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Urban-rural income inequality in the Mekong Delta, Vietnam

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Abstract

This research analyzes income inequality between urban and rural households in the Mekong Delta, Southern Vietnam. The paper applies the Oaxaca-Blinder decomposition method based on the Vietnam Household Living Standards Survey data sets in 2018 and 2020. The decomposition results show that the average income gap decreased from 25.5 percent in 2018 to 20 percent in 2020. The income gap is mainly attributed to the difference in the two sectors' human capital, physical capital and financial capital. The education of household members has a significant contribution to inequality. Higher education for urban residents increases the income gap, while higher return to higher education in rural areas reduces the income gap between the two regions. In addition, rural households owning more productive land helps narrow the income gap in terms of both characteristic and coefficient effects.

Keywords: income inequality, urban household, rural household, Oaxaca-Blinder decomposition, Mekong Delta.

JEL classification: D31, R23, O15.

1. Introduction

The "Doi Moi" policy, initiated in 1986, has significantly spurred economic growth and urbanization across Vietnam. However, this growth has been uneven across regions. Rural areas frequently encounter challenges such as lower educational attainment, limited infrastructure, and fewer economic opportunities compared to urban centers (Datta, 2023; Krishna, 2017). Consequently, rapid economic expansion has been accompanied by rising welfare disparities among population segments, with urban-rural inequality emerging as a primary driver of overall inequality (Le and Booth, 2014; Nguyen *et al*., 2007). Data from the Vietnam Household Living Standards Surveys (VHLSS) spanning 2002 to 2018 consistently indicate that urban per capita income is approximately twice that of rural areas. However, between 2019 and 2022, this income gap narrowed substantially to just over 1.5 times, largely due to the adverse effects of the COVID-19 pandemic (GSO, 2023, pp. 16-17).

Income inequality not only generates pronounced income disparities but also exacerbates social stratification, undermining national stability and sustainable development. Understanding the causes and consequences of income inequality between urban and rural areas is crucial for designing effective policies to reduce disparities and foster equitable growth. Several studies have investigated urban-rural inequality in Vietnam, including those by Bui and Imai (2019), Le and Booth (2014), and Nguyen *et al*. (2007). These researchers employed the Oaxaca-Blinder (OB) or Machado-Mata (MM) decomposition methods to analyze expenditure inequality in Vietnam. Based on VHLSS data up to 2012, they found that urban-rural inequality widened over time, attributable to both the characteristic effect - differences in household attributes between the two areas - and the coefficient effect (or structural effect) - differences in the marginal effects of these attributes on welfare. While Bui and Imai (2019) and Nguyen *et al*. (2007) attributed the welfare gap primarily to the coefficient effect, Le and Booth (2014) identified the characteristic effect as the dominant contributor. The household characteristics influencing inequality varied across these studies. Global empirical research also indicates that there is no universal pattern for urban-rural inequality, as it depends heavily on demographic factors, economic development stages, and institutional frameworks (Eastwood and Lipton, 2000).

This research analyzes income inequality between urban and rural households in the Mekong Delta using the Oaxaca-Blinder decomposition method, associated with VHLSS data from 2018 and 2020. The Mekong Delta's economy remains heavily reliant on agriculture, accounting for 34 percent of its gross regional domestic product (GRDP) (VCCI and Fulbright, 2023). As posited by Kuznets (1955), urban-rural inequality tends to increase during the transition from agriculture to industrialization and urbanization, before eventually declining as public policies and political institutions begin to favor lower-income groups to

curb disparities. The Mekong Delta is currently undergoing significant economic restructuring and urbanization, potentially amplifying inequality between urban and rural areas. Identifying the extent of this inequality and its contributing factors is essential for designing policies to enhance welfare, reduce disparities, and ensure the region's long-term economic development. Moreover, this study utilizes more recent VHLSS data from 2018 and 2020, a period marked by distinct socio-economic conditions compared to earlier research, particularly due to the onset of the COVID-19 pandemic in late 2019 and early 2020, which altered income dynamics between the two areas. These findings offer updated insights into urban-rural inequality amid an economically volatile context.

The rest of this paper is organized as follows: Section 2 reviews the theoretical framework and relevant empirical studies. Section 3 details the VHLSS data. Section 4 outlines the econometric model and estimation methodology. Section 5 presents and discusses the empirical results, drawing policy implications. Section 6 concludes with key findings.

2. Literature review

The theoretical foundation of urban-rural inequality originates from seminal works by Kuznets (1955) and Lewis (1954), who developed frameworks to elucidate the interplay between development processes and inequality. Kuznets (1955), analyzing historical data from the United States, England, and Germany, proposed an inverted U-shaped relationship between inequality and economic development, where inequality initially rises before declining. He hypothesized that urban-rural inequality intensifies as societies shift from agriculture to industrialization and urbanization. However, as development advances, the power of lower income groups increases due to the development of political institutions and public policies that can shift the distribution in favor of lower income groups, often those who migrate from rural to urban areas in cities. This plays an important role in reducing inequality. However, as development advances, the increasing influence of lower-income groups - facilitated by evolving political institutions and public policies - can redistribute income in their favor, often benefiting rural-to-urban migrants, thus reducing inequality. Similarly, Lewis (1954) introduced the dual-sector model, wherein surplus labor from the traditional sector shifts to the modern capitalist sector at subsistence wages. By categorizing "traditional" and "modern" sectors as proxies for "rural" and "urban" or "agricultural" and "industrial," Lewis provided empirical support for his model. Like Kuznets, Lewis associated dual-sector economic development with rising inter-sectoral inequality. Initially, significant income gaps drive labor migration from rural to urban areas. However, Lewis noted that labor supply is not perpetually infinite; eventually, rural labor shortages elevate wages, narrowing inequality. This dynamic parallels Kuznets's inverted U-curve.

Both scholars underscored the growing political leverage of lower-income urban groups and accompanying social legislation in developed nations as mechanisms to reduce inequality, emphasizing the government's role in implementing redistributive interventions.

While inequality declined in developed countries during the 1980s, its patterns are mixed in developing nations despite policies aimed at enhancing growth efficiency and reducing urban-rural disparities (Eastwood and Lipton, 2000). Urban bias may significantly contribute to this inequality. Urban areas in developing countries often benefit from greater investments in infrastructure, education, healthcare, and public funding, thereby enhancing quality of human capital and economic opportunities for urban residents. Moreover, urban dwellers typically possess higher education levels, enabling them to capitalize on these opportunities (Eastwood and Lipton, 2000).

In Vietnam's urban areas, employment opportunities are more diverse and better remunerated, whereas rural labor markets are constrained by limited industrialization and agricultural dependence (Glewwe *et al*., 2004). Rural workers often face barriers such as lower education and restricted access to training, which impeding their competitiveness in urban labor markets (Van de Walle and Gunewardena, 2001). Empirical studies by Bui and Imai (2019), Le and Booth (2014), and Nguyen *et al*. (2007), employing decomposition techniques, consistently identify the education gap as the primary driver of urban-rural inequality. Additionally, differences in geographic location, demographic characteristics (e.g., household composition, age, employment status, remittances), and the returns to these factors further contribute to welfare disparities between the two regions.

3. Empirical model and data

To analyze income inequality between rural and urban households, this research applies the Oaxaca-Blinder (OB) decomposition method, which identifies the sources of disparities between these groups. Developed independently by Oaxaca (1973) and Blinder (1973), the classic OB model relies on linear regression functions. Consider two demographic groups with the following regression functions:

$$Y_{ti} = X'_i\beta_t + \varepsilon_{ti} \qquad (\text{where } t = 0; 1 \text{ and } \mathbb{E}[\varepsilon_{ti}|X_i, T = t] = 0) \tag{1}$$

where X represents the vector of explanatory variables, β is the vector of regression parameters and ε is the random error term. The mean difference between group 0 (rural) and group 1 (urban) is expressed as:

$$\begin{aligned}\Delta_O^{\mu} &= \mathbb{E}[Y|T=1] - \mathbb{E}[Y|T=0] \\ &= \underbrace{\mathbb{E}[X|T=0]'(\beta_1 - \beta_0)}_{\Delta_S^{\mu}} + \underbrace{(\mathbb{E}[X|T=1] - \mathbb{E}[X|T=0])'\beta_1}_{\Delta_X^{\mu}}\end{aligned} \tag{2}$$

The first term of the equation (2), Δ_S^{μ}, represents the coefficient effect (or structural effect), capturing differences in the marginal returns to these attributes. The second term, Δ_X^{μ}, denotes the characteristic effect, reflecting differences due to variations in individual attributes. When expressed as the sum of contributions from all explanatory variables, this constitutes a "detailed" decomposition, illustrating each variable's role in the average disparity between groups.

$$\Delta_S^{\mu} = \sum_{k=1}^{K} \mathbb{E}[X^k|T=0]'\left(\beta_{1,k} - \beta_{0,k}\right) \quad (3)$$

$$\Delta_X^{\mu} = \sum_{k=1}^{K} \left[\mathbb{E}[X^k|T=1] - \mathbb{E}[X^k|T=0]\right]'\beta_{1,k} \quad (4)$$

Under the linearity assumption, estimating OB model components is straightforward by substituting the parameter vector β with its estimated values and replacing $\mathbb{E}[X|T=t]$ with sample means.

The income function (1) is constructed using demographic variables outlined in Table 1, supplemented by variables selected from the Sustainable Livelihoods Framework (DFID, 1999). This framework posits that household income results from livelihood strategies, which depend on access to and utilization of five livelihood capitals: human capital (H), physical capital (P), natural capital (N), financial capital (F), and social capital (S). These capitals are shaped by policies, structures, and processes, influencing household income through asset access and livelihood strategies. Variations in access and utilization across households lead to income inequality.

In equation (1), $Y_{t,i}$ is the natural logarithm of annual income for household i in group t (t = 0 for rural, t = 1 for urban household); $X_{t,i}$ is the vector of explanatory variables representing economic and demographic characteristics; β_t is the vector of regression coefficients; and ε_t is the error term. Household income aggregates earnings from agriculture, non-agricultural activities, property rentals, subsidies, etc., over the year. Explanatory variables encompass demographic traits of the household head, household characteristics, and livelihood assets, detailed in Table 1.

TABLE 1: **Descriptive statistics of variables in the research model**

Variable		Variable description	2018			2020		
			Urban	Rural	Overall	Urban	Rural	Overall
Human capital	X_1	Number of dependents (persons)	1.32	1.33	1.33	1.48	1.53	1.52
	X_2	Number of working-age members (persons)	2.39	2.24	2.28	2.16	2.11	2.13
	X_3	Number of members with education above grade 12 (persons)	0.30	0.12	0.17	0.35	0.12	0.18
	X_4	Number of members with high school education (persons)	1.09	0.66	0.77	1.19	0.70	0.83
	X_5	Years of schooling of the household head (years)	7.28	5.79	6.17	8.02	6.38	6.82
	X_6	Gender of the household head (Male = 1, Female = 0)	0.65	0.74	0.72	0.92	0.93	0.93
Physical capital	X_7	Natural logarithm of household asset value	10.39	10.10	10.18	10.56	10.36	10.41
	X_8	Ownership of TV (Yes = 1, No = 0)	0.93	0.92	0.92	0.93	0.91	0.92
	X_9	Ownership of motorbike or car (Yes = 1, No = 0)	0.88	0.81	0.83	0.90	0.87	0.88
	X_{10}	Ownership of computer (Yes = 1, No = 0)	0.22	0.11	0.14	0.25	0.10	0.14
	X_{11}	Use of tap water (Yes = 1, No = 0)	0.68	0.35	0.43	0.74	0.39	0.49
Natural capital	X_{12}	Area of productive land (ha)	0.39	0.80	0.69	0.21	0.72	0.58
	X_{13}	Natural logarithm of residential land area	4.32	4.35	4.34	4.32	4.38	4.36
Financial capital	X_{14}	Banking savings account (Yes = 1, No = 0)	0.12	0.05	0.07	0.14	0.05	0.08
Social capital	X_{15}	Age of household head (years)	54.73	54.26	54.38	53.20	52.36	52.58
Policy	X_{16}	Production support from government (Yes = 1, No = 0)	0.02	0.03	0.02	0.02	0.03	0.03
	Y	Average income (VND/person/month)	4,233.67	3,366.07	3,587.55	4,759.04	3,863.35	4,099.28

Source: Authors' calculations from VHLSS 2018 and 2020.

This research uses data from the VHLSS in 2018 and 2020. Conducted biennially by the General Statistics Office with technical assistance from the World Bank, VHLSS is a nationwide survey capturing household living standards through indicators such as income, expenditure, demographic characteristics, and income-generating economic activities. The sample is drawn using a systematic random sampling approach. For this study, households from 13 former provinces and municipalities in the Mekong Delta region were extracted from the 2018 and 2020 VHLSS datasets. The total sample comprises 24,015 households, including 6,246 urban and 17,769 rural households. Specifically, the 2018 dataset includes 14,505 households (3,741 urban and 10,764 rural), while the 2020 dataset includes 9,510 households (2,505 urban and 7,005 rural).

Household human capital is proxied by the number of dependents, working-age members, members with education above grade 12 or high school, years of schooling of the household head, and the head's gender. Table 1 reveals that the number of dependents increased in both urban and rural households from 2018 to 2020, while working-age members decreased. Despite this decline, labor quality improved, as evidenced by increases in members with education above grade 12, high school education, and the household head's schooling years. In 2018, urban households averaged 0.30 members with education above grade 12, compared to 0.12 in rural households; by 2020, these figures were 0.35 and 0.12, respectively.

Physical capital includes total asset value, ownership of televisions (TVs), motorbikes or cars, computers, and tap water usage. Table 1 indicates enhancements in physical capital across both areas from 2018 to 2020. Urban households consistently exhibit higher asset values, with increases observed in both regions by 2020. TV ownership remained stable, but motorbike/car ownership and tap water usage rose in 2020. These assets enhance mobility and living standards, though tap water access remains below 50 percent region-wide, particularly under 40 percent in rural areas, due to low population density and affordability constraints. Urban households also show higher computer ownership (0.22 in 2018, 0.25 in 2020) compared to rural households (0.11 in 2018, 0.10 in 2020), reflecting differing technological needs.

Natural capital is represented by productive and residential land areas. Rural households hold an advantage in terms of productive land (0.80 hectares in 2018 vs. 0.39 hectares in urban areas; 0.72 hectares in 2020 vs. 0.21 hectares in urban areas), which is critical for their livelihoods in this agriculture-dependent region. Residential land area increased slightly by 2020, signaling economic improvement. Financial capital, a catalyst for other forms of

capital, is measured by the ownership of banking savings accounts. Urban households outpace rural ones (12 percent in 2018 to 14 percent in 2020 vs. five percent in both years), though overall rates remain low, reflecting rural income constraints. Social capital, proxied by the household head's age, influences labor quality through established networks. Heads in both areas average over 50 years.

Per the Sustainable Livelihoods Framework (DFID, 1999), household income is also shaped by government policies, here represented by production support policies. Table 1 shows higher rural support rates, with slight changes between years.

Average per capita monthly income rose in both areas by 2020, though urban income consistently exceeds rural income, a disparity attributable to characteristic and coefficient effects detailed in subsequent sections.

4. Results of decomposing income differences between urban and rural areas

Table 2 presents the decomposition results for income differences in 2018 and 2020. Urban household income exceeds rural income in both years, though both increased by 2020. The urban-rural gap narrowed from 25.5 percent in 2018 to 20 percent in 2020, possibly due to the COVID-19 pandemic's disproportionate impact on urban incomes. In 2018, the characteristic effect accounted for 14.0 percent of the 25.5 percent gap, while in 2020, the characteristic (10.1 percent) and coefficient (8.5 percent) effects contributed nearly equally to the 20 percent gap. Thus, inequality declined, driven primarily by differences in household characteristics, aligning with findings by Le and Booth (2014) and Bui and Imai (2019).

TABLE 2: **Aggregate decomposition results for 2018 and 2020**

	2018		**2020**	
	Estimate	Standard error	Estimate	Standard error
Urban	11.794***	0.017	11.927***	0.017
Rural	11.539***	0.010	11.725***	0.010
Difference	**0.255*** **	**0.020**	**0.202*** **	**0.020**
Characteristic effect	0.140***	0.018	0.101***	0.017
Coefficient effect	0.074***	0.016	0.085***	0.017
Interaction	0.042***	0.012	0.015	0.014

Note: ***: denote statiscally significance at 1%.

Source: Authors' calculations from VHLSS 2018 and 2020.

Detailed decomposition results (Table 3) highlight contributions from all five livelihood capitals. In both years, variables like members with education above grade 12, asset value, computer ownership, and savings widen the gap, while productive land area narrows it. In 2018, additional factors (e.g., working-age members, high school education, motorbike/car ownership, residential land, production support) contributed to the characteristic effect. Urban households' superior human, physical, and financial capitals enhance income, while rural productive land mitigates the gap. In 2020, years of schooling and tap water usage further widened the gap.

For the coefficient effect, productive land area consistently reduced the gap by around two percent (significant at 10%), reflecting higher rural returns. In 2018, education above grade 12 also narrowed the gap (significant at 5%), suggesting higher rural returns to education - a surprising finding. Asset value and residential land effects varied, while tap water and computer ownership influenced the gap differently across years.

TABLE 3: **Detailed decomposition results of income differences between urban and rural areas**

	2018		2020	
	Estimate	Standard error	Estimate	Standard error
Difference	**0.255*****	**0.020**	**0.202*****	**0.020**
Characteristic Effect	**0.140*****	**0.018**	**0.101*****	**0.017**
Number of dependents	-0.002	0.003	-0.005	0.003
Number of working-age members	0.029***	0.007	0.009	0.006
Number of members with education above grade 12	0.020***	0.004	0.020***	0.005
Number of members with high school education	0.011**	0.005	-0.002	0.006
Years of schooling of the household head	0.003	0.004	0.014**	0.005
Gender of the household head	-0.003**	0.002	-0.002	0.001
Log of total asset value	0.063***	0.007	0.043***	0.007
Ownership of TV	0.000	0.000	0.001	0.001

Ownership of motorbike or car	0.010***	0.002	0.002	0.002
Ownership of computer	0.009***	0.003	0.019***	0.005
Use of tap water	-0.003	0.005	0.010**	0.005
Log of residential land area	-0.004**	0.002	-0.002	0.001
Area of productive land	-0.017***	0.003	-0.024***	0.003
Savings account	0.021***	0.003	0.015***	0.003
Age of household head	-0.001	0.001	-0.001	0.001
Production support	0.001**	0.001	0.001	0.001
Coefficient Effect	**0.074*** **	**0.016**	**0.085*** **	**0.017**
Number of dependents	0.019	0.016	0.011	0.018
Number of working-age members	0.006	0.030	0.027	0.027
Number of members with education above grade 12	-0.009**	0.003	-0.000	0.003
Number of members with high school education	-0.012	0.012	0.044	0.013
Years of schooling of the household head	0.037	0.026	0.020	0.032
Gender of the household head	-0.033	0.022	-0.080	0.051
Log of total asset value	0.378**	0.176	-0.245	0.168
Ownership of TV	-0.070	0.049	0.050	0.046
Ownership of motorbike or car	-0.080**	0.040	-0.028	0.045
Ownership of computer	-0.002	0.005	-0.008**	0.004
Use of tap water	0.036***	0.010	0.008	0.011
Log of residential land area	-0.463***	0.125	0.179	0.121
Area of productive land	-0.021***	0.005	-0.017*	0.010
Banking savings account	-0.000	0.002	0.004	0.002
Age of household head	0.022	0.065	0.002	0.063
Production support	0.000	0.003	-0.002	0.003
Interaction	**0.042**	**0.012**	**0.015**	**0.014**

Note: ***, **: denote significance at 1% and 5%, respectively.

Source: Authors' calculations from VHLSS 2018 and 2020.

In both years, the characteristic effect was mainly contributed by factors in all five sources of household livelihood capital. While the number of people in the household with education level above grade 12, the value of household assets, households owning computers and households having savings accounts widened the income gap between urban and rural areas, the variable of production land area reduced the gap. When considering 2018 alone, the characteristic effect was contributed by factors of number of household workers, number of people in the household with education level at high school level, households owning motorbikes and cars, housing area and government intervention and production land area. Urban households tend to have higher education levels, have more people of working age, own more valuable physical assets, use computers and have more savings. These are livelihood assets that can increase the productive capacity of households, so owning more of them helps urban households earn higher incomes than rural households. In contrast, rural households own more productive land, which helps them narrow the income gap with urban households. In 2020, the characteristic effect also contributed to the income gap between urban and rural areas because of variables that increase the income gap, including the number of years of schooling of the household head and whether the household has access to tap water.

When considering the coefficient effect, the effect of productive land area is negative and statistically significant at 10% in both 2018 and 2012, indicating that the effect of this variable reduces the income gap between urban and rural areas by about two percent in both years. This result also shows that the return on productive land is higher in rural areas than in urban areas. The income gap between the two regions decreased in 2018 due to the coefficient effect of the variable of people in the household with an education level above grade 12. This result is quite surprising because it shows that the return to education in rural areas may be higher than in urban areas and this difference is statistically significant at 5%. In addition, the coefficient effect of the value of household assets and house area also reduces the income gap between urban and rural areas, while the coefficient effect of the variable of households using tap water and total asset value increases the income gap. In 2020, in addition to the variable of production land area, the coefficient effect of the variable of households owning computers also narrows the income gap between the two regions. Using computers in rural areas may be more profitable than in urban areas.

5. Discussion

Income inequality between urban and rural areas is a common phenomenon in the growth and development of every economy. According to Kuznets's (1955) argument, this inequality can increase in the early stages of economic development and gradually decrease later. The Oaxaca-Blinder decomposition results in this study show that although there is inequality between the two regions in the Mekong Delta, this inequality has decreased from 25.5 percent in 2018 to 20 percent in 2020. The research results of Le and Booth (2014), using VHLSS data in the period 1993-2006, show that inequality between the two regions in the country has increased gradually throughout the period. In 2006, the average expenditure gap between the two regions was about 61 percent. Meanwhile, Bui and Imai (2019), using VHLSS data for the period 2008-2012, showed that inequality increased from 2008 to 2010 but decreased in 2012. The difference in per capita expenditure in the high-income group between urban and rural areas in the study of Bui and Imai (2019) was up to more than 41 percent. These research results may indicate a decreasing trend of inequality between the two regions and inequality in the Mekong Delta may be lower than the national average. However, this needs to be examined more carefully for the following reasons. First, previous studies measured inequality based on per capita expenditure, while this study used per capita income. Chang (2012) and Pham *et al*. (2023) argue that income inequality among population classes may generally be higher than expenditure inequality. Second, this study examines the period 2018-2020. This is the period when the national economy was heavily affected by the COVID-19 pandemic, which may have reduced inequality between regions. Therefore, assessing the decreasing trend of inequality may require more updated data for appropriate judgments.

Empirical studies by Bui and Imai (2019), Le and Booth (2014) and this study all show that the characteristic effect contributes significantly to the income gap between urban and rural areas. The urban bias may exist in the Mekong Delta. Urban households have more abundant human, material and financial resources, so they are able to participate in higher income generating activities, thereby increasing the income gap between the two regions. In particular, the contribution of education to inequality is the most significant. Studies on inequality in Vietnam in previous periods and this study have found that education is the most important factor causing inequality. Urban people have a much higher average education than rural people. This helps them participate in non-agricultural activities with

higher and more stable income, thereby making the income of urban households significantly higher than that of the remaining households. The interesting thing in this research result is that the coefficient effect of the number of people with a level of education above grade 12 reduces the income gap between the two regions, or it means that the rate of return to higher education in rural areas is higher than in urban areas. Highly educated farmers can apply the achievements of smart agriculture and create significant added value in agricultural production (Luu, 2020; Luu *et al*., 2018). This result shows that investing in education for rural people will be more profitable and contribute to reducing urban-rural inequality. In addition to education, the characteristic effects and coefficients of productive land are statistically significant over the years and have negative values, indicating that productive land is an important factor in reducing urban-rural inequality. In general, rural households own larger productive land areas, and the yield of productive land in rural areas is also higher than in urban areas. This has important policy implications. Agricultural land accumulation will be a solution to reduce inequality between the two regions in the long term. However, land accumulation can lead to land loss for small and inefficient farmers (Tarp, 2017; Van de Walle and Gunewardena, 2001). Therefore, along with the general trend of land accumulation, creating non-agricultural jobs for landless farmers will be a solution to reduce long-term inequality between urban and rural areas.

6. Conclusion

Based on the OB decomposition method with VHLSS data in 2018 and 2020, the research results show that the income gap between urban and rural areas in the Mekong Delta has decreased from 25.5 percent in 2018 to 20 percent in 2020. Compared with previous studies, inequality in the Mekong Delta is significantly lower than the national average and lower than in previous periods. In general, the income gap between the two regions is mainly due to differences in the characteristics of household resources in the two regions. Urban households have more education, physical capital, and financial capital, so the income gap between urban and rural households is wider, while farming households own larger areas of production land and higher land returns, helping farming households reduce the income gap with urban households. In particular, the return on education for rural households is higher than that for urban households, so investment in rural education will contribute significantly to reducing inequality between the two regions.

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