

MANAGING TECHNOLOGY'S IMPLICATIONS

FOR WORK, WORKERS, AND
EMPLOYMENT RELATIONSHIPS IN ASEAN



MOLISA





The Asia Foundation/Karl Grobl

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The Association of Southeast Asian Nations (ASEAN) was established on 8 August 1967. The Member States are Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam.

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The Study Report has fulfilled its objective of supporting ASEAN policy makers with assessment and recommendations to better understand the effect of platform economy and automation to the relationships between employees and employers and how labour policies and regulations shall evolve to accommodate it.

The Study Report was produced through a series of consultations with ASEAN Member States including through the conduct of the First Validation Workshop of the Draft Study Report on the Changing Nature of Employment Relationships as the Impact of the Use of ICT and the Adequacy of Legislations in Regulating Employment Relationships that was held on 29-30 July 2019 in Ha Noi, Viet Nam.

MOLISA would like to express our sincere appreciation to the following individuals for their technical expertise and knowledge in making this study worthwhile.

To the focal points, all of whom we cannot acknowledge individually, of labour ministries of ASEAN Member States for your invaluable time, information and insights;

To the ASEAN Secretariat, particularly Ms. Mega Irena, Ms. Pitchanuch Supavanich (former Senior Officer), Ms. Madyah Rahmi Lukri, and Ms. Sarah Choirinnisa for sharing their time and invaluable inputs at various stages of the Study;

To the consultant and report author, Just Jobs Network particularly Ms. Sabina Dewan and team, for their expertise that made this Study Report possible.

Foreword



The report “Managing Technology’s Implications for Work, Workers, and Employment Relationships in ASEAN” has been led by Viet Nam within the framework of ASEAN Labour Ministers’ Work Programme 2016-2020 with the support from the ASEAN Development Fund. It is compiled in the context that the 4th Industrial Revolution is occurring, bringing about cyber – physical systems and technologies emerging in almost all aspects of life.

Digital technologies have been and will bring outstanding progress in terms of productivity and efficiency in production and business. Most ASEAN Member States have a demographic advantage with the working age population accounting for an increasing proportion. ASEAN will continue to be the most dynamic region in the world with its rapid development, its high labour market participation rate and the relay of technology will make this trend continue to grow exponentially, driving significant changes in the labour market and creating new forms of employment while legal frameworks are currently not fully equipped.

Besides the prevalence of informal and self-employment, platform jobs are also rapidly growing in the region. Accordingly, technologies are changing the nature of employment and labour/ industrial relations, at the same time, posing great challenges for the governments, technology enterprises and workers themselves in the assurance of welfare for workers when there is no bond between employers and workers. The above-mentioned challenges require that we focus more on the promotion and protection of the rights of workers. Based on the economic and demographic characteristics, the labour market context of the member states and analytic documents on technical transformation in the ASEAN, the report has conducted assessments on impacts of new forms of technology-based jobs on employment relationships in the ASEAN, proposing recommendations to bridge the policy gaps. I hope, through these recommendations, policy makers in the ASEAN can come up with suitable policies to help the labour market, enterprises and workers adjust themselves to the speed and scope of technologies.

Being the lead nation in this study activity, I highly appreciate the collaboration and participation of other ASEAN Member States, the effective coordination of the ASEAN Secretariat and active involvement by Justjobs Network – all of them have been together with Ministry of

Labour, Invalids and Social Affairs of Viet Nam in the development of this report. I hope governments of all ASEAN Member States will continue their efforts to implement recommendations of the report to help ASEAN Member States and its enterprises, workers, trade unions and social organisations to make the best use of advantages brought about by technologies in the coming time, and to come up with suitable solutions to effectively respond to impacts of technologies on jobs, workers and employment relationships in the region./.

A handwritten signature in blue ink, appearing to read 'eeannd', is written over a horizontal line. The signature is stylized and cursive.

H.E DAO NGOC DUNG

Minister

Ministry of Labour, Invalids and Social Affairs of Viet Nam

Foreword



Technological progress has led to major transformations in the labor market. The emergence of platform companies, namely companies with business models based on online platforms, in transportation, wholesale and retail, travel and services in ASEAN has positively spurred consumption and economic growth. With ASEAN's digital economy forecasted to grow by 6.4 times to almost US\$200 billion by 2025 from US \$31 billion in 2015, the rise of more platform companies and work opportunities is expected to have a profound impact on employment relationships.

While the digital economy has not been affected much by the global economic slowdown caused by the COVID-19 pandemic, the situation has resulted in income losses for some workers in platform companies. As majority of platform workers are non-standard wage employees, losing their sole income without alternative sources puts their livelihood and welfare at risk. These circumstances remind us of the importance of social protection for workers in the informal economy and those in non-standard forms of employment, as well as the need for us to manage and adapt to the changing needs of a twenty-first century workforce and labor market.

I commend the ASEAN Labor Ministers for commissioning this timely and salient study as part of their 2016-2020 Work Programme. This report provides an overview on various topics, from technology trends in the world of work, to lessons learnt from regulatory responses of ASEAN Member States in ensuring the welfare of workers and decent working conditions in the non-standard forms of employment. It also offers valuable recommendations on how labor policies and regulations should evolve to better manage technology's implications on employment in the region.

I am confident that this report will serve as a useful resource for ASEAN Member States in promoting sound labour management systems, allowing the peoples of ASEAN the opportunity to widely enjoy the benefits presented by technology and the Fourth Industrial Revolution.

A handwritten signature in black ink, which appears to be 'Lim Jock Ho'.

DATO LIM JOCK HOI

Secretary-General of ASEAN

¹ Study on MS MEs Participation in the Digital Economy in ASEAN (ERIA, 2018)



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Abbreviations

ASEAN	The Association of Southeast Asian Nations
AMS	ASEAN member states
GDP	Gross Domestic Product
CLMV	Cambodia, Lao PDR, Myanmar, Vietnam
ASEAN-6	Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, Thailand
FDI	Foreign Direct Investment
PPP	Per day Per person
TCF	Textiles, Clothing and Footwear
E&E	Electronics and Electrical
TVET	Technical-Vocational Education & Training
ASPIRE	Atlas of Social Protection Indicators of Resilience and Equity
SPL	Social Protection and Labour
CAD	Computer-aided Design
BPO	Business Process Outsourcing
IoT	Internet of Things
KEI	Knowledge Economy Index
PMETs	Professionals, Managers, Executives & Technicians
ICTs	Information and Communication Technologies
BPJS	Indonesia's government-run health insurance program
UNI-MLC	Union Network International-Malaysia Labour Centre
NSS	National Sample Survey
DoLE	Department of Labour and Employment
TNVS	Transport Network Vehicle Service
ECP	Employees Compensation Program
PBPU	Pekerja Bukan Penerima Upah
NSSF	National Social Security Fund
EII	Employment Injury Insurance
SPPF	Social Protection Policy Framework
UHC	Universal Health Coverage
AQRF	ASEAN Qualifications Reference Framework
NQF	National Qualifications Framework
MQF	Malaysian Qualifications Framework
PQF	Philippine Qualifications Framework
TPQI	Thailand Professional Qualification Institute
BDQF	Brunei Darussalam Qualifications Framework
MOLISA	The Ministry of Labour, Invalids and Social Affairs
SEPs	Self-Employed Persons
SPES	Special Program for Employment of Students
GIP	Government Internship Program
ELP	Earn and Learn Program
GAP	Government Assistance Program
ADB	Asian Development Bank
MSMEs	Micro Small & Medium Enterprises
STEM	Science, Technology, Engineering and Mathematics
BLS	U.S. Bureau of Labor Statistics



Introduction

The Fourth Industrial Revolution¹, defined by the emergence of cyber-physical systems, embeds technology into nearly all aspects of our lives. No other phenomenon has had as sweeping an effect on the way people live and work as this recent wave of technological advancement. Technology is altering the nature of employment, displacing some jobs while making way for new forms of work.² It demands a requisite level of education and skill to perform certain jobs, or the tasks within them. In these ways, technology is rapidly restructuring labor markets such that it is altering the relationship between employees and employers, and the role of the state in managing these shifts.

The Association of Southeast Asian Nations (ASEAN), a grouping of diverse and some of the world's most dynamic economies including Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam, is also grappling with how best to adjust to this recent wave of technological change.

This study was authorized as part of the ASEAN Labor Ministers' Work Programme 2016-2020. It is intended to help harmonize the strategies and programs under the ASEAN Socio-Cultural Community Blueprint and those in the ASEAN Economic Community Blueprint in the areas of employment and decent work against the backdrop of the region's digital transformation. It looks at various ASEAN declarations and instruments relating to technology, jobs and skills, including for example, the ASEAN Declaration on Innovation (2017) and The Vientiane Declaration on Transition from Informal Employment to Formal Employment towards Decent Work Promotion in ASEAN (2016), to understand how these commitments could be used to guide policies and regulations in the region toward improved preparedness for transformations in the world of work.

This study investigates how technology, especially the automation of routine-intensive work, the emergence of the knowledge economy and the evolution of platform work, is affecting employment in the region. How must policies and regulations evolve to accommodate this new reality? This report examines the region's digital transition and the associated transformations underway in the world of work against the backdrop of its economic achievements, demographic change and existing labor market trends.

ASEAN member states (AMS) vary in terms of their levels of development, demographic profiles and the stage of their structural transformation. With the exceptions of Lao PDR, Myanmar and Vietnam where agriculture has the highest share of total employment, the service sector claims the highest share of total employment in all other member states. As



automation affects agricultural and

manufacturing productivity, the service sector offers potential to capitalize on the knowledge economy; that is, an economy in which the quantity, quality, and accessibility of information drive growth rather than the means of production. This is contingent on ensuring that people have the requisite levels of basic education with transferable skills, appropriate training and digital literacy.

Platforms are a major driver of the knowledge economy. Arguably, the emergence of platform work is instigating significant changes in the labor market and giving rise to new forms of employment that existing regulatory frameworks are ill-equipped for. Informal employment, self-employment and contractual work are

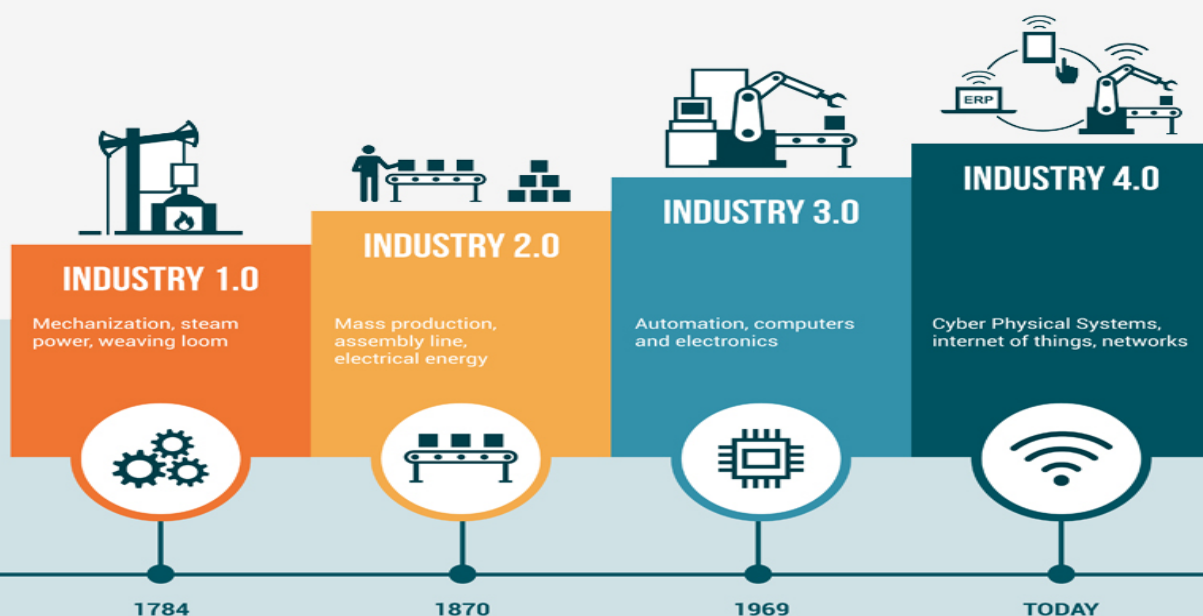
already prevalent in some ASEAN member states, but platform work is growing exponentially and it is driving an increase in these forms of work.

As this happens, welfare protections become de-linked from

employment, and usual ways of organizing workers no longer apply. This raises questions about whether the state, the workers themselves, or the technology firm/platform should assume responsibility for providing necessary social protection. How should workers organize given these new forms of work? What investments in human capital can ensure access to the new opportunities that technology brings, and protection against the losses for workers?

Following the introduction, section two of this report provides an overview of the economic, demographic and labor market trends in ASEAN and variations across its member states. Section three analyzes technological trends, specifically automation of routine-intensive work, the rise of the knowledge economy and the evolution of on how to fill the gaps.

platform work. In section four, the report addresses the new policy dilemmas that these emergent trends raise. Section five examines existing frameworks and policies, and the gaps, across ASEAN to respond to the ensuing labor market disruptions resulting from technology. The final section draws lessons from the regulatory responses in countries around the world to make recommendations on how ASEAN's policymakers can craft appropriate policy responses that can help labor markets, businesses and workers adjust to the pace and scale of technological change. This report draws insights from information provided by AMS, and analyzes existing literature on ASEAN's digital transformation to assess the gaps in current policies and to make recommendations



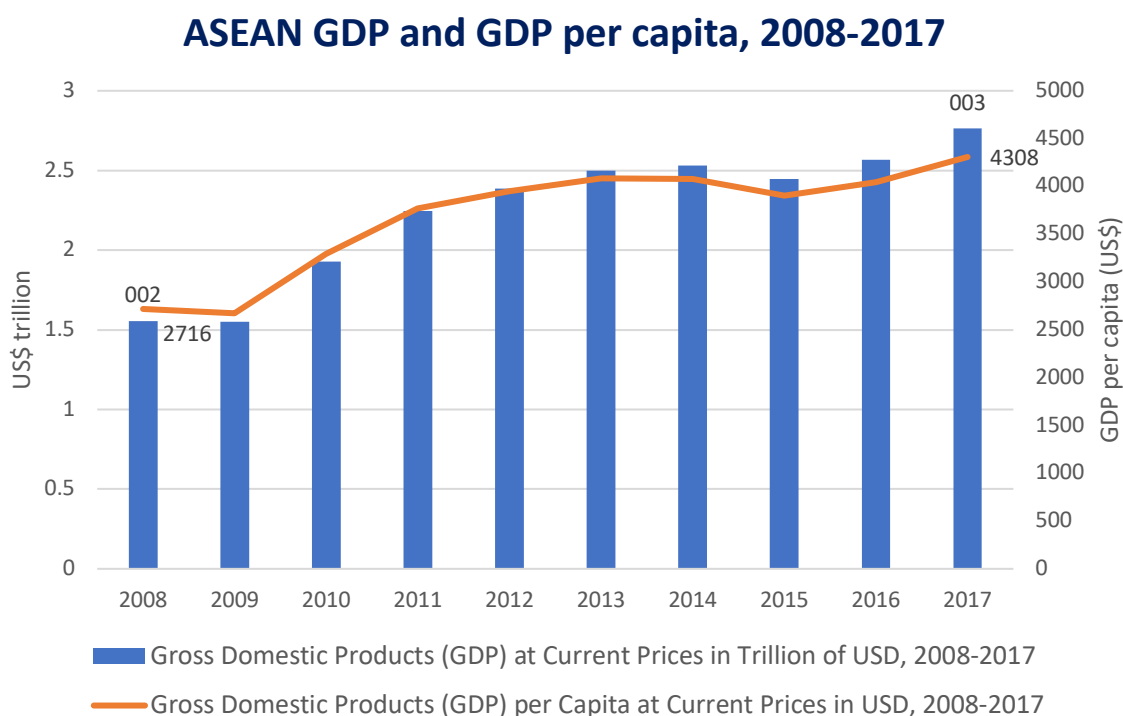
Economic, Demographic and Labor Market Trends in ASEAN

Since the turn of the century, ASEAN has seen high growth, investment, and a rapid expansion of its middle class. All member states, except Thailand and Singapore, have a demographic advantage in which the working age population constitutes a rising share in the total population with a relatively smaller dependent population. There is, nonetheless, heterogeneity among individual ASEAN member states that vary along economic, demographic and labor market dimensions' characteristic of their respective level of development. The aggregate and disaggregated economic backdrop of the region offers insight into its current digital transformation and the future of work in the region.

Economic development across the region

The collective Gross Domestic Product (GDP) of ASEAN in 2017 was USD\$ 2.76 trillion (**Figure 1**)³—a figure poised to reach USD\$ 4 trillion by 2022.⁴ Together, ASEAN member states constitute the world's seventh largest market and the world's third largest labor force, after China and India.⁵ By 2030, ASEAN is expected to be the fourth-largest economy in the world.⁶

Figure 1: ASEAN GDP total values and per capita, 2008-2017

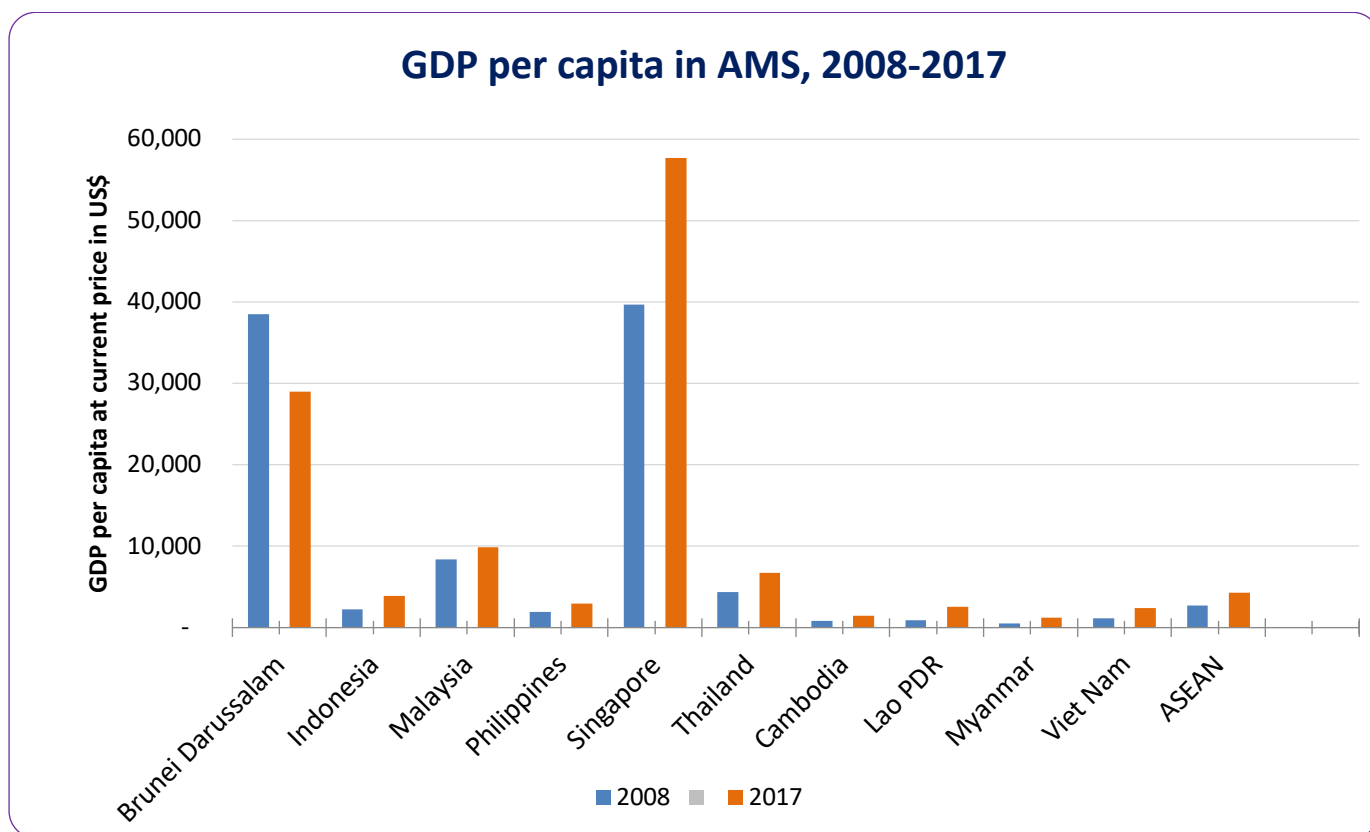


Source: ASEAN Statistical Yearbook 2018, ASEAN Secretariat

However, the level of economic development varies considerably across member states. As of 2017, GDP per capita in Singapore and Brunei Darussalam reached more than US\$ 50,000 and US\$ 25,000, respectively, while GDP per capita in Cambodia and Myanmar stood at US\$ 1,266 and US\$ 1,297, respectively. Indonesia, Malaysia, the Philippines and Thailand’s GDP per capita ranged from US\$3,000 to US\$10,000. According to the World Bank’s classification, Singapore and

Brunei Darussalam are high-income countries; Malaysia and Thailand are upper-middle-income countries; Indonesia, the Philippines, Vietnam, Lao PDR and Myanmar are lower- middle-income countries, and Cambodia is a low-income country.⁷ This report uses categories outlined by the AMS: CLMV countries refer to Cambodia, Lao PDR, Myanmar, Vietnam; and the ASEAN-6 are Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore, Thailand.

Figure 2: GDP per capita in AMS, 2008 & 2017

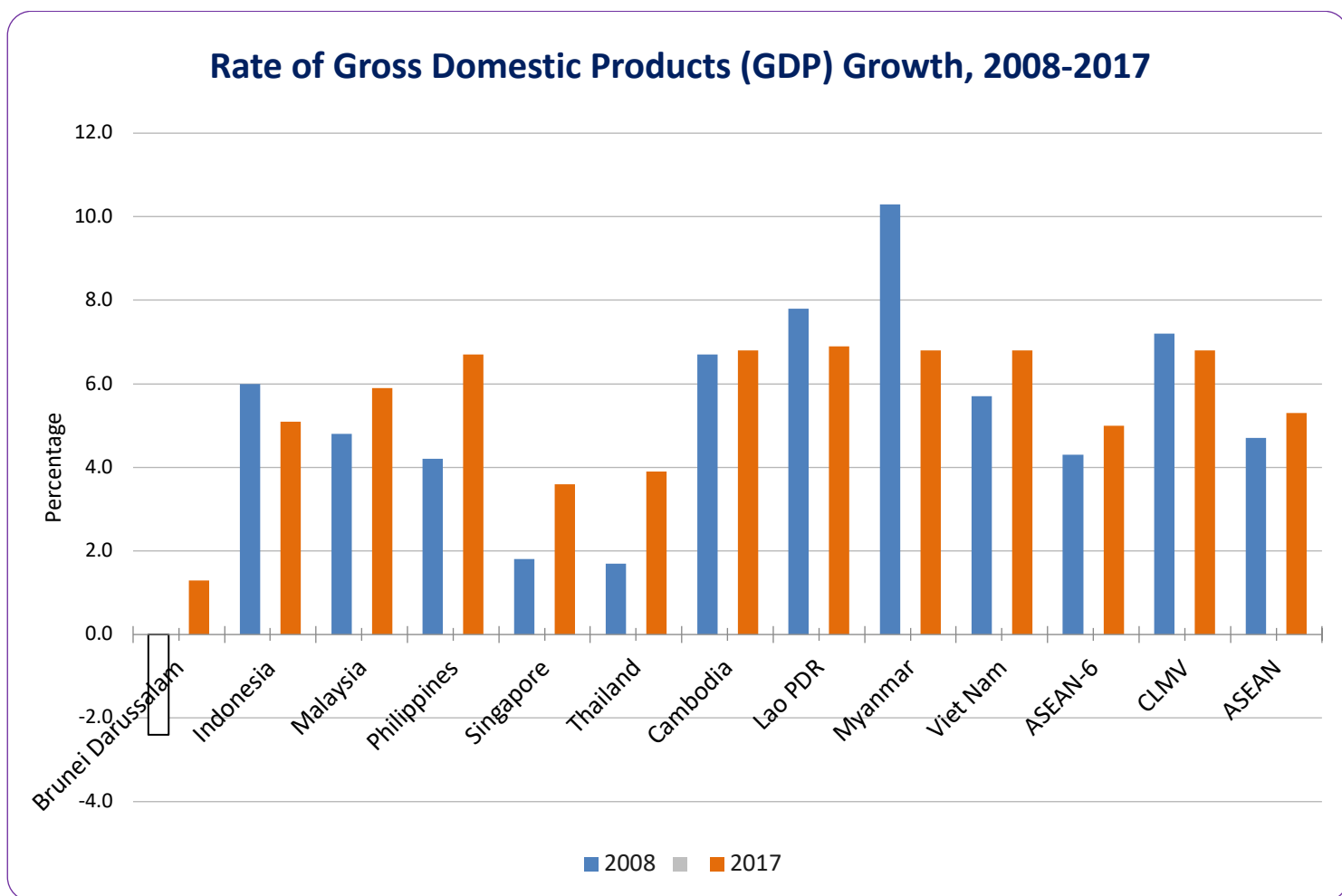


Source: ASEAN Statistical Yearbook 2018, ASEAN Secretariat

The gap in economic development between CLMV and ASEAN-6 has reduced significantly in recent decades—with CLMV countries growing faster than ASEAN-6 countries and increasing their share of ASEAN’s GDP. In 1999, CLMV represented less than 8 percent of ASEAN’s economy,⁸ whereas by 2017 this share had increased to 12 percent.⁹ In 1999, at US\$ 300, the average GDP per capita of ASEAN-6 was

almost five times higher than that of CLMV;¹⁰ but by 2017, ASEAN-6 GDP per capita was only 2.7 times higher than that of the CLMV.¹¹ By 2017, CLMV GDP per capita had grown to US\$ 1,940.¹² CLMV countries have maintained a high GDP growth rate above six percent over the course of the last decade (**Figure 3**). Expanding tourism and trade in goods helped drive these figures.

Figure 3: GDP growth rates in ASEAN, 2008-2017

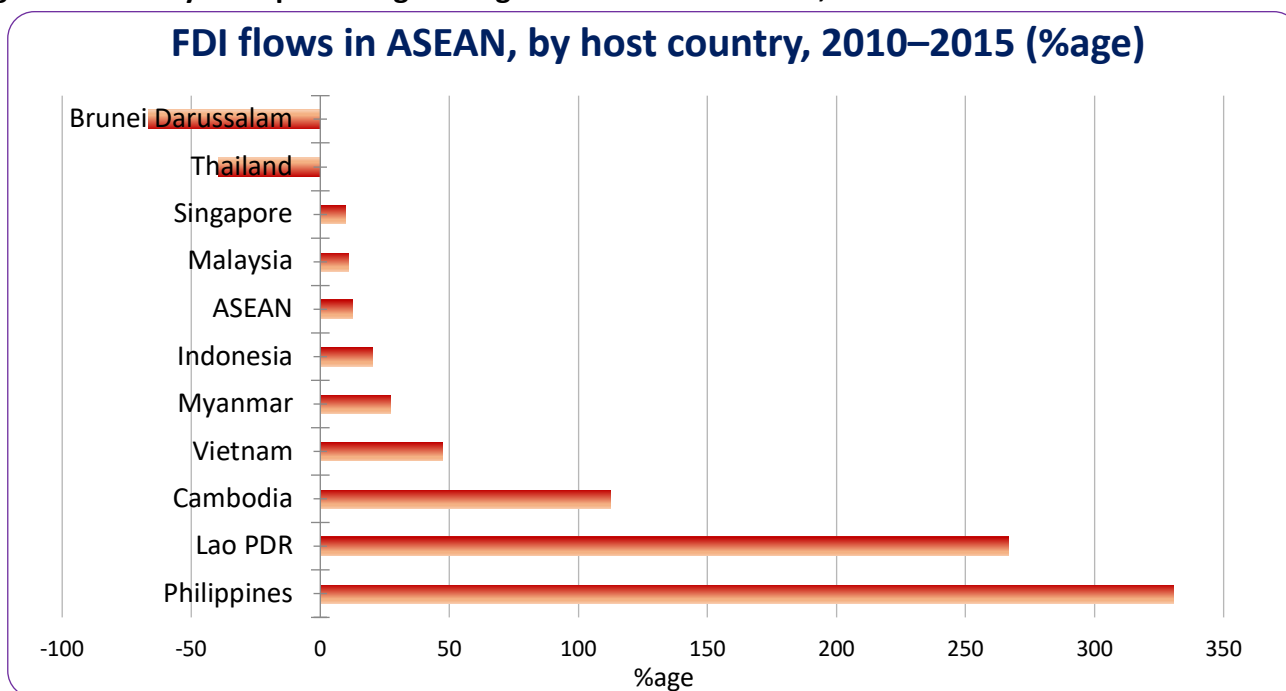


Source: ASEAN Economic Community Chartbook 2017, The ASEAN Secretariat, Jakarta

In terms of attracting investment, CLMV countries saw the highest growth rates in Foreign Direct Investment (FDI) inflows in the five-year period from 2010-2015 (Figure 4), further contributing to narrowing the development gap. Combined FDI flows to the four CLMV countries reached a record level of \$23

billion in 2017 – accounting for 17 percent of total FDI flows in ASEAN.¹³ Targets of these investments varied across CLMV – dominated by finance and other services in Cambodia, infrastructure in Lao PDR, manufacturing and mining in Myanmar, and manufacturing in Vietnam.¹⁴

Figure 4: Country-wise percentage change in FDI flows in ASEAN, 2010-2015



Source: ASEAN Secretariat, ASEAN FDI database in ASEAN Secretariat, UNCTAD (2018), “ASEAN Investment Report 2018 - Foreign Direct Investment and the Digital Economy in ASEAN”.

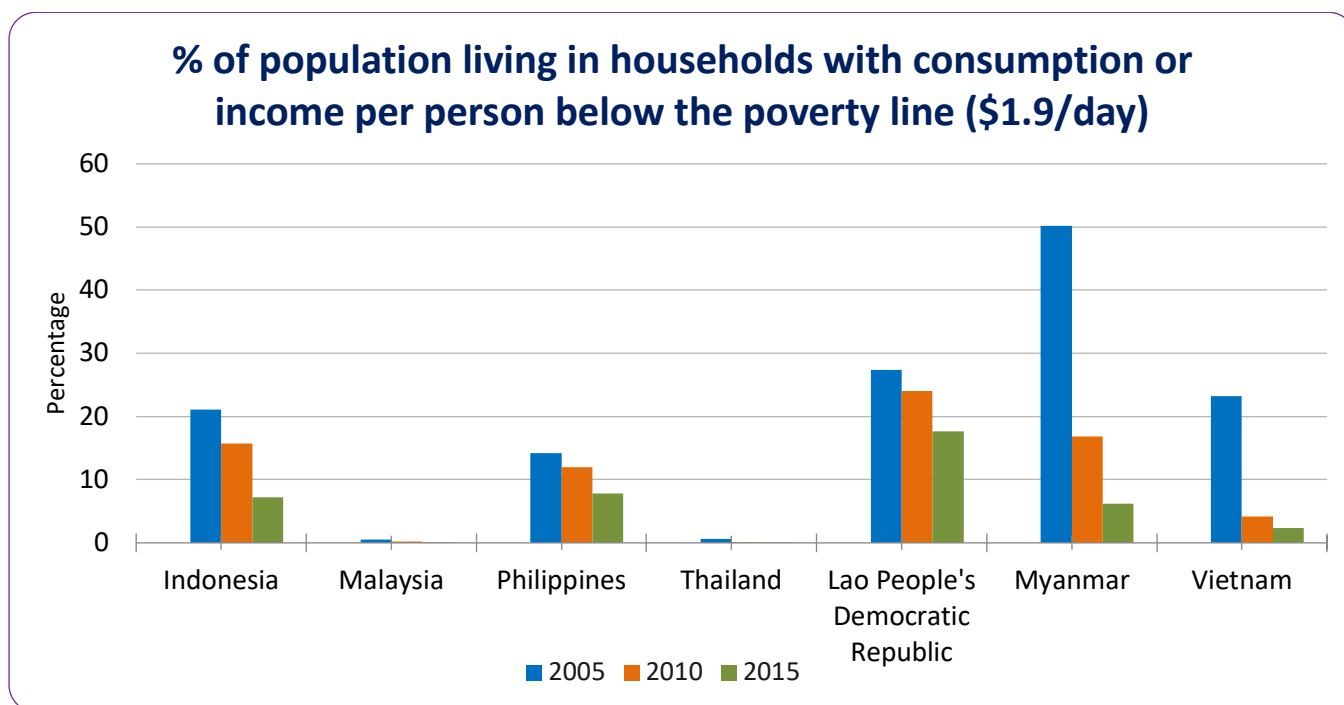
ASEAN has made significant advances in addressing poverty. **Figure 5** uses World Bank data to illustrate trends in poverty from 2005 to 2015.ⁱ According to the ASEAN Secretariat, between 1990 and 2015, most AMS were able to meet the Millennium Development Goal of halving the proportion of people whose income was less than one dollar a day. The Philippines and Thailand were the only countries unable to reach this target, according to ASEAN data available based on the \$1.25/day international poverty line measured in 2005 purchasing power parity (PPP).¹⁵

ⁱ PovcalNet is the official data source used for the monitoring of SDG target 10.1: “By 2030, progressively achieve and sustain income growth of

Figure 5 shows the reduction in the number of people living in extreme poverty defined as living on less than \$1.90 a day measured in 2011 PPP rates—the threshold the World Bank’s uses as the international extreme poverty line. Poverty reduction from 2005 to 2015 was most dramatic in the CLMV countries, while for Malaysia and Thailand extreme poverty was almost nil at the start of this period. Rates of extreme poverty as a share of the population remain the highest in Lao PDR, where progress has been slower than in other CLMV countries.¹⁶

the bottom 40 percent of the population at a rate higher than the national average.”

Figure 5: Poverty rates in ASEAN, 2005-2015



Source: PovcalNet, the on-line tool for poverty measurement developed by the Development Research Group of the World Bank (<http://iresearch.worldbank.org/PovcalNet>)

Note: Figures based on 2011 PPP and US\$1.90/day poverty line

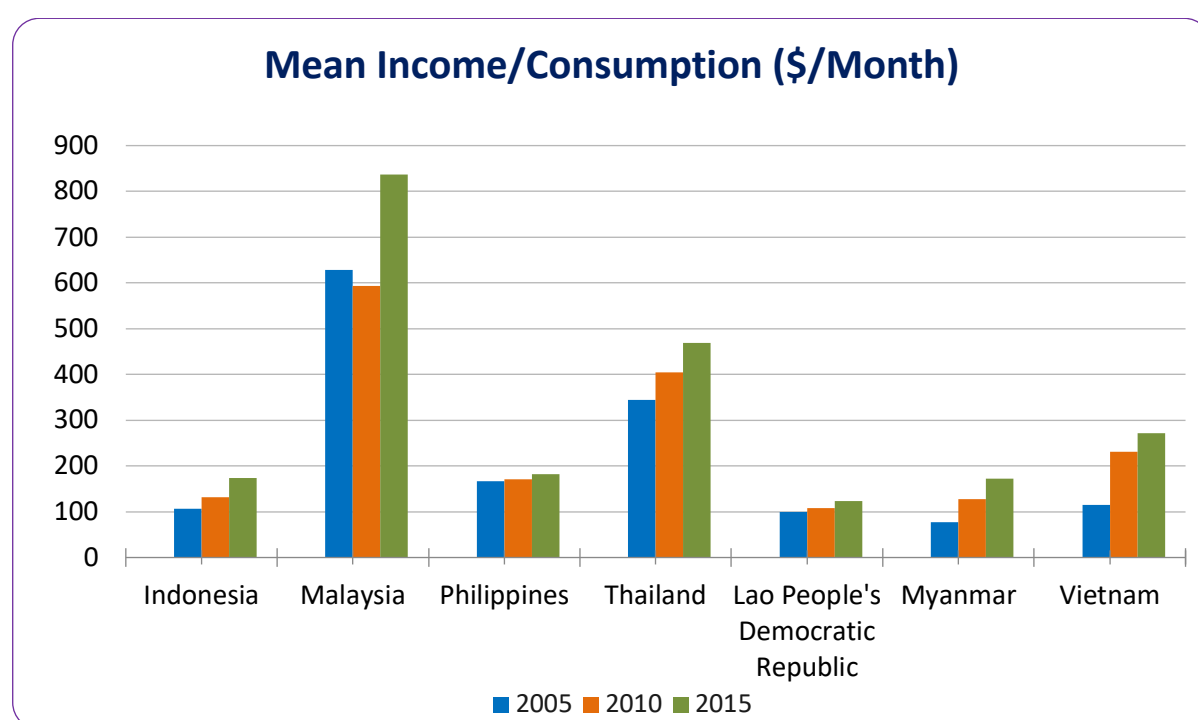
Poverty reduction and economic growth have also come with a remarkable increase in mean income, or consumption per capita. Here too, the rate of change has been especially pronounced in CLMV countries like Myanmar and Vietnam (**Figure 6**). This trend signals the growing middle class in ASEAN—one of the reasons why the global business community sees the region as an attractive investment destination.

The 2018 World Bank East Asia and Pacific regional report, *Riding the Wave*, shows that the shares of population that make up the “consumption class”—the economically secure and middle classⁱⁱ—have grown substantially, although at varying rates, between 2005 and 2015.¹⁷

ⁱⁱ The report defines the following consumption cut-offs for income groups expressed in terms of 2011 U.S. dollars PPP: (1) The extreme poor, living on less than US\$1.90 a day. This threshold is the World Bank’s international poverty line. (2) The moderate poor, living on US\$1.90 to US\$3.10 a day. The upper threshold is the moderate poverty line traditionally used by the World Bank in analysing trends in developing East Asia and Pacific. (3) The economically vulnerable, living on US\$3.10 to US\$5.50 a day. The cut-off to assess vulnerability is based on a 10 percent or higher chance of falling into poverty in the next measurement period, using panel

Price Waterhouse Coopers projects that the middle classⁱⁱⁱ —defined as households with daily expenditures of \$10 to \$100 per day per person (PPP)—will make up two-thirds of the overall population in ASEAN by 2030.¹⁸ It is this middle class that could serve as an engine of sustained growth for the region.¹⁹ A growing middle class increases aggregate demand creating new markets for goods and services, and for the adoption and consumption of technology.

Figure 6: Mean monthly income/consumption in ASEAN, 2005-2015 (\$/Month)



Source: PovcalNet, the on-line tool for poverty measurement developed by the Development Research Group of the World Bank (<http://iresearch.worldbank.org/PovcalNet>)

data (following the methodology of Lopez-Calva and Ortiz-Juarez 2011). (4) The economically secure, living on US\$5.50 to US\$15.00 a day. These households are not at significant risk of falling into poverty (see above) but cannot yet be considered middle class (see below). (5) The middle class, living on more than US\$15.00 a day. This threshold is broadly consistent with the values used by other studies.

ⁱⁱⁱ Kharas and Hamel (2018) A global tipping point: Half the world is now middle class or wealthier. Brookings Institution, Washington DC. Kharas and Hamel classify households that spend between \$11 to \$110 per day, per person, in 2011 purchasing power parity terms, as middle class. The defining factor of a middle-class household is that it has some discretionary income. The authors note, “[T]he new middle class is predominantly Asian – almost nine in 10 of the next billion middle-class consumers will be Asian – but they are spread out in China, India, and South and South East Asia.” Similarly, a report by Price Waterhouse Coopers suggests that by 2030 Asia’s middle-income segment with daily expenditures of US \$10 to US \$100 is expected to represent two-thirds of the overall population in the ASEAN region.

Structural transformation

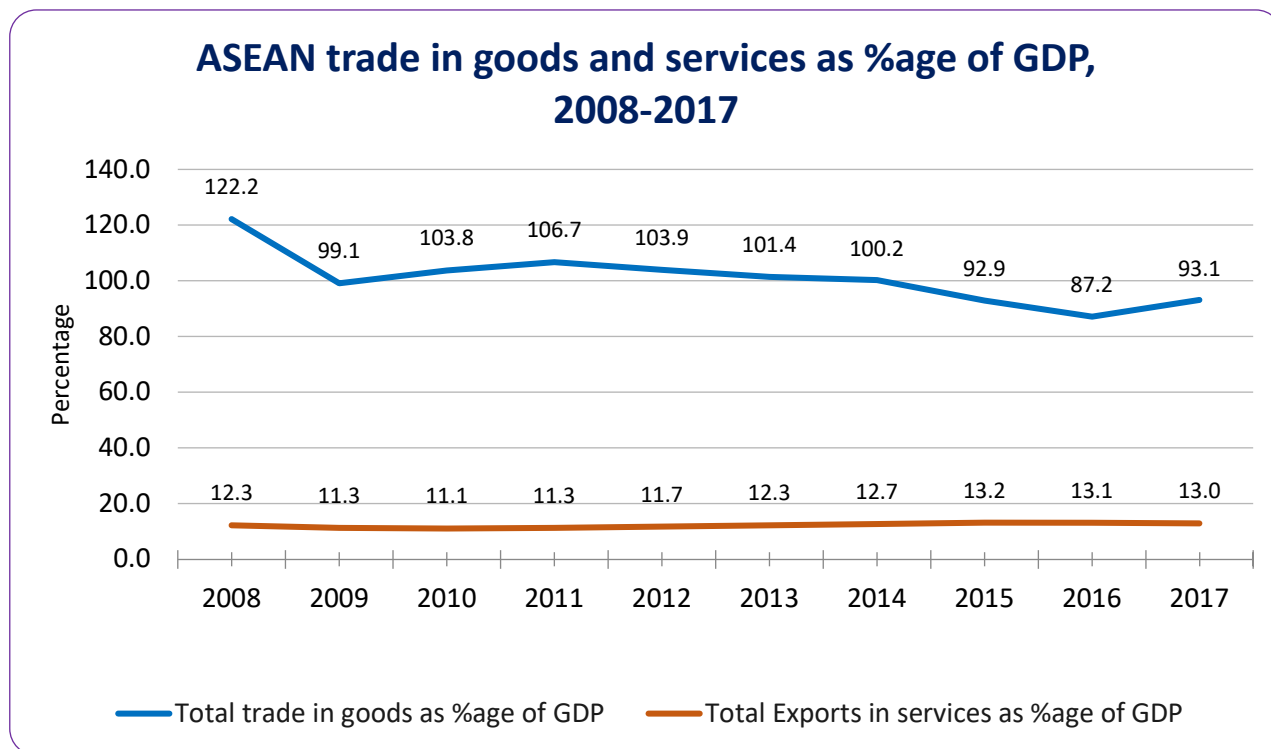
ASEAN's economic growth, its growing middle class, and the CLMV's upward trajectory not only raise questions about the factors that are driving these trends, but also about what these trends mean for the adoption and consumption of technology and its impact on the world of work. The common definition of structural transformation refers to a reallocation of economic activity away from agriculture to higher value-added sectors such as manufacturing and services. Technology, however is upending these traditional notions by introducing an additional transition toward a knowledge-economy; that is an economy in which the quantity, quality, and accessibility of information drive growth rather than the means of production. This section examines the factors that are driving this structural transformation in ASEAN.

The largest component of ASEAN's economy in terms of value-added in GDP is its services sector. Services account for a growing share of the region's GDP, reaching 53 percent in 2016 up from 49.8 percent in 2005. The services component of GDP ranges from 37 to 74 percent across the economies of AMS; the lowest share is

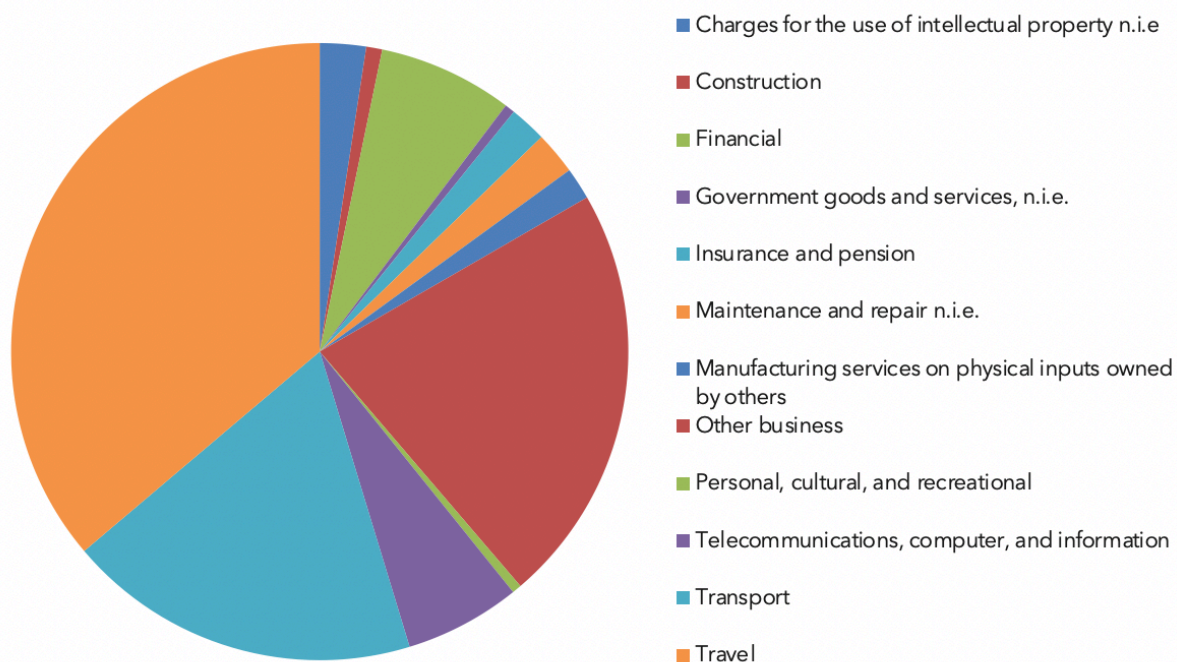
in Brunei, followed by Lao PDR and Myanmar; the highest is in Singapore, followed by Thailand.²⁰

Despite the growing dominance of services in national GDP, manufacturing remains a significant driver of economic growth in ASEAN economies and an important link to the global economy. Moreover, manufacturing also spurs an expansion of services. In terms of trade, ASEAN's services exports in 2017 were 13 percent of ASEAN's total trade in goods and services (**Figure 7**).²¹ ASEAN is the world's fifth-largest manufacturing economy²²—a hub for production of textiles, vehicles, and hard-disk drives, among many other consumer goods and inputs in global value chains.²³ The region produces more than one-tenth of the value of the global electronics sector.²⁴ However, the growth of trade in services is outpacing growth in manufacturing. Total trade in services doubled in the decade leading up to 2016. The top three services traded were travel, transport and other business services (**Figure 7**).²⁵ The growth in services trade propels and is propelled by a knowledge economy as well.

Figure 7: ASEAN total trade in services as percentage of GDP and breakdown of exports of services



Breakdown of ASEAN Exports of Services, 2017



Source: ASEAN Statistical Yearbook 2018, ASEAN Secretariat

Box 1: The Diverse Economic Contexts of ASEAN

The economic context differs considerably across the ASEAN member states. The short descriptions offered here draw from diverse perspectives to provide a birds-eye perspective on the variation.

Brunei is among the richest countries in the world. Its wealth comes primarily from its oil and gas sectors, which in 2014 accounted for more than 60 percent of the country's GDP and over 90 percent of its total exports.²⁶ Data from 2017 shows that in the past five years, the country has struggled to maintain its GDP growth, and the government is making efforts to encourage investment in non-petroleum sectors to diversify the economy and jumpstart domestic competition.²⁷

Singapore has the highest GDP per capita among AMS, with an economy organized around high value-added services like pharmaceuticals, financial and business services, and a vibrant start-up ecosystem with opportunities in fintech, transport and logistics, e-commerce and real estate.²⁸ It is the largest exporter and importer of services in the region.²⁹ Singapore also hosts advanced manufacturing activities—including production of integrated circuits, semiconductor devices and printed circuit boards.³⁰ It leads the region in electronics and electrical exports.³¹ The country is stepping up investments in high value-added activities and will continue to focus on sophisticated high-technology industries requiring specialized skills.³²

Indonesia is the largest economy in ASEAN and has a dynamic manufacturing sector that makes up more than a fifth of its GDP.³³ The two most significant sectors

within manufacturing are textiles, clothing and footwear (TCF) and the automotive and auto parts sector. Among ASEAN, Indonesia is the second-largest TCF exporter behind Vietnam, with exports totaling US\$16.3 billion in 2015, and the second-largest exporter of motor vehicles and auto parts after Thailand, with exports of US\$ 5 billion the same year.³⁴ The service sector is the largest employer, accounting for 47 percent of total employment in 2018,³⁵ most of which is in retail.³⁶ Online commerce in Indonesia holds high potential given the prevalence of the service sector in the country's national economy.

Malaysia is one of the most technologically-advanced countries in ASEAN and attracts the second highest amount of FDI after Singapore, with inward flows of about US\$ 12 billion in 2016.³⁷ Services have contributed significantly to the country's economic progress and are now the largest sector of the economy³⁸ also constituting just under 62 percent of total employment in 2018. Nonetheless, the country's economy remains strongly tied to exports of manufactured goods and commodities—especially electronic appliances, electronic parts and components, palm oil and natural gas. It is hailed by the World Bank as one of the top-performing economies in the Asia Pacific region, particularly in the areas of efficiency and quality of business regulations.³⁹

The Philippines has sustained recent economic growth through tradable, labor-intensive services as opposed to manufacturing, though the latter still remains an important part of its economy.

In 2015, services and manufacturing represented 59 percent and 20 percent of GDP, respectively.⁴⁰ Its key service sector is business processing outsourcing (BPO), which constituted six percent of GDP in 2015 and has seen annual average growth of 18 percent since the early 2000s.⁴¹ The sector's rapid development has been driven by an abundant English-speaking workforce, supportive government policies, and active business associations. Recently, the electronics and electrical products (E&E) sector has seen impressive expansion – between 2010 and 2015, E&E exports increased by 72 percent, representing over 50 percent of the Philippines' total exports in 2015.⁴² Although agriculture still employs one out of every four people as of 2018, the country is transforming into a predominantly service-based economy with 56 percent of total employment in this sector.⁴³

In Thailand, services and manufacturing sectors contributed 56 percent and 27 percent to total GDP, respectively.⁴⁴ Services constitute just under 46 percent of total employment. Three key manufacturing sectors in Thailand's economy are electrical and electronics; automotive and auto parts; and textiles, clothing and footwear. In the E&E sector, Thailand is the world's second-largest producer of hard disk drives and air conditioning units.⁴⁵ Thailand is also the largest exporter of automobiles and auto parts in ASEAN. Manufacturing's share of total employment has remained stable at 23 percent between 2014 to 2018.

Cambodia is following an economic development strategy that has proven successful elsewhere in ASEAN—attempting to lift millions of people out of poverty through export-oriented

manufacturing. The manufacturing sector made up a third (32 percent) of Cambodia's GDP in 2015.⁴⁶ Growth in manufacturing has been driven predominantly by the textiles, clothing and footwear sector, which accounted for 6 percent of total GDP in 2015.⁴⁷ TCF manufacturing in Cambodia is predominantly characterized by labor-intensive and low-skilled production, and more than 80 percent of the TCF workforce are rural women.⁴⁸ Cambodia's labor productivity in the TCF sector is among the lowest in ASEAN and is about one-fifth the level in Thailand's TCF sector.⁴⁹ Despite the push for labor-intensive manufacturing, industry as a whole constitutes just under 27 percent of total employment in 2018, up from 25 percent in 2012. Manufacturing represented approximately 18 percent of total employment in 2012.⁵⁰

Lao PDR, one of the poorest countries in ASEAN, was ranked the second fastest-growing economy in the world in 2016 by KPMG.⁵¹ The country's rapid economic growth over the last decade has been driven largely by its rich reserve of mineral resources, like copper and gold, as well as infrastructure projects, including cross-border developments under China's One Belt One Road initiative.⁵² As of 2018, 68 percent of total employment was in the agricultural sector – a sector characterized by high levels of informality and the sharing of low productivity work.

Myanmar is witnessing one of the most dramatic economic transformations in recent ASEAN history. It recorded the fastest economic growth in the world in 2016, according to KPMG, following a successful national election in 2015 which led to the easing of most sanctions against the country.⁵³ Like other countries in the region, it has sought to build its economy

through export-oriented textiles, clothing and footwear. Manufacturing accounted for 35 percent of GDP in 2015; however, TCF exports totaled only about 2 percent of the ASEAN TCF export leader, Vietnam.⁵⁴ As in Cambodia, TCF manufacturing in Myanmar is characterized by labor-intensive, low-skilled production, and monthly wages for garment workers are far lower than in other TCF manufacturers in ASEAN, such as Vietnam. Since the country is still in early stages of structural transformation, agriculture remains the dominant sector of employment, with one out of two workers employed in the sector as a share of total employment.⁵⁵

In Vietnam, industry accounted for 25.5 percent of total employment. Manufacturing accounted for approximately 15 percent of GDP in 2015.

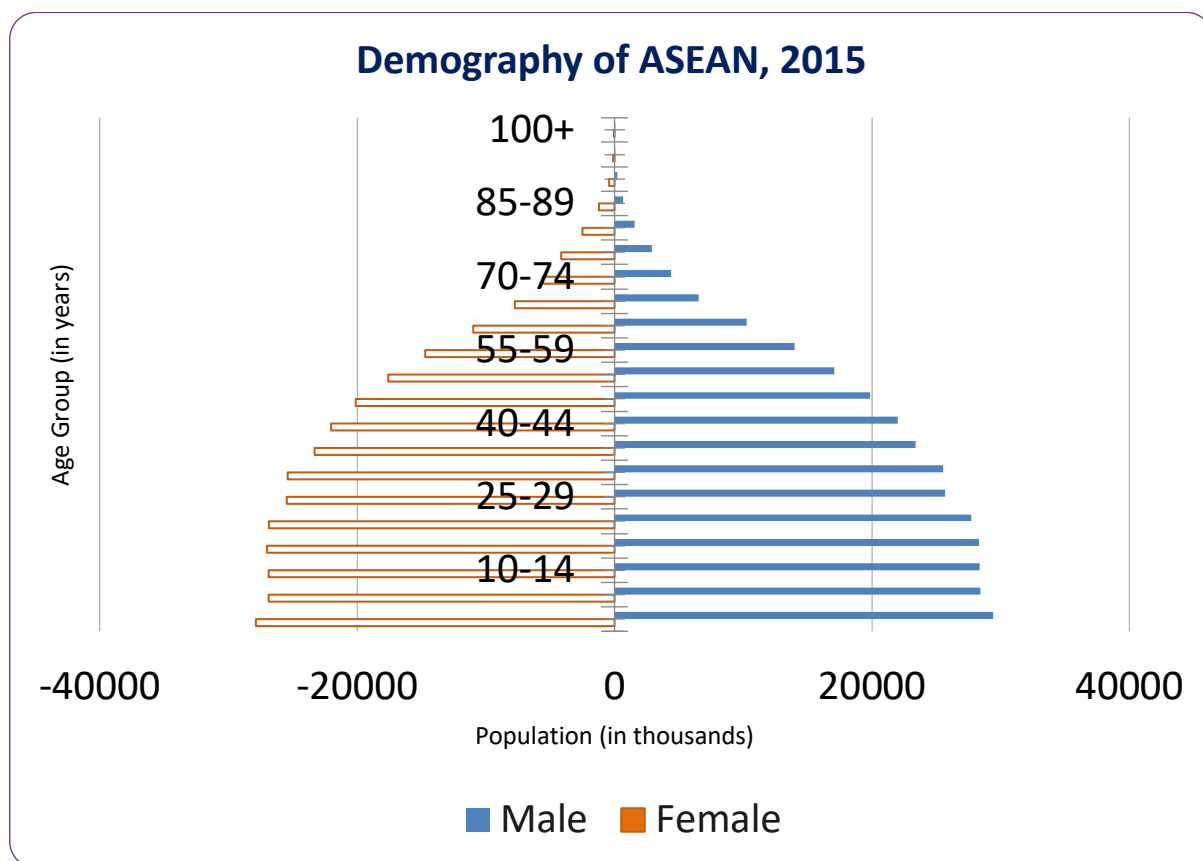
Yet, the country has seen rapid development of two critical sectors—textiles, clothing and footwear and electronics and electrical products.⁵⁶ Vietnam is the TCF export leader in ASEAN, the third-largest footwear exporter and fifth-largest exporter of textile and clothing in the world.⁵⁷ However, TCF manufacturing in Vietnam is predominantly characterized by labor-intensive, low-skill production, and labor productivity is only a fifth of the level in Thailand, the leader in TCF productivity.⁵⁸ The E&E sector, while less prominent by comparison, is growing quickly and accounted for around one-quarter of total exports in 2014.⁵⁹ Like Laos and Myanmar, agriculture still constitutes the largest share in total employment at just under 40 percent.

Demographic and labor market trends

With 642 million people, AMS together constitute 8.5 percent of the world's population. More than 60 percent of this population falls within the working-age population of 15-64 years. All ASEAN member states with the exceptions of Thailand and Singapore have a demographic advantage in which there is a rising share of the working age population

and a relatively smaller dependent population. A younger population offers productive potential; it comes with opportunities for greater digital penetration and consumption, but it also calls for investments in education and skills. Some estimates suggest that ASEAN will add 68.2 million new workers to the labor force by 2025.⁶⁰

Figure 8: ASEAN Population Pyramid, 2015



Source: United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019, custom data acquired via website.

ASEAN’s 213 million youth^{iv} constitute a demographic bulge that is expected to peak reaching 220 million by approximately 2038.⁶¹ Absorbing these new entrants into the workforce, and ensuring that they have productive livelihoods is imperative to building a strong consumption- driven middle class and stable economic growth.

Against the backdrop of this demographic bulge along with technology’s restructuring of labor markets, successful trajectories for young people depend on how equipped they are to participate in a rapidly changing 21st century economy. Education and skills are therefore of prime importance.

^{iv} According to the First Youth Development Index report by ASEAN and UNFPA, youth are defined as the cohort between 15 – 34 years old.

From **Figure 9**, it is clear that the majority of the employed youth in the region have completed basic education—primary and lower secondary education. While the region has high adult literacy rates (most AMS have literacy rates of 95 percent or above)^ν and high net enrolment ratio in primary education - the average of the region, at 96 percent, is better than the global average of 89 percent - these gains are yet to lead to major gains in enrolment in higher education (**Figure 9**).

Both the 2011-2015 ASEAN Five Year Work Plan on Education and the subsequent 2016-2020 plan emphasizes improving access to quality primary and secondary education. Improving enrolment in secondary and tertiary education is the necessary next step to harnessing the potential of the region’s youth bulge.

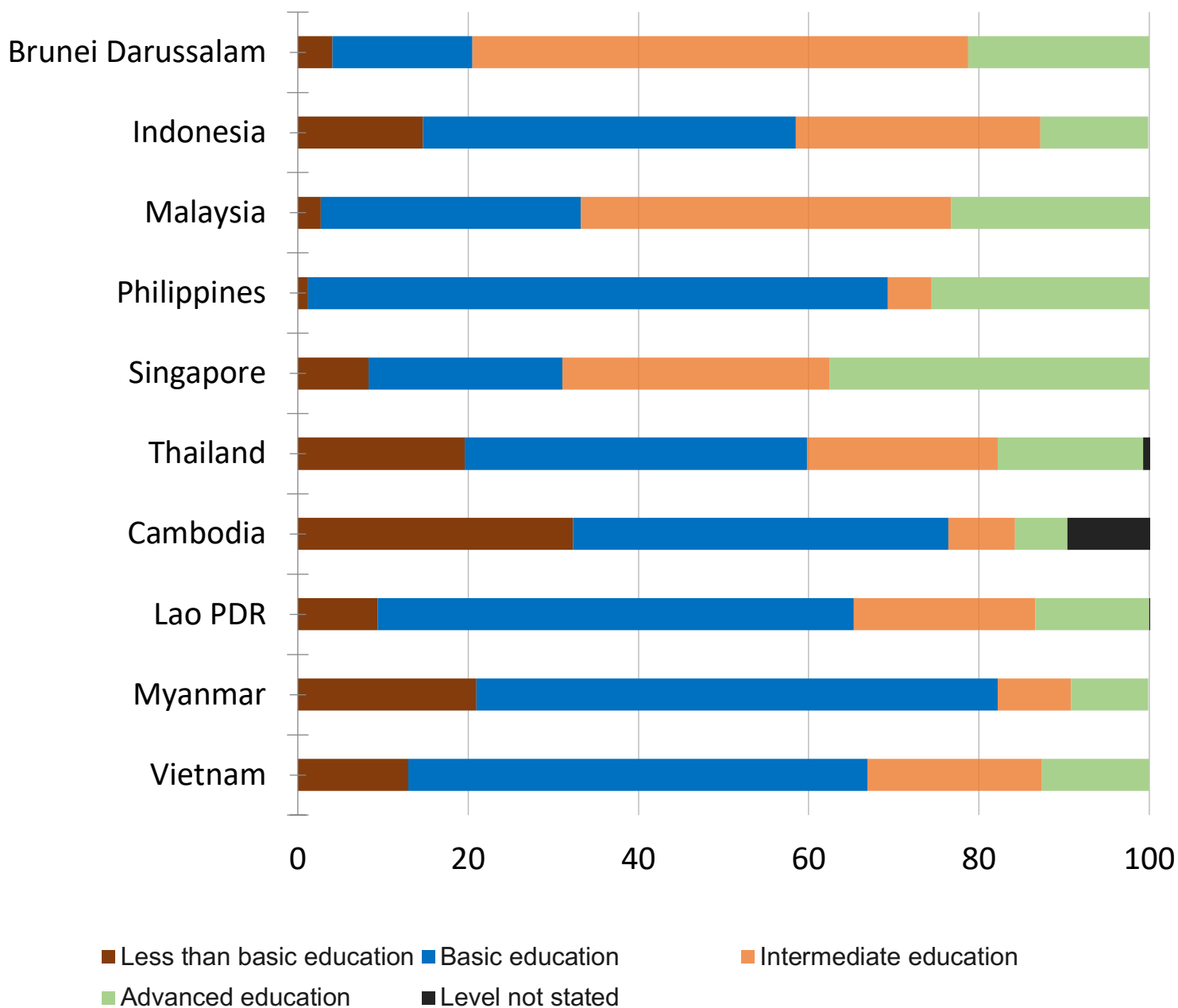


Nina Matzat

^ν While the rate in Cambodia and Lao PDR is relatively lower at 80.5 percent in 2016 and 84.7 percent in 2015 respectively, progress has been quite significant in both countries (up by 11.1 and 15.1 percentage points respectively) during the last fifteen years.

Figure 9: Employment distribution by education for youth (15-24 years), 2016/2017

Educational Attainment of Employed Youth (15-24 years), 2016/2017

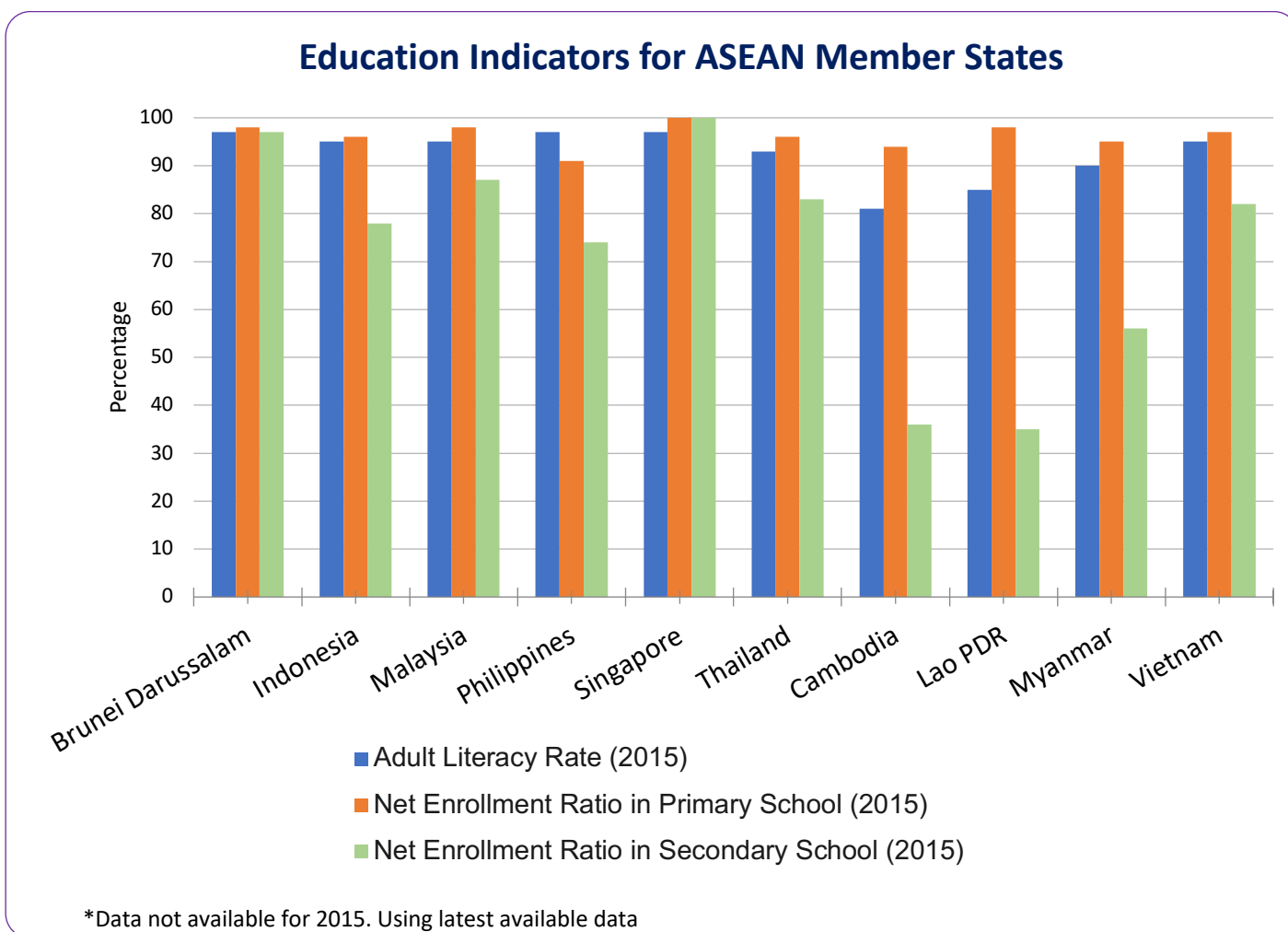


Source: ILOSTAT

Note: Highest level of education completed is classified according to the International Standard Classification of Education (ISCED). Basic education includes primary and lower secondary. Intermediate education includes upper secondary, post-secondary non-tertiary. Advanced education includes short-cycle tertiary, bachelor's, Master's and Doctoral levels.

*) Data of Singapore is for the year of 2017. Source of data is the Ministry of Manpower of Singapore

Figure 10: Adult literacy rate, net enrolment ratio in primary and secondary school in ASEAN, 2015




Source: ASEAN Statistical Yearbook 2018, The ASEAN Secretariat, Jakarta

In addition to education, Technical and Vocational Education and Training (TVET) is a key means by which to equip youth with the skills they need to engage in the economy. A successful TVET program (i) builds on requisite levels of quality

education, (ii) is aligned with industry need, (iii) and serves as a path to integrate youth that have dropped out, or never entered, back into the school system. Yet the uptake of TVET in much of the region is still low (Table 1).

Table 1: TVET enrolment as a Share of Total Secondary enrolment (2012 or most recent year)



	Secondary Net Enrolment Rate, Total	TVET Enrolment (Share of Total Secondary Enrolment)	Female (Share of TVET Enrolment)
<i>Brunei Darussalam</i>	94.7	11.4	49.6
<i>Cambodia</i>	38.2	2.3	47
<i>Indonesia</i>	74.8	18	42
<i>Lao PDR</i>	41.4	0.8	54
<i>Malaysia</i>	66.3	6.8	42.5
<i>Myanmar</i>	47		
<i>Philippines</i>	61.4		
<i>Singapore</i>		N.A.	N.A.
<i>Thailand</i>	79.5	15.4	41.5
<i>Vietnam</i>			

Source: UNESCO Institute for Statistics; as seen in International Labour Organization and Asian Development Bank, ASEAN Community 2015 : Managing Integration for Better Jobs and Shared Prosperity.

Improving skill levels among youth through vocational schools and university requires not just TVET policies but also a working pipeline of education from primary through secondary to tertiary with low dropout rates. **Table 5** in section 5 lists the government initiatives for education and skilling in AMS.

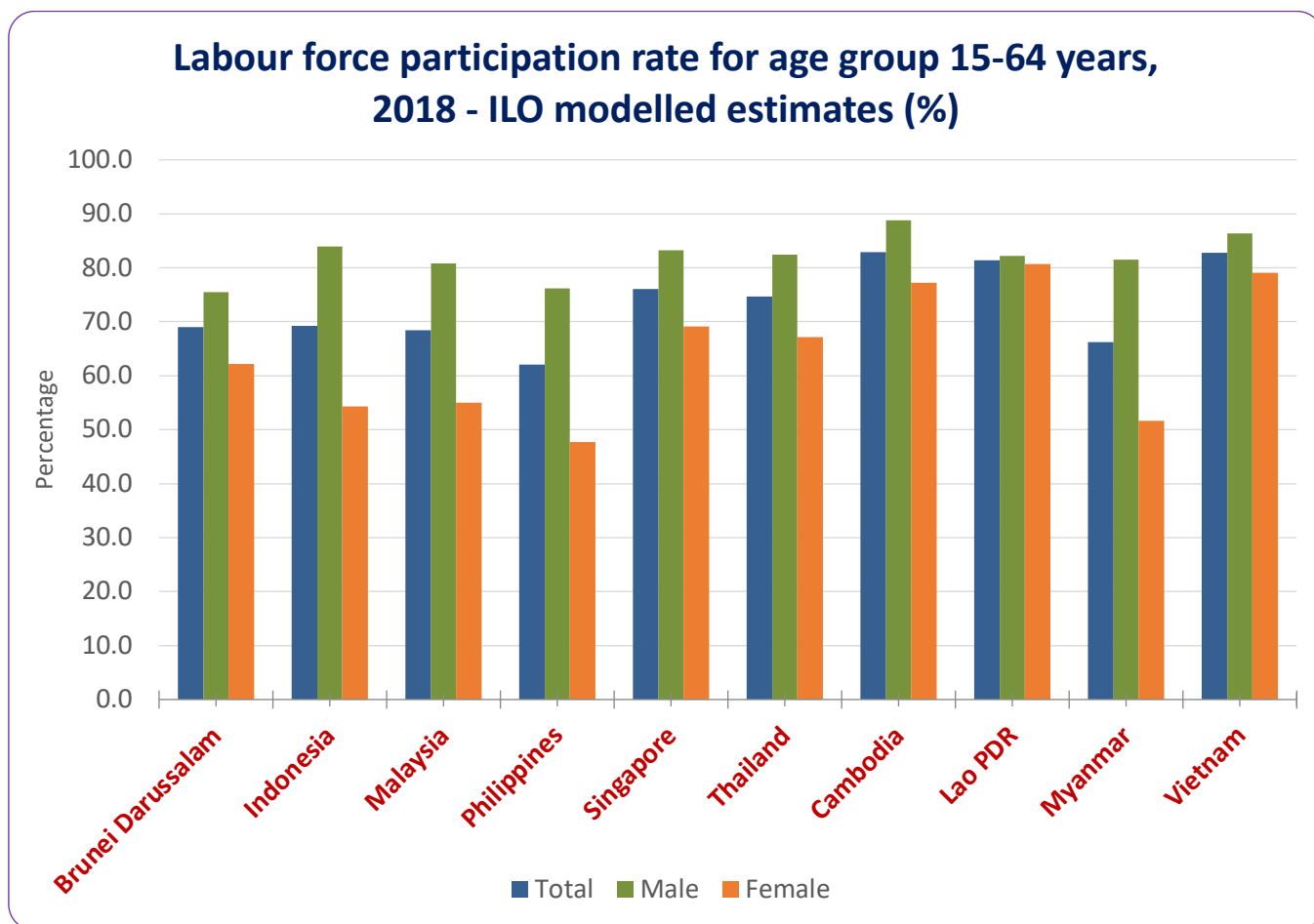
At least three out of every four persons of working age enter the labor force in

Cambodia, Lao PDR, Singapore, Thailand and Vietnam; in the other AMS, at least three out of five enter. While male labor force participation rates are uniformly higher than those of females in all AMS, the gap differs considerably across countries. Lao PDR, Cambodia and Vietnam have the highest female participation rates and relatively small gaps between male and female participation, while the Philippines, Myanmar, Malaysia, and

Indonesia have the lowest, with male-female gaps of over 25 percentage points. Higher labor force participation rates mean that more people are either working or

willing to work, but harnessing the productive potential of the region's population is also contingent on good quality jobs.⁶²

Figure 11: Total, female and male labor force participation rates in ASEAN, 2018

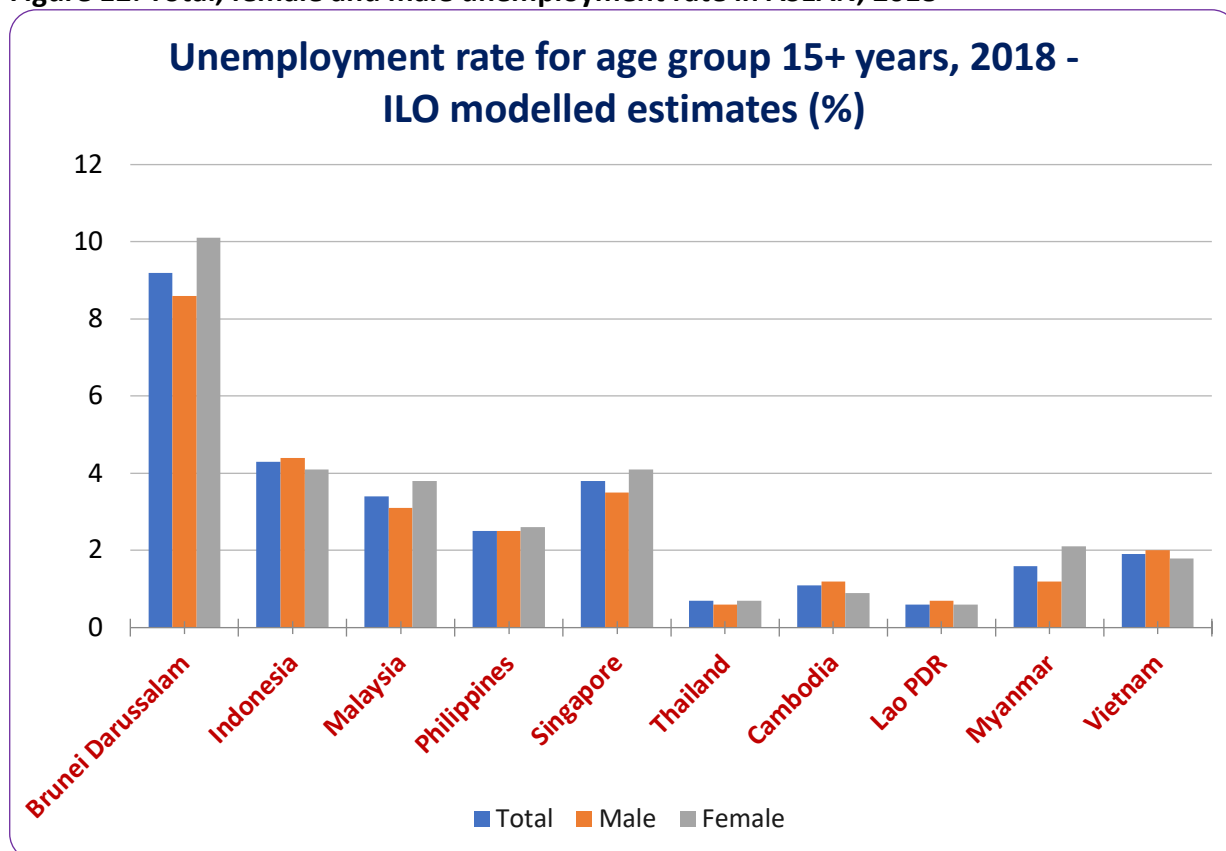


Source : ILOSTAT

All countries, with the exception of Brunei have an unemployment rate that is well below five percent—generally considered to be full employment (Figure 12). In some of the less developed AMS, low rates of unemployment reflect the fact that people

cannot afford to be unemployed; they have to work to sustain themselves. This is particularly true in the absence of a welfare state and safety nets.

Figure 12: Total, female and male unemployment rate in ASEAN, 2018



Source: ILOSTAT

Youth, however, are far more likely to be unemployed than the overall workforce across the region. At 29 percent, youth unemployment is highest in Brunei, followed by middle-income countries like Indonesia (15.8 percent) and Malaysia (11.2 percent). Research across developing nations suggests that countries with a large informal sector tend to have lower unemployment rates because most people have to work to make a living.⁶³ Many, then, find themselves in the informal sector characterized by low-productivity and low wages. Youth are particularly

susceptible to this phenomenon. Youth that are unemployed tend to be those that can afford to wait for the right job to come along.

Fitting this conclusion, the poorest countries of the region tend to have lower rates of youth unemployment, with Cambodia's at 1.3 percent and Lao PDR's at 1.6 percent. This points to the challenge that middle-income economies face in realizing the demographic dividend by providing productive jobs for their expanding youth populations. According to

the First Youth Development Index by ASEAN and UNFPA, youth in the region have made strides in terms of education, participation and engagement, health and well-being, but they lag in employment outcomes.⁶⁴

ASEAN member states have low levels of unemployment, but also high levels of informal employment. Informality is a multidimensional phenomenon. Despite decades of discourse, definitions still do not fully capture the many permutations of work arrangements, and this is further complicated by the emergence of new forms of platform work. Informality can apply to firms or workers. The definition of informal employment can vary across nations.

According to the 17th International Conference of Labor Statisticians, farm or unincorporated private businesses that produce at least in-part for the market are classified as informal if they do not keep accounts for reporting to government, or are not registered at the national level. Informal employment consists of own-account workers and employers that work in their own informal sector enterprises, or those that are engaged in the production of goods for final use by their household. It also includes contributing family workers and members of informal producers' cooperatives.

In addition, a worker is seen as being in informal employment if there is no employer contribution to social security on



the employee's behalf, and/or if the employee is not entitled to paid annual leave and paid sick leave.⁶⁵ As such, employees holding informal jobs, whether employed by registered enterprises, unregistered enterprises, or as paid domestic workers by households may also be considered to be in informal employment. Not all self-employment is informal. Variations across countries notwithstanding, a self-employed individual that is registered and has social security may not be considered to be in informal employment.^{vi}

This becomes particularly important as new forms of work in the digital economy emerge where workers do not receive welfare protections or when workers have multiple jobs; for instance, if one job is in a formal enterprise where the employer makes a social security contribution on behalf of the worker, and the other job is one in which the worker is self-employed with no social security contribution.

In less developed countries with surplus labor and where a significant share of the population has to work to make ends meet, the incidence of informal employment tends to be higher.⁶⁶

^{vi} Hussmanns R., 'Defining and measuring informal employment', Bureau of Statistics, International Labour Office, Geneva

According to an ILO estimate for 2016, the average share of informal employment in South- Eastern Asia (i.e. ASEAN along with Timor-Leste) was 78 percent,⁶⁷ ranging from 46.7 percent in Brunei Darussalam to 82.7 percent in Lao PDR according to LFS in respective countries in 2017 (**Figure 13**).

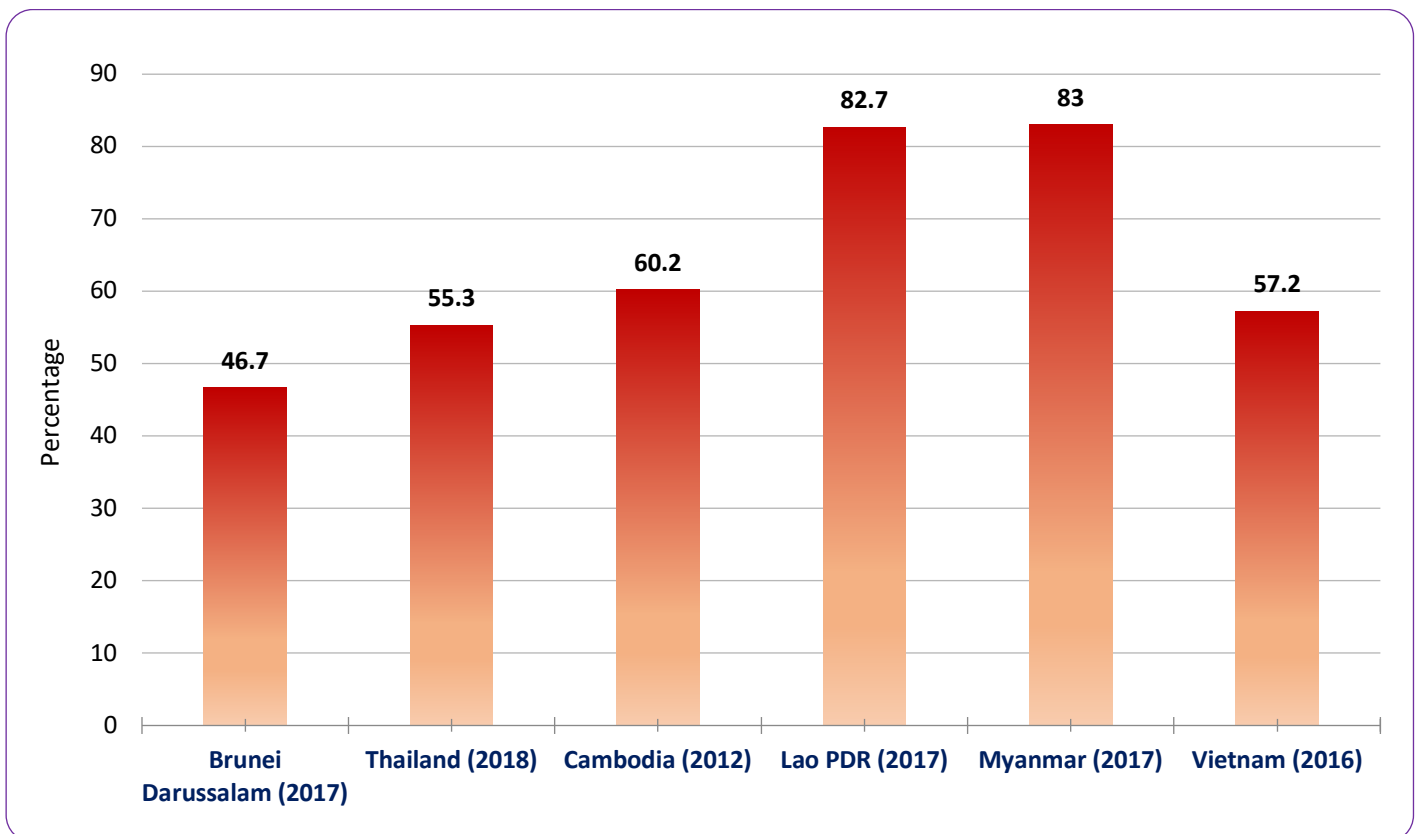
Agriculture, where the sharing of low-value add work is common, tends to constitute the highest share of informal employment in most developing countries. In ASEAN member states, where there is a rapidly expanding service economy, the incidence of informal employment in services is also high. For example, in Indonesia, agriculture and services have about the same number of informal workers. Closely related to the phenomenon of informality, self-employment is a major source of livelihoods in the region, especially in CLMV countries but also in Indonesia and Thailand (**Figure 13**).⁶⁸

The high incidence of informality and self-employment in these countries suggests that a significant share of the population cannot afford to be unemployed (**Figures 13 and 14**). They have to make ends meet and as such they are amenable to engaging

in informal livelihoods and subsistence entrepreneurship, often characterized by low productivity and wages. The fact that even relatively developed and prosperous ASEAN member states, such as Thailand and Brunei, have high rates of informality in their labor markets suggests that this challenge cannot be addressed by economic growth alone (Figure 13). Public

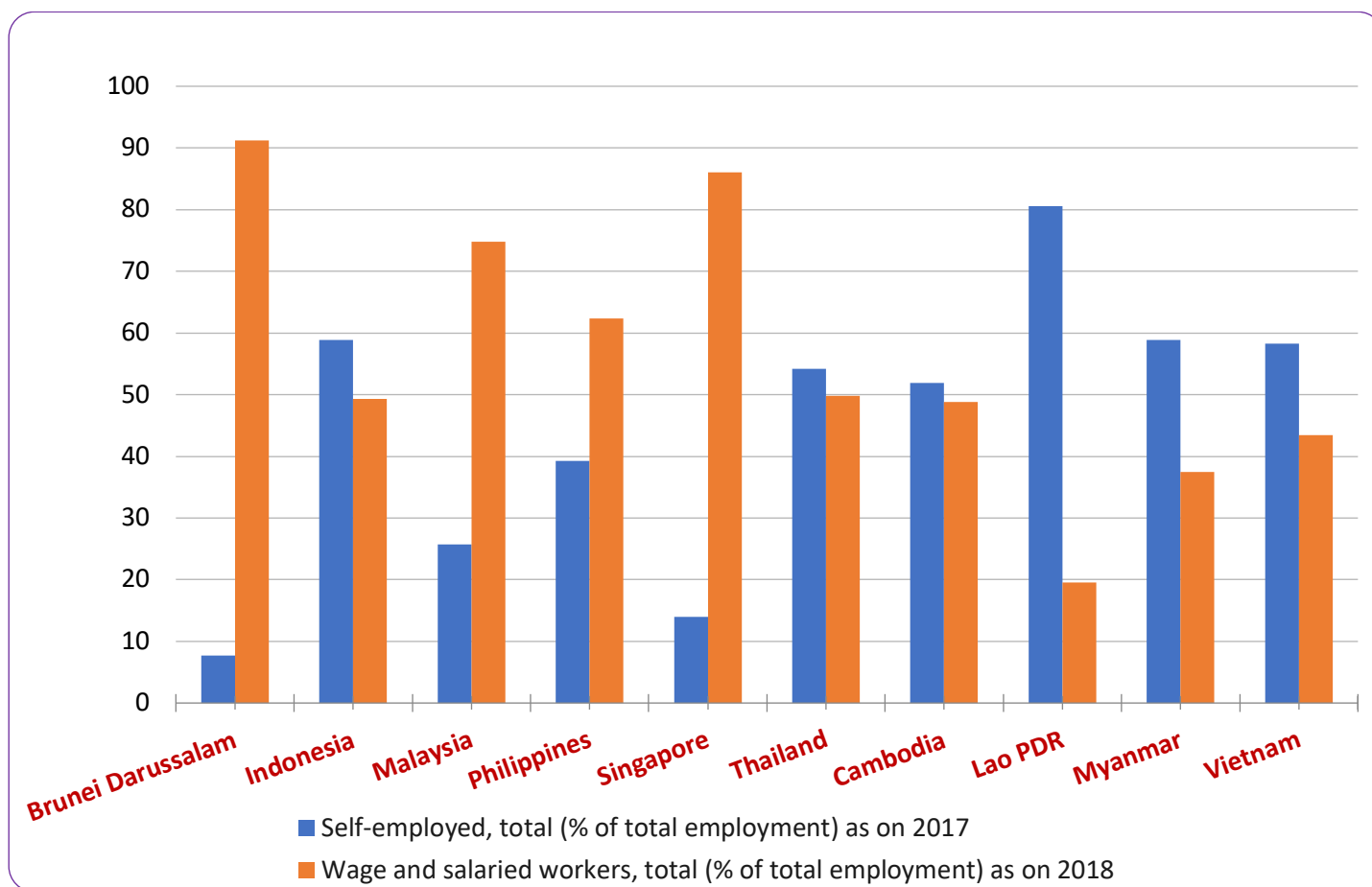
provision of a set of basic social security guarantees, that, at a minimum, ensure that all have access to essential healthcare and income security over their lifecycle,⁶⁹ is critical to enhancing human capital and productivity, and to empowering people to find decent work in the absence of benefits provided by employers, or when one is self-employed.⁷⁰

Figure 13: Informal Employment Rates in ASEAN for latest available years



Source: Jeff Ducanes, Informal Employment Statistics in ASEAN member states.

Figure 14: Share of self-employed vs. wage and salaried workers in ASEAN, 2017 and 2018



Source: ILOStat

Note: Singapore data both from 2018

Growing digitalization in the region is shifting the way people work. The general expansion in the region of non-standard forms of employment—including self-employment, temporary, part-time and freelance work – exacerbates informal employment, but also makes way for growing precariousness such as a shift from regular wage work to contract work - or work without contracts and higher degrees of job uncertainty and social

protection coverage.⁷¹ In all countries except Brunei, Malaysia, Philippines and Singapore, the share of self-employed workers in total employment is higher than that of wage and salaried workers.

Figure 15 shows the case of Vietnam, which is the only AMS that currently records trend data on contract types in its

labor force survey.^{vii} The share of workers with contracts that were either verbal or valid for a short term of less than a year shows an upward trend in the five years

from 2012 to 2016. These trends will likely only become more pronounced as technology upends traditional employment models.

Figure 15: Trend of contractual employment in Vietnam, 2012-2016



Source: Vietnam - Labour Force Survey 2012-2016, ILO Microdata Repository

Similar data from the Philippines on non-standard forms of employment from a nationwide sample survey^{viii} from 2010 shows that the share of non-regular employment^{ix} increased by 16.2 percent

between 2008 and 2010.⁷² The greatest increase was among contractual project-based workers—who constitute nearly one in four of all non-regular workers.

^{vii} It asks the question “With the above-mentioned job, did you hold an unlimited or limited term labor contract, a verbal agreement or no contract?” Recorded responses are: 1-unlimited term, 2-1 to 3 years, 3-3 months to under 1 year, 4-under 3 months, 5-verbal agreement, 6-no contract.

^{viii} The BLES Integrated Survey (BITS), that covered 6,780 non-agricultural establishments employing at least 20 workers.

^{ix} Non-regular employment includes contractual/project-based workers, probationary workers, w seasonal workers and apprentices/learners.

Table 2: Total employment of rank-and-file workers’ non-agricultural establishment with 20 or more workers by category, the Philippines (2008 and 2010):

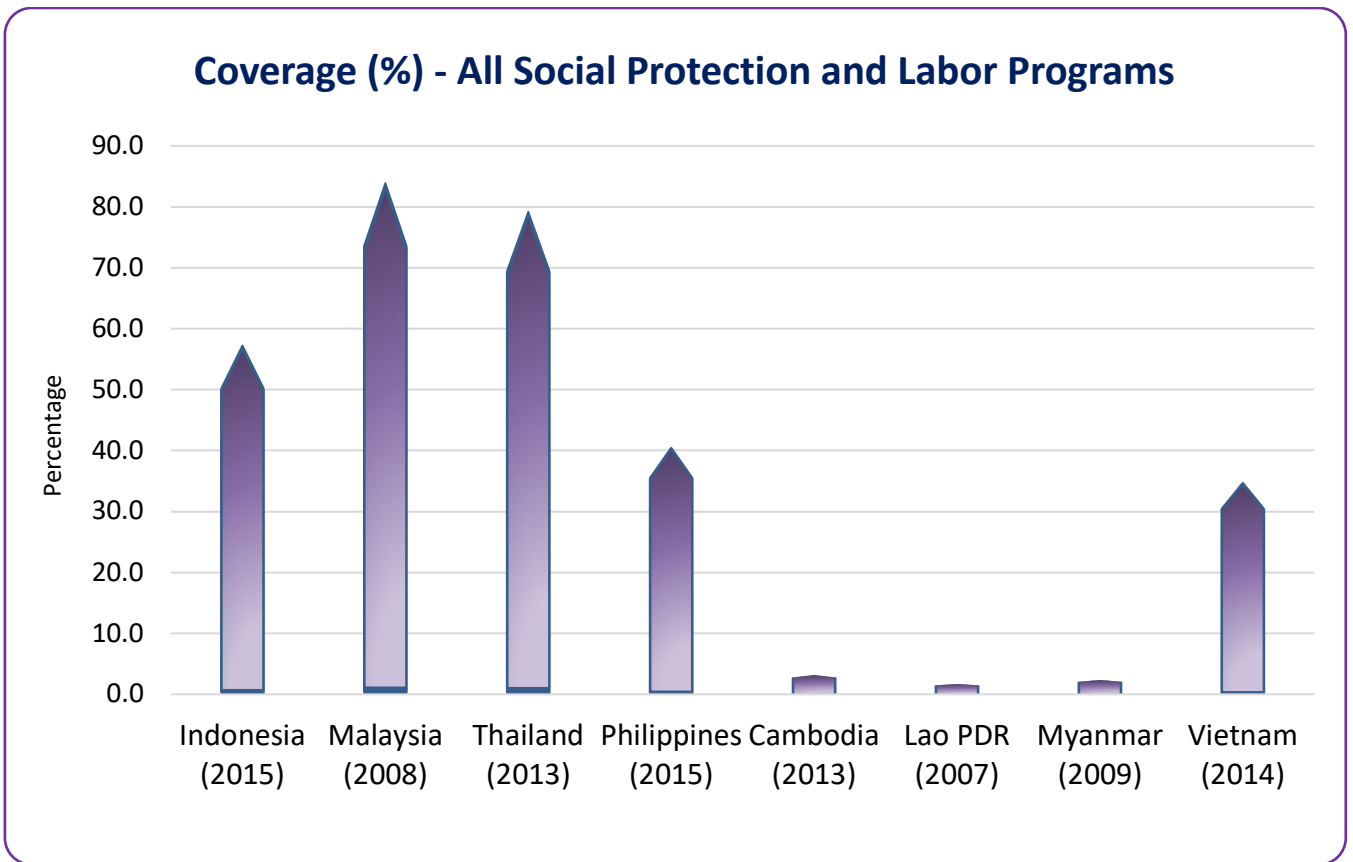
Type of worker	2010	% to total	2008	% to total
Total	2,617.417	100	2,599.228	100
Regular	1,767.332	67.5	1,867.680	71.9
Non-regular	850.085	32.5	731.548	28.1

Source: Table extracted from BLES (2012a: 1), Table 1 https://psa.gov.ph/sites/default/files/vol16_4.pdf. ASETUC, FES (2014), “The Rise of Non- Standard Employment in Selected ASEAN Countries”.

Figure 16 shows the percentage of population covered under at least one social protection program. The coverage numbers for Cambodia, Lao PDR and Myanmar among the CLMV countries are very low. This is because social protection for the working population is mainly limited to formal economy employment and subject to legal coverage criteria such as the definition of “employees” covered under national labor codes and social

security laws.⁷³ The low coverage rates are partly due to the exclusion of self-employed and informal economy workers who make up the majority of workforce in these countries. From **Figure 13**, these 3 have the highest share of informal workers in the workforce. **Table 4** gives a comprehensive overview of the different social protection programs.

Figure 16: Share of population participating in social protection and labor programs in ASEAN, latest recorded year



Source: The Atlas of Social Protection Indicators of Resilience and Equity (ASPIRE), the World Bank's premier compilation of Social Protection and Labor (SPL) indicators (<http://datatopics.worldbank.org/aspire>)

Note: 'All Social Protection and Labor Programs' are classified into 3 categories and 12 sub-categories : social insurance (pensions, others like injury and maternity benefits), labor market programs (active like trainings and startup incentives, passive like unemployment benefits), social assistance programs (cash transfers, in-kind transfers, non-contributory pensions, school feeding, cash for work, subsidies and others)

For Singapore, the coverage of social protection for its residents is 100% The Central Provident Fund (CPF) is Singapore's fully-funded pension scheme that is extended to all residents; and its coverage includes the Self-Employed Persons.

From these data it is clear that ASEAN continues to be one of the most dynamic regions in the world. Within ASEAN, there is variation across member states, but those with lower GDP per capita are also the ones that are growing the fastest. Most AMS have high labor force participation, low levels of unemployment, but some

also have high levels of informal employment that is growing as a result of non-standard forms of employment and a lack of social protection coverage. With the exception of Lao PDR, Myanmar and Vietnam, the service sector constitutes the highest share of total employment in all AMS. From innovations in financial services to business process outsourcing, the

service sector has also undergone significant changes as a result of technology. The region's burgeoning middle class and youth population offer explanations for its technology penetration, adoption and consumption trends, but also foreshadows significant restructuring of its labor markets.



Technology Trends and the World of Work in ASEAN

With the economic, demographic and labor market context of ASEAN as background, this section discusses important trends in technology, how they impact the world of work and their influence on the employment landscape of ASEAN in particular. Technological change will inevitably place new demands on AMS seeking to provide gainful employment and welfare protections for their growing workforces. This section hones in on three dimensions: automation in manufacturing, increasing skill requirements in the service sector, and the rise of the platform economy. Arguably, the latter is foremost in propelling the emergence of new forms of work and changing employment relationships.



Before exploring these three themes in particular, it must be noted that ASEAN member states are as diverse in terms of the penetration of technology as they are in terms of macroeconomic indicators. **Figure 17** illustrates how ASEAN member states perform on multiple metrics of technological advancement. On the Networked Readiness Index, which scores countries on their use of information and communication technologies to improve competitiveness, innovation, and well-being, Singapore ranks first in the world, while at 133, Myanmar ranks lowest among ASEAN member states.⁷⁴

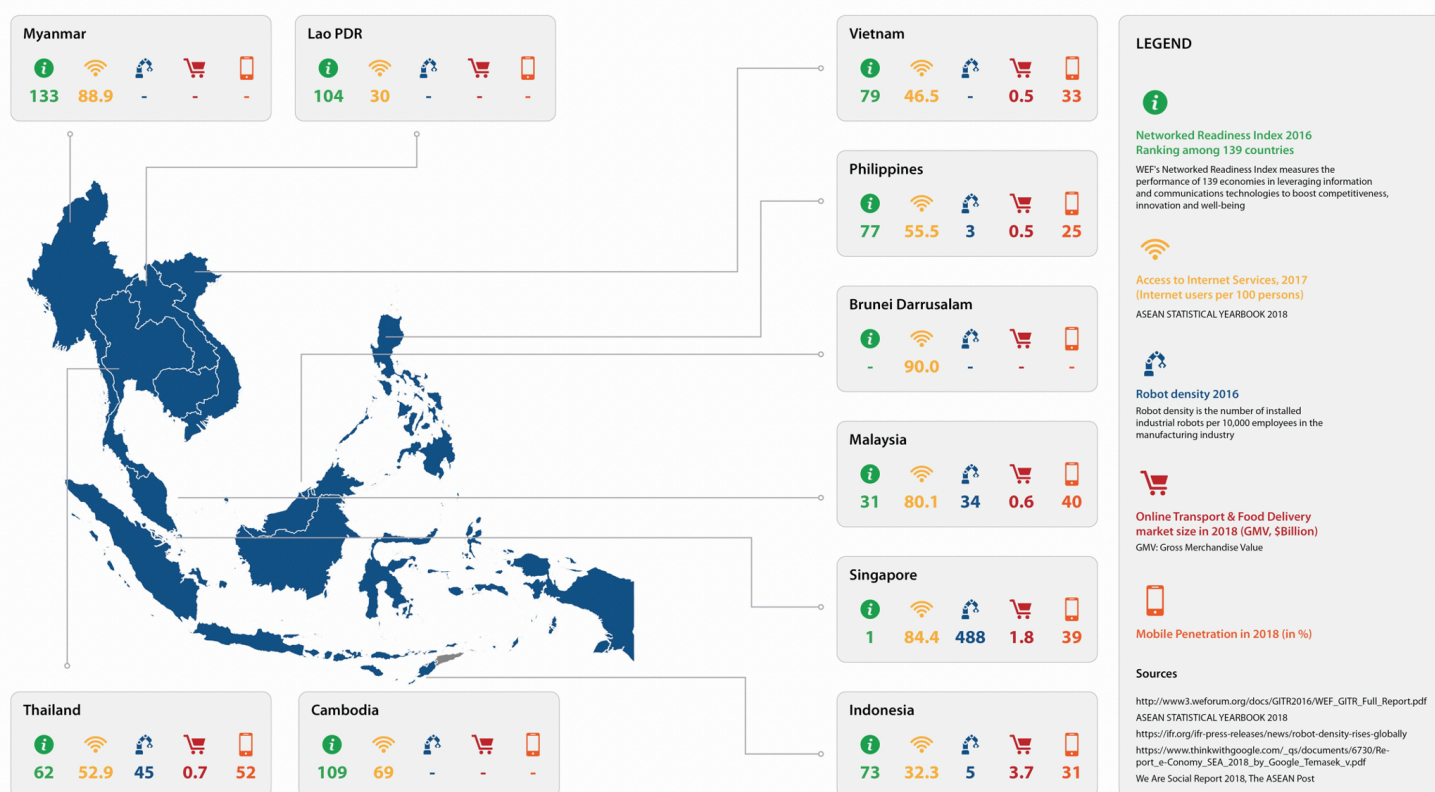
Table 3: ASEAN member states on the Networked Readiness Index:

ASEAN Member States	Rank
Singapore	1
Malaysia	31
Thailand	62
Indonesia	73
Philippines	77
Vietnam	79
Lao PDR	104
Cambodia	109
Myanmar	133

In terms of the use of robots in manufacturing, Thailand and Malaysia far outperform labor-intensive manufacturers like Indonesia and the Philippines, while Singapore uses more than 10 times the number of robots per 10,000 workers as compared to any other country in the region.⁷⁵ When it comes to internet use, fewer than half the population of Vietnam, Lao PDR and Indonesia have access to the internet, while in countries like Brunei Darussalam and Malaysia, over 80 percent of the population is online. In Singapore, more than 80 percent of

households have internet access. These differences in the penetration of technology reflect, on the one hand, differences in level of economic development; but they also suggest that the technological changes in the world of work will be experienced differently across ASEAN. Countries at lower levels of technology penetration, adoption and/or use have the potential to leapfrog; but leveraging the gains from technology calls for moving beyond business as usual to effectively manage its disruptive effects.

Figure 17: Technology indicators in ASEAN member states



Automation of routine-intensive work

Many ASEAN member states, especially rapidly growing low and middle-income countries in the region, have pursued a strategy of leveraging their abundant working age population to build labor-intensive manufacturing in sectors like textile, clothing and footwear. Even in countries like Thailand and Malaysia, which have moved up the value chain, electronics and automobile manufacturing are important economic drivers. Understanding the nature of automation in

these sectors is crucial to forecasting the future of ASEAN economies.

Automation of work occurs when machine input replaces labor, or reduces the time a person spends, on production-oriented tasks.⁷⁶ The manufacturing sector is the most automated of all sectors,⁷⁷ with technologies like 3D printing, collaborative robots also called cobots, and sewbots in the E&E and TCF sectors. Body scanners, wearable technology, nanotechnology and computer-aided design (CAD) are other technologies affecting the TCF sector.

Automation is also present in the services sector where cloud computing and artificial intelligence are impacting the business process outsourcing sector. Sophisticated sensors and data analytics because of the Internet of Things (IoT) will also bear an impact on the retail sector. According to a report by McKinsey, all these ‘fourth industrial revolution’ technologies will bring rising incomes, investments in infrastructure and energy, and expanding classes of consumers that can potentially fuel millions of new jobs.⁷⁸ At the same time they will cause major disruptions in labor markets along with shifting demands in education, with up to 375 million people worldwide needing to switch occupational categories.⁷⁹

These global trends are also reflected at the regional level in ASEAN. According to the World Economic Forum, automation technologies are driving growth but they are also disrupting the region’s traditional advantages in low-value-added manufacturing, which generally relies on a large, low-cost labor force.⁸⁰ These manufacturing sectors typically involve assembly line production with workers performing highly routinized, manual

tasks—for example, sewing machine operators in the TCF sector — making them most susceptible to automation. In ASEAN, emerging economies and those whose manufacturing sectors are heavily focused on TCF and low-cost E&E face the greatest vulnerability as a result of these trends.⁸¹ A study by the International Labour Organization found that over the next ten to twenty years, nearly 56 percent of all employment in five ASEAN member states — Cambodia, Indonesia, the Philippines, Thailand and Vietnam — could be at high risk of automation.⁸²

In these countries, three out of every ten manufacturing workers is employed in TCF—with the share reaching 75 percent in Cambodia and 40 percent in Vietnam. Garment manufacturing is the one of the most vulnerable to job losses through automation, given that it is characterized by low-skill and labor-intensive production, with and the bulk of salaried jobs requiring completion of extensive routine and manual tasks. Almost two-thirds of garment wage workers in Indonesia and 88 percent in Cambodia could lose their jobs to automation.⁸³



While it requires a workforce with slightly more advanced skills, the electrical and electronics sector (E&E) in ASEAN, especially in lower-wage economies, is also assembly-based. The sector accounts for 58 percent and 70 percent of all salaried manufacturing employment in Thailand and the Philippines, respectively. These jobs face an extremely high probability of automation (92 percent), given the rapid penetration and advancements in robotic technologies.⁸⁴ Automation will also affect automotive and auto parts manufacturing in Thailand, where one in three wage workers are high-risk mechanical machinery assemblers.⁸⁵

Another important manufacturing subsector, food and beverage production, faces high risks of automation, but the risk varies widely. In the Philippines, 37 percent of workers in food and beverage processing are likely to be displaced by automation, while the share in Cambodia could be as high as 70 percent. These variations are driven by differences in the skill and occupational compositions of the food and beverage production in each country—for instance butchers and bakers, low-skill and at a high risk from automation, make up only 15 percent of wage employment in the subsector in the Philippines but more than 50 percent in Cambodia.⁸⁶

In Malaysia, estimates suggest the share of jobs at high risk of being displaced by technology in the next two decades could be as high as 54 percent across sectors. Four out of five jobs at high risk of technological displacement are semi-skilled.⁸⁷ Brunei Darussalam's reliance on its oil and gas sectors, and nascent technology penetration in Myanmar and Laos PDR mean that the effect of technology on these economies might be slower.

Automation is also affecting jobs in the BPO industry, particularly in the Philippines where it contributes nearly six percent of

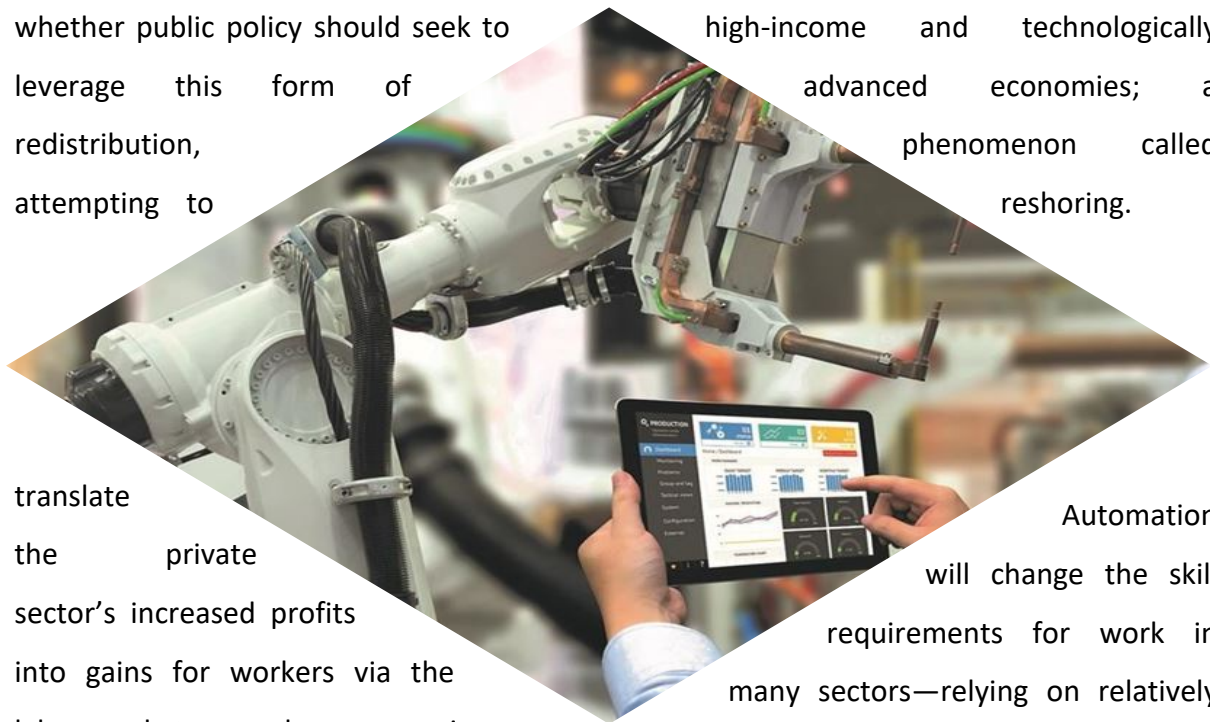
The flipside of job losses is that new technologies are poised to increase profits and reduce costs in the region. For example, in the manufacturing sector, a McKinsey Global Institute report estimates that new technology will produce an economic impact as large as \$25 to \$45 billion by 2030 in the region.⁸⁹ As opposed to labor-intensive, low-skill production in the TCF sector in Cambodia and Vietnam, Thailand has high labor productivity – nearly five times higher – due to technology like body scanners and computer-aided design. This helps improve its competitiveness and maintain its

GDP. The BPO industry in the Philippines is focused heavily on customer service, especially voice services, rather than finance and accounting work, making the jobs especially vulnerable to automation. According to the 2017 A.T. Kearney *Global Services Location Index* report, the country stands to lose 16 percent of jobs in the BPO industry to automation.⁸⁸ Other countries in the region, including Indonesia and Malaysia, have also witnessed rapid growth in the BPO sector. Vietnam has seen annual growth of 20-25 percent in the BPO sector over the last decade. These countries also face the spectre of losing BPO jobs to automation.

position as a high-end apparel producer and the third largest exporter of TCF in the region.⁹⁰ Singapore is the regional leader in E&E exports and the world leader in robot density (robots installed per worker).⁹¹ The worldwide E&E industry, after automotive, is the second largest customer of industrial robots, making automation indispensable to the success of the sector in Singapore.

These dual trends in the manufacturing sector as a result of automation—job displacement on the one hand, and aggregate productivity growth on the other hand—raise major questions about the distributional impact of technological

change in the region. One issue revolves around whether the increased profits that companies generate through automating production will be reinvested in the economy and, in turn, create new forms of employment. A related question is whether public policy should seek to leverage this form of redistribution, attempting to



translate the private sector's increased profits into gains for workers via the labor market, or seek to engage in more direct forms of redistribution. This could, for example, be by imposing higher taxes on manufacturers that deploy robots – a 'robot tax' -- and using those additional funds to expand social welfare programs. However, analyzing the issue through this lens presumes that the effects of automation will be contained within the national sphere, and that managing them will hinge on the policies that govern relationships between national governments, workers, and domestic manufacturing firms. In reality,

automation could restructure global value chains more fundamentally—not simply reducing the number of manufacturing workers required in countries like Vietnam or Myanmar, but actually shifting activities like TCF and electronics manufacturing to high-income and technologically advanced economies; a phenomenon called reshoring.

Automation will change the skill requirements for work in many sectors—relying on relatively few workers with advanced skills to design, build, train, manage, troubleshoot, and enhance technology. Currently, workers with these skills are more concentrated in high-income countries providing an incentive for reshoring. Proximity to market is another incentive for locating production. However, ASEAN's growing market could be an incentive to maintain production in the region as well. These possible scenarios make it difficult to definitively assess how and the extent to which automation will shorten value chains.

The question of automation's distributional impacts, therefore, cannot be understood at a national scale alone; automation could, in fact, benefit countries like Singapore and Malaysia the most, while adversely affecting countries like Myanmar and Cambodia. In this sense, it threatens to reverse the reductions in regional inequality that ASEAN has achieved over the last two decades.

ASEAN member states, especially those highly dependent on low-cost labor-intensive manufacturing and services, face two major policy challenges. First, they must design strategies aimed at ensuring they remain competitive in sectors that are undergoing technological upgrading and

automation—in order to avoid losing those sectors to higher-income countries where workers have more advanced skills. Second, even if they manage to tackle this problem, countries must grapple with the distributional impacts of technology—which will increase inequality—and figure out which mechanisms are most likely to redistribute the gains from automation and maintain employment levels. Addressing these challenges in CLMV countries, Indonesia, the Philippines, and to a lesser degree Thailand and Malaysia, will require a fundamentally new economic development strategy, one focused on technological upgrading, skill development, and innovation, as opposed to low-wage mass production.





The Asia Foundation/Karl Grobl

Increasing skill requirements and the knowledge economy

A knowledge economy relies primarily on the use of ideas and the application of technology rather than manual labor. Given the erosion of low-cost labor advantages in manufacturing and investments in technology, ASEAN member states will increasingly face the challenge of growing the knowledge-intensive segment of their economies if they are to sustain growth, create productive employment, and realize their demographic dividends.⁹² This imperative is directly related to the trends described in the section above. Automation creates new jobs that require advanced skills to design, build, train, manage, troubleshoot, and enhance technology.

The significant technological shocks of the last few decades—the growth of digital technologies being the most important—have dramatically increased the importance of building a knowledge-oriented economy, and these impacts will continue, while also affecting countries at lower and lower levels of economic development. The correlation between the accumulation of knowledge, as measured by the Knowledge Economy Index (KEI), and levels of economic development stands at 87 percent. Countries with higher KEI values tend to have higher levels of economic development, and vice versa.⁹³

Knowledge economies are characterized by a large tradable services sector.

According to conventional measures of labor market structure, the services sector includes everything from high-skilled and high-paying activities in finance, banking and consulting, for example, to low-skilled, low-wage employment in personal services like driving and cleaning. The former are generally characterized by their tradable nature; thus, like manufacturing, they can become the motor of economic growth, driven by specialization and innovation. Advanced manufacturing—i.e. the kinds of capital-intensive production that results from automating labor-intensive activities—is another important component of knowledge-oriented economies.

Within ASEAN, Singapore is the country that has most successfully built a knowledge-oriented economy; it has one of the highest per capita incomes in the world. Singapore had the highest share (54.6%) of tertiary educated workers in the region in 2017.⁹⁴ The share of professionals, managers, executives & technicians (PMETs) among employed residents has trended up over the decade to reach 57 percent in 2018, majority PMETs coming from the manufacturing, professional services, wholesale & retail trade, and Public Administration and

Education, Financial & Insurance Services sectors.⁹⁵ Beyond the high-value-added services for which Singapore is best known, the country has also built a globally competitive advanced manufacturing sector—accounting for nearly half of ASEAN’s high-skill manufacturing exports. Thailand and Malaysia have also made inroads in this regard, contributing 19.6 percent and 15.7 percent, respectively.⁹⁶

The World Bank argues for the following elements in its four-pillar framework for building knowledge economies.⁹⁷ (a) Knowledge economies usually require profound changes in education systems to promote lifelong learning, so that workers are able to adapt and continuously upgrade their skills. This requires that students acquire basic competencies, such as reading, writing, reasoning, and basic mathematics; and universities adjust their programs to world standards and to the needs of employers. (b) ICTs are the essential infrastructure of knowledge-based economies. It reduces transaction costs and facilitates the effective communication, dissemination, and processing of information and knowledge. (c) An effective innovation system for the diffusion of technologies and practices that are new to a given society – be it from

domestic advanced research activities or from foreign sources, entering the country through foreign direct investment, imports and licensing agreements. (d) The country's institutional regime, and the set of economic incentives it prioritizes is the crucible within which productive interactions between an innovative climate and wise use of knowledge assets can be created. This includes policy on the macroeconomic framework, trade regulations, finance and banking and labor markets; as well as government effectiveness in the rule of law and the level of corruption.

Other than Singapore, no AMS ranks among the top 50 globally in technological readiness. Except for Singapore, Malaysia and Indonesia, innovation is likewise weak for the rest of ASEAN.⁹⁸ However, given their solid economic foundations, expanding middle classes, and tech-savvy youth populations, ASEAN member states that are currently less competitive in advanced services and manufacturing still have potential to develop more knowledge-oriented economies. In fact, ILO models projected that ASEAN economies would create 14 million new high-skilled jobs between 2010 and 2025.⁹⁹

The growing demand for these workers is not only in the highest-income ASEAN member states; about half of these 14 million jobs are likely to be created in Indonesia, with the Philippines also seeing significant growth.

However, whether the pattern of high-skilled job creation can be sustained and expanded depends heavily on the availability of high-skilled workers in these economies. The lack of available skilled workers to operate new technologies is one of the biggest barriers to technological uptake cited by enterprises, second only to the high costs of buying technology. The ILO's 2016 *ASEAN in Transformation* study, which surveyed over 4,000 ASEAN enterprises in the manufacturing and service industries, found this to be true across all AMS.¹⁰⁰ The impressive gains in primary education, as depicted in the section two of the report, are insufficient for robust participation in the knowledge economy. Moreover, given the rapid pace of change in the technologies that knowledge workers must utilize and understand, preparing workers to compete in the knowledge economy requires a model of lifelong education and training.

Rise of the platform economy

In addition to technological changes that are automating jobs in manufacturing and placing new demands on workers to obtain advanced skills, another major technological trend in ASEAN is the growth of the platform economy. Technology not only changes the number of jobs and their skill requirements; it also upends traditional models of employment—fundamentally altering the relationship between workers and firms. The platform economy is perhaps the clearest example of this shift.

The rise of the platform economy and associated new forms of work are propelled by ASEAN’s burgeoning “internet economy”—i.e. all the transactions conducted online. In 2017, the region’s internet economy was estimated to be worth \$50 billion, or two percent of GDP. By 2025, projections suggest it will grow to \$200 billion and six percent of GDP.¹⁰¹

The growth of internet-based transactions corresponds to the broader digitalization of the economy—involving expansion of information and communications

technology (ICT) infrastructure and the application of internet-enabled technologies to the production and trade of goods and services. Digitalization involves traditional firms like telecommunication infrastructure operators and manufacturers of digital equipment, venture capital funds that invest in ICT start-ups, and a whole range of e-commerce, financial technology and work platforms.¹⁰²

A platform firm is one that uses a digital interface to provide a product or service, or connect buyers and sellers. Platform firms take several forms: goods marketplaces such as Airbnb and Amazon; social and information platforms like Twitter and Wikipedia; and work platforms, such as Uber and Freelancer.com. Work platforms link an independent contractor supplying a service to a business or consumer seeking a service. They can be divided into location-based work platforms—where the service is performed in-person, such as with Uber—and web-based or cloud work

platforms—where the service is performed remotely from anywhere (**Figure 18**).

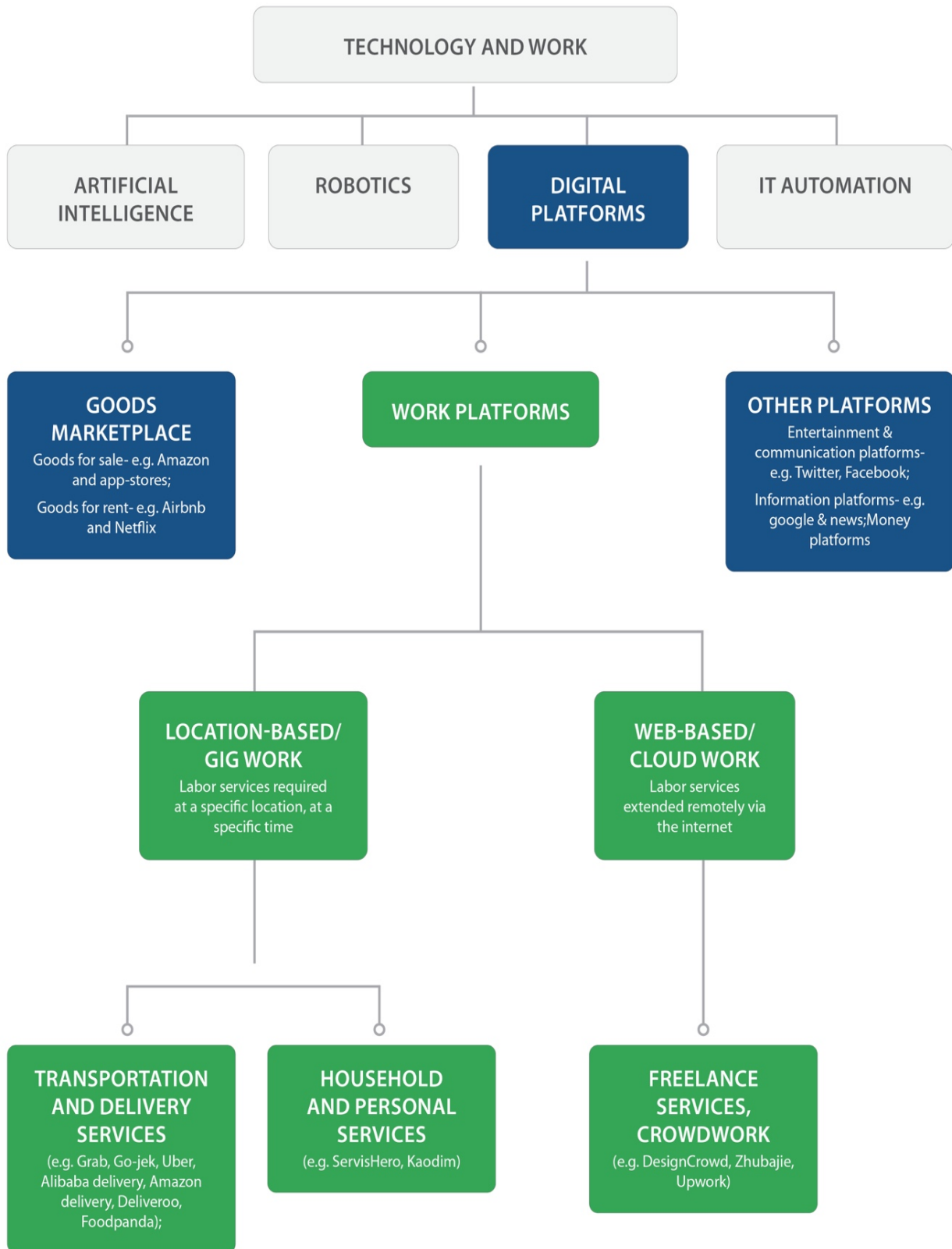
Consumer research has found that people in the Asia-Pacific region are amenable to using platforms to access their daily needs.¹⁰³ Investors are also enthusiastic about the platform economy's potential in the region. Foreign and ASEAN corporate venture capital firms have invested large sums in home-grown start-ups in the platform economy, especially transportation platforms. In 2017, Didi Chuxing (China) and Softbank (Japan) invested US \$2 billion in Singapore-based Grab, a ride-hailing platform. In 2018, a consortium of investors, including Google (United States), JD.com and Meituan-

Dianping (both from China), Samsung Venture International Corporation (South Korea), Temasek Holdings (Singapore) and Tencent (China) invested US\$ 1.5 billion in Indonesia-based Go-Jek, a ride-hailing and multi-services platform.¹⁰⁴ These are just two examples of the many investment deals made in recent years.

As ASEAN has established itself as the fourth most popular investment destination globally,¹⁰⁵ venture capital investments with exposure to the digital economy grew at an average rate of more than 54 percent a year between 2014 and 2017, cumulatively amounting to US\$ 10.7 billion (**Figure 19**).¹⁰⁶

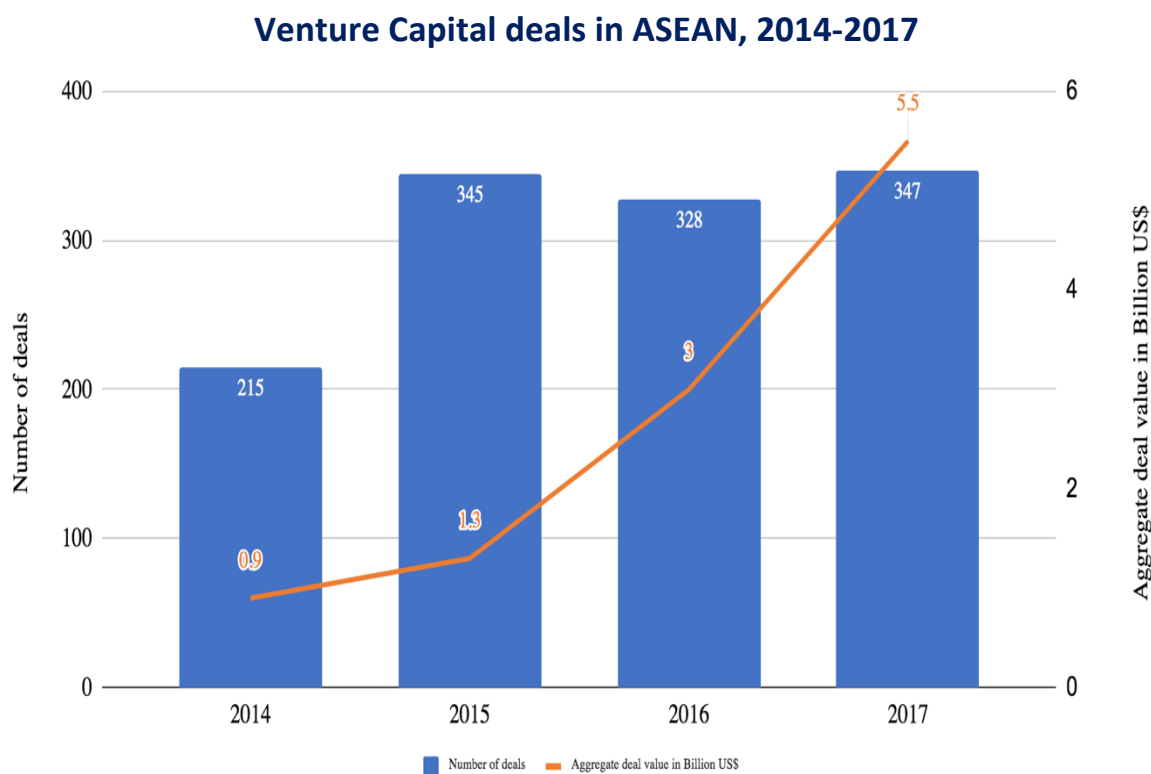


Figure 18: The platform economy within the world of technology and work



Source: Adapted from “Digital Labour Markets in the Platform Economy, Schmidt, 2017”

Figure 19: Venture capital deals with exposure to the digital economy in ASEAN, 2014–2017



Source: SVCA and Preqin (2018), “ASEAN Private Equity”. Factsheet in “ASEAN Investment Report 2018 - Foreign Direct Investment and the Digital Economy in ASEAN”, ASEAN Secretariat & UNCTAD.

Despite the economic dynamism of the platform economy, the growth of work platforms has raised questions about the changing nature of employment and the impact on workers. The growth of platforms is part of the general shift in the region toward non-standard forms of employment. In a 2016 ILO study, interviewees across all member states commented on the rising demand coming from both workers and employers for greater flexibility, enabled by technology,

which makes flexible types of employment the norm rather than the exception.¹⁰⁷

While it may come as no surprise that firms would like to enhance the flexibility of work, the study also surveyed more than 2700 students across ASEAN, finding that most were open to freelancing and working remotely. In each country, only eight percent or fewer said they would not perform this kind of work under any condition.¹⁰⁸ Other research also shows that young professionals are seeking more

remote work because they believe it would enhance their productivity, job satisfaction and work-life balance.¹⁰⁹ However, these studies do not offer insights into what young people would sacrifice for flexibility, or what they perceive as freelancing. A survey conducted by Perkumpulan Prakarsa and JustJobs Network in Jakarta

largely because it entails self-employment, but also elements of traditional wage employment—making existing regulatory approaches inadequate for governing it. Workers on platforms enjoy some of the benefits that self-employed entrepreneurs do—the most important arguably being flexibility. In most cases, platform workers



found, for example, that the vast majority of Go-Jek drivers view the platform as their employer, even though they are independent contractors and not employees in legal terms.

The latter example illustrates how platform work raises new policy challenges

can choose the number of hours they spend on a platform or the number of ‘gigs’ they accept; the time of day they work; and in many cases the location of their work as well. Such flexibility is particularly prized by women seeking to balance domestic responsibilities with income generation. The ability to choose the location of work

also plays a role in enabling the economic participation of women where social norms restrict their mobility.

Yet, workers on platforms must also accept some of the risks and downsides that come with this kind of work. For example, platform workers utilize their own fixed assets, such as vehicles, cleaning equipment, or salon equipment, to deliver services. The capital necessary to acquire these assets, and the depreciation of assets are costs associated with being a platform worker similar to the costs associated with being an entrepreneur.

Platform work also differs from entrepreneurship in important ways. Whereas entrepreneurs generally have control over how much they charge for their goods and services, the rate of pay on many platforms—whether hourly or per service provided—is determined by the platform, not the worker. Despite some flexibility around working hours, for example, platform workers sometimes have less flexibility when it comes to choosing which work to accept or decline. Ride-hailing apps, in particular, often do not allow a driver to see the destination a potential customer wants to travel to, or

how much the ride will pay. Incentive structures are also designed to penalize drivers who do not accept rides. Moreover, the performance review systems that platforms employ, where workers are judged by customers through ‘reputation scores’ or ‘ratings’ that in turn influence the frequency of work and wage earned by the worker, resemble the forms of control that traditional firms have over wage employees. In these ways, platform workers have far more restrictions placed on their work than do conventional entrepreneurs.

Despite confronting similar constraints typically associated with wage employment, platform workers generally do not enjoy any of the benefits that legal frameworks compel employers to provide regular employees. Health insurance, paid sick leave, maternity leave, and other benefits generally extended by employers to permanent employees are unavailable to platform workers in most cases because these workers are considered to be self-employed or contract workers rather than employees in the conventional sense. Moreover, platform workers do not have the same collective bargaining rights that are enshrined in law for employees.

The concern with platform work, therefore, is that it places most of the burdens of self-employment on workers without offering them all the benefits of entrepreneurship. From a regulatory perspective, it also introduces a new “trilateral” relationship. What was traditionally a bilateral relationship between an employer and a worker, or a service provider and a client, now has a third constituent—the platform. In such arrangements, the role of the platform, how much control it exerts, what its obligations are toward the service providers and/or the consumers, and what regulations and oversight it is subject to are all ambiguous.

For ASEAN to take advantage of its favorable demographics, expanding middle class and the attractiveness to

investors in order to create an inclusive economy with high-quality employment, it is critical that technology be harnessed toward enhancing economic opportunity while also protecting workers. In particular, youth in ASEAN, with a cultural affinity to technology and willingness to adopt new digital trends, can serve as the driving force for technology adoption and growth.¹¹⁰ In order to explore the specific tradeoffs, opportunities and challenges that emerge as the ASEAN region navigates technological change, the next section delves deeper into the policy challenges that emerge as the platform economy gives rise to new forms of work that call for a reassessment of existing institutional structures to govern labor markets and employment relationships.





The Platform Economy: New Policy Dilemmas

Be it giving a ride (Grab, GO-JEK), delivering food (Deliveroo, Swiggy), offering car maintenance (GO-AUTO, GO-CLEAN) or providing wellness services (GO-MASSAGE, GO-GLAM), platform workers across ASEAN are now engaged in nearly every aspect of the personal services economy. The rapid growth of this sector is one of the defining technological trends that is having a significant impact on the world of work in the region. This chapter explore key questions that policymakers must grapple with in this context, focusing in particular on three issues:

- (i) the ability of workers to organize and bargain collectively;
- (ii) the regulatory and social protections afforded to workers; and
- (iii) the ability of workers to obtain the skills, training and access to participate in these new forms of work.

Policy issue 1: Who takes responsibility for worker welfare?

As noted, flexible work arrangements, including in the platform economy, may not afford workers the same regulatory and social protections as regular employment arrangements do. Like other informal workers, platform workers tend to be beyond the purview of labor regulation—lacking social protection and other employment-related entitlements and benefits. A rise in the incidence of platform work upends traditional means of providing worker protections; it delinks social protection coverage from employment status.

In addition to employer provided benefits such as health insurance, another protection that platform workers lack is basic predictability of their incomes. In most cases, because platform work is not considered regular employment, there is no regulation regarding remuneration— even though platforms generally exercise considerable control over workers’ earnings. On cloud- based platforms, a workers’ wage is the price paid by the client minus the platform fee, while for most location-based platform work, platforms decide the share workers receive as well as any additional bonuses or incentives.¹¹¹

With cloud-based platform work, the labor supply is geographically dispersed and abundant, but demand tends to be more concentrated. This allows employers to practice ‘labor arbitrage’— buying

labor from where it is the cheapest, thereby producing a ‘race to the bottom’ in wage rates. Moreover, when pay is linked to services fulfilled, there is evidence that suggests that workers end up spending long hours at work—exacerbated by pressure to meet work targets and prevalence of performance-based incentives.¹¹² A

report by the JPMorgan Chase Institute claims that while more people are engaging in platform work, income levels are not rising.¹¹³ There is also evidence that, as in the regular labor market, workers on platforms are subject to various forms of wage discrimination—for example, based on gender or country of origin—but protecting workers against discrimination is relatively more difficult.¹¹⁴

This situation produces a high level of income volatility for workers on platforms.¹¹⁵ Not only is there no wage floor in



most platform-based work, the large swings in income make it difficult for platform work to provide a stable financial future for workers and their families.

Beyond social protection and pay, other issues of job quality and economic mobility also emerge in the context of the platform economy. Platform workers with higher ratings and more experience generally receive more work as a result of algorithmic search rankings. While this is in some ways a natural feature of the labor market—that is, experience is rewarded—it can lead to exploitation of digital workers who have limited visible experience and feedback on digital platforms.¹¹⁶

Facing mounting pressure to resolve issues of worker welfare, some firms in ASEAN and beyond have begun introducing limited benefits. For example, in terms of protections, Grab and GO-JEK both offer accident insurance to drivers. For bicycle delivery workers, Deliveroo provides insurance covering personal injury on the job, public liability and lost earnings while a worker is unable to work and recovering from a work-related injury.¹¹⁷ Under GO-JEK's Singapore insurance option, for instance, most drivers will have to pay into

the system to receive benefits, but “top drivers” receive the benefits for free.”

GO-JEK's Singapore operations recently announced an insurance program where drivers can pay a monthly contribution and receive paid medical leave.¹¹⁸ However, like pay, even benefits may be dependent on performance. Platform work also places the burden of developing skills and capabilities on the worker.¹¹⁹ Limited forms of skills training have also been introduced by platforms, usually tied directly to improving workers' productivity and professionalism. Foodora, which operates in the Philippines, conducts a safety training.¹²⁰ Home service platforms have started training workers in behavioral and soft skills to enhance their customer service.

Questions around how to best provide welfare protections and remuneration frameworks for platform workers notwithstanding, platforms also aggregate workers in a way that presents an opportunity to improve welfare provision. This is more likely to be the case in AMS marked by high levels of existing informality where individual workers are dispersed in a range of economic activities.

For one, taxes from transactions occurring on platforms could be used to support programs for social protection and skill development helping move nations toward greater universalization as welfare provision becomes delinked from traditional notions. Moreover, the platforms themselves create an access point for reaching otherwise disaggregated informal workers and delivering social protection to them. In other words, platforms represent a new opportunity to improve welfare among informal workers.

Despite some positive examples of platform firms taking initiative on their own, the opportunity to leverage platform growth for improving worker welfare will not be realized without robust policy

frameworks. Efforts among platform firms to improve worker welfare, while laudable, remain limited in scope. Only in the most developed ASEAN member states are platforms starting to provide critical benefits such as unemployment or medical insurance. Moreover, no platform company has meaningfully addressed the high levels of income volatility that workers face. There is a need for systematic policy frameworks that require platform firms to support workers' needs directly through laws that compel them to provide benefits, or that ensure a stable level of income that allows workers to do so for themselves, or that enable government prereservation funded through taxation.



Box 2: The Case of Motorbike Taxi Drivers in Indonesia¹²¹

A 2016 study by Perkumpulan Prakarsa and JustJobs Network examined on-demand transport workers in Jakarta, Indonesia surveying 205 motorbike taxi respondents working through online motorbike taxi-hailing applications, GO-JEK and Grab Bike.

Most drivers cited the prospect of a higher income on the platform as their reason for accessing passengers online. Other reasons to join the platform were increased flexibility (33 percent), dissatisfaction at previous jobs (12 percent) and previous unemployment (12 percent). Of those previously employed, 51 percent were previously engaged in the formal economy.

All respondents used their own motorbike on the job and their own smartphones. Car and motorbike companies in Indonesia, as in other parts of ASEAN, offer payment plans that enable even low-income households to buy vehicles. For example,

an entry-level motorcycle, worth approximately IDR 16.5 million (US\$ 1,250), can be purchased with a down-payment as small as IDR 500,000 (US\$ 38).

Nearly half (48 percent) of the respondents worked between 12 and 18 hours per day, while about a third (35 percent) worked six to 12 hours per day. The platform companies provide no overtime compensation. A majority of the full-time workers (55 percent) earned below the 2016 minimum wage of IDR 3.1 million (US\$ 235) per month in Jakarta. Those who drove part-time were most likely to earn in the range of IDR 1-2 million (\$76-\$152) per month. The platform companies provide no overtime compensation.

Over half of respondents (56 percent) received social protection in some form, most commonly through Indonesia's government-run health insurance program (BPJS).

Policy Issue 2: Do platforms support or hinder worker agency?

The rise of self-employment through platforms raises questions about the ability of independent workers to organize and bargain collectively. The high turnover and flexible work schedules that characterize the platform economy are not conducive to building solidarity between workers.¹²² A geographically fragmented labor pool of digital workers creates an additional barrier to platform worker organization, especially in the case of cloud-based platforms.¹²³ Therefore, in addition to platform workers' lack of legal rights to form unions or collectively bargain, their collective strength is structurally circumscribed by the nature of platforms themselves.



However, from another perspective, the growth of the platform economy in

countries with high levels of informality tends to have the effect of centralizing systems of work in transportation and provision sectors that otherwise operate in disaggregated, decentralized and informal ways. Given this aggregation of work in certain sectors, the platform economy may have the effect of pooling together large groups of workers that may have otherwise worked as disconnected self-employed individuals. In this context, there may be greater possibility for workers to enhance their welfare by making collective demands. In fact, research in Indonesia has revealed that—even if workers on platforms are not legally considered employees—they often perceive themselves as working for a company of which they can, and do, make demands.¹²⁴

Indeed, new forms of organizing and bargaining are emerging. Drivers for Grab in Indonesia have formed an association of drivers called Central Information Point Social, which communicates digitally through WhatsApp and social media sites—working to increase the number of drivers that register for the government's national health program (Badan Penyelenggara

Jaminan Sosial Kesehatan) and negotiating with the company on issues related to its legal obligation to ensure minimum wages and income.¹²⁵

In Malaysia, the Union Network International-Malaysia Labor Centre (UNI-MLC) has taken on the role of organizing workers in non-standard forms of employment in the services sector, including platform workers.¹²⁶ In addition, the Ministry of Transport also linked social protection access to taxi driver licenses. In Singapore, drivers of ride-hailing applications such as Grab formed an association to promote their welfare and interests with the support of Singapore National Trade Union Congress. Vietnam imposes a Value Added Tax (VAT) for Grab at five percent. In the Philippines, the law requires Grab and similar services to itemise different components of the fares; for instance, the base fare, surcharges and 12 percent VAT, among others.

Evidence on the kinds of jobs platform workers held before joining the platform suggests that the platform economy takes away worker agency in some respects but it also creates new opportunities for worker agency. Research among GO-JEK and Grab

Bike drivers in Jakarta and Surabaya found that about half of platform workers were formerly in formal employment and the other half were in informal employment.¹²⁷ This suggests that while some platform workers are moving toward a 'more formal' employment arrangement, with greater opportunity to exercise collective demands as compared to their previous work, other platform workers are now in a more informal employment arrangement than they were before. In other words, 'platformization' in ASEAN involves a complex combination of formalization and informalization of work which undermines this dichotomy as an effective way to understand this emergent context of work.

For policymakers, this raises the question of how to govern the industrial relations between platform economy workers and firms. On the one hand, organizing workers that are not connected via a common employer and geography – since platform workers are often self-employed – may be more difficult. On the other hand, if platform workers were already in self-employed in the informal sector prior to taking up work on a platform, then platforms actually aggregate them creating new opportunities to organize and bargain

collectively. Either way, there is a need for innovative models to organize workers and for labor regulations in the digital economy to manage, for instance, worker contract terms, remuneration and industrial disputes.

Yet discussions on internet governance tend to focus on issues such as the right to

privacy, disinformation and surveillance, but do not focus on how to regulate labor standards in this emergent digital economy, particularly work platforms.¹²⁸ Moreover, the fact that platform workers are organizing through digital platforms suggests that the next frontier for collective bargaining may be online, which may come with its own set of regulatory dilemmas.

Policy issue 3: Who has access to platforms

Technological progress is skill-biased—meaning it tends to favor those with specialized skills and adversely affect those without.¹²⁹ In ASEAN, the challenge of equipping young people with the skills they need to participate effectively in a digital economy looms large, given its sizable youth population. The increasing skill requirements affect the labor market at large; meanwhile, issues of access also relate to the platform economy specifically. Notwithstanding concerns over quality of employment, what kinds of workers are able to access platforms and benefit from the opportunities they create?

While some contend that platforms can provide opportunities to those with limited formal education,¹³⁰ others contend – in line with the technology-skill complementarity argument above – that to access and benefit from platform work one needs foundational literacy, access to technology, and basic digital skills. These skills are found in unequal measure not only across the nations of ASEAN, but within them as well.¹³¹ Research has found that platform workers are likely to be younger and more highly educated than workers performing similar services off platforms. For example, in a survey of 100 transport workers in Surabaya, the average age of a Go-Jek driver was 33.5, while the average age for an ojek (off-platform motorbike taxi) driver was 46. Among Go-

Jek drivers, 74 percent had completed upper secondary school or more education; while among ojek drivers, the figure was 15 percent.¹³² These findings, while limited to one place and one sector, suggest major differences in the populations using platforms and those performing the same work but without access to platforms.

Another question is whether the platform economy provides a unique opportunity for women to access the labor market. In their study of the Greater Mekong Sub-region, Betcherman and Haque use Gallup-ILO World Poll data to assess women's employment, finding that women across the region express a strong preference for activities that allow them to balance income generation with their family responsibilities.¹³³ Platform work may offer women this kind of opportunity – greater flexibility or, in some cases, the ability to work from home. However, women generally have unequal access to the technology and digital skills needed to engage in platform work.¹³⁴

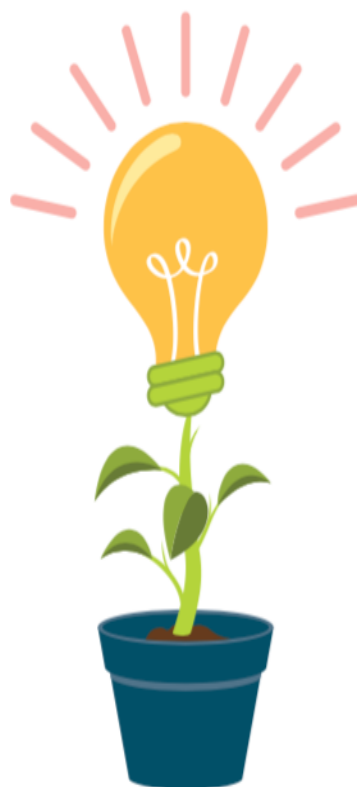
Moreover, platform work may not have all the same benefits of empowerment as conventional participation in the

workforce if it reinforces restrictive social norms by keeping women home-bound and employed in lower productivity work, burdened with a disproportionate share of unpaid care work. According to the ILO, sectoral and occupational segregation contributes to the gender wage gap, making it economically gainful to facilitate women's access to higher productivity sectors and occupations in the labor market, as well as improving the value female-dominated sectors and occupations.¹³⁵ The freedom to choose their work affects women's welfare positively too.

Another issue related to the platform economy's impact on women relates to the way it restructures the economy and labor market more broadly—i.e. whether the combination of job destruction and job creation facilitated by the platform economy will favor or hurt women's job prospects. For instance, a study by economists at Stanford and Uber found that while women Uber drivers in the U.S. no longer faced disadvantages from factors traditionally expected to contribute to a gender wage gap - returns to work intensity, preferences for specific hours, or customer discrimination - a gender wage

gap persisted nonetheless, explained by totally new factors.¹³⁶ Similarly, an analysis of India's National Sample Survey (NSS) showed that women have more trouble matching to jobs than men – an issue platforms are best equipped to solve.¹³⁷

Little research examines the platform economy at this macro level, but one can observe that the largest proliferation of platform jobs has been in transportation, delivery and logistics—where women are generally underrepresented.



Frameworks & Policies to Respond to Changing Needs of a 21st Century Workforce

Given the uncertainties around technological change and its impact on the nature of work, how can institutions adapt to create an environment that supports workers, promotes job creation, and enables economic dynamism? This section explores current policies in ASEAN—at a regional and country level—that respond to technological change. Where relevant, we also offer examples from outside ASEAN to shed light on how other regions are coping with the changing nature of work. The overview highlights gaps in their design and implementation, which inform the recommendations presented in the following section.

ASEAN member states have, at the regional and national levels, undertaken several efforts to improve the quality and productivity of work, with investments in worker welfare, education and skills, and occupational safety and health, as well as regulations that uphold workers' rights, from fair remuneration to collective bargaining.



ASEAN Secretariat

Improving welfare protections

The Vientiane Declaration¹³⁸ is a regional commitment to “facilitate the transition from informal employment to formal employment in all economic sectors” by “assessing the factors, characteristics and circumstances of informality in employment in the national contexts as inputs to the design and implementation of laws, policies and other measures.”¹³⁹ Several other ASEAN pronouncements, from the ASEAN Declaration on Strengthening Social Protection,¹⁴⁰ to the ASEAN Socio-Cultural Blueprint 2025, to the ASEAN Leader’s Vision for a Resilient and Innovative ASEAN (2018), reaffirm the region’s commitment to promoting formalization.

Meanwhile, the ASEAN Declaration on Strengthening Social Protection reaffirms the commitment of AMS to strategies to “promote the coverage, availability, comprehensiveness, quality, equitability, affordability and sustainability of various social protection services, including the expansion of social insurance to the informal sector.”¹⁴¹ However, the

declaration does not specify where responsibility lies in providing protections—the state, the private employer or the individual worker purchasing these protections in the private marketplace.

Ambiguities about categories of employment emerge when tech-based intermediaries are involved, such as work platforms like GO-JEK, Grab, MealTemple, FreshGora or others. Clearing up these ambiguities is essential to effectively protecting the rights of workers and enforcing employer obligations. Delineating legal categories for what

constitutes an employer and an employee is hence critical to answering the



question of whose responsibility it is to provide welfare protections.

The Philippines, for example, acknowledges the need to have an additional category of workers between a traditional employee and an independent contractor and has begun a process of identification and classification of platform workers. The Department of Labour and Employment (DoLE) in the Philippines recognizes platform workers on Grab and Uber as Transport Network Vehicle Service (TNVS) Drivers, under a broader category called “emerging jobs” and has identified key technical and soft skill competencies for such emerging jobs, as per the recommendations of APEC.¹⁴² It also recommended that DoLE and the Senate develop policies that address the lack of regulation of work from home jobs. In late 2018, the New Telecommuting Act, also referred to as the “Work From Home Law,” was introduced to provide a legal framework for the rights of workers that perform work from their homes.

By defining “fair treatment”, it gives telecommuting workers, rights to demand fair pay, decent working conditions and proper representation, marking a step

forward in recognizing and protecting new forms of work.¹⁴³ Among platform workers, this will affect particularly cloud-based platform workers who work remotely. A “Freelancers Protection Act”, currently pending in the Senate, puts down concrete definitions of a freelancer and client, systems for their taxation and grievance addressal for issues like non-payment.¹⁴⁴ However, it remains to be seen how such an act would regulate cloud-based platforms where the client usually sits in another country. The Employees Compensation Program (ECP) is targeting universal coverage of all workers under the employment injury insurance, regardless of their employment in the formal or informal economy.¹⁴⁵

In Indonesia, workers in platform work or otherwise outside the conventional scope of industrial relations are labelled PBPU (Pekerja Bukan Penerima Upah—i.e. “workers who do not receive wages”). PBPU workers carry out economic activities or businesses independently to obtain income from their activities. These include drivers on platforms like GO-JEK, Uber or Grab. Registering as a PBPU worker makes the worker eligible for the National Health Insurance Scheme under the BPJS

Kesehatan, however on a self-contributory basis, unlike for formal sector waged workers for whom employers contribute as well.¹⁴⁶ In a 2016 regulation passed by the Minister of Manpower, PBPU workers were made eligible for the workforce insurance as well — i.e. programs of work accident insurance, death insurance, and old age insurance, under the BPJS Ketenagakerjaan program which provides employment-related social security and earlier had low coverage outside the formal sector. The Indonesian government has also entered into agreements with platform companies like GO-JEK and Uber (now merged with Grab) to increase participation among drivers in BPJS Ketenagakerjaan.

Confronting the rise of platform work, which makes it easier for individuals to be self-employed, the Singapore government set up the Tripartite Working Group for Self-Employed Persons in 2017. The Working Group comprised representatives from government, worker and employer associations, and looked at ways to better address self-employed persons' common challenges.¹⁴⁷

The working group identified four common challenges, and made recommendations to address them. The Government has accepted the recommendations, and has made progress in implementing them. The recommendations are as follows:

A. Shape contracting norms to prevent payment disputes. Launched the Tripartite Standard on Contracting with self-employed persons (SEPs), as well as a contract template for SEPs to use when confirming key terms of engagement with their service-buyers;

B. Assist SEPs to resolve payment disputes. The Tripartite Alliance for Dispute Management (TADM) provides voluntary mediation services to all SEPs who have payment disputes with consumers of their services;

C. Help SEPs mitigate the loss of income during prolonged period of illness. Work with insurers to introduce prolonged medical leave insurance products and raised awareness among large intermediaries such as taxi and private hire car operators to support purchase of such insurance by their drivers. This is currently the most extensive earnings protection coverage offered to platform drivers in Singapore.

The scheme covers drivers for medical leave up to 21 days;

D. Help SEPs keep their skills current. Worked with tripartite partners and Government agencies to ensure SEPs such as insurance agents, financial advisers, estate agents, media freelancers and tourist guides – in addition to regular employees – have access to technical skills training through Singapore’s National Skills Frameworks. Also work with SEP associations to develop non-technical skills training, so that SEPs are equipped to start and maintain a business.

E. Help SEPs save more regularly. A “Contribute-As-You-Earn” model will be introduced so as to make it easier for SEPs to save for their healthcare and retirement needs – every time the SEP is paid, part of the payment is automatically conveyed to their social security account. The Government, as a service-buyer, will take the lead to implement the savings model in 2020.

Other countries in ASEAN, while not specifically addressing the labor market

changes brought on by technology, have programs aimed at improving the protection of workers. In recent years, Myanmar has introduced a host of new social protection laws for workers, covering issues related to social security, minimum wage, paid leave, and occupational safety and health. Cambodia has recently enacted Law on Social Security Schemes with the scope to cover Persons under public sector, Persons Defined by the Provisions of the Labour Law including personnel serving in air and maritime transportation as well as domestic workers and the self-employed. The National Social Security Fund (NSSF) covers around one million private sector workers under an Employment Injury Insurance (EII) as of 2014.¹⁴⁸ The Social Protection Policy Framework (SPPF), published in 2017, is the first policy document of its kind in Cambodia to cover social assistance, social insurance and social health protection. Among its goals is extending and strengthening the implementation of the employment injury insurance, the health insurance scheme and the pension scheme.¹⁴⁹

Box 3: Policy responses to platform work beyond ASEAN

This box presents two cases of regulation of platform work from Germany and California, U.S.A. Both are indicative of two different strategies for recognizing platform rights and protections of platform workers. The German case recognizes the unique control structures associated with platform work by creating a new category of workers, while the California case attempts to clarify conditions under which platform work may, or may not, fit into the existing employee or contractor category.



































Germany identifies a separate category of workers who fall outside of the definition of employee calling them “Employee-like persons” or quasi workers that are not “personally dependent” or “subordinated” like employees – but are “economically dependent”. By legally recognizing platform workers in such a way, the government is able to provide some employment protection to such workers, for instance paid holiday and anti-discrimination protection, entitling them to collective bargaining and allowing terms to be subject to judicial scrutiny.¹⁵⁰

The Supreme Court of California adopted the “suffer or permit” test under which the

law presumes a worker to be an employee, entitled to overtime pay, meal and rest breaks. A worker is considered an independent contractor only if the hiring entity meets each part of an “ABC” test (as in New Jersey and Massachusetts): (A) The worker is free from the type and degree of control and direction a hiring entity typically exercises over its employees; (B) The worker performs work outside the scope of the hiring entity’s business, and whose work therefore would not ordinarily be viewed by others as working in the hiring entity’s business; and (C) The worker is customarily engaged in an independently established trade, occupation, or business, taking such steps as incorporating the business, getting a business or trade license, or advertising.¹⁵¹ While this judgement acts as a safeguard against workers’ protections being downgraded by companies reclassifying employees as contractors, a narrow conception of contractual work could also lead to job loss. Uber and its competitor Lyft have stated that if a law were to be passed requiring drivers on their platforms to be classified as employees, it would lead to a loss of flexibility in the labor market and cause significant job losses.¹⁵²









Table 4, compiled by the JustJobs Network based on extensive research on policy frameworks in ASEAN, lays out the different kinds of protections available to workers in the region.

Table 4: Status of social protection in ASEAN

Countries	Healthcare	Sickness Benefit	Work injury /OSH	Unemployment Insurance	Permitted Overtime	Old age pension	Minimum Monthly Wages (In USD)
Brunei Darussalam	Universal health coverage (UHC)	  *	 	No provision	4 hours a day ⁱ	Universal social pension scheme ⁱⁱ	No provision ⁱⁱⁱ
Cambodia	Social health insurance	 	  **	No provision	2 hours per day ^{iv}	Available selectively as full pension old-age allowance ^v	170 (only for garment ind)
Indonesia	Contributory social health insurance for formal economy employees*** Targeting UHC	 	 	No provision	3 hours per day ^{vi}	Provident Fund	102.74 - 257.73 ^{vii}
Lao PDR	Contributory social health insurance for formal economy employees Targeting UHC	 and 	 or 	Yes ^{viii}	3 hours a day	Social insurance	130
Malaysia	Universal health coverage	   	 	No provision	104 hours a month	Provident Fund	229.11- 249.03
Myanmar	Contributory social health insurance for formal economy employees Targeting UHC	 	 	No provision	20 hours a week (factories), 12 hours a week (shop workers) ^{ix}	No statutory old-age pension ^x	98.88
Philippines	Contributory social health insurance for formal economy employees Targeting UHC	 	 	GSIS ¹ for government employees ^{xi}	NA	Social insurance	144.14-288.3
Singapore	Universal health coverage	 	 	No provision	4 hours a day	Provident Fund	No provision

 Employer's liability

 Social Insurance

Countries	Healthcare	Sickness Benefit	Work injury /OSH	Unemployment Insurance	Permitted Overtime	Old age pension	Minimum Monthly Wages (In USD)
Thailand	Universal health coverage	 	 	Yes, for all residents	36 hours a week	Social insurance	276-295
Vietnam	Contributory social health insurance for formal economy employees Targeting UHC	 	 	Yes, for all nationals	4 hours a day	Social insurance	120-173

Source: The state of social protection in ASEAN at the dawn of integration, ILO 2015

*Under employer-liability systems, workers are usually protected through labor codes that require employers, when liable, to provide specified payments or services directly to their employees.

**Social insurance comprises mandatory contributions whereby individuals contribute a portion of their income into individual or personal accounts for future income protection; it usually has employer contribution to these accounts as well.^{xii}

***Contributory schemes are those that seek to tie benefit entitlements closely to contributions.

- i. Department of Labour, "Guide to Brunei Darussalam Employment Laws and Regulations," 2009, <http://www.labour.gov.bn/Download/GUIDE TO BRUNEI EMPLOYMENT LAWS - english version-3.pdf>.
- ii. Pension Watch, "Data on Social Pensions," 2018, <http://www.pension-watch.net/country-data/brunei-darussalam/>.
- iii. "Brunei Minimum Wage Rate 2019," 2019, <https://www.minimum-wage.org/international/brunei>.
- iv. ILO, "Guide to the Cambodian Labour Law for the Garment Industry," 2005, <http://betterfactories.org/?p=6331>.
- v. Wage Indicator Foundation, "Social Security," 2019, <https://prake.org/labour-law/social-security>.
- vi. ASEAN Briefing, "The Guide to Overtime Regulations in ASEAN," 2015, <https://www.aseanbriefing.com/news/2015/10/15/the-guide-to-overtime-regulations-in-asean.html>.
- vii. ASEAN Briefing, "Minimum Wage Levels Across ASEAN," 2018.
- viii. National Assembly, "Lao People's Democratic Republic Law on Social Security," 2013.
- ix. Myanmar Garment Manufacturers Association, "Labour Related Provisions," 2019, <https://www.myanmargarments.org/laws-regulations/>.
- x. International Social Security Association (ISSA), "Social Security Programs Throughout the World: Asia and the Pacific, 2014," 2010.
- xi. Institute for Labor Studies, "Country Report on Unemployment Insurance: Philippines," 2013, <http://ils.dole.gov.ph/country-report-on-unemployment-insurance-philippines/>.
- xii. Paguman Singh, "Social Protection in ASEAN," International Council for Social Welfare, 2018.

The rise of new forms of work and changing employer-employee relationships could have important impacts on the number of workers that traditional social protection programs reach, but also the fiscal sustainability of social protection programs. These programs are generally based on contributions within a standard employer-employee relationship. Given the labor market restructuring underway, and the already high levels of informality in the region, a universal model of social protection—not tied to a traditional employer-employee relationship—is becoming more attractive, but sustained affordability must be worked out.

Universal coverage—unrelated to employment status—would require finding additional sources of revenue and changing taxation structures. According to the World Bank's 2019 *World Development Report*, reducing tax avoidance by platform companies is one of the ways developing nations can raise finances for investments in human capital and universalizing social protection.¹⁵³ As per the report, the increasingly digital nature of work only creates more opportunities for tax avoidance. Firms' generation of profit from

new kinds of assets, such as user data, makes it increasingly unclear how or where taxable value is created. This ambiguity makes it easier for companies to locate assets, and therefore profits, in tax havens—countries with preferential corporate tax frameworks.¹⁵⁴ Multinational technology firms withhold tax by engaging in base erosion and profit shifting—allocating more profits to affiliates located in zero- or low-tax countries regardless of the extent of their presence there. Estimates suggest that governments worldwide may miss out on US\$ 100 to 240 billion in annual revenue, the equivalent of four to ten percent of the global corporate income tax revenue.¹⁵⁵ Box 4 reports how Uber's corporate structure is set up to avoid tax.

For these reasons, the next frontier for ASEAN member states, if they seek to raise the funds necessary to protect workers and expand social welfare programs, is to design tax policies that can capture more revenue from the expanding digital economy while still remaining globally competitive and attractive to investors. Beyond developing suitable mechanisms to effectively tax digital players, additional tax measures such as Value Added Tax,

expanding the base of those that pay income tax, and exploring tax cuts to incentivize certain practices on part of

workers or businesses, and could help pay for welfare contributions and necessary investments in human capital.

Box 4: Uber's profit-shifting strategy for avoiding taxes

In 2015, Fortune magazine investigated Uber and its entities in more than 100 jurisdictions globally to understand how Uber has organized its business to avoid being taxed at the U.S. corporate rate of 35 percent, one of the highest in the world.

Uber International C.V. is an Uber subsidiary chartered in the Netherlands but headquartered in Bermuda, which does charge a corporate income tax. Uber International C.V. has a cost-sharing agreement with Uber for using its intellectual property outside the United States. This cost-sharing agreement effectively allows Uber to keep most of its non-U.S. profits beyond the reach of American tax authorities.

Another subsidiary, Uber B.V., also headquartered in the Netherlands, pays a royalty fee to Uber International C.V. to use Uber's intellectual property—the application matching drivers with riders.

The agreement is to pay a royalty fee amount that leaves Uber B.V. with an operating margin of one percent of revenue.

A stylized example explains how this complicated arrangement works. If a passenger outside the United States hails an Uber and takes a ride costing US\$ 100, the payment goes to Uber B.V., which sends US\$ 80 back to the driver. Of the US\$ 20 left, Uber B.V. will ultimately record one percent, or 20 cents, as income. The highest corporate tax rate in the Netherlands is 25 percent, so the government will get 5 cents and the company keeps 15 cents. After subtracting operating costs—for example, US\$ 10 of the initial US\$ 20—Uber B.V. then sends the balance (US\$ 9.80) to Uber International C.V. for the royalty. Since royalty payments are not taxable under Dutch Law, Uber International C.V. receives the US\$ 9.80 as untaxable income.

The only part of the US\$ 9.80 income that is taxable is from the cost-sharing agreement between Uber International C.V. and its parent, Uber—a 1.45 percent royalty fee. Hence for every US\$ 10 in net revenue for Uber International C.V. from Uber B.V, 14.5 cents goes back to Uber in the United States, subject to U.S. taxes.

The rest accumulates, without being taxed, in Bermuda.

In other words, from the US\$ 10 in net revenue earned from this ride, Uber pays less than 20 cents (two percent) in taxes to any government.

Enhancing human capital

To manage changes brought about by technological shifts, ASEAN has chalked out a vision for a future that harnesses technology to the benefit of its population. The ASEAN Declaration on Innovation was introduced in 2017, declaring the need for effective policies and laws to promote sustainable economic growth, job creation and enhanced well-being.¹⁵⁶

Education and skilling policies at the regional level include the 2016 Vientiane Declaration, which commits to strengthening the development of human resource polices to facilitate access to quality Technical Vocational Education and Training (TVET), skills development, and lifelong learning. Digital literacy is being promoted by adopting Core Values on

Digital Literacy for ASEAN—which are to serve as a guide for online etiquette to promote socially responsible online behavior and providing internet users with a safe online environment.”¹⁵⁷

At a national level, advances made in education and skills in different AMS are reflected in **Table 5**. All member states provide free public primary education, the result of which is the high literacy rates in the region. Singapore provides quality, affordable and accessible primary and secondary education. Upper-middle-income member states like Malaysia and Thailand provide for free secondary education, while Brunei provides free education up to the tertiary level. The Philippines is seeking to implement a 2017

law that aims to universalize access to tertiary education.

In countries where manufacturing is currently characterized by labor-intensive, low-skilled production, such as Cambodia, Myanmar and Vietnam, industries will increasingly require specialized skills to supply more sophisticated apparel products, and higher-value-added activities.¹⁵⁸ Policies specific to TVET are crucial in such contexts.

Among the ASEAN-6, Malaysia, Philippines, Singapore and Thailand thrive on high-skill automotive and E&E manufacturing as well as knowledge-based services. This necessitates investing in workforce qualifications in technology and fostering core employability or soft skills.¹⁵⁹

Singapore launched the SkillsFuture in 2015 to provide Singaporeans with the opportunities to develop their fullest

potential throughout life, regardless of their starting points. It also serves as a national skills strategy to transform Singapore's industries and economic competitiveness

Skills certification schemes aim to validate skills and competencies regardless of how they are acquired, allow employers to compare skills across the labor market, support occupational mobility, and promote lifelong learning.¹⁶⁰

At the regional level, the ASEAN

Qualifications Reference

Framework was proposed in 2012

as a common reference framework that will enable

comparisons of qualifications across ASEAN member states, with the aim of improving labor market mobility across member states.¹⁶¹ Its scope covers includes all education and training sectors and one of its key objectives is the promotion of lifelong learning which is crucial for the creation of a knowledge



economy and gives workers the ability to adapt. The framework is a hierarchy of levels of complexity of learning which use learning outcomes as the metric for the hierarchy rather than duration of study program.¹⁶² The AQRF was developed based on agreed understanding between AMS and aims to have a neutral influence on their national qualifications frameworks (NQF), making it a framework that national qualifications systems must relate to through the process of referencing, rather than transform into. The referencing process is designed to be flexible enough to enable both countries with and without an NQF to link to the AQRF. Managing the referencing process, given the uneven development of NQFs within the AMS, is the biggest challenge facing the AQRF.

The following AMS have invested in setting up national qualification standards to certify workers' skills in various industries - Singapore Workforce Skills Qualifications was established in 2003 as a national credential system that trains, develops, assesses and certifies skills and competencies for the workforce,¹⁶³ Malaysian Qualifications Framework (MQF) established in 2007,¹⁶⁴ Philippine Qualifications Framework (PQF) and the

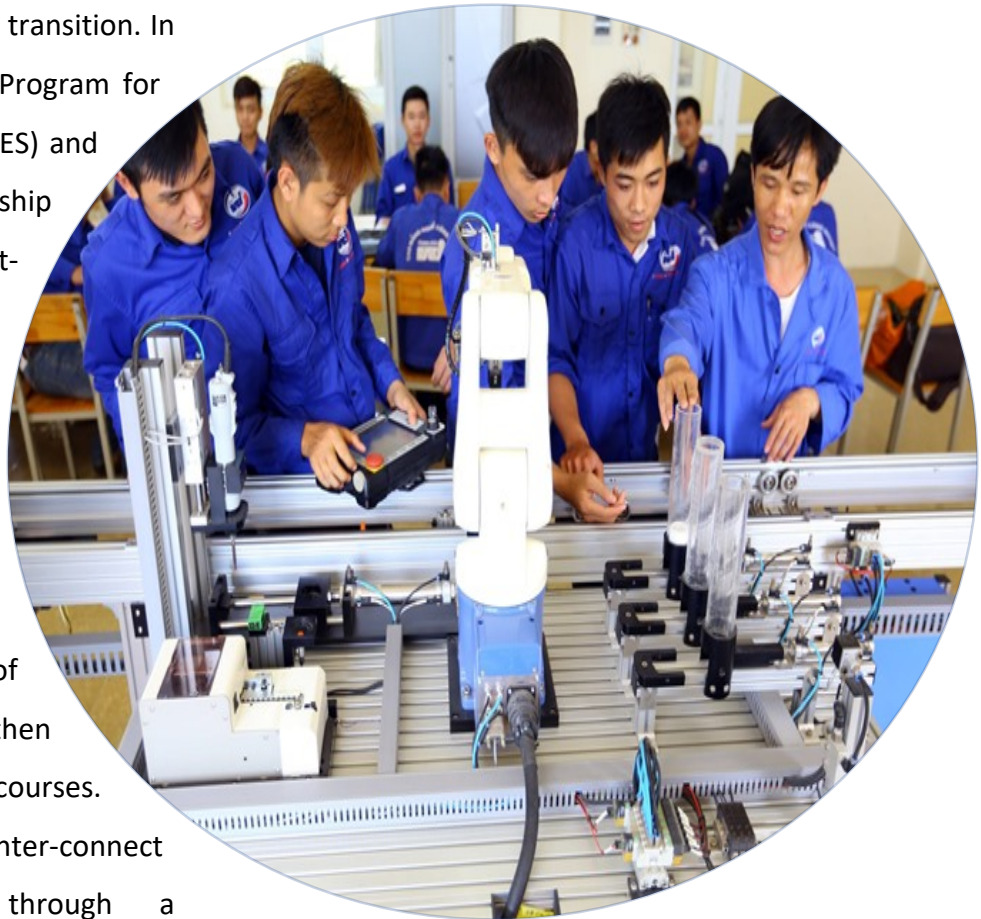
Thailand Professional Qualification Institute (TPQI) both set up in 2012,¹⁶⁵ Brunei Darussalam Qualifications Framework (BDQF) established in 2013.¹⁶⁶ Another approach by member states is to incentivize collaboration between training providers and the private sector, which aims to increase employers' investment in skilling and help ensure that curricula are practical and aligned with market demand. In Vietnam, the General Department of Vocational Education under MOLISA is collaborating with associations, corporations and enterprises toward actively linking skill development and vocational education to labor market demand.¹⁶⁷ Myanmar, as mandated in its 2013 Employment and Skill Development Law, plans to adopt a similar approach of establishing sector skills councils and a skill development fund to provide access to training at shared costs.¹⁶⁸ Thailand's Skill Development Promotion Act incentivizes private sector firms to train employees through tax cuts and contributions to a compulsory skills development fund.¹⁶⁹

Employers can also develop complementary apprenticeship schemes through which young people can gain practical experience and job-specific skills

that ease the school-to-work transition. In the Philippines, the Special Program for Employment of Students (SPES) and the Government Internship Program (GIP) provide short-term employment opportunities and internships to students and graduates. In Singapore, SkillsFuture Work-Study Programmes were introduced at the Institutes of Higher Learning to strengthen the industry relevance of courses. These programmes closely inter-connect theory and practice, through a combination of institution-based learning and structured on-the-job training.

Given that agriculture in several ASEAN member states still suffers from low productivity, while employing a large share of the population, technology adoption is also critical to improving employment outcomes for farmers and facilitating structural transformation of the economy.

Agriculture employs more than half the people in Cambodia, Lao PDR and Myanmar. Even countries like Indonesia, the Philippines and Thailand, which are



manufacturing and service-led economies, still employ nearly a third of the workforce in agriculture. Average wages and labor productivity is the lowest in agriculture among other sectors which makes improving productivity in agriculture crucial.¹⁷⁰ Lao PDR's 8th Five-Year National Socio-Economic Development Plan (2016–2020) emphasizes raising agricultural productivity as a development priority to raise livelihoods for agricultural workers in the short-term, and help them transition to more productive jobs in other sectors by reducing labor demand with increased agriculture productivity in the longer

term.¹⁷¹ Indonesia's 2017 Government Assistance Program (GAP) provides farmers assistance in the form of financial aid, scholarship for agriculture extension, agriculture machinery, farming land and infrastructure or material to establish farmland, all with the aim of increasing the productivity of national agriculture production.¹⁷² Such schemes help to

improve technology adoption among farmers which is a key driver of productivity. The adoption of new, high-yielding varieties of grain, fruit, vegetables, and even livestock, used in combination with improved fertilizers, irrigation, and machinery has boosted agricultural productivity on Asian farms over the last decade, according to the ADB.¹⁷³



Table 5: Education and skilling support provided by the governments in ASEAN

Member States	Education	Skills
Brunei Darussalam	Free education from pre-school to tertiary-level	National education plan includes transformation of technical-vocational education and training (TVET) by 2020 in terms of course restructuring, expanding apprenticeship options, career progression opportunities, upgrading the training environment Cash assistance for skills trainings to vulnerable groups
Cambodia	Free primary and secondary education	National fund to finance national TVET development and extend self-employment grants to vulnerable groups
Indonesia	Free primary and secondary education	Public vocational training centers provide subsidized training, funded from central, provincial and district budgets Master Plan for Acceleration and Expansion of Indonesia Economic Development 2011 - 2025 places emphasis on human capital development through vocational training
Lao PDR	Free primary education	National programme to improve non-formal education and skills training
Malaysia	Free primary and secondary education	National agency set up by Human Resources Ministry to improve supply of highly skilled workers in key growth industries. Includes internships, job placements, programs for women returning to the workforce and expats, tax incentive for employers to invest in employee up-skilling National vocational training institutes for youth who are unable to pursue higher education
Myanmar	Free daycare/pre-school and primary education	National Technical Education and Skills Development Plan 2018 – 2022 to serve as a guide in the implementation of technical-vocational education and training programs Jobs portal run by the Department of Labor and Employment
Philippines	Free education from primary to senior high school, universalized access to tertiary education	National Technical Education and Skills Development Plan 2018 – 2022 to serve as a guide in the implementation of technical-vocational education and training programs Jobs portal run by the Department of Labor and Employment
Singapore	Quality, affordable and accessible primary and secondary education	A tripartite council, collaboration among unions, employers and government, drives a national movement to provide an integrated skilling system for career guidance, vocational education courses, online and on-the-job training courses, skill upgrades for digital workplaces. All Singaporeans above 25 & 40 get subsidies for these programs. A national credentialing system for assessing and recognizing workers' skills
Thailand	Free education from pre-school to senior high school	National act that set up a national skill development fund, provides training and re-training services, incentivizes private sector to participate in training workforce A national institute to develop standards for benchmarking skills for industries
Vietnam	Free primary education	National law regulates and operates vocational educational and training (VET) institutions, incentivizes private organizations to provide VET

Improving data collection and governance

To manage labor market transformations as new forms of work emerge, there is a need for research that specifically documents that platform economy work. Even facts such as how widespread platform work is are unclear. While certain types of platform economy work such as ride-hailing are well studied, the effects of other forms such as crowd-work platforms are less understood. Brokering data-sharing arrangements with technology companies and platforms could help shed some light on these lacunae.

These data sharing norms can then be enshrined in both regional and national instruments. For instance, the “ASEAN Framework on Digital Data Governance”

from the Master Plan in ASEAN Connectivity 2025 is an initiative to enhance data management, facilitate harmonization of data regulations among ASEAN member states and promote intra-ASEAN flows of data including personal and non-personal data in the digital economy.

At the same time, governments also have a responsibility to protect their citizens data against misuse as they collect and share more data. As a first step toward centrally regulating data, data sovereignty^x is being used by member states such as Vietnam and Indonesia in protecting their citizen’s data against misuse, by subjecting data collected by digital platforms to the laws within the country it is collected.¹⁷⁴

^x Data Sovereignty is a concept that the data are subject to laws within the country it is collected.

The Way Forward

The “ASEAN Community Vision 2025”¹⁷⁵ offers insights to manage the changes brought about by the technological revolution. The unprecedented pace and scale of technological change and its impact on labor markets calls for honing, concretizing and operationalizing the commitments made by ASEAN member states in this vision document. Realizing these goals, however, also calls for the active participation of businesses, civil society, trade unions and workers themselves. This concluding section makes recommendations for the role that ASEAN, individual member states, businesses, trade unions and civil society can play to harness the benefits and minimize the costs of technological disruptions in the region. Rather than addressing ethical concerns and propagating decent working conditions through siloed Corporate Social Responsibility measures ex-post, platforms, workers and their representatives, consumers and governments can establish norms for responsible and ethical transactions ex-ante.

Clearly delineate responsibility for welfare provision



In implementing the ASEAN Declaration for Strengthening Social Protection, ASEAN could develop a framework mapping the varying forms of social protection against variations in employment status to see which workers enjoy which protections, and when they are absent, who would be best placed to provide them.

From social protection to social insurance, ensuring worker welfare in an era of growing self-employment, contractualization, and precaritization, entails answering difficult questions about who is responsible for the provision of these protections. Social protection, or aspects of it, must be separated from a worker's employment status. This calls for moving toward universal provision of healthcare where this is absent; affordable social insurance to cover pensions, death and disability and maternity care; and by clearly delineating which occupational health and safety factors and other protections technology intermediaries are responsible for.

Given that ASEAN member states have varying levels of fiscal space for the

provision of such protections, most of the region's economies will have to adopt a hybrid strategy that entails universal provision of some benefits, while holding employers or technology intermediaries, and workers themselves accountable for others. In India, for instance, ride hailing service Ola offers accident insurance to cover emergency care for their drivers. Employers and technology intermediaries should collaborate and comply with such responsibilities delineated by the State because, in addition to the ethical imperative, the sustainability of their operations could depend on it. More effort is also needed on part of trade unions and civil society groups to organize self-employed and informal workers, especially as platform economy work grows.

Build an education to skills continuum that accounts for a technologically driven economy



In addition to ensuring that social protection and welfare provisions are in place to harness the productive potential of workers, there is a need to alter education and skills systems. That technological change is skill-biased calls for new paradigms of not only equipping

populations with digital skills, but also ensuring that they have the requisite levels of good quality education and transferable skills. Skills training, especially short-term programs, cannot compensate for a lack of requisite levels of education. Education to skills must be a continuum reinforcing one

another rather than skills training acting as compensation for poor quality education.

First, this entails integrating digital and employability skills alongside basic education in an age appropriate manner. The ILO,¹⁷⁶ for instance notes that the most important worker skills for enterprises in ASEAN are technical knowledge, followed by teamwork and communication skills. Second, there is a need to keep skill portability in mind; that is cultivating skills that are transferable between jobs.¹⁷⁷ Both the scale of training delivered and the relevance of skills imparted must be sustainable in the long run.¹⁷⁸ In addition to honing technical skills, education and training initiatives must build the ability of individuals to adapt to changing labor market demands. This is essential to reducing labor market frictions. Third, systems should be designed within firms, clusters and in stand-alone initiatives to help workers re-skill themselves as their jobs or the tasks within their jobs change.

All three of these imperatives calls for active participation of the private sector. Too many programs to skill, re-skill and up-skill workers are public sector driven, supply-side measures that do not adequately align with employer or market demand. For skills training to be effective, the private sector must be an active participant providing regular input into the curriculum, instituting opportunities for training on the job or through internship and apprenticeship programs.

At higher levels of education, improving enrollment and outcomes of STEM (science, technology, engineering and mathematics) degrees, especially for women, is important. Grassroots organizations should institute programming to help overcome social barriers that prevent women's access to technology, requisite levels of education and skills, or advanced education in STEM.



The Fifteenth Meeting of the ASEAN Committee on Women
Promoting Women's Leadership Through Social Norm Change in ASEAN
6 October 2016, Singapore



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Create an enabling environment for female workers

Worker agency depends on recognizing the rights of vulnerable groups, including women. Interventions cannot fully harness the gains from platform economy without mainstreaming gender in labor regulations. While more working age women in east Asia and southeast Asia as a region are willing to work in a paid job instead of staying at home, a good share is still out of labor market indicating obstacles that prevent them from engaging fully in paid work.¹⁷⁹

Concerns about confining women to the home notwithstanding, digital platforms are playing a role in lifting some barriers to women's economic participation by enabling them to maintain a work-family balance while being gainfully employed in paid-work from home.¹⁸⁰ To create an enabling environment for female workers to thrive, policies are required to close the gender gap in access to work and access to equal pay, and to create family-friendly work arrangements even for women working from home. This entails a

sensitivity to the type and content of work and the hours in which women perform the work and it entails ensuring that women have access to digital technology and skills.¹⁸¹ Where companies provide family-friendly work arrangements such as flexible schedules, suitable content, and access to technology and training, it facilitates female labor force participation. Over a longer run, the solution also lies in alleviating women's disproportionate care

loads by enabling redistribution of unpaid care and domestic work within the family.¹⁸² This will help free up their time, the lack of which currently acts as a constraint in their engagement in skilling and digital training programs. This will further increase their competitiveness and boost up their participation in digital work.¹⁸³

Protect the collective bargaining and recognize online platforms as a new channel for worker organization



The foundations for decent work rest on well-established systems for social dialogue. The right to collective bargaining ensures that the work being carried out- irrespective of the type of contract- is decent. But social dialogue can only serve as a channel in new forms of work when digital platforms and digital employees are recognized as bargaining representatives – by one another, and by government.¹⁸⁴ Similar to how the social contract has historically made way for smoother industrial relations in parts of Europe, digital platforms have an

opportunity to leverage dialogue to diffuse conflict among platform workers before it boils over.

Digital workers already make use of online social spaces like Facebook and WhatsApp to coordinate, share complaints, share work opportunities, and give feedback to one another. In enforcing a set of “Core Values on Digital Literacy for ASEAN” to guide online etiquette and socially responsible online behavior, member states should guard against stifling such activity.

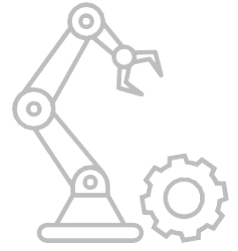
Another form of worker organization is emerging in the developed countries called platform cooperatives. These are small groups of gig workers where a worker is both a member and owner of the platform. Such an arrangement makes it easier for them to collectively uphold ethical working

conditions. While there do not appear to be any reported instances of these groups in ASEAN, promoting such models could change the way workers benefit from digital revolution.¹⁸⁵ Civil society groups and workers can help drive this phenomenon.



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Hold technology intermediaries to the same standards as other employers



The European Commission, the world’s most prominent regulator of technology and digital services, estimates that digital companies pay an average effective tax rate of 9.5 percent, compared with 23 percent for more traditional businesses. This may suggest the difficulties in taxing technology companies that are intermediaries and/or operate across borders.

According to the World Bank, solutions to curb tax avoidance require coordination at the global level. In early 2018, the OECD Task Force on the Digital Economy – comprised of over 110 countries and jurisdictions -- committed to delivering a long-term, consensus-based solution on tax challenges arising from digitization by 2020.¹⁸⁶ Meanwhile, France has taken a unilateral step in this direction by creating a new tax for the digital economy. Under the new law passed in July, a three percent tax would be levied on the revenue that companies earn from providing digital services to French users, currently applicable only on digital companies with substantial global revenue.¹⁸⁷ The law

covers activities like sale of user data, targeted advertising and “interfaces that put together buyers and sellers”, which means it should be applicable on work platforms as well.¹⁸⁸

The new French system will tax a company’s revenues in the countries where they are generated, rather than its profits. Traditionally, companies have been taxed on their profits. Calculating profit is a complex affair, affording much scope for creative accounting and tax avoidance. Traditionally, taxation rules are based on the concept of ‘source’ and ‘residence’. Source relates to a justification based on the geographic location of the income-generating activities; the idea of “where value is created” linked to the physical presence of labor or capital. Residence refers to where the company receiving the income is considered to have its primary location, usually based on where the company is incorporated or effectively managed as per the owner’s linkage to the state. Source countries have primary taxing rights over the income from sales. Residence countries tax multinationals’

income from cash investments. In practice, under the prevailing rules multinational enterprises pay taxes in the countries in which they locate their affiliates and activities. Firms organize their own internal cross-border production structures between affiliates, declaring different profits for different affiliates, in some cases seemingly irrespective of the direct value generation by each affiliate. It is often difficult to identify when these structures are legitimate and when they are established principally to avoid paying taxes in higher-tax jurisdictions.

Because they have many opportunities to avoid paying taxes, it is not surprising that firms do so.¹⁸⁹ Yet the stability of the platform economy in terms of avoiding unrest among its workers, and preventing

governments from restricting their activity, partly depends on their tax contributions that make it possible for governments to afford worker welfare.

Emphasizing the source principle and taxing revenues rather than profits better aligns the taxation with the location of value creation. It also improves the information available to tax authorities. However, other experts say this will be unfair to struggling companies that lose money despite having large sales. Hence to be effective, this strategy requires targeting companies and tie value creation to its intended location for taxation.¹⁹⁰ This would be tricky especially for crowd-work platforms that exchange value across national boundaries.



Build public-private partnerships for data-sharing



Without a comprehensive understanding of working hours, earnings, occupational safety and health in the platform economy, policymakers lack the capacity to design appropriate policies that maximize the platform economy's social benefit. As a result, government responses are often reactive and court-based, attempting to force-fit platforms into preexisting regulatory frameworks. More information is required to harness the productive power of platforms to create employment while ensuring that the opportunity to bring platform workers into the gambit of better employment, as stated in the ASEAN Vientiane Declaration, is not missed.

Platforms already collect and store essential data about operations, customers and workers, but the data is mostly proprietary, limiting its public use.¹⁹¹ Data-sharing by ride-hailing platforms in the past has been less than transparent.¹⁹² Platform companies express reluctance to share data publicly because they fear threats to their competitiveness, and they are concerned that governments may send blanket

requests for large volumes of data.¹⁹³ Governments worry that compelling companies to share data could dampen business sentiment and competitive drive.¹⁹⁴ Consumers too may be concerned about data-sharing with respect to the privacy of their personal data.



However, given the importance of data for effective public policy, some countries, states and cities have begun to take decisive action. Milan, Italy, permits hosts on Airbnb to rent out their homes on the condition that Airbnb cooperates with data requests by the government. In 2016, China launched a regulatory standard for ride-hailing taxis requiring digital platforms to apply for a permit and register network

service records with authorities. The California Public Utilities Commission fined Uber US\$ 7.6 million for not complying with its reporting requirements about accessible cars and the number of rides requested and accepted per ZIP code. New York City has gone so far as to require app-based services to apply for licenses, giving it data collection capabilities.

In other cases, governments have proposed voluntary or collaborative arrangements. In France and Belgium, platforms opt into a graded tax system and governments relay platform revenue information directly to tax authorities. In the United States, under National Association of City Transportation Officials data-sharing project called SharedStreets, Uber has agreed to share pick-up and drop-off data in Washington, D.C., which will be used to establish data standards for curbs, traffic speeds, and transit points. The ride-hailing platform also disclosed information on 14 million users to state and local regulators and law enforcement agencies in the United States and Canada in 2017.

While most of these examples come from the Global North, data governance is becoming a mainstream public policy issue

in the South as well. For example, the recently passed Brazilian General Data Protection Law outlines parameters for consumers, companies (including platforms) that collect personal data, and the government.¹⁹⁵ While the law is not specific to platform firms, its broader aim – ensuring that data is put to suitable use such as policymaking while maintaining consumer privacy and avoiding major threats to fair competition in the private sector – should be a guide for governments forging data-sharing arrangements or designing data policies for the platform economy.

In ASEAN, frameworks for data collection and sharing are present in a few states. Vietnam has a sweeping regulation on data privacy. Vietnam's Law on Cybersecurity that kicked into effect in January 2019 has a data localization requirement which means that companies collecting user data must store it in data centers within the country.¹⁹⁶ In Indonesia a Personal Data Protection Bill is currently being discussed in the parliament.¹⁹⁷ On the other extreme are Brunei and Myanmar that do not have laws on data as of yet. Regional frameworks in ASEAN can help close gaps between member states so that all are on

the same regulatory page¹⁹⁸ setting a higher standard in the region, avoiding a race to the bottom on part of technology companies that choose between different member states.

An additional benefit of data-sharing between platform firms and governments is that the latter could act as a neutral repository for data from multiple platforms. This approach could build on data portability efforts such as those embedded in Brazil's new policy, which aim to have companies store data in a structured, transferrable way. 205 Tracking and certifying a worker's employment experience across multiple platforms could improve his or her labor market prospects upon exiting the platform economy.

Governments may be able to capture some limited information about platform earnings through financial institutions. Unlike most informal economy workers in the Global South who receive cash payment, platform workers receive remuneration directly into bank accounts.

JP Morgan Chase Bank conducted its own study of the platform economy by tracking payments directed through 128 digital platforms to 2.3 million families from 2012 to 2018.¹⁹⁹ The data enabled analysis of the regularity of income from platforms, percentage of take-home pay and other details, while protecting customers' anonymity. Governments could work with financial institutions and tax authorities to build such valuable databases; this opportunity is particularly relevant in countries where leading banks are themselves state-owned.

Sharing of data is also a key contribution that companies can make toward building a better functioning ecosystem that at once provides opportunities for business but also facilitates evidence-based policymaking to benefit workers. Workers must also contribute to such efforts by making themselves visible to government authorities when asked to submit data, register or participate in surveys. Moreover, workers' groups and trade unions could push for such data-sharing as part the bargaining agenda.

Develop a new module in labor force surveys



While collaborative data-sharing agreements are one part of the solution, better tracking of employment in the platform economy partly hinges on governments updating their own data collection mechanisms to account for rapid changes in the nature of work. Conventional labor force surveys do not accurately measure platform employment. The questions that distinguish wage and salary work from self-employment and own-account work are often too broad to identify platform work – which is effectively in between the two.

Moreover, employment surveys are not usually designed to clarify employment relations, which are harder to define in the platform economy.²⁰⁰ Beyond these basic shortcomings, details such as the prevalence of multiple jobs, labor input of workers outside firm payrolls, factors motivating workers to join platforms, and the extent to which earnings from digital platforms serve as a primary source of income cannot be captured by traditional data collection methods.

While practical challenges persist, some governments are starting to devise new

tools for data collection. For example, the U.S. Bureau of Labor Statistics (BLS) has proposed a new category called ‘alternative work arrangements’ in their 2017 Contingent and Alternative Employment Arrangement Survey. This new category covers all workers whose main source of work is outside the traditional employment relationship – including Uber drivers, freelance writers and people employed through temporary-help agencies.²⁰¹ As a part of the process, it held consultations with various stakeholders, solicited public comment, and conducted laboratory tests of questions to accommodate non-standard employment into old survey questions.²⁰²

While the actual changes will be implemented at the member-state level, an ASEAN framework that, with the help of the International Labour Organization, provides specific guidance on such a module could instigate this much needed change. Stakeholder participation – from workers and enterprises – in this process is essential to designing modules that accurately capture the emerging reality of platform work.

Eliminate definitional ambiguities



Once governments have enough information to think comprehensively about regulating the platform economy, their first priority should be to establish formal legal categories for platform economy workers engaged in different kinds of activities from home-based crowd-work to those performing transport or delivery services. There will likely be no one-size-fits-all solution to clarifying the legal relationship between platforms and workers. However, determining these categories would lay the groundwork for governing the rights of platform workers and obligations for platform companies and governments.

While court action in many cases has supplanted the process of defining a particular employment category for those engaged in platform work^{xi,203} some countries in Europe have made strides in developing a specific legal status for those working on platforms. Germany and Spain, for example, have both introduced a

worker category for those who are self-employed but primarily serving a single firm and therefore “economically dependent.”²⁰⁴ The new laws further establish rights and protections for this type of employment.

There exist examples from ASEAN - “Workers Not Recipients of Wages” in Indonesia, the “Work from Home Law” in Philippines – which are starting points in the effort to streamline social benefits and costs arising from platform work by attempting to classify platform workers.

The goal of this effort ought to be, first, to ensure that if workers are assuming the burdens of self-employment, they also receive the benefits of freedom and independence; or, conversely, that if they are employed by someone, they also receive the benefits of adequate rights and protections. Second, such legal categories should effectively distinguish between those who rely almost entirely on a platform firm for their income – giving that

^{xi} For example, California’s Supreme Court ruled that companies are obligated to treat workers as full employees if their work relates to the firm’s

“usual course of business.” The case may set a precedent that would impact many different kinds of platform workers in the state.

company significant power over the worker – and those who use platforms as a source of supplementary income, and for whom the independent contractor status may afford valuable flexibility. Designing

appropriate legal categories for platform workers requires comprehensive information underscoring the efforts outlined earlier.



Use aggregators as a way of identifying invisible informal workers



There are several reasons for linking policy conversations around taxation and social protection in the platform economy. Primary among them is the fact that leveraging the

aggregation opportunity for revenue collection enables an expansion of social benefits especially for those that are outside the gambit. Moreover, governments can enhance buy-in among

workers and platform economy firms for taxation measures by tying them to expanded benefits for the platform workforce – aiding workers directly and firms indirectly through enhancements in productivity. Finally, the platform itself can play a dual role – as a site of revenue collection and an access point for delivery of healthcare or other benefits.

The concept of taxing platform companies, workers or users is already taking root. For example, the Belgian government has developed a tax system for platform workers and is considering providing social protections, and users of the Airbnb platform in the country are subject to taxes applicable to tourists.²⁰⁵ Authorities in India have determined that Uber is liable for service taxes, though arrangements to facilitate tax payments are not yet in place.²⁰⁶ The OECD and G20 are also exploring ways for governments in the Global South and North to effectively tax platform work.²⁰⁷

One mechanism to facilitate taxation could be to deduct taxes at the source of payment. Taxation facilitated through a platform company's digital algorithms, as suggested by Michèle Fink at the Max

Planck Institute, could reduce traditional regulatory burdens.²⁰⁸ Taxes could be levied on a per trip, task, or hour basis, with some portion being used to cover the expense of providing workers with social protection. Platforms themselves benefit when such protections for workers are provided by government making a case for tax contributions.

Aside from traditional revenue collection measures, policies could also require platform firms to make direct contributions to social protection schemes on behalf of workers. In France, lawmakers are considering requiring platform companies to provide accident insurance and professional training.²⁰⁹ Proposals for a pro-rated contribution by platform firms – proportionate to the number of hours an independent contractor spends working on the platform – have also been floated in the United States and Europe.²¹⁰

Platform workers themselves could also make subsidized payments into social protection programs – as in the case of social insurance programs from Indonesia to Thailand and the Philippines.²¹¹ Grab has partnered with a local insurance company to offer a voluntary insurance

package for drivers.²¹² Digital platforms may help to address chronic challenges with low uptake in voluntary contributions among informal workers,²¹³ by making payments easier or enabling dissemination of information to workers about the benefits of these programs.

Even if social protection is not tied directly to new forms of revenue collection, the aggregation alone provides governments an access point for providing social benefits to informal workers. For example, Ola and the government of India are piloting a program that would enable auto-rickshaw drivers to receive social security

benefits from the government if the drivers participate on their platform and are members of a trade union.²¹⁴

More comprehensive data is essential to designing these approaches in ways that benefit workers and place manageable expectations on platform firms. For example, if earnings volatility turns out to be a broad challenge platform workers face, social protection programs could be designed specifically to smooth income. If workers are commonly splitting their time across multiple platforms, this would enhance the case for a pro-rated contribution from employers.



Introduce uniform remuneration frameworks for geographically dispersed cloud-work



Regulations around how much one gets paid for their work on platforms are lacking. JustJobs Network’s study on ride-hailing platform drivers in Indonesia found the prospect of a higher income was the most popular reason to join the platform, yet a majority of respondents (55 percent) still earned below the minimum wage of \$235 per month in Jakarta.²¹⁵ Another study by the Oxford Internet Institute on crowd-work platform workers in Philippines, Malaysia and Vietnam found that there may be underemployment and downward pressures on pay in platform work. This was because of labor oversupply – a growing supply of workers not necessarily matched by equal increases in the demand for their work, especially for workers with few specialized skills.²¹⁶ Platform workers have to deal with low incomes, long hours

at work and many forms of insecurity. Regulating wages on platforms is not a straightforward affair, especially with cloud-based platform work wherein the person commissioning the work could be in a different geographic location than the person delivering the service.

ASEAN member states could develop or improve their national policies on wages that also apply to self-employed and contractual workers, especially those engaged in platform work. Several ASEAN member states from Myanmar to Vietnam have instituted minimum wage laws; these should also be applicable in the context of technology intermediaries. Maintaining decent working conditions from payment of fair wages to ensuring safety of workers, creates more stable work arrangements and sustainable business for platforms.

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