

June 2019

# MYANMAR LIVING CONDITIONS SURVEY 2017

REPORT  
03

POVERTY REPORT



Empowered lives.  
Resilient nations.



Map 1: Agro-zones and states/regions of Myanmar



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POVERTY REPORT

This report has been possible because of the generous financial support of the governments of Australia, Denmark, Finland, Ireland, Republic of Korea, Sweden and the United Kingdom.







**Ministry of Planning and Finance**

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## Foreword

### from Union Minister of Planning and Finance

The Ministry of Planning and Finance (MOPF) is one of the ministries in the Government of Myanmar that engages in making policies, national planning and budget allocations for the development of the country. In making policies for economic development, the first and most vital step is to understand the economic and living conditions of our people. Since the development policy of our Government is focused on achieving inclusive and sustainable development goals using a people-centred approach, it is important for policymakers to take the real conditions of people across the country into consideration. Moreover, it is also important to have insights into the employment conditions of our people and how they allocate spending on food, education, health care, housing and other basic needs. Hence, obtaining reliable and accurate statistics is critical for an evidence-based policymaking process.

For the development of the entire Union, socio-economic progress should be comprehensive, and growth should be balanced across the country. Thus, the Government should design and implement policies with the goal of achieving balanced socio-economic development across Myanmar.

In addition to providing an overall picture of the country as a whole, the 2017 Myanmar Living Conditions Survey (MLCS) presents statistics at the subnational level, namely, the state/region level. Insights from subnational analysis can inform the different development needs of individual states and regions. Moreover, both income and other (non-income) poverty-related indicators are presented in this survey, which will allow consideration of the socio-economic conditions of our people during the policymaking process and regional planning, as well as in monitoring and evaluation.

I would like to give special thanks to the Central Statistical Organization (CSO) for its leading role in the MLCS. I also would like to thank our development partners, namely, the World Bank and the United Nations Development Programme (UNDP), for the technical and financial assistance they provided to conduct this survey and analysis. Likewise, I also extend my sincere thanks to respective government departments for their role in the consultation process. I do believe that provisions of this Poverty Report will be useful in making development policies for our country. I hope this report will be useful and beneficial not only to government departments but also to those using statistics on Myanmar.

To conclude, I urge all to keep collaborating for the development of the statistics sector in Myanmar.

His Excellency U Soe Win  
Union Minister  
Ministry of Planning and Finance



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## Foreword

The Myanmar Living Conditions Survey (MLCS) is a comprehensive assessment of the well-being of people in Myanmar. It provides reliable, accurate and up-to-date data that can be used to inform policies for the future development of the country, establish the baseline of Myanmar Sustainable Development Plan and monitor the Sustainable Development Goals within the context of the 2030 Agenda. This Poverty Report is the second in a series of analytical reports drawing from the MLCS that are produced jointly by the Central Statistical Organization (CSO), World Bank and United Nations Development Programme (UNDP). The Key Indicators Report, launched in 2018, provides a snapshot of key non-monetary indicators of living standards in Myanmar. This report provides an update and a basic diagnostic of poverty in Myanmar.

This report shows substantial improvements over time in consumption-based welfare in Myanmar. Between 2005 and 2017, the share of the population that is considered poor declined by almost 50 percent. However, the report demonstrates that significant spatial differences in welfare exist, with poverty becoming increasingly concentrated in rural areas and some states and regions lagging behind. Compared with regions such as Tanintharyi, Mandalay and Yangon, poverty is four times as prevalent in Chin and three times as prevalent in Rakhine. Moreover, many people remain vulnerable and at risk of falling into poverty, particularly in the face of a negative shock. Closing geographical gaps in welfare will be vital for promoting more inclusive and sustainable growth in Myanmar.

The MLCS followed international technical standards in core areas, from questionnaire design to report writing. The questionnaire was designed through extensive consultation and piloting and benefited from the knowledge of a wide spectrum of actors from government, research institutes, academia and international organizations. The survey used an updated sample frame, benefiting from the 2014 Myanmar Population and Housing Census. And the survey improves our understanding of seasonality, since fieldwork was spread across the calendar year – the first exercise of this kind in Myanmar. Finally, the survey used a decentralized data entry system to support more reliable data collection.

We are grateful to U San Myint, Director General of the CSO, for his strong leadership in the process of finalizing this report. We would also like to thank the broader CSO team for successfully managing the technical, administrative, procurement and financial aspects of the survey. We would furthermore like to thank the government representatives, researchers and representatives from non-governmental and international development organizations who have supported the survey through continuous inputs at data-user workshops. The preparation of the report was generously supported by the governments of Australia, Denmark, Finland, Ireland, Republic of Korea, Sweden, and the United Kingdom.

We are pleased to launch this Poverty Report at a time when the Government is seeking such evidence to inform the annual budgeting process and the implementation of the Myanmar Sustainable Development Plan. We hope that the information in this report will assist policymakers in formulating policies, programmes and plans to support a more peaceful, inclusive and prosperous Myanmar.

A handwritten signature in blue ink, appearing to read 'P. Batchelor'.

Peter Batchelor  
Resident Representative  
United Nations Development Programme  
Myanmar

A handwritten signature in blue ink, appearing to read 'Ellen Goldstein'.

Ellen Goldstein  
Country Director for Myanmar, Cambodia and  
Lao PDR  
World Bank



## Acknowledgements

The 2017 Myanmar Living Conditions Survey (MLCS) is a large-scale multi-topic living conditions survey implemented by the Central Statistical Organization (CSO) of the Ministry of Planning and Finance (MOPF) and supported by the World Bank and the United Nations Development Programme (UNDP). The MLCS follows from various household surveys that have previously been conducted, in particular the Integrated Household Living Conditions Assessment (IHLCA, 2005 and 2010), the Household Income and Expenditure Survey (between 1989 and 2012) and the Myanmar Poverty and Living Conditions Survey (MPLCS, 2015). The MLCS brings the objectives of these previous household surveys together into a single survey and provides a comprehensive source of living conditions information.

The survey aims to provide reliable, accurate and up-to-date data for the country. The main statistical objectives of the survey are to produce estimates of poverty and living conditions, to provide core data inputs into the System of National Accounts and the Consumer Price Index (CPI) and to support monitoring of the Sustainable Development Goals.

The successful completion of the 2017 MLCS was made possible through the contributions of a range of actors at various stages across states and regions during the process. The survey has undergone an extensive consultation process and has benefited from multiple rounds of comments across the National Statistics System of the Government of Myanmar and its development partners. We would like to thank all the government representatives, researchers and representatives from non-governmental and international development organizations who have supported this effort, through their comments at multiple data-user workshops at the conception, design and analysis stages. Especially, I appreciated the assistance of the Department of Population of the Ministry of Labour, Immigration and Population (MOLIP), which provided the sampling frame and household lists and maps of the selected enumeration areas for the survey. Furthermore, the support and collaboration given by the national, state and regional administrations, as well as local leaders, played a large role in the successful implementation of the survey.

I wish to express my deep appreciation to the leaders and members of the UNDP and World Bank technical teams. Similarly, I would also like to acknowledge the Survey Section of the CSO for successfully managing the technical, administrative and logistical aspects of the survey, the resident adviser and trainers for their support in developing, training and monitoring the field work, the more than 140 supervisors, enumerators, listers and data processing staff for their tireless work throughout the whole year, the financial management team for their important work, the CSO regional coordinators and, in particular, the survey respondents.

This report provides an update of poverty estimates for Myanmar using the 2017 MLCS. Further socio-economic reports will follow with more in-depth analysis of living conditions in Myanmar. I hope that the information in this report will assist policymakers and programme managers in policy formulation and monitoring and designing programmes and strategies in Myanmar.

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# Contents

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	<b>Foreword</b>	<b>i</b>
	<b>Acknowledgements</b>	<b>iii</b>
	<b>Acronyms and abbreviations</b>	<b>vii</b>
	<b>Executive summary</b>	<b>viii</b>
	<b>Team members contributing to the report</b>	<b>xiii</b>
<b>01</b>	<b>Introduction</b>	<b>1</b>
	1.1 Objective of the report	2
	1.2 Data used in the report	2
	1.3 Overview of the report	3
<b>02</b>	<b>Poverty in 2017 and trends in welfare</b>	<b>5</b>
	2.1 Poverty in 2017	6
	2.2 Poverty trends from 2005 to 2017	13
	2.3 Inequality	17
<b>03</b>	<b>Poverty profile in 2017</b>	<b>21</b>
	3.1 Demographic characteristics	22
	3.2 Education and employment	24
	3.3 Asset ownership	27
	3.4 Access to services	28
	<b>References</b>	<b>31</b>
	<b>Annexes</b>	<b>33</b>
	Annex 1. Computing the welfare aggregate and updating the poverty line	34
	Welfare aggregate	34
	Poverty lines	36
	Poverty measures	37
	Inequality measures	38
	Annex 2. Statistical appendix	40

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# Tables

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Table 2.1:	National poverty line and median expenditures in 2017 (kyat)	6
Table 2.2:	Poverty measures, number of poor, and share of poor, 2017	8
Table 2.3:	Measures of inequality by residential area, 2017	17
Table 3.1:	Demographic statistics by poverty status, welfare quintile and residential area, 2017	23
Table 3.2:	Household asset ownership by area and poverty status, 2017	27
Table A1.1:	Adult equivalence scales	36
Table A1.2:	Poverty lines and median expenditures in 2017 (in 2017 quarter 1 kyat)	37
Table A2.1:	Poverty profile in 2017	41

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# Boxes

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Box 2.1:	Income is high and economic opportunities are increasing in Tanintharyi Region	9
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# Figures

---

Figure 2.1:	Per adult equivalent daily consumption, 2017 (kyat)	7
Figure 2.2:	Poverty headcount in 2017 (%)	7
Figure 2.3:	Correlation between food share and poverty headcount among states/regions, 2017	7
Figure 2.4:	Annual current GDP per capita by state/region, 2017 (`000 kyat)	9
Figure 2.5:	Poverty headcount, contribution to poverty and density of poverty by state/region, 2017	10
Figure 2.6:	Poverty gap and squared poverty gap by state/region, 2017	11
Figure 2.7:	The poor, non-poor insecure and non-poor secure, 2017	12
Figure 2.8:	Share of poor, non-poor insecure and non-poor secure, 2017	13
Figure 2.9:	Trend in median daily per adult equivalent expenditures – Union level (in 2017 quarter 1 Kyat)	14
Figure 2.10:	Trend in poverty headcount – Union level	14
Figure 2.11:	GDP per capita annual growth, Myanmar vs other ASEAN countries, 2005–2017	14
Figure 2.12:	Trend in poverty depth and severity – Union level	15
Figure 2.13:	Trend in poverty headcount by residential area	15
Figure 2.14:	Share of poor by residential area, 2005 to 2017	16
Figure 2.15:	Share of poor, non-poor insecure and non-poor secure in total population, 2005 to 2017	16
Figure 2.16:	Daily per adult equivalent expenditures by state/region, 2017: top 10 percent average value divided by bottom 10 percent average value (d10/d1)	18
Figure 3.1:	Poverty headcount and share of total poor by individual age and gender, 2017	23
Figure 3.2:	Poverty headcount by education of the household head and occupational sector of household members, 2017	25
Figure 3.3:	Distribution of the population by occupational sector of household members and welfare quintile, 2017	25
Figure 3.4:	Distribution of workers by education and sector of occupation, 2017	26
Figure 3.5:	Household asset ownership by poverty status, 2017	28
Figure 3.6:	Access to services by poverty status, 2017	29
Figure A2.1:	Poverty density as a function of poverty headcount, 2017	40

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# Acronyms and abbreviations

<b>CSO</b>	Central Statistical Organization
<b>CPI</b>	Consumer Price Index
<b>EA</b>	Enumeration Area
<b>GDP</b>	Gross Domestic Product
<b>MLCS</b>	Myanmar Living Conditions Survey (2017)
<b>MOPF</b>	Ministry of Planning and Finance
<b>MOLIP</b>	Ministry of Labour, Immigration and Population
<b>MPLCS</b>	Myanmar Poverty and Living Conditions Survey (2015)
<b>UNDP</b>	United Nations Development Programme

# Executive Summary

The 2017 Myanmar Living Conditions Survey (MLCS) was implemented by the Central Statistical Organization (CSO) in the Ministry of Planning and Finance (MOPF), with financial and technical support from the World Bank and the United Nations Development Programme (UNDP). The MLCS was conducted over a 12-month period from December 2016 to December 2017. It covered 13,730 households sampled countrywide. The MLCS had the following objectives: (i) provide updated estimates of poverty and living conditions at the national, urban/rural and state and region levels; (ii) inform national data needs and selected Sustainable Development Goal targets; (iii) construct consumption weights for the national and regional CPI baskets; and (iv) estimate private consumption expenditure for the System of National Accounts.

This Poverty Report is the second in a series of three analytical reports: (i) Key Indicators Report; (ii) Poverty Report; and (iii) Socio-economic Report. It provides a basic diagnostic of poverty. The forthcoming and more detailed Socio-economic Report will feature an in-depth analysis of living conditions in Myanmar.

## A substantial reduction of poverty over the last decade

**Between 2005 and 2017, the share of the population living in poverty declined substantially.** The proportion of people living below the national poverty line declined from 48.2 percent in 2005 to 24.8 percent in 2017.<sup>1</sup> Despite population growth, there was a decline in the number of poor people from 18.7 million in 2005 to 11.8 million in 2017. Strong poverty reduction over this period is reflective of Myanmar's robust economic

<sup>1</sup> These figures are based on IHCLA (Integrated Household Living Conditions Assessment – IHCLA-I, 2005 and IHCLA-II, 2010) and MLCS estimations. These surveys only covered the conventional population; more precisely, the universe of these surveys does not include people living in hotels/motels/guesthouses, military camps, police camps, orphanages/homes for the aged, religious centres, boarding schools/colleges/universities, correctional facilities/prisons, hospitals, camps/hostels for workers, and homeless/other collective quarters.

growth: between 2005 and 2017, Myanmar's annual growth rate in gross domestic product (GDP) per capita was 7.8 percent – the highest among Southeast Asian countries (World Bank, 2019). Improvement was also substantial on non-monetary dimensions of well-being (CSO, UNDP and World Bank, 2018a). Changes in the poverty gap and squared poverty gap<sup>2</sup> follow similar patterns to those observed for the poverty headcount.

**Poverty has a strong geographic dimension in Myanmar.** The incidence of poverty is highest in Chin State, where close to six out of 10 persons (58 percent) are poor. With a poverty headcount of 41.6 percent, Rakhine State has the second highest poverty incidence. At the other end of the distribution, three Regions – Tanintharyi, Mandalay and Yangon – have the lowest poverty headcounts of 13.2, 13.2 and 13.7 percent respectively. The differences among these three are not statistically significant.

**There are significant differences in the number of poor inhabitants by state/region.** This is explained primarily by differences in population size, but also state/region-specific poverty headcounts. With about 1.8 million poor people, Ayeyarwady Region has the highest number of poor inhabitants, followed closely by Shan State and Sagaing Region. Despite having a relatively high poverty rate, Kayah State, with 91,000 poor people, has by far the lowest number of poor people among all states/regions.

<sup>2</sup> The poverty gap, which captures the depth of poverty, is the mean distance separating the population from the poverty line, with the non-poor being given a distance of zero. The squared poverty gap takes the square of that distance into account. When using the squared poverty gap, the poverty gap is weighted by itself so as to give more weight to the very poor. It is important to use the poverty gap and the squared poverty gap in addition to the headcount for evaluation purposes, since these measures capture different aspects of poverty.

## Despite strong performance on poverty reduction, vulnerability remains an issue

**Much of the population remains vulnerable to falling into poverty, particularly in the face of an unanticipated negative shock.** Although classified as non-poor, many people may have consumption levels very close to the poverty line, which makes them vulnerable to falling into poverty. Between 2005 and 2017, there was overall upwards mobility, from poor to non-poor insecure (i.e. vulnerable) and from non-poor insecure to non-poor secure.<sup>3</sup> As poverty declined, both the non-poor insecure and non-poor secure groups expanded, with the proportion of non-poor secure growing slightly faster than that of non-poor insecure/vulnerable. In 2005, 24.0 percent of the population was classified as non-poor secure; this increased to 42.3 percent in 2017.

**The poor and vulnerable are more likely to be affected by negative shocks.** The most commonly experienced shock is high prices for food (12.5 percent of households report being affected by this), followed by serious illnesses/injuries, low prices for agricultural output, floods, and very heavy rain/hail. Overall, the incidence of negative shocks is higher for those living in rural areas. Close to half (46 percent) of the rural population experienced a negative shock in the last 12 months, compared with 32 percent of those living in urban areas. At the agro-ecological zone (agro-zone) level,<sup>4</sup> occurrence of negative shocks is highest (58 percent) in the Delta zone, followed by the Dry zone (42 percent). At the opposite end of the spectrum, those living in the Coastal zone seem to be less exposed, with only one in five people (21 percent) affected.

3 The non-poor insecure are those with per adult equivalent daily expenditures below 1.5 times the poverty line (i.e. between 1,590 and 2,385 kyat); the non-poor secure are those with per adult equivalent daily expenditures higher than 1.5 times the poverty line (i.e. higher than 2,385 kyat).

4 There are four agro-zones; Hills and Mountains, Delta, Dry and Coastal. The Hills and Mountains zone includes Kachin, Kayah, Kayin, Chin and Shan. The Delta zone includes Ayeyarwady, Bago, Mon and Yangon. The Dry zone includes Magway, Mandalay, Nay Pyi Taw and Sagaing. The Coastal zone includes Rakhine and Tanintharyi. We separate Yangon from the Delta zone in this report for the purpose of comparison.

## Poverty is associated with rural areas and employment in agriculture

**Poverty is more prevalent in rural areas.** The poverty headcount is significantly higher in rural areas of Myanmar (30.2 percent) than in urban areas (11.3 percent). The number of poor people is also 6.7 times higher in rural areas than urban areas, and those residing in rural areas make up an overwhelming majority (87 percent) of the nation's poor.

**Households that own land or have diversified or moved out of agricultural work have higher consumption-based welfare.** Agricultural occupations are associated with low earnings and poverty, and households that diversified or altogether moved out of agricultural work had better living conditions. Among people working in the agricultural sector, those who own a plot of land have higher welfare than those who do not. The poverty headcount is highest in landless households whose members work exclusively in agriculture (45.8 percent), followed by landless households whose members are engaged in both agricultural and non-agricultural activities (33.4 percent). On the other hand, poverty is lowest in households whose members work exclusively in sectors other than agriculture (13.2 percent).

## Based on their socio-demographic characteristics, some population groups are lagging behind, including the disabled and illiterate or those with little education

**The poor are more likely to live in larger households with more children and/or a head who is disabled or has no or little education.** On average, poor households have almost two times more children than non-poor households, resulting in a higher child dependency ratio:<sup>5</sup> 67.6 percent for poor households compared with 46.6 percent for non-poor households. Approximately 6 percent of household heads are disabled. At the Union level, the poverty headcount among the households headed by a disabled person is higher (27.4 percent) than among other households (24.6 percent). By agro-zone, the difference in the poverty headcount is highest in the Coastal zone, where the poverty rate in households headed by a disabled person is 19 percentage points higher than that of households with a non-disabled head. Members of households whose head completed no schooling, some primary schooling (without graduation) or monastic education are twice as likely to be poor as members of households with more educated heads.

**There is very little difference in consumption-based poverty between households headed by men and those headed by women.** At the Union level as well as the state/region level, there is little difference in the poverty rate between households headed by a female and households headed by a male. Although there are emerging patterns by location, significant differences are not yet apparent by residential area.

<sup>5</sup> The child dependency ratio is the ratio of dependents younger than 15 years old to the population of working age (aged 15–64).



## Team members contributing to the report

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# 01.

## INTRODUCTION

## 1.1 Objective of the report

This report is the second in a series of analytical products stemming from the 2017 Myanmar Living Conditions Survey (MLCS).<sup>6</sup> The objective of this report is to provide welfare estimates based on the 2017 MLCS and to discuss how welfare in Myanmar has changed over time. The analysis provides national, urban/rural trends from 2005 to 2017, and state/region poverty levels in 2017.<sup>7</sup>

The report provides a basic diagnostic of poverty with a focus on:

- (i) **Consumption patterns:** providing a snapshot of consumption habits, with a focus on broad food and non-food categories;
- (ii) **Poverty levels in 2017:** providing a profile of consumption-based poverty in 2017 by location (i.e. urban/rural and state/region). To ensure robust comparability over time, the poverty estimates are derived using the same methodology as that used in MOPF and the World Bank (2017a);
- (iii) **Poverty trends over time:** assessing the dynamics of consumption-based poverty using available surveys conducted in 2005, 2010, 2015 and 2017;
- (iv) **Inequality analysis:** examining levels of inequality. The analysis focuses on key inequality indices such as the Gini coefficient, Theil index and the consumption distribution ratios;
- (v) **Poverty profile in 2017:** providing a profile of the poor in terms of a number of socio-demographic characteristics.

This Poverty Report does not attempt to draw an in-depth socio-economic analysis of welfare in Myanmar, which will instead be the focus of the forthcoming Socio-economic Report.

## 1.2 Data used in the report

This section provides a short introduction to the 2017 MLCS. A more detailed description of the methodology can be found in the Annex of the MLCS 2017 Key Indicators Report (CSO, UNDP and World Bank, 2018a) and MLCS 2017 Technical Report (CSO, UNDP and World Bank, 2018b).

**The MLCS is a comprehensive survey on how people in Myanmar live.** It was carried out by the CSO in the MOPF, with technical and financial support from UNDP and the World Bank. It collects data on the occupations of people, how much income they earn and how they use this to meet the food, housing, health, education and other needs of their families. It also provides a rich socio-demographic profile of the population. The data collected can be used to formulate responsive policies for the future development of the country.

**The MLCS was designed to achieve the following objectives:**

- To provide updated estimates of poverty and living conditions at the national, urban/rural and state/region levels;
- To inform national data needs and selected Sustainable Development Goal targets;
- To construct consumption weights for the national and regional CPI baskets;
- To estimate private consumption expenditure for the System of National Accounts.

<sup>6</sup> The 2017 MLCS is the first in what will be a series of MLCS surveys.

<sup>7</sup> For poverty trend analysis, this report uses three previous household surveys conducted in Myanmar: IHLCA-I (2005) and IHLCA-II (2010); and MPLCS (2015). Due to differences in survey design from IHLCA to MPLCS and MLCS, the assessment of poverty uses imputation approaches to restore comparability of consumption aggregates over time at the Union and urban/rural levels (MOPF and World Bank, 2017a). State/region-level poverty results in IHLCA-I and IHLCA-II are not comparable to MLCS. The MPLCS is not representative at the state and region level.

**The MLCS builds from earlier household expenditure and living conditions surveys conducted in Myanmar**, in particular, the Integrated Household Living Conditions Assessment (IHCLA-I, 2005 and IHCLA-II, 2010), the Household Income and Expenditure Survey (between 1989 and 2012) and the Myanmar Poverty and Living Conditions Survey (MPLCS, 2015). The MLCS brings all these previous household surveys together and provides one comprehensive source of living conditions information.

**The 2017 MLCS is representative of the Union, its states and regions, as well as urban and rural areas.** A two-stage sampling design was utilized, with enumeration areas (EAs) and households serving as the primary sampling units and ultimate sampling units respectively. Sample EAs within each stratum were selected systematically with probability proportional to size. In each EA, 12 households were selected systematically with equal probability. The sample was designed to cover all districts and 296 of the 330 townships of Myanmar. In total, 13,730 households from 1,145 EAs participated in the survey.<sup>8</sup> The sample was based on the 2014 Myanmar Population and Housing Census frame. Sampling weights were used to make estimates representative for all 14 states/regions, the Union Territory of Nay Pyi Taw and urban and rural areas.

**In order to cater for seasonality, the survey was conducted continuously over a 12-month period** from late December 2016 to early December 2017. Interviewing began in the second month of the winter season (November to February), continued throughout the dry season (March to May) and the rainy season (June to October) and ended in the winter season of 2017.

**The sampling method of the survey allowed for quarterly representation.** The data from each quarter can be treated as an independent national-level cross-sectional survey. Quarterly analysis can be done at the national level but cannot be done at a state and region level. The quarters approximately map into Myanmar's seasons, with the first quarter firmly capturing the winter season, the second capturing the dry season, the third capturing the first half of the rainy season and the fourth capturing the rainy season and a month of the early winter season.

## 1.3 Overview of the report

**This Poverty Report consists of three chapters.** The first is this Introduction. Chapter 2 presents a description of welfare in 2017 and analyses how welfare has changed since 2005. Chapter 3 provides a univariate profile of poverty in 2017, which includes a description of poverty according to various household characteristics, such as the geographic area in which a household lives, the education and gender of the household head and the sectors in which household members work. Annex 1 provides a brief overview of the methodology that was adopted to measure poverty in Myanmar: the cost of basic needs approach. It highlights the key steps and assumptions made in the computation of the consumption aggregate and the derivation of the poverty line.

<sup>8</sup> Outreach activities took place over the 12 months of data collection, but it was not possible to conduct interviews in two townships of Northern Rakhine State and the Wa Self-Administered Division. Limitations in coverage are fully documented in the MLCS 2017 Technical Report and can be seen in the maps presented in this report.





# 02.

## POVERTY IN 2017 AND TRENDS IN WELFARE

**Chapter 2 provides a set of statistical results on poverty and inequality measures.** In addition to 2017 estimates, trends since 2005 are analysed. Detailed results are provided in Annex 2. Only the main results are discussed in this chapter, starting with the geography of poverty.

## 2.1 Poverty in 2017

Table 2.1

National poverty line and median expenditures in 2017 (kyat)

	Per adult equivalent per day
Poverty line	1,590
Median expenditures	2,182

Note: All values are spatially deflated in 2017 quarter 1 kyat.

**The national poverty line in 2017 is 1,590 kyat per adult equivalent per day.** The poverty line defines the minimum welfare level that is necessary for a person not to be considered severely deprived. In this report, minimum need is benchmarked using calorie needs (see Annex 1 for more details). A household is considered to be poor if its per adult equivalent consumption level in kyats falls below the threshold that is considered necessary to meet the basic minimum standard of living in Myanmar. An individual in Myanmar is considered to be poor if he or she lives in a household with consumption per adult equivalent per day of 1,590 kyat or less (Table 2.1).

**A quarter of the population of Myanmar is considered poor.** Table 2.2 presents the poverty headcount, or the share of the population that is poor. It is estimated that 24.8 percent of the Myanmar population is poor, which corresponds to nearly 11.8 million people.

**Poverty is more prevalent in rural areas.** The poverty headcount is significantly higher in rural areas of Myanmar (30.2 percent) than in urban areas (11.3 percent). This, coupled with the relatively large proportion of the population residing in rural areas, means that rural inhabitants make up an overwhelming majority (87 percent) of the nation's poor. The number of poor people is 6.7 times higher in rural areas than in urban areas.

**Per adult equivalent consumption varies widely across the country, with urban inhabitants spending more on non-food items.**<sup>9</sup> Across states/regions, average daily per adult equivalent consumption ranges from 1,737 kyat in Chin State to 3,374 kyat in Yangon Region (Figure 2.1). Urban inhabitants spend a significantly larger amount and share of expenditures on non-food items than do their rural counterparts. Consumption of non-food items represents more than half (57 percent) of the expenditures in urban areas. Among states/regions, Yangon Region has by far the lowest share of expenditures on food. Across states/regions, a positive correlation exists between poverty incidence and the proportion of total expenditure incurred on food (“food share”) (Figure 2.3).

<sup>9</sup> This includes expenditures on education, clothing, personal care, energy, water and sanitation, transport, telecommunication, imputed housing and use value of durable goods.



Figure 2.1

Per adult equivalent daily consumption, 2017 (kyat)

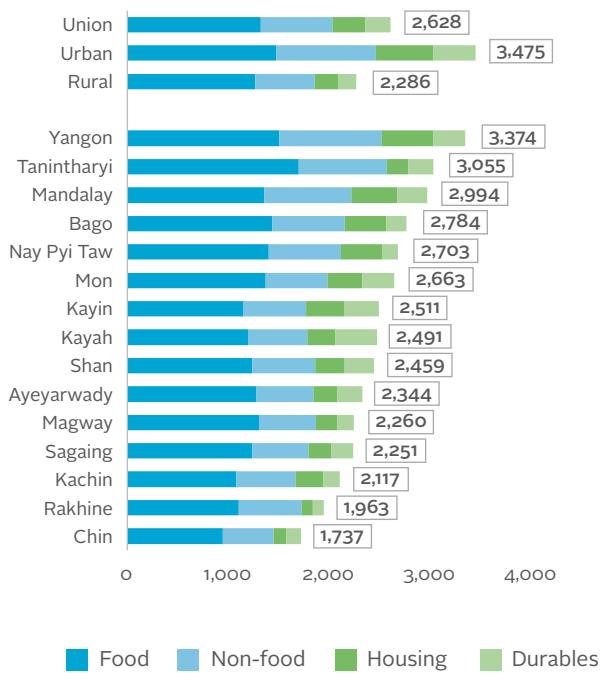
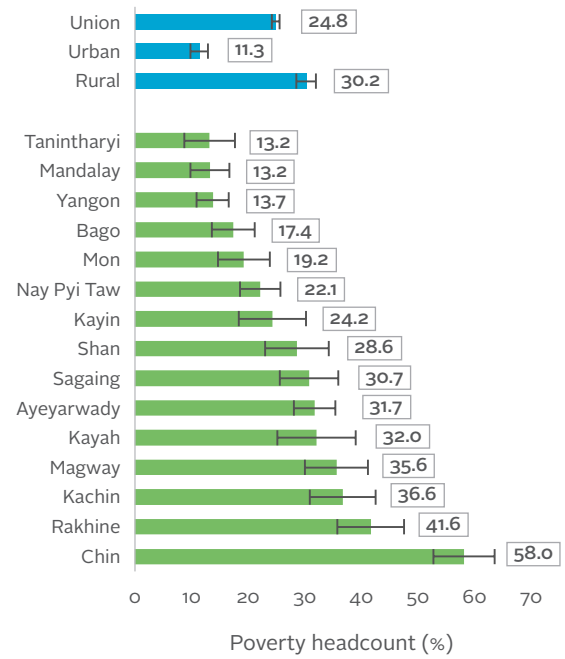


Figure 2.2

Poverty headcount in 2017 (%)



Note: All values are spatially deflated in 2017 quarter 1 kyat.

Figure 2.3

Correlation between food share and poverty headcount among states/regions, 2017

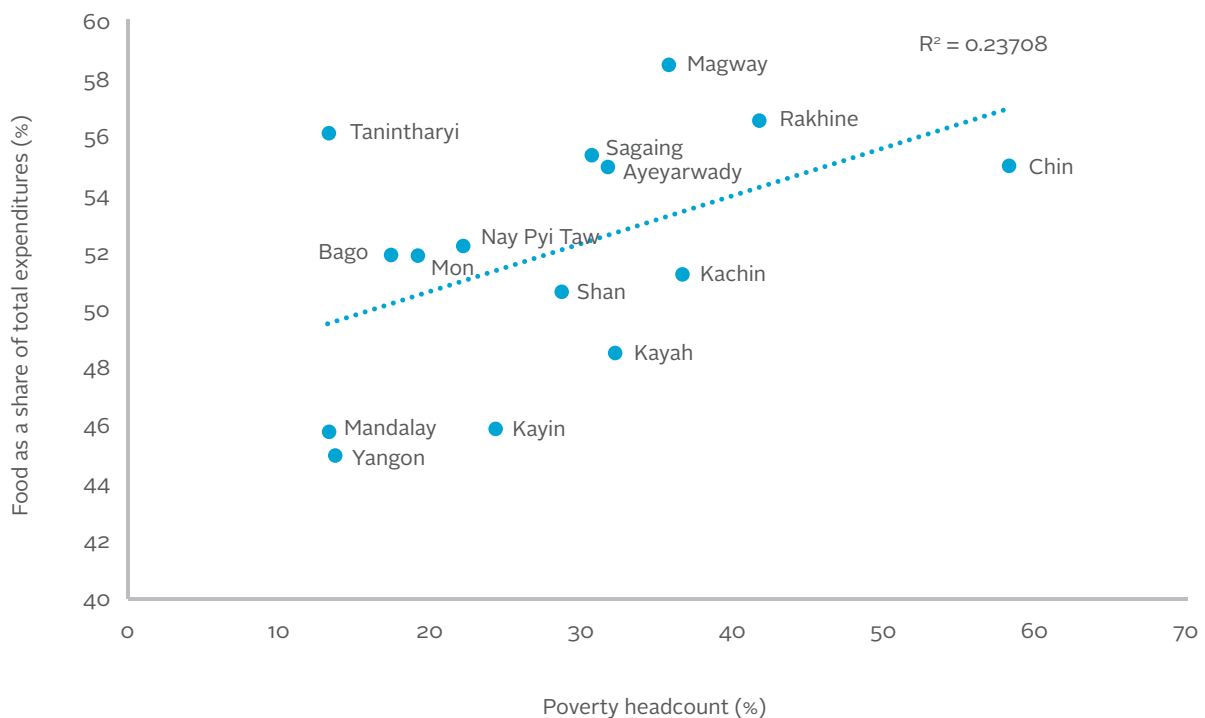


Table 2.2

Poverty measures, number of poor and share of poor, 2017

	Share of total population (%)	Poverty headcount (%)	Number of poor (000)	Share of poor (%)	Poverty gap (%)	Poverty gap squared (%)
<b>Union</b>	<b>100.0</b>	<b>24.8</b>	<b>11,756</b>	<b>100.0</b>	<b>5.2</b>	<b>1.6</b>
Urban	28.5	11.3	1,531	13.0	2.3	0.7
Rural	71.5	30.2	10,225	87.0	6.4	2.0
<b>Agro-zone</b>						
Coastal	8.5	32.2	1,288	11.0	5.5	1.5
Delta	25.9	24.4	2,990	25.4	5.1	1.6
Hills and Mountains	18.8	31.0	2,767	23.5	7.6	2.7
Dry	31.8	24.8	3,736	31.8	5.0	1.5
Yangon	15.0	13.7	974	8.3	2.7	0.8
<b>State/region</b>						
Kachin	3.3	36.6	570	4.8	10.0	3.7
Kayah	0.6	32.0	91	0.8	8.4	3.1
Kayin	2.8	24.2	325	2.8	4.1	1.0
Chin	1.0	58.0	275	2.3	18.7	8.1
Sagaing	10.3	30.7	1,499	12.8	6.4	2.1
Tanintharyi	2.8	13.2	175	1.5	2.5	0.9
Bago	10.1	17.4	830	7.1	3.8	1.1
Magway	7.5	35.6	1,268	10.8	7.6	2.4
Mandalay	11.8	13.2	741	6.3	2.3	0.6
Mon	3.6	19.2	329	2.8	4.2	1.5
Rakhine	5.7	41.6	1,114	9.5	7.0	1.7
Yangon	15.0	13.7	974	8.3	2.7	0.8
Shan	11.1	28.6	1,507	12.8	6.8	2.3
Ayeyarwady	12.2	31.7	1,831	15.6	6.3	1.9
Nay Pyi Taw	2.2	22.1	228	1.9	4.1	1.1

## Box 2.1: Income is high and economic opportunities are increasing in Tanintharyi Region

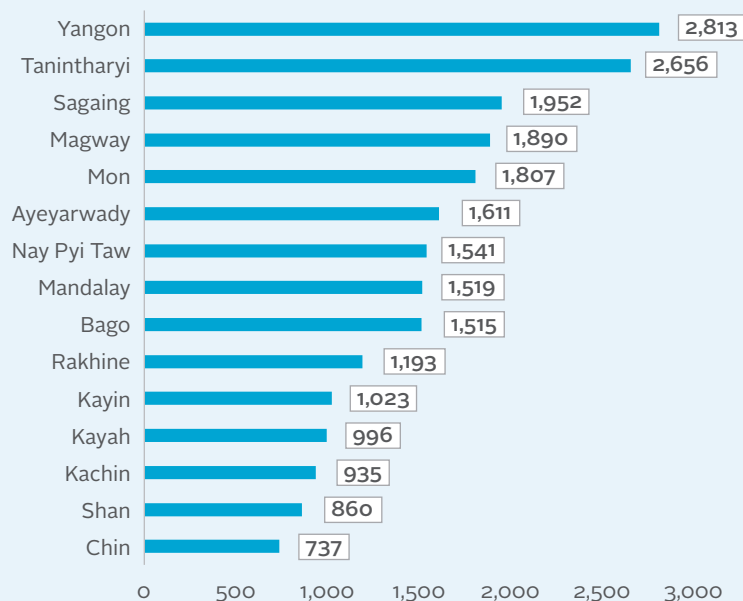
In 2017, Tanintharyi had the second highest GDP per capita (Figure 2.4) among all states/regions of Myanmar. Non-farm enterprises play an important role in income generation in the region. Tanintharyi has the second highest share of households that own or co-own a non-farm enterprise (43 percent), after Yangon (51 percent). Engagement in construction, wholesale trade, food service activities and manufacturing of food products is particularly high among non-farm enterprises in Tanintharyi.

Natural resources are plentiful in the region, including mines, cultured pearls and fisheries. Fisheries are an important source of income generation in Tanintharyi thanks to its long coastline along the Andaman Sea. Many enterprises are tied to fisheries, particularly wholesale trade, as fish caught in the region are exported to the rest of Myanmar and to neighbouring Southeast Asian countries such as Thailand and Malaysia. The local climate also makes Tanintharyi ideal for growing rubber trees and oil palms, which are key crops that fuel local income generation beyond the agricultural sector, particularly in sectors engaged in processing and distribution. The region has also been the target of foreign investors interested in onshore and offshore exploration for oil and gas, which is becoming a source of local employment.

Despite high income levels and economic opportunities, Tanintharyi performs poorly on some key non-monetary indicators (see CSO, UNDP and World Bank, 2018a; MOLIP and World Bank, 2018). It was the only state/region that was not connected to the national electricity grid in 2017, and it suffers from relatively low educational outcomes. In general, the region ranks poorly on the multidimensional disadvantage index, which is comprised of a number of non-monetary indicators from the 2014 Census (MOLIP and World Bank, 2018). The divergence between non-monetary indicators and income as well as consumption cannot be explained entirely by geography and requires additional research, which is beyond the scope of this report. Tanintharyi's isolation from much of Myanmar, its coastal terrain and more than 800 islands present obstacles to the provision of public services. Much of mainland Tanintharyi also remains remote. This may explain lower non-monetary welfare outcomes than expected at its level of economic and poverty performance.

Figure 2.4

Annual current GDP per capita by state/region, 2017 ( ` 000 kyat)

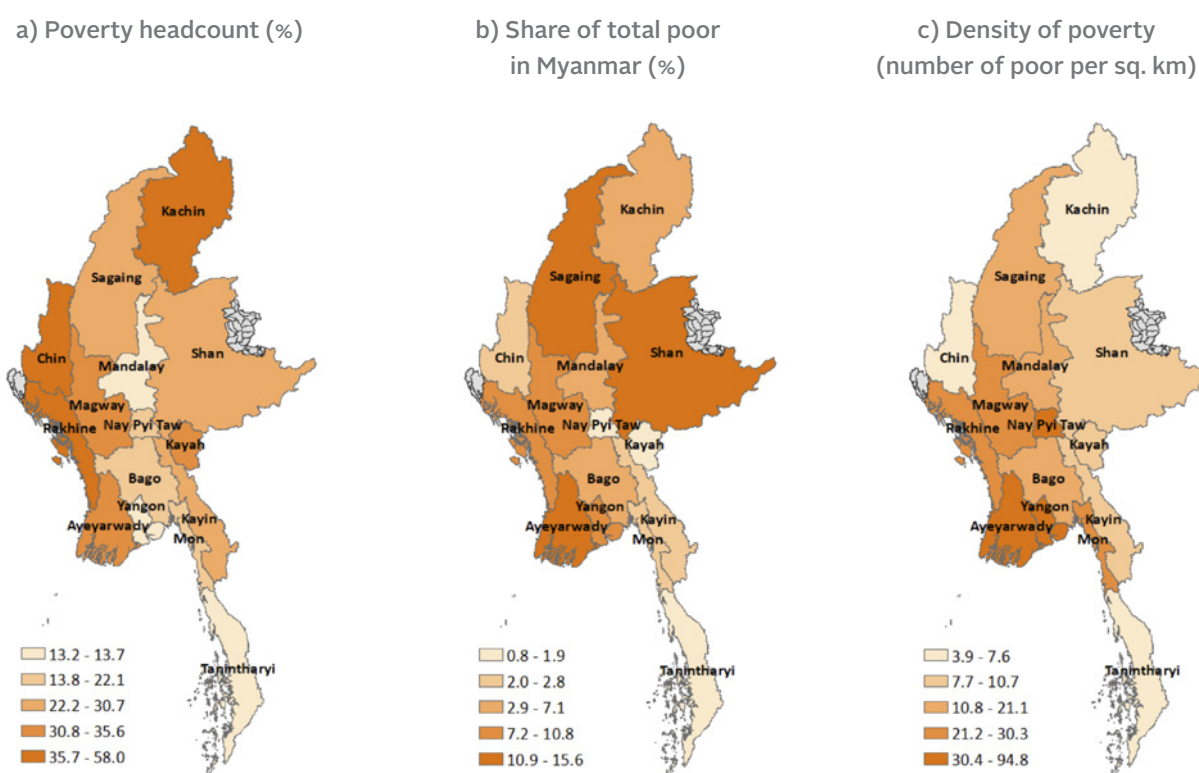


Source: MOPF for GDP data; Department of Population for population data.

**Poverty has a strong geographic dimension.** As illustrated in Figures 2.2 and 2.5 and Table 2.2, the incidence of poverty is highest in Chin State, where close to six out of 10 people (58 percent) are poor. With a poverty headcount of 41.6 percent, Rakhine State has the second highest poverty incidence. At the other end of the welfare distribution, Tanintharyi, Mandalay and Yangon have the lowest poverty rates at around 13–14 percent, with statistically insignificant differences among the three regions. At the agro-zone level, the Coastal zone and the Hills and Mountains zone have the highest poverty rates (32 percent and 31 percent respectively). The high incidence of poverty in the Coastal zone is driven by the higher poverty rate and relatively larger population in Rakhine State compared to Tanintharyi Region. In the Hills and Mountains zone, four of the five states are above the Union poverty headcount, which points to the challenges that remoteness and a mountainous terrain present to welfare in Myanmar. With about 1.8 million poor people, Ayeyarwady Region has the highest number of poor inhabitants, followed closely by Shan State and Sagaing Region. Proportional to its small population, Kayah State has the lowest number of poor people, with 91,000 poor. It is important to note that Yangon Region, which holds the country's largest city, despite having a relatively low poverty incidence (13.7 percent), has the highest poverty density (94 poor per squared kilometer), reflecting challenges around urban poverty.

Figure 2.5

Poverty headcount, contribution to poverty and density of poverty by state/region, 2017

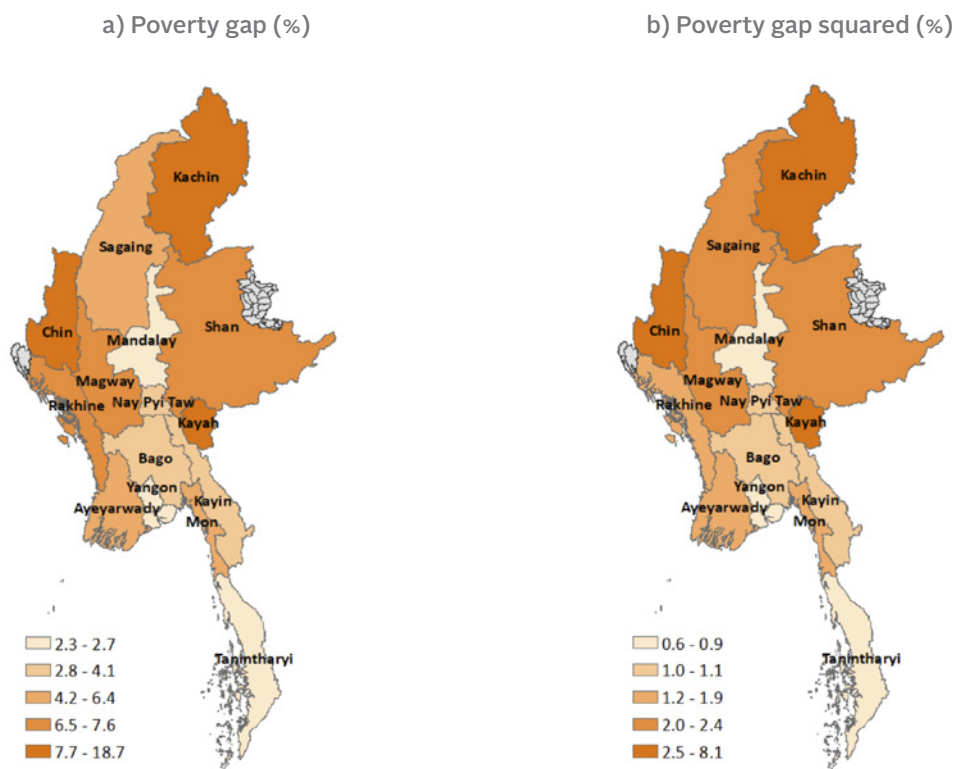


Note: Outreach activities took place over the 12 months of data collection, but it was not possible to interview in northern parts of Rakhine State (Maungdaw and Buthidaung townships) and the Wa Self-Administered Division. Limitations in coverage are fully documented in the MLCS 2017 Technical Report and can be seen in the maps presented in this report.

**There is significant regional variation in welfare among the poor in 2017.** Compared with the poverty headcount, which treats individuals below the poverty line as equally poor, measures of poverty depth and severity provide a more nuanced picture of deprivation among the poor. The poverty gap captures the depth of poverty by considering how far, on average, the poor are from the poverty line. The squared poverty gap estimates the severity of poverty by placing greater weight on individuals further away from the poverty line. In 2017, poverty depth was 5.2 percent, and severity was 1.6 percent. The elevated depth and severity of poverty in rural areas compared to urban areas is a reflection of poorer households being, on average, further from the poverty line in rural areas. Poverty depth is particularly high in the Hills and Mountains zone: Chin, Kachin and Kayah States have the largest poverty gaps in the country, and all states in this zone, with the exception of Kayin State, have a poverty gap exceeding that of the Union. This reflects the comparatively large share of very poor people in these states, particularly in Chin State, which has a poverty gap of 18.7 percent (Table 2.2 and Figure 2.6).

Figure 2.6

Poverty gap and squared poverty gap by state/region, 2017

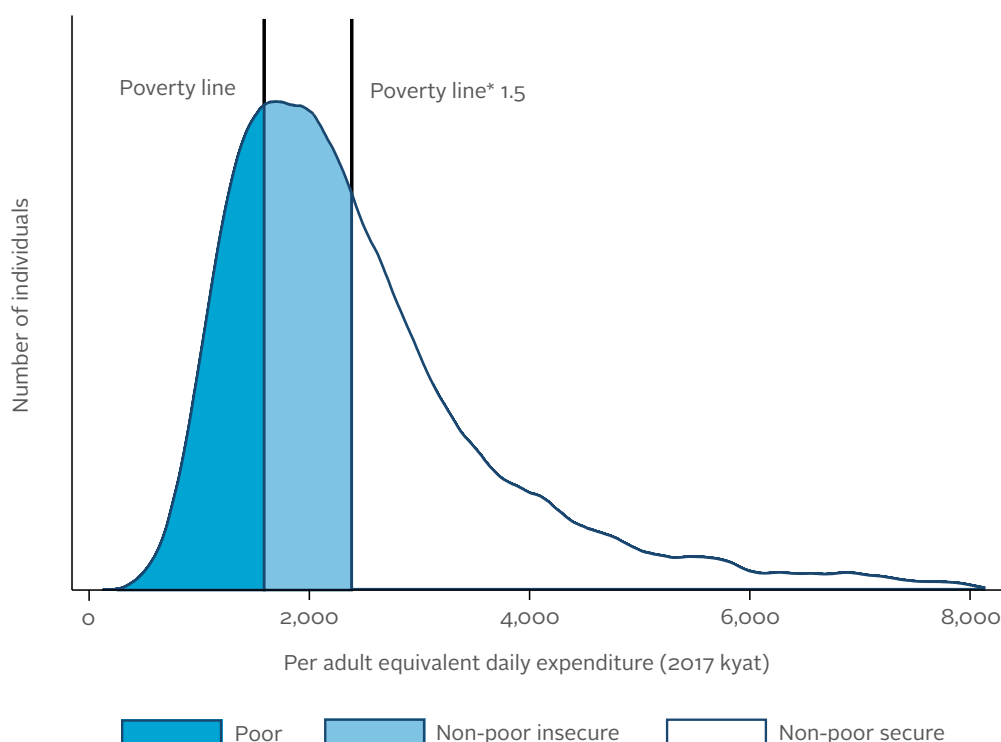


Note: Outreach activities took place over the 12 months of data collection, but it was not possible to interview in northern parts of Rakhine State (Maungdaw and Buthidaung townships) and the Wa Self-Administered Division. Limitations in coverage are fully documented in the MLCS 2017 Technical Report and can be seen in the maps presented in this report.

**Much of the population remains vulnerable to falling into poverty, particularly in the face of an unanticipated negative shock.** Beyond the 24.8 percent of the population that are classified as poor, a further 32.9 percent are non-poor insecure, or have per adult equivalent daily expenditures below 1.5 times the poverty line (i.e. between 1,590 and 2,385 kyat; see Figure 2.7). The other 42 percent of the population live at a consumption level that is 1.5 times higher than the poverty line, making them non-poor secure. The non-poor insecure are more likely to be pushed into poverty as a result of unexpected shocks. A larger share of the rural population is at risk compared with the urban population, and there is significant variation across states/regions (Figure 2.8). Given that a large share of the vulnerable rely on either agriculture or informal activities, which are susceptible to significant output volatility, many remain at serious risk of falling back into poverty. In 2017, the most common shock households experienced was unusually high prices for food (12.5 percent of households), followed by serious illness/accident, low prices for agricultural output, floods and very heavy rain/hail.<sup>10</sup> Some households were also affected by the other types of losses. Overall, the incidence of negative shocks was higher for those living in rural areas. Close to half (46 percent) of the rural population experienced a negative shock in the previous 12 months, compared with a third (32 percent) of those living in urban areas. Occurrence of negative shocks was very high (58 percent) in the Delta zone, followed by the Dry zone (42 percent). At the opposite end of the spectrum, those living in the Coastal zone seem to have been less exposed, with only one in five people (21 percent) affected.

Figure 2.7

The poor, non-poor insecure and non-poor secure, 2017

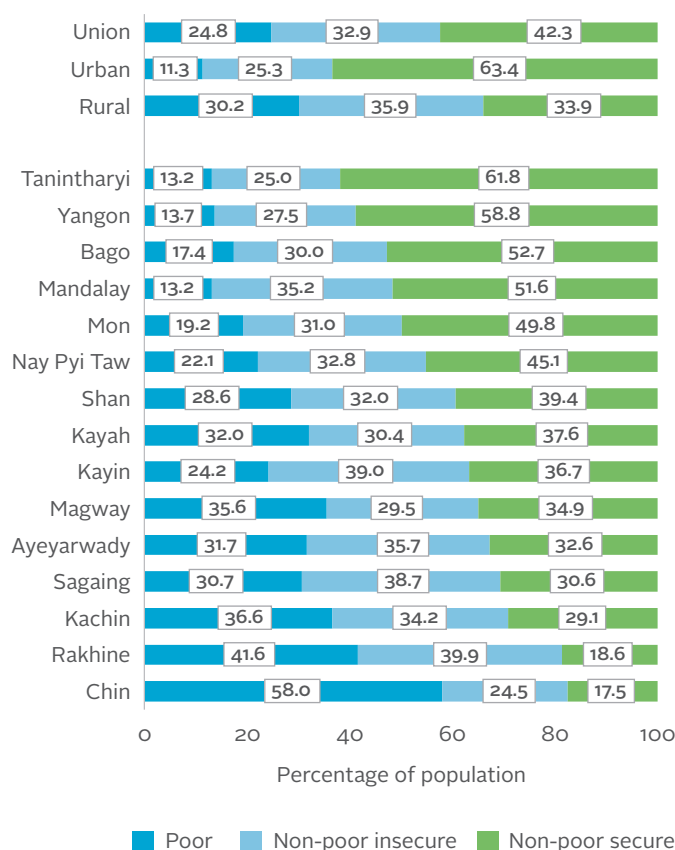


Note: The non-poor insecure are defined as those with per adult equivalent daily expenditures falling between the poverty line and 1.5 times the poverty line. All values are spatially deflated in 2017 quarter 1 kyat.

<sup>10</sup> The MLCS asks households about shocks experienced in the past 12 months, so households may experience more than one shock over the course of this period. The share of households that experienced both high prices for food and low prices for agricultural output is less than 2 percent.

Figure 2.8

Share of poor, non-poor insecure and non-poor secure, 2017



Note: The non-poor insecure are defined as those with per adult equivalent daily expenditures falling between the poverty line and 1.5 times the poverty line.

## 2.2 Poverty trends from 2005 to 2017

**The proportion of the population living in poverty declined substantially between 2005 and 2017.** Median daily expenditures per adult equivalent increased since 2005 (Figure 2.9), resulting in significant poverty reduction. The proportion of the population living below the poverty line declined from 48.2 percent in 2005 to 24.8 percent in 2017 (Figure 2.10). Despite population growth, the number of poor people declined from 18.7 million in 2005 to 11.8 million in 2017.<sup>11</sup> A decrease of 23.4 percentage points in the poverty headcount since 2005 reflects the strong economic growth that Myanmar has seen since the economic and political transition: between 2005 and 2017, Myanmar’s annual growth rate in GDP per capita was 7.8 percent – the highest among Southeast Asian countries (Figure 2.11). Changes in the depth and severity of poverty follow similar patterns to those observed for the poverty headcount (Figures 2.12 and 2.13). On average, the poor have seen an increase in welfare in the survey years from 2005 to 2017, and the annual increase has been fastest between 2015 and 2017.

<sup>11</sup> These figures are based on IHLCA and MLCS estimations. These surveys only covered the conventional population; more precisely, the universe of these surveys does not include people living in hotels/motels/guesthouses, military camps, police camps, orphanages/homes for the aged, religious centres, boarding schools/colleges/universities, correctional facilities/prisons, hospitals, camps/hostels for workers, and homeless/other collective quarters.

Figure 2.9

Trend in median daily per adult equivalent expenditures - Union level (in 2017 quarter 1 Kyat)

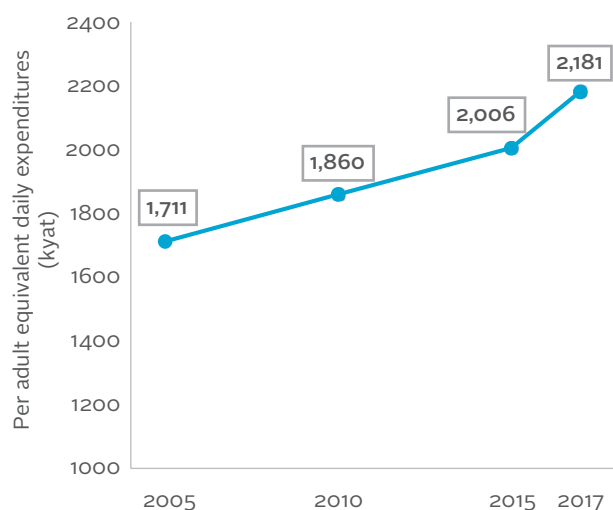
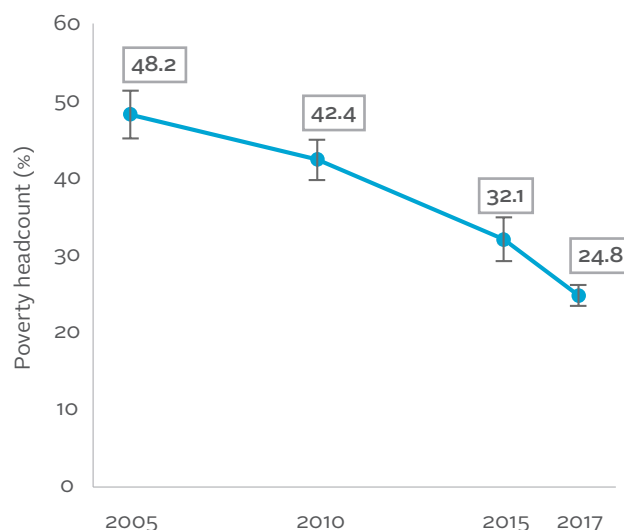


Figure 2.10

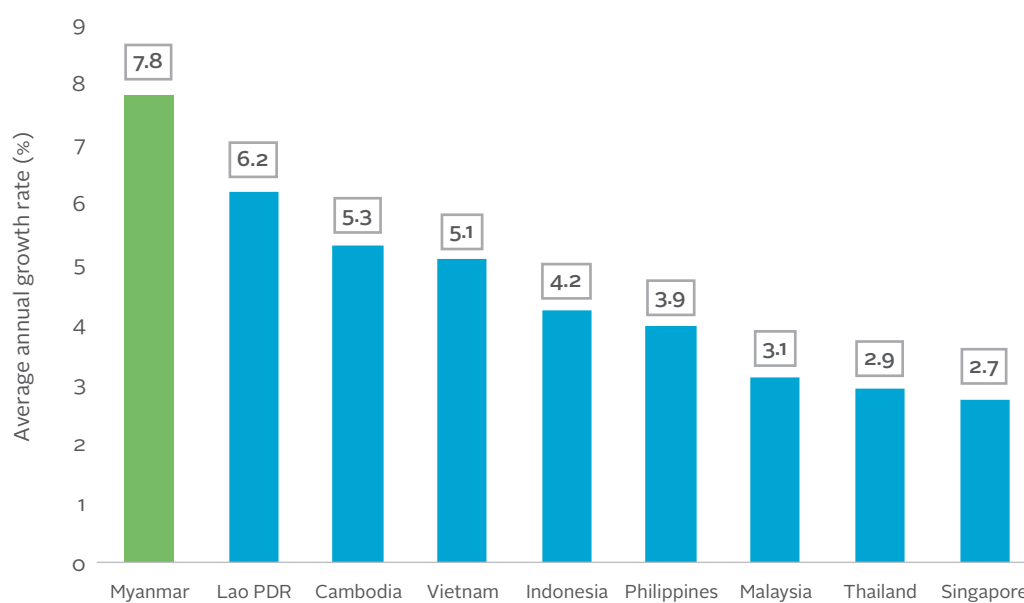
Trend in poverty headcount – Union level



Note: Due to non-coverage of two townships in northern Rakhine in 2017, and a slightly larger average household size in the MPLCS, accurate comparison between 2015 and 2017 requires adjusting sample weights to cater for these differences. Such adjustment of the sample weights produces a lower poverty rate (30.5 percent) for 2015, which can be compared to 2017 estimates. Imputation methods are used to restore comparability as far as possible in poverty estimation for 2005 and 2010. See MOPF and World Bank (2017a) for a detailed discussion of the robustness of these methods. All values are spatially and temporally deflated in Figure 2.9 and are reported in 2017 quarter 1 kyat.

Figure 2.11

GDP per capita annual growth, Myanmar vs other ASEAN countries, 2005–2017



Source: World Bank, World Development Indicators.



Figure 2.12

Trend in poverty depth and severity – Union level

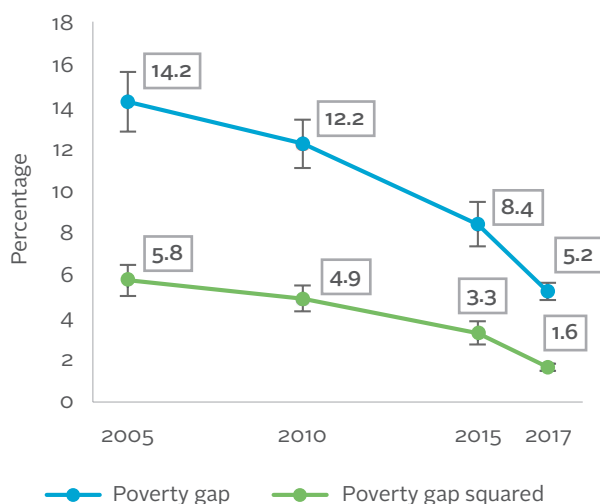
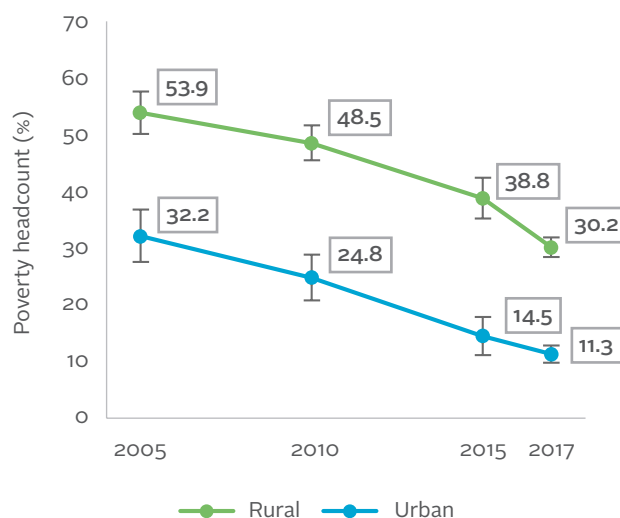


Figure 2.13

Trend in poverty headcount by residential area



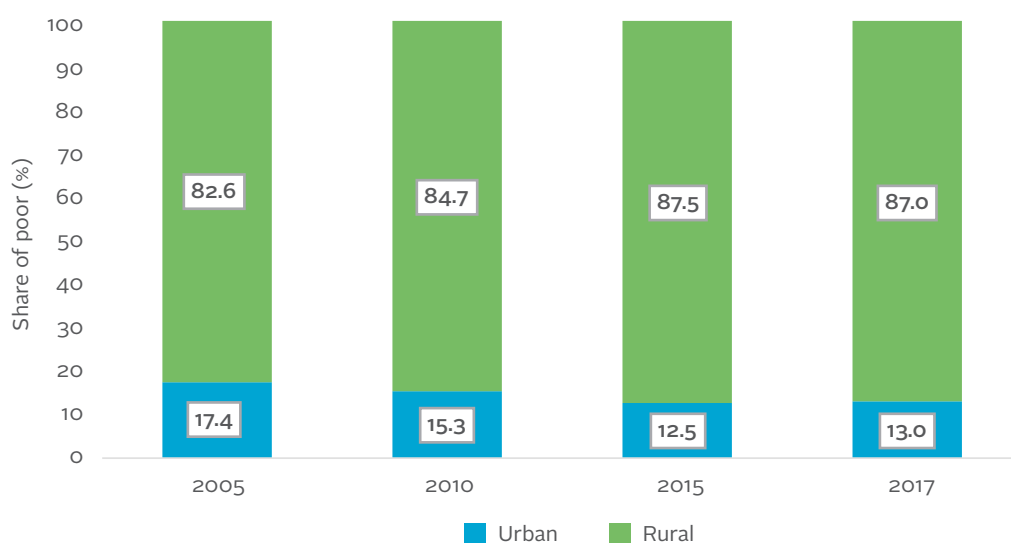
Note: Imputation methods are employed for the 2005 and 2010 poverty estimates in order to present comparable estimates for 2015 and 2017. See MOPF and World Bank (2017b) for a discussion of the robustness of these methods.

**Improvement on non-monetary dimensions of well-being was also substantial.** Building mainly on the MLCS, 2014 Myanmar Population and Housing Census and other available surveys, as well as administrative data, the Key Indicators Report (CSO, UNDP and World Bank, 2018a) provides an assessment of trends in non-monetary indicators of living standards in Myanmar. The Key Indicators Report highlights substantial improvement in access to electricity due to the rise of solar technology and an expansion of the public grid, and in the ownership and use of mobile phones. Improvements are also seen in educational outcomes among the younger generations and in narrowing gender gaps in educational attainment, as well as in the ownership of household assets such as motorbikes and rice cookers.

**Poverty has become increasingly concentrated in rural areas.** The share of the poor residing in rural areas has increased from 82.6 percent in 2005 to 87.0 percent in 2017 (Figure 2.14). These estimates suggest an urban/rural divide in poverty. Poverty remains high and concentrated in rural areas, allowing more space for poverty reduction in rural areas. In contrast, in urban areas, the poverty headcount is low, making a further reduction of poverty in these areas comparatively difficult. However, as highlighted in the previous subsection, challenges around urban poverty remain important, particularly for Yangon, where poverty density is growing.

Figure 2.14

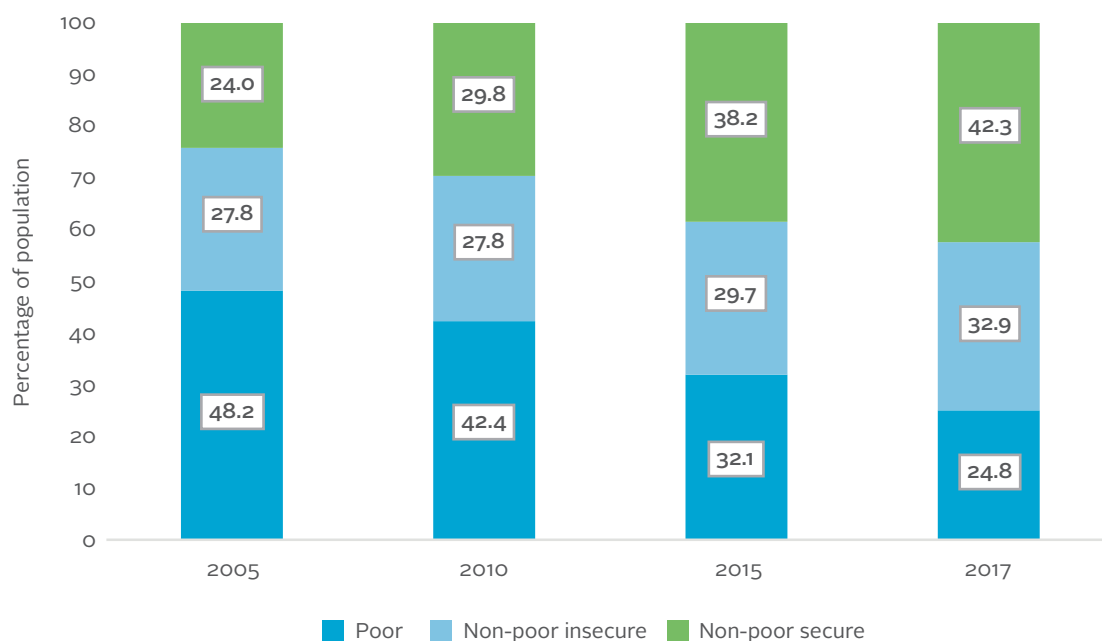
Share of poor by residential area, 2005 to 2017



**Success in reducing poverty has resulted in a higher proportion of non-poor insecure and non-poor secure.** Figure 2.15 shows that, as poverty receded, the share of non-poor insecure increased by 5.1 percentage points, from 27.8 in 2005 to 32.9 percent in 2017. During the same period, there was an even higher increase in the share of non-poor secure, an increase of 18.3 percentage points, from 24.0 percent in 2005 to 42.3 percent in 2017. Although some households may have experienced regressive shifts, overall, net mobility seems to have been upwards from poor to non-poor insecure and from non-poor insecure to non-poor secure.

Figure 2.15

Share of poor, non-poor insecure and non-poor secure in total population, 2005 to 2017



Note: The non-poor insecure are defined as those with per adult equivalent expenditures falling between the poverty line and 1.5 times the poverty line.

## 2.3 Inequality<sup>12</sup>

**Overall, inequality remains at a moderate level.** Poverty indices are affected only by changes in consumption for those below the poverty line. By contrast, inequality measures take into account the whole distribution of per adult equivalent consumption to provide a more comprehensive picture of welfare (see Annex 1 for definitions). The most widely used measure of inequality is the Gini coefficient or index. The Gini coefficient varies between zero, which reflects complete equality in consumption-based welfare, and one, which indicates complete inequality (one household holds all consumption; all other households have none). The Gini coefficient is estimated as 0.30 in 2017 (Table 2.3). Using an alternative measure ( $d_{10}/d_1$ ), the richest 10 percent of the population had consumption 6.5 times higher than the poorest 10 percent.

**There are important spatial differences in levels of inequality.** As illustrated in Figure 2.16, inequality is more pronounced in Kayah State, Yangon Region and Chin State. On average, there seems to be little relationship between inequality and poverty among states/regions in Myanmar.<sup>13</sup> Urban–rural differences in inequality are also apparent. In urban areas, inequality levels are higher (Gini of 31.8) than in rural areas (Gini of 26.3).

Table 2.3

Measures of inequality by residential area, 2017

	Union	Urban	Rural
Gini coefficient	30.03	31.82	26.34
Theil-o	14.84	16.59	11.52
Theil-1	17.48	18.94	13.43
Share of bottom 20%	9.09	8.55	9.93
Share of bottom 40%	22.19	21.15	23.90
$d_{10}/d_1$	6.47	7.25	5.24

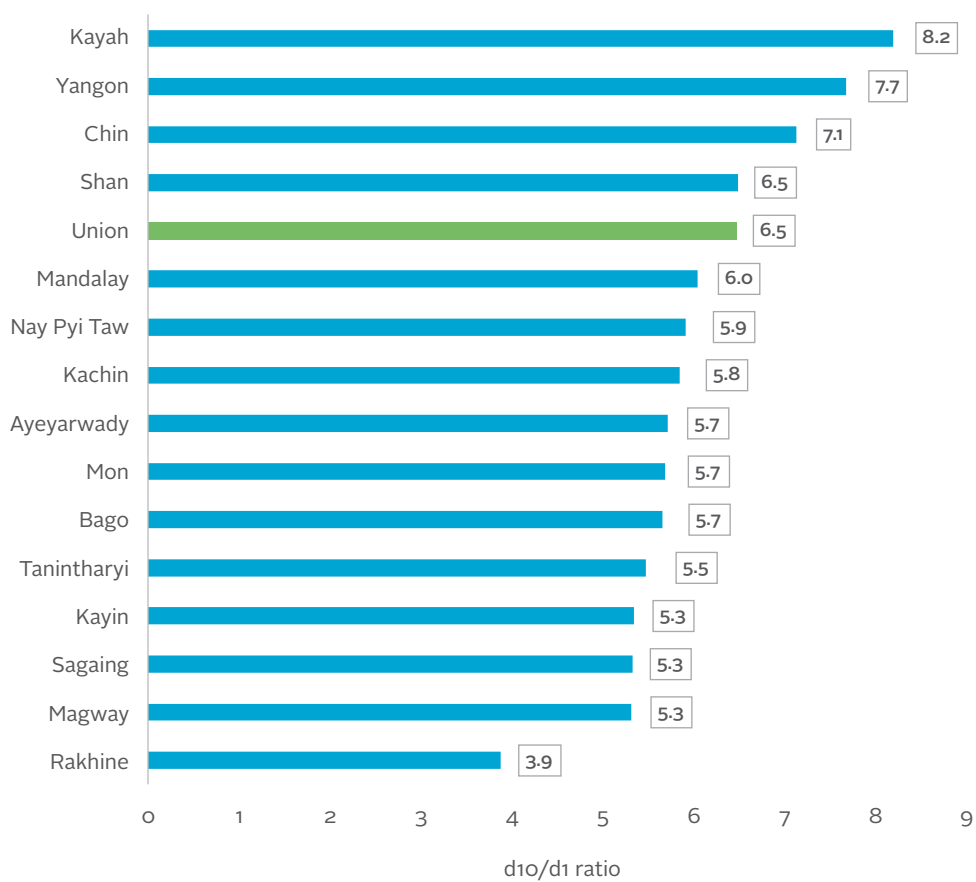
Note: Share of bottom 20% and share of bottom 40% refer to the share of total per adult equivalent consumption attributed to the bottom 20 percent and 40 percent of households, respectively. The ratio  $d_{10}/d_1$  represents the average consumption of the top 10 percent of households divided by the average consumption of the bottom 10 percent of households. The Theil index is an alternative statistic used to measure inequality. The Theil index measures the entropic distance of the population from the egalitarian state of everyone having the same income (see Annex 1 for more details).

12 Trend analysis of inequality involves consideration of differences in comparability across surveys. Among other differences, the 2015 MPLCS sample has wider coverage of both the poorest and the wealthiest households. Detailed analysis of inequality will be provided in the forthcoming Socio-economic Report.

13 For example, in Chin, high inequality is mostly driven by the existence of households with very low consumption, while in Yangon, it is driven by households with very high consumption.

Figure 2.16

Daily per adult equivalent expenditures by state/region, 2017: top 10 percent average value divided by bottom 10 percent average value (d10/d1)









# 03.

## POVERTY PROFILE IN 2017

**This chapter provides a detailed profile of the poor, outlining their main socio-economic characteristics.** It presents a univariate profile of poverty, which is a set of descriptive statistics showing the likelihood of being poor by various household characteristics, such as the geographic area in which a household lives or the level of education of the household head. We also look at poverty by some key demographic characteristics such as gender and age.

### 3.1 Demographic characteristics

**The poor are more likely to live in larger households with a higher child dependency ratio.** In 2017, poor households had, on average, nearly 1.25 more members than non-poor households (Table 3.1). This difference is primarily driven by the higher number of children in poor households: on average, poor households had almost two times more children than non-poor households. Poor households are also more likely to have a higher number of working-age members than non-poor households. However, the difference in the number of children between poor and non-poor households outruns the difference in working-age members, resulting in a higher number of child dependents per working-age adult in poor households.

**Children of all ages are more likely to live in poor households.** Households with more children are more likely to be poor, and hence the incidence of poverty is higher for children below the age of 15 (Figure 3.1a). More than 35 percent of children below the age of 15 live in poor households, whereas 26 percent of working-age people live in poor households. Children and youth below 20 years old also constitute a disproportionately high share of the total poor population (Figure 3.1b). Almost half (48 percent) of all poor people are below the age of 20.



Table 3.1

## Demographic statistics by poverty status, welfare quintile and residential area, 2017

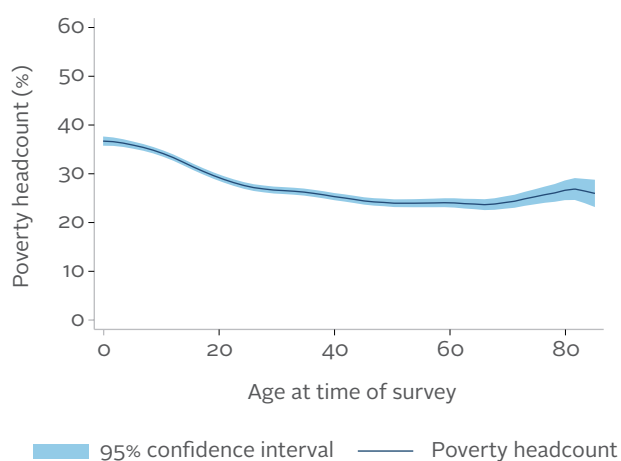
	Poverty status		Welfare quintile					Residence area		Union
	Poor Households	Non-Poor Households	Q1	Q2	Q3	Q4	Q5	Urban	Rural	
Household size	5.3	4.0	5.3	4.7	4.3	4.0	3.5	4.2	4.3	4.3
Number of children aged 0 to 14	1.8	1.0	1.8	1.4	1.1	0.9	0.6	1.0	1.2	1.1
Number of working age (15 to 64)	3.1	2.7	3.1	3.0	2.8	2.8	2.5	2.9	2.8	2.8
Number of elderly (65+)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total dependency ratio	67.6	46.6	69.0	57.2	51.0	45.3	37.7	44.5	54.2	51.3
Child dependency ratio	57.0	35.3	58.6	46.5	39.7	34.1	25.6	32.7	43.3	40.1
Aged dependency ratio	10.6	11.3	10.4	10.6	11.3	11.3	12.1	11.8	10.9	11.2
Age of the household head	50.9	50.9	50.6	50.8	50.6	50.9	51.4	51.5	50.6	50.9
Female headed Household (%)	19.4	21.5	18.7	20.5	20.5	20.2	24.2	23.4	20.1	21.1

Note: The total dependency ratio is the ratio of dependents (people younger than 15 years and older than 64 years) to the population of working age (aged 15–64). Data are shown as the proportion of dependents per 100 working-age people. Three different measures can be calculated: total dependency ratio, child dependency ratio and elderly dependency ratio.

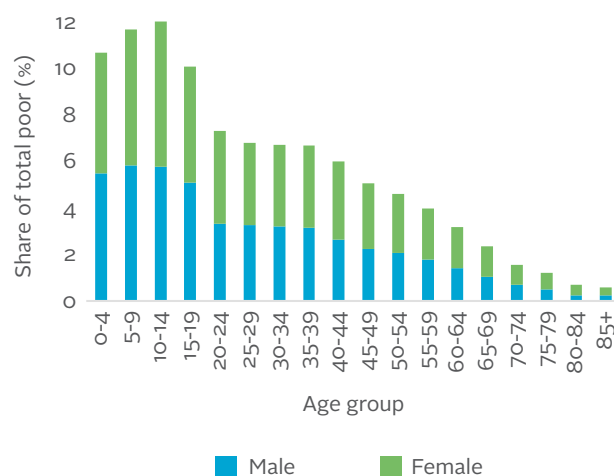
Figure 3.1

## Poverty headcount and share of total poor by individual age and gender, 2017

a) Poverty headcount by individual age (%)



b) Share of total poor by individual age group (%)



**There is little difference in consumption-based poverty by the gender of the household head.**

In Myanmar, a fifth of households are headed by women. At the Union level, as well as at a state/region level, there is marginal difference in poverty between households headed by a female and those headed by a male. This finding holds even when considering the number of child dependents the head has and the marital status and age of the household head.

**Members of households headed by a disabled person are more likely to be poor.** About 6 percent of households in Myanmar are headed by a person who reports having one or more disabilities, while one in 10 households have one or more disabled members. Those living in a household with a head or other member who is disabled are 23 percent more likely to be poor than those who do not. The difference is particularly pronounced in Mandalay Region, Rakhine State, and Kachin State, where members of households headed by a person with a disability are, on average, 88 percent more likely to be poor than those from households with non-disabled heads. Moreover, in Mandalay Region, those living in a household with at least one disabled member are over twice as likely to be considered poor.

## 3.2 Education and employment

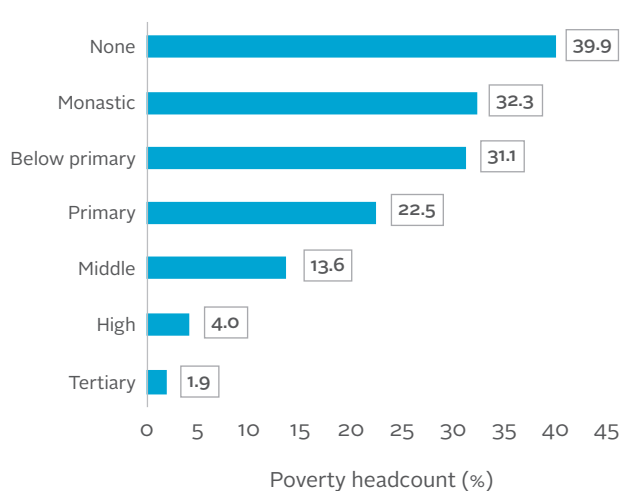
**The household head's educational attainment is strongly correlated to household welfare.** Poor households are more likely to have a head with little or no education. Less than 1 percent of people in the poorest consumption quintile have a household head who has completed high school or tertiary education, compared with 21 percent of those in the richest quintile. The probability that a household member is considered poor decreases with higher education levels of the household head (Figure 3.2). The share of the population living in a household with low education is non-trivial: six out of 10 people (62 percent) reside in households with a head who has no schooling or has completed only primary education or below.

**Households that own land or have diversified from agricultural work have higher welfare.** Agricultural occupations are associated with low earnings and poverty, and households that diversified or altogether moved out of agricultural work had better living conditions in 2017 (Figures 3.2 and 3.3). Among people working in the agricultural sector, those who own a plot of land have higher welfare than those who do not. The poverty headcount is highest in landless households whose members work exclusively in agriculture (45.8 percent), followed by landless households whose members are engaged in both agricultural and non-agricultural activities (33.4 percent). On the other hand, poverty is lowest in households whose members work exclusively in non-agricultural activities (13.2 percent).

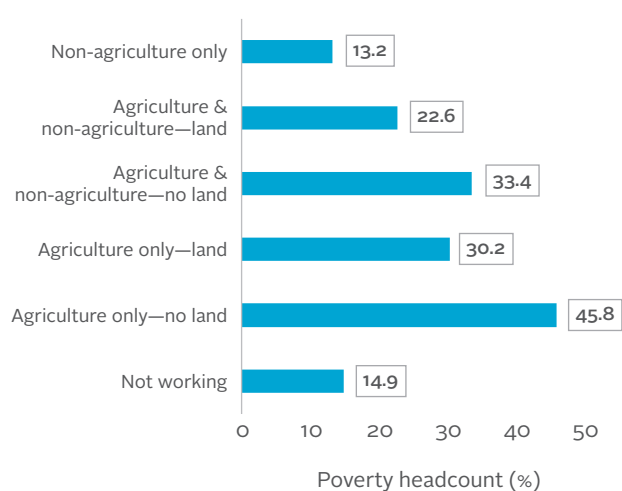
Figure 3.2

Poverty headcount by education of the household head and occupational sector of household members, 2017

a) By education of the household head



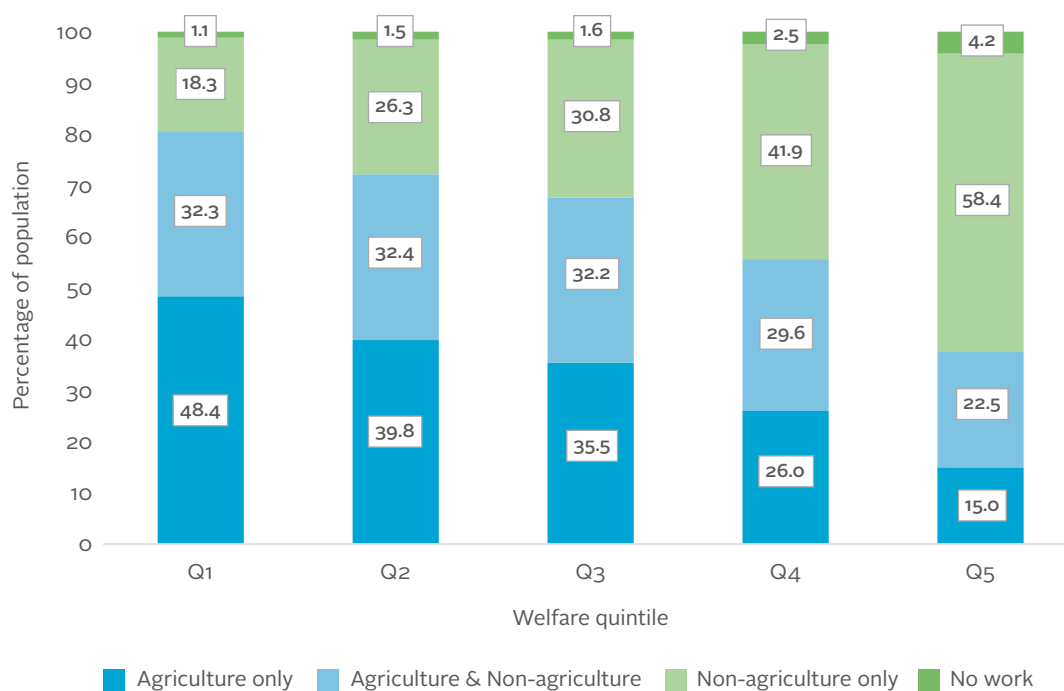
b) By occupational sector of household members



Note: The sectoral participation of the household is based on the sector of occupation of its working-age household members.

Figure 3.3

Distribution of the population by occupational sector of household members and welfare quintile, 2017



Note: The sectoral participation of the household is based on the sector of occupation of its working-age household members.

**An urban–rural divide exists in the occupational sector that households members participate in.**

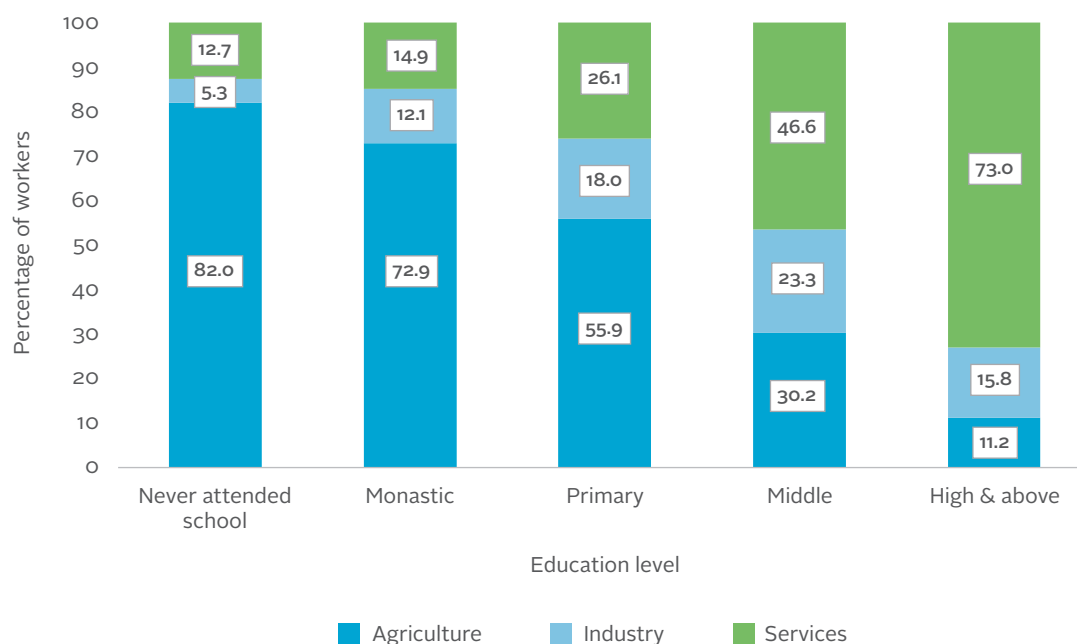
In rural areas, households are more likely to be working in agriculture: 45 percent of households are engaged exclusively in agricultural work, while another 33 percent of rural households work in both agriculture and non-agricultural activities. By contrast, in urban areas, the majority of households (80 percent) are involved in non-agricultural activities only. There is also a significant urban–rural difference in the poverty status of households with no working members. In urban areas, the poverty headcount is 63 percent lower for non-working households compared with working households, while in rural areas it is only 27 percent lower. Many of these non-working urban households rely on remittances, especially from Yangon and Thailand, as well as return on investments and assets.

**Educational attainment and sector of occupation are strongly correlated. Those with better education are more likely to work in non-agricultural occupations and are less likely to be poor.**

Education is associated with better skills, increased productivity and higher wages (Glewwe, 2002; Duflo, 2001). In 2017, better educated people were more likely to be employed in the non-agricultural sector (Figure 3.4), particularly in occupational sectors such as teaching, hospitality and retail, and food processing. Higher educational attainment and non-agricultural occupations are associated with higher welfare and thus may be avenues to help people move out of poverty.

Figure 3.4

Distribution of workers by education and sector of occupation, 2017



### 3.3 Asset ownership

**Ownership of modern assets is limited for poor households.** Asset ownership, in terms of both numbers and value, is lower among poor households. The median current value of assets owned by the non-poor is 295,000 kyat, which is 4.3 times the value of assets owned by the poor (Table 3.2). Figure 3.5 provides statistics on asset ownership by poverty status. The majority of households (85.8 percent) own at least one mobile phone. Ownership of colour TVs and motorcycles is also high, with at least half of all households owning these assets. There is a significant gap in asset ownership between poor and non-poor households. For instance, six out of 10 non-poor households own a TV, compared with only three out of 10 poor households. The percentage difference between poor and non-poor households is even more pronounced for some items, such as refrigerators, electric irons and rice cookers. As illustrated in the literature, most of these assets improve productivity in the home, for example by reducing the time spent on household chores (Blackden and Wodon, 2006). They can also improve human capital such as education and health (Kerr, 2019). For instance, possession of a refrigerator helps keep food safe for consumption and thus reduces the onset of foodborne illnesses.

Table 3.2

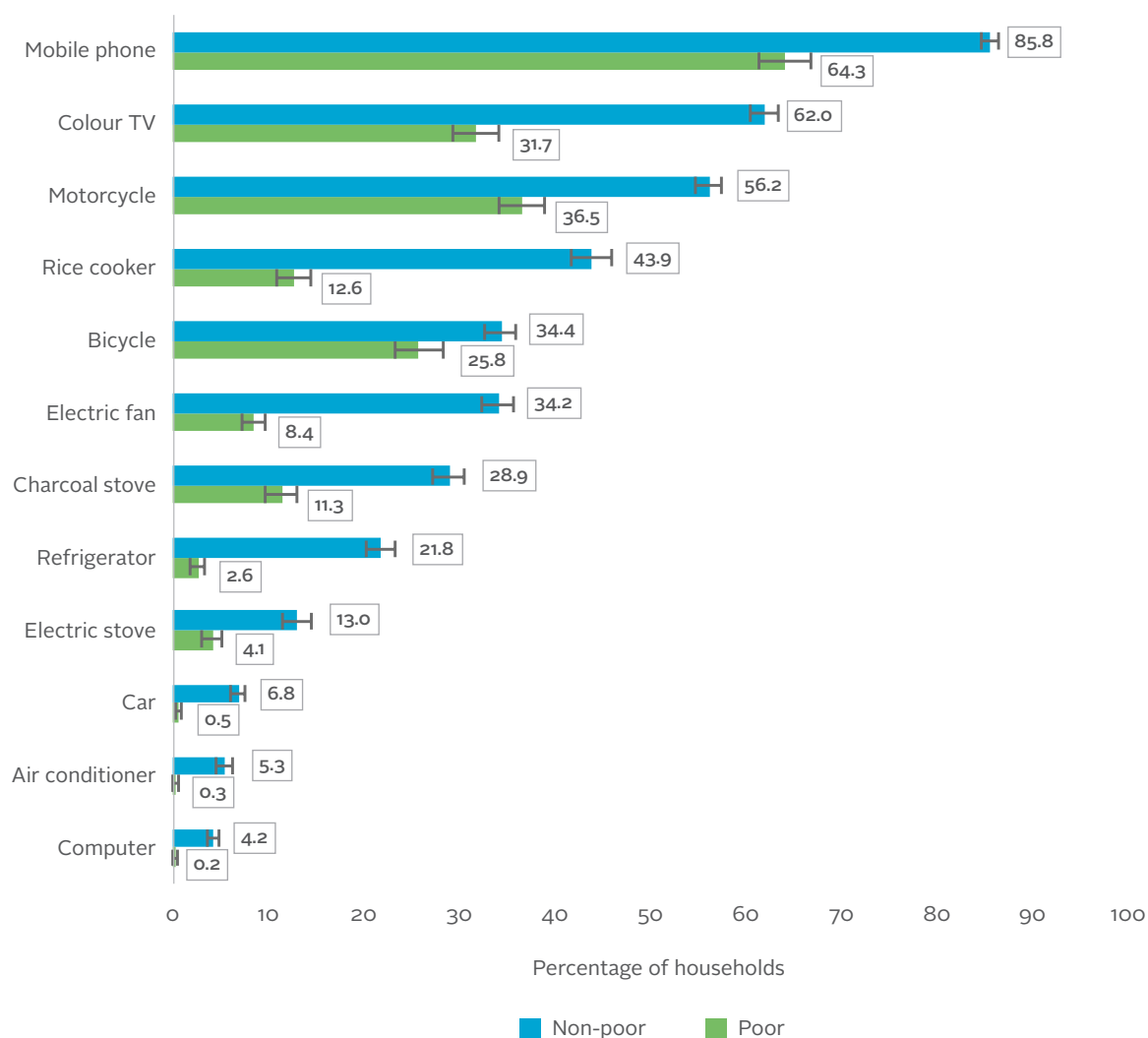
Household asset ownership by area and poverty status, 2017

	Owns any household asset (%)	Average number of assets owned	Median current value of assets (kyat)
Union	93.8	6.6	235,000
Rural	92.0	5.0	187,000
Urban	98.0	10.4	373,500
Non-poor	95.6	7.4	295,000
Poor	86.6	3.4	68,000

Note: The current value of assets is reported in 2017 spatially deflated kyat.

Figure 3.5

Household asset ownership by poverty status, 2017

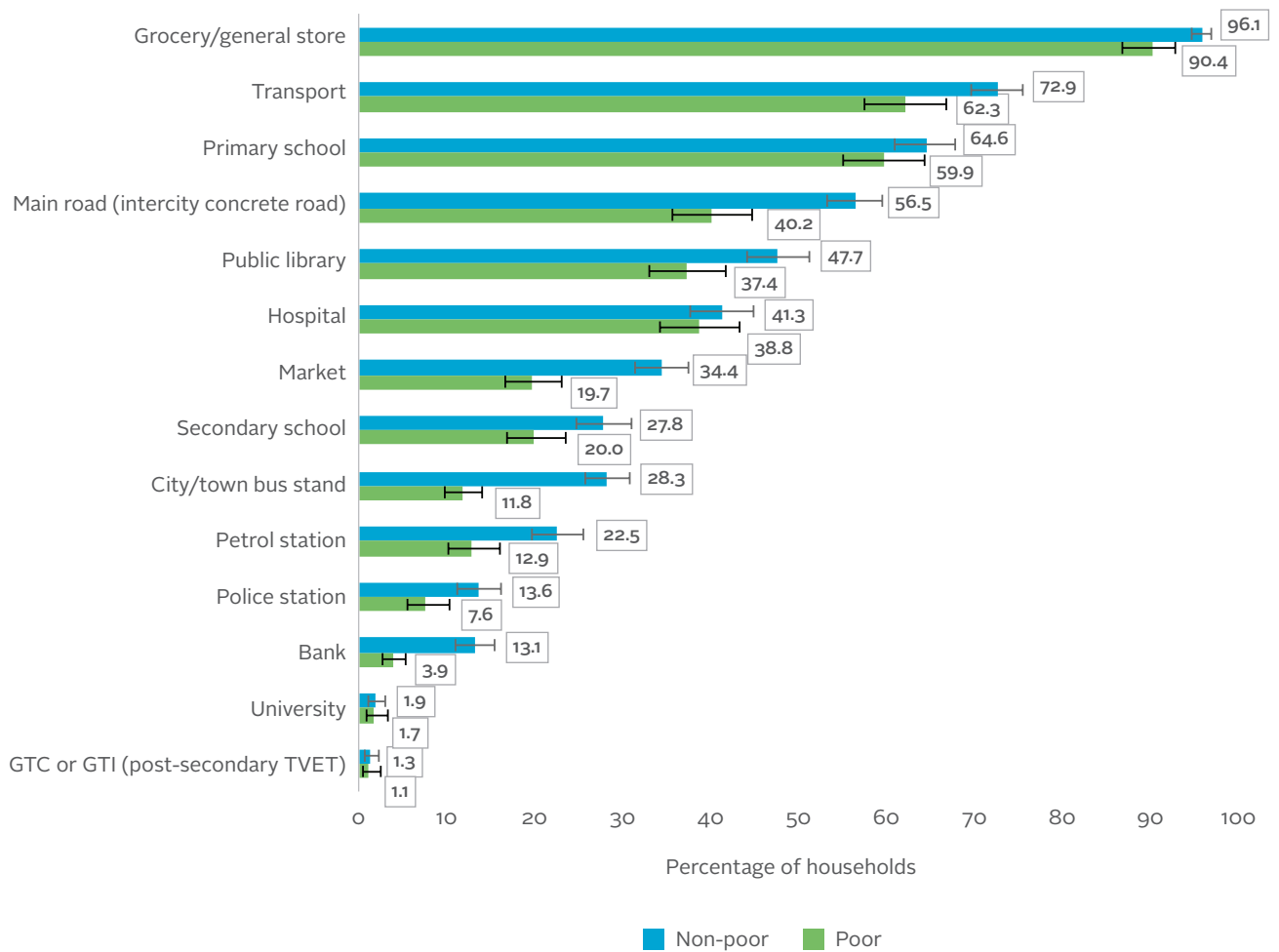


### 3.4 Access to services

**Many of the poor have limited access to a range of basic services.** Summary statistics on access to basic services for households are provided in Figure 3.6. Grocery/general stores are by far the most accessible facilities, with 95 percent of households living in a community that has such a store. Transport services and public primary schools are ranked second and third in terms of accessibility. On the other hand, police stations, banks, universities and vocational schools seem to be the least accessible. For all listed services, accessibility is higher for non-poor households, with the largest gap in market- and transport/road-related services. Combined, these services can help improve productivity, enhance connectivity to markets and provide the necessary environment for a market economy (Winters, Davis and Carletto, 2009).

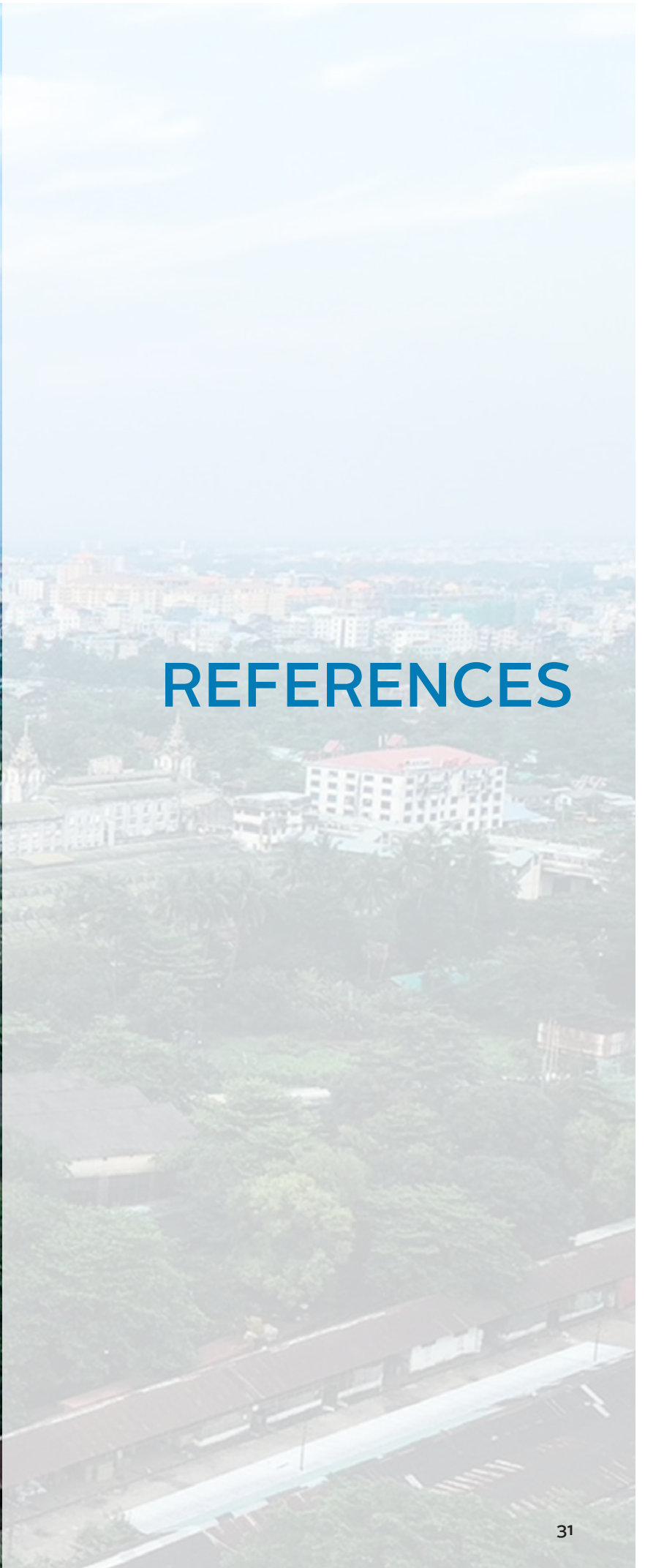
Figure 3.6

Accessibility of services by poverty status, 2017









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# ANNEXES

## Annex 1. Computing the welfare aggregate and updating the poverty line

Poverty assessment typically consists of three steps (see, for example, Coudouel, Hentschel and Wodon, 2002). First, one has to choose the relevant indicator of well-being. Second, one has to select a poverty line – the threshold below which a given household or individual is classified as poor. Finally, one must select relevant poverty and inequality measures to report, whether it is for the whole population or a sub-group. This annex documents choices made for the estimation of the household-level welfare aggregate as well as some issues related to data quality and the necessary adjustments made.

### Welfare aggregate

Household welfare is measured using a consumption aggregate for both theoretical and practical reasons (see Deaton and Zaidi, 2002). Compared to other welfare measures, consumption is a better proxy for long-term average welfare, assuming that household smooth their consumption over time. In developing countries, consumption is typically easier to measure than income due to the predominance of informal activities (e.g., in agriculture or self-employment). The consumption aggregate is constructed using both market and non-market consumption, such as home production or gifts. The aggregation method for each of the four components of the consumption aggregate – food, non-food, housing and durables – is discussed in detail below.

### Food consumption

The MLCS captures data on food consumption over the last seven days. Food consumption is computed by aggregating consumption from market purchases, consumption of home-produced food and food received in kind, all valued at the self-reported or imputed market price for each item. The food consumption module of the MLCS asks households to report consumption of foods in 10 broad categories: (i) rice and cereals; (ii) pulses and beans; (iii) roots and tubers; (iv) meat, dairy and eggs; (v) fish and other seafood; (vi) vegetables; (vii) fruits; (viii) oils and fats; (ix) other food products; and (x) food consumed away from home.

### Imputation of food consumption for Kayin State and Rakhine State

Quantitative and qualitative evidence, including follow-up interviews with enumerators and supervisors, reveals that the following non-sampling errors affected the quality of the food consumption data in Kayin State and Rakhine State: (i) mishandling of non-standard units for food; (ii) difficulty assessing accurate consumption quantities, particularly of meat and fish; and (iii) double counting of food consumed away from home. Due to issues in comparability with previous surveys,<sup>14</sup> within-survey imputation methods were used to impute total food consumption for Kayin State and Rakhine State.<sup>15</sup> More specifically, an econometric model was used to predict per adult equivalent daily food consumption for these two states. Explanatory variables included characteristics of the household and the household head, ownership of assets and characteristics of the dwelling.

### Non-food consumption (excluding housing and durable goods)

Non-food consumption includes expenditures on tobacco and alcohol, education, clothes and footwear, energy, water and sanitation, personal care, transport and communication (excluding purchase of vehicles), recreation, leisure and cultural expenses, entertainment materials and consumables. All non-food items are computed from the non-food household module using expenditures reported from the past 30 days, 6 months or 12 months with the exception of education expenses, which come from the education module, and water, tobacco, and alcohol expenses, which are recorded in the food consumption module.

<sup>14</sup> For instance, the 2015 MPLCS is not representative at the state/region level.

<sup>15</sup> This was done using multiple imputation via Stata's `mi` command to predict log per adult equivalent food expenditures. More details will be provided in the forthcoming technical report.

Exceptional health expenditures, such as on in-patient or out-patient treatment are typically considered “regrettable necessities” and are often excluded from the consumption aggregate (Deaton and Zaidi, 2002). We follow this approach in our construction of the consumption aggregate.

## Housing

The importance of using econometric modelling for rent imputation for welfare measurement is well recognized (e.g. Balcazar et al., 2014). Surveys often collect information on monthly rent for those renting their dwelling. The literature recommends imputing a rent value for those who are not subject to rent, such as homeowners or those for whom housing is provided free of charge (Deaton and Zaidi, 2002). Housing use values are typically estimated using a standard ordinary least squares (OLS) approach. Given that the literature finds that the use of the wrong retransformation method or no transformation method at all can lead to appreciable biases in estimation, the generalized linear model (GLM) was used for the 2015 MPLCS (Balcazar et al., 2014; Hill, 2011). For consistency, the housing model for the 2017 MLCS follows the same GLM approach.

## Durable goods

The consumption aggregate typically includes the usage value of durable goods since durable items, such as cars and refrigerators, are usually expensive and infrequent purchases that last for several years. For example, if a household buys a car, it will be inappropriate to add the total value of the purchase to the welfare aggregate. Instead, the usage value, which takes depreciation in the durable good into account, should be used (Deaton and Zaidi, 2002).

For each good, the age of the durable good, its current value, and the estimated value of the good if it were purchased new in the current day are used to calculate the good-specific depreciation rate. The usage value is given by the following formula:

$$Usage\ value_{ih} = Quantity\ owned_{ih} \times \left( \frac{Current\ value_{ih}}{1 - d_i} \right) \times (r + 0.01 + d_i)$$

where i=durable good; h=household; d=depreciation rate; r=real interest rate

## Spatial and temporal price adjustments

The nominal consumption aggregate generated from the steps outlined above is adjusted for spatial and within-survey temporal price differences using price indices. Two price indices that are commonly used to capture spatial price variation are the Paasche and Laspeyres price indices. A geometric average of the two indices (Fisher index, Törnqvist index) may also be used, which may come closer to the true cost of living. To make these indices more relevant to the poor, they can be restricted to a poor reference group (Deaton and Zaidi, 2002).

We spatially deflate prices using a Laspeyres welfare-ratio index. The Laspeyres index calculates the relative price in each state/region for the food basket. As the basket is fixed, the index does not allow for households to substitute expensive products, and therefore can overstate the cost of living in high-price areas. We use the ratio of the cost of the food basket between each state/region and the national level as the state/region deflator.

Given that the survey was conducted over a 12-month period, it is important to also account for within-survey temporal differences in the cost of living. More precisely the first quarter is taken as reference period. The food basket is valued for each of the subsequent quarters using national prices in the first quarter. The ratio between median prices in each quarter and median prices in the first quarter is used as the within-survey temporal price deflator.

## Household composition

Total household consumption is divided by the household size expressed in number of equivalent adults to generate household per equivalent adult consumption. Due to economies of scale and the fact that caloric requirements differ by age, consumption aggregates are often constructed in terms of per adult equivalents rather than in per capita terms. The equivalence scale used is based on the Ministry of Health's recommended nutrition scales, which stipulate an average of 2,400 calories for an adult aged 20 and above (Table A1.1).

Table A1.1

### Adult equivalence scales

Age group	Required calories	Adjusted for nonfood	Equivalent adult scale
<1 year old	850	1315	0.55
1–3 years old	1,260	1,602	0.67
4–6 years old	1,670	1,889	0.79
7–9 years old	1,800	1,980	0.83
10–12 years old	2,300	2,330	0.97
13–15 years old	2,550	2,505	1.04
16–19 years old	2,750	2,645	1.10
20 and above	2,400	2,400	1.00

Source: Ministry of Health and Sports; and CSO, UNDP, WB staff computations.

Note: A weight of 0.3 is given to non-food, while a 0.7 weight is given to food

## Poverty lines

Following international best practice, the Cost of Basic Needs (CBN) approach was used to estimate poverty lines for the 2015 MPLCS (MOPF and World Bank, 2017c). The approach includes two main steps: (i) construction of the food poverty line; and (ii) construction of the non-food poverty line. The food poverty line is obtained on the basis of the main food items consumed in the country (food basket). Conversion tables are used to convert daily quantities consumed into calories. The normative food basket used for the food poverty line is obtained by adjusting upward the actual food basket consumed by the population in order to meet basic needs as recommended by nutritionists.

Once the food poverty line has been estimated, various approaches can be used to estimate the non-food poverty line. One approach is to consider spending on non-food items by households whose welfare aggregate is at the food poverty line. The non-food expenditure of these households is then used as the non-food poverty line. The sum of the food and non-food poverty lines generates the overall poverty line.

For proper comparison over time, it is recommended to use the same underlying approach to derive the poverty line. In this case, the 2015 poverty line is used, adjusted to cater for inflation between 2015 and 2017. Table A1.2 provides the resulting poverty line in 2017 prices.

Table A1.2

Poverty lines and median expenditures in 2017 (in 2017 quarter 1 kyat)

	Per adult equivalent per day
Poverty line	1,590
Food poverty line	1,037
Non-food poverty line	553
Median expenditures	2,182
Median food expenditures	1,188

## Poverty measures

This subsection is reproduced with minor changes from Coudouel, Hentschel and Wodon (2002). It provides expressions for commonly used poverty measures: the first three poverty measures of the FGT class (Foster, Greer and Thorbecke, 1984), namely, the headcount, the poverty gap and the squared poverty gap.

**Poverty headcount:** This is the share of the population that is poor, i.e. the proportion of the population for whom consumption per equivalent adult  $y$  is less than the poverty line  $z$ . Suppose we have a population of size  $n$  in which  $q$  people are poor. The poverty headcount is:

$$H = \frac{q}{n}$$

**Poverty gap:** The poverty gap, which is often considered as representing the depth of poverty, is the mean distance separating the population from the poverty line, with the non-poor being given a distance of zero. The poverty gap is a measure of the poverty deficit of the entire population, where the notion of “poverty deficit” captures the resources that would be needed to lift all the poor out of poverty through perfectly targeted cash transfers. It is defined as follows:

$$PG = \frac{1}{n} \sum_{i=1}^q \left[ \frac{z - y_i}{z} \right]$$

where  $y_i$  is the consumption of household  $i$ , and the sum is taken only on those households that are poor (with appropriate weights). The poverty gap can be written as being equal to the product of the consumption (or income when that metric is used) gap ratio and the headcount index of poverty, where the consumption (or income) gap ratio is itself defined as:

$$PG = I * H, \text{ with}$$

$$I = \frac{z - y_q}{z} \quad \text{where} \quad y_q = \frac{1}{q} \sum_{i=1}^q y_i \quad \text{is the average consumption of the poor.}$$

It must be emphasized that the consumption gap ratio  $I$  in itself is not a good measure of poverty. Assume that some households that are poor but close to the poverty line are improving their

standards of living over time, and thereby become non-poor. The consumption gap ratio will increase because the mean distance separating the poor from the poverty line will increase (this happens because some of those who were less poor have emerged from poverty – so that those still in poverty are, on average, further away from the poverty line), suggesting a deterioration in welfare, while nobody is worse off and some people are actually better off. Although the consumption gap ratio  $I$  will increase, the poverty gap itself  $PG$  will decrease, because the headcount index of poverty will decrease, suggesting an improvement towards poverty reduction. The problem with the consumption gap ratio is that it is defined only on the population that is poor, while the poverty gap is defined on the population as a whole.

**Squared poverty gap:** This is often described as a measure of the severity of poverty. While the poverty gap takes into account the distance separating the poor from the poverty line, the squared poverty gap takes the square of that distance into account. When using the squared poverty gap, the poverty gap is weighted by itself so as to give more weight to the very poor. Said differently, the squared poverty gap takes into account the inequality among the poor. It is obtained as follows:

$$P^2 = \frac{1}{n} \sum_{i=1}^q \left[ \frac{z - y_i}{z} \right]^2$$

The headcount, the poverty gap and the squared poverty gap are the first three measures of the FGT class of poverty measures. The general formula for this class of poverty measures depends on a parameter  $\alpha$  that takes a value of zero for the headcount, 1 for the poverty gap and 2 for the squared poverty gap in the following expression:

$$P^\alpha = \frac{1}{n} \sum_{i=1}^q \left[ \frac{z - y_i}{z} \right]^\alpha$$

It is important to use the poverty gap and perhaps even the squared poverty gap in addition to the headcount for evaluation purposes, since these measures capture different aspects of poverty. Basing an evaluation on the headcount only could consider as more effective policies that lift the least poor (those close to the line) out of poverty to the detriment of poorer households. The poverty gap  $PG$  and the squared poverty gap  $P^2$ , on the other hand, put more emphasis on helping those who are further away from the line, the poorest of the poor.

## Inequality measures

This subsection provides expressions for commonly used inequality measures. As is the case for poverty measures, some inequality measures can be decomposed, but these decompositions are not used in this report.

The standard Gini index or coefficient measures twice the surface between the Lorenz curve, which maps the cumulative income share on the vertical axis against the distribution of the population on the horizontal axis, and the line of equal distribution. A large number of mathematical expressions have been proposed for the Gini index, but the easiest to manipulate is based on the covariance between the consumption  $Y$  of a household and the rank  $F$  of the household in the distribution of consumption (this rank takes a value between zero for the poorest and 1 for the richest). Denoting by  $\bar{y}$  mean consumption, the standard Gini index is:

$$Gini = 2 \text{ cov } (Y, F) / \bar{y}$$



The Gini index has attractive theoretical and statistical properties which other inequality measures do not have, which explains why it is used by many researchers. The extended Gini uses a parameter  $v$  to emphasize various parts of the distribution. The higher the weight, the more emphasis is placed on the bottom part of the distribution ( $v=2$  for the standard Gini index):

$$Gini(v) = \frac{-v \operatorname{cov}(y, [1 - F]^{v-1})}{\bar{y}}$$

Another family of inequality measures is the general entropy (GE) measure, defined as:

$$GE(\alpha) = \frac{1}{\alpha^2 - \alpha} \left[ \frac{1}{n} \sum_{i=1}^n \left( \frac{y_i}{\bar{y}} \right)^\alpha - 1 \right]$$

with  $GE(0) = \frac{1}{n} \sum_{i=1}^n \log \frac{\bar{y}}{y_i}$ ,  $GE(1) = \frac{1}{n} \sum_{i=1}^n \frac{y_i}{\bar{y}} \log \frac{y_i}{\bar{y}}$  and  $GE(2) = \frac{1}{2n\bar{y}} \sum_{i=1}^n (y_i - \bar{y})^2$

Measures from the GE class are sensitive to changes at the lower end of the distribution for  $\alpha$  close to zero, equally sensitive to changes across the distribution for  $\alpha$  equal to 1 (the Theil index) and sensitive to changes at the higher end of the distribution for higher values.

## Annex 2. Statistical appendix

Figure A2.1

Poverty density as a function of poverty headcount, 2017

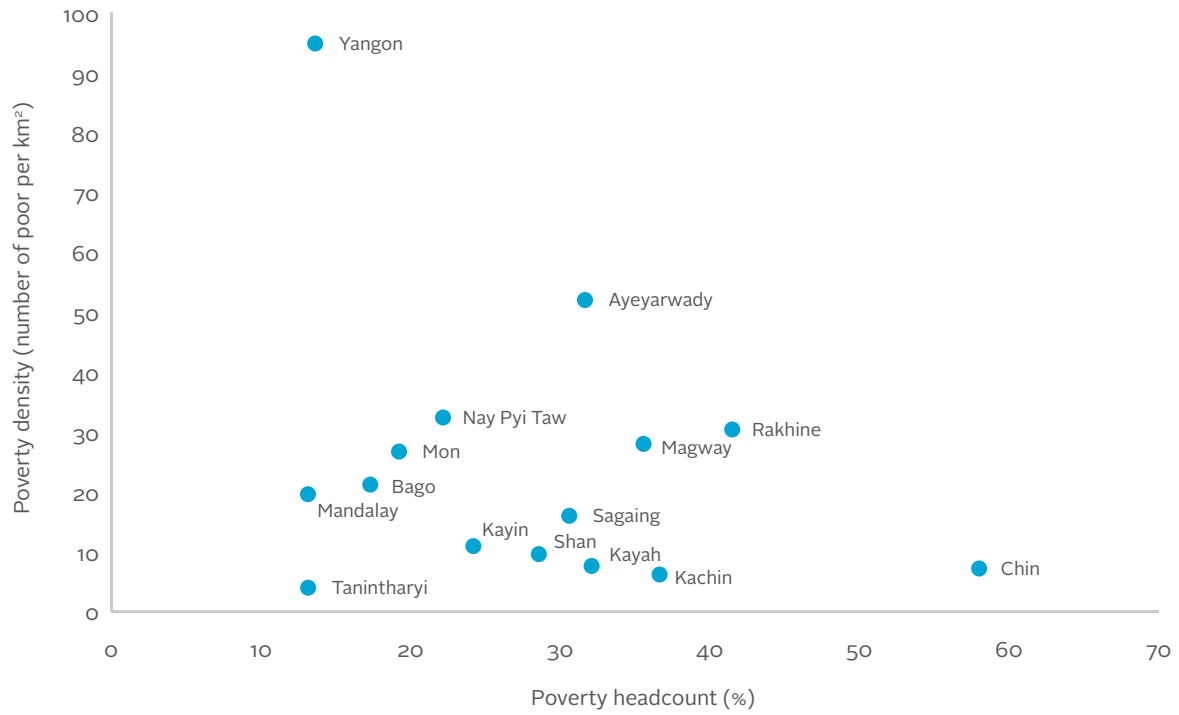


Table A2.1

## Poverty profile in 2017

	Distribution of the population (%)	Poverty rate (%)	Number of poor (ooo)	Contribution to poverty (%)	Poverty gap	Squared poverty gap
<b>Union</b>	<b>100.0</b>	<b>24.8</b>	<b>11,756</b>	<b>100.0</b>	<b>5.2</b>	<b>1.6</b>
<b>Residential area</b>						
Urban	28.5	11.3	1,531	13.0	2.3	0.7
Rural	71.5	30.2	10,225	87.0	6.4	2.0
<b>Agro-zone</b>						
Coastal	8.5	32.2	1,288	11.0	5.5	1.5
Delta	25.9	24.4	2,990	25.4	5.1	1.6
Hills and Mountains	18.8	31.0	2,767	23.5	7.6	2.7
Dry	31.8	24.8	3,736	31.8	5.0	1.5
Yangon	15.0	13.7	974	8.3	2.7	0.8
<b>State/region</b>						
Kachin	3.3	36.6	570	4.8	10.0	3.7
Kayah	0.6	32.0	91	0.8	8.4	3.1
Kayin	2.8	24.2	325	2.8	4.1	1.0
Chin	1.0	58.0	275	2.3	18.7	8.1
Sagaing	10.3	30.7	1,499	12.8	6.4	2.1
Tanintharyi	2.8	13.2	175	1.5	2.5	0.9
Bago	10.1	17.4	830	7.1	3.8	1.1
Magway	7.5	35.6	1,268	10.8	7.6	2.4
Mandalay	11.8	13.2	741	6.3	2.3	0.6
Mon	3.6	19.2	329	2.8	4.2	1.5
Rakhine	5.7	41.6	1,114	9.5	7.0	1.7
Yangon	15.0	13.7	974	8.3	2.7	0.8
Shan	11.1	28.6	1,507	12.8	6.8	2.3
Ayeyarwady	12.2	31.7	1,831	15.6	6.3	1.9
Nay Pyi Taw	2.2	22.1	228	1.9	4.1	1.1
<b>Household head disability status</b>						
Disabled	5.9	27.4	771	6.6	5.1	1.4
Non-disabled	94.1	24.6	10,985	93.4	5.2	1.7
<b>Household head gender</b>						
Male	82.2	24.9	9,716	82.7	5.3	1.7
Female	17.8	24.1	2,039	17.3	4.9	1.5

	Distribution of the population (%)	Poverty rate (%)	Number of poor (ooo)	Contribution to poverty (%)	Poverty gap	Squared poverty gap
<b>Household head age</b>						
Less than 19	0.1	31.7	19	0.2	9.5	3.6
20–29	5.2	21.3	528	4.5	4.2	1.2
30–39	17.0	27.6	2,226	18.9	6.4	2.2
40–49	24.1	24.3	2,785	23.7	5.4	1.8
50–59	24.9	24.5	2,891	24.6	4.9	1.5
60 and over	28.6	24.4	3,306	28.1	4.8	1.4
<b>Household head education</b>						
Never attended school	10.7	39.5	2,006	17.1	9.3	3.2
Monastic	13.8	32.3	2,114	18.0	6.9	2.1
Primary	57.2	25.5	6,909	58.8	5.2	1.6
Middle	11.1	12.1	635	5.4	2.3	0.7
High & above	7.2	2.7	91	0.8	0.4	0.1
<b>Household head occupation</b>						
Agriculture only	32.9	35.3	5,513	46.9	7.9	2.5
Agriculture + non-agriculture	29.8	27.6	3,893	33.1	5.6	1.7
Non-agriculture only	35.1	13.2	2,197	18.7	2.6	0.8
No work	2.2	14.9	153	1.3	2.6	0.7
<b>Household size</b>						
1 individual	1.1	4.3	23	0.2	0.5	0.1
2–3 individuals	20.0	10.2	972	8.3	1.9	0.5
4–5 individuals	41.4	22.2	4,354	37.0	4.4	1.3
6–7 individuals	24.5	35.4	4,113	35.0	7.6	2.4
8 individuals and more	12.9	37.6	2,293	19.5	9.0	3.1
<b>Union</b>	<b>100.0</b>	<b>24.8</b>	<b>11,756</b>	<b>100.0</b>	<b>5.2</b>	<b>1.6</b>

the fact that the number of cases is small, the results are not statistically significant. However, the results do suggest that the number of cases is small, and the results are not statistically significant. However, the results do suggest that the number of cases is small, and the results are not statistically significant. However, the results do suggest that the number of cases is small, and the results are not statistically significant.

The results of the regression analysis are presented in Table 2. The dependent variable is the number of cases. The independent variables are the number of cases, the number of cases, and the number of cases. The results show that the number of cases is significantly related to the number of cases, and the number of cases is significantly related to the number of cases.

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