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Trends and drivers of income inequality in the Philippines, Thailand, and Viet Nam: A decomposition analysis

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TRENDS AND DRIVERS OF INCOME INEQUALITY IN THE PHILIPPINES, THAILAND, AND VIET NAM

A DECOMPOSITION ANALYSIS

Rogelio Mercado, Cyn-Young Park, and Juzhong Zhuang

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ABSTRACT

Over the past 2 decades, income inequality has moderated in three middle-income countries in Southeast Asia—the Philippines, Thailand, and Viet Nam—with multiple factors at play. In each country, wage, nonfarm business income, and overseas remittance concentrations declined as less well-off households increasingly engaged in better-paying activities. In Thailand, private transfers became more pro-poor, and in Viet Nam, public transfers more targeted. Major contributors to lower income inequality also included a narrowing in regional disparity and urban–rural income gaps, and, in the Philippines and Thailand, a fall in the education premium. This recent trend of moderating income inequality might be the combined outcome of rising income opportunities, government policies promoting social inclusion, and positive impacts of structural transformation. Nonetheless, income inequality remains high, especially in the Philippines and Thailand. More policy efforts are still needed to make growth more inclusive.

Keywords: *Income inequality, decomposition, Southeast Asia*

JEL codes: D31, D63, I31, N15

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1. Introduction

Income and wealth inequality have increased rapidly around the world in the past several decades, attracting significant academic and policy attention (ADB 2007 and 2012; Piketty 2014; Rani and Furrer 2016; Zhuang 2023). Yet, in Southeast Asia, where countries have rapidly transformed structurally, the experience is mixed. According to World Bank data, income inequality has risen significantly in Indonesia, but declined in Malaysia, the Philippines, and Thailand and remained stable in Viet Nam—albeit at still high levels (Table 1). Wealth inequality in these countries also appears more stable than elsewhere; but, again, their wealth distribution remains highly unequal.¹

Assessing the key drivers of income inequality and their changes over time remains relevant in both theoretical and empirical literature, more so given their socio-economic policy implications.² Specifically, identifying which relevant factors contributed to the observed decline in income inequality is vital in designing and implementing tax schemes, social safety nets and other welfare programs particularly for emerging market economies where financial resources are limited. Unfortunately, empirical evidence remains scant as there are few studies which investigate the trends and drivers of income inequality particularly for Southeast Asian economies. For instance, Jenmana (2018), Lekfuangfu et al. (2020) and Paweenawat and McNown (2014) examine income inequality in Thailand; McDoom et al. (2018) and World Bank (2022) review the case in the Philippines; and Benjamin, Brandt, and McCaig (2016) and Nguyen and Tran (2021) look at Viet Nam. These studies provide findings that are generally consistent with Table 1. However, they fall short of carrying out complete analysis of underlying drivers for these income inequality trends, including the decomposition of income inequality by income sources and household characteristics as well as price and quantity effects of household characteristics.

Table 1: Inequality of per Capita Household Income/Consumption Expenditure, Selected Countries

	Decade Average Gini Coefficient					Decade Average Quintile Ratio				
	1980s	1990s	2000s	2010s	+ or -	1980s	1990s	2000s	2010s	+ or -
Indonesia	0.315	0.320	0.327	0.388	+	4.7	4.7	4.9	6.6	+
Malaysia	0.473	0.484	0.456	0.421	-	10.9	11.9	10.6	8.6	-
Philippines	0.409	0.442	0.422	0.401	-	7.4	8.8	8	7.2	-
Thailand	0.445	0.440	0.413	0.372	-	8.9	8.5	7.7	6.3	-
Viet Nam	...	0.356	0.363	0.361	+	...	5.6	6	6.4	+
PRC	0.282	0.354	0.420	0.406	+	4.3	5.9	8.6	8.1	+
India	0.323	0.317	0.349	0.357	+	4.8	4.6	5.2	5.5	+

... = not available; PRC = People's Republic of China; + = inequality increased; - = inequality declined.

Note: Malaysia data refer to per capita household disposable income.

Source: World Bank. *PovcalNet* (accessed 1 February 2022).

This study fills this gap in the literature by providing empirical evidence on key drivers behind the recent trends of income inequality in selected Asian economies using household survey data. This paper aims to estimate income inequality for three sample countries in selected sample years and examine the sources of income inequality and causes of their changes over time. In doing

¹ World Inequality Database. <https://wid.world/> (accessed 20 April 2022).

² See Paweenawat and McNown (2014); Furceri and Ostry (2019); Čihák and Sahay (2020); Park and Mercado (2022) on determinants of income inequality.

so, it extends the existing literature in two ways. First, instead of focusing a country case study, this paper considers three emerging market economies collectively, namely the Philippines, Thailand, and Viet Nam. These three economies were selected based on the availability of and access to household survey data. They, likewise, provide important development contexts useful for better understanding the complex relationship between economic growth, structural change, and income inequality by comparing and contrasting relevant drivers across sample countries.

Second, this paper employs decomposition methods that are widely applied in the current literature to examine the determinants of income inequality and causes behind the changes of income inequality by income sources and household characteristics. For the decomposition by household characteristics, we also consider the price effect (which reflects change in the premium of each characteristic, such as education attainment) as well as quantity effect (which reflects changes in the distribution of the household characteristic). This study is one of the first to consider these decompositions for several economies.

Our computed income inequality measures clearly show a marked decline in income inequality in the Philippines, Thailand, and Viet Nam over the sample period, while the results of our empirical analysis and decompositions highlight three new findings. First, for all three countries, wages were the largest source of income, and increased wage earners reduced income inequality. Second, by income source, a major contributing factor to the decline in income inequality was a reduction in concentration rates of wages, nonfarm business income, and overseas remittances as less well-off households increasingly engage in better-paying activities, such as wage employment, nonfarm business, or working overseas. Third, by household characteristics, narrowing regional disparity and urban-rural income gaps can explain a large part of the decline in nationwide income inequality in the three countries.

These new empirical findings have several important theoretical and policy implications. First, more theoretical work is needed to understand what causes concentration rates of various income sources, regional and urban-rural income gaps, education premiums, and premiums of other household characteristics to change. Second, the findings may imply that the changes in concentration rates are likely a combined effects of certain processes behind the Kuznets hypothesis, domestic policies, and some country-specific patterns of structural transformation. Lastly, decompositions of income inequality by sources and households can be a useful tool in assessing the effectiveness of social welfare programs.

The rest of the paper is structured as follows. Section 2 describes data. Section 3 discusses our methodology. Section 4 presents results and analysis, while Section 5 concludes.

2. Data Sources and Definitions

The paper is based on nationwide household surveys: the *Family Income and Expenditure Survey* for the Philippines, the *Household Socio-Economic Survey* for Thailand, and the *Household Living Standards Survey* for Viet Nam. For the Philippines, the Family Income and Expenditure Survey was merged with *the Labor Force Survey* to obtain additional information on household characteristics. These nationwide surveys are based on representative samples covering entire populations.

To study underlying causes of changes in income distributions over a relatively long period, 2 years were selected for each country: 2003 and 2018 for the Philippines, 2006 and 2019 for Thailand, and 2004 and 2018 for Viet Nam. The ending years were selected to make use of the latest available survey data. The starting years were selected considering factors such as the

availability and cross-country comparability of required data and having a relatively long time interval with the ending years. As shown in Table 2, the sample size is largely comparable between the 2 years for each country, except for the Philippines, the sample size of which expanded by almost four times between 2003 and 2018.

The survey data provide detailed information on household income, expenditure, and characteristics. Household income includes salary and wage (thereafter, wage); net income from farm production; net income from non-farm businesses; rental income from properties including land and houses for both businesses and residential uses; interest income and dividend from investment; imputed rent for owner-occupied properties; and income from various types of transfer. Household characteristics include those related to household head, such as age, gender, marital status, educational attainment, occupation and sector of employment, and those related to household, including regional and urban-rural locations and access to finance.

The identifiable items of transfer income vary across the three countries due to differences in the transfer system, survey design, and the authors' access to data. For the Philippines, these include overseas remittances (covering wage earnings and pension income of overseas workers, dividends and other net income from overseas investment, and cash gifts from relatives abroad); pensions (from both public and private sectors); cash assistance from domestic sources (covering public and private transfers); gifts in kind (from public and private sources); and direct taxes (income and profit taxes, real estate tax, and other direct taxes [such as the inheritance tax]). For Thailand, these include pension and worker compensation (such as payment on termination); assistance from the government (such as elderly and disability support); private transfer; gifts in kind (from public and private sources); and direct taxes. For Viet Nam, these include government education and health subsidies; other public transfers; domestic private transfers; overseas remittances; and direct taxes. Pensions were recorded as part of wages in the Viet Nam surveys.

Table 2: Sample Size of Nationwide Household Surveys (number of households)

Philippines	2003	2018
Urban	18,406	66,137
Rural	23,684	81,580
Total	41,257	147,166
Thailand	2006	2019
Municipalities	27,939	25,824
Non-municipalities	16,979	19,762
Total	42,076	43,825
Viet Nam	2004	2018
Urban	2,250	2,826
Rural	6,938	6,571
Total	8,994	9,297

Sources: Philippines Family Income and Expenditure Survey and Labor Force Survey, Thailand Household Socio-Economic Survey, and Viet Nam Household Living Standards Survey.

Table 3: Components of Income in Household Surveys

	Philippines	Thailand	Viet Nam
Household income	<ul style="list-style-type: none"> • Wage • Income from farming • Family sustenance • Income from family-based non-farm business 	<ul style="list-style-type: none"> • Wage • Income from farming • Income from family-based non-farm business • Rental from land and property leasing 	<ul style="list-style-type: none"> • Wage • Income from farming • Income from family-based non-farm business • Rental from land and property leasing

	Philippines	Thailand	Viet Nam
	<ul style="list-style-type: none"> • Rental from land and property leasing • Interest income and dividend • Imputed rent • Pension • Overseas remittance • Domestic cash assistance • Gifts in kind 	<ul style="list-style-type: none"> • Interest income and dividend • Imputed rent • Pension and work compensation • Government transfer • Private transfer • Gifts in kind 	<ul style="list-style-type: none"> • Interest income and dividend • Imputed rent • Education and health subsidies • Other public transfer • Domestic private transfer • Overseas remittance
Taxes	• Direct taxes	• Direct taxes	• Direct taxes

Sources: Philippines Family Income and Expenditure Survey and Labor Force Survey, Thailand Household Socio-Economic Survey, and Viet Nam Household Living Standards Survey.

In the paper, market income is defined as the sum of all the income components listed in Table 3. Household disposable income is market income minus direct taxes. The standard definition of disposable income requires subtracting households' social security contributions. This is not done, due to unavailability of data.

Table 4: Sample Mean and Growth of per Capita Household Disposable Income

	Philippines	
	2003	2018
In nominal PHP	35,708	81,360
In current US dollar	659	1,547
In constant 2018 PHP	62,319	81,360
Annual real growth (%)	1.8	
	Thailand	
	2006	2019
In nominal THB	73,036	131,436
In current US dollar	1,928	4,233
In constant 2018 THB	90,681	130,514
Annual real growth (%)	2.8	
	Viet Nam	
	2004	2018
In nominal VND	8,170,434	56,366,880
In current US dollar	519	2,494
In constant 2018 VND	23,500,724	56,366,880
Annual real growth (%)	6.4	

PHP = Philippine peso, THB = Thai baht, VND = Vietnamese dong.

Note: Real growth is in local currency terms.

Sources: Philippines Family Income and Expenditure Survey and Labor Force Survey, Thailand Household Socio-Economic Survey, and Viet Nam Household Living Standards Survey.

Table 4 reports annual mean per capita household disposable incomes and their growth rates between the 2 years for the three sample countries. In current US dollars, the Philippines per capita household disposable income increased from \$659 to \$1,547, Thailand's increased from \$1,928 to \$4,233, and Viet Nam's increased from \$519 to \$2,494. In constant local currency terms, the average annual growth rate of per capita household disposable income was 1.8% for the Philippines, 2.8% for Thailand, and 6.4% for Viet Nam. According to World Bank's World Development Indicators data, per capita gross domestic product (GDP) grew 4.0%, 2.8%, and 5.3%, respectively, for the Philippines, Thailand, and Viet Nam, in constant local currency terms annually during the sample periods. These growth rates are close to those of per capita

disposable income reported in Table 4, except for the Philippines, for which the growth of per capita disposable income from household surveys is much lower than per capita GDP growth from national accounts data.

3. Methodology

Our empirical analysis involves (i) estimating income inequality for the three sample countries in the selected sample years and (ii) examining the sources of income inequality and causes of their changes over time. To estimate income inequality, we use commonly-applied measures; including the Gini coefficient; variance of logs of per capita income; Theil index; income shares of the top (richest) 10%, 5%, and 1% of households; and growth incidence curves. To examine sources of inequality and causes of their changes over time, we use standard methods of decomposition by income sources and by household characteristics.

To decompose inequality and its change over time into contributions by different income sources, we follow a widely-used approach, expressing the Gini coefficient as the sum of the products of concentration rates of various income components and their corresponding shares in total income (Rao 1969; Kakwani 1977; Pyatt, Chen, and Fei 1980; Lerman and Yitzhaki 1985; and Urban 2022). That is:

$$G = \sum_{k=1}^K S_k C_k \quad (1)$$

where S_k represents the share of component k in total income, C_k is the concentration rate of income component k , and K is the total number of income components. Thus, this equation allows for decomposing the Gini coefficient into contributions by different income components, with the contribution of each component being the product of two terms: (i) how important a component is with respect to total income and (ii) how concentrated the income component is.

Lerman and Yitzhaki (1985) show that C_k can be further expressed as the product of the Gini coefficient of income component k , G_k , and its Gini correlation, R_k , that is,

$$C_k = G_k R_k \quad (2)$$

where R_k is given by

$$R_k = Cov(Y_k, F) / Cov(Y_k, F_k) \quad (3)$$

where Y_k is income component k , F is the cumulative rank distribution of total income Y , and F_k is the cumulative rank distribution of Y_k . R_k measures the extent and direction of the correlation of income component k with total income and assumes the range of $[-1, 1]$. C_k assumes the range of $[-G_k, G_k]$. When C_k is greater than G , an increase in the share of income component k will cause G to increase; when C_k is smaller than G , an increase in the share of income component k will cause G to decline.

Equation (1) can be used to decompose a change in G between two periods, ΔG , into contributions by various income sources, with the contribution of each income source further decomposed into a component that is due to a change in its share in total income, ΔS_k , and a component due to a change in its concentration rate, ΔC_k . Following Wang, Wan, and Zhang (2019), it can be shown that

$$\Delta G = \sum_{k=1}^K (\Delta S_k C_k^* + \Delta C S_k^*) \quad (4)$$

where $C_k^* = (C_{k,t} + C_{k,t+1})/2$, $S_k^* = (S_{k,t} + S_{k,t+1})/2$, and $C_{k,t}$ and $S_{k,t}$ are, respectively, income component k 's concentration rate and its share in the total income at time t , and $C_{k,t+1}$ and $S_{k,t+1}$ are the corresponding variables at time $t+1$. In equation (4), the first term refers to the contribution to a change in G by a change in the share of income component k , and the second term refers to the contribution to the change in G by a change in the concentration rate of income component k . An increase in C_k increases G and can be considered as “pro-rich”, and a reduction in C_k reduces G and can be considered as “pro-poor”.

To decompose income inequality and its change over time into contributions by household characteristics, we follow the regression-based approach found in Fields (2003). The regression-based decomposition has the advantage of using a large number of explanatory variables, and to express the inequality level and its change as a function of the commonly used income determinants. In the first step, the log per capita income is regressed on a set of explanatory variables, similar to a Mincerian equation:

$$\ln(Y_i) = \alpha + \sum_{j=1}^J \beta_j X_{j,i} + \varepsilon_i \quad (5)$$

where Y_i is per capita disposable income of household i ; α is a constant; $X_{j,i}$ is an explanatory variable, and β_j is its coefficient, where $j = 1, 2, \dots, J$; and ε_i is the error term. This Mincerian equation is run for each of the sample countries and sample years. The explanatory variables used in the analysis include various household characteristics, many of which are in a dummy form, including those related to household head, such as age (in years) and age squared, gender, employment status, and educational attainment, and those related to household, such as access to finance and geographical locations (urban vs. rural and region). The study uses two measures for the access to finance: access to loans and access to investment opportunity in financial assets.

According to Fields (2003), equation (5) can be used to calculate “relative factor inequality weight”, \hat{s}_j , which shows how much of the total inequality in income is explained by each covariate in the regression. That is:

$$\hat{s}_j = \hat{\beta}_j \frac{\text{Cov}(X_j, \ln(Y))}{\text{Var}(\ln(Y))}, \text{ with } j = 1, 2, \dots, J \quad (6)$$

and the share of the residual (unexplained part) is given by

$$\hat{s}_\varepsilon = 1 - \sum_{j=1}^J \hat{s}_j \quad (7)$$

One can also calculate the proportion of the rise or fall in inequality that is accounted for by each explanatory variable, $\hat{\pi}_j$. That is:

$$\hat{\pi}_j = \frac{\hat{s}_j^1 I^1 - \hat{s}_j^0 I^0}{I^1 - I^0} \quad (8)$$

where I^0 and I^1 are the level of inequality in period 0 and 1, respectively, and \hat{s}_j^0 and \hat{s}_j^1 are relative factor inequality weights in period 0 and 1.

According to Fields (2003), any inequality measure can be used in equation (8). However, according to Yun (2006), using the variance of logs of per capita incomes as an inequality measure allows decomposing the contribution of each household characteristic to change in total inequality further into a quantity effect, reflecting the part due to change in the distribution of the household characteristic (such as education attainment), and a price effect, reflecting the part reflecting change in the premium of the household characteristic (such as return to education). To do this, Yun first constructs an auxiliary distribution of income, using Equation (9):

$$\ln(Y_i^*) = \alpha^1 + \sum_{j=1}^J \beta_j^1 X_{j,i}^0 + \varepsilon_i^0 \quad (9)$$

where α^1 and β^1 are the coefficients of the regression model estimated using Equation (5) for period 1, $X_{j,i}^0$ are household characteristics in period 0, and ε^0 is residuals of the regression model for period 0. That is, the auxiliary income distribution is generated using coefficients of period 1 and household characteristics and residuals of period 0.

The total change in variance of logs of income between two periods can then be expressed as

$$I^1 - I^0 = \sum_{j=1}^J (\widehat{s}_j^1 I^1 - \widehat{s}_j^* I^*) + \sum_{j=1}^J (\widehat{s}_j^* I^* - \widehat{s}_j^0 I^0) \quad (10)$$

where the first term on the right is the sum of the quantity effects and the second term is the sum of the price effects. I^0 and I^1 are variance of logs of per capita income for period 0 and 1, respectively, and I^* is variance of logs of per capita income for the auxiliary income distribution generated from equation (9).

Decomposing total contribution to change in inequality by a particular household characteristic into a quantity effect and a price effect allows digging deeper into causes of changes in inequality. But one deficiency of this approach is that the variance of logs measure cannot be guaranteed to satisfy the Pigou–Dalton principle of transfers (Cowell 2011), unlike most other indices such as the Gini coefficient. We therefore also present results using the Gini coefficient in equation (8) without decomposing the total contribution into a quantity and a price effect.

4. Results

4.1. Income Inequality Stylized Facts

Table 5 reports estimates of national, urban and rural income inequalities for the three countries. Notably, there are no or very small differences between Gini coefficients of market income and those of disposable income for all the three countries. This partly reflects a limited role of taxation in income redistribution, a common observation across developing Asia (Zhuang 2023). But it may also be related to under-reporting of tax information and missing data. The survey data used by this study show that, in the case of the Philippines, direct taxes only accounted for less than 2% of the total disposable income in 2003 and less than 1% in 2018; for Thailand and Viet Nam, the percentage of direct taxes is even smaller: less than 0.1% for both years. For Thailand, Jenmana (2018) finds that income Gini coefficients estimated from household survey data combined with tax returns are much higher than those estimated from the household socio-economic survey data alone during 2001–2016. The discussions below focus on disposable income only.

Table 5: Income and Consumption Inequalities

	Philippines		Thailand		Viet Nam	
	2003	2018	2006	2019	2004	2018
Market income						
Gini coefficient	0.505	0.444	0.520	0.430	0.440	0.398
Disposable income						
Gini coefficient	0.499	0.440	0.520	0.430	0.440	0.398
Variance of logs of income	0.749	0.559	0.861	0.576	0.566	0.560
Theil-T index	0.511	0.383	0.559	0.363	0.369	0.284
Income share of top 10% (%)	32.6	27.5	35.3	27.8	31.1	25.1
Income share of top 5% (%)	21.6	17.4	24.1	18.0	19.7	15.5
Income share of top 1% (%)	8.3	6.6	10.1	6.5	6.7	5.0
Urban Gini	0.464	0.423	0.479	0.402	0.400	0.340
Rural Gini	0.439	0.422	0.486	0.422	0.369	0.371
Urban-rural income ratio	2.3	1.6	2.2	1.6	2.43	1.92
Consumption expenditure						
Gini coefficient	0.459	0.403	0.450	0.377	0.365	0.356

Source: Authors' estimation.

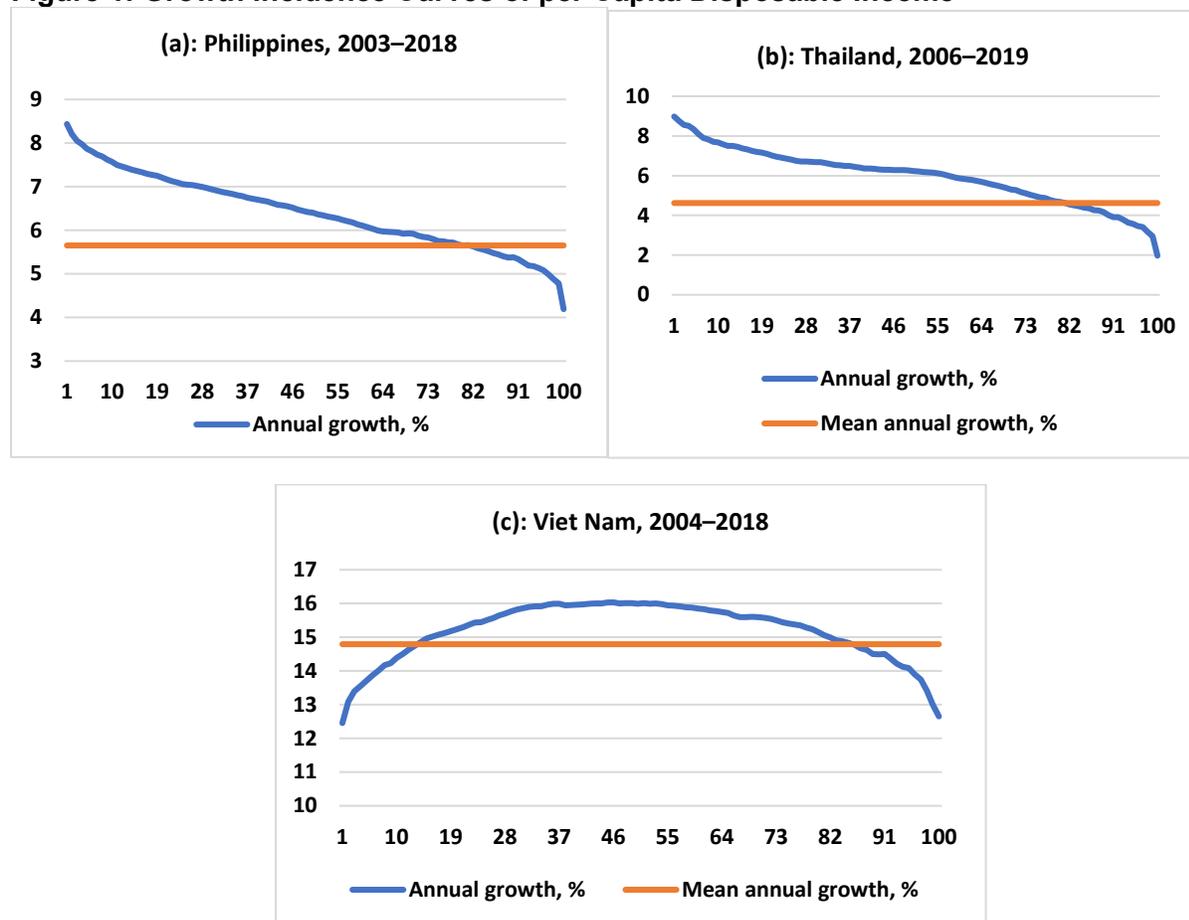
Across all measures, nationwide income inequality declined in the three countries between two sample periods. The Gini coefficient of per capita household disposable income declined from 0.499 in 2003 to 0.440 in 2018 for the Philippines, from 0.52 in 2006 to 0.43 in 2019 for Thailand, and from 0.440 to 0.398 during 2004–2018 for Viet Nam. The variance of logs of per capita income and Theil-T index follow the same pattern. However, for Viet Nam, there was only a very small reduction in variance of logs of per capita income, but a larger drop in Theil-T index, suggesting that change in income distribution occurred mainly at the upper tail, from rich households to the middle class. In comparison, the redistribution was more broad-based in the Philippines and Thailand. The income share of the 10% richest households in 2018, at 27.5% for the Philippines, 27.8% for Thailand, and 25.1% for Viet Nam, was high, but lower compared with its level 15–20 years ago, declining by 5.1, 7.9, and 6.0 percentage points, respectively. The income shares of the top 5% and top 1% as well as the Gini coefficient of per capita consumption expenditure (in the last row of Table 5) declined too for the three countries.

Urban and rural income inequalities also declined in general. The urban Gini coefficient declined 8.8% for the Philippines, 16.1% for Thailand, and 15% for Viet Nam. The rural Gini coefficient declined 3.9% in the Philippines and 13.2% in Thailand but increased slightly in Viet Nam. Notably, the urban-rural income gap narrowed for all three countries, contributing to declines in nationwide inequality.

To gain insight into income distribution, we look at the growth incidence curve, which shows growth of per capita household disposable income at each percentile of the income distribution during the sample periods. The shape of the growth incidence curves is consistent with the decline in the nationwide income inequality in the three countries. It also confirms that, in Viet Nam, reduction in income inequality was mainly due to the redistribution from the top end of the distribution to the middle class, while the redistribution was more broad-based in the Philippines and Thailand.

As shown in Figure 1 (a)–(c), per capita disposable income in current prices grew 5.7% in the Philippines and 4.7% in Thailand on average, and the growth rate declined steadily from a low percentile to a higher percentile of population ranked by per capita income, that is, lower income households enjoyed higher income growth. In Viet Nam, per capita household disposable income at current prices grew 14.8% on average. The middle percentiles enjoyed higher income growth, with the highest growth occurring at the 46th percentile. The three growth incidence curves also confirm that the decline in income inequality was more significant for the Philippines and Thailand than for Viet Nam, as shown by various inequality measures reported in Table 5, although in absolute levels, Viet Nam is much more equal than the Philippines and Thailand.

Figure 1: Growth Incidence Curves of per Capita Disposable Income



Source: Authors' estimation.

4.2. Decomposing Income Inequality and Its Change by Income Sources

To identify contributors to declines in income inequality in the three countries, we first carry out decomposition analysis by income sources. Table 6 (a)–(c) reports results on contributions to the nationwide Gini coefficient of per capita disposable income at yearend, as well as to changes in the Gini coefficients between the two periods, 2003–2018 for the Philippines, 2006–2019 for Thailand, and 2004–2018 for Viet Nam, by income sources.

For all the three countries, at the end-period, wages were the largest source of income inequality measured in the Gini coefficient, accounting for 45.4% for the Philippines, 55.3% for Thailand,

and 37.9% for Viet Nam, largely because it was the largest component of total income. Other major contributors, each explaining more than 10% of the nationwide Gini, include nonfarm business income, overseas remittances, and imputed rent for the Philippines; nonfarm business income and transfers for Thailand; and imputed rent and nonfarm business income for Viet Nam. In contrast, the contribution of farm income to the nationwide Gini is small, less than 1% in the Philippines and about 4%–5% in Thailand and Viet Nam, because of its small share in total income and a low concentration rate. The concentration rate of farm income is among the lowest in all three countries, meaning it is concentrated more in low-income households or it is more “pro-poor” compared with other income components. Property income and financial income have a concentration rate that is among the highest, meaning these incomes are concentrated more in rich households or more “pro-rich”, relative to other income components. But because they only account for a small share of total income, their contribution to the nationwide Gini is also small; combined they only explain less than 2% for the Philippines and Thailand, and about 5% for Viet Nam.

Table 6 (a)–(c) also shows there are large differences in the shares and contributions to the nationwide Gini of various components of transfer among the three countries. For the Philippines, where it is not possible to separate domestic transfers into public and private components, and Thailand, where there are no separate data on overseas remittances, pensions are the largest contributor to the nationwide Gini among transfers. Pensions have a relatively high concentration rate, suggesting it is relatively “pro-rich”, likely because pension coverage is larger in cities, where per capita income is higher than rural areas. For Viet Nam, where pensions are included as part of wages, public transfers (including education and health subsidies and other social benefits) are the largest contributor to the nationwide Gini, given their large share in total income, partly reflecting the legacy of socialist planning. Common across the three countries are: first, transfers—with the exception of pensions, all have a low concentration rate, whether private or public and whether in cash or in kind, suggesting they are relatively “pro-poor” (for Thailand, public transfer has a negative concentration rate); second, direct taxes only result in a very small reduction in the nationwide Gini, suggesting they play a limited role in income redistribution in the three countries.

Contributions of different income sources to changes in nationwide income inequality are more diverse among the three countries. For the Philippines, the Gini coefficient of per capita disposable income declined by about 12% during 2003–2018. Wages are the largest contributor to the decline, explaining 4.2 percentage points (pp), followed by imputed rent at 3.3 pp, nonfarm business income at 3.2 pp, overseas remittances at 2.8 pp, property income and financial income combined at 1 pp, while domestic transfers and farm income cause the Gini to increase slightly. Each of these contributions can be further decomposed into the part due to change in each income source’s share in total income and its concentration rate. Wages’ contribution to the decline in the nationwide Gini is driven by a decline in its concentration rate—wage income became more “pro-poor”, likely because low-income households increasingly entered wage employment. Nonfarm business income’s contribution is driven by both a decline in its share in total income and in the concentration rate—as low-income households increasingly engaged in nonfarm business. Overseas remittances’ contribution is mainly driven by a decline in their concentration rate—as low-income households increasingly received overseas remittances. On the other hand, domestic transfers caused the nationwide Gini to increase, mainly because the share of pensions in total income increased and the share of taxes declined. Overall, shifts in shares of various income sources led to an increase in the nationwide Gini by 0.9 pp, while changes in the concentration rates helped to reduce the nationwide Gini by 12.8 pp.

In Thailand, the nationwide Gini coefficient declined by about 17% during 2006–2019. The largest contributor is nonfarm business income explaining 5.8 pp, followed by farm income, 4.7 pp, transfer, 4.1 pp, financial and property incomes combined, 1.8 pp, imputed rent, 0.6 pp, and wages, 0.3 pp. Nonfarm business income and farm income made the largest contributions, because their income share fell, low-income households increasingly engaged in nonfarm business, and farm income became more pro-poor. Transfers made the third largest contribution, mainly because private transfer, public transfer, and gifts in kind all became more pro-poor. By contrast, wages made a limited contribution to the decline in the nationwide Gini, because although low-income households increasingly entered wage employment, these were offset by a relatively large increase in the share of wages in total income. Financial and property incomes combined made larger contribution than wages mainly because their shares in total income declined. For all the income sources, overall, changes in their concentration rates helped reduce the nationwide Gini coefficient by 17.8 pp, which was offset slightly by changes in their income shares.

For Viet Nam, the nationwide Gini coefficient declined by about 10% during 2004–2018. The largest contributor is transfers, accounting for 11.8 percentage points (pp), followed by farm income, 6.4 pp, overseas remittances, 5.4 pp, nonfarm business income, 1.9 pp, and property income, 0.4 pp; this was offset by positive contributions by wages, at 10.4 pp, imputed rent, at 3.3 pp, and financial income, at 2.4 pp. Domestic transfers made the largest contribution to the decline in the nationwide Gini, both because its share in total income fell and because it became more pro-poor, largely as a result of public transfers becoming more targeted, as the country moved towards market-oriented determination of wage and remuneration, a major step in economic transition. On the other hand, wages made a large positive contribution, mainly because of a large increase in their share in total income, a result of increased wage employment driven by rapid industrialization and urbanization in Viet Nam, while wage income actually became more pro-poor, because of rural-urban migration. For all the income sources, overall, changes in their concentration rates helped to reduce the nationwide Gini by 14.8 pp, which was offset by changes in their shares in total income, by 5.1 pp.

Table 6 (a): Decomposing Income Inequality by Income Source, Philippines

Income Source	2018					Contribution to Change in Nationwide Gini, 2003–2018, as % of 2003 Gini, due to Change in		
	Income share (%)	Gini coefficient	Gini correlation	Concentration rate	% Contribution to nationwide Gini	Income share	Concentration rate	Total
Wage	47.4	0.595	0.709	0.422	45.4	3.5	-7.7	-4.2
Farm income	5.7	0.839	0.071	0.060	0.8	0.0	1.6	1.6
Non-farm business	14.4	0.859	0.606	0.520	17.0	-1.6	-1.5	-3.2
Property income	1.2	0.974	0.662	0.645	1.8	-1.0	0.0	-0.9
Financial income	0.4	0.999	0.939	0.938	0.9	-0.1	0.0	-0.1
Overseas remittance	10.7	0.898	0.703	0.631	15.4	-0.4	-2.4	-2.8
Domestic transfer	10.9	0.841	0.399	0.336	8.3	2.4	-1.3	1.1
Pension	3.7	0.959	0.741	0.711	6.0	1.1	0.1	1.2
Cash transfer	5.4	0.745	0.173	0.129	1.6	1.0	-1.7	-0.7
Gifts in kind	2.6	0.816	0.492	0.401	2.4	-0.5	-0.1	-0.6
Taxes	-0.9	0.969	0.837	0.811	-1.7	1.6	-0.1	1.4
Imputed rent	9.3	0.624	0.794	0.495	10.5	-1.8	-1.6	-3.3
TOTAL	100.0	0.440	1.000	0.440	100.0	0.9	-12.8	-11.8

Source: Authors' estimation.

Table 6 (b): Decomposing Income Inequality in 2019 and its Change in 2006–2019 by Income Source, Thailand

Income Source	2019					Contribution to Change in Nationwide Gini, 2006–2019, as % of 2006 Gini, due to Change in		
	Income share (%)	Gini coefficient	Gini correlation	Concentration rate	% Contribution to nationwide Gini	Income share	Concentration rate	Total
Wage	44.7	0.716	0.744	0.533	55.3	5.6	-5.9	-0.3
Farm income	7.0	0.966	0.274	0.265	4.3	-2.6	-2.1	-4.7
Non-farm business	16.6	0.890	0.590	0.525	20.3	-2.4	-3.5	-5.8
Property income	0.6	0.993	0.583	0.579	0.7	-0.6	-0.2	-0.8
Financial income	0.5	0.977	0.770	0.752	0.8	-0.8	-0.1	-1.0
Transfer	20.8	0.656	0.366	0.240	11.6	0.9	-5.0	-4.1
Pension	4.0	0.979	0.791	0.774	7.2	2.7	-0.2	2.5
Private transfer	9.0	0.845	0.263	0.222	4.7	-0.7	-3.0	-3.7
Public transfer	2.5	0.662	-0.292	-0.193	-1.1	-0.5	-0.5	-1.0
Gifts in kind	5.4	0.593	0.132	0.078	1.0	-0.3	-1.6	-1.9
Taxes	0.0	0.885	0.783	0.693	0.0	0.0	0.0	0.0
Imputed rent	9.8	0.562	0.537	0.302	6.9	0.4	-1.0	-0.6
TOTAL	100.0	0.430	1.000	0.430	100.0	0.4	-17.8	-17.3

Source: Authors' estimation.

Table 6 (c): Decomposing Income Inequality in 2018 and its Change in 2004–2018 by Income Source, Viet Nam

	2018					Contribution to Change in Nationwide Gini, 2004-2018, as % of 2004 Gini, due to Change in		
	Income share (%)	Gini coefficient	Gini correlation	Concentration rate	% Contribution to nationwide Gini	Income share	Concentration rate	Total
Wage	40.6	0.587	0.632	0.371	37.9	14.7	-4.2	10.4
Farm income	11.8	0.795	0.212	0.169	5.0	-5.1	-1.3	-6.4
Non-farm business	16.7	0.844	0.597	0.504	21.2	-0.9	-1.0	-1.9
Property income	1.3	0.981	0.711	0.697	2.3	-0.5	0.1	-0.4
Financial income	1.5	0.945	0.741	0.700	2.6	1.2	1.2	2.4
Overseas remittance	1.5	0.985	0.649	0.639	2.4	-4.3	-1.1	-5.4
Domestic transfer	8.9	0.746	0.321	0.239	5.4	-5.0	-6.7	-11.8
Public transfer	7.1	0.750	0.309	0.232	4.1	-4.4	-4.7	-9.2
Private transfer	1.9	0.941	0.312	0.294	1.4	-0.3	-2.2	-2.6
Taxes	-0.1	0.954	0.825	0.787	-0.2	0.0	-0.1	-0.1
Imputed rent	17.7	0.624	0.838	0.523	23.3	5.1	-1.8	3.3
Total	100.0	0.398	1.000	0.398	100.0	5.1	-14.8	-9.7

Source: Authors' estimation.

4.3. Decomposing Income Inequality and Its Changes by Household Characteristics

Decomposing income inequality and its changes over time by household characteristics helps gain insight into drivers and sheds light on causality. For simplicity, we only report results on percentage contributions to total inequality and to changes in the nationwide Gini coefficient by household characteristics (Table 7), estimated from equations (6)–(8), and contributions to changes in the nationwide variance of logs of per capita income, estimated from equations (9)–(10) (Table 8). Results of regression models estimated using equation (5) and summary statistics of the variables are reported in the appendixes.

The left panel of Table 7 shows that household characteristics included in regression models as explanatory variables can explain close to half of nationwide income inequality for all three countries in both sample years, ranging from 44% to 56%. The remaining is accounted for by unknown factors, as shown by figures in the row for residuals and the models' R-squared reported in the appendixes. Compared with similar studies, model fitness is considered quite good.³

Education attainment of household head is the most important contributor to income inequality for all the three countries. At the end-year, this explained about 17% in the Philippines, 19% in Thailand, and 12% in Viet Nam. Other major contributors include household's regional and urban-rural locations, household head's occupation and sector of employment, household's access to loan (for the Philippines), and access to financial investment (for Thailand and Viet Nam).⁴ On the other hand, household head's age, gender and marital status have a limited power in explaining income inequality. Over time, the percentage contribution by education decreased in the Philippines, but increased in Thailand and Viet Nam, while percentage contributions by household locations declined for all the three countries. Apart from education and locations, in the Philippines, the percentage contribution of occupation increased, but that of sector of employment declined; in Thailand, the contributions of these two household characteristics changed too, but in the opposite direction; in Viet Nam, the percentage contribution by access to financial investment increased significantly.

The right panel of Table 7 shows contributions to changes in income inequality between two sample years by household characteristics, as a percent of the base-year inequality, using the Gini coefficient to measure inequality. For the Philippines, the Gini coefficient declined by about 12% during 2003–2018. The most important contributor to the decline is household head's education attainment, accounting for 5 percentage points (pp), followed by regional location at 4.4 pp, urban-rural location at 3.7 pp, and household head's sector of employment at 3.4 pp. Other household characteristics have a limited (either positive or negative) or no power in explaining changes in the Gini coefficient between the 2 years. The unknown factors explain 3.8 pp of the total change, as shown by the contribution of residuals.

For Thailand, the nationwide Gini coefficient declined by about 17% between 2006 and 2019. Among the household characteristics, regional location made the largest contribution to the decline, at 5.2 pp, followed by occupation of household head, at 2.7 pp, and urban-rural location, at 1.7 pp. The power of other household characteristics in explaining changes in the Gini coefficient is very limited. Although education is the largest contributor to the level of inequality in

³ For example, see the study on the United Kingdom by Brewer and Wren-Lewis (2016), on India by Pieters (2011), and on the United States by Cowell and Fiorio (2009).

⁴ While the access to loan is not found to be among major contributors to income inequality in the case of Thailand in this study, a government report (NESDC 2019) reveals that a key determinant of income inequality in Thailand is the lack of financial access to financial institutions for low-income families.

2019, it only made a very small but positive contribution (0.4 pp) to the total change in the Gini between 2006 and 2019. The unknown factors, however, accounted for 8 pp of the total decline.

For Viet Nam, the nationwide Gini coefficient declined by close to 10% between 2004 and 2018. The largest contributor to the decline was urban-rural location, accounting for 5.8 pp, followed by regional location, accounting for 2.6 pp. However, access to financial investment caused the Gini to increase by 5.2 pp and household head's education caused it to increase by 2.5 pp, offsetting the decline due to other household characteristics and unknown factors.

Contributions to the decline in income inequality over time by household characteristics can be attributed to changes in the distribution of household characteristics across households, known as the quantity effect. These are determined by household characteristics variables used to estimate the regression models. They can also be attributed to changes in premiums of household characteristics, known as the price effect, which are determined by the estimated coefficients of the regression models. In education, for example, its contribution to the decline in income inequality can be due to a decline in the education premium, determined by the coefficient of the education variable, or a decline in the education inequality, captured by the education variable. Using variance of logs of per capita disposable income to measure inequality allows decomposition of the total contribution of a particular household characteristic into a quantity effect and a price effect—although variance of logs of income is often not considered a satisfactory inequality measure, as noted.

Table 8 shows that the relative importance of various household characteristics in explaining changes in inequality when using variance of logs of income is more or less consistent with that when using the Gini coefficient for all three countries. However, the magnitude differs, with only one exception, education for Thailand, the total contribution of which becomes important in explaining the decline in inequality when using variance of logs of income.

For the Philippines, nationwide variance of logs of pre capita income declined 25% in 2003–2018. Education remains the largest contributor to the decline, and the contribution is largely driven by the price effect, that is, a decline in the education premium, accounting for 7.6 pp, which is offset slightly by a change in the distribution of education attainments. Other major contributors to the decline in the variance of logs of income are regional location, urban-rural location, and household head's sector of employment. These are all driven by the price effect, indicating declines in regional income disparity, urban-rural income gap, and sectoral earning differentials. The decline in the premium of access to loans made a sizable contribution to the decline in inequality, but was offset by an equally sizable change in the distribution of access to loans, making its total contribution small. Overall, contributions by household characteristics to the decline in inequality in the Philippines were dominated by the price effect, with distributions of household characteristics remaining quite stable.

For Thailand, the overall variance of logs of income declined by 33%, but about half of this decline was due to unknown factors. Among household characteristics, regional location, occupation of household head, and urban-rural location remained key contributors to the decline, with the regional location being the most important. However, education, which has limited explanatory power in Table 7 (when using the Gini coefficient to measure inequality), becomes an important contributor to the decline in inequality. The contributions by regional location, urban-rural location, and occupation, similar to the case in the Philippines, are largely driven by the price effect, that is, declines in regional income disparity, in the urban-rural income gap, and in earning differentials among different occupations. However, for education, a large price effect (a decline in the

education premium) is offset by a sizable change in the distribution of education attainments; for regional location, a large price effect was re-enforced by a sizable quantity effect.

For Viet Nam, variance of logs of income only declined 1.2%.⁵ Major contributors to the decline remain urban-rural and region locations, at 5.2 pp and 1.8 pp, respectively, together with unknown factors, at 3.6 pp. These are offset by positive contributions of 5.6 pp by access to financial investment and 3.6 pp by household head's education attainment. Urban-rural location is the largest contributor to the decline in inequality, driven largely by a price effect, that is, narrowing the urban-rural income gap, but offset sizably by a positive quantity effect. The positive quantity effect of the urban-rural location is likely due to the country's low urbanization (at 36.8% in 2018, the lowest among the three countries) and it is still in the stage where migration from rural to urban areas causes inequality to increase (Kuznets 1955; Kanbur and Zhuang 2013). The contribution of the regional location to the decline in inequality is driven by the price effect, that is, narrowing regional income gap, but offset sizably by a quantity effect. Education causing inequality to increase is also mainly driven by the quantity effect, while the education premium increased only slightly. Access to financial investment made a large positive contribution to inequality, driven by the quantity effect. Overall, unlike in the Philippines and Thailand, both price effect and quantity effect played an important role in causing inequality to change in Viet Nam, with the price effect helping to reduce inequality and the quantity effect causing inequality to increase.

4.4. Analysis of Results

The above results are summarized into three key findings. *First, for all three countries, in the end-sample years, wages were the largest source of income and increased wage earners reduced income inequality.* Other important sources included nonfarm business income, overseas remittances, and imputed rents for the Philippines; nonfarm business income and transfers for Thailand; and imputed rents and nonfarm business income for Viet Nam. Property and financial income were among the most unequal income components but, combined, only explained a very small part of the inequality because of their low shares in total income. By household characteristics, the education attainment of the household head was the most important contributor to income inequality in the three countries. Other major contributors included household's regional and urban-rural locations, household head's occupation and sector of employment, household's access to loans (for the Philippines), and access to financial investment (for Thailand and Viet Nam).

Second, a major contributing factor to declines in income inequality in the three countries during the sample periods was a reduction in concentration rates of wages, nonfarm business income, and overseas remittances, as less well-off households increasingly engage in better-paying activities, such as wage employment, nonfarm business, or working overseas. Other important contributors to the declines included, in Thailand, private transfers that became more pro-poor; in Viet Nam, more targeted public transfers; and in both countries, farm income that became less concentrated with a declining share. However, several factors caused income inequality to rise and offset the above negative contributors. Common to all three countries was a rising share of wages in total income, driven by industrialization and urbanization, especially in Viet Nam, where the pace has been particularly rapid. In the Philippines and Thailand, a rising share of pensions in total income and, in Viet Nam, a rising share of imputed rent also sizably offset negative

⁵ As noted, the much smaller decline in variance of logs of income than in the Gini coefficient in Viet Nam is likely because the decline in income inequality was largely due to the redistribution away from high income households to the middle class.

contributors. In all three countries, changes in direct taxation did not cause income inequality to change much.

Third, by household characteristics, narrowing regional disparity and urban-rural income gaps can explain a large part of declines in nationwide income inequality in the three countries. But in the Philippines and Thailand, a falling education premium was the largest contributor to the declines, with a narrowing in the earning differentials among sectors or occupations also playing some role. In Viet Nam, a change in the distribution of education attainments, an increase in education premium, and a change in the distribution of access to financial investment caused income inequality to increase, partly offsetting the effects of narrowing regional disparity and urban-rural income gaps.

Nevertheless, the empirical findings of this paper need to be interpreted with caution. A major caveat is possible underreporting of income by the richest households. For Thailand, Jenmana (2018) finds that the income Gini coefficients estimated from household survey data combined with tax returns are much higher than those estimated from the household survey data alone. Underreporting by the richest households in household income surveys is a common problem. For the United States, Piketty (2014) shows that income inequality would have been 20% higher in 2011 if underreporting by top income earners were corrected. However, if the extent of underreporting by the richest households is consistent across all sample years, it can be argued that it will unlikely invalidate the findings of this paper.

Table 7: Regression-Based Decomposition: Percentage Contributions to Income Inequality and Changes in the Gini Coefficient by Household Characteristics

	Percentage Contribution to Income Inequality (%)						Contribution to Change in Gini, as % of the Base-Year Gini		
	Philippines		Thailand		Viet Nam		Philippines	Thailand	Viet Nam
	2003	2018	2006	2019	2004	2018	2003–2018	2006–2019	2004–2018
Residuals	44.1	54.3	52.3	53.6	56.2	53.2	3.8	-7.9	-8.1
Age	1.3	1.7	-1.4	-1.8	1.0	1.3	0.2	-0.1	0.1
Gender	0.1	-0.2	0.2	0.0	0.9	0.3	-0.3	-0.2	-0.6
Marital status	1.1	1.6	1.1	1.8	-0.1	0.0	0.3	0.4	0.1
Sector of employment	4.5	1.3	6.1	7.7	3.9	4.6	-3.4	0.3	0.2
Occupation	5.1	6.4	3.0	0.7	4.6	4.1	0.6	-2.4	-0.8
Education	19.7	16.6	15.6	19.3	8.2	11.9	-5.0	0.3	2.5
Urban-rural	6.2	2.8	3.7	2.4	13.0	7.9	-3.7	-1.7	-5.8
Region	9.9	6.3	15.6	12.7	11.5	9.8	-4.4	-5.2	-2.6
Access to loan	6.7	8.2	0.6	0.7	0.4	0.7	0.5	0.0	0.3
Access to financial investment	1.3	0.9	3.2	3.0	0.4	6.1	-0.5	-0.7	5.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	-11.8	-17.3	-9.5

Source: Authors' estimation.

Table 8: Contributions to Changes in Income Inequality, as a Percentage of Initial Inequality

Contribution	Philippines, 2003–2018			Thailand, 2006–2019			Viet Nam, 2004–2018		
	Total	of which		Total	of which		Total	of which	
		Q effect	P effect		Q effect	P effect		Q effect	P effect
Residuals	-3.4			-16.5	--	--	-3.6	--	--
Age	0.0	0.2	-0.2	0.2	-0.2	0.4	0.3	-0.6	0.9
Gender	-0.2	0.0	-0.3	-0.2	-0.1	-0.1	-0.6	0.0	-0.6
Marital status	0.1	0.1	0.0	0.1	0.3	-0.2	0.1	0.0	0.1
Sector of employment	-3.5	-1.0	-2.5	-1.0	0.2	-1.1	0.6	0.8	-0.2
Occupation	-0.3	-0.2	-0.1	-2.5	0.0	-2.5	-0.5	0.6	-1.1
Education	-7.3	0.4	-7.6	-2.7	2.8	-5.5	3.6	3.2	0.4
Urban-rural	-4.1	-0.4	-3.7	-2.1	-0.1	-2.0	-5.2	2.0	-7.1
Region	-5.2	0.0	-5.2	-7.1	-2.5	-4.6	-1.8	2.2	-4.1
Access to loan	-0.6	2.4	-3.0	-0.1	0.1	-0.2	0.3	0.3	0.0
Access to financial investment	-0.6	-1.1	0.5	-1.2	-0.3	-0.9	5.6	5.5	0.1
Total	-25.2	0.3	-22.1	-33.1	0.2	-16.8	-1.2	14.0	-11.6

Note: Q = quantity effect; P = price effect.

Source: Authors' estimation.

5. Conclusion

The Philippines, Thailand, and Viet Nam, three middle-income countries in Southeast Asia, have seen their income inequality moderating in recent years in contrast to the global trend of widening income inequality. This paper examines factors that drove the moderation by decomposing income inequality and its changes by income sources and household characteristics. Main findings can be summarized as follows. First, for all three countries, wages were the largest source of income, and increased wage earners reduced income inequality. Second, by income source, a major contributing factor to the decline in income inequality was a reduction in concentration rates of wages, nonfarm business income, and overseas remittances as less well-off households increasingly engage in better-paying activities, such as wage employment, nonfarm business, or working overseas. Third, by household characteristics, narrowing regional disparity and urban-rural income gaps can explain a large part of the decline in nationwide income inequality in the three countries.

A natural question is, at a deeper level, what caused changes in concentration rates of various income sources, regional and urban-rural income gaps, education premiums, and premiums of other household characteristics, as highlighted above? Although this question may go well beyond the scope of this paper, conjecture is possible. All these changes are likely combined outcomes of certain processes behind the Kuznets hypothesis, domestic policies, and some country-specific patterns of structural transformation.

According to the Kuznets (1955) hypothesis, a country's income inequality tends to worsen in the initial stage of development, stabilize when its income reaches a certain level, and fall when the country becomes wealthy. One of the reasons is that economic takeoff often starts with a small number of entrepreneurs investing in new technologies and accumulating capital before leading to higher income for the wider population. This may widen income inequality as such early investment opportunities may not be even. For example, it is more likely to take place in cities with better infrastructure and areas close to markets. However, as benefits of investment and growth broaden, regional and urban-rural income gaps may narrow. According to Kuznets, urbanization can also drive inequality to rise initially, but decline when urbanization reaches a certain level and reduction in the between-urban-rural inequality outweighs the increase in the within-urban-rural inequality (see Kanbur and Zhuang [2013] for an empirical demonstration).

Other important factors could reduce inequality, such as progressive taxes and public transfers for better income redistribution. In these three economies, domestic policies are likely contributing to the declines in income inequality as well in recent years. In the Philippines, for example, the *Pantawid Pamilyang Pilipino* Program (4Ps), is a major conditional cash transfer program started in 2008 to provide grants to extremely poor households to improve their health, nutrition, and education, particularly of children aged 0–14 (World Bank. n.d.). In Thailand, successive governments in the past 2 decades have introduced programs to strengthen the country's social protection system, including universal basic healthcare, universal old-age allowance, and extension of the social security system to cover informal and self-employed workers. The country's agriculture price subsidies in various forms have helped to increase incomes of farmers and reduce urban-rural income gaps, although the subsidies have also been criticized for slowing structural transformation (Kanchoochat 2023). In Viet Nam, since 2006, the government has implemented many nationally targeted poverty reduction programs, covering areas such as construction of new rural areas, employment and vocational training, sustainable poverty reduction, and child protection (ADB 2016). All these initiatives have certainly helped to reduce poverty and income inequality in the three countries.

Patterns of structural transformation that are unique to the country may also partly explain differences in the causes of declines in income inequality among the three countries. First, in the Philippines and Thailand, a decline in the education premium was the largest contributor, while in Viet Nam, the education premium increased slightly. The education premium is affected by both demand for and supply of skilled labor. In all three countries, education attainments of the population have increased significantly in recent years, and these have likely led to increased supply of skilled workers. For instance, between 2000 and 2018, the gross enrollment rate of tertiary education increased from 30.4% to 35.5% in the Philippines, from 39.4% to 49.3% in Thailand, and from 9.5% to 28.5% in Viet Nam (ADB 2020). Second, Viet Nam's rapid economic growth in recent years has been driven by the expansion of the industrial sector, manufacturing exports, and foreign direct investment, which may arguably demand more skilled labor. On the other hand, growth in the Philippines and Thailand has relied more on the service sectors, such as business processing outsourcing in the former and tourism in the latter. Arguably the service sector demands less skilled workers. These may explain why the education premium declined in the Philippines and Thailand, but increased in Viet Nam.

Appendixes

Appendix 1: Regression Models

Philippines, 2003

(analytic weights assumed)		
(sum of weights	=	1.5944e+07)

Number of obs	=	41257
Prob>F	=	0
R-squared	=	0.559
Root MSE	=	0.575

RHS variables	Coefficient	Standard errors	t-statistics
age	-0.00105	0.00120	-0.870
age squared	8.91e-05	1.21e-05	7.360
gender	-0.00706	0.0110	-0.640
marital status	-0.167	0.0104	-16.02
industry	0.191	0.0125	15.35
services	0.172	0.0128	13.41
occup1	0.164	0.0130	12.62
occup2	0.220	0.0225	9.770
occup3	0.0557	0.0214	2.610
occup4	0.0403	0.0221	1.830
occup5	-0.0247	0.0152	-1.620
occup6	-0.0848	0.0149	-5.700
occup7	-0.124	0.0147	-8.400
occup8	-0.0244	0.0129	-1.890
occup9	-0.161	0.0127	-12.67
edu2	0.193	0.0176	10.99
edu3	0.337	0.0180	18.79
edu4	0.426	0.0188	22.66
edu5	0.574	0.0184	31.15
edu6	0.833	0.0194	42.85
edu7	1.165	0.0205	56.88
urban	0.238	0.00712	33.38
reg1	0.289	0.0213	13.55
reg2	0.431	0.0228	18.87
reg3	0.480	0.0196	24.52
reg4	0.473	0.0189	24.99
reg5	0.115	0.0209	5.510
reg6	0.154	0.0200	7.670
reg7	0.176	0.0203	8.660
reg8	0.183	0.0217	8.440
reg9	-0.0586	0.0228	-2.570
reg10	0.0862	0.0218	3.950
reg11	0.242	0.0216	11.21

reg12	0.181	0.0220	8.210
reg13	0.642	0.0196	32.81
reg14	0.480	0.0274	17.55
reg15	0.255	0.0247	10.32
access to loan	0.450	0.00868	51.86
access to financial investing	0.278	0.0159	17.54
constant	8.942	0.0389	230.0

Philippines, 2018

(analytic weights assumed)		
(sum of weights	=	2.4661e+07)

Number of obs	=	147165
Prob>F	=	0
R-squared	=	0.457
Root MSE	=	0.551

RHS variables	Coefficient	Standard errors	t-statistics
age	0.00281	0.000619	4.530
age squared	3.84e-05	5.97e-06	6.430
gender	0.0261	0.00438	5.970
marital status	-0.184	0.00429	-42.92
industry	0.0973	0.00694	14.03
services	0.109	0.00682	15.98
occup1	0.104	0.00830	12.58
occup2	0.332	0.0124	26.78
occup3	0.00504	0.0114	0.440
occup4	-0.0752	0.0120	-6.260
occup5	-0.110	0.00877	-12.53
occup6	-0.132	0.00551	-23.88
occup7	-0.170	0.00908	-18.69
occup8	-0.113	0.00901	-12.54
occup9	-0.251	0.00643	-38.96
edu2	0.170	0.0112	15.12
edu3	0.273	0.0113	24.11
edu4	0.432	0.0112	38.59
edu5	0.632	0.0165	38.24
edu6	0.668	0.0167	40.08
edu7	0.868	0.0115	75.27
urban	0.137	0.00345	39.71
reg1	0.273	0.0112	24.34
reg2	0.291	0.0120	24.34
reg3	0.339	0.0101	33.47
reg4	0.276	0.00981	28.17
reg5	0.0120	0.0111	1.090
reg6	0.126	0.0105	11.97
reg7	0.234	0.0105	22.18

reg8	0.0118	0.0115	1.030
reg9	-0.0210	0.0120	-1.750
reg10	0.0817	0.0113	7.200
reg11	0.194	0.0111	17.42
reg12	0.0419	0.0113	3.700
reg13	0.326	0.0103	31.80
reg14	0.330	0.0143	23.10
reg15	-0.189	0.0129	-14.64
access to loan	0.324	0.00349	92.85
access to financial investing	0.403	0.0115	35.03
constant	10.04	0.0209	480.8

Thailand, 2006

(analytic weights assumed)		
(sum of weights)	=	1.8025e+07)

Number of obs	=	44872
Prob>F	=	0
R-squared	=	0.477
Root MSE	=	0.673

RHS variables	Coefficient	Standard errors	t-statistics
age	0.0247	0.00136	18.13
age squared	-0.000178	1.28e-05	-13.97
gender	-0.0992	0.00729	-13.61
marital status	0.198	0.0133	14.91
sector2	0.00364	0.0338	0.110
sector3	-0.132	0.0916	-1.440
sector4	0.234	0.0126	18.62
sector5	0.588	0.0595	9.890
sector6	0.139	0.0157	8.880
sector7	0.275	0.0118	23.43
sector8	0.268	0.0176	15.18
sector9	0.251	0.0191	13.12
sector10	0.446	0.0453	9.840
sector11	0.211	0.0291	7.250
sector12	0.0268	0.00148	18.14
sector13	0.0230	0.00215	10.69
sector14	0.316	0.0342	9.250
sector15	0.0116	0.00158	7.370
sector16	0.0129	0.00333	3.870
sector17	0.0605	0.0208	2.910
occup1	0.243	0.0104	23.40
occup2	0.277	0.0274	10.09
occup3	0.154	0.0217	7.090
educ2	0.230	0.0140	16.39
educ3	0.560	0.0179	31.36
educ4	0.660	0.0184	35.99
educ5	0.851	0.0248	34.27
educ6	1.076	0.0217	49.52
educ7	1.356	0.0428	31.68
educ8	1.697	0.180	9.400
educ9	0.495	0.125	3.950
urban	0.190	0.00874	21.68
reg2	0.0104	0.0252	0.410

reg3	0.000834	0.0257	0.0300
reg4	-0.187	0.0314	-5.940
reg5	-0.144	0.0333	-4.340
reg6	-0.265	0.0491	-5.390
reg7	-0.246	0.0315	-7.800
reg8	-0.464	0.0519	-8.930
reg9	-0.510	0.0424	-12.05
reg10	-0.185	0.0325	-5.690
reg11	0.00423	0.0269	0.160
reg12	-0.109	0.0370	-2.950
reg13	-0.213	0.0366	-5.810
reg14	-0.250	0.0515	-4.860
reg15	-0.298	0.0338	-8.820
reg16	-0.234	0.0412	-5.680
reg17	-0.341	0.0534	-6.390
reg18	-0.745	0.0324	-23.03
reg19	-0.729	0.0202	-36.13
reg20	-0.955	0.0246	-38.80
reg21	-0.806	0.0250	-32.30
reg22	-0.920	0.0254	-36.18
reg23	-0.656	0.0239	-27.43
reg24	-0.886	0.0379	-23.38
reg25	-0.709	0.0273	-25.94
reg26	-0.669	0.0375	-17.83
reg27	-0.811	0.0336	-24.15
reg28	-0.644	0.0237	-27.11
reg29	-0.643	0.0253	-25.45
reg30	-0.807	0.0354	-22.81
reg31	-0.644	0.0288	-22.33
reg32	-0.578	0.0312	-18.53
reg33	-0.846	0.0256	-33.09
reg34	-0.819	0.0294	-27.91
reg35	-0.824	0.0280	-29.40
reg36	-0.875	0.0369	-23.74
reg37	-0.683	0.0440	-15.52
reg38	-0.512	0.0224	-22.80
reg39	-0.458	0.0416	-11
reg40	-0.612	0.0303	-20.22
reg41	-0.582	0.0388	-15.01
reg42	-0.644	0.0378	-17.06
reg43	-0.939	0.0374	-25.08
reg44	-0.687	0.0359	-19.12
reg45	-0.687	0.0251	-27.41
reg46	-0.892	0.0529	-16.86

reg47	-0.364	0.0276	-13.20
reg48	-0.592	0.0464	-12.76
reg49	-0.368	0.0303	-12.15
reg50	-0.664	0.0382	-17.40
reg51	-0.590	0.0340	-17.37
reg52	-0.460	0.0300	-15.32
reg53	-0.400	0.0365	-10.97
reg54	-0.620	0.0280	-22.14
reg55	-0.225	0.0301	-7.470
reg56	-0.399	0.0308	-12.97
reg57	-0.286	0.0307	-9.300
reg58	-0.0372	0.0285	-1.310
reg59	-0.0434	0.0365	-1.190
reg60	-0.369	0.0622	-5.930
reg61	-0.335	0.0406	-8.270
reg62	-0.380	0.0394	-9.660
reg63	-0.441	0.0240	-18.42
reg64	-0.291	0.0423	-6.870
reg65	-0.0304	0.0538	-0.560
reg66	0.0921	0.0472	1.950
reg67	-0.0957	0.0283	-3.380
reg68	-0.281	0.0603	-4.650
reg69	-0.155	0.0378	-4.090
reg70	-0.283	0.0249	-11.35
reg71	-0.399	0.0520	-7.670
reg72	-0.215	0.0349	-6.160
reg73	-0.397	0.0371	-10.71
reg74	-0.700	0.0398	-17.60
reg75	-0.404	0.0419	-9.650
reg76	-0.735	0.0335	-21.96
access to loan	0.135	0.00684	19.81
access to financial investing	0.299	0.00917	32.65
constant	9.789	0.0392	249.7

Thailand, 2019

(analytic weights assumed)		
(sum of weights	=	2.1847e+07)

Number of obs	=	45528
Prob>F	=	0
R-squared	=	0.464
Root MSE	=	0.557

RHS variables	Coefficient	Standard errors	t-statistics
age	0.0147	0.00108	13.69
age squared	-9.71e-05	9.64e-06	-10.08
gender	-0.0535	0.00559	-9.580
marital status	0.186	0.00908	20.44
sector2	0.120	0.0348	3.440
sector3	0.213	0.0784	2.720
sector4	0.323	0.0103	31.55
sector5	0.555	0.0454	12.22
sector6	0.217	0.0129	16.80
sector7	0.267	0.00933	28.57
sector8	0.256	0.0130	19.74
sector9	0.243	0.0168	14.40
sector10	0.324	0.0587	5.510
sector11	0.320	0.0378	8.460
sector12	0.0259	0.00317	8.160
sector13	0.0194	0.00280	6.920
sector14	0.320	0.0240	13.32
sector15	0.0213	0.00111	19.15
sector16	0.0183	0.00154	11.86
sector17	0.0173	0.00166	10.47
occup1	-0.0558	0.0289	-1.930
occup2	0.0981	0.0218	4.510
occup3	0.0756	0.0178	4.240
educ2	0.118	0.0128	9.210
educ3	0.307	0.0149	20.58
educ4	0.467	0.0148	31.50
educ5	0.621	0.0188	33.09
educ6	0.860	0.0161	53.54
educ7	1.195	0.0276	43.32
educ8	1.471	0.0749	19.64
educ9	0.299	0.0478	6.250
urban	0.118	0.00620	18.99

reg2	-0.0303	0.0166	-1.830
reg3	0.0402	0.0180	2.230
reg4	0.0520	0.0192	2.720
reg5	-0.326	0.0245	-13.30
reg6	-0.437	0.0425	-10.27
reg7	-0.396	0.0260	-15.24
reg8	-0.357	0.0477	-7.480
reg9	-0.499	0.0380	-13.13
reg10	-0.118	0.0265	-4.460
reg11	0.0522	0.0172	3.040
reg12	-0.00437	0.0230	-0.190
reg13	-0.129	0.0293	-4.390
reg14	-0.314	0.0396	-7.930
reg15	-0.0171	0.0249	-0.690
reg16	-0.240	0.0271	-8.860
reg17	-0.278	0.0403	-6.910
reg18	-0.452	0.0287	-15.78
reg19	-0.417	0.0163	-25.51
reg20	-0.650	0.0218	-29.86
reg21	-0.505	0.0230	-21.98
reg22	-0.671	0.0244	-27.52
reg23	-0.487	0.0195	-24.98
reg24	-0.538	0.0321	-16.79
reg25	-0.503	0.0240	-20.92
reg26	-0.420	0.0434	-9.660
reg27	-0.539	0.0341	-15.80
reg28	-0.257	0.0188	-13.69
reg29	-0.335	0.0217	-15.46
reg30	-0.325	0.0328	-9.910
reg31	-0.446	0.0346	-12.91
reg32	-0.395	0.0258	-15.28
reg33	-0.352	0.0227	-15.48
reg34	-0.654	0.0264	-24.81
reg35	-0.450	0.0256	-17.56
reg36	-0.537	0.0306	-17.58
reg37	-0.487	0.0394	-12.35
reg38	-0.413	0.0179	-23
reg39	-0.313	0.0330	-9.480
reg40	-0.443	0.0246	-17.97
reg41	-0.519	0.0332	-15.60
reg42	-0.459	0.0322	-14.25
reg43	-0.534	0.0328	-16.26
reg44	-0.641	0.0318	-20.16
reg45	-0.525	0.0215	-24.37

reg46	-0.639	0.0485	-13.18
reg47	-0.353	0.0232	-15.24
reg48	-0.414	0.0397	-10.41
reg49	-0.315	0.0263	-11.99
reg50	-0.500	0.0323	-15.47
reg51	-0.358	0.0282	-12.69
reg52	-0.516	0.0237	-21.81
reg53	-0.440	0.0299	-14.69
reg54	-0.441	0.0246	-17.91
reg55	-0.296	0.0256	-11.55
reg56	-0.370	0.0259	-14.31
reg57	-0.372	0.0249	-14.95
reg58	-0.103	0.0220	-4.680
reg59	-0.132	0.0226	-5.860
reg60	-0.167	0.0504	-3.310
reg61	-0.264	0.0324	-8.140
reg62	-0.279	0.0321	-8.690
reg63	-0.326	0.0197	-16.51
reg64	-0.217	0.0372	-5.840
reg65	-0.247	0.0428	-5.760
reg66	-0.0607	0.0314	-1.930
reg67	-0.106	0.0221	-4.790
reg68	-0.413	0.0440	-9.370
reg69	-0.147	0.0309	-4.760
reg70	-0.492	0.0199	-24.77
reg71	-0.481	0.0439	-10.95
reg72	-0.368	0.0290	-12.67
reg73	-0.578	0.0308	-18.76
reg74	-0.666	0.0326	-20.44
reg75	-0.414	0.0363	-11.40
reg76	-0.713	0.0307	-23.19
access to loan	0.112	0.00588	19.06
access to financial investing	0.281	0.00766	36.76
constant	10.71	0.0330	324.3

Viet Nam, 2004

(analytic weights assumed)		
(sum of weights	=	1.7491e+07)

Number of obs	=	9167
Prob>F	=	0
R-squared	=	0.438
Root MSE	=	0.565

RHS variables	Coefficient	Standard errors	t-statistics
age	0.0167	0.00287	5.800
age squared	-0.000115	2.68e-05	-4.300
gender	-0.118	0.0187	-6.310
marital status	0.0739	0.0213	3.470
wageworker	-0.180	0.0158	-11.36
self-employed nonfarm	0.103	0.0160	6.440
self-employed farm	-0.107	0.0156	-6.830
occup1	0.376	0.0413	9.110
occup2	0.401	0.0543	7.390
occup3	0.324	0.0405	7.990
occup4	0.385	0.0567	6.780
occup5	0.144	0.0375	3.840
occup6	0.325	0.0373	8.720
occup7	0.100	0.0235	4.270
occup8	0.272	0.0418	6.500
edu1	0.199	0.0174	11.43
edu2	0.392	0.0176	22.27
edu3	0.740	0.0387	19.12
urban	0.464	0.0166	27.94
reg2	-0.198	0.0215	-9.210
reg3	-0.357	0.0395	-9.050
reg4	-0.342	0.0205	-16.66
reg5	-0.0595	0.0240	-2.480
reg6	-0.126	0.0301	-4.170
reg7	0.412	0.0207	19.86
reg8	0.147	0.0194	7.590
access to loan	-0.0549	0.0133	-4.140
access to financial investing	-0.193	0.0317	-6.090
constant	7.892	0.0782	100.9

Viet Nam, 2018

(analytic weights assumed)		
(sum of weights)	=	2.5898e+07)

Number of obs	=	9297
Prob>F	=	0
R-squared	=	0.468
Root MSE	=	0.544

RHS variables	Coefficient	Standard errors	t-statistics
age	0.0322	0.00265	12.17
age squared	-0.000248	2.38e-05	-10.41
gender	-0.0643	0.0168	-3.830
marital status	-0.00755	0.0186	-0.410
wageworker	-0.0335	0.0168	-1.990
self-employed nonfarm	0.140	0.0200	6.980
self-employed farm	-0.125	0.0148	-8.420
occup1	0.372	0.0509	7.310
occup2	0.151	0.0400	3.780
occup3	0.244	0.0411	5.940
occup4	0.215	0.0503	4.260
occup5	0.216	0.0235	9.180
occup6	0.142	0.0235	6.060
occup7	0.196	0.0206	9.510
occup8	0.202	0.0286	7.060
edu1	0.232	0.0178	13.04
edu2	0.411	0.0172	23.90
edu3	0.751	0.0306	24.51
urban	0.281	0.0144	19.53
reg2	-0.274	0.0212	-12.91
reg3	-0.589	0.0365	-16.15
reg4	-0.298	0.0208	-14.34
reg5	-0.173	0.0230	-7.530
reg6	-0.233	0.0269	-8.640
reg7	0.188	0.0189	9.960
reg8	-0.0537	0.0194	-2.770
access to loan	-0.0636	0.0146	-4.360
access to financial investing	0.366	0.0176	20.75
constant	9.343	0.0751	124.4

Variable definitions	
gender	= dummy for gender
marital status	= dummy for marital status
industry	= industry dummy
services	= service sector dummy
sector	= dummy for sectors
wageworker	= dummy for wage worker

self-employed_nonfarm	= dummy for self-employment, nonfarm
self-employed_farm	= dummy for self-employment, farm
occup	= occupation dummy
edu	= education dummy
urban	= dummy for urban households
reg	= dummy for region
access to loan	= dummy for households with access to loan
access to financial investing	= dummy for households with access to financial investment

Appendix 2: Summary Statistics of Variables

(a) Philippines

	Mean	Standard Deviation	Mean	Standard Deviation
	2003		2018	
	log per capita income	10.04	0.864	10.98
age	46.20	14.26	50.26	14.56
age squared	2338	1444	2738	1542
male dummy	0.834	0.372	0.764	0.425
married dummy	0.813	0.390	0.757	0.429
industry sector dummy	0.280	0.449	0.167	0.373
service sector dummy	0.362	0.481	0.383	0.486
occupation dummy 1	0.106	0.307	0.110	0.313
occupation dummy 2	0.0219	0.146	0.0223	0.148
occupation dummy 3	0.0209	0.143	0.0266	0.161
occupation dummy 4	0.0196	0.139	0.0232	0.150
occupation dummy 5	0.0525	0.223	0.0998	0.300
occupation dummy 6	0.269	0.443	0.144	0.351
occupation dummy 7	0.0959	0.294	0.0822	0.275
occupation dummy 8	0.0916	0.289	0.0826	0.275
occupation dummy 9	0.161	0.368	0.180	0.384
education dummy 2	0.218	0.413	0.172	0.378
education dummy 3	0.194	0.396	0.171	0.376
education dummy 4	0.125	0.330	0.395	0.489
education dummy 5	0.214	0.410	0.0134	0.115
education dummy 6	0.117	0.321	0.0132	0.114
education dummy 7	0.101	0.302	0.216	0.411
urban dummy	0.492	0.500	0.522	0.500
region dummy 1	0.0530	0.224	0.0490	0.216
region dummy 2	0.0361	0.187	0.0344	0.182
region dummy 3	0.105	0.306	0.112	0.316
region dummy 4	0.152	0.359	0.182	0.386
region dummy 5	0.0586	0.235	0.0517	0.221
region dummy 6	0.0809	0.273	0.0740	0.262
region dummy 7	0.0725	0.259	0.0743	0.262
region dummy 8	0.0486	0.215	0.0428	0.202
region dummy 9	0.0370	0.189	0.0339	0.181
region dummy 10	0.0463	0.210	0.0453	0.208
region dummy 11	0.0497	0.217	0.0519	0.222
region dummy 12	0.0439	0.205	0.0457	0.209
region dummy 13	0.144	0.351	0.134	0.341
region dummy 14	0.0179	0.133	0.0171	0.130
region dummy 15	0.0274	0.163	0.0266	0.161
access to loan dummy	0.141	0.348	0.335	0.472
access to financial investing dummy	0.0355	0.185	0.0161	0.126

(b) Thailand

	Mean	Standard Deviation	Mean	Standard Deviation
	2006		2019	
	log per capita income	10.72	0.928	11.47
age	50.42	15.00	54.67	15.12
age squared	2767	1587	3218	1660
male dummy	0.689	0.463	0.611	0.488
married dummy	0.0745	0.263	0.121	0.326
sector dummy 2	0.00897	0.0943	0.00564	0.0749
sector dummy 3	0.00124	0.0352	0.00116	0.0340
sector dummy 4	0.0959	0.294	0.104	0.306
sector dummy 5	0.00278	0.0527	0.00341	0.0583
sector dummy 6	0.0469	0.211	0.0487	0.215
sector dummy 7	0.103	0.304	0.108	0.310
sector dummy 8	0.0370	0.189	0.0477	0.213
sector dummy 9	0.0313	0.174	0.0273	0.163
sector dummy 10	0.00526	0.0723	0.00210	0.0458
sector dummy 11	0.0120	0.109	0.00511	0.0713
sector dummy 12	0.477	2.345	0.0575	0.829
sector dummy 13	0.275	1.869	0.0736	0.976
sector dummy 14	0.00948	0.0969	0.0126	0.111
sector dummy 15	0.283	2.041	0.580	2.893
sector dummy 16	0.0585	0.966	0.268	2.055
sector dummy 17	0.00101	0.131	0.163	1.658
occupation dummy 1	0.125	0.330	0.0115	0.107
occupation dummy 2	0.0264	0.160	0.0250	0.156
occupation dummy 3	0.0255	0.158	0.0257	0.158
education dummy 2	0.661	0.473	0.566	0.496
education dummy 3	0.0904	0.287	0.112	0.315
education dummy 4	0.0859	0.280	0.121	0.326
education dummy 5	0.0261	0.160	0.0373	0.189
education dummy 6	0.0623	0.242	0.0982	0.298
education dummy 7	0.00689	0.0827	0.0129	0.113
education dummy 8	0.000259	0.0161	0.00128	0.0358
education dummy 9	0.000670	0.0259	0.00291	0.0539
Urban dummy	0.306	0.461	0.464	0.499
region dummy 2	0.0191	0.137	0.0325	0.177
region dummy 3	0.0175	0.131	0.0254	0.157
region dummy 4	0.0114	0.106	0.0215	0.145
region dummy 5	0.0107	0.103	0.0127	0.112
region dummy 6	0.00456	0.0673	0.00392	0.0625
region dummy 7	0.0119	0.108	0.0114	0.106
region dummy 8	0.00396	0.0628	0.00300	0.0547
region dummy 9	0.00609	0.0778	0.00481	0.0692
region dummy 10	0.0106	0.102	0.0104	0.101
region dummy 11	0.0161	0.126	0.0289	0.167
region dummy 12	0.00831	0.0908	0.0152	0.122
region dummy 13	0.00831	0.0908	0.00857	0.0922

region dummy 14	0.00407	0.0636	0.00456	0.0674
region dummy 15	0.0102	0.101	0.0127	0.112
region dummy 16	0.00651	0.0804	0.0105	0.102
region dummy 17	0.00376	0.0612	0.00449	0.0668
region dummy 18	0.0111	0.105	0.00904	0.0946
region dummy 19	0.0396	0.195	0.0355	0.185
region dummy 20	0.0230	0.150	0.0173	0.131
region dummy 21	0.0226	0.149	0.0151	0.122
region dummy 22	0.0219	0.146	0.0136	0.116
region dummy 23	0.0254	0.157	0.0228	0.149
region dummy 24	0.00826	0.0905	0.00750	0.0863
region dummy 25	0.0177	0.132	0.0142	0.118
region dummy 26	0.00836	0.0911	0.00381	0.0616
region dummy 27	0.0107	0.103	0.00631	0.0792
region dummy 28	0.0248	0.155	0.0245	0.155
region dummy 29	0.0211	0.144	0.0174	0.131
region dummy 30	0.00942	0.0966	0.00704	0.0836
region dummy 31	0.0153	0.123	0.00625	0.0788
region dummy 32	0.0128	0.112	0.0117	0.108
region dummy 33	0.0214	0.145	0.0159	0.125
region dummy 34	0.0146	0.120	0.0113	0.106
region dummy 35	0.0166	0.128	0.0118	0.108
region dummy 36	0.00860	0.0923	0.00806	0.0894
region dummy 37	0.00569	0.0752	0.00468	0.0683
region dummy 38	0.0274	0.163	0.0270	0.162
region dummy 39	0.00653	0.0806	0.00668	0.0815
region dummy 40	0.0130	0.113	0.0128	0.112
region dummy41	0.00751	0.0863	0.00669	0.0815
region dummy 42	0.00804	0.0893	0.00712	0.0841
region dummy 43	0.00814	0.0899	0.00696	0.0831
region dummy 44	0.00892	0.0940	0.00733	0.0853
region dummy 45	0.0215	0.145	0.0179	0.133
region dummy 46	0.00400	0.0631	0.00308	0.0554
region dummy 47	0.0167	0.128	0.0150	0.122
region dummy 48	0.00500	0.0706	0.00458	0.0675
region dummy 49	0.0130	0.113	0.0113	0.106
region dummy 50	0.00787	0.0884	0.00721	0.0846
region dummy 51	0.0101	0.100	0.00943	0.0966
region dummy 52	0.0135	0.115	0.0139	0.117
region dummy 53	0.00865	0.0926	0.00839	0.0912
region dummy 54	0.0158	0.125	0.0127	0.112
region dummy 55	0.0132	0.114	0.0113	0.106
region dummy 56	0.0127	0.112	0.0109	0.104
region dummy 57	0.0130	0.113	0.0129	0.113
region dummy 58	0.0152	0.122	0.0162	0.126
region dummy 59	0.00824	0.0904	0.0165	0.127
region dummy 60	0.00284	0.0532	0.00275	0.0524
region dummy 61	0.00684	0.0824	0.00675	0.0819
region dummy 62	0.00725	0.0849	0.00692	0.0829

region dummy 63	0.0236	0.152	0.0221	0.147
region dummy 64	0.00573	0.0755	0.00511	0.0713
region dummy 65	0.00384	0.0619	0.00394	0.0626
region dummy 66	0.00473	0.0686	0.00698	0.0833
region dummy 67	0.0153	0.123	0.0165	0.127
region dummy 68	0.00291	0.0539	0.00347	0.0588
region dummy 69	0.00781	0.0880	0.00783	0.0882
region dummy 70	0.0204	0.141	0.0212	0.144
region dummy 71	0.00404	0.0635	0.00367	0.0605
region dummy 72	0.00938	0.0964	0.00883	0.0936
region dummy 73	0.00849	0.0917	0.00789	0.0885
region dummy 74	0.00705	0.0837	0.00679	0.0821
region dummy 75	0.00635	0.0794	0.00565	0.0749
region dummy 76	0.0108	0.103	0.00803	0.0893
access to loan dummy	0.427	0.495	0.330	0.470
access to financial investing dummy	0.184	0.388	0.194	0.395

(c) Viet Nam

	Mean	Standard Deviation	Mean	Standard Deviation
	2004		2018	
log per capita income	8.681	0.752	10.66	0.748
age	49.51	14.03	52.74	13.80
age squared	2648	1529	2972	1548
male dummy	0.749	0.434	0.735	0.441
married dummy	0.810	0.393	0.789	0.408
wage worker dummy	0.359	0.480	0.400	0.490
agriculture dummy	0.236	0.425	0.198	0.399
non-agriculture dummy	0.602	0.489	0.463	0.499
occupation dummy 1	0.0238	0.153	0.0153	0.123
occupation dummy 2	0.0198	0.139	0.0402	0.196
occupation dummy 3	0.0254	0.157	0.0230	0.150
occupation dummy 4	0.0118	0.108	0.0139	0.117
occupation dummy 5	0.0274	0.163	0.113	0.317
occupation dummy 6	0.0267	0.161	0.0734	0.261
occupation dummy 7	0.0810	0.273	0.134	0.341
occupation dummy 8	0.0220	0.147	0.0538	0.226
education dummy 1	0.247	0.431	0.242	0.428
education dummy 2	0.417	0.493	0.466	0.499
education dummy 3	0.0480	0.214	0.0939	0.292
urban dummy	0.252	0.434	0.341	0.474
region dummy 2	0.115	0.320	0.114	0.318
region dummy 3	0.0258	0.159	0.0295	0.169
region dummy 4	0.130	0.337	0.122	0.328
region dummy 5	0.0860	0.280	0.0879	0.283
region dummy 6	0.0484	0.215	0.0619	0.241
region dummy 7	0.151	0.358	0.183	0.387
region dummy 8	0.201	0.401	0.173	0.379
access to loan dummy	0.295	0.456	0.219	0.414
access to financial investing dummy	0.0370	0.189	0.137	0.344

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Trends and Drivers of Income Inequality in the Philippines, Thailand, and Viet Nam

A Decomposition Analysis

Income inequality has moderated in the Philippines, Thailand, and Viet Nam over the past 2 decades. This paper examines the factors that drove the moderation by decomposing income inequality and its changes by income sources and household characteristics. Wage, nonfarm business income, and overseas remittance concentrations declined as less well-off households increasingly engaged in better-paying activities. Moderating income inequality might be the combined outcome of rising income opportunities, government policies promoting social inclusion, and positive impacts of structural transformation. Nonetheless, income inequality remains high, especially in the Philippines and Thailand. More policy efforts are still needed to make growth more inclusive.

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