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# Socioeconomic inequality in Viet Nam

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**Abstract:** This study provides an introduction to major discussions and core findings on inequalities in Viet Nam, drawing on a review of recent research, consideration of how inequality is discussed in legal documents, and an analysis of inequality using household survey data from Viet Nam. Inequality is widely mentioned in legal documents. As of May 2024, there are 443 legal documents that mention the term 'gap between the poor and the rich' and 2,200 legal documents mentioning the term 'social equity'. The term 'gender equality' is mentioned in 6,744 legal documents. Regarding academic studies, most focus on expenditure and income inequality using household surveys. Using VHLSS data, we measure inequality in different welfare indicators, including consumption expenditure, income, electricity spending, and durable and housing value. Although relative inequality remained stable from 2010 to 2022, absolute inequality, as measured by the absolute Gini coefficient, increased, indicating a widening absolute gap in living standards between the poor and the rich.

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# 1    Introduction

Income and wealth inequality have been changing over time. According to Chancel et al. (2022), in 2021, the global bottom 50% held a mere 8% of total global income (at purchasing power parity (PPP)), while the global top 10% claimed 52% of total income. The disparity in wealth is even more pronounced: the global bottom 50% owned just 2% of wealth (at PPP), whereas the global top 10% held ownership of 76% of total wealth. High inequality can have an adverse impact on socioeconomic outcomes. It can hamper economic growth (e.g., Cingano 2014; Aiyar and Ebeke 2020; Balcilar et al. 2021) and increase the poverty rate (e.g., Sehrawat and Giri 2018; Bergstrom 2022). Moreover, inequality is strongly linked to social conflicts and violence (e.g., Oishi et al. 2011; Østby 2013; Alcorta et al. 2018) and is inversely related to happiness and life satisfaction (Schneider 2015; Tran et al. 2018; Ferrer-i-Carbonell and Ramos 2021) and social mobility (Mitnik et al. 2016).

Viet Nam has achieved a higher economic growth rate (around 6% annually) since implementing economic reforms in the late 1980s. The high economic growth, coupled with Viet Nam's commitment to a 'growth with equity' strategy, has led to a remarkable reduction in poverty. The expenditure poverty rate, using the poverty line of US$3.20/day 2011 PPP, dropped from 16.8% in 2010 to 5.0% in 2020 (World Bank 2022). Inequality, as measured by expenditure, has remained relatively low and stable over time, with the Gini index estimated around 0.37 (World Bank 2022). Although the relative gap in living standards between population subgroups has been stable, the absolute gaps between them have been increasing (MDRI and Oxfam 2020; World Bank 2022). For example, during the 2010–20 period, per capita consumption expenditure of the bottom 10% of the population increased from VND7.4 million to VND12.1 million, while the richest 10% of the population experienced an increase from VND52.9 million to VND136.0 million per month (World Bank 2022). The per capita expenditure of the Kinh/Hoa group and ethnic minority groups was around VND27.8 million and VND11.4 million, respectively, in 2010. By 2016, these figures had risen to VND35.7 million and VND16.0 million, respectively (MDRI and Oxfam 2020). Viet Nam ranks among the top five countries in Asia with the highest growth rate in the number of super-rich individuals (those with US$30 million and more) (Manh Ha 2024). Disparities not only exist in income and expenditure but also in other dimensions such as health, education, and political participation (MDRI and Oxfam 2020).

This study provides an introduction to major discussions and core findings on inequalities in Viet Nam, drawing on a review of recent research, consideration of how inequality is discussed in legal documents, and a new analysis of inequality trends in household survey data. There are numerous studies on inequality in Viet Nam (e.g., recent studies Benjamin et al. 2017; MDRI and Oxfam 2020; GSO 2021; World Bank 2022; Dang et al. 2022). In addition to providing an updated review of the literature, our study differs in several aspects from previous studies. First, we offer a systematic picture of how inequality is discussed in policy, based on a review of legal documents. Second, we utilize more recent datasets, specifically VHLSS data from 2010 to 2022. Inequality may have increased following the COVID-19 pandemic due to its adverse effects on the poor (World Bank 2022). Additionally, the pandemic has accelerated the growth of the digital economy, and the rich might be better placed to capture these opportunities (World Bank 2022). Second, our study not only estimates expenditure and income inequality but also examines wealth inequality. Previous studies have primarily focused on expenditure and income inequality. In our research, we estimate the current value of assets and housing as proxies for household wealth.

This study is structured into five sections. The second and third sections review policy documents and academic studies regarding inequalities in Viet Nam, respectively. The fourth section presents

an analysis of the trends in inequality in Viet Nam using VHLSS data. The final section provides conclusions.

## 2     Policies and legal documents

Viet Nam has committed to a 'growth with equity' strategy. This section examines how the reduction of inequality is reflected in Viet Nam's legal documents and whether specific policies and programs have been implemented to address this issue.

### 2.1   Inequality

Since the economic reform in 1986, social equity has been emphasized in the Resolutions of the National Congresses of the Communist Party as well as in legal documents. Inequality was mentioned as a problem in the 13th National Congress of the Communist Party of Viet Nam in 2021 as follows: 'The gap between rich and poor tends to increase, and the lives of some people are still difficult, especially those in ethnic minority areas and areas affected by natural disasters. The development gap between localities, regions, and areas remains quite large' (Communist Party of Viet Nam 2021). The 10-year Socio-Economic Development Strategy for 2021–30 of the 13th National Congress also mentions the objective of poverty and inequality reduction. Every five years, the National Assembly of Viet Nam issues a five-year socioeconomic development plan, which also mentions the objective of reducing poverty and inequality. Recently, Resolution 16/2021/QH15 on the five-year socioeconomic development plan 2021–25 (National Assembly of Viet Nam 2021) set a development objective: 'Gradually narrow the gap in cultural enjoyment between urban and rural areas, between regions; rich-poor gap; access to basic social services; access to jobs between regions and population groups. Effectively implement national target programs on building new rural areas, sustainable poverty reduction and socio-economic development in ethnic minority and mountainous areas'.

In 2020, the Government of Viet Nam issued Resolution No. 136/NQ-CP on sustainable development goals, with Goal 10 aiming to reduce inequality in society (Government of Viet Nam 2020). The Resolution provides the guideline:

> Create conditions for everyone and every community in society to have equal opportunities to develop, access common resources and participate, contribute and benefit, creating foundations good material, knowledge and culture for future generations; Leave no one behind, reach the hardest to reach first, including children, women, the elderly, the poor, people with disabilities, and people in areas with poor socio-economic conditions and difficulties, border areas, islands and other vulnerable groups.

To examine how often inequality has been mentioned in legal documents, we searched for keywords related to inequality topics in all legal documents issued by provincial-level and central governmental organizations since 1941. The legal documents are listed on the TVPL website (TVPL 2024). The popular terms related to economic inequality between population subgroups mentioned in legal documents include 'social equity' (2,200 documents), 'gap between the poor

and the rich' (443 documents), 'inequality' (257 documents), and 'gap between regions' (50 documents).[1]

Figure 1 presents the number of legal documents containing the phrase 'gap between the poor and the rich' by the issuing organizations and issuance time. There are more legal documents issued by central organizations than by provincial-level organizations. The 2011–15 period saw the highest number of legal documents containing the phrase 'gap between the poor and the rich'. Similarly, Figures 2 and 3 present the number of legal documents containing the terms 'inequality' and 'social equity', respectively. These terms are more increasingly used in legal documents in recent years.

Figure 1: The number of legal documents with the words 'gap between the poor and the rich'

Panel A. By issuing organizations
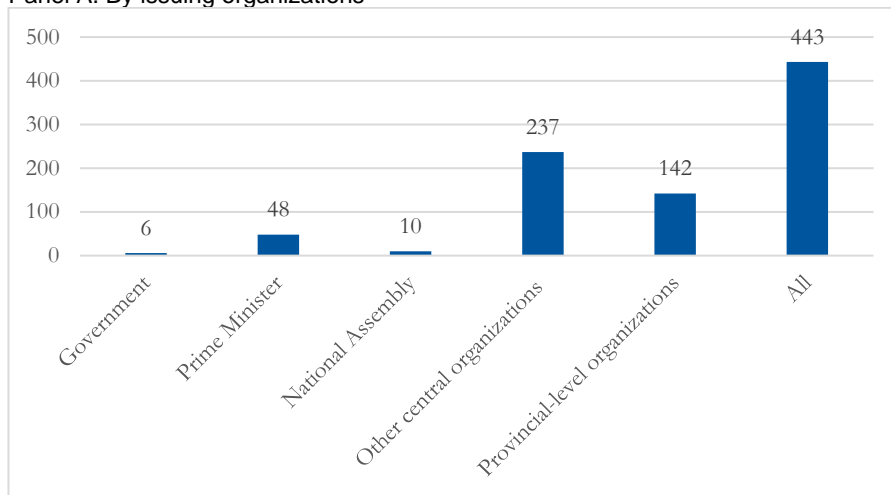


Panel B. By issuance years
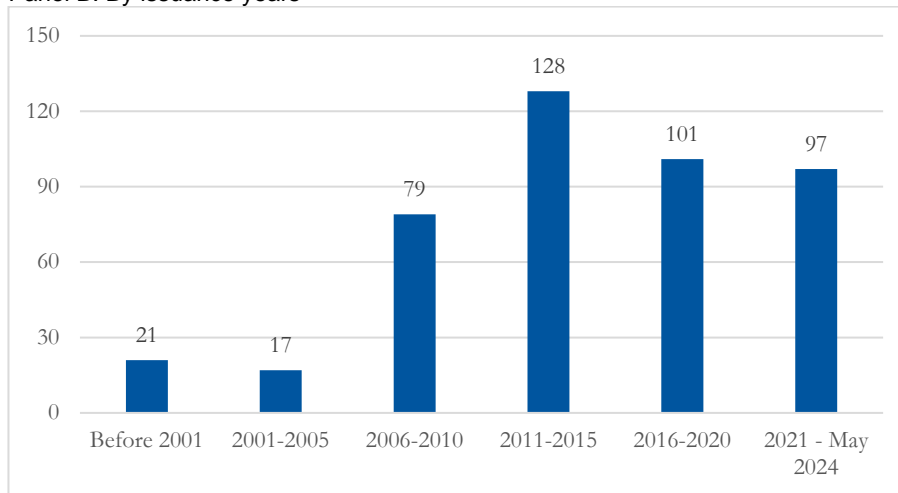


Source: authors' estimation using information on legal documents from TVPL (2024).

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[1] The original Vietnamese terms are 'công bằng xã hội' (social equity), 'chênh lệch giàu nghèo' or 'khoảng cách giàu nghèo' (gap between the poor and the rich), 'bất bình đẳng' (inequality), and 'chênh lệch vùng miền' or 'khoảng cách vùng miền' (gap between regions).

Figure 2: The number of legal documents with the word 'inequality'

Panel A. By issuing organizations



Panel B. By issuance years



Source: authors' estimation using information on legal documents from TVPL (2024).

Figure 3: The number of legal documents with the words 'social equity'

Panel A. By issuing organizations
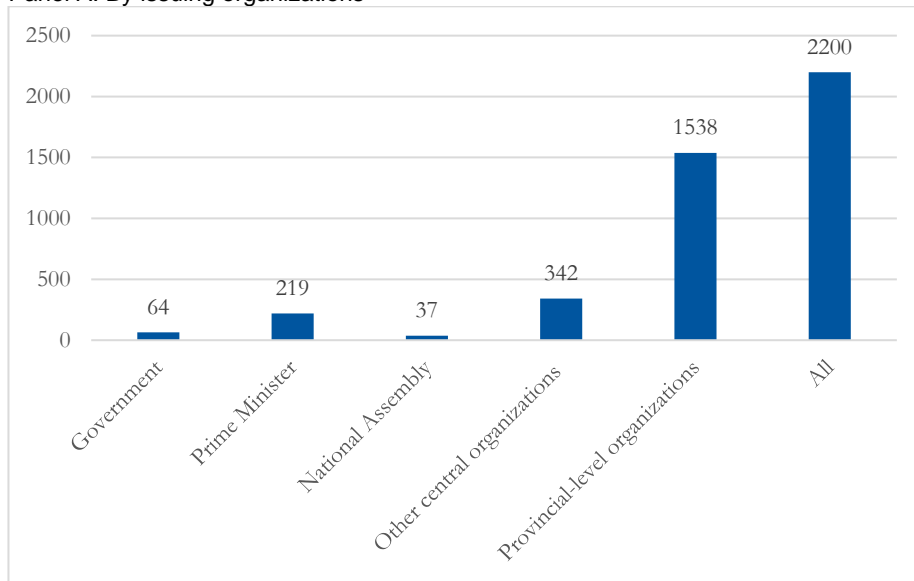


Panel B. By issuance years
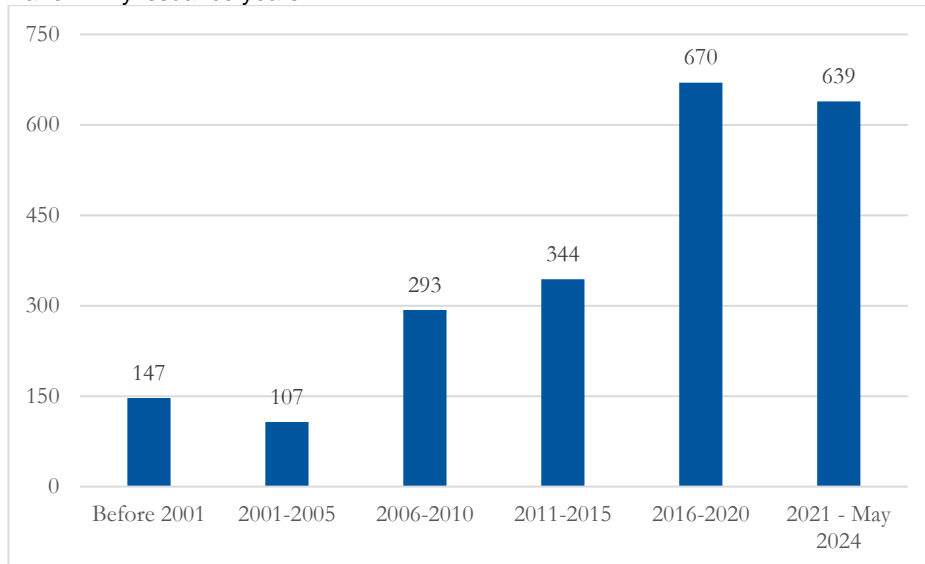


Source: authors' estimation using information on legal documents from TVPL (2024).

Gender equality has been increasingly mentioned in legal documents, especially since the Law on Gender Equality was issued in 2006. Until May 2024, there are 6,744 legal documents that contain the phrase 'gender equality' or 'gender inequality'. Figure 4 presents the number of legal documents containing these phrases by the issuing organizations and issuance time.

Figure 4: The number of legal documents with the words 'gender equality'

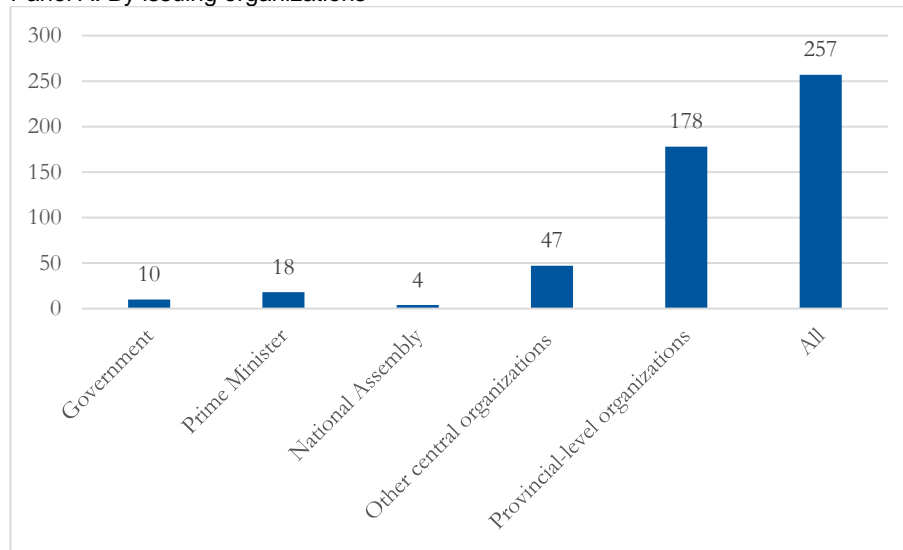Panel A. By issuing organizations
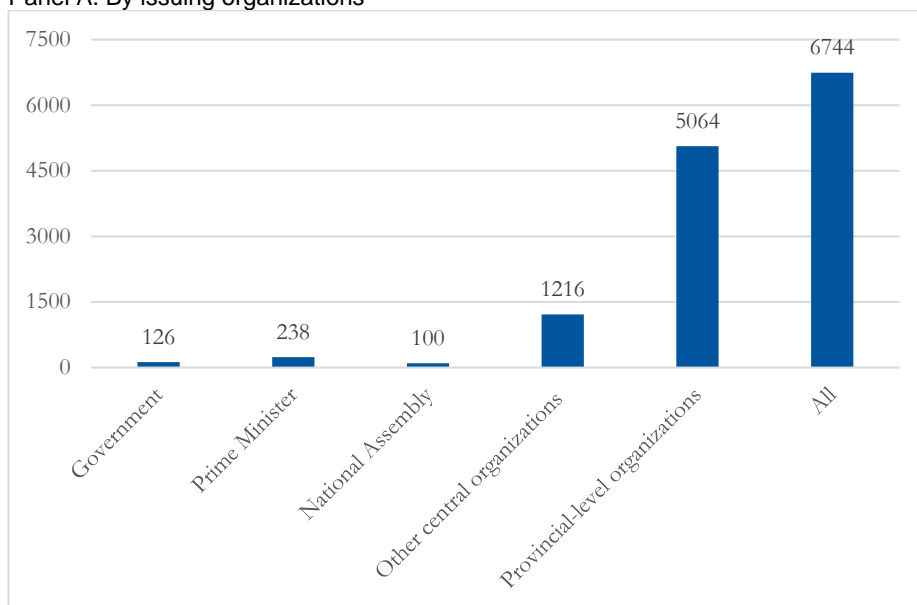


Panel B. By issuance years



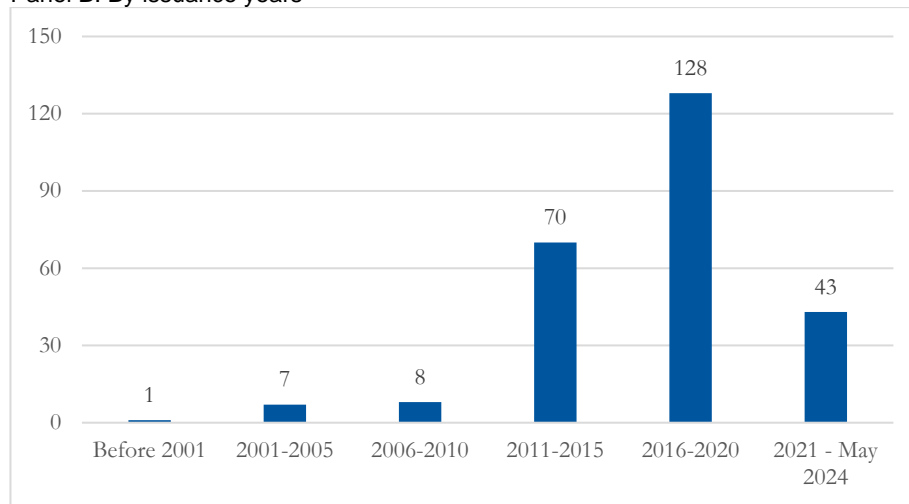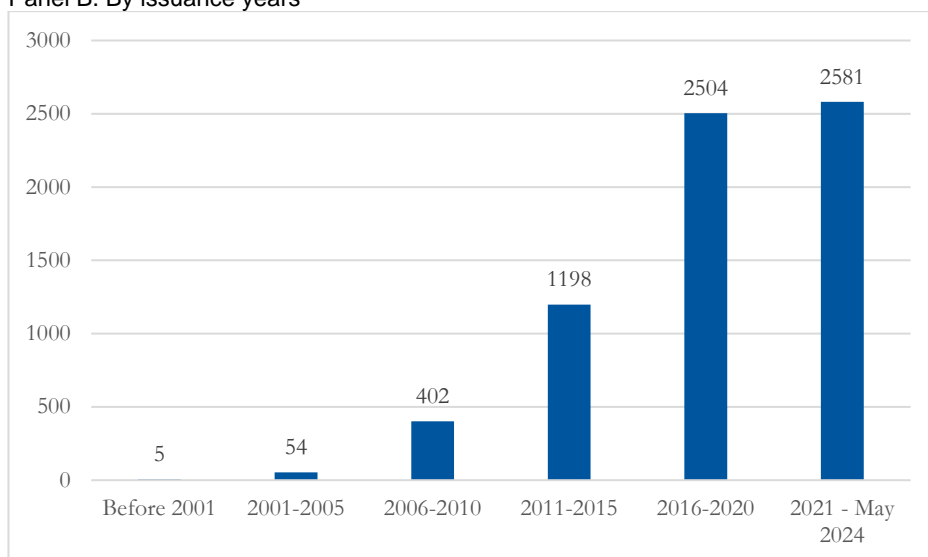Source: authors' estimation using information on legal documents from TVPL (2024).

## 2.2. Policies to reduce inequality

Policies that can help to reduce inequality include national targeting programs and social assistance policies. The central government has spent relatively large amounts on national targeting programs (the poverty reduction program is one of the national targeting programs). Around VND560 trillion (approximately US$25 billion) was spent on all national targeting programs during the 2010–19 period (World Bank 2022). Since 1998, Viet Nam has implemented two important poverty reduction initiatives including the 'National Targeted Program for Poverty' and 'Socio-economic Development for the Communes Facing Greatest Hardships in the Ethnic Minority and Mountainous Areas'. These two programs provide support for the poor and ethnic minorities to improve their production and income and reduce poverty. In 2008, the Government of Viet Nam implemented a new program targeted at the poorest districts of the countries (Government of Viet

Nam 2008). This program is known as the 30A program, providing support to improve infrastructure, production, and livelihoods of the 62 poorest districts. Since 2012, the government has incorporated both the 30A program and the 135 Program into the National Targeted Programme on Sustainable Poverty Reduction (Government of Viet Nam 2012, 2016).

In addition to national targeted programs, the government has provided monthly cash transfers for the vulnerable and disadvantageous groups since 2000 (Government of Viet Nam 2000). The recipients include infants and children younger than 16 years of age, people with heavy disabilities, and poor older people living alone without any support. Specifically, the beneficiaries of the cash transfer program according to Decree 136/2013/NĐ-CP and Decree 20/2021/NĐ-CP include the following groups (Government of Viet Nam 2013, 2021):

- Infants and children younger than 16 years old and children with high disabilities.
- People with HIV disease and people with high disabilities.
- People from poor households without a spouse and currently raising a child younger than 16 years old.
- People older than 60 years living in poor households and not having any support.
- People 80 years and older who do not have contributory pensions.

## 3      Academic studies on inequality in Viet Nam

An important question is whether the core topics on inequality reduction, as reflected in Viet Nam's legal documents, have been examined in academic studies. This section reviews academic studies on inequality in Viet Nam. Numerous studies analyse inequality trends and examine the sources of inequality. The impact of policies and programs aimed at reducing inequality has also been evaluated in several studies.

### 3.1    Monetary inequality

There are numerous studies on expenditure and income inequality in Viet Nam. The main sources of data used to study monetary inequality are the Viet Nam Living Standard Surveys (VLSS) from 1993 and 1998 and the Viet Nam Household Living Standard Surveys (VHLSS) since 2002. Several studies, such as Nguyen and Pham (2018), MDRI and Oxfam (2020), Dang et al. (2022), and World Bank (2022), examine the trends in monetary inequality. Inequality is commonly measured using per capita expenditure and income of households. The most common measures of relative inequality include the Gini index, Theil index, and the ratio of the 90th to 10th percentiles of expenditure or income. Expenditure inequality has been relatively stable in Viet Nam. According to the World Bank (2022), the Gini index, estimated based on per capita expenditure data from VHLSSs, decreased from 0.39 in 2010 to 0.35 in 2016 and then slightly increased to 0.37 in 2020. Income inequality is slightly higher than expenditure inequality. Income inequality remained unchanged during the 2010–16 period at 0.43, then decreased to 0.38 in 2020 (GSO 2021).

The sample size of VHLSSs does not allow for the estimation of inequality at the provincial level. Several studies use small area estimation (SAE) methods to estimate inequality in provinces and districts in Viet Nam (e.g., Nguyen et al. 2010; Lanjouw et al. 2017). The SAE method combines a household survey and a population census. It first estimates an expenditure model using a household survey and then applies this expenditure model to a population census to predict per capita expenditure for all households in the census and the inequality measures at the small areas. Lanjouw et al. (2017) combined the 2010 VHLSS and the 2009 Viet Nam Population and Housing Census. The Gini index of within-province as well as within-district expenditure inequality varies

from 0.2 to 0.45. Poorer provinces and districts in the Midlands and Northern Mountain region and Central Highlands tend to have higher inequality than other provinces and districts. The positive correlation between inequality and poverty, and the negative correlation between per capita expenditure and inequality at the provincial and district levels, are also found in Minot et al. (2006) and Nguyen et al. (2010), which used earlier datasets.

In addition to aggregate inequality indexes, inequality is also analysed by the gap in income and expenditure between regions, urban/rural, and ethnic groups (e.g., MDRI and Oxfam 2020; Dang et al. 2022; GSO 2021; World Bank 2022). There are 54 ethnic groups in Viet Nam. The Kinh majority group accounts for around 85% of the total population. The Kinh group tends to live in delta and coastal areas and has higher income and living standards than other ethnic groups. Ethnic minorities are concentrated in the Midlands and Northern Mountain and the Central Highlands regions. Most studies on inequality in Viet Nam also examine the gap in income and expenditure between Kinh and ethnic minorities. The expenditure poverty rate, using the poverty line of US$3.20/day 2011 PPP, was only 1.2% for Kinh but 27.2% for ethnic minorities in 2020 (World Bank 2022). As a result, ethnic minorities account for 15% of the total population but 80% of the poor population.

Inequality is also analysed in terms of the wage gaps between males and females. There is a wage gap between males and females in Viet Nam. The gender gap in wage earnings tends to decrease over time (e.g., Demombynes and Testaverde 2018; Hong Vo et al. 2021; Obermann et al. 2021). Using ordinary least squares (OLS) regressions and data from Labor Force Surveys, Demombynes and Testaverde (2018) show that the gender wage gap decreased from 15.4% in 2007 to 12.6% in 2014. Several studies such as Vu and Yamada (2018) and Hong Vo et al. (2021) examine the sources of gender wage gaps using decomposition methods. The results show that education, ethnicity, employment sectors, and occupations are the main sources of gender wage gaps in Viet Nam.

## 3.2 Inequality in other dimensions

There are a number of studies that examine inequality in non-monetary dimensions such as education, health, energy, violence, and political participation. Tran and Pasquier-Doumer (2019) show that students with full-day schooling have better access to school resources such as libraries, computers, internet, electricity, and clean water compared to students without full-day schooling. The gap in educational attainment between different regions, poor/non-poor, and ethnic groups has been analysed in several studies (Vu 2012; MDRI and Oxfam 2020; World Bank 2022). MDRI and Oxfam (2020) highlight a large gap in educational attainment among regions and ethnic groups. For example, in 2016, the proportion of people aged 18–22 attending a tertiary education institution was 46% for Kinh, while this figure was less than 10% for ethnic groups such as Khmer, H'Mong, and Dao. The poor have lower educational attainment, especially in tertiary education, than the non-poor (World Bank 2022). MDRI and Oxfam (2020) suggest six possible drivers of inequality in education: (i) unequal access to high-quality education; (ii) differences in social and cultural norms; (iii) lack of provision for special educational needs; (iv) unequal access to early childhood development opportunities; (v) unequal access to career guidance and vocational technical training; and (vi) unequal access to educational materials and the internet.

Several studies examine the gap in health status and healthcare utilization between different population subgroups. Målqvist et al. (2013) conduct a literature review of 49 publications on health-related outcomes of ethnic minorities. This study suggests severe health inequity in healthcare seeking and utilization, maternal and child health, nutrition, infectious diseases, and oral health and hygiene. Children from ethnic minorities have malnutrition rates that are twice as high as those of Kinh and Hoa children (World Bank 2014). MDRI and Oxfam (2020) show that the bottom expenditure quintile group has a proportion of people with disabilities nearly four times

higher than that of the top quintile group. The disability rate among ethnic minority groups is also much higher than that of the Kinh. The Kinh majority and the top quintile group have substantially higher healthcare expenditures than ethnic minorities and the bottom quintile group (MDRI and Oxfam 2020). In 2016, the Kinh spent more than 15 times as much on healthcare as the H'Mong (MDRI and Oxfam 2020).

A few studies examine inequality in energy usage. Using data from VHLSSs from 2004–16, Nguyen et al. (2019) find that, although people tend to shift from traditional energy sources such as coal and biomass to gas and electricity, poor and ethnic minority households still primarily use traditional energy sources. Nguyen et al. (2023) show a large spatial variation in electricity consumption. Households in mountainous and highland areas have much lower electricity consumption than those in delta and coastal areas. Moreover, there is very high inequality in electricity consumption within poorer districts and provinces.

## 3.3   Sources of inequality

Understanding sources of inequality is important for design for policies to reduce inequality. A number of studies examine sources of inequality in Viet Nam using decomposition methods. Van de Walle and Gunewardena, (2001), Pham and Reilly (2009), Imai et al. (2011), Yamada (2017), and Kompas et al. (2017) use the Blinder–Oaxaca decomposition method and other similar decomposition methods to decompose the gap in wages and household incomes between Kinh/Hoa and ethnic minorities. These studies show that inequality in income and wage between ethnic groups is derived from not only the difference in endowments such as education and assets but also the difference in returns in endowments. Using the 2006 VHLSS, Kompas et al. (2017) find that the language barrier is an important source of inequality among ethnic groups. Reducing this language barrier can reduce the inequality in educational attainment and, therefore, the inequality in income.

Other studies examine the welfare gap between other population subgroups. Several studies such as Nguyen et al. (2007), Yamada (2017), Kang and Imai (2012), and Bui and Imai (2019) explore the income gap between urban and rural areas. Nguyen et al. (2007), using VLSS data from 1993 and 1998, show that the urban-rural gap is due to differences in covariates such as education, ethnicity, and age, as well as differences in returns to these covariates. Yamada (2017), also using VLSS data from 1993–98 and additional VHLSS data from 2004–14, confirms that the main sources of the urban-rural expenditure gap are education, employment, and the ethnic minority status of the household head. Using VHLSS data from 2008–12, Bui and Imai (2019) find that basic education can help the rural poor and ethnic minorities improve their living standards, thereby reducing urban-rural inequality. Instead of focusing on urban-rural inequality, Pham et al. (2023) examine the inequality between farm and non-farm households. Specifically, Pham et al. (2023) investigate the gap in consumption expenditures between farm and non-farm households in rural Viet Nam using a decomposition method and data from the 2016 VHLSS. This study shows that most of the expenditure gaps are explained by differences in observed characteristics between farm and non-farm households—particularly education. Recently, using VLSS 1998 and VHLSSs 2010 and 2020, Doan et al. (2023) find that the declining return to education can reduce inequality in wages between top and bottom wage quintiles.

Several studies investigate sources of inequality using income source decomposition techniques (e.g., Tran 2016; Nguyen et al. 2017; Nguyen et al. 2020; MDRI and Oxfam 2020; Dang et al. 2022). Using data from a Northern Mountains Baseline Survey in 2010, Tran (2016) show that crop income decreases income inequality (measured by the Gini index), but off-farm income sources (wage and non-farm self-employment income) increase income inequality in the Northern Mountain region of Viet Nam. Using VHLSSs 2004–16, Nguyen et al. (2017), Nguyen et al. (2020),

MDRI and Oxfam (2020), and Dang et al. (2022) show that inequality in wages and non-farm income is the main source of income inequality.

Another method to examine the source of income and expenditure inequality is to use regressions in which inequality is used as the dependent variables. Bui et al. (2014) find a negative effect of natural disasters on expenditure using VHLSS 2008 and the regression method. Natural disasters are found to increase expenditure poverty and inequality. Phan and Coxhead (2010) and Nguyen et al. (2011) show that migration can help decrease inequality, possibly through remittance channels. Phan (2021) finds a positive association between corruption and inequality, suggesting better corruption control might improve equality.

Several studies examine the impacts of economic policies and programs on inequality. Nguyen (2008) finds that micro-credit can increase expenditure for the poor and reduce the poverty rate, suggesting a reducing effect on inequality. Nguyen and van den Berg (2014) also show that informal credit reduces expenditure poverty and inequality. Recently, Li et al. (2023) demonstrate that agricultural land reform in Viet Nam helps middle-income households increase their income, thereby reducing overall income inequality. Hung et al. (2020) find a negative association between government quality and income inequality. Their regression results indicate that higher government quality can increase economic growth and reduce inequality. Le et al. (2022) use the regression method and provincial-level data from 2002–16, finding that commercial credit tends to increase income inequality, while policy credit reduces income inequality. However, other studies do not find a significant effect of public policies on inequality. Van den Berg and Nguyen (2011) find that, although public and private transfers can reduce poverty, they are not successful in reducing inequality, as these transfers are more likely to reach the non-poor than the poor. Phan et al. (2017) find that national targeted programs can increase income inequality, possibly because these programs tend to benefit the non-poor more proportionally than the poor.

## 3.4 Impacts of inequality

Higher inequality can have negative effects on socioeconomic outcomes. Using a decomposition method, Nguyen and Pham (2018) find that the decrease in expenditure inequality during the 2004–08 period contributed to poverty reduction. A positive correlation between inequality and poverty, and a negative correlation between per capita expenditure and inequality at the provincial and district levels, are found in several studies, including Minot et al. (2006), Nguyen et al. (2010), and Lanjouw et al. (2017). These studies use district-level and provincial-level data on per capita expenditure, the expenditure poverty rate, and expenditure inequality (Gini index), which are estimated from small area estimation methods. Recently, using provincial-level data from the 2002–20 period, Dang et al. (2023) find that provinces with higher expenditure inequality tend to have higher expenditure growth and lower expenditure poverty. Nguyen et al. (2024) find an inverted U-shaped relationship between per capita gross domestic product (GDP) and income inequality using annual provincial-level data from the 2004–21 period.

Regarding non-economic outcomes, Tran et al. (2018) investigate the impact of expenditure inequality on the quality of life, specifically life satisfaction or happiness, among the elderly in rural Viet Nam using a 2011 survey of older people. The study finds that individuals residing in communes with high inequality are more likely to report lower levels of happiness. This effect tends to be larger for the poor and farmers compared to the non-poor and non-farmers.

# 4    Analysis of inequality in Viet Nam

Extending from previous research, in this section we use more recent household datasets to offer new analysis of inequality trends, including consideration of wealth inequality as well as expenditure and consumption. In addition to the relative inequality measures, we present estimates of the absolute Gini coefficient.

## 4.1    Inequality trend

In this section, we provide analysis of monetary inequality in Viet Nam using recent household survey data. The data are from VHLSSs from 2010–22. VHLSSs are conducted every two years by the General Statistics Office of Viet Nam (GSO) with technical support from the World Bank in Viet Nam since 2002.[2] The sample size of each VHLSS is around 9,300 households, representative of the six regions in Viet Nam. The VHLSS contains detailed data on households and individuals. Household-level data include information on durables, assets, production, income, and expenditures, while individual-level data consist of information on demographics, education, employment, and healthcare.

There are two issues in measuring aggregate inequality: selecting a welfare or living standard indicator and selecting an inequality measure. Consumption expenditure and income are often used as aggregate welfare indicators in measuring inequality in Viet Nam. Both consumption expenditure and income data can be underreported (e.g., Moore et al. 2000; Hurst and Pugsley 2014). In this study, we use consumption expenditure, which is computed by the World Bank and GSO. In addition to per capita consumption expenditure and income, we use three additional welfare indicators: per capita electricity consumption, per capita current value of household durables (the list of durables is presented in Appendix Table A.1), and per capita housing values. Electricity consumption is strongly correlated with household expenditure and income and is less likely to be associated with measurement errors than total consumption and income. Compared with expenditure and income, durable and housing values are more correlated with household wealth (household net worth). Per capita values of the five indicators during the 2012–22 period are presented in Appendix Table A.2. Regarding inequality measures, we use common measures, including the relative Gini coefficient, Theil L and Theil T indexes, and the ratio of the 90th/10th percentiles of the welfare indicator (see Appendix 1 for a presentation of the inequality measures).

Figure 5 compares inequality of the five welfare indicators in 2022 using the Lorenz curves. It shows that, among these indicators, inequality in durable value is the highest, followed by inequality in housing value, while inequality in per capita expenditure is the lowest. In 2022, the Gini coefficient was 0.60 for durable value, 0.56 for housing value, 0.45 for electricity expenditure, 0.38 for income, and 0.35 for expenditure. Higher inequality in housing and durable values suggests that inequality in wealth is remarkably higher than inequality in consumption expenditure and income.

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[2] Since 2015, the GSO has conducted VHLSSs in odd-numbered years. However, these VHLSSs contain only information on the basic demographics and income of households.

Figure 5: Lorenz curves of different welfare indicators in 2022
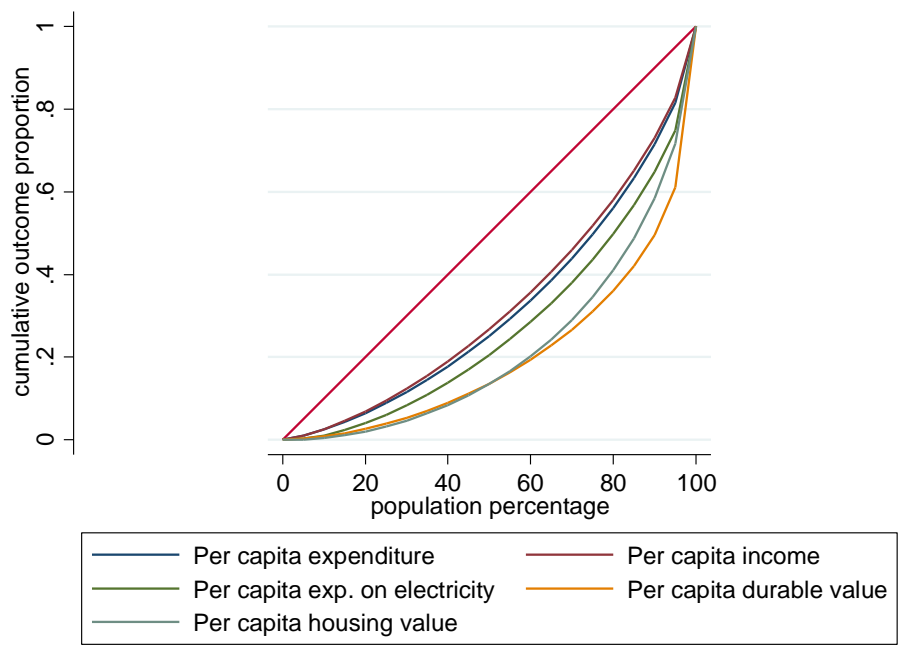


Source: authors' estimation using data from the 2022 VHLSS.

Figure 6 presents the Gini coefficients of the five welfare indicators during the 2010–22 period. The Gini coefficients for income and housing value slightly decreased over time, while the Gini coefficients for the other indicators remained quite stable. Other measures of inequality including the Theil index and the ratio of the 90th/10th distribution percentiles are presented in Appendix Table A.3.

Figure 6: The Gini coefficients of different welfare indicators
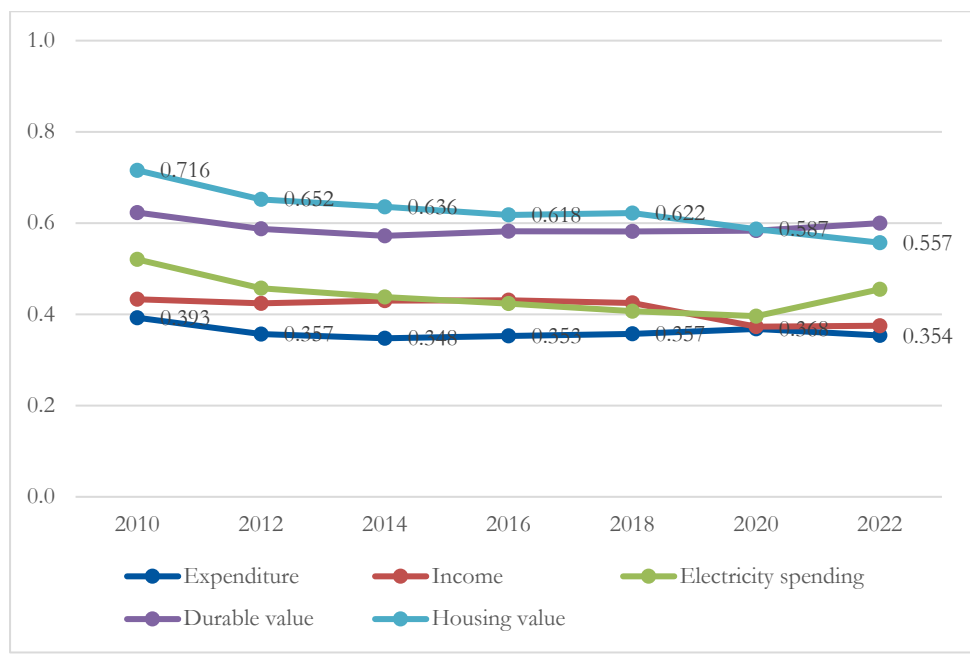


Source: authors' estimation using data from VHLSSs 2010–22.

Figure 7 presents the ratio of the 90th to 10th percentile of the distribution of different welfare indicators. In 2022, the 90th/10th ratio was 21 for housing value, 13.1 for durable value, 8.3 for electricity expenditure, 4.8 for income, and 4.7 for expenditure. The 90th/10th ratios of the distribution percentiles for all indicators decreased over time. The 90th/10th ratio for housing values decreased from 45 in 2010 to 21 in 2022, possibly because low-price lands have experienced a higher rate of price increase compared to high-price lands.

Figure 7: The ratio of the 90th to 10th percentile of welfare distribution
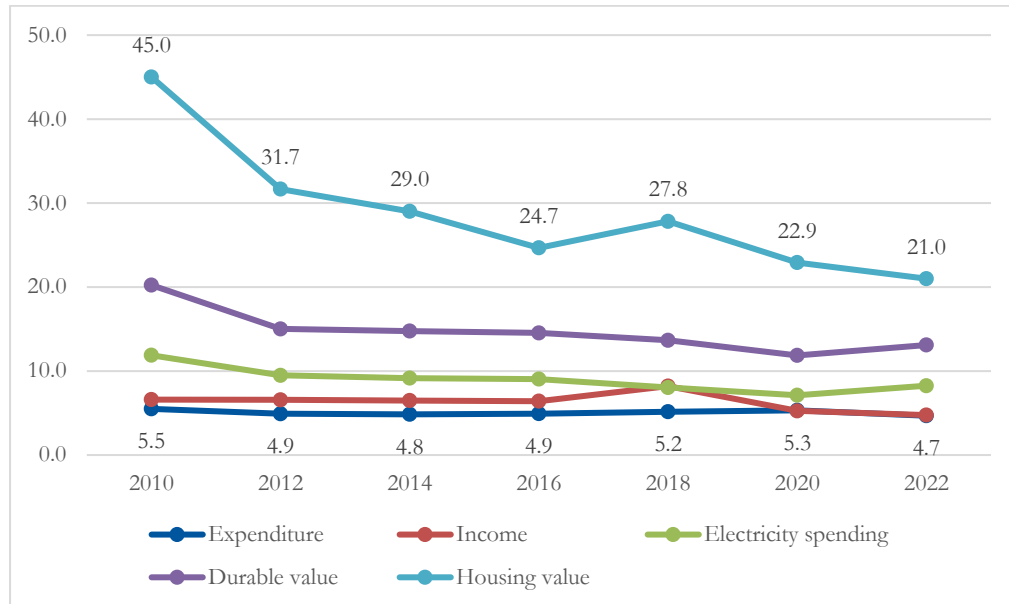
Appendix Tables A.4 and A.5 present the income inequality within urban and rural areas and within regions, respectively. Consistent with previous studies such as MDRI and Oxfam (2020) and GSO (2021), inequality tends to be higher in the poorest regions, including the Northern Midlands and Mountain Areas and the Central Highlands. Appendix Table A.6 presents the Gini coefficient of income inequality for provinces. The estimates of the provincial-level Gini coefficients are obtained from the Statistical Year Book of the GSO.

The inequality indexes above provide estimates of inequality in the distribution of a welfare indicator relative to its mean. Stable relative inequality indicates that both the poor and the rich experience similar growth in welfare indicators. However, the absolute gap in welfare indicators between these groups can still widen over time. To examine this issue, we estimate the absolute Gini coefficients for different welfare indicators, which measure the absolute gap among people (see Appendix 1 for the formula). It should be noted that absolute inequality measures depend on the scale and measurement unit of the welfare indicator. In our study, the five welfare indicators are measured in millions of Vietnamese dongs and adjusted to January 2022 prices using the monthly overall consumer price index (CPI). Figure 8 shows the increasing absolute Gini coefficient over time. Specifically, the absolute Gini coefficient of per capita income increased from 13.4 in 2010 to 22.2 in 2022. During this period, the absolute Gini coefficient of per capita consumption increased from 12.7 to 17.3. The absolute Gini coefficient of per capita durable value (Figure 8) and per capita electricity spending and housing value (Figure 9) also increased over time. This finding confirms the increase in the absolute gap in welfare among people.

Figure 8: Absolute Gini coefficients of expenditure, income, and durable value
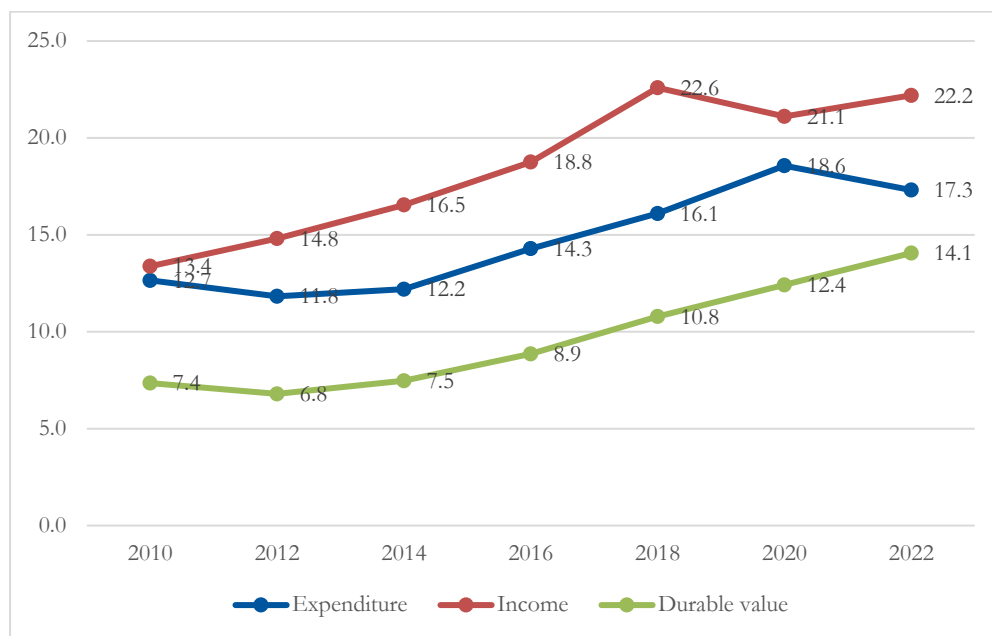


Note: per capita expenditure, per capita income, and per capita durable value are measured in millions of VND and adjusted to the January 2022 price using the monthly overall CPI.

Source: authors' estimation using data from VHLSSs 2010–22.

Figure 9: Absolute Gini coefficients of electricity spending and housing value

Panel A. Absolute Gini of electricity spending          Panel B. Absolute Gini of housing value
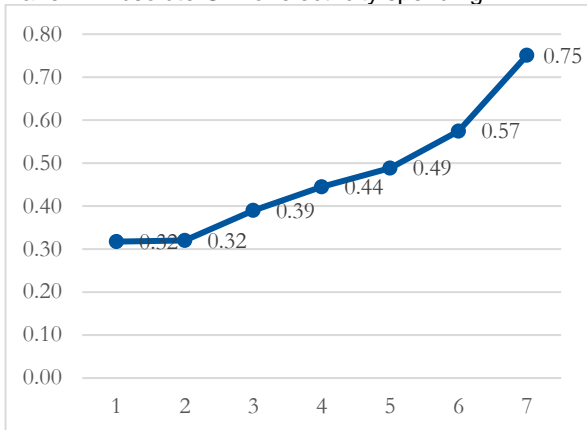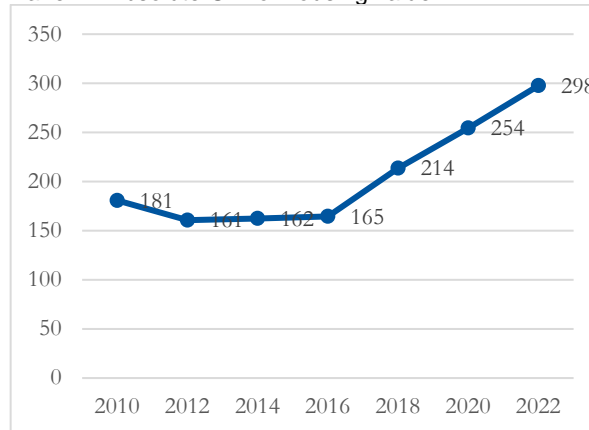


Source: authors' estimation using data from VHLSSs 2010–22.

Inequality can also be examined by the gap between different population subgroups. Figure 10 presents per capita income of urban and rural areas over time. It shows that the ratio of per capita income of urban to rural areas has decreased over time. The absolute gap in per capita income between urban and rural areas also slightly decreased between 2010 and 2012. Real per capita income of urban areas decreased between 2018 and 2022, possibly due to the negative impact of the COVID-19 pandemic.

Figure 11 presents per capita income by region. The ratio of per capita income of the Southeast region (the richest region) to that of the Northern Midlands and Mountain Areas region (the poorest region) decreased over the 2010–22 period. However, the absolute gap in per capita

income between these two regions slightly increased during this period, from VND29.8 million in 2010 to VND35.9 million in 2022.

Figure 10: Real per capita income of urban and rural areas
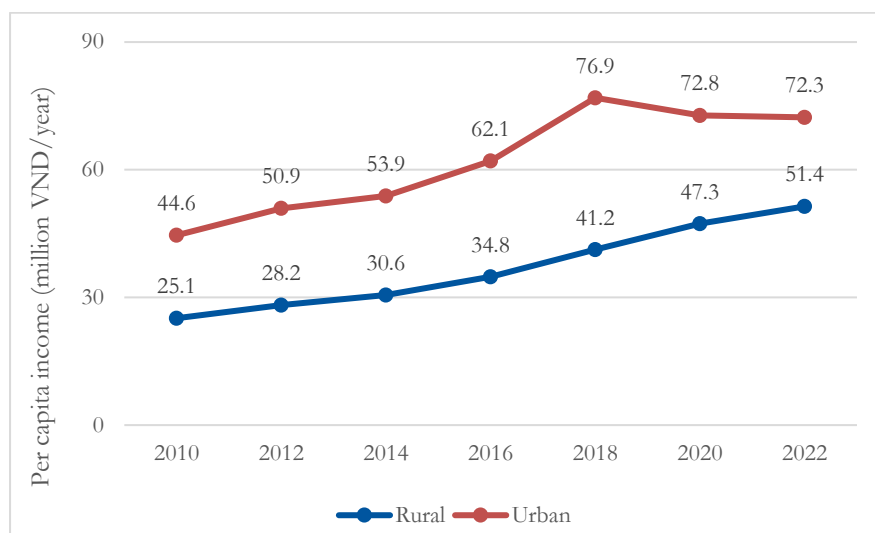


Note: the indicators are adjusted to the January 2022 price using the monthly overall CPI.

Source: authors' estimation using data from VHLSSs 2010–22.

Figure 11: Real per capita income of regions
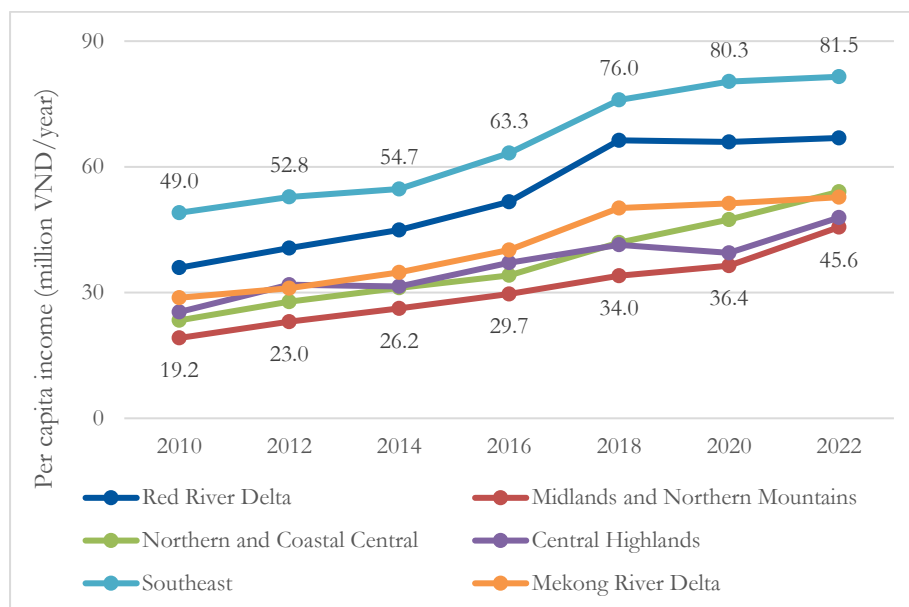


Note: the indicators are adjusted to the January 2022 price using the monthly overall CPI.

Source: authors' estimation using data from VHLSSs 2010–22.

There are 54 ethnic groups in Viet Nam. The Kinh majority accounts for 85% of the total population. The Hoa (Chinese) group has similar living standards to the Kinh majority. Compared to other ethnic groups, the Kinh and Hoa have higher income and living standards. Figure 12 shows that ethnic minorities experienced a higher growth rate of per capita income than the Kinh and Hoa groups during the 2010–22 period. This means that the relative gap in income between the Kinh/Hoa and other ethnic groups decreased over time. However, the absolute gap in per capita income widened from VND20.0 million in 2010 to VND31.4 million in 2022.

Figure 12: Per capita income of Kinh/Hoa and ethnic minorities
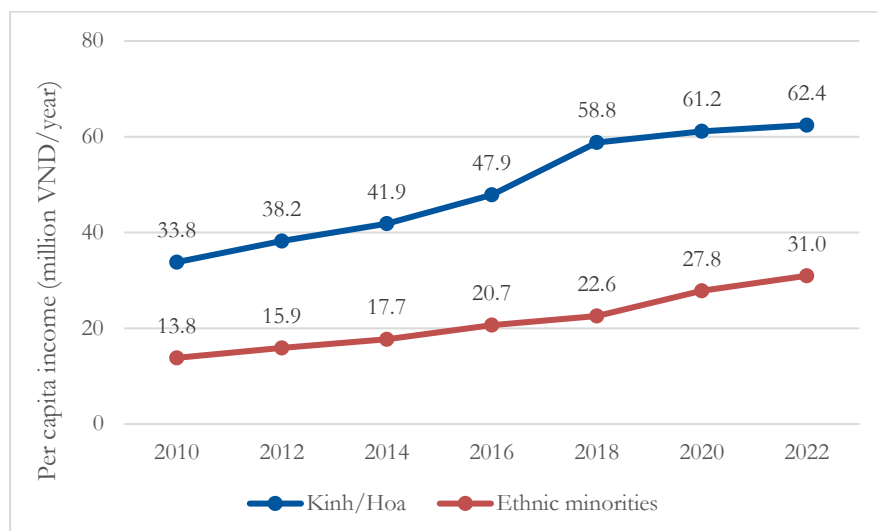


Note: the indicators are adjusted to the January 2022 price using the monthly overall CPI.

Source: authors' estimation using data from VHLSSs 2010–22.

## 4.2   Decomposition analysis

To understand the causes of inequality, we decompose aggregate inequality into inequality within and between population subgroups (see Appendix 1 for a presentation of the method). We focus on income inequality, as we can decompose income inequality by income sources. We first decompose income inequality by population subgroups and then by income sources. Theil indexes are used as the inequality measures since these indexes allow for inequality decomposition by population subgroups. The decomposition results of the Theil L index are reported in Tables 10 and 11. The results from the decomposition of the Theil T index are very similar. Figure 13 presents the decomposition of income inequality by urban/rural areas and by ethnic groups in 2006, 2016, and 2022. The total inequality is mainly explained by within-group inequality. Specifically, within-urban and within-rural inequality accounted for 88.2% of total inequality in 2010, and the contribution of this component increased to 93.4% in 2016. Urban-rural inequality accounted for a small proportion of the aggregate inequality. A similar result is found for the inequality decomposition by Kinh/Hoa and ethnic minorities. Inequality within ethnic groups is the main contributor to total income inequality. In 2022, inequality within the Kinh/Hoa group and within ethnic minorities accounted for 91% of the total inequality, while inequality between the Kinh/Hoa group and ethnic minorities accounted for 9%.

Figure 13: Decomposition of inequality in per capita income by urban/rural areas and ethnic groups (in per cent)

Panel A. Decomposition of inequality by urban and rural areas
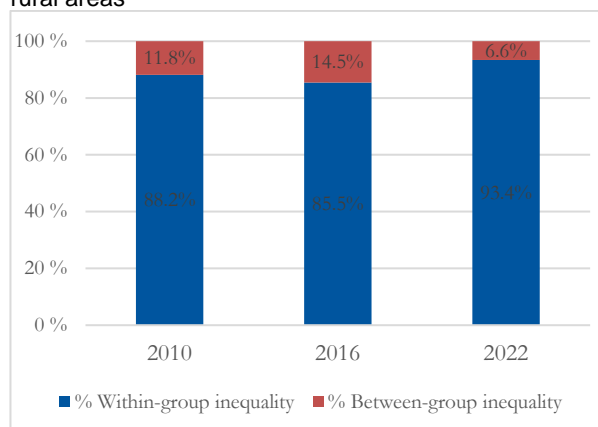
Panel B. Decomposition of inequality by Kinh/Hoa and ethnic minorities
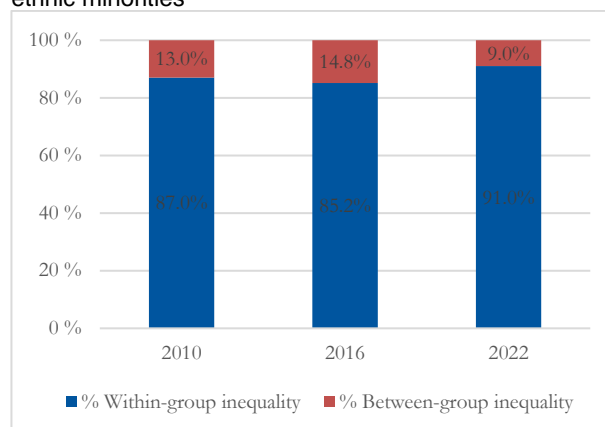


Note: this figure reports the decomposition of the Theil L index of per capita income into within-group and between-group inequalities.

Source: authors' estimation using data from VHLSSs 2010–22.

Figure 14 presents the decomposition of income inequality by regions and provinces. Similar to the decomposition in Figure 13, the proportion of within-group inequality accounts for most of the total inequality, and this proportion decreased over time. In 2022, within-region inequality and within-province inequality accounted for 93.4% and 91.0%, respectively.

Figure 14: Decomposition of the Theil L index of income inequality by regions and provinces (in per cent)

Panel A. Decomposition of inequality by regions
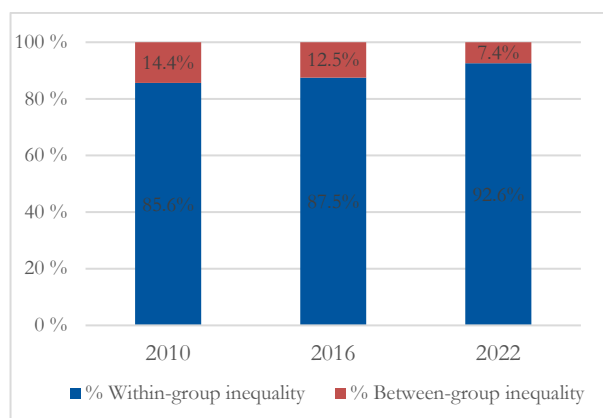
Panel B. Decomposition of inequality by provinces
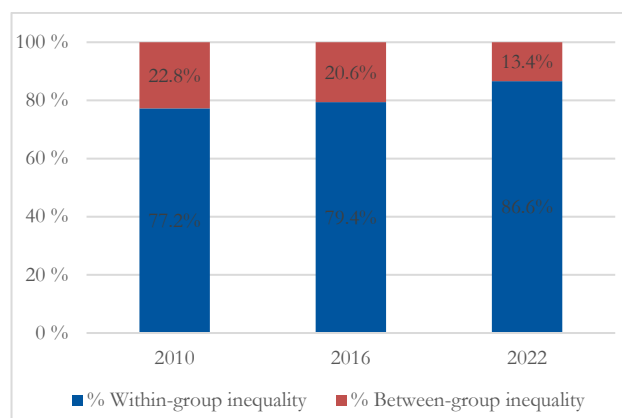


Note: this figure reports the decomposition of the Theil L index of per capita income into within-group and between-group inequalities.

Source: authors' estimation using data from VHLSSs 2010–22.

To decompose total inequality into inequality by income sources, we classify household income into different groups, including crop income, livestock income, other agricultural income, wage earnings, non-farm business income, and other non-farm income sources such as private and public transfers. Figure 15 presents the contribution of different income sources to the total income inequality measured by the Gini coefficient of per capita income (see Appendix 1 for the decomposition method). Consistent with previous studies (e.g., Tran 2016; Nguyen et al. 2017; Nguyen et al. 2020; MDRI and Oxfam 2020; Dang et al. 2022), we find that inequality in non-farm business income and other non-farm income is the main source of total inequality. The

contribution of wages and non-farm income to the total inequality increased over the 2010–22 period. In 2022, inequality in wage earnings and other non-farm income accounted for 48.8% and 34.9% of total inequality, respectively. The contribution of farm income sources is minimal to the total inequality. This indicates that the share of wage earnings and non-farm income in the total income, as well as the variation in these income sources, has tended to increase over time.

Figure 15: Contribution of income sources to the total income inequality (in per cent)
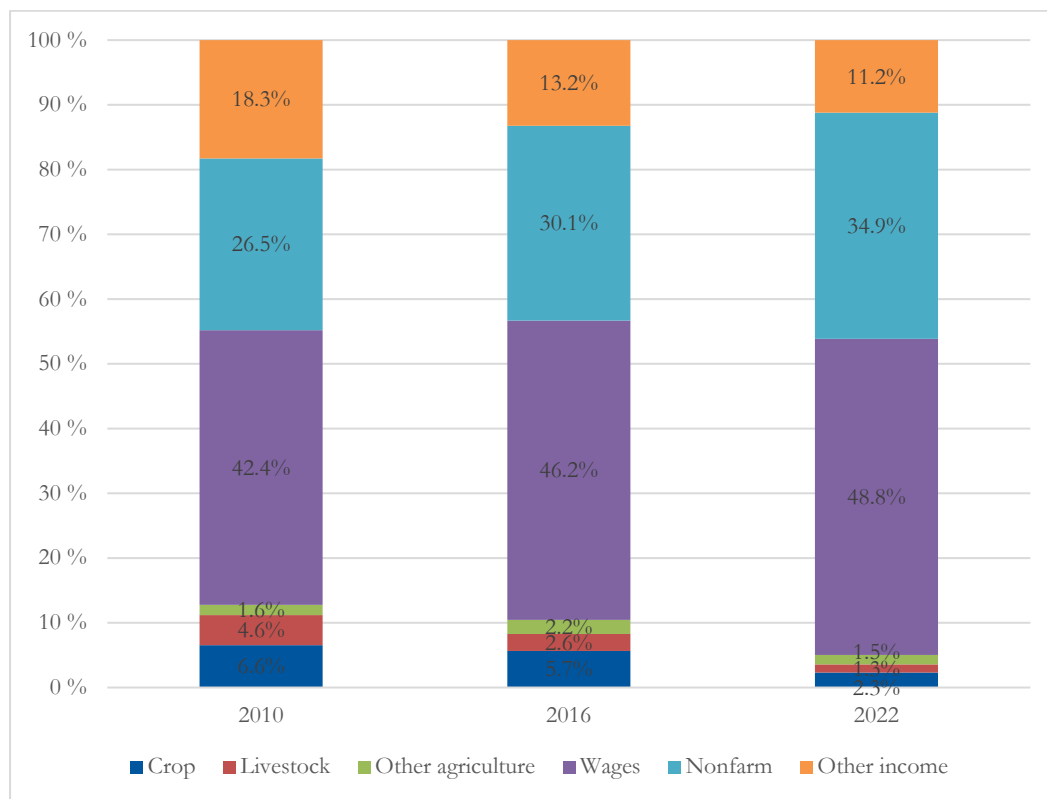


Note: this figure reports the decomposition of inequality measured by the Gini coefficient of per capita income into inequality by income sources.

Source: authors' estimation using data from VHLSSs 2010–22.

## 5    Conclusions

Viet Nam has been very successful in economic growth and has experienced a fast growth rate of the number of super-rich individuals (those with US$30 million and more) (Manh Ha 2024). This raises a concern about rising inequality. This study reviews studies of inequality in Viet Nam and provides estimates of inequality using recent VHLSSs. Inequality has been studied extensively in Viet Nam using VLSS and VHLSS data. Inequality topics have also been mentioned in documents of the National Congresses of the Communist Party as well as legal documents from National Assembly and the central government to the provincial government.

Using VHLSS data, we find that relative inequality, regardless of welfare indicators and measures, did not increase during the 2010–22 period. Inequality in durable and housing values is remarkably higher than inequality in consumption expenditure and income. Inequality in Viet Nam is mainly driven by inequality within population subgroups such as regions, provinces, and ethnic groups. Relative gaps in income between population subgroups tend to decrease over time. However, the absolute gap in the welfare indicators among people, as measured by the absolute Gini coefficient,

has been increasing. This finding indicates the widening absolute gap in living standards between the poor and the rich. The absolute income gap between the Kinh/Hoa and ethnic minorities remains large and has slightly increased over time. To reduce inequality, there should be policies to increase wages and non-farm employment opportunities for low-income people. The government should implement policies that promote the private sector, attracting labour from rural and ethnic minority areas.

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**Appendix 1: Inequality measurement**

In this study, we measure inequality using the Gini coefficient, which is estimated as follows (Deaton 1997):

$$G = \frac{1}{2n^2\bar{Y}}\sum_{i=1}^{n}\sum_{j=1}^{n}|Y_i - Y_j| \tag{A.1}$$

where $Y_i$ and $Y_j$ are per capita income (or expenditure) of individual $i$ and $j$. The average income is denoted by $\bar{Y}$, and n is the sample size. The Gini coefficient ranges from 0 to 1, with a higher value representing greater income inequality.

The equation (A.1) presents a relative inequality measure, which is equal to the absolute inequality divided by the income mean. The absolute Gini coefficients measure the absolute gap in income between people. It is equal to half the mean difference as follows:

$$G = \frac{1}{2n^2}\sum_{i=1}^{n}\sum_{j=1}^{n}|Y_i - Y_j| \tag{A.2}$$

In addition to the Gini coefficient, we use Theil L and Theil T indexes. These indexes allow for analysis of decomposition by within- and between-group inequality. The Theil L and Theil T indexes are calculated using the following formulas:

$$Theil_L = \frac{1}{n}\sum_{i=1}^{n}ln\left(\frac{\bar{Y}}{Y_i}\right) \tag{A.3}$$

$$Theil_T = \frac{1}{n}\sum_{i=1}^{n}\frac{Y_i}{\bar{Y}}ln\left(\frac{Y_i}{\bar{Y}}\right) \tag{A.4}$$

The Theil L index ranges from 0 to infinity, while the Theil T index ranges from 0 to ln(N). A higher value of the indexes indicates more inequality.

The inequality that is measured by Theil indexes can be decomposed into inequality within groups (e.g., urban and rural areas) and inequality between groups:

$$Theil_L = \sum_{i=1}^{m}s_k T_k + \sum_{i=1}^{m}s_i ln\left(\frac{\bar{Y}}{\bar{Y_k}}\right) \quad with \ s_i = \frac{n_k}{n} \tag{A.5}$$

$$Theil_T = \sum_{k=1}^{m}s_k T_k + \sum_{k=1}^{m}s_k ln\left(\frac{\bar{Y_k}}{\bar{Y}}\right) \quad with \ s_k = \frac{n_k}{n}\frac{\bar{Y_k}}{\bar{Y}} \tag{A.6}$$

$T_k$ is a Theil index of within inequality of group $k$, $n_k$ is the population size, and $\bar{Y_k}$ is the mean income of group $k$.

The Gini coefficient is not decomposed into within- and between-inequality components like the Theil index. However, it can be decomposed into inequality components of income sources as follows (Stark et al. 1986; Lopez-Feldman 2006):

$$Gini = \sum_{g=1}^{G}s_g G_g R_g \tag{A.7}$$

where sg is the share of income from source g in total income, Gg is the Gini index of income from source g, and Rg is the Gini correlation of income from source g with the distribution of total income. This is computed as follows: $R_g = Cov[y_g, F(y)]/Cov[y_g, F(y_g)]$, where F(y) and F(yg) are the cumulative distributions of total income and income from source g.

## Appendix 2: Additional tables

Table A.1: List of durables and appliances

| Code | Names of durables |
|------|-------------------|
| 1 | Automobile(s) |
| 2 | Motorbike(s) |
| 3 | Bicycle(s) |
| 4 | Ship(s), boat(s), junk(s), outer part with a motor |
| 5 | Ship(s), boat(s), junk(s), outer part without a motor |
| 6 | Other means of travel |
| 7 | Pumping machine(s) |
| 8 | Electricity generator(s) |
| 9 | Printer(s) |
| 10 | Fax machine(s) |
| 11 | Landline telephone(s) |
| 12 | Mobile telephone(s) |
| 13 | Sewing machine(s) |
| 14 | Video player(s), DVD player(s), digital player(s), satellite antenna |
| 15 | Colour TV(s) |
| 16 | Black and white TV(s) |
| 17 | Music rack of various kinds |
| 18 | Radio/radio-cassette player(s) |
| 19 | Disk player(s) |
| 20 | Computer(s) |
| 21 | Camera(s), video recorder(s) |
| 22 | Refrigerator(s) |
| 23 | Air conditioner(s) |
| 24 | Washing machine(s), (clothes-) drying machine(s) |
| 25 | Electric fan(s) |
| 26 | (Bath) water heater(s) |
| 27 | Gas cooker(s), magnetic cooker(s) |
| 28 | Electric cooker(s), electric rice cooker(s), pressure cooker(s) |
| 29 | Trolleys of various kinds |
| 30 | Cupboard(s), cabinet(s), wardrobe(s) (of various kinds) |
| 31 | Bed(s) |
| 32 | Desk(s), chair(s), long bench(es), dressing table(s) |
| 33 | Vacuum cleaner(s), dehumidifier(s), water filter(s) |
| 34 | Microwave oven(s), baking oven(s) |
| 35 | Juice extractor(s), citrus juicer(s) |
| 36 | Piano(s), keyboard(s) |
| 37 | Others (specify) |

Source: authors' compilation based on data from questionnaires from Vietnam Household Living Standard Surveys.

Table A.2: Per capita value of welfare indicators

| Years | Per capita expenditure (million VND) | Per capita income (million VND) | Per capita expenditure on electricity (million VND) | Per capita value of durables (million VND) | Housing value per capita (million VND) |
|---|---|---|---|---|---|
| 2010 | 32.23 | 30.90 | 0.61 | 11.80 | 252.49 |
| 2012 | 33.16 | 34.93 | 0.70 | 11.57 | 246.46 |
| 2014 | 35.09 | 38.47 | 0.89 | 13.06 | 255.58 |
| 2016 | 40.52 | 43.52 | 1.05 | 15.22 | 266.27 |
| 2018 | 45.08 | 53.15 | 1.20 | 18.54 | 343.44 |
| 2020 | 50.44 | 56.60 | 1.45 | 21.28 | 433.61 |
| 2022 | 48.93 | 59.19 | 1.65 | 23.44 | 534.26 |

Note: the indicators are adjusted to the January 2022 price using the monthly overall CPI.

Source: authors' estimation using data from VHLSSs 2010–22.

Table A.3: Inequality measures over time

| Year | Gini | Thiel L | Thiel T | Ratio 90th/10th |
|------|------|---------|---------|-----------------|
| *Panel A. Inequality measures of per capita expenditure* | | | | |
| 2010 | 0.393 | 0.259 | 0.294 | 5.5 |
| 2012 | 0.357 | 0.213 | 0.230 | 4.9 |
| 2014 | 0.348 | 0.205 | 0.216 | 4.8 |
| 2016 | 0.353 | 0.212 | 0.223 | 4.9 |
| 2018 | 0.357 | 0.219 | 0.226 | 5.2 |
| 2020 | 0.368 | 0.231 | 0.246 | 5.3 |
| 2022 | 0.354 | 0.214 | 0.249 | 4.7 |
| *Panel B. Inequality measures of per capita income* | | | | |
| 2010 | 0.433 | 0.31 | 0.39 | 6.6 |
| 2012 | 0.424 | 0.28 | 0.31 | 6.6 |
| 2014 | 0.430 | 0.26 | 0.27 | 6.5 |
| 2016 | 0.431 | 0.26 | 0.27 | 6.4 |
| 2018 | 0.425 | 0.31 | 0.30 | 8.2 |
| 2020 | 0.373 | 0.22 | 0.22 | 5.3 |
| 2022 | 0.375 | 0.21 | 0.23 | 4.8 |
| *Panel C. Inequality measures of per capita electricity expenditure* | | | | |
| 2010 | 0.520 | 0.492 | 0.504 | 11.9 |
| 2012 | 0.457 | 0.383 | 0.366 | 9.5 |
| 2014 | 0.438 | 0.356 | 0.334 | 9.2 |
| 2016 | 0.424 | 0.340 | 0.308 | 9.0 |
| 2018 | 0.407 | 0.313 | 0.287 | 8.0 |
| 2020 | 0.396 | 0.298 | 0.269 | 7.1 |
| 2022 | 0.455 | 0.435 | 0.794 | 8.3 |
| *Panel D. Inequality measures of per capita durable value* | | | | |
| 2010 | 0.623 | 0.799 | 0.935 | 20.2 |
| 2012 | 0.587 | 0.688 | 0.814 | 15.0 |
| 2014 | 0.572 | 0.647 | 0.732 | 14.8 |
| 2016 | 0.582 | 0.669 | 0.756 | 14.5 |
| 2018 | 0.582 | 0.668 | 0.773 | 13.7 |
| 2020 | 0.584 | 0.647 | 0.750 | 11.9 |
| 2022 | 0.600 | 0.686 | 0.800 | 13.1 |
| *Panel E. Inequality measures of per capita housing value* | | | | |
| 2010 | 0.716 | 1.115 | 1.113 | 45.0 |
| 2012 | 0.652 | 0.880 | 0.840 | 31.7 |
| 2014 | 0.636 | 0.823 | 0.823 | 29.0 |
| 2016 | 0.618 | 0.768 | 0.780 | 24.7 |
| 2018 | 0.622 | 0.798 | 0.759 | 27.8 |
| 2020 | 0.587 | 0.709 | 0.670 | 22.9 |
| 2022 | 0.557 | 0.776 | 0.589 | 21.0 |

Source: authors' estimation using data from VHLSSs 2010–22.

Table A.4: Gini coefficients of per capita expenditure and income by urban/rural area and regions

| | Gini index of per capita expenditure | | | Gini index of per capita income | | |
|---|---|---|---|---|---|---|
| | Year 2010 | Year 2016 | Year 2022 | Year 2010 | Year 2016 | Year 2022 |
| **Urban/rural** | | | | | | |
| Urban | 0.386 | 0.329 | 0.341 | 0.402 | 0.391 | 0.354 |
| Rural | 0.332 | 0.318 | 0.333 | 0.395 | 0.408 | 0.364 |
| **Regions** | | | | | | |
| Red River Delta | 0.401 | 0.328 | 0.342 | 0.408 | 0.401 | 0.333 |
| Northern Midlands and Mountain Areas | 0.371 | 0.364 | 0.376 | 0.406 | 0.433 | 0.408 |
| Northern and Coastal Central | 0.340 | 0.339 | 0.324 | 0.385 | 0.393 | 0.351 |
| Central Highlands | 0.367 | 0.397 | 0.396 | 0.408 | 0.439 | 0.399 |
| Southeast | 0.398 | 0.309 | 0.347 | 0.414 | 0.387 | 0.346 |
| Mekong River Delta | 0.317 | 0.306 | 0.329 | 0.398 | 0.405 | 0.352 |

Source: authors' estimation using data from VHLSSs 2010–22.

Table A.5: Gini coefficients of per capita electricity expenditure, durable, and housing values by urban/rural area and regions

| | Gini index of per capita electricity expenditure | | | Gini index of per capita durable value | | | Gini index of per capita housing value | | |
|---|---|---|---|---|---|---|---|---|---|
| | Year 2010 | Year 2016 | Year 2022 | Year 2010 | Year 2016 | Year 2022 | Year 2010 | Year 2016 | Year 2022 |
| **Urban/rural** | | | | | | | | | |
| Urban | 0.453 | 0.362 | 0.375 | 0.617 | 0.580 | 0.630 | 0.625 | 0.546 | 0.532 |
| Rural | 0.446 | 0.396 | 0.491 | 0.561 | 0.544 | 0.547 | 0.650 | 0.540 | 0.526 |
| **Regions** | | | | | | | | | |
| Red River Delta | 0.484 | 0.355 | 0.479 | 0.614 | 0.563 | 0.574 | 0.664 | 0.559 | 0.493 |
| Northern Midlands and Mountain Areas | 0.505 | 0.465 | 0.471 | 0.576 | 0.619 | 0.664 | 0.637 | 0.599 | 0.592 |
| Northern and Coastal Central | 0.446 | 0.394 | 0.364 | 0.591 | 0.587 | 0.617 | 0.627 | 0.558 | 0.520 |
| Central Highlands | 0.432 | 0.410 | 0.395 | 0.577 | 0.655 | 0.675 | 0.666 | 0.606 | 0.600 |
| Southeast | 0.461 | 0.359 | 0.405 | 0.647 | 0.546 | 0.607 | 0.644 | 0.553 | 0.545 |
| Mekong River Delta | 0.480 | 0.390 | 0.404 | 0.567 | 0.533 | 0.540 | 0.595 | 0.560 | 0.574 |

Source: authors' estimation using data from VHLSSs 2010–22.

Table A.6: Income Gini coefficients of provinces

| Regions and provinces | Year 2018 | Year 2019 | Year 2020 | Year 2021 | Year 2022 |
|---|---|---|---|---|---|
| All of the country | 0.425 | 0.423 | 0.373 | 0.374 | 0.375 |
| *Red River Delta* | *0.390* | *0.387* | *0.317* | *0.327* | *0.333* |
| Hà Nội | 0.387 | 0.305 | 0.341 | 0.359 | 0.346 |
| Vĩnh Phúc | 0.351 | 0.291 | 0.286 | 0.307 | 0.339 |
| Bắc Ninh | 0.365 | 0.295 | 0.288 | 0.310 | 0.313 |
| Quảng Ninh | 0.397 | 0.274 | 0.309 | 0.277 | 0.366 |
| Hải Dương | 0.336 | 0.277 | 0.271 | 0.322 | 0.297 |
| Hải Phòng | 0.372 | 0.277 | 0.268 | 0.286 | 0.320 |
| Hưng Yên | 0.339 | 0.287 | 0.282 | 0.285 | 0.301 |
| Thái Bình | 0.323 | 0.286 | 0.256 | 0.221 | 0.236 |
| Hà Nam | 0.342 | 0.307 | 0.329 | 0.319 | 0.324 |
| Nam Định | 0.340 | 0.329 | 0.329 | 0.207 | 0.287 |
| Ninh Bình | 0.393 | 0.284 | 0.285 | 0.313 | 0.318 |
| *Northern Midlands and Mountain* | *0.444* | *0.438* | *0.420* | *0.428* | *0.408* |
| Hà Giang | 0.440 | 0.441 | 0.428 | 0.465 | 0.467 |
| Cao Bằng | 0.487 | 0.488 | 0.501 | 0.525 | 0.493 |
| Bắc Kạn | 0.432 | 0.460 | 0.425 | 0.453 | 0.458 |
| Tuyên Quang | 0.367 | 0.320 | 0.371 | 0.348 | 0.356 |
| Lào Cai | 0.436 | 0.416 | 0.449 | 0.446 | 0.440 |
| Yên Bái | 0.433 | 0.454 | 0.468 | 0.408 | 0.390 |
| Thái Nguyên | 0.395 | 0.294 | 0.330 | 0.349 | 0.352 |
| Lạng Sơn | 0.380 | 0.369 | 0.382 | 0.401 | 0.364 |
| Bắc Giang | 0.358 | 0.313 | 0.314 | 0.310 | 0.304 |
| Phú Thọ | 0.372 | 0.311 | 0.331 | 0.366 | 0.337 |
| Điện Biên | 0.470 | 0.457 | 0.452 | 0.501 | 0.426 |
| Lai Châu | 0.432 | 0.433 | 0.455 | 0.496 | 0.432 |
| Sơn La | 0.440 | 0.451 | 0.469 | 0.474 | 0.420 |
| Hòa Bình | 0.385 | 0.355 | 0.392 | 0.360 | 0.345 |
| *Northern and Coastal Central* | *0.383* | *0.389* | *0.354* | *0.347* | *0.351* |
| Thanh Hóa | 0.370 | 0.331 | 0.317 | 0.258 | 0.305 |
| Nghệ An | 0.404 | 0.367 | 0.348 | 0.362 | 0.367 |
| Hà Tĩnh | 0.389 | 0.332 | 0.391 | 0.367 | 0.371 |
| Quảng Bình | 0.404 | 0.402 | 0.409 | 0.365 | 0.367 |
| Quảng Trị | 0.379 | 0.384 | 0.425 | 0.412 | 0.393 |
| Thừa Thiên-Huế | 0.360 | 0.296 | 0.320 | 0.372 | 0.346 |
| Đà Nẵng | 0.368 | 0.312 | 0.333 | 0.329 | 0.335 |
| Quảng Nam | 0.345 | 0.349 | 0.324 | 0.326 | 0.319 |
| Quảng Ngãi | 0.368 | 0.349 | 0.385 | 0.363 | 0.355 |
| Bình Định | 0.357 | 0.344 | 0.364 | 0.375 | 0.374 |
| Phú Yên | 0.372 | 0.379 | 0.372 | 0.409 | 0.399 |
| Khánh Hòa | 0.355 | 0.324 | 0.331 | 0.374 | 0.348 |
| Ninh Thuận | 0.417 | 0.334 | 0.379 | 0.383 | 0.371 |
| Bình Thuận | 0.315 | 0.236 | 0.259 | 0.203 | 0.252 |
| *Central Highlands* | *0.440* | *0.443* | *0.406* | *0.418* | *0.399* |
| Kon Tum | 0.438 | 0.428 | 0.372 | 0.336 | 0.346 |

| Regions and provinces | Year 2018 | Year 2019 | Year 2020 | Year 2021 | Year 2022 |
|---|---|---|---|---|---|
| Gia Lai | 0.446 | 0.465 | 0.426 | 0.455 | 0.411 |
| Đắk Lắk | 0.421 | 0.397 | 0.410 | 0.405 | 0.385 |
| Đắk Nông | 0.441 | 0.382 | 0.388 | 0.414 | 0.411 |
| Lâm Đồng | 0.417 | 0.353 | 0.354 | 0.378 | 0.356 |
| *Southeast* | *0.375* | *0.375* | *0.291* | *0.322* | *0.346* |
| Bình Phước | 0.384 | 0.318 | 0.357 | 0.321 | 0.349 |
| Tây Ninh | 0.370 | 0.294 | 0.330 | 0.326 | 0.339 |
| Bình Dương | 0.374 | 0.285 | 0.285 | 0.256 | 0.378 |
| Đồng Nai | 0.368 | 0.331 | 0.261 | 0.334 | 0.347 |
| Bà Rịa - Vũng Tàu | 0.439 | 0.399 | 0.387 | 0.388 | 0.370 |
| TP. Hồ Chí Minh | 0.340 | 0.257 | 0.254 | 0.300 | 0.309 |
| *Mekong River Delta* | *0.400* | *0.395* | *0.372* | *0.352* | *0.352* |
| Long An | 0.380 | 0.318 | 0.331 | 0.321 | 0.309 |
| Tiền Giang | 0.369 | 0.308 | 0.330 | 0.315 | 0.318 |
| Bến Tre | 0.406 | 0.367 | 0.389 | 0.375 | 0.353 |
| Trà Vinh | 0.413 | 0.352 | 0.417 | 0.432 | 0.451 |
| Vĩnh Long | 0.379 | 0.352 | 0.365 | 0.352 | 0.364 |
| Đồng Tháp | 0.401 | 0.292 | 0.249 | 0.281 | 0.298 |
| An Giang | 0.391 | 0.336 | 0.323 | 0.356 | 0.350 |
| Kiên Giang | 0.403 | 0.392 | 0.422 | 0.410 | 0.377 |
| Cần Thơ | 0.391 | 0.348 | 0.438 | 0.345 | 0.334 |
| Hậu Giang | 0.389 | 0.377 | 0.359 | 0.340 | 0.344 |
| Sóc Trăng | 0.426 | 0.327 | 0.343 | 0.280 | 0.308 |
| Bạc Liêu | 0.339 | 0.331 | 0.279 | 0.234 | 0.337 |
| Cà Mau | 0.384 | 0.355 | 0.397 | 0.397 | 0.367 |

Source: authors' compilation using data from the Statistical Year Book from GSO. Available at:
https://www.gso.gov.vn/.