



BACKGROUND PAPER

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STRENGTHENING PRODUCTION SUPPLY CHAINS IN THE RECOVERY OF COVID-19 PANDEMIC: IMPLICATIONS FOR ASEAN MANUFACTURING SECTOR

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1. Introduction

While ASEAN member states (AMS) have worked hard in fighting against the Coronavirus disease of 2019 (Covid-19) pandemic, each country has performed differently in avoiding the health crisis, whereas the impacts on the economy varied significantly across countries and sectors. The severity of impacts depends largely on health system capacity, containment measures, consumer and business confidence, and policy response [1]. While movement restriction has been crucial to contain the virus spread, it has imposed social costs, transforming a health crisis into a broader consequence on the economy across the region. One of the significant impacts is seen through cross-border closures, travel restrictions, supply disruptions of goods, services, and inputs for industrial production; leading to deceleration of regional main growth drivers, including tourism, investment, manufacturing and trade. For instance, reduced access to input from abroad, coupled with demand shock from export partners has led to production suspension, business closure and job losses. GDP of ASEAN was estimated to 3.4% contraction in 2020, a sharp decline from a pre-crisis forecast of 4.7% growth (IMF October Economic Outlook)[2].

To cushion and mitigate the impacts, AMS have rolled out various policy actions including fiscal stimulus, sector-specific intervention, and trade-related measures [3]. Policy responses however, will affect outputs only in the near term. With a prolonged impact, there is a long road ahead requiring more efforts for the economy to return to a productive state. Fiscal space and sustained value chains are necessary for the AMS to maintain production and complement the path to recovery, and, thus, to prepare for post-pandemic restructuring. The crisis presents not only a challenge, but also an opportunity to implement necessary reforms to revive growth.

This background paper, therefore, will provide an overview of what has been done and ways forward for ASEAN industrial prospects in the recovery context to be prioritized by the governments and supported by the Parliaments in domestic and regional platforms. It should be noted that the report will look specifically at the impact and implication for ASEAN supply chains in the manufacturing sector, while services would not be within the scope of this paper.

To obtain the objectives, the paper will try to answer the following questions:

- What are the factors and economic impacts of supply chain disruptions in ASEAN during the Covid-19 pandemic?
- What are the main economic and fiscal measures undertaken by AMS in response to the immediate impact of the Covid-19 pandemic?
- What could be the priorities for AMS and the roles of their Parliaments to support the post-pandemic resilient recovery?

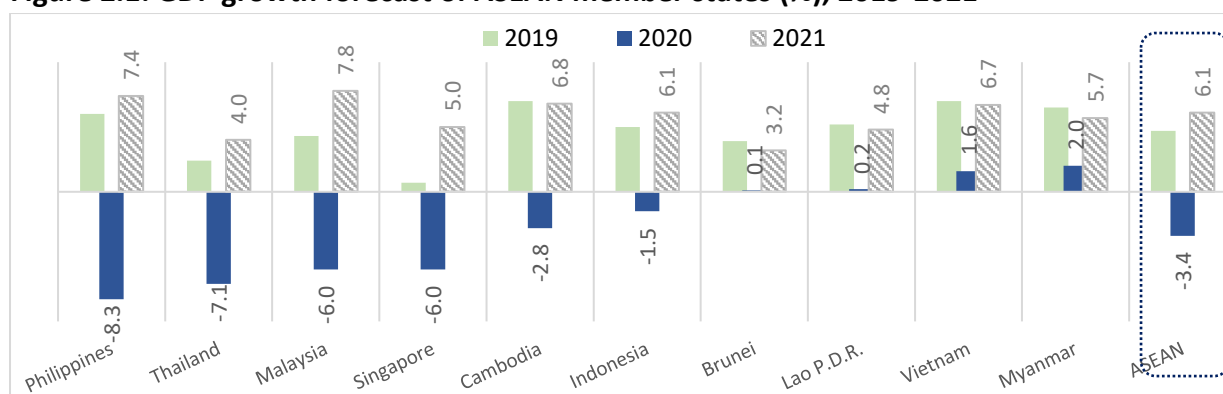
The paper is structured into five main sections. Section two highlights the economic impacts due to supply chain disruptions posed by the Covid-19 pandemic, followed by a review of policy measures pursued by AMS in response to the economic impact in Section three. Section four discusses implications for governments and parliaments toward resilient recovery, and Section 5 concludes the paper.

2. ASEAN Economic Impact of the Covid-19 Pandemic

2.1. Gross domestic product (GDP) impact in ASEAN member states

ASEAN economy has been broadly robust during the last decade, with an annual average growth rate of 5.3% during the 2010s, driven by strong domestic demand and investments [2]. This momentum is slowed down by the Covid-19 pandemic as GDP growth was estimated to decline by 3.4% in 2020, as shown in Figure 2.1 [2]. The economic impacts take into account weakening public and private investment and business confidence, particularly in specific sectors such as manufacturing and tourism. However, the impact varies by countries depending on the scale of the individual country exposure to external demand and policy responses. Although the growth rate was expected to rebound to 6.1% in 2021, many sectors and groups of population would take longer to get back to the pre-crisis period.

Figure 2.1: GDP growth forecast of ASEAN member states (%), 2019-2021



Source: IMF (October 2020) [2] (<https://data.imf.org/?sk=ABFF6C02-73A8-475C-89CC-AD515033E662>)

The Philippines has faced the hardest impact, contracted by 8.3%, given a sharp decline in investment, household consumption and remittances, with high unemployment and a slow pace of government spending during the period. As the economy started to reopen in Q3, remittances were expected to rebound and unemployment improve. The second most affected country is Thailand with a 7.1% negative growth, followed by Malaysia and Singapore. Cambodia and Indonesia experienced a moderate decline by 2.8% and 1.5%, respectively. The negative growth of these two countries attributes to the sharp fall in tourism, transportation, and manufacturing exports, coupled with the broader effect of business closure, leading to job and income losses.

Nevertheless, Brunei and Laos have performed well in avoiding the health crisis as the infectious cases have remained low compared to their counterparts in the region, and thus, growth rates are expected to remain slightly positive in 2020. Myanmar and Vietnam, on the other hand, topped the list in the expected growth, at 1.6% and 2.0% respectively. These two countries could have different reasons for these relatively high growth rates. Myanmar economy does not seem to depend largely on tourism, for which international border closers may lead to relatively less severe impact during the period. Vietnam, however, has benefited from an investment shift from China during the US-China trade war and has signed a Free Trade Agreement with the EU in the last quarter of 2020, which is expected to offset the economic impact of the pandemic [3, 4].

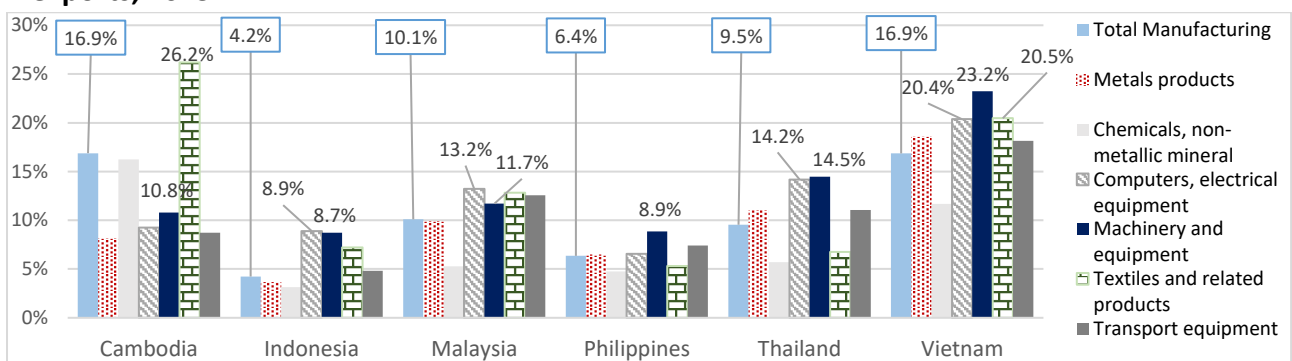
2.2. Impacts of supply chain disruptions

2.2.1. Driving factors of supply chain disruptions during the pandemic

Interconnectedness among countries has evolved overtime and is now one of the main pillars for globalization and global value chains (GVCs). GVCs, involving a complex sets of activities and the exchange of production inputs and services, have gained momentum in connecting multinational enterprises across regions through trade and investment liberalization, infrastructure development, and technology revolution [5]. Given the strong connection, sharing consequent risks and vulnerabilities are inevitable. A downturn in supply in one area could affect the whole production network, and thus may result in disturbance of production, investment and trade in other areas.

During the last decade, China has transformed to be a major GVC player and has become a principle supplier of inputs to ASEAN, for downstream value chains [5]. This is evidenced through the level of value added trade¹ sourced from China in manufacturing gross exports which has increased significantly from 3.9% in 2005 to 9.0% in 2015, with Cambodia and Vietnam reaching 16.9%, followed by Malaysia (10.1%) and Thailand (9.5%) [6]. Figure 2.2 shows this number by main industries.

Figure 2.2: Share of GVT-related trade source from China in AMS manufacturing gross exports, 2015



Source: OECD Stat, Trade in value added, 2020[6]

(https://stats.oecd.org/Index.aspx?DataSetCode=TIVA_2018_C2)

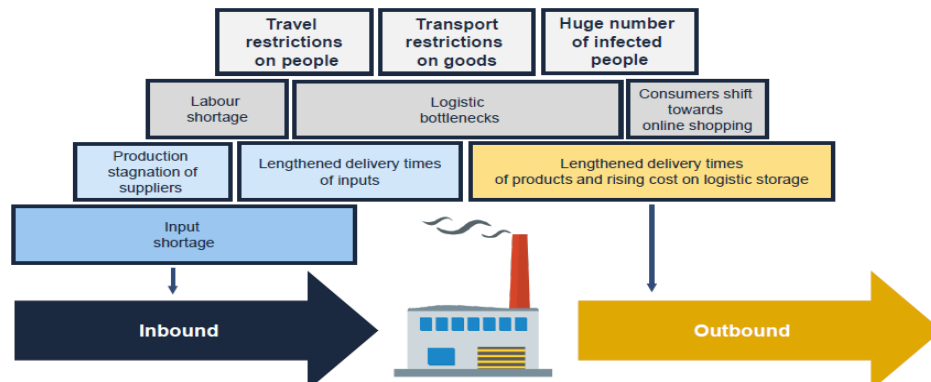
Share of Textile value added imports from China alone is particularly high for Vietnam, Malaysia, and the highest for Cambodia, reaching 26.2%. The first two countries also depend substantially on imported inputs for the exports of machinery, computers and electrical equipment, and transport equipment, although the extent differs from an average of 20.6% for Vietnam and 12.5% for Malaysia. These sectors also apply to all of the remaining countries in the region, especially Thailand, Indonesia and the Philippines.

A study by the Economic Research Institute for ASEAN and East Asia (ERIA) suggested that these statistics can explain the production and trade disturbance in AMS given the suspension of industry activity in China GVCs, which is evidenced during the Covid-19 pandemic [5]. In addition, Figure 2.3 illustrates further, the driving factors of supply chain interruptions,

¹Trade in Value Added shows how the value of a country's gross exports of intermediate and final products is an accumulation of value generated by many industries in many countries. The database provides better insights into global production networks and supply chains than is possible with conventional trade statistics. (See: <http://oe.cd/tiva>.)

stemming first from factory lockdowns and transport restrictions in China, followed by many countries in the world, leading to input and labor shortages for the inbound side, and then delays in production and output delivery for the outbound side. The immediate deceleration in economic activities across ASEAN, therefore, resulted in the decline in production and trade activity, and weakening business confidence [2, 7].

Figure 2.3: Driving factors of supply chain disruptions during the Covid-19 pandemic, 2020



Source: Huyen (2020)[7]

2.2.2. Understating the impacting channels

To understand economic impacting channels resulting from supply disturbance, this paper outlines, with modifications, a study by Asian Development Bank (2020) as summarized in Table 2.1 [8]. The first channel is the impact on international trade which would lead first to input supply shocks and then export demand shocks. The second channel is production impact covering decreased outputs and consumption. Last is the pressure on government higher public spending through policy responses to support impacted business and vulnerable groups.

Table 2.1: Economic impacts of supply chain disruptions

Trade impacts	Supply: <ul style="list-style-type: none"> • Input shortage • Delays in input delivery 	Demand: <ul style="list-style-type: none"> • Lower merchandise exports • Lower tourism arrivals and receipts
Production impacts	<ul style="list-style-type: none"> • Production disruptions • Impaired labor mobility 	<ul style="list-style-type: none"> • Lower consumption growth • Weaker investment growth
Pressure on policy response	Policy response: <ul style="list-style-type: none"> • Fiscal stimulus • Monetary measure • Higher government spending 	

Source: Asian Development Bank (2020), with Author's modification[8]

2.2.3. Trade impacts: Supply side and demand side effect

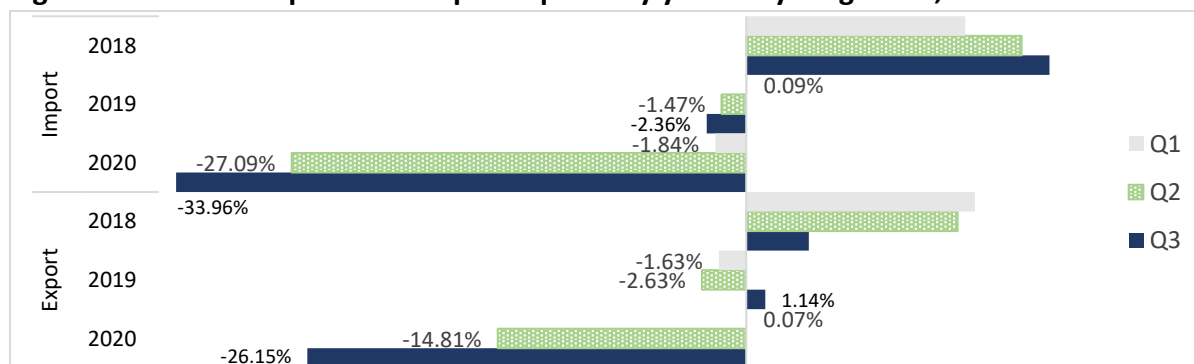
ASEAN trade and production have improved in recent decades with total exports expanding from USD811 billion in 2008 to USD1,423 billion in 2019; however, progress in product and destination diversification remained slow, making the regional trade vulnerable to external shock [9]. During the last decade, China, the U.S and EU markets have been the region's main

trading partners, accounting for 38% of total exports and 39% of total imports in 2019 (Appendix TableA1 provides the list of ASEAN major trade partners) [9]. While these partners are the main economies reeling from supply shocks due to lockdowns and travel restrictions, direct disruptions in those major partners have seriously affected ASEAN trade as well as production and labor markets, causing economic slowdown through both channels: input supply and market demand.

For the **supply side**, value added in the production process has remained limited as sizeable raw materials are imported and assembled into finished products. Electrical equipment, machinery and apparel manufacturing are dependent highly on material imports, particularly from China, as one of the largest hubs of GVCs. As China was the first country to apply lockdowns, followed by many large economies, where industrial activities were largely suspended, supply delays have caused a significant interruption in the manufacturing sector in several AMS such as Thailand, Singapore, Cambodia, Indonesia, and Malaysia. Manufacturers and retailers who relied on inputs from factories abroad could not acquire enough inputs for their production. Evidence shows that ASEAN total imports declined by 27.1% in Q2 and further down to 34.0% in Q3 of 2020, compared to the same period last year, with a high decline in imports of electrical and garment materials (Figure 2.4) [9].

As for the **demand side**, a large part of merchandise export orders has either been cancelled or postponed during the pandemic as ASEAN’s other major trade partners such as Japan, Korea, and Hong Kong were also affected. Total ASEAN exports decelerated quickly by 14.8% in Q2 and continued down to 26.1% in Q3 year-on-year, and even after the third quarter of 2020, most of the remaining factories will only have limited orders.

Figure 2.4: ASEAN imports and exports quarterly year-on-year growth, 2018-2020



Source: ASEAN statistics Division (<https://data.aseanstats.org/trade-quarterly>) [9]

Beyond the break in supply chains and hence trade activities, lockdowns imposed in many AMS may also hinder the operations of, and access to, critical infrastructure including port connectivity, cargo handling, customs clearance, and other necessary components for the smooth flow of logistics [1]. This interruption could further delay delivery times, making trade impact more pronounced.

While the overall impact would be deteriorating the regional economy, the long-term consequence would likely depend on the structure of the trade market. A Policy Brief by ASEAN secretariat (2020) found that AMS exports tend to be more concentrated than imports since there is less variety in the types of products exported than those imported [1]. The Brief suggested that diversifying trade structure would be one source of resilience for the AMS. The impact on overall trade shock could be minimized wherein trade is diffused across a range of products and markets, rather than concentrated on a few.

2.2.4. Production impacts: Some selected AMS cases

Coupled with the unprecedented trade shocks, uncertainty associated with supply chains have led to business's reluctance to spend and the postponement of major operations. A decline in manufacturing growth as well as consumer expectations were also observed across AMS, albeit at different levels, indicating a decline in business and consumer confidence (Table 2.2) [4]. Malaysia, the Philippines and Thailand have seen the greatest downswing in manufacturing growth, particularly during Q2 2020, while Vietnam stands out as manufacturing remains upbeat as this country has been deemed effective in containing the virus [3, 4].

Table 2.2: Manufacturing output and consumer demand in selected ASEAN economies, Q4 2019-Q3 2020

	Manufacturing growth (% year-on-year)				Consumer confidence indices* (Index 100 as neutral point)			
	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2019	Q1 2020	Q2 2020	Q3 2020
Indonesia	3.7	2.1	-6.2	-4.3	123	118	82	85
Malaysia	3.0	1.5	-18.4	3.3	82	51	90	NA
Philippines	4.3	-3.6	-20.7	-9.7	106	106	NA	52
Singapore	-2.3	6.6	-0.8	10.0				
Thailand	-2.2	-2.7	-14.4	-5.3	69	61	48	50
Viet Nam	11.3	7.1	3.4	3.9				

Note: *All indices are adjusted to set 100 as neutral confidence point

Source: OECD (2021) [4] [Economic Outlook for Southeast Asia, China and India 2021 - © OECD 2021](#)

Numerous domestic industries have reported being impacted by supply interruptions, with record declines in production output and new orders, attributed to deteriorating operating conditions. Those industries include [10]:

- Malaysia Tech firms in the state of Penang, which is one of the world largest electronic and electrical hubs: relying as much as 60% for components and materials from China, these firms supply their outputs to large tech enterprises (such as Intel, Apple and Broadcom). The firms have reported serious concern on supply distraction during the pandemic, and hence on production and revenue growth outlook instability.
- Factories in Indonesia: Major factories, several of which are large domestic employers stated an estimate of 20% to 50% of raw materials of the factories being sourced from China. As those businesses struggled, the government was forced to provide relief

measures such as income tax relief for workers and delays in corporate and import taxes for companies.

- Major firms in Singapore: large enterprises particularly in logistics, manufacturing and technology sectors stated that their operations have been extensively impacted by the pandemic, possibly indicative of larger disruptions to regional supply chains.
- Cambodia and Vietnam textile industries: procuring some 50% to 60% of their materials from China, garment factories faced similar struggles of supply cuts. For Cambodia, input delays have caused a significant suspension of production in the garment industry, the country's main export sector employing about one million full-time formal workers. Garment exports have decelerated quickly, while garment industry growth is estimated to decline by 6.4% in 2020, compared to a positive growth of 6.6% the previous year. About 130 garment and footwear factories (12% of total) have partially or totally suspended their operations, resulting in nearly 100,000 job losses [10, 11].

Workers in the informal sector have been disproportionately affected since there are a high number of this group across the region, ranging from 90.3% of total employment in Cambodia to 10.6% of that in Malaysia [12]. The International Labor Organization predicts a drop in working time of 3.5% in the Asia-Pacific region during the second quarter of 2020, equivalent to the loss of 235 million full-time jobs, mostly in the hardest hit sectors including tourism, retail, and in SMEs [12] (cited from ILO 2020).

3. Policy Measures in Response to Economic Impact During the Pandemic

ASEAN member states have taken targeted and decisive measures in response to the impact of the outbreak through three broad interventions: fiscal stimulus packages, monetary and financial measures, and sector-specific interventions [3, 12]. Fiscal stimulus is expected to boost health, social and economic sectors, particularly in hardest hit segments of population and industries, whereas monetary measures were undertaken to promote adequate liquidity and increase confidence with the concerns related to production cuts [3]. Each measure might be complex on its own and might be interconnected from one to another. The effectiveness in identifying targets and resource allocation will be crucial to maintain livelihoods, employment and economic activities before moving forward to the recovery. On the other hand, the effectiveness will also depend on the disbursement and absorption capacity of each measure [12].

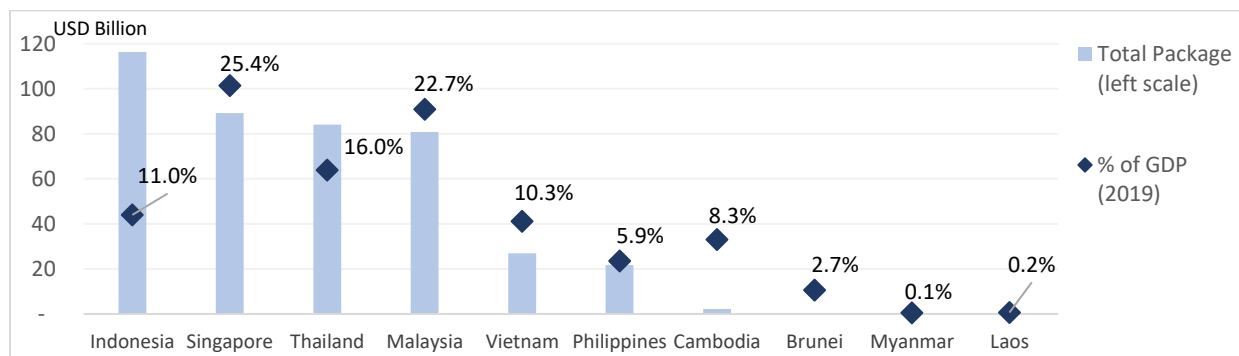
3.1. Fiscal stimulus packages

The extent of fiscal stimulus measures that governments can use to address the crisis can be limited due to each country's fiscal space, including costs of borrowing, scope of public debt, and level of development. Some AMS have let go of the fiscal targets and increased borrowing to finance spending to fight the outbreak [3]. While following suit, some members, such as Cambodia, have also put in place reduction of non-necessary current expenditure to allocate the saved budget for health sector and to cushion the impact [13, 14]. Fiscal intervention for ASEAN economies could be classified under three categories [3]:

- Tax/fees/charges/moratoriums (reduce financial burden) to affected business and industries to help them survive and resume operations
- Household subsidies (including cash allowance, subsidies for social security and health protection), particularly those identified as low-income and vulnerable groups
- Financing and moratorium/restructuring of loans for affected business (including individuals and SMEs) due to their limited capital and resources.

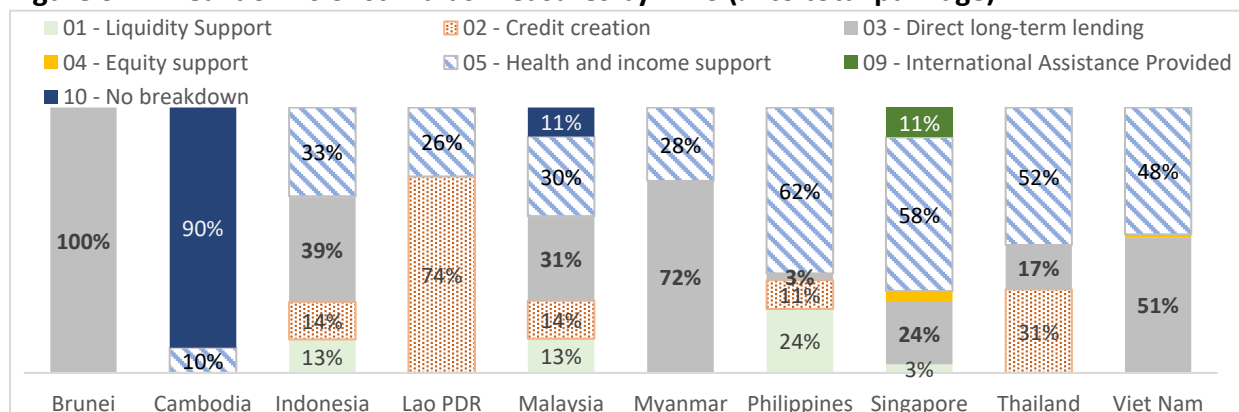
As of December 2020, AMS have employed a wide range of measures amounting to a combined US\$421 billion, equivalent to an average of 10.2% of GDP in 2019 [15]. Individually, Indonesia has the largest package, reaching US\$116 billion, or 11% of GDP in 2019 and comprising about 27% of the total regional package (Figure 3.1); Singapore with almost US\$90 billion has the second largest package, yet stands first in GDP equivalent (25.3%) in the same period. As shown in Figure 3.1, Malaysia and Thailand stand in the middle, followed by Vietnam (10.3% of GDP), Cambodia (8.3%) and the Philippines (5.9%), while Brunei, Laos and Myanmar stand at the bottom of the list as the impact on their economies have been relatively less severe.

Figure 3.1: AMS total stimulus amount (in USD billion) and share to 2019 GDP (in %)



Note: Total amount does not include component 6, 7 and 8 to avoid double counting.

Figure 3.2: Breakdowns of stimulus measures by AMS (% to total package)



Source (Figure 3.1 and Figure 3.2): ADB, IMF [15, 16]

According to the IMF, the measures rolled out by the governments and central banks could consist of one or more of the following main components²: 1) liquidity support, 2) credit creation, 3) direct long-term lending, 4) equity support, 5) health and income support, 6) budget reallocation, 7) central bank financing government, 8) international assistance received, 9) international assistance provided, and 10) no breakdown³[15, 16]. As Figure 3.2 demonstrates, besides Brunei where all of the measures go to direct lending (measure-3), all other members have spent a fair to a high amount on health and income support (measure-5), suggesting that the pandemic has significantly impacted some groups that require income assistance, whereas the health sector is also in need of funding in many AMS. Notably, 90% of the total package of Cambodia is recorded as no-breakdown. This could suggest that further study on a more detailed distribution of the budget stimulus may be useful.

A large part of the budget stimulus in AMS has been directed to support SMEs since they are more vulnerable compared to large firms. SMEs are subject to limited resources, capital and liquidity constraints, and hence, are more likely to lay off workers and close down during the crisis. Across ASEAN, SMEs account for more than 90% of businesses and are responsible for a large share of total employment, ranging from 52% in Vietnam to 97% in Indonesia, particularly those in informal brackets[17]. As a result, a high number of them are at risk of losing jobs and income.

Fiscal Stimulus: the case of Cambodia

Cambodia is taken as a case example for a more detailed study of the stimulus package. With budget saved from the reduction of current expenditures, coupled with sufficient fiscal buffer, as of December 2020, the Cambodia government has put in place seven rounds of budget measures as summarized in Table 3.1.

Table 3.1: Cambodia Budget intervention for health, social and economic sectors, 2020

Intervention priorities	Equivalent budget amount in USD million
Measure on tax exemption (worth \$200 million equivalent)	
Several tax relief measures for garment, tourism, and aviation industries	200
Measure on financing the economic sector (\$600 million)	
Special financing program through Rural and Agricultural Development Bank (for low-interest loans)	50
Co-financing and risk sharing through SME Bank (Announcement on the launch of Co-financing program to support SME ¹)	50
Credit guarantee funds (Credit Guarantee Corporation of Cambodia)	200

² Please visit <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19> for further information of the components. A Figure showing their relationship is given in Appendix Figure A.1.

³ Measure 8 is international loans or grants the country received as a borrower/recipient. Measure 9 is the loans or grants the country provided as a lender/donor to other countries.

Measure 10-No breakdown: captures actions or announced measures that do not yet clearly fit into one or more of the other measures or cannot be clearly allocated according to their purposes (it is not double counting).

Additional financing facilities	300
Intervention for health, income, and social protection (\$564 million)	
Implementation on fighting against Covid-19 (virus testing, containment, and treatment)	100 (including resource mobilization from development partners)
Cash subsidies for identified poor and vulnerable households ²	300
Wage subsidies and skills training program for suspended workers/employees in garment and tourism industries	64
“Cash for work” program	100

Note: ¹<https://www.mef.gov.kh/pr-launch-20200403.html>. ²Following Sub-degree dated 12 June, 2020

Source: MEF (2020), and IMF (2020) [13, 16]

3.2. Monetary and financial measures

Central banks across the region have taken measures to ease market liquidity and support financial institutions mostly through conventional policy instruments including policy rate cuts, reserve requirement ratio reduction, open market operations, loan facilities, and asset purchases [1]. Loan rate cuts and additional credit have also been provided specifically to virus affected manufacturers, essential sectors, and medical product producers. Most monetary institutions also continued to encourage banks to support lending without undermining the soundness of the banking sector. Taken together, the measures are intended to maintain stability of banking system and to boost liquidity and market confidence, aiming at steering the economy out of the crisis. Actions taken by several AMS individual central banks could be summarized as follows[1].

AMS Central Bank	Some monetary and financial measures
National Bank of Cambodia	<ul style="list-style-type: none"> • delayed additional increase in the capital conservation buffer for one year • issued a guideline on loan structuring for borrowers experiencing financial difficulties in priority sectors. For example, financial institutions have provided additional credit to essential businesses and SMEs, whereas some SMEs and households were able to roll over debt contingencies, adjust loan repayment arrangements or delay the repayment period (particularly for housing mortgages)[1] • continued extension of forbearance to June 2021, taking into account the impacts of the recent flooding in Cambodia in addition to the pandemic [16].
Bank of Laos	<ul style="list-style-type: none"> • urged commercial lenders to restructure financing for affected borrowers, with one-year grace periods and lower interest rates as needed.
State Bank of Vietnam	<ul style="list-style-type: none"> • encouraged banks and lenders to curb dividends and operating expenses

	<ul style="list-style-type: none"> • urged banks to bring down settlement fees of 50% through interbank electronic system. This measure has been taken to support sufficient supplies of capital.
Bank of Thailand	<ul style="list-style-type: none"> • applied Corporate Bond Stabilization Fund by providing bridge financing to high-quality firms to ensure stability in the financial market • set up a special facility to provide liquidity for mutual funds through banks • purchased government bonds to support the functioning of the bond market.
Monetary Authority of Singapore	<ul style="list-style-type: none"> • initiated efforts to address the financial institutions operational challenges • adjusted specific regulatory requirements and supervisory programs to ease the financial system

3.3. Infrastructure projects as part of stimulus measures

Infrastructure projects have typically been used as a tool to support the economy during crisis as they provide a strong boost to economic activities and have long-term impact[4, 18]. Similarly, in the time of the pandemic, governments continue infrastructure works as part of the stimulus measures as well as to help bridge the gap of supply chain disruptions in the AMS:

- With sufficient fiscal space, **Cambodia** has been able to spend on infrastructure programs including a USD100 million project for infrastructure development and rehabilitation investment in Preah Sihanuk Province, and a USD150 million construction and improvement of 38 lines of road in Siem Reap Province during the last quarter of 2020 [14].
- **Malaysia** continued large infrastructure works to support economic growth and at the same time allocated budget for small initiatives aiming at maintaining jobs, whereas the **Philippines** continued the ‘build, build, build’ project.
- **Indonesia** expected to start labor-intensive plans country-wide to preserve employment particularly for low-income workers.
- **Singapore** committed to continue construction schemes after some delays due to travel restrictions and when Covid-19 cases accelerated (in April 2020).
- **Thailand** reserved investment resources for community infrastructure as part of the packages for stabilizing the economy.

Despite being a crucial measure to counter the severe contractionary impact, infrastructure construction has also been affected by social restrictions, while budgets must be realigned for other stimulus funding. For instance, Indonesia has to reallocate funding from the capital plan to the pandemic response. However, as the lockdowns are lifted, large-scale infrastructure projects will work as a vital part of the recovery plan to revive economies.

3.4. ASEAN collective responses

ASEAN as an institution

In addition to the measures by individual members, ASEAN has attentively and cooperatively responded to the crisis with a series of meetings and joint declarations among members, as well as with stakeholders and external partners, to strengthen coordination mechanisms and to mitigate the adverse impacts of the pandemic [12]. As soon as the start of the crisis, regional preparedness and response actions were launched in January 2020 by the ASEAN Health Sector with ASEAN-plus-three partners (China, Japan and Republic of Korea). The Covid-19 ASEAN Response Fund has, then, been established.

In addition to the health sector response, ASEAN declared it was keeping markets open and facilitating flows of food, medicines and medical supplies, and other essential goods. The ASEAN Economic Ministers (AEM) have reaffirmed to promote regional economic resilience through AEM statement on **“Strengthening ASEAN’s economic resilience in response to the outbreak of COVID-19”**, adopted at the 26th AEM Retreat in March 2020 [19]. According to the statement, the region commits to maintain ASEAN’s open economic and integration policies, while [...exploring cooperation with external partners and the international community to enhance readiness and response measures to mitigate and eliminate the impact of the COVID-19] (p.2) [19]. Following this statement, an “ASEAN-Japan Economic Resilience Action Plan” and “Hanoi Plan of Action of Strengthening ASEAN Economic Cooperation and Supply Chain Connectivity in Response to the Covid-19 Pandemic” have subsequently been adopted (in April and June 2020, respectively) to implement the AEM statement and to explore a temporary arrangement to preserve supply chain connectivity [20, 21].

The ASEAN-Japan economic resilience action plan

The ASEAN Secretariat’s data suggested that Japan is ASEAN’s second largest external source of foreign direct investment and fourth largest trading partner, whereas ASEAN is the second largest trading partner for Japan[20]. Both parties believe that further close collaboration will help them overcome challenges and mitigate adverse impact on the economy and GVCs brought about by the pandemic. ASEAN-Japan affirm to prioritize outbreak prevention and support sustainable regional and GVCs through the ASEAN-Japan Economic Ministers’ Joint Statement on **“Initiatives on Economic Resilience in Response to the Corona Virus Disease (COVID-19) Outbreak”**, released in April 2020, which has covered a collective course of actions including the following⁴ [22]:

- Keeping the market open for trade and investment to prevent stagnation of economic activities by ensuring the smooth flow of goods and services
- Making their best efforts to provide materials as pivotal suppliers to the global market in order to mitigate adverse impact on both the regional and the global economy by enhancing market stability and protecting health

⁴ Through the release of the joint statement, ASEAN and Japan have prepared the “ASEAN-Japan Economic Resilience Action Plan” which identifies concrete actions with three objectives (details in Appendix Table A2).

- Encouraging the use of digital technology and collaboration with industry stakeholders (including SMEs) to minimize trade and investment disruption caused by recent travel restrictions
- Building resilient supply chains through production diversification, complementarity, and transparency that will enable businesses to achieve better balance between risk management and cost competitiveness.

4. Preparing for the Post-Pandemic Resilient Recovery

4.1. Lessons learnt and ways forward

While the immediate priorities are necessary, governments must balance between health protection and economic costs as a long-term recovery plan is also as vital for the region to build back better and emerge stronger. A sustainable and resilient path to economic and social recovery is thus an important agenda for ASEAN as a whole as well as for individual members. Successful experiences from a few members could be taken while more concrete strategies are needed for effective implementation.

The first lesson could be drawn from the experience of Singapore and Vietnam that have managed to contain the disease quickly with relatively low human and economic costs. The success is attributed to their decisive and evidence-based actions coupled with a high-quality public health system which would represent a broader policy development as countries cope with technology shock [23]. The second lesson is that “we must not treat containment of the disease and mitigation of the economic pain as separate goals to be achieved with separate instruments” (p.2)[23]. An integrated policy of health and economy should work together to preserve both lives and livelihood. Next, ASEAN has demonstrated an effective result implementing international cooperation and coordination to fight against the disease, to reap the benefits of liberalization and to stimulate growth in the region.

While production activity is resuming as lockdowns have been eased and vaccination against the disease has started to rollout in many AMS, uncertainty remained as weak global demand and unemployment are likely to prevail, with particular concern on the informal sector, tourism, and manufacturing with highly disrupted value chains that may continue to experience the consequences. Despite the challenges, the region could seize upon the opportunities that have arisen. For instance, the disruptions may lead to the promotion of skills advancement as economies upgrade toward digitalization whereas new sectors can emerge such as, e-commerce and technology creation [12]. It is, therefore, crucial that governments continue to provide support to ensure that businesses are able to return to their pre-crisis production and employment levels while maximizing absorption capacity. There is now an important nexus between production networks, digitalization, skill upgrades, and other cross-cutting issues to be addressed with more resilient and forward-looking policies that will buffer ASEAN to kick-start the regional economic recovery.

The “ASEAN Comprehensive Recovery Framework” has been developed through ASEAN commitment, with the mandate at the 37th ASEAN Summit, to lay the foundation for

sustainable recovery⁵ [24]. The framework covers a complete three phase-approach, starting first with immediately address during the “Reopening” phase where AMS are at different stages of curbing the virus and restarting the economy. The second phase is “Recovery” when activity picks up, and where support is needed for severally affected sectors or groups. The third phase is “Resilience” entailing long-term sustainability and preparation for emerging trends for future crisis. The implementation of the Framework follows the three phase-approach, as shown in Figure 4.1.

Figure 4.1: The three phase-approach of the recovery strategy for ASEAN

Re-opening	<ul style="list-style-type: none"> • A period of differing states of epidemiological status • Close cross-sectoral coordination is required for a safe reopening • In this phase, economies re-open safely, while minimizing the risk of resurgence of the virus
Recovery	<ul style="list-style-type: none"> • The timeframe for this phase will be until such time that a full recovery is achieved • Focus on assisting sectors/groups that have been adversely affected by the pandemic • In this phase, economic activities will be fully back to pre-Covid levels
Resilience	<ul style="list-style-type: none"> • A period of converging with the longer-term ASEAN's shared vision • Focus on contributing towards long-term regional resilience • A phase that is cognizant of the new trends and emerging challenges and the risk of future pandemic (s)

Source: ASEAN Secretariat (2020), ASEAN Comprehensive Recovery Framework, p18 [24]

4.2. Implications for ASEAN supply chains in economic recovery

Following the approach (Figure 4.1), the Framework is accompanied by an implementation plan that outlines a series of broad strategies, in which **Broad Strategy 3: “Maximizing the potential of intra-ASEAN market and economic integration”** focuses on enhancing supply chains and trade facilitation. This Broad Strategy together with other implications from relevant studies, key priorities and initiatives in enhancing manufacturing supply chains in ASEAN could be summarized below.

Strengthening supply chain connectivity: it is important for ASEAN to have sustained connectivity across the region given the experience of supply chain challenges. The purposes of sustained connectivity are two-fold: to maintain regional production networks and to reduce the high dependency of supplies from specific external markets. This can be achieved through resilient infrastructure as it remains key to socio-economic growth [25]. The priorities focus on ensuring connectivity of both hard and soft infrastructure to facilitate movement of goods, services and labor, deepening and widening the connection among producers and suppliers to reduce costs of GVCs, and promoting public-private partnerships. This priority is compatible with the Master Plan for ASEAN Connectivity 2025 to enhance regional outlets that cover a set of five strategies: sustainable infrastructure, digital innovation, seamless logistics, regulatory excellence, and people mobility [26]. In cases of government’s budget pressure after the pandemic, public-private partnerships are vital to facilitate infrastructure development through private sector investment [5]. Other initiatives may include supporting

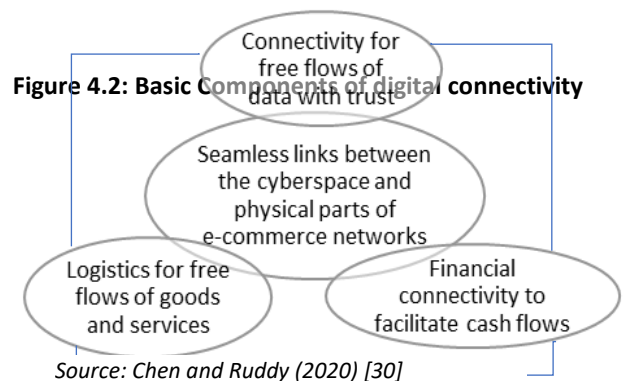
⁵ The objectives of the Framework are: 1) to articulate and guide ASEAN sectors to assess, realign or expedite work and priorities, and 2) to outline a reference for cross-pillar engagement with and contribution from broader stakeholders. Please see the details of the Broad Strategies in Appendix Figure A2.

and clustering smallholder businesses to increase productivity and market access (particularly in Cambodia, Laos, Myanmar and Vietnam), connecting small producers and large enterprises, developing trade routes to address key checkpoint barriers, and exploring the possibility of establishing a database for ASEAN manufacturers and exporters for essential goods to avoid delays in the paperwork process [24].

Diversification of supply networks: while strengthening regional connectivity is important, this should not limit the opportunity for the region to diversify production networks and expand market potential to scale up trade routes across the GVCs [25]. The pandemic is a signal for manufacturers and businesses in the region to reduce reliance in sourcing inputs from particular countries, and diversify the supply sources to a range of destinations, taking into consideration geographical locations and costs of distribution. In addition, greater relocation of production away from China to ASEAN could be seen in the experience of the US-China trade war, when producers relocated or created new factories in ASEAN to avoid paying higher import tariffs when importing goods to the US. A study by Nomura (2018) utilizing the Production Relocation Index identified Vietnam, Malaysia and Singapore as the countries most benefiting from the diversion of production and FDI from China during the trade war period [27]. The finding may suggest that the plan to relocate or establish new investment to ASEAN can be repeated as businesses look at diversifying the source of production after the pandemic. Therefore, it is important for ASEAN to identify and reap the advantage of the relocation opportunities and prepare itself to attract new businesses[10].

Investment in technology and digitalization: As AMS start to reopen the economy, adoption of new technology particularly as seen in Industrial Revolution 4 (such as artificial intelligence, Internet of Things) will give firms the opportunity to secure and gradually increase production when demand picks up [28]. Empowering businesses including SMEs to adopt digital connectivity is the stepping stone toward setting the foundation for longer-term productivity, competitiveness and sustainability [3]. In addition, while companies consider shifting their production back to their countries, CARI (2020) suggests that while reshoring of production might be more economical due to labor and relocation costs, the shifts can be made possible by technology and automation of manufacturing where workers can work remotely without worrying about supply disruptions and health risk [10].

To further opening up for investment and mitigating the concerns with reshoring, digital connectivity is essential to facilitate not only e-commerce activity, but also overall economic digitalization. AMS as a whole, is one of the world fastest-growing online markets, with e-commerce expected to grow by 25%-35% on average per year during the 2020s [29]. While ASEAN has a generally satisfactory quality of infrastructure, the development of technological-related infrastructure is uneven, both between and within countries⁶. As digital connectivity is a broad topic, a policy brief by Chen



⁶ Appendix Table A3 lists the varying degree in technology ‘readiness’ and ‘usage’ by member states.

and Ruddy (2020) proposed a framework of three basic components: data, logistics and financial connectivity. Figure 4.2 shows their relationship, suggesting that “how effectively they intersect with one other depends on seamless links between the cyberspace and physical networks, which then determines the overall quality of digital connectivity for e-commerce” [29]. To streamline these connections, the region-wide priorities may include the following efforts [29]:

- Collaborating on national and regional rule-setting for connectivity which covers traditional trade issues and new issues such as cross-border information flow, data localization and protection.
- Enhancing digital-related infrastructure (through public investment and public-private partnership), and establishing a digital-friendly environment to ensure accuracy and fairness of information access, payments and competition.
- Promoting value-added in the service sector to ensure that the connectivity is speedy, reliable and transparent, and to support SMEs inclusion.

Trade and investment facilitation and liberalization: keeping the ASEAN market open is important to attract multinational enterprises as they are seeking to relocate their production base given the interruptions of GVCs. Policy actions include minimizing non-tariff measures and cutting down market distorting policies (refers to any interventions, such as price ceilings and tax subsidies, imposed by a governing body that constrains the market in reaching optimal market prices) which would contribute to greater intra-ASEAN trade and investment. Establishing a conducive investment regulatory environment is an important instrument to facilitate investment regime and encourage large enterprises to balance their investment portfolios which could ensure sufficient supply [28]. ASEAN Comprehensive Recovery Framework also proposes the following initiatives: 1) ensuring smooth customs procedures by leveraging digital technology to keep goods moving while limiting unnecessary human interaction, 2) applying financial technologies to facilitate cross-border trade and transactions, and 3) working towards wider acceptance of digital documents to facilitate seamless trade in the region so that traders do not have to maintain both digital and paper-based documents for customs clearance [12, 24].

Building a competitive ASEAN single market: As ASEAN could be seen as potential alternative sites for international firms who seek to diversify their production base, the region must expedite trade integration and push toward a competitive single market to better compete with larger markets of China and India. However, it should be recognized that while relocating a final production base, firms themselves may be dependent on raw material supplies and sub-assembly components from larger markets, such as China and India which could hinder the relocation process[10]. It is vital that ASEAN collectively coordinate and defend rules-based trading and foster regional trade agreements from which the region has benefited as a single institution. For example, the Regional Comprehensive Economic Partnership (RCEP) can serve as a multilateral mechanism to push for outward-looking trade and guard against protectionism. Such regional partnerships would bolster ASEAN and give it strong negotiation powers[10].

Investment in human capital, skills development and social protection: investment in human capital is essential to allow citizens to participate in economic activities, move to a more innovative and productive livelihood, and share the full benefits of the recovery process [23]. This inclusive goal can be achieved through strengthening social protection to increase access to better public services including the health care system and skills enhancement. It is vital to ensure employment capacity building during the digitalization era which can be done as regional platform [24]. For example, skills training can be done online across areas within the countries as well as across the region, either on general skill sets, such as communication skills or specific professional skill sets, such as accounting and tour agent business. In addition, as in the experience of some AMS, investing on social protection has been an inevitable tool to protect the most vulnerable households from falling into poverty, as well as providing support to informal workers.

4.3. Parliaments role in supporting supply chain connectivity

ASEAN Inter-Parliamentary Association (AIPA) as an institution has provided a platform for member Parliaments to share and discuss collective actions, together with external parliaments such as those from other countries in Asia and the EU. AIPA has enhanced partnership between the legislative and executive as two prominent bodies to respond to numerous internal and external challenges, where a collective plan involving both bodies could be pursued on an unprecedented scale, especially during the time of crisis with Covid-19 [30].

In fact, the promotion of regional supply chains is not a new topic for AIPA through its existing commitments such as the support for ASEAN economic integration, ASEAN trade liberalization, ASEAN Connectivity 2025 and ASEAN Economic Community 2025. For example, Deputy Speaker of the House of Representatives of Indonesia, in the 38th AIPA General Assembly held in 2017, expressed continued support in the creation of the ASEAN Economic Community and recommended AIPA and ASEAN promote the involvement of SMEs in regional supply chains [30]. Therefore, Parliaments in AMS, through both individual and collective commitment, could have a fundamental role in supporting the key priorities discussed in Section 4.1. through their three main functions: legislation, representation and oversight.

Parliaments can accelerate and expand **legislation** aiming at promoting regional connectivity for Covid-19 resilience recovery in a timely manner. Parliaments, through legislative power, can initiate or propose measures through the legislative process which it considers to be necessary to mitigate the impacts on the economy and social impacts on citizens. Relevant legislation may deal with such subjects as trade and investment agreements, taxation and customs-excise regimes, infrastructure and digital technology projects, all of which would link closely to budget bills to support the policy actions as well as to respond to the impacts caused by the pandemic. Many parliaments in the region, for example, have adopted emergency stimulus packages for this purpose during 2020. Alternative agreements with external partners could also be sought, such as in the case of the Comprehensive and Progressive Agreement for the Trans-Pacific Partnership⁷ and the Regional Comprehensive Economic

⁷ This initiative includes 11 countries: Japan, Malaysia, Singapore, Vietnam, Brunei, Australia, New Zealand, Canada, Chile, Peru and Mexico.

Partnership⁸ in which members of ASEN have integrated into both cross-regional and intra-regional trade agreements.

Production networks can also be strengthened through digital infrastructure and technology supported by parliaments. For instance, as part of the legislative mandate, the International Trade Committee of the European Parliament has adopted a report on blockchain technology to promote global value chains and trade, as blockchain stimulates collaboration, promotes transparency and reduces the procedural costs of paperwork [31].

In addition, Parliaments also play a significant role in **overseeing, monitoring and communicating** executive actions that ensure fair and inclusive support for business activities including SMEs involving the broader production and technological networks which fosters sustainable re-opening and recovery processes. Parliament and parliamentary committees can conduct public hearings, have discussions with the executive branch on specific issues and plans, such as the economic and social impacts of COVID-19 and plans for improved supply chain connectivity. Through this mechanism, parliament can follow up and conduct oversight over the government to ensure the executive's accountability and transparency for the interests of the citizens. For example, Singapore's Members of Parliament questioned the Minister of Trade and Industry in 2020 on how the accelerating shifts of the global supply chain due to supply disruption would affect Singapore's economy and what measures would be taken by the executive branch on this issue[32].

Parliaments can play a **representative role** in reminding governments and citizens of the importance of regional connectivity. By providing needed support to governments that wish to enhance regional supply chains, the legislative body can help to adopt and expand regional economic cooperation systems through consultation with relevant groups to get inputs and deal with issues on investment regulations and public-private partnerships. Efforts could also be taken in cooperation with business and citizens to represent and address concerns on employment, skills upgrading and social protection to better enable them to participate and benefit from the shared growth. Research and educational services may be utilized to provide information on relevant industrial sector issues, while outreach and media workshops could be used at the local level to disseminate information on policy actions to the public.

5. Conclusion

The Covid-19 pandemic has caught ASEAN by surprise, evolving from a health crisis into a broader economic and social issue that impacted livelihoods and business activities across the region. Since many manufacturing sectors in AMS have become highly dependent on raw materials sourced from China, consequences were first evident by the disruptions in supply chains, delays in input delivery, production and labor suspensions, coupled with the decline in both investment and consumption in 2020 and beyond.

Because of these supply chain disruptions, this Background Paper studies the impacts on trade and production, looking at both supply and demand side channels. ASEAN GDP growth would decline by 3.4% in 2020, whereas imports and exports by 34% and 26%, respectively, in Q3 of 2020 year-on-year estimates. Despite the broad regional effects, these varied across member

⁸ This partnership consists of ASEAN members plus Japan, China, South Korea, Australia, New Zealand, and India.

states given, on one hand, the health containment measures and, on the other, economic exposure to external markets. Malaysia, Thailand and the Philippines, in particular, would see the highest decline in growth in 2020, attributed to a sharp drop in manufacturing activity and consumer confidence. Numerous industries in Malaysia, Indonesia, Vietnam and Cambodia have reported severe impacts on production and revenue due to input supply interruptions and decline in new orders. Similar cases could probably happen in large industries in Singapore and Vietnam, yet the economy seemed to rebound quickly in Q3 given intensive containment measures, high-quality health system and broad economic response, which could be drawn as lesson learned for other AMS.

Despite the challenges, the pandemic presents opportunities for production network restructuring and other necessary reforms. While immediate economic responses have been put in place, longer-term recovery plans are necessary to prepare the AMS to become stronger and more resilient, requiring efforts and support from both governments and parliaments in the regional collective platform.

Drawn from the ASEAN Comprehensive Recovery Framework adopted at the 37th ASEAN Summit, in combination with existing studies on the impacts of supply chains during the pandemic, implications for ASEAN to prepare for the post-pandemic recovery are summarized in the current paper. Enhancing regional supply chain connectivity as well as diversification of production networks among a range of partners are fundamental to avoid trade and manufacturing shocks from similar crisis in the future. In achieving this restructuring, investing in technology and infrastructure development are crucial to attract more investment and multinational enterprises seeking to relocate their production base as well as to promote inclusion of all segments of domestic businesses, particularly SMEs. These principles take into account the formation of ASEAN as a single market through trade and investment facilitation to minimize non-tariff barriers and other cross border restrictions. Finally, investing in human capital, skills upgrading and social protection are vital to ensure domestic delivery and absorption productive capacity, and create greater equality and opportunity for everyone to participate and thrive in the economy, with improved outcomes for all. Parliaments in the region could play a crucial role in representing constituents' interests in legislation and policy formulation, as well as in monitoring policy actions performed by the executive to strengthen supply chain connectivity in ASEAN, thereby supporting post-pandemic resilient recovery.

Reference

1. ASEAN Secretariat. (2020). *Economic Impact of Covid-19 Outbreak on ASEAN. Policy Brief No.1*. Jakarta, Indonesia: ASEAN Integration Monitoring Directorate and Community Relations Division The ASEAN Secretariat.
2. IMF. (Oct, 2020). *Regional economic outlook update. Asia and Pacific: Navigating the pandemic: A multispeed recovery in Asia. October Updates*. Washington, DC: International Monetary Fund, World Economic and Financial Survey, , Available at: <https://data.imf.org/?sk=ABFF6C02-73A8-475C-89CC-AD515033E662> [Accessed 07-12-2020].

3. Zulkhibri, M., Blessilda, J. (2020). *Assessing Asean Economic Policy Responses in a Pandemic*, ASEAN Policy Brief No.2 [No.2] Jakarta: ASEAN Integration Monitoring Directorate and Community Relations Division The ASEAN Secretariat.
4. OECD. (2021). *Economic Outlook for Southeast Asia, China and India 2021: Reallocating Resources for Digitalization*. Paris: OECD Publishing, Available at: <https://doi.org/10.1787/711629f8-en>.
5. ERIA. (2020). *COVID-19 and Southeast and East Asian Economic Integration: Understanding the Consequences for the Future. Policy Brief*. [No.2020-01] Jakarta, Indonesia: Economic Research Institute for ASEAN and East Asia.
6. OECD (2020). Industry and globalisation: Trade in Value Added. 2005-2015. OECD Stat. Available at: https://stats.oecd.org/Index.aspx?DataSetCode=TIVA_2018_C2 [Accessed on 24-March-2020]
7. Huyen. Do Thanh, (2020). *Responding to supply chain disruptions during Covid-19: The Vietnam perspective. Webinar*. D. S. A. Asia, Available at: <https://www.dezshira.com/> [Accessed 3-Mar-2021].
8. Park, C., villafuerte, J., Abiad, A., Narayanan, B., Banzon, E., Samson, J., Aftab, A., and Tayag, M. (2020). *An Updated Assessment of the Economic Impact of Covid-19*. ADB Briefs [No.133] Manila, Philippines: Asian Development Bank.
9. ASEAN Stats (2018). Trade in Goods, Annually In: ASEANstats (ed.). ASEAN Statistics Division. Available at <https://data.aseanstats.org/trade-annually> [Accessed on 10-Feb-2020].
10. CARI. (2020). *How COVID-19 Will Transform Global Supply Chains and How ASEAN Must Respond*. [Online]. CARI ASEAN RESEARCH AND ADVOCACY. Available at: <https://www.cariasean.org/news/how-covid-19-will-transform-global-supply-chains-and-how-asean-must-respond/#.X0cT2jWlaUn> [Accessed 10-Mar-2021].
11. The World Bank. (2020). *Cambodia Economic Update: Cambodia in the Time of Covid-19: SPECIAL FOCUS: Teacher Accountability and Student Learning Outcomes*. Phnom Penh: World Bank Group Cambodia Country Office.
12. ASEAN Secretariat. (Nov, 2020). *ASEAN Rapid Assessment: The impact of Covid-19 on livelihoods across ASEAN*. Jakarta: Community Relations Divisions of the ASEAN Secretariat, 135.
13. MoEF. (2020). *Report on the results of the implementation of the budget in the first semester, evaluations and estimations of the results of the implementation of the law on financial management 2020*. Phnom Penh: Ministry of Economy and Finance Government of Cambodia, Available at: <https://www.mef.gov.kh/documents/mustsee/Mid-Year-Report-2020.pdf> [Accessed 24 Sep 2020].
14. RGC. (2020). *Statement of reason. Draft Law on Financial Management 2021*. Phnom Penh, Cambodia: Royal Government of Cambodia, Office of Council of Ministers. Available at: <https://mef.gov.kh/documents-category/law-and-regulation/budget/> [Accessed 25-Jan-2021].
15. ADB (2020). ADB Covid-19 Policy Database. Policy Measures. 2020. December 2020 ed.: Asian Development Bank
16. IMF (2020). *Policy Responses to Covid-19: Policy Tracker*. International Monetary Fund, Available at: <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19> [Accessed 08-01-2021].

17. ASEAN Secretariat. (2018). *ASEAN Commemorates Micro, Small and Medium-sized Enterprises Day* [Online]. Jakarta: ASEAN Secretariat. Available at: <https://asean.org/asean-economic-community/sectoral-bodies-under-the-purview-of-aem/micro-small-and-medium-enterprises/international-msme-day/> [Accessed 08 Oct 2020].
18. ADB (2020). *Asian Development Outlook 2020 Update: Wellness in Worrying Times* Manila, Philippines: Asian Development Bank.
19. ASEAN. (2020). *ASEM statement on "Strengthening ASEAN's Economic Resilience in Response to the Outbreak of the Coronavirus Disease (Covid 19)"* [Online]. ASEAN. Available at: <https://asean.org/storage/2020/03/AEMR-26-Statement-on-COVID-19-FINAL-10.03.2020.docx.pdf> [Accessed 26 Aug. 2020].
20. ASEAN Secretariat. (2020). *ASEAN -Japan Economic Ministers' Joint Statement on Initiatives on Economic Resilience in Response to the Corona Virus Disease (COVID-19) Outbreak* [Online]. Jakarta: ASEAN Secretariat. Available at: <https://asean.org/storage/2020/04/AJ-EM-Joint-Statement-on-Economic-Resilience-in-Response-to-COVID-19-FI....pdf> [Accessed 20-Aug-2020].
21. ASEAN Secretariat. (2020). *Hanoi Plan of Action on Strengthening ASEAN Economic Cooperation and Supply Chain Connectivity in Response to the COVID-19 Pandemic, June 2020*. [Online]. Jakarta ASEAN Secretariat. Available at: <https://asean.org/hanoi-plan-action-strengthening-asean-economic-cooperation-supply-chain-connectivity-response-covid-19-pandemic/> [Accessed 08-Feb-2021].
22. ASEAN. (2020). *AEM, METI adopt 52 Strategic Measures of the ASEAN-Japan Economic Resilience Action Plan* [Online]. JAKARTA: ASEAN. Available at: <https://asean.org/aem-meti-adopt-52-strategic-measures-asean-japan-economic-resilience-action-plan/> [Accessed 26 Aug 2020].
23. ASEAN Secretariat. (2020). *ASEAN Economic Integration Brief No. 07*. [No.7] Jakarta, Indonesia. : ASEAN Integration Monitoring Directorate and Community Relations Division The ASEAN Secretariat.
24. ASEAN Secretariat. (2020). *ASEAN Comprehensive Recovery Framework*. Jakarta: Community Relations Division (CRD) of the ASEAN Secretariat.
25. ASEAN. (2020). *Enhancing ASEAN Connectivity for Post-Covid 19 Recovery. Regional efforts related to ASEAN connectivity*. [Online]. Jakarta: ASEAN Secretariat. Available at: <https://connectivity.asean.org/resource/enhancing-asean-connectivity-for-post-covid-19-recovery/> [Accessed 12 Aug. 2020].
26. ASEAN Secretariat. (2016). *Master Plan on ASEAN Connectivity 2025*. Jakarta: Community Relations Division (CRD) of the ASEAN Secretariat.
27. Nomura. (2018). *US-Sino trade friction: not all a lose-lose outcome for Asia* [Online]. Nomura. Available at: <https://www.nomuraconnects.com/focused-thinking-posts/us-sino-trade-friction-not-all-a-lose-lose-outcome-for-asia/> [Accessed 01-03-2021].
28. Nishimura, H. (2020). *Understanding the Consequences of the Covid-19 pandemic for the future of south and east Asian economic integration* [Online]. Jakarta: Economic Research Institute for ASEAN and East Asia (ERIA) Available at: <https://www.eria.org/news-and-views/understanding-the-consequences-of-the-covid-19-pandemic-for-the-future-of-southeast-and-east-asian-economic-integration/> [Accessed 06 Oct 2020].
29. Chen, L., and Lydia, R. (2020). *Improving Digital Connectivity: Policy Priority for ASEAN Digital Transformation*. P. [No. 2020-07] Jakarta, Indonesia.

30. Canada Parliament. (2017). *The 38th General Assembly ASEAN Inter-Parliamentary Assembly, Philippines, 14th-20th September 2017: Appendix C. Report* [Online]. Senate Parliament of Canada Available at: <https://www.parl.ca/DocumentViewer/en/IIA/visit-report/9154091/page-21> [Accessed 22 Mar 2021].
31. Inter-Parliamentary Union. (2018). *2018 Annual Session of the parliamentary Conference on the WTO. Highlight of the Session. WTO: The Way Forward*. Geneva.
32. Koh, F. (2020). *Parliament: Supply chain shifts due to Covid-19 will impact economy but also present opportunities, says Chan Chun Sing* [Online]. Singapore The Straits Times. Available at: <https://www.straitstimes.com/singapore/supply-chains-shifts-due-to-covid-19-will-impact-economy-but-also-present-opportunities> [Accessed 26-Agu-2020 2020].

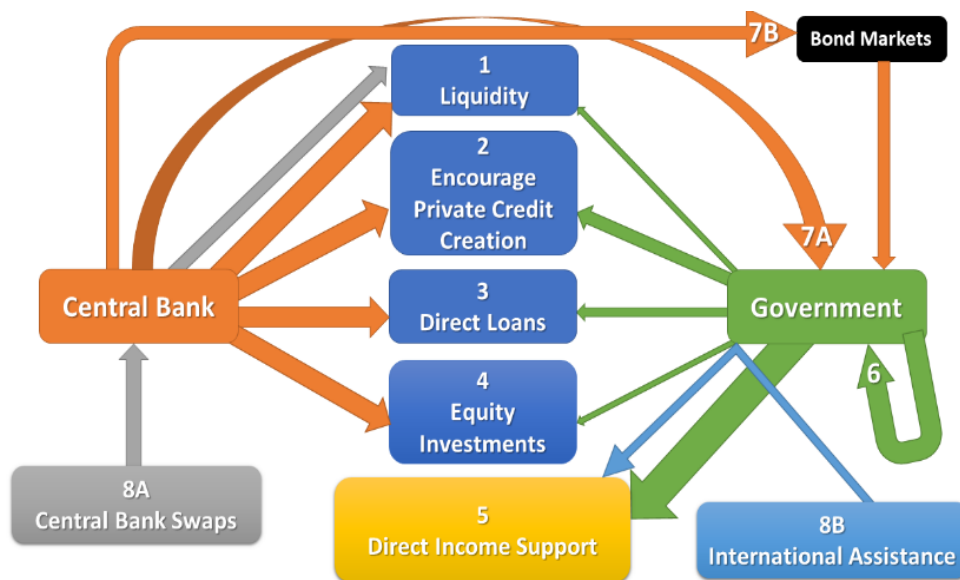
Appendix

Table A1: Major trade partners of AMS, 2019

Export partners	share to total exports	Import partners	Share to total imports
ASEAN	23.34%	China	21.93%
China	14.23%	ASEAN	21.56%
US	12.91%	EU	9.10%
EU	10.82%	Japan	8.34%
Japan	7.72%	US	7.97%
Hong Kong	6.48%	Korea	6.97%
Korea	4.17%	Taiwan	5.68%
India	3.39%	Germany	2.41%
Taiwan	2.83%	India	2.07%
Australia	2.49%	Australia	1.99%
Others	11.63%	Others	11.99%

Source: ASEAN Secretariat statistics (accessed January 2021)

Figure A1 Types of measure and funding supports by the governments and central banks



Source: ADB, IMF [15, 16]

Table A2: Objectives of the ASEAN-Japan Economic Resilience Action Plan

Objective 1: Sustaining the close economic ties developed by ASEAN and Japan

- Strengthening economic integration and cooperation, including through the full implementation and utilization of the AJCEP and its protocol, to keep markets open for trade and investment;
- Refrain from imposing non-tariff measures that are unnecessary and could potentially restrict export and import of goods, especially those classified as essential goods, including medical, food and other essential supplies or disrupt regional supply chains and are inconsistent with WTO rules;
- Provide capacity-building assistance to promote manufacturing, including auxiliary industries, and services competitiveness, export competitiveness, and economic diversification
- Enhance on-going projects to improve supply chain connectivity and promote trade facilitation and e-commerce.

Objective 2: Mitigating the adverse impact on the economy

- Promoting information exchange and sharing of best practices on economic policies to manage the COVID-19 pandemic and public- private collaboration effort to respond to economic and business challenges;
- Facilitate the smooth flow of essential products such as medicines, medical and health supplies, and equipment as well as agricultural and food products to support the viability and integrity of supply chains;
- Enhance support, including financial support, for businesses, particularly MSMEs and vulnerable groups, affected by the COVID-19 outbreak and shall be in accordance with the World Trade Organization (WTO) rules;
- Promote pioneer businesses, new business models including start-ups, with digital technologies providing solution to challenges brought by the COVID-19 outbreak.

Objective 3: Strengthening economic resilience

- Initiate programs to strengthen supply chain resilience centered on ASEAN, including through enhancing business and academic experts participation;
- Formulate a cooperative framework aimed at building capacity on emergency preparedness and response for supply chains;
- Strengthen the network to facilitate interactions of relevant stakeholders in the region;
- Explore public-private collaboration initiatives in strategic sectors including agri-food industries, health related industries, and energy.

Note: For the detailed strategic measures and activities, please refer to: https://asean.org/storage/2020/07/AJ-Economic-Resilience-Action-Plan_AR.pdf

Figure A2: ASEAN Comprehensive Recovery Framework: Broad strategies, key priorities, and enabling factors

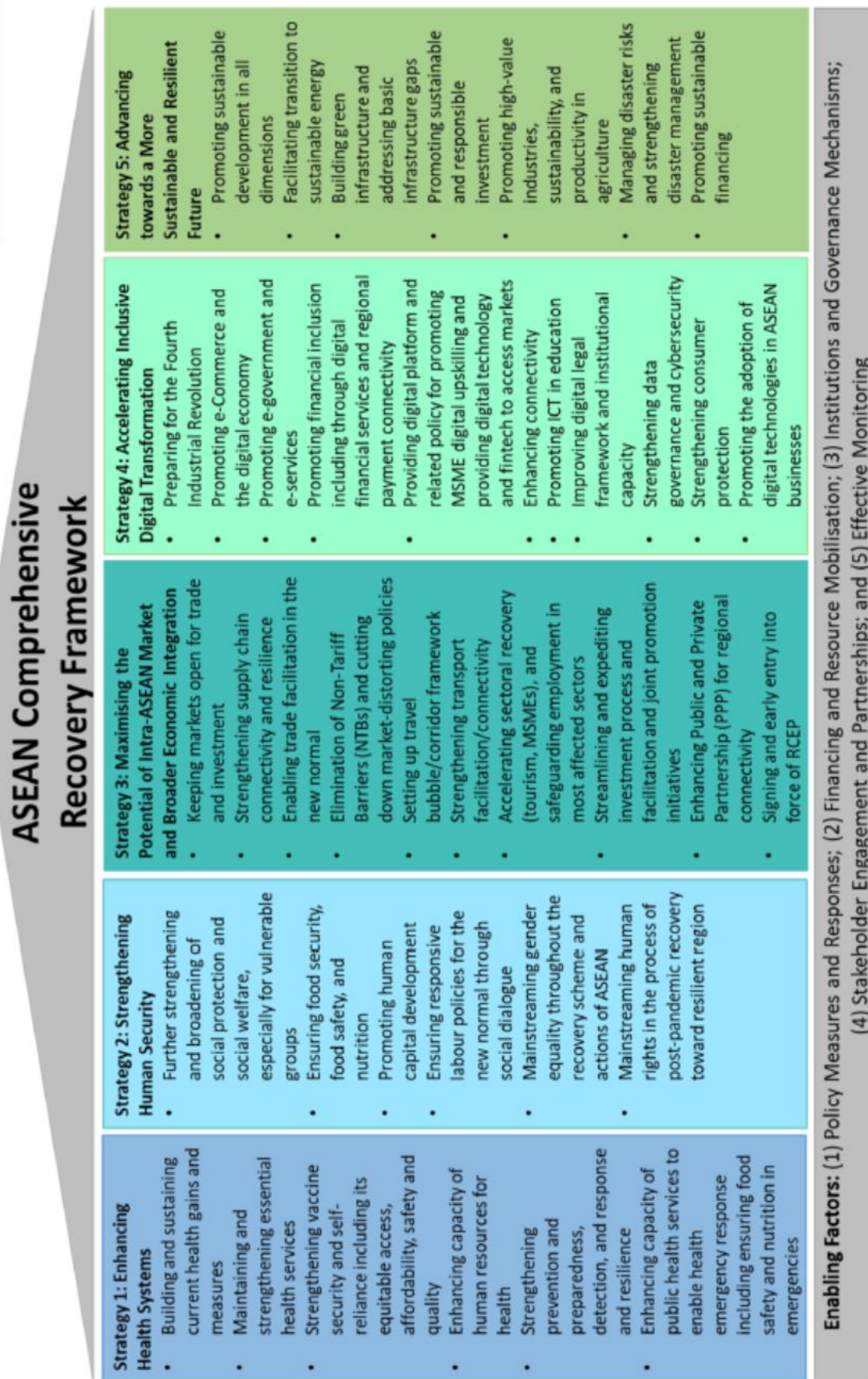


Table A3: Technology ‘readiness’ and ‘usage’ by member states: Selected indicators from the Network Readiness Index 2016

Ranking ■ 1–10 ■ 11–25 ■ 26–50 ■ 51+

Overall rank	Country	Readiness ²		Usage ³			
		Infra-structure	Affordability	Skills	Individual	Business ⁵	Government
1	Singapore	15	72	1	12	14	1
31	Malaysia	71	91	46	47	26	6
45	Brunei Darussalam ⁴	37	129	30	50	56	30
62	Thailand	67	64	73	64	51	69
73	Indonesia	105	38	65	92	34	65
77	Philippines	87	107	54	79	36	63
79	Viet Nam	121	3	82	85	81	61
104	Lao PDR	108	82	106	124	89	110
109	Cambodia	98	43	120	101	104	116
133	Myanmar	115	122	113	131	138	137

Note: 1. The Network Readiness Index includes four sub-indexes: Environment, Readiness, Usage, and Impact.

2. The Readiness sub-index measures the degree to which a society is prepared to make good use of an affordable ICT infrastructure and digital content.

3. The Usage sub-index assesses the individual efforts of the main social agents to increase their capacity to use ICT as well as their actual use in day-to-day activities.

4. Data as of 2014; Brunei Darussalam did not participate in 2015 and 2016 survey.

5. Includes: 1) firm level technology absorption; 2) Capacity for innovation; 3) PCT patent application per million population; 4) Business-to-business internet use; 5) business-to-consumer internet use; 6) Extent of staff training. Data is from the World Economic Forum’s Executive Opinion Survey (-14,000 executives from over 140 countries).

Source: Adopted from *Master Plan for ASEAN Connectivity 2025*, p. (2016) [27]