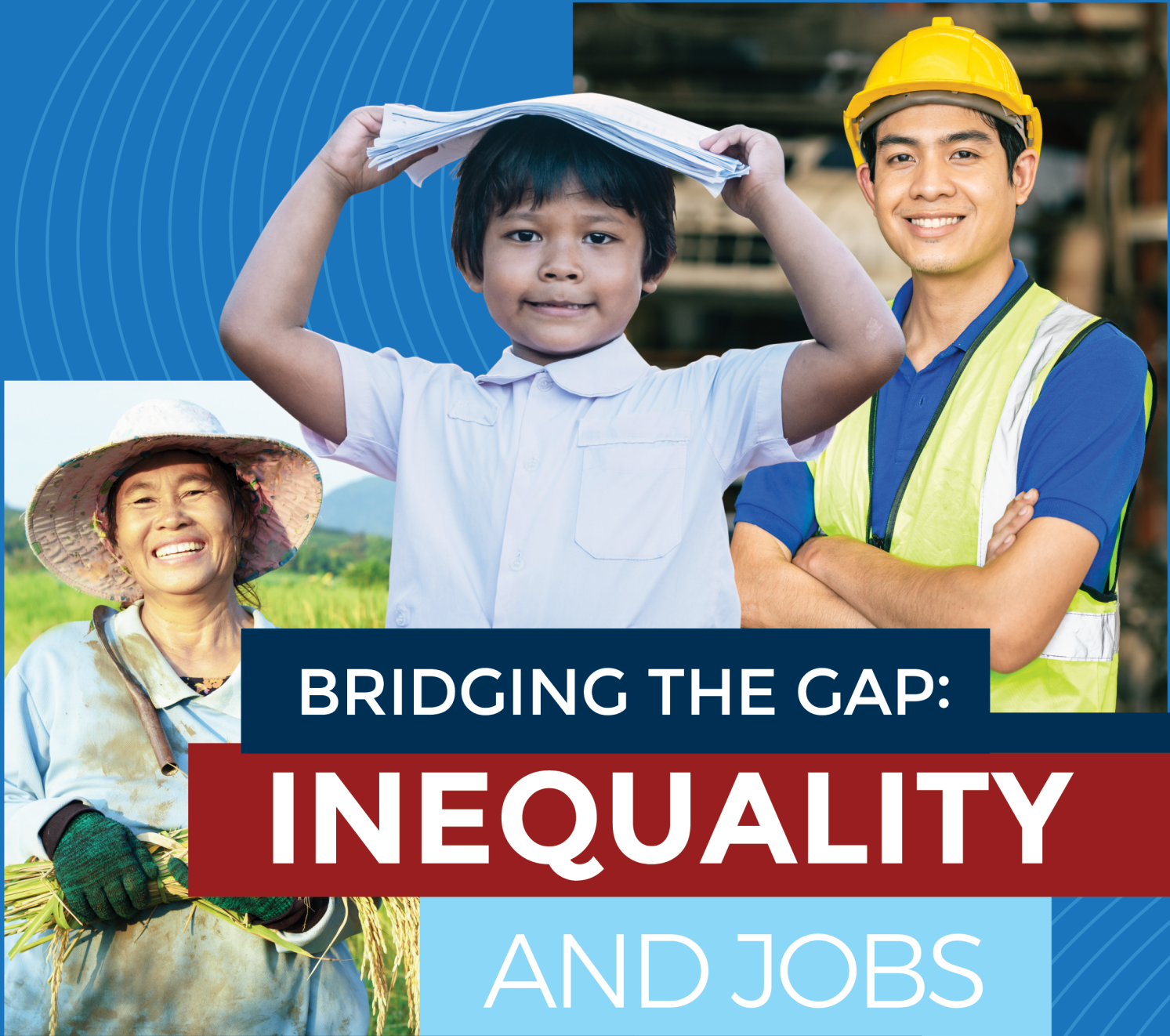




WORLD BANK GROUP



BRIDGING THE GAP:

INEQUALITY

AND JOBS

IN THAILAND

NOVEMBER 2023

ACKNOWLEDGEMENT

The members of the core team that prepared this report are Nadia Belhaj Hassine Belghith (EEAPV, TTL), Tanida Arayavechkit (EEAPV, co-TTL), Francine Claire Fernandez (Consultant, EEAPV) and Buntarika Sangarun (EACTF). Additional help was provided by Angeli Grace Juani (Consultant), Miguel Carlos (Consultant) and Jose Corpus (Consultant).

The work of the team was guided by Fabrizio Zarcone (Country Manager, EACTF), Achim Fock (Manager Operations, EACPF), and Rinku Murgai (Practice Manager, EEAPV). The team also gratefully acknowledges constructive feedback from Matt Wai-Poi (lead Economist, EEAPV), Souleymane Coulibaly (Program Leader, EEADR), Ambar Narayan (Lead Economist, EAWPV), Harry Edmund Moroz (Economist, HLCSP), and Judy Yang (Senior Economist, EEAPV).

The team offers its thanks to Kanitha Kongrukgratitayos (External Affairs Officer, ECREA), Kwanpadh Suddhi-Dhamakit (Senior Country Officer, EACTF), Lilanie Olarte Magdamo (Senior Operation Officer, EACPF), Mildred Thomas Gonsalvez (Program Assistant, EEAPV), Rinalee Ibrahim (Program Assistant, SEAEI), and Parichart Atcharek (ET Temporary, EACTF) for their valuable help with preparation of the report. The team acknowledges the support of Gregory Michael Larson (Consultant) in editing the report.

The team is grateful for useful discussions with the Thailand National Statistics Office (TNSO) and the Office of the National Economic and Social Development Council (NESDC) during preparation of this report. The team also benefited from consultations with researchers and academics from Thammasat University and is grateful for the advice of Dr. Somchai Jitsuchon (Thailand Development Research Institute, TDRI).

TABLE

OF CONTENTS

Acknowledgement	i
Executive Summary	vii
1. Introduction: State of Income Inequality in Thailand	01
2. Recent Development: Inequality in the Aftermath of COVID-19	09
Income and consumption inequality	09
Wealth inequality	13
Spatial inequality	17
Inequalities in labor market outcomes	21
Human capital and food security	23
3. Structural Drivers of Inequality: Evidence from the Past Decades	25
Inequality over the Life Cycle and across Generations	25
Persistence of Income Disparities	33
Gender gaps	44
Role of Fiscal Policy in Addressing Inequality	50
4. Toward a More Inclusive Society	55
Ensuring an equitable recovery and building resilience	55
Setting the stage for a vibrant and inclusive economy	58
Promoting equality of opportunities	61
5. Annexes	64
Appendix A. Data Sources	64
Appendix B. Structure of inequality	65
Appendix C: Inequality and Polarization in Wage and Employment	66
Appendix D: Unconditional Quantile Decomposition of the Gender Pay Gap	69
6. References	72

TABLE

OF FIGURES

Figure 1. Inequality Trends, East Asia and Pacific Region, 1998-2021, Percent _____	01
Figure 2. Inequality and Income Level, Most Recent Year After 2015, Percent _____	02
Figure 3. Income and Wealth Inequality, 2021 _____	03
Figure 4. Income and Poverty Incidence by Region and Province, 2020 _____	04
Figure 5. Perceptions About Inequality, 2019, Percent _____	05
Figure 6. Individual's vs Family Social Position, 2019, Percent _____	05
Figure 7. Important Factors to Get Ahead, 2019, Percent _____	06
Figure 8. Poverty Rates, 2015-2021, Percent _____	09
Figure 9. Inequality Rates, 2015-2021, Percent _____	09
Figure 10. Variation in main income components by decile, 2019-2021, Percent _____	10
Figure 11. Coverage and Benefit Transfers by Decile, 2021 _____	10
Figure 12. Share of Income Sources in Household Current Income by decile, 2019, Percent _____	11
Figure 13. Share of Income Sources in Household Current Income by decile, 2021, Percent _____	11
Figure 14. Growth Incidence Curves, 2019-2021, Percent. _____	12
Figure 15. Variation in food and nonfood consumption expenditure by decile, 2019-2021, Percent _____	13
Figure 16. Wealth inequality, 2011-2021 _____	14
Figure 17. Wealth gap, 2011-2021 _____	14
Figure 18. Household asset and debt by income group _____	15
Figure 19. Average household debt by type of loan _____	16
Figure 20. Poverty and Inequality Rates by Area, 2015-2021, Percent. _____	17
Figure 21. Poverty by Region, 2015-2021, Percent _____	18
Figure 22. Poverty Rates by Household Head Sector of Work and Area, 2015-2021, Percent. _____	19
Figure 23. Poverty Rates of Agricultural-headed Households by Region, 2015-2021, Percent _____	20
Figure 24. Inequality by Region, 2015-2021, Percent _____	21
Figure 25. Sector of Employment by Education Level, 2019-2022, Percent _____	21
Figure 26. Type of Employment (All levels), 2019-2022, Percent _____	22
Figure 27. Type of Employment (Primary and below), 2019-2022, Percent _____	22
Figure 28. Employment in Informal Jobs by Age, Gender, Education and Sectors, 2019-2021, Percent _____	23

Figure 29. Pregnant Women Receiving Prenatal Care, 1987-2019, Percent _____	26
Figure 30. Prevalence of Stunting, Wasting and Underweight among Children Under-5, 2018/2020, Percent _____	26
Figure 31. School Attendance by Gender and Region, 2021, Percent. _____	27
Figure 32. Enrollment at Age-Appropriate Levels by Consumption Quintile, 2021, Percent _____	28
Figure 33. Type of School Attended by Consumption Quintile, 2021, Percent _____	28
Figure 34. Non-attendance of 17-18 Year Olds in School by Consumption Quintile, 2000-2021, Percent _____	29
Figure 35. Education Completion Rates of 24-26 Year Olds by Consumption Quintile, 2021 _____	29
Figure 36. PISA Score Levels by ESCS Decile, 2018, Percent _____	29
Figure 37. Total Inequality, IOP Share and Contribution of Circumstances to IOP in Thailand and Comparator Countries, 2018, Percent _____	30
Figure 38. Access to Improved Water Sources by Urban/Rural, Region, and Quintile, 2021, Percent _____	31
Figure 39. Computer Ownership and Internet Access by Consumption Quintile, 2021, Percent _____	32
Figure 40. Internet Access by Region, 2018-2021, Percent _____	32
Figure 41. Mobile Phone and Smartphone Ownership by Consumption Quintile, 2018-2021, Percent _____	33
Figure 42. Smartphone Ownership by Region, 2018-2021, Percent _____	33
Figure 43. Share of Inequality Between Groups in Total Income Inequality, 2000-2021, Percent _____	34
Figure 44. Returns to Education, Occupation, and Employment Sector, 2000-2021 _____	36
Figure 45. Contribution of Income Sources to Total Income Inequality, 2000-2021 _____	37
Figure 46. Employment by Sector, Occupation and Education Levels, 2001-2022, Percent _____	38
Figure 47. Composition-Adjusted College/High-School Log Weekly Wage Ratio, 2001-2022 _____	40
Figure 48. College/High-School Log Relative Supply, 2002-2021 _____	40
Figure 49. Composition-Adjusted Log Real Weekly Wage by Education Group, 2002-2021 _____	41
Figure 50. Smoothed Changes in Wage Employment by Occupation Skills Percentiles, 2001-2021 _____	43
Figure 51. LFP by Gender, 2001 and 2022, Percent _____	44
Figure 52. Education by Gender, 2001 and 2022, Percent _____	44
Figure 53. Labor Force Participation, by Gender and Age Group, 2001-2022, Percent _____	45
Figure 54. Labor Force Participation, by Gender and Age Group, 2001-2022, Percent _____	46
Figure 55. Cross-Country Comparison of GSNI and GSNI2 by Gender, 2020, Percent _____	47
Figure 56. Endowments and Returns Effects on Gender Pay Gap, 2001, 2010, 2015 and 2022 _____	48
Figure 57. Detailed Endowments and Returns Effects on Gender Pay Gap, 2001 and 2022 _____	49

Figure 58. Most households are net beneficiaries, although not in cash terms _____	50
Figure 59. Benefits are significant for poorer households relative to their incomes, but contributions are modest for richer households _____	50
Figure 60. Fiscal policy reduces inequality in both cash and non-cash terms _____	51
Box 1. The CEQ methodology _____	52
Figure 61. There is scope for Thailand to collect more revenue with a more progressive tax mix _____	54
Figure C1. College/High-School Log Relative Supply Young Cohort, by Gender, 2001-2022 _____	66
Figure C2. College/High-School Log Relative Supply Older Cohort, by Gender, 2001-2022 _____	66
Figure C3. College Education Level by Age Cohorts, Employed Male, 2001-2022, Percent _____	67
Figure C4. Age Composition of Total Population, 2000-2021, Percent _____	67
Figure C5. School Attendance by Gender, Students Below 25, 2000-2021, Percent _____	67
Figure C6. Grade Attendance by Gender, Age 15-24, 2006-2021, Percent _____	67
Figure C7. Composition Adjusted Log Real Weekly Wage by Gender, Less than High-school, 2001-2022 _____	67
Figure C8. Composition Adjusted Log Real Weekly Wage by Gender, College Graduates, 2001-2022 _____	67
Figure C9. Wage Density, Less than High-school, 2001-2022 _____	68
Figure C10. Wage Density, College Graduates, 2001-2022 _____	68

ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank	OAA	Organization for Economic Co-operation and Development Old Age Allowance
ASEAN	Association of Southeast Asian Nations	PIT	Personal Income Tax
CEQ	Commitment to Equity	PISA	Programme for International Student Assessment
CPSD	Country Private Sector Diagnostic	PER	Public Expenditure Review
EAP	East Asia and the Pacific	PPP	Purchasing Power Parity
ECQ	Enhanced Community Quarantine	RIF	Recentered influence function
ESCS	Economic, Social and Cultural Status	SES	Thailand Socio-economic Survey
FSQL	Fundamental School Quality Level	SDG	Sustainable Development Goals
GDP	Gross domestic product	STEM	Science, technology, engineering, and math ocial Welfare Card
GIC	Growth Incidence Curves	SWC	Social Welfare Card
GSNI	Gender Social Norms Index	SY	School year
HDI	Human Development Index	THB	Thai Baht
HCI	Human Capital Index	TNSO	Thailand National Statistics Office
HFS	High-Frequency Phone Surveys	UHC	Universal Health Care
ILFS	Informal Labor Survey	UN	United Nations
ILO	International Labor Organization	UNDP	United Nations Development Program
IMF	International Monetary Fund	UNICEF	United Nations Children’s Fund
IOP	Inequality of opportunity	VAT	Value Added Tax
ISSP	Social Mobility International Social Survey Program	WBG	World Bank Group
LFP	Labor force participation	WDI	World Development Indicators
LFS	Labor Force Surveys	TNSO	Thailand National Statistics Office
LGU	Local government units	WEF	World Economic Forum
MCCT	Modified Conditional Cash Transfer	WHO	World Health Organization
MPI	Multidimensional Poverty Index	WID	World Inequality Database
NDHS	National Demographic and Health Survey	WVS	World Values Survey
NESDC	Office of the National Economic and Social Development Council		
OECD	Organization for Economic Co-operation and Development Old Age Allowance		

EXECUTIVE SUMMARY

During the past two decades, Thailand has made progress towards reducing its significant levels of inequality. In the early 2000s, the country had the highest level of income-based inequality in the East Asia and Pacific (EAP) region, with an estimated income Gini coefficient of 52.4 percent, and the region's second-highest level of consumption-based inequality, with a consumption Gini coefficient of 42.8 percent. Inequality has declined significantly since then, though progress has slowed since 2015.

Yet inequality remains high. In 2021, with an income Gini coefficient of 43.3 percent, Thailand still had the highest level of income-based inequality in EAP, and it ranked as the 13th most unequal of the 63 countries for which income Gini coefficients are available. At its current rate, Thailand's income Gini coefficient is in line with the median level (43.5 percent) of upper-middle income countries (UMICs) but well above the median (31.6 percent) of high-income countries (HICs). In terms of consumption inequality, Thailand has performed better. With a consumption Gini coefficient of 35 percent, it ranked 45th out of 72 countries for which consumption Gini coefficients are available, though it continues to rank higher on this measure than half of the countries in EAP.

Inequality is particularly high when considering the concentration of income and wealth in the wealthiest ten percent of households. In 2021, the share of net personal income earned by the richest 10 percent in Thailand reached 48.8 percent, the highest among countries with available data. When measured in terms of net personal wealth, this figure soars to 74.2 percent, reflecting high concentration of wealth among the few at the top. Thus, a perception of low mobility prevails, coupled with the perception that inequality is unfair, and meritocracy is low.

To tackle inequality, Thailand will need to address both the root causes of persistent inequality as well as the new challenges that have emerged from the COVID-19 pandemic. Inequality, in some forms, can undermine progress on human capital accumulation and reduce the pace and sustainability of growth and poverty reduction. Persistent gaps in education as well as employment and wage earnings, combined with Thailand's increasing cost of living and changing demographics, present significant challenges to reducing inequality as the country continues to recover from the shock of the COVID-19 pandemic. Reducing inequality and promoting inclusion are central to the national development agenda and integral to achieving the UN Sustainable Development Goals (SDGs).

Structural drivers of inequality

Inequality in Thailand begins very early in life, with unequal opportunities in human development, and perpetuates over the life cycle and across generations. Inequality of outcomes, such as in income or wealth, reflects differences in effort and inequality due to the circumstances people are born into (or inequality of opportunity)—and these, in turn, shape the options available to them later in life. Even

before birth, factors such as parents' socioeconomic status and geographic location often influence the availability and quality of care that mothers receive, affecting the endowments with which children are born. Throughout childhood, the same factors influence critical inputs for human capital development, including access to health care, proper nutrition, safe drinking water and sanitation, and quality education. This unequal distribution of opportunities for economic advancement influences children's cognitive skills and learning outcomes, shaping their earnings later in life. Such inequalities are likely transmitted across generations, as children from low-income families tend to have less access to opportunities than their wealthier peers, which tends to reduce their future resources and incentives for investing in their own children—limiting both intergenerational mobility as well as overall economic growth prospects. Moreover, perceptions of low equality of opportunity and intergenerational mobility may affect individual aspirations, reducing investments in human capital and economic growth.

More efforts are needed, but sustained investments in health and nutrition programs have helped Thai children get a healthy—and equal—start in life. Successful community-based nutrition programs in the late 1980s through the 1990s, along with an expansion of the country's health infrastructure, have enabled the majority of women and children to receive proper care and nutrition regardless of their location or income level. While the country has done well in providing children a healthy start, however, efforts to support equality of opportunity throughout childhood and adulthood have been less successful.

In particular, opportunities in education are less universal and are influenced by geographic location and income levels. Because primary and lower secondary education is compulsory, attendance is close to universal. Large gaps in attendance begin to appear at the upper secondary level, based on the households' income level and regional location. Youth from lower-income households have lower rates of school attendance and completion and also fare worse on learning outcomes. Results from the 2018 Programme for International Student Assessment (PISA) reveal that learning outcomes in Thailand generally rise with households' socioeconomic levels, with students from the wealthiest deciles performing significantly better than those from lower deciles. These results reflect the depth of the country's inequality of opportunity in education: not only are students from poorer families disproportionately out of school at a young age, but those who do stay in school are less likely to reach age-appropriate grade levels, more likely to have worse learning outcomes, and less likely to reach tertiary education compared to their peers from wealthier families. These inequalities reduce employment opportunities later in life for students from poorer families, constraining their prospects for upward mobility.

Over the last two decades, education reforms and structural transformation have led to a more educated workforce and a shift towards better jobs, though progress has slowed since 2015. Between 2001 and 2022, the share of workers with just lower secondary education or less fell from 80 percent to 55 percent, and the share of those with at least a college education expanded from 8 to 18 percent. During the same period, employment in agriculture fell by 15 percentage points to 31 percent in 2022, coupled with increased employment in low-end services (e.g., food and accommodation, trade and transportation) and a more tempered rise in industry and high-end services (e.g., ICT, public administration, finance). This gradual structural transformation of Thailand's economy, combined with increasing wage employment and rising incomes, drove a massive reduction in poverty and (to a lesser extent) inequality. However, this progress has slowed since 2015. From 2000 to 2015, the national poverty rate fell from 42.3 percent to 7.2 percent, then marginally declined

to 6.3 percent in 2021. Poverty increased temporarily in 2016 and 2018, as well as in 2020 during the COVID-19 pandemic. Given this trend of declining poverty, Thailand's Gini coefficient fell by more than 7 points from 2000 to 2015 and dropped a further 2 points between 2015 and 2021—while still having the highest level across EAP.

Despite this progress, most less-educated workers continue to be engaged in agriculture and informal employment. In 2022, more than half of Thai workers with primary education or less were employed in agriculture and about 70 percent were engaged in informal employment. Workers who completed high school, by contrast, have shifted to low-end services and industry, though they are mainly employed in middle-skilled occupations and over half are engaged in informal employment. College-educated workers are predominantly employed in high-end services and high-skilled occupations, but they seem to be increasingly shifting to middle-skilled occupations.

Inequalities based on household heads' occupation and education level are the largest contributors to income inequality. Decomposition of inequality across households reveal that close to one-third of income inequality is attributable to differences in the education levels of household heads. This pattern has persisted for more than 20 years, never falling below 28 percent and rising to 30 percent in 2021. The share of inequality attributable to household heads' occupation and employment sector, while smaller, are still important—estimated at 20 percent and 13 percent, respectively. Households' regional location accounts for a further 13 percent, while differences in demographic composition accounts for 10 percent.

The slow expansion of tertiary education and a skills shortage has led to a large college wage premium, which has prevented a faster reduction in inequality. The attainment of high school education in Thailand has expanded quite significantly, but the limited expansion of tertiary education has led to a large skill premium for college-educated workers. This premium reached its peak in 2010, when the average wages of college graduates exceeded those of high school graduates by 134 percent. By 2022, this gap fell to 92 percent—its lowest level in two decades, but still high. The college premium followed similar trends for men and women but was much higher for men. Two factors contributed to the reduction of the college premium after 2010: the disproportionate increase of real wages for less-educated workers on the one hand, and an acceleration in the supply of college-educated workers on the other, particularly college-educated young women between 2008 and 2015. The premium for college education reflects a valuation of skills and provides incentives for investing in education. While it contributes to the persistence of wage and overall income inequalities, efforts can be directed to address the sources of these inequalities—namely by tackling barriers that prevent access to higher education and access to those occupations that adequately reward education.

However, completing tertiary education does not automatically equate to better labor market outcomes. While some college-educated workers are able to benefit from the large skill premium, a significant share are either unemployed or employed in less productive jobs. On the demand-side, this could be due to changes in the broad macroeconomic environment: the country's structural transformation has slowed since 2015, resulting in slower job creation, particularly for high-skilled occupations. This is reflected in the shift of a sizeable share of tertiary-educated workers down the occupation-skill ladder towards less productive jobs. This could also be influenced by supply-side factors if universities are not producing graduates with the skills that are needed in the labor market. In that case, tertiary-educated workers with skills that are valued in the labor market gain from the large skill premium, while those whose skills do not match labor market demands shift down the occupation-skill ladder, ending up in less productive jobs.

Differences in returns to tertiary education across income groups is another major cause of inequality.

The high earnings ratio of college graduates relative to high school graduates conveys the positive news that educational investment offers a high wage return. But this masks a discouraging truth: returns to college education are much lower for low-income households than for better-off ones. This pattern has persisted during the past three decades and contributes to the tenacity of Thailand's wage and income inequalities. A possible explanation for this may be differences in school quality or fields of study. It may be the case that college-educated workers from poorer households benefited from poorer school quality, and/or engaged on fields of study that attract low interest in the labor market, limiting their earnings potential. In contrast, returns to secondary education tend to be similar at the bottom and top of the income distribution. Differences in returns to education are likely to be more prevalent at higher schooling levels, because workers at those levels tend to have more variety in their schooling paths and educational quality.

Education gaps can be compounded by weak foundational skills, such as literacy, digital proficiency, and socio-emotional skills, among a significant portion of the population.

These skill deficiencies are likely prevalent among older adults, younger adults lacking higher education degrees, and those living in rural areas. Individuals with skills below the foundational threshold are likely to show poorer performance across various labor market indicators. For instance, income of those with weak foundational literacy skills is likely to be lower than that of those with adequate skills. This income disparity can further exacerbate income inequality, leading to a significant economic cost.

Gender equality in Thailand is high by some measures, but low by others. The country ranks 79th globally for gender equality and 8th among countries in the EAP region, according to the 2022 World Economic Forum Global Gender Gap Report. The country's ranking on economic participation and opportunity—a function of labor force participation (LFP), wage equality, incomes, and the share of managers and technical workers—is high among Asian countries with available data. However, Thailand fares less well on measures of educational attainment equality and political empowerment, where it is ranked 130th of 146 countries, due to its low share of women in parliament and lack of women in ministerial positions.

While both men and women are entering the labor force later, women have lower levels of participation in the labor market at every age.

With more students staying longer in school, LFP among Thais younger than 20 has fallen significantly during the last two decades. While women tend to enter the labor market at a later age than men, they tend to stay working longer. On average, women have higher education levels than men, but LFP remains consistently higher among men at every age.

While the gender wage gap has slowly narrowed over time, women's education gains have been somewhat offset by the increasing returns to education for men.

Thailand's overall wage gap has narrowed considerably, with gaps in weekly wages falling from 15 percent in 2001 to 2 percent in 2022. Among other factors, this progress is due to improvements in women's labor market attributes, particularly their rapidly increasing education levels during the period. However, while women employed in wage jobs have higher education levels than men, particularly in high-paying positions, the returns to both education and experience have increased at a faster pace for men. Given this, the gender gap in returns to education have widened, despite the narrowing of the overall wage gap.

Spatial disparities across and within regions contribute to the persistence of income inequality, although this effect has declined over time.

In 2020, the average per capita gross domestic product (GDP) in Bangkok was nearly double that of the Central region and more than 6.5 times that of the Northeast region, which had the lowest GDP per capita in the country. A recent assessment of urban infrastructure finance in Thailand unveiled how the prevailing infrastructure development and financing patterns have contributed to these disparities. A more nuanced look at poverty and income levels reveals large income disparities across provinces and within regions, which is most apparent in the South. While that region encompasses provinces with some of Thailand's highest income levels, including Chumphon and Phuket, it also includes provinces with some of the highest poverty rates in the country, including Ranong and the conflict-affected provinces of Pattani, Yala, and Narathiwat. Sustained regional development efforts have helped reduce income disparities between regions, decreasing their overall contribution to income inequality from 25 percent in 2000 to 13 percent in 2021. However, additional measures are required to further reduce spatial disparities. Enabling secondary cities to take on a larger share of urban investment would benefit the entire nation, as these cities serve as centers of economic activity, concentrating local wealth and incomes, where agglomeration effects, similar to those that have benefited Bangkok, can raise incomes, create jobs, and stimulate growth.

Thailand's progressive fiscal system has helped reduce inequality.

Fiscal policies determine the extent to which households pay taxes and benefit from direct cash transfers from social assistance programs as well as non-cash benefits from public spending on health and education. In 2019, Thailand's poorest households received more benefits than they paid taxes; fiscal policy increased incomes for the poorest decile by 10 percent in cash terms, rising to 70 percent when including non-cash health and education. The next poorest decile saw a net 2 percent increase in cash incomes, or 45 percent when non-cash benefits are included. The wealthiest decile paid more taxes than they received in benefits, contributing a net 13 percent of their income. This progressive pattern in Thailand's fiscal system helped reduce inequality by 8.9 points on the Gini index in 2019, while also reducing poverty (to a lesser extent) by 0.9 percentage points. At the global level, the impact of fiscal policy on inequality in Thailand is 22nd-best out of 58 countries with available data, and 13th-best out of 24 UMICs. While the impact of the country's fiscal policy on poverty is relatively low, it is still 15th-best out of 56 countries with comparable data and 7th highest among UMICs.

However, Thailand's social spending and revenue collection levels are low by international standards, leaving room for fiscal policy reforms to further reduce inequality.

While social spending does help reduce poverty and inequality in the country, overall levels are low. At the same time, overall spending is constrained by low total tax revenue collection. In 2019, tax revenues were around 16 percent of GDP, below the averages of both UMICs and non-OECD high-income countries and just half of the OECD average. Moreover, Thailand relies more on indirect taxes, which are less progressive than direct taxes. Its personal income tax (PIT), which is very progressive, accounts for just 1.7 percent of GDP, compared to the UMIC average of 2.8 percent—and it contributes only a quarter as much revenue as the country's VAT and excises. Consequently, Thailand both collects less total revenue than other countries and has a less progressive mix.

Inequality in the aftermath of COVID-19

The impacts of COVID-19 on poverty and inequality in Thailand were relatively mild, despite the pandemic's significant effect on the economy. Owing to its high dependence on tourism and exports, the Thai economy was one of the hardest-hit among ASEAN countries, with GDP falling by more than 6 percent in 2020. Yet between 2019 and 2020, the country's poverty rate increased by only half a percentage point to 6.8 percent, before falling back to 6.3 percent in 2021. The impact of the pandemic on inequality was similarly tempered, with both consumption- and income-based measures of inequality remaining stable between 2019 and 2021.

The expansion of social assistance during the pandemic helped compensate for losses in earnings. Total government expenditure on social assistance more than tripled between 2019 and 2020, rising from 0.8 percent of GDP to more than 3 percent. The government's response was one of the largest in the EAP region, with social assistance estimated to have reached about 30 million people. While the coverage of these programs was larger among poorer groups, the average benefits received by poor groups were smaller than those received by better-off groups.

Low-income groups already living on tight budgets were forced to cut food spending, which may aggravate their food insecurity. Between 2019 and 2021, poor households actually experienced a larger increase in real per capita income than better-off households—largely due to their heavy reliance on farm incomes, which slightly improved during the pandemic, as well as a slower decline in wage income. However, more nuanced analysis reveals that households in the poorest decile experienced a decline in real per capita consumption at the onset of the pandemic, particularly in terms of food consumption. Their food consumption continued to deteriorate even after their total consumption expenditures began to recover, exposing them to food insecurity.

Overall, the government's strong response helped mitigate substantial increases in poverty and inequality. Without transfers from COVID-19 programs, poverty would have reached an estimated 8.1 percent (or 27 percent higher than 2021 figures), while the depth of poverty would have been an estimated 41 percent higher. Inequality would have risen as well: the consumption-based Gini coefficient could have reached 36.3 percent, while the income-based Gini coefficient could have reached over 44 percent.

But the pandemic may have exacerbated the existing gap in learning outcomes and aggravated learning losses, with potential long-lasting effects on human capital. The myriad challenges that distance learning imposes on students—including lack of access to devices, lack of support due to insufficient knowledge about subjects or understanding of online classes, and lack of a physical space to study—were magnified for children in Thailand's poor households. Limited access to resources that could support remote learning placed students from poor households at a further disadvantage, making it even more difficult to maintain pre-pandemic learning outcomes. The pandemic is estimated to have widened the learning gap—the difference between the expected years of school and the learning-adjusted years of school—from 3.7 to 4 years, resulting in a loss of 1.22 learning-adjusted years of schooling and further aggravating the country's already-low learning outcomes, particularly among low-income families. With this, the Human Capital Index (HCI) in Thailand is estimated to have declined from 0.61 in 2020 to 0.55 in 2022.

COVID-19 also exacerbated household debt challenges, contributing to the persistent wealth gap.

As households had to borrow to compensate for income losses caused by the pandemic, household debt levels in Thailand deteriorated substantially. Between 2019 and 2021, the overall rate of indebted households increased from 45.2 percent to 51.5 percent, and the average amount of debt held by households climbed by about 10 percent (from THB 332,830 in 2019 to THB 364,739 in 2021, equivalent to the average Thai annual income). The pandemic led to an increase in consumer loans across all income groups and a rise in farm debt among low-income households, though high-income households fared slightly better than other income groups.

Household income recovery has been slower in urban areas, narrowing the urban-rural gap, but the rural South and Northeast continue to have the country's highest poverty rates.

The slower pace of recovery in urban areas is most evident in the North and Northeast regions. In the urban North, declining wage income, the deterioration of business income, and a fall in remittances all contributed to the stagnation of household income, especially among those in the poorest decile. In the urban Northeast, the deterioration of business income was coupled with a considerable shift of workers towards agriculture. For rural areas, increased agricultural commodity prices and production in 2021 raised average farm incomes, resulting in declining poverty rates across all regions. However, poverty remains much higher in rural areas than urban ones. It is highest in Southern rural areas, followed by Northeastern ones; in both of these areas, poverty rates were about double the national average in 2021.

Policy Possibilities: towards a more inclusive society

The analysis in this report shows that despite Thailand's significant progress in reducing poverty and inequality, many challenges remain.

Large disparities in income and wealth are particularly concerning. Challenges such as low farm incomes, skills shortages, education and labor market gaps, population aging, and increasing household debt further constrain efforts to reduce vulnerability and inequality. These vulnerabilities, alongside the lingering effects of COVID-19, a challenging global environment, and climate change underscore the need for renewed efforts to sustain and advance Thailand's economic and social development.

Thailand can leverage the crisis generated by the pandemic to promote necessary reforms.

The pandemic has underscored the urgency to address structural challenges that contribute to the persistence of poverty and inequality in Thailand, and to launch reforms to ensure a sustained and inclusive recovery. Policy priorities can be structured around three pillars, which partly overlap: ensuring an equitable recovery and building resilience, setting the stage for a vibrant and inclusive economy, and promoting greater equality of opportunity.

Ensuring an equitable recovery and building resilience. In the short term, policy actions are needed to urgently address the lingering impacts of COVID-19, particularly learning losses and the rising prices of necessities, which could both widen human capital gaps. In particular, policies should aim to provide vulnerable groups with enough support to increase their resilience as challenges from rising inflation and climate events mount.

- *Support schools in assessing student learning and providing learning recovery programs.* With the return of students to face-to-face classes, it is critical to assess students' learning levels and adjust teaching accordingly to support the recovery of student learning. This will require training teachers to enable them to effectively manage classes with learning inequalities. It is

also important to address attendance problems and prevent school dropouts by providing appropriate support to at-risk students to help them complete their education.

- *Enhance redistribution through fiscal policy.* Fiscal policy is one of the key instruments through which governments can seek to reduce inequality. In addition to financing public investments that can promote growth, reduce poverty, and address inequality in the long-term, fiscal policy can also affect income distribution in the short-term. While Thailand's fiscal policy is already progressive, additional reforms could further promote redistribution and reduce inequality. Strengthening social protection programs and providing well-targeted assistance, for instance, will enhance the ability of existing transfers to benefit poorer households—while further increasing overall transfers would also help. In the short-term, more efficient social protection with targeted transfers to low-income households could help mitigate the poverty impacts of rising inflation at a lower fiscal cost than price controls and subsidies. To avoid burdening the fiscal space, policymakers could increase revenue collection and enhance the equity of the tax system by broadening the personal income tax base and streamlining allowances, and expanding property tax collection. Since education and health services disproportionately benefit poorer households as a share of their income, increasing spending in these areas or making other investment in human capital would also help reduce inequality in the short and long term.
- *Address household debt.* High household indebtedness could curtail future consumption growth. The pandemic caused a surge in household debt, which was already at high levels: household debt rose from less than 60 percent of GDP in 2010 to its peak of more than 90 percent in 2021. The composition of household debt is tilted towards personal loans (mainly consumption through credit cards) and loans for financing farm and business operations. While the Thai authorities have already established various mechanisms to alleviate pressure on households from elevated debt levels, the country can benefit from further sustainable restructuring (such as extension of debt repayment period and reduction of debtors' repayment burden) and policy reforms related to household debt—including awareness raising about personal and household financial management, especially for vulnerable groups.

Setting the stage for a vibrant and inclusive economy. Policies to revitalize the Thai economy and make it more inclusive can focus on four key priorities: reskilling and upskilling the workers most affected by labor market disruptions; using education and training to build pathways to better jobs and help workers adapt to a rapidly-changing labor market; enhancing women's participation in the labor market; and increasing farmers' income.

- *Strengthen efforts to upskill and reskill workers, particularly those disproportionately affected by the pandemic.* The pandemic caused significant disruptions in the labor market, disproportionately affecting less-educated workers and youth. As the economy recovers from the crisis, there are signs that the recovery process could be slower for these groups. To support a more inclusive and equitable recovery, efforts to reskill and upskill workers should be expanded and strengthened. The skills that workers learn from technical training and skills development should align with the needs of the private sector, to help ensure that workers are able to find productive work afterwards. As such, the private sector should ideally be involved in the development of such courses as well as in the training and assessment of students.

- *Boost skills for a transition to a more productive and innovative economy.* The changing nature of work due to digitalization and other forces may accelerate the shift of labor demand away from low- and middle-educated to higher-educated and skilled workers. Unless the economy's supply of skills adapts to changing demands, the already-large skill premium may grow, worsening income inequality. Revising education and training systems to emphasize skills demanded by the digital era will be critical to harnessing technological changes for more inclusive and stronger economic growth. Policy measures should seek to enhance foundational and non-cognitive skills in basic education, increase access to quality tertiary education, strengthen collaboration between government and the private sector to reform tertiary and technical vocational education, and close the quality gap in tertiary education to increase the returns to education for students from poorer households.
- *Expand efforts to increase women's participation in the labor market.* This is particularly important given the country's changing demographics, where the working-age share of the population is expected to plunge from 71 percent in 2020 to 56 percent in 2060. Increasing the benefits and expanding the coverage of parental leave, for instance, could incentivize higher LFP rates among women—particularly as Thailand lags other Asian countries on both maternal and paternal leave policies. Women's LFP and their overall economic empowerment could also be enhanced through a range of other policies, including supporting more flexible work arrangements, scaling up efforts to upskill women and provide career guidance and mentorship to help them secure more productive jobs, encouraging firms to expand opportunities for women who want to reenter the labor market, supporting female entrepreneurship, and expanding the provision of childcare and care services for older persons.
- *Raise farmers' income.* In 2021, more than one-third of Thailand's workforce was employed in agriculture, but productivity and incomes in the sector remain low. The average per capita income for households whose head works in agriculture is about 36 percent of the income for households whose head is employed in high-end services, and 55 percent of those whose head is in industry. A recently-completed rural income diagnostic in Thailand identified three sets of opportunities to enhance farm income growth: increasing agriculture productivity, supporting diversification to higher-value crops, and improving access to markets. Increasing productivity in agriculture boosts farm incomes while also increasing food security—by increasing access to irrigation water, using improved inputs and modern technologies, providing better agriculture extension and information services, and improving land tenure security. Despite its relatively limited profitability, for example, rice production has continued to dominate the use of Thailand's limited irrigated land; while improving rice productivity is still critical, there is considerable opportunity to raise farm incomes through diversification to high-value crops and crop rotation. To aid in the transition, farm-to-market links should be improved and farmers' access to finance should be expanded. Agriculture must also be ready to deal with the challenges rising from climate change. To ensure that the sector is sustainable and resilient, concerted action by policymakers, agricultural and climate specialists, scientists, and researchers is needed to identify how best to promote and support climate-smart agricultural practices, such as promoting innovations that sustainably increase productivity and using digital platforms such as early warning systems to monitor weather conditions.

Promoting greater equality of opportunity. While Thailand has made great strides in expanding services and providing access to opportunities in health and education, there are still large disparities internally between regions and income groups in access to social services and in human development outcomes. Policies to address inequality of opportunity can include:

- *Increase equality of opportunity in education.* While Thailand has done well to provide children a healthy start through sustained investments in health and nutrition programs, inequality of opportunity is more apparent in education—where opportunities are less universal and marked by geographic and income-level disparities. Youth in the poorest households are disadvantaged with regard to school attendance and completion while also faring worse in terms of learning outcomes. Less-educated workers are then trapped in low-productivity and low-paying jobs, mostly in agriculture and informal employment. Providing comparable educational opportunities is at the center of ensuring equal opportunity for all. Entry points for policy reform include increasing incentives for enrolling poorer children in preschool and closing the gaps in learning outcomes by identifying and supporting at-risk students. This may improve their learning achievements and reduce their likelihood of dropping out. Disparities in learning outcomes could also be explained by unevenness in teaching quality, especially in regions where teachers may not be equipped to manage older and poorer students enrolled in levels that are not age-appropriate. The first step to improve teaching quality is to use a teacher appraisal system that ties teacher performance to student learning outcomes. The results from such an appraisal could then be used to design teacher training programs and better accountability measures. This would help allocate resources more effectively to improve teachers' performance.
- *Improve allocation of educational resources.* Low learning outcomes are partly due to spending inefficiencies. Such inefficiencies are caused by several factors, including the existence of a very large number of small schools with even smaller class sizes. This results in resources being stretched too thin and schools suffering from a shortage of teachers and other educational inputs. Consolidating and reorganizing such schools to create larger and better-resourced schools could help improve the equitable distribution of resources across schools without reducing student access.
- *Improve evidence on transition to tertiary education.* Collecting standardized data on the transition from secondary to tertiary education could improve the government's understanding of who attends tertiary education and who is left behind. Data on which students are unable to attend tertiary education would enable the design of policies to better target those who have the requisite skills but are likely to miss out on the returns from higher education.
- *Strengthen foundational and digital skills.* Thailand's human capital development policy, in line with the Thailand 4.0 vision, focuses on investing in education and skills to promote economic and social development. Significant progress has been achieved in enhancing access, promoting equity, and improving the quality of basic education. Important strides have been taken to strengthen vocational training and higher education. Nevertheless, there is a need for additional efforts to strengthen foundational and digital skills, enhance the overall quality of the education and training system, and provide increased incentives for learning.

- *Improve access to basic services, particularly safe drinking water.* In urban areas, about 3 percent of households drink from unimproved water sources, and this rate soars to nearly 13 percent in rural areas. Access to improved water sources varies across regions, ranging from universal access in Bangkok to 83 percent in the South and 88 percent in the Northeast. It also varies by household income level: among the poorest quintile, about 18 percent lack access to improved water compared to less than 3 percent of the richest quintile. This indicates how burdened poor households are by the risks of exposure to unclean water, which further worsen their productivity and health outcomes.
- *Overall, a clear national framework for financing local infrastructure could be helpful.* A well-designed and widely supported framework for urban infrastructure finance could accelerate the provision of services to citizens and enterprises. Such a framework could provide policy guidance to all levels of government and clarify roles and responsibilities. The development of such a framework is itself an opportunity for building consensus about the way forward. Lessons from other countries demonstrate that developing and implementing such a framework will take time, perseverance, and coordination. A coherent and consistent approach can generate significant urban investment that would contribute to addressing disparities in access to basic services and infrastructure throughout the country and mitigate inequalities related to local circumstances.

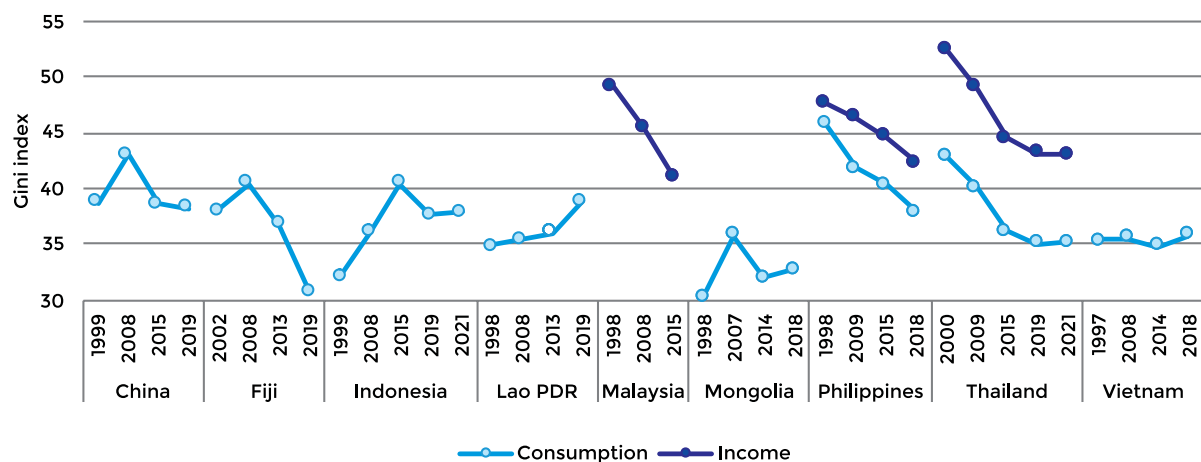
1. INTRODUCTION:

STATE OF INCOME INEQUALITY

IN THAILAND

Thailand has made significant progress in reducing inequality over the past two decades. In the early 2000s, it had the highest income-based inequality level and the second highest consumption-based inequality level across the peer countries listed in Figure 1. Since then, both measures have declined significantly, though progress has slowed in recent years. Between 2000 and 2021, Thailand's income-based Gini declined from 52.4 percent to 43.3 percent and its income-based Gini declined from 42.8 percent to 35 percent.

Figure 1. Inequality Trends, East Asia and Pacific Region, 1998-2021, Percent

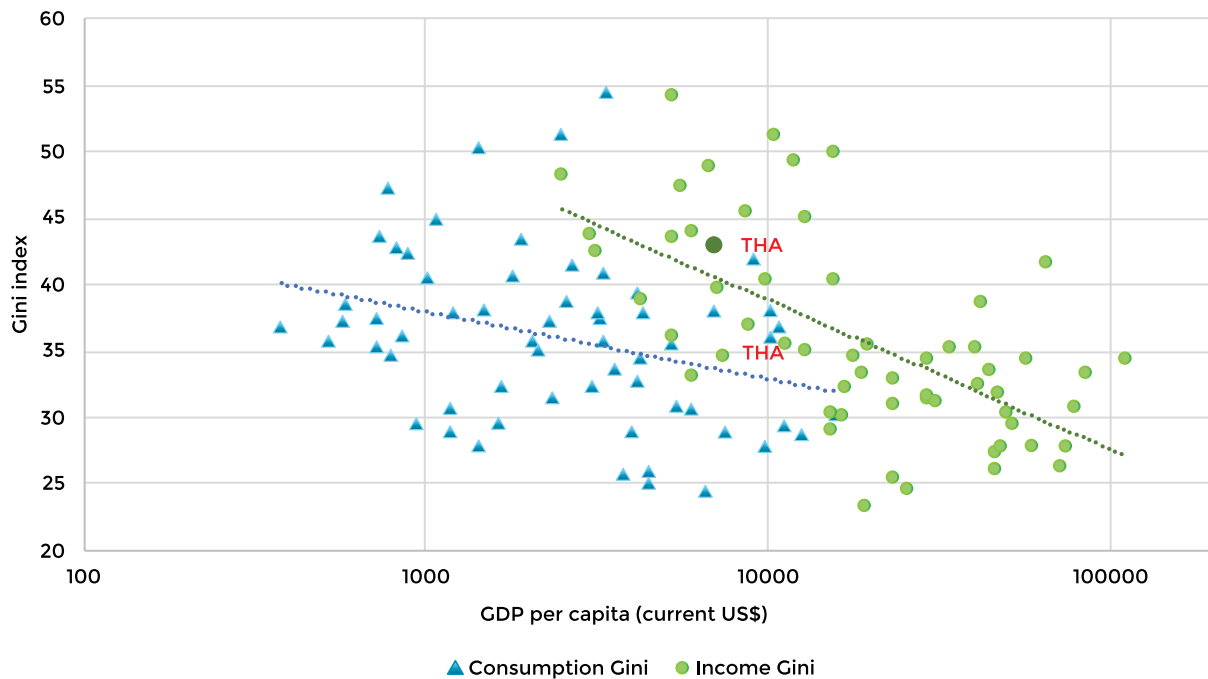


Source: World Bank Poverty and Inequality Platform.

Nonetheless, inequality remains higher in Thailand than in countries with similar income levels.

Figure 2 shows that, for 60 countries with available recent data, income and consumption inequality levels tend to be lower in countries with higher per capita gross domestic product (GDP). For both types of inequality, Thailand falls above the lines of best fit, suggesting high relative inequality for its income level, particularly in terms of income inequality. Thailand ranks among the top quartile for income-based inequality within this country group.

Figure 2. Inequality and Income Level, Most Recent Year After 2015, Percent



Source: World Bank Poverty and Inequality Platform and World Development Indicators (WDI)

Thailand’s inequality challenge is even clearer when considering the concentration of income and wealth in the country. In 2021, the share of net personal income earned by the richest 10 percent of the Thai population was 48.8 percent, the highest share among peer countries with available data (Figure 3). The share soars to 74.2 percent when measured in terms of net personal wealth, making Thailand among the most unequal countries in the world by this metric. Other sources align with this finding, including Credit Suisse’s most recent wealth report in 2021, which found that 66 percent of wealth in Thailand is held by the top 10 percent, 56 percent is held by the top 5 percent, and 39 percent is held by the top 1 percent (Credit Suisse 2022)¹. In terms of consumption inequality, Thailand performs better globally, ranking 45th most unequal out of 72 countries with available consumption Gini coefficients. In the East Asia and the Pacific (EAP) region, it ranks 5th out of 10 countries—with lower consumption inequality than Lao PDR, the Philippines, and Vietnam but higher than China, Indonesia, and Mongolia.

¹ Credit Suisse. 2022. Global Wealth Databook 2022. <https://www.credit-suisse.com/media/assets/corporate/docs/about-us/research/publications/global-wealth-databook-2022.pdf>.

Figure 3. Income and Wealth Inequality, 2021

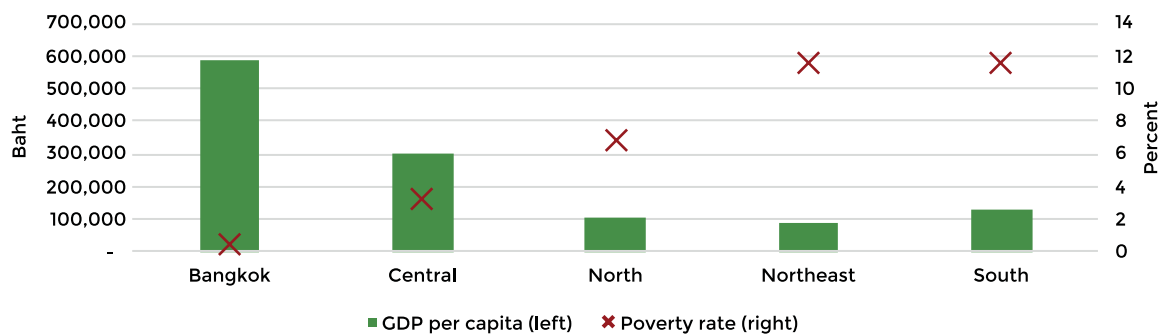


Source: World Inequality Database (WID.world) (<https://wid.world/wid-world/>).

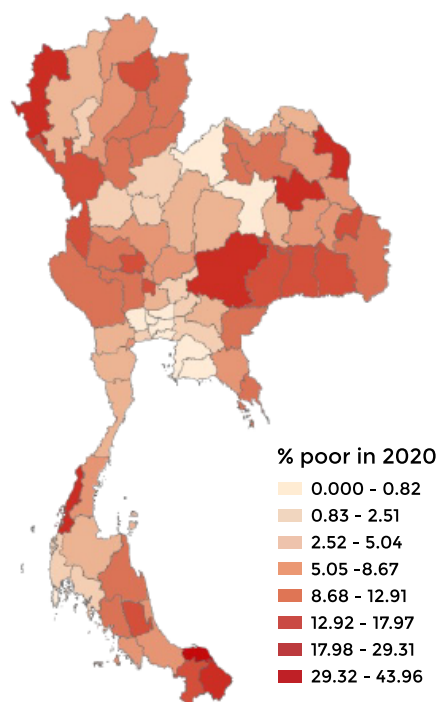
Spatial disparities across and within regions contribute to overall inequality in Thailand. In 2020, the average income in Bangkok (which has the country’s highest regional GDP per capita) was close to double that of the Central region (with the second-highest regional GDP per capita) and more than 6.5 times that of the Northeast region, which has the lowest GDP per capita (Figure 4A). Though Bangkok and the Central region also have the lowest poverty rates based on Thailand’s national poverty line, higher average income levels do not always correspond to lower poverty incidence. For instance, while the South region has a higher GDP per capita than the North, its poverty rate (11.6 percent) is more than 1.5 times higher than the North’s (6.8 percent), which implies a higher level of inequality. A more nuanced look at poverty and income levels reveals large disparities in income across provinces and within regions. This is most apparent in the South, which encompasses some of the country’s highest-income provinces (including Chumphon and Phuket), as well as some of its poorest (including Ranong and the conflict-affected provinces of Pattani, Yala, and Narathiwat). (See Figures 4B and 4C).

Figure 4. Income and Poverty Incidence by Region and Province, 2020

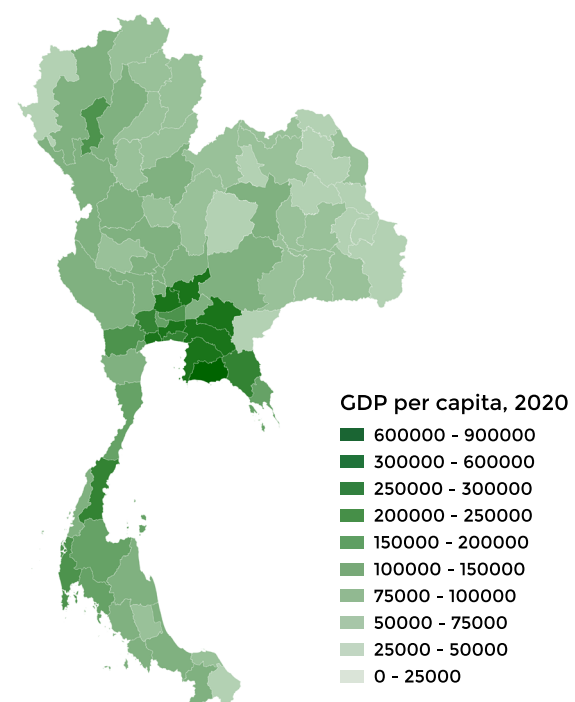
A. GDP per capita and poverty rate by region



B. Poverty rate by province, percent



C. GDP per capita by province, THB

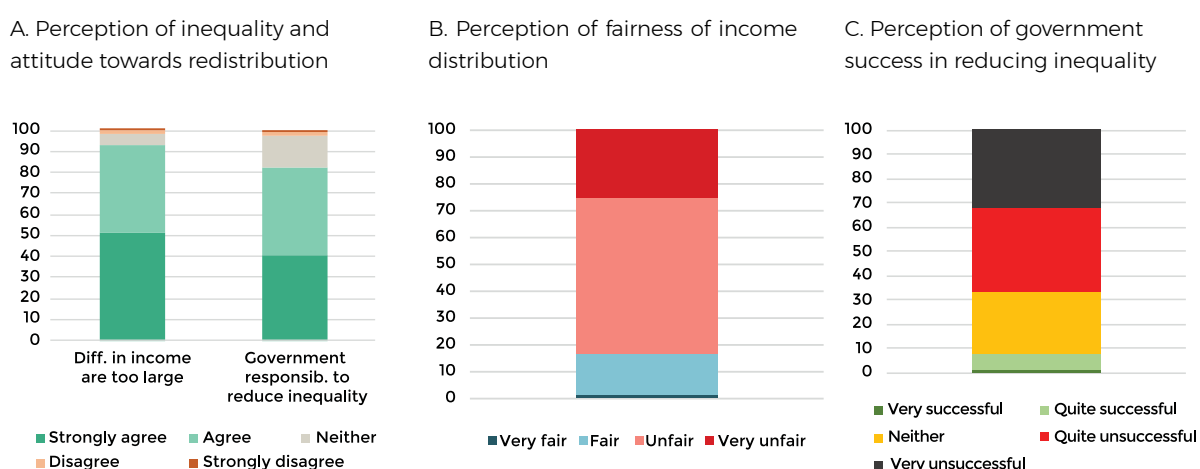


Source: Office of the National Economic and Social Development Council (NESDC) and Thailand National Statistical Office (TNSO).
 Note: Poverty rates are based on the national poverty line.

The concentration of economic growth in Bangkok has exacerbated regional disparities in Thailand, emphasizing the imperative need for a strategy to foster balanced regional development. A recent assessment of urban infrastructure finance in Thailand (World Bank 2023a) unveiled how the prevailing infrastructure development and financing patterns have contributed to these disparities. While Bangkok has traditionally served as the economic center, secondary cities are emerging, requiring significant infrastructure investments. Nevertheless, decentralization efforts have yet to fully delegate responsibilities to municipalities, leaving them dependent on the central government. Secondary cities in diverse regions with different economic focus areas like tourism, agriculture, or industrial production require various types of critical infrastructure. This emphasizes the importance of an enabling policy environment to empower these cities to take on responsibility for attracting investment, generating the agglomeration effects that have worked to Bangkok’s advantage and capitalizing on regional opportunities to create jobs and raise incomes.

The vast majority of the Thai population perceives income inequality to be both high and unfair, with large public support for redistribution. More than 70 percent of the population views Thai society as a pyramid, with the majority at the bottom and a small elite at the top, according to 2019 data from the International Social Survey Programme (ISSP) that assessed subjective perceptions of inequality. More than 90 percent of the population believes that the difference in incomes is too large, and more than 80 percent agrees that it is the government’s responsibility to reduce income differences between low- and high-income groups (Figure 5A). Likewise, more than 80 percent of the population considers the current income distribution to be unfair, and more than two-thirds believe that the government has not been successful in reducing inequality (Figures 5B and 5C).

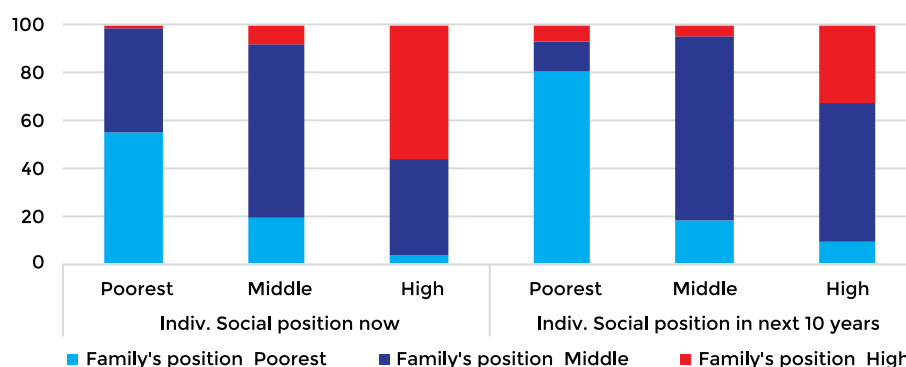
Figure 5. Perceptions About Inequality, 2019, Percent



Source: International Social Survey Programme (ISSP) 2019.

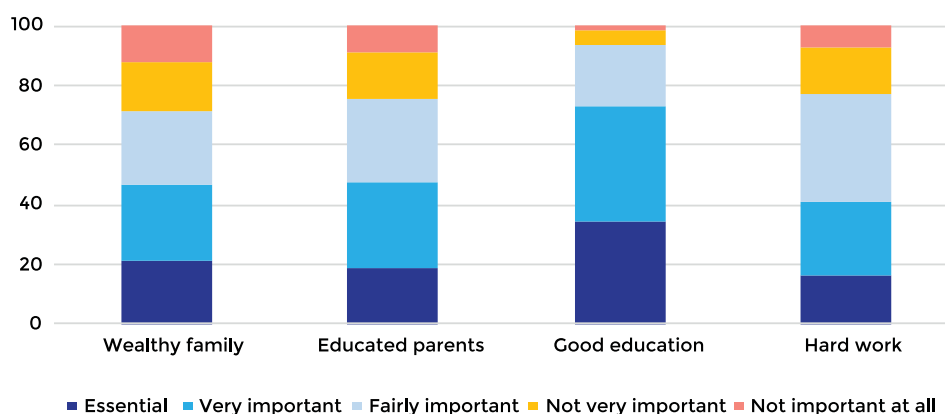
Perceptions about social position and expectations about mobility are highly influenced by family circumstances. When asked about their current position in society compared to their family upbringing, around 56 percent of respondents from families in the poorest group perceive themselves to also be in the poorest group, while 56 percent of those from high-income families also perceive themselves to be in the high-income group (Figure 6). In terms of social mobility, respondents from families in the poorest group are much more pessimistic, with more than 80 percent believing that they will continue to be in the bottom group over the next 10 years.

Figure 6. Individual’s vs Family Social Position, 2019, Percent



Source: ISSP 2019.

Figure 7. Important Factors to Get Ahead, 2019, Percent



Source: ISSP 2019.

Perceptions of low mobility seem to be associated with perceptions of low meritocracy. A considerable share of the Thai population thinks that family advantages play a major factor in people’s success. While the majority still believe that having a good education (72 percent) and hard work (40 percent) are either essential or very important, nearly half (47 percent) believe that having well-educated parents and a wealthy family are essential or very important (Figure 7). This belief is more prevalent—by more than 10 percentage points (pp)—among the poorest group of respondents compared to the richest group.

Perceptions of low mobility seem to be associated with perceptions of low meritocracy. A considerable share of the Thai population thinks that family advantages play a major factor in people’s success. While the majority still believe that having a good education (72 percent) and hard work (40 percent) are either essential or very important, nearly half (47 percent) believe that having well-educated parents and a wealthy family are essential or very important (Figure 7). This belief is more prevalent—by more than 10 percentage points (pp)—among the poorest group of respondents compared to the richest group.

Evidence suggests that the decline in income inequality has been driven by shifts at the lower end of the income spectrum, while the gap between the poorest and wealthiest groups persists. Using data on labor income and education levels from 1998 to 2017, Wasi et al. (2019) finds that Thailand’s declining income inequality has primarily been driven by income convergence among low-skilled workers, as the wage gaps between primary and secondary school graduates have narrowed over time. By contrast, the labor incomes of high- and low-skilled workers have diverged as the wage gaps between college educated and non-college educated workers have widened. Similarly, Muthitacharoen and Burong (2023) used Thai tax return data to find that earnings inequality rose between 2009 and 2018, primarily due to gains made by the highest earners. Their analysis revealed that the ratio of annual earnings by workers in the 50th income percentile to that of workers in the 20th percentile remained stable, while the ratio of earnings by workers in the 90th percentile to those in the 50th percentile rose considerably.

Income inequality also seems to be driven by disparities in employment formality. Wasi et al. (2019) further posit that Thailand’s wage disparities are partially explained by whether workers stay in the formal sector or move between formal and informal employment. Using Social Security data spanning 8 years, they find that workers who primarily remain in the formal sector have higher median wages than hybrid workers. The wages of formally-employed workers also tend to increase as they age, while hybrid workers’ wages tend to peak in their early thirties and remain stagnant as they age. These findings strongly

suggest that employment formality plays a role in the persistence of income inequality formal workers not only start their employment with higher wages, but the gap between their earnings and those of hybrid workers also rises throughout their careers. Likewise, Muthitacharoen and Burong (2023) examine the links between employment formality and upward mobility, finding that formal workers have a significantly higher probability of moving up at least two earnings deciles compared to informal workers.

Thailand's rapidly changing demographics could have significant implications on its prospects for inequality reduction. Projections show that the share of the population aged 65 and above (currently 13 percent) is expected to rise to 31 percent by 2060. During the same period, the working-age share of the population is expected to decrease from 71 percent to 56 percent, reflecting a change in the old-age dependency ratio from 30 percent to 78 percent (World Bank 2021a, 2021b). These demographic shifts could widen overall inequality, as the incomes of a relatively smaller but increasingly skilled and well-educated younger share of the population outpaces older populations that leave the labor force or have more limited earning potential. These income gaps could widen as the share of the elderly population grows, particularly if old-age support is inadequate (Kim, Baek, and Lee 2018; Zhong 2011). The increased demand for old-age benefits and other means of support could also put more pressure on the country's fiscal resources, particularly as Thailand's GDP per capita is significantly less than that of Japan, South Korea and Singapore when their old age dependency ratios were at levels similar to Thailand's today (World Bank 2021a). The growing care needs of an elderly population could also further depress women's participation in the labor market, exacerbating Thailand's already large and persistent gender gaps.

The COVID-19 pandemic has had a disproportionate impact on poorer households, exacerbating inequality. While the COVID-19 pandemic disrupted virtually all sectors in the Thai economy, workers in sectors and occupations that were heavily reliant on in-person work were more vulnerable. A study by Lekfuangfu et al. (2020) notes that workers from lower-income households were more likely to be employed in such sectors and occupations, which placed them at higher risk for job and income losses. Risk-sharing within dual income-earner households—where the job loss of one spouse can be cushioned by the earnings of the other—could be critical for helping households weather the shock of the pandemic. However, Lekfuangfu et al. (2020) finds strong spousal occupational correlations in Thailand, suggesting that lower-income workers tend to have partners employed in similar occupations, resulting in a prevalent lack of household risk-sharing that further magnifies the pandemic's disproportionate impact on the poor.

The pandemic also disproportionately impacted the youth. With less experience and lower job tenure, younger Thai workers were more likely than older workers to experience job loss or a reduction in working hours during the pandemic. Lockdowns and mobility restrictions also severely disrupted youth educational opportunities, with interruptions in formal education, technical and vocational training, and apprenticeships and internships (ILO and ADB 2020). The economic literature has shown that such shocks can have negative effects; Hacibedel et al. (2019), for example, use data from 71 low-income and emerging market countries between 1981 and 2014 to find that unemployment (particularly youth unemployment) significantly affects the impact of economic growth on inequality. If not mitigated, these disruptions could have a scarring effect on Thailand's youth, adversely impacting inequality as well as productivity, future wages, and the competitiveness of the country's workforce more broadly.

To tackle inequality, Thailand will thus need to address its root causes as well as the new challenges that have emerged from the pandemic.

Large wage disparities between the highest and lowest earners, the country's rapidly changing demographics, and the disproportionate impacts that the pandemic has had on vulnerable groups present significant challenges for reducing inequality. Indeed, throughout the world, the pandemic has underscored the urgent need for more effective strategies to promote equality and inclusion. To accelerate inclusive economic growth in Thailand—while also tackling the pandemic's lingering effects, the consequences of an aging population, and the growing threat of climate shocks—addressing inequality is both an urgent and critical priority. Despite a growing interest in the topic, however, the literature on inequality in Thailand remains scant – and without a better understanding of the challenge, the strategies chosen to address it could be flawed.

This report is intended to inform public debate and policymaking on income inequality in Thailand.

It aims to provide a comprehensive analysis of income inequality in Thailand and identify opportunities to promote more inclusive growth. The analysis uses a wealth of data from a variety of sources (detailed in Appendix A) to examine the pattern, structure, and drivers of income inequality in the country, with a special focus on inequality and labor market supply-side factors. It is structured as follows. This section has laid the foundation for analysis, examining historical trends in both consumption - and income-based measures of inequality while providing geographic context and data on public perceptions about inequality. It also provided a summary of literature findings. Section 2 analyzes the pandemic's impacts on inequality, including the role that social assistance played in mitigating its effects but also the potential scarring effects on children's human capital development. Section 3 examines the structural drivers of inequality and its persistence, focusing on the role of inequality of opportunity in human capital development and access to basic services. Finally, Section 4 provides policy options to create a more inclusive society by addressing the root causes of persistent inequality and mitigating the challenges brought about by the pandemic. In particular, since a significant share of the poor in Thailand are engaged in agriculture, the report underscores that improving farm incomes is crucial for alleviating poverty and reducing inequality. As such, Section 4 draws its recommendations from a recent study on the key challenges and opportunities facing Thai farmers to raise agricultural productivity and incomes (World Bank 2022a).

2. RECENT DEVELOPMENT:

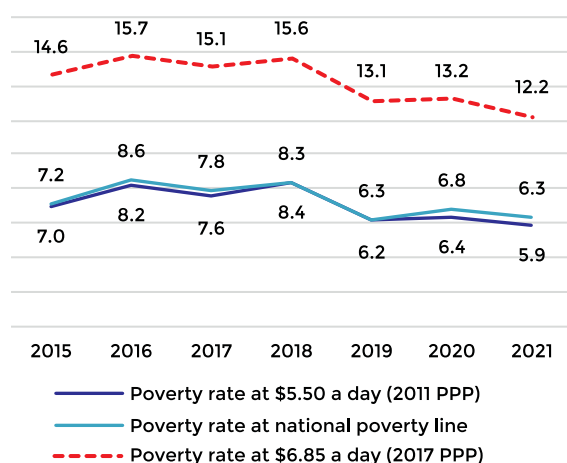
INEQUALITY IN

THE AFTERMATH OF COVID-19

Income and consumption inequality

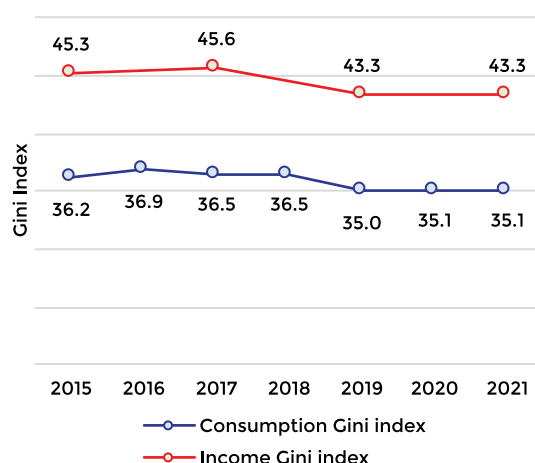
The impacts of COVID-19 on poverty and inequality were relatively mild Between 2016 and 2018, national poverty rates hovered between 7.8 to 8.3 percent before falling to 6.3 percent in 2019 (Figure 8). In 2020, the Thai economy was one of the hardest-hit among ASEAN countries, owing to its high dependence on tourism and exports, and the country's GDP fell by more than 6 percent that year. Despite this large overall effect, the increase in poverty during the pandemic was relatively mild, rising only half a percentage point to 6.8 percent in 2020 before falling back to 6.3 percent in 2021. The impact of the pandemic on inequality was also tempered and closely followed the trends in poverty. Both consumption-based and income-based measures of inequality remained stable between 2019 and 2021 (Figure 9).

Figure 8. Poverty Rates, 2015-2021, Percent



Source: Thailand Socio-economic Survey (SES) 2015-2021 and NESDC estimates.

Figure 9. Inequality Rates, 2015-2021, Percent

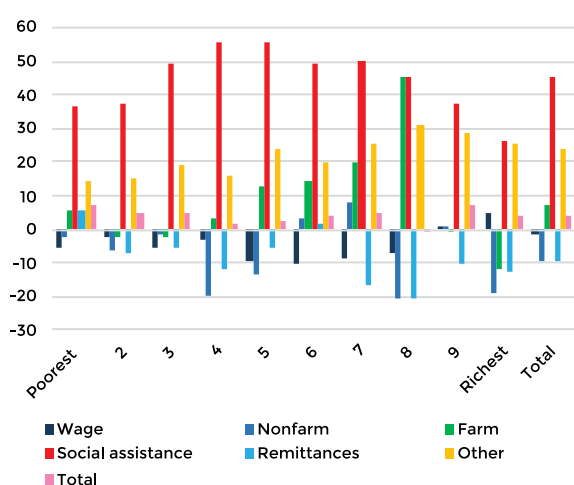


Source: Thailand Socio-economic Survey (SES) 2015-2021 and NESDC estimates.

Earnings losses during the pandemic were compensated by a dramatic expansion of social assistance.

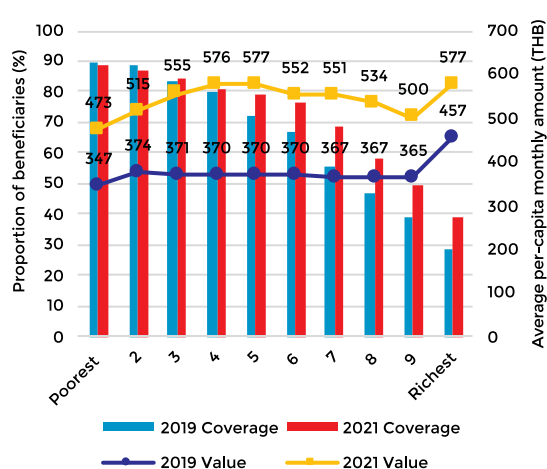
Wage income in Thailand fell by 2 percent due to pandemic-related economic shocks, while nonfarm business income and remittances both fell by over 10 percent, according to estimates from the Thailand Socio-economic Survey (SES) of 2021. To help mitigate these impacts, total government expenditure on social assistance more than tripled during the pandemic, rising from 0.8 percent of GDP in 2019 to more than 3 percent in 2020. This surge in social assistance reached an estimated 30 million people in Thailand, making it one of the largest government responses in the EAP region (World Bank 2021c, 2022b). As a result, average household support from social assistance in Thailand increased by about 46 percent between 2019 and 2021, helping to thwart the deterioration of household incomes (Figure 10).

Figure 10. Variation in Main Income Components by Decile, 2019-2021, Percent



Source: SES 2019-2021.

Figure 11. Coverage and Benefit Transfers by Decile, 2021



Source: SES 2021

Note: Average transfers are in 2021 prices, adjusted by the consumer price index (CPI).

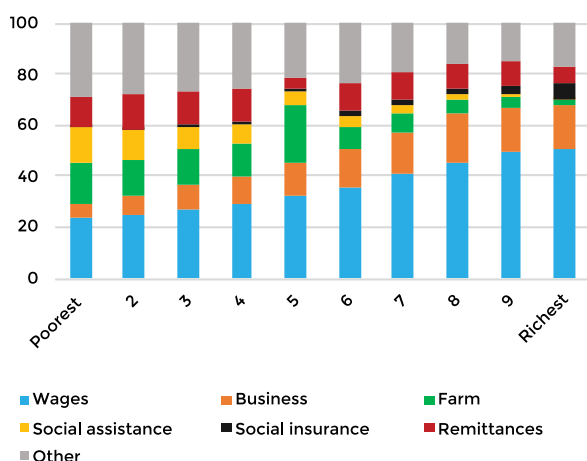
The majority of poor people receive social assistance, but the benefits these groups receive are smaller in absolute terms.

According to SES data from before the pandemic, about 65 percent of the population received some form of social assistance in 2019—including old age allowance (OAA), social welfare card (SWC), and disability assistance—and the average transfer amount was around THB 371 per capita per month². Coverage of total assistance (the share of people receiving social assistance) was much larger among poorer groups, but the average transfer amount was higher for better-off groups. By 2021, the share of the population receiving some form of social assistance (including COVID-19 programs in addition to those listed above) increased to about 71 percent and the average transfer amount increased to about THB 540 per capita per month (or around 20 percent of the average national poverty line of THB 2803). About 88 percent of the population’s poorest decile benefitted from social assistance transfers in 2021, with an average monthly amount of THB 473 per capita, while about 39 percent of the richest decile received transfers with an average monthly amount of THB 577 per capita (Figure 11).

² In Thailand the national poverty line is estimated at the household level and varies from THB 1520 to THB 5189 per month.

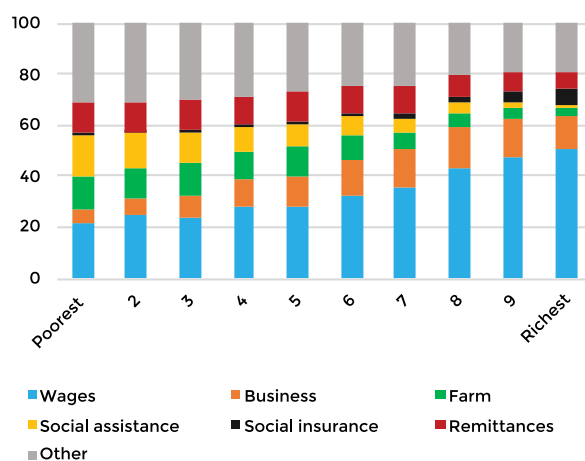
Middle-income households faced the worst income shocks from the pandemic. Between 2019 and 2021, households in the middle-income group (the 4th to 8th deciles) experienced a sharp decline in wage and business income as well as a sharp decline in remittances (Figure 12). This decline was partly offset by an increase in their farm income, as well as transfers from social assistance; however, middle-income groups have a higher reliance on the income sources that deteriorated the most (Figure 12 and Figure 13). These trends contributed to avoid an increase in inequality, as discussed below.

Figure 12. Share of Income Sources in Household Current Income by Decile, 2019, Percent



Source: SES 2019.

Figure 13. Share of Income Sources in Household Current Income by Decile, 2021, Percent

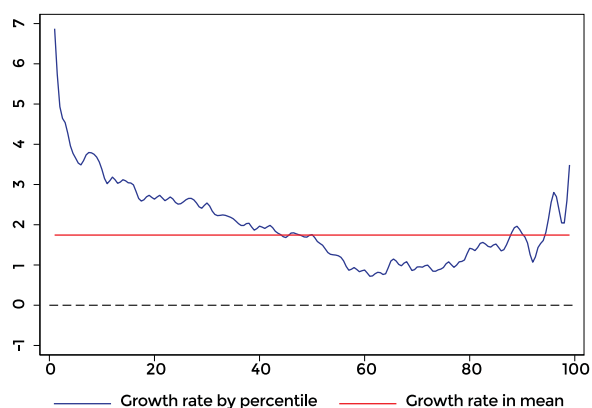


Source: SES 2021.

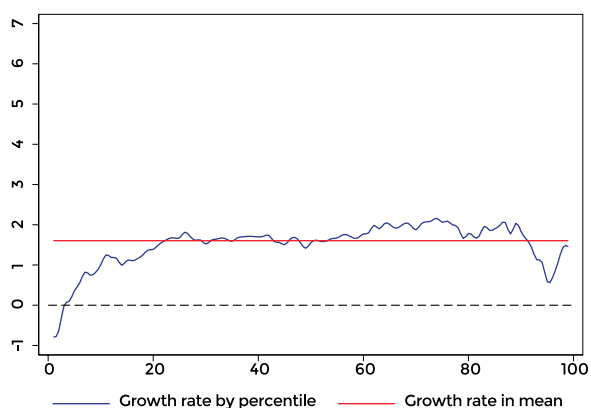
By contrast, household incomes for low-income groups were less affected on average. Many poor households who already lived on a tight budget and had low financial buffers were forced to cut their consumption spending, especially early in the pandemic. Between 2019 and 2021, however, real per capita income in Thailand increased by almost 2 percent on average—and for the poorest decile, it increased by over 4 percent per year on average (Figure 14A). This was partly due to poor households' heavy reliance on income sources that increased the most during the pandemic (i.e., social assistance) as well as to slower declines in their wage income and an increase in their remittances. However, an opposite pattern was observed for consumption: between 2019 and 2021, real per capita consumption in Thailand increased by 1.6 percent on average—but for the poorest decile, it only increased by 0.3 percent per year (Figure 14B). Figures 14C and 14D show a breakdown of the growth incidence curve during the periods 2019-2020 and 2020-2021. These show that poor households' real per capita consumption declined sharply during the first year of the pandemic (despite a 2.1 percent average increase in consumption during that year) but that this pattern reversed in the following year, as the poor started to recover and raised their consumption level at a faster pace than better-off households. Overall, as noted, households in middle income groups (around the median) faced the worst shock of the pandemic. While this helped avoid overall increases in poverty and inequality, it does not bode well for the youth and social expectations for upward mobility.

Figure 14. Growth Incidence Curves, 2019-2021, Percent.

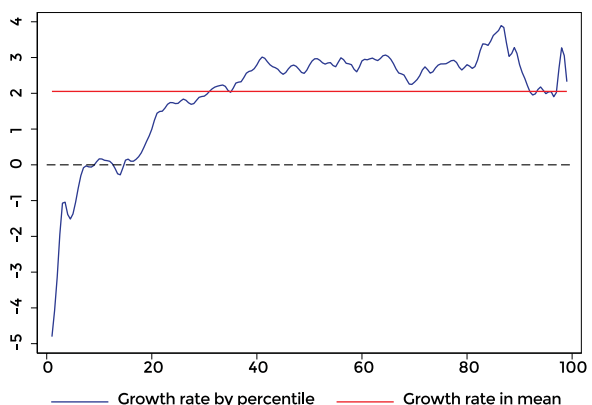
A. GIC income, 2019-2021



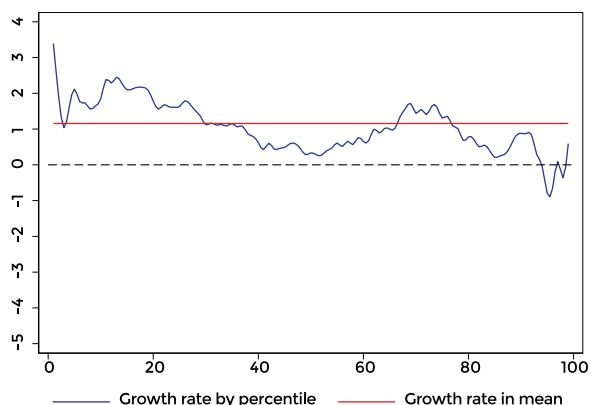
B. GIC consumption 2019-2021



C. GIC consumption, 2019-2020



D. GIC consumption, 2020-2021

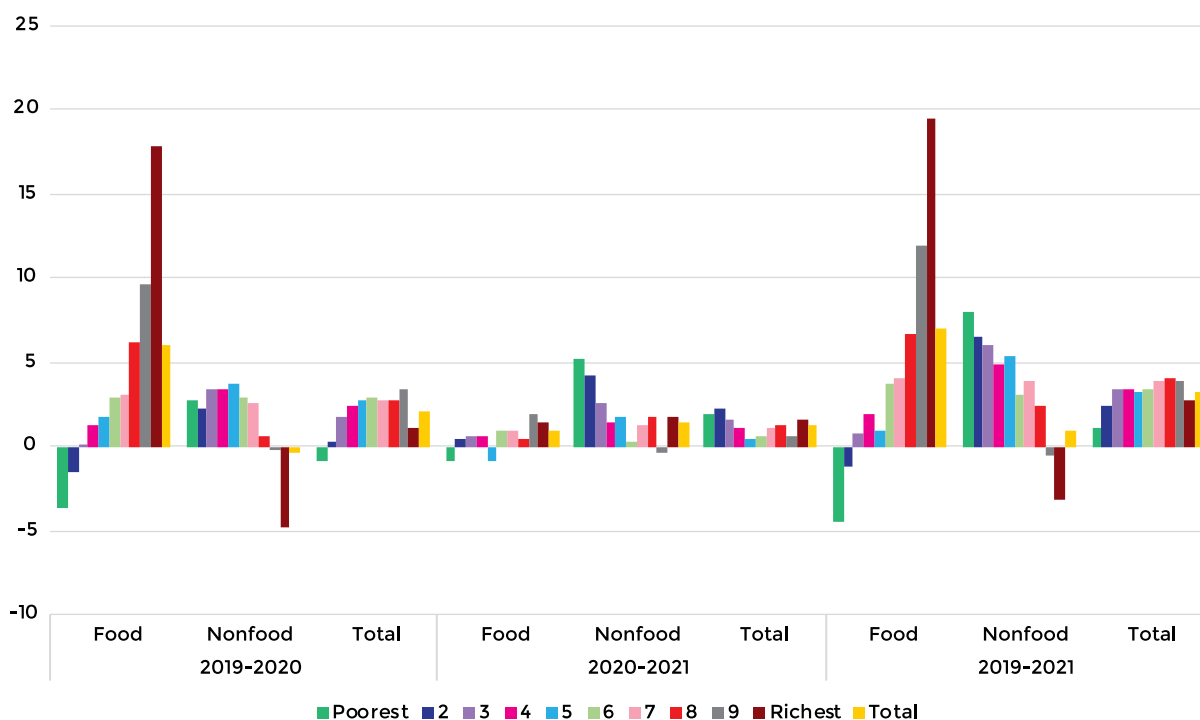


Source: SES 2019-2020.

Source: SES 2020-2021.

While poor households’ total spending rebounded during the pandemic, food spending declined and was subsumed by increased expenditures on medical and health services, communication, and housing. Throughout the entire period of 2019-2001, the poorest decile’s real per capita food consumption declined by 4.6 percent, putting them at risk of food insecurity and malnutrition (Figure 15). The recovery of poor households’ total consumption was thus driven by increase in other expenditure categories, namely spending on medical and health services, communication, and housing. By contrast, better-off households cut back on expenditures on clothing, personal care, transportation, and recreation at the onset of the pandemic; their spending on non-food items increased slightly in 2021, but remained lower than pre-pandemic levels.

Figure 15. Variation in Food and Nonfood Consumption Expenditure by Decile, 2019-2021, Percent



Source: SES 2019-2021.

Overall, the government’s response helped mitigate a substantial increase in poverty and inequality.

Without transfers from COVID-19 social assistance programs, the poverty rate in Thailand would have reached an estimated 8.1 percent (approximately 27 percent higher than actual 2021 figures), while the depth of poverty (the distance of the poor people from the poverty line) would have been 41 percent higher. Inequality would have risen as well: absent the government’s response, the consumption-based Gini coefficient would have increased from 35 percent in 2019 to an estimated 36.3 percent in 2021, while the income-based Gini coefficient would have increased from 43 percent in 2019 to over 44 percent in 2021. The future trajectory of these trends is currently unclear; while the government maintained social assistance spending of more than 3 percent of GDP throughout 2021, it likely declined somewhat in 2022.

Wealth inequality

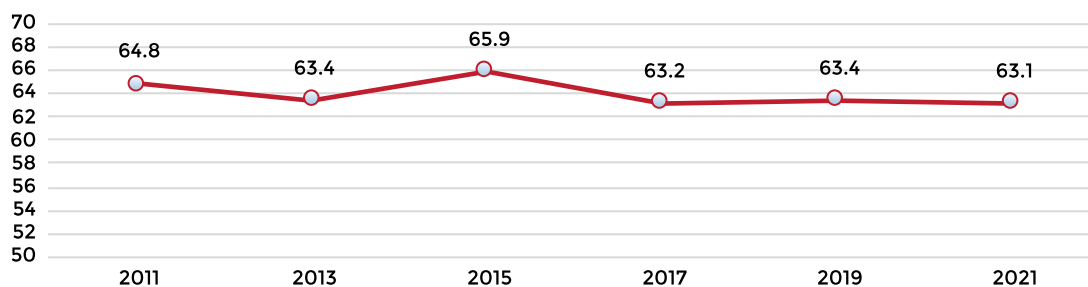
Unlike income and consumption inequality, overall wealth inequality in Thailand has been stubbornly high for the past decade and remained unchanged by the pandemic.^{3,4}

Between 2011 and 2019, the wealth Gini coefficient declined slightly from 64.8 percent to 63.4 percent. The pandemic neither exacerbated nor drastically improved this unequal wealth distribution. By 2021, the wealth Gini decreased slightly to 63.1 percent (Figure 16). High-wealth households had 3.2 times as much wealth as middle-wealth households in 2021, maintaining its pre-pandemic ratio of 3.1 in 2019, and 25 times as much wealth as low-wealth households, down from the pre-pandemic ratio of 26.9.

³ Wealth, or net worth, is the value of assets owned by a household such as housing, land, transportation, and financial assets, minus outstanding debt such as a mortgage or loan.

⁴ Analysis in this section is based on Thailand’s Household SES. Household surveys, in general, tend to underestimate inequality (consumption, income, and wealth) due to underreporting at the top end of the distribution. As a result, measures of inequality and wealth concentration reported in this section are lower than those reported using World Inequality Database (WID) data (Figure 3), in which some adjustments and imputations are made based on other data sources such as tax data. Given the underreporting problem, results should be interpreted with caution.

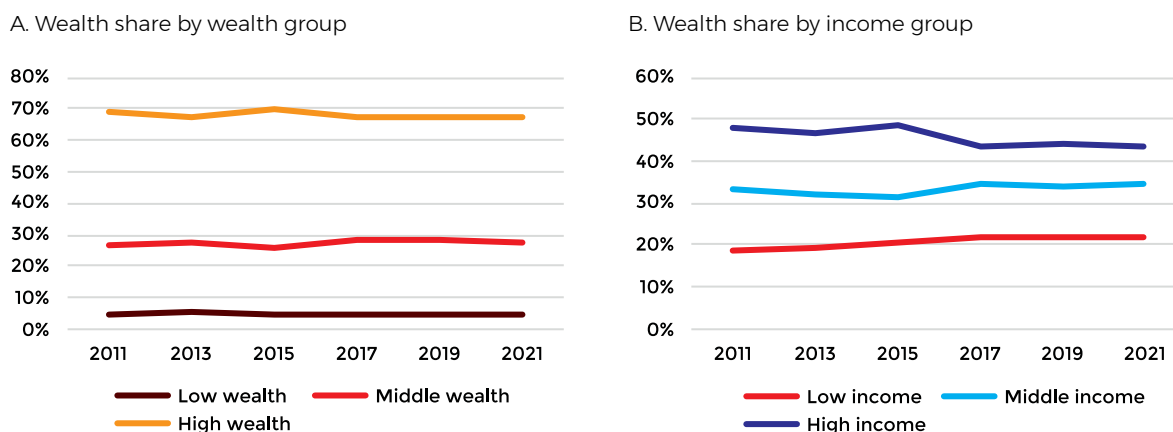
Figure 16. Wealth Inequality, 2011-2021



Source: SES 2011-2021.

Likewise, the wealth gaps between income groups have persisted. Thailand has seen a negligible change in wealth concentration over the last decade and through the pandemic. The share of total wealth held by high-wealth families decreased slightly from 69.1 percent in 2011 to 67.4 percent in 2019, and this figure remained largely unchanged during the pandemic (Figure 17A). The shares of wealth held by low- and middle-wealth families rose by a mere 0.6 and 1.2 percentage points over the past decade, respectively. By contrast, wealth gaps between income groups have narrowed slightly. The share of aggregate wealth going to low-income families increased from 18.7 percent in 2011 to 21.8 percent in 2021, while the share going to middle-income families increased from 33.1 percent to 34.6 percent over the same period (Figure 17B).

Figure 17. Wealth Gap, 2011-2021



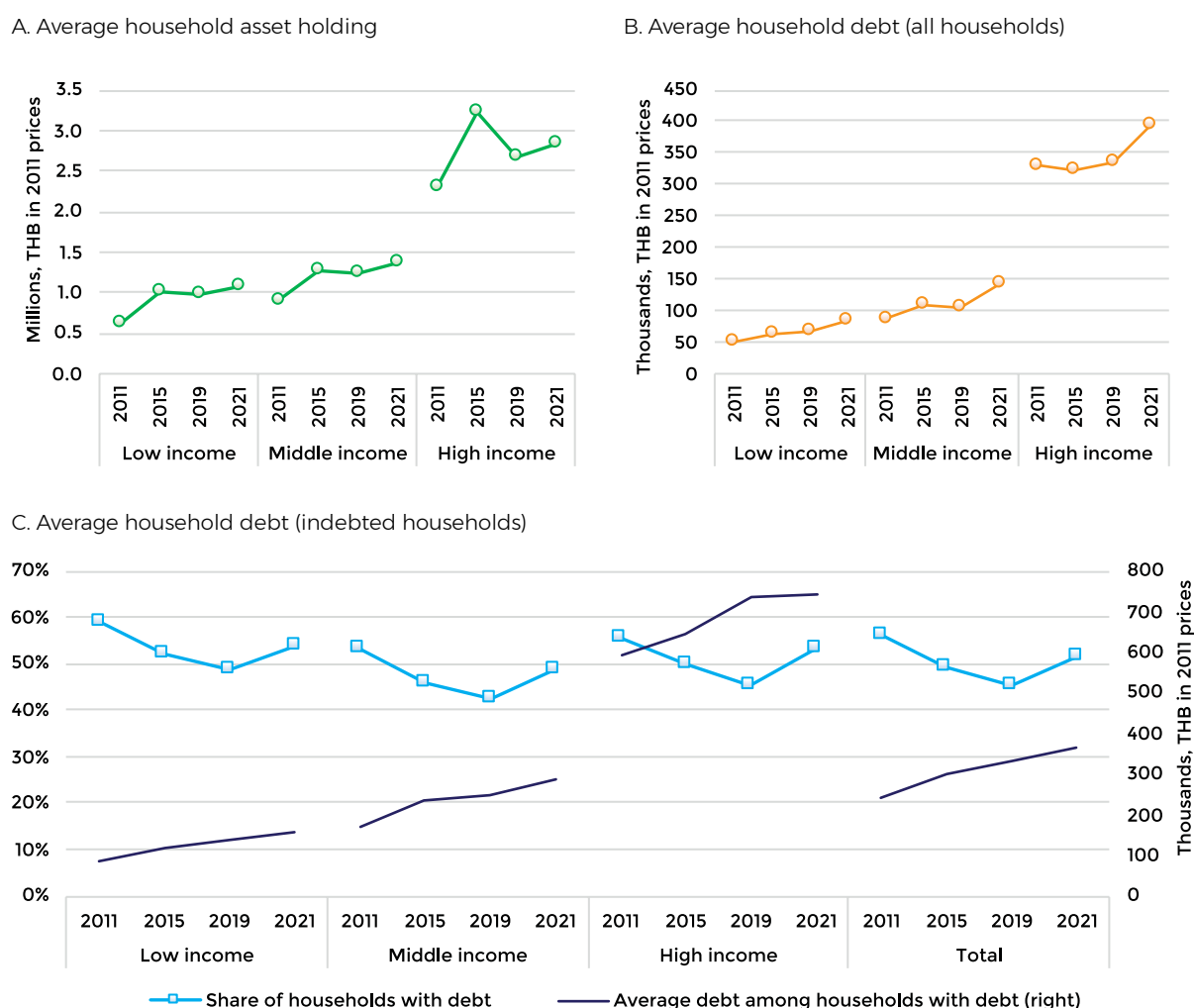
Source: SES 2011-2021

Note: Low-wealth and low-income households are those in the bottom 40 percentile of the distribution. Middle-wealth and middle-income households are those in 40th-80th percentile of the distribution. High-wealth and high-income households are those in the top 20 percentile of the distribution.

Low-income and middle-income families accumulated assets but became more indebted prior to the pandemic, contributing to persistent wealth gaps. Between 2011 and 2019, average asset holdings rose by 55.7 percent for low-income families and 32.6 percent for middle-income families (Figure 18A).⁵ During the same period, however, average household debt rose by 36 percent and 17.2 percent for low- and middle-income families, respectively, dampening their wealth gains; by comparison, average household debt for high-income families increased by a mere 1.5 percent (Figure 18B).

Rising debt levels were driven by already-indebted households; the total share of indebted households actually declined during this period. The total share of Thai households with debt consistently declined from 55.8 percent in 2011 to 45.2 percent in 2019, with the declines observed across all income groups (Figure 18C). However, the average amount of household debt (in 2011 CPI) climbed rapidly over the same period, from THB 241,760 to THB 332,830—a level equivalent to average annual household income. These trends resulted in an overall increase to Thailand’s absolute level of household debt.

Figure 18. Household Asset and Debt by Income Group, 2011-2021



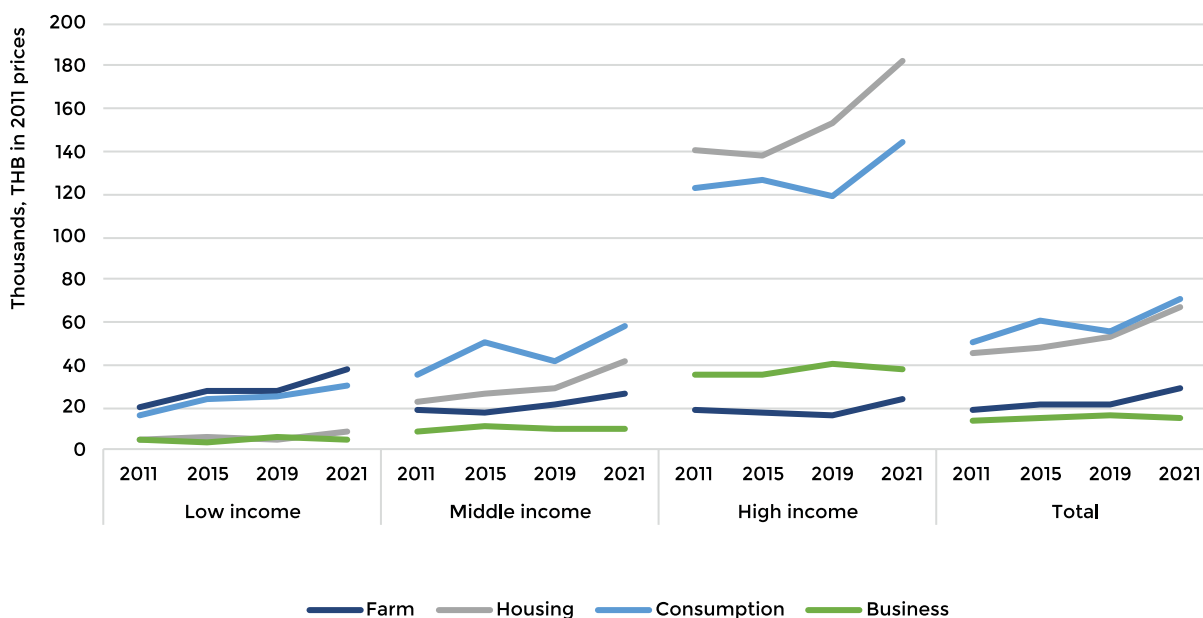
Source: SES 2011-2021

⁵ All numbers are expressed in 2011 prices.

COVID-19 exacerbated the household debt situation in Thailand. As households had to borrow to compensate for income losses caused by the pandemic, the share of indebted households rose from 45.2 percent in 2019 to 51.5 percent in 2021. The average amount of debt held by these households also climbed, from THB 332,830 in 2019 to THB 364,739 in 2021.⁶ Similar to the pre-pandemic period, high-income households fared slightly better than low- and middle-income groups in terms of pandemic-related debt accumulation.

Consumer loans surged during the pandemic across all income groups, while farm debt rose among low-income households. Loans for consumption account for a large share of household debt in Thailand, hovering between 37 and 41 percent over the past decade. While the average amount of consumer loans gradually increased over the decade prior to the pandemic (or, in the case of high-income households, declined), it surged from THB 55,898 in 2019 to THB 67,394 in 2021. Significant increases were observed across all income groups (Figure 19). The pandemic also led to a substantial increase in farm debt, especially among low-income households, with average farm debt nearly doubling from 2011 to 2021 for this group. Home loan debt was rising before the pandemic and continued its upward trend during the pandemic, especially among middle- and high-income households. By contrast, business loans remained relatively flat and then slightly declined during the pandemic. Household loans are mainly from formal sources, comprising agriculture/agricultural cooperatives (27 percent), commercial banks (15 percent), other finance companies (23 percent), and village fund schemes (16 percent), with the remainder coming from informal sources.

Figure 19. Average Household Debt by Type of Loan, 2011-2021



Source: SES 2011-2021

⁶ Values are in 2011 CPI.

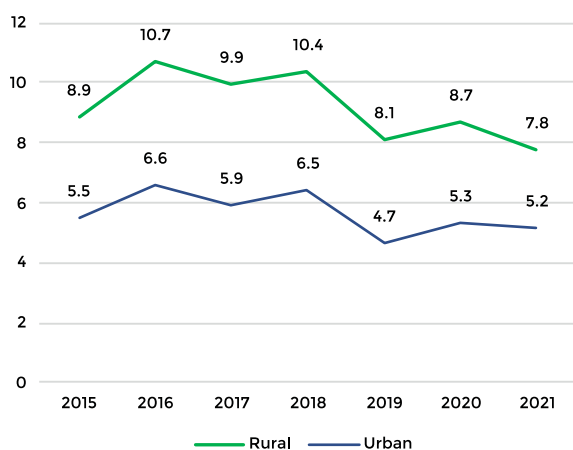
Spatial inequality

Poverty remains higher in rural areas, but faster rural poverty reduction during COVID-19 has narrowed the rural-urban gap. Thailand has been witnessing spatial convergence in recent years, as poverty levels in rural areas and other lagging regions catch up with urban and more advanced regions. This convergence continued throughout the pandemic because urban areas experienced a larger shock from the crisis. Before the pandemic, rural poverty hovered from year to year but was on a downward trend, declining to 8.1 percent in 2019 (Figure 20A). Urban poverty followed a similar pattern, declining to 4.7 percent in 2019. Amid the onset of the pandemic, poverty rose in both areas by 0.6 pp in 2020, but by 2021, it had declined 0.9 pp in rural areas while remaining virtually unchanged in urban areas. The faster decline of poverty in rural areas during the pandemic has narrowed its gap with urban areas: in the 5 years since 2016, the poverty rate in rural areas declined by almost 3 pp, despite the shock of the pandemic, while the decline was only 1.4 pp in urban areas.

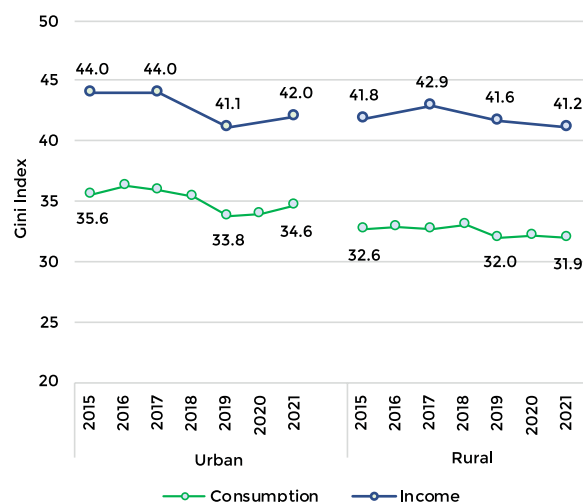
Income inequality seems to have slightly increased in urban areas. Inequality rates have historically been higher for urban areas. Between 2015 and 2019, the consumption-based Gini coefficient in urban areas ranged from 33.8 percent to 36.3 percent, while ranging from 32.0 to 32.8 in rural areas, with similar trends for the income-based Gini coefficient (Figure 20B). Inequality rose slightly in both urban and rural areas in 2020, but it has continued to rise through 2021 in urban areas while falling to 2019 levels in rural areas.

Figure 20. Poverty and Inequality Rates by Area, 2015-2021, Percent

A. Poverty rates, at national poverty line, by area



B. Inequality rates, by area

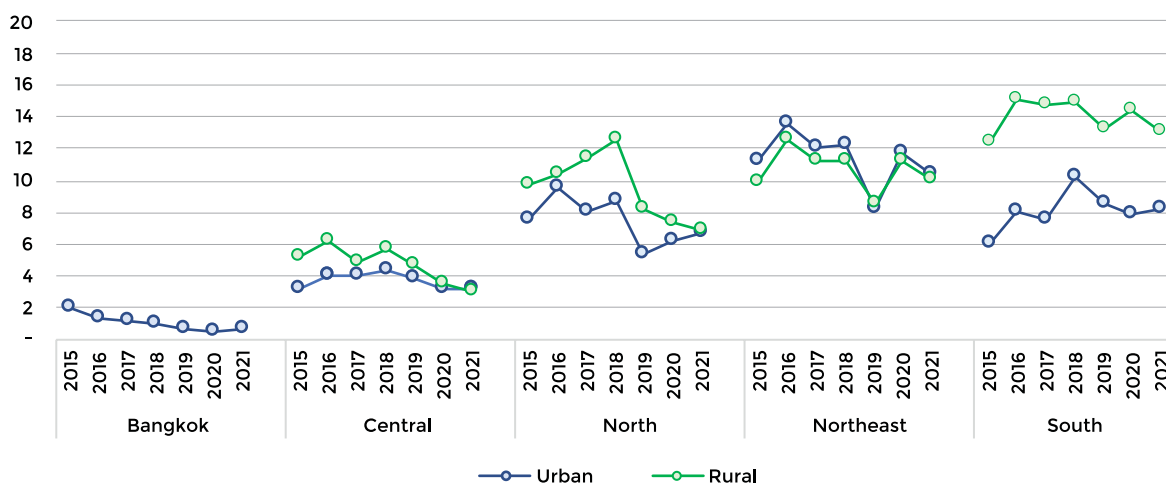


Source: SES 2015-2021

The slowing reduction in urban poverty is partly due to the aggravation of urban poverty in the North and Northeast. Average poverty rates across Thailand’s urban areas continued to decline despite the pandemic, except for urban areas in the North and Northeast regions (Figure 21). In the urban North, the poverty rate increased from 5.3 percent in 2019 to 6.9 percent in 2021. In the urban Northeast, it increased from 8.5 percent to 10.1 percent over the same period.

In the urban North, the poorest decile saw stagnant household income owing to declining wage income, the deterioration of business income, and a fall in remittances. Wage income in low-end services in the urban North experienced a significant decline in recent years, falling by nearly 50 percent from 2019 to 2021. Likewise, business income from manufacturing, construction, and trade in the urban North tumbled 43 percent over the same period, and income from remittances fell by 28 percent. While social assistance also increased in 2021 in response to the pandemic, its increase among poorest decile households in the urban North paled in comparison to their wealthier neighbors: such benefits increased by 52 percent for the second-wealthiest decile of households but by only 16 percent for the poorest decile. Perhaps as a result of these factors, food consumption by the poorest decile in the urban North declined by 8 percent on average between 2019 and 2021, and for those poorest working in industry, it fell by 18 percent.

Figure 21. Poverty by Region, 2015-2021, Percent



Source: SES 2015-2021 and NESDC.

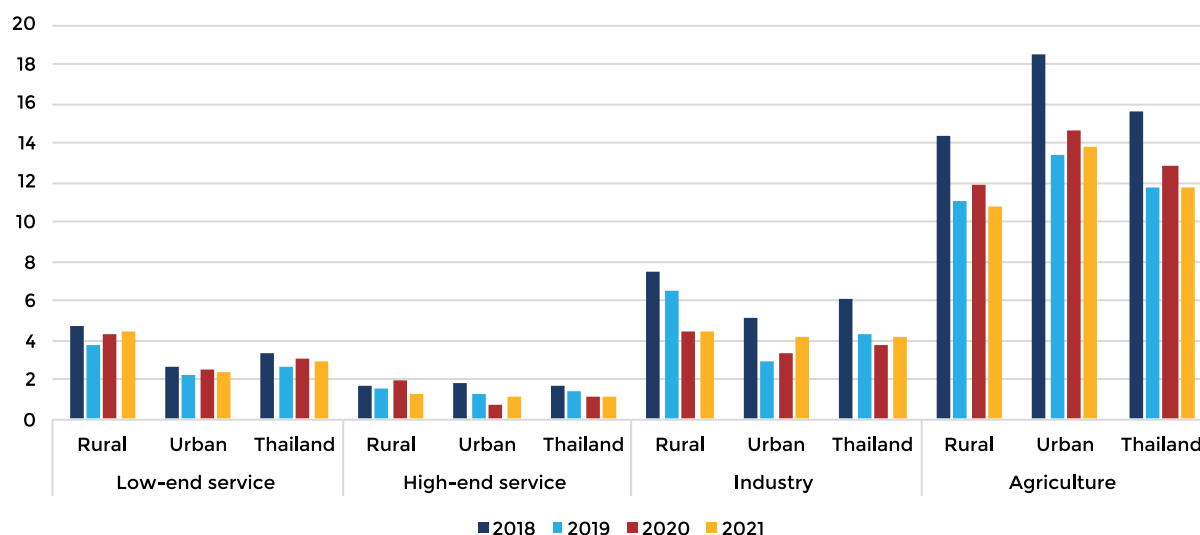
Note: Poverty rates are based on the national poverty line.

Similar challenges faced the poorest decile in the urban Northeast, coupled with a shift of workers towards agriculture. Business incomes for the poorest decile in the urban Northeast fell across services, industry, and agriculture between 2019 and 2021, with the most severe deterioration (68 percent) in industry. Wage income in low-end services was more tempered but also fell, declining by 19 percent over the same period. Perhaps driven by these declines, the urban Northeast also saw a significant shift of workers in the poorest decile from industry and services to agriculture: the share of bottom-decile household heads in the urban Northeast employed in agriculture increased from 72 percent in 2019 to 76 percent in 2021. As in the urban North, pandemic-related increases in social assistance were also more modest among the poor, increasing 37 percent between 2019 and 2021 for the bottom decile compared to 50 percent or more for households in the second to seventh deciles. Also similar to the urban North, food consumption plunged 11 percent overall for the poorest decile households in the urban Northeast between 2019 and 2021.

Poverty increased for industry workers in urban areas and for low-end services workers in rural areas.

Poverty rates among urban households whose head works in industry rose from below 3 percent in 2019 to 3.4 percent in 2020, then continued to rise despite economic recovery, reaching 4.1 percent in 2021 (Figure 22). In rural areas, poverty rates have constantly declined among industry-headed households but have increased among households whose head works in low-end services.

Figure 22. Poverty Rates by Household Head Sector of Work and Area, 2015-2021, Percent.



Source: SES 2018-2021.

Increased agricultural prices and production helped rural areas recover from the impacts of COVID-19.

Declining production, disruptions in transportation systems due to mobility restrictions, and a shift in consumer behavior towards purchasing food products from supermarkets rather than community markets all contributed to a decline in agricultural income in 2020, adversely impacting farming households (World Bank 2022a, NESDC 2021). Given this, poverty rates rose across rural areas in the Northeast and the South. In the rural North, the momentum of poverty reduction halted, falling by just 0.7 pp between 2019 and 2020 after declining 4.4 pp between 2018 and 2019 (Figure 21). By 2021, as mobility restrictions were eased, alongside growth in agricultural production and an increase in agricultural prices, rural incomes began to recover. Poverty rates declined across agricultural-headed households in all regions between 2020 and 2021, ranging from a decline of 0.4 pp in the Central region to 1.4 pp in the South region.

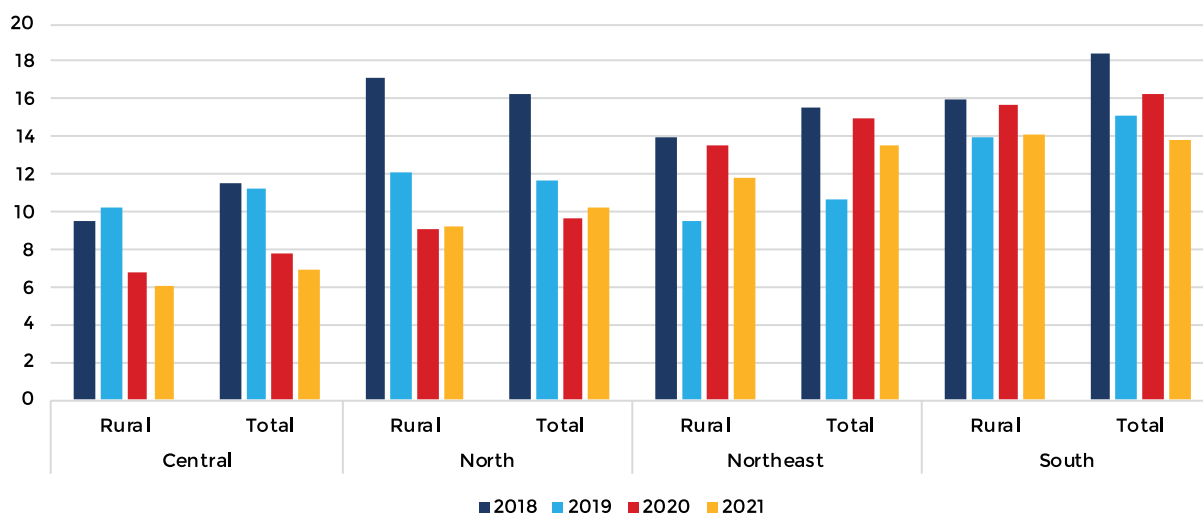
Nevertheless, farm households in the South and Northeast continue to suffer from high levels of poverty, contributing to the persistence of rural poverty in these regions.

Poverty in the rural South was estimated to be 13.1 percent in 2021, more than four times the poverty rate of rural Central and 3 pp higher than the rural Northeast, which has the second highest poverty rate in the country (Figure 21). Before the pandemic, poverty declined substantially among agricultural-headed households in the rural North and Northeast (about -5pp between 2018 and 2019), and to a lesser extent in the rural South (-2pp over the same period). (See Figure 23.) This contributed to the significant reduction in poverty in these regions' rural areas. However, the pandemic wiped out these gains in the rural Northeast and stalled poverty reduction in the rural South. Poverty rates among farming households in the South continue to be the highest among all farming households in the country, followed by the Northeast with the second-highest—contributing to the persistence of poverty in these regions, particularly in their rural areas.

Constrained farm income in these regions is driven by limited access to irrigation systems and markets.

While the agricultural sector employs more than 60 percent of all household heads in the rural South and rural Northeast, the regions have the lowest rates of access to irrigated water in the country. Only 10 percent of farm households in the rural South and 13 percent in the rural Northeast are estimated to have access to irrigation systems (Attavanich et al. 2019). This lack of access severely constrains farmers’ ability to maximize their income, limiting growing to the rainy season and preventing farmers from growing higher-value crops. It also constrains their ability to diversify their crops, making them more vulnerable to price shocks and climate variability (World Bank 2022a). The rural South and rural Northeast regions also lack year-round access to main roads, posing a challenge for both farm and non-farm households as it constrains market access (for farming inputs as well as consumer produce) and raises prices given higher transportation costs. Together, the lack of access to irrigation systems and markets limit both agricultural productivity and rural incomes.

Figure 23. Poverty Rates of Agricultural-headed Households by Region, 2015-2021, Percent



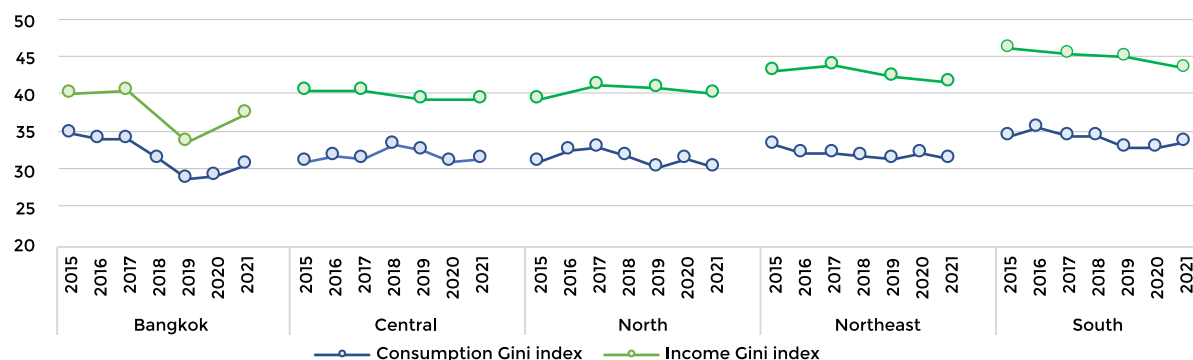
Source: SES 2018-2021.

Note: “Total” refers to poverty rates among all agricultural-headed households (both urban and rural) in the region.

The South has Thailand’s highest rate of inequality, driven by its large urban-rural gap and disparities between provinces.

Despite steadily declining inequality in the South, the region has had persistently higher income and consumption-based measures of inequality compared to the rest of the country (Figure 24). The South is home to provinces which attract a substantial number of tourists, including Phuket, Surat Thani, and Chumphon—but it is also home to three conflict-affected provinces, namely Pattani, Narathiwat, and Yala. As such, the large degree of inequality in the South is shaped by the highly divergent experiences of its provinces. As of 2021, poverty rates in the South’s conflict-affected provinces ranged from upwards of 19 percent (in Narathiwat and Yala) to nearly 31 percent (in Pattani). In stark contrast, the South’s lowest poverty rates were in Phuket (0.6 percent), Surat Thani (3.7 percent), and Chumphon (4.4 percent).

Figure 24. Inequality by Region, 2015-2021, Percent

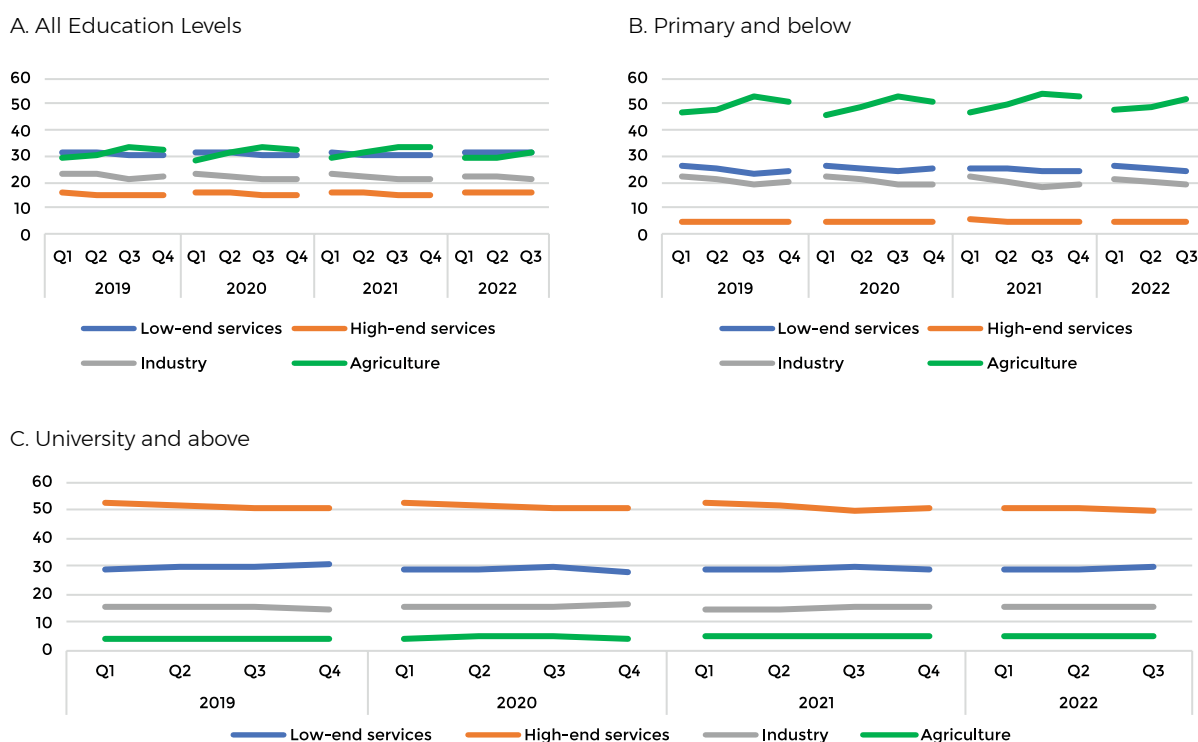


Source: SES 2021.

Inequalities in labor market outcomes

While the sectoral distribution of workers has remained relatively stable, less-educated workers shifted to agriculture during the pandemic. While broad sectoral employment patterns have remained stable (Figure 25A), distinct trends stand out when looking at workers by education level. Even prior to the pandemic, workers with a primary education or less were already disproportionately employed in agriculture. In the immediate aftermath of the pandemic, however, the share of this group’s employment in agriculture rose by 7 pp, accompanied by declines in the share employed in low-end services and industry (Figure 25B). Meanwhile, workers with a college education or above remained mostly employed in high-end services with minimal shifts during the pandemic period (Figure 25C).

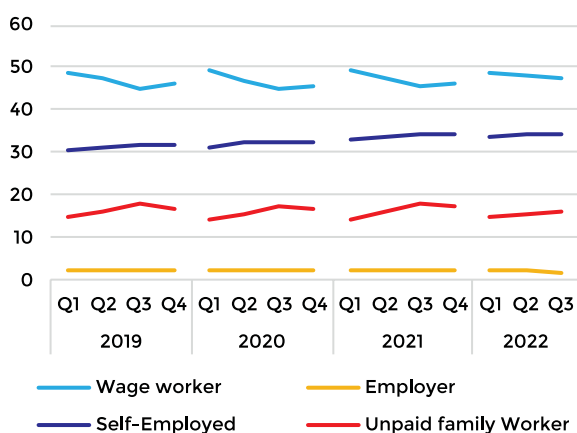
Figure 25. Sector of Employment by Education Level, 2019-2022, Percent



Source: Labor Force Survey (LFS) 2019-2022

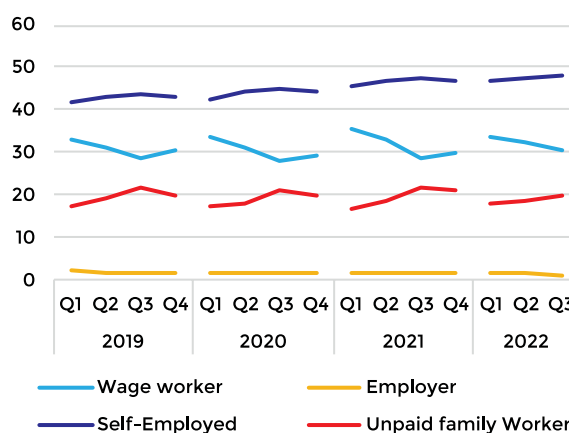
Shifts in employment type closely mirror the patterns found in sectoral shifts. Overall patterns in the employment type of workers have remained stable in the aftermath of the COVID-19 crisis and the recovery period that followed. Across the employed population, wage work continues to be the dominant form of employment type in Thailand, accounting for 47 percent of employment as of Q3 2022 (Figure 26). Self-employed workers are the next largest share, having climbed steadily since 2019 to 34 percent of the workforce as of Q3 2022. The rates of self-employment among workers with a primary education or less grew even more rapidly, rising from 42 percent in 2019 to 48 percent in Q3 2022 (Figure 27). The overall share of workers engaged in unpaid family work has remained relatively stable, but this share is relatively larger among workers with primary education or less (approximately one-third of the total workforce for this education level).

Figure 26. Type of Employment (All levels), 2019-2022, Percent



Source: Labor Force Survey (LFS) 2019-2022

Figure 27. Type of Employment (Primary and below), 2019-2022, Percent



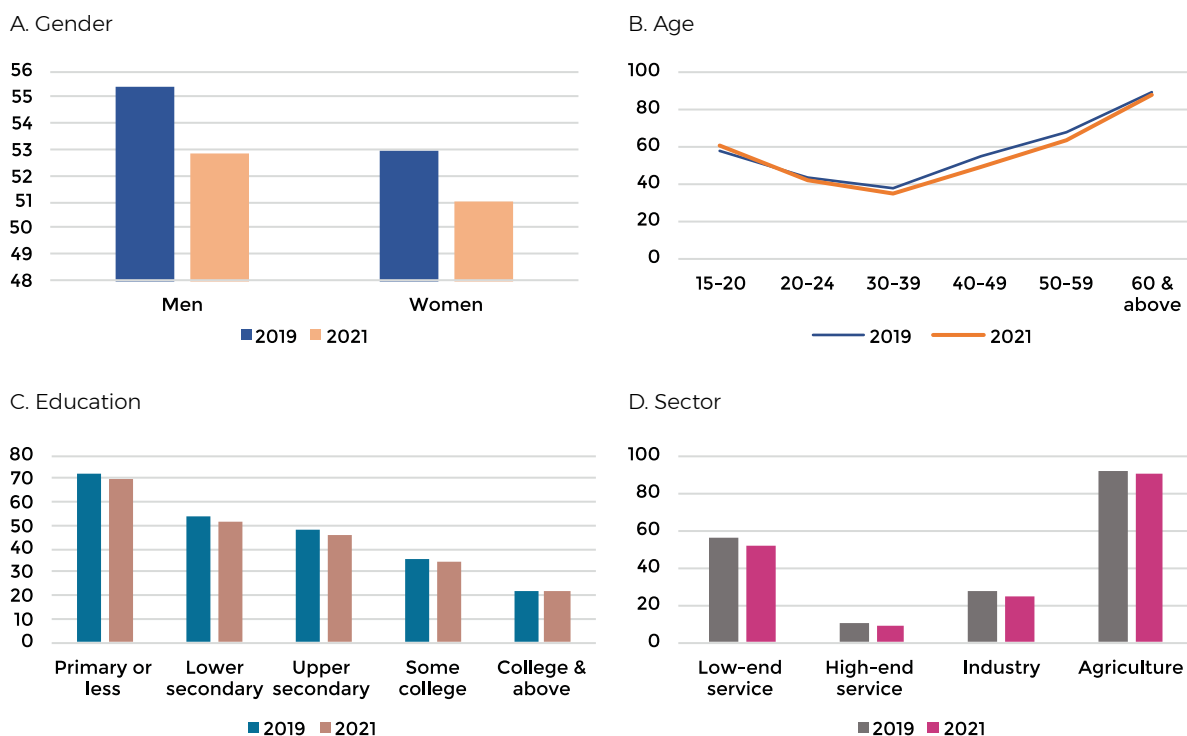
Source: Labor Force Survey (LFS) 2019-2022

Informal employment fell slightly in 2021, but continues to employ more than half the workforce.

While informal employment declined moderately for both men and women between 2019 and 2021, it still represents a major share of the overall labor market. More than *half* of both men and women continue to work in informal employment, with the share slightly higher among men (Figure 28A). Interestingly, patterns of informal employment vary widely across age groups, which suggest that some workers vacillate between formal and informal employment throughout their working lives (Figure 28B). Informal employment tends to be higher for youngest and oldest age groups.⁷ The share of informal workers reaches its lowest point (35 percent) at the 30-39 age group, before beginning a persistent rise. A significant share of older workers is informally employed: 63 percent of 50-59-year-olds and 87 percent of workers aged 60 and above are informally employed. Across education levels, workers with a primary education or less are disproportionately employed in the informal sector (Figure 28C). While rates of informal employment decline with every additional level of education, 70 percent of workers with a primary education or less are informally employed, followed by 52 percent of workers with just a lower secondary education. Most workers in the agricultural sector are also informally employed, followed by 51 percent of workers in low-end services (Figure 28D). Compared to workers in high-end services, the informality gap is vast: as of 2021, the share of informally employed workers was more than 80 pp higher in the agricultural sector than in high-end services.

⁷ While the share of informal employment has remained fairly stable among young workers, unemployment did increase considerably in recent years, rising from 5.8 percent in 2019 to 8.6 percent in 2021.

Figure 28. Employment in Informal Jobs by Age, Gender, Education and Sectors, 2019-2021, Percent



Source: Informal Labor Force Survey (ILFS) 2019-2022

Human capital and food security

In addition to coping with the effects of the pandemic, Thai households have also had to grapple with a heightened cost of living. Food prices, in particular, have increased during recent years amid global disruptions from the COVID-19 pandemic and the conflict in Ukraine. Data from the High-Frequency Phone Surveys (HFS)⁸ of August 2022 show that about 80 percent of Thai households believe that prices have increased by a considerable amount. More concerning, 87 percent of households in the poorest quintile believe that inflation is a threat to their finances, with 54 percent stating that it is a substantial threat to their finances. While the pandemic remained a cause of concern for a considerable share of households at the time of this survey, increasing prices had already eclipsed it: at the national level, the leading issues causing concern for households in August 2022 were price increases (65 percent) followed by COVID-19 (63 percent), poverty (49 percent), and unemployment (35 percent).

Households have relied on adverse coping strategies to weather the twin shocks of COVID-19 and rising prices, which could have long-term implications on children’s human capital development.

While 29 percent of households have utilized government assistance as an important source of support during these crises, a larger proportion (53 percent) reported reducing food consumption or shifting to cheaper food items (HFS 2022)—a trend that could threaten years of progress towards improving children’s health outcomes, especially among the poor. While 10 percent of households at the national level reported having skipped a meal due to lack of money or other resources, this figure soars to 26 percent for the poorest households (HFS 2022). Extreme food insecurity, defined as having gone a full day without eating, is three times higher for the poorest households (12 percent) than the national level (4 percent).

⁸ The survey was conducted by UNICEF in collaboration with the World Bank.

The poorest households are also less likely to eat nutritious food: 40 percent report being unable to eat healthy and nutritious food due to financial constraints, almost 20 pp higher than the national level. Increasing food insecurity may lead to rising rates of malnutrition and undernutrition, which could have significant impacts on children's physical and cognitive development.

While most students have returned to school following pandemic-related school closures, a significant share from the poorest households have not. According to data from the 2022 HFS, 94 percent of households report that school-aged children (aged 7 to 17) have returned to school following Thailand's first school closures in March 2020 and partial closures through 2021. However, this figure masks disparities in attendance across regions and income levels. In the Central, North, and South regions, as well as in Bangkok, at least 98 percent of households report their children returning to school, compared to only 83 percent in the Northeast. Similarly, households in the top three wealth quintiles report near-universal rates of returning to school, compared to only 81 percent of the poorest households. Access to remote learning follows a similar pattern: 91 percent of households in the Central, North, and South regions, including Bangkok, had access to remote learning, compared to 77 percent of households in the Northeast. Likewise, 93 percent of wealthier households reported having access to remote learning, compared to only 73 percent of the poorest. These trends could worsen existing disparities in attendance across income levels, further dampening prospects of income mobility for poorer students.

The pandemic may have exacerbated the existing gap in learning outcomes. According to the 2022 HFS, 65 percent of households believe that in-person instruction is more effective than remote learning, with 14 percent stating that remote learning was not effective at all. While remote learning has inherent difficulties for all households, these challenges are likely to be more severe for the poorest households with fewer resources. This is reflected in the HFS data, with more than a quarter of respondents from the poorest households stating that remote learning was not effective at all. Learning losses from remote learning are also perceived to be severe. Nearly half of households at the national level believe that children only learned 30 to 50 percent of what they would have learned from in-person instruction, while 28 percent believe this figure is less than 30 percent (HFS 2022).

3. STRUCTURAL DRIVERS OF INEQUALITY: EVIDENCE FROM THE PAST DECADES

Inequality over the Life Cycle and across Generations

The literature emphasizes that inequality begins very early in life and perpetuates over time.

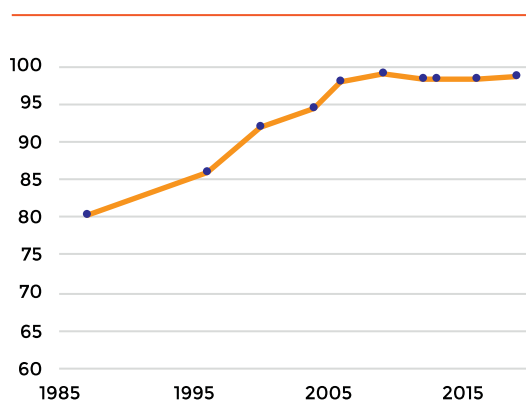
Inequality of opportunity stems from the circumstances people are born into, which shape the options available to them at different stages of their lives. Even before birth, for instance, factors such as parents' socioeconomic status and geographic location often influence the availability and quality of maternal and antenatal care that mothers receive, which then affect the endowments children are born with as well as infant health. Throughout childhood, the same factors influence critical inputs for human capital development, including access to health care, proper nutrition, safe drinking water and sanitation, and quality education (Rama et al. 2015 and World Bank 2016). These inequalities persist through childhood and youth, when parents' income, mother's education, and geographic location affect children's school attendance and completion rates, the quality of education they receive, and learning outcomes. The cognitive and non-cognitive skills that individuals develop during childhood and youth likewise shape labor outcome later in life, including income during adulthood as well as how much they are able to invest in any future children of their own.

High inequality of opportunity limits economic mobility across generations and prospects for economic growth.

The unequal distribution of opportunities for economic advancement among children creates inequalities that are likely transmitted across generations. As noted, higher income inequality affects the opportunities and incentives for families to invest in their own children, increasing the role that family background plays in determining individuals' prospects and limiting earnings mobility across generations (Corak 2013, Aiyar and Ebeke 2020). Inequality of opportunity and low intergenerational mobility waste productive potential, resulting in less innovation and a misallocation of human capital in the economy, possibly dampening long-term economic growth prospects. Even the perception of unequal opportunities or an inability to rise above one's parents' socioeconomic position can lead to feelings of unfairness and distrust, which can threaten social cohesion. Such perceptions can also depress individuals' aspirations, ambitions, and human capital investments, particularly those on the lower end of the socioeconomic spectrum—all of which could further dampen economic growth (Narayan et al. 2018, Aiyar and Ebeke 2020).

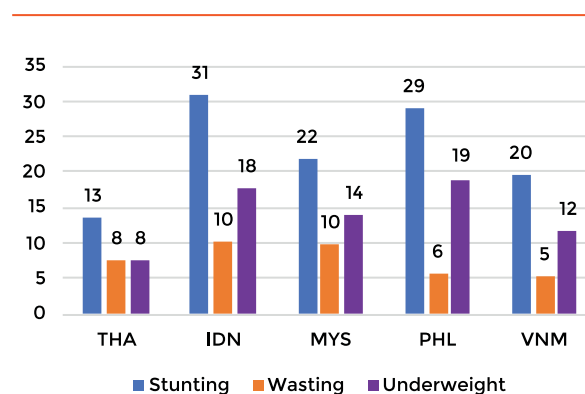
In Thailand, sustained investments in health and nutrition programs have helped children get a healthier—and more equal—start in life. Successful community-based nutrition programs in the late 1980s and 1990s, alongside expanding health infrastructure across the country, has allowed most women and children to receive proper care and nutrition regardless of their location and income level. Between 1987 and 2019, for example, the proportion of pregnant women receiving prenatal care increased from 80 percent to almost 99 percent (Figure 29). The country has similarly improved on most measures of nutrition: for children under 5, the rate of stunting fell from 24.6 percent in 1987 to 13.6 percent in 2019 and their rate of being underweight fell from more than 20 percent to 7.7 percent during the same period. Owing to these improvements, Thailand outperformed its regional peer countries on all nutrition indicators except for rates of wasting, where it performed better than Indonesia and Malaysia but worse than the Philippines and Vietnam (Figure 30). After falling from 5.7 percent in 1987 to 5.4 percent in 2016, the rate of wasting increased to 7.7 percent in 2019.

Figure 29. Pregnant Women Receiving Prenatal-Care, 1987-2019, Percent



Source: World Development Indicators (WDI) 2022.

Figure 30. Prevalence of Stunting, Wasting and Underweight among Children Under-5, 2018/2020, Percent

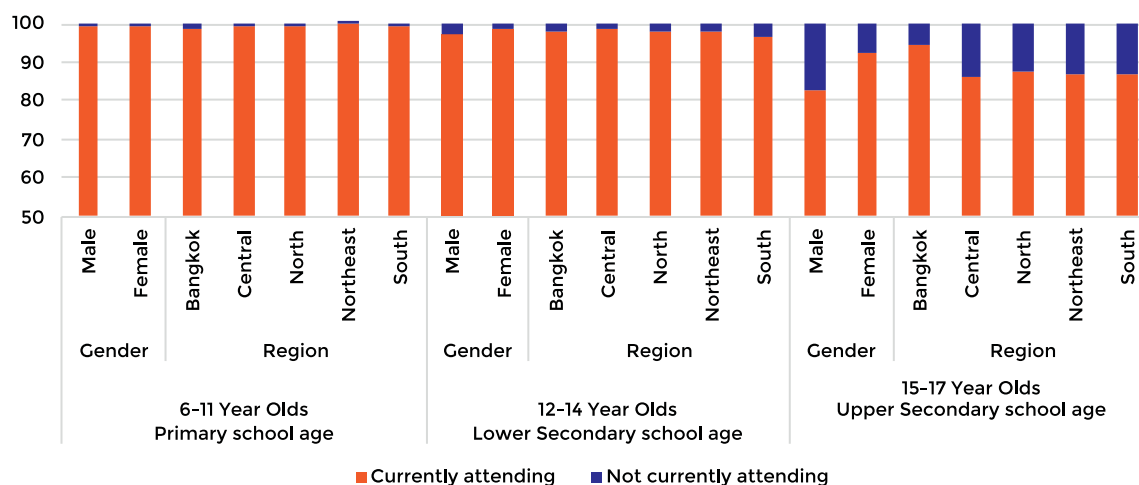


Source: WDI 2022. Figures are for the most recent year available. For stunting and underweight: IDN (2018), THA, MYS and PHL (2019), VNM (2020); for wasting: IDN (2018), THA, MYS, PHL and VNM (2019)

While the country has done well in providing children a healthy start, inequality of opportunity seems more apparent in education, where opportunities are influenced by gender, location, and income levels

While educational attendance is nearly universal at lower levels of education, significant disparities emerge by upper secondary school. Since primary school attendance is compulsory in Thailand, school attendance among children aged 6 to 11 is nearly universal, with no discernable differences across gender and regions (Figure 31). Disparities begin to appear among lower secondary school-aged students (12 to 14 years) and aggravate at older ages. It is in the ages of 15 to 17, which correspond to when students should be enrolled in upper secondary education, that wide disparities truly emerge—while the share of girls not attending school rises to 7.7 percent, non-attendance among boys soars to 17.4 percent. At this level, large gaps across regions similarly appear, with rates of non-attendance significantly higher outside Bangkok, where close to 95 percent of students at this age level remain in school. By contrast, non-attendance rates in the Central, North, Northeast, and South regions all surpass 12 percent. Gaps also appear by income level, with non-attendance rates among students from the poorest quintile more than three times higher than those from wealthier households.

Figure 31. School Attendance by Gender and Region, 2021, Percent.



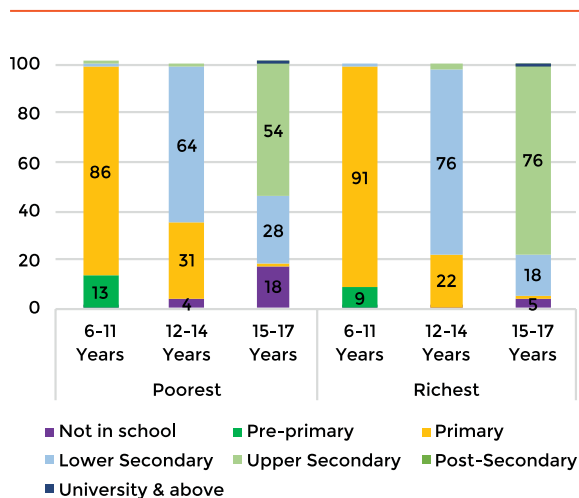
Source: SES 2021.

Attendance rates mask disparities in age-appropriate enrollment. While primary school attendance is close to universal, many children from poorer households enter school at a later age. More than 90 percent of children from the richest quintile are enrolled in primary school at the appropriate age, compared to just 86 percent in the poorest quintile (Figure 32). This gap further widens for 12-14-year-olds: while 76 percent of children from wealthier households are enrolled at the age-appropriate level (lower secondary), this falls to 64 percent for children from poorer households. By age 15-17, only 54 percent of youths from poorer households are enrolled at the age-appropriate level (upper secondary).

There are also large disparities in school quality. The *type* of school students attend also vary widely across income groups. While students from poorer households are overwhelmingly enrolled in public schools (ranging from 96 percent at the primary level to 91 percent in secondary), many students from better-off households choose to enroll in private schools (Figure 33). These disparities are particularly stark in the critical years of pre-primary and primary education, which form the foundation for future learning: the shares of wealthier students in private school are 46 pp and 48 pp higher than the poorest students at the pre-primary and primary levels, respectively. While this gap declines at the secondary level, the share of wealthier students receiving education from private schools remain 3 times higher than those from the poorest households. Thailand’s results from the 2018 Program for International Assessment (PISA) also suggest considerable differences in the quality of education that students receive across institutions: students from private independent schools, in particular, have considerably better learning outcomes (namely in reading) than students from public schools or private government-dependent schools (World Bank 2020b).⁹

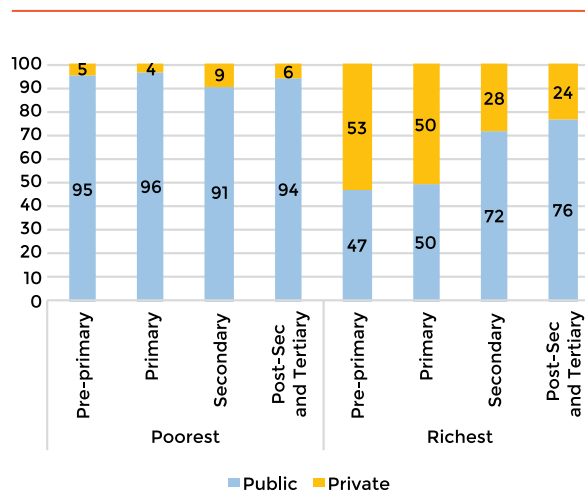
⁹ The report categorizes the type of schools under three categories: public, private independent, and private government-dependent schools. Private schools are categorized as independent if less than half of their core funding comes from government agencies and are classified as government-dependent if it exceeds 50 percent.

Figure 32. Enrollment at Age-Appropriate Levels by Consumption Quintile, 2021, Percent



Source: SES 2021.

Figure 33. Type of School Attended by Consumption Quintile, 2021, Percent



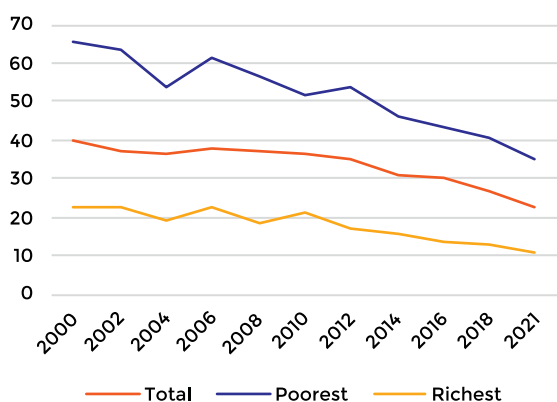
Source: SES 2021.

Educational disparities in school attendance and completion prevent poorer youth from moving to higher education levels.

Thailand has made important gains in education in recent years. For example, the share of youth aged 24-26 years who have completed only primary education or less¹⁰ declined 8 pp between 2011 and 2021, coupled with increasing shares of youth who have completed upper secondary and post-secondary education. However, gaps in educational attainment persist along income lines, particularly at higher education levels. In particular, completing tertiary education is still beyond the reach for most youth from poor households. For students aged 17-18 years (corresponding to when students should be enrolled in post-secondary or tertiary education), the rate of non-attendance for youth from the poorest decile is 12 pp higher than the national average, which has fallen consistently and significantly. When compared to students from wealthier households, poor youths' rate of non-attendance is a full 24 pp higher (Figure 34). Gaps in completion rates are even starker. In 2021, only 5 percent of youths from poorer families completed tertiary education, compared to 52 percent in the richest quintile (Figure 35). About 26 percent of youths from poorer families have only a primary education or less and only 35 percent have completed lower secondary. By contrast, 86 percent of youths from better-off households have completed upper secondary or higher. These educational gaps contribute to the persistence of broader gaps in employment and income opportunities, as lower levels of human capital limit future employment opportunities and prospects for income mobility.

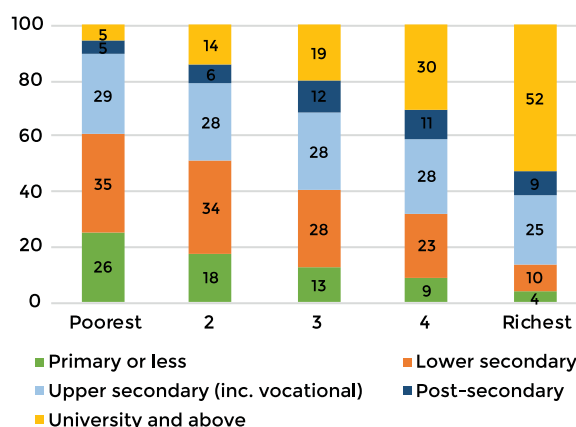
¹⁰ Primary or less includes other education levels, including short courses and unknown levels, which combined comprise less than 1 percent for each quintile.

Figure 34. Non-attendance of 17-18 Year Olds in School by Consumption Quintile, 2000-2021, Percent



Source: SES 2000-2021.

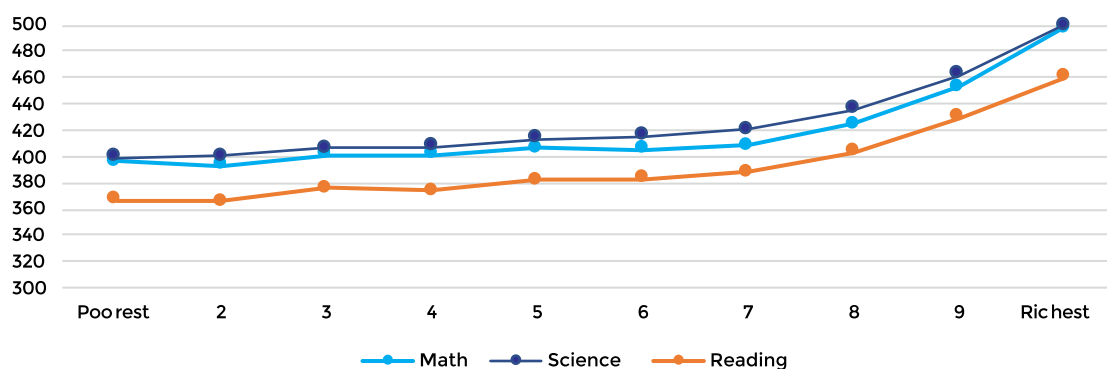
Figure 35. Education Completion Rates of 24-26 Year Olds by Consumption Quintile, 2021



Source: SES 2021.

The poorest youth also fare worse in terms of learning outcomes. Results of the 2018 PISA assessment reveal large gaps in learning outcomes between youth from low and high socioeconomic backgrounds, with students from the poorest decile scoring below the minimum levels of proficiency across reading, math, and science (Figure 36).¹¹ Learning outcomes generally rise with households' socioeconomic levels, with students from the richest deciles performing significantly better than those from lower deciles. These results reflect the depth of the inequality of opportunity in education in Thailand: not only are the poorest youth disproportionately out of school, but those that do stay enrolled also have worse learning outcomes relative to their wealthier peers.

Figure 36. PISA Score Levels by ESCS Decile, 2018, Percent



Source: PISA 2018.

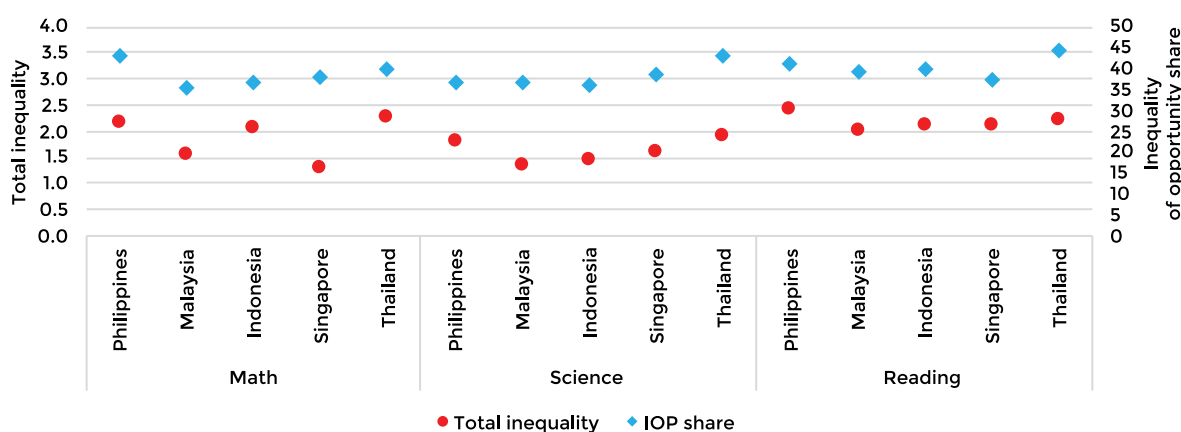
Note: The PISA economic, social, and cultural status (ESCS) index is calculated from three sets of variables related to household background: (1) parents' highest level of education, (2) parents' occupational status, and (3) home possessions.

¹¹ PISA scores are evaluated on a scale depending on how students performed for reading, math, and science, with each having different scales. Level 2 corresponds to the minimum level of proficiency that students should have acquired by the end of their secondary education. The lower score limits for each of the subjects are 407 for reading, 420 for math, and 410 for science.

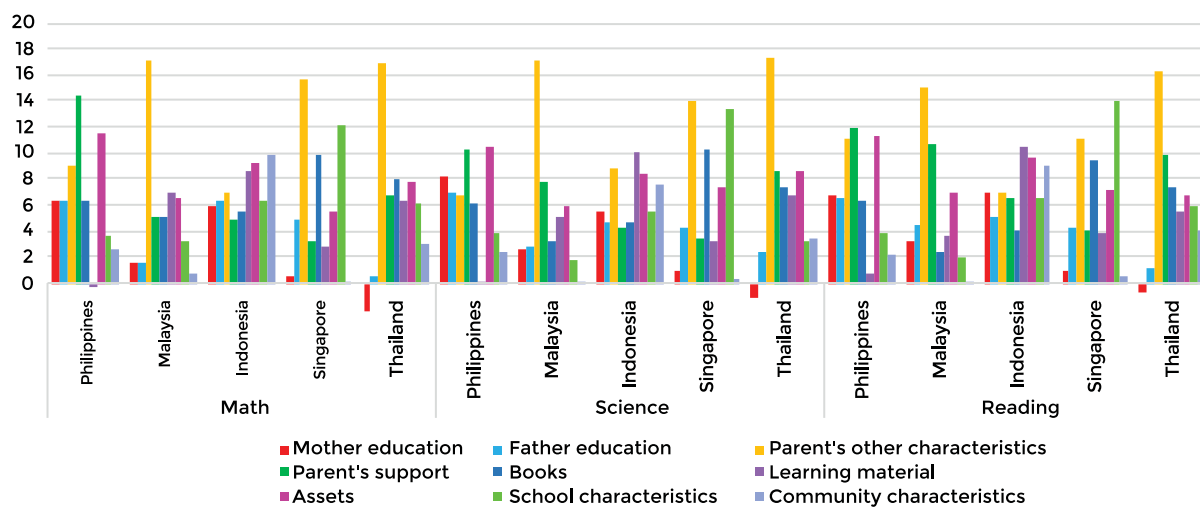
Analysis of the factors that shape student outcomes reveal large inequalities, particularly due to differences in parental characteristics. IOPs that shape students' learning outcomes often stem from factors outside of their control. These factors include their parents' background, including education levels; the level of support they receive from their parents; the household's socioeconomic level; ownership and access to learning materials, ICT tools, and other assets conducive to learning; and other characteristics that are specific to students' schools and communities. Estimates using PISA 2018 data from Thailand reveal that the share of IOP attributable to these types of circumstances is highest in reading (44 percent), followed by science (43 percent) and math (40 percent).¹² Moreover, Thailand's IOP shares in science and reading are the highest across comparator countries, while its shares in math rank higher than all comparator countries except the Philippines (Figure 37A). Across the different factors that contribute to IOP, estimates suggest that parental characteristics play the most significant role in shaping learning outcomes, particularly in science (Figure 37B).

Figure 37. Total Inequality, IOP Share and Contribution of Circumstances to IOP in Thailand and Comparator Countries, 2018, Percent

A. Total Inequality and IOP Share in Math, Science, and Reading



B. Contribution of Circumstances to IOP



Source: PISA 2018.

¹² The analysis uses the parametric approach of Bourguignon et al. (2007) to estimate the contribution of circumstances (or IOP) to inequality in education achievement. The share of IOP is measured by comparing the observed inequality in achievements with the inequality that would have prevailed if circumstances were equally distributed.

Spending inefficiencies also contribute to the stagnation of learning outcomes, despite an increase in real per student expenditure.

According to analysis of public education expenditure in the Thailand Public Expenditure Review (PER), learning outcomes in the country have stagnated¹³ despite an increase in real per student expenditure (World Bank 2023b). A key driver of this spending inefficiency appears to be Thailand’s high number of small schools with even smaller class sizes. Not only are small schools more costly to run than larger schools; they also spread their resources more thinly across a large number of very small classes, further exacerbating the misallocation of resources. Further analysis using the World Bank’s Fundamental School Quality Level (FSQL) Standards tool¹⁴ also reveals that small schools lacking educational staff were also more likely to have lower quality school management as well as lower levels of educational practices that foster learning.

Access to basic services is nearly universal, except for the use of improved water sources

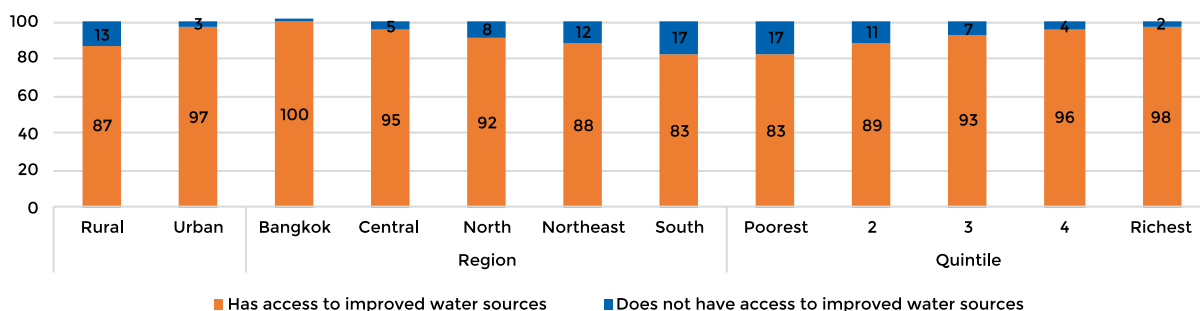
Electricity and improved sanitation are widely available in Thailand, with no significant differences across income levels or geography.

Electricity is essential for both livelihoods and education, allowing students to study in the evenings, and improved sanitation helps reduce the incidence of disease and its limiting effect on human capital accumulation, particularly among young children. The universality of these services in Thailand suggests that poor households and those in rural areas benefit from them as much as wealthier or more urban households. While electricity access in homes is almost universal, however, measures of quality and affordability are less available, which may weaken overall benefits: poor reliability can dampen the utility of electricity, and if electric connections are prohibitively expensive, fewer people and businesses will have the ability to benefit from them.

Improved water sources are less accessible to poorer and rural households, as well as those outside of Bangkok.

Access to improved water sources varies notably by region, ranging from universal access in Bangkok to 88 percent in the Northeast and just 83 percent in the South. Likewise, in urban areas, the share of households without access to an improved water source is only 3.3 percent, compared to 12.8 percent in rural areas (Figure 38). Access to improved water also varies by household income level: less than 3 percent of the richest quintile lack access to improved water, compared to 17.5 percent for the poorest quintile. This suggests that income levels and location impact how burdened households are by the risks of exposure to unclean water, which can adversely affect both productivity and health outcomes.

Figure 38. Access to Improved Water Sources by Urban/Rural, Region, and Quintile, 2021, Percent



Source: SES 2021

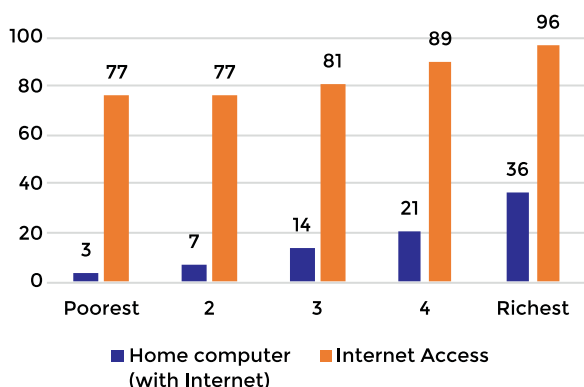
¹³ As measured by PISA test results from 2000 to 2018.

¹⁴ The FSQL tool consists of 63 questions encompassing the following areas: 1) school leadership, 2) learning outcomes, 3) teacher quality, and 4) school infrastructure and utility and school accessibility. Schools rate themselves for each of the questions.

Ownership of communication assets and access to infrastructure vary significantly across income levels and regions

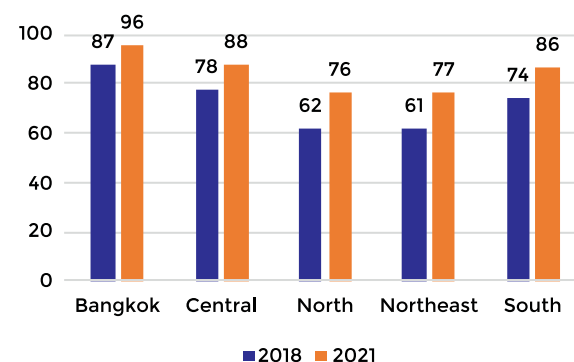
Large gaps also persist in the ownership of computers, though internet access has increased—particularly in the North and Northeast regions. While the rate of internet-enabled computer ownership has remained low in Thailand, significant gaps exist across income groups: wealthier households are 12 times more likely than the poorest to own a computer with internet connectivity (Figure 39). Nonetheless, overall internet access is much broader, with 77 percent of the poorest households being able to access the internet and nearly universal access for wealthier households. Since 2018, internet access has significantly increased, particularly in the North and Northeast. While connectivity in these regions remains lower compared to the rest of Thailand, the share of households¹⁵ able to access the internet grew 16 pp and 14pp in the Northeast and North, respectively, between 2018 and 2021, surpassing 75 percent connectivity in both regions (Figure 40).

Figure 39. Computer Ownership and Internet Access by Consumption Quintile, 2021, Percent



Source: SES 2021.

Figure 40. Internet Access by Region, 2018-2021, Percent

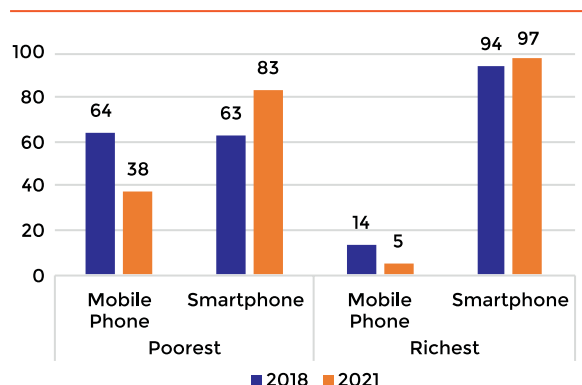


Source: SES 2018 and 2021.

Smartphone ownership among poorer households has increased dramatically. In the relatively short period between 2018 and 2021, smartphone ownership among Thailand’s poorest households rose by a full 20 pp, reaching 83 percent (Figure 41). This was accompanied by a rapid decline in the share of households owning a basic mobile phone, which fell by 26 pp among the poorest households and 9 pp among wealthier households during the same period. As with the increase in internet connectivity, the largest regional increases in smartphone ownership occurred in the North and Northeast, even though these regions still have the country’s lowest rates (Figure 42). While still not universal, the increasing rates of smartphone ownership and internet connectivity present a significant opportunity to enhance productivity, increase access to markets, and raise incomes, particularly for small businesses in rural or remote areas. For instance, farmers can benefit from these technologies in a number of ways, including access to the sharing economy (e.g. to utilize modern equipment without incurring large upfront costs), e-commerce markets, agricultural extension and information services, and early warning systems for weather-related shocks like flooding (World Bank 2022a). While gaps remain, increased access to and adoption of technology and communication assets could help mitigate existing inequalities over time.

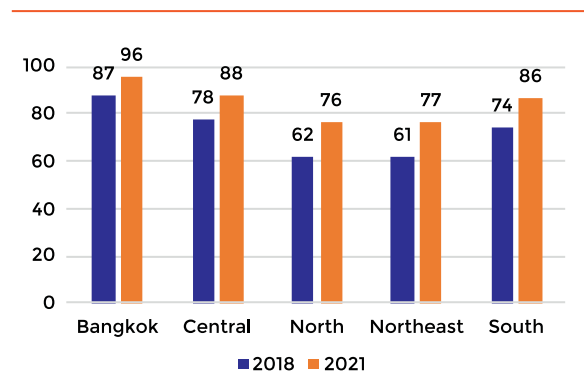
¹⁵ Internet access is defined as having at least one household member who has accessed the internet in the past 12 months.

Figure 41. Mobile Phone and Smartphone Ownership by Consumption Quintile, 2018-2021, Percent



Source: SES 2018 and 2021.

Figure 42. Smartphone Ownership by Region, 2018-2021, Percent



Source: SES 2018 and 2021.

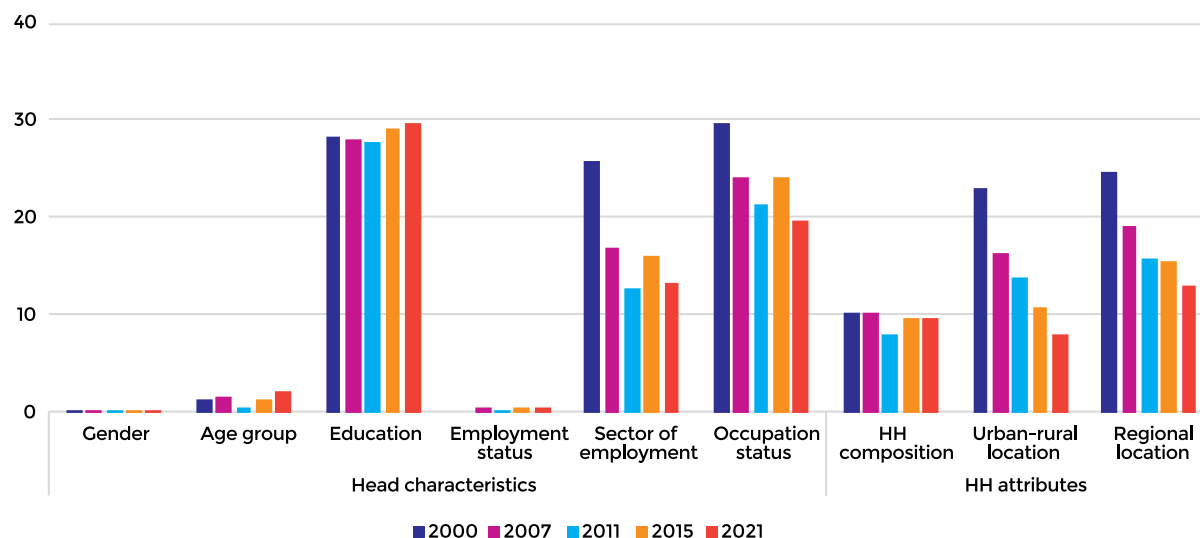
Persistence of Income Disparities

Educational gaps and occupational differences are the largest drivers of income inequality in Thailand, followed by employment sector, geographic location, and other factors. Decomposing inequality by household attributes shows that more than one-third of Thailand's income inequality is driven by gaps in the education levels of household heads (Figure 43).¹⁶ While overall education levels have broadly risen during the past two decades, this share has never fallen below 28 percent since 2000—and in 2021, it increased to 30 percent.¹⁷ The second largest contributor to income inequality (at 20 percent) is the occupation of household heads—though this share is down from 30 percent in 2000. Other key contributors are the sector where the household head is employed (13 percent) and income gaps between geographic regions (13 percent). Household demographics—or gaps between elderly households, those with large numbers of dependents, and those with no dependents—are a relatively important and persistent driver (10 percent), as well. Rural-urban gaps, once a major contributor to income inequality (23 percent in 2000), represented only 8 percent in 2021 due to sustained rural development in recent decades. The age and gender of household heads barely exceed 1 percent contributions, owing to the lower proportion of woman-headed households in the sample (about 40 percent) and the status of women who head their own households, who benefit from wide family support.

¹⁶ The analysis uses the conventional decomposition method of Cowell and Jenkins (1995) to measure how much inequality is explained by a given household characteristic or set of characteristics. Nine characteristics are considered: the gender, age, education, employment status, sector of employment, and occupation status of the household head; the regional location of the household; its urban/rural status; and its demographic composition. See Appendix B for more details.

¹⁷ Decomposition using consumption inequality shows similar trends, but larger contribution of education to inequality at over 30 percent in 2000-2021.

Figure 43. Share of Inequality Between Groups in Total Income Inequality, 2000–2021, Percent



Source: SES 2000 to 2021.

Note: Estimates are based on Theil_L and bootstrap 50 replications.

In particular, unequal returns to college education is the most important reason why inequality persists.

Figure 44 presents the results from a series of analyses to estimate the economic returns to education, type of occupation, and sector of employment for Thai household heads in 2000, 2015, and 2021. The returns are estimated using the Recentered Influence Function (RIF) regression of the unconditional quantile of household per capita income on a set of household socio-demographic characteristics (Firpo, Fortin, and Lemieux 2018). Figure 44 reports detailed estimates of the returns (or regression coefficients) for the 5th to 95th income percentiles. Progressive returns (i.e., when poorer quantiles obtain higher returns than wealthier quantiles) are illustrated by downward slopes on Figure 44, while regressive returns that contribute to inequality (i.e., when wealthier quantiles obtain higher returns than poorer quantiles) are upwardly sloping. While the results for occupation type and employment sector are notable (see below), the most dramatic findings from this analysis are the results for education. The upward slope for college level education and above (see the top right box in Figure 44) is particularly steep, indicating regressive returns to college education that benefit wealthier Thai households more than poorer ones.

While high returns to college indicate that skills are highly valued in the economy, the persistently regressive nature of this relationship is concerning.

In 2021, the estimated returns to college education increased monotonically across income groups—from just a 13 percent return at the 5th percentile to a 178 percent return at the 95th percentile. This indicates that individuals in the top of the income distribution can expect the highest returns to college education, a pattern that has persisted (though declined in its severity or steepness of slope) since 2000. Such a regressive college premium suggests the possible existence of other factors or skills driving the linkage between income level and educational returns.¹⁸ Differences in school quality and fields of study are potential explanations: students who receive a lower-quality education tend to do worse in the labor market, thus seeing lower educational returns (Patrinos, Ridao-Cano, and Sakellariou 2006).

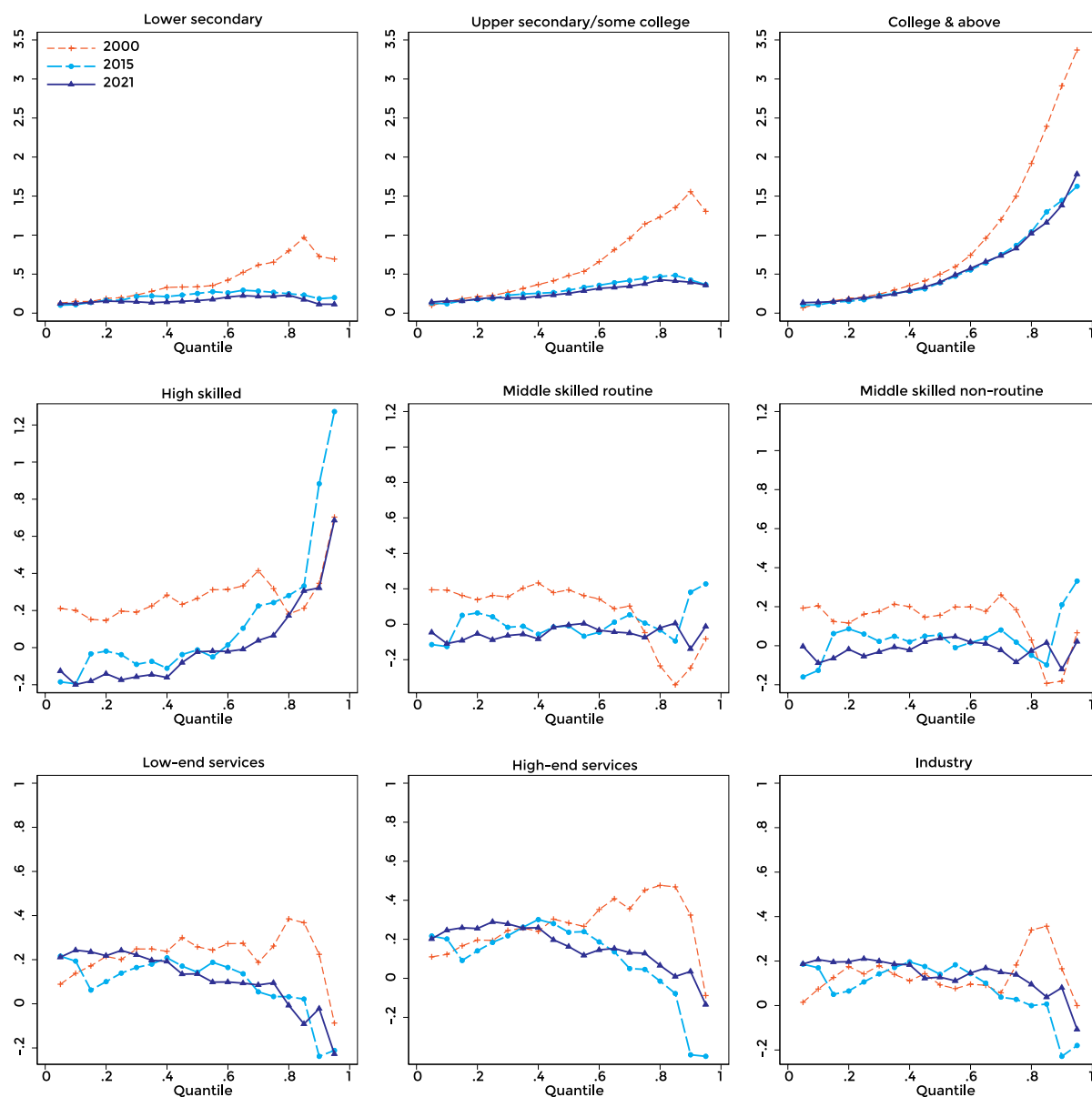
¹⁸ While the returns to education are often larger for poorer households, which reduces inequality over time, in some contexts the relationship is reversed: education complements other factors that give wealthier households larger educational returns (see Buchinsky 1994, Mwabu and Schultz 1996).

The pattern could also be indicative of unequal opportunities in the labor market. In addition to unobserved complementary endowments or differences in school quality, other factors influenced by circumstance could also contribute to the pattern of regressive college returns. These include students' parental connections and social networks, particularly when leveraged to secure better labor market opportunities for their children. Analysis of the impact of parental characteristics on their children's income across 49 economies finds that it accounts for 80 percent of income inequality persistence across generations (Narayan et al. 2018), representing a key constraint to intergenerational mobility. The analysis identifies three channels through which parental characteristics can influence their children's outcomes: 1) labor market benefits through parental connections, 2) better access to information, networks, and peers due to clustering of wealthy parents, and 3) access to higher quality education.

Unequal returns to high-skilled occupations also drives inequality. Returns to high-skilled occupations (e.g., upper management, engineers and scientists, doctors) also increase across income groups, but the slope has become less steep in 2021 than in 2015.¹⁹ In 2021, the estimated returns to high-skilled occupations were more than 17 times higher at the upper end of the income distribution than for the poorest groups, suggesting that high-skilled occupations contribute to the persistence of inequality (Figure 44). In the regression results for both occupation type and employment sector, some patterns are consistent with trends in technological change and the potential routine-biased polarization of incomes. For example, between 2015 and 2021, the returns to high-end services and industry seem to have increased at the lower and upper ends of the income distribution but decreased in the middle. Returns to middle-skilled occupations, by contrast, declined for all income groups except at the middle of the income distribution.

¹⁹ The classification of occupations is based on Acemoglu and Autor (2011) and Barany and Siegel (2018), with some modifications. High-skilled occupations include managers and managing proprietors, professionals, and associate professionals and technicians. Middle-skilled routine occupations are comprised of clerical support workers, craft and related trades workers, and plant and machine operators and assemblers. Middle-skilled nonroutine occupations are comprised of service and sales workers. Low-skilled occupations comprise elementary occupations, which include cleaners and helpers; and laborers in mining, construction, manufacturing and transport.

Figure 44. Returns to Education, Occupation, and Employment Sector, 2000–2021



Source: SES 2000 to 2021.

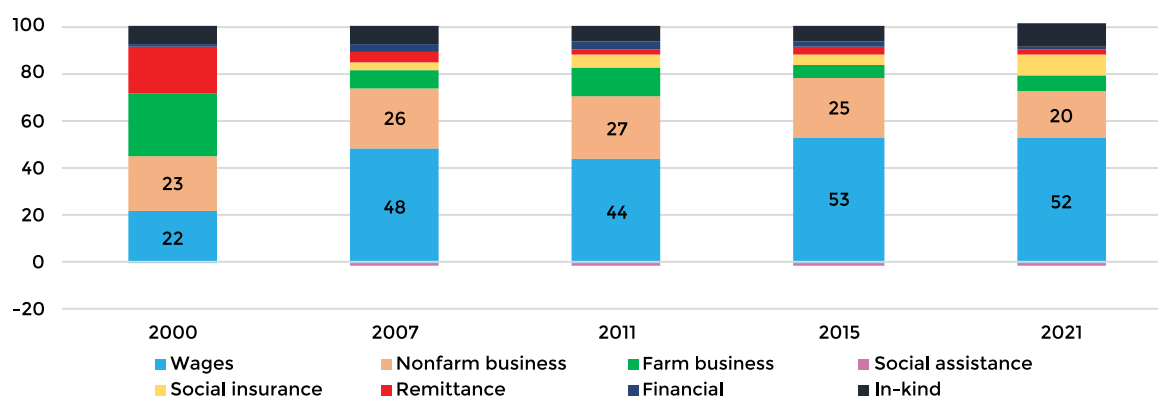
Note: Estimates represent the unconditional quantile coefficients at different percentiles of the income distribution. The base groups in the regression are primary education or less, work in agriculture, and low-skilled occupations.

Wage labor drives income inequality more than any other source of income, and social assistance reduces it only marginally.

Analysis to decompose Thailand’s income Gini coefficient by income source shows that wage income has been the largest contributor to income inequality since 2007, comprising more than 50 percent since 2015²⁰ (Figure 45). The contribution of social insurance to income inequality has also been growing, given Thailand’s aging population and the increasing share of pensions as a source of income. Income from social assistance, by contrast, only marginally reduces inequality.

²⁰ The decomposition uses the approach of Lerman and Yitzhaki (1985) and Stark, Taylor, and Yitzhaki (1986).

Figure 45. Contribution of Income Sources to Total Income Inequality, 2000-2021



Source: SES 2000-2021.

Structural transformation and education reforms led to a more highly-educated workforce and a shift to more productive employment, though the economy started losing its dynamism after the mid-2000s.

Between 2001 and 2022, the share of workers in agriculture fell 15 pp from 46 percent to 31 percent (Figure 46A). This shift was accompanied by an increasing share of workers in low-end services, which rose 7 pp from 24 percent to 41 percent during the same period, as well as more tempered increases in both high-end services and industry. Educational reforms, which expanded compulsory education to include the lower secondary level, also led to considerable shifts in the workforce’s education levels. Over the same two decades, the share of workers with only a primary education or less fell 29 pp from 67 percent to 38 percent, and the share of those completing college rose 10 pp from 8 percent to 18 percent (Figure 46B). These shifts were accompanied by a rise in workforce productivity: from 1999 to 2008, Thailand’s average growth in total factor productivity (TFP) was 3.6 percent per annum (World Bank 2022d). However, the changes that delivered the greatest productivity gains lost steam after the mid-2000s. Between 2009 to 2017, average growth in TFP fell to just 1.3 percent per annum.

Nearly half of less-educated workers continue to be employed in agriculture, where productivity has stagnated at very low levels.

Between 2001 and 2022, some less-educated Thai workers moved from agriculture to low-end services and industry, where they primarily work in low- or middle-skilled occupations (Figures 46C and D). However, such workers are still overwhelmingly employed in agriculture. As of 2022, nearly half of workers with lower secondary education or less were employed in agriculture, down 10 pp from 2001. This sector is one of Thailand’s least productive: despite some progress, agricultural productivity remained about five times lower than services or industry from 2001 to 2022.

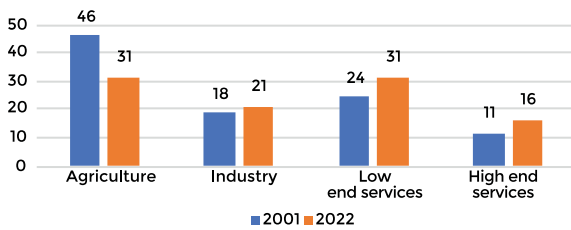
While more highly-educated workers are still largely employed in high-skilled occupations, they increasingly shifted to middle-skilled jobs with lower productivity.

Most workers with higher levels of education, particularly with a college degree or above, are employed in high-end services and high-skilled occupations—but this group has seen a shift in recent years toward low-end services and middle-skilled occupations (Figures 46C and D). This supports the findings in Wasi et al. (2019), which shows that expanding education resulted in more highly-educated workers but was accompanied by workers’ downward shift in the occupation-skills ladder. Moreover, while most college-educated workers are still employed in wage labor, they are increasingly shifting to self-employment (Figure 46E). Overall, labor force participation for college-educated workers declined by about 10 pp over two decades.

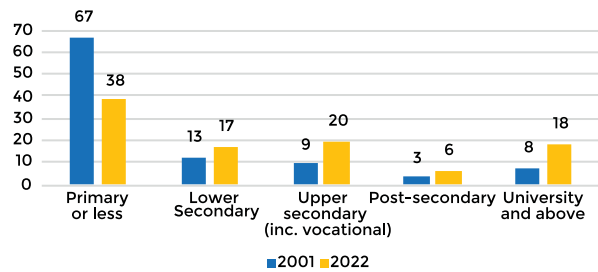
These patterns suggest that employment opportunities for highly-educated workers are limited or that there are skills mismatches (i.e., the education system is not equipping students with the knowledge and skills needed by the labor market)—or both. World Bank (2022d), for instance, indicates that firms face significant difficulties finding workers with the required skills; while firm demand is highest for engineering and other technical graduates, the supply of new graduates in the fields of social sciences far outnumbers that of students in the fields of science and technology. The report also notes that certain measures of cognitive (problem solving) and non-cognitive (social and leadership) skills have declined over time among new graduates.

Figure 46. Employment by Sector, Occupation and Education Levels, 2001-2022, Percent

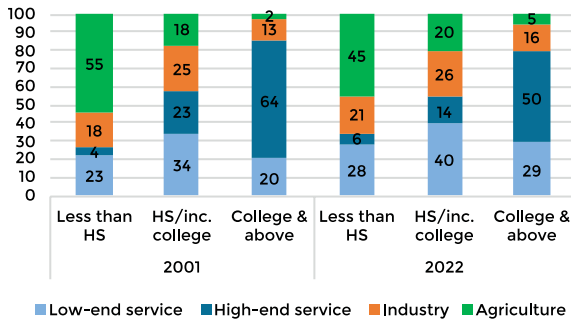
A. Employment by Sector



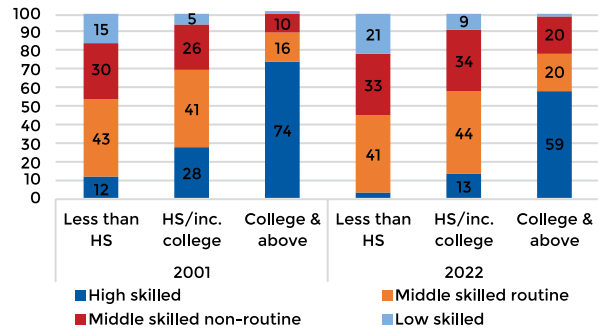
B. Educational Attainment of Workers



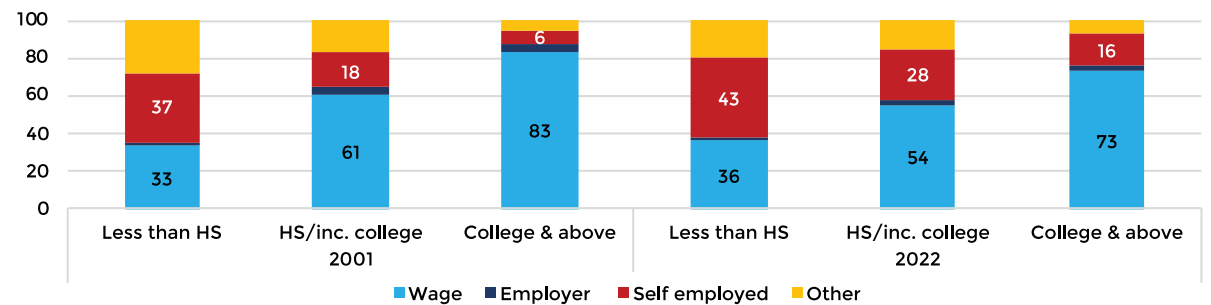
C. Sector of Employment by Education Level



D. Occupation by Education Level



E. Wage Work by Education Level



Source: Labor Force Survey (LFS) 2001-2022.

Deeper analysis sheds light on how the college wage premium perpetuates inequality.

Complementing the analysis above and building on the work of Acemoglu and Autor (2011), the figures below analyze college wage premiums and the supply of college-educated workers.²¹ This analysis can help illuminate how education and labor market trends affect wage gaps—and thus drive income inequality, since wage income is the main source of household incomes in Thailand. The first measures the relative earnings of college- and high school-educated workers and provides a rough measure of how the labor market values skills; the second indicates the relative supply of skills.

The persistently high college wage premium is driven by a skills shortage in the labor market and a large skills premium.

Figure 47 shows that the college wage premium has fluctuated but remained high between 2001 and 2022, increasing to peaks of 85 points in 2008 and 2010—at which point the wage earnings of the average college graduate exceeded those of the average high school graduate by 134 percent. The college premium then followed a downward trend to 65 points in 2022, its lowest level in two decades but still high, with the college-educated workers' earnings still exceeding those of high school-educated workers by 92 percent. Notably, the college premium has followed similar trends for men and women but is persistently much higher for men. At its peak in 2008 and 2010, the wage earnings of the average male college graduates exceeded those of the average male high school graduate by almost 148 percent, while the same gap among women was 139 percent.

Among other factors, the college premium is most affected by the relative supply of college-educated workers in the economy, which has increased steadily but not rapidly enough.²²

Figure 48 compares the supply of college-educated workers to non-college-educated workers between 2002 and 2021. The relative supply of college-educated workers steadily increased throughout this period, accelerating between 2008 and 2015 due to young college graduates entering the labor market, then moderating somewhat.²³ Overall, the relative supply of female college-educated workers has been higher than their male counterparts. The acceleration during 2008–15 period was faster for women than for men (Figure C2 in Appendix C), and the moderation thereafter was largely driven by a deceleration in the relative supply of male college graduates. Overall, despite steadily increasing rates of enrollment in tertiary education—which has increased the average education of Thailand's labor force—the increase was not rapid enough, resulting in a persistent shortage of skills that has kept the college wage premium high.²⁴

²¹ For details about this analysis, see Appendix C.

²² This could be due to either the slow expansion of tertiary education or the lack of skills produced by tertiary education that meet the demand in the labor market.

²³ See Figure C1 in Appendix C for the comparison of the supply by age cohorts.

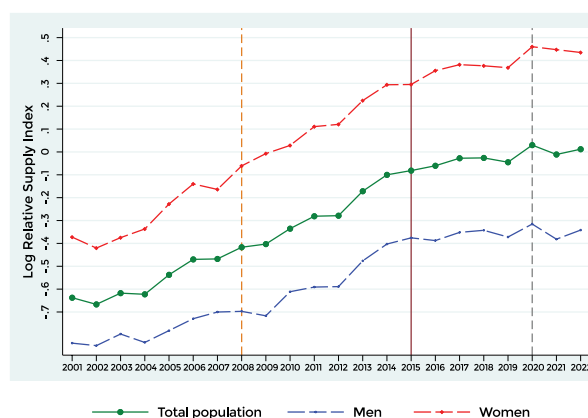
²⁴ The college premium represents a summary measure of the market price of skills, which is affected by (among other things) the relative supply of skills (Acemoglu and Autor 2011).

Figure 47. Composition-Adjusted College/High-School Log Weekly Wage Ratio, 2001–2022



Source: LFS 2002 to 2021.

Figure 48. College/High-School Log Relative Supply, 2002–2021



Source: LFS 2002 to 2021.

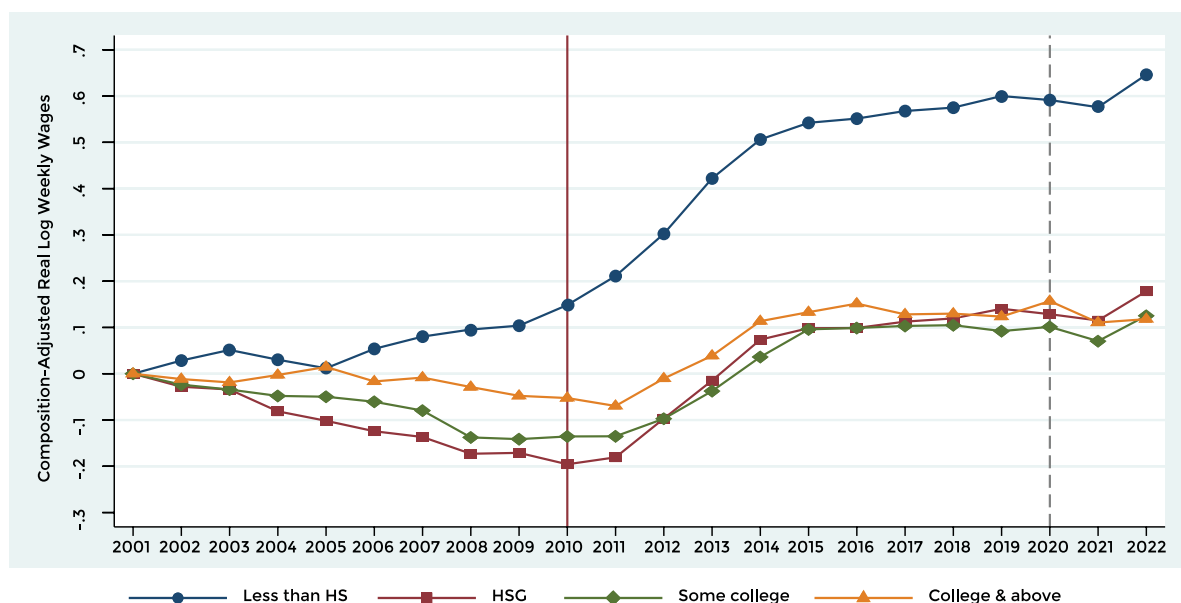
The deceleration in the relative supply of male college graduates in recent years may be explained by several factors. First, the relative deceleration of male college-educated workers after 2015 (illustrated in Figure 48) was driven by a decline in college completion rates among young adult males over the same period. Rates of college attainment for Thai men aged 25–34 almost doubled between 2001 and 2015, then started a slow decline (see Figure C3 in Appendix C). While it rebounded in 2022, it remains below the 2015 peak. By contrast, college completion rates among adult females as well as an older male cohort (aged 35–44) maintained a steady increase from 2001 to 2022. Second, rates of school attendance for young men (aged 15–24) have also stagnated (Figures C4, C5 and C6 in Appendix C); given that Thailand’s overall population is rapidly aging, the education levels of worker cohorts entering the labor market have declined compared to cohorts exiting the workforce. These trends may have important impacts on the overall educational stock of the labor force: even if college enrollment maintains its past trends, the declining labor supply from aging will not be able to raise the share of college-educated workers as it did in the past. Third, the decline of skilled job opportunities and the downturn in relative college earnings since 2010 may have discouraged college enrollment. Increasing tertiary education enrollment and completion is thus essential to offset the negative effects of aging, increase the overall skills level in the workforce, and reduce wage and income inequality.

Since 2010, real wages of less-educated workers grew faster than those of college-educated workers, helping to reduce inequality, but wage gaps between education groups remain large and increased during the pandemic. The college wage premium gives information about the relative market value of skills, but not about real wage levels themselves. For instance, a large or rising college premium can occur when real wages rise for college-educated workers or when real wages fall for those with only a high school education or less—or when both occur at the same time. Figure 49 plots the evolution of composition-adjusted real log weekly wages by education level from 2001 through 2022. Real wages remained more or less stable across all education levels until 2010 (with some groups seeing their wages decline marginally), then increased substantially between 2010 and 2015—by 38 percent on average.²⁵ Real wages maintained an upward trend throughout 2020, though the pace of growth moderated—averaging just 4 percent—before falling by 2 percent at the start of the Covid-19 pandemic, then rebounding by 6 percent in 2022.

²⁵The two main factors driving the rising trend in wages during this period were the increase to the minimum wage (applied during 2012 and 2017) and the restructuring of minimum civil servant salaries in 2012. However, it should be noted that raising the minimum wage will not automatically lead to reduced inequality, and caution should be applied in interpreting the relationship between the two. For instance, if minimum wages rise but are not accompanied by an increase in productivity, smaller businesses could be adversely affected, which could then slow growth and increase rates of unemployment.

The rapid increase in real wages for less-educated workers has helped reduce the college premium since 2010. Figure 49 offers a narrative for how the college wage premium has evolved over the last two decades. Between 2001 and 2010, it shows that the increase in the college premium was largely driven by the fact that wages for high school-educated workers fell more (18 percent) than those of college-educated workers (5 percent). Between 2010 and 2019, by contrast, average real wages rose by 19 percent overall, but the wage gap narrowed because wages increased more for less-educated groups: real wages rose 40 percent for high school graduates and 57 percent for workers with less than a high school degree during this period, the latter comprising a 67 percent increase for women and a 51 percent increase for men (Figures C7 and C8 in Appendix C). Trends in recent years have been fluctuating. In 2020, the gap widened because wages for college educated workers rose (by 3.4 percent) while falling for high school graduates (by 1.2 percent). During the onset of the pandemic, wages fell for all groups, but the decline was steeper for college-educated workers (4.5 percent) than high school-educated workers (1.4 percent). In 2022, the rebound boosted all groups but was much larger for groups with a high school education or less (about 7 percent) than college graduates (0.7 percent). Looking across the entire two decades, periods of disproportionate increases to real wages for less educated workers seem to coincide with increases to minimum wage in 2012, 2017 and 2022 (Figures C9 and C10 in Appendix C)—though further analysis is needed. Regardless, these relative gains were not sufficient to reduce the college premium or wage inequality. Despite the fast increase of real wages of less-educated workers, wage gaps remain high.

Figure 49. Composition-Adjusted Log Real Weekly Wage by Education Group, 2002–2021



Source: LFS 2001–2022.

Note: Log wages are normalized at zero in 2001; subsequent values correspond to the log change in earnings for each group relative to the 2001 level.

Despite large college premiums, completing tertiary education does not automatically lead to better labor market outcomes, particularly for youth.

In 2022, Thai aged 15–24 had the highest rate of unemployment (6.6 percent), more than 4 pp higher than its next-older cohort (aged 25–29) and 5 pp higher than the national average. Among youth, unemployment was highest for those who had completed college, 17.8 percent—considerably higher than unemployment rates among those with less education. However, employment of college-educated youth varies significantly by field of study. College graduates with degrees in teacher training and education science, as well as personal services, comprise a considerable share of unemployed youth. By contrast, those with degrees in social and behavioral science as well as engineering comprise a larger share of the youth who are employed. While graduates with a business and administration degree comprise the highest share among unemployed youth, they also comprise the largest share among youth who are employed. This likely reflects the popularity of the field of study, particularly among the youth.

The early 2000s was marked by a relative expansion of middle- and higher-skilled occupations, which accelerated over 2008-15, but this pattern has started reversing.

Figure 50A plots the smoothed changes in wage employment shares for occupational skill percentiles, where occupations are ranked according to mean weekly wages.²⁶ Like Barany and Siegel (2018) and Acemoglu and Autor (2011), we use employment shares measured by the proportion of hours worked for each wage occupation as a share of total hours worked in all wage occupations. This gives more weight to occupations where average hours worked are greater. Occupations are ranked on the x-axis by their skill level from lowest to highest; an occupation's skill rank is approximated by the average wage of workers in the occupation in 2001. The height at each skill percentile on the y-axis measures the growth of employment in each occupation, relative to the whole.²⁷ The overall trend from 2001 to 2022 reveals that employment growth was negative in low-skilled occupations and positive in higher-skilled occupations during this period. While some signs of job polarization seem to be emerging in recent years, this period of analysis is too short to draw final conclusions. Figure 50B shows shifting patterns in employment shares across 3 periods: 2001-2008, 2008-2015 and 2015-2022. Most of the increase in higher-skilled occupations seems to have occurred in 2008-2015. By 2015-2022, the pattern had flattened out, with only slight growth observed among the lowest 2nd to 4th occupation deciles.

²⁶ Ranking by mean daily wages shows a similar pattern.

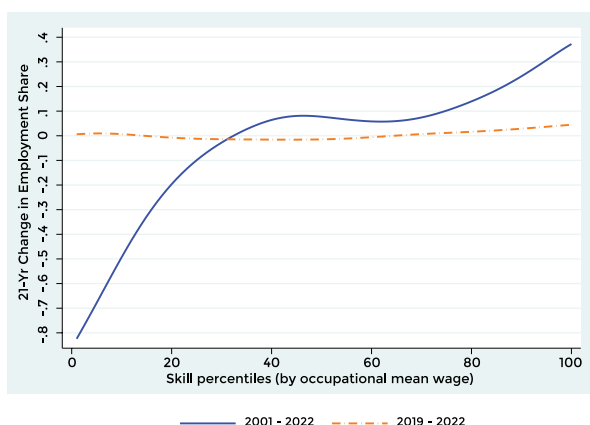
²⁷ Occupations are split into 100 groups, each representing 1 percent of employment in 2001. We smooth changes in employment shares with a locally weighted regression using a bandwidth of 0.8. Results are not sensitive to the choice of the skill measure (monthly vs. weekly wages) or base year for skill ranking.

The deceleration of employment in routine occupations may accelerate with the changing nature of work, potentially exacerbating inequality.

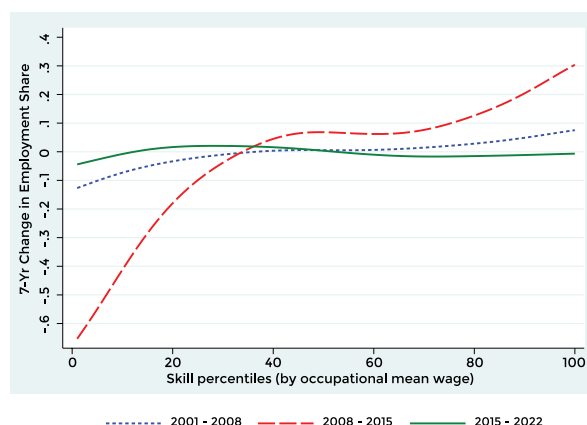
Figure 50C depicts the changes in occupational structure of Thailand’s labor market over two decades, using four broad clusters. During 2015-2002, wage employment growth was fastest in low-skilled occupations, while more tempered in middle-skilled routine and high-skilled occupations. Figure 50D provides a more detailed analysis using eight occupation categories. It shows that within routine occupations, employment fell in craft and related trade, while marginally increasing for plant and machine operators. These trends may accelerate with the rise in digitalization, particularly since the pandemic, which can be especially disruptive for older and less-educated workers who are highly-concentrated in occupational categories that are experiencing the most employment reduction. With increased automation and technology adoption, middle-skilled jobs (particularly those in routine occupations) will continue to thin out, forcing workers to shift to either low- or high-skilled occupations. Older and less-educated workers with less ability to adapt and learn new skills may be pushed to lower-skilled occupations. Given the context of an aging population, this may lead to a rapid polarization in the labor market and aggravation of inequality.

Figure 50. Smoothed Changes in Wage Employment by Occupation Skills Percentiles, 2001-2021

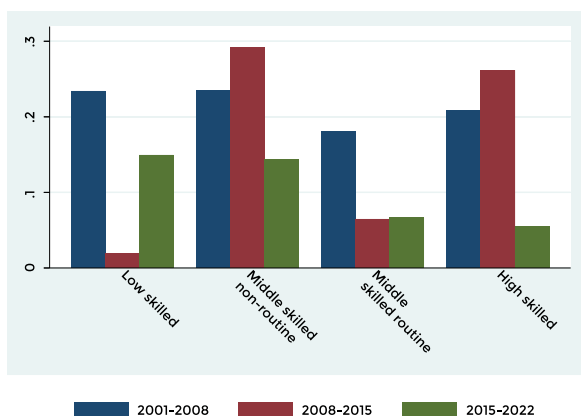
A. Changes over two decades



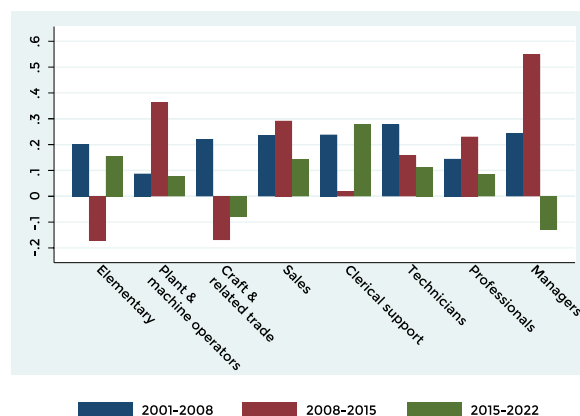
B. Changes over 7-year periods



C. Percent change in wage employment by occupation, 2001-2022



D. Percent change in wage employment by detailed occupation, 2001-2022



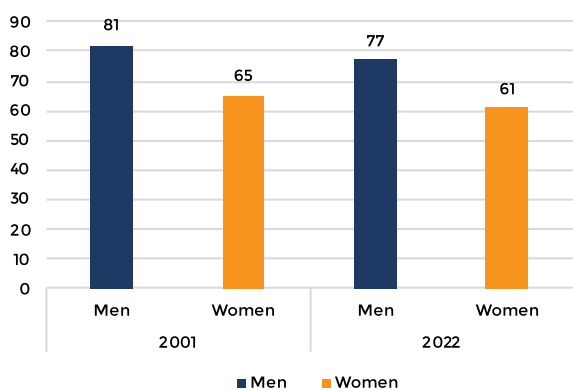
Source: LFS 2001 to 2022.

Note: Figures are for wage employment.

Gender gaps

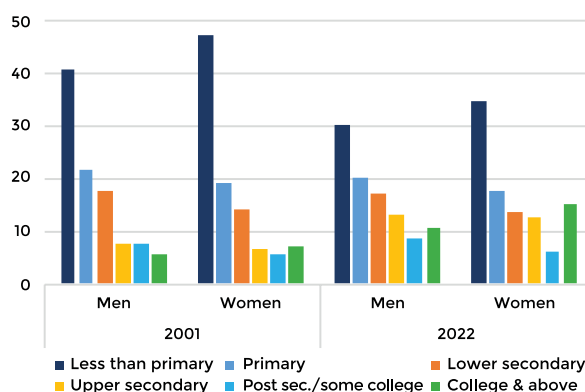
Gender equality in Thailand is very high by some measures but very low by others. The country ranks 79th globally for gender equality and 8th among countries in the EAP region, according to the 2022 World Economic Forum (WEF) Global Gender Gap Report, having closed 70.9 percent of its overall gender gap. In particular, Thailand’s gender equality indicator for economic participation and opportunity (a function of labor force participation, wage equality, incomes, and the gender share of managers and technical workers) is 15th globally and one of the highest among Asian countries with available data. Between 2001 and 2022, the gender gap in labor force participation remained consistent at 16 pp (Figure 51). In terms of educational attainment, the WEF report ranks Thailand 92nd in the world. Most of the gap in education attainment (97.9 percent), defined by current enrollment and literacy rates, has been closed. However, while more women than men have completed tertiary education (15 percent and 11 percent, respectively), a greater share of women have not completed primary education (Figure 52). Women political empowerment in Thailand is among the lowest globally, ranking 130th out of 146 countries, with only 8.4 percent of the gap closed due to a low share of women in parliament and lack of women in ministerial positions.

Figure 51. LFP by Gender, 2001 and 2022, Percent



Source: LFS 2001 and 2022.

Figure 52. Education by Gender, 2001 and 2022, Percent



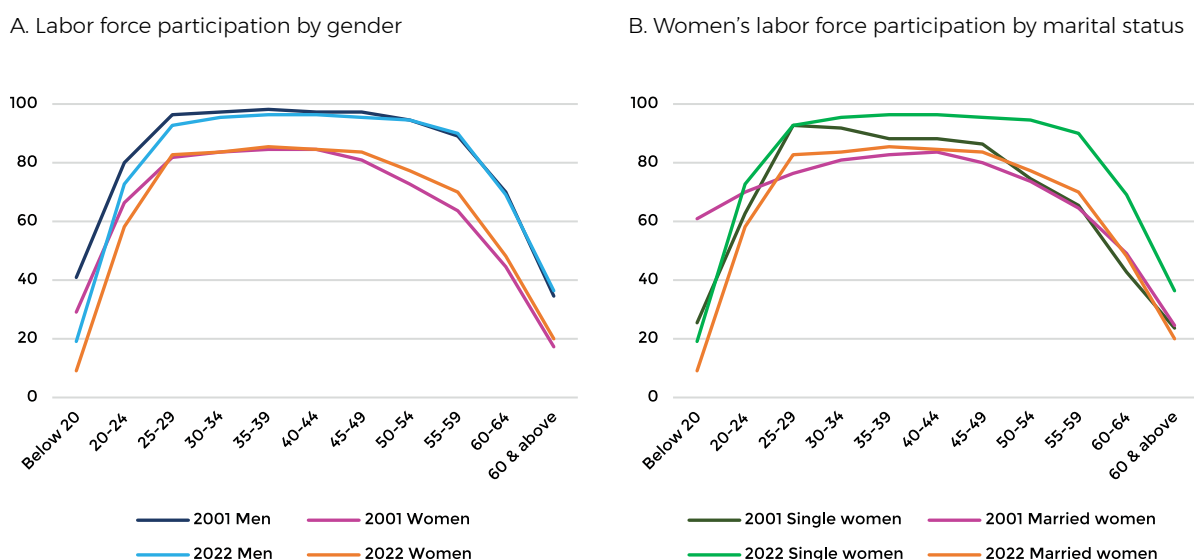
Source: LFS 2001 and 2022.

Both men and women are entering the labor force later in life, but women’s labor force participation (LFP) remains lower at every age. As more students stay in school longer, LFP of Thais younger than 20 has fallen significantly between 2001 and 2022. The share of women entering the labor market before they turned 20 declined from 29 percent to 9 percent during this period, while the share for men fell from 40 percent to 18 percent (Figure 53A). Women are also *staying* in the labor market longer—while the share of women in the labor force between 25 to 44 years has remained fairly consistent since 2001, the share of women working over age 45 has increased. Despite these positive developments, the gender gap in LFP has persisted, with participation among men consistently higher across every stage of the life cycle.

Overall patterns of LFP have changed over time, particularly between single and married women.

In 2022, single women had higher LFP rates throughout the life cycle compared to 2001. At that time, the share of single women peaked when they were 25-29 years old (93 percent LFP) then rapidly declined. By 2022, single women’s LFP still peaks at 25-29 years but maintains its high level until the age 50-54, indicating that a much larger share of single women chooses to remain in the labor market as they get older (Figure 53B). Interestingly, participation rates reflect a different pattern when comparing single and married women in 2001 and 2022. In 2001, married women had higher participation rates than single women for the below 20 age group, as well as for the 20-24 group. From there, LFP of married women increased incrementally to reach its peak at 85 percent at 40-44 age group and then started a rapid decline. In 2022, participation rates of married women followed the same pattern as in 2001 though they seemed to stay a little longer in the labor market. In addition, beginning at age 25 until the age of 59, the participation rates of single women are consistently higher than 90 percent. By comparison, participation rates among married women range from 82 to 85 percent from the ages of 25 to 49 years old, before a steep decline to 77 percent once they reach ages 50 to 54.

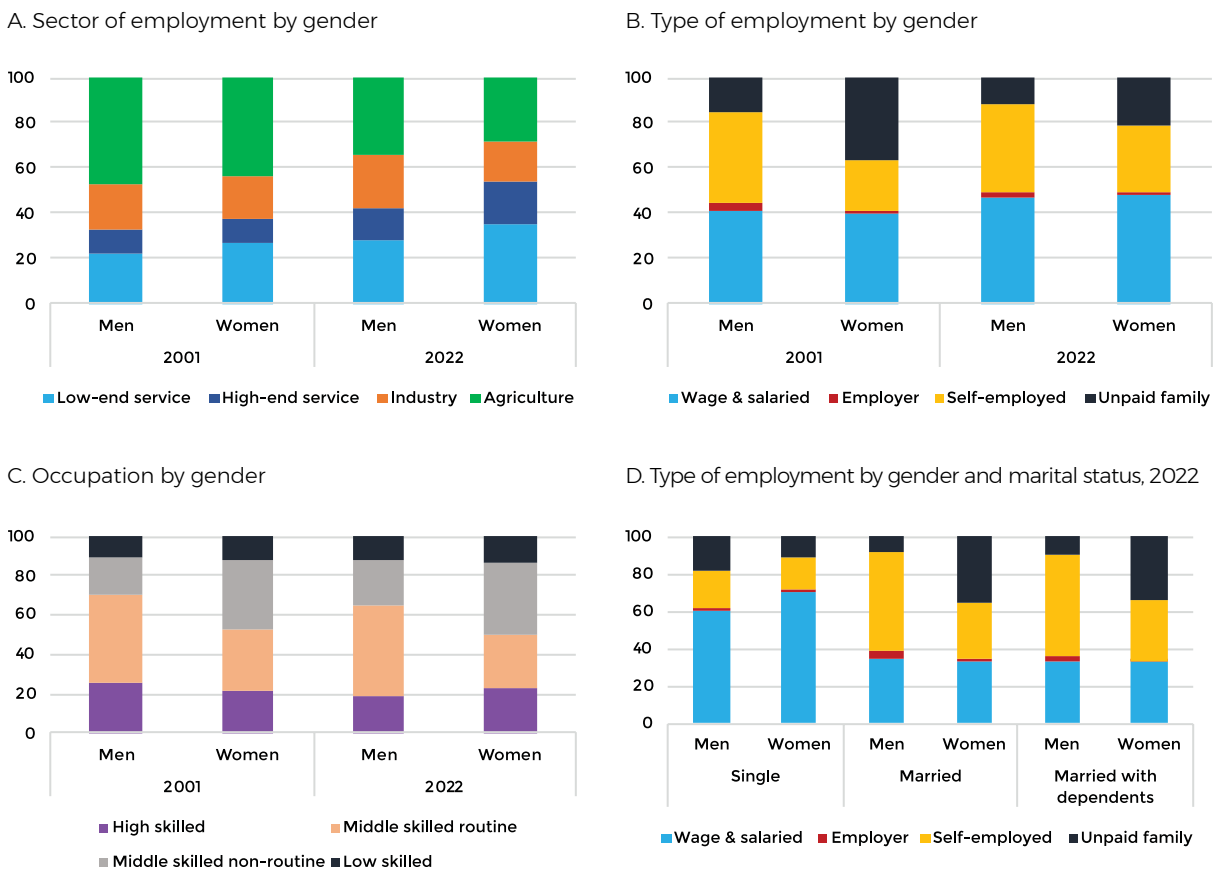
Figure 53. Labor Force Participation, by Gender and Age Group, 2001-2022, Percent



Source: LFS 2001 and 2022.

Women and men have different profiles of employment. Fewer women than men are employed in agriculture and industry, with larger shares of women than men in high-end and low-end services (Figure 54A). The share of women in agriculture fell 16 pp between 2001 and 2022, while their employment in high- and low- end services rose by 9 pp and 7 pp, respectively. Men’s employment in industry rose between 2001 and 2022 while remaining unchanged among women. This shift aligns with the higher rate of men employed in middle-skilled routine occupations, which reached 47 percent in 2022 (Figures 54B and C). Notably, women’s employment in high-skilled occupations increased between 2001 and 2022 while falling 7 pp among men. The share of women engaged in unpaid family work fell considerably since 2001, but continues to be much higher than men’s share (Figure 54B). This pattern strongly reflects persistent gender roles, as it does not appear among single women and is much higher among married women and married women with dependents (Figure 54D). Among married women and married women with dependents, 35 percent are in unpaid family work compared to 9-10 percent for married men and married men with dependents.

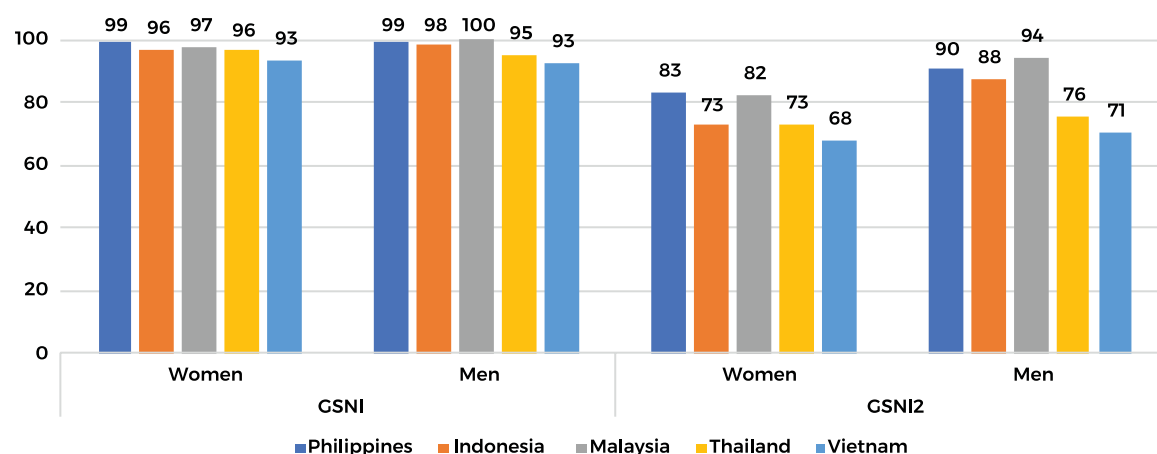
Figure 54. Labor Force Participation, by Gender and Age Group, 2001-2022, Percent



Source: LFS 2001 and 2022.

Gender bias has remained relatively high. Across Thailand and in peer countries, an almost universal share of the population (including men and women) expresses at least one gender bias, as defined by the Gender Social Norms Index (GSNI) (Figure 55). However, a lower share among both men (76 percent) and women (73 percent) exhibits two or more biases, indicating that bias is widespread but not across all dimensions. Economic bias, which reflect biases on the gender of business leaders and employment merits (i.e., the belief that men should have more right to a job than women), is lowest in Thailand (at 51 percent) among peer countries and below the global average of 59 percent. In contrast, educational bias—defined as reflecting a belief that university education is more important for men—is still slightly higher in Thailand (at 29 percent) than the global average.

Figure 55. Cross-Country Comparison of GSNI and GSNI2 by Gender, 2020, Percent



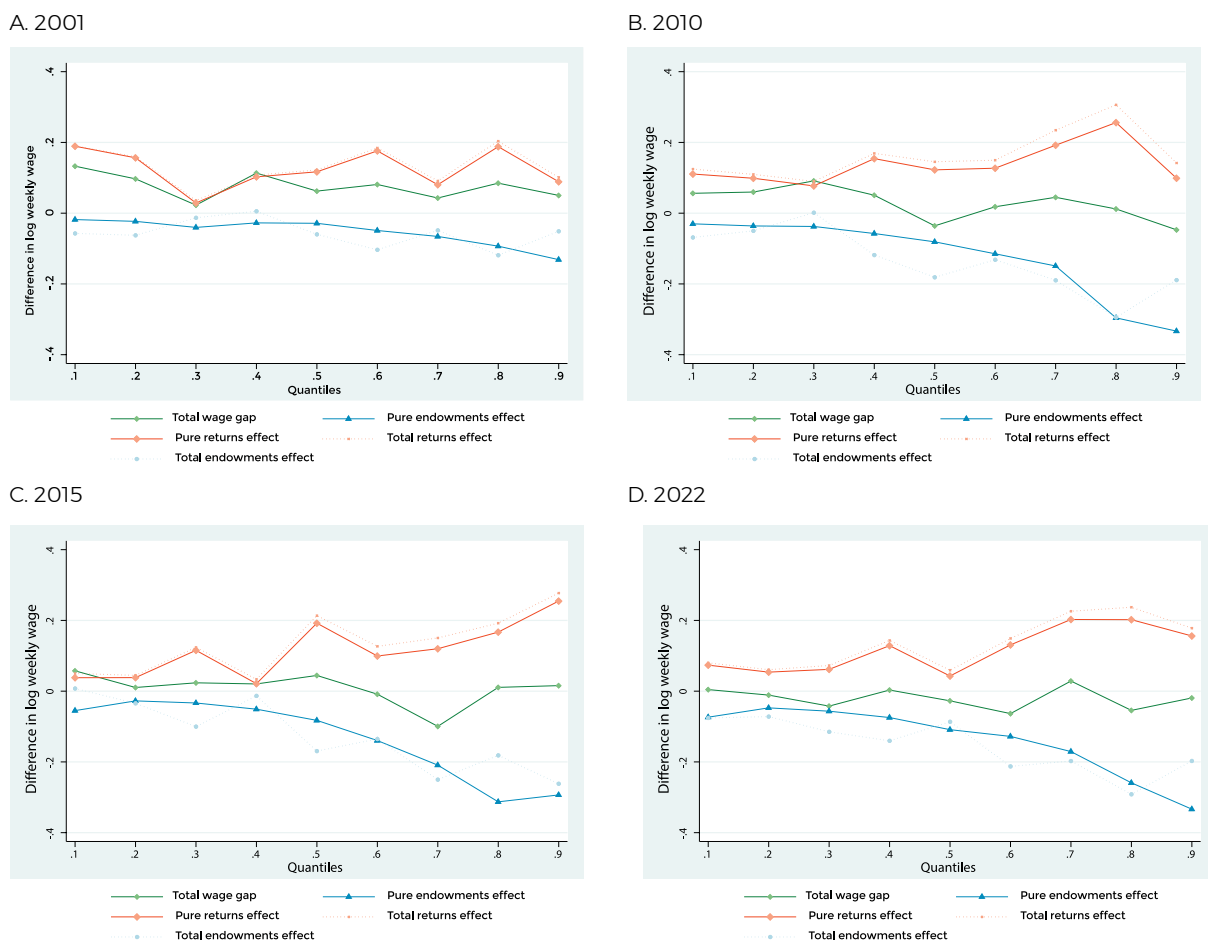
Source: UNDP 2020, based on the World Values Survey.

More rigorous analysis sheds light on the extent and drivers of Thailand’s gender pay gaps.²⁸ It is necessary to analyze the entire wage distribution to determine whether gender pay differentials are in favor of men or women and whether they are higher at the top or bottom of the wage distribution. It is also important to separate observed pay differentials that are due to composition or endowment effects (i.e., gender differences in labor market attributes and personal characteristics, including education and experience endowments, occupation levels, sectors of employment, and family and demographic characteristics) and those due to wage structure or returns effects (i.e., gender differences in the returns to labor market and personal characteristics). Below, our decomposition of the gender pay gap into endowments and returns effects uses the unconditional quantile RIF-regression method of Firpo, Fortin, and Lemieux (2009, 2018). Technical details about the methodology and the variables used in the regressions can be found in Appendix D.

²⁸ Because labor earnings data is available only for wage employment, the analysis is constrained when trying to understand the full extent of gender income gaps.

The overall gender wage gap has slowly narrowed over time, driven by endowment effects in favor of women while the returns persistently benefit men. Figure 56 shows the decomposition of the gender pay gap for 2001, 2010, 2015 and 2022 at different (unconditional) quantiles of the weekly wage distribution.²⁹ Each chart shows the overall pay gap (the green line), the pure endowments effect (the blue line), and the pure returns effect (the orange line). The dotted lines indicate the specification and reweighting errors.³⁰ In 2001, the average weekly wage was about 10 percent higher for men than women, though the gap was higher at the bottom of the distribution. At the lowest decile, the weekly wage was 14 percent higher for men than for women while the gap at the highest decile was 5 percent. In 2022, the weekly wage was about 2 percent higher for men than for women, with no evident variations across the distribution. The slow closing of the average wage gap over two decades has been driven by the endowment effect for women, which has improved at a faster pace than for men, mainly at the top of the pay distribution. In contrast, the returns to these endowments seem to have increased at a faster pace for men, widening the returns gaps in favor of men even as the overall wage gap has narrowed.

Figure 56. Endowments and Returns Effects on Gender Pay Gap, 2001, 2010, 2015 and 2022



Source: LFS 2001 to 2022.

Note: Negative values in the figures indicate gaps in favor of women and positive values indicate gaps in favor of men.

²⁹ The results are based on the reweighted-regression decomposition, where the reweighting factor is estimated using the logit model.

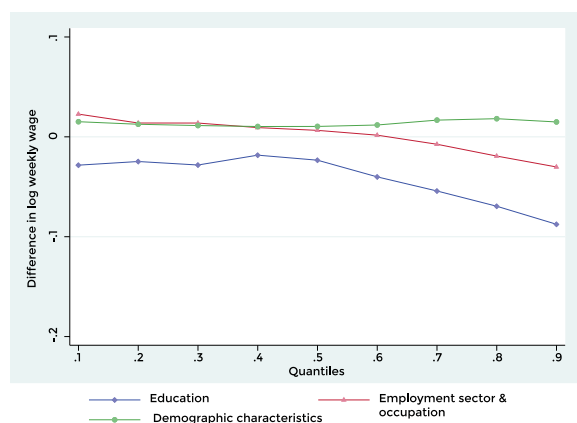
³⁰ The specification error reflects the importance of departures from the linearity assumption of the RIF-regressions and the fact that, except for the mean, the RIF depends on the distribution of log wages (and thus from the explanatory variables X through their effect on log wages). The reweighting allows for assessing the quality of the reweighting (see Appendix D and Firpo, Fortin, and Lemieux 2018 for more technical details).

The shifting endowment effects have been driven by women’s increasing education levels, while the returns to education and experience have increased at a faster pace for men.

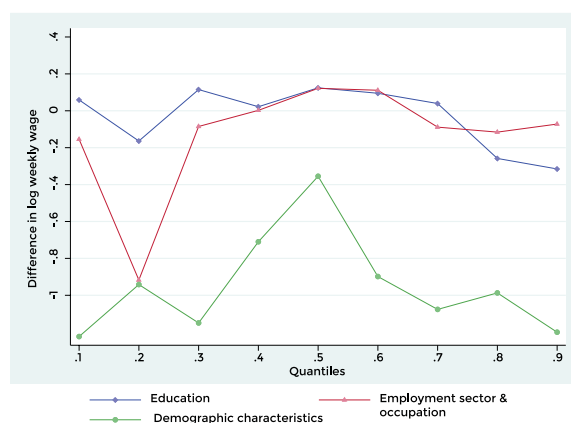
The main factor contributing to women’s higher endowments over time is education (Figure 57). Women employed in wage jobs have higher education levels than men, particularly at the levels of high school and above. This advantage has been growing over time, particularly in higher-paying positions. Men, by contrast, tend to have higher levels of work experience and receive higher returns to their education and experience.³¹ At upper quantiles, women have larger shares of employment in high-end services and high-skilled occupations yet receive lower returns.³² In particular, returns to upper secondary and college education are much higher for men than women, and this gap has increased significantly over the past two decades. Gender pay differentials seem unaffected by the presence of a young child or elderly members in a household, suggesting that these factors may affect women’s LFP but do not affect their returns once they are working.

Figure 57. Detailed Endowments and Returns Effects on Gender Pay Gap, 2001 and 2022

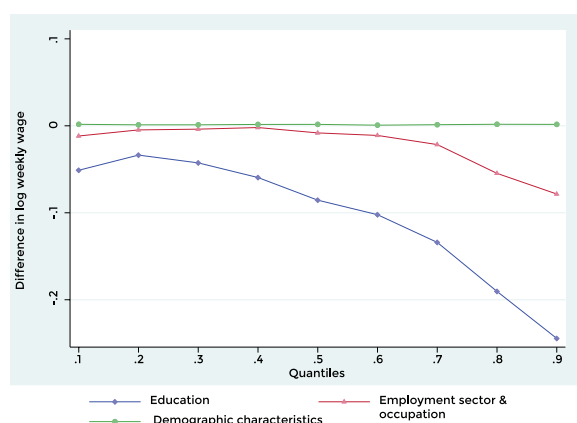
A. Selected endowment effects, 2001



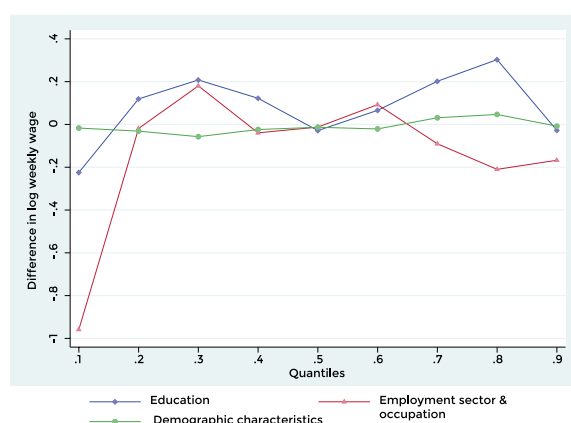
B. Selected returns effects, 2001



C. Selected endowment effects, 2022



D. Selected returns effects, 2022



Source: LFS 2001 and 2022.

³¹ Experience is proxied by number of years of potential work after completing education, i.e., age less years of education less six.

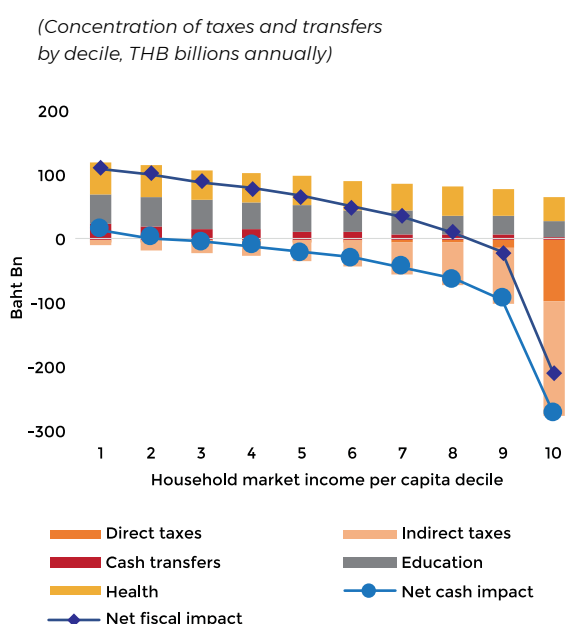
³² A notable exception is women in the bottom of the pay distribution, who tend to receive higher returns to their education than men.

Role of Fiscal Policy in Addressing Inequality

Fiscal policy is one of the few instruments governments can use to reduce poverty and inequality in the short run, while also financing important investments in public services and growth. Below, our analysis of Thailand’s fiscal policy impacts on poverty and inequality builds on the Commitment to Equity (CEQ) method used to estimate the distributional welfare consequences of Thailand’s public revenues and expenditures in the PER (World Bank 2023b). See Box 1 for details on the CEQ analysis.

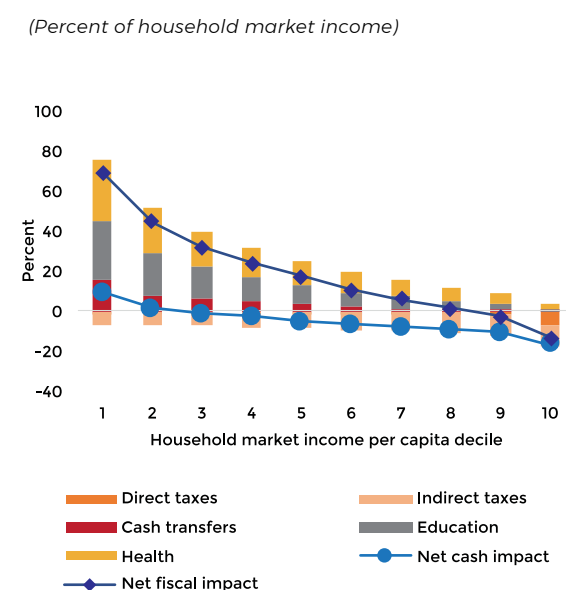
The pre-pandemic fiscal system was progressive, with a greater share of net contributions coming from richer households through taxation and a greater share of transfers and benefits going to poorer households. Figure 58 shows the total taxes paid, the total public benefits received, and the net impact for each decile of the income distribution in 2019. If non-cash benefits in health and education are excluded, Thais in the poorest two deciles were net beneficiaries – they received more in cash benefits than they paid in tax. The next two deciles roughly broke even, paying as much as they benefitted, while the richest six deciles were all net cash contributors. Moreover, each of the richest six deciles contributed an increasing amount to the fiscal system, with the richest decile contributing three times more than the second-richest decile. When non-cash health and education spending is also included, the first seven deciles become net beneficiaries and only the richest decile remains a significant net contributor, having paid THB 209 billion more in taxes than they received in benefits. Indeed, the poorest 20 percent received nearly as much in net terms (THB 225 billion). While a greater share of education, health, and cash transfers went to poorer households, the main driver of the pre-pandemic progressive fiscal system was the high share of total tax paid by the richest households.

Figure 58. Most households are net beneficiaries, although not in cash terms



Source: SES 2019 and World Bank staff calculations.
 Note: The population is divided into ten equal groups, ranked from the poorest 10 percent according to market or pre-fiscal income (“decile 1”) to the richest 10 percent (“decile 10”).

Figure 59. Benefits are significant for poorer households relative to their incomes, but contributions are modest for richer households

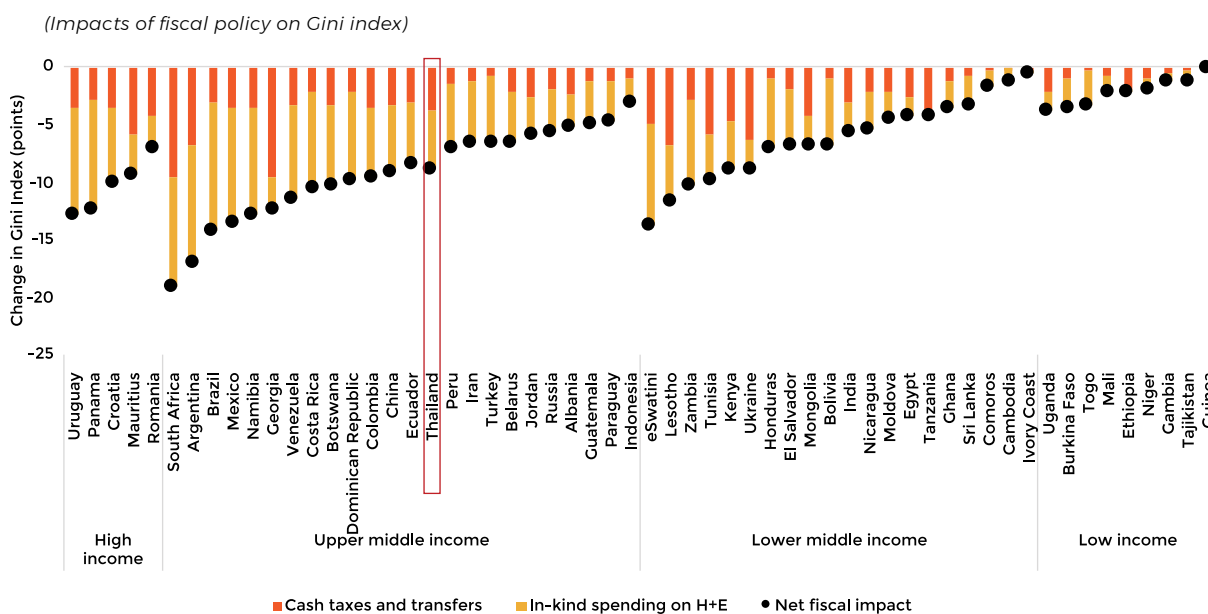


Source: SES 2019 and World Bank staff calculations.

The system reduced inequality significantly. In 2019, direct taxation and transfers reduced Thailand’s Gini index from 37.5 to 35.0.³³ Including the payment of indirect taxes (e.g., VAT, excise taxes, etc.) further reduced it to 34.0. While non-cash health and education services are benefits to households often not included in the Gini index, they do represent real benefits. Poorer households, in particular, tend to have more children and are more likely to send their children to public schools and utilize public health services. When valued at their cost of delivery, including health and education services benefits further reduces Thailand’s Gini index by 5.1 points.

Inequality in Thailand is comparable to the UMIC average, although it does much better in cash terms. Thailand’s pre-pandemic fiscal system did more to reduce inequality in cash terms than in most other countries with comparable data. In 2019, taxes and cash benefits reduced the country’s Gini Index by 3.8 points from its pre-fiscal level. This was the 12th best out of 58 countries with available CEQ data and 4th best out of the 24 UMICs. Like most countries, direct taxes and transfers played the largest role. However, after including non-cash health and education benefits, Thailand’s net fiscal impact on inequality (8.9 points) was closer to average in international rankings, 22nd out of 58 countries and 13th out of 24 UMICs (Figure 60). While health and education benefits did reduce inequality in Thailand by more than the 58-country average impact (4.4 points) they did so by less than the UMIC average (6.0 points). Nonetheless, cash impacts matter and are most relevant to poorer households’ immediate and subsistence needs—so Thailand’s strong inequality reduction in cash terms merits recognition.

Figure 60. Fiscal policy reduces inequality in both cash and non-cash terms



Source: World Bank estimates based on SES 2019, CEQ Data Center on Fiscal Redistribution, OECD and World Bank data.

³³This is equivalent to the consumption-based Gini index in 2019. Disposable income or income net of direct taxes and social security charges is set equivalent to the measured consumption in the 2019 SES data. See Box 3 for more detail.

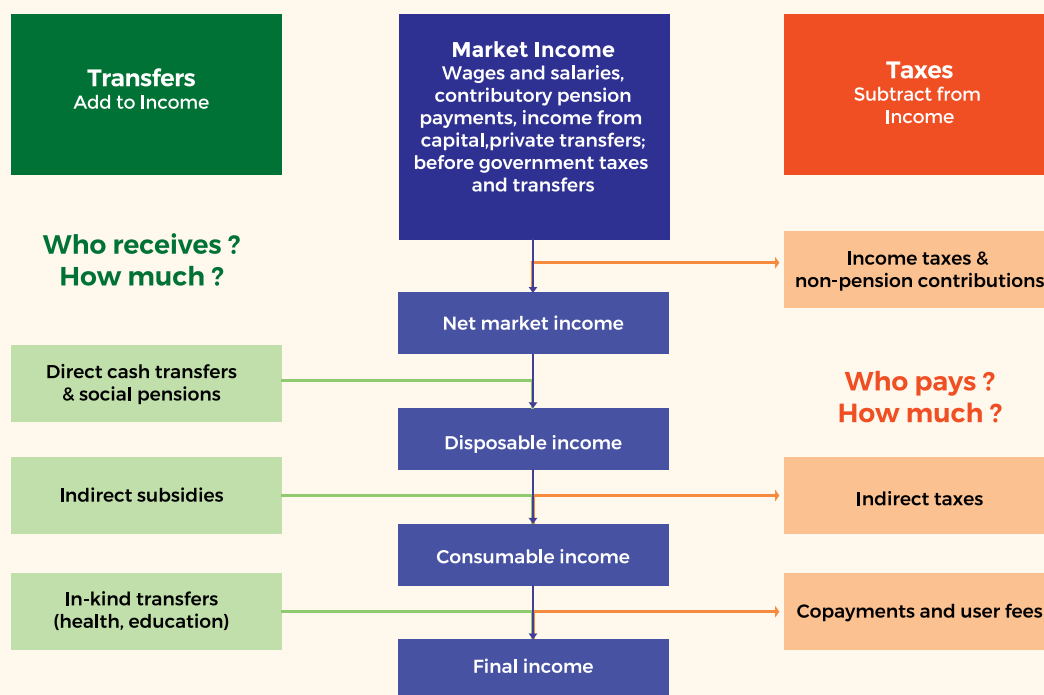
The COVID-19 pandemic brought fiscal policy's role in mitigating shocks into sharp relief. To mitigate the impact of the pandemic, total government expenditure on social assistance in Thailand more than tripled, rising from 0.8 percent of GDP in 2019 to over 3 percent in 2020. With social assistance estimated to have reached 30 million people, the government's response was one of the largest in the EAP region (World Bank 2021c, 2022b) and the surge in social assistance thwarted the deterioration of household incomes. Estimates from the SES reveal that household income from social assistance increased 46 percent between 2019 and 2021, which helped offset the relatively large decline in nonfarm business income and remittances, both of which fell by more than 10 percent. It also helped buffer the decline in wage income, which fell 2 percent during this period.

These fiscal measures prevented a significant increase in poverty and inequality. The massive government response helped mitigate a substantial increase in poverty and inequality. Without these measures, poverty would have reached 8.1 percent and the depth of poverty or poverty gap would have been considerably worse at 1.7 percent (27 percent and 41 percent higher than 2021 figures, respectively). Inequality would have risen, as well: absent the government's response, the consumption-based Gini coefficient would have increased from 35 percent in 2019 to 36.3 percent, while the income-based Gini coefficient would have increased from 43 percent to over 44 percent. The government maintained total social assistance spending at about 3 percent of GDP through 2021, but it probably declined in 2022.

Box 1: The CEQ methodology

To determine the impact of fiscal policy on household welfare, the Commitment to Equity (CEQ) framework of fiscal incidence analysis is used (Lustig 2018). Under this framework, household income is assessed at different stages, as outlined in the below figure. First, a household's market income or pre-fiscal income is the total income it received from wages and salaries, rents and dividends, private transfers, remittances, and contributory pension income. Some households pay PIT and non-pension social security contributions, which reduce their market income. Some households likewise receive direct transfers (including social pensions) from the government as part of the social safety net, which increases their market income. The net effect after direct taxes and direct transfers is a household's disposable income: how much money does it have to spend on goods and services, or to save? Disposable income is equivalent to the measured consumption in the SES. Second, when a household does buy goods and services, it pays indirect taxes (such as VAT, GST or Sales tax or special excises on particular goods), but it might also benefit from indirect subsidies (such as cheaper fuel or electricity). How much of different goods and services a household can afford to buy, after considering both indirect taxes and subsidies, is called consumable income. When considering only cash-based fiscal instruments, this is also a household's post-fiscal income. Finally, a household may also use public services such as sending their children to a public school or visiting a health center or hospital. In this case, the public spending benefits are non-cash. Including this non-cash spending results in a household's final income (the post-fiscal income if non-cash spending is included).

Definition of income concepts and the role of fiscal instruments



Source: Lustig (2018).

This framework helps answer two key questions. First, who pays a particular tax or receives a particular benefit? Second, what is the net impact of all taxes and transfers on different households?

The CEQ framework has two important advantages. First, it assesses both tax and expenditure policies, including direct taxes (PIT, social security) and pension and social insurance contributions; indirect taxes on consumption (VAT, excise); indirect subsidies; and in-kind spending (for example, education and health benefits, which are not received by households as cash). Moreover, the framework not only assesses as much tax and spending as possible but also examines their joint effect to estimate the net impact on households. Second, it uses a standardized methodology, making it comparable across countries and time and allowing international benchmarking.

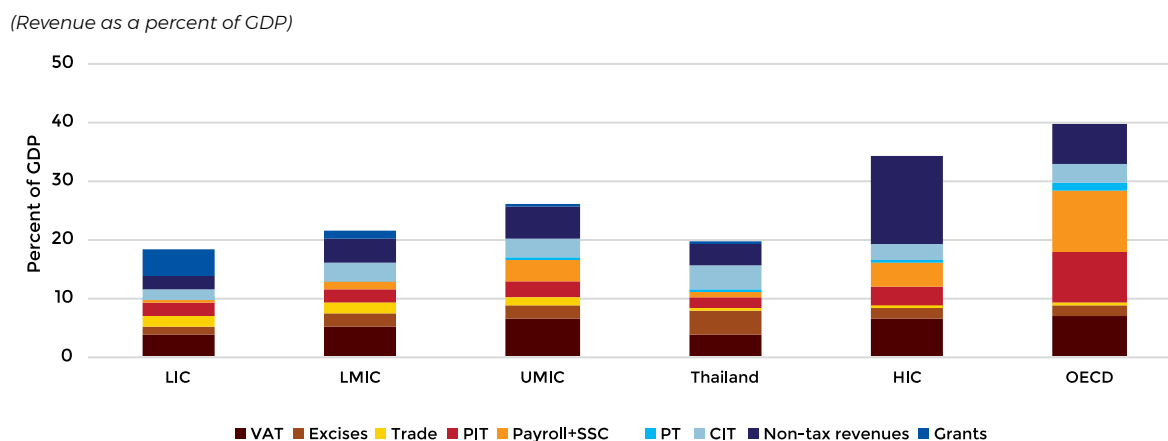
Because the framework takes an accounting approach, it does not include behavioral effects, general equilibrium effects, or intertemporal effects. More details can be found in World Bank (2023b).

Despite its progressiveness, there are several important limitations to Thailand’s fiscal policy from an equity perspective. While social assistance coverage is high and cash transfers are progressive, the value of benefits is mostly low, and targeting could be improved. Over 80 percent of Thais in the poorest four deciles of the income distribution benefit from some form of social assistance and receive around 60 percent of all transfers. Likewise, social assistance coverage exceeds 90 percent in the poorest decile, which receives about 20 percent of all transfers. Nonetheless, average transfers are equivalent to just 17 percent of the pre-fiscal income of the poorest decile, a figure that drops to 9 percent for the second poorest decile. In addition, around a third of all social assistance transfers go to the richest half of the population and nearly 10 percent to the richest two deciles. Better targeting of transfers away from richer households would create budget space for more generous benefits to poorer groups, which could achieve a greater impact on poverty and inequality at no extra cost.

While Thailand’s human capital investments are pro-poor, they lag other UMIC countries in terms of total spending, making their contribution to inequality reduction also lower. For example, spending on health is 2.9 percent of GDP, compared to the UMIC average of 4.0 percent and the EAP average of 4.9 percent. Similarly, education spending is 3.0 percent (having declined from 4.2 percent half a decade earlier), below the 4.4 percent predicted by its level of income (World Bank 2023b). Social assistance spending (at 0.8 percent of GDP) is also low, compared to an international benchmark of 1.5 percent, while existing budgets are used inefficiently, with many richer households benefitting from transfers (World Bank 2023b).

Thailand’s relatively low tax revenue collection is a key reason for underinvestment in pro-poor spending. Pre-pandemic tax revenues were around 16 percent of GDP, below the averages for UMIC as well as non-OECD high-income countries (HICs), and only half the OECD average (Figure 61). Moreover, the government’s revenue collection efforts rely more on indirect taxes, which are less progressive than direct taxes. While Thailand’s PIT is very progressive, with most revenue coming from richer households, it accounts for just 1.7 percent of GDP (compared to the UMIC average of 2.8 percent)—a quarter of the revenues generated from Thailand’s VAT and excises. Consequently, the country both collects less total revenue than peer countries and has a less progressive mix.

Figure 61. There is scope for Thailand to collect more revenue with a more progressive tax mix



Source: World Bank estimates based on IMF World database, in World Bank (2023b).

4. TOWARD

A MORE INCLUSIVE SOCIETY

The analysis in this report shows that despite Thailand's significant progress in reducing poverty and inequality, many challenges remain. Large disparities in income and wealth are particularly concerning. Challenges such as low farm incomes, skills shortages, education and labor market gaps, population aging, and increasing household debt further constrain efforts to reduce vulnerability and inequality. These vulnerabilities, alongside the lingering effects of COVID-19, a challenging global environment, and climate change underscore the need for renewed efforts to sustain and advance Thailand's economic and social development.

Thailand can leverage the lessons of the COVID-19 crisis to promote necessary reforms and create a more equal and inclusive society. The pandemic exposed areas of high vulnerability in the country, but also opened an opportunity to address weaknesses with policies to build back better. Policy priorities to revive growth and promote inclusion can be structured around three somewhat overlapping pillars: ensuring an equitable recovery and building resilience, setting the stage for a vibrant and inclusive economy, and promoting greater equality of opportunity.

Ensuring an equitable recovery and building resilience

In the short term, policy actions are needed to urgently address the lingering impacts of COVID-19, particularly learning losses and rising prices of necessities. Policies can provide vulnerable groups with enough support to increase their resilience as challenges from rising inflation and climate events mount. First, recovering from learning losses will require the government to provide additional support to schools and teachers for assessing student learning and adjusting learning programs for those who have fallen behind. Second, monitoring and mitigating inflationary pressures as well as bolstering efforts to rein in food insecurity, particularly for the poorest households, will help alleviate the pandemic's long-term impacts on human capital. Third, the government can enhance redistribution through fiscal policy. Fourth, there is an urgent need to address increasing household debt levels.

- **Support schools in assessing student learning.** The COVID-19 pandemic and its effect on learning modalities disproportionately affected poorer students, both in terms of school attendance and learning outcomes (World Bank 2020a). With return to school, children from poor households run the risk of falling behind, with over 80 percent of the poorest quintile households believing that remote learning was either less effective than face-to-face instruction or not effective at all. If not mitigated, these challenges could have scarring effects that could last well beyond the pandemic, adversely impacting efforts to reduce poverty, prospects for income mobility, and overall economic growth. As such, expanding efforts to bring back students who dropped out of school due to the pandemic is crucial, particularly among the poorest households. It is also critical that student learning assessments are performed to identify and provide additional support to students who may have fallen behind. Likewise, it is critical to differentiate instruction to meet the needs of children at different achievement levels, given pandemic-related learning losses. Targeted instruction

involves grouping students by learning levels, rather than by age or grade, and engaging them in activities appropriate to their levels of academic achievement, often in small groups (World Bank, forthcoming).

- **Monitor and mitigate inflationary pressures.** Increasing prices spurred by COVID-19 disruptions and the crisis in Ukraine continue to threaten Thailand's recovery from the pandemic. While these inflation drivers are due to global factors outside the control of local policymakers, the government can play a significant role in monitoring inflation rates, adjusting targets and alleviating pressures on the poor through targeted transfers. Focusing transfers on those with lower incomes is crucial, as they are most likely to use adverse coping mechanisms which could have negative long-term effects on human capital development. It is also important to avoid policies that, while mitigating inflation in the short-term, could have negative long-term consequences. For instance, while price controls and subsidies can be effective at reducing inflation, they can also reduce productivity, lead to shortages, and have broad distortionary effects, particularly if they are poorly calibrated. The EAP economic update of October 2022 caution against price control and other distortionary measures taken by several countries to protect households from food and fuel price shocks. It suggests that more efficient social protection with targeted transfers to low-income households would better mitigate the poverty impacts of rising inflation at a lower fiscal cost than price control and subsidies (World Bank 2022c).
- **Bolster efforts to rein in food insecurity, particularly for the poorest households.** While a majority of Thai households responded to the pandemic and rising prices by reducing food consumption, HFS data reveals that these shocks had a disproportionate effect on the food security of the poorest households. Rates of extreme food insecurity for the poorest households are three times higher than the national level, with more than a third unable to eat nutritious food due to lack of resources. These adverse coping strategies will likely lead to increased rates of malnutrition, threatening years of progress to improve health and nutrition outcomes for Thai children, particularly among the poorest households. Strengthening school lunch programs, including efforts to improve the quantity and nutrition of food provided to students in public schools, could help alleviate nutritional shortfalls and persuade more students to return to school. At the household level, transfers or vouchers that can be used exclusively for food could strengthen food security for the poorest households.
- **Enhancing redistribution through fiscal policy.** While Thailand's fiscal policy already has a progressive impact, the following reforms would promote redistribution and further reduce inequality:
 - *Strengthen social protection programs and provide well-targeted assistance.* As noted, the poor receive a greater share of transfers and benefits than the rich, but the targeting of transfers could be improved by strengthening delivery mechanisms. A significant percentage of wealthier households benefit from social transfers in Thailand. Stronger targeting could redirect transfers towards increasing the benefit levels for poorer households—reducing inequality through the fiscal system without increasing spending. At the same time, COVID-19 has shown that Thailand needs to strengthen its social protection delivery chain to better protect vulnerable households in times of shock. Most foundational elements for social protection delivery in Thailand are strong and well-established, including personal identification, financial inclusion, payment systems, and mobile phone penetration (World Bank 2021b). However, beneficiary data management can be improved by linking social assistance databases with

other sources in order to create a virtual social registry. The quality of data in some program and administrative databases also need to be improved. For instance, the Low-Income Earners Registry, used for poverty-targeting in the SWC program, could be improved by establishing on-demand updating. A well-functioning virtual registry would allow automated targeting and more responsiveness to shocks. Simulations using the CEQ approach show that an increase of SWC transfers to THB 699 per capita per month (about 30 percent above the poverty line), alongside better targeting to the lowest income quintile, would reduce poverty by 2.9 pp and inequality by 1.2 pp at a cost of THB 73 billion.³⁴ Better targeting of the OAA to the bottom 40 percent, with a tapered increase of the benefits to between THB 2000 and THB 500 per month for elderly people (60 and above), would reduce poverty by 2.1 pp and inequality by 1.2 pp at a cost of THB 71 billion (World Bank 2023b).³⁵

- *Increase tax revenue without burdening the poor.* Rich households are more likely to pay direct taxes than poorer ones. Nearly half of the richest decile are estimated to pay PIT, more than double the rate of the second richest decile; only 10 percent of decile 8 pays PIT and almost no household in the poorest half of the distribution does. At least half of all direct taxes and most PIT are paid by the wealthiest 10 percent of households. Nonetheless, the average direct tax burden for decile 10 is less than 9 percent of their pre-tax income, suggesting that greater revenues could be generated from PIT in a progressive manner while leaving the burden on taxpayers at a reasonable level. PIT in Thailand is narrow due to the large number of exemptions and deductions, the prevalence of informality, as well as a large compliance gap. Excluding those who were exempted from tax, only 10 percent of the labor force paid tax in 2019, most of whom were salary workers (World Bank 2023b). Expanding the tax base could be achieved by addressing the low number of self-declarations or under-reporting of income among the self-employed, business owners, and workers in the informal sector. The expansion of the PIT base from 28.5 percent of labor force to the UMIC average of 32.5 percent would increase revenue by an estimated 0.3 percent of GDP. The removal of some generous deductions and allowances would also improve PIT collection while making the system more equitable, as would the expansion of property taxes. Between 2005 and 2019, property taxation amounted to just 0.2 percent of GDP, and this rate dropped to 0 percent during the pandemic due to temporary property tax discount measures. Clearly, expanding property tax collection can further increase revenue mobilization. Meanwhile, improvements in tax administration could improve collection. Expanding e-filing and e-payment, while introducing behavioral initiatives and utilizing third-party data through firm networks, could lower the burden of tax filing and help improve voluntary compliance.

³⁴ In the case of SWC, current payments range from THB 200 to THB 300 per month, depending on the beneficiary's household income. The program covers a larger proportion of the poor than the rich, but many poorer households remain excluded while many non-poor households are included. The reform scenario consists of increasing the coverage of the bottom two quintiles, excluding richer households (while keeping the overall number of beneficiaries constant), and increasing the transfers to 30 percent above the poverty line (THB 699 per month).

³⁵ Currently, the OAA ranges between THB 600 and THB 1000 per month, increasing by beneficiary age. In the tapered increase OAA reform scenario, benefits increase by income quintile for 60 and older beneficiaries—to THB 2,000 for quintile 1, THB 1,500 for quintile 2, THB 1,000 for quintile 3, and THB 500 for quintile 4. Benefits are removed for quintile 5.

- *Increasing spending on health and education.* Education and health benefits represent a greater percentage of income for poorer households than wealthier ones. Their inequality-reducing effect is even greater than that of direct cash transfers, although it is not reflected in the official consumption-based Gini index (as in-kind education and health benefits are not included in the measured consumption or income). While health and education benefits do already reduce inequality in Thailand, they do so by less than in peer countries. On average, such non-cash benefits are responsible for around two-thirds of the total inequality reduction driven by fiscal policy in other countries; in Thailand, they are responsible for just over half. This is due in part to the fact that Thailand spends less on health and education than the UMIC average, and in part because of differences in enrolment across the income distribution. Greater investment in human capital, including spending on health and education, would enhance inequality reduction in both the short and long term. Reforms could focus on increasing education spending, providing adequate resources to improve learning and skills, and increasing health spending.
- **Address household debt.** High household indebtedness could curtail future consumption growth. The pandemic caused a surge in household debt, which was already at a high level. Household debt steadily rose from less than 60 percent of GDP in 2010 to its peak of more than 90 percent in 2021. The composition of household debt is tilted towards personal loans, credit cards, and auto-financing, all of which are generally non-productive. While Thai authorities have established various mechanisms to alleviate pressure on households from elevated debts, the country could benefit from sustainable restructuring³⁶ and policy reforms related to household debt, with an aim to support productivity growth and raise awareness about personal and household financial management, especially among the most vulnerable groups.

Setting the stage for a vibrant and inclusive economy

Policy actions are also needed to bolster inclusive and sustainable growth in Thailand. In particular, policy efforts are needed across four domains. First, the government should support reskilling and upskilling of the workers most affected by labor market disruptions. Second, it should use education and training to build pathways to better jobs and help the workforce adapt to a rapidly changing labor market. Third, reforms are needed to enhance women's participation in the labor market. Fourth, efforts are needed to increase farmers' income.

- **Strengthen efforts to upskill and reskill workers, particularly those disproportionately affected by the pandemic.** The pandemic caused significant disruptions in the labor market, disproportionately affecting less-educated workers and youth. As the overall economy slowly recovers from the crisis, there are signs that the recovery may also be slower for these groups. To support a more inclusive and equitable future for all Thais, reskilling and upskilling efforts should be expanded and strengthened. The skills offered from such technical training and skills development programs should align with the needs of the private sector, to help ensure that workers are able to find productive work afterwards. As such, the private sector should ideally be involved in the development of courses as well as the training and assessment of students.

³⁶ The IMF suggests two broad approaches for household debt restructuring (such as extension of debt repayment period, interest rate reduction, and reduction of debtors' repayment burden) in Thailand. The first approach is a case-by-case restructuring in which the government establishes the legal and institutional framework. The second approach involves government's financial support to households or to the banks. See IMF (2022) for more details.

- *Expand programs to support youth employment.* Younger workers were also disproportionately affected by job losses during the pandemic. In addition to higher rates of unemployment, a considerable share of the youth that did remain employed transitioned to less productive sectors. If not mitigated, these challenges could threaten future productivity and undermine the competitiveness of the country's workforce. Beyond formal education, apprenticeship programs and internship opportunities could be an effective way to impart skills and knowledge to youth, expanding avenues for vocational training.
- *Strengthen labor market information systems.* Investments in a strong labor market information system can help underpin the success of active labor market policies. In addition to matching workers with available jobs, such a system can also be used as a valuable tool to monitor and evaluate the effectiveness of skills development and training programs, providing critical insight on students' labor market outcomes. It could also be used as a platform to provide services to job seekers, including career guidance, links to training courses, and information on government programs. To ensure that job seekers equally benefit from these systems regardless of location or income level, it is equally important to invest in raising the digital literacy of job seekers and workers, particularly in areas where internet access and smartphone ownership have recently grown.
- **Boost skills for a transition to a more productive economy and adapt to the changing nature of work.** With the country's stock of labor projected to fall considerably in the coming decades, efforts to raise productivity should be emphasized, particularly as a shortage in the country's labor supply could stifle prospects for economic growth and poverty reduction. While wider adoption of automation could help mitigate shortfalls in labor supply, this shift needs to be accompanied by a more skilled workforce to fully realize its benefits. This requires more intensive and deliberate investments in human capital to ensure that workers are able to prepare for, adapt to, and thrive in the changing nature of work. With this, it is critical to strengthen student learning outcomes to ensure that future workers have a solid foundation upon which to build new skills. It is also crucial to invest in lifelong learning programs that deliver quality training and are well-matched to the needs of the labor market.
- **Expand efforts to increase women's participation in the labor market.** The country's changing demographics, where the working-age share of the population is expected to plunge from 71 percent in 2020 to 56 percent in 2060, further highlight the importance of closing the gender gap in LFP—which, as noted earlier, has persisted through decades of economic growth and structural transformation (World Bank 2021a). Raising the benefits and expanding the coverage of parental leave could incentivize higher workforce participation rates for women, particularly as Thailand lags behind other Asian countries in both maternal and paternal leave policies. Thailand's 14-week maternity leave is shorter than the benefits offered in the Philippines (15 weeks), Singapore (16 weeks), and Vietnam (26 weeks). Paternity leave, by contrast, is not guaranteed for workers in Thailand's private sector, unlike the approach taken in Indonesia, the Philippines, China, and Vietnam (World Bank 2021a, 2021d).³⁷ In 2023, Thailand received a score of 20 out of 100 on the World Bank's Women, Business, and the Law Parenthood indicator.³⁸ Thailand's Parenthood score

³⁷ In contrast, men working in the public sector are provided 15 days of paternity leave in Thailand (Liao and Paweenawat 2019, World Bank 2021a)

³⁸ This indicator measures legislation affecting a woman's work during and after pregnancy, including paid leave for mother, father, and parents, and laws prohibiting firms from dismissing workers because they are pregnant.

is significantly lower when compared to the Philippines (60), Indonesia (40), and the South Asia average (30). In addition, scaling up programs that support women's entrepreneurship—including training programs and providing career guidance and mentorship for women—could also help raise women's participation in the labor market. Supporting more flexible work arrangements and expanding the provision of childcare and care services for older persons can further help women reconcile their economic participation and family duties.

- **Increase farm income.** In 2021, more than one-third of Thailand's workforce was employed in agriculture. However, productivity and incomes in the sector remain low. The average per capita income of households whose head works in agriculture is about 36 percent of the income earned by households whose head is employed in high-end services, and 55 percent of those whose head is in industry. A recently-completed rural income diagnostic in Thailand (World Bank 2022a) identified three sets of opportunities to enhance farm income growth: increasing agriculture productivity, supporting diversification to higher-value crops, and improving access to markets.
 - *Increasing productivity in agriculture.* Efforts to increase the agricultural sector's productivity boosts farm incomes while also increasing food security. It involves increasing access to irrigation water, promoting the use of improved inputs and modern technologies, improving agriculture extension and information services, and enhancing land tenure security. In particular, low and unequal access to water has been one of the key challenges for Thai farming households. While the agricultural sector employs over 60 percent of household heads in the rural South and Northeast, these two regions also have the most limited access to irrigation water in the country. Moreover, while access rates are slightly higher in the Northeast, the lack of rainfall in that region leaves it more vulnerable to climate shocks and droughts (World Bank 2022a). This limits the ability of farmers to cultivate year-round, leaving farmland uncultivated outside the rainy season.
 - *Diversification to higher value-added crops.* Low and unequal access to water also constrains farmers from diversifying into higher-value crops that could raise profitability. Despite its relatively limited profitability, for instance, rice production has continued to dominate the use of Thailand's limited irrigated land. While improving rice productivity is still critical, there remains considerable opportunity to raise farm incomes through diversification to high-value crops and crop rotation.
 - *Improve access to markets.* Expanding farmers' access to markets is critical for raising farm incomes, as it could allow farmers to obtain better prices and sell higher volumes. E-commerce and online trading could help widen access to markets by providing a platform that facilitates the efficient matching of buyers and sellers. The expansion of market access could also benefit non-farm rural enterprises, offering the potential to raise employment and incomes and broadly contribute to the development of Thailand's rural economy. The use of e-commerce platforms can contribute to improved trade connections, especially in rural areas where physical connection infrastructure is lacking.

- *Agriculture must be ready to deal with the challenges rising from climate change.* To ensure that the sector is sustainable and resilient with the aggravation of climate change³⁹, collaborative efforts are needed by policymakers, agricultural and climate specialists, scientists, and researchers to identify how best to promote and support climate-smart agricultural practices. These efforts include promoting innovations that sustainably increase productivity and using digital platforms, such as early warning systems to monitor weather conditions (ADB 2021).

Promoting equality of opportunities

While Thailand has done a great deal to expand services and provide access to opportunities in health and education, more efforts are needed. In recent decades, access to basic services have improved, including for poor households. Social assistance programs, which aim to support poor households' income in the short-run and break the intergenerational poverty cycle, have been successful at helping reduce poverty. However, large disparities persist between regions and income groups in terms of access to social services and human development outcomes, which together contribute to the persistence of inequalities in economic opportunities and incomes. Policies to address inequality of opportunity can include:

- **Increase equality of opportunity in education.** While Thailand has done well in providing children a healthy start through sustained investments in health and nutrition programs, inequality of opportunity seems more apparent in education, where opportunities are less universal and influenced by geographic locations and income levels. Youth from the poorest households are not only disadvantaged with regard to school attendance and completion, they also fare worse in terms of learning outcomes. Less-educated workers are then trapped in low-productivity and low-paying jobs, mostly in agriculture and informal employment. Providing comparable educational opportunities is at the center of ensuring equal opportunity for all. Entry points for policy reform include:
 - *Increasing access to early childhood education, especially among the poor.* While attendance at the primary school level is close to universal, a considerable share of children from poorer households enter school at a later age compared to their wealthier peers. These disparities widen as students reach higher levels of education. By the time children from the poorest households reach the ages of 15 to 17, they are more likely than wealthier peers to be out of school. Among those that remain in school, less than 55 percent are in age-appropriate levels. As early childhood education is not compulsory in Thailand, efforts to bolster access to preschools should be strengthened, with particular focus on enrolling children from the poorest households. In addition to helping develop cognitive and non-cognitive skills at an earlier age, enhance abilities and motivation for learning, and sustain learning throughout schooling and beyond, preschools also offer the opportunity to widen the reach of school feeding programs, which could have significant effects on the nutritional outcomes of the poorest children.

³⁹ The Thailand Economic Monitor with a thematic focus on droughts and floods (World Bank 2023d) indicates that the exacerbation of climate change, especially floods, presents increasing macroeconomic costs. A 1-in-50-year flood in 2030 could potentially result in a loss of over 10 percent of GDP. The report highlights the persistence of challenges in flood and drought management, such as fragmented institutions, funding issues, and aging infrastructure. It emphasizes the need for an integrated climate adaptation framework, with a focus on planning, infrastructure, and innovation, to enhance resilience.

- *Closing the gaps in learning outcomes.* The 2018 PISA results show large gaps in learning outcomes between Thai students from low and high socioeconomic backgrounds. Analysis shows that over 40 percent of the inequalities in learning outcomes are driven by family background and circumstances. Targeted support to students from disadvantaged households can help moderate these negative effects on educational achievement. This could be done by identifying at-risk students based on their parental and household characteristics, then providing them with additional support upon enrollment. Such efforts may also reduce students' likelihood of dropping out. Disparities in learning outcomes could also be explained by the quality of teaching (World Bank, forthcoming). For instance, teachers in some regions may be less equipped to teach older students who are not enrolled at the age-appropriate level, which in Thailand is more common for students from poorer households. The first step for improving teaching quality is using a teacher appraisal system that ties teacher performance with student learning outcomes, the results from which can be used to design teacher training programs and better accountability measures. Policymakers should thus review these existing systems and allocate resources for improving teacher performance and behavior.
- *Expand access to quality tertiary education.* Data from the SES reveals that youth from poor households are ten times less likely than their wealthier peers to have completed tertiary education. More concerning, in the poorest quintile of youth aged 24-26, more than a quarter have only a primary school education or less, which precludes them from accumulating higher levels of human capital and limits their options for high-skilled occupations and more productive employment. Given Thailand's large college premiums, the low share of poorer youth that have completed tertiary education could lead to widening inequality in the future. As such, policies should aim to expand access to quality tertiary education, particularly for poorer youth that drop out of school at disproportionately high rates.
- *Improve allocation of educational resources.* The analysis of public education expenditure and student outcomes in the Thailand PER (World Bank 2023b) reveals that higher expenditure on education does not guarantee better learning outcomes. Spending inefficiencies, particularly in basic education, are partially caused by the existence of a large number of small schools with even smaller class sizes. This set-up results in resources being stretched too thin, with schools suffering from a shortage of both teachers and other key educational inputs. One possible way to address these inefficiencies is to reorganize and consolidate smaller schools to create larger schools that are better resourced, while also ensuring that teachers and other educational inputs are distributed more equitably across schools. The PER shows that this could potentially reduce per-student spending and improve efficiency.
- *Improve evidence on the transition to tertiary education.* To understand better who attends tertiary education and who is left behind, there is a need to collect standardized data on the transition from secondary to tertiary education. Greater data on which students are unable to attend tertiary education would allow policies to better target those who have the requisite skills but are likely to miss out on the returns from higher education.

- *Strengthen foundational and digital skills.* Thailand's human capital development policy, in line with the Thailand 4.0 vision, focuses on investing in education and skills to promote economic and social development. Significant progress has been achieved in enhancing access, promoting equity, and improving the quality of basic education. Important strides have been taken to strengthen vocational training and higher education. Nevertheless, there is a need for additional efforts to strengthen foundational and digital skills, enhance the overall quality of the education and training system, and provide increased incentives for learning (Puriwat and Tripopsakul 2020).
- **Improve access to basic services, particularly safe drinking water.** In urban areas, about 3 percent of Thai households drink water from unimproved sources. In rural areas, this rate soars to nearly 13 percent. Access to improved water sources varies across regions, ranging from universal access in Bangkok to 83 percent in the South and 88 percent in the Northeast. It also varies with household income levels: among the poorest quintile, about 18 percent lack access to improved water compared to less than 3 percent among the richest quintile. This indicates how burdened poor households are by risks of exposure to unclean water, further constraining their productivity and health outcomes. Overall, a clear national framework for financing local infrastructure could be helpful. As suggested in World Bank (2023a), a well-designed and widely supported framework for urban infrastructure finance could accelerate the provision of services to citizens and enterprises. Such a framework could provide policy guidance to all levels of government and clarify roles and responsibilities. The development of such a framework is itself an opportunity for building consensus about the way forward. Lessons from other countries demonstrate that developing and implementing such a framework will take time, perseverance, and coordination. A coherent and consistent approach can generate significant urban investment that would contribute to addressing disparities in access to basic services and infrastructure throughout the country and mitigate inequalities related to local circumstances.

5. ANNEXES

Appendix A. Data Sources

Survey name	Period	Purpose
Household Socio-Economic Survey (SES)	Yearly: 2000-2021 Household level	Poverty and inequality official statistics. Living conditions.
Labor Force Survey (LFS)	Quarterly basis: 2001-2022 Individual level	Official labor statistics.
Labor Force Survey (LFS)	Yearly: 2016-2021 Individual level	Official labor statistics.
International Social Survey Programme (ISSP)	Social inequality: 2019.	Cross-national collaboration to conduct annual surveys on diverse topics relevant to social sciences.
World Value Surveys (WVS)	Wave 5: 2005-2009 and Wave 6: 2010-2014	International research program to assess the impact that stable values or change over time has on the social, political, and economic development of countries.
World income database (WID.world)	2021	Database on the evolution of the global distribution of income and wealth within and between countries.
High-Frequency Phone Survey	2022 Round	COVID-19 phone monitoring survey

Appendix B. Structure of inequality

The positive picture of equalization of income distribution patterns in Thailand may hide persisting inequalities between groups. It is important, thus, to examine the structure of inequality and to investigate the extent to which income inequality is attributable to variations between population subgroups. This investigation can be carried out by the decomposition of inequality by population subgroups, which consists of separating overall inequality in the distribution of income into inequality within population subgroups and inequality between them. (Box B.1.)

Box B.1. Inequality Decomposition

The static decomposition of inequality enables one to explore how the differences in households' characteristics affect the level of inequality and provide important clues for understanding the underlying and changing structure of real per capita income distribution in Thailand.

The decomposition follows the approach of Cowell and Jenkins (1995) and consists of separating total inequality in the distribution of income into inequality between the different household groups in each partition, I_{Betw} , and the remaining within-group inequality, I_{Within} . As the most commonly decomposed measures in the inequality literature come from the General Entropy class, mean log deviation ($Theil_L$) and the $Theil_T$ indices in real per capita income are used to identify the contribution of between-group differentials to total inequality. The General Entropy inequality measures allow total inequality to be equal to $I_{Betw} + I_{Within}$ and the amount of inequality explained by households attributes (or group of attributes) is measured by I_{Betw}/I_{total} , where between and within group inequalities are defined, respectively, for $Theil_L$ and $Theil_T$ indices as

$$I_{Betw} = \left[\sum_{j=1}^k f_j \log \left(\frac{\mu_j}{\mu} \right) \right] \quad I_{Within} = \sum_{j=1}^k f_j GE_0^j$$

$$I_{Betw} = \left[\sum_{j=1}^k v_j \left(\frac{\mu_j}{\mu} \right) \log \left(\frac{\mu_j}{\mu} \right) \right] \quad I_{Within} = \sum_{j=1}^k v_j GE_1^j$$

with f_j the population share, v_j the income share, and μ_j the mean income of subgroup j ; μ total mean income, GE_0^k $Theil_L$ index, and GE_1^k $Theil_T$ index of subgroup j .

with: $Theil_L = 1/n \sum_{i=1}^n \log \left(\frac{\bar{y}}{y_i} \right)$ and $Theil_T = 1/n \sum_{i=1}^n \left(\frac{y_i}{\bar{y}} \right) \log \left(\frac{y_i}{\bar{y}} \right)$

y_i : is real per capita income for household i and \bar{y} is mean real per capita income.

$Theil_L$, also referred to as the mean log deviation measure, is more sensitive to differences at the lower end of the income distribution while $Theil_T$ is more sensitive to differences at the top of the distribution.

Nine household attributes were considered for the analysis: the gender, age, educational attainment, employment and occupation status and sector of employment of the head of the household, the regional location, the urban/rural status, and the demographic composition of the household.

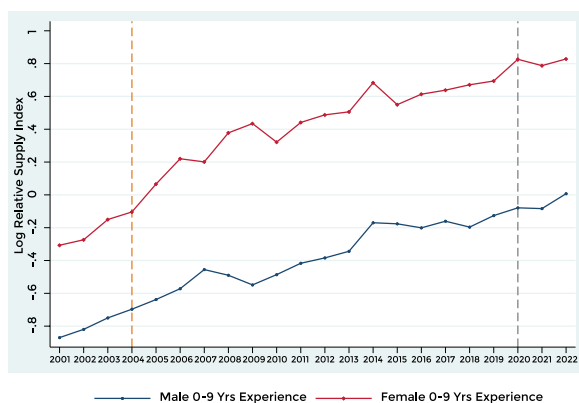
Appendix C. Inequality and Polarization in Wage and Employment

Figure 44 plots the composition-adjusted log college/high-school (and log some college and above/high-school) weekly wage premium in Thailand labor market for years 2001-2002 for wage workers 15 and older. This composition adjustment holds constant the relative employment shares of demographic groups as defined by gender, education, and potential experience, across all years of the sample.

The analysis follows the approach of Acemoglu and Autor (2011). It first estimates mean (predicted) log real weekly wages in each year for 40 gender-education-experience groups. These groups consist of four education categories (less than high school, high school graduate, some college, and college degree and above), five potential experience levels (0–9 years, 10–19 years, 20–29 years, 30–39 years, and 40–48 years), and two genders. The number of years of potential experience is estimated as the difference between age and years of education minus six. The number of years of experience is set to a minimum of 0 and a maximum of 48. Weekly wages are deflated by the 2011 Consumer Price Index (CPI); and log real weekly wages are regressed in each year on education dummies, potential experience, and interactions of education, experience, and gender. The composition-adjusted log real weekly wage is the predicted log real weekly wage. Mean wages for broader groups are calculated as fixed-weighted averages of the relevant sub-group means (using as weights the average share of total hours worked for each group over 2002 to 2021). This adjustment ensures that the estimated college premium is not mechanically affected by shifts in experience, gender composition, or average level of completed schooling within the broader categories of college and high-school graduates. The analysis also used daily wages and alternative deflators, including the ratio of poverty lines; the results show similar trends as those reported here.

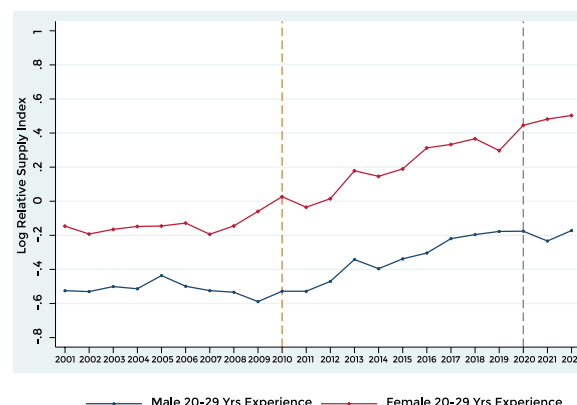
The labor supply for college/high-school groups is estimated using efficiency units to adjust for changes in labor force composition. We follow Acemoglu and Autor (2011) in measuring the efficiency units as the mean labor supply for broad college and high-school graduates weighted by fixed relative average wage weights for each cell. The labor supply of workers with some college education is divided equally between the broad college and high-school categories. The fixed set of weights for 2002–21 are constructed using the average wage in each cell of gender-education-experience groups relative to the reference wage of a male high-school graduate with 10 years of experience.

Figure C1. College/High-School Log Relative Supply Young Cohort, by Gender, 2001–2022



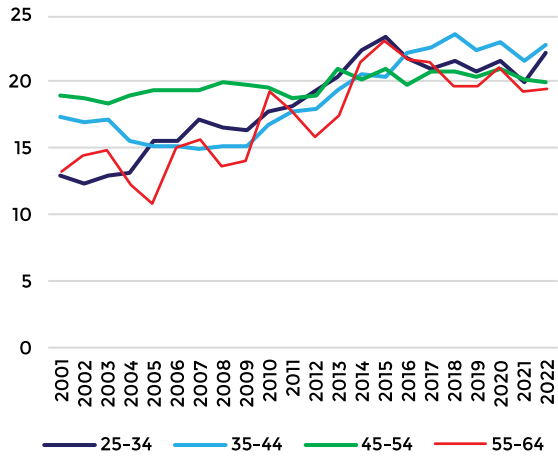
Source: LFS 2001–2002.

Figure C2. College/High-School Log Relative Supply Older Cohort, by Gender, 2001–2022



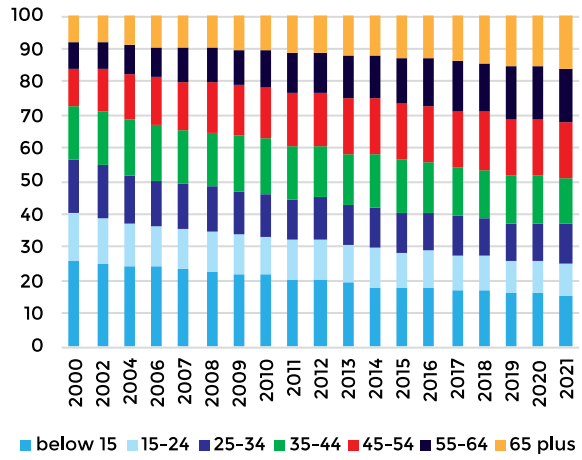
Source: LFS 2001–2002.

Figure C3. College Education Level by Age Cohorts, Employed Male, 2001-2022, Percent



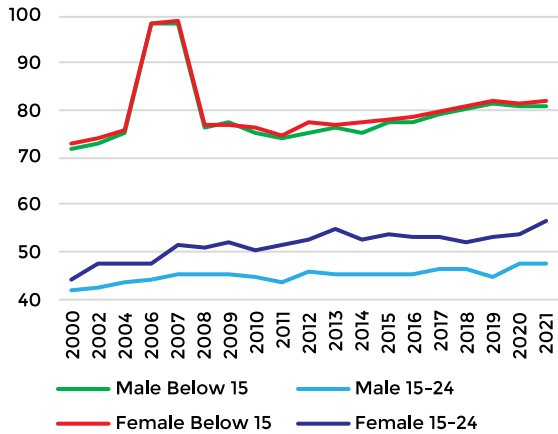
Source: LFS 2001-2022.

Figure C4. Age Composition of Total Population, 2000-2021, Percent



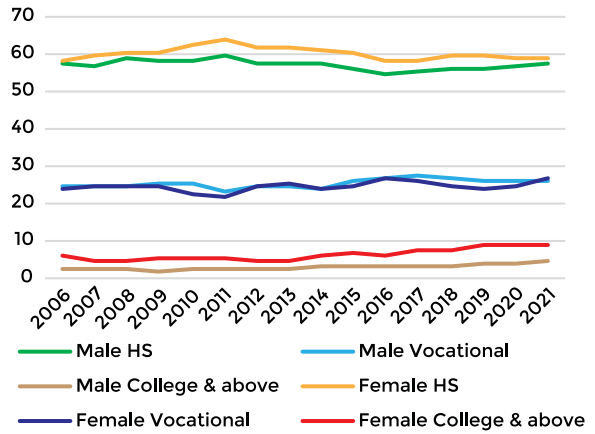
Source: SES 2000-2021.

Figure C5. School Attendance by Gender, Students Below 25, 2000-2021, Percent



Source: SES 2000-2021.

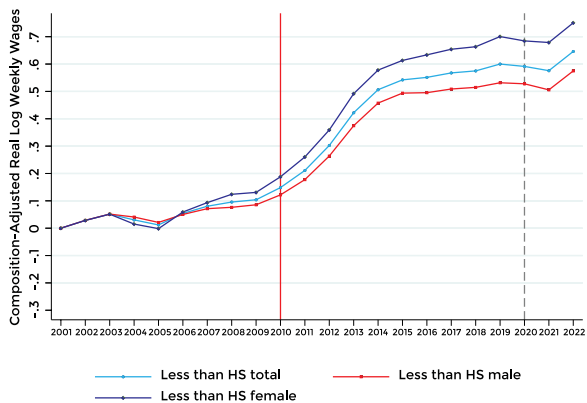
Figure C6. Grade Attendance by Gender, Age 15-24, 2006-2021, Percent



Source: SES 2006-2021.

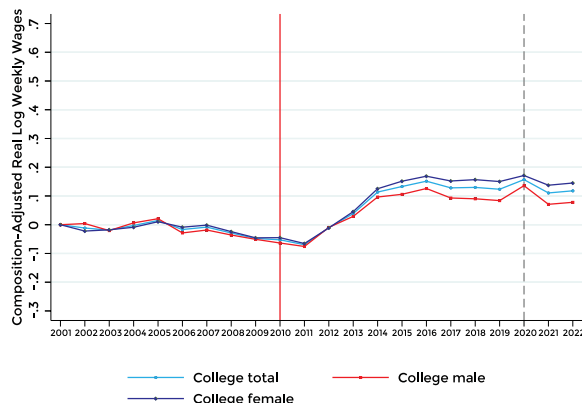
Note: Grade attendance is not available before 2006.

Figure C7. Composition Adjusted Log Real Weekly Wage by Gender, Less than High-school, 2001-2022



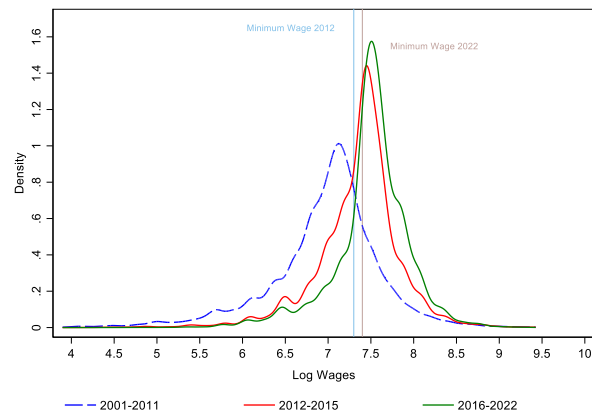
Source: LFS 2001-2022.

Figure C8. Composition Adjusted Log Real Weekly Wage by Gender, College Graduates, 2001-2022



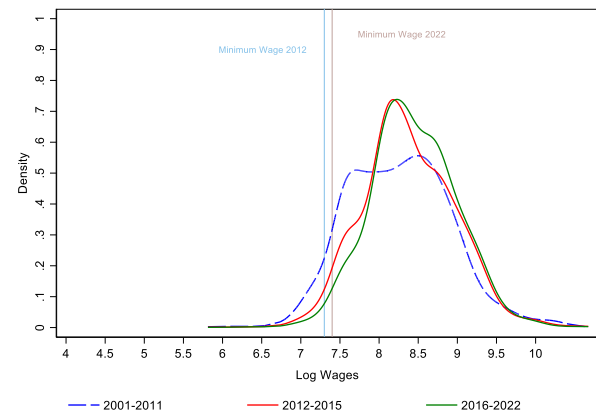
Source: LFS 2001-2022.

Figure C9. Wage Density, Less than High-school, 2001-2022



Source: LFS 2001-2022.

Figure C10. Wage Density, College Graduates, 2001-2022



Source: LFS 2001-2022.

Appendix D. Unconditional Quantile Decomposition of the Gender Pay Gap

The recentered influence function (RIF) regression approach (Firpo, Fortin, and Lemieux 2009 2018) provides a simple regression-based procedure for performing a detailed decomposition of different distributional statistics such as quantiles, variance, and Gini coefficient. The RIF-regression model is called unconditional quantile regression when applied to the quantiles (percentiles, deciles, and so forth). The technique consists of decomposing the pay gap between men and women at various quantiles of the unconditional distribution into differences in endowment characteristics such as education, age, occupational level, and so forth (also called wage composition effects) and differences in the returns to these characteristics (called returns or wage structure effects). These components are then further decomposed to identify the specific attributes that contribute to the gender pay gap.

The procedure is carried out in three steps. The first step consists in estimating the unconditional quantile regressions on log daily wages for men and women. The second step serves to estimate a counterfactual wage distribution for women—that is, the wage structure that would have been realized among women if they were paid the same returns for their labor market attributes and personal characteristics as men. The third step involves the comparison of the counterfactual and empirical distributions to estimate the part of the pay gap that is only attributable to differences in labor market endowments and characteristics between men and women and the part only explained by differences in returns to those characteristics. The endowment and return components can be further divided into the contribution of each specific characteristic variable.

The method can be easily implemented as a standard linear regression, and an ordinary least squares (OLS) regression of the following form can be estimated:

$$RIF(y, Q_\theta) = X\beta + \varepsilon \quad (\text{B.1})$$

where f_y is the marginal density function of y and I is an indicator function. X is the regressors matrix including the intercept, β is the regression coefficient vector, and ε is the error term. The regressors include seven groups of variables: (1) demographic characteristics, which include age, a categorical variable for marital status (single, married, widowed, and divorced/separated), and number of members aged 0–2 years, 3–5, 6–8, 9–11, and 12–14; (2) education (six categories): no education, elementary, incomplete high school, high school graduate, postsecondary/some college, and college graduate and above; (3) employment sectors (four categories): agriculture, industry, low-end services and high-end services; (4) type of employment (four categories): private household, private establishment, government employee, and family business with pay⁴⁰; (5) four categories for occupation level: high skilled, middle-skilled routine, middle skilled-nonroutine and low skilled; (6) childcare assistance: dummy variable for whether the family benefits from domestic help, and number of extended members aged 10–60 years old; (7) geographic location fixed effects that capture external factors to the individual: urban, and regional location.

⁴⁰ Only classes with wage employees were considered; self-employed, employers, and unpaid family workers were excluded. Also, workers paid based on commissions or other nonregular/nonconventional ways were excluded.

Model (1) is estimated for the 10th to 90th quantiles and uses the below decomposition in which traditional Oaxaca-Blinder (OB) decompositions are applied to the wage distribution by percentile:

$$\begin{aligned}\widehat{Q}_\theta^M - \widehat{Q}_\theta^F &= \{\widehat{Q}_\theta^M - \widehat{Q}_\theta^*\} + \{\widehat{Q}_\theta^* - \widehat{Q}_\theta^F\} = (\bar{X}^M - \bar{X}^F) \widehat{\beta}_\theta^M + \bar{X}^F (\widehat{\beta}_\theta^M - \widehat{\beta}_\theta^F) \\ \widehat{Q}_\theta^M - \widehat{Q}_\theta^F &= \widehat{\Delta}_\theta^X + \widehat{\Delta}_\theta^S\end{aligned}\quad (\text{B.2})$$

where \widehat{Q}_θ^M and \widehat{Q}_θ^F are the θ^{th} unconditional quantiles of log daily wage for men and women respectively, \bar{X}^M and \bar{X}^F the vectors of sample averages of characteristics, and $\widehat{\beta}_\theta^{M,F}$ the estimates of the unconditional quantile partial effect. $\widehat{Q}_\theta^* = \bar{X}^F \widehat{\beta}_\theta^M$ is the counterfactual quantile representing the distribution of wage that would have prevailed for women if they received the same returns for their characteristics as men.

The first term on the right-hand side of equation (B.2) represents the contribution of the differences in characteristics to the gender pay gap at the θ^{th} unconditional quantile, or *endowment effect*. The second term of the right-hand side of the equation represents the gender pay gap due to differences (or discrimination) in returns to those characteristics at the θ^{th} unconditional quantile.

The *endowment and return* effects can be further decomposed into the contribution of individual specific characteristics (or group of some characteristics) as follows:

$$\widehat{Q}_\theta^M - \widehat{Q}_\theta^* = \sum_k (\bar{X}_k^M - \bar{X}_k^F) \widehat{\beta}_{\theta,k}^M \text{ and } \widehat{Q}_\theta^* - \widehat{Q}_\theta^F = \sum_k \bar{X}_k^F (\widehat{\beta}_{\theta,k}^M - \widehat{\beta}_{\theta,k}^F) \quad k: 1 \dots K \quad (\text{B.3})$$

where k designates the individual specific household characteristics.

Equation (B.1) is based on the standard linearity assumption between the dependent variable and the covariates X used in the OB decomposition. When the linearity assumption does not hold, the model can lead to estimation errors (Firpo, Fortin, and Lemieux 2018; Fortin, Lemieux, and Firpo 2010). The problem can be addressed by using a reweighted regression approach and the reweighted-regression decomposition of the overall pay gap can be specified as follows:

$$\begin{aligned}\widehat{Q}_\theta^M - \widehat{Q}_\theta^F &= (\bar{X}^M \widehat{\beta}_\theta^M - \bar{X}_C^M \widehat{\beta}_{\theta C}^M) + (\bar{X}_C^M \widehat{\beta}_{\theta C}^M - \bar{X}^F \widehat{\beta}_\theta^F) \\ \widehat{Q}_\theta^M - \widehat{Q}_\theta^F &= \widehat{\Delta}_\theta^{X,R} + \widehat{\Delta}_\theta^{S,R}\end{aligned}\quad (\text{B.4})$$

Where $\widehat{\beta}_C^M = (\sum_{i \in M} \widehat{\Psi}(X_i) X_i X_i')^{-1} (\sum_{i \in M} \widehat{\Psi}(X_i) Q_{Mi} X_i)$ $\bar{X}_C^M = \sum_{i \in M} \widehat{\Psi}(X_i) X_i$

The composition effect in equation (B.4a) can be divided into a pure composition or endowment effect (first term in equation (B.4b)) and a component linking to the specification error in the linear model (second term in equation (B.4b)):

$$\begin{aligned}\widehat{\Delta}_\theta^{X,R} &= (\bar{X}^M - \bar{X}_C^M) \widehat{\beta}_\theta^M + \bar{X}_C^M (\widehat{\beta}_\theta^M - \widehat{\beta}_{\theta C}^M) \\ \widehat{\Delta}_\theta^{X,R} &= \widehat{\Delta}_\theta^{X,p} + \widehat{\Delta}_\theta^{X,e}\end{aligned}\quad (\text{B.4b})$$

Similarly, the structural effect in equation (B.4a) can be divided into a pure structural or returns effect (first term in equation (B.4c)) and a reweighting error component (second term in equation (B.4c)):

$$\begin{aligned}\widehat{\Delta}_\theta^{S,R} &= (\widehat{\beta}_{\theta C}^M - \widehat{\beta}_\theta^F) \bar{X}^F + \widehat{\beta}_{\theta C}^M (\bar{X}_C^M - \bar{X}^F) \\ \widehat{\Delta}_\theta^{S,R} &= \widehat{\Delta}_\theta^{S,p} + \widehat{\Delta}_\theta^{S,e}\end{aligned}\quad (\text{B.4b})$$

If the model was truly linear, the specification error term would be equal to zero, as both the weighted and unweighted regressions would yield the same consistent estimates, where $plim(\hat{\beta}_{oc}^M) = plim(\hat{\beta}_o^M) = \beta_o^M$. Computing the specification error is thus important for checking whether the linear model is well specified, and for adjusting the composition effect in the case where the linear specification is inaccurate. When the reweighting factor is consistently estimated $plim(\bar{X}_c^M - \bar{X}^F) = 0$.

The reweighting factor $\Psi(X)$ is a simple function of X that can be easily estimated using standard methods such as a logit or probit. Consider the dichotomous variable D_M indicating the gender of wage workers: $D_M = 1$ for men and $D_M = 0$ for women.

The reweighting factor can be expressed as

$$\Psi(X) = \frac{P(D_M=1|X)P(D_M=0)}{P(D_M=0|X)P(D_M=1)}$$

The conditional probabilities $P(D_M=1|X)$ and $P(D_M=0|X)$ can be estimated using a logit or probit specification and then used to estimate $\widehat{\Psi(X)}$.

The decomposition of the gender pay gap in the reweighted model (as expressed in equation (B.4)) proceeds in the following steps: estimate the reweighted factor $\widehat{\Psi(X)}$, compute the counterfactual quantiles using the reweighted wage distribution of men, and decompose gender pay gap into pure composition and structure effects as well as specification and reweighting errors at each selected quantile of the wage distribution.

Another problem in the gender pay gap decomposition concerns the choice of the omitted group or base group for categorical covariates. For example, when considering the sectors of work, the underrepresentation of women in the industry sector would lead to significantly different returns effects when agriculture is considered as the omitted group compared to when services is the omitted one; in the first case, the underrepresentation of women in industry is priced at the relative returns in industry versus the agricultural sector, and in the other it is priced at the relative returns in industry versus the services sector. We address the problem by normalizing the coefficients of the categorical variables (sectors, employment class etc.) using the approach of (Firpo, Fortin, and Lemieux 2007, 2018; Rios-Avila 2019).

Results for the reweighted model using a logit specification are presented in table 4.1 of chapter 4; results for the nonreweighted (linear) model and the reweighted model using a probit specification are in figures B.1 to B.4.

Figures B.1 and B.2 compare the overall endowment effects obtained by a linear model and by reweighting. The pure endowment effect in the reweighted model shows a very similar pattern to the endowment effect displayed by the linear model. The specification error term is relatively small except for the 7th and 9th deciles. However, both models show different patterns for the returns effects. This means that the RIF-regression model allows a consistent estimation of the endowment effects, but the reweighting model allows a more accurate and robust estimation of the returns effects.

REFERENCES

Acemoglu, D., and Autor, D. 2011. Skills, Tasks and Technologies: Implications for Employment and Earnings. In *Handbook of Labor Economics*, Vol. 4B, edited by Orley Ashenfelter and David Card, 1043-1171. Amsterdam: North-Holland.

Aiyar, S., and Ebeke, C. 2020. Inequality of opportunity, inequality of income and economic growth. *World Development* (136) 105115.

Asian Development Bank (ADB). 2021. *Asian Development Outlook ADO 2021 Update: Transforming Agriculture in Asia*. Metro Manila: Asian Development Bank. <https://dx.doi.org/10.22617/FLS210352-3>

Attavanich, W., Chantararat, S., Chenphuengpaw, J., Mahasuweerachai, P., and Thampanishvong, K. 2019. *Farms, farmers and farming: a perspective through data and behavioral insights*. Puey Ungphakorn Institute for Economic Research.

Bárány, Z. L., and Siegel, C. 2018. Job Polarization and Structural Change. *American Economic Journal: Macroeconomics* 10 (1): 57-89.

Bourguignon, F., Ferreira, F. H. G., and Menendez, M. 2007. Inequality of Opportunity in Brazil. *Review of Income Wealth* 53(4): 585-618.

Buchinsky, M. 1994. Changes in the U.S. Wage Structure 1963-1987: An Application of Quantile Regression. *Econometrica* 62: 405-58.

Corak, M. 2013. Income Inequality, Equality of Opportunity, and Intergenerational Mobility. *Journal of Economic Perspectives*, Vol.27, p: 79-102.

Cowell, F. A., Jenkins, S. P. 1995. How much inequality can we explain? A methodology and an application to the USA. *Economic Journal* 105: 421-430.

Credit Suisse. 2022. *Global Wealth Databook 2022: Leading perspectives to navigate the future*. <https://www.credit-suisse.com/media/assets/corporate/docs/about-us/research/publications/global-wealth-databook-2022.pdf>

Firpo, S., Fortin, N. M. and Lemieux, T. 2009. Unconditional Quantile Regressions. *Econometrica* 77:953-973.

Firpo, S. P., Fortin, N. M., and Lemieux, T. 2018. Decomposing Wage Distributions Using Recentered Influence Function Regressions." *Econometrics* 6: 28. Doi:10.3390/econometrics6020028.

Hacibedel, B., Mandon, P., Muthoora, P., and Pouokam, N. 2019. *Inequality in Good and Bad Times: A Cross-Country Approach*. IMF Working Paper WP/19/20.

International Labor Organization (ILO) and Asian Development Bank (ADB). 2020. *Tackling the COVID-19 youth employment crisis in Asia and the Pacific*. Mandaluyong, Metro Manila and Bangkok, Thailand.

International Monetary Fund (IMF). 2022. *Thailand: Selected Issues*. <https://www.elibrary.imf.org/view/journals/002/2022/301/article-A004-en.xml>.

Kim, Y. Y., Baek, S. H., and Lee, S. S. Y. 2018. Precarious Elderly Workers in Post-Industrial South Korea. *Journal of Contemporary Asia*.

Lekfuangfu, W., Piyapromdee, S., Porapakkarm, P., and Wasi, N. 2020. On Covid-19: New Implications of Job Task Requirements and Spouse's Occupational Sorting. PIER Discussion Paper, 133.

Lerman, R. I., Yitzhaki, S. 1985. Income Inequality Effects by Income Source: A New Approach and Applications to the United States. *The Review of Economics and Statistics*. Vol. 67, No. 1, pp. 151-156.

Liao, L. and Paweenawat, S. 2019. Parenthood Penalty and Gender Wage Gap: Recent Evidence from Thailand. PIER Discussion Paper 102, Puey Ungphakorn Institute for Economic Research, Bangkok.

Lustig, N. 2018. CEQ Handbook: Estimating the Impact of Fiscal Policy on Inequality and Poverty. CEQ Institute at Tulane University and Brookings Institution Press.

Muthitacharoen, A., and Burong, T. 2023. How High Can You Climb? Earnings Inequality and Intragenerational Earnings Mobility in a Developing Country: Evidence from Thai Tax Returns. PIER Discussion Papers, 196.

Mwabu, G., and T. P. Schultz. 1996. Education Returns Across Quantiles of the Wage Function. Alternative Explanations for Returns to Education by Race in South Africa. *American Economic Review* 86:33539.

Narayan, A., Van der Weide, R., Cojocar, A., Christoph, L., Redaelli, S. Mahler, D. G., Ramasubbaiah, R. G. N., Thewissen, S. 2018. Fair Progress? Economic Mobility Across Generations Around the World. *Equity and Development*. Washington, DC: World Bank.

Office of the National Economic and Social Development Council (NESDC). 2021. Thai Economic Performance in Q4 and 2020 and the Outlook for 2021. NESDC News. https://www.nesdc.go.th/nesdb_en/article_attach/article_file_20210215120612.pdf.

Patrinos, H. A., Ridao-Cano, C., and Sakellariou, C. 2006. Estimating the Returns to Education: Accounting for Heterogeneity in Ability. World Bank Policy Research Working Paper No. 4040, Washington, DC. <https://openknowledge.worldbank.org/handle/10986/9026>.

Puriwat, W., and Tripopsakul, S. 2020. Preparing for Industry 4.0 – Will youths have enough essential skills?: An Evidence from Thailand. *International Journal of Instruction*, 13(3), 89-104. <https://doi.org/10.29333/iji.2020.1337a>.

Rama, M., Béteille, T., Li, Y., Mitra, P. K., Lincoln, N. J. 2015. Addressing Inequality in South Asia. International Bank for Reconstruction and Development, World Bank. Washington, D.C.: World Bank Group.

Stark, O., Taylor, J.E., Yitzhaki, S. 1986. Remittances and Inequality. *The Economic Journal*, Volume 96, Issue 383, pp. 722-740.

Wasi, N., Paweenawat, S. W., Ayudhya, C. D. N., Treeratpituk, P., and Nittayo, C. 2019. Labor Income Inequality in Thailand: The Roles of Education, Occupation and Employment History. *Pier Discussion Papers*, 117.

World Bank. 2016. *Indonesia's Rising Divide*. Washington, D.C.: World Bank Group.

References

World Bank. 2020a. Simulating the Potential Impacts of COVID-19 School Closures on Schooling and Learning Outcomes: A Set of Global Estimates. Washington, D.C.: World Bank Group.

World Bank. 2020b. Thailand – PISA 2018 Brief. Washington, DC: World Bank.

World Bank. 2021a. Aging and the Labor Market in Thailand. Washington, DC: World Bank.

World Bank. 2021b. Towards Social Protection 4.0: An Assessment of Thailand’s Social Protection and Labor Market Systems. Washington, DC: World Bank.

World Bank. 2021c. Thailand Economic Monitor: The Road to Recovery. Washington, DC: World Bank.

World Bank. 2021d. Overcoming Barriers to Women’s Economic Empowerment in the Philippines. Washington, DC: World Bank.

World Bank. 2022a. Thailand Rural Income Diagnostic: Challenges and Opportunities for Rural Farmers. Washington, DC: World Bank.

World Bank. 2022b. Thailand Economic Monitor: Fiscal Policy for a Resilient and Equitable Future. Washington, DC: World Bank.

World Bank. 2022c. East Asia and the Pacific Economic Update October 2022 Edition: Reforms for Recovery. Washington, DC: World Bank.

World Bank. 2022d. Creating Markets in Thailand: Rebooting Productivity for Resilient Growth— Country Private Sector Diagnostic. World Bank Group. Washington, DC: World Bank.

World Bank Group- Country Private Sector Diagnostic- (CPSD). 2022. Creating Markets in Thailand: Rebooting Productivity for Resilient Growth. The World Bank and IFC. Washington D.C.

World Bank. 2023a. Thailand Urban Infrastructure Finance Assessment: Challenges and Opportunities. Washington, DC: World Bank.

World Bank. 2023b. Thailand Public Revenue and Spending Assessment: Promoting an Inclusive and Sustainable Future. Washington, DC: World Bank.

World Bank. 2023d. Thailand Economic Monitor. Building a Resilient Future: Coping with Droughts and Floods. Washington, DC: World Bank.

World Bank. Forthcoming. Bridging the Learning Gap: Supporting Teachers in East Asia and the Pacific. Washington, DC: World Bank.

Zhong, H. 2011. The impact of population aging on income inequality in developing countries: Evidence from rural China. *China Economic Review*, 22.



World Bank Group, Siam Piwat Tower, 30th Floor, 989 Rama I Road, Pathumwan, Bangkok 10330

E-mail. thailand@worldbank.org | Tel. 02-686-8300



www.worldbank.org/thailand



<http://www.facebook.com/worldbankthailand>