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**IMPACTS OF INCOME INEQUALITY ON ECONOMIC  
GROWTH OF COUNTRIES IN THE WORLD AND POLICY  
IMPLICATIONS FOR VIETNAM**

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## INTRODUCTION

### 1. Rationale for choosing the topic

Along with the economic growth in Vietnam, income inequality has also gradually increased, especially the gap between the richest and the poorest. Although economic growth has positive effects, it does not guarantee that the increasing income inequality will not cause disadvantages for economic growth in the future. The 13th National Party Congress Resolution orienting the country's development in 2021-2030 emphasizes the requirement for "Strictly and effectively manage social development, ensuring social security and human security; *enforce social progress and social justice*; ... comprehensively improve the people's material and spiritual life." Therefore, it is necessary to understand how the increasing income inequality will affect the economic growth in Vietnam. It helps provide warnings of adverse circumstances and encourages the pursuit of resolutions and policy proposals to minimize risk, thereby achieving stable and sustainable growth, particularly in light of Vietnam's current relatively low level of development.

There are many studies on the impact of natural disasters on economic growth in Vietnam. However, these studies use gross regional product (GRDP) data for the period before 2017. Nguyen Thi Huong assessed that these data inadequately reflected socioeconomic growth's true magnitude and pace. The research period for these studies has not been updated to include data until 2020. Some studies have employed a system of simultaneous equations suitable for bidirectional relationships; unfortunately, the equations in the system do not accurately depict the bidirectional association between irregularities and economic concentration. Instead, they primarily serve to validate the impact of transmission channels. Any mention of a bidirectional relationship is presented in linear form rather than nonlinear.

Given the limited availability of annual data on unemployment inequality in Vietnam, which fails to meet the minimum sample size requirements, the dissertation has analyzed the influence of inequality on economic growth in countries worldwide. It identified a group of countries with similar characteristics to those of Vietnam and utilized the results from this group, in conjunction with Vietnam's current circumstances, to infer the impact of inequality on economic growth in Vietnam. From the analysis of different groups of countries, solutions for Vietnam have been proposed. Estimating the system of simultaneous equations with structural equations depicts the bidirectional, nonlinear relationship between inequality and economic growth has been used to evaluate the impact of inequality on economic growth worldwide. Unlike most previous studies, the thesis used the Gini index from the Standardized World Climate Change Database (SWIID) (Solt, 2009). This dataset is considered one of the most comprehensive databases, ensuring

comparability with seamless, continuous information and has been used in several recent studies. With all the above reasons, the thesis topic is rational and needed for policy recommendation.

## **2. Novel aspects of the dissertation**

### ***2.1. In the theory***

1) Data in previous studies have not been grouped; if yes, it has been clustered based on only one criterion. This thesis has simultaneously grouped data based on two criteria, including inequality and economic growth.

2) It is the first study to analyze the impact of inequality on economic growth based on a new combination between the SWIID dataset and the simultaneous equation system approach.

3) The study uses the most inequality measures: Gini index (Solt and WB), 10% income gap coefficient, 20% income gap coefficient, ratio 40, and WB and Palma's score.

### ***2.2. In practice***

1) Results are provided based on updated data up to 2019.

2) The added value of the dissertation is to show the world moving trend and the feasibility and replicability of the economic growth model in parallel with social justice.

3) Another added value of the dissertation is to evaluate the influence of three factors, including education, healthcare and technical progress, on the impact of income inequality on economic growth in countries similar to Vietnam.

4) The study verifies many transmission channels of income inequality's impact on economic growth. Specifically, there are nine transmission channels of influence examined, including fiscal policy channel, imperfect capital market channel, socio-political instability channel, reproductive decision channel, savings/investment channel, consumption behavior channel, labor motivation channel, access to education and healthcare channel, and channel of domestic demand for goods and services.

5) Policy recommendations for Vietnam to promote economic growth are made for the period after 2022 based on the updated context to 2020.

## **3. Dissertation structure**

In addition to the introduction and conclusion, the thesis includes four chapters. Chapter 1 contains two main contents: an overview of research works on the impact of natural disasters on economic growth and the proposed research directions of the thesis. Chapter 2 provides a theoretical basis, allowing us to partially visualize the possible effects of income inequality on economic growth, along with the corresponding impact transmission channel and world

experiences of the effects of inequality on economic growth. Chapter 3 considers the current situation of inequality, economic growth and its impact on economic growth in the world and Vietnam in particular. Chapter 4 analyzes the inequality issue, offers perspectives on the selection of Vietnam's economic growth trajectory and suggests concrete measures to facilitate the successful implementation of the chosen economic path.

## **CHAPTER 1. LITERATURE REVIEW AND RESEARCH DIRECTION OF THE DISSERTATION**

### **1.1. LITERATURE REVIEW AND RESEARCH GAP**

#### **1.1.1. Literature review on the impacts of income inequality on economic growth**

##### ***1.1.1.1. Unidirectional effect of income inequality on economic growth***

###### *\* Negative impact of income inequality on economic growth*

Several studies agree that increased income inequality will lead to lower GDP growth. The negative impact of income inequality on economic growth is found in the long term (Alesina and Rodrik, 1994; David and Hopkins, 2011; Bernard and Sin-Yu, 2017), in the medium term (Alesina and Rodrik, 1994; Deninger and Squire, 1998; Voitchovsky, 2005; Ostry et al., 2014), in the short term (Chambers and Krause, 2010; Lee and Son, 2016; Kennedy et al., 2017), and instantaneously (Dabla – Norris et al., 2015). Based on time series data consisting of only 28 observations for Vietnam, Luong Quang Hien (2022) also finds that inequality slows down the rate of change in economic growth in the same year.

Factors likely to influence the results include the level of economic development (Perotti, 1996; Deninger and Squire, 1998), the countries' degree of democracy (Persson and Tabellini, 1994; Perotti, 1996; Clarke, 1995; Deninger and Squire, 1998), the adopted regression model (Perotti, 1996; David and Hopkins, 2011), the study period (Lee and Son, 2016) and the estimation technique (Lee và Son, 2016). Several authors (Persson and Tabellini, 1994; Clarke, 1995; Perotti, 1996; Galor and Zang, 1997; Tanninen, 1999) have tried to conduct robustness testing on the obtained results using different income inequality measurements, and the results remain unchanged.

###### *\* Positive impact of income inequality on economic growth*

Positive effects are found in the short term (Li and Zou, 1998; Ortega –Diaz, 2006), in the medium term (Ortega –Diaz, 2006; Chletsos and Fatouros, 2016) and long term (Li et al., 2016). This result may vary depending on the level of economic development (Ortega – Diaz, 2006; Brida et al., 2020) and the duration of the effect (Li and Zou, 1998). In Vietnam, Nguyen Van Cong (2006), Hoang Thuy Yen (2008), and Nguyen Le Hai Ha (2019) also found a positive relationship between the degree of DI and economic loss in the

provinces. Hoang Thuy Yen (2008) also pointed out that with the same level of inequality, areas with more investment and better healthcare and education would have higher economic growth rates.

*\* Some studies found no impacts of income inequality on economic growth*

These include Lopez (2004), Odedokun and Round (2004), and Thewissen (2014), among others. In Vietnam, Hoi (2008), Hoai Nam Nguyen et al. (2020), and Quoc Hoi Le & Hoai Nam Nguyen (2019) did not find a significant direct impact of inequality on economic growth in 61 provinces but found an indirect negative impact through poverty reduction (Hoi, 2008; Hoai Nam Nguyen et al., 2020) and through two channels of education – reproductive decisions and capital market imperfections (Quoc Hoi Le & Hoai Nam Nguyen, 2019).

*\* Some studies found both positive and negative impacts of income inequality on economic growth, depending on certain conditions*

The influence was identified to be positive or negative depending on the length of time observed (Forbes, 2000; Halter et al., 2014), the implemented model (Chen and Guo, 2005; Bleaney and Nishiyama, 2004), the level of economic development (Barro, 2000; Castello, 2010; Nguyen Thi Tue Anh et al., 2004) and the implemented inequality measurement (Voitchovsky, 2005; Berumen, 2016; Bleaney and Nishiyama, 2004). Some research initially used the quadratic function form and found evidence of the impact of inequality on economic growth in the form of an inverted U shape (Chen, 2003; Abebe and Ratbek, 2020). This finding is also evidenced in Vietnam on income inequality and economic development (Hoang Thuy Yen, 2015; Pham Ngoc Toan and Hoang Thanh Nghi, 2012) and expenditure inequality and economic development (Le Ho Phong Linh and Nguyen Ngoc Anh Truc, 2016). Some other studies have found a link between fluctuations in unemployment inequality and economic growth. Banerjee and Duflo (2003) show that whether the level of inequality increases or decreases, it reduces the speed of economic growth in the next period. In contrast, Henderson et al. (2015) show an equilibrium between economic growth and income inequality, and only vast fluctuations of income inequality can affect economic growth.

***1.1.1.2. Bidirectional relationship between income inequality and economic growth***

Up to now, research seems to have converged on the idea that income inequality harms economic growth and reduces effectiveness (Benabou, 1996; Stiglitz, 2012; Turnovsky, 2015). The long-term relationship depends on government spending (Turnovsky, 2015), which is negative if government spending is financed by capital taxes and positive if government spending is funded by other forms of taxation (on consumption or labor). In Vietnam, Nguyen Thanh Hung et al. (2020) also found the opposite effect of income inequality on economic growth, using a system of three simultaneous equations.

The relationship between income inequality and economic growth is complicated and influenced by many factors. Even if the measure of income inequality, the model and the estimation method chosen are appropriate, the result of this impact estimate is inconsistent because the relationship between income inequality and economic growth may change over time and can vary widely from country to country. It is the cause of the varied, even contradictory, results obtained by the above authors.

### **1.1.2. Literature review on methods researching the impact of income inequality on economic growth**

All studies used secondary data. Most perform quantitative analysis, and very few studies use only qualitative research (Bernabou, 1996; Stiglitz, 2012, 2016; Turnovsky, 2015). In quantitative analysis studies, parametric, non-parametric and semi-parametric approaches are all used, but the most common is the parametric approach; very few studies use the non-parametric approach (Henderson et al., 2015) or semi-parametric (Chambers and Krause, 2010). In the parametric approach, studies mainly estimate a single equation for cross-sectional or panel data; studies using time series data are also rare (Bernard and Sin-Yu, 2017; Luong Quang Hien, 2022). From 2003 and earlier, research using cross-sectional data with OLS least squares estimates dominated (Alesina and Rodrik, 1994; Perotti, 1996); recently, most studies use panel data. The panel data estimations include: fixed effects model FE, random effects model RE (Li and Zou, 1998; Abebe and Ratbek, 2020), two-stage least squares 2SLS (Person and Tabellini, 1994; Chletsos and Fatouros, 2016), three-stage least squares 3SLS (Barro, 2000), estimate generalized method of moments GMM (Banerjee and Duflo, 2003; Kennedy et al., 2017), the First-Difference GMM model (Forbes, 2000; Abebe and Ratbek, 2020), the System GMM model (Voitchovsky, 2005; Abebe and Ratbek, 2020) and the Autoregressive distributed lag model ARDL (Li et al., 2016; Brida et al., 2020). Few studies use simultaneous equation system estimation to reflect bidirectional relationships between variables (David and Hopkins, 2011; Nguyen Thanh Hung et al., 2020). Most studies using economic growth equations consider the impact of income inequality on economic growth as a linear function (David and Hopkins, 2011; Nguyen Thanh Hung et al., 2020). A few recent studies have examined the nonlinear effects of income inequality on economic growth in an inverted U shape (Chen, 2003; Abebe and Ratbek, 2020).

### **1.1.3. Literature review on space and time scope of studying the impact of income inequality on economic growth**

Although the number of studies on the impact of income inequality on economic growth is quite large, each study observes one or a group of countries in a specific period. There is almost no overlap among the studies. The furthest study period was in 1830 (Person

and Tabellini, 1994) and the closest one was in 2015 (Brida et al., 2020), with the largest observed sample of 133 countries (Deininger and Squire, 1998); updated data for the current period not yet available. Most of these studies do not group countries; if they do, they are based only on the level of economic development.

#### **1.1.4. Research gap**

##### ***1.1.4.1. Regarding the content***

Most of the studies are for countries or subgroups but only based on the level of economic development ranked by the World Bank. Some studies did not even group the data. Most studies use only one measure of income inequality (usually the World Bank's Gini index), a few have retested with other measures, and only about three inequality measures are used. Studies (if any) only examine a maximum of four channels of transmission of the impact of income inequality on economic growth, while several other channels of impact transmission have not been tested.

##### ***1.1.4.2. Regarding the method***

Most studies estimate the impact of income inequality on economic growth through a single equation. Some studies use a system of simultaneous equations; however, the effect of income inequality on economic growth is proposed in a linear form, not in quadratic form, and Solt's unbiased data (evaluated with the best quality available) has not been used.

##### ***1.1.4.3. Regarding research time***

Most of the previous studies refer to the 1960s to the latest 2015. No works have been updated to 2019, nor have any studies for 1980 - 2019.

## **1.2. RESEARCH OBJECTIVES, SUBJECTS AND SCOPE**

### **1.2.1. Research objectives**

#### ***1.2.1.1. General objective***

Assessing the impact of income inequality on the economic growth of countries around the world and Vietnam, thereby making policy recommendations for Vietnam in correcting inequality in the distribution of income and economic growth to achieve the goal of "enforcing social progress and social justice" in the long term.

#### ***1.2.1.2. Specific objectives***

- 1) Systematizing the theoretical issues on the impact of income inequality on economic growth;
- 2) Using datasets of countries around the world to analyze the effect of income inequality on economic growth and conduct in-depth research for Vietnam; and
- 3) Proposing some solutions for Vietnam in correcting income inequality and economic growth.



### **1.2.2. Research objects**

The object of the thesis is the impact of income inequality on economic growth.

### **1.2.3. Research scope**

1) Regarding research content: In order to assess the current status of economic growth, the thesis will evaluate two contents, which are economic growth rate and quality of economic growth in terms of economic aspect (with different measures including economic restructuring, contribution ratio of total factor productivity (TFP) and incremental capital-output ratio (ICOR). To study the impact of income inequality on economic growth, the thesis only focuses on the economic growth rate (specifically, the growth rate of real GDP per capita). The most commonly used measure of income inequality is the Gini index developed by Solt (2009). In addition, the thesis uses some other measures of income inequality for comparison, including World Bank's Gini index, the income ratio of the richest 10% to the poorest 10%, the income of the richest 20% to the poorest 20%, the ratio of 40 WB and the Palma coefficient.

2) About the research space: the thesis considers all countries in the world that have both economic growth data and income inequality data of Solt, a total of 178 satisfied countries and territories, including Vietnam. Countries with only economic growth data or income inequality data will be excluded because it does not help to probe the impact of income inequality on economic growth. In the solution part, the thesis only focuses on solutions for Vietnam.

3) About the timeframe of the study: To ensure the number of countries participating in the calculation each year, the economic growth and income inequality of countries worldwide will be assessed in 2000 - 2019. For Vietnam, economic growth and income inequality are considered in 2002 - 2020, except for data related to economic components and ICOR capital efficiency only for 2005 - 2020. To analyze the impact of income inequality on countries' economic growth worldwide, the thesis makes maximum use of data that can be obtained from 1980 – 2019. Recommendations are provided for the period up to 2030.

### **1.2.4. Research questions**

- 1) What is the reality of income inequality and economic growth in the world and Vietnam?
- 2) Which method can best assist in assessing the impact of income inequality on economic growth?
- 3) What is the impact of income inequality (measured by the Gini index) on real economic growth in countries worldwide and in Vietnam? Does this effect change when different measures of income inequality are employed from other income inequality databases? What are the transmission channels for the impact of income inequality on economic growth?

- 4) How is this impact influenced by educational, medical, scientific, and technical factors?
- 5) How should Vietnam choose a growth model concerning income inequality? What solution is needed to implement that growth model successfully?

### **1.3. RESEARCH APPROACH AND METHODS**

#### **1.3.1. Analytical framework and approach**

The thesis uses an approach from general to practical, from overall to specific; a systematic approach; a two-way approach and a macro approach. The analytical framework provides different channels by which income inequality affects economic growth, some positive and others negative. Since the dissertation aims to evaluate the impact of income inequality on economic growth and propose solutions, other factors believed to affect economic growth and the degree of income inequality are also listed.

#### **1.3.2. Method of data collection**

The information and data used in the thesis are all secondary data, taken from three primary sources, the World Bank's World Development Index (WDI) database (accessed in December 2021, data updated to 2019), the SWIID NCD database developed by Solt (2009) (version 9.2, accessed January 2022, data updated to 2020) and Total Bureau of Statistics (for Vietnam's data, preliminary updated data up to 2020).

#### **1.3.3. Data and information analysis methods**

The thesis uses analytical methods, including the statistical disaggregation method (dividing data into different groups), economic statistical method (data description, situation analysis) and quantitative modeling method (impact estimation).

## **CHAPTER 2. THEORETICAL BASIS AND PRACTICAL EXPERIENCE ON IMPACTS OF INCOME INEQUALITY ON ECONOMIC GROWTH**

### **2.1. THEORETICAL BASIS OF INCOME INEQUALITY**

#### **2.1.1. The concept of income inequality**

The thesis uses a simple and common understanding: income inequality is a phenomenon that of income is distributed unequally among individuals in the economy. If the percentage of income held by the rich is significantly more than that of the rest, it is considered unfair. This concept does not imply promoting egalitarianism in the distribution. Equal income distribution, or too large a gap between rich and poor, negatively impacts the country's long-term development.

### **2.1.2. The source of the difference in income distribution**

The source of the difference in income distribution between the two groups is the difference in assets and wages. Differences in property are mainly caused by inheritance and are intergenerational. Meanwhile, the difference in salaries is derived from the nature of the job, personal characteristics (such as working capacity, experience, health, etc.) and other factors belonging to the economic, political and social characteristics of the country the person lives in.

### **2.1.3. Measure of income inequality**

The inequality measures in income distribution used in the thesis include the Lorenz curve, Gini index, income elasticity, 40 WB standard and Palma ratio.

### **2.1.4. Factors affecting income inequality**

The dissertation considers factors including economic development, economic growth rate, government spending, education, the openness of the economy, industrialization, technical progress, capital market imperfection, inflation, and institutions.

## **2.2. THEORETICAL BASIS FOR ECONOMIC GROWTH**

### **2.2.1. The concept of economic growth**

In the most general way, economic growth is understood as an increase in the economy's production level over time. However, economic growth reflects the expansion in quantity but has not paid attention to quality. We should not absolutize economic growth and focus on longer-term economic and sustainable development issues.

### **2.2.2. Measuring economic growth**

Economic growth is reflected in two aspects: growth rate and growth quality. In this dissertation, the growth rate is calculated through the real GDP per capita to measure the quality of economic growth; the measures used include economic restructuring, the proportion of the contribution of total factor productivity TFP and ICOR capital efficiency.

### **2.2.3. Factors affecting economic growth**

The dissertation considers factors including investment, human capital (education, health), technical progress, government spending, industrialization, globalization, the development of financial markets, inflation and institutions.

## **2.3. THEORY ON IMPACTS OF INCOME INEQUALITY ON ECONOMIC GROWTH**

The dissertation presents eight theories: distribution theory, theory of capital market imperfection, theory of socio-political instability, theory of reproductive decisions and

investment for education, neoclassical growth theory, comparative social theory, labor motivation theory and Todaro's theory.

## **2.4. PRACTICAL EXPERIENCE ON IMPACTS OF INCOME INEQUALITY ON ECONOMIC GROWTH**

The dissertation chooses China to represent countries in Group 2, Hong Kong for countries in Group 3 and Korea for countries in Group 4. China and Hong Kong represent developing countries with growth at all costs, while Korea represents developed countries with growth that goes hand in hand with equality. From the experience of these countries, we can deduce 8 lessons: (1) Increasing income inequality will cause many risks to the economy, unstable growth and stagnation; (2) Policies for extreme growth cause significant harm to inequality, in turn, inequality makes growth less stable and stagnant; (3) Low wealth inequality is a very good condition to restrain the increase of inequality; (4) Education is an essential factor to help us achieve economic intelligence and social justice at the same time; (5) Rural development policies should be considered as an important aspect of the country's socioeconomic development strategy; (6) An extensive social welfare system will help stabilize people's lives, minimize the effects of economic shocks, natural disasters and epidemics; (7) A labor market built on the basis of equality between employers and employees will be effective in solving unemployment in the context of the economic crisis, so that the economic can be quickly restored and (8) Subsidy policies should aim to promote self-discipline of the poor, encourage welfare beneficiaries to participate in the labor market, improve their own income instead of just relying on current subsidies, thereby getting a sustainable income.

## **CHAPTER 3. ANALYZE THE IMPACTS OF INCOME INEQUALITY ON ECONOMIC GROWTH**

### **3.1. CURRENT CIRCUMSTANCES OF INCOME INEQUALITY AND ECONOMIC GROWTH**

#### **3.1.1. Current circumstances of income inequality**

##### ***3.1.1.1. General circumstances by groups of countries worldwide***

In order to increase the homogeneity of data and ensure more accurate estimation results, the thesis proposes to separate countries into homogeneous subgroups according to 2 criteria: (1) level of economic growth (measured by real GDP per capita) and (2) degree of income inequality (Gini Solt). The countries are then grouped into four groups. Group 1 is the countries with a low level of GDP per capita and income inequality (lower than the

average). Group 2 is the countries with low GDP per capita (lower than the average) and high income inequality (higher than the average). Group 3 is the countries with GDP per capita and a high level of income inequality (higher than average). Group 4 is the countries with high GDP per capita (higher than average) and low levels of income inequality (lower than average). In these four groups, Groups 1 and 4 include countries that follow the path of economic growth along with equality; Groups 2 and 3 include countries that follow a trade-off of equality for economic growth. Groups 3 and 4 are successful in their selection, and groups 1 and 2 are unsuccessful. However, group 1 is said to have a better situation than Group 2 and 4 has a better position than Group 3. During 1980 - 2019, Vietnam was continuously in Group 1, with a low level of development and income inequality (lower than the average). The calculation results show that Group 4 is the most equal among the four groups, followed by Group 1, and the most unequal are Groups 2 and 3. While groups 1, group 2 and group 4 show a decreasing trend of income inequality level, group 3 shows a significant increase of income inequality level.

### ***3.1.1.2. Specific circumstance in Vietnam***

In general, inequality in Vietnam remains low compared to the world and tends to increase over time. Vietnam has improved the income position of middle-class groups quite well while improving the income position of the poor groups as well as narrowing the gap between the rich and the poor has not yet achieved high efficiency. The poorest population groups have not benefited from growth gains but have suffered relative to other groups. Under economic crises and raging natural disasters, the poor are severely affected, while the rich have even more benefits. The Covid-19 pandemic has set new records in Vietnam for equality, bringing inequality to its lowest level in the past 20 years. The improvement of inequality does not come from proactive adjustment solutions of the state but from economic shocks and epidemics.

Like many other countries, Vietnam's income inequality is now higher and "hotter" in rural and low-income areas, while less pressure is found in urban and high-income areas. Although the Covid-19 pandemic has improved a lot of income inequality in rural areas, the inequality measures all reflect an apparent increase of income inequality in rural areas while the income inequality in urban areas tends to decrease. In general, income inequality tends to shift from urban to rural areas and Vietnam's current problem is income inequality in rural areas. From a regional perspective, while the Southeast shows a decreasing trend in the level of income inequality, the remaining regions have recorded an increase, and by any measure, the Southeast - the region with the highest income levels in the country currently remains the most equal region while the Central Highlands and the Northern Midlands and Mountains - the two regions with the lowest income levels in the country and at the same time are the two most unequal regions with a large gap compared to other regions. Data

from a regional perspective has provided evidence that growth is a material condition for social justice. At the same time, social justice is a prerequisite for rapid and stable growth. The Southeast should be seen as an example for other regions to learn from in creating an equal and more livable society when it was once the most unequal region in the country at the beginning of the period.

### **3.1.2. Current circumstances of the economic growth**

#### ***3.1.2.1. General situation by groups of countries worldwide***

*Regarding GDP growth rate:* The decreasing trend of growth rate is shown in all four groups of countries, and the more unequal the groups of countries, the lower the growth rate is compared to the less unequal groups of countries. The economic crisis has hit rich countries hard while providing opportunities for poor countries. The growth of groups 3 and 4 is unstable but fluctuates abnormally with large amplitudes. Even so, the trend of decreasing growth rate still exists in all four groups, in which group 1 has the highest growth rate and group 3 has the lowest. Excluding the impact of the world economic crisis, group 4 may have had a higher growth rate than Group 2 during the whole period.

*Regarding the growth quality:* Although the economic sector structure of all groups of countries is in line with the recommended structure (services play a leading role, followed by industry, construction, and finally agriculture, forestry and fishery), there are other signs of a decline in the growth quality of these groups of countries such as productivity decline, low capital efficiency, etc. The share of agriculture, forestry, fishery and service sectors varies considerably between rich and poor countries, while the share of industry and construction is quite similar. In terms of the economic restructuring trend, the proportion of agriculture, forestry and fishery sectors has decreased significantly in all groups of countries. The increasing trend of the service sector proportion is evident in groups 1, 2 and 4, while the industry and construction show a decreasing trend. Notably, group 3 moved in the opposite direction compared to the other groups. In particular, it is a worrying sign when the proportion of the construction industry in groups of countries with low economic development is reducing.

#### ***3.1.2.2. Specific circumstances in Vietnam***

*Regarding GDP growth rate:* Vietnam's economic market band of fluctuation is relatively stable, common at over 6%, does not show a clear uptrend and has positive signals in the recent period. Low growth rates were recorded due to the impact of the world economic crisis, the weakening of growth-supporting factors or the Covid-19 pandemic. Compared to other countries in the ASEAN region, Vietnam's economic growth is often in the top 3 or 4 countries with the highest economic growth rate and even reached the Top 2 position in 2019. The construction industry has the highest growth rate of the three

economic sectors but is also the least stable, while the agriculture, forestry and fishery industry has the lowest and most stable growth rate. A downward trend in growth rate was observed in the industry - construction (before there were improvements in the period after 2016) and the agriculture, forestry and fishery sectors. Service sector growth is generally stable. Among the three economic sectors, the FDI sector has the most dynamic growth and is the least stable, while the state-owned economic sector grows more slowly. In recent years, the growth rate of foreign direct investment (FDI) and state-owned economic sectors has decreased, while the non-state economic sector has been increasing.

*Regarding the growth quality:* Vietnam's economic growth has recorded many positive signs and is gradually deepening; as shown in the recent increase in TFP's contribution to growth along with the economic restructuring process, capital efficiency has steadily improved. The service sector is key, while the agriculture, forestry and fishery industries account for the lowest proportion. The structure of the economic sector shows a tendency to decrease the proportion of agriculture, forestry and fishery and slightly decrease the construction industry proportion while increasing the service sector. By economic sectors, the non-state economic sector accounts for the highest proportion, and the lowest is the economic sector with foreign direct investment. Economic sectors shifted toward increasing the proportion of the economic sector with foreign direct investment while reducing the proportion of the state economic sector. The main drivers of growth come from the construction industry and the foreign-invested economic sector.

## **3.2. ANALYSIS MODEL FOR IMPACTS OF INCOME INEQUALITY ON ECONOMIC GROWTH**

### **3.2.1. Model for applying impact analysis**

There is a high possibility of a bidirectional relationship between economic growth and income inequality; therefore, the dissertation proposes to use a system of simultaneous equations model that includes two structural equations: one economic growth equation and one income inequality. The dissertation starts with the system of fundamental equations and then expands further by adding different control variables to the model. The system of basic equations is given by:

$$G_t = \beta_1 + \beta_2 GDP_{t-1} + \beta_3 BBD_t + \beta_4 BBD_t^2 + \beta_5 GD_{t-10} + U_{1t}$$

$$BBD_t = \alpha_1 + \alpha_2 G_t + \alpha_3 G_t^2 + \alpha_4 GDP_{t-1} + \alpha_5 GDP_{t-1}^2 + \alpha_6 GD_{t-10} + U_{2t}$$

The extended system of equations is given by:

$$G_t = \beta_1 + \beta_2 GDP_{t-1} + \beta_3 BBD_t + \beta_4 BBD_t^2 + \beta_5 GD_{t-10} + \beta X_{1t} + U_{1t}$$

$$BBD_t = \alpha_1 + \alpha_2 G_t + \alpha_3 G_t^2 + \alpha_4 GDP_{t-1} + \alpha_5 GDP_{t-1}^2 + \alpha_6 GD_{t-10} + \alpha X_{2t} + U_{2t}$$

In which,  $G_t$  is Economic growth,  $GDP_t$  is GDP per capita and  $BBD_t$  is the level of income inequality at time  $t$ .  $GD_{t-10}$  is the enrollment rate of middle and high school students ten years ago.  $Solt$  is the income inequality index.  $X_1, X_2$  are of control variables, including industrialization, urbanization, globalization, technical progress, inflation, financial markets, healthcare and investment in infrastructure. All control variables are taken at the same period as the dependent variable. In addition, the thesis also evaluates the influence of education, science, technology and healthcare on the impact of income inequality on economic growth through a system of equations:

$$G_t = \beta_1 + \beta_2 GDP_{t-1} + \beta_3 Solt_t + \beta_4 Solt_t^2 + \beta_5 GD_{t-10} + \beta_6 Z_t * Solt_t + \beta_7 Z_t * Solt_t^2 + \beta_8 Z_t + U_{1t}$$

$$BBD_t = \alpha_1 + \alpha_2 G_t + \alpha_3 G_t^2 + \alpha_4 GDP_{t-1} + \alpha_5 GDP_{t-1}^2 + \alpha_6 GD_{t-10} + U_{2t}$$

In which  $Z_t$  is education, science, technology or healthcare. The channels of transmission of the impact of natural disasters on economic growth are tested by estimating two structural equations:

$$G_t = \beta_1 + \beta_2 KENH + \beta X_t + U_{1t}$$

$$KENH = \alpha_1 + \alpha_2 Solt_t + \alpha W_t + U_{2t}$$

in which,  $KENH$  is one of the nine impact transmission channels  $X$  and  $W$  are groups of control variables. All variables are averaged over five years, except  $GDP$  and  $Solt$  are taken at the beginning of each period.

### 3.2.2. Data and estimation methods

#### 3.2.2.1. Data

The data is sourced at WDI and SWIID. In order to increase the accuracy of the estimation results, the data has been divided into four groups of countries; the estimation results will be performed on these four groups of countries.

#### 3.2.2.2. Estimation method

To estimate the system of simultaneous equations, because the thesis uses lagged variables of the factors, the GMM method will be used. This estimation method has the advantage that it can overcome the problem of endogenous variables, lack of variables, and solve the causal relationship. The J-Hansen test for the appropriateness of the instrumental variables was also performed. The smaller the J-test value, the more suitable the instrument variable. The used instrumental variables are all predefined variables belonging to the system of equations (including exogenous variables, lagged endogenous variables, and constants), similar to the recommended instrumental variable for the 2SLS estimation method.



### 3.3. CURRENT CIRCUMSTANCES OF THE IMPACTS OF INCOME INEQUALITY ON ECONOMIC GROWTH FROM MODEL RESULTS

#### 3.3.1. Current circumstances by groups of countries worldwide

##### 3.3.1.1. *The current situation of group 1, a group of countries with lower economic development and inequality than average (including Vietnam)*

*Regarding the impacts of income inequality on economic growth:* All estimated results reflect the impact of income inequality on economic growth in the form of a concave curve quadratic function, whether basic or extended systems of equations. This result does not change when using different measures of inequality. The Parabolic peak reached an inequality level of about 32%. Thus, if  $Gini\ Solt > 32\%$ , reducing inequalities will stimulate economic growth; if  $Gini\ Solt < 32\%$ , more equality will inhibit economic growth. In the opposite direction, economic growth helps to reduce income inequality.

*Regarding the factors suspected to influence income inequality and economic growth simultaneously:* There is a concave curve relationship between economic growth and income inequality. At a 10-year lag, education helps to improve equality and, at the same time, promotes economic growth. More investment in infrastructure supports economic growth but, at the same time, increases the level of inequality. Industrialization helps to improve economic growth, but its positive impact on inequality has not been found. Inflation harms economic growth but helps to strengthen inequality; this result is not as expected due to the use of the Gini index instead of measures focusing on rich and poor groups. Promoting exports increases the economic growth rate, but on the other hand, it also exacerbates the level of inequality. Rapid urbanization is harmful to economic growth but helps to reduce inequality. In the immediate future, the increasing proportion of the population using the Internet will reduce the speed of economic growth but will benefit in the next ten years. At the same time, more people's access to the Internet increases income inequality, whether in the immediate, short or medium term. In the short term, healthcare reduces economic growth and improves income inequality, but after ten years, healthcare helps to promote economic growth and enhance income inequality. Access to capital will help reduce income inequality.

Since Vietnam belongs to Group 1 and in order to have more grounds to propose solutions for Vietnam, the dissertation has conducted in-depth research for Group 1. The estimated results show that the impact of income inequality on economic growth is influenced by education, science and technology and healthcare. The higher the level of access to education, the Internet, and the higher spending on health, the later the Parabolic peak will be; in other words, the negative impact of inequality on economic growth will only be recorded at a higher level of income inequality than usual. Even at the level of internet access and spending on healthcare is large enough, overall, the harmful effects of

DRs on economic growth have not been found. In addition, the research results support the impact of unemployment inequality on economic growth through 6 channels: fiscal policy channel, capital market imperfection channel, consumer behavior channel, labor motivation channel, education accessibility channel, and domestic demand for goods and services channel while not supporting the channel. Remarkably, the savings/investment channels and the healthcare service access channel have not been tested because there is no appropriate measure for the savings of the rich and the ability to measure the people's ability to access healthcare services. Accordingly, income inequality promotes economic growth through fiscal policy channels and labor motivation channels. It hinders economic growth through capital market imperfection channel, consumer behavior channel, channel of accessing educational services and channel of domestic demand for goods and services. Because of the very different combinations of these channels across countries, we observe that, in general, inequality has a positive impact on economic growth in this country but hurts economic growth in other countries. In other countries, this has been reflected through the quadratic form of the unexpected bias variable in the economic growth regression model. In addition, the thesis also explores the impact of tax policy on income inequality in group 1. The test results show that tax policy has the effect of significantly reducing the initial income inequality.

### ***3.3.1.2. The current circumstances of Group 2 - the group of countries with low economic development and higher than average levels of income inequality***

*Regarding the impacts of income inequality on economic growth:* The estimated results all reflect the impact of the inequality on economic growth in the form of a convex curve, whether a system of basic equations or an extended system of equations. The Parabolic peak is at an income inequality level of about 53%. However, more than 95% of the observations have a Gini Solt index below 53%, which means that the increase in the income inequality rate is associated with a decrease in the economic growth rate. This result changes when using different measures of inequality. The dissertation still finds convex curve impacts of the income ratio of the richest 10% compared to the poorest 10% on economic growth but finds a concave curve effect of 40WB on economic growth (with the parabolic peak at 18.7%) while the remaining measures have not found any evidence of impact. In the opposite direction, the thesis also sees the effects of economic growth on income inequality in the form of a concave quadratic function.

*Regarding the factors suspected to influence income inequality and economic growth simultaneously:* The impact is found as a concave quadratic function of the level of economic growth on income inequality. Education and healthcare help to improve income inequality and promote economic growth. Industrialization also helps to improve income inequality and promote economic growth. Investment in infrastructure also helps promote economic growth and enhance equality. Inflation is harmful to economic growth and causes

more severe inequality. The increase in exports reduces the economic growth rate and, at the same time, reduces income inequality. The impact of reducing the economic growth of exports can be explained through the instability of exports. Urbanization helps to improve equality but has not found any impact on economic growth. Internet access supports the improvement of inequality, but no impact on economic growth has been found.

### ***3.3.1.3. The current circumstances of Group 3, a group of countries with higher levels of economic development and inequality than the average***

*Regarding the impacts of income inequality on economic growth:* The estimated results show that the effect of income inequality on economic growth is in the form of a convex quadratic function, with the Parabolic peak at about 46% of the income inequality level. However, there are only two countries with income inequality above 46%, Puerto Rico and Saudi Arabia, and the data for these two countries alone reflect an inverse relationship between Gini Solt and economic growth. Therefore, the effect is opposite for each segment. In the opposite direction, economic growth also affects the level of inequality in the form of a concave quadratic function. Due to the small number of observations, the dissertation does not change the measure of inequality in the system of basic equations.

*Regarding the factors suspected to influence income inequality and economic growth simultaneously:* The dissertation finds a convex curve relationship of economic growth to the level of inequality with the Parabolic bottom at GDP per capita of about US\$40240. This result is similar to Lessmann (2013) that after following the conclusions of the Kuznets model, inequality will continue to increase again when the economy reaches a very high level of growth. In addition, the thesis finds that globalization and urbanization help economic growth faster while helping to improve income inequality. Due to the small number of observations (or even none), the thesis has not found the impact of the remaining factors on economic growth and inequality.

### ***3.3.1.4. The current circumstances of Group 4 - a group of countries with a high level of economic growth and a lower-than-average level of inequality***

*Regarding the impacts of income inequality on economic growth:* The impact of income inequality on economic growth is found in the form of a convex quadratic function, with the Parabolic bottom reaching about 33% of the inequality level. This impact does not change when other inequality measures are used (except for the 40 WB measure, which has not yet found an impact). The countries of Group 4 have mainly lower income inequality rate by 33%; accordingly, a lower income inequality rate reduces economic growth. In the opposite direction, the thesis finds the impact of economic growth on inequality in the form of a convex quadratic function, according to which, at a moderate level of economic growth, the economic growth helps to improve equality while the rapid economic growth will harm the average income equality. The threshold level of economic growth is about 5.7%.

*Regarding the factors suspected to influence income inequality and economic growth simultaneously:* There is a convex curve relationship between economic growth and the level of income inequality. Investment in infrastructure and industrialization promotes economic growth while helping to improve equality. Export supports economic growth and might improve equality. Investment in health will enable a higher economic growth rate in the medium term of 10 years. Inflation is harmful to economic growth, but on the other hand, it helps to reduce income inequality. Internet access inhibits economic growth and increases inequality, but in the medium term of 15 years, more convenient Internet access helps promote economic growth and improve equality. Education helps to improve equality, but on the other hand, when a high school enrollment rate is too high, it is not good for economic growth. In Group 4, there are many countries where the secondary school enrollment rate regularly exceeds 100%, reaching 160% at the highest due to early enrollment, late schooling and re-learning. Finally, urbanization exacerbates inequality, and the impact of urbanization on economic growth has not been found.

### **3.3.2. Specific circumstances in Vietnam**

Vietnam's annual income inequality data is relatively limited, consisting of only 12 observations according to GSO and World Bank and 28 observations according to Solt, which does not meet the minimum sample size to run the regression model for only Vietnam. Another alternative is to use Vietnamese provincial data. However, GRDP data before 2017 has limitations: the total GRDP of all provinces is much larger than the GDP of the whole country, which does not reflect reality. Therefore, it is advisable to only use data from 2017 to now, including 2018 and preliminary data for 2020; the period is relatively short, making it difficult to assess the long-term effects of factors such as education and health on the impact of DR on economic growth. Therefore, the thesis has used the estimation results of Group 1 (the group to which Vietnam belongs) to make inferences about Vietnam.

The analysis shows a similarity between the results of Group 1 and demonstrated from the graph of Vietnam; accordingly, a high income inequality rate is associated with slower economic growth. Specifically, when the Gini Solt index increased by 0.1 percentage points, the estimated growth decreased by 0.092 percentage points on average. Although the data for other inequality measures are less than those of Solt, the trend of reducing growth as inequality increases is also evident with measures of the 10% income gap coefficient, 20% income gap coefficient, and 40 WB ratio. As for the two measures of WorldBank's Gini index and the Palma ratio, the relationship is relatively weak. Simulation results of the influence of education, healthcare and technical progress on the impact of income inequality show that Vietnam's income inequality rate does not exceed 35.6%, a high probability even if the income inequality rate increases, it still supports economic growth.

Vietnam has soon recognized the adverse effects of inequality on economic growth and the positive impact that education, healthcare, and technical progress can bring; since then, there have been timely solutions to improve equality. Growth has improved since 2012 before falling sharply due to the impact of the Covid 19 pandemic. Education expenditure has increased over the years; however, the ratio of education and training spending to GDP currently stands at only about 3%, far from the benchmark of 6% specified in the global goal of Education For All. Spending on healthcare has also increased over the years, accounting for 11% of total public expenditure in 2017 (Oxfam, 2020), lower than the figure of 15% according to Abuja standards (budgetary standards on the levels of investment in healthcare by countries). Science and technology activities are increasingly interested in, along with education, science and technology is now considered a leading national policy. Vietnam is doing quite well in terms of social security and benefits for workers.

### **3.4. SOME CONCLUSIONS FROM THE ANALYSIS OF THE IMPACTS OF INCOME INEQUALITY ON ECONOMIC GROWTH**

#### **3.4.1. General comments**

*Regarding the impacts of income inequality on economic growth:* Inequality affects economic growth, regardless of which measure of inequality is used. When changing different measures of inequality, similar results can be obtained in most cases. Still, sometimes different results can be obtained, especially for countries with a convex curve impact of inequality on economic growth. This impact is variable, depending on different country groups. In Group 1, this impact is influenced by education, healthcare and technological progress. In general, the effect of inequality on economic growth is a combination of many different impact channels with different dimensions.

*Regarding the growth model:* The economic growth model that increases growth at all costs is ineffective in many countries. Higher economic growth does not necessarily equate to equality. Countries with a lower level of economic development can completely change their position and move to a higher level of economic development if enough efforts are made, in countries with low levels of inequality have more advantages. Countries that want to improve equality must do it as soon as possible. They should not wait until achieving economic achievements before improving as it will be much more difficult later.

#### **3.4.2. Some comments for Vietnam**

The results obtained for Vietnam are quite different from previous studies for Vietnam. If previous studies have allowed Vietnam to accept a larger inequality for higher economic growth, the dissertation results show that the continued inequality increase will hinder economic growth. The actual data of Vietnam confirms that high inequality is associated with slower economic growth. Accordingly, the issues that Vietnam needs to solve in the near future include (1) Well control of inequality; (2) Increased investment in education, healthcare, and technical advancement; and (3) Poverty reduction.

## **CHAPTER 4. SOME POLICY RECOMMENDATIONS FOR VIETNAM IN EFFECTIVELY MANAGING INCOME INEQUALITY TO FACILITATE ECONOMIC GROWTH**

### **4.1. CONTEXT RELATED TO ECONOMIC GROWTH AND INCOME INEQUALITY IN THE NEXT PERIOD**

#### **4.1.1. International context**

Recent years have seen an improvement in inequality at the global level between rich and poor countries, but inequality within each country tends to increase. The 2020 Inequality Commitment Index report shows that failures to tackle inequality have pushed most nations into misery during the COVID-19 pandemic. It is worth mentioning that, according to the data on US billionaires published by Forbes, while the pandemic is still going on, US billionaires are not only unaffected, but their wealth has increased by an average of 24.7 % while many people are in a difficult situation. “Extreme inequality is not inevitable, and it’s not just rich countries that can take action against it,” said Matthew Martin, director of the International Finance Corporation. Inaction “is a political choice that COVID-19 has exposed, at a catastrophic human and economic cost” (Oxfam, 2020).

#### **4.1.2. Domestic context**

Vietnam’s economic development takes place in the context of technological progress and the 4.0 technology revolution that is happening every day at a rapid pace, both an opportunity and a challenge for the problem of income inequality and economic growth. Covid-19, on the one hand, has a heavy impact on the Vietnamese economy. On the other hand, it significantly reduces the existing level of income inequality. Inflation is still under control despite uncertainties and wars pushing fuel prices up. Import and export activities continued to grow at a high rate despite the impact of the Covid 19 epidemic. After the pandemic, industrial production showed signs of recovering its growth rate. The problem of climate change is still present, with many potential risks to the livelihoods of many poor people, vulnerable and unable to fight. Climate change is likely to increase if it is not well controlled.

### **4.2. VIEWPOINTS AND ORIENTATIONS ON THE ISSUES OF INCOME INEQUALITY AND ECONOMIC GROWTH IN THE NEXT PERIOD**

#### **4.2.1. Viewpoints**

There are four main points of view: (1) Income inequality is not entirely bad; it will positively impact economic growth if maintained at a “reasonable” level. The research results suggest that, if the effects of education, healthcare and internet access are taken into account, the reasonable level of inequality for Vietnam will be about 35.6% by 2028 according to the Gini Solt index; (2) Too fast economic growth is also not entirely good.

The growth strategy should aim for stable, long-term and “reasonable” growth with no more than 6-8% per year; (3) Vietnam should continue on the chosen path of economic development: economic growth goes hand in hand with social justice, and (4) the improvement of the level of inequality should be made as soon as possible.

#### **4.2.2. Orientations**

The development orientation of Vietnam in the coming time should be towards: (1) Building a widespread social welfare system, ensuring a minimum standard of living for the poor, the elderly, women and children, the disadvantaged people in society; (2) Increasing investment in education, increasing access to education in order to improve the quality of human resources; (3) Increasing investment in healthcare, increasing access to basic healthcare services for everyone, promoting universal health insurance coverage, and improving the quality of human resources; (4) Promoting scientific and technological development, enhance internet access for all; (5) Paying due attention to rural development policies, the goal is to increase the income of rural and mountainous areas, thereby narrowing the income gap between rural, urban and lowland areas, and at the same time contributing to the country’s socioeconomic development; (6) Reducing the rate of poor households, near-poor households and the rate of falling back into poverty; (7) Enhancing access to credit and loans for the poor in combination with perfecting and developing financial markets; (8) Enhancing the status and ensuring the rights of workers; (9) Developing, perfecting and implementing progressive tax and transfer policies and (10) Some other orientations drawn from the model results of the thesis include: Promoting product export activities refined products, well control inflation, create conditions for processing and manufacturing industries to develop.

### **4.3. SOME POLICY IMPLICATIONS TO PROMOTE GROWTH BASED ON ACCESS FROM INCOME INEQUALITY IN VIETNAM**

#### **4.3.1. Education Policy**

Including: (1) Continuing to apply and expand existing tuition fee exemption and reduction policies. Quickly develop a roadmap for free tuition for 5-year-old preschool children, junior high school students and high school students. Consider exemption and reduction of university tuition fees for students from poor households; (2) Continuing the policy of supporting study expenses; (3) Promoting the process of educational socialization and financial autonomy at universities, accompanied by commitments on tuition incentives for students from poor households; (4) Focusing on teachers by increasing salaries, training in the innovation of teaching methods, funding research and development, raising entry points for pedagogy and (5) Streaming education, organizing effectiveness of vocational training programs and development of vocational schools.

#### **4.3.2. Healthcare Policy**

These include: (1) Increasing revenue for health insurance through increasing the payment ratio of enterprises to employees; (2) Promoting universal health insurance by not increasing the amount of revenue associated with propaganda and facilitating the purchase of voluntary health insurance, and (3) Increasing medical expense support for the poor.

#### **4.3.3. Science and Technology Policy**

These include: (1) Promoting the socialization of science and technology development activities; (2) Strengthening the encouragement of individuals and organizations to participate in science, technology and innovation activities; (3) Continuing to build and expand infrastructure for science and technology.

#### **4.3.4. Social Security Policy**

Including: (1) Continuing to implement the subsidy policy, ensuring a minimum standard of living; (2) Promoting the self-discipline of beneficiaries towards sustainable livelihoods; (3) Promoting voluntary social insurance and (4) Completing the database on social security.

#### **4.3.5. Policy of tax**

These include: (1) Developing real VAT incentives for the poor; (2) Improving the efficiency of PIT collection in the direction of increasing tax rates of high-income levels by further subdividing tax tiers at high-income levels; (3) Developing a more appropriate CIT policy with real incentives for micro-enterprises, small and medium enterprises. It is recommended to apply a progressive tax policy for Corporate Income Tax to create a more level playing field for micro, medium and small enterprises compared to large enterprises, foreign direct investment, and (4) Completing the Law on Property Tax, proceeding to the implementation of the Law.

#### **4.3.6. Rural development policy**

Including: (1) Improving labor productivity in rural areas; (2) Strengthening access to credit for poor households; (3) Creating stable output for farmers; and (4) Improving investment efficiency in rural areas.

#### **4.3.7. Employee Policy**

Including: (1) Enhancing the status of workers through the activities of the Vietnam General Confederation of Labor and grassroots trade unions, facilitating the development of job placement centers, mainly introducing laborers working in the formal sector; (2) Increasing the minimum wage and (3) Promoting the participation of women in the labor market.



#### **4.3.8. Strengthen monitoring of income inequality in line with international standards**

Build a separate monitoring system, ensuring comprehensiveness and conformity with international standards, which can be based on the currently used income inequality monitoring system for the improvement in the world, provided by Oxfarm for the first time in 2017, which was built for Vietnam.

## **CONCLUSION AND RECOMMENDATION**

### **1. Conclusion**

The thesis has systematized, summarized and built a relatively complete theoretical basis on inequality, the economic concentration and the impact of inequality on economic growth, and built a theoretical framework to analyze the impact of inequality on economic growth. The grouping of countries was carried out to ensure the samples were homogenous and minimize estimation bias. The data is divided into four groups of countries based on two criteria: real GDP per capita and level of inequality. Subsequent results show that the clustering of observations is necessary because the impact of changing factors is quite diverse depending on each country group. In addition, by considering the displacement between groups of countries, the thesis has pointed out the trend of shifting in the world and the feasibility and replicability of the economic concentration model in parallel with social justice. This is the inevitable trend and can be achieved with enough determination.

The thesis employs the SWIID database (with better quality and seamless data) and the WDI database. GMM estimation method is used for a system of simultaneous equations, considering the quadratic impact. The thesis has evaluated the impact of inequality on economic growth in each group of countries with updated data up to 2019, showing that inequality has been increasing in Vietnam. The high level of inequality will restrain economic growth, and the optimal inequality threshold for Vietnam in 2028 will be about 35.6% (according to the Gini Solt index). This impact is influenced by education, health, and technological progress. The negative effect might be eliminated with enough access to education, health care, and the Internet. Other measures of inequality are also used, and the results are pretty similar; in most cases, high inequality will be detrimental to growth. By examining nine transmission channels of the impact of inequality in income distribution on economic growth, the thesis has found evidence to support six transmission channels, including the fiscal policy channel, capital market channel imperfection, consumer behavior channel, labor motivation channel, education accessibility channel and domestic demand for goods and services.

Although the results of the impact of income inequality on economic growth differ among groups, the thesis believes that reasonable control of inequality is essential to ensure sustainable development for all countries, where both growth and equality can be achieved

simultaneously over time. Reasonable inequality control needs to be implemented as soon as possible, do not wait until economic growth is achieved. High growth contributes to improvement; however, too hot, too fast growth can exacerbate inequality. Therefore, solutions should not only be focused on promoting growth at all costs but should also aim to harmonize growth and income inequality.

The current situation of inequality in Vietnam shows that the income proportions of Groups 1, 2 and 5 tend to decrease while the income proportions of middle-class groups increase. As a result, the Gini index causes the illusion that inequality is stable, even slightly reduced, while inequality is growing significantly from the perspective of low-income people. Compared with the past, the poorest population groups still have not benefited from the fruits of growth; they even worsened. Meanwhile, Vietnam's economic growth rate is relatively stable, typically at over 6%, often in the top 3, top 4 countries with the highest economic growth rate in Southeast Asia, even reaching the leading position. Since 2019, economic growth has been gradually deepening, supported by innovation, the application of science and technology in production and business and improving resource efficiency. Investment efficiency has been enhanced from 2016 to now (except in 2020, when the COVID-19 pandemic occurred). Based on the estimated results and the current context, the thesis supports Vietnam to continue implementing the economic concentration model in parallel with social justice. It also recommends a policy system for Vietnam to realize its chosen growth path.

## **2. Limitations of the thesis**

The thesis has only assessed the immediate impact of inequality on economic growth but has not yet evaluated this impact in the medium and long term. Grouping the data only helps to increase the homogeneity of the data. Still, it does not guarantee that the data are homogeneous, and the observed sample may change in different years, leading to the representativeness of the mean decrease. The comparison between the averages may not be accurate. Inferring from the results of Ggroup 1 for Vietnam has certain potential deviations. Other inequality measures not mentioned due to lack of data or complicated calculation include the Theil coefficient, Atkinson coefficient, etc.

## **3. Recommendations for future research**

Studies can be further deepened in some directions: (i) analyzing the direct impacts of inequality on economic growth in the medium and long term, (ii) if data is large enough, using data from provinces (based on GSO consolidated data on GRDP since 2017) in Vietnam to analyze the impact for Vietnam directly.

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