

A Growing Crisis: Work, Workers, and Wellbeing in Myanmar



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Executive Summary

Myanmar's economy has been affected by numerous internal and external shocks since 2020. Myanmar's transition to an open market economy in 2011 propelled its GDP per capita by 52 percent between 2012 and 2019 and caused poverty to fall from 42.4 to 24.8 percent between 2010 and 2017. However, the Covid-19 pandemic and subsequent military coup have now reversed these gains. Estimates of real GDP per capita grew by 2 percent in 2020 and fell by 18.4 percent in 2021, the year of military coup. Economic growth recovered to a tepid 3 percent in the following year, suggesting that output levels are still well below 2019 levels.

This report takes stock of the effect of these shocks on Myanmar's workers and their well-being using a reliable new source of household data. The report compares employment indicators from 2017 and 2022 to spotlight the extent of adversity faced by workers and households. Employment indicators for 2017 are based on official Myanmar Living Conditions Survey (MLCS) data. However, no official data exists after 2020. A new set of surveys—the Myanmar Subnational Phone Survey (MSPS) conducted by the World Bank—are now filling this knowledge gap. MSPS provides reliable employment indicators at the sub-national level for 2022 that are comparable with baseline official data from 2017. MSPS provides reliable employment indicators at the sub-national level for 2022 that are comparable with baseline official data from 2017. MSPS' large sample of 8500 households, covering approximately 95 percent of Myanmar's population across all states and regions, ensures that almost every demographic group is proportionally represented in this study. While anchored in the MSPS, this report complements quantitative data with qualitative insights from the Community Welfare Monitoring Surveys, in particular the March 2023 round, conducted by the World Bank since 2020.

Labor force participation and employment rate in Myanmar fell by 1.6 and 4.8 percentage points, respectively, between 2017 and 2022¹. Although 9 million people were added to Myanmar's working age between 2017 and 2022 due to normal population growth, only 2.5 million males and 0.8 million females were added to its labor force. Female employment in Myanmar has particularly suffered in recent years. Compared to men, adult females are more likely to be out of the labor force, more likely to be unemployed, and more likely to be out of education or training.

Male workers were partially protected by their education and work experience. Employment rates for men with up to middle school level of education fell in the past half decade, but those with high school or college education either increased or held their employment rate at par with 2017 levels. Female workers with college or higher levels of education, in contrast, experienced a fall in the employment rate during this time. Incidence of "Not in Employment, Education or Training" (NEET) increased by 9.4 percentage points among college educated women during this time.

The quality of jobs and labor earnings deteriorated sharply. Employment in mining, construction and the retail sector have risen while agricultural employment has contracted between 2017 and 2022. Moreover, private sector salaried employment opportunities have diminished considerably while casual and self-employed roles

¹ Through this document, we refer to employment rate as the share of employed individuals in the population (with ages 15 and above).

have flourished. Younger adults are more likely to be employed in retail services while older, more experienced workers have switched to agricultural activities in 2022 – pointing to a misallocation of human capital towards less productive sectors. Real wages of salaried workers have fallen by 15 percent during the same time.

Aggregate nationwide labor market trends, however, mask significant differences at the subnational level. Employment rates have fallen by more than 15 percentage points between 2017 and 2022 in Kayah, Kayin and Tanintharyi – along the eastern border and Sagaing in the north. In comparison, states and regions on the western border and at the middle of the country experienced up to 5 and 10 percentage point decline in employment rate respectively. A greater share of households in eastern states and regions incurred income losses of more than 20 percent over the past 12 months, compared to other states and regions².

Agriculture was a buffer against falling employment opportunities in western parts of the country. Between 2017 and 2022, rural employment growth outpaced urban levels in western areas, while in eastern states and regions rural employment lagged growth in urban employment. Differential trends in rural and urban employment are likely due to differences in patterns of agricultural growth across locations. Agricultural activities expanded in the western parts of the country and shrank along the eastern border during 2022. States and regions in the middle of the country, comprising of Mandalay, Nay Pyi Daw, Magway and Ayeyarwady, experienced notable services sector growth but relatively smaller changes in other sectors. Private sector salaried employment has reduced in all states and regions.

Reductions in wage earnings were near universal but states and regions that had higher average wages in 2017 experienced larger cuts in the following half-decade. The shrinking of private sector employment opportunities has meant that real wages in 2022 were lower than 2017 across all states and regions states. However, states and regions with higher average wages in 2017 experienced larger reductions in real earnings until 2022 – resulting in wage convergence across states. The universal drop in real wages and deep household income losses are associated with over 70 percent of households in every state and region having to either sell assets, deplete savings, or borrow.

Migration is rarely adopted as a coping strategy; when migration does occur, it is mostly within the country and towards urban and more well-off areas. Thirty percent of households that resorted to migration as a coping strategy had a member that relocated to another rural area within Myanmar, while 56 percent of such households had a member migrate to urban regions. International migration was limited to a select number of households. Overall, 4.1 percent of the population changed their township of residence in the past 2 years (that is, since February 2021) and 2.5 percent of the population changed townships across state and regional boundaries (either voluntarily or due to conflict induced displacement). Compared to other households that have been residing in the same township for more than 2 years, immigrant households from other states and regions have fewer assets, less education, more precarious employment, and have experienced deeper income losses in the past year.

² We refer to Kayah, Kayin and Tanintharyi as eastern and Kachin and Shan as north-eastern; Sagaing as the north-western; Chin and Rakhine western; and Mandalay, Nay Pyi Daw, Magway, Ayeyarwady, Bago, Mon and Yangon as states and regions in the middle or the center of the country.

Increasingly, the place of residence within states and regions—not individual skills or endowments—determines employment outcomes for Myanmar’s workers. In 2017, worker attributes explained 12.6 percent of the variation in wages, while 14 percent of its variation could be attributed to township level characteristics. But by 2022, the contribution of township level factors towards explaining wage variation doubled while that of individual characteristics increased only 4.1 percentage points. Thus, wages are increasingly more influenced by characteristics of where workers reside within states and regions, compared to abilities, skills, education levels and other individual level factors. This is perhaps not surprising given the nature of location-specific, yet covariate, shocks that the country has faced. This report spotlights three township characteristics that have strongly influenced employment outcomes.

Employment has particularly suffered in townships with higher incidence of conflict events. Our analysis shows that a one percentage point increase in township share of conflict incidents between 2021 and 2023 is associated with an average 2.6 percentage point reduction in employment rate. These events contributed to adverse impacts on the employment status of higher educated male workers, between the ages of 25 to 35, and living in urban areas.

Employment in the mining sector has increased in townships that had a pre-existing mine, leading to poorly diversified economic structures. Concentration of employment in mineral extraction industry could carry substantial longer-term costs and environmental risks across Myanmar. The share of mining and construction jobs in townships with preexisting mines rose by 1.8 percentage points between 2017 and 2022 while agricultural share in employment contracted by 8.6 percentage points in these areas.

Townships that have higher likelihood of opium production experienced large increases in agricultural activities and a fall in mining and construction activities. According to the UN Office on Drugs and Crimes (UNODC), Myanmar experienced a historic growth in poppy cultivation in 2022. Poppy production in the country is concentrated in Shan, Kachin, Kayah and Chin states. Townships located at altitudes over 1000 meters above sea level in these four states are offer ideal conditions for poppy cultivation. The share of agricultural employment in these townships was 22.2 percentage points higher in 2022 than 2017, while mining and construction employment in these areas fell by 13.3 percentage points during the past half decade. Average agricultural wages in townships with high risk were also considerably higher during this time.

Faced with a multitude of shocks—electricity outages, escalating energy prices, conflict—Myanmar’s households have endured deep income losses. Of these three, conflict is inflicting the greatest impact. A one standard deviation increases in the incidence of conflict in a township increases the probability of households experiencing deep income losses (of more than 20 percent) over the past year by 4.7 percent – the highest among a range of individual and township level factors.

Introduction

Myanmar's economy has been subdued by multiple shocks in recent years —COVID, high energy prices, and conflict — stalling a stretch of rapid growth. Estimates show that Myanmar's GDP contracted by 18 percent in 2021 and in July 2022, its local currency kyat, depreciated by 30 percent relative to the dollar even as inflation rose to 19.5 percent. Given these challenges, World Bank (2023) had projected a real GDP growth of 3 percent between 2022-23 for the country, suggesting that future output levels will continue to be lower than in 2019.

The impact of Myanmar's multiple crises has been uneven across states and regions. For instance, households in Rakhine encountered 10 percent higher price of rice in December 2022 compared to a national inflation rate of -3.0 percent (m-o-m; WFP, 2023). Similarly, levels of hunger amongst households in Kachin state are much higher than the rest of the country (MAPSA, 2022). Even within states, households in townships (the third administrative division in Myanmar) with more exposure to conflict incidents have experienced greater adversity than in other locations. Thus, sub-nationally representative indicators from reliable data sources are needed to determine the impact of Myanmar's multiple crises on household welfare.

Past household monitoring efforts have been impeded by the lack of reliable official data. Much of what is known about household wellbeing in Myanmar since 2020 is based on field reporting by media publications, qualitative community surveys using purposive sampling, or analysis that either uses simulations of official data collected before 2020 or data from telephonic surveys. For instance, ILO's rapid employment assessment for 2022 (ILO, 2022) are based on models calibrated to official labor force survey data from 2020. Others like the World Bank and IFPRI have collected household data using high frequency telephonic surveys. The World Bank initiated its data collection immediately at the onset of the pandemic and has shown rising levels of household adversity across the country. However, owing to their small sample size and survey design, these surveys could not capture the diversity of impact across states and regions. On the other hand, household surveys conducted by IFPRI called the Myanmar Household Welfare Surveys (MHWS), have produced reliable sub-national household indicators since 2022. However, due to differences in questionnaire design, employment indicators from MHWS may not be directly comparable with baseline employment estimates from official surveys such as MLCS-2017.

A new series of surveys by the World Bank - the Myanmar Subnational Phone Surveys (MSPS), have filled this gap. MSPS data allows periodic monitoring of regionally disaggregated shocks in Myanmar and can quantify their effects on household well-being based on location and other characteristics. The first round of MSPS, conducted during November 2022 to March 2023, collected household demographics, education, employment, exposure to adversity, coping strategies, consumption, and prices information. MSPS is comparable with past sub-nationally representative surveys in Myanmar, such as, MLCS-2017. A large sample size exceeding 8500 households, drawn from all fifteen states and regions, and covering approximately 95 percent of Myanmar's population, ensures that almost every demographic group in the country is proportionally represented in MSPS. Employment indicators from MSPS have been used to analyze labor market outcomes in this report and an accompanying report by Bhatta, et al (2023) uses education and learning indicators from MSPS to take stock of educational standards in Myanmar. A new round of the community welfare monitoring survey, which has been

following a sample of 17 rural communities across eight states and regions since 2020, was implemented in March-April 2023 to provide additional insights.

This report is organized as follows: chapter 1 provides a snapshot of overall labor market changes since 2017 and focuses on disparities by gender, employment type, industry of occupation and other worker characteristics. Chapter 2 analyzes similarities and differences in level employment indicators by state and regions. Chapter 3 concludes by spotlighting key township level characteristics that have influenced workers, their work prospects, and their overall well-being.

Chapter 1: Snapshot of Myanmar's labor market in recent years

Key Messages:

- Labor force participation and employment rate in Myanmar have fallen by 1.6 and 4.8 percentage points, respectively, between 2020 and 2022.
- Female employment has faced considerable setbacks in recent years. Compared to men, adult females are more likely to be out of labor force, more likely to be unemployed, and more likely to be out of education or training.
- Higher education and more years of work experience protected employment status of male workers. However, highly educated women were less likely to be working in 2022 than 2017.
- Employment in mining, construction and the retail sector have risen while agricultural employment has contracted during 2017 and 2022.
- Quality of employment has suffered over the past half decade as private sector salaried employment opportunities have diminished considerably while casual work and self-employment have flourished.
- Older, more experienced workers have switched to agricultural activities in 2022.
- Real weekly wages of salaried workers have fallen by 15 percent (~3.2 percent annually) between 2017 and 2022.

Macroeconomic weaknesses are associated with deteriorating labor market conditions in Myanmar.

Labor force participation (LFP) in Myanmar was already on a gradual downward trend despite strong GDP per capita growth between 2015 and 2020 (Table 1). LFP fell further by 1.6 percentage points between 2020 and 2022 – coinciding with 16.5 percent GDP per capita reduction over the same period³. The prevailing social norm prescribing that women be primarily responsible for performing household work and tending to children and elderly dependents (Asian Development Bank, 2016) has contributed to a higher share of women staying out of the labor force in the past. Female LFP has continued to fall further in 2022 from a low baseline level, as less than half of all adult women were engaged in the labor force.

In addition, the quality of jobs have suffered. The share of employed adults and share of wage employment among employed workers have fallen by 4.8 and 6.2 percentage points, respectively, between 2020 and 2022.

³ Employment figures for 2022 are based on World Bank's new Myanmar Subnational Phone Surveys (MSPS). The first round of MSPS was conducted between November 2022 to March 2023 and collected detailed information regarding labor market participation, education levels, consumption, migration, exposure to economic shocks and coping strategies. Additional information about MSPS survey design and sampling strategy can be found in Sinha Roy (2023).

The share of formally employed workers (that is, those with contracts and pension benefits) in the workforce almost doubled between 2017 and 2022 – likely reflecting the fact that workers without formal work arrangements were more likely to experience job cuts. The fall in job quality standards suggests rising informalization of work opportunities. Finally, share of agricultural employment dropped by 6.6 percentage points between 2017 and 2022.

Table 1: Summary of key-labor market indicators (as a share of 15+ population)

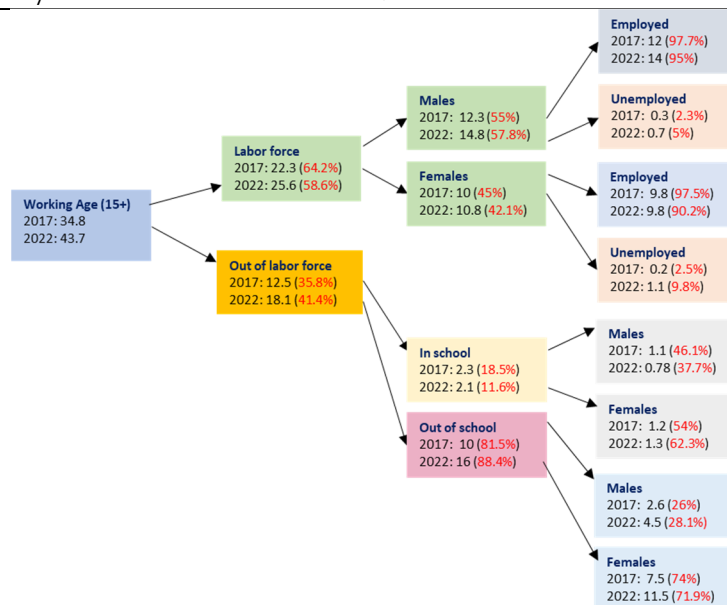
Year	LFP rate	LFP rate (Females)	Employment rate	Share of wage employment to total employment	Share of formal employment among wage employees	Share of agricultural employment (15+)
2015	64.7	51.6	64.2	35.3		
2016				36.0		
2017	62.0	48.5	61.2	36.8	13.0	49.5
2018	62.4	49.3	61.9	34.4		
2019	60.5	47.1	60.3	35.1		
2020	60.2	45.6	59.3			
2021						
2022	58.6	45.9	54.5	28.9	24.2	42.9

Sources: WDI, national estimates; MSPS WDI, national estimates; MSPS WDI, national estimates; MSPS WDI, modelled ILO estimates; MSPS MLCS-2017, MSPS MLCS-2017, MSPS

The past half decade has seen significant backsliding in employment prospects for women.

Although 9 million people were added to Myanmar’s working age population between 2017 and 2022 through normal population growth, only 3.3 million people were added to its labor force. During the same period, number of adults not in employment, education, or training (NEET) grew by 6 million while those in education fell by 0.3 million. The 6 million additional NEET individuals between 2017 and 2022, comprised of 4 million females and 2 million male adults. The rising incidence of NEET in Myanmar therefore disproportionately comprised of women. Of the 3.3 million people that entered the labor force over the past half-decade, 2.5 million were males and 0.8 million were females. Meanwhile, female unemployment has risen by 7 percentage points while that of men has grown 2.5 percentage points. Differential population growth cannot explain the adverse labor market outcomes for women as an almost equal number of male and female individuals of working age (4 and 4.8 million respectively) were added to Myanmar’s population between 2017 and 2022.

Figure 1: Snapshot of Myanmar's labor market in 2017 and 2022



Notes: Population figures are in million. Estimates for 2017 and 2022 are from MLCS and MSPS respectively. Sample include individuals aged 15 or over.

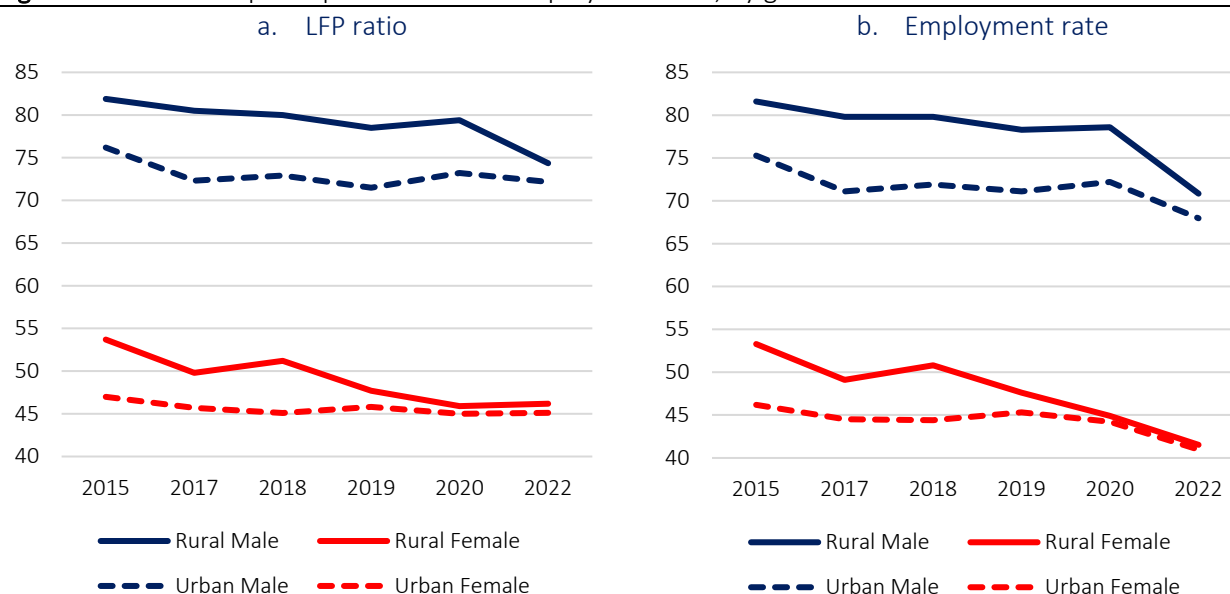
Deterioration in employment indicators since 2020 has been more pronounced among male workers.

Disaggregating labor force participation by gender and location shows a gap between female and male participation rates already existed in the past (Figure 2). Between 2015 and 2020, LFP and employment rates steadily fell among rural women but remained steady for urban females. Thereafter, female employment rate fell by 3.4 and 3.2 percentage points in rural and urban areas until 2022, even as LFP remained steady. Thus, employment conditions for rural women were downward trending prior to the COVID pandemic and the military coup and worsened further in following years.

In contrast, the year 2020 marked a clear break in male employment trends. Participation rates and employment rates among men were largely stable between 2015 and 2020. Thereafter, male LFP dropped by 5 and 1 percentage points in rural and urban areas, while employment rates fell by 7.7 and 4.2 percentage points, respectively.

In general, smaller changes in LFP rates of both genders relative to employment rate suggests that the willingness to find work among working age individuals in Myanmar has been less affected by the crises. However, Myanmar's unsupportive economy in 2022 has been unable to provide enough suitable jobs to interested workers, leading to a relatively larger fall in employment rate.

Figure 2: Labor force participation rate and employment rate, by gender and location: 2015-2022



Notes: Estimates for 2015-2020 and 2022 from ILOSTAT and MSPS respectively. Sample include individuals over 15 years of age.

Education and experience shielded male workers from shocks. In contrast, educated women have withdrawn and are more likely to be in NEET status in 2022 than in 2017.

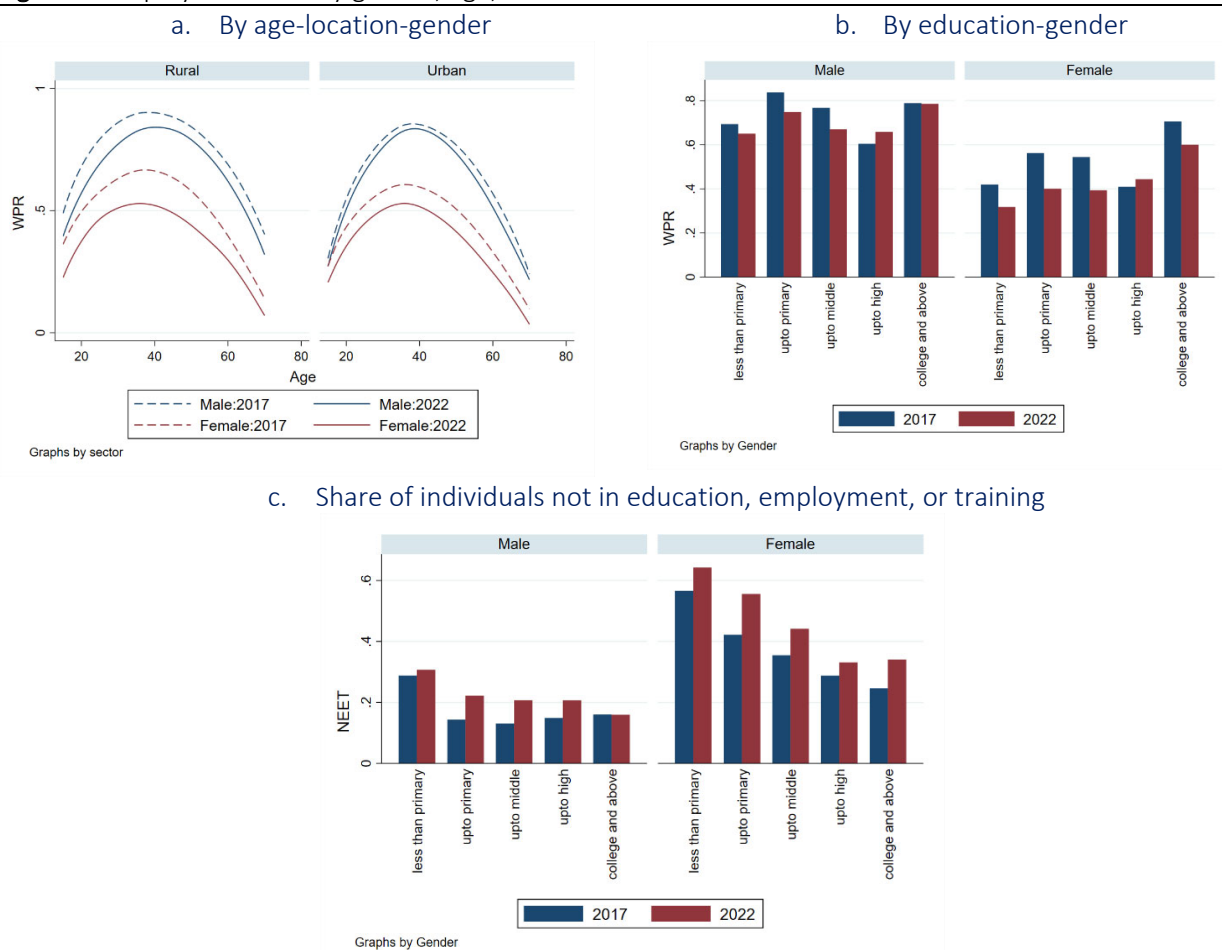
Employment of urban males has been most resilient despite numerous shocks to Myanmar’s economy since 2017 across different groups (Figure 3, panel a). In comparison, employment rate for rural males between 25-35 years, and 36 to 65 years were 11 and 5 percentage points lower in 2022 than 2017. Thus, younger male workers with fewer years of experience were more exposed to labor market shocks. On the other hand, older females experienced a larger fall in employment rate compared to younger ones. Employment rate for women between the ages of 36 to 65 (in rural and urban combined) fell by 12.3 percentage points compared to an 8.1 percentage point drop among younger female age group (25 to 35 years). Therefore, additional years of work experience shielded male workers from employment shocks more than female ones.

Male workers also benefitted more from higher educational attainment. Employment rate for men with up to middle school level of education fell in the past half decade (Figure 3, panel b), but those with higher education either increased or held their employment rate at par. Female workers with college or higher levels of education in contrast experienced a fall in employment rate between 2017 and 2022.

Additionally, sixty-four percent of women with less than primary education and 55 percent with up to primary education were in NEET category in 2022 (Figure 3, panel c). This represents a 7.6 and 13.3 percentage point rise in female NEET shares over the past half-decade. NEET shares have also risen by 9.4 percentage points among college educated women. In contrast, males with college degrees are less likely to be in the NEET category in 2022 than in 2017.

Qualitative data from World Bank’s community socio-economic welfare monitoring from March-April 2023⁴ suggests that competition from returned students and migrants reduced employment opportunities available to less educated women in rural areas. Male day laborers are paid significantly more than female day laborers (20-33 percent more on average across the sample villages), which may have led households to prioritize men’s remunerated labor. Additionally, some agricultural tasks are seen as unsuitable for women and only offered to men. Mobility restrictions and security concerns have disproportionately impacted women’s access to work and employment. Qualitative interviews across the village sample indicate female day laborers are prevented from travelling in search of work and from commuting to nearby towns or cities for non-agricultural employment. To avoid unofficial tolls at checkpoints, laborers in masonry, construction, and some forms of agricultural work tend to stay at the job site until the work is completed, rather than commuting, making this type of work less available to women due to cultural mores, security concerns and care responsibilities. Respondents in community surveys have also noted that since April 2022, a citizenship scrutiny card is required for all internal travel. According to the 2014 census, women are less likely to possess this documentation, with disparities rising with age.

Figure 3: Employment rate by gender, age, and education levels



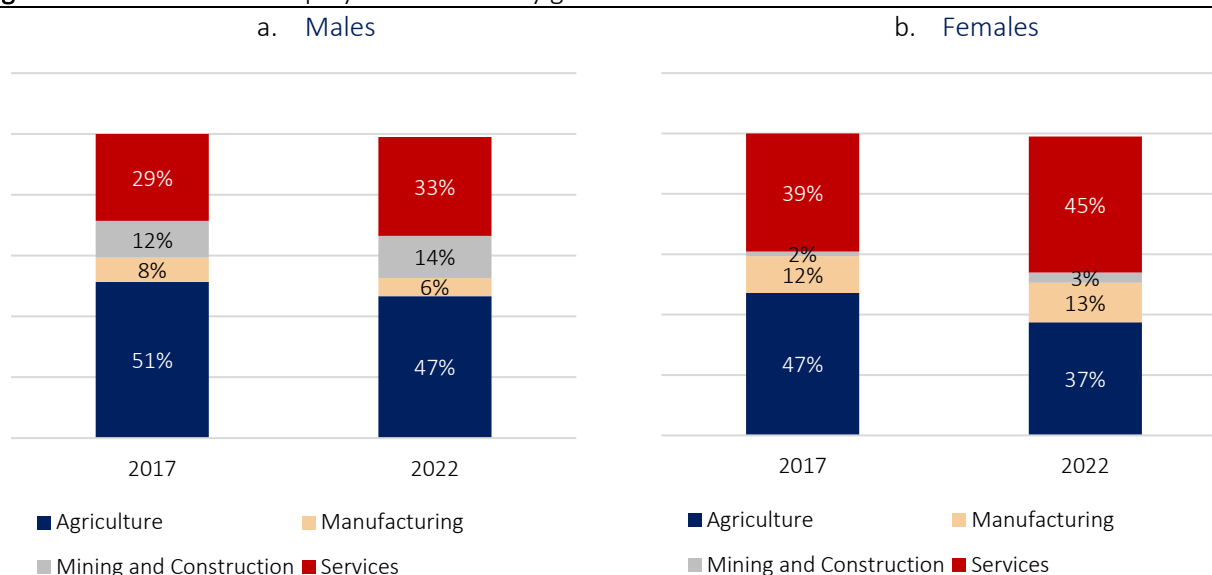
⁴ The community socio-economic village-level monitoring is a panel study running annually or bi-annually since 2020. Using the village as the unit of analysis, it draws on interviews in 17 villages across 8 of Myanmar’s states and regions and 18 civil society organizations and service providers active in rural areas in the same states and regions.

Notes: Source: MLCS-2017 and MSPS-2022. Sample include individuals over 15 years of age. Panel (a) shows average WPR for each age using lowess smoothed locally weighted regressions. Estimates based on sampling weights. Non-literate population is included under less than primary level of schooling in panel (b).

The workforce has shifted from agriculture and manufacturing to construction, mining, and retail services. Sectoral changes among female workers are more pronounced than men.

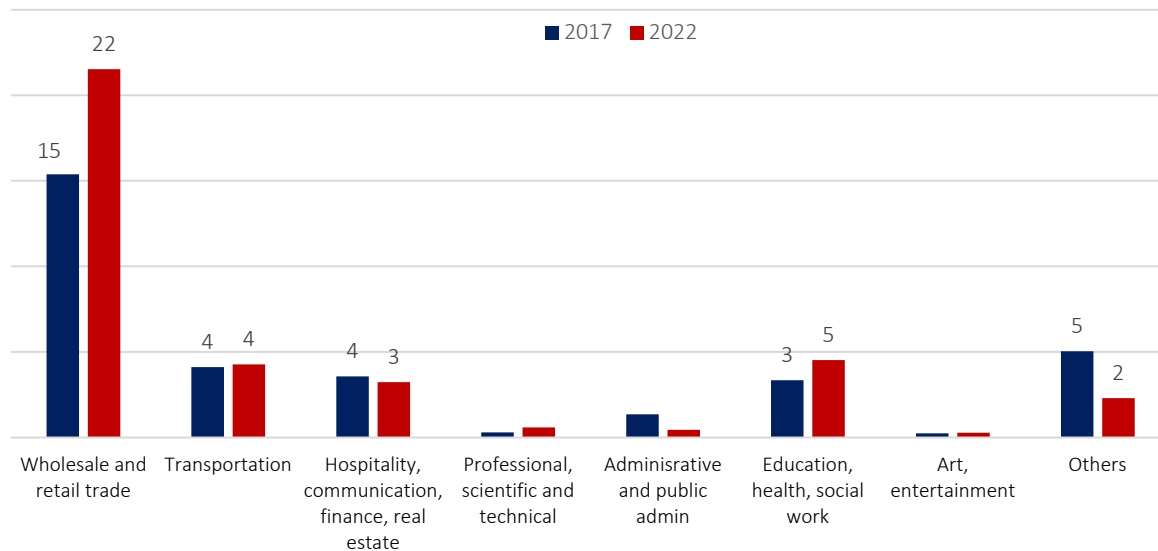
An expansion of retail sector jobs, combined with rising mining and construction work, provides indications of rising informality levels in Myanmar since 2017. Male employment has increasingly shifted from agriculture to mining, construction, and retail sector jobs (Figure 4). Changes in the sectoral composition away from agriculture for female workers were even more pronounced, falling sharply by 10 percentage points between 2017 and 2022. The rise in services sector employment among both genders, does not signify a positive structural transformation process that is generally associated with expansion of sectors with high value addition. This is because most services sector growth over the past half-decade occurred due to a 7-percentage point rise in share of wholesale and retail activities (Figure 5).

Figure 4: Distribution of employment sectors by gender and over time



Notes: Agriculture includes forestry and fishing. Manufacturing sector includes electricity, water supply and waste management sectors. Services includes all other sectoral codes. Sample include individuals over 15 years of age. Estimates are weighted by sampling weights. Source: MLCS -2017 and MSPS.

Figure 5: Disaggregating services into constituent sectoral groups



Notes: Figure shows share of workers (male and female) by various services sectoral codes. Sample include individuals over 15 years of age. Estimates are weighted by sampling weights. Source: MLCS -2017 and MSPS.

Work has become more precarious as opportunities for salaried employment that provide stable income have declined.

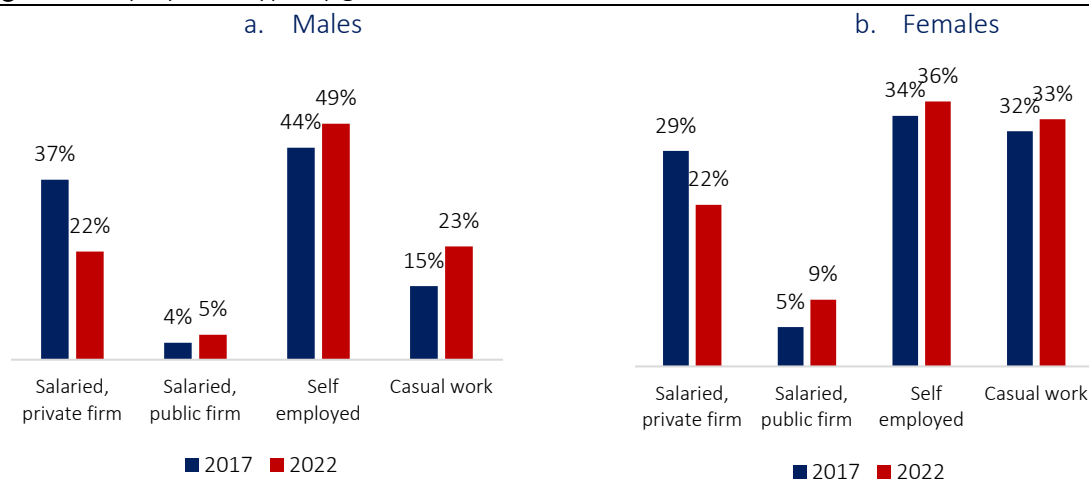
Private sector salaried opportunities have diminished while self-employment work opportunities have increased for both genders (Figure 6). Similarly, casual work share increased by 8 percentage points for male workers but only by 1 percentage points for females. Females are less likely to be compensated for their casual work activities. Whereas unpaid casual work for both genders have risen during 2017 and 2022, for women, the share of casual work performed in exchange of pay has fallen by 1.7 percentage points (Figure 6, panel c). Casual work performed by men in exchange for pay, in comparison, almost doubled between 2017 and 2022.

Qualitative data from World Bank’s community socio-economic monitoring survey suggest that women in the private sector may have stopped employment due to security risks and challenges such as military checkpoints between villages and their workplaces. Moreover, high transportation costs due to higher prices of petrol have affected women’s private sector participation as they rely on transportation services to travel to work on a daily basis. Combined, these changes make commuting from rural areas to towns or cities for private sector work less feasible. Childcare responsibilities, increased due to school closures and security concerns, may also be prompting women more than men to stop working, especially in urban areas. Qualitative data from rural Myanmar did not capture this driver as strongly, given the underlying childcare strategies for rural households remained (i.e. elder household members providing care, joining parents in the fields, etc.).

Qualitative monitoring also indicates that an oversupply of male casual labor in villages (exacerbated by return migration of male villagers due to high inflation, loss of work or security concerns in cities) could have crowded out female casual activities performed in exchange for pay. Traditional farm activities that were specifically

performed by women workers in the past are now being allocated to excess male casual labor as men are traditionally seen to be able to do multiple tasks related to cultivation.

Figure 6: Employment type by gender



c. Paid and unpaid casual wage activity

Gender	Casual- wage activity	2017	2022
Male	Paid	4.5%	9.3%
Female	Paid	9.4%	7.7%
Male	Unpaid	10.7%	14.1%
Female	Unpaid	22.3%	25.7%

Notes: Salaried jobs include apprenticeships and trainees. Self-employed includes working as an own employer – with or without other employees. Casual work includes operating another business or someone’s farm as well as helping without pay in a business or a farm. Sample include employed individuals over 15 years of age. Estimates are weighted by sampling weights. Source: MLCS -2017 and MSPS.

Shrinking of private sector salaried work and expansion of casual work was most pronounced in the mining and construction sector.

The expansion of mining and construction activities in the past half-decade, has coincided with shrinking share of private salaried workers in the sector (falling 40 percentage points) and an expansion of casual employment (rising 30 percentage points). Private sector employment also fell, by varying magnitude, in agriculture, services, and manufacturing (15, 7 and 6 percentage points respectively). Finally, the high concentrations of self-employed workers in retail in 2017 has remained largely unchanged over the past half decade. This relative stability in the retail sector during a tumultuous economic period could explain the 7-percentage point growth in retail employment shares since 2017.

Figure 7: Employment type by sector



Notes: Sample include employed individuals over 15 years of age. Estimates are weighted by sampling weights. Source: MLCS -2017 and MSPS.

High quality human capital is being misallocated to least productive sectors: workers with more education and years of work experiences are increasingly turning to agricultural activities.

In 2017, 55 percent of college educated individuals worked in non-retail services sector jobs and 7.5 percent in agriculture (Figure 8). But by 2022, the share of highly educated individuals working in non-retail services fell by 11 percentage points even as share of agriculture in the group rose by an equivalent amount. This result points to significant misallocation of human capital as the most educated workers in the economy are increasingly turning to low productivity agricultural activities. The sectoral reallocation was associated with a fall of 5 percentage points share of private sector salaried jobs among highly educated workers and a rise in self-employment of an almost equivalent amount (Figure 9).

In addition to education, employment patterns also vary by years of experience in two notable ways (Figure 10). First, younger workers are much less likely to be in agriculture in 2017 than in 2022. At the same time, share of agriculture among older workers has risen – further evidence that the most productive human capital is being diverted to low productivity sectors. Second, retail employment shares have risen the most for younger workers

and fallen for the oldest cohorts. Changes in mining and construction, manufacturing and services are almost uniform across all age-groups.

The rise in agricultural employment among older workers is associated with higher growth in casual work and fall in self-employment compared to all other age groups. The large increase in retail sector jobs among younger cohorts on the other hand have led to increases in self-employment and casual work status of comparable magnitude. Lastly, private sector salaried work opportunities have fallen almost equally across all age categories.

Qualitative data from World Bank’s community monitoring surveys suggests that students and younger return migrants could have taken-up retail employment in their home villages. On the other hand, civil servants who have given up their public sector positions have turned to subsistence farming as a coping strategy. Other sectors of employment are not feasible for such individuals because their identity cards identify them as ‘government staff’ and many employers do not want to take risks in employing them. Given a relatively high share of more educated women were working in the public sector (often as teachers, nurses, clerks, etc.), women are particularly likely to have been affected.

Qualitative interviews have also highlighted that farmers are planting less acreage and lowered demand for casual laborers. Due to the high cost of agricultural inputs and transporting items to markets, farmers rely more on family labor, including that of out of school children and youth. Villages in the qualitative study pointed to security concerns as another potential explanation: rising insecurity has meant fewer work opportunities either due to active fighting making farms inaccessible, or checkpoints within or between village tracts where workers are subjected to searches or fees to pass through. Lastly, some respondents have highlighted that in heavily mined areas, even farm labor could be a fatal activity.

Figure 8: Industry by education level

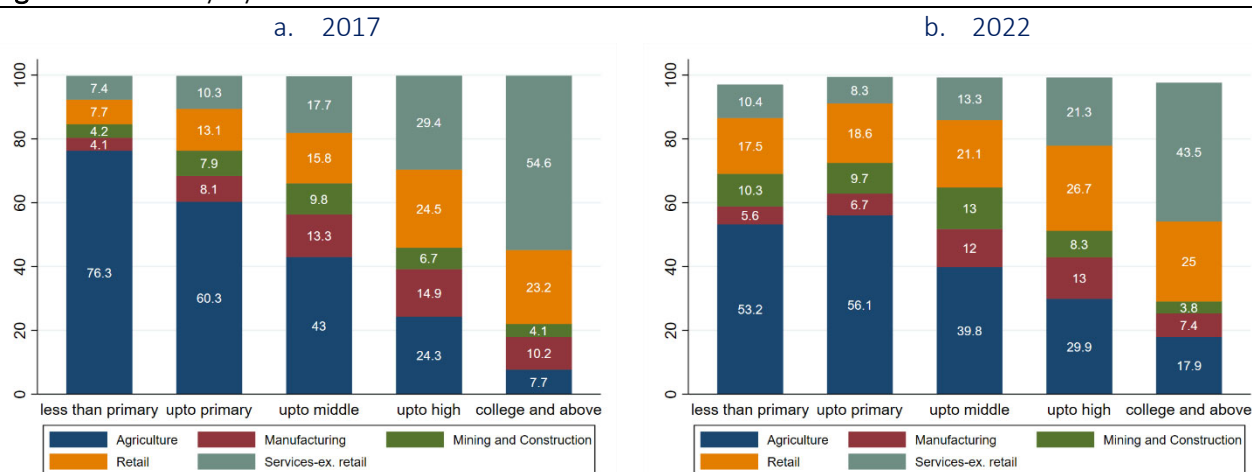
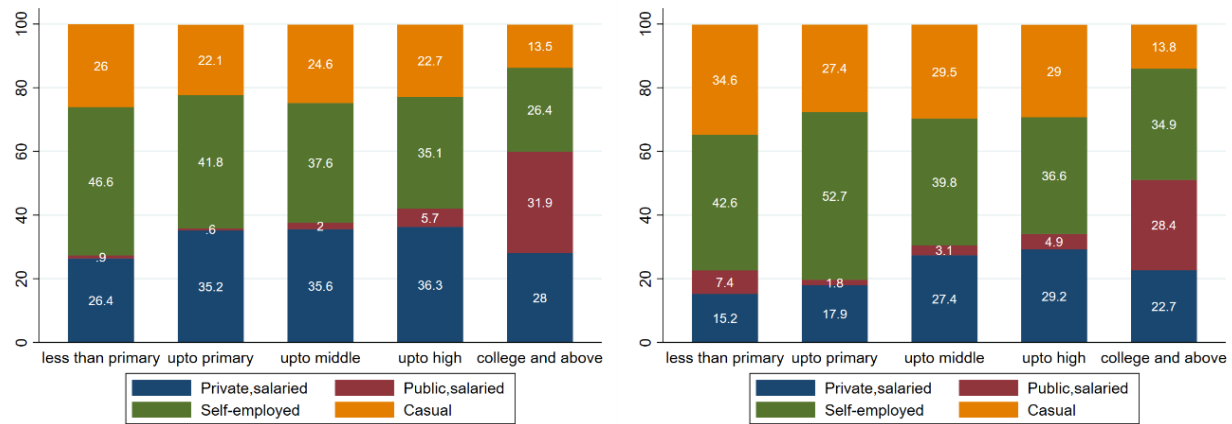


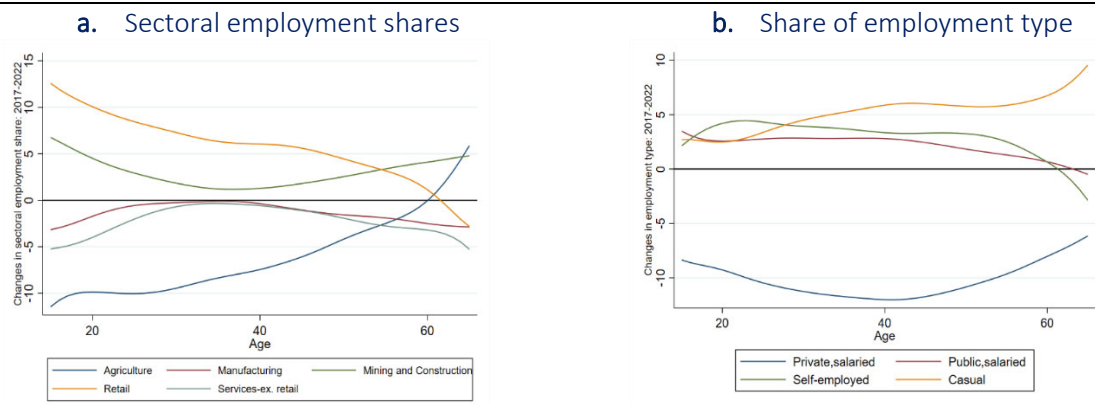
Figure 9: Employment type by education level

a. 2017 b. 2022



Notes: Salaried jobs include apprenticeships and trainees. Self-employed includes working as an own employer – with or without other employees. Casual work includes operating another business or someone’s farm as well as helping without pay in a business or a farm. Sample include employed individuals over 15 years of age. Estimates are weighted by sampling weights. Source: MLCS -2017 and MSPS.

Figure 10: Changes in sector and type of employment (2017-2022)

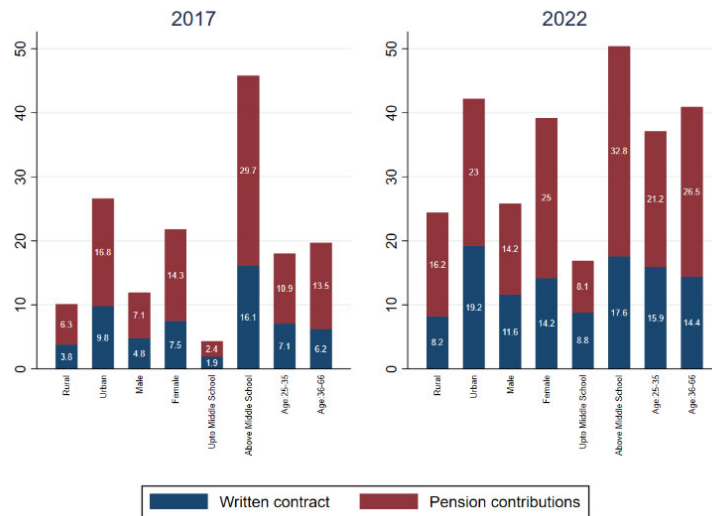


Notes: Plotted lines are locally smoothed locally weighted regressions. Salaried jobs include apprenticeships and trainees. Self-employed includes working as an own employer – with or without other employees. Casual work includes operating another business or someone’s farm as well as helping without pay in a business or a farm. Sample include employed individuals over 15 years of age. Estimates are weighted by sampling weights. Source: MLCS -2017 and MSPS.

Workers without written employment contracts or pension contributions were most likely to lose their salaried private sector job.

The share of salaried workers possessing a written employment contract or receiving pension contributions from their employers has risen in 2022 across worker characteristics (Figure 11). These changes occurred likely because salaried workers with formal work arrangements had a higher chance of surviving deep reductions in private sector salaried work reported in the earlier sections. As a result, their share within salaried employment is higher in 2022 than 2017, even as opportunities for salaried work have considerably diminished during the past half decade.

Figure 11: Share of wage workers with written contracts and pension contributions



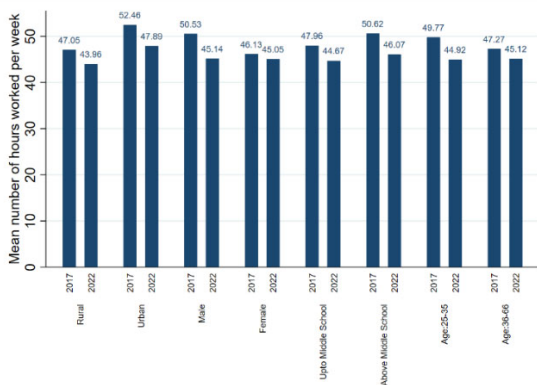
Notes: Salaried jobs include apprenticeships and trainees. Self-employed includes working as an own employer – with or without other employees. Casual work includes operating another business or someone’s farm as well as helping without pay in a business or a farm. Sample include employed individuals over 15 years of age. Estimates are weighted by sampling weights. Source: MLCS -2017 and MSPS.

Willingness to undertake additional work remains high but number of hours of work performed has reduced.

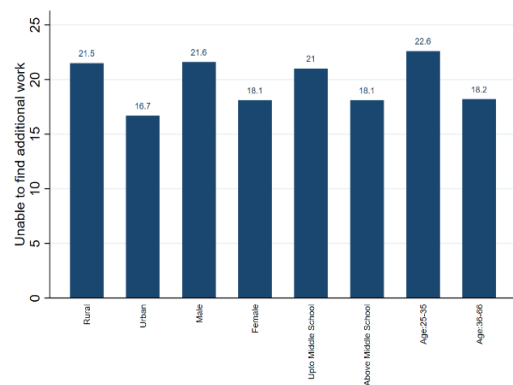
Number of hours of work performed by males per week was 10.7 percent lower in 2022 than in 2017 (Figure 12) compared to 2.3 percent reductions among females. Urban, highly educated, and more experienced workers were likely to work fewer hours in 2022 than their rural, younger and undereducated counterparts. The fall in working hours among younger workers since 2017 is unlikely to be related to their willingness to work. Approximately 1/5th of all younger workers reported willingness to perform additional duties – the highest among all worker categories – but were unable to find suitable work in the past 7 days (Figure 12, panel b).

Figure 12: Hours of work performed per week and underemployment

a. Hours of work performed per week



b. Inability to find additional jobs in the past week, despite willingness to perform more duties



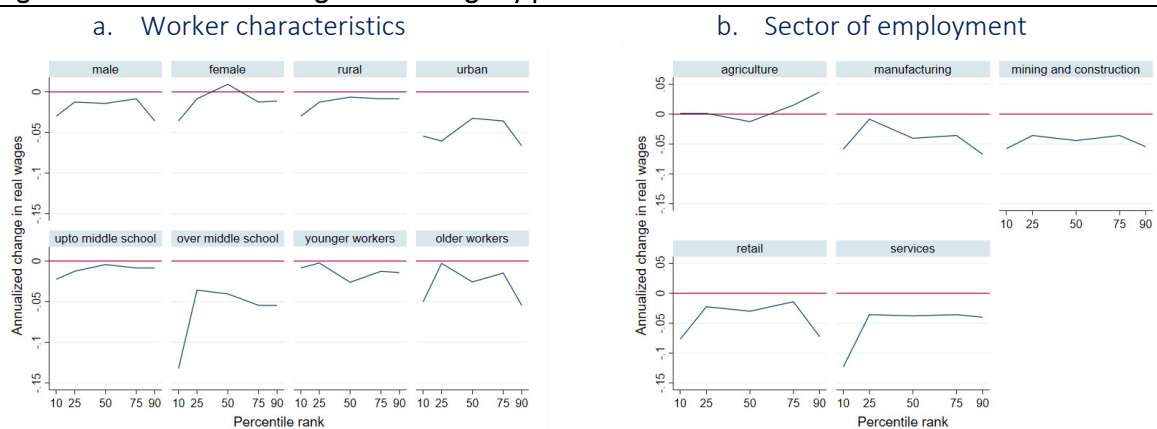
Notes: Sample include employed individuals over 15 years of age. Estimates are weighted by sampling weights. Source: MLCS -2017 and MSPS.

Real wages have dropped at an annualized rate of 3.2 percent between 2017 and 2022, with higher reductions among more educated and experienced workers.

Average weekly wages have dropped by 15 percent (~3.2 percent annually) between 2017 and 2022⁵. The reduction in real weekly earnings coincides with a significant fall in private sector work opportunities identified in earlier sections. Weekly wages have fallen across the board, with some variation across sectors and worker characteristics such as education, age, and earnings levels (Figure 13). The fall in earnings is most pronounced for workers in urban areas and with middle school level of education. Both groups have experienced wage losses of upto 5 percent annually.

Organizing results by sectors, shows broad based earnings reduction of approximately 5 percent per year across percentiles in mining and construction. This coincides with about 40 percent reduction in share of salaried workers in the sector. In manufacturing, retail and services, earnings at the top and the bottom of the earnings distribution have fallen but are flatter at the middle of the distribution. Finally, despite a 15 percentage point reduction in share of salaried workers within agriculture, earnings in the sector have changed the least and even risen at the top of the distribution. This is could be a likely explanation for more educated and experienced workers switching into agriculture (alongside other factors like security, and inflation making renting accommodation and buying food in the urban areas too costly for migrants, and transportation too expensive for commuters).

Figure 13: Annualized changes in earnings by percentile rank



Notes: Percentile ranks assigned on real weekly wages observed in the two surveys, after trimming 1st and 99th percentile outliers. Wages are available only for employed workers. Sample includes employed individuals over 15 years of age. Estimates are weighted by sampling weights. Source: MLCS - 2017 and MSPS.

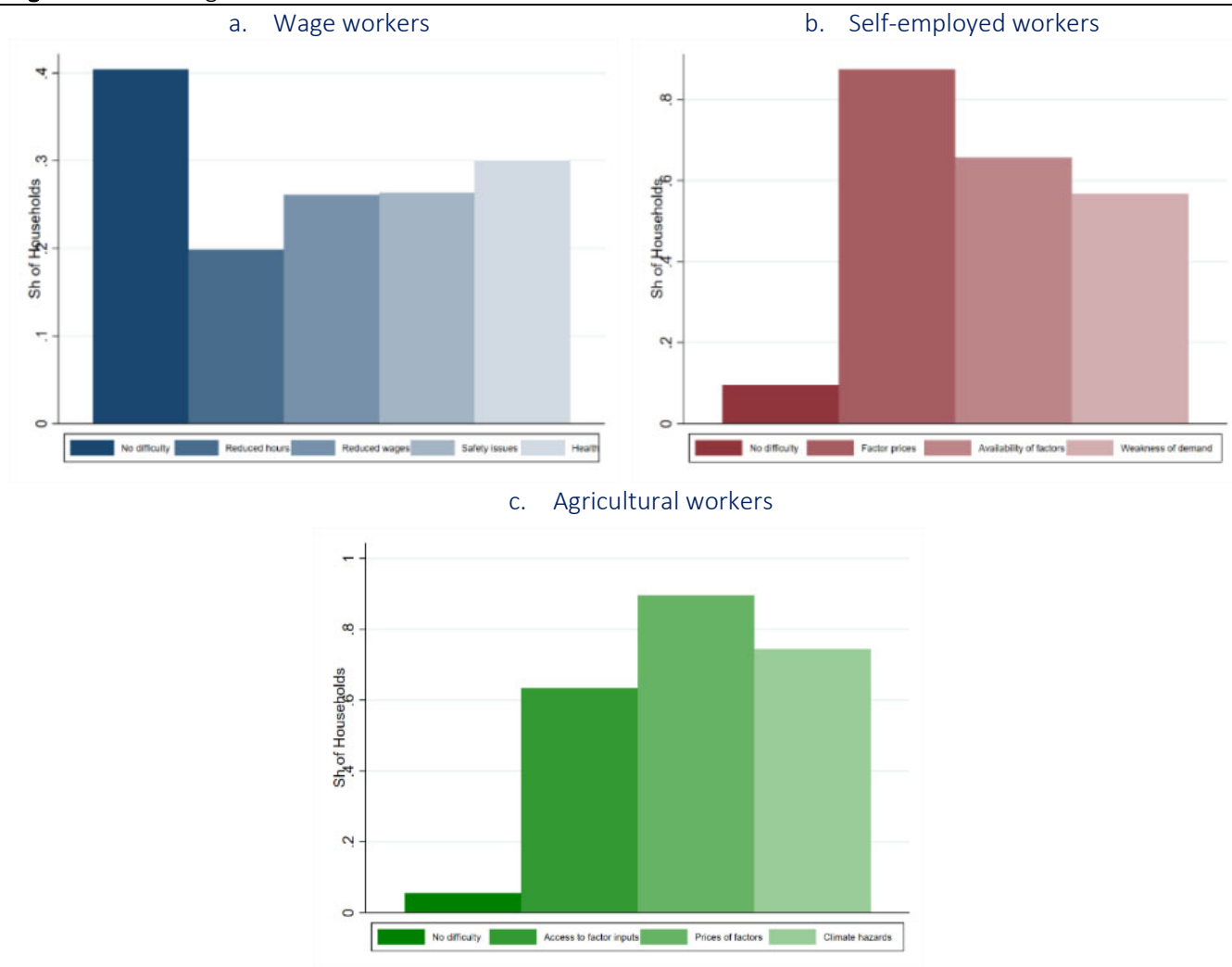
Paradoxically, despite broad-based reduction in wages, 40 percent of households that had a wage-earning member reported that they did not experience challenges related to their employment activity. An additional 30 and 26 percent of households reported health or safety related challenges pertaining to their wage work.

⁵ The estimate is based on weekly earnings of regular salaried workers since MLCS 2017 carries earnings information only for such workers. The average earnings data is calculated after trimming the 1st and 99th percentile of the income distribution due to the presence of large outlier amounts in both surveys.

Moreover, despite observed reductions in number of hours of work performed, only a fifth of such households reported facing challenges in the number of hours of work performed.

In contrast, over 80 percent of households that had members working in a non-agricultural or agricultural sector (either as a self-employed or casual wage worker) reported challenges related to prices of raw materials. About 60 percent of households in both categories reported challenges related to availability of factor inputs. Sixty percent of households with members working in non-agricultural related business cited weakness in their customer’s ability to purchase goods as a detriment to activities. Finally, 70 percent of households with members engaged in the agriculture sector reported weather, pests or security-related challenges in accessing their farms.

Figure 14: Challenges related to work activities



Notes: Samples in panel a, b and c are restricted to households that had members working a regular salaried job, members working in non-agriculture related sectors and members engaged in agriculture related industries respectively (either as self-employed or casual wage workers).

Chapter 2: Subnational Differences in Employment, Earnings, and Coping Strategies

Key Messages:

- Employment losses and income contractions were highest among states and regions along the eastern border. Males and more educated individuals were less likely to lose employment across all states and regions.
- In contrast, urban employment losses were higher in eastern, and lower in western states and regions compared to rural areas. This was likely due to an expansion of agricultural activities along the western border and rise in non-agricultural work in eastern states and regions.
- Real wages in 2022 were below 2017 levels across all states. However, wage reductions were more pronounced in states and regions that had higher wages in the baseline period.
- Households resorted to different coping strategies across states and regions. Asset sales, savings depletion and borrowing were most common across locations while some household members resorted to migration.
- Households that migrated across states since February 2021 were more likely to be poorer, undereducated, and employed than other households residing in the same township.

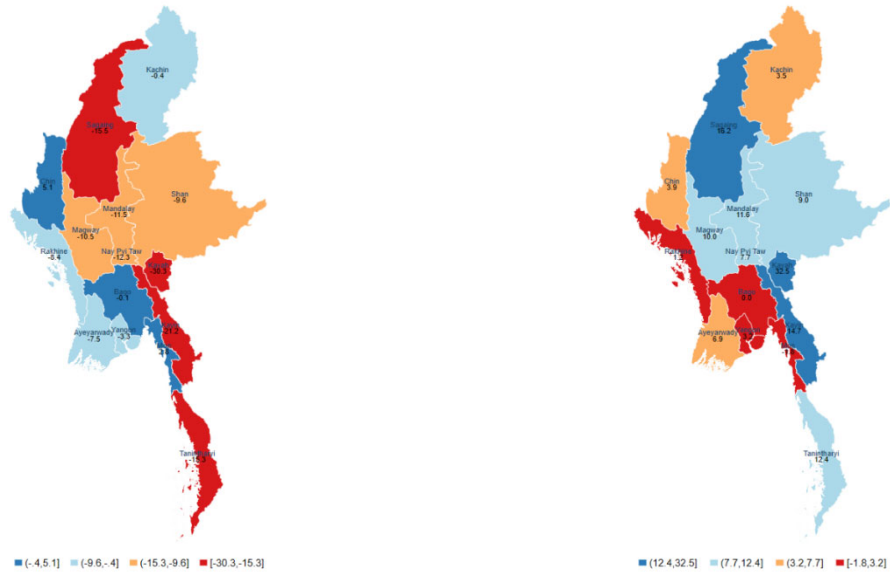
States and regions along the eastern border have registered a large fall in employment since 2017. Share of households reporting income losses exceeding 20 percent over the past year is highest in this area compared to other states and regions.

Employment rates have fallen by more than 15 percentage points in Kayah, Kayin and Tanintharyi – along the eastern border and Sagaing in the north (Panel a, Figure 15). In contrast, states and regions on the western border and at the center of the country experienced up to 5 and 10 percentage point decline in employment rate respectively. The share of the population that is not in employment, education or technical education (NEET) has also risen in eastern states (Panel b, Figure 15). This indicates a sizable reduction in labor force participation rates in such areas.

Figure 15: Changes in worker share and NEET in percentage points (2017-2022)

a. Worker share

b. NEET



Notes: Sample include employed individuals over 15 years of age. Estimates are weighted by sampling weights. Source: MLCS -2017 and MSPS.

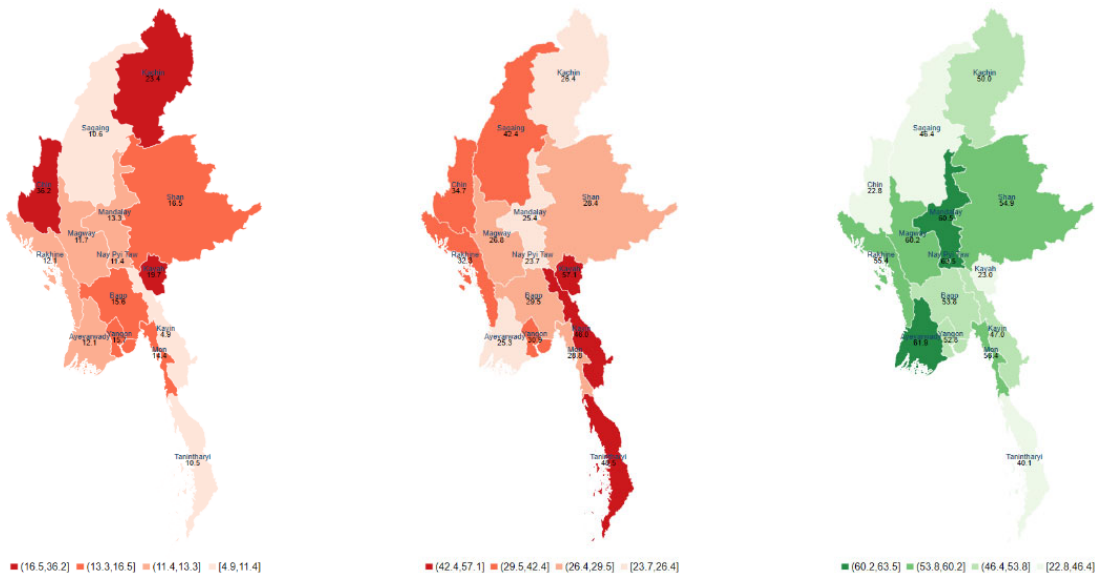
A high proportion of households in eastern states and regions also reported income losses exceeding 20 percent in the past 5 years (Figure 16). For instance, over 40 percent of families in Kayah, Kayin, and Tanintharyi in the south-east and Sagaing in the north-west, reported income losses exceeding 20 percent in the past year as compared to 30 percent of households reporting a similar figure across the country. In comparison, over 50 percent of households in Bago, Mon, Mandalay, Yangon, and Nay Pyi Daw (central states and regions) reported either no change or a small increase in household incomes (Figure 16, panel c) and only about a quarter of households experienced income reduction over 20 percent (Figure 16, panel b).

Figure 16: Changes in household incomes over the past year

a. Losses below 20%

b. Losses exceeding 20%

c. No change or rise in incomes



Notes: Sample include employed individuals over 15 years of age. Estimates are weighted by sampling weights. Source: MLCS -2017 and MSPS.

Individuals with higher educational attainment were more protected from shocks and were less likely to report employment losses in all states and regions, including those on the eastern side where aggregate employment losses have been the highest (Table 2). Similarly, gender patterns in employment are consistent across states and regions – female adults have experienced a larger fall in employment rates than males across locations. In contrast, employment trends differ considerably across states and regions based on households’ rural and urban status. Urban households in western states and regions (Sagaing, Chin and Rakhine) experienced a larger fall in employment rate than in rural areas. Urban households along the northern and eastern borders (Kachin, Shan, Kayah and Kayin) on the other hand, registered smaller reduction in employment rate than rural. These urban-rural differences are indicative of differential growth in agricultural activities across states and regions.

Table 2: Changes in employment rate by states and regions (2017-2022)

States	Gender		Rural/Urban		Education	
	Male	Female	Rural	Urban	Below middle school	Above middle school
Kayah	-30%	-32%	-33%	-20%	-32%	-25%
Kayin	-20%	-24%	-24%	-5%	-27%	-2%
Tanintharyi	-13%	-16%	-15%	-19%	-23%	8%
Nay Pyi Taw	-12%	-13%	-11%	-16%	-15%	-7%
Sagaing	-10%	-19%	-15%	-18%	-19%	-4%
Rakhine	-8%	-10%	-7%	-17%	-8%	-10%
Mandalay	-7%	-15%	-14%	-6%	-16%	0%
Magway	-5%	-14%	-11%	-5%	-14%	4%
Ayeyarwady	-5%	-9%	-8%	-7%	-9%	0%
Shan	-3%	-15%	-14%	3%	-13%	7%
Kachin	-2%	-1%	-4%	7%	-9%	17%
Bago	-1%	0%	-1%	5%	-3%	9%
Yangon	1%	-6%	-4%	-3%	-8%	3%
Mon	1%	3%	4%	-1%	1%	6%
Chin	2%	8%	9%	-23%	1%	15%

Notes: Sample include employed individuals over 15 years of age. Estimates are weighted by sampling weights. Source: MLCS -2017 and MSPS.

Non-agricultural employment has intensified in eastern parts while agricultural share in employment has risen in western states and regions. Growth in non-agricultural work is associated with rising self-employment in eastern states while agricultural growth in western states and regions led to an increase in casual activities.

Eastern states and regions – Kachin, Shan, Kayah and Kayin – experienced a considerable fall in agricultural employment as share of manufacturing, mining and construction sector jobs expanded (Figure 17). Mining and construction jobs accounted for most of these increases. Growth in non-agricultural sectors in these areas were

also accompanied by a small rise in retail services activities. The fall in agricultural activities in these states have likely resulted in rural employment lagging urban areas, as reported in Table 2 above.

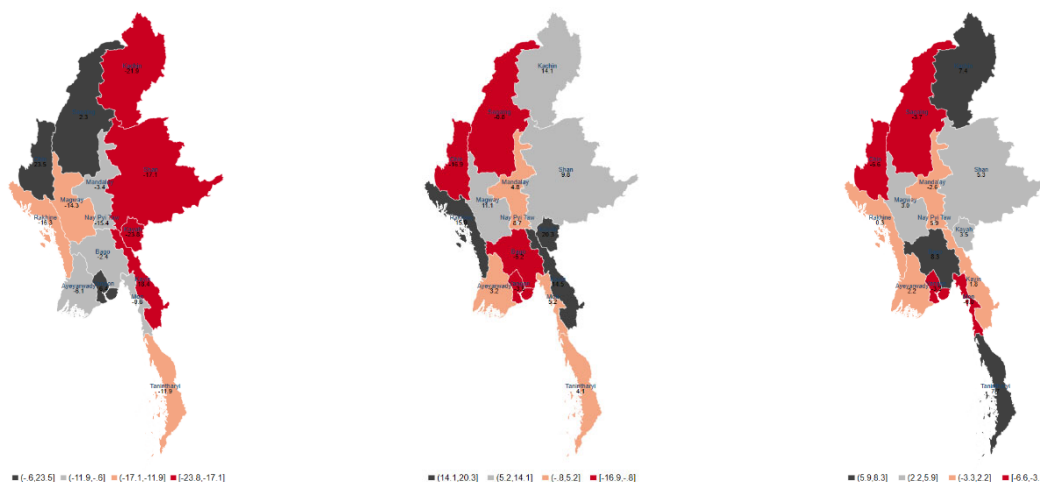
States on the western border, most notably Sagaing and Chin, experienced large increases in agricultural employment (which includes forestry and timber related sectors) and a contraction in manufacturing, mining and construction and services employment. Agricultural growth expansion combined with contraction of non-agricultural activities in this cluster of states and regions corresponds to a larger fall in urban employment than rural sectors (Table 2). Finally, states in the middle of the country, comprising of Mandalay, Nay Pyi Daw, Magway and Ayeyarwady, experienced notable services sector growth but relatively smaller changes in other sectors.

Figure 17: Sectoral changes in employment by state and regions

a. Agriculture

b. Manufacturing, mining, and construction

c. Services

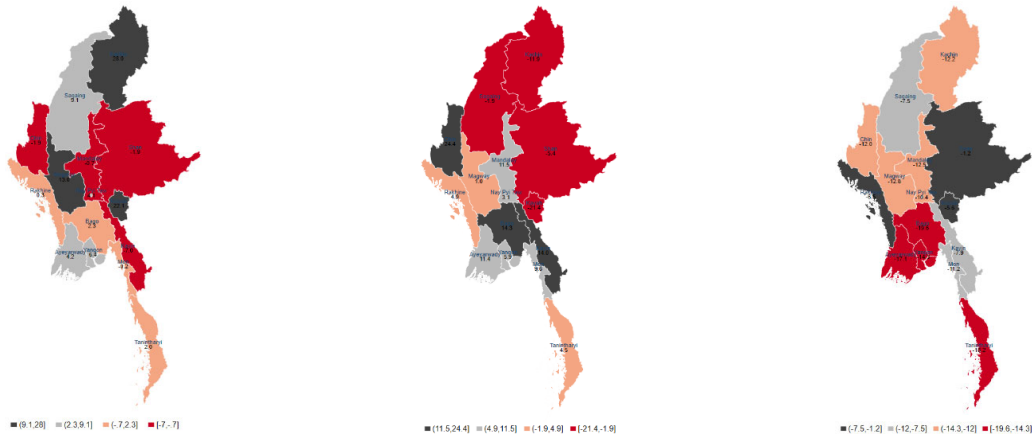


Notes: Sample include employed individuals over 15 years of age. Estimates are weighted by sampling weights. Source: MLCS - 2017 and MSPS.

The growth in non-agricultural activities in the eastern cluster of states and region has contributed to increased self-employment in these areas (Figure 18). In contrast, rising agricultural work on the western cluster of states and regions has led to a rise in casual activities. Private sector salaried job opportunities have fallen in all parts of the country but most intensely in central states and regions which had the highest shares of such jobs in 2017. Workers in these regions have increasingly switched to casual jobs.

Figure 18: Changes in employment types

a. Self-employed b. Casual work c. Private sector salaried

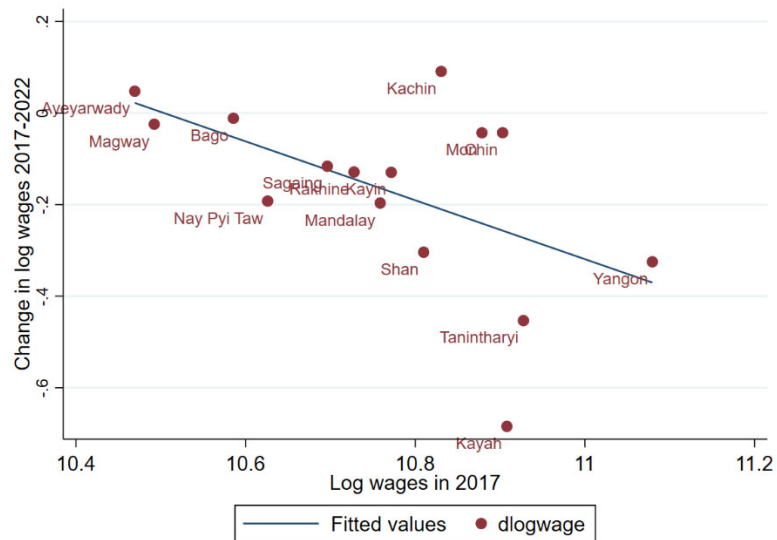


Notes: Sample include employed individuals over 15 years of age. Estimates are weighted by sampling weights. Source: MLCS - 2017 and MSPS.

A pattern of strong wage convergence is observed across states but average wages in 2022 were lower than 2017 in every state.

The drop in private sector opportunities in areas led to a convergence of wage earnings across the country (Figure 19). Areas with high wages in 2017 experienced a larger reduction in wage earnings between 2017 and 2022 (wage information is available only for salaried workers in MLCS-2017). In contrast, wages have fallen by a smaller amount in areas where earnings were low to begin with in 2017. In other country contexts, wage convergence often signifies a reduction in inequality across locations as low wage areas grow at a faster rate than higher income locations. However, in the case of Myanmar, the observed reduction in inequality coincides with significant losses in household wellbeing as all states.

Figure 19: Convergence in wage earnings between 2017 and 2022



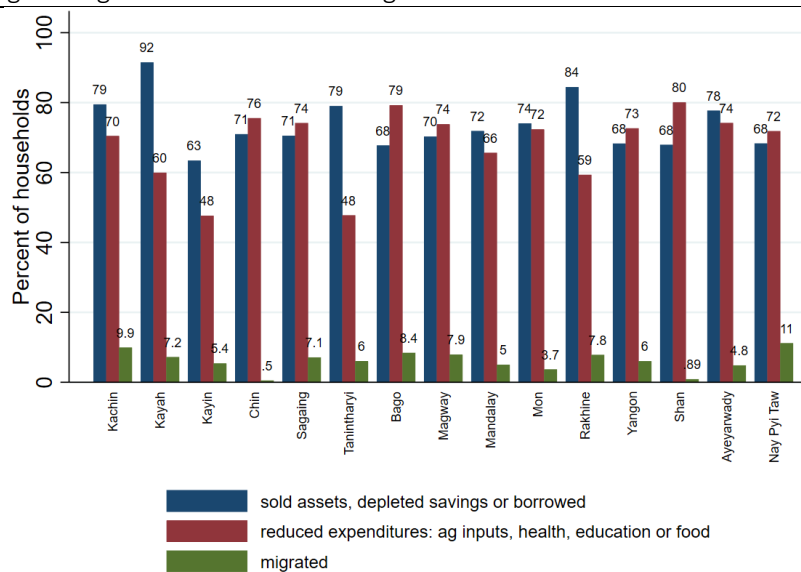
Notes: Sample include wage workers over 15 years of age. The wage data excludes top and bottom 1 percent of all workers due to the presence of outliers.

Given widespread income and wage losses, over 70 percent of households in every state and region had to either sell assets, deplete savings, or borrow to cope with losses.

Households in Kayah have been most affected by income and wages losses. Sixty percent of households in the region reported income losses exceeding 20 percent over the past year (Figure 16) while experiencing the largest fall in average wages since 2017 across all states and regions (Figure 19). To cope with such high losses, over 90 percent of households in Kayah resorted to selling assets, depleting savings or borrowing from non-family members. High level of adversity in Kayah is expected as UNHCR estimates about a third of its population comprises of internally displaced persons⁶. Even in Ayeyarwady, where average wage losses were minimal (Figure 19) and 62 percent of households reported no change or small increase in incomes over the past year (the highest across all states, see Figure 16 panel (c)), 74 percent of households had to reduce expenditures in agricultural inputs, health, education, or food. In states like Kayin, Tanintharyi and Rakhine, households were more likely to reduce expenditures than sell assets, borrow, or deplete savings to cope with earning shocks. Long term migration (measured as absence of a member for more than 6 months from the household unit) as a coping strategy was employed by a limited number of households.

However, data from the World Bank’s community monitoring suggests that a particular form of migration, displacement, is frequent and repeated. Villages in Magway, Sagaing, and Kayin in particular have faced frequent localized displacement, with villagers keeping bags packed with essentials in case they need to flee at a moment’s notice. Displacements were reported to last 1-30 days at a time, with villagers often returning to the village during the day or to the fields but spending the night in the forest. Such frequent and repeated displacement puts tremendous strain on households, leading to negative coping strategies such as reducing food, borrowing, or selling assets. Those that are displaced for political reasons and forced to leave the village permanently often sell their assets to finance travel and renting accommodation in another area.

Figure 20: Coping strategies across states and regions



⁶ UNHCR estimates 95,100 IDPs in Kayah with a total population of approximately 300,000 (UNHCR, 2023)

Notes: Estimates are weighted by sampling weights. Source: MSPS.

Most migration occurred within Myanmar and a limited number of households reported a member that migrated to Thailand and Malaysia. Households that migrated within Myanmar since 2021 were less likely to own assets, experience deeper income losses and were more likely to be working than other households within the same township.

Thirty percent of households that resorted to migration as a coping strategy had a member that relocated to another rural area within Myanmar, while 56 percent of such households had a member migrate to urban regions. International migration as a coping strategy was limited: only 7 and 4.3 percent of households reported a member having relocated to Thailand and Malaysia respectively. MSPS also allows us to identify households that have relocated across townships since 2021. According to UNHCR, 1.499 million people were internally displaced between February 2021 and May 2023, representing 2.6 percent of Myanmar’s population, and adding to the more than 300,000 people internally displaced prior to February 2021 who remain displaced. In comparison, MSPS finds that 4.1 percent of population moved across townships in the past 2 years and 2.5 percent of the population changed townships across state and regional boundaries. The share of migrants in MSPS is higher because it likely includes internally displaced populations registered with UNHCR in addition to other migrant families.

Sinha Roy (2023) identifies considerable differences in migration patterns across states. Up to 4 percent of Mandalay, Mon and Yangon’s population is observed to be migrant households that have moved townships across state/region boundaries. In contrast, states like Kayah and Kayin have limited migrants from other states/regions. Compared to others that reside in the same township that serves as a destination for migrants and have been living in the area for more than 2 years, migrant households from other states/regions are less likely to own assets, experience deeper income losses in the past year, be more likely to be undereducated, more likely to be employed and work in casual sector work (Table 3).

Data from qualitative monitoring found that villagers from Magway, Sagaing, Ayeyawaddy and Rakhine are migrating to Mandalay, Yangon, Shan State, mining areas in Kachin, and fishing areas in Tanintharyi for work. Those migrating internationally are going to Thailand, Malaysia, and India. Yet, there are significant new trends in migration that are important to monitor – family migration from conflict-affected areas; migration of out of school teenagers and youth to safer locations or for education; CDM participants and political activists migrating abroad for safety; an increase in illicit migration and payment of brokers and smugglers; and an increase in underage youth migrating abroad.

Table 3: Characteristics of immigrant households and other families living within the same township

Characteristics	Shares among households that immigrated to the township from another state/region	Shares among households residing in the township for more than 2 years	Difference
Assets:			
Rice cooker	65%	62%	0.03
Refrigerator	34%	34%	-0.001
TV	48%	65%	-0.174***
Wardrobe	42%	63%	-0.212***
Car, motorcycle, scooter	42%	73%	-0.304***

Computer, laptop	91%	88%	0.033
Agricultural land	14%	45%	-0.31***
Urban	54%	28%	0.258***
Household income changes in the past year			
Losses below 20 percent	8%	14%	-0.063***
Losses above 20 percent	53%	32%	0.211***
Increase or no change	39%	53%	-0.149***
Education			
Less than primary	20%	17%	0.031**
Upto primary	27%	35%	-0.073***
Upto middle school	24%	20%	0.044***
Upto high school	17%	19%	-0.016
Upto college or above	11%	10%	0.015
Employed	61%	54%	0.068***

Notes: Estimates are based on sampling weights. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Chapter 3: Micro-determinants of employment and household wellbeing

Key Messages:

- Between 2017 and 2022, township characteristics played a greater role in influencing employment outcomes than individual level conditions.
- Employment levels were considerably lower among townships that experienced high levels of conflict events
- Employment in mining sector has increased in townships that had a pre-existing mine, leading to poorly diversified economic structures. The concentration mineral extraction industry could carry substantial longer-term costs and environmental risks across Myanmar.
- Myanmar experienced a historic rise in poppy cultivation in 2022. Townships that have higher likelihood of poppy cultivation, experienced higher agricultural employment growth, contraction of mining and construction activities, rise in casual work, a fall in self-employment activities, and a significant increase in wage incomes.
- Although Myanmar has experienced a series of internal and external shocks, greater incidence of conflict events at the township level is the strongest correlate of household level adversity among a range of individual and township level characteristics.

Employment outcomes in 2022 were more influenced by townships level characteristics than education or skill profiles of workers.

Employment status and wage earnings are jointly determined by worker characteristics (such as gender, education, years of experience, industry of work, language, etc.) as well as localized factors in the vicinity of where people reside and work. For example, denser areas are often associated with agglomeration related externalities that confer higher wages on workers with similar ages, skills, and experience levels. Decomposing variation of individual level wages in Myanmar into worker and township level factors can help reveal whether locational characteristics, at the levels below state/regions, exert a greater influence on employment outcomes than individual level factors.

Table 4 shows the dispersion in real wages across the country has fallen between 2017 and 2022⁷. This observation is consistent with convergence of wages reported in Figure 19. In 2017, individual level

⁷ That is, the variance of (log) wages in Myanmar dropped from 0.419 to 0.315 between the two years.

characteristics⁸ explained 12.6 percent of the variation in wages, while 14 percent of the differences in wages could be attributed to township level characteristics (Table 4, first row). However, by 2022, the contribution of individual level characteristics increased by 4.1 percentage points to 16.7 percent, but the share of variation in wages that can be explained by township level characteristics has doubled to 28 percent. Thus, wages are increasingly more influenced by locational characteristics of where workers reside in Myanmar, compared to their abilities, skills, education levels and other individual level factors.

Table 4: Decomposition of variation in log wages by individual and location characteristics

	Variance of log wages	Proportion of variation explained by individual level characteristics	Proportion of variation explained by township level characteristics
2017	0.419	12.6%	14.0%
2022	0.316	16.7%	28.0%

Notes: Variance calculations use sampling weights. Outlier wages (below 1st percentile and above 99th percentile) are excluded from 2017 and 2022. Sample includes individuals above 15 years. Source: MLCS for 2017 and MSPS for 2022.

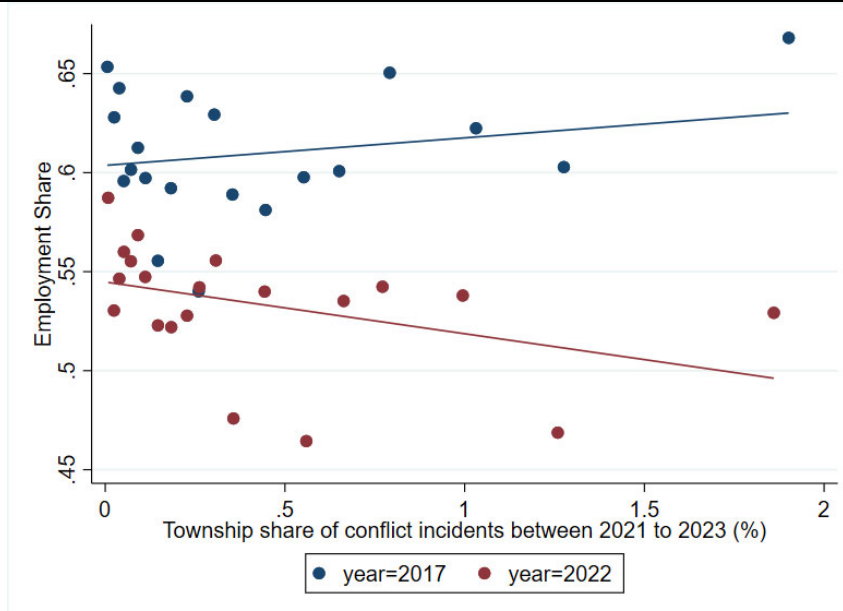
In the following sections, we spotlight three township level factors that bear a strong relationship with employment related indicators: (1) rising exposure to conflict events since the military coup at the township level; (2) proximity of a township to known mines and quarries and (3) a historic rise in opium production in select townships that have higher likelihood of poppy cultivation.

Townships with high incidence of conflict events have fewer employed individuals. These events had large adverse impacts on the employment status of higher educated male workers, between the ages of 25 to 35, and those living in urban areas.

According to data from Armed Conflict Location and Event Data Project (ACLED), there were 42 conflict events per township between 2017 to 2020. Between 2021 and 2023, average incidents per township rose to 68. Conflict events in our study includes battles, explosions, and violence against citizens from the ACLED dataset. To study how these events affected employment, we overlaid ACLED data with MSPS and MLCS surveys at the township level. Specifically, we calculated township level share of conflict events across Myanmar that occurred between 2021 and 2023 and merged it with individual level employment data from MLCS and MSPS surveys. The horizontal axis of Figure 21 shows the township level share of incidents while the vertical axis denotes the average employment rate across townships. The divergence between the blue and red trend lines suggests that townships with the highest concentration of conflict incidents between 2021 and 2023 have experienced the biggest fall in employment since 2017.

⁸ We consider the following worker characteristics for this analysis: female, urban, log-age, log-age-squared, number of children between 0 to 18 in the worker’s household, number of older individuals above 65 years in the household, female headed households, education level of the head of the households, whether the household is employed, dummy variables for below primary, primary, middle school, high school and college educated workers, Buddhist households and dummy variables for agriculture, manufacturing, services and mining or construction.

Figure 21: Township level employment and share of conflict events between 2021 and 2023



Notes: The figure denotes binned scatter plots. Each dot represents mean values of horizontal and vertical indicators at 20 equally sized bins. The fitted lines are calibrated to actual data. 2017 trend line is based on MLCS-2017; 2022 trendline is based on MSPS round 1.

To test this relationship more formally, in Table 5, we regress township level share of conflict incidents on an individual’s employment status. The results show that a one percentage point increase in township share of conflict incidents is associated with an average 2.6 percentage point reduction in employment rate in 2022 (column 1). Male employment rates are more affected by such incidents, falling 4.2 percentage point for a percent increase in township share of conflict incidents (female employment is insignificantly affected by these events). Rising conflict also adversely impacted employment outcomes of urban, more educated workers and those between the ages of 25 to 35 living in the township.

Table 5: Correlation between share of conflict events (2021-2023) at the township level and employment rate

Employment rate in 2022	All	Male	Female	Rural	Urban	Below middle school	Above middle school	Ages: 25 to 35	Ages: 36 to 65
TS level share of conflict	-0.026* (0.015)	-0.042* (0.022)	-0.014 (0.014)	-0.018 (0.020)	-0.031* (0.016)	-0.015 (0.018)	-0.033** (0.015)	-0.047** (0.023)	-0.023 (0.016)
Constant	0.545*** (0.006)	0.684*** (0.009)	0.423*** (0.007)	0.566*** (0.008)	0.529*** (0.008)	0.497*** (0.008)	0.597*** (0.008)	0.689*** (0.011)	0.498*** (0.007)
Observations	27552	12864	14688	11512	16040	14602	12950	6942	20610

Notes: Clustered Standard errors at township level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Employment in mining sector has boomed in townships that had a pre-existing mine, leading to poorly diversified economic structures. The concentration of mineral extraction industry could carry substantial longer-term costs and environmental risks across Myanmar.

World Bank (2022), citing reports of rising extractive sector activities such as mining of jade, gold, and rare earth minerals, highlighted the substantial environmental risks and longer-term costs associated with such work. This section examines the employment effects of rising extractive industries in townships that are most exposed to such activities. The analysis overlays survey data from MLCS and MSPS on historical maps of mines and quarries obtained from Myanmar Information Management Unit (MIMU). These maps identify mining locations using digitized high-resolution imagery from Google Earth and Bing Aerial from 2014-15. The dataset contains a field indicating the certainty with which a location can be classified a mine. Figure 22 illustrates mining locations identified with high certainty; 35 percent of all townships in Myanmar (117 townships in total) are observed to contain a known mine or a quarry location – suggesting that mining takes place in a sizable portion of the country. We regress this township-level indicator, characterizing whether the location has a preexisting mine, on sectoral composition of employment within the township from MLCS 2017 and MSPS 2022 in the next step.

Figure 22: Preexisting mines detected with high certainty in MIMU’s geospatial dataset



Notes: Scatter points represent centroids of mines detected with high certainty in MIMU’s geospatial data

The results are reported in table 6. Insignificant coefficients in the first row of the table mean that in 2017, sectoral employment in townships with a historical mine or quarry was well-diversified across sectors. That is, despite the presence of mines and quarries, local employment was not dominated by just the mining and construction sector in such areas. However, the third row of table 6 shows that in 2022, mining and construction employment share in such townships rose by 1.8 percentage points while agricultural share in employment contracted by 8.6 percentage points in these areas. Rising mining employment share was also accompanied by a 15.8 percentage point increase in retail activities.

The rising concentration of employment in mineral extraction, drawing labor away from agriculture, can expose workers to shocks in the mineral markets, in addition to carrying substantial environmental risks. This can be inferred on the basis of other country contexts where a boom in extractive sectors without proper resource management strategies is associated with rent capture (Asher and Novosad, 2023) and resource curse (Ross, 1999). Given that a sizable share of townships are exposed to such vulnerabilities in the extractives sector, the risk could carry over to Myanmar’s aggregate economy.

Table 6: Sectoral share of employment in townships with known mines and quarries in 2017 and 2022

	(1) Mining and Construction	(2) Agriculture	(3) Manufacturing	(4) Retail
TS with known mines	-0.012 (0.013)	0.048 (0.030)	-0.003 (0.011)	0.003 (0.010)
Year=2022	0.012* (0.006)	-0.054*** (0.012)	-0.011 (0.007)	0.158*** (0.009)
TS with known mines # Year=2022	0.018* (0.010)	-0.086*** (0.024)	0.013 (0.011)	0.022 (0.014)
Gender	-0.111*** (0.005)	-0.051*** (0.007)	0.048*** (0.005)	0.060*** (0.003)
Education below middle school	0.034*** (0.004)	0.284*** (0.011)	-0.015*** (0.005)	-0.040*** (0.005)
Constant	0.221*** (0.010)	0.285*** (0.019)	0.039*** (0.010)	0.040*** (0.008)
District Fixed Effect	Yes	Yes	Yes	Yes
Observations	39930	39930	39930	53865

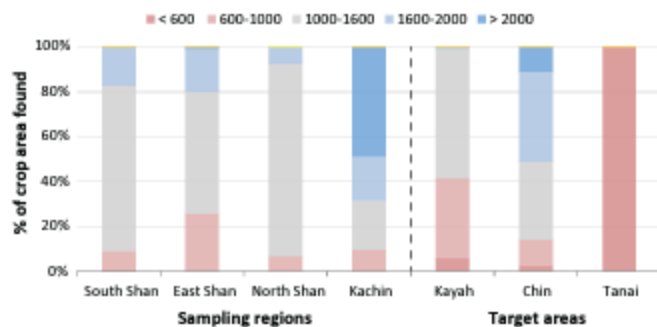
Notes: Clustered Standard errors at township level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Gender and education are included as controls. “TS with known mines” indicates townships that had a mine with high level of certainty in MIMU’s mine geospatial data.

The historic rise in poppy cultivation during 2022 is reflected in households reporting high agricultural employment amongst townships that offer ideal conditions for opium cultivation. Mining and construction activity shrank in these areas even as worker wages increased.

The Myanmar Opium Survey of 2022, conducted by the UN Office on Drugs and Crimes (UNODC), has found that the total area under poppy cultivation in Myanmar has risen by 33 percent between 2021 and 2022 -- reversing a downward trend in cultivation that began in 2014. Similarly, total production and average yield for poppy is estimated to have increased by 100 and 41 percent respectively in the past year. UNODC also found a 70 percent reduction in incidences of eradication and seizures and projects average farm gate prices of opium to have risen by 69 percent during this time. Thus, by all yardsticks, poppy cultivation in Myanmar appears to have experienced a historic boom in 2022.

According to UNODC, cultivation of poppy is concentrated in Shan, Kachin, Kayah and Chin regions of Myanmar. Within these states, townships at altitudes above 1000 meters above sea level offer ideal conditions for crop cultivation (Figure 23). In comparison, the likelihood of poppy cultivation among townships that are below 600 meters is quite low. This variation altitude is likely due to changes in climate conditions that support propagation of the poppy crop. Studies also suggest that higher altitude locations in Southeast Asian countries offer good soil quality and acidity levels to the poppy plant through optimal exposure to sunlight and rainwater drainage, which is critical for the plant’s growth (US-DOJ, 1992).

Figure 23: Townships with altitude levels that offer ideal conditions for plant propagation



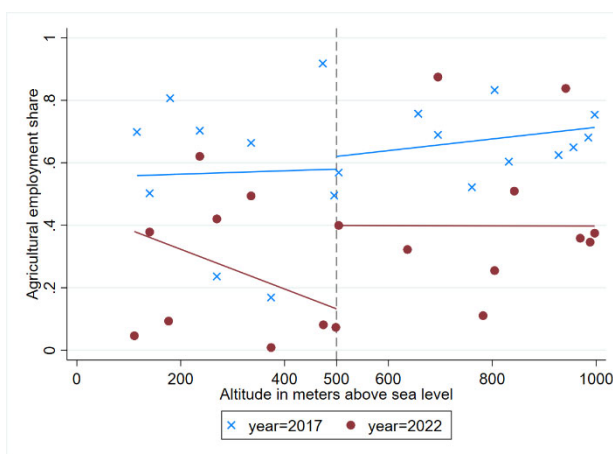
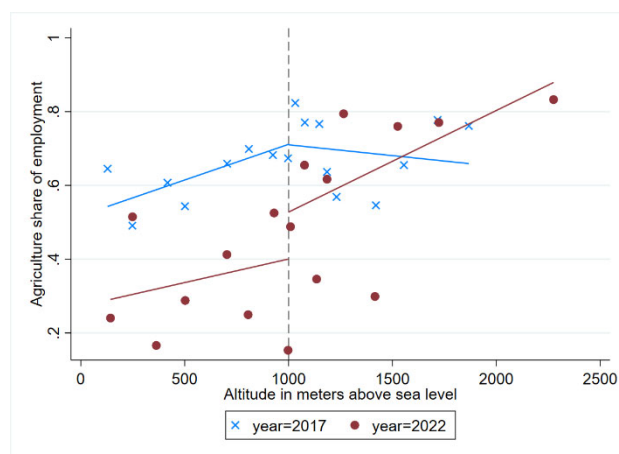
Notes: Myanmar Opium Survey, 2022 by UNODC

The historic rise in poppy cultivation during 2022 is confirmed in MSPS, by examining if townships at altitude levels exceeding 1000 meters, located in the four states that offer ideal conditions for plant propagation, have reported higher share of agricultural activities than other locations within the same states. The blue trend line in figure 24, panel (a) shows that in 2017, average agricultural employment share was comparable across townships that are above and below the 1000-meter altitude threshold. However, coinciding with the historical rise in poppy cultivation of 2022, the employment share in agriculture among townships above the 1000-meter altitude threshold continuously rises at higher altitudes (as indicated by the upward trending maroon line). Further, panel (b) shows that a similar relationship between agriculture and altitude is not observed around the 500-meter threshold, neither in 2017 nor 2022. Therefore, in panel (a) we confirm UNODC’s finding of historic rise in poppy cultivation during 2022 amongst townships at altitudes exceeding 1000 meters and in panel (b) we find support for the observation that townships at lower altitude levels may be at less likely to grow such crops.

Figure 24: Changes in agricultural and non-agricultural employment share in townships that have high likelihood of poppy cultivation

a. Share of agricultural employment (at 1000 meter threshold)

b. Share of agricultural employment (at 500 meter threshold)



Notes: Samples restricted to four states that offer ideal conditions for plant propagation: Shan, Kayah, Kayin and Chin. The figure denotes binned scatter plots. Each dot represents mean values of horizontal and vertical indicators at 20 equally sized bins. The fitted lines are calibrated to actual data. 2017 trend line is based on MLCS-2017; 2022 trendline is based on MSPS round 1. Trend lines are fitted using weighted regressions.

We use these insights to study how incidence of crop cultivation at the township level could impact employment outcomes. Table 7 contains the main results. Column (1) of the table shows agricultural share of employment in 2022 is 22.2 percentage points higher than 2017 in townships above 1000 m altitude. Correspondingly, the share of mining and construction employment in the same areas has fallen by 13.3 percentage points during the past half decade. Similarly, self-employment is observed to have fallen by 26.1 percent in townships that have higher likelihood of poppy cultivation while casual work in these areas have risen by 27.4 percentage points between 2017 and 2022. Differences in manufacturing, services and private sector employment are insignificant between townships. Finally, average agricultural wage earnings in townships with higher likelihood of poppy cultivation have risen considerably between the two years.

Qualitative data from World Bank’s community surveys support these findings, while providing additional insights into agriculture sector dynamics in these areas (see Box 1). Households in Chin State reported that employment in the poppy fields mostly involves casual employment to carry out activities such as clearing fields, planting, and harvesting. These workers reported working for 1-2 weeks per season and receiving three times the usual daily wage for agricultural workers for a day of work clearing land for poppy fields.

Table 7: Risk of crop cultivation at the township level and its influence on employment outcomes

	(1)	(2)	(3)	(4)	(5)
	Agriculture employment share	Mining and construction employment share	Self-employment share	Share of casual workers	Log earnings among agriculture workers
Township altitude above 1000 m	0.060 (0.062)	-0.011 (0.010)	0.020 (0.023)	-0.007 (0.029)	-0.232** (0.093)
Year=2022	-0.293*** (0.065)	0.147*** (0.051)	0.239*** (0.076)	-0.198** (0.076)	0.316 (0.530)
TS altitude above 1000 m x Year=2022	0.222** (0.099)	-0.133** (0.057)	-0.261*** (0.094)	0.274** (0.109)	3.544** (1.531)
Constant	0.632*** (0.051)	0.042*** (0.009)	0.299*** (0.020)	0.574*** (0.018)	10.425*** (0.062)
Observations	10153	19940	4577	4577	788

Notes: Clustered Standard errors at township level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Samples restricted to four states at high risk: Shan, Kayah, Kayin and Chin. Source: 2017 data from MLCS-2017 and 2022 data from MSPS 2022. Estimates based on weighted regressions. Earnings data is available only for wage workers.

Box 1: A Deeper dive into agriculture

Trends in agricultural employment from MSPS can be summarized as follows. The share of workers engaged in agriculture has fallen by 6.6 percentage points in the past half decade with larger reductions among female workers than men. Workers with higher levels of education and more years of experience were more likely to work in agriculture in 2022 than in 2017. This suggests that highly qualified labor in Myanmar is increasingly being misallocated to a low-productivity sector. A quarter of all agricultural workers had a regular salaried employment in 2017. By 2022, the share of regular salaried workers engaged in agriculture fell by 15 percentage points. Thus, there has been a considerable rise in informal employment in the sector over the past half-decade. At the same time, regular salaried workers in agriculture that managed to keep their formal positions, were able to better protect their wage levels (in real terms) as regular wage earners in the sector experienced the smallest reductions in wages; some at top of the earnings distribution even reported a small rise in real wages.

States and regions along the north and eastern borders experienced a decline in agricultural employment between 2017 and 2022 but high-altitude townships in these areas reported a rise in agricultural activity. A potential reason for this difference could be rising incidence of poppy cultivation at higher altitudes. Since 2022 was a historical year of poppy cultivation in Myanmar, high-altitude townships along the northern and eastern border that were most likely to engage in poppy cultivation, experienced an increase in agricultural activity. The activity was highly lucrative as average wages in such townships were considerably higher than others.

Qualitative evidence from community welfare surveys show that additional dynamics are also at play. They suggest that increases in the costs of agricultural inputs (including fertilizers and petroleum) and inflation more generally have led to farmers in some areas to reduce farmed areas. Others have switched from high-input crops like paddy to lower input crops such as beans and pulses; used family labor (including out-of-school children) in agriculture to save on labor costs; or in some cases left farming altogether (reflecting drop in share of agriculture work in MSPS in the past half-decade). These coping strategies reduced demand for casual agricultural labor. Pests in Sagaing and floods in Chin State led to crop loss and therefore less demand for casual labor during the latest harvest season.

Qualitative interviews also revealed that restrictions on travel and frequent military checkpoints, particularly in conflict areas, reduced mobility of casual agricultural laborers to areas with higher labor demand. The same mobility restrictions have impacted the agriculture marketing network. For example, livestock owners in Magway cited reduced market price of cows due to border market closures, hindering their sales abroad.

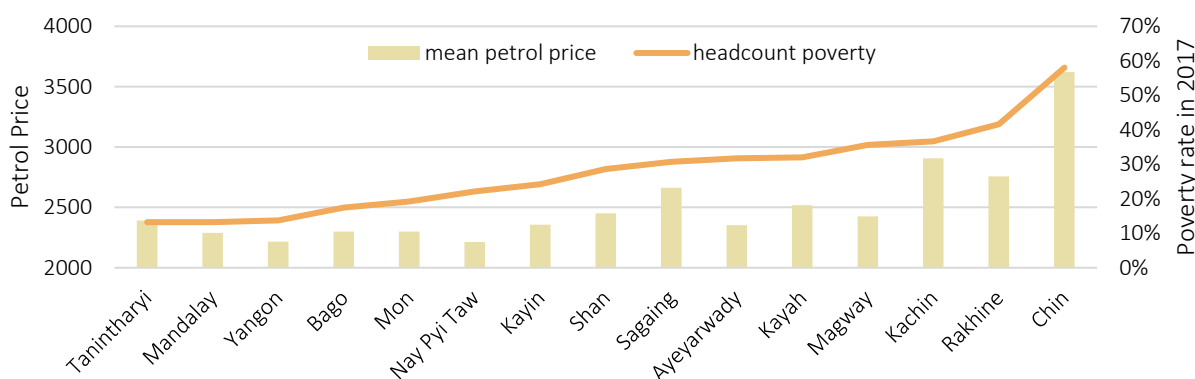
Qualitative data also shows that returned students, educated youth, and civil servants participating in the civil disobedience movement (CDM) have increasingly been involved in agriculture. Their work in the sector either as subsistence farmers or as casual laborers, echoes findings from the MSPS on the increased share of educated workers in agriculture. CDM participants in particular have used farming as a coping strategy for their loss of civil service salary and their limited freedom of movement due to their identity cards designating their occupation as 'government staff'.

Displacement in rural areas, particularly in Sagaing, Magway, and Kayin (the qualitative study did not include Kayah) has impacted not only employment in agriculture, but also farmers' agriculture marketing strategies. Farmers in Sagaing reported that they were harvesting and immediately selling crops even if at low prices, as they could not wait for higher prices 1-2 months after harvest for fear of future attacks destroying stored crops or forced displacement causing farmers to abandon their harvest.

Myanmar’s economy has experienced two major shocks since the pandemic: high energy prices and conflict since 2021. While both shocks have adversely impacted household wellbeing in Myanmar, conflict incidents in the aftermath of the coup have the strongest association with households reporting deep income losses.

Although petrol prices are high across Myanmar, there is considerable variation at the subnational levels. Petrol prices from MSPS are observed to be higher in states/regions with higher levels of headcount poverty (Figure 25) likely because of their remoteness (locations with less market access have higher average prices and higher incidence of poverty). For instance, households in Chin (headcount poverty rate of 58 percent – highest among all states) reported petrol prices to be approximately 3700 kyats per liter – about 50 percent more than the office price of petrol in Yangon according to the central statistics office⁹. The concentration of high petrol prices amongst remote states, which are also the poorest, indicates that the cost-of-living crisis has likely had a disproportionate impact among poorest households in Myanmar.

Figure 25: Average petrol prices are highest in the poorest states and regions



In the concluding section, we examine if deep income losses among households are more strongly influenced by higher energy prices at the township level, higher incidence of conflict events in an area or other household level characteristics¹⁰. Table 8 reports these main results. Holding all other factors constant¹¹, urban households are 1.8 percentage points more likely to report households’ income losses exceeding 20 percent. The probability of income losses increases by 3.3 to 3.4 percentage points amongst households that have more undereducated members. Households that have more older members (above 65 years) are able to reduce the probability of experiencing deep income losses by about 2.1 percentage points. Gender of the household head, their education level, their employment status, the size of the household and the number of children in the household are not significantly correlated with households experiencing more than 20 percent income loss in the past year.

⁹ https://www.csostat.gov.mm/Statistics/MarketPrice#rice_table accessed on 26 April 2023

¹⁰ All individual and township characteristics are standardized with a mean of zero and 1 standard deviation. The coefficients in table can therefore be interpreted as the impact of 1 standard deviation change in an indicator on the probability of households reporting more than 20 percent income losses over the past year.

¹¹ The inclusion of district fixed effects means that comparisons are being made across units (households, individuals or townships) within the same district. For instance, the estimate on the conflict variable shows the effect of such events on household income losses across townships that are located in the same district but had a differential incidence of such events.

On the other hand, township level characteristics have a stronger influence on household wellbeing than individual level factors (consistent with the results reported in Table 4 above). Increases in the share of daily power cuts and high average petrol prices within the township increases the likelihood of households experiencing deep income losses by 4.4 and 3.4 percentage points respectively. However, the largest impact on household wellbeing across a range of individual and location characteristics is township’s exposure to conflict events. A one standard deviation increase in this variable increases the probability of households experiencing deep income losses by 4.7 percent – the highest among all other factors. Thus, exposure to such events in the township is the strongest predictor of adverse shocks of household wellbeing despite Myanmar facing a multitude of external and internal shocks.

Table 8: Share of households reporting income losses of more than 20 percent in the past year

Share of female members	0.001 (0.010)
Urban household	0.018** (0.009)
Share of members with less than primary education	0.033*** (0.010)
Share of members with up to primary education	0.034*** (0.013)
Share of members with up to middle school education	0.015 (0.011)
Share of members with up to high school education	0.026*** (0.010)
Share of members with college and above education	-0.034*** (0.009)
Share of members between ages 0 to 18	-0.009 (0.008)
Share of members over 65 years	-0.021** (0.008)
Female headed household	-0.007 (0.011)
Household head educated over high school	0.011 (0.012)
Household head employed	-0.012 (0.011)
Buddhist household	-0.006 (0.009)
Household size	0.006 (0.008)
Share of power cuts over a 24-hour period	0.044*** (0.009)
Petrol prices	0.034*** (0.012)
Township with a known mine or quarry	-0.016 (0.012)
Share of conflicts in the township	0.047*** (0.014)
Constant	0.295*** (0.006)
District fixed effect	Yes
Observations	4652

Notes: Clustered Standard errors at township level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. “Townships with known mines” indicates townships that had a mine with high level of certainty in MIMU’s mine geospatial data. All variables are standardized with mean 0 and standard deviation of 1.

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