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Title of Thesis

THE IMPACT OF MULTINATIONAL ENTERPRISES (MNE'S) ON INEQUALITY AS A SOCIETAL CHALLENGE IN WESTERN BALKAN COUNTRIES, WITH PARTICULAR EMPHASIS IN KOSOVO

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DECLARATION

I hereby declare that this dissertation, entitled "The impact of Multinational Enterprises (MNE's) on inequality as a societal challenge in Western Balkan Countries, with particular emphasis in Kosovo" was composed solely by myself for the degree of Doctor of Philosophy in Business Administration under the guidance and supervision of Assoc. Prof. Dr. Gadaf Rexhepi, South East European University, Tetovo, North Macedonia.

I confirm that, except where indicated through the proper use of citations and references, this is my own original work. As a candidate for the above-mentioned degree, I am not enrolled for additional research awards. This thesis contains results and conclusions which are my own original work and were not submitted for any further academic award.

I dedicate this thesis …….

To my Parents Ismet and Valdete
To my blessings Sirea and Amelia,
To my lovely husband Ramiz
To my angels Sisters
Who give meaning to everything I do!

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ABSTRACT

Purpose: – The aim of this study is to evaluate the effect on inequalities in the Western Balkans for the years 2007 to 2019 of multinational enterprises through foreign direct investment. A fundamental topic is addressed in the study: do MNE alter the distribution of income?

Methodology – The study of the model includes the analysis of impacts on the distribution of income in FDI and Trade openness. The study uses different techniques such as Two-stage Least Squared, Fixed and Random effects model, and GMM (Generalized Method of Moments).

Findings –Multinational Companies through FDI have a significant effect on income inequality when interacted with Gini-index and HDI index. These publications show that FDI impacts on income disparity in the Western Balkans are substantial and have a detrimental influence on income disparity. Therefore, the results from the GMM estimator proves the hypothesis Multinational companies have a positive impact on reducing inequality in the Western Balkans countries.

Originality/value – This is the first research to analyze the influence of FDI on income distribution in the Western Balkans. The study is original in nature and makes an effort to give insight regarding the effect of Multinational Companies on inequality in Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia and Serbia in the 21st century. The findings of this study will be of value to governments and policymakers.

Keywords: Multinational Companies, FDI, Inequality, Transition economies, Western Balkan

JEL Classification: F23, F21, D63

TABLE OF CONTENTS

List of figures

List of tables

List of abbreviations

EU European Union

ECM Error Correction Model

FDI Foreign Direct Investments

FDI stock The FDI stock is the amount of the equities and net loans of international investors to companies Resident in the reporting economy

FEM Fixed Effects model

GDP Gross Domestic Product

GINI The Gini assesses the degree whereby the income distribution between people in an economy is completely equal

GLS Generalized Least Squares

GMM Generalized Methods of Moments

ILO- LABOURSTA International Labour Organization – Labour statistics

LIS Luxembourg Income Study

MNE's Multinational Enterprises

N Amount of cases

NACE European Community quantitative taxonomy of business activities

OECD Organization for Economic Co-operation and Development

2SLS Two-Stage Least Squares

REM Random Effects Model

SUR Seemingly Unrelated Regressions

SWIID Standardized World Income Inequality Database

UNESCO United Nations Educational, Scientific and Cultural Organization

VAR Vector Auto Regression

WIID World Income Inequality Database

WLS Weighted Least Squares

1 INTRODUCTION

1.1 Introduction

The growing global economic integration affects every country in the world and every aspect of human life. Countries are vying to be a part of the global economic system because of the economic advantages, and FDI is the primary mechanism by which countries will benefit from increased globalization. Therefore, many developing countries have undertaken economic policies of liberalization against FDI for the achievement of greater economic development, regarded as a means of growth and economic development for the country's development. Many of the studies explore the relationship between the FDI and economic development, but because of the high income inequality and significant amounts of internal FDI in many developed countries, the FDI's impact on income inequality has changed. The effect of FDI on recipient countries' economies was contradictory. In addition, the literature shows contradictions explaining the connection between FDI and income inequality, so it is important for efficient national policies aimed at reducing social income inequality to better understand this relationship.

As a result of general economic liberalization in the world economies the world economy has been seeing rapid growth in FDI from the mid-1980s. The business environment of a country that provides economic attractiveness of foreign companies is a key determinant of the amount of FDI that the country attracts (Dunning 1988, 1993; Bevan & Estrin 2004).

In the global economy, MNE played a major role. In recent years, a need has emerged to understand aspects of inequality both in countries and in growth. (Piketty 2014, Stiglitz 2012, 2014, 2012). (Milanovic 2016.). Multilateral institutions like the World Bank (2016, Lange et al 2018), the International Monetary Fund (IMF) 2017, have been flagging the existence and the implications of increasing inequality between countries and worldwide in relation to development and poverty reduction. The Sustainable Development Goals of the United Nations also include reducing disparities. In this research I would like to contribute to IB literature for inequality as a societal challenge of Multinational Enterprises (MNE's) in transition countries. The main aim of this study is to expand the understanding of the impact of Multinational Enterprises on inequality as a societal challenge in transition countries, more precisely in Western Balkan countries. The

diversity of types of inequality has become a fundamental problem for social sciences (e.g. Alderson and Nielsen, 1999; Mahutga, 2006; Milanovic, 2005; Morris and Western, 1999; Nielsen, 1994). Particularly, this study explores how Societal Challenge- inequality forms, such as economic inequality, income inequality, gender inequality and education inequality are affected by Multinational Enterprises (MNE's) operating in Transition economies. Countries that will be examined within transition economies are western Balkan countries while Countries belonging to the Western Balkans include Albania, Bosnia and Herzegovina, Kosovo, Montenegro, the Republic of North Macedonia and Serbia

The positive effect on various parts of the business, this leads to the following research question:

- In which ways Multinational Enterprises (MNE's) effect inequality as a societal challenge in transition economies?

And the following sup-questions:

In which ways MNE's effect to economic inequality in transition economies?

In which ways MNE's effect to income inequality in transition economies?

In which ways MNE's effect to education inequality in transition economies

In which ways MNE's effect to gender inequality in transition economies

What is the role of MNE's ownership?

Which are the differences of the role of ownership of MNE's in Inequality?

This research question focuses on a business phenomenon. It is supposed to give a better understanding and should be able to be generalized. (Fisher, 2010, p.36)

This chapter provides the study background of study, research objectives and, research hypotheses will be presented. This chapter also outlines the methodology of the study.

1.2 Background

Today's business climate, especially for multinational corporations, has become very challenging (mnes). The key explanations for their current challenges include economic liberalization, the saturation of advanced economies, the development of an identifiable market target, with higher disposable income, and Digital marketing. (Arnold and Quelch, 1998).

The main economic literature on MNE's offered a largely optimistic study of their effect, showing them as good paid jobs and technological transfers to poor countries. However, their effect depends on their investment structure. Many MNE's investments are not now being made directly by wholly owned firms, but by networks of suppliers which are engaging in contract wars to see who can generate at the lowest cost and in the shortest time for MNE's. The employees are facing low wages, decreased benefits, speeds of output and a range of Union-avoidance methods at the end of these hypo-competitive supply chains. Many vendors have recourse to seasonal workers and informal sub-contracting networks which are often dependent on women, child labor and disadvantaged sections of society as their jobs become more unstable. (Aner et al, 2014). Multinational enterprises (MNE's) played a major role in improving trade and FDI and are increasingly rising in the global economy. (UNCTAD 2009). Kumar (2003: 6) refers to MNE's as 'FDI flows typically as a package of tools, including finance, production technologies, organizational and managerial skills, marketing knowledge as well as market access through the FDI marketing networks.' As a result of rising FDI activity across countries and continents, MNE's are one of the main pillars of modern global economies and are the primary drivers behind globalization. (Dunning 1988, 1993; Dunning & Lundan 2008).

When MNE's enter new global markets via FDI, they face two strategic choices (Hennart & Park 1993; Chen & Hennart 2002; Brouthers & Hennart 2007; Dikova & van Witteloostuijn 2007 The first option is called an establishment mode in which the company must determine whether to initiate operations from scratch, e.g., investments at Greenfield or purchase existing local companies. (e.g. Hennart & Park 1993; Padmanabhan & Cho 1995; Dikova & van Witteloostuijn 2007; Slangen & Hennart 2008). The second option involves the subsidiary ownership level - that is, whether the MNE is to create wholly-owned subsidiaries (woss) or to establish joint ventures with local partners. (e.g. Delios & Beamish 1999; Padmanabhan & Cho 1999; Chang & Rosenzweig 2001; Jung, Beamish & Goerzen 2008).

Stephen Hymer (1960/1976) was the first researcher to theorize that businesses had costs that the local firms did not face in doing business abroad. The different structure of institutional structures of countries they join are the key source of these extra costs for international companies. (Guillen 2003a; Djelic & Quack 2003; Henisz 2004). In order to get an accurate understanding of the FDI set up and the ownership choices of the MNE's, it is also essential to analyze the structure of institutions and institutions within the host countries. Cavusgil et al. (2011) divides the world into four groups, namely advanced economies, developing economies and emerging markets and transition countries. Since the saturated and highly competitive industrialized economies have decreasing long term potential, firms look like a transitional economy, linked with less competitive markets, more disposable income, large populations of young consumers and gradually opened up through economic liberalization (Sakarya et al., 2007).

In a community, disparity represents the social gap between rich and poor people. Policy, economic and market factors include key drivers for FDI's long-term slowdown (WIR, 2019). There are significant challenges to resolve the disparities faced by businesses and their employees. Investments from the MNC produce huge wealth and create employment. However, low wage employment on contractual or part-time contracts is not enough. The wealth generated by MNE's should instead be spread more fairly through the supply chain. MNE's would not agree to a fairer distribution of the capital by themselves. They will instead continue to operate on a business basis, provided that there are no major destabilizing powers (Aner,2014).

The reasons for and varying levels of disparity are what changes over time. Inequality can be calculated on the basis of economic, gender and education inequality (gross income, net income or expenditure). Income is classified as disposable household earnings in a given year. It consists of returns, self-employment, capital income and government cash transfers. Income and social security taxes are deducted from households. The World Bank monitors consumption or income growth for the poorest 40 percent of the population of each country—the lowest 40 percent—in order to monitor progress in response to its target of improving mutual prosperity (WB, 2015). Likewise, SDG's 10.1 target aims to raise sales by 40% below the national average by 2030. Progress can be calculated by the difference between the bottom-40% consumption or income increase and the overall population average consumer or income rise. There are two considerations that directly reflect the quantity of international market integration when addressing economic disparity caused by multinational corporations' activities: trade flow

(exports and imports) as a share of GDP and foreign direct investment (FDI) as a share of GDP. By looking at the two growing factors in the past few decades following the liberalization of capital markets, the level of income inequality in the least-developed countries is correspondingly increasing (Ha 2012: 143, Dilbone, 2014).

Gender inequality continues to be a significant obstacle to human advancement. Since 1990, girls and women have made significant progress, but gender equality has yet to be achieved. Women's and girls' inequalities are a significant cause of discrimination. In areas such as health, education, policy representation and the labor market, women and girls are routinely discriminated against with unfavorable repercussions on their capacity to grow and their free choice. Gender Inequality (BIGI) is characterized as the disparity between men and women in three main areas of life: 1) educational opportunities in childhood; 2) healthy life expectancy (the number of years one would expect to live in good health); and 3) overall life satisfaction.

According to Stoet and Geary (2019) the Gender Inequality Index (GII) is a measurement of inequality. It assesses gender differences in three main areas of human development: reproductive health (as measured by the maternal mortality ratio) and teenage birth rates; and economic development (as measured by the labor force participation rate).

Inequality in Education-Children of high-income parents are more likely to become high-income adults, while their low-income peers are more likely to become low-income adults. Intergenerational income persistence is heavily influenced by education. Many researchers expected intergenerational income persistence since education-based disparities have risen in recent decades (Bloome, Dyer, Zhou,2018). Torpey-Saboe proposed a Gini coefficient for years of schooling as a method of measuring educational disparity (Torpey, Saboe, 2019)**.** This Gini coefficient is calculated using data on educational attainment for different segments of the population from Barro and Lee (Journal of Development Economics 2013, pp. 184–198) and data on the period of primary and secondary schooling in countries around the world from the United Nations Educational, Scientific and Cultural Organization (UNESCO). Torpey-Saboe measures the proportions of the population who have completed equivalent shares of the country's total years of schooling and builds a Gini coefficient for educational disparity using these datasets.

1.3 Research Gap

Globalization has significantly increased disparity between and within nations, even as it connects people like never before" (Mazur 2000). The aim of this research dissertation is to display the major inequality disadvantage caused by multinational enterprises' behavior in Western Balkan Transition countries. Globalization, according to Tomlinson, is a process that "increases the density of a global network of interconnections and interdependency among countries and regions" (Tomlinson 1999:2). More than 60,000 multinational companies with more than 800,000 overseas branches now handle the globalization of world business. In this context, researchers must consider the potential problems that this process can cause and devise strategies to reduce or eliminate these consequences. This leads us to multinational corporations, or MNE's, which are described as "a business operating in multiple countries from a single [home] country" (as opposed to transnational corporations, which have no real "home base" and are thus better able to respond to local markets). This raises issues about the type of influence these corporations have, as well as the socio-economic conditions of the countries that benefit from their enormous wealth, which can rise much faster than the GDP of developing countries. In the discussion of economic disparity resulting from multinational corporation activities, two variables specifically illustrate the quantity of international market integration: trade flows (export and imports) as GDP shares and foreign direct investment (FDI) as GDP shares. Looking at those two factor variables in recent decades as a result of liberalization of capital markets, there is a corresponding rise in income inequality between transitional economies (Ha 2012: 143). "Foreign direct investment, as Anner and Hossain put it, is a mechanism by which mnc companies establish foreign affiliations and purchase or combine existing companies outside the country" to enter markets where work is cheaper and more competitive.

1.4 Research objectives

The research objective of this study is divided into general and specific objectives.

General objective

- **Measure the impact of Multinational Enterprises on inequality in Transition Economies (Western Balkan Countries).**

The specific objectives of the current research are:

- **To define the impact of MNE's on inequality in Western Balkan countries**
- **To Assess the effect of MNE's on Economic Inequality in Western Balkan countries**
- **To Assess the effect of MNE's on Income inequality in Western Balkan countries**
- **To Assess the effect of MNE's on education inequality in Western Balkan countries**
- **To Assess the effect of MNE's on gender inequality in Western Balkan countries**
- **To define the role of MNE's ownership**
- **To assess the differences of the role of ownership of MNE's in Inequality**

1.5 Research hypothesis

This research will use a deductive approach, meaning that hypotheses are developed based on the existing theories. Consequently, based on the extensive literature review the following 2 main hypotheses and sub hypotheses are defined:

H1a: There is a significant effect on Economic inequality from MNE's;
H1b: There is a significant effect of Income Inequality from MNE's;
H1c there is a significant relationship between FDI and Gini Coefficient;
H1d: There is a significant relationship between trade flows (exports/imports) and Gini coefficient;
H1e: There is a negative correlation between FDI and Trade openness, if FDI increases will decrease the Gini coefficient;
H1f: There is a negative correlation if trade flows increases will decrease the Gini coefficient too.
H1g: There is a negative impact and significant effect between Gender Inequality and inequality from MNE's;
H1h: There is a significant effect of Education Inequality from MNE's;
H1: Multinational Enterprises have a significant impact on reducing inequality in transition economies;
H2: There is a significant effect of the role of ownership of MNE's in Inequality

1.6. Methodology

This section deals with the data collection, organization and integration process for achieving the project goal. The section begins with a review of science methodology and study design. In addition, a summary and interpretation of the data collection is given. The scientific method is characterized as a process whereby scientists try to establish a precise (that is to say, accurate, consistent and unarbitrary) representation of the over time (Yin 1994) . According to Churchill and Lacobucci (2005), Three classes of research design are applicable: research exploration, descriptive and causal. Exploratory study deals with the exploration of ideas and observations, descriptive studies generally decide what happens or relationship between two variables and usually a starting hypothesis; causal research design deals with determining relationships of cause and effect and they are examined through experiments. The research is planned to carry out research in foreign business enterprises. The knowledge resources and research designs are accompanied by simple problem formulation, according to Churchill and Lacobucci 2004; therefore, methods of collecting data can be chosen only after an objective has been decided. To measure the impact of Multinational Enterprises on inequality in Transition Economies (Western Balkan Countries). The research is planned to be executed with description research based on qualitative method and quantitative, more precisely panel data. The time span of the research will be within 12 years, with particular emphasis in Kosovo.

The empirical analysis focuses on: – (i) individual-level characteristics and macro-level control variables. The firms that will be analyzed will be selected among several transition countries taking into consideration the size of the country. The dataset will be based on data collected from different sources, i.e. SWIID, UNCTAD, World Bank –World Development Indicator, World Bank-enterprise surveys Competitiveness Yearbook so as to provide insights into and understanding of the variables that account the impact of MNE's on inequality to transition economies.

1.7 Contributions

Although the field of study has been very attractive for the past three decades, this topic is still subjects of few empirical studies. In addition, the effect of the MNE on all dimensions of inequality

on the Western Balkans is little or no observed. The expected results of this study are to contribute to this literature gap by influencing various types of inequality in the form of MNEs. This thesis, in addition, would fill a void in global literature, as quantitative studies in this field are still in scarcity, by reacting to research assumptions. In addition, the results of the study can also be useful to policymakers who know about the role of MNE's in the country's economy, so that the results of the study can be used to develop better policy on the health of people in countries in transition. The owners of MNE may also benefit from this study by recognizing and embracing certain principles of equality. In addition, this thesis will increase the interest of other scientists and researchers in the development of this attractive field of research.

1.8 Originality

In this dissertation it is analyzed whether Multinational Enterprises effect the inequality in transition countries more precisely there is a significant effect of Economic inequality, income inequality, gender inequality and education inequality from MNE's. The results of this study will have an impact of MNE's on inequality in Transition countries. There is a significant relationship between Gini index and FDI and Trade Flows.

This paper attempts to add to the current literature by examining the distributional effect of Foreign direct investment in Southeast Europe. First, this is the only article that addresses several types of inequality, including economic inequality, income inequality, education inequality, and gender inequality. Second, we used two proxies (Gini Index and Human Development Index) as predictor variable to see which one better matches our hypothesis in the context of six Western Balkan countries: Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia from 2007 to 2019. The majority of studies agreed with group number three's argument that FDI has a negative effect on income inequality. To summarize, a large number of studies have looked into the effect of foreign direct investment on inequality. However, yet there is no consensus among them, relating to the impact of FDI on income inequality, which provides good ground for this research.

I differ from others in the context of comprehensiveness since this is the first research that measure all types of inequalities rather than just income inequality, as almost all other studies have done. Moreover, there are few empirical studies dealing with the relationship between FDI and income inequality, Western Balkans countries. This paper seeks to fulfill the gap in the literature

by examining how the inequalities in Western Balkans could be affected by Multinational companies through FDI.

1.9 Structure

This doctoral thesis is comprised of five chapters:

Chapter 1 – Introduction: This chapter introduces this research by covering the background of the study, it's scope and the research gap. This chapter also presents the objectives and hypotheses of the study. In the end, contributions of the study are highlighted.

Chapter 2 – Literature review: This chapter includes the specifics of MNEs, Inequality and types of Inequality, and the role of MNE's ownership. This chapter also offers an overview of the existing theories and literature related to the topic of the impact of MNEs on inequality. It particularly covers the types of inequality, income inequality, economic inequality, gender, education. The chapter ends with a review of empirical studies related to current research and the presentation of the conceptual framework of this study.

Chapter 3 – Methodology: This chapter draws the research methodology used in the current study. The chapter presents the research process, approach, and design. The methods of data collection, study variables, methods of data analysis and pilot testing are also included in this chapter.

Chapter 4 – Findings: This chapter will provide the data collection process, and data analysis including descriptive and inferential statistics. The chapter will also include the hypotheses testing and dominance analysis.

Chapter 5 – Summary: This chapter will discuss the research result which will be followed by a conclusion. In the end, the research will present the contribution of the study, the limitations as well as the recommendations and future research directions.

2. Literature Review

2.1 Globalization

The mechanism by which companies or other entities grow or become internationally influential. The global interconnectedness of the government, the social movements and the financial markets via commerce and ideas-sharing. The widening of the interconnectedness of international economies, cultures and peoples, as a result of transnational commerce in products and services, technology and investment, human resources and knowledge flows, is characterized by globalization.

2.2 Foreign Direct Investment (FDI) and International Trade

Globalization is an important process responsible for the growth of global integration, particularly in terms of economic globalization. Liberalization is the key element of economic globalization,

Globalization is characterized as the process by which the national economy integrates into the global economy through trade, FDI, technology flows, jobs, humanity and the flows of capital (Bhagwati, J. 2004). FDI is a key element of economic globalization that is regarded as a growth driver in the recipient country (Bhandari 2007). Often used as a proxy for globalization or for global integration in literature. Since FDI is a global integration measure, countries are competing with each other to obtain more FDI, with the goal of achieving more integration into the global economic network as their place on global trade and investment flows are considered to be deciding the economic achievement (Dicken 2011). The flow of FDI contributes to increased economic growth and development in the country and increases the flow of capital for investment in domestic development (Asiedu 2002). However, since there is little research on the determinants of FDI attraction for countries with varying levels of integration into the global economy, it is unreasonable to conclude that FDI would have the same impact on all of them. (Blonigen and Wang 2004). Approximately 2/3 of the world's exports are managed by multinationals and 1/3 of them is the FDI. Over 80% of FDI is received by 20 nations because of global competitiveness (Mukim and Nunnenkamp 2012). An MNE based in one country invests in a foreign country to

operate a device. With the increase in FDI, MNE power rises in the global economy. Since FDI has grown faster than trade, it has now become the main mode of global economic integration (Dicken 2011). This means that FDI starts if a multinational business (MNE) decides to transfer some activities to a foreign country. As a result, a multinational corporation (MNE) allocates its capital globally and expands its power to dominate a new position in another region (Athukorala 2009). FDI in the world has grown and is rising faster than global GDP, accounting for 46.6% of the global GDP. (Dunning, Lundan , 2016) FDI is critical to the success of international trade and the creation of long-term economic relationships between countries(Groh and Wich 2012). It is also a major channel of increasing international economic integration (OECD 2008a). The geographical distribution of FDI is determined by the value added activities of MNE's because the location advantage of different places influences the location decisions of MNE's, therefore, MNE's prefer to locate in places which enhance their main competencies (Dunning 1998). In addition, state policy also influenced MNE's locational decisions as MNE's prefer to locate their operational activities in countries with a supportive institutional environment (Wallerstein and Wallerstein 1998). Country level institutions in developing countries, along with legal and regulatory structure also affects investment strategies of foreign firms (Meyer and Estrin 2001). Government policies also influence the construction of local assets which make the location unique and hard to transfer or locate elsewhere (Dunning 1998). MNE's investment strategy is based on demand for its product, supply, availability of inputs, infrastructure, cost factor and the institutional environment (Wall 2016). As countries move towards knowledge intensive industries, these types of factors become more crucial for location decisions of MNE's. Property rights are an intangible commodity, while local variables such as physical infrastructure, government regulations, clusters, and access to global networks are tangible assets (Dunning 1998). There are four types of foreign investment strategies used by companies. The first is market-seeking investment, which seeks to serve new customers, and the second is resource-seeking investment. FDI invests in extracting and processing natural export or local sales resources in order to increase the quality of them. FDI is an investment in the manufacture of products and services for the global market, and asset seeking investment is FDI that seeks to acquire new assets and alliances with local firms in order to retain or enhance the advantages of MNE's (Dunning 1998). Market seeking and asset seeking MNE's prefers to be located in semi-peripheral areas and both are involved in horizontal FDI aimed at imitating the output of their parent company or getting access to new markets (Jansen, Wall, 2016). On the other hand, resource-seeking and efficiency-seeking MNE's choice of location in the

periphery where they can increase their income by building manufacturing units and extracting natural resources, this form of investment is called vertical FDI (Mukim and Nunnenkamp 2012). In terms of sectoral comparative advantage, sectors with a comparative advantage draw more inward FDI than sectors with a comparative disadvantage (Qiu 2003). As a result, MNE location decisions are informed by a combination of tangible and intangible assets provided by host countries, because MNEs prefer to settle in areas where local circumstances meet their needs (Jansen, Wall, 2016). In turn, the activities of MNEs and the conditions of property rights in host countries decide the impact on human capital growth, jobs, technological innovation, and trade structure in host countries. (Dunning, Lundan,2016).

2.3 FDI and Economic Development

FDI is considered a growth engine in today's globalizing world because financial capital is flowing through countries and integrating world economies through FDI. As a result, host countries and many developing countries around the world are implementing liberalization policies in order to draw more FDI and grow their economies (Jansen, Wall, 2016). Aside from the role of FDI in global economic integration, there have been divergent views on the effects of FDI on long-term development, especially in developing countries (Nair-Reichert and Weinhold 2001). FDI is increasing economic growth and competitiveness in recipient countries from a neoclassical perspective. The majority of economists and international institutions believe that, in addition to filling the resource gap, FDI will result in greater economic growth and development in the host country by improving human capital and management skills and access to the export market (Tsai 1995; Li and Liu 2005). Unlike the neoclassical approach, dependency theory states that, particularly over the long term, economic dependency on developed countries is counterproductive to developing countries (Jansen, Wall, 2016). Accordingly, the theory claims that FDI is adverse in developing countries' economic growth and results in disparity and fragmentation in developing economies (Firebaugh and Beck 1994). It is anticipated that the input of FDI would increase disparity between highly qualified and skilled employees. Initiated by multinational companies, it will contribute to the process of fragmented output. This increased income gap leads to greater inequality across society. Tsai also affirmed theory of addiction in the conclusion that FDI led to unequal earnings distribution in the countries of east and southeast Asia (Tsai 1995). However, the literature shows that the long-term influence of multinational corporations and FDI is inconsistent.

The causal link between FDI and economic growth in all countries is heterogeneous (Nair-Reichert and Weinhold 2001). In their empirical research on developing countries, Beugelsdijk et al. found that FDI boosts economic development. (Beugelsdijk et al. 2008). A FDI has been shown in a variety of studies to have a direct and indirect impact on economic development. By hiring local employees in their foreign firms, FDI boosts economic development in developing countries; however, if the technology gap between the host country and foreign firms is too large, FDI has a negative effect (Li and Liu 2005). Adams concluded in his study on Africa that FDI is important for development, but it is not a sufficient condition for economic growth in Africa (Adams 2009).

Foreign direct investment (FDI) is investment by an enterprise based in a country directly into its development, either by purchasing an enterprise in the target country or extending its operations to include its current industry. FDI is mainly directed through multinationals. These investments have advantages such as market access, technology, management experience, etc. Globalization is a major phenomenon that has resulted in greater global integration; in particular, economic globalization has played a significant role in shaping today's environment. Liberalization, foreign direct investment, and international trade are the three main components of economic globalization (Mah, 2003). Globalization is characterized as the process of national economies integrating into the global economy through trade, FDI, and capital flows, as well as the integration of workers, humanity, and capital flows (Bhagwati, J. 2004). FDI is an important part of economic globalization and is seen as a growth driver in the receiving region (Bhandari 2007). It's often used as a measure for globalization. Since FDI is such an important indicator of global integration, countries compete with one another to attract more FDI in order to achieve greater integration into the global economic network, because a country's economic success is largely determined by its role in global trade and investment flows (Dicken 2011). The previous global crisis had a negative impact on dependent countries in the global south, but few of these countries have improved their status in the global economy as well as their socioeconomic growth (Jansen, Wall, 2016). There is only a minimal, partial, and empirical study because it ignores the position of economic power in deciding country relations (Wall 2016). Foreign direct investment (FDI) is an indicator of a country's entry into the global economy, and it is intended to support the recipient country (Jansen, Wall, 2016). The inflow of FDI boosts the country's economic growth and development, as well as the resources available for domestic development projects (Asiedu 2002). However, since there is few research on the factors that influence FDI attraction for

countries with varying levels of integration into the global economy, it is unfair to conclude that FDI would have the same impact on all of them (Blonigen and Wang 2004). Foreign Direct Investment (FDI) has been regarded as a tool of host countries' economic growth and development, but literature and political decision makers generally have ignored their effect on income inequality. The majority of economists and international institutions believe that, in addition to filling the income gap, FDI will result in greater economic growth and development in the host country by developing human capital and management skills and access to the export market (Tsai 1995; Li and Liu 2005).

The FDI portion of foreign capital flows is assumed to be stabler and provides numerous benefits for the recipient economies, as opposed to short-term capital and other types of capital flows that are expected to carry the seeds of the financial crisis. The degree of FDI reversibility, especially during the time of crisis, is considerably below that of other types of capital streams. It is also argued that foreign direct investment provides the domestic companies with superior technology, new production processes and management know-how, which generate productivity gainsIf transnational or multinational enterprises bring new technologies or new manufacturing processes into the host country, domestic enterprises can acquire new technologies and eventually increase productivity levels by engaging with international companies or by working mobility from foreign to domestic enterprises (Kouassi,2019).

FDI is also said to supplement domestic savings, build employment, diversify exports, and modernize recipient economies. The "Monterrey Consensus," reached in 2002 at the United Nations (UN) summit on "Financing for Development," summarizes the potential benefits of FDI as follows: "Foreign direct investment is particularly important for its potential to transfer knowledge and technology, create jobs, boost overall productivity, enhance competitiveness and entrepreneurship, and ultimately eradicate poverty through entrepreneurship" (United Nations, 2003, p. 9). In summary, foreign direct investment (FDI) is characterized as a collection of tangible and intangible assets with the potential to promote economic growth and development in the receiving country. All countries, without exception, have adopted positive attitudes toward FDI by removing or lowering various entry barriers, paying subsidies, providing attractive fiscal incentives, creating investment promotion agencies, and improving the investment climate. Licensing conditions were eliminated, previously closed areas of the economy were reopened, and

laws protecting intellectual property rights were strengthened (European Round Table of Industrialists[ERT], 2000, pp.14-15).

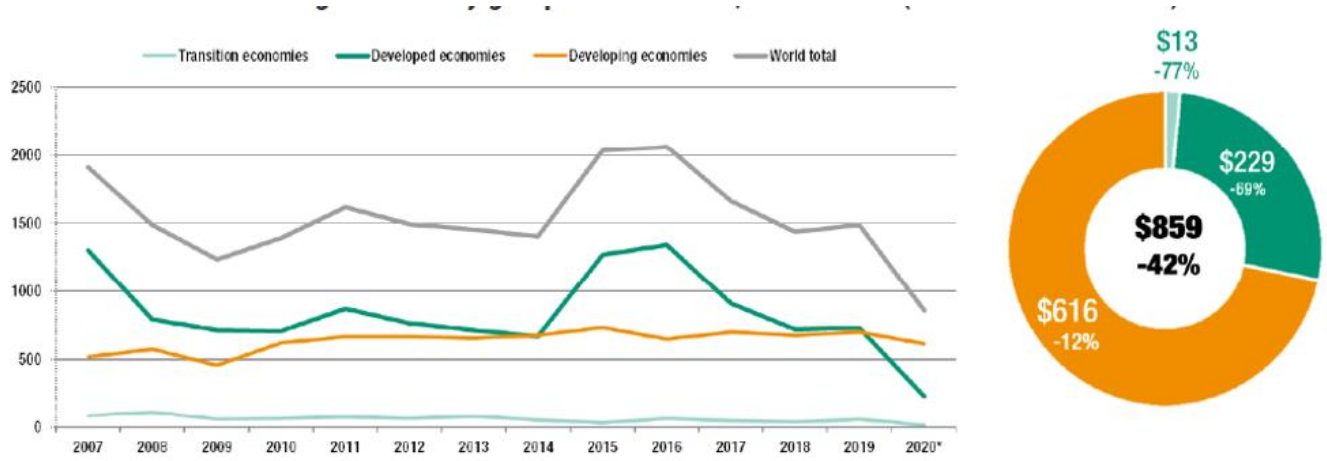
Approximately 90% of national regulatory investment regime changes enacted by more than 100 countries between 1991 and 2012 created a more favorable climate for FDI (Demena and Bergeijk, 2016, p.1). Similarly, 65 countries implemented 126 investment policy initiatives in 2017, with about 84 percent of them being beneficial to FDI (World Investment Report [UNCTAD], 2018, p.80). Since the 1990s, these "FDI-friendly" policies have resulted in an increase in global FDI traffic. Since 1990, global FDI has more than tripled, with FDI accounting for half of all private capital flows in developing countries in 2000. (Farkas, 2012, p.2). Inflows of foreign direct investment grew from US$ 205 billion in 1990 to US$ 1.909 trillion in 2007. However, global FDI inflows are still smaller than they were in 2007. (pre-crisis level). It peaked at $1.77 trillion in 2015, $1.87 trillion in 2016, and $1.43 trillion in 2017 (World Investment Report [UNCTAD], 2018, p.14).

FDI has been a topic of discussion in economics since the 1960s, and as the millennium approached, it drew more and more interest. It was first identified as a cause of underdevelopment in third-world countries, with dependency theory serving as an explanation (Hemmer et al., 2005). Rich states move and harvest capital from poorer and more nascent economies, making developed countries richer while poor countries become poorer. Foreign direct investments grew rapidly in the 1990s, following the global economy's growth, before dipping slightly in the twenty-first century (World Bank, 2016)1. To begin with, the majority of the investments were typically made between OECD countries. However, as time passed, the proportion of FDI directed to developing countries gradually increased (UNCTAD, 2016). Today, FDI is a global phenomenon that is often regarded as a positive economic instrument when it comes to the theory of development. This contrasts with a more negative view, provided that there is so much rivalry between salaries or domestic firms in connection with the subjects regarding poverty and inequality, to name only a few. There are reasons for and against foreign direct investment, but it is undeniable that it is one of the most important companions to the flourishing globalization that has occurred in recent decades. (Rye,2016).

According to UNCTAD, global foreign direct investment (FDI) fell 42 percent in 2020, from $1.5 trillion in 2019 to an estimated $859 billion. This low level of investment hasn't been seen since the 1990s, and it's more than 30% lower than the investment trough that followed the global

financial crisis of 2008-2009. Despite forecasts for a sluggish and uneven recovery in the global economy in 2021, UNCTAD expects FDI flows to remain poor due to uncertainty about the COVID-19 pandemic's progression (UNCTAD, 2020). In last year's World Investment Report, the organization forecasted a 5-10 percent decline in FDI in 2021.

Figure 1 Global and group economies FDI inflow between 2007-2020 (bn of USD)



Source: UNCTAD, 2020

The decline in FDI was concentrated in developing countries, according to the report, where flows fell by 69 percent to an estimated $229 billion. FDI flows to developing economies fell by 12% to $616 billion, but they still accounted for 72% of global FDI, the highest share on record (UNCTAD, 2020). According to the study, data on announced transactions – such as mergers and acquisitions, greenfield projects, and project financing – paints a mixed picture of future developments and reinforces the poor outlook for 2021. According to the study, "greenfield project announcements in 2020 were 35% lower than in 2019, which does not exactly reflect well for new investment in industrial sectors in 2021."

2.4 Multinational Corporations/ Enterprises (MNE's)

• A multinational corporation is a type of business entity that conducts business in more than one country. It's also known as a multinational company or an MNC.

• "A foreign company is one that exists in one or more countries in addition to the country in which it is incorporated." -Jocoby,Neil.H.

• Businesses with headquarters in one country but who do business all over the world.

Multinationals (MNE's) have notably advanced as one of the most important players in the world economy. In the last few decades, foreign direct (FDI) investments by MNE's have grown globally at an unusually rapid pace. Trends in FDI have fluctuated in recent history. Despite substantial increase in global FDI flows in 2015 due to the world economy's recovery, FDI influxes decreased by 2 percent to $1.75 billion in 2016 with MNE'S observing a slowdown in global economic growth and increasing policy uncertainties (Akbaba,2018). This was primarily due to a 14 per cent fall in FDI inflows to developing countries. Even so, considering increasing geopolitical threats and uncertainties, the predictions are fairly positive for the years to come. The FDI flows by 2018 will steadily rise at approximately $1.5 trillion in economic growth and corporate profit. In the meantime, FDI inflows have doubled since 2014 in Europe, while European MNE's have again slowed outflows after a short rise (Akbaba,2018). Ten of the top 20 FDI host countries are currently located in Europe, compared to twelve of the top 20 FDI host countries in Europe (UNCTAD, 2017a).

Multinational practices are now core elements of the world economy and seem to continue to grow in importance. For example, in 2010, more than 890,000 international affiliates of Transnational Corporations were estimated worldwide (UNCTAD, 2011, Web table 34). Some of the MNE's have evolved to such an extent that they are often comparable to domestic economies. Sales of the 500 most important companies in the world almost tripled from 1990 to 2001, with GDP only increasing by 1.5 times in the same time frame at current levels. In the years between 1990 and 2000, even profits of the 100 big companies rose from $3.2 bn to almost $4.8 bn (UNCTAD, 2002, p.90). The top 100 non-financial Transnational Corporations had revenues of $7.4 trillion in 2016, with assets of $13.2 trillion and 16.3 million employees (UNCTAD, 2017, p.29).

The size of large multinational corporations is often compared to that of countries' economies to assess the extent of impact of multinational corporations in the global economy. Anderson and Cavanagh (2000) were the first to attempt this, and UNCTAD was the next one (2002). Anderson and Cavanagh (2000) find that the top 200 companies in the world account for 27.5 percent of global GDP. Furthermore, 14 multinational enterprises and 36 countries were among the world's 50 largest "economies" (combined country-company list). These findings

indicate that the scale of certain global companies outweighs the economies of many nations around the world.

Since GDP is a value-added indicator, firms' profits must also be recalculated as value added in order to allow accurate comparisons. After fixing the methodological flaws in Anderson and Cavanagh (2000)'s analysis, UNCTAD (2002, p.90) estimates that there were 29 transnational companies and 71 countries in the top 100 of a combined country-company list. In other words, 29 of the world's top 100 economic forces are multinational corporations. This shows that some multinational corporations (MNE"s) have more impact in the global economy than others.

From 1990 to 2017, the MNE's global affiliates' assets increased by nearly 20-fold. International affiliates account for about 33% of global product and service exports. Kleinert (2004, pp. 26-28) reports that Transnational Companies account for about 80% of all foreign trade. In 2017, the value added of international affiliates accounted for 9% of global GDP, compared to just 5% in 1990. Multinational companies also play a significant role in the development of jobs in the global economy. From 1990 to 2017, the total number of workers at their international branches nearly tripled. MNEs' international affiliates' sales and value-added rose by 4.2 percent and 5.2 percent, respectively, in 2017, while the number of employees was around 73 million (Table 1.6). The international assets of the top 100 non-financial Multinational Corporations rose by 3.2% in 2016, up from $8014 billion in 2015(UNTAD, 2017, p.2).

Multinational Enterprises (MNE’s) manage approximately two-thirds of global exports, with FDI responsible for 1/3 of that. Twenty countries earn more than 80% of FDI due to the dynamic global market (Mukim and Nunnenkamp 2012). An MNE based in one country invests in a foreign country to operate a unit. With the increase in FDI, MNE power rises in the global economy. FDI has now become a main source of global economic integration, due to a higher growth rate than trade growth (Dicken 2011). In other words, FDI begins when a multinational corporation (MNE) decides to move some of its operations to a foreign country (Jansen, Wall, 2016) . Therefore, MNE spreads worldwide its capital and the ability to monitor the new site abroad (Athukorala 2009). FDI's global importance has risen and grows faster than global GDP, representing 46.6 percent of world GDP (Dunning, Lundan ,2016).

FDI plays a crucial role in international trade development and the establishment of long-term economic ties among countries (Groh and Wich 2012). It is also an effective tool for

increasing global economic integration (OECD 2008a). The geographical distribution of FDI is determined by the added-value of mnes' activities since the locality advantages of various locations influence MNEs decision on the locations (Dunning 1998). Moreover, state policies are also influenced by MNE's location decisions, as MNEs tend to operate in countries with a friendly institutional environment (Wallerstein and Wallerstein 1998). First of all, land rights that are intangible and secondly local elements like physical infrastructure, government policies and clusters and global network connectivity (Dunning 1998).

The institutions of developing countries and the legal and regulatory framework affect investment plans of foreign companies (Meyer and Estrin 2001). Government policies often impact local buildings that make it impossible to travel or find other places unique (Dunning 1998). The strategy of MNE investments depends on demand, supply, availability of inputs, infrastructure, cost factors, institutional environment, etc. MNE investment strategy investment strategy (Wall 2016) As countries transition into knowledge-intensive manufacturing, factor types become more important in decision-making on localization.

These figures clearly show that MNE's control and reinforce the world economy in Europe. But great obligations come with great strength. Consequently, a lot of opposing views exist about the actual effect of MNE's on society. On the one hand, multinational companies are considered to be one of the main sources of technical knowledge that contribute to growth and social welfare. On the other hand, these companies mostly concentrate on growth and maximize their own income while neglecting the possible consequences on their respective countries and their subsidiaries' host countries (Akbaba, 2018). For example, developed countries typically experience a work outflow and developed countries are battling with the ever-increasing power of MNE's for financial independence. "The immense wealth and influence of companies is the heart of so many problems around the world – such as inequality and climate change," Nick Dearden said. (Inman, 2016). MNE's have also been extensively analyzed, reported, and discussed environmental and social problems. In the meantime, increasing income inequality in both developed and development states has become one of the hottest economic themes of the 21st century. With increased mobility of labor and capital and a fully integrated global economy

2.4.1 The influence of Multinationals (MNE)

State sovereignty did not vanish as a result of globalization; rather, it evolved. It now competes with companies for government authority and control. Corporations are used by states, and corporations are used by states. The international flow of money and technology channels both are from multinationals (MNEs) (UNCTAD 2010). MNEs continue to spread across countries through globalization of the international economy and regional economic integration (Olayinka, Loykulnanta 2019). MNEs appear to connect the technology gap between developing and developed countries. In reality, the MNEs of advanced and emerging technologies are the greatest inventors, since they also have sufficient funds to finance research and development (R&D). These technologies are exported to their affiliates in the host nation and their affiliates then compete with their domestic companies, using their company's advanced technology as their own strategic advantage (Olayinka, Loykulnanta 2019). The phenomenal influence remains on multinationals like Apple and Starbucks. They control large supply chains, export goods across the globe and support their interests in molding foreign affairs. In several ways, multinationals have policymakers at their disposal – their consistent performance in stepping up tax collections can be seen.

To prove the importance of Multinationals in today's world in the following there are some comparisons of how powerful are MNE's. Taking the indicator measures the revenue of the biggest MNE's in the world and on the other side the GDP of nations. As you can see the Wal-Mart in the 2005 was the biggest corporation in the world with 287.989 bn almost the same as GDP of Sweden 301606bn, followed by Sinopec Group which is almost equal with summing two countries Saudi Arabia plus United Arab Emirates. In the third rank is State Grid with 270bn USD compared with two states GDP that of Norway plus Bangladesh 272bn USD, the next one is China National Petrol with 269bn USD revenue near to GDP of Poland plus Romania with 266bn USD.

Table 1 Comparison between the Biggest MNE's in the world and on the other side the GDP of nations in 2005

Rank	**Corporation**	**Revenues ($ millions)2005**	**Comparison Nation(s)**	**Gross Domestic Product ($ millions)2005**
1	Wal-mart (USA)	$ 287,989	Sweden	$ 301,606
2	Sinopec Group	$ 285,059	Saudi Arabia plus UAE	$ 285,708
3	State Grid	$ 270,772	Norway plus Bangladesh	$ 272,768

4	China National Petroleum	$ 268,690	Poland plus Romania	$ 266,514
5	Royal Dutch Shell	$ 193,517	Argentina plus Peru	$ 190,173
6	Saudi Aramco	$ 176,688	South Africa plus Zimbabwe	$ 177,636
7	Volkswagen	$ 172,616	Singapore plus Pakisan	$ 174,166
8	British Petrol	$ 172,233	Greece	$ 172,203
9	Amazon.com	$ 152,866	Ireland	$ 153,719
10	Toyota Motor	$ 152,609	Portugal	$ 147,899

Sources: revised by author; For corporate data, Fortune 2015; for GDP data, World Bank 2015

European Multinational is on the 5th rank, Royal Dutch Shell with approximately 194bn USD and is near with the GDP of Argentina plus Peru with the amount 190bn USD. Next Multinational is Saudi Aramco with almost 177 bn USD and is similar with South Africa plus Zimbabwe's GDP with 178bn USD. Next Multinational is from Germany, Volkswagen with 173 bn USD Revenue and is similar with Singapore plus Pakistan's GDP with 174bn USD. In the 8th place is British Petrol with total 172bn USD revenue similar with Greece's GDP 172bn USD, next one is the giants from United States, Amazon.com with 152bn USD revenue and is compared with the Ireland's GDP 153 bn USD and the last one from our ranking is Toyota from Japan with 152bn UDF revenue almost near to Portugal's GDP 148bn USD.

In the following we looked the same multinationals after 14 years and results are as below; Walmart is still in the top ranking with 524bn USD which is near to Belgium's GDP 530bn USD, in the 2nd ,3rd and 4rth ranks remains Chinese Corporation Sinopec with 407bn USD revenues near to Norway's GDP 403bn USD, State Grid with 379bn USD near to Ireland's GDP 388 bn USD and China National Petrol with 379bn USD Revenue near with Malaysia's GDP 365bn USD.

Table 2 Comparison between the Biggest MNE's in the world and on the other side the GDP of nations in 2019

Rank	Corporation	Revenues ($ millions)2005	Comparison Nation(s)	Gross Domestic Product ($ millions)2005

1	Wal-Mart (USA)	$	287,989	Sweden	$	301,606
2	Sinopec Group	$	285,059	Saudi Arabia plus UAE	$	285,708
3	State Grid	$	270,772	Norway plus Bangladesh	$	272,768
4	China National Petroleum	$	268,690	Poland plus Romania	$	266,514
5	Royal Dutch Shell	$	193,517	Argentina plus Peru	$	190,173
6	Saudi Aramco	$	176,688	South Africa plus Zimbabwe	$	177,636
7	Volkswagen	$	172,616	Singapore plus Pakistan	$	174,166
8	British Petrol	$	172,233	Greece	$	172,203
9	Amazon.com	$	152,866	Ireland	$	153,719
10	Toyota Motor	$	152,609	Portugal	$	147,899

Source: Author revised taking from World Bank,2019

In the 5th rank is Royal Dutch Shell with 352bn USD similar to South Africa's GDP 351 bn USD. Saudi Aramco with 330bn USD Revenues near with Bangladesh's GDP 303bn USD, next one is Volkswagen with 283 bn USD similar with Chile's GDP 282bn USD, British Petrol is another Multinational with 283bn USD Revenues almost same with Pakistan's GDP 278 bn USD. Next Corporation is Amazon with 281bn USD Revenue summing up two countries that Romania plus North Macedonia's GDP 271 bn USD and the last Corporation is Toyota Motor with 286 bn USD in with Portugal's plus Kosovo's plus Croatia's GDP 238bn USD. If we see those Multinationals after more than a decade, precisely after 14 years we can witness how those businesses have increased almost 100percent of their revenue in 2005. This led us to think that the power or the influence of those multinationals have increased too.

2.5MNE's strategies to invest

Companies' foreign investment plans are grouped into four groups.

market seeking aimed at emerging countries, Resource seeking is an investment in the mining and refining of natural resources for export or for sale in the local market. Efficiency targeting FDI is investment in the manufacture of products and services for the global market, and lastly, asset seeking is the FDI aiming to develop new properties and alliances for MNE advantages with local companies. MNEs tend to locate in semi-peripheral areas, and they are both involved in horizontal FDI aimed at replicating their parent company's output or gaining access to new markets (Jansen, Wall, 2019). Resource-seeking and efficiency-seeking MNEs, on the other hand, tend to locate in the periphery where they can increase their income by building manufacturing units and extracting natural resources; this form of investment is known as vertical FDI. (Mukim and Nunnenkamp

2012). In contrast to sectors with a comparative disadvantage, sectors with a comparative advantage receive more inward FDI (Qiu 2003). As a result, MNE location decisions are informed by a variety of tangible and intangible assets provided by host countries, as MNEs prefer to locate in areas where local conditions fit their needs (Jansen, Wall, 2019). In turn, the activities of MNE's and the conditions of property rights in host countries decide the impact on human resource growth, jobs, technological innovation, and trade structure in those countries (Dunning, Lundan,2016).

There is contradictory evidence in the literature on the long-term and transnational influence of Multinational and FDI companies. The FDI-economic relationship is heterogeneous across countries (Nair-Reichert and Weinhold 2001). Beugelsdijk et.al showed that FDI contributes to greater economic growth in their empirical research on developing countries (Beugelsdijk et al. 2008). Several research studies have shown FDI's impact on economic growth directly and indirectly. In developing countries, FDI increases economic growth, hiring local employees at foreign companies, while if the technology gap between host countries and international companies is broad, then FDI has an adverse effect (Li and Liu 2005).

The question of whether the expected impact on the host countries is significant for academic researchers, as well as political leaders is a corollary of the FDI flow in the world. While theory predicts in general that FDI is a source of numerous benefits to the recipient country, there is no conclusive evidence of empirical studies to confirm these advantages. Empirical research on FDI's effect on host countries' growth and income inequality in particular have shown contradictory results. According to De Mello (1997, p.30), "whether FDI can be regarded as a stimulus for production growth, capital accumulation, and technological advancement is a less contentious hypothesis in theory than in practice." For example, according to Bruno and Campos (2013, p.4), 50 percent of empirical studies find that FDI promotes economic growth, 11 percent find that FDI has a negative impact on growth, and 39 percent find no correlation between FDI and economic growth. Similarly, Hanson (2001) concludes that there is only poor evidence for the positive spillover effects of FDI in host countries after performing a literature review. The question of whether FDI increases or worsens income distribution is often ignored and understudied (Figini and Görg, 2011, p.1455; Mah, 2012, p.1522; Lin et al., 2013, p.874). However, the public concern about the socioeconomic consequences of increased economic globalization, as well as the recent publication of books such as Stiglitz's Globalization and its Discontents (2002) and Piketty's Capital in the Twenty-First Century (2014), have sparked academic researchers' and policymakers'

interest in the topic of inequality. Empirical studies aimed at assessing the distributional effect of FDI in host countries, on the other hand, have failed to draw a definite conclusion. (Clark et al., 2011).

2.6 Inequality

In developing countries, extreme poverty and inequality are growing problems, and reducing poverty and inequality is a top priority as well as a challenge. While poverty reduction is the first goal of the United Nations Millennium Development Goals, inequality has received less attention, despite the fact that it is a major social problem around the world (Facundo Alvaredo 2015). Inequality can appear in many different ways. Economic disparity (e.g., income and wage disparities) and cultural inequality are the two main forms. (e.g. Class, gender, race etc.). The majority of economics literature has largely concentrated on various dimensions and indicators of economic inequality. Inequality in the economy can be calculated in a variety of ways. The three main forms of economic disparity are wage, income, and consumption. Economic inequality, specifically income inequality. The Lorenz curve, the Gini coefficient, percentile ratios, the Atkinson Index, and the Palma Index are some of the metrics used to calculate income inequality (Jansen, Wall, 2019). However, the Gini coefficient is the most widely used metric (Morelli et al. 2015; Gilbert 2000). The majority of previous research looked at income distribution across countries to assess income inequality. However, the Gini coefficient is the most widely used indicator of income inequality. Simond Kuznets identified the connection between income distribution inequality and the country's economic growth in his groundbreaking work. He argued that as the world shifts from agriculture to manufacturing, income gaps between skilled and unskilled workers expand, rising inequality. However, after the extent of progress has been achieved, there is a decrease in inequality as prosperity enters the greater segment of society. He clarified that the growing weight of the urban population contributes to more inequalities because of rural-urban migration. The rural-urban per capita difference in per capita income appears to increase in the context of economic growth because per capita production is tending to rise faster than agriculture (Jansen, Wall, 2019). As a result, total income inequality increases as economic growth increases. In the early phases of industrialization, income inequality widened particularly in eastern countries, where industrialization has destructive effects on previous economic and social institutions. If the initial phase of industrialization and urbanization has passed, a number

of forces come into play that lead to a lower income and lower inequality penetration of development (Jansen, Wall, 2019). This connection between economic growth and income inequality was expressed as a U-form curve reversed (Kuznets 1955). In the last two decades and a half the world income inequality and poverty has fallen, according to neoliberal arguments due to growing economic integration among countries. The key solution for the countries that lag behind, particularly Africa, is more open financial markets and free trade policies for deeper global integration. This claim is endorsed in international media such as The Financial Times and The Economist by the strongest organizations such as the World Bank, the IMF, the World Trade Organization, the US and Treasuries of the UK. On the other hand, according to the argument of dependence theory, inequality and poverty among world incomes is increasing because of the unregulated forces of globalization. This approach indicates that public policy on market forces should be regulated. In addition, in contrast with the neo-liberals, this anti-neoliberal party proposes several ways to minimize inequality (Wade 2004). The majority of previous research on international inequality evaluated inequality across countries using GDP per capita. Another form of study attempted to factor in the country's income distribution. These studies use Gini coefficients or other methods to estimate income distribution using a single statistic because survey data isn't available. Both of these methods, according to Milanovic, are insufficient because, first, a single measure of inequality cannot accurately represent the income distribution, and second, the presumption that all countries have the same income distribution is unreasonably optimistic. Since the 1980s, more precise studies have relied on survey results, but household surveys were used to calculate income shares rather than real earnings. Household surveys were first used in studies in the 1990s, but they were mainly used to assess poverty rather than inequality. Milanovic's report on international inequality was the first to be exclusively focused on household survey results, and it extracted global income distribution in the same way that regional income distribution is aggregated for a country. According to the research, global inequality is extremely high, and it grew even further between and within countries between 1988 and 1993. However, inequality between countries was comparatively higher, leading to a rise in overall inequality (Milanovic 2002). Melchior, on the other hand, reported that global inequality has been decreasing since the late 1960s. In this case, international inequality is calculated as the Gini coefficient of per capita income weighted by population. The main explanation is that some developing countries, especially in Asia, have grown faster than many developed countries. Despite the variability of

economic development across developed countries, the Gini coefficient demonstrates convergence since per capita income is determined by the country's population.

He indicated that when calculating global inequality, it should be clear whether we want to measure inequality between countries or inequality between individuals. For example, when inequality is calculated using average per capita income, it only calculates inequality between countries. As a result, global inequality dependent on country comparison is lower than intercountry comparison (Jansen, Wall, 2019). According to the paper, increased inequality within countries leads to variance or higher inter-country inequality (Melchior 2001). When inequality is calculated as population-weighted PPP adjusted per capita income of countries, Wade noted that the neoliberal claim is accepted. When calculated for the entire distribution or cross-sectional data based on household surveys, or measures of combined inequality within and across countries, inequality has risen since the 1980s (Jansen, Wall, 2019). Between the 1960s and the 1980s, pay disparity within countries was either decreasing or stagnating, but it has been steadily growing since the 1980s. In the manufacturing sector all over the world, pay disparities are even higher. Simultaneously, absolute wealth disparities are widening rapidly. Overall, he argued that due to significant regional differences in economic development, different methods of measurement yield different results, and that the pattern of global income distribution is dependent on the countries chosen and the method of measurement used, as there is no single best method for measuring global income inequality. Inequality has been measured using a variety of measurements, including per capita GDP in US dollars or adjusted to Purchasing Power Parity (PPP), countries treated as a single unit, and population weighting. There are income distribution indicators such as Gini coefficients, average coefficients, income ratios of the first and tenth deciles of the world population, and the ratio of average incomes of rich and poor countries (Jansen, Wall, 2019). Measurement often varies depending on the source of income data, such as National Accounts and Household Survey data, the sample countries chosen, and the time span (Wade 2004). A large number of studies have found a relationship between inequality and economic development (Tabassum, Majeed, 2008. While there is some discourse about whether inequality has increased or decreased across countries over the past few decades, a longer pattern of the ratio between rich and poor countries indicates an increase in inequality (Basu, 2006). Income inequality is a major social challenge, especially in developing countries, as illustrated by the literature. According to studies, most African countries have the world's highest levels of income inequality. Between 1988

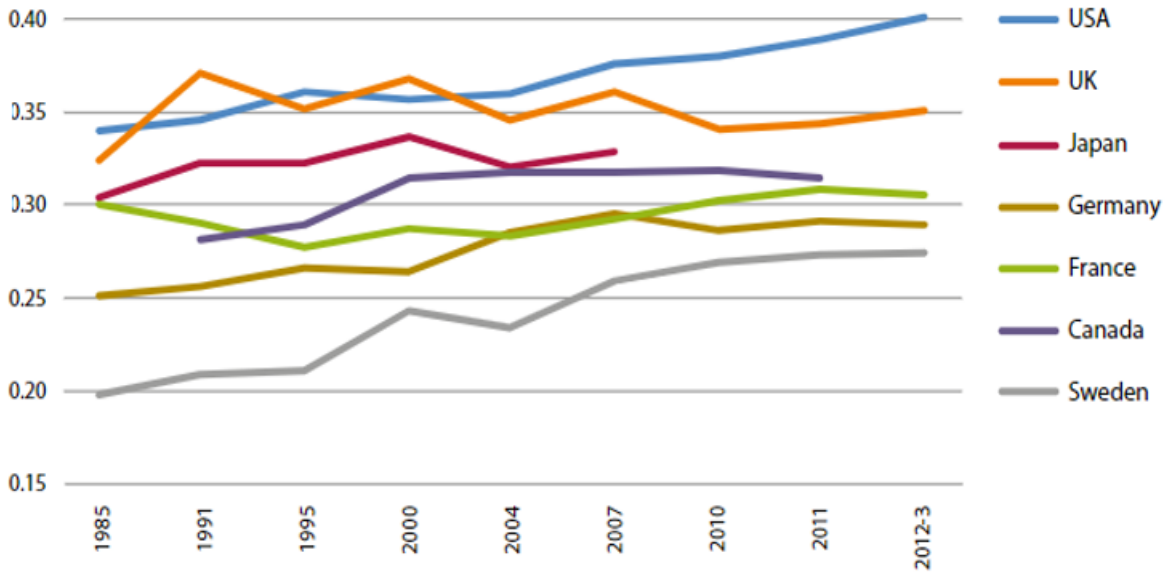
and 1993, Africa's total income inequality increased, while intra-country inequality decreased significantly but remained higher than the rest of the world (Nissanke and Thorbecke 2006). Besides that, Sub-Saharan Africa has the greatest disparity in consumption (Alvaredo and Gasparini 2015).

2.6.1 Inequality as a societal challenge

Inequality is seen as a reflection of the social divide between wealthy and poor people in a society. The main reasons for the FDI slowdown in the long run.

Inequality has been reintroduced to the global political agenda in the second decade of the twenty-first century, thanks to the 2008 economic crisis, the so-called "Arab spring," food protests in Mexico, and the Occupy movement. The reports about injustice are well-known, but they continue to be eye-catching. According to numerous reports, the wealthiest 1% of the global population held approximately half of all household income in 2015 (Crédit Suisse, 2015), and the richest sixty-two persons owned as much as the bottom half of humanity (Oxfam, 2016, between 1993 and 2014, the top 1% of Americans accounted for 55% of all growth in the country, and this trend is expected to continue (Saez, 2014). The recent rise in economic inequality seems to have begun in the 1980s and 1990s, when the neoliberal model took root in Western countries. Multinational corporations (mncs) cause production fragmentation, and it is predicted that FDI inflows would increase the gap between highly skilled and low-skilled jobs. This increased income gap leads to greater inequality across society

Figure 2 Evolution of Gini Coefficients in high income countries between 1985-2013



Source: OECD Income Distribution (retrieve 3 March 2019)

Inequality has deeper foundations and can be seen in all the states, continents, towns and city districts of a town on all levels. Inequality of income can be measured by at least 3 components: distribution of production factors, demand for these factors, and supply. The forces that drive income inequality are labor- or human capital, that is, the allocation of education and the returns on skills. Multinational corporations (MNE's) induce production fragmentation, and inflows of FDI are projected to exacerbate disparity between highly skilled and low-skilled jobs. As a result of the widening wage gap, society as a whole experience more inequality. Tsai backed up dependency theory by concluding that foreign direct investment (FDI) has resulted in unequal income distribution in East and Southeast Asian countries (Tsai 1995).

In developing countries, persistent poverty and injustice are growing challenges, and decreasing inequality and poverty is a top priority as well as a challenge. While poverty reduction is the first goal of the United Nations Millennium Development Goals, inequality has gained less coverage, despite the fact that it is a significant social problem around the world (Facundo Alvaredo 2015). The majority of economics research has largely concentrated on various dimensions and indices of economic disparity. A variety of tools are available for measuring income inequality, including the Lorenz curve, the Gini coefficient, percentile ratios, the Atkinson

Index and the Palma Index (Jansen, Wall,2016). However, the most famous indicator is the Gini coefficient (Morelli et al. 2015; Gilbert 2000). All of the other preceding research evaluated income inequality by analysis of national income distribution. But the most popular indicator of income inequity is the Gini coefficient. In his pioneer work, Simond Kuznets developed the connection between income distribution disparities and the country's economic development. He stated that as the world transitions from agriculture to industry, the degree of inequality rises due to the widening income gap between skilled and unskilled workers (Kwon, 2014). However, after a certain degree of prosperity has been reached, inequality begins to decrease as inflation spreads across the population. He clarified that the increased weight of the urban population causes more disparity as a result of rural-urban migration. Since per capita production in urban economic activities rises faster than in agriculture, the rural-urban income difference continues to widen during the process of economic growth (Jansen, Wall, 2016). As a result, as the economy grows, overall income inequality grows as well. Income inequality deepens during the early stages of industrialization, especially in older countries where the presence of industrialization destroys previous economic and social institutions. Although the initial period of industrialization and urbanization has passed, a variety of factors come into play, resulting in growth penetration into the lower income category and reduced inequality (Jansen, Wall, 2016). An inverted U-shaped curve was used to depict the relationship between economic prosperity and income inequality (Kuznets 1955).

Inequality seems to be a simple concept at first sight, but it is actually very complicated. For decades, inequality has been a major issue in society, but only recently, due in part to the rise of big data, has interest in the subject rediscovered (Akbaba, 2018). We should concern ourselves with inequalities from scientific interests to the search for justice for a series of causes. It is our responsibility, especially for economists, to think as effectively as possible about how we can spread income and other economical capital. Even so, there is a trade-off between wealth and productivity, and so social welfare is not always maximized as resources are redistributed (Salverda et al., 2009). Furthermore, Wilkinson (2011) highlights many negative social and health problems associated with high economic disparities in his TED Talk. It has been shown, for example, that countries with the highest income inequalities have higher crime rates, lower social mobility, and more health issues (Akbaba, 2018). As a result, it is essential to understand the concept of disparity before looking deeper into it more.

2.7 Forms of Inequality

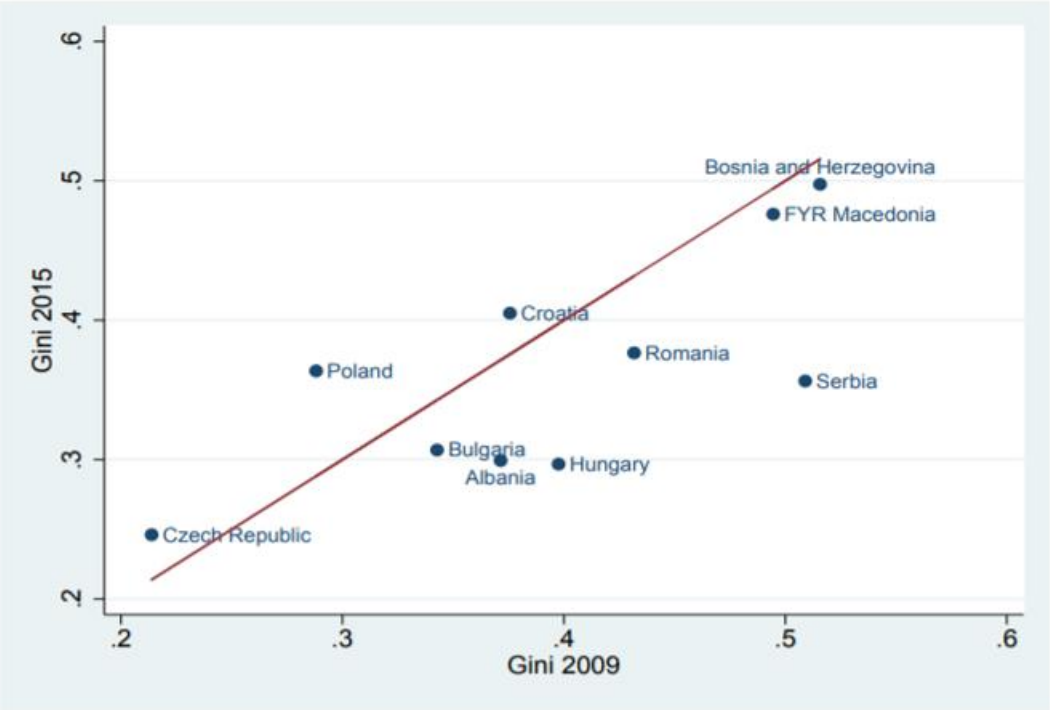
Study explores how multinationals through foreign direct investment impact on different forms of inequality which is considered a societal challenge. The categories of inequality that will be elaborated in this dissertation are as follows; economic inequality, income inequality, gender inequality and education inequality. In the following there are explanations for each form separately.

2.7.1 Income Inequality

Income inequality is a category of inequality defined as the unfair distribution of income in society (Faustino and Vali 2011; Firebaugh, G. 2003; OECD 2015). Foreign direct investment (FDI) is a key component of and measure of global economic integration (OECD 2008; Wall 2015). According to Wall, FDI is an investment by a corporation in one country that gives it control of a unit in another (Wall 2016) There are two different claims in the literature that explain the association between FDI and income inequality. The first is a neo-classical theory that FDI inflows in the receiving area reduce income inequality. According to dependence theory, the positive or adverse effect of FDI on income disparity is determined by the local factors of the host nation. The four main concepts in dependence theory used in literature to understand the FDI's impact on income inequality, particularly in developing countries, are absorptive capacity, human resources, technological diffusion, and institutional efficiency (Kaur, Wall, Fransen, 2016). The word "income" refers to the amount of money a family spends in a particular year. It comprises family incomes, self-employment, capital gains and public transfers; payroll taxes are deducted and social security contributions are paid. Such measures used to quantify income inequality include the Lorenz curve, Gini coefficient and percentile ratios, Atkinson index, and Palma index (Kaur, Wall, Fransen, 2016). Gini is the most commonly used measure (Morelli et al. 2015; Gilbert 2000). In the majority of earlier studies, income distribution among economies has been examined in order to measure income disparities. The Gini coefficient is however the most commonly used income inequality measure. In his pioneering work Simond Kuznets defined the connection between the inequality in distribution of income and economic development in the region. He concluded that the extent of inequality increases as the country moves from agriculture to the industrial economy

due to increasing wage disparities between the skilled and unskilled labor force (Kwon, 2014). However, with development, inequality starts to decline as the wealth spreads across society.

Figure 3 Country-level changes of Gini index between 2009-2015



Source: OeNB Euro Survey

2.7.2 Economic Inequality

Economic inequality is a consequence of multinational companies' activities. Foreign direct investment (FDI) as a share of GDP and trade balance (exports and imports) as a share of GDP are two factors that directly represent the amount of international business integration. The degree of income inequality between Least Developed Countries increased as these two variables have steadily increased in response to capital market liberalization during the last few decades.

2.7.3. Education Inequality

Education is a social institution that reflects and reproduces society's socioeconomic and cultural disadvantages (Bourdieu and Passeron, 1977). Students from low-income families are more likely

to attend schools with poor infrastructure, fewer qualified teachers, less ambitious peers, and inadequate pedagogical practices as compared to students from more wealthy regions (Antoninis, Delprato, Benavot, 2016). As a result, they are more likely to perform poorly academically. The positive effect of education on other development outcomes will be boosted if educational disparities were reduced. For instance, for a given degree of average education in the population, a more equal distribution of education has an additional impact on economic development (Antoninis, Delprato, Benavot, 2016). Education must be administered in an equal way in order to resolve the root causes of urban unrest. According to reports, increased educational inequality has also been linked to a higher risk of violence in low and middle-income countries (UNESCO, 2014). The Global Education Monitoring Report developed the World Inequality Database on Education (WIDE) to demonstrate educational inequality by using demographic and health surveys (DHS), multiple indicator cluster surveys (MICS), and national household surveys (Antoninis, Delprato, Benavot, 2016).

Table 3 Inequality in distribution of ears of schooling

HDI Rank	Country	2010	2011	2012	2013	2014	2015	2016	2017	2018
69	Albania	12.7	11.9	11.9	ll9	11.9	11.9	9.1	8.5	12.3
75	Bosnia. and Herzegovina	19.4	5.2	5.2	5.2	12.5	12.5	12.5	19.8	17
52	Montenegro	9.6	2.5	2.5	2.5	7.4	7.4	7.4	7.4	7.4
82	North 1acedonia	17.5	17.5	12.3	10.6	10.6	10.6	10.5	10.5	10.5
63	Serbia	11.1	9.9	9.9	10.7	8.1	8.1	9.3	8.1	8.1

Source: Author's calculation based on data from Household surveys estimated using the Atkinson inequality index (UNDP,2020).

2.7.4 Gender Inequality

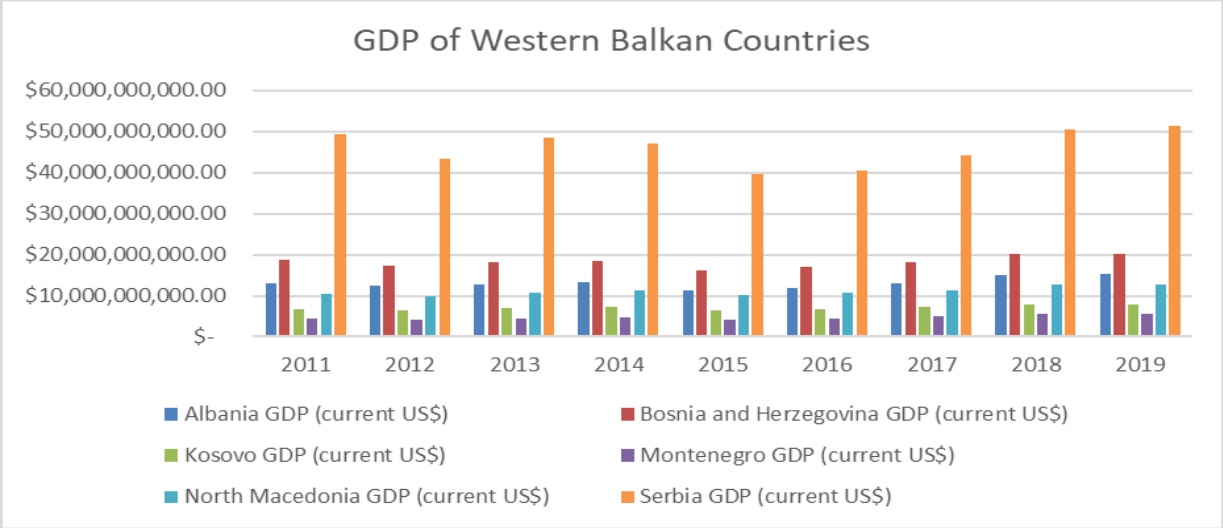
Gender inequity is a legal, social and cultural situation under which sex and/or sex have separate advantages, different dignities for men and women, leading to unfair access to, or the exercise of, rights and the performance of stereotyped cultural and social positions (European Commission, 2004). The GII is an inequality metric. It evaluates sexual inequalities in three fields of human development: reproductive wellbeing as evaluated by mother mortality ratio and youth birth rates; Empowerment, as calculated by the proportion of women in the parliament and the share of adult women and men 25 and older with a minimum number of secondary education; and economic status, as expressed in labor market participation, as determined by the labor force participation rate of female and male demographics aged 15 and over (PEFA).

3. Trends of FDI, GDP and trade openness in Western Balkan

In the past 25 years, Emerging Europe has experienced an important economic transition. The 'U-shaped' direction of economic performance, which has become a 'styled reality' for transition countries, has been encountered in most countries with initial drops in productivity and recovery in the second half of the 1990s (Sanfey and Cviic, 2010). However, the direction of change has been especially unstable in the western Balkans. The impacts of the transformation in the Western Balkans are often more painful and permanent, with a greater longing for the past than in other former communist areas (Koczan,2016). The transformation in Emerging Europe is linked to instability and fear about questions ranging from being afraid to lose one's work to not being able to afford higher bills.

It is impressive that more than half the people in the Western Balkans even in 2006 (upon years of fast growth and before a global crisis started to affect the region) believed that they were worse off than they were in 1989. Albanians tend to regard transition in a much more positive light, remembering the bleak economic conditions (IMF,2016) and oppressive political regime that prevailed up to the end of the 1980s (Sanfey and Cviić, 2010) Albanians appear to see the change in a much more optimistic way, with the dull economic and authoritarian political circumstances that existed until the end of the 1980s in mind (Sanfey and Civic 2010) A meager 11% felt it was easier. However, this should be taken with considerable care, considering data limitations and price and exchange rate fluctuations, real GDP per capita in Croatia and Kosovo doubled approximately between 1989 and 2006; in Albania, BiH and Montenegro it grew below 1.5-fold (if any) and in Serbia in 2006 it remained below its 1989 amount (International Monetary Fund, 2016).

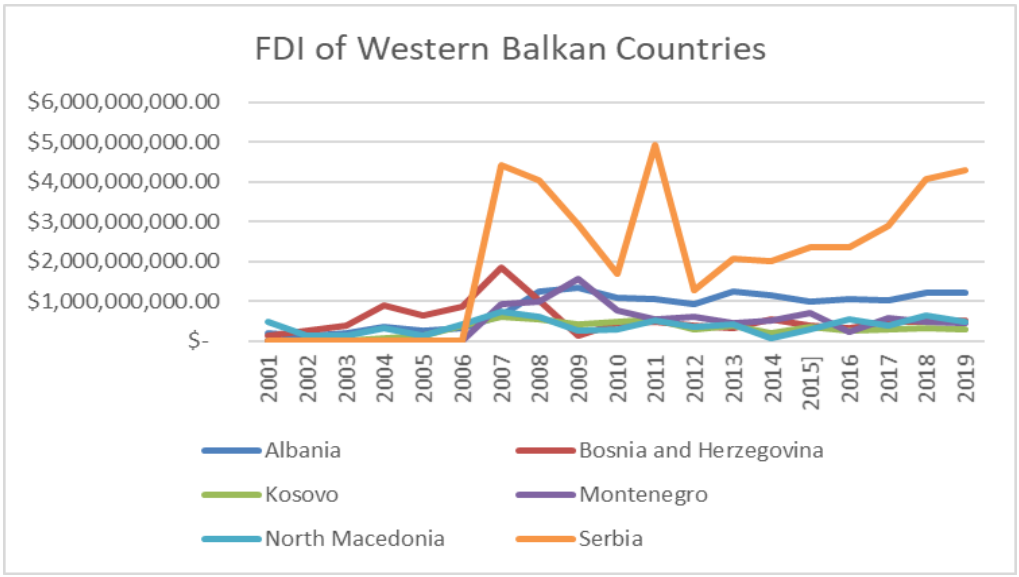
Table 4 GDP of Western Balkan Countries between 2011-2019



Source: Own calculation's based on World Bank WDI

The West Balkan countries started after the conflict-ridden 1990s to reconstruct and overhaul their economies comprehensively. They opened up to foreign trade. They became increasingly export-oriented and enlarged the position of the private sector; they abolished regulations which stifled business growth (International Monetary Fund, 2016). As a result of these interventions, strong economic development, substantial income and livelihood growth and improved macroeconomic stability have been achieved. The transition process started however in the middle of the 2000s and is incomplete (Murgasova et al., 2015).

Figure 4 FDI of Western Balkan countries between 2001-2019



Source: Author's calculation based on World Bank WDI

Countries formerly planned economies that move to market economies typically use various kinds of tax cuts and non-tax breaks to draw multinational firms to foreign resources (Andonova,2021). There are no exceptions to that in the West Balkans. For more than a decade, all of the Western Balkan countries have pursued policies aimed at attracting foreign investment through a variety of tax reductions, reliefs, and benefits (Andonova,2021). Complete or partial profit tax cuts, tax-holidays for employee benefits, discounted pensions, venture incentives, custom tax reliefs, and 'special' care in the provision of public utilities are all examples of this. Then there are regulatory and specially built departments, or other types of public bodies, as well as special economic zones, to encourage and appeal to developers (Andonova,2021). Since it is provided on a limited basis, the majority, if not all, of the assistance provided by public funding will be classified as state aid. The aid is almost entirely justified by the fact that it is directed at sustainable growth. It seems that these countries have been competing in the last decade to provide international investors with a better supply.

With a wide range of benefits and support initiatives by different fiscal and non-fiscal actions, the area of the Western Balkans has reported a strong investment support policy and especially foreign direct investment in over a decade (Kovachev, Velkovska, Garvanlieva,2020). Many are evident by the so-called "boom" of the development and opening of special economic zones (SEZ). State support was provided to consumers of these areas, mostly international businesses, both in terms of quantity and form with an opportunity cost as a direct cost and loss of profits. The WB region's countries are actually at various levels of European integration and have all signed a Stabilization and Association Agreement (SAA) with the European Union, though at different times. Through the signing of the Stabilization and Association Agreements (SAAs), which contain rules related to state assistance, including market rights, countries commit to achieving them within a specific timeline (Kovachev, Velkovska, Garvanlieva,2020). In 2006 the SAA was signed by Albania (in 2014 it received EU candidate status), in 2008 by Bosnia and Herzegovina, and in 2001 by North Macedonia (in 2005 it was granted EU candidate status, still awaiting the start of negotiations), in 2014 Kosovo signed SAA (EU facilitated dialog at a high level between Kosovo and Serbia but still not free movements with EU). In 2008 Serbia signed the SAA, and received EU candidacy status in 2012, as well as progress in talks. Serbia also

received the EU nominee status. A key requirement for EU accession is the SAA, which requires the implementation of a national management mechanism for state assistance. It comes under the SAA and the Central European Trade Convention (CEFTA), as well as under the Energy Community Treaty, to create state aid control structures.

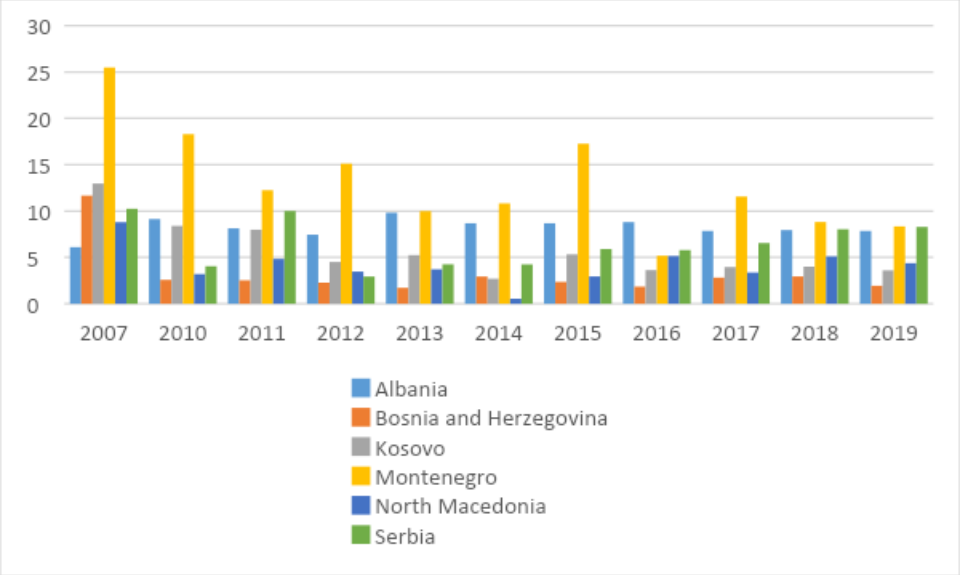
In the last decade, foreign investment policies in the WB region have been implemented through a variety of programs, measures, and forms, the most notable of which is the appearance of the FEZ, i.e. since the early 2000s, when laws on free economic zones were enacted in Montenegro in 2004, Serbia in 2006, Albania in 2007, and Bosnia and Herzegovina in 2009, Ever since, a large number of free zones have been developed and/or made operational: three in Albania, four in Bosnia and Herzegovina, fifteen in North Macedonia, three in Kosovo, one in Montenegro, and fourteen in Serbia (Kovachev, Velkovska, Garvanlieva,2020). Fiscal and non-fiscal incentives are used to give assistance, which is expressed in both financial and economic costs and rewards. The level of openness and capacity to execute the legislation in the region, as seen in the EU reports, also shows the strong likelihood that government assistance is higher than the amount of State aid registered but is somewhat contradictory to the rules for State aid to protect competition (Kovachev, Velkovska, Garvanlieva,2020). CEA's research of the costs and benefits of foreign investment in free zones clearly identifies the concern of non-transparency and lack of accountability, leaving a vague secret and incapable of clearly assessing the benefits of the aid granted and the extent to which the objectives of those policies are met - i.e. efficiency of public expenditure or the price of political funds and economic resources (Kostadinov, A. 2008).

3.1. Foreign Direct Investment in the WB Region

GDP per capita in Western Balkan countries is significantly different in comparison with the total GDP per capita in the EU, Montenegro has the highest GDP per capita in the WB countries, at 25%, relative to the EU average of 13%, and Kosovo has just 12%, indicating that integration to the EU average is slow. FDI inflows into the Western Balkans region have changed over the decades, with different trends at various periods, as well as variations between countries. In the second half of the 1990s, all of the region's countries experienced a slow inflow of FDI relative to GDP (Kovachev, Velkovska, Garvanlieva,2020). All countries in the region noted a substantial rise in FDI from the 2000 to the 2008 financial crisis, which in some countries resulted in decrease.

Following this time, trends stabilize, but with a steady average growth pattern. Montenegro had significantly higher rates in the 2008–2010 period than the regional average FDI inflow which amounted to several dozens of % of GDP (in 2009, 36.7 percent). In Albania, FDI is constantly valued at ~8 per cent to ~10 per cent per year in comparison to GDP. In the period 2007-2008, North Macedonia, had a large number of benefits / advantages to draw foreign investments (at least in terms of the number of benefits added since 2007), had a higher share of FDI, during which the average stabilized at about 2% to 3% of GDP (Kovachev, Velkovska, Garvanlieva,2020). During the same time line, Serbia (which also provides major benefits) receives at least double the annual share of FDI.

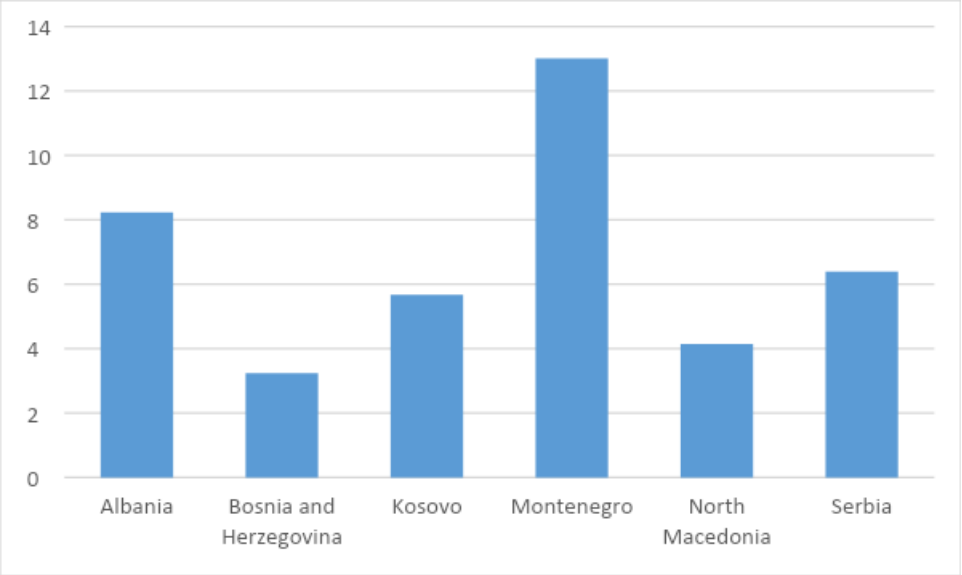
Figure 5 FDI ,Net inflows (%of GDP) in Western Balkan between 2007-2019



Source: Author's calculation based on World Bank WDI

Based on the table above we can summarize that Montenegro wins the biggest pie of investors with average value of FDI, net inflows as percentage of GDP 13.03 between 2007 to 2019, Albania is the next country which attracted highest part of investors between Western Balkan countries with average values of FDI, net inflow expressed as percentage of GDP 8.23, in the third place is Serbia with average value 6.39 between 2007 to 2019, the next one is Kosovo with average value 5.67 prior the last one is North Macedonia with average value of 4.14 and the last one is Bosnia and Herzegovina with average value 3.24.

Figure 6 Average Value of FDI in Western Balkan countries



Source: Author's calculation based on World Bank WDI

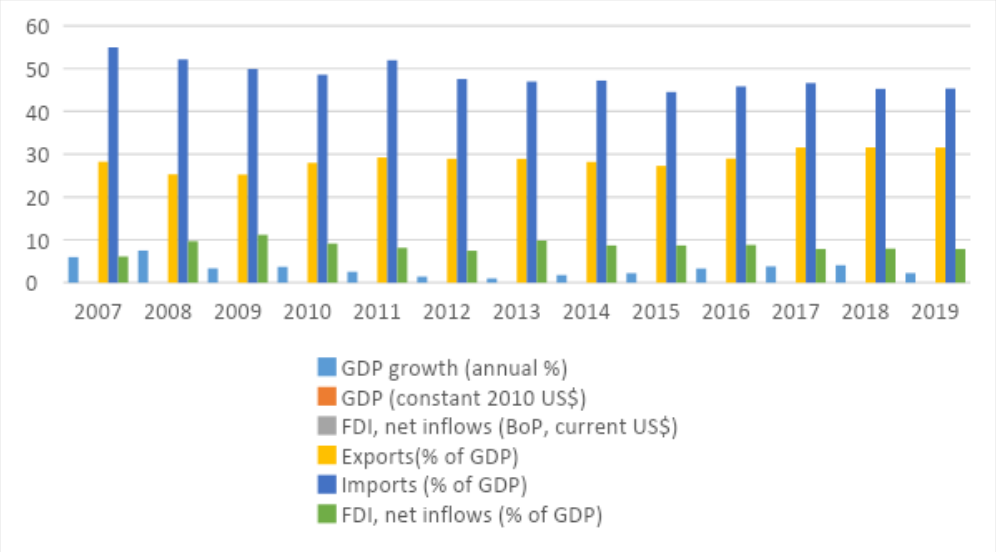
3.2 Trends of FDI, GDP and Trade openness in Albania

The Albanian economy performed poorly and inefficiently under the communist rule. At this time, the economic system was centralized and closed, which meant that they couldn't export or import any capital, goods, or innovative technology in order to increase the country's production and efficiency in satisfying the needs for goods and services. Simplifying, they were isolated and relying entirely on their own forces, which changed with time. This status began to change when the Communist rule was over in 1990, when Albania changed ideology of leading and directing the government. The democracy and the free open trade economy established in this era in Albania led to a very positive move in the economy of Albania and to a new stage of evolution for the economy of Albania, as Albania was now a developed nation that tried to enter a new process for improving its wellbeing and prosperity (Turan, G., & Seni, D. ,2014).

Albania has undergone many social and economic reforms since switching from a centralized to a democratic economic structure in the early 1990s (Berhani, Hysa,2013). During this transitional period, Albania confronted significant issues such as enforcing all required reforms for the stabilization, liberalization, privatization, and incorporation of its economy into global and regional economic trends (Berhani, R., & Hysa, E. ,2014). Albania survived the initial waves of the global financial crisis, but the crisis's disruptive consequences triggered a major economic recession (Moody's Analytics). Albania's economy has slowly grown since 2014, with

growth reaching 3.8 percent in 2017. However, Albania is vulnerable to the spillover impact of potential debt problems and poor development in the eurozone due to strong trade, remittance, and banking sector links with Greece and Italy (IMF, 2017).

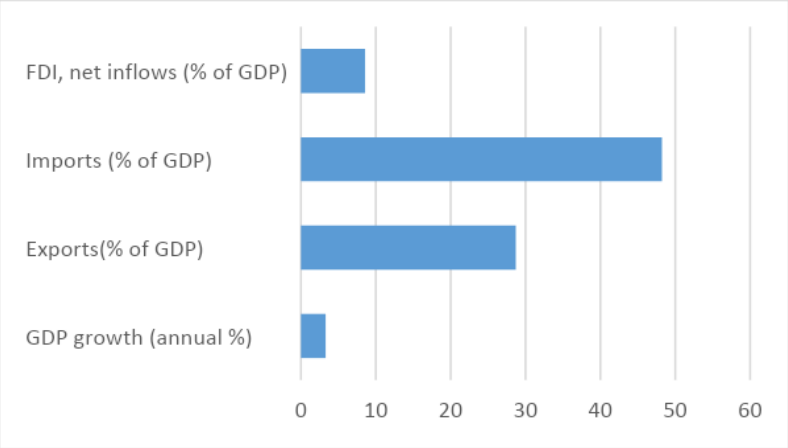
Figure 7 Trends of GDP growth,FDi and Trade Openness in Albania between 2007-2019



Source: Author's calculation based on World Bank WDI

Based on the graph below in brief we can state that the average inhabitants of Albania between 2007 to 2019 are 2.89mil, while average GDP growth is constant 3.3, or the average value of GDP in constant USD is 12.6 billion, the average FDI in net inflow expressed as BOP, current USD 1.08 billion or 8.57 expressed as % of GDP, Exports takes much less than import, the average value of 28.70 expressed as % of GDP, while Imports average value of 48.22 expressed as % of GDP.

Figure 8 Average value of GDP growth, FDI and Trade openness in Albania



Source: Author's calculation based on World Bank WDI

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3.2.1 Actions to Promote Investment

In the use of state assistance, Albania's Law on International Investments treats domestic and foreign investors equally. The Albanian Investment Development Agency (AIDA) - Agjencia Shqiptare e Zhvillimit të Investimeve, which is responsible for promoting investment in Albania, has compiled a number of concrete steps to encourage it: Benefit tax of 8% if profits are paid as dividends, and 0% if the company's revenue is less than 8 million leks (65,000 euros). The general income tax rate is 15 percent; the personal income tax of 0 percent is the minimum wage established by law, at the gross wage of 26 000 LEK (210 euro). 13% on gross salaries between LEK 26,000 and LEK 150,000 (EUR 210 and EUR 1,210); and 23% on gross salaries above 150,000 LEK (EUR 1,210); 0% value added tax on products from a separate list of Council of Ministers and 6 and 10% preferential tax on these kind of products (the general VAT rate is 20 percent) Use of AIDA Funds for businesses of competitiveness, creativity, innovation and launch; Investment stimulus by deferred tax payments for up to 12 months (e.g. if the investment lasts longer and is exactly subject to those regulations defined by the Ministry of Finance and Economy).

Except in particular situations specified by statute and in the public interest, foreign investments are protected from overt or indirect acts of expropriation or nationalization. The right

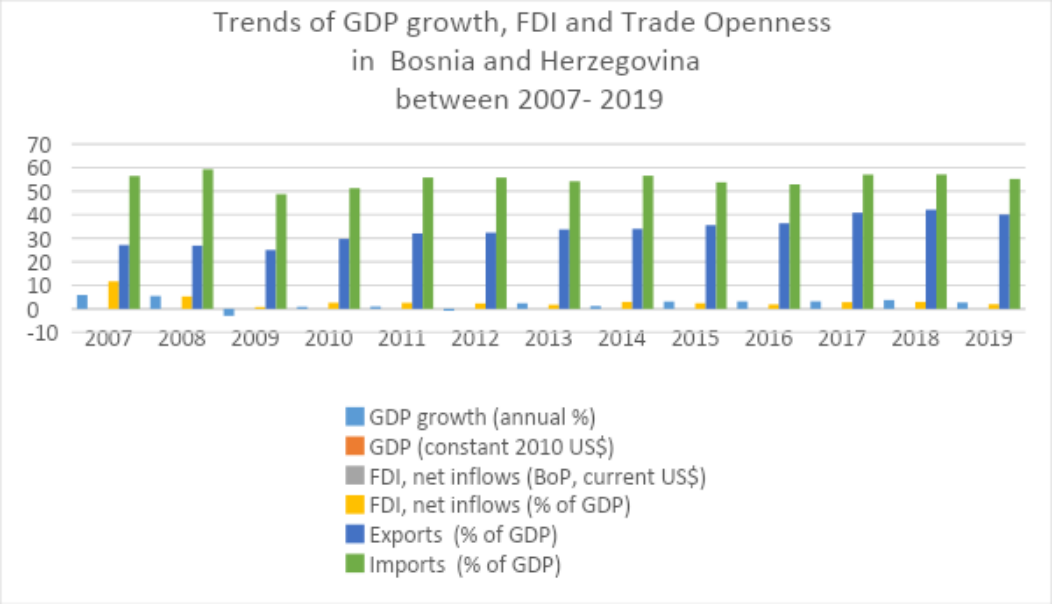
of international investors to return revenue and assets; Legal defense of foreign investors with respect to their investments' legal rights; Positive discrimination against foreign investors – The Government shall offer financial assistance to foreign investors with third parties in civil proceedings through resolution of the Council of Ministers; The property could be owned by foreign investor firms; Customs duty exception - for emigrants who have stayed in another country for at least 12 months and are returning to Albania.

3.3 Trends of FDI, GDP and Trade openness in Bosnia and Herzegovina

Bosnia and Herzegovina is experiencing a transitional economy with minimal market changes. Metals, power, textiles and furniture as well as foreign assistance are important factors of economic importance. A very fragmented government hampers cohesion and restructuring of economic policy while excessive regulation and segmented markets hinder foreign investment. Economy in the region were amongst the least productive. In Bosnia-Herzegovina, the interethnic wars caused the output to collapse by 80 percent between 1992 and 1995 and increased unemployment, but the economy progressed toward the 2008 economic downturn. Bosnia and Herzegovina has been experiencing positive economic growth since 2013, with heavy floods hampering the rebound in 2014. In September 2007, Bosnia and Herzegovina entered into the Central European Free Trade Agreement in full. The private sector in Bosnia and Herzegovina grew steadily, but after 2007 foreign investment fell sharply and has continued to be poor.

The largest economic concern for BiH is its disparity in the economic model: the public policies and the promotion of benefits have concentrated towards the public rather than the private sector.In order to help dynamic small and medium-sized enterprises and the development of major businesses, the country has to move into a corporate context that promotes private investment, improves export efficiency and competitiveness and creates high need for private-sector jobs.In addition, the nation must maintain the viability and inclusivity of potential development when resolving those inequalities in an economic paradigm (World.Bank,2019).

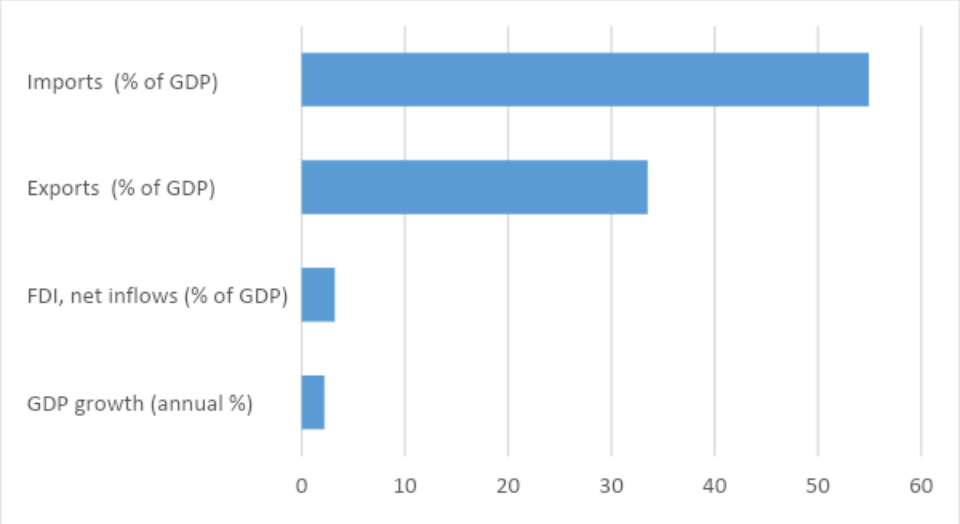
Figure 9 Trends of GDP growth, FDI and Trade Openness in Bosnia and Herzegovina between 2007-2019



Source: Author's calculation based on World Bank WDI

Based on the graph below in brief we can state that the average inhabitants of Bosnia and Herzegovina between 2007 to 2019 are 3.52mil, while average GDP growth is constant 2.2, or the average value of GDP in constant USD is 18.1 billion, the average FDI in net inflow expressed as BOP, current USD 561million or 3.21 expressed as % of GDP, Exports takes much less than import, the average value of 33.51 expressed as % of GDP, while Imports average value of 54.94 expressed as % of GDP.

Figure 10 Average value of Trends of GDP growth, FDI and Trade Openness in BIH between 2007-2019



Source: Author's calculation based on World Bank WDI

3.3.1 Actions to Promote Investment

The state assistance policies in terms of attracting foreign direct investments vary from the central to the program level due to the unique state governance structure (Kovachev, Velkovska, Garvanlieva,2020). The Law on Foreign Direct Investment Policies of BiH, the Law on International Investments of the Federation of BiH, and the Law on Foreign Investments in Republika Srpska both treat foreign and domestic legal persons in the same way when it comes to the use of state assistance. In order to encourage investment, the Foreign Investment Promotion Agency in Bosnia and Herzegovina (FIPA) - a central State investment attraction agency, sets the special State assistance policies General policies applicable to the whole BiH Territories are: territorial treatment to international investors; opening an account in every foreign currency in a domestic business bank; Free foreign national jobs, unless the legislation provides for otherwise (Kovachev, Velkovska, Garvanlieva,2020). Preservation from nationalization, usurpation and request, except for public interests and payment to the fair market; Treatment for domestic property ownership; l Unrestricted repatriation of operating earnings. Customs and tax deduction on equipment purchases with the exception of passenger cars and vending equipment and games of chance (exemption from VAT on imported products, use of public goods with preferential compensation, etc.). Policies applicable only to the territories of the Federation of BiH shall be: l Exemption from 30 percent profit-tax where reinvesting of manufacturing equipment is at least 50% of the existing profit value; Exclusion from 50 per cent of the earning tax for all years, where

re-investments in equipment have occurred over five years, for a gross amount of 20 million KM (10 million euros), where minimum 4 million KM (2 million euros) in the first year Policies that extend only to the territories of Republika Srpska include: Deduction of the benefit tax base for the valuation of each project planned for the purchase of machinery and real estate in relation to manufacturing activities; Reduction of the tax base in the amount of personal income tax and contributions for employers that create at least 30 new job opportunities per year; Subsidies for jobs for projects with a minimal investment of 2 million KM (1 million euros) and at least 30 new jobs in the amounts of 3,500 KM (1,750 euros) per worker in developed and moderate developed units, and 5,000 KM (2,500 euros) per worker in poorly developed and particularly undeveloped local self-government units Financial assistance of 15% of the investment valuation for projects of more than 25 million KM (12.5 million euros) and creating at least 100 new job opportunities, based on the extent of growth of the region in which they invest. Policies that apply only to the territory of Brcko District are: Company fee exemption; Reimbursement of court costs for registration of newly established enterprises (Kovachev, Velkovska, Garvanlieva,2020).

Reimbursement of utility costs; Reimbursement of construction permit costs and approvals; Reimbursement of costs in the amount of the difference between the cost of utilities paid by the company and the price paid by households; Reimbursement of paid employment contributions for newly employed persons; Remuneration in case of maternity leave in the amount of 100%; l Stimulation for the employer in the amount of 50% of the total health insurance duties for newly employed persons (Kovachev, Velkovska, Garvanlieva,2020).; Policy applicable to the Brcko area only is: l Business fee deduction; l refunds for legal expenses for newly-established companies;

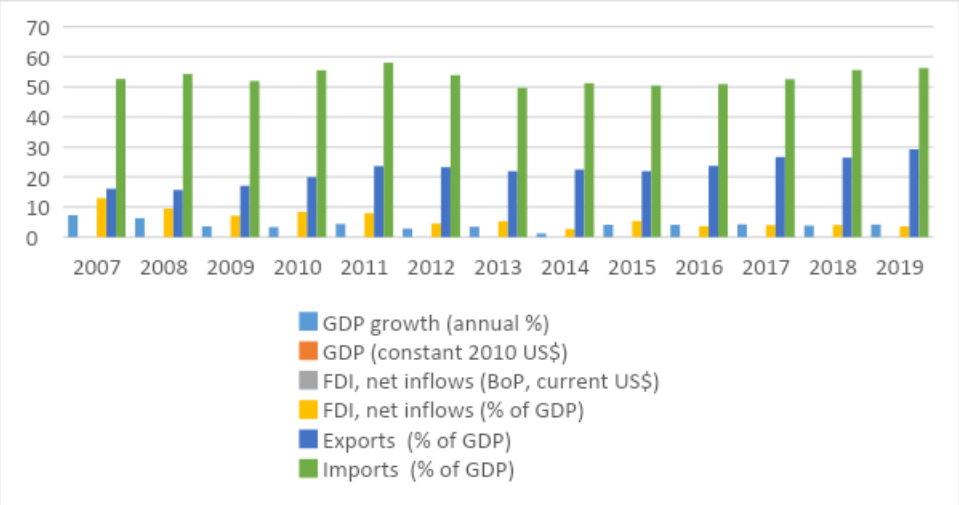
3.4 Trends of FDI, GDP and Trade openness in Kosovo

Kosovo's economy has developed steadily since the war ended in 1999. It is also one of the four European countries to have maintained consistent positive growth rates after the financial crisis (2008-2012). Thanks to its modest economic penetration into the world economy, a stable flow of remittances from the diaspora and donation aid, and a generally pro-growth budget (Trade Club), the country was able to survive the crisis that afflicted the rest of Europe. During the period 2009-2019, the country's GDP increased by an average of 3.5 percent.

Kosovo's economy has outperformed most of its neighbors thanks to conservative fiscal and financial reforms, with the state's public debt-to-GDP ratios among the lowest in the region (estimated at 17.6 percent of GDP in 2019 - IMF). Kosovo imports almost all manufactured goods, resulting in a systemic trade imbalance and a failure to improve its export industry's attractiveness in recent years. As a result, Kosovo's foreign exchange reserves are smaller than the rest of the region, but the IMF claims they still are sufficient (Trade Club). Kosovo, like Montenegro, has a euro-based economy and a strong financial market dominated by banking operations. Financial development proceeds, with banks sufficiently capitalized and profitable.

Although Kosovo's economy has progressed, further changes and improvements are needed if the country is to achieve the amount of growth necessary to minimize unemployment and dramatically increase living standards. In reality, Kosovo's unemployment rate was forecast to be 25.7 percent in 2019 (one of the highest in Southeast Europe, according to the IMF), and the country is Europe's third poorest, with approximately one-third of the population living in poverty (IMF, 2019).

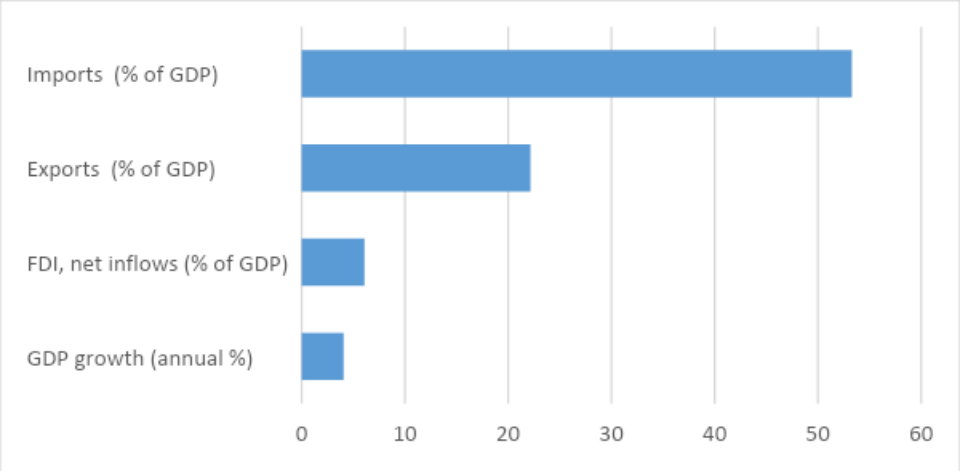
Figure 11 Trends of GDP growth, FDI and Trade Openness in Kosovo between 2007-2019



Source: Author's calculation based on World Bank WDI

According to the graph below, the average population of Kosovo from 2007 to 2019 is 1.754 million. While average GDP growth is constant 4.06 %, or the average value of GDP in constant USD is 6.498 billion, the average FDI in net inflow expressed as BOP, current USD 377 million or 6.08 expressed as % of GDP, Exports takes much less than import, the average value of 22.16 expressed as % of GDP, while Imports average value of 53.29 expressed as % of GDP.

Figure 12 Average value of trends of GDP growth, FDI and Trade Openness in Kosovo between 2007-2019



Source: Author's calculation based on World Bank WDI

3.4.1. Actions to Promote Investment

Kosovo's foreign investment law ensures that domestic and foreign companies get fair care by using state assistance. KIESA as a government agency for investment promotion, lists such steps to encourage them: A flat income tax payable quarterly; Taxpayers with income below EUR 50,000 can elect to impose a tax of 10 percent on their actual or presumed basis of tax; The income tax on dividends shall be 0 percent; organization losses can be passed in 7 years; profit tax paid overseas by citizens shall be allowed up to the limit of tax liability in Kosovo (Kovachev, Velkovska, Garvanlieva,2020). The tax rate on personal income is scalable; 0% for salaries up to EUR 960 per year, 4% for salaries between EUR 961 and EUR 3000 per year, 8% for earnings between EUR 3001 and EUR 5400 per year and 10% for wages up to EUR 5 400 per year; Subsidy for each new worker to keep himself in employment for more than 1 year.

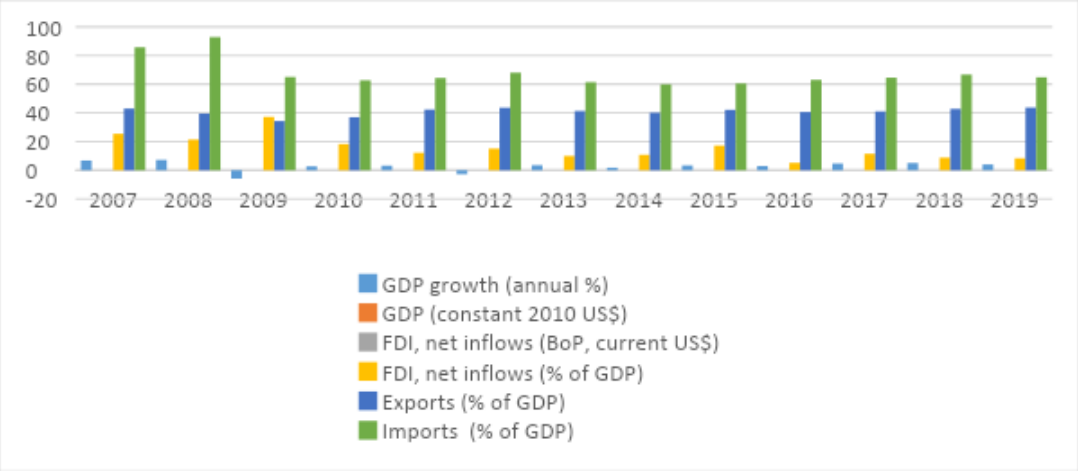
3.5 Trends of FDI, GDP and Trade openness in Montenegro

The economy of Montenegro has moved towards a system of the market. As of 2015, about 90% of Montenegrin state-owned enterprises, including 100% banking, telecommunications and oil distribution, have been privatized (Moody's Analytics). Approximately 20 percent of the GDP of Montenegro is represented by Tourism, which attracts 3 times as many tourists per year as the

population of Montenegro. Numerous new luxury tourist facilities are under construction along the coast, with a majority of them offering packages that include local boating and yachting facilities. Energy and agriculture, in addition to tourism, are considered two distinct pillars of the economy.

Despite not being an official member of the euro zone, Montenegro uses the euro as its domestic currency (Moody's Analytics). To stay competitive and open the market to foreign investment, the government understands the need to eliminate barriers. Russia, Italy, Cyprus, Denmark, Hungary, and Serbia are the top foreign investors in Montenegro. Thanks to a low corporate tax rate, net foreign direct investment achieved $755 million in 2016, and investment per capita is among the best in Europe (Moody's Analytics). Montenegro plans to revise and expand the air transit infrastructure by substantial redesign of its road and rail networks (IMF, 2019).

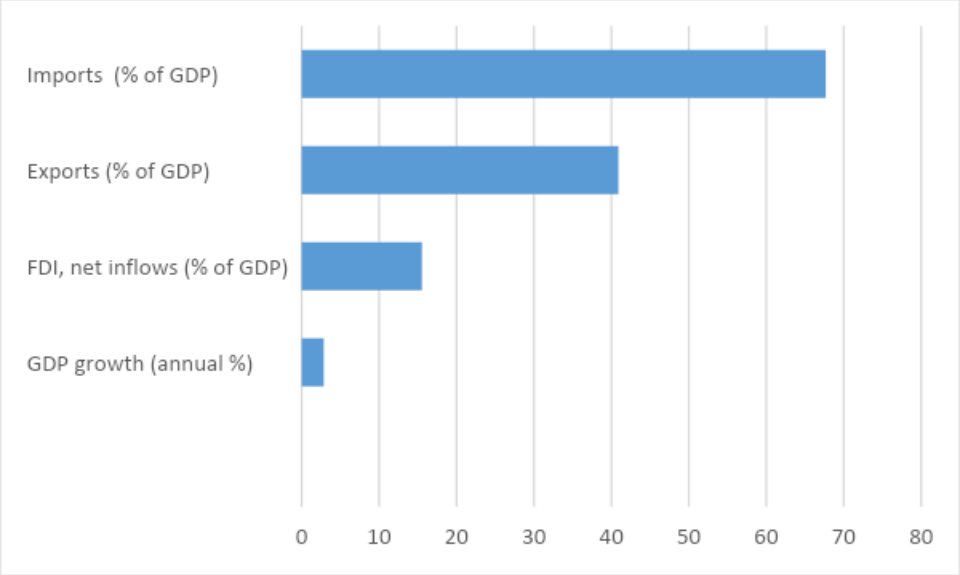
Figure 13 Trends of GDP growth, FDI and Trade Openness in Montenegro between 2007-2019



Source: Author's calculation based on World Bank WDI

In brief, the graph below, the average population of Montenegro from 2007 to 2019 is 620,420. While average GDP growth is constant 2.85 %, or the average value of GDP in constant USD is 4.47 billion, the average FDI in net inflow expressed as BOP, current USD 675 million or 15.53 expressed as % of GDP, Exports average value is 40.90 expressed as % of GDP, while Imports average value of 67.68 expressed as % of GDP.

Figure 14 Average value of Trends of GDP growth ,FDI and Trade Openness in Montenegro between 2007-2019



Source: Author's calculation based on World Bank WDI

3.5.1. Actions to Promote Investment

The main initiatives and state assistance programs to encourage investment in Montenegro are: competitive taxation (9% benefit tax; 9% PIT for income up to EUR 720 and 15% PIT for income over EUR 720; 3% tax rates of VAT – 0% – 7% and 19%); l Newly hired job subsidies (between EUR 3,000 and EUR 10,000 per new worker. The ranking is carried out in accordance with the quantity, industry, export impact, technical growth, climate and regional development of the investment, i.e, (investor references and coordination with domestic legal entities);

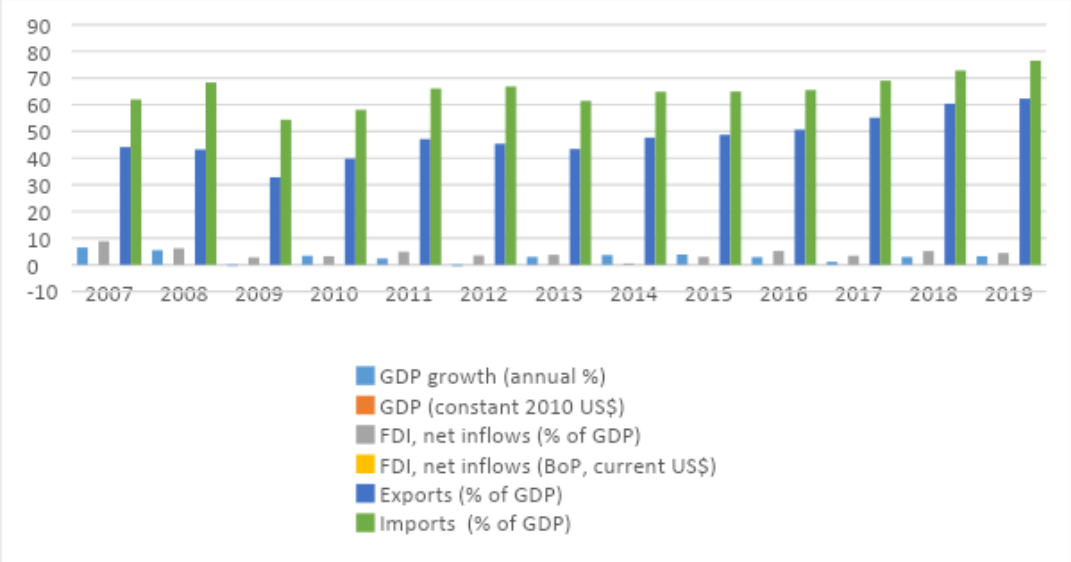
Without undertaking a scoring process, funds are distributed in the sum of 17% of the value of the investment proposal for capital projects of more than 10 million euros that have at least 50 employments; Benefits from the "Port Bar" free economic zone (exempt from VAT, profit tax, and customs duties; exempt from customs control; preferential care in response to fees for organizing construction property; use of land and buildings on long-term leases on fixed terms).

3.6 Trends of FDI, GDP and Trade openness in North Macedonia

Macedonia has advanced in liberalizing its economy and strengthening its economic climate since its independence in 1991. Its low tax rates and its open trade areas have attracted foreign investment, which remains low in comparison with the rest of Europe (Index Mundi). There are important issues with corruption and the poor rule of law. Some companies complain about uncertainty and unfair law enforcement.

The economy of Macedonia, as the export and investment client, is closely connected with Europe and suffered from a persistent Eurozone weakness. While the level of unemployment is steadily high at approximately 23%, it could be exaggerated on the basis of a large grey market projected to be between 20% and 45% of GDP that is not covered by official statistics. By carefully conducting monetary policy that maintains the domestic currency attached to the euro and inflation at a low degree, Macedonia retained macroeconomic stability throughout the global financial crisis. The internal political crisis has, however, hindered economic performance in the past two years with slowed GDP growth in 2016 and 2017 and falling both domestic private and public spending. The fiscal policies were weak and unproductive, including subsidies and pension rises, as well as increasing loan guarantees for state-owned companies and continually lacking fiscal goals (Index Mundi). In 2017, government debt was still comparatively low, with about 47 percent of GDP, compared with neighboring Western Balkans and the rest of Europe (IMF,2019).

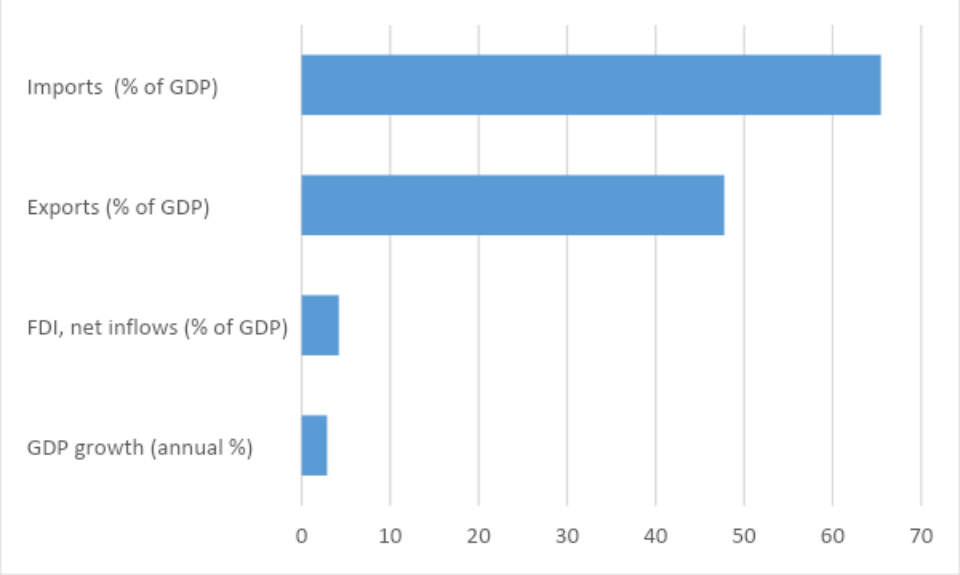
Figure 15 Trends of GDP growth, FDI and Trade Openness in North Macedonia between 2007-2019



Source: Author's calculation based on World Bank WDI

Based on the graph below, the average population of North Macedonia between 2007 to 2019 is 2 million inhabitants. While average GDP growth is constant 2.87 %, or the average value of GDP in constant USD is 10 billion, the average FDI in net inflow expressed as BOP, current USD 433 million or 4.19 expressed as % of GDP, Exports average value is 47.75 expressed as % of GDP, while Imports average value of 65.45 expressed as % of GDP.

Figure 16 Average value of Trends of GDP growth, FDI and Trade Openness in North Macedonia between 2007-2019



Source: Author's calculation based on World Bank WDI

3.6.1 Actions to Promote Investment

North Macedonia's constitution and legislation handle domestic and international investors equally when it comes to using state assistance. The Agency for Foreign Investments and Export Promotion of the Republic of North Macedonia the Directorate for Technological Industrial Development Zones - an institution inside the Government that oversees the integration of administrative affairs in all industrial zones in the region - are the institutions directly responsible for attracting investment. Within the Ministry of Economy, the Government participates in this process along with the minister who does not have a portfolio in charge of drawing foreign direct investment (Kovachev, Velkovska, Garvanlieva,2020). When the Agency for Foreign Investments

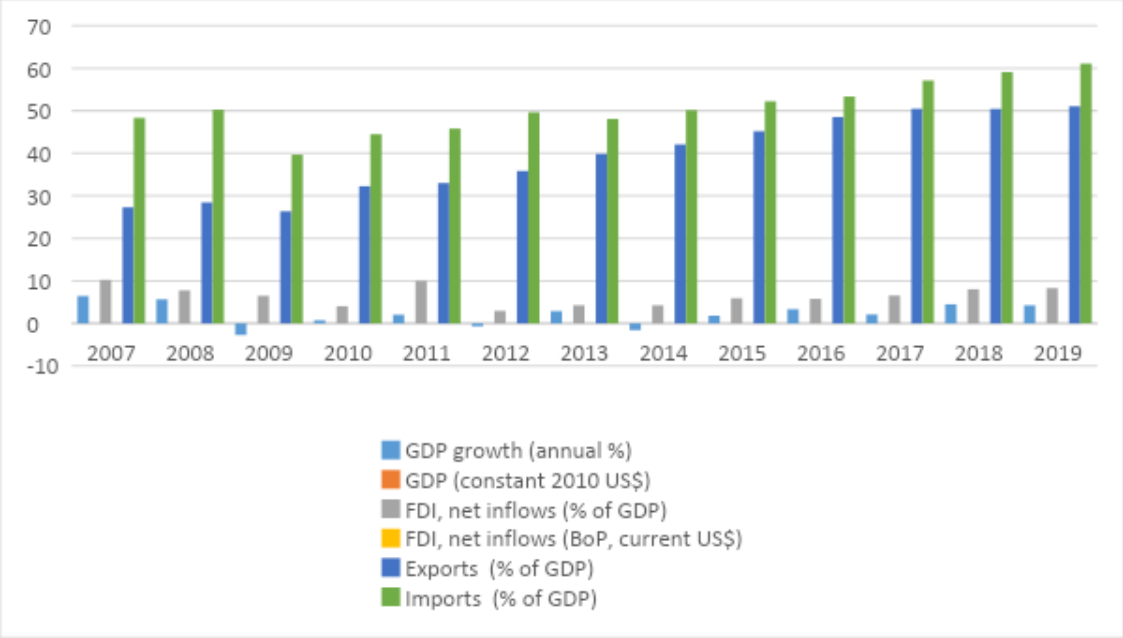
and Export Promotion receives state assistance, on behalf of the government the investment agency signs the agreement with the investor (FEZ). State subsidies for investment attraction in Northern Makedonia have key policies and initiatives as follows, 10% flat tax (with few exceptions given under legislation); 0% earnings before tax reinvestment; Financial assistance for new jobs (20% of the new fully net salary charged, if the net salary is at least 50% of the net wage offered by law); Financial support to set up and promote collaboration with RNM registered suppliers (1 percent of the value of the total performed procurements, provided that 15 percent of the total production input in the previous year is performed by suppliers registered in RNM; Financial assistance in setting up technological and professional operational forms (up to 50% of overall cost-justified for industrial research); Financial assistance to investment programs with substantial economic significance (grants from 2.000 and 4.000 Euro/worker; funds up to 10% of the investment obtained and not more than 1 million euro; tax and personal income exemption; In infrastructure projects up to 50% of total justified investment costs of €5 million; in investment projects up to 25% of total justified investment costs of €50 million to €100 million; in investment projects up to 17% of total, justified investment cost of over €100 million;); Financial assistance for capital and sales growth (10%, but not more than 1 million euros, of the investment realized); Financial assistance in buying material assets from troubled companies (10% of the acquisition expense of the company's material assets under bankruptcy or liquidation, but not more than EUR 1 million); l Funding assistance for businesses to improve their market competitiveness (10 percent but not more than €1 million per year of justified investment costs).

3.7 Trends of FDI, GDP and Trade openness in Serbia

Serbia has a transitory economy dominated overwhelmingly by market powers, although in some places the state sector continues to be significant. The economy is dominated mainly by foreign investment and production and exports. The economy was worse off than in 1990, as were the MILOSEVIC- era of economic mismanagement, prolonged foreign economic sanctions, civil war, and disruption to infrastructure and industry during NATO airstrikes in 1999 (Index Mundi). Serbia's GDP in 2015 was 27.5% below 1989's level. Serbia has made strides in trade liberalization, enterprise reform, and privatization, but several major businesses remain state-owned, including power plants, telecommunications companies, natural gas companies, and

others. Although unemployment in Serbia is comparatively low (16 percent in 2017) in comparison to its Balkan neighbors, it remains substantially higher than the European average (Index Mundi). Serbia is gradually introducing systemic economic changes that are needed to ensure the country's long-term stability. In 2017, Serbia cut its fiscal deficit to 1.7 percent of GDP and its public debt to 71% of GDP (Index Mundi). Around 2008 and 2015, the national debt more than doubled. Serbia's inflation and exchange-rate issues prohibit the use of monetary expansion (IMF, 2019).

Figure 17 Trends of GDP growth, FDI and Trade Openness in Serbia between 2007-2019

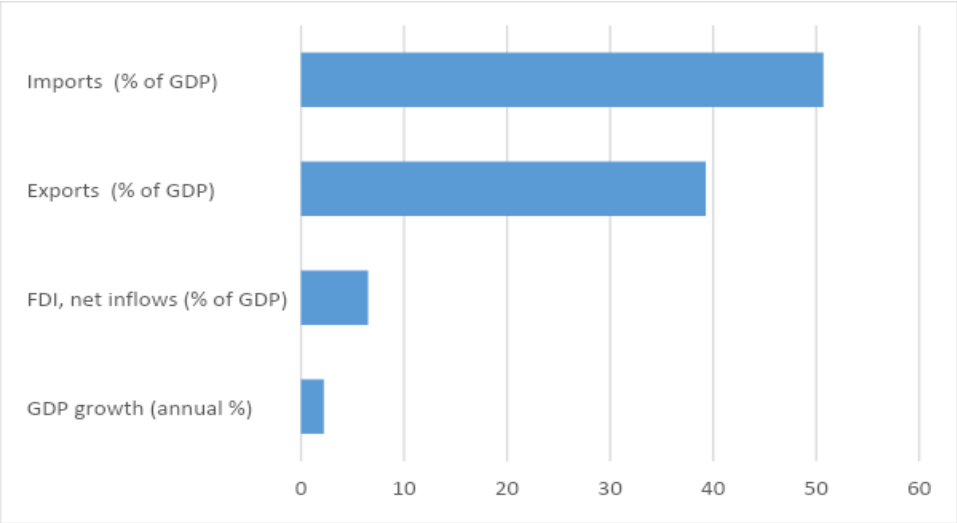


Source: Author's calculation based on World Bank WDI

Based on the graph below, the average population of Serbia between 2007 to 2019 is 7.2 million inhabitants. While average GDP growth is constant 2.21 %, or the average value of GDP in constant USD is 44 billion, the average FDI in net inflow expressed as BOP, current USD 3 billion

or 6.51 expressed as % of GDP, Exports average value is 39.29 expressed as % of GDP, while Imports average value of 50.70 expressed as % of GDP

Figure 18 Average value of Trends of GDP growth, FDI and Trade Openness in Serbia between 2007-2019



Source: Author's calculation based on World Bank WDI

3.7.1 Actions to Promote investment

In Serbia, the Constitution and legislation offer domestic and foreign investors fair rights in the use of state assistance. Institutions that specifically attract investments are: The Serbian Development Agency (DAS), the Department of Finance and Economy which carries out the administration of state relations in the field of free regions, and the Directorate of Free Zones. Development Agency of the Republic of Serbia, Development Agency of Serbia and DAS.

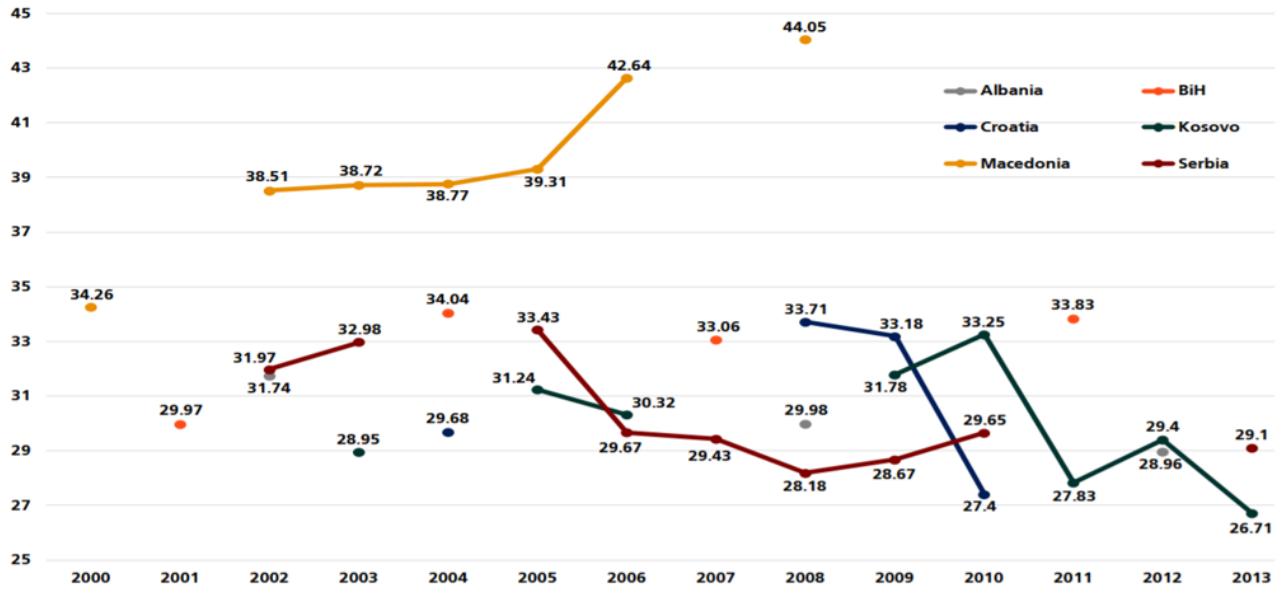
State assistance strategies and initiatives for investment in Serbia are as follows: Financial assistance for current workers (20% to 40% of justified gross wage costs for a two-year period), The amount of investments and the level of growth of the area in which they are invested, depending on the sector); Financial assistance for jobs that have already recently been created (between EUR 3,000 and EUR 7,000 for every job created, dependent on the production sector, investment volume, investment level of the business area in which investment was produced, and the number of jobs that have been freshly created); Financial assistance to procure physical and intellectual investments to be made over time for the project (minimum investment amounts shall

be between EUR 100 000 and EUR 20 000 000 and 5 to 30 percent of legitimate investment costs, depending on the importance of development investment, manufacturing sector Financial assistance for greenfield and brownfield investment related to foreign trade; l State subsidy for the conversion of building land (in case of investment of domestic or municipal properties, selling of land at lower prices than market value); Earning tax exemption for a period of 10 years (for businessmen employing 100 people over 1 billion dinars ,sample 8.5 million euro); Earning tax deduction for a period of 5 years (for specially designated investments within the developing areas); Company losses can be transferred for up to 5 years; Business losses can be maintained for up to five years; l Use of free economic zone benefits (exempt from VAT, customs duties, other taxes and contributions; free flow of capital; quick and easy one-stop-shop administration; exemption from payment of some local fees and charges; use of transportation services, air freight, insurance, and other associated services at pre-negotiated rates).

3.8 Income Inequality in The Western Balkan

In Southeast Europe, income inequality is high, posing a major challenge to economic stability, social well-being, and democracy. Labor markets are a significant source of inequity in the region. Unemployment and inactivity, as well as insecure and informal employment, all contribute to income disparity. Income disparity is among the highest in Europe in Southeast Europe (SEE), an area experiencing difficult economic and political transformations. Given that measures of inequalities are based on various data outlets, there are also difficulties with data standardization in the field. The European Union Statistics on Income and Living Conditions (EU-SILC) surveys, which collect detailed information on incomes, living conditions, and labor market patterns, are only possible for Croatia, Macedonia, and Serbia, whereas other surveys, such as living standards measurement surveys (LSMS) or household budget surveys (HBS) (Friedrich Ebert Stiftung, 2018), where

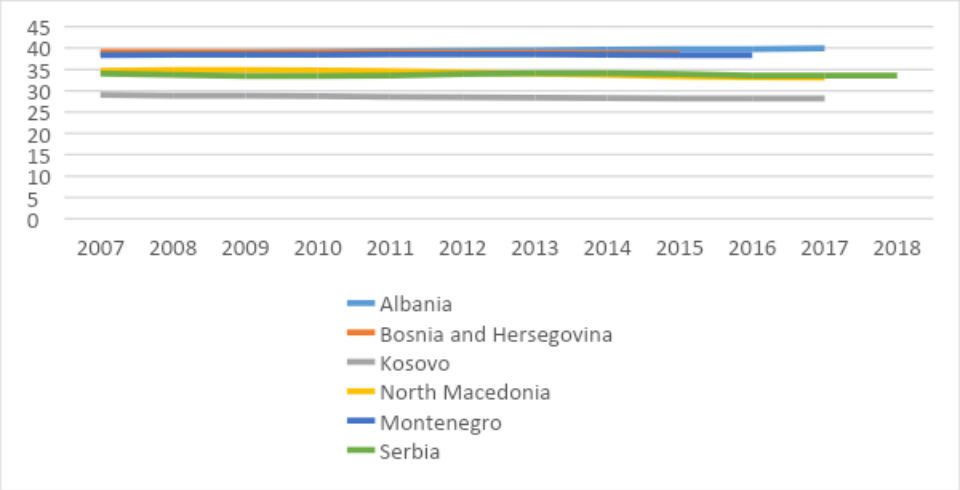
Figure 19 Gini index, household consumption per capita between 2000-2013



Source: Author's calculation based on World Bank WDI

seem to track household consumption, and are available for Croatia, Macedonia, and Serbia. Since 2000, the measurements available have painted a very unequal view of the regional inequalities. Croatia shows intermediate to lower levels of inequality and a gradual steep decline which converges in recent years with the EU28 average. Although income inequality has increased in Serbia and stayed high in recent years, it peaked and has decreased in Macedonia after the 2008 economic crisis (Friedrich Ebert Stiftung, 2018). In Kosovo, this tends to be a medium level of consumption inequality with certain variations. It is steady and relatively lower in Albania, while in the second half it seems to have increased after 2000.

Figure 20 Gini Index (SWIID) for Western Balkan countries between 2007-2018



Source: Author's calculation based on World Bank WDI

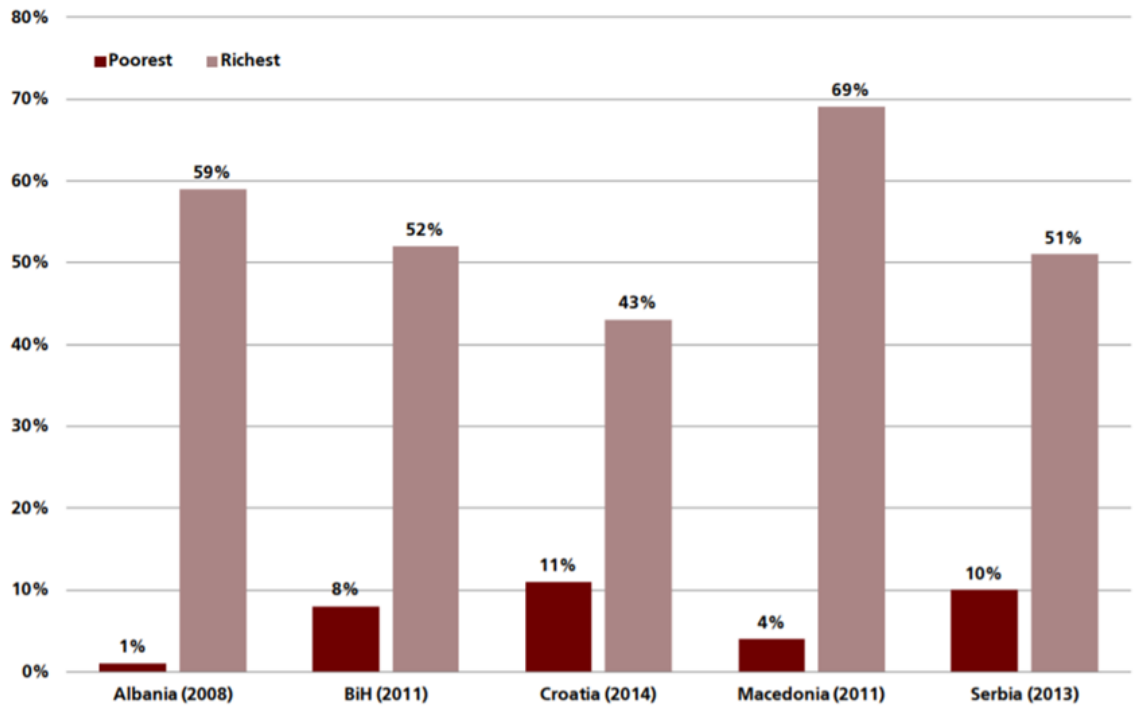
compared to the general population, the education achievement of the Roma is smaller, affecting their job opportunities. Although the post-secondary enrollment rate of women is higher than that of men in the country, women appear to be grouped into separate programs, resulting in sector specific separation. People with disabilities do often face the threat of excluding themselves from schooling, can be divided into specific groups or participate fully in services aimed at some of those occupations. Furthermore, low standard of education in the area could contribute to young people's social exclusion. The high proportion of students aged 15 who scored under Level 2 on the OECD International Student Assessment (PISA), which denotes basic abilities, suggest poor performance. A majority of students in Kosovo, Macedonia and Albania do not seem to have access to education that would allow them to achieve a basic standard of qualifications and students in Croatia and Serbia are under the OECD average (Friedrich Ebert Stiftung, 2018). This could cause young people, in contrast with other demographic groups, to be in the weakness of their difficult status on the working world. education programs in which a large number of pupils do not have the basic skills are considered inadequate.

3.9. Social Safety Nets in The Western Balkans

The Western Balkan countries have two kinds of safety nets, representing the two paths taken during transition: Bosnia and Herzegovina, Macedonia, Montenegro, and Serbia implemented

incremental and systematic changes to the structure and architecture of the pre-transition safety net. These schemes are more generous in terms of the range of risks covered, but they offer numerous and often categorical incentives that are fragmented, undermining the overall effectiveness of social aid (International Monetary Fund, 2016). Albania and Kosovo restructured their existing programs and adopted totally new incentives. This new schemes have less incentives and are less fragmented, but they offer lower levels of protection, particularly for parents with kids and the unemployed (International Monetary Fund, 2016).

Figure 21 Enrollment at third-cycle schools by student wealth, (International Monetary Fund, 2016)



Source: Author's calculation based on (International Monetary Fund, 2016)

Non-contributory social assistance services are often divided into four different categories: Last-resort social assistance schemes, mostly for the chronically ill, with little ability to perceive and protect the unstable community.

Incentives for family and child protection, with a variety of goals (alleviate poverty, increase fertility rates). The Western Balkans spend less on child allowances than the New Member States: Albania and Kosovo do not have separate child benefits, while other countries limit benefits by imposing strict income limits (Bosnia and Herzegovina, Serbia) or a minimum income on child

allowances (Montenegro). Disability coverage for people who do not have disability insurance. The Western Balkans pay more on disability benefits than the New Member States, with Albania paying the most. Benefits tailored to particular regions for war veterans and their families. These are extremely regressive and account for a disproportionate share in Bosnia and Herzegovina, but they are also significant in Kosovo, Montenegro, and Serbia, and have been increasing in the country (International Monetary Fund, 2016).

In the Western Balkans, public expenditure on social assistance is competitive with that of the New Member States. Instead of mean-tested gain, an increasing share of allocations go to categorical services. In all Western Balkan countries, the coverage of the poorest quintile with all kinds of social benefits is low. (International Monetary Fund, Kozcan 2016).

4. Theoretical background

4.1 Motivations for Foreign Direct Investment Activities

Theories of FDI aimed at explaining the motivations (reasons) behind FDI activities revolve around the following questions: Why does an investor or a firm decide to conduct investment activities such as firm creation or firm acquisition in a foreign country instead of contracting with local producers or distributors? What determines the location decision or why the foreign firm decides to establish a production unit in a particular foreign country? Several approaches related to international economics, international finance, and international business have been used in the attempts to answer these questions. In this section, we focus on the main theories of FDI.

The FDI activity or global operations is inspired by the ordinary pursuit of gains, according to one approach focused on conventional international finances. When investors anticipate that more cash flow or a reduced cost of capital would be gained in a foreign country. The "cost of capital principle" means that international companies will enjoy flexible terms of credit access not available to domestic companies by their structure and scale. In this respect, foreign corporations are simply arbitrators moving from one country to another to exploit the differences in capital gains between countries (Antràs and Yeaple 2014, p.56Alfaro 2014 p.6).

This response was not sufficient, however. If the only justification driving FDI is the differing rates of interest (or lower capital cost), why does the investor not prefer portfolio investment instead of running an enterprise in an unknown country? Therefore, a differentiation between FDI and portfolio investment was not explicitly explained from the traditional approach. The direct investment is even more than capital movements, as Kindleberger (1969; quoted Alfaro, 2014, p.6) points out The limits of the previous theories' interpretations of FDI focused on the traditional international finances and an ideal competitive environment have caused new ways to understand FDI's drives.

According to Justin (2020), 52 publications were written between 1980 and 1999, 145 between 2000 and 2006, and 303 between 2007 and 2020. The following theoretical lenses have been most commonly used in MNE-FDI research:

(1) Internalization theory,

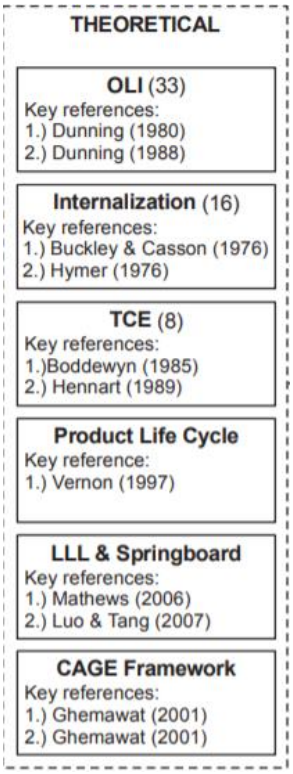
(2) The eclectic OLI paradigm,

(3) Product life-cycle (PLC) theory,

(4) Institutional Theory, and

(5) Resource Based View.

Table 5 Theoretical lenses most used in MNE-FDi



4.2 Internalization Theory

Hymer (1976) made important contributions to the advancement of this theory. Rugman (1980) integrated internationalization and internalization logic to provide an integrative basis for the existence of the MNE.

Internalization (Buckley and Casson, 1976, 2009) illustrates why companies participate in FDI by focusing on home-country (country of origin) central company basic advantages (resources and/or capabilities) rather than depending on local factor endowments in individual international product markets (Verbeke & Kano, 2016). By expanding it alongside vertical and horizontal integration of MNE-FDI behavior Hennart (1982, 1986) established the internalization model. In recent studies FDI has been inspired by internalization to understand regionalization and the disintegration of the global value chain (Pak & Park, 2004; Rugman, Rugman & Verbeke, 2003;2010; Verbeke & Kano, 2016).

Theory of internalization is just another theory to describe FDI or foreign activities. Buckley and Casson (1976) are suggesting this hypothesis to respond to the basic question: why do companies participate in FDI, rather than license? The idea is essentially that a company should

develop innovative technologies, new manufacturing processes or other sources of incorporeal and knowledge-based properties that provide a cost benefit to the establishment of a global subsidiary. It then becomes more beneficial for the company to integrate these advantages in FDI rather than produce this ownership advantage locally and to sell or license it. In order to take care of the manufacturing and the sales of the finished product which has an ownership benefit, the company does not want to copy their new technologies or production processes, thereby opening up a subsidiary outside Germany. The Eclectic Paradigm is the prevalent structure for FDI and international production explanation (Dunning, 2001, p.187). This framework is known as an OLI paradigm and states that an enterprise is involved in FDI, where there are three conditions: I the enterprise should have a specific ownership advantage over its competitors in the host country; (ii) there are local advantages in using a specific ownership advantage in the foreign countries (L) **(I).**

4.3 Eclectic Paradigm -OLI Paradigm

The Eclectic Paradigm continues to be the most common method for understanding FDI and international production (Dunning, 2001, p.187). The OLI paradigm states that a firm engages in FDI if the following three conditions are met: I the business should have a property rights advantage vis-à-vis its rivals in the receiving country (O); (ii) there are location advantages in using the ownership-specific benefit in a foreign land (L); and (iii) the internalization profit is larger than license profit (I). In MNE-FDI study, Dunning's OLI model (e.g., 1988, 2000) has become the most commonly used lens. This model illustrates how businesses compete in global markets by using opportunities such as ownership advantages (O), position advantages (L), and internalization advantages (I) (Dunning, 2001). In today's FDI studies, the OLI model is still in use. Over 30 works in our study were presented whether across those three OLI parameters or in finer approaches along one of the dimensions. Ownership benefits are tangible and intangible properties such as management abilities, advanced technologies, economies of scale, brand image, marketing ability, and raw material access, among other things. Which allows the company to compete in an unfamiliar market in the receiving country while surpassing local rivals. The motivations of a company to take advantage of such benefits offered by a foreign nation, such as plentiful natural resources, low labor costs, convenient access, and low-cost inputs. Political stability, a favorable legal and cultural climate, lower trade costs, lower risk, and receiving country government policies such as favorable tax treatment are all examples of location advantages. These

considerations allow the investment company to choose the different country in which to do the investment. Internalization advantage refers to a company's need to save money or maintain its ownership advantage. Growing and selling by international branches may also result in significant cost savings over producing domestically and exporting. Firms often engage in FDI initiatives rather than forming a relationship or a licensing arrangement with local firms to secure their reputation, name, technologies, and managerial know-how. It is more advantageous for a company to participate in FDI operation rather than outsourcing or selling its ownership advantages to international companies when there is substantial internalization revenue (Dunning, 2001, p. 176).

The three above requirements should be met before the FDI can take effect at the same time. For example, if there are owner and locational benefits, but there are no internalization benefits, most likely the company can generate its ownership advantages at home and sell or license to foreign companies. Despite its widespread adoption, there is no relief from critiques of FDI's eclectic model, which incorporates various reasons for FDI. One of the key concerns is that, because of so many parameters that are included, the forecasting value of the model is weak; the model is static, and business dynamics are not clarified in the model. Delevic and Heim, (2017), stated that home market weaknesses are balanced by the location benefits of the host country, and Cook, Pandit, Loof and Johansson (2012), based on the notion of a global urban geographic cluster, found that more experienced MNEs and those with stronger home-country resource positions are more likely to engage in OFDI. One explanation why OLI paradigms are so prominent may be that they form a basis for other theory attempts to explain the growing MNE-FDI phenomenon. Barkema, Chen, George, Luo and Tsai (2015) found out the difficulties of evaluating West models with Eastern Structures by their discussion of the property of equilibrium, meaningfulness, and diffusion. Moreover, the OLI paradigm may not be appropriate to describe FDI designs of new generation companies such as Google, Uber, Airbnb and Bitcoin (e.g. Cannon &Summers/2014; Ross, 2016), that are wealthy and are mostly digital in their path to internationalization. The eclectic approach incorporates theory of monopoly gain, theory of internalization and position theory. In other words, in Dunning's hypothesis there are three key reasons for FDI,

4.3 Product Life Cycle PLC Theory/ International Trade Theory

The motivations for FDI are also explained by Vernon's (1966) product life cycle theory. In some FDI research, the PLC hypothesis serves as the focal theoretical prism, but it has not gained the same amount of scrutiny as the OLI model in recent years (Paul, Feliciano-Cestero,2021). It is a method focused on the competitive benefit and factor endowment theory. In explaining FDI flows, the author went beyond just factor costs and included detail, complexity, and economies of scale. It's the first time a dynamic explanation of FDI movements and trading patterns has been offered. Vernon (1966) established the concept in response to FDI from U.S.-based MNEs in Western Europe after World War II, especially those in the manufacturing sector. The author tries to clarify when and where FDI occurs using data from US multinational corporations, as Hymer's theory failed to provide an answer to this issue. He claims that most manufacturing products have a life cycle, with each stage involving a unique pattern of trade and FDI flows.

Vernon established four development phases that he thought shaped a continuous cycle: innovation, development, maturity, and decline. The first step is the stage of innovation. At this stage, a new product is patented and manufactured in a developed country such as the United States, the European Union, or Japan, among others. The first stage of manufacturing is mostly for the domestic market, while production for the international market occurs as well.

According to this hypothesis, companies export before reflecting on foreign demand in the context of FDI. The PLC model assumes that capital-intensive and technologically advanced innovations generally emerge for the domestic market and evolve at different stages in which manufacturing is shifted in (mostly) developed countries to other countries and ultimately emerging countries; As for Contractor, Dangol, Nuruzzaman, (Paul, Feliciano-Cestero,2021) and Raghunath (2019, p.2), which mean that "multinational firms, at one point of the investment lifecycle in return for more mature institutions, are willing to take the risks of investing in a country of less institutional efficiency in another life-cycle phase." PLC theory extends beyond FDI research. It is also being used in other areas, such as marketing, where PLC theory was especially common in the 1980s and 1990s (Boddewyn, 1983; Calvet, 1981; Kim & Lyn, 1987; Trevio & Daniels, 1995).

4.4 Institutional Theory

The institutional theory and the dynamic capabilities theory (Paul, Feliciano-Cestero,2021) are two other theories used in FDI analysis. According to institutional theory, hierarchical systems and attitudes are heavily influenced and legitimized by their surroundings (Child, 1997; Eisenhardt, 1988;).

Many other scholars have applied institutional theory when concentrating on the selection of suitable organizational forms for international business entry, such as ijvs and wholly-owned subsidiaries (Lu, Song, & Shan, 2018; Li & Meyer, 2009; Peng, 2003; Roy & Oliver, 2009; Yiu & Makino, 2002;).

Meyer (2004) emphasized the importance of institutional theory in assessing and agreeing on the suitability of various business penetration modes for EMNEs from emerging markets.

4.5 Resource-Based View (RBV)

RBV was mostly used in FDI research from developed countries, mainly in the form of the OFDI. RBV is a method used to describe how businesses at the multinational level have comparative advantages RBV gained attention in the 1980s and 1990s after the publication of significant works by Wernerfelt (1984) and Barney (1990). (1991). One of the founders for RBV's use in the international market was Ghoshal (1987). RBV researchers argue that companies should look for sources of economic benefit internally instead of seeking them in the competitive external world. One major consideration of this is that the primary source of sustainable competitive edge are intangible capital, such as intellectual property rights and brand value (Barney, 1991; Wernerfelt, 1984). Some researchers have used RBV as part of EMNE OFDI (Cook et al, 2012; Cui & Jiang, 2009; Gaur, Ma, & Ding, 2018; Lin, 2016).

4.6 Theoretical Work by Aghion and Howitt (1998)

Based on Violante (1996), Aghion and Howitt (1998) construct a basic theoretical paradigm explaining how technological diffusion would account for the growth of income inequality. The

economic structure tackles the relationship between multinational companies' participation and inequalities in receiving countries. In theory, the model addresses the economic growth implications of social learning. In practice, this ensures that the model examines the impact of employee discrepancies, overall productivity and revenues on the economy. The model considers MNEs thus as tools to introduce new technology in the host nation. The model suggests that the system uses only old technology, which implies that emerging technologies are only incorporated by MNEs into the host economy. This means that MNE's are seen by domestic companies as role models, that learn by following the state-of-the-art production technologies used by (Liebrand, 2018) MNE's This though MNE's who are involved in the economy have a higher technological level than domestic companies.

4.7 Theoretical work by Feenstra and Hanson (1996)

A Heckscher Ohlin (H–O model) model is set in the Feenstra and Hanson model (1996), meaning that trading could increase earnings disparity in the North but narrow the Southern Divide (Heckscher & Ohlin, 1991). This result is due to the assumption of the balanced trade paradigm that a nation can export goods that are intensive in the relatively strong element that the country has, and that goods that are intensive in that the country is relatively scarce. The Heckscher and Ohlin (1991) model suggests that the trade liberalization of labor-intensive sectors would help to minimize inequalities, which causes relative demand and wages for resources or skilled labor. Feenstra and Hanson (2003) were both referring to the liberalization of trade. The scholars claim that the disparities among highly skilled and low-skilled workers rely heavily on the growth level of the nation in which the labor-informed and high-skilled industries operate.

4.8 Dependency Theory

Given the widespread skepticism, the dependency theory is indeed prevalent in political and theoretical debates. Dependency theory is broadly concerned with the origins of underdevelopment and the means of overcoming it. While there is no universal theory of dependency, most dependency theorists are strongly supportive of transnational corporations' FDI in developing countries. Within dependency theory, there are two major approaches: one based on Marxist principles and one based on structuralism principles. According to Marxists, multinational companies' FDI operations have a negative effect on economic growth in the South. They push out

local industries by extreme competitiveness and monopolize the most diverse markets of the local economy; they obtain tremendous benefits at the cost of developing countries; and they use capital-intensive production processes, exacerbating unemployment in developing host nations. An economy dominated by foreign companies, in their opinion, cannot grow organically. It will instead evolve in a disconnected manner because the multiplier effect through which output in one industry creates demand in another will be low, which will have a negative impact on economic growth in developing countries.

As per the Marxist perspective, underdevelopment is caused by exogenous variables such as international trade and foreign direct investment. These factors contribute to the entry of peripheral economies (developing economies) into the global economy controlled by the core (developed countries) and establish a pattern of contingent growth in the peripheral countries. As per this viewpoint, developed countries are pressured to maximize their exports in order to maintain their volume of imports due to differential exchange. The dominance of the world economy by "developed economies of the world" induces a steady decrease in the prices of raw materials produced by periphery countries and an increase in the prices of manufactured goods exported by the middle (developed countries). In other words, the trading terms that dominate in the world economy are supported by a majority of the North. Furthermore, they contend that the pattern of international trade between the South and the North causes the South to focus on backward forms of production, weakening their growth (Spero, 1990, p.149; Arghiri, 1972,). Transnational firms, according to Marxists, have a negative effect on economic growth in the South via their FDI operations. They push out local industries by extreme competitiveness and monopolize the most diverse sectors of the local economy; they receive enormous benefits at the cost of developing countries; and they use capital-intensive manufacturing processes, worsening unemployment in emerging host countries. To summarize, Marxists see foreign investment as a force that distorts South growth. They propose a movement to get out of this situation: "total collapse of the international capitalist economy and its replacement by an international socialist system" (Spero, 1990, p.150).

The structuralism model advocates on the structure of relationships between the periphery and the core states, as well as the convergence of the periphery's economies with the demands of the center's economy. Raul Prebish is a well-known representative of this school of thought. The evolution of the financial economy, according to this viewpoint, determines systemic changes.

However, these economic reforms only result in partial modernization, affecting only the respective export sectors and subordinating other sectors of society to this respective export sector in the absence of incorporation. The failure of convergence produces social variation in the economies of the periphery, while the societies of the middle are completely incorporated in a capitalist manner. This interaction of diverse social systems in the periphery inhibits production and development processes from occurring.

Structuralists, like Marxists, criticize international trade and foreign investment for the majority of underdevelopment in peripheral countries. International trade, according to structuralists, does not foster prosperity in the South; rather, it is merely a redistribution of wealth from the South to the North due to trade conditions that are biased towards the peripheral or South nations. According to structuralists, multinationals' income earned from FDI operations are repatriated, resulting in decapitalization in the South, which impedes capital investment and productivity. They also say that FDI flows to the South appear to concentrate in export-oriented industries, exacerbating the negative impact of trade in the region (Spero, 1990). Furthermore, they claim that foreign direct investment in developing countries contributes to an economic system dominated by monopolies, resulting in "underutilization of productive forces." Through them, an economy dominated by multinational corporations is incapable of organic growth. It will evolve in a disjointed manner because the multiplier effect, wherein demand in one industry stimulates demand in another, will be low, which will have negative consequences for developing country's economic development (Amin, 1974, Adams, 2009).

Cardoso and Faletto (1979, pp. 191-18) describe that the policy decisions of transitional countries can be affected in general by international investors, and in particular by those that concern economic policies. If foreign companies dominate particular sectors of the economy in the transitional region, they can influence decisions at national level to some degree. The development of new markets and operations of transnational companies contribute to a domestic reorganization of the administrative, technical and financial economy to adjust it to the center's capitalist economic structure. This leads to new ways of political and social influence, and leaves the periphery region, host of these multinational companies to control both its manufacturing environment and its economic growth mechanism less strategically. Similarly, Evans (1985, pp.194-195) claims that the incorporation of transitional economies into the global economic structure of transnational corporation's places tension on the peripheral countries that

hosts them to comply with international economic policies, since these multinational firms participate heavily in international policy-making. Transnational companies control the most competitive economic sectors in a periphery country's economy once it has achieved a certain degree of industrialization, and these transnational linkages may hinder national economic policies from achieving their intended objectives.

As Evans (1989) also put it, emerging countries, which are also vulnerable to corruption, could provide different ways for transnational companies to control their political and economic decisions. Almost all can be gained in these corrupt states called 'predatory' from Evans, (1989), by those who have sufficient money. Thus, transnational companies, among others in the periphery countries which host them, will affect political decisions and decisions of justice and licenses. According to Evans (1989, p.571), rental politicians and the national bourgeoisie may unite to represent foreign firms' needs in these "predictive" states. When transnational companies and national institutions are engaged in corruption, the country becomes paralyzed and therefore cannot apply methods that contribute to economic growth and prosperity autonomously, because decisions are taken for sale In comparison, structuralists support foreign market change in such a way as to allow the industrialization of the southern countries, against the Marxists and neo-Marxists who defend revolution as the only way of addressing the case.

In brief, FDI practices support multinationals at the cost of host developing countries, according to dependence theories (Prebisch,1968). Through its operations in the FDIs, multinational corporations hinder local economies growth by crowning domestic companies in the most diverse sectors of the economies of the host countries and monopolizing domestic markets. Inappropriate capital-intensive technologies have been used, which means the host countries would increase unemployment. They increase the income gap, disrupt popular identity, misuse natural capital and by different means manipulate policy structures in the host countries (Seyoun et al. 2014, Moran, 1978).

4.9 The World System Theory

The theory of the world system began in the 1970s and relates to certain theoretical elements of the theory of dependence, but has a broader variety of social and economic ideas that go outside

the framework of the theory of dependence. Immanuel Wallerstein is one of the main practitioners of this school of thought. While theoreticians of dependence tend primarily to concentrate on the economic growth of the world's periphery and semi-peripheral areas, world system theorists focus on the economic, political and cultural nature of the system worldwide. The underdevelopment of world system theory is based on economic, political and social forces outside the influence of affected populations, as Bornschier and Chase-Dunn (1985, p. 10) point out. The economic component is shaped by global commerce and a globalized, multinational-dominated economy. The cultural context, in particular, is related to aspects of the economic and political dimension. In short, it defines the universal diffusion of standards and values.

World system theorists, including dependency theorists, are cynical about the effect of foreign investment on developing countries. In world system theory, transnational organizations are essential components. These transnational companies are regarded as the world's most influential force in promoting hierarchy systems in the worldwide distribution of resources and thereby promoting the capitalistic world order. Multinational organizations, according to world system theories, are the main institutions of the global economy that cause the internalization of previously foreign economic ties. They represent a modern type of economic organization. In terms of the political component, it is believed that authority will be transferred from national economies' states to a transnational economy. Nations remain significant, but they are only one component of this structure, along with other nations and related political and economic institutions. To summarize, Petras (1981, p.149) noted that "the central theme of the world systems perspective is the presumption that main regions dominate peripheral regions through different processes of unequal exchange."

4.10 The Monopolistic Advantage Theory

Hymer's approach originating from industrial organization was the first broadly known approach used to understand the motivation of global behavior (1976). He was a predecessor to the contemporary approach to FDI. Hymer's methodology was one of the first to explain international development in an imperfect business context, and the nature of it is that domestic companies have an advantage over foreign firms in terms of understanding of local market dynamics, history, and the political and legal environment. They also benefit from their understanding of local business traditions, culture and the public network. Additional expenses include shipping and

communication costs for operations in a foreign country and the exposure of the foreign business to foreign exchange risks. Somehow, the investor company may compensate for these inconveniences to participate in FDI business. For Hymer, companies participate in FDI practices because they have "unique firm benefit" and are known by Kindleberger as "monopoly advantages" (1969) and can be seen as superior technologies, managerial abilities, new systems, trademarks, brands and economies of scale. This company-specific benefit or monopoly benefit allows international investors to exceed domestic businesses. In brief, companies are engaging in Foreign investment because their counterparts in the host nation have superior advantages. As per Hymer, the most valuable corporate advantage is technical superiority, which allows innovative goods to be introduced with characteristics associated. It also strengthens manufacturing and marketing capabilities. Hymer's theory that companies participate in FDI based practices is further refined and expanded by Kindleberger (1969), as they provide greater benefits than their host countries competitors. Kindleberger advances the FDI hypothesis based on monopoly control using Hymer's work as a foundation. The author considers FDI to be unable to compete perfectly. In other words, only in an environment of imperfect rivalry transnational companies will profit from their advantages. Kindleberger claims that the monopolistic advantages can exist in the products and factors industries, and may be in the case of product distinction, advanced management abilities, advanced technologies, market knowledge, and versatile credit access conditions, among many others. Kindleberger notes that monopoly benefits can also come from measures like import limits imposed by the host country's government (Barclay, 2000, pp.30-31). In summary, FDI activities are driven by competition failures rather than disparities in return levels between countries, according to the principle of monopoly advantages.

4.11 Oligopolistic Reaction Theory

To mitigate risk and confusion in the country of origin. Their insight tends to develop the commodity by getting closer to the consumers. At the end of this point, exports to the highest income countries will occur. In these nations, the rise in production and exports marks the beginnings of the second phase if good feedback is received.

In the second phase (maturing stage of the product, the method of manufacture and the nature of this innovative product is well learned by the inventor and exportation to other developing nations increases considerably with the increasing demand. In order to meet increasing demand

effectively, the company inventor moves abroad through the development of a manufacturing plant, but also to compete with its competing companies. In other words, at this point the internationalization of the company inventor begins.

The product development process is well-known in the final phase, also called the standardized production period, and is no longer the sole property of the initial manufacturer. There must then be moves to other places around the world to further minimize the manufacturing costs, ideally in developing countries where work is relatively inexpensive. The product is made in the final stage in a developing country and shipped back to the country of the main company while the company inventors focus on new production. In short, the inventor or exporter becomes an importer in the standardized product phase.

The processes mentioned in the Lifecycle Product Theory have been adopted by numerous objects, such as semiconductor chips, radio, black, white and color TV, textile and computers. The United States started the manufacture of personal computers, then transferred to Japan and now China, one of the major exporters of personal computers. The results of this model are, however, uncertain today. The market world that has evolved considerably as this theory has developed has considerably diminished its predictive ability. The paradigm clearly illustrated what happened to high technology built in the United States in the 1960s and 1970s. Today this principle became less applicable because of the increasing convergence of the world economy (globalization). In reality, a number of new goods are not currently being launched exclusively in the US, Japan or the European Union. In many countries, they are launched simultaneously. To date, the theoretical claims examined primarily focus on modernization theories illustrated by the neoclassical and endogenous theories of growth. These theories suggest that the presence in developing countries of transnational companies is needed and highly beneficial through the FDI operations, as they contribute through capital accumulation and technology transfers to economic development and growth in these countries. Even so, other perspectives such as dependence and theories of the world system, among others, contradict this hopeful perception of the role of transnational companies in developing countries.

4.12 Previous Empirical Evidence

In the empirical literature, the repercussions of FDI on income distribution has been investigated both in developed and developing countries. Overall, consistent with the division in the theoretical literature, empirical studies on the repercussions of FDI on income distribution in host countries are inconclusive. Empirical studies found positive, neutral, as well as negative effects of FDI on income inequality.

The discourse on the effect of FDI and international trade on income distribution started between modernization and dependency theorists in the 1960s-1970s and has regained interest in recent years with the prevalence of anti-globalization movements (Mah, 2003, p.159; Franco and Gerussi, 2013, p.1134). Obstfeld (1998, p.21) contends that the contribution of FDI on income distribution is close to the effect of trade on income distribution as estimated by the Heckscher- Ohlin-stolper Samuelson model.

Theoretical statements and empirical evidence on the FDI-income gap correlation are inconclusive and inconsistent. In other words, there is still no definitive judgment about the existence of the relationship between FDI and income inequality. Some arguments support the FDI's equalizing effect (FDI lowers income inequality), and some claims consider the FDI's disequalizing effect (FDI increases income inequality). The predominant, as well. According to recent literature, FDI in host countries can worsen or decrease income inequality. A variety of studies have considered the impact of inward FDI on inequality in host countries (Figini and Görg, 1999; Driffield and Taylor, 2000; Taylor and Driffield, 2005; Jensen and Rosas, 2007; Chintrakarn et al., 2012; Peluffo, 2015; Doytch and Uctum, 2016; Mclaren and Yoo, 2017; Greaney and Li, 2017; Wang et al., 2018).

Giuliani (2018) specifically wonders also whether mnes can increase inequality and how they can increase it. For certain impacts, she describes major networks. Consequently, through violations of human rights, mnes can increase inequality. Doh's evidence (2018) strongly upholds the argument that mnes promote disparities through certain skill-specific networks. The Doh study (2018) also explores potential responses from mnes and politicians and states that 'private legislation' has offered partial solutions for the problem of injustice in codes of ethics and norms, but government action is essentially necessary for coping with inequalities. The well-quoted Tsai paper is an example (1995). During the 1970s, he studied the association between FDI and wage inequality in 33 developed countries. The author finds that FDI's effect on inequalities

is not homogenous across geographical regions, based on an Ordinary Least Squares (OLS) methodology.

Feenstra and Hanson (1997) propose that FDI flows from the north to the south (developing countries) increase the pay gap between skilled workers and unskilled workers, contributing to a broader income inequality in developing countries. This theory was implemented in Mexico between 1975 and 1988. FDI flows into Mexico, the results show, increasing the relative skill market. Peluffo (2015) concluded that Uruguay's FDI is connected with improved efficiency and demand for professional jobs. A collection of Driffield and colleagues research has typically found similar conclusions in the UK (Taylor and Driffield, 2005; Bailey and Driffield, 2002; Driffield and Taylor, 2000). Basu and Guariglia (2007) found that FDI raises inequality and prosperity across a panel of 119 developed countries. The findings are clarified by a paradigm in which FDI encourages development in the new manufacturing sector rather than in the conventional farming industry. Also observed, by way of big panels of countries, a favorable relationship between the Gini inequality coefficient and FDI, Alderson and Nielsen (1999), Choi (2006), Reuveny and Li (2003). But even more complex and unlike observations are found in some studies.

In fact, the findings show that FDI just worsens earnings disparities in the countries of East and South-East Asia. Similarly, Alderson and Nielsten (1999), using panel data for 88 countries over the period 1969-1994, analyzed the relationships of fdis with income inequality. The results indicate that the income inequality in inward FDI stock is growing. Reuvenyand Li also looks at the effects of FDI over the period 1960-96 on income inequality in 69 countries. The findings demonstrate that FDI increases the disparity of wages. Choi (2006) also finds that FDI inflows in 119 countries worsen wealth gaps between 1993 and 2002. Similarly, Basu and Guariglia (2007) analyzed the results of FDI inflows in 119 developed countries for the 1970-1999 period of development and educational disparity. They observed that FDI fosters productivity and raises disparity in human capital by using fixed effects and GMM regression. The authors argue that inflows of FDI intensify income inequalities. Herzer et al. (2014), using evidence from Latin American countries from the period 1980-2000, investigate the long-term relationship of FDI to income inequality. Based on the technique of DDLS, the inward stock of FDI encourages income inequality in the countries of Latin America. Furthermore, the findings suggest that FDI raises income disparities in all of the study countries other than Uruguay. Huang et al. (2016) found that

the FDI's internal income is more likely to increase income disparities for transition economies and Latin American countries by using panel data for a grouping of 39 middle-income countries for the period 1981–2006. For the 65 developed countries using the panel results, Beer and Boswell (2002) analyze the shift in revenue disparities resulting from foreign direct investment in a region. Two points in time are the primary emphasis compared with the 1980–1995 findings. They observed that in most countries, for example, income inequality is increased and multinational businesses are more increasingly dependent.

The findings of trade and financial globalization for 51 countries for the period 1981-2001 were analyzed by Jaumotte et al. (2013). The calculation of their econometric model shows that trade lowers income inequality, while FDI, in particular, facilitates financial globalization. Similarly, Asteriou et al. (2014) are looking at the effects of globalization, for the period between 1995 and 2009, on wage inequality for the EU-27. They use different methods in econometrics including fixed effects, random effects and generalized moment methods (GMM). Overall, the results show that free exchange decreases disparity as financial globalization, in particular FDI, raises revenue inequality. The results indicate that since 1995, FDI has been the primary driver of income inequality in the EU-27. Bogliaccini and Egan performed an insightful study of the FDI nexus which was distinct from the other research studies in terms of approach (2017). The effect of the sectoral FDI on income inequality is discussed (Suanes, 2016). Using figures from 60 middle-income countries in 1989–2010, they find that services in FDI contribute to higher income inequality, whereas primary and industrial inflows in the FDI are not related to greater income inequality. These findings are due to skills and shifts in job trends associated with investments in the services sector. In addition, Herzer and Nunnenkamp (2013) examine the impact of FDI on income differences in 8 European countries between 1980 and 2000 among country-specific studies. Although the study indicates a positive correlation between flows of FDI and inequality, the results suggest a negative, long-term association between FDI and income inequality. In short, FDI has a balancing impact over the long term. Moreover, in a large panel of 127 development countries from the 1977 to 2012 period Im and mclaren (2015) are analyzing the impact of FDI inflowing on income inequality and poverty. They conclude that FDI does not affect income inequality without testing the endogeneity problem. By using instrumental variables estimation process, they further monitor the possible endogeneity problem associated with FDI nexus. FDI

decreases tax disparities and hunger, they find. The authors stress the need to monitor the endogenous problem, while looking at the relation between FDI and the distribution of income.

The effect of the FDI in Eastern Europe and Central Asia on income inequality is investigated for 1990-2002 by Bhandari (2007). The author uses a model of fixed effects and the findings show that the FDI stock did not contribute to income inequality as a whole. In the same way, FDI does not affect income inequality in Mahler et al. (1999). The estimated empirical model from the theoretical context in which the stock of eligible labor modulates the relation between FDI and wage inequality is estimated at Figini and Görg (2011). They investigate FDI-wage non-linear ties for more than 100 countries from 1980-2002. The study is classified into two groups: I the developed and (ii)the developing countries. They found a nonlinear association between FDI and income inequality in developing countries using fixed effects and GMM regresses. FDI increases wage inequality and the effect tends to reduce when there is a further increase in FDI. Concerning the case of developed countries, the authors did not find a nonlinear relationship between FDI stock and wage inequality. However, they find that FDI stock reduces wage inequality in developed countries. They conclude that the effect of FDI on wage inequality is likely to depend on certain domestic factors such as the education level of the workforce and the level of economic development in the host country. Following the approach used by Figini and Görg (2011), Franco and Gerussi (2013) investigate the impact of trade and FDI on income inequality in 17 transition countries for the period 1990-2006. They employ fixed effects and GMM regressions, and the results indicate no effect of FDI on income distribution. However, when they take into account the role of education in the link between FDI and income inequality, they find different results and conclude that the educational system is a crucial channel through which FDI affects income distribution in host countries.

The FDI's effect on income inequality is analyzed by Mihaylova (2015) in ten countries in Central and Eastern Europe from 1990 to 2012. On the basis of regressions of fixed effects FDI shows that the income inequality could be minimized but that the realization of this effect in host countries would be decided by certain domestic influences. The results suggest, in fact, that FDI raises income disparities on lower levels of human capital and economic growth but that FDI's improving influence declines as the higher stock levels of human capital and GDP are attained. Lin et al. (2013) examine the role of human capital in the link between FDI and income inequality using a large panel of 73 developed and developing countries for the period 1960- 2005. In contrast to

Mihaylova (2015) who uses a linear interaction model, Wu and Hsu (2012) employ a threshold regression model. They find that FDI increases income inequality when the level of human capital exceeds a certain threshold. Below this threshold level, FDI inflows reduce income inequality.

Table 6 Schematic overview of studies (Liebrand, 2018)

Research	Results	Time span	Empirical approach	Remarks
Firebaugh & Beck (1994)	FDI reduced income inequality	1965 to 1988 62 developing countries	FEM regressions	
Alarcon & McKinley (1996)		1989 to 1992 Mexico	OLS regressions	
Jensen & Rosas (2007)		1990 to 2000 Mexico	OLS and 2SLS regressions	Controlled for technology and trade
Im & McLaren (2015)		1960 to 2010 65 countries	OLS and TSLS regressions	
Le, Quoc Hoi (2020)		2002-2016 60 Provinces of Vietnam	GMM regressions	
Tsai (1995)	FDI increased inequality	1968 to 1981 33 developing countries	OLS regressions	FDI increased income inequality in some Asian countries (Liebrand, 2018)
Aitken, Harrison & Lipsey (1996)		1977 to 1990 Mexico, Venezuela, US	Logit estimator	
Feenstra & Hanson (1997)		1975 to 1988 Mexico	OLS and IV model	FDI using regional data on foreign assembly plants (Liebrand, 2018)
Alderson & Nielsen (1999)		1967 to 1994 88 countries	REM and GLS regressions	
Mahler, Jesuit & Roscoe (1999)		1985 to 1992 10 countries	OLS regressions	
Dollar & Kraay (2001)		1975 to 1997 73 developing countries	VAR model	Trade liberalization does not increase income inequality (Liebrand, 2018)
Mah (2002)		1975 to 1995 Korea	AR regressions Johansen- Juselius tests	

Reuveny & Li (2003)		1960 to 1996 69 countries developed and less developed	OLS model – Pooled time series	Democracy and trade reduce income (Liebrand, 2018)
Velde (2003)		1985 to 1998 Latin America	OLS regressions	
Zhang & Zhang (2003)		1986 to 1998 China	OLS regressions	
Taylor & Driffield (2005)		1983 to 1992 UK	GMM regressions	
Choi (2006)		1993 to 2002 119 countries	OLS regressions	
Basu & Guariglia (2007)		1970 to 1999 119 developing countries	GMM and FEM regressions	Educational inequality (human capital Gini) as a measure of inequality
Chen, Ge, & Lai (2011)		1998 to 2007 China	OLS regressions Logit regressions Tobit regressions	
Velde & Morrissey (2003) (2004)		1985 to 1998 10 developing countries	Logit and OLS regressions SUR & IV estimation	No strong evidence that FDI has improved inequality (Liebrand, 2018)
Lipsey & Sjöholm (2004)		1996 Indonesia	FEM regressions	FDI through blue- and white-collar workers
Jaumotte, Lall & Papageorgiou (2013)		1981 to 2003 51 countries	SURE estimations	Trade globalization is associated with a reduction in inequality (Liebrand, 2018)
Mihaylova (2015)		1990-2012 10 eastern Europe countries	FEM estimator	
Suanes (2016)		1980-2009 Latin America	GMM and 2SLS regressions	Manufacturing and services sector (Liebrand, 2018)
McLaren & Yoo (2017)		1989 to 2009 Vietnam	OLS and IV regression	The number of employees of foreign establishment as measure of FDI and living standards as inequality (Liebrand, 2018)
Bogliaccini & Egan (2017)		1989 to 2010 60 developing countries	VAR and ECM regression	FDI in services is more likely to be associated with inequality than other sectors (Liebrand, 2018)
Bodea and Ye (2017)		1981-2009 113 developing countries	OLS regression with panel-corrected standard errors (Liebrand, 2018)	

Santarelli & Figini (2002)	Any effects on inequality	1970 to 1998 54 developing countries	OLS, FEM and REM Econometric models	Inequality measured through relative and absolute poverty (Liebrand, 2018)
Blonigen & Slaughter (2001)		1977 to 1994 US	WLS regressions	Different forms of FDI: greenfield investment and acquired establishments
Milanovic (2005)		1985 to 1997 89 countries	GMM regressions	
Sylwester (2005)		1970 and 1989 29 developing countries	OLS and FEM regressions (Liebrand, 2018)	
Figini, & Görg (1999)	FDI increased inequality, but at a decreasing rate overtime	1979 to 1995 Ireland	GLS Regression	FDI through blue- and white-collar workers
Lee (2006)		1951 to 1992 14 developed countries (Europe)	GLS regressions	Kuznets curve valid
Herzer & Nunnenkamp (2013)		1990-2000 10 European countries	Panel cointegration and causality techniques	
Le, Q. H., Do, Q. A., Pham, H. C., & Nguyen, T. D. (2021)		2012-2018 6 3 Provinces of Vietnam	GMM Regression	

Gopinath & Chen (2003)	Mixed findings	1970 to 1995 15 developed and 11 developing countries	FEM and REM regressions	FDI only widens the income gap between skilled and unskilled workers in developing countries (Liebrand, 2018)
Figini & Görg (2011)		1980 to 2002 100 OECD and non-OECD countries	GMM regressions non-linear estimation	FDI increased inequality in developing host countries, while inequality decreased in advanced host countries (both Gini and Theil index used)
Chintrakarn, Herzer & Nunnenkamp (2012)		1977 to 2001 48 US states	DOLS regressions (panel co-integration)	FDI at the state level reduced income inequality during the period 1977 to 2001, on average, but the effects proved to be heterogeneous.(Liebrand, 2018)
Herzer et al. (2014)		Latin America 1980-2000	Panel co-integration techniques and 2-step ECM	Country specific results; on aggregate it increases inequality(Liebrand, 2018)

Source: Author's calculation revised from Liebrand,2018

5. Research Methodology and Data

5.1 Research Methodology

In this part we generate an empirical econometric model that evaluates the relationship and causal correlation between FDI and inequalities in the transitional phase of European countries for 2007-2019 (roughly 12 years) for six European transition countries, namely those in Southeastern Europe (Western Balkans). These countries are Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, using panel data models such as 2SLS, fixed and random effect models, Hausman-Taylor IV, and GMM.

The baseline of the empirical specification is given as below:

$$Inequality\text{-}(Giniit \ \ or\ HDI\ it) = \beta 0 + \beta 1\ FDIit + \beta kXitk + ui + eit \qquad \textit{Equation 1}$$

Where inequalityit is a measure of within-country income inequality (GINI or HDI) over time periods t= 1,2…..,T and countries i=,1,2,……,N (Suanes,2016). Fdiit represents the independent variables on aggregate level FDI measured as inward FDI stocks as a percentage of GDP in country i at time t. Xit is a vector of control variables, discussed below. The term u-i represents the fixed effect by country, respectively, country-specific effects, capturing any country specific omitted factors that are assumed to be correlated with inequality and eit is the remaining white noise error term(Suanes, 2016). This variable is added to deal with the presence of unobserved heterogeneity across countries. Country and time dummies are part of both equations, but are not reported for ease of visual interpretation. These country and time effects are included to ensure that an exogenous change that comes from outside the model is explained by the model, meaning that other observable or unobservable variables affecting inequality are controlled for in the model (Liebrand, 2018).

The Haussmann Taylor IV estimator and dynamic panel model (GMM) are used to assess the relationships between FDI and inequalities, as well as other independent variables. For comparative purposes, we also present the findings from 2SLS, fixed effects, and random effects in this article. Using the Hausman–Taylor IV and GMM, we find a solution to the endogeneity dilemma, which is critical in econometrics. As a result, endogenous independent variables would be associated with distorted regression coefficients. We use one-equation applying IVs to solve the endogeneity problem. The Hausman–Taylor IVs model and GMM estimator are more suitable models than random and fixed effects models based on the above assumptions of the endogeneity problem.

The baseline of Hausmann-Tylor model of the empirical specification is given as below:

$$\gamma\square\square = \square + \square 1(\square\square\square - 1) + \square 2(\square\square\square\square\square\square\square) + \square 3(LnTradeoppenessit) + \beta 4(LnGDPgrwthit) + \beta 5(LnGDPpc\square\square) + \beta 6(Lninfl\square\square) + \beta 7(Lneducineq\square\square) + \beta 8(Lngndrineq\square\square) + \square 9(schoolenroltert\square\square) + uit \qquad \textit{Equation 2}$$

where yit is dependent variable which represents Gini Index/HDI for each country i and t represent years; c is term of constant; the explanatory variables include yit-1 is the first lagged of dependent

variable, FDIit is the foreign direct investment variable, Tradeopenness as percent of GDP, GDPgrwthit is the GDP growth rate, GDPpercapita it variable, Inflation it variable , educationineqit is the index of education inequality, genderineqit is the index of gender inequality schoolenroltertit is the school enrollment in tertiary and uit are the exogenous disturbance (Kovachev, Velkovska, Garvanlieva,2020)..

The accuracy of its instrument sets determines the GMM estimator's efficiency. Arellano and Bond (1991), Arellano and Bover (1995), and Blundell and Bond (1995) proposed two specification tests to resolve this problem (2000). The first is the Sargan test, which examines whether the null hypothesis of over-identification limits are in place or whether instruments are exogenous as a category.

By testing the sample analog of moment conditions used in the estimation process, this measure proves or disproves an instrument's overall reliability. The second test looks at the null hypothesis, which states that autocorrelation does not exist and that the error terms are not serially associated. We use difference regression to see whether the differenced error term is serially uncorrelated in first or second order.

The dynamic panel data model (GMM) has the following specifications:

$$\text{Ln}Gini\square\square/HDI\square\square = \square + LnGini\ (\square\square - 1) + \beta 1(LnFDI\square\square) + \square 2(LnFDI\square\square) + \square 3(LnGDPpc\square\square) + \square 4(LnInfl\square\square)$$

$$+\square 5(LnGDPgr\square\square) + \square 6(Lneduineq\square\square) + \square 7(Lngndineq\square\square) + \square 8(sclenrlmtter\square\square) + \square i + \gamma i + \varepsilon i \quad \textit{Equation 3}$$

The dependent variable is Gini index / HDI for each country i and t represents years, μ is term of constant; explanatory variables include Gini /HDI it–1is the first lag of dependent variable, FDIit is foreign direct investment and FDI2 it represents Foreign direct investment square assuming a non-linear relationship between inequality and FDI. Based on the theoretical assumption that the relationships between FDI and Gini/HDI is non-linear. In order to increase model efficiency and to have robust results, we also incorporate and control variables. The effect of the control variables on inequalities is taken into account when choosing them. (Checherita and Rother, 2010; Sala-i-Martin et al., 2004; Kumar and Woo, 2010; Sala-i-Martin et al., 2004). Trade openness, GDP growth rate, GDP per capita, inflation, education inequality, gender inequality, and tertiary school enrollment are the control variables. The word δi stands for the country fixed effect, which allows

us to account for time-invariant unobservable variables that can influence discrimination and contribute to bias coefficients. The word γi refers to a specific time effect that encompasses the business cycle effect, which would otherwise result in spurious regression between the dependent variable and the explanatory variables. The term εit represents standard error.

In the following you can find in summary the econometric models used in the paper. The two-step Least Squares approach is used in linear regression to handle models in linear regression with endogenous explanatory variables. An endogenous variable is a corresponding variable in the regression model with the error term. The use of the endogenous variable contradicts the assumptions of linear regression. This type of variable can be found when a mistake is measured (Xlstat). To deal with this issue and acquire unbiased estimates, we make use of the two-stage least-squares estimator (2SLS). This enables us to use instrumental variables (ivs) to deal with the endogenous FDI variables (Akbaba, 2018). Consequently, at least one IV is required that is correlated with the FDI variables and uncorrelated with the error term in the respective model (Akbaba, 2018). A common approach is to use lagged values of the endogenous variable as the IV (Akbaba, 2018). Since several papers from the literature also employ this method, we find sufficient reason to instrument the potentially endogenous FDI variables by their one-period lagged values (Akbaba, 2018). Including lagged FDI also ensures that any effects on wages are completed since it normally takes time to notice any substantial spill-over effects on inequality (Akbaba, 2018).

Fixed Effects Regression; In a panel data analysis, as it is the case at hand in this study, there may be an unobserved heterogeneity across countries in the sample, and this issue needs to be controlled by using random effects or fixed effects approach. However, the fixed effects method is usually preferred as an estimation method because the random effects model relies on an important assumption that the country-specific effects are not correlated with the other explanatory variables in the model. In other words, the fixed effects (FE) method is the suitable approach if the unobserved country-specific effects are correlated with the explanatory variables. Hausman test is usually performed to guide the choice of the appropriate method between the fixed effects method and random effects method

Random Effects Regression: This examination is generally aimed at generalizing it to a variety of contexts. So if one had the argument that all studies employed the same tightly defined sample,

then it would not be feasible to extrapolate to others from this sample and the usefulness of the research was severely restricted (Meta-Analysis).

Generalized Method of Moments(GMM): This estimator is proposed by Arellano and Bond (1991). This method was extended by Arellano and Bover (1995), and Blundell and Bond (1998). The GMM approach has several advantages such as its ability to control for the country-specific effects and the simultaneity bias caused by some potential endogenous explanatory variables. The GMM version proposed by Arellano and Bond (1991) is known as a first-differenced GMM estimator. In this approach, the lagged levels of the regresses are used as instruments. It is valid under the assumptions that (i) the error term is not serially correlated, and (ii) the lag of the explanatory variables are weakly exogenous. This method is able to control for simultaneity bias and country-specific effects. However, its major limitation is that, when the explanatory variables are persistent, the lagged levels of the explanatory variables tend to become weak instruments, and hence may lead to biased estimates (Blundell and Bond, 1998).

5.1.1 Endogeneity Issues

The fundamental problem with the variables is that numerous independent factors may be associated with the error term, i.e. endogeneity problems. This would cause our regressions to have partial coefficients if not addressed. Endogeneity bias is conceivable in our model for several reasons. Firstly, reverse causation between inequality and FDI may be present. FDI in particular might not just explain inequality; but inequality may also play a role in deciding whether to invest in a country for a multinational (Akbaba, 2018). For instance, a MNC could be less willing to invest in a country that has high inequality levels due to higher risks of social conflicts and instability (Akbaba, 2018). Conversely, vertical MNE's can exploit the high inequality level and locate low-wage low-skilled activities in the country (Herzer and Nunnenkamp, 2013). The majority of the literature on the effects of FDI on inequality address issues such as endogeneity but they generally deal with them in different manners (Akbaba, 2018). For example, Figini and Görg (2011) and Milanovic (2005) use the generalized methods of moments systems estimator, whereas Sylwester (2005) builds a simultaneous three-equation model including the Gini, FDI and the economic growth rate. To deal with this issue and acquire unbiased estimates, we make use of the two-stage least-squares estimator (2SLS).It allows the use, for the endogenous FDIs, of instrumental variables (ivs). As a result, at least one IV must be connected with and not associated with the FDI variables in the corresponding model with an error term. A common approach is to

use lagged values of the endogenous variable as the IV (Akbaba, 2018). Since several papers from the literature also employ this method, we find sufficient reason to instrument the potentially endogenous FDI variables by their one-period lagged values (Akbaba, 2018). Including lagged FDI also ensures that any effects on wages are completed since it normally takes time to notice any substantial spill-over effects on inequality (Akbaba, 2018).

5.2 Data

The empirical analysis primarily makes use of an unbalanced panel dataset, consisting of 6 Western Balkan Countries in total over the period of 2007 to 2019 and reaching up to 78 observations (Akbaba, 2018). To check the robustness, the alternative proxy used instead of Gini was HDI (Khan, Nawaz, 2019). A brief description of all the variables based on WDI, SWIID, UNCTAD and UNDP is given in the following. All regressions and diagnostic checks are performed using the econometric software STATA 16.

Table 7 Variables used in research

Variable	Description	Source
$Giniindex_{it}$	A measure of the income distribution in a country, In my data listed between 0 and 100. 0 shows full equality, and 100 refers to greatest disparity.	SWIID,World Bank Povcal
$HDIt_{it}$	Human Development Index is a combination of life expectancy, education and per capita income indicators, which are used to mark countries under four tiers of human development (HDR, UNDP). The HDI uses the logarithm of income, to reflect the diminishing importance of income with increasing GNI, (HDR, UNDP)	UNDP

FDI_{it}	The liabilities (stock) of FDI in a country, divided by total GDP in USD, times 100	World Bank Povcal, Lane & Milesi-Ferretti (2007)
$Tradeopenness_{it}$	Is represented by the sum of imports and exports as percentage of GDP (Sylwester,2005)	World Development Indicators
$logGDP\_pcap_{it}$	GDP per capita in current USD	World Development Indicators
$gdpgrowth_{it}$	Annual GDP growth measured in percent	World Development Indicators
$inflation_{it}$	Inflation, FDP deflator (annual %(	World Development Indicators
GII_{it}	Gender Inequality Index is the ratio of women to men on three core dimensions of (Stoet, Geary 2019) life.1.) Educational opportunities in childhood; 2.) Healthy life expectancy*the number of years one can expect to live in good health; and 3.(Overall life satisfaction (Stoet, Geary 2019)	UNDP
EII_{it}	Calculated using Mean years of Schooling and Expected Years of Schooling	World Development Indicators

$Schoolenrollmenttert_t$	Calculated by dividing the number of students enrolled in tertiary education regardless of age by the population of the age group which officially (corresponds to tertiary education, and multiplying by 100(World Bank)	World Development Indicators

5.2.1 Dependent Variable: Inequality

1 Dependent variables- two proxy variables.

The income inequality was computed using Gini and HDI for each country-year. We acknowledge that the Gini coefficient is not the only way of measuring income inequality. Our choice is highly motivated by the relative availability of the Gini coefficient as compared to the other existing inequality measures. Also, the Gini coefficient is the widely used income inequality indicator in the literature, and as pointed out by Clarke (1995), it is highly correlated with the other existing indicators of income inequality. Two proxies were used to examine income inequality. In terms of income distribution, the Gini index value varied from 0 to 1-0 and in terms of inequality the highest. There is no totally equal distribution of money since people differ in terms of knowledge (Khan, Nawaz, 2019), capabilities, education attainment, etc. Pereira and Salinas (1978) pointed out that Gini coefficient is the most popular measure of inequality among other contending measures. Elements such as human capital, trade, economic growth, (Khan, Nawaz, 2019) inflation have an effect on distribution of income. The Gini index used as income inequality indicator in this study is sourced from the Standardized World Income Inequality Database by Solt (2016). This database allows us to assess the relationship between FDI and income inequality much more profoundly than most of the previous studies that often have to struggle with more missing observations and a low number of degrees of freedom (Mihaylova, 2015). The extensive use of Gini-coefficient in literature has strongly influenced the use of Gini-coefficient in the current study (Basu and Guariglia, 2007; Çelik and Basdas, 2010; Chaudhry and Imran, 2013; Choi, 2006; Franco and Gerussi, 2013) Lin et al. (2014), IMF (2015), Anyanwu et al. (2016), Kaulihowa and Adjasi (2017), among others.

Human Development Index (HDI) is a combination of life expectancy, education and per capita income indicators, which are used to mark countries under four tiers of human development (HDR, UNDP). The HDI uses the logarithm of income, to reflect the diminishing importance of income with increasing GNI (HDR, UNDP). The scores for the three HDI dimension indices are then aggregated into a composite index using geometric mean (HDR, UNDP). To check the robustness, the alternative proxy used instead of Gini is HDI (Khan,Namaz, 2019). Likewise, HDI is viewed as an index of "potential" human development. When there is a perfect distribution of income in society, the HDI value is the maximum. On the other hand, unequal distribution of income leads to lower HDI value. The value of HDI ranges from 0 to 1. The country scores the highest value of HDI when the life expectancy, the education level and the GDP per capita (Khan,Nawaz, 2019) are higher. Conversely, the country scores 0 when the life expectancy, education level and GDP per capita are quite low (Khan,Nawaz, 2019)

5.2.2 Independent variables;

The main variable of interest is Foreign Direct Investments. Following common practice (Chintrakarn et al., 2012; Figini and Gorg, 2006; Franco and Gerussi, 2013; Herzer and Nunnenkamp, 2011), in the current study, the stock value of inward FDI was used, which was the total amount of capital by foreign investors in the receiving country (Herzer and Nunnenkamp, 2013). The stock value of inward FDI was used rather than inflows because the stocks are permanent investments and their impact on income inequality is quite different from that of temporary investments (Herzer and Nunnenkamp, 2013). The data on inward FDI stock are calculated from UNCTAD, 2020.

Trade openness is represented by the sum of imports and exports as percentage of GDP and is taken from WDI(Khan, Nawaz, 2019) WB. The measure of trade openness is considered to capture the direct impact of trade openness on income inequality and is used extensively in literature (Dollar and Karry, 2002; Celik and Basdas, 2016; Chaudhry and Imran, 2013; Mah, 2003; Sylwester, 2005) (Sylwester, 2005). According to the standard trade theory, trade openness would favor owners of the abundant production factor.

GDP per capita. An indicator of the level of economic development is usually included in income inequality regression in order to account for the famous Kuznets effect. Kuznet (1955)

hypothesized that inequality increases in the early phase of development and decreases as the country moves towards the later phase of development. Following Wu and Hsu (2012), Franco and Gerussi (2013) and others, we use the natural logarithm of the real GDP per capita measured in 2020 constant US dollar purchasing power parity(PPP) to control for the effect of economic development on income inequality in Western Balkan countries. The data on GDP per capita PPP is taken from World Development Indicators (2020).

Inflation is usually included in the inequality model to account for the effect of unstable macroeconomic conditions on inequality. Poor people are more affected by high inflation than the rich, especially in countries where the nominal income is not adjusted with inflation. High inflation hurts disproportionately the purchasing power of those at the bottom of the distribution and tends to worsen income inequality.

Gender Inequality (BIGI) is the ratio of women to men on three core dimensions of life; 1) Educational opportunities in childhood; 2) Healthy life expectancy (the number of years one can expect to live in good health); and, 3) Overall life satisfaction (Stoet, Geary, 2019). The GII is an inequality index. It measures gender inequalities in three important aspects of human development—reproductive health, measured by maternal mortality ratio and adolescent birth rates (HDR, UNDP).

Education Inequality-The children of high-income parents often become high-income adults, while their low-income peers often become low-income adults (Bloome, Dyer, Zhou, 2018). Education plays a central role in this intergenerational income persistence (Bloome, Dyer, Zhou, 2018) . Because education-based inequalities grew in recent decades, many scholars predicted that intergenerational income persisted (Bloome, Dyer, Zhou, 2018).The measurement of education inequality that Torpey-Saboe has developed: a Gini coefficient for years of schooling (Torpey-Saboe, 2019). This Gini coefficient is derived using data from Barro and Lee (Journal of Development Economics 2013, pp. 184–198) on educational attainment for various portions of the population and United Nations Educational, Scientific and Cultural Organization (UNESCO) data on the duration of primary and secondary schooling in countries around the world (Torpey-Saboe, 2019). Using these datasets, Torpey-Saboe calculates the shares of the population that have attained corresponding shares of the total years of education in the country and constructs a Gini coefficient for education inequality (Torpey-Saboe, 2019).

Tertiary school enrolment was calculated as percentage of gross enrolment ratio(Khan, Nawaz,2019). Gross enrollment ratio can exceed 100 per cent owing to the inclusion of over- and under-aged students because of early or late school admission and grade repetition (Khan, Nawaz, 2019). It was observed that the rate of literacy through its effect on the population of skilled labor over the years has improved the distribution of income (Khan, Nawaz, 2019). The tertiary school enrollment ratio was added in the model to assess the role played by education in shaping the labor market (Khan, Nawaz, 2019).. It is expected that the higher the enrollment ratio, the higher is the supply of skilled labor (Khan, Nawaz, 2019).. This in turn may reduce wage inequality by increasing the relative supply of skilled labor (Khan, Nawaz, 2019). The higher level of education can result in demand for skilled labor (Khan, Nawaz, 2019). The demand for skilled labor is linked with the decline of income inequality (Figini and Gorg, 2006; Basu and Guariglia, 2006; Mahesh, 2016; Jensen and Rosas, 2007; Mihaylova, 2015). According to Barro and Lee (2001). Furthermore, previous studies have shown that an increase in education can help to increase human capital, which leads to an increase in employment and, thus, reduction in the income distribution (Tsai, 1995; Jensen & Rosas, 2007).

5.3. Descriptive Statistics

The summary statistics for the paper in Table 1. Through descriptive statistics we will describe some of the statistical data for the variables which are included in the first econometric model and will analyze the Pearson correlation coefficient between the dependent variable and the independent variables which are included in this study to test the first hypothesis. Initially, the mean, standard deviation, maximum and minimum values, variance will be analyzed. The summary statistics are presented in the table below. The numbers of observations vary across variables, which may give us reason to believe that some of the predictions may not be as strong as desired.

Table 8 Descriptive statistic

Variable	Observation	Mean	SD	Minimum	Maximum
Gini	78	35.39571	3.896912	28.2	39.9
HDI	78	0.7641167	0.028683	0.713	0.816
FDI	78	7.34225	5.697263	0.5358076	37.27248

Tradeoppenness	78	92.06999	17.41327	66.02182	137.2766
GDPpercapita	78	12874.56	2419.516	7538.314	18179.78
GDPgrowth	78	2.891394	2.43674	-5.795094	7.49997
Inflation	78	3.034503	2.727737	-0.6324429	16.04154
Tertiary school enrolment	78	49.8545	10.66495	30.68713	67.78984
Education Inequality	78	10.20889	3.965695	2.5	19.8
Gender Inequality (BIGI)	78	0.1955385	0.0426737	0.119	0.273

Source: Author's calculation

The correlation analysis is needed to measure the significance of the association between the study variables. The correlation coefficient is usually represented by the "r" letter and can take values between -1 and +1. The +1 value shows an ideal positive correlation, as opposed to the value of -1 which represents ideal negative correlation. Values in between -1 and + 1 show a Data analysis ,Descriptive Inferential Statistics ,Statistics Frequencies, Means ,Correlation ,Multiple Regression 87 weaker positive or negative correlation (Saunders et al., 2009; Walliman, 2011) There may also be a 0 value that represents the perfect independent correlation, but this s a very unusual case in research. In correlation, both variables are treated equally and neither is considered to be a predictor or an outcome (Crawford, 2006). There are an extensive number of correlations that may be used based on the type of scale used to measure the variables. The correlation between variables in this study is measured using Karl Pearson's correlation coefficient, known also as the Pearson Moment method, named in honor of the English statesman Karl Pearson, who is said to be the inventor of this method (Singh, 2006).

Table below presents the correlation matrix of the variables. FDI is positively correlated with the Gini coefficient, IHDI and HDI. GDP per capita and trade openness and inflation are negatively correlated with the Gini coefficient while inflation and financial development are positively correlated with the Gini coefficient (Seven, 2021). The moderate positive correlation is seen between Gini coefficient, and gender inequality, However, correlation does not mean causality which is the relation in which our study is interested. More rigorous econometric methods are

necessary. The small size of the correlation coefficients between the explanatory variables is an indication of no risk of multicollinearity (Yeboua, 2019).

5.4 Regression Diagnostics

Prior to estimating the regressions, several diagnostic tests are performed to assess the validity of our model (Akbaba, 2018). Firstly, using the Augmented Dickey Fuller (ADF) test, all variables are tested for the presence of unit-root (or non-stationarity). If a variable is non-stationary, the estimation results are spurious and hence makes the regression unreliable (Akbaba, 2018). When there is a unit root present in a variable, it is therefore replaced by its first difference to ensure stationarity (Akbaba, 2018). We find no evidence of any multicollinearity issues (Akbaba, 2018). Working with panel data usually provides a convenient way to control for unobserved effects (Akbaba, 2018). These are unpleasant when untreated, as they cause the estimated coefficients to be correlated with the error term and thus potentially make the estimates susceptible to (omitted variable) bias (Akbaba, 2018). This generally happens in pooled OLS models so it is more practical to use a special type of model (Torres-Reyna, 2007). In fixed effects (FE) models, country-specific unobserved effects are captured and thus allows for an arbitrary correlation between these effects and the independent variables (Akbaba, 2018).

In fixed effects (FE) models, country-specific unobserved effects are captured and thus allows for an arbitrary correlation between these effects and the independent variables (Akbaba, 2018). This is in contrast to the random effects method, where the error term and the independent variables are assumed to be uncorrelated with each other (Wooldridge, 2010). The majority of papers that have analyzed the effects of FDI on inequality have estimated FE models (Akbaba, 2018). Nevertheless, we check which model to consult by using the Haussmann test. Based on the results, it is confirmed that a FE model is preferred (Akbaba, 2018). Finally, the assumptions on the error term must be tested (Akbaba, 2018). After running a modified Wald test, as explained by Torres-Reyna (2007), it is found that the residuals are not homoscedastic.

6. Empirical Results

In this chapter we will present all the results of the research which have been carried out to confirm the hypotheses set out at the beginning of this study. Before analyzing all the evaluation reports for the two hypotheses presented, it is necessary to clarify each econometric model which has been applied for testing the hypotheses, the variables included in the model, the methodology of data collection, scientific arguments for the use of certain variables as well as interpretations of empirical results.

The economic model built to test this hypothesis is based on the aforementioned studies, given that most of these authors have used secondary data, including time series and dynamic models to test this hypothesis. We are also based on time series data published by the SWIID, the World Bank for the period 2007-2019. The data included in these econometric models are data reported on an annual basis, and the number of observations reaches up to value 78. We applied the following statistical tests: Two- stage least Square regression, fixed effect model and random effect, Hausman Taylor model and Generalized method of moments (GMM).

The main purpose of using these models lies in the fact that we are dealing with panel data and dynamic models. Through these statistical tests most authors have identified the link between Inequality and Multinational Enterprises. The table above presents the variables that will be used to construct the econometric model and test the first hypothesis.

Results for the estimation of the relationship between Multinational companies through FDI and income inequality by considering two different dependent variables – Gini coefficient and Human Development Index for each dependent variable. The empirical analysis was built around various models, including Foreign Direct Investment measures(Khan, Nawaz, 2019) in broad terms and particular components of explanatory. Each model has been estimated by taking logarithm function while FDI with lag.

In the following section, we will present the testing of the hypotheses identified at the start of this dissertation, as well as all of the obtained findings, which validate the hypotheses and will assist us in answering research questions and fulfilling study objectives.

6.1 The econometric assessment and testing of the 1st group of sub- hypotheses

The first research question of this study addresses the issue of impact of Multinationals on economic inequality. The latest economic literature focuses primarily on two explanatory factors of increasing economic inequality: FDI and trade openness. The results of several studies have been searched during the literature review process and raise the question of the ways in which MNE's impact economic inequality in transition economies? During the analysis and interpretation of the scientific evidence, different distinctions are made between our empirical findings and the results of other authors' studies Sen et al. 1997; Thorbecke and charumilind,2002; Solt F.,2008; Van Kerm and Jenkins ,2009.

H1a: There is a significant effect of Economic Inequality from MNE's;

H1d: There is a significant relationship between trade flows (exports, imports) and Gini

H1f: There is a negative correlation if trade flows increases will decrease the Gini coefficient too;

Table 9 Description of variables in 1st sub-hypothesis

Variable	Description	Source
$Giniindex_{it}$	A measure of the income distribution in a country, listed from 0 to 100 in my data.	SWIID,World Bank Povcal
$HDIt_{it}$	Human Development Index is a combination of life expectancy, education and per capita income indicators, which are used to mark countries under four tiers of human development (HDR, UNDP). The HDI uses the logarithm of income, to reflect the diminishing importance of	UNDP

	income with increasing GNI (HDR, UNDP)	
FDI_{it}	The liabilities (stock) of FDI in a country, divided by total GDP in USD, times 100	World Bank Povcal, Lane & Milesi-Ferretti (2007)
$Tradeopenness_{it}$	Is represented by the sum of imports and exports as percentage of GDP (Sylwester, 2005)	World Development Indicators
$logGDP\_pcap_{it}$	GDP per capita in current USD	World Development Indicators
$gdpgrowth_{it}$	Annual GDP growth measured in percent	World Development Indicators
$inflation_{it}$	Inflation, FDP deflator (annual %)	World Development Indicators

The main purpose of using these models lies in the fact that we are dealing with panel data and dynamic models. Through these statistical tests most authors have identified the link between foreign investment, trade openness and the Gini index. The following table shows the variables that will be used to construct the econometric model and test the first hypothesis.

The Gini index, which was used as a first proxy measure of income inequality in this analysis, was obtained from Solt's Standardized World Income Inequality Database (2016). This

database makes for a far more in-depth examination of the relationship between FDI and income inequality than other prior analyses, which often suffer with more missing findings and a low degree of freedom.

The widespread use of Gini coefficient in literature has greatly affected the uses of Gini in the present research (Choi, 2006; Basu & Guariglia, 2007; Çelik and Basdas, 2010; Chaudhry & Imran, 2013 (Çelik and Basdas, 2010); Franco and Gerussi, 2013, Lin and al. ,2014) .The second proxy used as a dependent variable is the human development index, that is obtained from the United Nations Development Program and is used to calculate inequality in this dissertation. Foreign Direct Investment (FDI) is the primary independent variable used in this study.

Since the impact of MNE's was determined by FDI, the inward FDI stock was used as the total capital sum for foreign investors in the receiving region (Herzer, Nunnenkamp, 2013). The cumulative amount of capital invested by foreign investors in the receiving country has been used as a stock amount of inward FDI (Herzer, Nunnenkamp, 2013). Data on inward FDI stock is obtained from UNCTAD, 2020. The second major independent variable in this hypothesis is trade openness, which is measured as the total of exports and imports as a percentage of GDP and obtained from the World Bank's World Development Indicator. The following explanatory variables are used to calculate the effect of inequality: GDP per capita, an index of economic development; it is expected that as GDP per capita increases, inequality decreases; data for this explanatory variable are taken from WDI- World Bank (2020). And besides, per capita income is calculated by dividing total income by the population (MacDonald, 2014). The difference between the growth rate of income and the growth rate of population is approximately equal to the growth rate of GDP. Inflation coefficients reveal that a rise in inflation worsens income inequality; Muhibbullah and Dad (2019) show that a 1% increase in inflation raises income inequality by 4.99 percent in Bangladesh. This variable's data is also sourced from the WDI-World Bank

6.1.1 Descriptive statistics and correlation analysis for the first econometric model.

Through descriptive statistics we will describe some of the statistical data for the variables which are included in the first econometric model and the correlation coefficient will be analyzed. Pearson between the dependent variable and the independent variables which are included in this study, to test the first hypothesis. Initially, the mean, standard deviation, maximum and minimum values, variance, curve and kurtosis will be analyzed. The following table presents descriptive

statistics for the variables included in the first econometric(Grundvag et al.,2021) model. The main purpose of the use of these descriptive analysis is to identify the accuracy of the data, which are taken as a basis for measuring econometric models.

Table 10 Descriptive statistics of 1st sub-hypothesis

Variables	Obs	Mean	Std. Dev.	Min	Max
log_Ginii	70	3.56026	0.115023	3.339322	3.686376
Log_HDI	60	-0.26973	0.037675	-0.33827	-0.20334
FDI_lag1	72	7.479751	5.86382	0.535808	37.27248
log_Tradeo	78	4.50564	0.183355	4.189985	4.921998
log_GDPpc	78	9.444211	0.199438	8.927753	9.808065
log_GDPgrwth	69	1.13394	0.543668	-0.31328	2.014899
log_Infl	76	0.767055	0.954205	-1.73148	2.775181

Source: Author's calculation

The correlation between the variables of this econometric model is analyzed in the following of this chapter. The Pearson coefficient, which shows the association between independent and dependent variables, is used to calculate correlation. The values of the correlation coefficient between the GINI index, HDI, and other independent variables are seen in the table below.

FDI is positively correlated with the Gini coefficient and HDI. GDP per capita, GDP growth, trade openness and inflation are negatively correlated with the Gini coefficient while all these positively correlated Human Development Index.

Table 11 Correlations between variables in 1st sub-hypothesis

	log_Gini	Log_HDI	FDI_lag1	log_Tradeo	log_GDPpc	log_GDPgrwth	log_Infl
log_Ginii	1.0000						
Log_HDI	0.2275	1.0000					
FDI_lag1	0.2960	0.6759	1.0000				
log_Tradeo	-0.5596	0.0667	-0.1050	1.0000			

log_GDPpc	-0.6967	0.3968	0.0465	0.7177	1.0000		
log_GDPgrw	-0.0732	0.3524	0.1693	0.3910	0.4197	1.0000	
log_Infl	-0.4845	0.0333	-0.0304	0.2854	0.4322	0.1954	1.0000

Source: Author's calculation

6.1.2 Specification of the econometric model and analysis of multiple linear regression.

To answer this question, we use a variety of econometric models and techniques, including 2SLS, fixed and random effects models, and GMM (Generalized Method of Moments). The data from World Bank World Development Indicators (WB), United Nations Development (UNDP) Program and Solt's World Income Inequality Standardized Database (SWIID) (2016) were obtained for this study.

The empirical evidence includes panel data for the Western Balkans countries from 2007 to 2019 (approximately 12 years). The countries mentioned are Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia and Serbia. The empirical specification baseline is given below:

$$\gamma = \beta_{0+}\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + ui + eit \qquad 4$$

Where:

Y= is Gini index or Human Development Index

X1=Foreign Direct Investment

X2= Trade Openness

X3= GDP per capita

X4=Inflation

X5=GDP growth rate

Based on the data given for the first econometric model, we transformed each variable into a logarithmic function (Log) to get an estimate of the values used in this econometric model. The general equation's form then appears:

$$Inequality\text{-}(Giniit \ \ or \ HDI \ it) = \beta 0 + \beta 1 \ FDIit + \beta kXitk + ui + eit \qquad 5$$

Where inequality is a measure of intra-country income disparity (GINI or HDI) over time periods t=1,2,.....,T and countries i=1,2,.....,N. FDI (Foreign Direct Investment) It characterizes the independent variables on accumulated FDI stocks as a percent of Gdp in country I at time t (Suanes, 2016) . Xit is a set of control variables that will be addressed further down. The term u-i stands for the fixed effect by country, or country-specific effects, and e-it stands for the remaining white noise error term (Liebrand, 2018), which captures any country-specific omitted factors that are assumed to be correlated with disparity. This variable was assigned to address besides unobserved heterogeneity between countries. Country and time ignorance are both equal but are not stated to be easy to grasp. Those countries and time effects are taken into account to ensure that the framework illustrates an exogenous shift that occurs from outside the model, i.e. that all observed or unnoticed factors causing inequalities have been regulated in the model.

6.1.3 Estimation with Gini Index coefficient as dependent variable

6.1.3.1 Two-Stage Least Square

There are no general rules regarding the value of the R squared value, and the decision of what value of R squared is considered adequate depends on the particular research discipline. Chin (1998) recommended R2 values for endogenous latent variables based on: 0.67 (substantial), 0.33 (moderate), 0.19 (weak). The coefficient of determination R-Squared for the study is 0.3320 with Two-Stage Least Square model. This indicates that 33.20% of the variations in the model can be explained by the explanatory variables of the model.

Table 12 Results with Gini estimation-2SLS model for 1st sub-hypothesis

	(IVreg)
VARIABLES	LogGini
log_Foreigndirectinvestmentneti	-0.0745

	(0.0610)
log_FDI2	0.0411**
	(0.0184)
LogTradeofGDP	-0.124
	(0.108)
log_GDPpercapitaPPPconstant20	0.297***
	(0.0916)
log_GDPgrowthannual	-0.0475*
	(0.0273)
log_InflationGDPdeflatorannual	0.00225
	(0.0170)
Constant	1.345**
	(0.615)
Observations	67
R-squared	0.314

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The result in Table 12 shows that the coefficient of the Foreign Direct Investment is negative coefficient (-0.0745) and statistically in moderate level significant; thus, the FDI has effect to accelerate the inequality and supports the Kuznets hypothesis that there is a nonlinear relationship among FDI and inequality (N'Yilimon, 2015). Our results are equally in line with the findings of Wu and Hsu (2012).

The trade openness has a negative coefficient (-0.124) argues that export and imports contributes on reducing the income inequality in the region. The positive coefficient of the GDP per capita (0.297) and significant with 99 % confidence level indicates the level of economic development would most probably increase income inequality in Western Balkan countries. This tends to support the Kuznets hypothesis according to which at the early phase of economic development, economic growth increases income inequality. Our finding is in line with Cho and

Ramirez (2016), Im and Mclaren (2015), and Jensen (2007), among others who find a positive but statistically significant effect of GDP per capita on income inequality. Inflation has a positive coefficient of (0.00225) shows that this explanatory variable has effect on decelerating income inequality in Western Balkan countries. The GDP growth has a negative coefficient (-0.0475) and significant in 90 % confidence level indicating that GDP growth contributes in reducing the inequality.

6.1.3.2 Random Effect Model

Dynamic panel model specification (Random - Effects) to test the impact of foreign investment on inequality.

$$Log\_Gini = \beta_{0+}\, \beta_1 FDI_{it} + \beta_2 Trdeopen_{it} + \beta_3 XGDPpc_{it} + \beta_4 GDPgwr_{it} + \beta_5 infl_{it} + Yit \qquad 6$$

Given that all the symbols presented in the above econometric model are the same as in the multiple linear regression analysis, except for the symbol over time periods t=1, 2.....,T and countries i=1,2,.....,N.

Table 13 Results with Gini estimation, Fixed-effect model for 1st sub-hypothesis

VARIABLES	(RE) LogGini
FDI_lag1	0.00600*
	(0.00309)
log_Foreigndirectinvestmentneti	0.0124
	(0.0293)
LogTradeofGDP	-0.179
	(0.120)
log_GDPgrowthannual	-0.0451
	(0.0280)
log_GDPpercapitaPPPconstant20	0.373***
	(0.103)
log_InflationGDPdeflatorannual	-0.00414
	(0.0178)

Constant	0.816
	(0.659)
Observations	61
Number of Code	6

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of Foreign Investment (0.00600) in this model has a positive coefficient with confidence level 90% indicating that an increase in foreign direct investment will lead increase in inequality too. The coefficients of trade openness (-0.179) and GDP growth rate (-0.0451) have a negative influence concluding that those two variables decrease the inequality in region. The coefficient of GDP per capita (0.373) have a positive coefficient and statistically significant with 99 % confidence level meaning that main independent variable and explanatory variable of this hypothesis has a negative effect on economic inequality and the coefficient of inflation (-0.00414) have negative coefficients arguing that this control variable implies on reducing the inequality in the region.

6.1.3.3 Fixed Effect model

The model of the fixed effects is also one of the most relevant experiments with a very broad use of dynamic panel data statistics. The key reason for using this model is that the data are not random, and the fixed effects estimator, corresponding to the internal regression coefficient estimator, is used in this study. The findings of the econometric model of fixed effects are shown in the table 14 below:

Table 14 Results with Gini estimation, Random-effect model for 1st sub-hypothesis

	(FE)

VARIABLES	LogGini
FDI_lag1	0.000128
	(0.000355)
log_Foreigndirectinvestmentneti	0.00350
	(0.00385)
LogTradeofGDP	-0.0412**
	(0.0193)
log_GDPgrowthannual	0.00352
	(0.00295)
log_GDPpercapitaPPPconstant20	-0.0276
	(0.0209)
log_InflationGDPdeflatorannual	-0.00201
	(0.00215)
Constant	3.993***
	(0.167)
Observations	61
Number of Code	6
R-squared	0.263

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The results presented in the table 14 using fixed effect model, the coefficient of determination R-Squared for the sample is 0.263. This implies that the model's explicatory variables will account for 26.3 percent of the variations. The FDI has a positive coefficient (0.000128) meaning that main independent variable of this hypothesis has a negative effect on economic inequality stating that an increase in FDI will lead in the rise of economic inequality in the region too. The coefficient of trade openness (-0.0412) have a negative coefficient and

statistically significant with 99% confidence level, GDP growth rate has a positive influence (0.00352) indicating in increasing the disparity, the inflation coefficient (-.002013) have negative coefficient arguing that this variable contributes on reducing the inequality in the Western Balkan countries. The GDP per capita has a negative coefficient (-0.0276), implying that an increase in GDP per capita would also lead to a decrease in inequality in the region.

6.1.3.4 Hausmann Taylor

The Hausman and Taylor (1981) model is a hybrid statistical model that combines the robustness of a fixed effects model with the efficiency and applicability of a random effects model. The data of the first hypothesis will also be tested through this model, in order to make comparisons with other statistical tests. The Hausman-Taylor Regression model takes into account the effect of exogenous variables on the observations included in the econometric model. Two very important variables that explain the impact of Multinational Corporations on the inequality. The following table presents the econometric results of the regression analysis applying the Hausman-Taylor model.

The baseline of Hausmann-Tylor model of the empirical specification is given as below:

$$\gamma = \alpha + \beta 1(\quad - 1) + \beta 2(\quad) + \beta 3(LnTradeoppenessit) + \beta 4(LnGDPgrwthit) + \beta 5(LnGDPpc) + \beta 6(Lninfl) + uit \quad 7$$

The results on the estimation demonstrate that the main explanatory variable, foreign direct investment have a positive coefficient and significant in 99% confidence level stating that a coefficient which contributes to reverse influence in Inequality and a nonlinear relationship.

Table 15 Results with Gini estimation, Hausman -Taylor IV model for 1st sub-hypothesis

	(Hausman-Taylor)
VARIABLES	LogGini
log_FDI2	0.00668***
	(0.00253)

LogTradeofGDP	-0.0255
	(0.0349)
FDI_lag1	0.000312
	(0.000712)
log_GDPgrowthannual	-0.00814
	(0.00584)
log_InflationGDPdeflatorannual	-0.000333
	(0.00409)
log_GDPpercapitaPPPconstant20	0.185***
	(0.0357)
Constant	-1.904***
	(0.293)
Observations	61
Number of Code	6

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficients of trade openness, GDP growth rate and inflation have negative impact on inequality, moreover an increase in those coefficients will lead to the decrease of inequality in the Western Balkan countries. The coefficient of GDP per capita has a positive coefficient (0.185) and statistically in 99 % confidence level stating that this coefficient contributes to decreasing the disparity in the region.

6.1.3.5 GMM Model

In statistics and econometrics, the GMM model is one of the general methods applied for estimating parameters in statistical models. This model is usually applied to dynamic panel data. One of the other important criteria for the implementation of this model is also the value of the parameters included in other models must be very close to zero and through this method the problem of endogeneity of variables is explained.

The dynamic panel data model (GMM) has the following specifications:

$$\text{Ln}Gini/HDI = \alpha + LnGini\,(t-1) + \beta 1(LnFDI) + \alpha 2(LnFDI) + \alpha 3(LnGDPpc) + \alpha 4(LnInfl)$$

$$+\alpha 5(LnGDPgr) + \alpha i + \gamma i + \varepsilon i \qquad 8$$

The findings demonstrate that all measured dynamic panel models are well developed, as the coefficients of the lagged realistic Gini index are statistically important. Furthermore, the Sargan -test for identifying limitations in the presence of heteroscedasticity with the corresponding p-value, which tests the reliability of the instrumental variables, is acknowledged (generated in the result of the second step) as safe instruments for all approximate equations. As a result, the findings of the GMM estimator support the hypothesis that instrumental variables are unrelated to the group of residuals. Therefore, Arellano – Bond tests AR (1) and AR (2) with p-values in the first order are refused, while they are approved in the second-order confirming that the second-order is not auto correlated between the error term (by construction, the differenced error term is first-order serially correlated even if the original error term is not).

In applying the GMM estimator, the variables that are considered to be exogenous and used as their instruments school enrollment tertiary (set). The variables that are considered to be endogenous and are instruments by the deviation of the individual mean are Foreign Direct Investment first lag (fdilag1), GDPgrwoth (GDPgr), inflation (infl), and trade openness (to).

Table 16 Results with Gini estimation, GMM model for 1st sub-hypothesis

	(GMM)
VARIABLES	LogGini
LogGini_L1	0.0138
	(0.00939)
log_Foreigndirectinvestmentneti	-0.00415**

	(0.00211)
log_FDI2	0.00162**
	(0.000760)
LogTradeofGDP	-0.0532***
	(0.00807)
log_GDPgrowthannual	-0.00164
	(0.00114)
log_InflationGDPdeflatorannual	0.00176**
	(0.000684)
Constant	3.748***
	(0.0524)
Observations	50
Number of Code	6

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The results presented in Table 16 show a negative relationship between the coefficient of FDI on the Gini index. The coefficient of FDI (-0.00415) is negative and highly significant with 95% confidence level and standard error (0.00211). This implies that FDI contributes on reducing income inequality in Western Balkan countries. Our finding is consistent with the results obtained by Firebaugh & Beck (1994), Alarcon & McKinley (1996), Jensen & Rosas (2007), Jensen & Rosas (2007), Im and McLareen (2017) while opponent to results obtained by Alderson and Nielsen (1999), Reuveny and Li (2003), Jaumotte et al. (2013), Asteriou et al. (2014), and Herzer et al. (2014). On the basis of Kuznets effect that income inequality rises during the initial stages of the economic growth and declines in the next stages of economic development we can infer that it does not have a linear relationship by placing the FDI square coefficient for the assessment of linearity.

The coefficient of the Trade openness is a negative coefficient (-0.0532) and statistically significant with 99% confidence level and standard error (0.00807); thus, the trade

openness affects to accelerate the inequality. Our results are in line with the findings of Reuveny and Li (2003), and Wu and Hsu (2012). Inflation has a positive coefficient of (0.00176) and a statistically significant 95% confidence level on inequality in Western Balkan countries. The inequality-increasing effect of inflation is intensified when the wages are not adjusted to the level of inflation as is the case in many WB countries. Weak institutions and weak labor unions in many WB countries leave workers with less or no rise in wages in case of high inflation. Our finding conforms with the results obtained by Bhandari (2007). The GDP growth has a negative coefficient (-0.00164) and is statistically significant indicating that GDP growth contributes to reducing inequality.

6.1.4 Estimation with HDI-coefficient as dependent variable

In this section the measurement of Human Development index is used as another proxy for dependent variable to measure the inequality in Western Balkan Countries. The econometric models and techniques, are used same as in the section where Gini Index was dependent variable; 2SLS, fixed and random effects models, and GMM (Generalized Method of Moments). The data from World Bank World Development Indicators (WB), United Nations Development (UNDP) Program and Solt's World Income Inequality Standardized Database (SWIID) (2016) were obtained for this study.

$$\gamma = \beta_{0+}\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + ui + eit \qquad 9$$

Where:

Y= is Human Development Index

X1=Foreign Direct Investment

X2= Trade Openness

X3= GDP per capita

X4=Inflation

X5=GDP growth rate

Based on the data given for the first econometric model, we transformed each variable into a logarithmic function (Log) to get an estimate of the values used in this econometric model. The general equation's form then appears:

$$Inequality\text{-}((HDI\ it) = \beta 0 + \beta 1\ FDIit + \beta kXitk + ui + eit \qquad 10$$

Where inequality is a measure of intra-country income disparity (HDI) Human Development Index over time periods t=1, 2,.....,T and countries i=1,2,.....,N (Suanes, 2016). FDI (Foreign Direct Investment) It characterizes the independent variables on accumulated FDI stocks as a percent of GDP in country I at time t (Suanes, 2016). Xit is a set of control variables that will be addressed further down. The term ui stands for the fixed effect by country, or country-specific effects, and eit stands for the remaining white noise error term, which captures any country-specific omitted factors that are assumed to be correlated with disparity. This variable was assigned to address besides unobserved heterogeneity between countries. Country and time ignorance are both equal but are not stated to be easy to grasp. Those countries and time effects are taken into account to ensure that the framework illustrates an exogenous shift that occurs from outside the model, i.e. that all observed or unnoticed factors causing inequalities have been regulated in the model.

6.1.4.1 Two-Stage Least Square

The coefficient of determination R-Squared for the study is 0.6740 with the Two-Stage Least Square model. This indicates that 67.40% of the variations in the model can be explained by the explanatory variables of the model. The result in table 17 shows that the coefficient of the Foreign Direct Investment is negative coefficient (0.0067392) and statistically significant, the opposite was the result with Gini Index; thus, the Foreign Investment contributes to accelerating economic inequality in Western Balkan Countries. The coefficient of Foreign investment square tends to support the Kuznets hypothesis according to which at the early phase of economic development, economic growth increases income inequality.

Table 17 Results with HDI estimation, 2SLS model for 1st sub-hypothesis

	(2SLS)
VARIABLES	LogHDI

log_Foreigndirectinvestment	-0.00127
	(0.0140)
log_FDI2	0.0102**
	(0.00421)
LogTradeofGDP	-0.0396
	(0.0248)
log_GDPpercapitaPPPconstant20	0.149***
	(0.0210)
log_GDPgrowthannual	-0.00880
	(0.00624)
log_InflationGDPdeflatorannual	-0.00810**
	(0.00390)
Constant	-1.524***
	(0.141)
Observations	67
R-squared	0.674

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of trade openness has a negative coefficient (-0.0396) argues that export and imports contributes to reducing the economic inequality in the region. The positive coefficient of the GDP per capita (0.0.149) with a 99 % confidence level indicating that the level of economic development would probably increase inequality in Western Balkan countries. Our finding is in line with Cho and Ramirez (2016), Im and Mclaren (2015), and Jensen (2007), among others who find a positive but statistically significant effect of GDP per capita on income inequality. Inflation has a negative coefficient of (-0.00810) with 95% confidence level and 0.00390 standard error shows that this explanatory variable has effect on accelerating inequality in Western Balkan

countries. The GDP growth has a negative coefficient (-0.00880) indicating that GDP growth contributes in decreasing the disparity.

6.1.4.2 Fixed Effect model

The findings of the econometric model of fixed effects are shown in the table below. The coefficient of determination R-Squared for the sample is 0.436. This implies that the model's explanatory variables will account for 43.6 percent of the variations. The FDI has a negative coefficient (-0.00471) and is highly significant with 99% confidence level and standard error (0.00163). meaning that the main independent variable of this hypothesis has a negative relationship with economic inequality implying that an increase in FDI will lead to the decrease of economic inequality in the region too.

Table 18 Results with HDI estimation, Fixed-effect model for 1st sub-hypothesis

	(Fixed-Effects)
VARIABLES	LogHDI
iFDI_lag1	-0.00471***
	(0.00163)
log_FDI2	0.00567**
	(0.00263)
LogTradeofGDP	-0.0200
	(0.0357)
log_GDPgrowthannual	-0.00149
	(0.00583)
log_GDPpercapitaPPPconstant20	0.0879*
	(0.0460)
log_InflationGDPdeflatorannual	0.00274
	(0.00402)
Constant	-0.998**
	(0.400)

Observations	61
Number of Code	6
R-squared	0.436

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of trade openness has a negative coefficient too (-0.0200) and standard error 0.00357 indicating the trade openness as another form of globalization contributes on decreasing the inequality in host countries economy, The GDP per capita coefficient is positive (0.0879) and statistically in 90 % confidence level showing that GDP per capita is factor the contributes on the decelerate the inequality. The coefficient of GDP growth rate has a negative coefficient (-0.00149) leading to decreasing the disparity and inflation coefficient as GDP per capita have a reverse effect in the inequality, if the inflation rate increase will lead an increase in inequality too in the region.

6.1.4.3 Random Effect Model

Dynamic panel model specification (Random - Effects) to test the impact of foreign investment on inequality.

$$Log\_HDI = \beta_{0+}\beta_1 FDI_{it} + \beta_2 Trdeopen_{it} + \beta_3 XGDPpc_{it} + \beta_4 GDPgwr_{it} + \beta_5 infl_{it} + Yit \quad 11$$

Given that all the symbols presented in the above econometric model are the same as in the multiple linear regression analysis, except for the symbol over time periods t=1, 2,.....,T and countries i=1,2,.....,N. The coefficient of Foreign direct investment has a negative correlation with inequality (-0.00503) and is statistically significant with 99 % confidence level stating that an increase in FDI with contribute in reducing inequality in the host countries economy. The Kuznets effect is measured by adding square to the coefficient of FDI (0.00116) with 99% confidence level stating with standard error 0.00137 that there is a nonlinear relationship between FDI and HDI index.

Table 19 Results with HDI estimation, Random-effect model for 1st sub-hypothesis

VARIABLES	(RE) LogHDI
iFDI_lag1	-0.00503***
	(0.00143)
log_FDI2	0.0116***
	(0.00137)
LogTradeofGDP	-0.0449**
	(0.0220)
log_GDPgrowthannual	-0.00445
	(0.00539)
log_GDPpercapitaPPPconstant20	0.129***
	(0.0202)
log_InflationGDPdeflatorannual	0.00257
	(0.00405)
Constant	-1.293***
	(0.146)
Observations	61
Number of Code	6

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of Trade Openness (-0.0449) is a negative coefficient and statistically significant with 95 % confidence level and GDP growth rate has a negative coefficient (-0.00445) indication those two coefficients as FDI implies that they contribute on decreasing the inequality in the region. While the GDP per capita coefficient (0.129) with 90% confidence level and the coefficient of inflation (0.00257) have positive coefficients meaning that those variables have an adverse effect on economic inequality in the host countries economy.

6.1.4.4 Hausman Taylor

In the Hausman-Taylor Regression model the influence of exogenous variables is taken into consideration for the findings in the econometric model. The effect on inequalities of multinationals is explained by two essential variables. The table 20 shows the econometric effects of the regression analysis of the Hausman-Taylor model.

The baseline of Hausmann-Tylor model of the empirical specification is given as below:

$$\gamma_{it} = \alpha + \beta 1(LnHDI_{it-1}) + \beta 2(LnTradeofGDP_{it}) + \beta 3(LnTradeoppenessit) + \beta 4(LnGDPgrwthit) + \beta 5(LnGDPpc_{it}) + \beta 6(Lninfl_{it}) + uit$$

12

The findings on the examination demonstrate that the main independent variable, foreign direct investment has a positive coefficient concluding that FDI coefficient contributes to adverse effect in Inequality and a nonlinear relationship.

Table 20 Results with HDI estimation, Hausman-Taylor IV model for 1st sub-hypothesis

	(Hausman Taylor)
VARIABLES	LogHDI
log_FDI2	0.000614
	(0.00154)
LogTradeofGDP	-0.0404**
	(0.0200)
FDI_lag1	0.000149
	(0.000373)
log_GDPgrowthannual	0.00353
	(0.00308)
log_InflationGDPdeflatorannual	-0.00176
	(0.00217)

log_GDPpercapitaPPPconstant20	-0.0280
	(0.0225)
Code	-0.0234
	(0.0307)
Constant	4.086***
	(0.211)
Observations	61
Number of Code	6

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficients of trade openness have a negative coefficient (-0.0404) and statistically significant in 95 % confidence level, GDP per capita and inflation have negative impact on inequality, stating that those coefficients contribute to accelerating disparity in the region. The coefficient of GDP growth rate has a positive coefficient (0.00353185) indicating that this coefficient contributes to increasing the gap of disparity in the Western Balkan countries.

6.1.4.5 GMM Model

The Generalized Method of Moments estimator is a popular econometric method used to estimate parameters. The dynamic panel information is typically used in this model. The parameters of other models must be very near to zero and the issue of endogenous variables is also one of the other relevant conditions for implementing this model.

Table 21 Results with HDI estimation, GMM model for 1st sub-hypothesis

	(GMM)
VARIABLES	LogHDI
L.LogHDI	0.904***

	(0.0493)
FDI_lag1	-0.000117
	(0.000286)
log_FDI2	0.000510
	(0.000806)
LogTradeofGDP	-0.0148
	(0.0136)
log_GDPgrowthannual	-0.00139
	(0.00204)
log_InflationGDPdeflatorannual	0.00116
	(0.00126)
Constant	0.0437
	(0.0645)
Observations	45
Number of Code	6

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The results presented in Table 21 show a negative relationship between the coefficient of FDI on the Human Development Index. The coefficient of FDI (-0.000117) is negative which implies that FDI contributes to reducing income inequality in Western Balkan countries. Our finding is consistent with the results obtained by Firebaugh & Beck (1994), Alarcon & McKinley (1996), Jensen & Rosas (2007), Jensen & Rosas (2007), Im and McLaren (2017) while opponent to results obtained by Alderson and Nielsen (1999), Reuveny and Li (2003), Jaumotte et al. (2013), Asteriou et al. (2014), and Herzer et al. (2014). On the basis of Kuznets effect that income inequality rises during the initial stages of the economic growth and declines in the next stages of economic development we can infer that it does not have a linear relationship by placing the FDI square coefficient for the assessment of linearity.

The coefficient of the Trade openness is a negative coefficient (-0.0148); thus, the trade openness affects to accelerate the inequality. Our results are in line with the findings of Reuveny

and Li (2003. Inflation has a positive coefficient of (0.00116). The inequality-increasing effect of inflation is intensified when the wages are not adjusted to the level of inflation as is the case in many WB countries, our finding conforms with the results obtained by Bhandari (2007). The GDP growth has a negative coefficient (-0.00139) and is statistically significant concluding that GDP growth leads to reduced inequality.

6.2 The econometric assessment and testing of the 2nd group of sub-hypotheses

H1b: There is a significant effect of Income Inequality from MNE's;

H1c: There is a significant relationship between FDI and Gini index

H1e: There is a negative correlation between FDI and Trade openness, if FDI increases will decrease the Gini coefficient;

In this section is assessed the effect of MNE's through FDI on income inequality, by considering two different dependent variables – Gini coefficient, Human Development Index for each dependent variable using four estimation methods; 2SLS, Fixed -effect model, Random-Effect model and GMM estimator.

The primary aim of using these models is to work with panel data and dynamic models. These statistical tests have established the correlation between international investment, the Gini Index and the Human Development Index. The table below 22 the variables to construct the econometric model and evaluate the 2nd sub-hypothesis.

Table 22 Description of variables in 2nd sub-hypothesis

Variable	Description	Source

Giniindex$_{it}$	A measure of the income distribution in a country, listed from 0 to 100 in my data. 0 indicates perfect equality, and 100 indicates maximum inequality.	SWIID,World Bank Povcal
HDIt$_{it}$	Human Development Index is a combination of life expectancy, education and per capita income indicators, which are used to mark countries under four tiers of human development (HDR, UNDP). The HDI uses the logarithm of income, to reflect the diminishing importance of income with increasing GNI(HDR,UNDP).	UNDP
FDI$_{it}$	The liabilities (stock) of FDI in a country, divided by total GDP in USD, times 100	World Bank Povcal, Lane & Milesi-Ferretti (2007)

Source: Author's calculation

The Gini index, which served as the first proxy estimate of income inequality in this study, was derived from Solt's Standardized World Income Inequality Database (2016). This database allows for a much more in-depth analysis of the relationship between FDI and income inequality than previous studies, which frequently suffer from incomplete details and a lack of freedom. The widespread use of Gini coefficient in literature has greatly affected the uses of Gini in the present research (Choi, 2006; Basu & Guariglia, 2007; Çelik and Basdas, 2010; Chaudhry & Imran, 2013; Franco and Gerussi, 2013, Lin and al. ,2014).

The human development index, acquired from the United Nations Development Program and used to measure deprivation in this dissertation, is the second proxy used as a dependent variable. The key independent variable in this analysis is Foreign Direct Investment (FDI).

6.2.1 Descriptive statistics and correlation analysis for the first econometric model.

The definition of some of the statistical data for the variables used in the first econometric model is performed using descriptive statistics, and the correlation coefficient is evaluated. To assess the second sub-hypothesis, the Pearson between the dependent variable and the independent variables used in this analysis. The mean, normal differences, maximum and minimum values, variance, curve and kurtosis will be evaluated initially. The table 23 provides descriptive figures for the variables in the first econometric model. The primary goal of using these descriptive analyses is to determine the precision of the data that is used as the basis for calculating econometric models.

Table 23 Descriptive statistics of 2ndt sub-hypothesis

Variable	Obs	Mean	Std. Dev.	Min	Max
log_FDI2	78	3.583182	2.482234	0.057754	13.09177
LogGini	78	3.562741	0.115249	3.339322	3.686376
LogHDI	78	-0.27514	0.03902	-0.33968	-0.20334
FDI_lag1	72	7.479751	5.86382	0.535808	37.27248
log_Foreig~i	78	1.750831	0.724223	-0.62398	3.618255
iFDI_lag1	72	7.479751	2.344566	4.989031	12.54446
iLogGini_L1	78	3.563385	0.004372	3.555992	3.568398
iLogHDI_L1	78	-0.27566	0.016011	-0.30568	-0.25601

Source: Author's calculation

This chapter analyzes the association between the variables of this econometric model. For the calculation of the interaction, the Pearson coefficient, which indicates the relationship between

independent and dependent variables. The values of the GINI, HDI, and other independent correlation coefficients are shown in this figure.

The Gini coefficient and HDI are positively correlated by FDI.

Table 24 Correlations between variables in 2nd sub-hypothesis

	LogGini	LogHDI	log_FDI2	iFDI_l~1	log_Fo~i	iLogGi~1	iLogHD~1
LogGini	1						
LogHDI	0.47	1					
log_FDI2	0.2399	0.5207	1				
iFDI_lag1	0.0286	-0.3374	0.2455	1			
log_Foreig~i	0.1521	0.5108	0.931	0.2038	1		
iLogGini_L1	0.0386	-0.3327	0.1797	0.6583	0.0979	1	
iLogHDI_L1	-0.0375	0.3695	-0.25	-0.8744	-0.1871	-0.9113	1

Source: Author's calculation

H1b: There is a significant effect of Income Inequality from MNE's;

6.2.2 Specification of the econometric model and analysis of multiple linear regression.

In order to address this query we use a range of econometric models and methods, including 2SLS, REM and GMM (Generalized Method of Moments). For this analysis data was collected from World Bank Indicators of Development (WB), United Nations Development Program (UNDP) and Solt's World Income Uniformity Standardized Database (SWIID) (2016). Panel data for Western countries from 2007 to 2019 included empirical evidence (approximately 12 years).

$$\gamma = \beta_{0+}\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + ui + eit \qquad 13$$

6.2.3Estimation with Gini-coefficient as dependent variable

6.2.3.1 Two-Stage Least Square

The coefficient of determination R-Squared for the study is 0.327 with the Two-Stage Least Square model. This indicates that 32.70 % of the variations in the model can be explained by the explanatory variables of the model. The result in Table 25 shows that the coefficient of the Foreign Direct Investment is negative coefficient (-0.0745) and statistically in moderate level significant; thus, the FDI has effect to accelerate the inequality and supports the Kuznets hypothesis that there is a nonlinear relationship among FDI and inequality (N'Yilimon Nantob,2015). Our results are equally in line with the findings of Wu and Hsu (2012).

The coefficient of Human Development Index has a positive correlation with 99% confidence level stating that an increase in HDI will lead an increase to Gini index too.

Table 25 Results with Gini estimation-2SLS model for 2nd sub-hypothesis

	(2SLS)
VARIABLES	LogGini
LogHDI	2.049***
	(0.429)
log_Foreigndirectinvestmentneti	-0.0997**
	(0.0448)
log_FDI2	0.0188
	(0.0140)
iFDI_lag1	0.0142**
	(0.00619)
Constant	4.120***
	(0.120)
Observations	72
R-squared	0.327

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of Foreign Direct Investment has a negative coefficient (-0.0997) and statistically significant with 95% confidence level, while the coefficient of FDI in square has a positive coefficient supporting the Kuznets curve, hypothesis according to which at the early phase of economic development, economic growth increases income inequality and the Lag function of coefficient FDI has a positive(N'Yilimon ,2015) coefficient and statistically significant (N'Yilimon ,2015) with 95% confidence level and is used to reduce endogeneity bias in the region of Western Balkan countries.

6.2.3.2 Random Effect Model

Specification of dynamic panel models (random effects) in order to check for unequal effects of foreign investment.

$$Log\_Gini = \beta_{0+}\, \beta_1 HDI_{it} + \beta_2 FDI_{it} + \beta_2 FDIlag_{it} + \beta_3 FDI2_{it} + \Upsilon it \qquad 14$$

As the aforementioned econometric model contains all symbols equal to the multiple linear regression analysis with the exception of the symbols during the time intervals t=1,2,.....T and countries i=1,2,.....,N.

Table 26 Results with Gini estimation-Random-effect model for 2nd sub-hypothesis

	(RE)
VARIABLES	LogGini
LogHDI	0.176**
	(0.0754)
log_Foreigndirectinvestmentneti	0.000423
	(0.00529)
log_FDI2	-0.00113
	(0.00167)
iFDI_lag1	0.00264***

	(0.000746)
Constant	3.594***
	(0.0571)
Observations	72
Number of Code	6

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The HDI coefficient is positive and statistically relevant with a 95% confidence level, implying that an increase in HDI would also result in an increase in Gini index. The coefficient of Foreign Direct Investment has a positive coefficient (0.000423), while the coefficient of FDI in square has a negative coefficient that does not support the Kuznets curve. The Lag function of coefficient FDI has a positive coefficient and is highly significant with a 95% confidence level, and it is used to mitigate endogeneity bias in the Western Balkan countries.

6.2.3.3 Fixed Effect model

The fixed effect model is also one of the most important studies in which dynamic panel statistics can be used very widely. The fixed effects estimator, which corresponds to the internal regression coefficient estimator, is used in this analysis since the data are not random. The results of the fixed effects econometric model are shown in the table 27:

Table 27 Results with Gini estimation, Fixed-effect model for 2nd sub-hypothesis

	(FE)
VARIABLES	LogGini
LogHDI	0.172**
	(0.0758)
log_Foreigndirectinvestmentneti	0.000508

	(0.00532)
log_FDI2	-0.00116
	(0.00168)
iFDI_lag1	0.00262***
	(0.000750)
Constant	3.593***
	(0.0196)
Observations	72
Number of Code	6
R-squared	0.172

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of Human Development Index has a positive (0.172) relationship with Gini Index and is statistically significant with 95 % confidence level and standard error 0.0758, the coefficient of FDI has a positive coefficient (0.000508) indicating that and increase in Foreign investment will contribute an increase to Gini index too. The coefficient FDI in square has a negative coefficient (-0.00116) which proves the hypothesis of Kuznets curve and the Lag function of FDI has a positive coefficient (0.00262) and is statistically significant with 99% confidence level.

6.2.3.4 Hausmann Taylor

The hybrid statistical model of Hausman and Taylor (1981) links the robustness of the models with the reliability and application of the random effects model. In order to allow comparisons with other statistical experiments, the data in the second sub-hypothesis will also be evaluated via this model. The Hausman-Taylor model of regression considers the impact of exogenous variables on the observations of the econometric model. Two key variables which

explain the effect on inequality of multinationals. The table 28 shows the econometric effects of the regression analysis using Hausman-Taylor.

The baseline of Hausmann-Tylor model of the empirical specification is given as below:

$\gamma\square\square = \square + \square 1(\square\square\square - 1) + \square 2(\square\square HDI\square\square) + \square 3(Ln\square\square\square it) + \beta 4(LnFDI2it) + \beta 5(LnFDIlag\square) + uit$ 15

Table 28 Results with Gini estimation, Hausman-Taylor IV model for 2nd sub-hypothesis

	(Hausman-Taylor)
VARIABLES	LogGini
LogHDI	0.179**
	(0.0767)
log_Foreigndirectinvestmentneti	0.000370
	(0.00538)
log_FDI2	-0.00111
	(0.00170)
iFDI_lag1	0.00266***
	(0.000759)
Constant	3.687***
	(0.102)
Observations	72
Number of Code	6

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of HDI has a positive coefficient (0.179) and is statistically significant with 95 % confidence level and with standard error 0.0767 implying that a rise in HDI index will lead an

increase to Gini index too. The coefficient of Foreign investment has a positive coefficient indicating that an increase in the foreign investment will contribute to the increase in the dependent variable. The coefficient of FDI square has a negative coefficient approving the Kuznets hypothesis that there is a nonlinear relationship between FDI and inequality (N'Yilimon,2015). The Lag function of FDI has a positive coefficient (0.00266) and is statistically significant with 99% confidence level and standard error 0.000759.

6.2.3.5 GMM Model

GMM is one of the general techniques used in regression simulations for the estimation of parameters. The dynamic panel data is generally employed in this model. The importance of the parameters of other models is also one of the other relevant requirements for the implementation of the model and the endogeneity of the variables is clarified by that approach.

The dynamic panel data model (GMM) has the following specifications:

$$\mathrm{Ln}Gini\square\square\square\square = \square + LnGini\ (\square\square - 1) + \beta 1(LnHDI\square\square) + \square 2(LnFDI\square\square) + \square 3(LnGGDI2\square\square) + \square 4(LnFDIlagl\square\square)$$

$$+\square i + \gamma i + \varepsilon i \qquad 16$$

The results show that all calculated models of the dynamic panel are well established as statistically relevant coefficients of the declining realistic Gini index. The Sargan test also recognizes (generated in the second step) as safe instruments for all approximate equations for identifying limitations in case of heteroscedasticity with corresponding p values which test the reliability of instrumental variables; The results from the GMM estimator thus endorse the assumption that instrumental variables are not connected to the residue group. Therefore, Arellano – AR (1) and AR (2) bond checks of p values in first order are denied, while the second order confirms that the second order is not automatically associated between the error term and the second order (by construction, the differenced error term is first-order serially correlated even if the original error term is not).

Table 29 Results with Gini estimation, GMM model for 2nd sub-hypothesis

	(GMM)
VARIABLES	LogGini

LogGini_L1	0.615***
	(0.0518)
LogHDI	0.348***
	(0.135)
log_Foreigndirectinvestmentneti	-0.00416
	(0.0111)
log_FDI2	0.00454
	(0.00399)
Constant	1.456***
	(0.201)
Observations	72
Number of Code	6

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of HDI has a positive coefficient (0.348) and is statistically significant with 99 % confidence level and with standard error 0.135 indicating that a rise in HDI index will contribute an increase to Gini index too. The coefficient of Foreign investment has a negative coefficient indicating that an increase in the foreign investment will contribute to the decrease of the Gini Index too. The coefficient of FDI square has a positive coefficient approving the Kuznets hypothesis that there is a nonlinear relationship between FDI and inequality (N'Yilimon Nantob,2015).

6.2.4 Estimation with HDI -coefficient as dependent variable

6.2.4.1 Two-Stage Least Square

The coefficient of determination R-Squared for the study is 0.629 with the Two-Stage Least Square model. This indicates that 62.9 % of the variations in the model can be explained by the

explanatory variables of the model. The result in Table 30 shows that the coefficient of the Gini index has a positive coefficient and is statistically significant with 99 % confidence level stating that an increase in Gini index will lead to an increase to the Human Development Index too.

Table 30 Results with HDI estimation, 2SLS model for 2nd sub-hypothesis

	(2SLS)
VARIABLES	LogHDI
LogGini	0.124***
	(0.0260)
log_Foreigndirectinvestmentneti	0.0165
	(0.0112)
log_FDI2	0.00422
	(0.00346)
iFDI_lag1	-0.00779***
	(0.00126)
Constant	-0.698***
	(0.0945)
Observations	72
R-squared	0.629

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of Foreign Direct Investment is a positive coefficient (0.0165) and statistically in moderate level significant; thus, the FDI has the effect to decelerate the inequality and supports the Kuznets hypothesis that there is a nonlinear relationship among FDI and inequality (N'Yilimon Nantob,2015).

6.2.4.2 Random Effect Model

Specifying dynamic panel models for the purpose of testing uniform international investment outcomes (random effects).

$$g\_Gini = \beta_{0+} \beta_1 HDI_{it} + \beta_2 FDI_{it} + \beta_2 FDIlag_{it} + \beta_3 FDI2_{it} + Yit \quad 17$$

The coefficient of Gini Index has a positive coefficient (0.198) and is statistically significant with 95 % confidence level and with standard error 0.0834 implying that an increase in Gini index will contribute to a rise in Human Development index too.

Table 31 Results with HDI estimation, Random-effect model for 2nd sub-hypothesis

VARIABLES	(RE) LogHDI
LogGini	0.198**
	(0.0834)
log_Foreigndirectinvestmentneti	0.0119
	(0.00846)
log_FDI2	0.000443
	(0.00269)
iFDI_lag1	-0.00667***
	(0.000941)
Constant	-0.950***
	(0.296)
Observations	72
Number of Code	6

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of Foreign investment has a positive coefficient indicating that a change in the foreign investment will contribute to the increase in the dependent variable. The coefficient of FDI square has a positive coefficient which does not support the Kuznets hypothesis that there is a nonlinear relationship between FDI and inequality (N'Yilimon Nantob,2015). The Lag function of FDI has a negative coefficient (-0.00667) and is statistically significant with 99% confidence level and standard error 0.000941.

6.2.4.3 Fixed Effect model

The paradigm for fixed effects is also a key study where the figures for dynamic panels can be commonly used. The estimator for fixed results, which refers to the internal estimator for regression, is used in this study since the data are not random. The findings of the econometric model with fixed effects are shown in the table 32:

Table 32 Results with HDI estimation, Fixed-effect model for 2nd sub-hypothesis

	(FE)
VARIABLES	LogHDI
LogGini	0.446**
	(0.196)
log_Foreigndirectinvestmentneti	0.0105
	(0.00845)
log_FDI2	0.000420
	(0.00271)
iFDI_lag1	-0.00692***
	(0.000985)
Constant	-1.830**
	(0.697)
Observations	72
Number of Code	6

R-squared	0.461

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of Gini Index has a positive (0.446) relationship with HDI and is statistically significant with 95 % confidence level and standard error 0.196, the coefficient of FDI has a positive coefficient (0.0105) indicating that and increase in Foreign investment will contribute an increase to HDI index too. The coefficient FDI in square has a positive coefficient (0.000420) which proves the hypothesis of Kuznets curve and the Lag function of FDI has a negative coefficient (-0.00692) and statistically significant with 99% confidence level indicating that FDI contributes on reducing Human Development Index.

6.2.4.4 Hausmann Taylor

The regression model of Hausman-Taylor considers the effect on observations of the econometric model of exogenous variables. Two main variables explaining the impact on multinationals' inequalities. The following table illustrates the econometric results of Hausman Taylor regression analysis.The baseline of Hausmann-Tylor model of the empirical specification is given as below:

$$HDI = \alpha + \beta 1(HDI - 1) + \beta 2(GINI) + \beta 3(Ln it) + \beta 4(LnFDI2it) + \beta 5(LnFDIlag) + uit \quad 18$$

Table 33 Results with HDI estimation, Hausman-Taylor IV model for 2nd sub-hypothesis

	(Hausman-Taylor)
VARIABLES	LogHDI
LogGini	0.266***
	(0.101)
log_Foreigndirectinvestmentneti	0.0116
	(0.00832)

log_FDI2	0.000353
	(0.00265)
iFDI_lag1	-0.00672***
	(0.000930)
Constant	-1.230***
	(0.368)
Observations	72
Number of Code	6

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of Gini has a positive coefficient (0.266) and is statistically significant with 99 % confidence level and with standard error 0.101 indicating that a change in Gini index will bring up an increase to HDI too. The coefficient of Foreign investment has a negative coefficient and is statistically significant with 99% confidence level and standard error 0.000930 indicating that an increase in the foreign investment will contribute to the decrease of the dependent variable, HDI. The coefficient of FDI square has a positive coefficient approving the Kuznets hypothesis that there is a nonlinear relationship between FDI and inequality (N'Yilimon Nantob,2015).

6.2.4.5 GMM Model

GMM is a popular technique for estimating parameters used in regression simulations. This model usually uses dynamic panel data. One of the other important conditions for applying the model is the value of parameters of other models and this method clarifies the endogenous nature of the variables.

The dynamic panel data model (GMM) has the following specifications:

$\text{Ln}HDI_{it} = \alpha + LnHDI\ (_{it} - 1) + \beta 1(LnGini_{it}) + \alpha 2(LnFDI_{it}) + \alpha 3(LnGGDI2_{it}) + \alpha 4(LnFDIlagl_{it})$

$+\alpha i + \gamma i + \varepsilon i$ 19

The findings show that the statistically valid coefficients of the falling practical gini index are well defined for all measured models. In addition, in case of heteroscedasticity with the relevant p values, the Sargan test recognizes that the reliability of instrumental variables is safe for all approximate equations (generated in the second stage).

Table 34 Results with HDI estimation, GMM model for 2nd sub-hypothesis

	(GMM)
VARIABLES	LogHDI
L.LogHDI	0.856***
	(0.0421)
iLogHDI_L1	-0.0876
	(0.0910)
LogGini	0.0640***
	(0.0122)
log_Foreigndirectinvestmentneti	0.00392
	(0.00267)
iFDI_lag1	-0.00108**
	(0.000505)
log_FDI2	-0.000586
	(0.000950)
Constant	-0.285***
	(0.0432)
Observations	72
Number of Code	6

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of Gini Index has a positive coefficient (0.0640) and is statistically significant with 99 % confidence level and with standard error 0.135 indicating that a rise in HDI index will contribute an increase to Human Development Index too. The coefficient of Foreign investment has a negative coefficient (-0.00108) and statistically significant with 95 % confidence level implying that a change in the foreign direct investment will contribute to the decrease the HDI too. The coefficient of FDI square has a negative coefficient disapproving the Kuznets hypothesis that there is a nonlinear relationship between FDI and disparity.

6.3 The econometric assessment and testing of the 3rd sub- hypothesis

In this section it is measured the gender discrimination impact of MNE through FDI by considering two dependent variables – Gini coefficient, Human Development Index, four assessment tools, 2SLS, FE, RE & GMM, while independent variables are used. The primary purpose of these models is to operate with complex models and panel data. The association between the foreign investments, Gini and Human Development Index, and the index of gender inequality was identified by these statistical studies. The table 35 shows the variables for developing the economic model and assessing the 3rd sub hypothesis.

Table 35 Description of variables in 3rd sub-hypothesis

Giniinde x_{it}	A measure of the income distribution in a country, listed from 0 to 100 in my data. 0 indicates perfect equality, and 100 indicates maximum inequality.	SWIID,Worl d Bank Povcal
HDIt$_{it}$	Human Development Index is a combination of life expectancy, education and per capita income indicators, which are used to mark countries under four tiers of human development(HDR,UNDP). The HDI uses the logarithm of income, to reflect the diminishing importance of income with increasing GNI (HDR,UNDP).	UNDP

FDI_{it}	The liabilities (stock) of FDI in a country, divided by total GDP in USD, times 100	World Bank Povcal, Lane & Milesi-Ferretti (2007)
GIIit	Gender Inequality Index is the ratio of women to men on three core dimensions of (Stoet, Geary,2019) lifeL1.) Educational opportunities in childhood; 2.) Healthy life expectancy*the number of years one can expect to live in good health; and 3.(Overall life satisfaction (Stoet, Geary,2019).	UNDP

Source: Author's calculation

The Gini index database enables a much more in-depth examination of the relationship between FDI and gender inequality than previous research, which often suffer from missing information and a lack of freedom. The prevalent application of the Gini coefficient in the literature has had a significant impact on the use of Gini in the current study (Celik, Basdas,2010).

The second proxy used as a dependent variable is the human development index, which was obtained from the United Nations Development Program and used to assess inequality in this dissertation. Foreign Direct Investment is the most important independent variable in this study (FDI). Gender Inequality (BIGI) represents the ratio of men and women of the three main aspects of life; 1) early education opportunities; 2) the expectation to remain in good health (for years one might expect); and 3) the overall satisfactions of life (Stoet, Geary,2019).

The Global Inequality Index (GII) is a measure of inequality. It assesses gender disparities in three main areas of human development: reproductive health (as determined by the maternal mortality ratio and teen birth rates); education; and (HDR, UNDP) health.

6.3.1 Descriptive statistics and correlation analysis for the first econometric model.

Specific statistical data are described for the variables used in the first econometric model with descriptive statistics and the correlation coefficient evaluated. The Pearson between the dependent

variable and the independent variables used in this study to evaluate the third sub-hypothesis. Original evaluation of average, regular, maximum and minimum values, variance, curve and kurtosis. The estimates for the variables in the first econometric model as shown in table 36. The main objective of these descriptive studies is to assess the accuracy of the data used by econometric models.

Table 36 Descriptive statistics of 3rd sub-hypothesis

Variable	Obs	Mean	Std. Dev.	Min	Max
LogGini	78	3.562741	.1152489	3.339322	3.686376
LogHDI	78	-.2751382	.0390196	-.3396774	-.2033409
Log.Genderineq	39	-1.65515	.218449	-2.128632	-1.298283
Log.FDI	78	1.750831	.7242225	-.6239802	3.618255
FDI_lag1	72	7.479751	5.86382	.535805	37.27248
Log_FDI2	78	3.583182	2.482234	.057737	13.09177

Source: Author's calculation

This chapter analyzes the association between the variables of this econometric model. For the calculation of the interaction, the Pearson coefficient, which indicates the relationship between independent and dependent variables. The values of the GINI, HDI, and other independent correlation coefficients are shown in table 37. The Gini coefficient is positively correlated with Gender inequality coefficient, while negatively correlated with HDI Index, HDI are positively correlated by FDI.

Table 37 Correlations between variables in 3rd sub-hypothesis

	LogGini	LogHDI	log_FDI	Log_gender	FDI_lag	Log_FDI2
LogGini	1					
LogHDI	0.0454	1				
log_FDI	0.1814	0.6944	1			
Log_gender	0.3901	-0.3322	0.1305	1		

FDI_lag	0.2744	0.4969	0.6520	0.1029	1	
Log_FDI2	0.2510	0.6704	0.9835	0.1202	0.6942	1

Source: Author's calculation

H1g: There is a significant effect of Gender Inequality from MNE's;

6.3.2 Specification of the econometric model and analysis of multiple linear regression.

To solve this query, we use a number of econometric models and techniques, including 2SLS, Random, Fixed Effect and Hausman Taylor IV (Generalized Method of Moments). Data from the World Bank Development Indicators (WB), the United Nations Development Program (UNDP) and the Solt World Income Uniformity Standard Database (SWIID) were obtained for this analysis (2016). Empirical proof was presented in the panel data for Western Balkan countries from 2007 to 2019 (approximately 12 years).

$$\gamma = \beta_{0+}\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + ui + eit \qquad 20$$

6.3.3 Estimation with Gini-coefficient as dependent variable

6.3.3.1 Two-Stage Least Square

The coefficient of determination R-Squared for the study is 0.347 with the Two-Stage Least Square model. This indicates that 34.70 % of the variations in the model can be explained by the explanatory variables of the model. In this section we have analyzed the relationship between Gini index and gender inequality index through foreign direct investment. The result in Table 38 shows that the coefficient of the Gender Inequality is positive coefficient (0.128) and statistically significant with 99 % confidence level; Indicating that as Gender inequality increases will lead to the increase of Gini index too. The coefficient of FDI lag has a negative coefficient while the FDI coefficient has a negative coefficient (-0.236) and is statistically significant with 95 % confidence level and the coefficient of FDI in square has a positive coefficient (0.0727) and is statistically significant with 95% confidence level.

Table 38 Results with Gini estimation-2SLS model for 3rd sub-hypothesis

VARIABLES	(2SLS) LogGini
log_GenderInequalityIndexGII	0.128***
	(0.0459)
FDI_lag1	0.000585
	(0.00217)
log_Foreigndirectinvestmentnet	-0.236**
	(0.0889)
log_FDI2	0.0727**
	(0.0271)
Constant	3.981***
	(0.109)
Observations	39
R-squared	0.347

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

Taking into consideration those three values of coefficients we can conclude the in the past Foreign Direct Investment has contributed on increasing the gender inequality in the region , while in present the Multinationals through FDI coefficient supports decreasing the gender discrimination and in the future would have potential to contribute on reversing the gender disparity taking into account the results with Two-stages Least Square and Gini index as dependent estimator and supports the Kuznets hypothesis that there is a nonlinear relationship among FDI and inequality (N'Yilimon Nantob, 2015).

6.3.3.2 Random Effect Model

Dynamic panel model specifications (random effects) for the purposes of verification of unequal foreign investment impacts.

$$Log\_Giniit = \beta_{0+} \beta_1 Genderinequ_{it} + \beta_2 FDI_{it} + \beta_2 FDIlag_{it} + \beta_3 FDI2_{it} + \Upsilon it \quad 21$$

Since the above econometric model includes all symbols equivalent to the study of multiple linear regressions with the exception of symbols over periods t=1,2,....T and countries i=1,2,.....,N.

The conclusion of table 39 shows that the Coefficient of Gender Inequality is positive (0.128) and statistically valid with 99% confidence level. It also shows the rise of the Gini Index as gender inequality increases

Table 39 Results with Gini estimation, Random-Effect model for 3rd sub-hypothesis

	(RE)
VARIABLES	LogGini
log_GenderInequalityIndexGII	0.128***
	(0.0459)
FDI_lag1	0.000585
	(0.00217)
log_Foreigndirectinvestmentneti	-0.236***
	(0.0889)
log_FDI2	0.0727***
	(0.0271)
Constant	3.981***
	(0.109)
Observations	39
Number of Code	5

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The FDI lag coefficient has a negative value, while the FDI coefficient is negative (-0236). It is statistically important with a degree of 95 percent conviction. In square, the FDI coefficient has a positive coefficient (0.0727). Taking these three coefficient values into account, we can conclude that in the past Foreign Direct Investments have generated significant gender inequality in the region, whereas at present FDI coefficient supports multinationals would decrease gender discrimination and have the capacity in the future to contribute to worsening gender inequality.

6.3.3.3 Fixed Effect model

The model of fixed effect is perhaps one of the most critical experiments for the very widespread use of dynamic panel statistics. For this study, since the data are not random, the fixed effect estimator that corresponds to the internal regression coefficient estimator is used. The findings of the econometric model with fixed effects are seen in table 40.

The coefficient of Gender Inequality is positive coefficient (0.0115) statistically insignificant and with standard error (0.00851). The coefficient of FDI lag has a negative coefficient (-0.000213) while the FDI coefficient has a negative coefficient (-0.0111) and the coefficient of FDI in square has a positive coefficient (0.00160).

Table 40 Results with Gini estimation, Fixed-Effect model for 3rd sub-hypothesis

	(FE)
VARIABLES	LogGini
log_GenderInequalityIndexGII	0.0115
	(0.00851)
FDI_lag1	-0.000213
	(0.000227)

log_Foreigndirectinvestmentneti	-0.0111
	(0.0131)
log_FDI2	0.00160
	(0.00353)
Constant	3.647***
	(0.0175)
Observations	39
Number of Code	5
R-squared	0.132

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

In the light of those three coefficients, we can argue that FDI investments have decelerated major gender disparities in the area in the past and the present FDI support coefficient is designed to reduce disparity between men and women and to have the potential to lead to worsening gender inequalities in the future.

6.3.3.4Hausmann Taylor

The Hausman and Taylor hybrid mathematical model (1981) connects simulations to their robustness with their stability and implementation. The data in the second third sub hypothesis will also be analyzed using this model to make comparisons with other statistical experiments. The Hausman-Taylor regression model takes into account the effect on the observations of the econometric model of exogenous variables. Two important variables explaining the effect on multinationals' inequalities. The table 41 illustrates the econometric results of the Hausman-Taylor regression analysis.

The baseline of Hausmann-Tylor model of the empirical specification is given as below:

$$\gamma it = c + \beta 1(\gamma it - 1) + \beta 2(LnGenderinequalityit) + \beta 3(LnFDIit) + \beta 4(LnFDI2it) + \beta 5(LnFDIlagt) + uit \qquad 22$$

The result in Table 41 shows that the coefficient of the Gender Inequality is positive coefficient (0.106) implying that as Gender inequality increases will increase the Gini coefficient as well. The coefficient of FDI lag has a negative coefficient (-0.000189) while the FDI coefficient has a negative coefficient (-0.0110) , the coefficient of FDI in square has a positive coefficient (0.00170).

Table 41 Results with Gini estimation, Hausman-Taylor IV model for 3rd sub-hypothesis

VARIABLES	(Hausman Taylor LogGini
log_GenderInequalityIndexGII	0.0106
	(0.00867)
log_Foreigndirectinvestmentneti	-0.0110
	(0.0134)
log_FDI2	0.00170
	(0.00360)
FDI_lag1	-0.000189
	(0.000231)
Constant	3.758***
	(0.0431)
Observations	39
Number of Code	5

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

We may conclude, based on those three coefficients, that FDI investments have historically slowed significant gender inequality in the region, and that the current FDI support coefficient is intended to minimize inequality between men and women while still having the potential to increase gender gaps throughout the future.

6.3.3.5 GMM Model

The results show that all calculated dynamic panel models are well established, as the lagged real Gini index coefficients are statistically significant. In addition, the Sargan -test for recognizing limitations in the presence of heteroscedasticity, as well as the corresponding p-value, which measures the reliability of the instrumental variables, are recognized (generated as a consequence of the second step) as safe instruments for all approximate equations.

As a result, the GMM estimator results support the hypothesis that instrumental variables are irrelevant to the residual group. Also as result, Arellano – Bond checks AR (1) and AR (2) with p-values in the first order are rejected, although they are accepted in the second order, indicating that the second order is not auto correlated between the error term and the error term (by construction, the differenced error term is first-order serially correlated even if the original error term is not).

The dynamic panel data model (GMM) has the following specifications:

$$LnGiniitit = \mu + LnGini\,(it-1) + \beta 1(LnGenderubeqit) + \beta 2(LnFDIit) + \beta 3(LnFDI2it) + \beta 4(LnFDIlaglit) + \delta i + \gamma i + \varepsilon i$$
$$23$$

The table 42 concludes that the Coefficient of Gender Inequality is positive (0.00614) and statistically relevant with a 95% confidence margin. It also represents the Gini Index rising as gender inequality rises.

Table 42 Results with Gini estimation, GMM model for 3rd sub-hypothesis

	(GMM)
VARIABLES	LogGini
FDI_lag1	0.000109
	(9.16e-05)
LogGini_L1	1.005***
	(0.00991)
log_GenderInequalityIndexGII	0.00614***

	(0.00226)
log_Foreigndirectinvestmentneti	0.00592
	(0.00425)
log_FDI2	-0.00157
	(0.00121)
Constant	-0.0126
	(0.0372)
Observations	39
Number of Code	5

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of FDI and FDI lag have positive coefficients and the coefficient of FDI in square has a negative coefficient (-0.00157). Taking those three coefficient values into account, we can conclude that in the past and present, the coefficient of Foreign Direct Investment has contributed to increasing gender inequality in the region and has the potential to contribute to changing gender disparities in the future, taking into account the results of GMM and the Gini index as dependent estimators supports the Kuznets hypothesis that there is a nonlinear relationship among FDI and inequality (N'Yilimon Nantob, 2015). The estimated coefficients support the expectation of an Inverted-U shape, the sign of the coefficient of the variable Log_FDI is positive, while the coefficient of Log_FDIsquare is negative. This indicates that, as suggested above, an increase in the share of MNCs leads initially to a decrease in income inequality (Figini, Gorg, 1999).

6.3.4 Estimation with HDI-coefficient as dependent variable

6.3.4.1 Two-Stage Least Square

The coefficient of determination R-Squared for the study is 0.685 with Two-Stage Least Square model. This indicates that 68.5 % of the variations in the model can be explained by the explanatory variables of the model. In this section we have analyzed the relationship between Gini index and gender inequality index through foreign direct investment. The result in Table 43 shows that the coefficient of the Gender Inequality is negative coefficient (-0.0635) and statistically significant with 99 % confidence level; Indicating that as Gender inequality increases leads the decrease of Gini index as well.

Table 43 Results with HDI estimation, 2SLS model for 3rd sub-hypothesis

	(2SLS)
VARIABLES	LogHDI
log_GenderInequalityIndexGII	-0.0635***
	(0.0141)
FDI_lag1	0.000772
	(0.000666)
log_Foreigndirectinvestmentneti	0.0689**
	(0.0272)
log_FDI2	-0.0108
	(0.00831)
Constant	-0.448***
	(0.0334)
Observations	39
R-squared	0.685

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of FDI has a positive coefficient (0.0689) and is statistically significant with 95 percent confidence level, the FDI lag coefficient has a positive coefficient (0.000772) and the coefficient of FDI in square has a negative coefficient (-0.0108). The calculated coefficients support the Inverted-U curve expectation; the Log FDI variable coefficient is positive while the Log FDI square coefficient is negative.

6.3.4.2 Fixed Effect model

Probably one of the most important experiments for using quite popular dynamic panel statistics is the fixed effect model. In this analysis, the fixed-effect estimator corresponding to the internal regression estimator is used because the results are not random. In the following table, the results of the econometric model of fixed effects are shown:

The coefficient of the Gender Inequality is negative coefficient (-0.130) statistically significant with 99% confidence level and with standard error (0.0206) arguing that a change in the gender inequality will lead on the decrease the coefficient of HDI. The coefficient of FDI lag has a positive coefficient (-0.000633) while the FDI coefficient has a negative coefficient (-0.0189) and the coefficient of FDI in square has a positive coefficient (0.00907).

Table 44 Results with HDI estimation, Fixed-effect model for 3rd sub-hypothesis

	(FE)
VARIABLES	LogHDI
log_GenderInequalityIndexGII	-0.130***
	(0.0206)
FDI_lag1	0.000633
	(0.000550)
log_Foreigndirectinvestmentneti	-0.0189
	(0.0318)
log_FDI2	0.00907
	(0.00857)
Constant	-0.473***

	(0.0425)
Observations	39
Number of Code	5
R-squared	0.590

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

Taking those three coefficient values into account, we can conclude that in the past and present, the coefficient of Foreign Direct Investment has contributed to increasing gender inequality in the region and has the potential to contribute to changing gender disparities in the future.

6.3.4.3 Random Effect Model

Specifications of the dynamic panel model (random effects) to verify the uneven influence of international investment:

$$Log\_HDIi = \beta_{0+}\,\beta_1 Genderinequ_{it} + \beta_2 FDI_{it} + \beta_2 FDIlag_{it} + \beta_3 FDI2_{it} + Yit \qquad 24$$

Since the above econometric model includes all symbols equivalent to the study of multiple linear regressions with the exception of symbols over periods t=1,2,....T and countries i=1,2,.....,N.

The conclusion of the table 45 shows that the Coefficient of Gender Inequality is negative (-0.0635) and statistically valid with 99% confidence level. It also shows the reduction of the Gini Index as gender inequality increases.

Table 45 Results with HDI estimation, Random-effect model for 3rd sub-hypothesis

	(RE)
VARIABLES	LogHDI
log_GenderInequalityIndexGII	-0.0635***

	(0.0141)
FDI_lag1	0.000772
	(0.000666)
log_Foreigndirectinvestmentneti	0.0689**
	(0.0272)
log_FDI2	-0.0108
	(0.00831)
Constant	-0.448***
	(0.0334)
Observations	39
Number of Code	5

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of FDI and FDI lag have positive values, while the FDI in square coefficient is negative (-0.0108). Taking these three coefficient values into account, we can conclude that in the past and actual time Foreign Direct Investments have generated significant gender inequality in the region, whereas in the future to contribute to worsening gender inequality.

6.3.4.4 Hausman-Taylor

Hausman and Taylor (1981) combine simulation with its stability and use, with its integrated mathematical model. The third sub-hypothesis data was also studied using this model, in order to compare the results with other statistical experiments. The Hausman-Taylor regression model takes into account the impact of exogenous variables on the observations of the econometric model. The impact on multinationals' inequality is explained by two main variables. The table below shows the econometric effects of the regression study Hausman-Taylor. The baseline of Hausmann-Tylor model of the empirical specification is given as below:

$$\gamma it = c + \beta 1(\gamma it - 1) + \beta 2(LnGenderinequalityit) + \beta 3(LnFDIit) + \beta 4(LnFDI2it) + \beta 5(LnFDIlagt) + uit \quad 25$$

The result in Table 46 shows that the coefficient of the Gender Inequality is a negative coefficient (-0.125)) implying that as Gender inequality increases will decrease the Human Development coefficient. The coefficient of FDI has a negative coefficient (-0.00420) while the coefficients of FDI Square and FDI lag have positive coefficients.

Table 46 Results with HDI estimation, Hausman-Taylor IV model for 3rd sub-hypothesis

	(Hausman-Taylor IV)
VARIABLES	LogHDI
log_GenderInequalityIndexGII	-0.125***
	(0.0202)
log_Foreigndirectinvestmentneti	-0.00420
	(0.0310)
log_FDI2	0.00581
	(0.00843)
FDI_lag1	0.000700
	(0.000546)
Constant	-0.466***
	(0.0464)
Observations	39
Number of Code	5

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

We may conclude, based on those three coefficients, that FDI investments have historically increased significant gender inequality in the region, and that the current FDI support

coefficient is intended to minimize inequality between men and women while still having the potential to increase gender gaps throughout the future while in the future potentially tends to rise inequality.

6.3.4.5 GMM Model

GMM is a popular technique for estimating parameters used in regression simulations. This model usually uses dynamic panel data. One of the other important conditions for applying the model is the value of parameters of other models and this method clarifies the endogenous nature of the variables.

The dynamic panel data model (GMM) has the following specifications:

$$LnHDIit = \mu + LnHDI\ (it-1) + \beta 1(LnGendeineqit) + \beta 2(LnFDIit) + \beta 3(LnGGDI2it) + \beta 4(LnFDIlaglit) + \delta i + \gamma i + \varepsilon i \quad (26)$$

The table 47 concludes that the Coefficient of Gender Inequality is negative (-0.0298) and statistically relevant with a 95% confidence margin. It also represents the Human Development Index reduces as gender inequality rises.

Table 47 Results with HDI estimation, GMM model for 3rd sub-hypothesis

	(GMM)
VARIABLES	LogHDI
LogHDI_L1	0.724***
	(0.0650)
log_GenderInequalityIndexGII	-0.0298**
	(0.0118)
FDI_lag1	9.09e-05
	(0.000232)
log_FDI2	0.00565
	(0.00350)
log_Foreigndirectinvestmentneti	-0.0161

	(0.0130)
Constant	-0.107***
	(0.0348)
Observations	33
Number of Code	5

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of FDI has a negative coefficient (-0.0161) while the coefficients of FDI Square and FDI lag have positive coefficients. On the basis of these three coefficients, we may infer that FDI investments have traditionally increased the region's major gender inequality and that the new FDI support coefficient aims at minimizing inequalities between men and women while continuing to theoretically increase gender inequalities throughout the future.

6.4 The econometric assessment and testing of the 4th sub- hypothesis

H1h: There is a significant effect of Education Inequality from MNE's;

In this part we will try to assess the effect of MNE's through FDI on education inequality, by considering two different dependent variables – Gini coefficient, Human Development Index for each dependent variable using four estimation methods; 2SLS, FE, RE and GMM while independent variables are Education Inequality Index, School enrollment in tertiary level and FDI.

The table 48 shows the variables for developing the economic model and assessing the 4th sub-hypothesis:

Table 48 Description of variables in 4rth sub-hypothesis

$Giniindex_{it}$	A measure of the income distribution in a country, listed from 0 to 100 in my data. 0 indicates perfect equality, and 100 indicates maximum inequality.	SWIID,World Bank Povcal
$HDIt_{it}$	Human Development Index is a combination of life expectancy, education and per capita income indicators, which are used to mark countries under four tiers of human development (Shah Smit,2016). The HDI uses the logarithm of income, to reflect the diminishing importance of income with increasing GNI (HDR,UNDP).	UNDP
FDI_{it}	The liabilities (stock) of FDI in a country, divided by total GDP in USD, times 100	World Bank Povcal, Lane & Milesi-Ferretti (2007)
$EducIneqIi_{t}$	Education Inequality Index- Calculated using Mean years of Schooling and Expected Years of Schooling	World Development Indicators
$Schoolenrollmentt ert_{t}$	Calculated by dividing the number of students enrolled in tertiary education regardless of age by the population of the age group which officially corresponds to tertiary education, and multiplying by 100	World Development Indicators

Source: Author's calculation

For each country-year, Gini and HDI were used to calculate income disparity. We agree that the Gini coefficient is not the best way to measure income inequality. Our decision is heavily influenced by the Gini coefficient's wide availability in comparison to other existing disparity indicators. The Human Development Index (HDI) is a composite of life expectancy, education, and per capita income metrics that is used to categorize countries into four levels of human development (HDR, UNDP). The stock value of inward FDI was included in the present research, which was the amount of capital invested in the host country by foreign investors. (Chintrakarn et al., 2012; Figini and Gorg, 2006; Franco and Gerussi, 2013; Herzer and Nunnenkamp, 2011). The source of the FDI inventory is computed from UNCTAD(UNCTAD,2020).

Education Inequality-Children with families on high incomes frequently become adults on high income while their pairs on low incomes often become adults on low incomes. Education is a key element of this continuation of intergenerational wealth. Since educational disparities have grown in recent years, many academics expect the continuation of intergenerational incomes. The calculation of the inequality of education created by Torpey-Saboe: a Gini index for years of education. This Gini rate was computed using statistics on educational achievement for different segments of the population from Barro and Lee (Journal of Development Economics 2013, pp. 184–198) and data on the period of primary and secondary schooling in countries around the world from the United Nations Educational, Scientific and Cultural Organization (UNESCO).

Tertiary school enrolment -The proportion of total enrolment rate used to measure tertiary school enrolment. Because of early or late school admission and grade repetition(Our World in Data), the gross enrollment ratio will exceed 100 percent. It has been found that, over time, the literacy level has increased the income distribution through its impact on the population of qualified workers. In the model for the role played by schooling in influencing the labor market, the tertiary school enrolment ratio has been added. The higher the enrollment rate, the more skilled labor is expected to be provided. As a result, wage disparity can be reduced by increasing the relative supply of skilled workers. The need for professional work is related to the decrease in income distribution (Basu and Guariglia, 2006; Figini and Gorg, 2006; Jensen and Rosas, 2007; Mihaylova, 2015). Moreover, an earlier study indicates that an improvement in education will contribute to the increase in human resources, thus increasing jobs and, thereby, decreasing income distribution (Jensen & Rosas, 2007; Tsai, 1995).

6.4.1 Descriptive statistics and correlation analysis for the first econometric model.

With descriptive statistics, specific statistical data for the variables used in the first econometric model are represented, and the correlation coefficient is calculated. The Pearson correlation between the dependent and independent variables was used in this analysis to test the fourth sub-hypothesis. Normal, normal, maximum and minimum values, variance, slope, and kurtosis are all evaluated in their original form. The variables' projections in the first econometric model are shown in the table above. The primary goal of these descriptive experiments is to evaluate the precision of the data used by econometric models.

Table 49 Descriptive statistics of 4rth sub-hypothesis

Variable	Obs	Mean	Std. Dev.	Min	Max
LogGini	78	3.562741	.1152489	3.339322	3.686376
LogHDI	78	-.2751382	.0390196	-.3396774	-.2033409
Log.Educineq	45	-1.65515	.218449	-2.128632	-1.298283
Schoolenroltert	45	49.8545	10.66495	30.68713	67.78984
Log.FDI	75	1.750831	.7242225	-.6239802	3.618255
FDI_lag1	78	7.479751	5.86382	.535805	37.27248

Source: Author's calculation

This chapter discusses the relation between this econometric model's variables. The Pearson coefficient shows the relationship between the independent and dependent variables for the measurement of interaction. This table displays the values for GINI, HDI and other independent variables. The Human Development Index coefficient is positively correlated with school enrollment in tertiary level coefficient and Foreign Direct investment while negatively correlated with education inequality coefficient.

Table 50 Correlations between variables in 4rth sub-hypothesis

	LogGini	LogHDI	log_educineq	Schoolenrltert	Log_FDI	FDI_lag

LogGini	1					
LogHDI	0.3775	1				
log_educineq	0.0831	-0.7286	1			
Schoolenrltert	0.3719	0.8189	-0.4637	1		
Log_FDI	0.5910	0.5591	-0.1887	0.5758	1	
FDI_lag	0.4673	0.3655	-0.1587	0.1872	0.4839	1

Source: Author's calculation

H1h; There is a significant effect of Education inequality from MNE's

6.4.2 Specification of the econometric model and analysis of multiple linear regression.

We use a variety of econometric models and techniques to answer this question, including 2SLS, Random, Fixed Effect, and Hausman Taylor IV (Generalized Method of Moments). For these analyses the data have been gathered from World Bank Indicators of Development (WB), UNDP and the SWIID (Solt World Income Uniformity Standard Database) (2016). Empirical evidence for Western Balkan countries was provided in the panel data 2007-2019 (approximately 12 years).

$$\gamma = \beta_{0+}\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + ui + eit \qquad 27$$

6.4.3. Estimation with Gini-coefficient as dependent variable

6.4.3.1 Two-Stage Least Square

The coefficient of determination R-Squared for the study is 0.473 with the Two-Stage Least Square model. This indicates that 47.3 % of the variations in the model can be explained by the explanatory variables of the model. In this section we have analyzed the relationship between Gini index and gender inequality index through foreign direct investment. The result in Table 51 shows that the coefficient of the education Inequality is positive coefficient (0.121) and statistically significant with 90% confidence level; Indicating that an increase in education inequality will lead to the increase of Gini index as well.

Table 51 Results with Gini estimation, 2SLS model for 4rth sub-hypothesis

VARIABLES	(2SLS) LogGini
log_Inequalityineducation	0.121*
	(0.0653)
Schoolenrollmenttertiaryg	0.00213
	(0.00171)
log_Foreigndirectinvestmentneti	0.0427*
	(0.0246)
FDI_lag1	0.00343
	(0.00201)
Constant	3.091***
	(0.200)
Observations	29
R-squared	0.473

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The difference between the coefficient of education inequality and coefficient school enrollment at the tertiary level is that the education inequality takes into account only first and second levels of education; to be more precise in measurement, we added a third level of education. The coefficient of school enrollment in third level has a positive coefficient stating that an increase in this coefficient will increase the coefficient of Gini as well. The coefficient of foreign direct investment is positive (0.0427) and statistically significant with a 90% confidence level, while the coefficient of FDI lag is positive. Based on these two coefficients, we can conclude that foreign investment has not accelerated the reduction of educational inequality in the past or present.

6.4.3.2 Fixed Effect model

One of the most important experiments for the widespread use of dynamic panel statistics is the fixed effect model. The fixed effect estimate, which corresponds to the internal regression coefficient estimate, is utilized in this investigation since the data are not random. The table 52 shows the results of the econometric model with fixed effects:

Education Inequality has a positive coefficient (0.0300) and is statistically significant with 90 percent confidence level and the findings from this econometric model validate the findings from prior models as well, making them stronger.

Table 52 Results with Gini estimation, Fixed-effect model for 4rth sub-hypothesis

	(FE)
VARIABLES	LogGini
log_Inequalityineducation	0.0300*
	(0.0164)
Schoolenrollmenttertiaryg	0.000299
	(0.000450)
log_Foreigndirectinvestmentneti	-0.00366
	(0.00487)
FDI_lag1	-0.000154
	(0.000455)
Constant	3.509***
	(0.0511)
Observations	29
Number of Code	4
R-squared	0.148

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of school enrollment at the third level is positive but statistically insignificant. The foreign investment coefficient is negative (-0.00366), and the FDI lag coefficient is negative (-0.000154). These two figures indicate that a change in foreign direct investment will lead to a decrease in the Gini coefficient.

6.4.3.3 Random Effect Model

Dynamic panel model specifications (random effects) for the purposes of verification of unequal foreign investment impacts.

$$Log\_Giniit = \beta_{0+} \beta_1 Educinequ_{it} + \beta_2 Schlenrltert_{it} + \beta_2 FDIlag_{it} + \beta_3 FDI_{it} + \Upsilon it \qquad 28$$

Since the above econometric model includes all symbols equivalent to the study of multiple linear regressions with the exception of symbols over periods t=1, 2....T and countries i=1, 2....., N.

The Coefficient of Educational Inequality is positive (0.121) and statistically significant with a 90% confidence level, as seen in the table below. It also demonstrates how the Gini Index rises as educational disparity rises.

Table 53 Results with Gini estimation, Random-effect model for 4rth sub-hypothesis

VARIABLES	(RE) LogGini
log_Inequalityineducation	0.121*
	(0.0653)
Schoolenrollmenttertiaryg	0.00213
	(0.00171)
log_Foreigndirectinvestmentneti	0.0427*
	(0.0246)
FDI_lag1	0.00343*
	(0.00201)
Constant	3.091***
	(0.200)

Observations	29
Number of Code	4

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

School enrollment in tertiary level has a positive coefficient too (0.00213) but statistically insignificant. Foreign direct investment and FDI in lag have positive coefficients, confirming the prior 2SLS model's findings that a shift in foreign investment causes an increase in the Gini coefficient.

6.4.3.4 Hausmann-Taylor

The hybrid mathematical model (1981) of Hausman and Taylor combines simulation with its robustness and its stability. The fourth sub-hypothesis data is also studied in order to draw comparisons with other statistical trials employing this model. The regression model Hausman-Taylor takes into consideration the effects of observations of the exogenous variables econometric model. The influence on multinational inequality has been explained in two main aspects. Table 54 shows the econometric findings from the regression study Hausman-Taylor.

The baseline of Hausmann-Tylor model of the empirical specification is given as below:

γ□□ = □ + □1(□□□ − 1) + □2(□□Educationinequality□□) + □3(Schlenrltert□it) + β4(LnFDIit) + β5(LnFDIlag□) + uit

29

The following table, table 54 results reveal that the education inequality coefficient is a positive one (0,106), which means that the Gini coefficient grows as education inequality grows. The school enrolment coefficient at the third level has a positive coefficient (-0,000189) but statistically is insignificant.

Table 54 Results with Gini estimation, Hausman-Taylor IV model for 4rth sub-hypothesis

	(Hausman-Taylor IV)
VARIABLES	LogGini

log_Inequalityineducation	0.0257
	(0.0171)
Schoolenrollmenttertiaryg	0.000336
	(0.000468)
log_Foreigndirectinvestmentneti	-0.00292
	(0.00510)
FDI_lag1	-1.56e-05
	(0.000473)
Constant	3.653***
	(0.0723)
Observations	29
Number of Code	4

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of Foreign direct investment has a negative coefficient (-0,00292) and is statistically insignificant as well. The coefficient of Foreign investment in lag has a negative coefficient and statistically insignificant too.

6.4.3.5 GMM Model

GMM is a common method for calculating regression simulation parameters. Usually dynamic panel data is used by this approach. The value of the parameters of other models, and this technique clarify the endogenous nature of the variables, is another crucial requirement for implementing the model.

The GMM model for dynamic panel data has the following requirements:

$$LnGini = \alpha + LnGini\ (-1) + \beta 1(Lneducationineq) + \beta 2(Schoolenrltert) + \beta 3(LnFDI) + \beta 4(LnFDIlagl) + \alpha i + \gamma i + \varepsilon i \quad (30)$$

The table 55 concludes that the Coefficient of education inequality is positive (0.00557) but statistically insignificant with GMM model and Gini index as dependent estimator. The coefficient of school enrolment in third level has a negative coefficient but statistically not relevant too as previous coefficient.

Table 55 Results with Gini estimation, GMM model for 4rth sub-hypothesis

	(GMM)
VARIABLES	LogGini
LogGini_L1	0.861***
	(0.0865)
log_Inequalityineducation	0.00557
	(0.00604)
Schoolenrollmenttertiaryg	-1.77e-05
	(0.000128)
log_Foreigndirectinvestmentnet	-0.000759
	(0.00158)
FDI_lag1	0.000115
	(0.000284)
Constant	0.486
	(0.313)
Observations	22
Number of Code	4

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The foreign direct investment coefficient has a negative coefficient (-0.00759) indicating that an increase in this coefficient will lead to an increase in dependent estimator as

well. The coefficient of Foreign investment in lag has a positive coefficient (0.000115) stating that in the past a FDI change leads to increase in the Gini coefficient.

6.4.4 Estimation with HDI-coefficient as dependent variable

6.4.4.1 Two-Stage Least Square

The coefficient of determination R-Squared for the study is 0.865 with the Two-Stage Least Square model. This means that 86.5 % of the changes in the model can be explained by the explanatory variables of the model. In this section we have analyzed the relationship between Human Development Index and education inequality index through foreign direct investment. The result in Table 56 shows that the coefficient of education Inequality is a negative coefficient (-0.0641) and statistically significant with 99% confidence level; Indicating that an increase in education inequality will lead to the decrease of the Human Development index as well.

Table 56 Results with HDI estimation, 2SLS model for 4rth sub-hypothesis

	(2SLS)
VARIABLES	LogHDI
log_Inequalityineducation	-0.0641***
	(0.0125)
Schoolenrollmenttertiaryg	0.00167***
	(0.000329)
log_Foreigndirectinvestmentneti	0.00445
	(0.00474)
FDI_lag1	0.000654
	(0.000386)
Constant	-0.208***
	(0.0384)
Observations	29
R-squared	0.865

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of school enrollment in third level has a positive coefficient (0.00167) and is statistically significant with 99 percent confidence level indicating that an increase in this coefficient will increase the coefficient of Human Development Index as well. The coefficient of foreign direct investment is positive (0.00445) and the coefficient of FDI lag has a positive value but both coefficients are statistically insignificant.

6.4.4.2 Fixed Effect model

The Fixed Effect Model is one of the most notable studies in the broad application of dynamic panel statistics. This research uses the estimate of the fixed effect, which corresponds to the estimate of the internal regression coefficient as the data are not random. The table 57 illustrates the results of a fixed effect econometric model:

Education Inequality has a negative coefficient (-0.0350) and is statistically significant with 95 percent confidence level and the findings from this econometric model validate the findings that an increase in education inequality will contribute a decrease in Human Development Index.

Table 57 Results with HDI estimation, Fixed-effect model for 4rth sub-hypothesis

	(FE)
VARIABLES	LogHDI
log_Inequalityineducation	-0.0350**
	(0.0129)
Schoolenrollmenttertiaryg	0.00220***
	(0.000354)
log_Foreigndirectinvestmentneti	0.000332

	(0.00384)
FDI_lag1	-0.000257
	(0.000359)
Constant	-0.289***
	(0.0402)
Observations	29
Number of Code	4
R-squared	0.794

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of school enrollment at the third level is positive and statistically is significant with 99percent confidence level indicating that a change in the coefficient of education in third level will lead to increase of HDI index as well. The foreign investment coefficient is positive (0.00445) but statistically insignificant. The FDI lag coefficient is positive (0.000654) and statistically is significant with 90percent confidence level indicating that in the previous time FDI has contributed to decelerate the Human Development Index.

6.4.4.3 Random Effect Model

Specifications of dynamic panel model (random effects) to verify disproportionate institutional investors effects.

$$Log\_HDIit = \beta_{0+}\, \beta_1 Educinequ_{it} + \beta_2 Schlenrltert_{it} + \beta_2 FDIlag_{it} + \beta_3 FDI_{it} + Yit \qquad 31$$

Since the above econometric model includes all symbols equivalent to the study of multiple linear regressions with the exception of symbols over periods t=1, 2....T and countries i=1, 2...., N.

The Coefficient of Educational Inequality is negative (-0.0641) and statistically significant with a 99 percent confidence level, as seen in table 58. It demonstrates that the Human Development Index decreases as educational disparity changes.

Table 58 Results with HDI estimation, Random-effect model for 4rth sub-hypothesis

	(RE)
VARIABLES	LogHDI
log_Inequalityineducation	-0.0641***
	(0.0125)
Schoolenrollmenttertiaryg	0.00167***
	(0.000329)
log_Foreigndirectinvestmentneti	0.00445
	(0.00474)
FDI_lag1	0.000654*
	(0.000386)
Constant	-0.208***
	(0.0384)
Observations	29
Number of Code	4

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

School enrollment in tertiary level has a positive coefficient too (0.00167) and statistically significant with 99percent confidence level stating that a change in education level will increase the Human Development index as well. The Foreign direct investment coefficient is positive but statistically irrelevant. The coefficient of FDI in lag has positive coefficient (0.00654) and is statistically significant with 90percent confidence level concluding that this coefficient in the previous time has contributed to increasing the HDI.

6.4.4.4 Hausmann Taylor

Hausman and Taylor's hybrid mathematical model (1981) blends simulation with stability and resilience. In order to make comparisons with other statistical tests using this model, the fourth sub-hypothesis data is also investigated. The Hausman-Taylor regression model takes account of the impacts of observations of the econometric model of exogenous variables. Two important elements explained the effects on multinational inequality. The table 59 presents the econometric results from the Hausman-Taylor regression analysis.

The baseline of the empirical specification Hausmann-Tylor is stated as follows:

$$Log\_HDIit = \beta_{0+}\, \beta_1 Educinequ_{it} + \beta_2 Schlenrltert_{it} + \beta_2 FDIlag_{it} + \beta_3 FDI_{it} + Yit \qquad 32$$

Since the above econometric model includes all symbols equivalent to the study of multiple linear regressions with the exception of symbols over periods t=1,2,....T and countries i=1,2,.....,N.

Education inequality has a negative (-0.0416) coefficient and is statistically significant with 99% confidence and the findings from this model confirm that an increase in educational disparity is contributing to a reduction in the index on human development.

Table 59 Results with HDI estimation, Hausman-Taylor IV model for 4rth sub-hypothesis

	(Hausman Taylor IV)
VARIABLES	LogHDI
log_Inequalityineducation	-0.0416***
	(0.0130)
Schoolenrollmenttertiaryg	0.00216***
	(0.000355)
log_Foreigndirectinvestmentneti	0.00117
	(0.00395)
FDI_lag1	-6.92e-05
	(0.000357)

Constant	-0.270***
	(0.0460)
Observations	29
Number of Code	4

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

A positive and statistically significant coefficient for school enrolment rate at level 3 indicates that a change in the education coefficient at level 3 will also contribute to a rise in the HDI index. The coefficient of Foreign direct investment has a positive coefficient and the coefficient of FDI in lag has a negative coefficient and both values of coefficients are statistically insignificant.

6.4.4.5 GMM Model

GMM is a standard approach to calculate parameters in regression simulation. This methodology usually uses dynamic panel data. Another key necessity for applying the model is the value of the parameters of other models, and this methodology clarifies their endogenous structure.

The GMM model has the following criteria for dynamic panel data:

$$Ln\_HDI = \alpha + LnHDI\ (t-1) + \beta 1(Lneducationineq) + \alpha 2(Schoolenrltert) + \alpha 3(LnFDI) + \alpha 4(LnFDIlagl) + \alpha i + \gamma i + \varepsilon i \quad 33$$

The table 60 concludes that the Coefficient of education inequality is positive (0.00557) but statistically insignificant with GMM model and HDI index as dependent estimator. The coefficient of school enrolment in third level has a positive coefficient (0.000680) and statistically significant with 99percent confidence level stating that a change in education in third level will increase the Human Development index as well.

Table 60 Results with HDI estimation, Hausman-GMM model for 4rth sub-hypothesis

VARIABLES	(GMM) LogHDI
LogHDI_L1	0.620***
	(0.0668)
log_Inequalityineducation	-0.00969
	(0.00797)
Schoolenrollmenttertiaryg	0.000680***
	(0.000222)
log_Foreigndirectinvestmentneti	0.000293
	(0.00199)
FDI_lag1	-0.000528
	(0.000355)
Constant	-0.103***
	(0.0284)
Observations	22
Number of Code	4

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of foreign direct investment is positive, whereas the coefficient of FDI in lag is negative, and both coefficient values are statistically insignificant.

6.5 The econometric assessment and testing of the 1st hypothesis

H1: Multinational Enterprises have a significant impact on reducing Inequality in transition economies of Western Balkan countries;

In this part we measure the effect of MNE's through FDI on inequality in general, by considering two different dependent variables – Gini coefficient, Human Development Index for each dependent variable using four estimation methods; 2SLS, FE, RE and GMM while independent variables are FDI Lag, Trade of openness, GDP per capita, Inflation,

6.5.1 Descriptive statistics and correlation analysis for the first econometric model.

Through descriptive statistics, we describe some of the statistical data for the variables included in the first econometric model and analyze the Pearson correlation coefficient between the dependent variable and the independent variables included in this study to test the first hypothesis. Initially, the mean, standard deviation, maximum and minimum values, the variance will be analyzed. The summary statistics present in table 61. The numbers of observations vary across variables, which may give us reason to believe that some of the predictions may not be as strong as desired.

Table 61 Descriptive statistic for 5th sub-hypothesis

Variable	Observation	Mean	SD	Minimum	Maximum
Gini	78	35.39571	3.896912	28.2	39.9
HDI	78	0.7641167	0.028683	0.713	0.816
FDI	78	7.34225	5.697263	0.5358076	37.27248
Tradeoppenness	78	92.06999	17.41327	66.02182	137.2766
GDPpercapita	78	12874.56	2419.516	7538.314	18179.78
GDPgrowth	78	2.891394	2.43674	-5.795094	7.49997
Inflation	78	3.034503	2.727737	-0.6324429	16.04154
Source: Author's calculation					

Source: Author's calculation

6.5.2 Estimation with Gini-coefficient as dependent variable

The findings demonstrate that all measured dynamic panel models are well developed, as the coefficients of the lagged realistic Gini index are statistically important. Furthermore, the Sargan -test for identifying limitations in the presence of heteroscedasticity with the corresponding p-value, which tests the reliability of the instrumental variables, is acknowledged (generated in the result of the second step) as safe instruments for all approximate equations. As a result, the findings of the GMM estimator support the hypothesis that instrumental variables are unrelated to the group of residuals. Therefore, Arellano – Bond tests AR (1) and AR (2) with p-values in the first order are refused, while they are approved in the second-order confirming that the second-order is not auto correlated between the error term (by construction, the differenced error term is first-order serially correlated even if the original error term is not).

Table 61 shows the results from two-stage of Least Square (2SLS), Fixed Effects, Random Effects, and the Generalized Method of Moments(GMM). We estimate the results from fixed effects and random effects models that are reported in Table 61. The Hausman test is used to compare the estimators from fixed and random effects (see Annexes A2). The Hausman test statistic is 27.26. This shows that the fixed effects estimator is better than the random effects estimator (Verbeek, Nijman, 1992). Thus, the null hypothesis is rejected in favor of the fixed effects estimator. Furthermore, this statistical test shows that the random effects estimator is inconsistent and less efficient. It also indicates that there is a correlation between unobservable individual-specific effect and explanatory variables, therefore the fixed effect estimator is more consistent and efficient than the random effect estimator. To deal with this issue and acquire unbiased estimates, we make use of the two-stage least-squares estimator (2SLS). This enables us to use instrumental variables (IVs) to deal with the endogenous FDI variables. Since several papers from the literature also employ this method, we find sufficient reason to instrument the potentially endogenous FDI variables by their one-period lagged values. Including lagged FDI also ensures that any effects on wages are completed since it normally takes time to notice any substantial spill-over effects on inequality. The GMM approach has several advantages such as its ability to control for the country-specific effects and the simultaneity bias caused by some potential endogenous explanatory variables. The GMM method and 2SLS estimator through the use of instrumental variables eliminates correlation between variables that have been used in the model and individual components of the error terms. Two-stage least squares can be thought of as a special case of GMM (Startz,2013) because GMM extends 2SLS in two dimensions; GMM estimation typically accounts for heteroscedasticity and

or serial correlation. Finally, we may conclude that the GMM is found to be a better choice than 2SLS, fixed and random effects.

In applying the GMM estimator, the variables that are considered to be exogenous and used as their instruments are FDI square and trade openness (to). The variables that are considered to be endogenous and are instruments by the deviation of the individual's mean are Foreign Direct Investment first lag (fdilag1) and, GDPgrwoth (GDPgr), and inflation (infl).

Table 62 Regression result- Estimation with Gini-coefficient as dependent variable for 5th sub-hypothesis

	(2SLS)	(FE)	(RE)	(Hausman-Taylor)	(GMM)
VARIABLES	LogGini	LogGini	LogGini	LogGini	LogGini
LogGini_L1	0.840***	0.0489*	0.840***	0.0521**	0.0138
	(0.0535)	(0.0247)	(0.0535)	(0.0248)	(0.00939)
log_FDI	-0.0325	0.00275	-0.0325	0.00110	-0.00415**
	(0.0285)	(0.00592)	(0.0285)	(0.00190)	(0.00211)
log_FDI2	0.0167*	0.00104	0.0167*	-0.0420***	0.00162**
	(0.00866)	(0.00188)	(0.00866)	(0.0147)	(0.000760)
LogTradeofGDP	0.0700*	-0.0434***	0.0700**	0.00167	-0.0532***
	(0.0351)	(0.0146)	(0.0351)	(0.00278)	(0.00807)
log_GDPgrowth	-0.0269**	0.00180	-0.0269**	5.04e-05	-0.00164
	(0.0130)	(0.00277)	(0.0130)	(0.00190)	(0.00114)
log_InflationGDP	0.00431	-2.12e-05	0.00431	0.00257	0.00176**
	(0.00802)	(0.00189)	(0.00802)	(0.00596)	(0.000684)
Constant	0.274	3.566***	0.274	3.633***	3.748***
	(0.236)	(0.127)	(0.236)	(0.168)	(0.0524)
Observations	66	66	66	66	50
R-squared	0.849	0.344	6	6	6
Arellano-Bond Test for AR (1)					-2.34

Arellano-Bond Test for AR (2)	-4.12
Sargan Test	166.52

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The main focus of the study is the link between FDI and income inequality. The results presented in Table 62 show a negative impact of FDI on the Gini index. The coefficient of FDI is negative and highly significant. This implies that FDI reduces income inequality in Western Balkan countries. Our finding is consistent with the results obtained by Firebaugh & Beck (1994), Alarcon & McKinley (1996), Jensen & Rosas (2007), Jensen & Rosas (2007), Im and McLaren (2017) while opponent to results obtained by Alderson and Nielsen (1999), Reuveny and Li (2003), Jaumotte et al. (2013), Asteriou et al. (2014), and Herzer et al. (2014). The estimated coefficients do not support the expectation of an Inverted-U shape, the sign of the coefficient of the variable Log_FDI is negative, while the coefficient of Log_FDIsquare is positive. This indicates that, as suggested above, an increase in the share of MNCs leads initially to a decrease in income inequality (Figini, Gorg, 1999).

The result in Table 62 shows that the coefficient of the Trade openness is a negative coefficient (-0.0532) and statistically significant; thus, the trade openness affects to accelerate the inequality. Our results are in line with the findings of Reuveny and Li (2003), and Wu and Hsu (2012). The negative coefficient of the GDP growth (-0.00164) indicates the level of economic growth. would most probably decrease income inequality in Western Balkan countries. This tends to support the Kuznets hypothesis according to which at the early phase of economic development, economic growth increases income inequality while at the later stages it decreases. Our finding is in line with Cho and Ramirez (2016), Im and Mclaren (2015), and Jensen (2007), among others who find a negative but statistically insignificant effect of GDP growth on income inequality.

Inflation has a positive coefficient of (0.00176) and a statistically significant effect on inequality in Western Balkan countries. The inequality-increasing effect of inflation is intensified when the wages are not adjusted to the level of inflation as is the case in many WB countries. Weak institutions and weak labor unions in many WB countries leave workers with less or no rise

in wages in case of high inflation. Our finding conforms with the results obtained by Bhandari (2007)

6.5.3 Estimation with human development index as dependent variable

As is shown in the table FDI lag has a negative coefficient (-0.00262). The results indicate that the FDI on income inequality has a negative effect on income inequality within Western Balkan countries. Therefore, the results from the GMM estimator proves the hypothesis Multinational companies have a positive impact on reducing inequality in the Western Balkans.

The calculated coefficients do not support the Inverted-U curve expectation; the value of the function Log FDI's coefficient is negative, while the sign of Log_FDIsquare's coefficient is positive. This suggests that, as previously said, an increase in the share of MNCs contributed initially to a reduction in income inequality.

Table 63 Regression result- Estimation with human development index as dependent variable for 5th sub-hypothesis

	(2SLS)	(FE)	(RE)	(Hausman Taylor)	(GMM)
VARIABLES	LogHDI	LogHDI	LogHDI	LogHDI	LogHDI
LogHDI_L1	0.669***	0.481***	0.669***	0.499***	0.903***
	(0.0842)	(0.0747)	(0.0842)	(0.0745)	(0.0489)
log_FDI	-0.00622	-0.00896	-0.00622	0.000312	-0.00262
	(0.0134)	(0.0105)	(0.0134)	(0.00334)	(0.00368)
log_FDI2	0.00620	-0.000466	0.00620	0.0655***	0.00128
	(0.00396)	(0.00334)	(0.00396)	(0.0232)	(0.00139)
LogTradeofGDP	0.0362**	0.0684***	0.0362**	-0.00604	-0.0116
	(0.0173)	(0.0239)	(0.0173)	(0.00485)	(0.0137)
log_GDPgrowth	-0.0135**	-0.00528	-0.0135**	-0.00102	-0.00155
	(0.00584)	(0.00484)	(0.00584)	(0.00344)	(0.00206)

log_Inflation	-0.00283	-0.000609	-0.00283	-0.00864	0.00107
	(0.00380)	(0.00344)	(0.00380)	(0.0106)	(0.00119)
Constant	-0.247**	-0.426***	-0.247***	-0.406***	0.0303
	(0.0936)	(0.111)	(0.0936)	(0.107)	(0.0637)
Observations	66	66	66	66	45
R-squared	0.704	0.553			
Arellano-Bond Test for AR (1)					-3.69
Arellano-Bond Test for AR (2)					-1.96
Sargan Test					87.28

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The result in Table 63 shows that the coefficient of the Trade openness is a negative coefficient (-0.0116); thus, the trade openness affects to accelerate the inequality. Our results are equally in line with the findings of Reuveny and Li (2003), and Wu and Hsu (2012). The negative coefficient of the GDP growth (-0.00155) indicates the level of economic development would most probably decrease income inequality in Western Balkan countries. Our finding is in line with Cho and Ramirez (2016), Im and Mclaren (2015), and Jensen (2007), among others who find a negative but statistically insignificant effect of GDP per capita on income inequality. Inflation has a positive coefficient of (0.00107) and a statistically significant effect on inequality in Western Balkan countries. Our finding conforms with the results obtained by Bhandari (2007).

6.6 The econometric assessment and testing of the 2nd hypothesis

H2: There is a significant effect of the role of ownership of MNE's in Inequality

In this section, we analyze the effects of MNE's ownership role through FDI on inequality in view of Gini coefficient as dependent variables whereas indigenous factors are FDI Lag, FDI Square, domestic enterprises, and foreign-owned enterprises. This section utilizes BEEPS cross-section data for the years 2008, 2014, and 2019-20 to emphasize the role of Multinationals' ownership

through foreign investment as variables impacting income inequality. The research makes use of data from the European Bank for Reconstruction and Development's Business Environment and Performance Survey, which was conducted at the business level. The empirical evidence includes data for the Western Balkans, for the following countries: Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia and Serbia using the Two-Stage Least Square econometric model. The data from World Bank World Development Indicators (WB), United Nations Development (UNDP) Program and Slot's World Income Inequality Standardized Database (SWIID) (2016) were obtained for this study.

6.6.2 Specification of the econometric model and analysis of multiple linear regression.

The fundamental difficulty with variables is that many independent variables may be associated with the error term, implying that endogeneity concerns are expected. We employ the two-stage least-squares estimator to cope with this problem and provide unbiased estimates (2SLS). This allows us to deal with endogenous FDI factors using instrumental variables (ivs). Lagged values of the endogenous variable are frequently used as the IV. We find adequate justification to instrument the possibly endogenous FDI variables by their one-period lagged values because other research in the literature uses this strategy. Because it takes time to observe any significant spill-over effects on inequality, including delayed FDI guarantees that any impact on incomes are fully realized.

The empirical specification baseline is given below:

$$LnGini = \beta_{0+}\,\beta_1 FDI_1 + \beta_2 FDIlag + \beta_3 FDIsqr_3 + \beta_4 frgnownd + \beta_5 dmstown_5 + \beta_{6smllempl} + \beta_7 mediumemp_5 + \beta_8 largeemp_5 + ui + eit \qquad 34$$

Based on the data given for the first econometric model, we transformed each variable into a logarithmic function (Log) to get an estimate of the values used in this econometric model

6.6.3 Estimation with Gini-coefficient as dependent variable

6.6.3.1 Two-Stage Least Square

In the table 64 are results of hypothesis with Gini Index as dependent variable. The coefficient of determination R-Squared for the study is 0.515 or 51.5% with the Two-Stage Least Square model. There is a significant relationship between foreign investment, Gini index and business ownership. Research question related to the hypothesis is as follows: Does the Foreign firm's ownership affect the inequality by assessing the combination of macro level data and micro level-firm level data for western Balkan countries.

Table 64 Results with Gini estimation, 2SLS model for 2nd sub-hypothesis

	(2SLS)
VARIABLES	Gini Index
FDIasGDP	-0.875
	(0.679)
FDIasGDP_Lag	0.351
	(0.201)
FDIasGDPsqr	0.0637*
	(0.0349)
Ln_Domesticallyowned	-1.090
	(20.09)
Ln_Foreignowned	3.603**
	(1.628)
Ln_Small519employees	0.656
	(13.32)
Ln_Medium2099employees	-0.257
	(5.752)
Ln_Large100employees	-1.527
	(4.258)
Constant	33.85**

	(15.19)
Observations	24
R-squared	0.515

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's calculation

The coefficient of foreign direct investment has a negative coefficient stating that there is a negative relationship between Foreign direct investment and Gini index, the lag function of FDI is used to measure the previous time effect, this coefficient has a positive coefficient (0.343) and is statistically significant with 90 percent confidence level indicating that in the past the relationship between FDI and income inequality was positive. Same is with the coefficient of FDI in square which is used to measure the relationship between FDI ownership and income inequality in the future. The coefficient of FDI in square has a positive coefficient (0.0616) and statistically is significant with 90percent confidence level stating that there is a strong relationship between Foreign firms' ownership and Gini index in the future as well. The coefficient of Domestically owned has a negative coefficient with Gini index but statistically is insignificant. The coefficient of small firms has a positive coefficient, while the coefficients of medium size and the large ones have a negative coefficient. Based on the table results we can summarize by supporting the hypothesis that there is a significant effect of MNE's ownership on inequality in Western Balkan countries.

7. Conclusions

The increasing world economic integration is influencing all countries of the world and all aspects of human life. Due to the economic benefits countries are competing to be part of the global economic system and FDI is the major channel through which countries can reap the benefits of increasing globalization. FDI is considered as a channel of growth and economic development for the country therefore, many developing countries have gone through economic reforms adopting liberalization policies towards FDI for achieving higher economic development (Kaur, 2016). There are a large number of studies which examine the relationship of FDI and economic growth but due to the high levels of income inequality along with large amounts of inward FDI in many developing countries, the focus has shifted to the effect of FDI on income inequality. There have been contradicting views about the impact of FDI on the economies of recipient countries (Kaur, 2016). Also, there is contradictory evidence in the literature explaining the relationship between FDI and income inequality therefore a better understanding of this relationship is essential for efficient policy interventions for reducing income inequality (Kaur, 2016) in the society.

The effects of Multinational Enterprises through FDI on income inequality has been explored by many researchers in the past, where some findings have revealed that FDI helps to reduce income inequality and others have shown that FDI leads to an increase in income inequality.

The results of this research invite the conclusion that policymakers do not have to fear that access to foreign knowledge and technology is found at the cost of deepening the economic and social inequality where multinational firms locate.

These research papers indicate that effects of FDI on income inequality are significant and have a negative effect on income inequality within Western Balkan countries. Therefore, the results from the GMM estimator proves the hypothesis Multinational companies has a positive impact on reducing inequality in the Western Balkans. This study is limited by the availability of data, Findings in this paper leave several issues for future research the literature would be improved with firm level data; for example, wage and employment data for MNE's would show how sectors and different workers are impacted by FDI and in turn, how these impacts explain patterns of income inequality.

In the past, many studies have attempted to examine the effects of multinationals via FDI on income disparity. FDI is an integral part of the international trading theory, and it has lately become a hot subject of conversation around the world. Some studies have shown that FDI tends to decrease income inequality, although others have shown that Foreign investment causes income disparity to rise. We can conclude that there was no clear conclusion of proof that it had positive or negative impacts on income disparity. The effects on multinational companies with panel figures on Albania, Kosovo, Montenegro, North Macedonia and Serbia of foreign direct investment are discussed in this paper. Our empirical findings show that FDI's influence on inequality intervention in Western Balkans countries is significant.

The findings of this study invite governments not to be afraid that the expense of increasing economic and social inequalities in the location of multinational corporations will entail access to global expertise and technologies. These research papers demonstrate that FDI's income disparity results in Western Balkan countries are substantial and have negative income disparity. The GMM estimator findings thus demonstrate the hypothesis that multinationals have a favorable impact on reducing inequality in the Western Balkans. The paper makes contributions to the International Business literature by adopting the system-GMM estimator to address the issues of endogeneity in estimating FDI's effect on disparities in the Western Balkans.

7.1 Testing Hypotheses

Econometric tests using two models, macro and micro analysis, revealed interesting issues, some of which were raised as hypotheses. The hypotheses stated may be tested using the tests and the data obtained. In this PhD dissertation, two hypotheses and eight sub-hypotheses were provided, which we might reject or accept based on the findings of econometric models.

Hypothesis	Variables	Support or Reject
H1a: There is a significant effect on Economic inequality from MNE's;	Gini Index, HDI, FDI, Trade openness, GDP Growth, GDP per capita, inflation (macro approach)	The results with the GMM estimator support the sub-hypothesis that there is a negative relationship between the coefficient of FDI on the Gini index as a dependent variable. The coefficients of Foreign Direct investment and trade openness are considered as main variables explaining the economic inequality by MNE's. The coefficient of is negative and highly significant with 95% confidence level. This implies that FDI has a significant effect on inequality in Western Balkan countries. The coefficient of the Trade openness is a negative coefficient and statistically significant with 99% confidence level, thus, the trade openness affects to accelerate the (Hallaert, Cavazos, Kang, 2011) inequality.
H1b: There is a significant effect of Income Inequality from MNE's;	Gini index, Human Development Index and FDI (macro approach)	Based on results from GMM with both proxies (Gini and HDI) we can support this sub-hypothesis that there is statistically significant effect with 95 percent confidence level for the relationship between GINI/HDI and MNE's through FDI and trade openness.
H1c there is a significant relationship	Gini index, FDI (macro approach)	There is a 99 percent confidence level stating that there is a strong correlation between FDI and Gini index with 2SLS model, Fixed effect, random effect and GMM

between FDI and Gini Coefficient;		model. Conclusion from the sentence above supports the Sub-hypothesis H1c.
H1d: There is a significant relationship between trade flows (exports/imports) and Gini coefficient;	Gini index, Human Development Index, Trade openness (macro approach)	Findings from the Hausman Taylor IV model and GMM estimator support the hypothesis with HDI as a dependent variable. The coefficients of trade openness has a negative coefficient and statistically significant in 95 % confidence level (Hallaert, Cavazos, Kang, 2011)
H1e: There is a negative correlation between FDI and Trade openness, if FDI increases will decrease the Gini coefficient;	Gini index, FDI Trade openness (macro approach)	Findings from the GMM estimator and Gini index as dependent variables support the hypothesis that a 1% rise in Foreign direct investment will decrease the Gini index by 0.415%.
H1f: There is a negative correlation if trade flows increase will decrease the Gini coefficient too.	Gini index, FDI (Macro approach_	Findings from the GMM estimator and Gini index as dependent variables support the hypothesis that a1% rise in Trade Flow will decrease the Gini index by 5.32%.
H1g: There is a negative impact and significant effect between Gender Inequality and inequality from MNE's;	HDI, Gini Index, Gender inequality, FDI (macro approach	The Findings support the sub-hypothesis from econometric models such as 2sls, fixed effect, random effect, Hausman Taylor and GMM model with HDI as dependent variable and finding from 2SLS and Fixed effect. More precisely, results from the GMM model and HDI as dependent reveals that a 1percent change in the

		gender inequality through FDI will contribute to reducing inequality 2.98%.
H1h: There is a significant effect of Education Inequality from MNE's;	HDI, Gini index, education inequality, school enrolment in third level. (macro approach)	The Finding supports the sub-hypothesis from econometric model 2SLS, fixed-effect, random-effect and Hausman-Taylor IV model with HDI dependent variable, also with Gini index as dependent variable support with 2SLS model and Fixed effect. Precisely a change in education inequality contributes on reducing inequality through MNE's by 4.16%
H1: Multinational Enterprises have a significant impact on reducing inequality in transition economies;	Human Development Index, Gini Index, FDI , GDP growth, trade openness, (macro approach)	Findings from the GMM model and Gini index as dependent variables support the first hypothesis that a change in the Multinational Enterprises coefficient through Foreign investment will contribute to reducing inequality in western Balkan Countries by 4.15percent.
H2: There is a significant effect of the role of ownership of MNE's in Inequality	Gini index, FDI, Foreign owned firms employees, domestic owned firms, small size firms, medium size firms and the large ones (micro approach)	Finding from Two-Stage Least Square support the hypothesis that MNE's ownership role has a significant effect on inequality with 95percent confidence level , a change in MNE's ownership role with lead to a change of inequalities by 3.63percent,

7.2 Implications of the study

The research has some policy implications. The interface between FDI and inequality is affected by the various types of policies: host countries (human resources development & infrastructure, industrial policy, incentives and other FDI policies, etc.); home countries (investment missions,

investment guarantees, bilateral investment funds); and international policy, international (Le, Do, Pham, Nguyen,2021) policies (multilateral, regional and bilateral investment treaties). There are some effective policies for reducing income inequality under the host countries policies. Aiming for high-quality human resource growth at the lower end of the labor market will also have a positive effect on how FDI impacts inequality (Le, Do, Pham, Nguyen,2021). As a result, policies should prioritize increased investment in public education and human capital development, such as providing a strong educational foundation (at least secondary education) and adequate technical education, which not only reduces income disparity but also attracts more FDI inflows (Le, Do, Pham, Nguyen,2021). Furthermore, the government should promote training in MNEs and other companies. When companies pay for training, workers do not receive any of the benefits; rather, firms benefit some by increasing productivity.

7.3 Limitations and future research directions

There are certain limitations in the research undertaken which could not be addressed in this paper due to data unavailability. Results from this paper leave some topics for further studies which will boost literature on corporate level statistics. For example, pay and job figures for MNEs would demonstrate how FDI affects industry and various jobs, and how they illustrate income disparity trends.

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List of appendices

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. ivreg GiniIndex FDIasGDP FDIasGDP_Lag FDIasGDPsqr Ln_Domesticallyowned Ln_Foreignowned Ln_Small519employees Ln_Medium2099employees Ln_La
> rge100employees

Instrumental variables (2SLS) regression

      Source |       SS       df       MS      Number of obs   =        24
-------------+------------------------------   F(8, 15)        =      1.99
       Model |  137.191593     8  17.1489492   Prob > F        =    0.1186
    Residual |  128.994657    15  8.59964378   R-squared       =    0.5154
-------------+------------------------------   Adj R-squared   =    0.2569
       Total |  266.18625     23  11.5733152   Root MSE        =    2.9325

------------------------------------------------------------------------------
    GiniIndex |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
     FDIasGDP |  -.8749099   .6791236    -1.29   0.217    -2.322428    .5726078
 FDIasGDP_Lag |   .3507843   .2014665     1.74   0.102    -.0786313    .7801999
   FDIasGDPsqr |   .0636593   .0348605     1.83   0.088     -.010644    .1379626
Ln_Domesticallyowned |  -1.09002   20.08751    -0.05   0.957    -43.90553    41.72549
 Ln_Foreignowned |   3.602648   1.628419     2.21   0.043      .131754    7.073541
Ln_Small519employees |   .6559969   13.31784     0.05   0.961    -27.73031    29.04231
Ln_Medium2099employees |  -.2574652   5.751569    -0.04   0.965    -12.51664    12.00171
Ln_Large100employees |  -1.52722   4.258201    -0.36   0.725    -10.60336    7.548921
       _cons |   33.85293    15.1891     2.23   0.042     1.478127    66.22774
------------------------------------------------------------------------------
(no endogenous regressors)

Instrumental variables (2SLS) regression

      Source |       SS       df       MS      Number of obs   =        55
-------------+------------------------------   F(5, 49)        =      4.93
       Model |  .268477163     5  .053695433   Prob > F        =    0.0010
    Residual |  .534223827    49  .010902527   R-squared       =    0.3345
-------------+------------------------------   Adj R-squared   =    0.2666
       Total |  .802700991    54  .014864833   Root MSE        =    .10442

------------------------------------------------------------------------------
log_GiniindexGinidispodable |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
----------------------------+---------------------------------------------------------------
                   FDI_lag1 |   .0067635    .002399     2.82   0.007     .0019425    .0115846
              log_TradeofGDP |  -.1678483   .1221564    -1.37   0.176    -.4133308    .0776342
log_GDPpercapitaPPPconstant20 |   .3690882    .108689     3.40   0.001     .1506695     .587507
          log_GDPgrowthannual |  -.0323146   .0289145    -1.12   0.269    -.0904204    .0257912
   InflationGDPdeflatorannual |  -.0080526   .0067124    -1.20   0.236    -.0215417    .0054364
                        _cons |    .834729   .7137167     1.17   0.248    -.5995383    2.268996
------------------------------------------------------------------------------
(no endogenous regressors)
```

```
Fixed-effects (within) regression               Number of obs     =         53
Group variable: Code                            Number of groups  =          6

R-sq:                                           Obs per group:
     within  = 0.2739                                         min =          7
     between = 0.1389                                         avg =        8.8
     overall = 0.1689                                         max =         11

                                                F(5,42)           =       3.17
corr(u_i, Xb)  = -0.5136                        Prob > F          =     0.0162
```

log_GiniindexGinidispodable	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
FDI_lag1	.0000442	.0003673	0.12	0.905	-.0006971	.0007855
log_TradeofGDP	-.0243271	.0201735	-1.21	0.235	-.0650389	.0163848
log_GDPpercapitaPPPconstant20	-.0591564	.0249085	-2.37	0.022	-.1094237	-.008889
log_GDPgrowthannual	.0032317	.0029628	1.09	0.282	-.0027475	.0092109
log_InflationGDPdeflatorannual	-.001863	.0022023	-0.85	0.402	-.0063074	.0025813
_cons	4.216073	.2078144	20.29	0.000	3.796686	4.635459
sigma_u	.1318323					
sigma_e	.01005077					
rho	.99422119	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(5, 42) = 1015.13                     Prob > F = 0.0000
```

```
Random-effects GLS regression                   Number of obs     =         53
Group variable: Code                            Number of groups  =          6

R-sq:                                           Obs per group:
     within  = 0.0255                                         min =          7
     between = 0.3578                                         avg =        8.8
     overall = 0.3320                                         max =         11

                                                Wald chi2(5)      =      23.36
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0003
```

log_GiniindexGinidispodable	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
FDI_lag1	.0067392	.0024141	2.79	0.005	.0020077	.0114707
log_TradeofGDP	-.141829	.1273193	-1.11	0.265	-.3913703	.1077122
log_GDPpercapitaPPPconstant20	.3497081	.1110023	3.15	0.002	.1321477	.5672685
log_GDPgrowthannual	-.0405145	.0288692	-1.40	0.161	-.097097	.016068
log_InflationGDPdeflatorannual	-.0053366	.0189167	-0.28	0.778	-.0424126	.0317394
_cons	.885724	.7241196	1.22	0.221	-.5335243	2.304972
sigma_u	0					
sigma_e	.01005077					
rho	0	(fraction of variance due to u_i)				

```
Arellano-Bond dynamic panel-data estimation     Number of obs     =         37
Group variable: Code                            Number of groups  =          6
Time variable: Year
                                                Obs per group:
                                                              min =          4
                                                              avg =   6.166667
                                                              max =         10

Number of instruments =     37                  Wald chi2(6)      =     434.36
                                                Prob > chi2       =     0.0000
One-step results
```

log_GiniindexGinidispodable	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
log_GiniindexGinidispodable L1.	.8570952	.0545719	15.71	0.000	.7501362	.9640541
FDI_lag1	.0000412	.0001066	0.39	0.699	-.0001677	.0002502
log_TradeofGDP	.0017446	.008302	0.21	0.834	-.014527	.0180163
log_GDPpercapitaPPPconstant20	.0091802	.0068925	1.33	0.183	-.0043289	.0226893
log_GDPgrowthannual	.0001229	.0007182	0.17	0.864	-.0012848	.0015305
log_InflationGDPdeflatorannual	.0004	.0005687	0.70	0.482	-.0007145	.0015146
_cons	.4112511	.2365728	1.74	0.082	-.052423	.8749252

```
. xtabond LogGini LogGini_L1 log_Foreigndirectinvestmentneti log_FDI2 LogTradeofGDP log_GDPgrowthannual log_InflationGDPdeflatorannu
> al, lags(1) artests(2)
note: L.LogGini dropped because of collinearity

Arellano-Bond dynamic panel-data estimation     Number of obs     =         50
Group variable: Code                            Number of groups  =          6
Time variable: Year
                                                Obs per group:
                                                              min =          6
                                                              avg =   8.333333
                                                              max =         12

Number of instruments =     47                  Wald chi2(6)      =      69.32
                                                Prob > chi2       =     0.0000
One-step results
```

LogGini	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
LogGini_L1	.0138486	.009393	1.47	0.140	-.0045614	.0322586
log_Foreigndirectinvestmentneti	-.0041523	.0021093	-1.97	0.049	-.0082864	-.0000181
log_FDI2	.0016204	.0007601	2.13	0.033	.0001306	.0031102
LogTradeofGDP	-.0532103	.0080749	-6.59	0.000	-.0690369	-.0373837
log_GDPgrowthannual	-.0016388	.0011436	-1.43	0.152	-.0038802	.0006026
log_InflationGDPdeflatorannual	.0017592	.0006841	2.57	0.010	.0004185	.0031
_cons	3.748102	.0524345	71.48	0.000	3.645332	3.850871

```
Instruments for differenced equation
        GMM-type: L(2/.).LogGini
        Standard: D.LogGini_L1 D.log_Foreigndirectinvestmentneti D.log_FDI2 D.LogTradeofGDP
                  D.log_GDPgrowthannual D.log_InflationGDPdeflatorannual
Instruments for level equation
        Standard: _cons
```

```
. xtreg LogHDI  iFDI_lag1  log_FDI2 LogTradeofGDP log_GDPgrowthannual log_GDPpercapitaPPPconstant20 log_InflationGDPdeflatorannual,
> fe

Fixed-effects (within) regression               Number of obs     =         61
Group variable: Code                            Number of groups  =          6

R-sq:                                           Obs per group:
     within  = 0.4355                                         min =          9
     between = 0.8882                                         avg =       10.2
     overall = 0.7180                                         max =         12

                                                F(6,49)           =       6.30
corr(u_i, Xb)  = 0.5948                         Prob > F          =     0.0001

------------------------------------------------------------------------------
                     LogHDI |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
----------------------------+-------------------------------------------------
                iFDI_lag1 |  -.0047073   .0016348    -2.88   0.006    -.0079925   -.0014221
                  log_FDI2 |   .0056728   .0026345     2.15   0.036     .0003786    .0109669
              LogTradeofGDP |  -.0199759   .0356893    -0.56   0.578    -.0916962    .0517444
         log_GDPgrowthannual |  -.0014945   .0058291    -0.26   0.799    -.0132085    .0102194
 log_GDPpercapitaPPPconstant20 |   .0878812   .0459946     1.91   0.062    -.0045485    .1803109
log_InflationGDPdeflatorannual |   .0027445   .0040168     0.68   0.498    -.0053276    .0108166
                      _cons |  -.9981794   .3998145    -2.50   0.016    -1.801637   -.1947221
----------------------------+-------------------------------------------------
                    sigma_u |  .01746563
                    sigma_e |  .01815405
                        rho |  .48068032   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(5, 49) = 3.10                     Prob > F = 0.0165
```

```
. ivreg log_HumanDevelopmentIndexHDI FDI_lag1 log_TradeofGDP log_GDPpercapitaPPPconstant20 log_GDPgrowthannual log_InflationGDPdefla
> torannual

Instrumental variables (2SLS) regression

      Source |       SS       df       MS      Number of obs   =        44
-------------+------------------------------   F(5, 38)        =     24.59
       Model |  .043334542     5  .008666908   Prob > F        =    0.0000
    Residual |  .013391415    38  .000352406   R-squared       =    0.7639
-------------+------------------------------   Adj R-squared   =    0.7329
       Total |  .056725957    43  .001319208   Root MSE        =    .01877

------------------------------------------------------------------------------
log_HumanDevelopmentIndexHDI |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------------------------+------------------------------------------------
                    FDI_lag1 |   .0026661   .0004462     5.98   0.000     .0017629    .0035693
               log_TradeofGDP |  -.0812434   .0225876    -3.60   0.001    -.1269696   -.0355171
 log_GDPpercapitaPPPconstant20 |   .2506233   .0280735     8.93   0.000     .1937916     .307455
          log_GDPgrowthannual |   .0073644   .0057916     1.27   0.211    -.0043601    .0190889
log_InflationGDPdeflatorannual |  -.0203143   .0043952    -4.62   0.000    -.0292119   -.0114166
                       _cons |  -2.289491   .2181287   -10.50   0.000    -2.731069   -1.847912
------------------------------------------------------------------------------
. xtreg LogHDI  iFDI_lag1  log_FDI2 LogTradeofGDP log_GDPgrowthannual log_GDPpercapitaPPPconstant20 log_InflationGDPdeflatorannual,
> re

Random-effects GLS regression                   Number of obs     =         61
Group variable: Code                            Number of groups  =          6

R-sq:                                           Obs per group:
     within  = 0.3996                                         min =          9
     between = 0.9462                                         avg =       10.2
     overall = 0.7717                                         max =         12

                                                Wald chi2(6)      =     182.50
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

------------------------------------------------------------------------------
                     LogHDI |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
----------------------------+-------------------------------------------------
                iFDI_lag1 |   -.005032   .0014269    -3.53   0.000    -.0078287   -.0022353
                  log_FDI2 |   .0115834   .0013746     8.43   0.000     .0088893    .0142776
              LogTradeofGDP |  -.0448683   .0219824    -2.04   0.041     -.087953   -.0017836
         log_GDPgrowthannual |  -.0044547    .005394    -0.83   0.409    -.0150268    .0061174
 log_GDPpercapitaPPPconstant20 |   .1294105   .0202341     6.40   0.000     .0897525    .1690686
log_InflationGDPdeflatorannual |   .0025684   .0040467     0.63   0.526    -.0053629    .0104997
                      _cons |  -1.292911   .1455897    -8.88   0.000    -1.578262   -1.007561
----------------------------+-------------------------------------------------
                    sigma_u |          0
                    sigma_e |  .01815405
                        rho |          0   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg log_HumanDevelopmentIndexHDI FDI_lag1 log_TradeofGDP log_GDPpercapitaPPPconstant20 log_GDPgrowthannual log_InflationGDPdefla
> torannual , re

Random-effects GLS regression                   Number of obs     =         44
Group variable: Code                            Number of groups  =          5

R-sq:                                           Obs per group:
     within  = 0.6347                                         min =          8
     between = 0.8994                                         avg =        8.8
     overall = 0.7639                                         max =         10

                                                Wald chi2(5)      =     122.97
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000
```

log_HumanDevelopmentIndexHDI	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
FDI_lag1	.0026661	.0004462	5.98	0.000	.0017917	.0035406
log_TradeofGDP	-.0812434	.0225876	-3.60	0.000	-.1255143	-.0369725
log_GDPpercapitaPPPconstant20	.2506233	.0280735	8.93	0.000	.1956004	.3056463
log_GDPgrowthannual	.0073644	.0057916	1.27	0.204	-.0039869	.0187158
log_InflationGDPdeflatorannual	-.0203143	.0043952	-4.62	0.000	-.0289288	-.0116998
_cons	-2.289491	.2181287	-10.50	0.000	-2.717015	-1.861966
sigma_u	0					
sigma_e	.00859865					
rho	0	(fraction of variance due to u_i)				

```
. ivreg LogGini  FDI_lag1 log_FDI2 LogTradeofGDP log_GDPpercapitaPPPconstant20 log_GDPgrowthannual log_InflationGDPdeflatorannual

Instrumental variables (2SLS) regression
```

Source	SS	df	MS		
				Number of obs	= 61
				F(6, 54)	= 4.93
Model	.314264284	6	.052377381	Prob > F	= 0.0004
Residual	.573181394	54	.01061447	R-squared	= 0.3541
				Adj R-squared	= 0.2824
Total	.887445678	60	.014790761	Root MSE	= .10303

LogGini	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
FDI_lag1	.0039536	.0034673	1.14	0.259	-.0029979	.010905
log_FDI2	.0115753	.0103097	1.12	0.267	-.0090944	.0322449
LogTradeofGDP	-.1645585	.1168722	-1.41	0.165	-.3988732	.0697561
log_GDPpercapitaPPPconstant20	.3592457	.101483	3.54	0.001	.1557844	.5627069
log_GDPgrowthannual	-.0500797	.027994	-1.79	0.079	-.1062044	.0060449
log_InflationGDPdeflatorannual	-.0037132	.0176065	-0.21	0.834	-.039012	.0315856
_cons	.888669	.6566498	1.35	0.182	-.4278346	2.205173

(no endogenous regressors)

```
. xthtaylor LogHDI FDI_lag1 log_FDI2 LogTradeofGDP log_GDPpercapitaPPPconstant20 log_GDPgrowthannual log_InflationGDPdeflatorannual
> Code, endog( FDI_lag1 log_GDPgrowthannual log_InflationGDPdeflatorannual log_GDPpercapitaPPPconstant20)

Hausman-Taylor estimation                       Number of obs     =         61
Group variable: Code                            Number of groups  =          6

                                                Obs per group:
                                                              min =          9
                                                              avg =       10.2
                                                              max =         12

Random effects u_i ~ i.i.d.                     Wald chi2(7)      =      40.38
                                                Prob > chi2       =     0.0000
```

LogHDI	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
TVexogenous						
log_FDI2	.0066781	.0025344	2.63	0.008	.0017108	.0116455
LogTradeof~P	-.025521	.0348751	-0.73	0.464	-.093875	.042833
TVendogenous						
FDI_lag1	.0003122	.0007119	0.44	0.661	-.0010831	.0017074
log_GDPgro~l	-.0081392	.0058377	-1.39	0.163	-.0195808	.0033024
log_Inflat~l	-.000333	.0040892	-0.08	0.935	-.0083477	.0076816
log_GDPpe~20	.1848797	.0356746	5.18	0.000	.1149587	.2548006
TIexogenous						
Code	-.0051901	.0047712	-1.09	0.277	-.0145415	.0041612
_cons	-1.903957	.2931615	-6.49	0.000	-2.478543	-1.329371
sigma_u	.01476322					
sigma_e	.01852265					
rho	.38847872	(fraction of variance due to u_i)				

```
Note: TV refers to time varying; TI refers to time invariant.

. xtabond LogHDI LogHDI_L1 FDI_lag1 log_FDI2 LogTradeofGDP log_GDPgrowthannual log_InflationGDPdeflatorannual, lags(1) artests(2)
note: LogHDI_L1 dropped because of collinearity

Arellano-Bond dynamic panel-data estimation     Number of obs     =         45
Group variable: Code                            Number of groups  =          6
Time variable: Year

                                                Obs per group:
                                                              min =          5
                                                              avg =        7.5
                                                              max =         11

Number of instruments =     46                  Wald chi2(6)      =     413.85
                                                Prob > chi2       =     0.0000
One-step results
```

LogHDI	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
LogHDI						
L1.	.9040635	.0492785	18.35	0.000	.8074795	1.000648
FDI_lag1	-.0001173	.0002864	-0.41	0.682	-.0006785	.000444
log_FDI2	.0005098	.0008059	0.63	0.527	-.0010697	.0020893
LogTradeofGDP	-.0147712	.0135616	-1.09	0.276	-.0413515	.011809
log_GDPgrowthannual	-.0013897	.0020432	-0.68	0.496	-.0053944	.0026149
log_InflationGDPdeflatorannual	.0011596	.0012644	0.92	0.359	-.0013186	.0036378
_cons	.043686	.0645317	0.68	0.498	-.0827938	.1701657

```
Instruments for differenced equation
        GMM-type: L(2/.).LogHDI
        Standard: D.LogHDI_L1 D.FDI_lag1 D.log_FDI2 D.LogTradeofGDP D.log_GDPgrowthannual
                  D.log_InflationGDPdeflatorannual
Instruments for level equation
        Standard: _cons
```

```
. xtabond log_HumanDevelopmentIndexHDI L1_log_HumanDevelopmentIndexHDI FDI_lag1 log_InflationGDPdeflatorannual log_GDPgrowthannual l
> og_GDPpercapitaPPPconstant20 log_TradeofGDP, lags(1) artests(2)
note: L.log_HumanDevelopmentIndexHDI dropped because of collinearity

Arellano-Bond dynamic panel-data estimation     Number of obs     =         29
Group variable: Code                           Number of groups  =          5
Time variable: Year
                                               Obs per group:
                                                            min =          4
                                                            avg =        5.8
                                                            max =          8

Number of instruments =     30                 Wald chi2(6)      =     368.29
                                               Prob > chi2       =     0.0000
One-step results
```

log_HumanDevelopmentIndexHDI	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
L1_log_HumanDevelopmentIndexHDI	.7080959	.1280068	5.53	0.000	.4572072	.9589846
FDI_lag1	.0000367	.0003021	0.12	0.903	-.0005554	.0006287
log_InflationGDPdeflatorannual	-.002565	.0023537	-1.09	0.276	-.0071781	.0020481
log_GDPgrowthannual	-.0011273	.0026557	-0.42	0.671	-.0063324	.0040777
log_GDPpercapitaPPPconstant20	.076469	.0468089	1.63	0.102	-.0152746	.1682127
log_TradeofGDP	.0000616	.024743	0.00	0.998	-.0484338	.048557
_cons	-.7971334	.418731	-1.90	0.057	-1.617831	.0235643

```
Instruments for differenced equation
        GMM-type: L(2/.).log_HumanDevelopmentIndexHDI
        Standard: D.L1_log_HumanDevelopmentIndexHDI D.FDI_lag1 D.log_InflationGDPdeflatorannual
                  D.log_GDPgrowthannual D.log_GDPpercapitaPPPconstant20 D.log_TradeofGDP
Instruments for level equation
        Standard: _cons
```

```
. ivreg  LogGini  LogHDI log_Foreigndirectinvestmentneti log_FDI2 iFDI_lag1

Instrumental variables (2SLS) regression
```

Source	SS	df	MS		
				Number of obs	= 72
				F(4, 67)	= 8.13
Model	.312579582	4	.078144896	Prob > F	= 0.0000
Residual	.643681575	67	.009607188	R-squared	= 0.3269
				Adj R-squared	= 0.2867
Total	.956261158	71	.013468467	Root MSE	= .09802

LogGini	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
LogHDI	2.048984	.4290298	4.78	0.000	1.192637	2.905331
log_Foreigndirectinvestmentneti	-.0996756	.0447539	-2.23	0.029	-.1890048	-.0103464
log_FDI2	.0188414	.0140393	1.34	0.184	-.0091812	.0468641
iFDI_lag1	.0142371	.0061906	2.30	0.025	.0018806	.0265935
_cons	4.119622	.1203775	34.22	0.000	3.879347	4.359896

```
(no endogenous regressors)
```

```
. ivreg LogHDI LogGini log_Foreigndirectinvestmentneti log_FDI2 iFDI_lag1

Instrumental variables (2SLS) regression

      Source |       SS           df       MS      Number of obs   =        72
-------------+----------------------------------   F(4, 67)        =     28.41
       Model |  .066050382         4  .016512596   Prob > F        =    0.0000
    Residual |  .038938334        67  .000581169   R-squared       =    0.6291
-------------+----------------------------------   Adj R-squared   =    0.6070
       Total |  .104988716        71  .001478714   Root MSE        =    .02411

------------------------------------------------------------------------------
      LogHDI |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      LogGini |   .1239495   .0259534     4.78   0.000     .0721464    .1757527
log_Foreigndirectinvestmentneti |   .0165077   .0112279     1.47   0.146    -.0059032    .0389187
     log_FDI2 |   .0042218   .0034609     1.22   0.227    -.0026862    .0111298
    iFDI_lag1 |  -.0077883   .0012633    -6.17   0.000    -.0103099   -.0052668
        _cons |  -.6980975   .0944772    -7.39   0.000    -.8866747   -.5095202
------------------------------------------------------------------------------
(no endogenous regressors)


. xtreg LogHDI LogGini log_Foreigndirectinvestmentneti log_FDI2 iFDI_lag1,fe

Fixed-effects (within) regression               Number of obs     =         72
Group variable: Code                            Number of groups  =          6

R-sq:                                           Obs per group:
     within  = 0.4609                                         min =         12
     between = 0.4182                                         avg =       12.0
     overall = 0.3821                                         max =         12

                                                F(4,62)           =      13.25
corr(u_i, Xb)  = -0.7726                        Prob > F          =     0.0000

------------------------------------------------------------------------------
      LogHDI |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      LogGini |   .4462476   .1963211     2.27   0.026     .0538074    .8386878
log_Foreigndirectinvestmentneti |   .0104667   .0084546     1.24   0.220    -.0064338    .0273672
     log_FDI2 |   .0004196   .0027101     0.15   0.877    -.0049978    .0058369
    iFDI_lag1 |   -.006919   .0009849    -7.03   0.000    -.0088877   -.0049502
        _cons |  -1.829645   .6970875    -2.62   0.011    -3.223103   -.4361874
-------------+----------------------------------------------------------------
      sigma_u |  .04433477
      sigma_e |  .01672338
          rho |  .87543831   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(5, 62) = 15.45                     Prob > F = 0.0000
```

```
. xtreg LogHDI LogGini log_Foreigndirectinvestmentneti log_FDI2 iFDI_lag1,re

Random-effects GLS regression                   Number of obs     =         72
Group variable: Code                            Number of groups  =          6

R-sq:                                           Obs per group:
     within  = 0.4460                                         min =         12
     between = 0.5493                                         avg =       12.0
     overall = 0.5170                                         max =         12

                                                Wald chi2(4)      =      55.56
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000
```

LogHDI	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
LogGini	.1981724	.0833824	2.38	0.017	.0347459	.3615988
log_Foreigndirectinvestmentneti	.0119349	.0084563	1.41	0.158	-.0046391	.0285089
log_FDI2	.0004434	.0026905	0.16	0.869	-.0048298	.0057166
iFDI_lag1	-.0066654	.0009412	-7.08	0.000	-.0085102	-.0048207
_cons	-.950399	.2964219	-3.21	0.001	-1.531375	-.3694227
sigma_u	.0252058					
sigma_e	.01672338					
rho	.69434948	(fraction of variance due to u_i)				

```
. xtreg LogGini  LogHDI log_Foreigndirectinvestmentneti log_FDI2 iFDI_lag1,fe

Fixed-effects (within) regression               Number of obs     =         72
Group variable: Code                            Number of groups  =          6

R-sq:                                           Obs per group:
     within  = 0.1722                                         min =         12
     between = 0.3861                                         avg =       12.0
     overall = 0.1993                                         max =         12

                                                F(4,62)           =       3.22
corr(u_i, Xb)  = 0.4050                         Prob > F          =     0.0181
```

LogGini	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
LogHDI	.1723803	.0758366	2.27	0.026	.0207852	.3239755
log_Foreigndirectinvestmentneti	.0005084	.0053189	0.10	0.924	-.0101239	.0111407
log_FDI2	-.0011572	.0016783	-0.69	0.493	-.004512	.0021976
iFDI_lag1	.0026249	.0007496	3.50	0.001	.0011265	.0041232
_cons	3.59267	.019616	183.15	0.000	3.553458	3.631881
sigma_u	.12301042					
sigma_e	.01039393					
rho	.99291098	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(5, 62) = 1179.23                     Prob > F = 0.0000
```

```
. xthtaylor LogGini  LogHDI log_Foreigndirectinvestmentneti log_FDI2 iFDI_lag1 Code ,endog ( iFDI_lag1)

Hausman-Taylor estimation                       Number of obs     =         72
Group variable: Code                            Number of groups  =          6

                                                Obs per group:
                                                              min =         12
                                                              avg =         12
                                                              max =         12

Random effects u_i ~ i.i.d.                     Wald chi2(5)      =      13.95
                                                Prob > chi2       =     0.0160
```

LogGini	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
TVexogenous						
LogHDI	.1790035	.0766858	2.33	0.020	.0287022	.3293049
log_Foreig~i	.0003697	.0053834	0.07	0.945	-.0101816	.010921
log_FDI2	-.0011099	.0016984	-0.65	0.513	-.0044386	.0022189
TVendogenous						
iFDI_lag1	.0026583	.0007586	3.50	0.000	.0011715	.0041451
TIexogenous						
Code	-.0264606	.0256721	-1.03	0.303	-.076777	.0238558
_cons	3.686912	.1021342	36.10	0.000	3.486733	3.887092
sigma_u	.10277856					
sigma_e	.01007404					
rho	.9904841	(fraction of variance due to u_i)				

Note: TV refers to time varying; TI refers to time invariant.

```
. xthtaylor LogHDI  LogGini log_Foreigndirectinvestmentneti log_FDI2 iFDI_lag1 Code ,endog ( iFDI_lag1)

Hausman-Taylor estimation                       Number of obs     =         72
Group variable: Code                            Number of groups  =          6

                                                Obs per group:
                                                              min =         12
                                                              avg =         12
                                                              max =         12

Random effects u_i ~ i.i.d.                     Wald chi2(5)      =      58.16
                                                Prob > chi2       =     0.0000
```

LogHDI	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
TVexogenous						
LogGini	.2659374	.1007483	2.64	0.008	.0684743	.4634004
log_Foreig~i	.0115754	.0083156	1.39	0.164	-.0047229	.0278737
log_FDI2	.0003534	.0026493	0.13	0.894	-.004839	.0055459
TVendogenous						
iFDI_lag1	-.0067164	.0009303	-7.22	0.000	-.0085398	-.004893
TIexogenous						
Code	.011245	.007769	1.45	0.148	-.003982	.026472
_cons	-1.229859	.3679817	-3.34	0.001	-1.95109	-.5086286
sigma_u	.02968646					
sigma_e	.01620869					
rho	.77034984	(fraction of variance due to u_i)				

Note: TV refers to time varying; TI refers to time invariant.

```
. xtdpdsys LogGini LogGini_L1 LogHDI log_Foreigndirectinvestmentneti log_FDI2 , lags(1) artests(2)
note: L.LogGini dropped because of collinearity

System dynamic panel-data estimation            Number of obs     =         72
Group variable: Code                            Number of groups  =          6
Time variable: Year
                                                Obs per group:
                                                              min =         12
                                                              avg =         12
                                                              max =         12

Number of instruments =     67                  Wald chi2(4)      =     242.58
                                                Prob > chi2       =     0.0000
One-step results
```

LogGini	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
LogGini_L1	.615389	.0517747	11.89	0.000	.5139125	.7168654
LogHDI	.3483462	.1348479	2.58	0.010	.0840491	.6126433
log_Foreigndirectinvestmentneti	-.0041575	.0110574	-0.38	0.707	-.0258296	.0175146
log_FDI2	.0045398	.0039858	1.14	0.255	-.0032722	.0123518
_cons	1.456154	.2005819	7.26	0.000	1.06302	1.849287

```
Instruments for differenced equation
        GMM-type: L(2/.).LogGini
        Standard: D.LogGini_L1 D.LogHDI D.log_Foreigndirectinvestmentneti D.log_FDI2
Instruments for level equation
        GMM-type: LD.LogGini
        Standard: _cons

. outreg2 using ggm1m.doc
ggm1m.doc
dir : seeout

. shellout using `"ggm1m.doc"'

. estat sargan
Sargan test of overidentifying restrictions
        H0: overidentifying restrictions are valid

        chi2(62)     =   115.644
        Prob > chi2  =    0.0000
```

```
. ivreg LogGini log_GenderInequalityIndexGII FDI_lag1 log_Foreigndirectinvestmentneti log_FDI2

Instrumental variables (2SLS) regression
```

Source	SS	df	MS		
				Number of obs	= 39
				F(4, 34)	= 4.51
Model	.067509132	4	.016877283	Prob > F	= 0.0050
Residual	.127291329	34	.003743863	R-squared	= 0.3466
				Adj R-squared	= 0.2697
Total	.19480046	38	.005126328	Root MSE	= .06119

LogGini	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
log_GenderInequalityIndexGII	.1279339	.045923	2.79	0.009	.0346072	.2212606
FDI_lag1	.0005852	.0021724	0.27	0.789	-.0038296	.0049999
log_Foreigndirectinvestmentneti	-.2359333	.0889049	-2.65	0.012	-.4166097	-.0552568
log_FDI2	.0726989	.0271161	2.68	0.011	.0175924	.1278054
_cons	3.98107	.1090043	36.52	0.000	3.759547	4.202593

(no endogenous regressors)

```
. xtreg LogGini log_GenderInequalityIndexGII FDI_lag1 log_Foreigndirectinvestmentneti log_FDI2,re

Random-effects GLS regression                   Number of obs     =         39
Group variable: Code                            Number of groups  =          5

R-sq:                                           Obs per group:
     within  = 0.0071                                         min =          4
     between = 0.9308                                         avg =        7.8
     overall = 0.3466                                         max =          9

                                                Wald chi2(4)      =      18.03
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0012
```

LogGini	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
log_GenderInequalityIndexGII	.1279339	.045923	2.79	0.005	.0379266	.2179413
FDI_lag1	.0005852	.0021724	0.27	0.788	-.0036726	.0048429
log_Foreigndirectinvestmentneti	-.2359333	.0889049	-2.65	0.008	-.4101837	-.0616829
log_FDI2	.0726989	.0271161	2.68	0.007	.0195524	.1258454
_cons	3.98107	.1090043	36.52	0.000	3.767426	4.194715
sigma_u	0					
sigma_e	.0053455					
rho	0	(fraction of variance due to u_i)				

```
. xtreg LogGini log_GenderInequalityIndexGII FDI_lag1 log_Foreigndirectinvestmentneti log_FDI2,fe

Fixed-effects (within) regression               Number of obs     =         39
Group variable: Code                            Number of groups  =          5

R-sq:                                           Obs per group:
     within  = 0.1322                                         min =          4
     between = 0.0022                                         avg =        7.8
     overall = 0.0016                                         max =          9

                                                F(4,30)           =       1.14
corr(u_i, Xb)  = -0.0287                        Prob > F          =     0.3557
```

LogGini	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
log_GenderInequalityIndexGII	.0114754	.0085061	1.35	0.187	-.0058963	.0288471
FDI_lag1	-.0002128	.0002267	-0.94	0.356	-.0006758	.0002503
log_Foreigndirectinvestmentneti	-.0110862	.0131214	-0.84	0.405	-.0378836	.0157112
log_FDI2	.0016035	.0035309	0.45	0.653	-.0056075	.0088146
_cons	3.647153	.0175286	208.07	0.000	3.611354	3.682951
sigma_u	.08339091					
sigma_e	.0053455					
rho	.99590778	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(4, 30) = 1106.18                     Prob > F = 0.0000
```

```
. xthtaylor LogGini log_GenderInequalityIndexGII FDI_lag1 log_Foreigndirectinvestmentneti log_FDI2 Code , endog( FDI_lag1)

Hausman-Taylor estimation                       Number of obs     =         39
Group variable: Code                            Number of groups  =          5

                                                Obs per group:
                                                              min =          4
                                                              avg =        7.8
                                                              max =          9

Random effects u_i ~ i.i.d.                     Wald chi2(5)      =      16.66
                                                Prob > chi2       =     0.0052
```

LogGini	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
TVexogenous						
log_Gender~I	.0106302	.0086707	1.23	0.220	-.006364	.0276244
log_Foreig~i	-.0110298	.0133673	-0.83	0.409	-.0372291	.0151696
log_FDI2	.0017036	.0036006	0.47	0.636	-.0053536	.0087607
TVendogenous						
FDI_lag1	-.000189	.0002314	-0.82	0.414	-.0006425	.0002645
TIexogenous						
Code	-.0345917	.0098939	-3.50	0.000	-.0539835	-.0151999
_cons	3.758319	.0431194	87.16	0.000	3.673807	3.842832
sigma_u	.03759468					
sigma_e	.00502123					
rho	.9824738	(fraction of variance due to u_i)				

```
Note: TV refers to time varying; TI refers to time invariant.

. xtdpdsys LogGini LogGini_L1  log_GenderInequalityIndexGII FDI_lag1 log_Foreigndirectinvestmentneti log_FDI2 , endog( FDI_lag1)
note: L.LogGini dropped because of collinearity
note: FDI_lag1 dropped because of collinearity

System dynamic panel-data estimation            Number of obs     =         39
Group variable: Code                            Number of groups  =          5
Time variable: Year
                                                Obs per group:
                                                              min =          4
                                                              avg =        7.8
                                                              max =          9

Number of instruments =     52                  Wald chi2(5)      =   16467.56
                                                Prob > chi2       =     0.0000
One-step results
```

LogGini	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
FDI_lag1	.000109	.0000916	1.19	0.234	-.0000705	.0002884
LogGini_L1	1.004673	.009915	101.33	0.000	.9852401	1.024106
log_GenderInequalityIndexGII	.0061417	.0022607	2.72	0.007	.0017108	.0105725
log_Foreigndirectinvestmentneti	.0059191	.0042512	1.39	0.164	-.0024131	.0142512
log_FDI2	-.0015712	.0012076	-1.30	0.193	-.0039381	.0007957
_cons	-.0126077	.0372211	-0.34	0.735	-.0855597	.0603443

```
Instruments for differenced equation
        GMM-type: L(2/.).LogGini L(2/.).FDI_lag1
        Standard: D.LogGini_L1 D.log_GenderInequalityIndexGII D.FDI_lag1
                  D.log_Foreigndirectinvestmentneti D.log_FDI2
Instruments for level equation
        GMM-type: LD.LogGini LD.FDI_lag1
        Standard: _cons
```

```
. ivreg LogHDI log_GenderInequalityIndexGII FDI_lag1 log_Foreigndirectinvestmentneti log_FDI2

Instrumental variables (2SLS) regression

      Source |       SS           df       MS      Number of obs   =        39
-------------+----------------------------------   F(4, 34)        =     18.45
       Model |  .025934866         4  .006483716   Prob > F        =    0.0000
    Residual |  .011951067        34  .000351502   R-squared       =    0.6846
-------------+----------------------------------   Adj R-squared   =    0.6474
       Total |  .037885933        38  .000996998   Root MSE        =    .01875

------------------------------------------------------------------------------
                     LogHDI |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
----------------------------+-------------------------------------------------
log_GenderInequalityIndexGII |  -.0634903   .0140713    -4.51   0.000    -.0920866    -.034894
                    FDI_lag1 |   .0007724   .0006656     1.16   0.254    -.0005803    .0021252
log_Foreigndirectinvestmentneti |     .068854   .0272414     2.53   0.016     .0134928    .1242152
                    log_FDI2 |  -.0108461   .0083087    -1.31   0.201    -.0277313    .0060391
                       _cons |  -.4482815   .0334001   -13.42   0.000    -.5161587   -.3804044
------------------------------------------------------------------------------
(no endogenous regressors)

. xtreg LogHDI log_GenderInequalityIndexGII FDI_lag1 log_Foreigndirectinvestmentneti log_FDI2,fe

Fixed-effects (within) regression               Number of obs     =         39
Group variable: Code                            Number of groups  =          5

R-sq:                                           Obs per group:
     within  = 0.5899                                         min =          4
     between = 0.1470                                         avg =        7.8
     overall = 0.3113                                         max =          9

                                                F(4,30)           =      10.79
corr(u_i, Xb)  = -0.4542                        Prob > F          =     0.0000

------------------------------------------------------------------------------
                     LogHDI |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
----------------------------+-------------------------------------------------
log_GenderInequalityIndexGII |  -.1303785   .0206354    -6.32   0.000    -.1725216   -.0882354
                    FDI_lag1 |   .0006331   .0005501     1.15   0.259    -.0004903    .0017565
log_Foreigndirectinvestmentneti |  -.0189142    .031832    -0.59   0.557    -.0839237    .0460954
                    log_FDI2 |   .0090728   .0085658     1.06   0.298     -.008421    .0265665
                       _cons |  -.4730002   .0425239   -11.12   0.000    -.5598455   -.3861549
-------------+----------------------------------------------------------------
                     sigma_u |  .03129251
                     sigma_e |    .012968
                         rho |  .85343348   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(4, 30) = 10.27                     Prob > F = 0.0000

. xtreg LogHDI log_GenderInequalityIndexGII FDI_lag1 log_Foreigndirectinvestmentneti log_FDI2,re

Random-effects GLS regression                   Number of obs     =         39
Group variable: Code                            Number of groups  =          5

R-sq:                                           Obs per group:
     within  = 0.2952                                         min =          4
     between = 0.7907                                         avg =        7.8
     overall = 0.6846                                         max =          9

                                                Wald chi2(4)      =      73.78
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

------------------------------------------------------------------------------
                     LogHDI |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
----------------------------+-------------------------------------------------
log_GenderInequalityIndexGII |  -.0634903   .0140713    -4.51   0.000    -.0910695   -.0359111
                    FDI_lag1 |   .0007724   .0006656     1.16   0.246    -.0005322    .0020771
log_Foreigndirectinvestmentneti |     .068854   .0272414     2.53   0.011     .0154618    .1222462
                    log_FDI2 |  -.0108461   .0083087    -1.31   0.192    -.0271308    .0054386
                       _cons |  -.4482815   .0334001   -13.42   0.000    -.5137445   -.3828186
-------------+----------------------------------------------------------------
                     sigma_u |          0
                     sigma_e |    .012968
                         rho |          0   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xthtaylor LogHDI log_GenderInequalityIndexGII FDI_lag1 log_Foreigndirectinvestmentneti log_FDI2 Code , endog( FDI_lag1)

Hausman-Taylor estimation                       Number of obs     =         39
Group variable: Code                            Number of groups  =          5

                                                Obs per group:
                                                              min =          4
                                                              avg =        7.8
                                                              max =          9

Random effects u_i ~ i.i.d.                     Wald chi2(5)      =      42.13
                                                Prob > chi2       =     0.0000
```

LogHDI	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
TVexogenous						
log_Gender~I	-.125278	.0202023	-6.20	0.000	-.1648739	-.0856822
log_Foreig~i	-.0041991	.0309867	-0.14	0.892	-.0649319	.0565338
log_FDI2	.0058085	.0084308	0.69	0.491	-.0107155	.0223325
TVendogenous						
FDI_lag1	.0007002	.0005461	1.28	0.200	-.0003701	.0017705
TIexogenous						
Code	-.0050541	.0069429	-0.73	0.467	-.0186619	.0085537
_cons	-.4662726	.0464249	-10.04	0.000	-.5572638	-.3752814
sigma_u	.02582845					
sigma_e	.01218131					
rho	.81804332	(fraction of variance due to u_i)				

```
Note: TV refers to time varying; TI refers to time invariant.

. xtabond LogHDI LogHDI_L1 log_GenderInequalityIndexGII FDI_lag1 log_FDI2 log_Foreigndirectinvestmentneti, lags(1)
note: L.LogHDI dropped because of collinearity

Arellano-Bond dynamic panel-data estimation     Number of obs     =         33
Group variable: Code                            Number of groups  =          5
Time variable: Year

                                                Obs per group:
                                                              min =          3
                                                              avg =        6.6
                                                              max =          8

Number of instruments =     34                  Wald chi2(5)      =     270.46
                                                Prob > chi2       =     0.0000
One-step results
```

LogHDI	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
LogHDI_L1	.7240011	.0650441	11.13	0.000	.5965171	.8514852
log_GenderInequalityIndexGII	-.0298229	.0118259	-2.52	0.012	-.0530013	-.0066446
FDI_lag1	.0000909	.0002322	0.39	0.695	-.0003641	.0005459
log_FDI2	.0056517	.0034983	1.62	0.106	-.0012048	.0125082
log_Foreigndirectinvestmentneti	-.0161062	.0129793	-1.24	0.215	-.0415452	.0093329
_cons	-.107111	.0348251	-3.08	0.002	-.1753669	-.0388551

```
Instruments for differenced equation
        GMM-type: L(2/.).LogHDI
        Standard: D.LogHDI_L1 D.log_GenderInequalityIndexGII D.FDI_lag1 D.log_FDI2
                  D.log_Foreigndirectinvestmentneti
Instruments for level equation
        Standard: _cons
```

```
. xthtaylor LogHDI log_Inequalityineducation Schoolenrollmenttertiaryg log_Foreigndirec
> tinvestmentneti FDI_lag1 Code , endog( FDI_lag1)

Hausman-Taylor estimation                       Number of obs     =         29
Group variable: Code                            Number of groups  =          4

                                                Obs per group:
                                                              min =          4
                                                              avg =        7.3
                                                              max =          9

Random effects u_i ~ i.i.d.                     Wald chi2(5)      =      85.94
                                                Prob > chi2       =     0.0000
```

LogHDI	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
TVexogenous						
log_Inequa~n	-.041565	.0129885	-3.20	0.001	-.0670219	-.016108
Schoolenro~g	.0021647	.0003554	6.09	0.000	.0014681	.0028613
log_Foreig~i	.0011709	.0039492	0.30	0.767	-.0065695	.0089113
TVendogenous						
FDI_lag1	-.0000692	.0003572	-0.19	0.846	-.0007692	.0006309
TIexogenous						
Code	-.000467	.0037896	-0.12	0.902	-.0078944	.0069604
_cons	-.2699894	.0460379	-5.86	0.000	-.360222	-.1797568
sigma_u	.01192187					
sigma_e	.00782795					
rho	.6987489	(fraction of variance due to u_i)				

```
Note: TV refers to time varying; TI refers to time invariant.

. xtreg LogHDI log_Inequalityineducation Schoolenrollmenttertiaryg log_Foreigndirectinv
> estmentneti FDI_lag1, re

Random-effects GLS regression                   Number of obs     =         29
Group variable: Code                            Number of groups  =          4

R-sq:                                           Obs per group:
     within  = 0.6801                                         min =          4
     between = 0.9553                                         avg =        7.3
     overall = 0.8646                                         max =          9

                                                Wald chi2(4)      =     153.24
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000
```

LogHDI	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
log_Inequalityined~n	-.0641062	.0125489	-5.11	0.000	-.0887016	-.0395108
Schoolenrollmentte~g	.0016733	.000329	5.09	0.000	.0010284	.0023181
log_Foreigndirecti~i	.0044499	.0047366	0.94	0.347	-.0048337	.0137335
FDI_lag1	.0006538	.0003856	1.70	0.090	-.000102	.0014096
_cons	-.2079851	.0383941	-5.42	0.000	-.2832362	-.132734
sigma_u	0					
sigma_e	.008541					
rho	0	(fraction of variance due to u_i)				

```
. xtreg LogHDI log_Inequalityineducation Schoolenrollmenttertiaryg log_Foreigndirectinv
> estmentneti FDI_lag1, fe

Fixed-effects (within) regression               Number of obs     =         29
Group variable: Code                            Number of groups  =          4

R-sq:                                           Obs per group:
     within  = 0.7940                                         min =          4
     between = 0.7398                                         avg =        7.3
     overall = 0.7709                                         max =          9

                                                F(4,21)           =      20.23
corr(u_i, Xb)  = 0.1173                         Prob > F          =     0.0000
```

LogHDI	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
log_Inequalityined~n	-.035013	.012914	-2.71	0.013	-.0618691	-.0081569
Schoolenrollmentte~g	.0022011	.000354	6.22	0.000	.0014649	.0029372
log_Foreigndirecti~i	.0003324	.0038354	0.09	0.932	-.0076437	.0083086
FDI_lag1	-.0002575	.0003586	-0.72	0.481	-.0010032	.0004882
_cons	-.2891716	.0402347	-7.19	0.000	-.3728443	-.2054988
sigma_u	.0168106					
sigma_e	.008541					
rho	.7948259	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(3, 21) = 7.72                     Prob > F = 0.0012

. ivreg LogHDI log_Inequalityineducation Schoolenrollmenttertiaryg log_Foreigndirectinv
> estmentneti FDI_lag1

Instrumental variables (2SLS) regression
```

Source	SS	df	MS		
				Number of obs	= 29
				F(4, 24)	= 38.31
Model	.020569585	4	.005142396	Prob > F	= 0.0000
Residual	.003221498	24	.000134229	R-squared	= 0.8646
				Adj R-squared	= 0.8420
Total	.023791083	28	.000849682	Root MSE	= .01159

LogHDI	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
log_Inequalityined~n	-.0641062	.0125489	-5.11	0.000	-.0900059	-.0382065
Schoolenrollmentte~g	.0016733	.000329	5.09	0.000	.0009942	.0023523
log_Foreigndirecti~i	.0044499	.0047366	0.94	0.357	-.005326	.0142258
FDI_lag1	.0006538	.0003856	1.70	0.103	-.0001421	.0014496
_cons	-.2079851	.0383941	-5.42	0.000	-.2872266	-.1287435

```
(no endogenous regressors)
```

```
. xtabond LogGini LogGini_L1 log_Inequalityineducation Schoolenrollmenttertiaryg log_Fo
> reigndirectinvestmentneti FDI_lag1 ,lags(1) artests(2)
note: L.LogGini dropped because of collinearity

Arellano-Bond dynamic panel-data estimation     Number of obs     =         22
Group variable: Code                           Number of groups  =          4
Time variable: Year
                                               Obs per group:
                                                             min =          2
                                                             avg =        5.5
                                                             max =          8

Number of instruments =     23                 Wald chi2(5)      =     105.04
                                               Prob > chi2       =     0.0000
One-step results
```

LogGini	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
LogGini_L1	.8611265	.0865375	9.95	0.000	.6915161	1.030737
log_Inequalityined~n	.0055658	.0060351	0.92	0.356	-.0062627	.0173943
Schoolenrollmentte~g	-.0000177	.000128	-0.14	0.890	-.0002687	.0002332
log_Foreigndirecti~i	-.0007594	.0015781	-0.48	0.630	-.0038526	.0023337
FDI_lag1	.0001152	.0002845	0.40	0.686	-.0004424	.0006728
_cons	.4859926	.312982	1.55	0.120	-.1274408	1.099426

```
Instruments for differenced equation
        GMM-type: L(2/.).LogGini
        Standard: D.LogGini_L1 D.log_Inequalityineducation
                  D.Schoolenrollmenttertiaryg D.log_Foreigndirectinvestmentneti
                  D.FDI_lag1
Instruments for level equation
        Standard: _cons

. xthtaylor LogGini log_Inequalityineducation Schoolenrollmenttertiaryg log_Foreigndire
> ctinvestmentneti FDI_lag1 Code , endog( FDI_lag1)

Hausman-Taylor estimation                      Number of obs     =         29
Group variable: Code                           Number of groups  =          4

                                               Obs per group:
                                                             min =          4
                                                             avg =        7.3
                                                             max =          9

Random effects u_i ~ i.i.d.                    Wald chi2(5)      =      13.24
                                               Prob > chi2       =     0.0212
```

LogGini	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
TVexogenous						
log_Inequa~n	.0256802	.0170655	1.50	0.132	-.0077675	.059128
Schoolenro~g	.0003359	.0004679	0.72	0.473	-.0005811	.0012529
log_Foreig~i	-.002915	.0050964	-0.57	0.567	-.0129038	.0070737
TVendogenous						
FDI_lag1	-.0000156	.0004727	-0.03	0.974	-.0009421	.0009108
TIexogenous						
Code	-.0334403	.0104273	-3.21	0.001	-.0538774	-.0130032
_cons	3.653305	.0722948	50.53	0.000	3.51161	3.795
sigma_u	.03375174					
sigma_e	.0099426					
rho	.92015153	(fraction of variance due to u_i)				

```
Note: TV refers to time varying; TI refers to time invariant.
```

```
. xtreg LogGini log_Inequalityineducation Schoolenrollmenttertiaryg log_Foreigndirectin
> vestmentneti FDI_lag1, re

Random-effects GLS regression                   Number of obs     =         29
Group variable: Code                            Number of groups  =          4

R-sq:                                           Obs per group:
     within  = 0.0078                                         min =          4
     between = 0.8239                                         avg =        7.3
     overall = 0.4725                                         max =          9

                                                Wald chi2(4)      =      21.50
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0003
```

LogGini	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
log_Inequalityined~n	.1213417	.0652753	1.86	0.063	-.0065955	.2492789
Schoolenrollmentte~g	.0021284	.0017114	1.24	0.214	-.0012259	.0054826
log_Foreigndirecti~i	.0426992	.0246383	1.73	0.083	-.0055909	.0909894
FDI_lag1	.0034261	.0020058	1.71	0.088	-.0005052	.0073574
_cons	3.090954	.1997135	15.48	0.000	2.699522	3.482385
sigma_u	0					
sigma_e	.01084826					
rho	0	(fraction of variance due to u_i)				

```
. xtreg LogGini log_Inequalityineducation Schoolenrollmenttertiaryg log_Foreigndirectin
> vestmentneti FDI_lag1, fe

Fixed-effects (within) regression               Number of obs     =         29
Group variable: Code                            Number of groups  =          4

R-sq:                                           Obs per group:
     within  = 0.1478                                         min =          4
     between = 0.1007                                         avg =        7.3
     overall = 0.0035                                         max =          9

                                                F(4,21)           =       0.91
corr(u_i, Xb)  = -0.1374                        Prob > F          =     0.4761
```

LogGini	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
log_Inequalityined~n	.0299505	.0164026	1.83	0.082	-.0041605	.0640615
Schoolenrollmentte~g	.000299	.0004496	0.67	0.513	-.000636	.001234
log_Foreigndirecti~i	-.003658	.0048715	-0.75	0.461	-.0137889	.0064728
FDI_lag1	-.0001545	.0004555	-0.34	0.738	-.0011017	.0007927
_cons	3.508608	.0511038	68.66	0.000	3.402332	3.614884
sigma_u	.08574429					
sigma_e	.01084826					
rho	.98424519	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(3, 21) = 239.89                     Prob > F = 0.0000

. ivreg LogGini log_Inequalityineducation Schoolenrollmenttertiaryg log_Foreigndirectin
> vestmentneti FDI_lag1

Instrumental variables (2SLS) regression

      Source |       SS           df       MS      Number of obs   =        29
-------------+----------------------------------   F(4, 24)        =      5.37
       Model |  .078079128         4  .019519782   Prob > F        =    0.0031
    Residual |  .087165209        24  .003631884   R-squared       =    0.4725
-------------+----------------------------------   Adj R-squared   =    0.3846
       Total |  .165244336        28  .005901583   Root MSE        =    .06027
```

LogGini	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
log_Inequalityined~n	.1213417	.0652753	1.86	0.075	-.0133799	.2560633
Schoolenrollmentte~g	.0021284	.0017114	1.24	0.226	-.0014038	.0056605
log_Foreigndirecti~i	.0426992	.0246383	1.73	0.096	-.0081517	.0935502
FDI_lag1	.0034261	.0020058	1.71	0.101	-.0007137	.0075658
_cons	3.090954	.1997135	15.48	0.000	2.678765	3.503142

```
(no endogenous regressors)
```

```
. xtabond LogHDI LogHDI_L1 log_Inequalityineducation Schoolenrollmenttertiaryg log_Fore
> igndirectinvestmentneti FDI_lag1, lags(1) artests (2)
note: L.LogHDI dropped because of collinearity

Arellano-Bond dynamic panel-data estimation     Number of obs     =         22
Group variable: Code                           Number of groups  =          4
Time variable: Year
                                               Obs per group:
                                                             min =          2
                                                             avg =        5.5
                                                             max =          8

Number of instruments =     23                 Wald chi2(5)      =     435.61
                                               Prob > chi2       =     0.0000
One-step results
```

LogHDI	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
LogHDI_L1	.6198164	.0667687	9.28	0.000	.4889522	.7506806
log_Inequalityined~n	-.009693	.0079723	-1.22	0.224	-.0253184	.0059324
Schoolenrollmentte~g	.0006804	.0002221	3.06	0.002	.000245	.0011158
log_Foreigndirecti~i	.0002926	.001985	0.15	0.883	-.0035981	.0041832
FDI_lag1	-.0005282	.0003545	-1.49	0.136	-.0012231	.0001667
_cons	-.1032196	.0283558	-3.64	0.000	-.1587959	-.0476433

```
Instruments for differenced equation
        GMM-type: L(2/.).LogHDI
        Standard: D.LogHDI_L1 D.log_Inequalityineducation
                  D.Schoolenrollmenttertiaryg D.log_Foreigndirectinvestmentneti
                  D.FDI_lag1
Instruments for level equation
        Standard: _cons

. estat sargan
Sargan test of overidentifying restrictions
        H0: overidentifying restrictions are valid

        chi2(17)     =  15.35299
        Prob > chi2  =    0.5701
```

```
. ivreg log_GiniindexGinidispodable log_FDi_Lag1 log_TradeofGDP log_GDPpercapitaPPPconstant20 log_GDPgrowthannual log_Inflati
> onGDPdeflatorannual log_Inequalityineducation log_GenderInequalityIndexGII Schoolenrollmenttertiaryg

Instrumental variables (2SLS) regression
```

Source	SS	df	MS		
				Number of obs	= 21
				F(8, 12)	= 76.16
Model	.123335723	8	.015416965	Prob > F	= 0.0000
Residual	.002429205	12	.000202434	R-squared	= 0.9807
				Adj R-squared	= 0.9678
Total	.125764928	20	.006288246	Root MSE	= .01423

log_GiniindexGinidispodable	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
log_FDi_Lag1	.0192629	.0055915	3.45	0.005	.0070802	.0314457
log_TradeofGDP	-.1360684	.0469625	-2.90	0.013	-.2383908	-.033746
log_GDPpercapitaPPPconstant20	-.6957364	.0689059	-10.10	0.000	-.8458694	-.5456033
log_GDPgrowthannual	.0243698	.0077359	3.15	0.008	.0075147	.0412249
log_InflationGDPdeflatorannual	-.0136013	.0068143	-2.00	0.069	-.0284484	.0012457
log_Inequalityineducation	-.1043954	.0418619	-2.49	0.028	-.1956047	-.013186
log_GenderInequalityIndexGII	-.2291246	.0369211	-6.21	0.000	-.3095687	-.1486805
Schoolenrollmenttertiaryg	.0010502	.0007242	1.45	0.173	-.0005277	.0026281
_cons	10.61471	.5910159	17.96	0.000	9.326993	11.90242

```
. xtreg  log_GiniindexGinidispodable log_FDi_Lag1 log_TradeofGDP log_GDPpercapitaPPPconstant20 log_GDPgrowthannual log_Inflat
> ionGDPdeflatorannual log_Inequalityineducation log_GenderInequalityIndexGII Schoolenrollmenttertiaryg,fe

Fixed-effects (within) regression               Number of obs     =         21
Group variable: Code                            Number of groups  =          4

R-sq:                                           Obs per group:
     within  = 0.5204                                         min =          3
     between = 0.4243                                         avg =        5.3
     overall = 0.3159                                         max =          7

                                                F(8,9)            =       1.22
corr(u_i, Xb)  = 0.4574                         Prob > F          =     0.3836
```

log_GiniindexGinidispodable	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
log_FDi_Lag1	-.00074	.0054374	-0.14	0.895	-.0130403	.0115603
log_TradeofGDP	-.0457332	.0402549	-1.14	0.285	-.1367961	.0453298
log_GDPpercapitaPPPconstant20	.0136007	.1297512	0.10	0.919	-.2799169	.3071184
log_GDPgrowthannual	.004879	.0059121	0.83	0.431	-.008495	.018253
log_InflationGDPdeflatorannual	-.0020311	.00313	-0.65	0.533	-.0091117	.0050494
log_Inequalityineducation	-.0165832	.0283044	-0.59	0.572	-.0806122	.0474458
log_GenderInequalityIndexGII	.013234	.0405316	0.33	0.752	-.0784549	.1049229
Schoolenrollmenttertiaryg	.0004082	.0005954	0.69	0.510	-.0009386	.0017551
_cons	3.706112	1.331875	2.78	0.021	.6932009	6.719022
sigma_u	.08070916					
sigma_e	.00575239					
rho	.99494582	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(3, 9) = 21.47                     Prob > F = 0.0002
```

```
. xtreg  log_GiniindexGinidispodable FDI_lag1 log_TradeofGDP log_GDPpercapitaPPPconstant20 log_GDPgrowthannual log_InflationG
> DPdeflatorannual log_Inequalityineducation log_GenderInequalityIndexGII Schoolenrollmenttertiaryg,re

Random-effects GLS regression                   Number of obs     =         21
Group variable: Code                            Number of groups  =          4

R-sq:                                           Obs per group:
     within  = 0.0557                                         min =          3
     between = 0.9985                                         avg =        5.3
     overall = 0.9783                                         max =          7

                                                Wald chi2(8)      =     541.78
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000
```

log_GiniindexGinidispodable	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
FDI_lag1	.0016659	.000547	3.05	0.002	.0005939	.002738
log_TradeofGDP	-.1363032	.0501259	-2.72	0.007	-.2345482	-.0380583
log_GDPpercapitaPPPconstant20	-.7526678	.0649455	-11.59	0.000	-.8799586	-.625377
log_GDPgrowthannual	.018588	.0078737	2.36	0.018	.0031558	.0340202
log_InflationGDPdeflatorannual	-.0078716	.0067926	-1.16	0.247	-.021185	.0054417
log_Inequalityineducation	-.1113171	.0439373	-2.53	0.011	-.1974326	-.0252016
log_GenderInequalityIndexGII	-.2450174	.0401584	-6.10	0.000	-.3237263	-.1663084
Schoolenrollmenttertiaryg	.0018976	.0007167	2.65	0.008	.0004929	.0033023
_cons	11.12459	.5496245	20.24	0.000	10.04735	12.20184
sigma_u	0					
sigma_e	.00568049					
rho	0	(fraction of variance due to u_i)				

```
. xthtaylor log_GiniindexGinidispodable FDI_lag1 log_TradeofGDP log_GDPpercapitaPPPconstant20 log_GDPgrowthannual log_Inflati
> onGDPdeflatorannual log_Inequalityineducation log_GenderInequalityIndexGII Schoolenrollmenttertiaryg Code,endog( log_GDPper
> capitaPPPconstant20 log_GDPgrowthannual log_InflationGDPdeflatorannual)

Hausman-Taylor estimation                       Number of obs     =         21
Group variable: Code                            Number of groups  =          4

                                                Obs per group:
                                                             min =          3
                                                             avg =        5.3
                                                             max =          7

Random effects u_i ~ i.i.d.                     Wald chi2(9)      =      22.80
                                                Prob > chi2       =     0.0067
```

log_Giniin~e	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
TVexogenous						
FDI_lag1	.0005856	.0005502	1.06	0.287	-.0004927	.0016639
log_Tradeo~P	-.0770967	.0314046	-2.45	0.014	-.1386486	-.0155447
log_Inequa~n	-.0297601	.0227583	-1.31	0.191	-.0743655	.0148454
log_Gender~I	-.0367594	.0459339	-0.80	0.424	-.1267883	.0532694
Schoolenro~g	.0006635	.000482	1.38	0.169	-.0002811	.0016081
TVendogenous						
log_GDPpe~20	-.0743404	.0966999	-0.77	0.442	-.2638687	.1151878
log_GDPgro~l	.0067891	.0035657	1.90	0.057	-.0001996	.0137777
log_Inflat~l	-.0019659	.00298	-0.66	0.509	-.0078067	.0038748
TIexogenous						
Code	-.0285282	.0114821	-2.48	0.013	-.0510326	-.0060238
_cons	4.724831	.9434432	5.01	0.000	2.875717	6.573946
sigma_u	.02892986					
sigma_e	.00413317					
rho	.97999688	(fraction of variance due to u_i)				

Note: TV refers to time varying; TI refers to time invariant.

```
Arellano-Bond dynamic panel-data estimation     Number of obs     =         12
Group variable: Code                            Number of groups  =          4
Time variable: Year
                                                Obs per group:
                                                              min =          1
                                                              avg =          3
                                                              max =          5

Number of instruments =     13                  Wald chi2(9)      =     122.56
                                                Prob > chi2       =     0.0000
One-step results
```

log_GiniindexGinidispodable	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
log_GiniindexGinidispodable L1.	.9164588	.1953359	4.69	0.000	.5336075	1.29931
log_FDi_Lag1	-.0009067	.0023687	-0.38	0.702	-.0055493	.0037358
log_GDPpercapitaPPPconstant20	.0430442	.062181	0.69	0.489	-.0788283	.1649167
log_GDPgrowthannual	-.0018695	.0025162	-0.74	0.458	-.0068012	.0030623
log_InflationGDPdeflatorannual	.0021694	.0014295	1.52	0.129	-.0006324	.0049712
log_Inequalityineducation	-.0231285	.0145716	-1.59	0.112	-.0516884	.0054313
log_GenderInequalityIndexGII	-.0012564	.0251144	-0.05	0.960	-.0504798	.0479669
log_TradeofGDP	.0140195	.0241989	0.58	0.562	-.0334094	.0614484
Log_Schoolenrollmenttertiaryg	-.0004586	.0138467	-0.03	0.974	-.0275977	.0266804
_cons	-.1202637	.9922657	-0.12	0.904	-2.065069	1.824541

```
Instruments for differenced equation
        GMM-type: L(2/.).log_GiniindexGinidispodable L(2/.).log_FDi_Lag1
                  L(2/.).log_GDPpercapitaPPPconstant20 L(2/.).log_GDPgrowthannual
                  L(2/.).log_InflationGDPdeflatorannual
        Standard: D.L1_log_GiniindexGinidispodable D.log_FDi_Lag1
                  D.log_GDPpercapitaPPPconstant20 D.log_GDPgrowthannual
                  D.log_InflationGDPdeflatorannual D.log_Inequalityineducation
                  D.log_GenderInequalityIndexGII D.log_TradeofGDP
                  D.Log_Schoolenrollmenttertiaryg
Instruments for level equation
        Standard: _cons

. estat sargan
Sargan test of overidentifying restrictions
        H0: overidentifying restrictions are valid

        chi2(3)      =   1.74409
        Prob > chi2  =    0.6272

. ivreg log_HumanDevelopmentIndexHDI  log_FDi_Lag1 log_TradeofGDP log_GDPpercapitaPPPconstant20 log_GDPgrowthannual log_Infla
> tionGDPdeflatorannual log_Inequalityineducation log_GenderInequalityIndexGII  Log_Schoolenrollmenttertiaryg

Instrumental variables (2SLS) regression
```

Source	SS	df	MS		
Model	.013275709	8	.001659464	Number of obs	= 22
Residual	.000848746	13	.000065288	F(8, 13)	= 25.42
				Prob > F	= 0.0000
Total	.014124455	21	.000672593	R-squared	= 0.9399
				Adj R-squared	= 0.9029
				Root MSE	= .00808

log_HumanDevelopmentIndexHDI	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
log_FDi_Lag1	.0106163	.0029343	3.62	0.003	.004277	.0169555
log_TradeofGDP	-.0797635	.0241372	-3.30	0.006	-.1319086	-.0276183
log_GDPpercapitaPPPconstant20	.0375503	.0328613	1.14	0.274	-.0334422	.1085428
log_GDPgrowthannual	.0075242	.0037824	1.99	0.068	-.0006473	.0156956
log_InflationGDPdeflatorannual	-.0097947	.0035471	-2.76	0.016	-.0174578	-.0021315
log_Inequalityineducation	-.023945	.0210371	-1.14	0.276	-.0693928	.0215028
log_GenderInequalityIndexGII	-.0792648	.0206244	-3.84	0.002	-.1238212	-.0347084
Log_Schoolenrollmenttertiaryg	.0617949	.0220214	2.81	0.015	.0142205	.1093693
_cons	-.5860799	.2791111	-2.10	0.056	-1.189063	.016903

```
. xtreg log_HumanDevelopmentIndexHDI  log_FDi_Lag1 log_TradeofGDP log_GDPpercapitaPPPconstant20 log_GDPgrowthannual log_Infla
> tionGDPdeflatorannual log_Inequalityineducation log_GenderInequalityIndexGII  Log_Schoolenrollmenttertiaryg,fe

Fixed-effects (within) regression               Number of obs     =         22
Group variable: Code                            Number of groups  =          4

R-sq:                                           Obs per group:
     within  = 0.9738                                         min =          3
     between = 0.3605                                         avg =        5.5
     overall = 0.5151                                         max =          8

                                                F(8,10)           =      46.50
corr(u_i, Xb)  = -0.3717                        Prob > F          =     0.0000
```

log_HumanDevelopmentIndexHDI	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
log_FDi_Lag1	.0004313	.0029507	0.15	0.887	-.0061432	.0070059
log_TradeofGDP	-.0391843	.0228721	-1.71	0.117	-.0901466	.0117781
log_GDPpercapitaPPPconstant20	.1949488	.0386234	5.05	0.001	.1088904	.2810071
log_GDPgrowthannual	.0003359	.0033675	0.10	0.923	-.0071672	.0078391
log_InflationGDPdeflatorannual	-.0032285	.0022024	-1.47	0.173	-.0081356	.0016787
log_Inequalityineducation	-.0133147	.0116949	-1.14	0.281	-.0393725	.0127431
log_GenderInequalityIndexGII	.0226983	.0199699	1.14	0.282	-.0217974	.067194
Log_Schoolenrollmenttertiaryg	.0884692	.0165098	5.36	0.000	.0516831	.1252553
_cons	-2.217523	.3899833	-5.69	0.000	-3.08646	-1.348586
sigma_u	.02225534					
sigma_e	.00402309					
rho	.96835634	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(3, 10) = 14.15                     Prob > F = 0.0006
```

```
. xtreg log_HumanDevelopmentIndexHDI  log_FDi_Lag1 log_TradeofGDP log_GDPpercapitaPPPconstant20 log_GDPgrowthannual log_Infla
> tionGDPdeflatorannual log_Inequalityineducation log_GenderInequalityIndexGII  Log_Schoolenrollmenttertiaryg,re

Random-effects GLS regression                   Number of obs     =         22
Group variable: Code                            Number of groups  =          4

R-sq:                                           Obs per group:
     within  = 0.8796                                         min =          3
     between = 0.9934                                         avg =        5.5
     overall = 0.9399                                         max =          8

                                                Wald chi2(8)      =     203.34
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000
```

log_HumanDevelopmentIndexHDI	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
log_FDi_Lag1	.0106163	.0029343	3.62	0.000	.0048651	.0163675
log_TradeofGDP	-.0797635	.0241372	-3.30	0.001	-.1270714	-.0324555
log_GDPpercapitaPPPconstant20	.0375503	.0328613	1.14	0.253	-.0268567	.1019572
log_GDPgrowthannual	.0075242	.0037824	1.99	0.047	.0001107	.0149376
log_InflationGDPdeflatorannual	-.0097947	.0035471	-2.76	0.006	-.0167469	-.0028424
log_Inequalityineducation	-.023945	.0210371	-1.14	0.255	-.0651768	.0172869
log_GenderInequalityIndexGII	-.0792648	.0206244	-3.84	0.000	-.119688	-.0388417
Log_Schoolenrollmenttertiaryg	.0617949	.0220214	2.81	0.005	.0186337	.1049561
_cons	-.5860799	.2791111	-2.10	0.036	-1.133128	-.0390321
sigma_u	0					
sigma_e	.00402309					
rho	0	(fraction of variance due to u_i)				

```
. xthtaylor log_HumanDevelopmentIndexHDI log_FDi_Lag1 log_TradeofGDP log_GDPpercapitaPPPconstant20 log_GDPgrowthannual log_In
> flationGDPdeflatorannual log_Inequalityineducation log_GenderInequalityIndexGII Schoolenrollmenttertiaryg Code,endog( log_G
> DPpercapitaPPPconstant20 log_GDPgrowthannual log_InflationGDPdeflatorannual)

Hausman-Taylor estimation                       Number of obs     =         22
Group variable: Code                            Number of groups  =          4

                                                Obs per group:
                                                              min =          3
                                                              avg =        5.5
                                                              max =          8

Random effects u_i ~ i.i.d.                     Wald chi2(9)      =     310.21
                                                Prob > chi2       =     0.0000
```

log_HumanD~I	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
TVexogenous						
log_FDi_Lag1	.0010736	.0030324	0.35	0.723	-.0048699	.0070171
log_Tradeo~P	-.044462	.0234591	-1.90	0.058	-.0904408	.0015169
log_Inequa~n	-.0154116	.0126091	-1.22	0.222	-.0401249	.0093017
log_Gender~I	.0181526	.0212495	0.85	0.393	-.0234956	.0598008
Schoolenro~g	.0014963	.000302	4.96	0.000	.0009045	.0020881
TVendogenous						
log_GDPpe~20	.1943991	.04024	4.83	0.000	.1155302	.273268
log_GDPgro~l	.0004408	.0034744	0.13	0.899	-.0063689	.0072506
log_Inflat~l	-.0038846	.0023883	-1.63	0.104	-.0085657	.0007964
TIexogenous						
Code	-.005638	.0065548	-0.86	0.390	-.0184851	.0072091
_cons	-1.896479	.4099382	-4.63	0.000	-2.699943	-1.093015
sigma_u	.01661805					
sigma_e	.00326421					
rho	.96285037	(fraction of variance due to u_i)				

Note: TV refers to time varying; TI refers to time invariant.

```
Arellano-Bond dynamic panel-data estimation     Number of obs     =         13
Group variable: Code                            Number of groups  =          4
Time variable: Year
                                                Obs per group:
                                                              min =          1
                                                              avg =       3.25
                                                              max =          6

Number of instruments =     14                  Wald chi2(9)      =     121.33
                                                Prob > chi2       =     0.0000
One-step results
```

log_HumanDevelopmentIndexHDI	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
log_HumanDevelopmentIndexHDI						
L1.	.687878	.4397676	1.56	0.118	-.1740507	1.549807
log_GDPpercapitaPPPconstant20	.075486	.1541041	0.49	0.624	-.2265524	.3775245
log_GDPgrowthannual	.0022309	.0061159	0.36	0.715	-.0097562	.0142179
log_InflationGDPdeflatorannual	-.0022486	.0037828	-0.59	0.552	-.0096628	.0051656
log_FDi_Lag1	-.0032774	.0057719	-0.57	0.570	-.0145902	.0080353
log_Inequalityineducation	-.0042066	.0219843	-0.19	0.848	-.0472951	.0388819
log_GenderInequalityIndexGII	.083751	.0838063	1.00	0.318	-.0805062	.2480083
log_TradeofGDP	.0613847	.089257	0.69	0.492	-.1135558	.2363252
Log_Schoolenrollmenttertiaryg	.0167747	.059993	0.28	0.780	-.1008095	.1343589
_cons	-.9859781	1.291588	-0.76	0.445	-3.517444	1.545488

```
Instruments for differenced equation
        GMM-type: L(2/.).log_HumanDevelopmentIndexHDI L(2/.).log_FDi_Lag1
                  L(2/.).log_GDPpercapitaPPPconstant20 L(2/.).log_GDPgrowthannual
                  L(2/.).log_InflationGDPdeflatorannual
        Standard: D.L1_log_HumanDevelopmentIndexHDI D.log_FDi_Lag1
                  D.log_GDPpercapitaPPPconstant20 D.log_GDPgrowthannual
                  D.log_InflationGDPdeflatorannual D.log_Inequalityineducation
                  D.log_GenderInequalityIndexGII D.log_TradeofGDP
                  D.Log_Schoolenrollmenttertiaryg
Instruments for level equation
        Standard: _cons

. estat sargan
Sargan test of overidentifying restrictions
        H0: overidentifying restrictions are valid

        chi2(4)      =  2.970872
        Prob > chi2  =    0.5627
```