B
2002	8.8 B	6.4 B	1.1 B	7.7 B	.6 B	38.3 B	3.5 B	5.1 B
2003	7.6 B	6.7 B	1.2 B	8.1 B	.6 B	42.2 B	3.6 B	5.7 B
2004	7.9 B	8.2 B	1.3 B	9.5 B	.7 B	54.9 B	3.9 B	8.2 B
2005	9.9 B	10.3 B	1.5 B	10.5 B	.8 B	75.7 B	4.7 B	10.5 B
2006	12.2 B	12.1 B	1.7 B	11.9 B	.9 B	80.7 B	5.7 B	11.5 B
2007	13.6 B	13.9 B	2.2 B	13.6 B	1.1 B	93.1 B	6.9 B	13.7 B
2008	16. B	18.9 B	2.6 B	14.5 B	1.3 B	127.5 B	8.5 B	17. B
2009	12.3 B	15.1 B	2.5 B	11.5 B	1.2 B	93.8 B	5.1 B	14.2 B
2010	15.5 B	20.6 B	3. B	13.8 B	1.4 B	135.7 B	5.2 B	15.6 B
2011	17.4 B	24.4 B	3.7 B	16.6 B	1.8 B	177.4 B	6.4 B	18.9 B
2012	17.7 B	25.5 B	3.6 B	17. B	2. B	191.7 B	6.3 B	20.8 B
2013	16.9 B	27.1 B	3.8 B	17.5 B	1.9 B	186.6 B	6.2 B	21.5 B
2014	17.3 B	27.7 B	4.1 B	18.3 B	1.8 B	178.2 B	5.8 B	22.9 B
2015	16.9 B	21.5 B	3.2 B	17.6 B	1.5 B	142.7 B	5. B	20.5 B
2016	17.4 B	16.3 B	3.2 B	17. B	1.4 B	135.7 B	4.8 B	19.3 B
2017	17.7 B	20. B	3.5 B	18.4 B	1.6 B	156.9 B	5.8 B	20.5 B
2018	20.2 B	23.2 B	3.8 B	19.7 B	2.4 B	188.7 B	6.2 B	20.3 B

Note: M denotes million and B denotes billion $

Appendix 12: Import Data of Developing Countries, (current US$)

	Malaysia	Namibia	Peru	Paraguay	Thailand	Tonga	Turkiye	South Africa
1990	29.3 B	1.2 B	2.6 B	1.4 B	33. B	.1 B	22.3 B	18.4 B
1991	36.6 B	1.1 B	2.8 B	1.5 B	37.6 B	.1 B	21. B	18.8 B
1992	39.9 B	1.3 B	4. B	1.4 B	40.7 B	.1 B	22.9 B	19.7 B
1993	45.7 B	1.3 B	4.2 B	1.7 B	46.1 B	.1 B	29.4 B	20. B
1994	59.6 B	1.4 B	5.6 B	2.4 B	54.5 B	.1 B	23.3 B	23.4 B
1995	77.7 B	1.6 B	7.6 B	3.1 B	70.8 B	.1 B	35.7 B	30.5 B
1996	78.4 B	1.7 B	7.9 B	3.2 B	72.3 B	.1 B	43.6 B	30.2 B
1997	79. B	1.8 B	8.6 B	3.4 B	62.9 B	.1 B	48.6 B	33. B
1998	58.3 B	1.6 B	8.2 B	2.9 B	43. B	.1 B	45.9 B	29.2 B
1999	65.4 B	1.6 B	6.8 B	1.9 B	50.4 B	.1 B	40.2 B	26.7 B
2000	82. B	1.6 B	7.4 B	2.3 B	61.9 B	.1 B	54.5 B	29.7 B
2001	73.7 B	1.5 B	7.3 B	2.2 B	62. B	.1 B	41.4 B	28.2 B
2002	79.8 B	1.5 B	7.5 B	1.7 B	64.6 B	.1 B	51.6 B	29.3 B
2003	83.3 B	2. B	8.4 B	2.2 B	75.8 B	.1 B	69.3 B	39.7 B
2004	105.2 B	2.4 B	10.1 B	3.1 B	94.4 B	.1 B	97.5 B	53.5 B
2005	114.3 B	2.6 B	12.5 B	3.7 B	118.2 B	.1 B	116.8 B	62.3 B
2006	130.4 B	2.9 B	15.3 B	4.7 B	128.8 B	.1 B	139.6 B	78.7 B
2007	146.2 B	3.5 B	20.4 B	5.9 B	140. B	.1 B	170.1 B	88.5 B
2008	156.3 B	4.3 B	30. B	9. B	179.2 B	.2 B	202. B	101.6 B
2009	123.8 B	5. B	21.8 B	6.9 B	133.7 B	.1 B	140.9 B	74.1 B
2010	164.6 B	5.6 B	30. B	10. B	182.9 B	.2 B	185.5 B	96.8 B
2011	187.5 B	6.6 B	37.7 B	12.4 B	228.8 B	.2 B	240.8 B	124.4 B
2012	196.4 B	7.3 B	42.5 B	11.6 B	249.1 B	.2 B	236.5 B	127.2 B
2013	205.9 B	7.6 B	43.7 B	12.1 B	250.4 B	.2 B	260.8 B	126.3 B
2014	208.9 B	8.5 B	42.3 B	12.2 B	227.7 B	.2 B	251.1 B	122. B
2015	176. B	7.7 B	37.9 B	10.3 B	202.7 B	.2 B	213.6 B	104.7 B
2016	168.7 B	6.7 B	36.3 B	9.8 B	194.2 B	.2 B	202.2 B	91.7 B
2017	195.4 B	6.8 B	39.9 B	11.9 B	221.5 B	.2 B	238.7 B	101.6 B
2018	217.6 B	8.3 B	43.3 B	13.3 B	248.2 B	.2 B	231.2 B	114. B

Note: M denotes million and B denotes billion $

Appendix 13: HDI Data of Developing Countries

	Argentina	Bulgaria	Belize	Brazil	Botswana	China	Colombia	Costa Rica
1990	0.707	0.694	0.613	0.613	0.57	0.501	0.6	0.655
1991	0.714	0.691	0.618	0.62	0.576	0.509	0.603	0.661
1992	0.719	0.691	0.624	0.626	0.574	0.52	0.613	0.67
1993	0.725	0.69	0.627	0.634	0.573	0.53	0.621	0.676
1994	0.729	0.691	0.627	0.642	0.567	0.537	0.628	0.682
1995	0.731	0.697	0.627	0.651	0.573	0.549	0.633	0.687
1996	0.738	0.703	0.627	0.657	0.572	0.558	0.643	0.69
1997	0.746	0.704	0.63	0.664	0.575	0.566	0.651	0.696
1998	0.752	0.71	0.631	0.67	0.577	0.574	0.658	0.702
1999	0.763	0.709	0.636	0.675	0.579	0.583	0.658	0.706
2000	0.77	0.712	0.643	0.684	0.578	0.591	0.662	0.711
2001	0.775	0.722	0.647	0.691	0.58	0.599	0.664	0.714
2002	0.77	0.729	0.655	0.698	0.576	0.61	0.667	0.717
2003	0.775	0.738	0.663	0.694	0.583	0.622	0.666	0.72
2004	0.775	0.745	0.668	0.697	0.589	0.631	0.68	0.724
2005	0.777	0.75	0.666	0.7	0.598	0.643	0.693	0.728
2006	0.801	0.756	0.676	0.701	0.612	0.657	0.7	0.734
2007	0.806	0.764	0.678	0.705	0.625	0.67	0.713	0.742
2008	0.81	0.771	0.683	0.716	0.638	0.681	0.72	0.75
2009	0.81	0.774	0.688	0.718	0.647	0.69	0.724	0.751
2010	0.818	0.779	0.693	0.726	0.66	0.702	0.729	0.754
2011	0.823	0.782	0.699	0.73	0.676	0.711	0.735	0.768
2012	0.823	0.786	0.706	0.734	0.687	0.719	0.736	0.774
2013	0.824	0.792	0.707	0.752	0.699	0.727	0.746	0.777
2014	0.825	0.797	0.71	0.755	0.709	0.735	0.75	0.785
2015	0.828	0.807	0.715	0.755	0.714	0.742	0.753	0.786
2016	0.828	0.812	0.722	0.757	0.719	0.749	0.759	0.789
2017	0.832	0.813	0.719	0.76	0.724	0.753	0.76	0.792
2018	0.83	0.816	0.72	0.77	0.728	0.758	0.761	0.794

Appendix 14: HDI Data of Developing Countries

	Dominican Republic	Ecuador	Gabon	Guatemala	Guyana	Indonesia	Jamaica	Jordan
1990	0.593	0.642	0.619	0.477	0.537	0.525	0.641	0.616
1991	0.597	0.645	0.623	0.484	0.533	0.53	0.646	0.627
1992	0.606	0.649	0.623	0.489	0.548	0.535	0.65	0.648
1993	0.613	0.653	0.625	0.495	0.561	0.541	0.66	0.659
1994	0.618	0.657	0.628	0.5	0.571	0.551	0.662	0.669
1995	0.624	0.661	0.63	0.507	0.578	0.56	0.665	0.683
1996	0.63	0.663	0.632	0.515	0.589	0.574	0.668	0.685
1997	0.637	0.667	0.633	0.523	0.594	0.587	0.669	0.689
1998	0.643	0.67	0.636	0.531	0.597	0.587	0.67	0.693
1999	0.648	0.667	0.631	0.539	0.601	0.595	0.672	0.696
2000	0.653	0.669	0.627	0.546	0.606	0.604	0.669	0.702
2001	0.657	0.674	0.63	0.553	0.609	0.61	0.68	0.708
2002	0.662	0.679	0.632	0.56	0.612	0.616	0.683	0.706
2003	0.663	0.682	0.633	0.564	0.609	0.623	0.678	0.711
2004	0.666	0.687	0.632	0.567	0.614	0.629	0.695	0.717
2005	0.675	0.692	0.638	0.571	0.619	0.633	0.698	0.729
2006	0.682	0.695	0.638	0.579	0.624	0.643	0.702	0.732
2007	0.689	0.706	0.643	0.588	0.627	0.644	0.71	0.735
2008	0.692	0.711	0.645	0.594	0.63	0.648	0.728	0.736
2009	0.694	0.712	0.653	0.597	0.633	0.659	0.724	0.734
2010	0.701	0.716	0.658	0.602	0.639	0.666	0.723	0.728
2011	0.704	0.742	0.663	0.607	0.648	0.674	0.723	0.725
2012	0.708	0.74	0.672	0.613	0.652	0.682	0.722	0.726
2013	0.712	0.751	0.679	0.616	0.656	0.688	0.72	0.72
2014	0.724	0.75	0.688	0.643	0.66	0.691	0.72	0.72
2015	0.733	0.758	0.692	0.647	0.663	0.696	0.722	0.721
2016	0.738	0.756	0.696	0.648	0.666	0.7	0.722	0.722
2017	0.741	0.757	0.7	0.649	0.668	0.704	0.725	0.722
2018	0.745	0.758	0.702	0.651	0.67	0.707	0.726	0.723

Appendix 15: HDI Data of Developing Countries

	Malaysia	Namibia	Peru	Paraguay	Thailand	Tonga	Turkiye	South Africa
1990	0.644	0.579	0.613	0.588	0.574	0.645	0.579	0.625
1991	0.652	0.582	0.619	0.593	0.583	0.651	0.583	0.632
1992	0.661	0.586	0.62	0.597	0.589	0.653	0.589	0.64
1993	0.668	0.586	0.625	0.607	0.597	0.657	0.597	0.646
1994	0.676	0.586	0.636	0.615	0.604	0.664	0.599	0.648
1995	0.683	0.581	0.646	0.622	0.611	0.667	0.607	0.652
1996	0.695	0.571	0.651	0.629	0.619	0.667	0.615	0.649
1997	0.706	0.563	0.657	0.633	0.625	0.667	0.624	0.644
1998	0.709	0.556	0.667	0.638	0.63	0.67	0.635	0.638
1999	0.715	0.546	0.677	0.641	0.64	0.67	0.643	0.633
2000	0.724	0.543	0.679	0.64	0.649	0.666	0.655	0.629
2001	0.722	0.542	0.688	0.648	0.657	0.67	0.661	0.61
2002	0.724	0.54	0.688	0.658	0.665	0.676	0.672	0.618
2003	0.731	0.542	0.687	0.657	0.674	0.685	0.679	0.617
2004	0.734	0.544	0.694	0.664	0.683	0.674	0.685	0.618
2005	0.732	0.544	0.7	0.667	0.693	0.674	0.691	0.62
2006	0.738	0.55	0.697	0.666	0.694	0.675	0.702	0.624
2007	0.751	0.558	0.705	0.671	0.71	0.678	0.709	0.631
2008	0.762	0.566	0.715	0.68	0.714	0.681	0.714	0.644
2009	0.766	0.575	0.718	0.678	0.718	0.686	0.721	0.654
2010	0.773	0.588	0.721	0.692	0.721	0.692	0.743	0.662
2011	0.779	0.601	0.734	0.697	0.729	0.696	0.759	0.663
2012	0.782	0.612	0.734	0.697	0.733	0.7	0.765	0.673
2013	0.787	0.622	0.742	0.709	0.731	0.699	0.781	0.683
2014	0.792	0.631	0.752	0.712	0.739	0.699	0.792	0.691
2015	0.797	0.637	0.75	0.718	0.746	0.714	0.8	0.699
2016	0.801	0.639	0.755	0.718	0.753	0.715	0.8	0.702
2017	0.802	0.643	0.756	0.722	0.762	0.717	0.805	0.704
2018	0.804	0.645	0.759	0.724	0.765	0.717	0.807	0.705

LIST OF PUBLICATIONS RELATED TO THE TOPIC OF DISSERTATION

Journal Article

Corekcioglu, Selim.(2019). The Competitiveness of Countries in International Market and Technology Relationship. *Acta Oeconomica Universitatis Selye International Scientific Journal Volume 8, No:1, 53-62.*

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