

Digital Inclusion and Integration in ASEAN:

A Competitiveness Analysis

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Digital Inclusion and Integration in ASEAN: A Competitiveness Analysis

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About ACI

The Asia Competitiveness Institute (ACI) was established in August 2006 as a research centre at the Lee Kuan Yew School of Public Policy (LKYSPP), National University of Singapore (NUS). It aims to build intellectual leadership and network for understanding and developing competitiveness and sustainable growth in Asia. ACI seeks to contribute to the enhancement of inclusive growth, living standards, and institutional governance through competitiveness research on sub-national economies in Asia. It identifies mitigating issues and challenges for potential public policy interventions through close collaboration with regional governments, business corporations, policy think tanks, and academics. ACI's three key research pillars include (i) sub-national economies level competitiveness analysis, (ii) emerging sustainable development landscape in 16 Asia economies, and (iii) Asia's long-term growth strategies and public policy analysis.

ACI's value propositions may be encapsulated in its acronym:

Analytical inputs to initiate policies for policy-makers and business leaders in Asia

Capacity building to enable others through improvement in productivity and efficiency

Intellectual leadership to create pragmatic models of competitiveness and inclusive growth

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- ACI's over-arching vision is to build up its research credibility with policy impact, contributing as a professional, world-class think-tank.
- ACI's mission is to establish our niche as a leading policy think-tank by identifying development trends, opportunities, and challenges among Asian economies and business corporations.
- ACI endeavours to articulate sound recommendations, promote discussion, and shape research agenda in the arena of public policy amongst Asian governments.
- ACI undertakes evidence-based analysis of public policy issues and decisions, in order to provide assessment of their effectiveness as well as economic and societal impact

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Preface

The elevated geopolitical tensions and disruptions from the COVID-19 pandemic have triggered a fundamental rethink of globalisation in both firms and governments as the agenda shifts towards resilience, competition and risk management. The region of ASEAN has emerged as a key node of global growth in the face of an extended period of turbulence in the global environment. These developments have lent a new urgency to ASEAN's regional integration agenda. Central to this is the adoption of digital technologies and the digital economy for the next stage of development.

The Asia Competitiveness Institute (ACI), Lee Kuan Yew School of Public Policy (LKYSPP), National University of Singapore (NUS) seeks to expand understanding of the developmental issues facing ASEAN. Through the publication of ACI's long running series of annual studies on the competitiveness of the ASEAN Member States (AMS), ACI hopes to contribute meaningful research that highlights key areas of policy interest.

Digital Inclusion and Integration in ASEAN: A Competitiveness Analysis continues the long running ACI ASEAN Annual Competitiveness Analysis and the more recently developed ASEAN+ Digital Competitiveness Analysis. These provide the broader context and understanding of the various developmental policies, strengths and weaknesses of the ASEAN+ economies with which to engage the research on Digital Inclusion and Integration.

The research on inclusion and integration in this volume centres on two core policy issues. Firstly, cross-border data flows, an issue fundamental to the core of the digital economy and one that underpins much of the common digital technologies in use globally. ASEAN has emerged at the centre of a growing body of international agreements and standards governing this issue. This volume explores some of the fundamental concerns facing policymakers as negotiations continue to allow integration and to improve public understanding of the state of policy in ASEAN.

The second deals with trust in the digital economy. The issue of building a trusted environment in order to improve the uptake and utilisation of digital technologies and the digital economy has been a key pillar in many ASEAN policy documents. This volume approaches the issue quantitatively by building upon the indicators in the ASEAN+ Digital Competitiveness Index to explore the practical aspects of building trust in the digital economy.

It is hoped that this volume provides readers with an improved understanding of the dynamics of the rapidly developing ASEAN region in an increasingly uncertain global environment. ACI will endeavour to improve and expand its research on development in ASEAN going forward.

Professor Paul Cheung

Director, Asia Competitiveness Institute
Lee Kuan Yew School of Public Policy
National University of Singapore

Executive Summary

The developmental gaps in ASEAN are a well-documented phenomenon. They provide impetus for the regional integration and development agenda while simultaneously creating hurdles to progress. The increasingly turbulent global environment has further exacerbated this as the highly globalised economies of ASEAN are facing heightened risks and uncertainties. *Digital Inclusion and Integration in ASEAN: A Competitiveness Analysis* was written in the context of an ASEAN seeking to deepen economic integration, both within the region and with trusted partners beyond ASEAN to secure progress in development.

This volume presents the latest results of the long running ACI ASEAN Annual Competitiveness Analysis and the more recently developed ASEAN+ Digital Competitiveness Analysis. This edition of the ASEAN analysis seeks to provide a better understanding of the developmental agenda by detailing the key policies adopted by the individual AMS in the context of the strengths and weaknesses highlighted by the Competitiveness Indices in Chapters 2 and 3. This is valuable for readers seeking to understand the broad range of developmental strategies, priorities and challenges facing the diverse grouping of ASEAN as they seek deeper integration.

Through the above exercise, two key areas of in-depth research were developed and presented in Chapters 1 and 3 respectively. Chapter 1 features an overview of the ASEAN region, presenting some key quantitative indicators covering both the broader socioeconomic and digital economic aspects of ASEAN. With this background knowledge, Chapter 1 proceeds to discuss in-depth the issue of cross-border data flows. The international flows of data underpin much of modern economic activity and is critical to the inclusion and integration agenda. It has also emerged as a key point of contention in the negotiation of international agreements dealing with digital technologies and the digital economy. The case study presents some of the key properties of data, cross-border data flows and relevant policy mechanisms to aid readers in understanding the trade-offs faced by policymakers. The study then presents the various policy regimes and mechanisms in play within ASEAN to achieve the goal of enabling cross-border data flows with appropriate safeguards.

Chapter 3 explores the issue of digital inclusion by examining the role of trust in promoting the uptake of digital technologies. This chapter starts by presenting the results of the latest edition of the ASEAN+ Digital Competitiveness Analysis upon which the quantitative case study on trust is built. The results challenge the conventional wisdom that trust results in high adoption of digital technologies. It is demonstrated that economies that have low trust in digital technologies tend to have high adoption rates and competitiveness, and vice versa. This trend also has a developmental aspect as the low trust, high adoption and high competitiveness economies tend to be developed economies. One explanation explored is the role of education in this process; populations in developed economies have higher levels of digital literacy, which includes an understanding of the risks of digital technologies as well as mitigation strategies. This has interesting implications for the design of education and data protection policies in both developed and developing economies.

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This book features the latest update of the Annual ASEAN competitiveness and digital competitiveness studies with the latest available data. Our comprehensive approach to measuring and monitoring elements of economic competitiveness and digital competitiveness have highlighted the issues of cross-border data flows and digital inclusion as key developmental issues of the day. This enabled the development of in-depth studies that delved deeper into each issue to provide readers a better understanding of these complex topics as well as challenge conventional understanding.

This book would not have been possible without the support of our research and administrative colleagues. In particular, we would like to thank extend our sincere thanks to the competent and dedicated administrative team at ACI, including Cai Jiao Tracy, Nurliyana Binte Yusoff, Dewi Jelina Ayu Binte Johair and Lyne Po Lai Yin.

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We place on record our appreciation for the encouragement by Professor Danny Quah (Dean), Professor Khong Yuen Foong (Vice Dean, Research and Development), Kadir Suzaina (Vice Dean, Academic Affairs), Francesco Mancini (Vice Dean, Executive Education) and other colleagues in the Lee Kuan Yew School of Public Policy, NUS, for making this project possible.

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List of Abbreviations

ADB	Asian Development Bank
ADGMIN	ASEAN Digital Minister’s Meeting
ADM	ASEAN Digital Masterplan
ADII	ASEAN Digital Integration Index
AEC	ASEAN Economic Community
AI	Artificial Intelligence
AMS	ASEAN Member States
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
BBB	Build Build Build (Philippines)
BOI	Board of Investment (Thailand)
BRI	Belt and Road Initiative
CBDFM	Cross Border Data Flow Mechanism
CITIRA	Corporate Income Tax and Incentives Reform Act (Philippines)
CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
CSA	Cybersecurity Act
DEA	Digital Economy Agreements
DEPA	Digital Economy Partnership Agreement
DEPA	Digital Economy Promotion Agency (Thailand)
DGA	Digital Government Agency (Thailand)
DGDP	Digital Government Development Plan (Thailand)
E-Commerce	Electronic Commerce
EEC	Thailand’s Eastern Economic Corridor
EU	European Union
FBMC	Financial, Businesses and Manpower Conditions
FDI	Foreign Direct Investment
FTTX	Fibre to the X
GCI	Global Competitiveness Index
GCR	Global Competitiveness Report
GDP	Gross Domestic Product
GDPR	General Data Protection Regulation
GIS	Government and Institutional Setting
GMID	Global Market Information Database
GMV	Gross Merchandise Value
GST	Goods and Services Tax (Malaysia)
ICT	Information and Communication Technology

IMF	International Monetary Fund
IP	Intellectual Property
IPR	Intellectual Property Rights
IT	Information Technology
ITU	International Telecommunication Union
JENDELA	National Digital Network (Malaysia)
KPIs	Key Performance Indicators
MCC	Model Contractual Clauses
M-Commerce	Mobile Commerce
MDES	Ministry of Digital Economy and Society (Thailand)
MS	Macroeconomic Stability
NBTC	National Broadcasting and Telecommunications Commission (Thailand)
NFCP	National Fiberisation and Connectivity Plan 2019-2023 (Malaysia)
O&G	Oil and Gas
OECD	Organisation for Economic Co-operation and Development
PDPA	Personal Data Protection Act
PPP	Public-Private Partnership
QLID	Quality of Life and Infrastructure Development
R&D	Research and Development
RCEP	Regional Comprehensive Economic Partnership
SIL	Strongest Indicators List
SME	Small and Medium-sized Enterprises
SST	Sales and Service Tax (Malaysia)
TSDP	Tax Strategy Development Plan
Tbits/s	Terabits per second
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNESCO	The United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
US	United States of America
VAT	Value-added Tax (Laos)
WCY	World Competitiveness Yearbook
WIL	Weakest Indicators List

Chapter 1

Navigating ASEAN in Turbulent Times

Tan Kway Guan

1.1 Introduction

The outlook for Association of Southeast Asian Nations (ASEAN) and the broader global economy going into 2023 continues to be turbulent. Even as the economies of ASEAN and other key partner economies moved into a post-COVID position, significant global risks remain such as the on-going conflicts in Ukraine, elevated global inflation and worsening US-China relations. All these significantly elevate the risk of a global economic slowdown in the coming years. Despite this, growth prospects for the ASEAN economies remain positive if subdued.¹

As ASEAN economies move to transform their economy, much remains to be addressed within the region. Most notably, Timor-Leste has been granted in-principle membership to ASEAN as its 11th member, bringing with it the potential for a new market. Unfortunately, the crisis within Myanmar persists despite the ASEAN Five-Point Consensus. Both bring added complexities to the agenda of the ASEAN Economic Community. In spite of this, progress has been made in the regional economic integration agenda. The coming into force of the Regional Comprehensive Economic Partnership (RCEP) in 2022 marks a significant deepening of economic integration between ASEAN and five major trade partners. The parties of the RCEP collectively account for approximately 28.7% of total global trade in 2021.^{2 3}

Core to the ASEAN economic agenda is the development of the digital economy. In the Borocay Digital Declaration following the Third ASEAN Digital Minister's Meeting (ADGMIN) in February 2023, the ASEAN members recognised the importance of digital transformation to economic development, the need to accelerate digital transformation and narrow the digital divide.⁴

In this volume we examine some of the core policy issues pertaining to the developmental and digital divide in ASEAN. This will be done through the use of the ASEAN Annual Competitiveness and Digital Competitiveness Indices as well as closer examination of a range of quantitative indicators in the context of local and regional policies. The central concern of this series of publications by ACI revolves around the capacity of ASEAN+ economies to benefit from developments in both the digital and wider regional economy to advance their development agendas. To do this will require that the economies develop both the means to *access* a key resource of the future economy, *data*, and the necessary human capital to *utilise* the resource to generate value. This volume will thus present in-depth case studies on two key issues that manifest across all the ASEAN+ economies, cross-border data flows and education that deal directly with the issues of *access* and *utilisation*.

¹ See IMF (2023) and ADB (2022b).

² As at time of writing, the RCEP comprises ASEAN, Australia, China, Japan, New Zealand and South Korea.

³ Figures are calculated by the author based on data from UNCTADStat.

⁴ See ASEAN (2023).

The subsequent sections in this chapter will present a brief overview of ASEAN economies through a series of quantitative indicators. This is to provide a basic illustration of the developmental challenges as well as key trends in ASEAN motivating the push towards developing the digital economy. With this as background, the chapter will then examine the issue of cross-border data flows in further detail with the goal to help readers grasp some of the key concepts, policy instruments and potential trade-offs. The case study is not intended to be a comprehensive treatment of the issue but to serve as a primer for further reading and research.

1.2 ASEAN in Numbers

Table 1.1: ASEAN Key Indicators 2021

Country	Land Area (¹ 000 km ²)	Population (millions)	Human	GDP
			Development Index	(const. 2015 billion US\$)
Brunei	5.3	0.4	0.829	13.2
Cambodia	176.5	16.6	0.593	23.7
Indonesia	1877.5	272.2	0.705	1065.6
Lao PDR	230.8	7.3	0.607	19.1
Malaysia	328.6	32.6	0.803	355.1
Myanmar	652.7	55.3	0.585	70.9
Philippines	298.2	110.2	0.699	379
Singapore	0.7	5.5	0.939	360.9
Thailand	510.9	65.2	0.800	438.5
Vietnam	313.4	98.5	0.703	332.3
ASEAN	4394.5	663.9	N/A	3058.1

Country	GDP per capita (const. 2015 US\$)	Trade (% of GDP)	FDI Inflows	
			Billion US\$	% of GDP
Brunei	29673.4	134.2	0.2	1.5
Cambodia	1429.9	156.2	3.5	12.8
Indonesia	3892.5	36.1	20.1	1.7
Lao PDR	2566.3	69.2	1.1	5.5
Malaysia	10575.9	144.2	11.6	3.1
Myanmar	1317.5	39.1	1.0	1.4
Philippines	3327.7	51.3	12.4	3.2
Singapore	66176.4	218.7	99.1	25.1
Thailand	6123.9	106.8	14.6	2.9
Vietnam	3409	184.1	15.7	4.3
ASEAN	4606.7	99.8	179.2	5.4

Source: ASEANStats, World Bank Group World Development Indicators, UNCTAD and UNDP (accessed 15 Feb 2023)

Table 1.1 highlights the key macro indicators that characterise ASEAN. The countries of ASEAN are a diverse grouping with large disparities in geography, demographics and human development. Collectively ASEAN's population is the third largest in the world, behind China and India. It is also on the cusp of a demographic dividend as much of the population is young. Economically, ASEAN member states (AMS) are now largely middle income, with Brunei and Singapore being in the high-income category.⁵

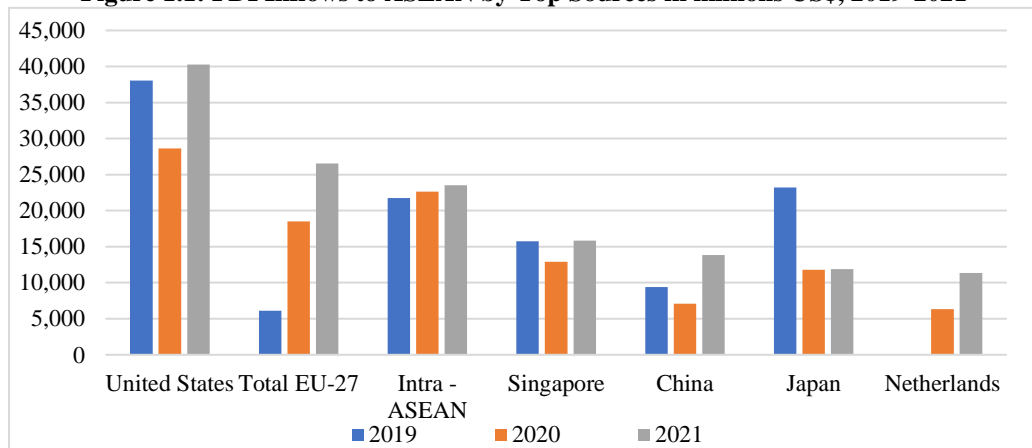
⁵ See World Bank (2023).

Trade plays a critical role in the economies of ASEAN; at the extreme end is Singapore with total trade value at 218.7% the national GDP. Collectively, the total trade value of ASEAN is 99.8% of regional GDP. China features prominently as the largest merchandise trade partner in terms of both imports (approx. 23.9% of total) and exports (approx. 16.4% of total). This high degree of globalisation exposes ASEAN economic development to a high degree of global risk. To better navigate the turbulent global environment, the AMS have sought to enable collective action by integrating the economies of the AMS into a single market and product base, dubbed the ASEAN Economic Community (AEC).⁶

ASEAN is one of the top global Foreign Direct Investment (FDI) destinations. Based on data from ASEANStats, FDI inflows rebounded by 47% in 2021 following the pandemic downturn in 2020. The region attracted 12% of total global FDI inflows in 2020-2021.⁷ Reflected in Figure 1.1, the US was the largest source of FDI to ASEAN in 2021 with a value of US\$40 billion, up 41% from 2020. Interestingly, the European Union (EU) collectively has significantly ramped up investments in ASEAN despite previously being outside of the top five sources of FDI. Over the period of 2019 to 2021, the EU has emerged as the second largest source of FDI, with the Netherlands being the largest source within the EU. Intra-ASEAN FDI continues to be a significant contributor of FDI, a positive indicator of deepening economic integration. Intra-ASEAN FDI continues to be a major source, with Singapore being the largest source and destination of FDI.

Breaking down the data by industry in Figure 1.2 finds that the financial and insurance industry continues to be the largest recipient of FDI. Manufacturing saw a sharp rebound in 2021 that saw the industry return to being the second largest recipient of FDI. Within Manufacturing, semiconductors, electronics and electric vehicles were the standouts, according to ASEAN reports.⁸ Complementing this is the new entrant to the top five industries, Information and communication, that saw an approximately 4-fold increase in FDI from 2020 to 2021.

Figure 1.1: FDI Inflows to ASEAN by Top Sources in millions US\$, 2019-2021



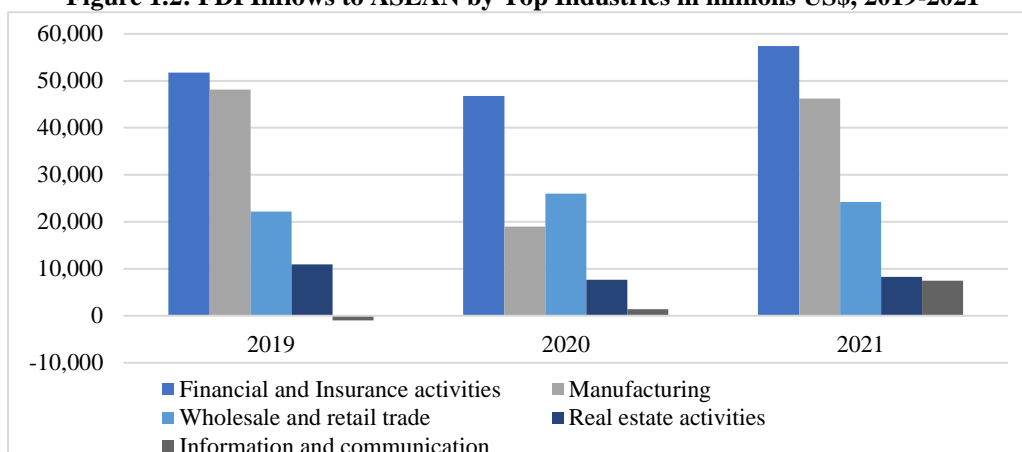
Source: Asia Competitiveness Institute based on ASEANStats (accessed 20 Feb 2023)

⁶ See ASEAN Secretariat (2022a).

⁷ See ASEAN Secretariat (2022b).

⁸ See ASEAN (2022a).

Figure 1.2: FDI Inflows to ASEAN by Top Industries in millions US\$, 2019-2021



Source: Asia Competitiveness Institute based on ASEANStats (accessed 20 Feb 2023)

Table 1.2: ASEAN Digital Economic Indicators

Country	Internet Users 2021 (% Total Population)	Exports of digitally-deliverable service 2021		Retail E-Commerce 2022 (Millions US\$)	ICT Goods Exports 2021 (% Total Exports)	ICT Goods Imports 2021 (% Total Imports)
		Millions US\$	% Total Trade in Services			
Brunei	98.1	7.3	3.6	N/A	0.0	1.8
Cambodia	60.2	246.5	37.5	33.3	2.5	1.0
Indonesia	62.1	8402.6	59.9	57048.8	2.9	8.5
Laos	62.0	N/A	N/A	10.7	3.0	3.9
Malaysia	96.8	11266.0	54.0	6788.3	32.2	27.0
Myanmar	44.0	572.2	26.6	17.9	0.6	2.4
Philippines	52.7	26165.7	77.8	6966.5	48.5	21.8
Singapore	91.1	148415.2	64.6	4143.8	34.7	32.9
Thailand	85.3	14743.1	60.2	19602.0	16.1	14.3
Vietnam	74.2	2626.3	71.5	15006.3	N/A	N/A
ASEAN	N/A	212461.5	64.4	N/A	24.8	21.8

Note: Figures in blue are estimates

Sources: Euromonitor, UNCTAD, ITU via CEIC (accessed 21 Feb 2023)

Central to these trends is the growth of the digital economy and Industry 4.0 in ASEAN.⁹ ASEAN as a region is rapidly digitalising, driven by improving digital infrastructure such as 5G networks. Chapter 2 of this volume demonstrates a narrowing technological gap between ASEAN economies. This trend extends into the manufacturing sector with increased use of automation and robotics in the more industrialised economies of ASEAN.¹⁰ Google, Temasek and Bain (2022) valued the Gross Merchandise Value (GMV) of ASEAN in 2022 at US\$ 194 billion, well ahead of the oft cited projections done in 2016 which expected a GMV of US\$ 200 billion by 2025 citing similar developments.

⁹ Ibid.

¹⁰ See ASEAN Secretariat (2021).

The indicators in Table 1.2 provide a snapshot of digital economic activity in ASEAN. The digital gap between countries can be readily observed across all the indicators. There is wide variance in terms of data quality and availability amongst AMS regarding the digital economy. In general, data quality and availability in ASEAN is limited, compared to many other parts of the world. The limitations on data in ASEAN appear to reflect broader digital capabilities of the AMS. In spite of these limits, it is notable that a high proportion of the populations in ASEAN are connected to the internet and much of the export of services are digitally deliverable. These are indicators of the economic potential of developing the digital economy in the AMS.

Table 1.3: ASEAN E-Governance Indicators

Country	UN E-Government Survey 2022				ITU Global
	E-Government Index	Online Service Index	Human Capital Index	Telecommunication Infrastructure Index	Cybersecurity Index 2020
Brunei	0.7270	0.5871	0.7567	0.8372	56.07
Cambodia	0.5056	0.4181	0.5380	0.5605	19.12
Indonesia	0.7160	0.7644	0.7438	0.6397	94.88
Laos	0.3764	0.3005	0.5468	0.2820	20.34
Malaysia	0.7740	0.7630	0.7645	0.7945	98.06
Myanmar	0.4994	0.3073	0.5829	0.6082	36.41
Philippines	0.6523	0.6303	0.7629	0.5638	77.00
Singapore	0.9133	0.9620	0.9021	0.8758	98.52
Thailand	0.7660	0.7763	0.7879	0.7338	86.50
Vietnam	0.6787	0.6484	0.6903	0.6973	94.59

Source: United Nations E-Government Development Database and ITU (accessed 22 Feb 2023)

The disparities in economic indicators amongst AMS are also present in Table 1.3 comparing the levels of e-governance in ASEAN. Coherence in governance is a key issue in the ASEAN Economic Community (AEC) 2025 agenda.¹¹ This extends to the digital economy where the ASEAN Digital Masterplan (ADM) 2025 and numerous other related documents call to enhance regulatory coherence on issues such as cross-border data flows, intellectual property rights and e-commerce regulations.¹²

Table 1.4 gives a condensed overview of the prevalence of various key types of digital legislation compiled by UNCTAD (2021a). It illustrates a high degree of recognition of the importance of having adequate regulatory protections to govern the digital economy. The presence of regulation and legislation plays a critical role in establishing wider trust in the digital economy to encourage uptake.¹³ Chapter 3 delves deeper into the trust aspects of the digital economy and highlights the need for robust capacity building programs.

¹¹ See ASEAN Secretariat (2015).

¹² See Quah and Chen (2022).

¹³ See UNCTAD (2016) for more on the trade and development effects of data legislation.

The appearance of consensus among AMS in Table 1.4 belies the fact that the governing philosophies around specific issues differ widely within ASEAN. This poses a key challenge towards the ASEAN integration agenda, not just within the bloc but also with external partners. The following section highlights one such issue, cross-border data flows.

Table 1.4: State of Digital Legislation in ASEAN

Country	E-Transactions Laws	Consumer Protection Laws	Data Protection & Privacy Laws	Cybercrime Laws
Brunei	Has Legislation	No Legislation	No Legislation	Has Legislation
Cambodia	Has Legislation	Has Legislation	Has Legislation	Legislation Drafted
Indonesia	Has Legislation	Has Legislation	Has Legislation	Has Legislation
Laos	Has Legislation	Legislation Drafted	Has Legislation	Has Legislation
Malaysia	Has Legislation	Has Legislation	Has Legislation	Has Legislation
Myanmar	Has Legislation	Has Legislation	Legislation Drafted	Legislation Drafted
Philippines	Has Legislation	Has Legislation	Has Legislation	Has Legislation
Singapore	Has Legislation	Has Legislation	Has Legislation	Has Legislation
Thailand	Has Legislation	Has Legislation	Has Legislation	Has Legislation
Vietnam	Has Legislation	Has Legislation	Has Legislation	Has Legislation

Legend

Has Legislation	Has Legislation
Legislation Drafted	Legislation Drafted
No Legislation	No Legislation

Source: Asia Competitiveness Institute based on UNCTAD (2021a)

1.3 Cross-Border Data Flows in ASEAN

1.3.1 An Introduction to Data

Data is the new oil, a popular refrain in the discussion of the digital economy to emphasise that data is now a fundamental factor of production. Digitalisation has both leveraged on and generated a growing volume of data to add value to and transform much of the global economy. However, as we will discuss subsequently, data carries with it some peculiar properties that sets it apart from conventional capital goods or resources, which in turn has severe implications for policy. For the individual and private sector, this section is intended to provide some basic information and grounding to engage in the policy discourse. Given that this is the case, it is important to start by building an understanding of data itself in the context of broader economic activity. This will form the foundation for discussing the cross-border data regimes present in ASEAN where these properties will need to be kept in mind with the added complexities of navigating a challenging international environment.

The immediate and fundamental task is to define “data”. This has proven to be a difficult task, with the UNCTAD (2021a) report noting that:

“...on the most basic elements – the definitions of data and of cross-border data flows – remains elusive.”

The OECD working paper by Nguyen and Paczos (2020) cites an earlier OECD definition:

“data can be described as the unordered and unprocessed representation of any types of observations that are quantified and stored in symbols”

However, the same paper subsequently comes to the same perspective as the UNCTAD (2021a) report. In so doing, it notes the challenges such ambiguity presents for the purposes of measurement and policy formation. This might seem an odd problem to have, after-all in our digital devices and data plans do we not already measure data in terms of bits and bytes? Do we not already determine the data storage capacities in those terms? Why then are we unable to define and measure data?

To address this issue, we refer to one critical point highlighted by Nguyen and Paczos (2020); that data does not inherently generate value. It is the *information* extracted from analysing data and the usage of this to inform businesses that does. Further, data may be transformed and combined with other data in this process to create new sets of data. The full economic value of data is thus an indeterminate potential value contingent on the *utilisation* of data to create *information*. The academic economics literature parallels this view.¹⁴ This observation also implies that measuring data in terms of bits and bytes does not offer a meaningful way to assess the actual impact of data flows. For example, 1 Terabyte of bank account details contains inherently different value from 1 Terabyte of shopping lists. The recognition of this difference has led to the classification of data in different types for the purposes of policy. This offers a way to circumvent the issue of unclear definitions to achieve direct regulatory outcomes such as defining “personal” data for privacy protection laws or “sensitive” data for security purposes.

Practical recognition of the value of information is embodied in intellectual property rights and privacy laws. Despite this recognition, the assignment of property rights or *ownership* in terms of data remains under debate. Unlike traditional goods and services such as the oil analogy, data tends to be generated as a by-product of other activities. Often, data is extracted by the platforms from the data sources that are the platform’s users. The value of the data then accrues to the platform and not to the data sources. This also opens up issues of misuse of data that is now largely not within the control of the data sources or the relevant legal jurisdictions of the data sources.⁷ This is the case for assigning personal data rights and protections. It should be noted that the implementation of these data rights and protections require extensive institutional and regulatory capacities that developing economies often lack. There is also a case for treating data as a form of commons, as the greatest value for data comes from understanding the relationships between data.¹⁵ The commonality of both perspectives is that data comes with externalities both positive and negative.

To better understand the problem of valuing data, we return to the original analogy of data as the new oil; data derives its value from being processed into information that drives production, paralleled by the extraction of energy and petrochemicals from oil. The analogy to oil might explain why there is incentive for firms and countries to hoard data or prevent data transfers. However, this perspective fails to recognise one fundamental property of data that wildly differs from oil. Data is nonrival. It is upon this property that the already shaky analogy to oil breaks down fully.

¹⁴ See Jones and Tonetti (2020).

¹⁵ See UNCTAD (2019) Chapter 2.

A non-rival good in economics is one that does not diminish when it is used. In this case, data is a factor of production that is nonrival; it is, in theory, infinitely reusable. One party using a dataset for analysis to generate information will not diminish the dataset, preventing another user from using the same dataset. The contents of this book are the clearest example of this; the data were largely from publicly available sources that are also used by many others for a myriad of purposes none of which actively “uses up” the data. Compare this to a rival good like oil, once a certain unit of oil is processed into energy, it can no longer be reused.

This non-rival property significantly complicates the already problematic issues of measurements and policy formation arising from a lack of clear definitions. In theory, data is infinitely reusable at low marginal costs, making evaluation of a value based on potential values high impossible.¹⁶ The policy implications of this property is that there is potentially increasingly higher economic benefits from broadly using data across firms in spite of personal privacy and security concerns. Firms on the other hand may choose to hoard data in an attempt to avoid competition, thus diminishing the potential economic benefits of the data.¹⁷ This also brings with it notable downsides to the firms for it is costly to store and process large volumes of data. Data centers are highly energy intensive and the unnecessary hoarding of data may well be detrimental to both economic and business performance. A key example of this in practice is the moratorium on new data center developments from 2019-2022 in the data center hub of Singapore. This was implemented on the grounds of energy and sustainability concerns.¹⁸ The end of the moratorium on new data centers in Singapore came with a pilot program to improve the sustainability of data centers.¹⁹

There remains a substantial body of unaddressed concepts around data but for the purposes of this study, the above, hopefully, serves as sufficient grounding for readers to engage the issue of cross-border data flows. The key takeaway being, data is a resource that brings with it significant potential economic benefits, accompanied by risks and costs that are difficult to evaluate. Some of the key properties of data identified are, firstly, data is a resource that has little inherent value until it is analysed and *information* extracted. Secondly, data is non-rival as a resource, this enables theoretically unlimited potential users and uses at low marginal cost. Thirdly, the unnecessary hoarding of data comes at significant costs. Lastly, ambiguity surrounding data, *ownership* and the potential value of data makes understanding the trade-offs between economic benefits, costs and other concerns such as privacy and security difficult.

1.3.2 Key Concepts in Cross-Border Data Flows

Having built a workable understanding of data and its key properties, we now move onto the issue cross-border data flows. As eluded to in the previous section, the phenomenon of digitalisation is a global one. Based on ITU statistics, the annual international bandwidth usage globally tripled from 405Tbit/s in 2018 to 1,229 Tbits/s in 2022. Much of this is enabled by a handful of global digital platforms such as Google, Apple and Alibaba.²⁰ The flows of data across borders now

¹⁶ See Nguyen and Paczos (2020).

¹⁷ See Jones and Tonetti (2020).

¹⁸ See UNCTAD (2021a) box I.4. for more on the energy consumption of data centers.

¹⁹ See IMDA (2022).

²⁰ See UNCTAD 2019.

underpin much of international economic activity as multinationals collect, transfer, aggregate and utilise data from a myriad of sources, enabling the proliferation of a whole range of new digital products and services.²¹ Take for example, e-commerce. The globalised nature of the internet has enabled producers and consumers across international borders to transact, giving both access to a wider market by significantly lowering the cost of information needed to operate cross-borders. In the process of which, the platform providers transmit all manner of data including payments, search data and even personal data such as addresses between borders to enable the transaction. The e-commerce platform may then transform the data generated through transactions to create valuable market information for sale or sell direct access to the data, all of which may be transmitted globally through the internet rapidly and repeatedly thanks to the non-rival property of data.

Returning to the issue of definitions, once again, there is a lack of clear understanding as to what constitutes cross-border data flows.²² To illustrate why, consider the user of a social media platform that holds its entire data infrastructure outside national borders or “offshore”. In this example, the data is generated as a product of the user interacting with an offshore server. Is the data then to be considered belonging to the location of the user, the location of the server or to the owners of the servers who may be in a third location? This question is inevitably tied to the earlier discussion on *ownership* of data. In the absence of any clear and globally accepted standard, what then ultimately matters is who has *access* to and control over the data such that value can be created.

The issue of *access* is fundamental to the discussion on development, particularly as the bulk of the international bandwidth usage quoted in the earlier paragraphs are centred on high-income economies and their dominant major global platforms. Developing countries risk losing much of the value of their data if they are unable to *access* and *utilise* data, furthering the developmental divide. On the other hand, the issues pertaining to privacy and security also take on increasingly complex dimensions in a globalised environment, particularly for developing economies with limited institutional capacity.

There are economic arguments for governments to mandate that data be stored locally to foster development of the local digital economy. These parallel the rationale for protectionism in traditional trade by providing local firms preferential access to the key resource and local markets. Another consideration is speed of transmission or latency; the transmission of large volumes of data needed for high-value analysis requires significant time, though it is shorter when closer to the data centre. The localisation of data within a local data centre would in theory give local firms a speed advantage. To be clear, data localisation does not necessarily preclude cross-border data flows. The restrictiveness of cross-border data flows exist on a spectrum with the extremes being strict localisation and free flows, as we will elaborate upon in the next section. The non-rival property of data means that a copy of the data can be stored locally while simultaneously transmitted offshore. Non-rivalry also entails that it is possible for developing economies to leverage on external sources of data to create value.

The issue of *utilisation* brings challenges of its own and is often intertwined with the issue of *access*. The core of this lies in the process of extracting *information* and capturing value from it. The use of information to create value is not a new concept; this has long been embedded in the

²¹ Ibid.

²² See UNCTAD (2021a) and UNDP (2021).

ideas and process of economic development. Without resorting to the need for abstract concepts and models, the global recognition of the need for education in the process of development is the clearest demonstration of this. What is different is the digitalisation of the process. The proliferation of digital data has brought with it key changes to traditional understanding. Digital data requires significant capital investment to collect, process, store and analyse. This applies to both physical capital and human capital. This leads to a high degree of information asymmetries as only those with the capacities to provide both are able to obtain value.²³ This may explain the high degree of concentration in international digital companies and data flows observed earlier as information asymmetries grant market power.

In the context of cross-border data flows, at the extremes in consideration of both *access* and *utilisation*, the risk is that developing economies become simply the suppliers of data, with little room for higher value-added activities. To illustrate, recall that much of the international data flows are concentrated in the hands of a small group of major global companies, largely from developed economies. A restriction of data flows out of these developed economies would potentially cut developing economies off from their own data. The preventing of extraction of information that is of high relevance to the local context has severe implications for the development of local capabilities. Even without such a restriction, developing economies that lack the capital to benefit from data would still be limited to low value data activities.

However, there has been limited evidence to support the case for data localisation creating significant value for developing economies.²⁴ Part of the issue is the cost of data localisation, as elaborated in the previous section; it is costly for firms to operate data centres. One notable example is the closure of Yahoo's services in China citing the "increasingly challenging business and legal environment in China" following new data protection policies.²⁵ Excessive restrictions on cross-border data flows risks cutting off micro, small and medium firms from affordably accessing key services such as cloud storage and cloud computing or in the context of the earlier e-commerce example, from reaching global markets, resulting in adverse developmental outcomes instead.²⁶ Developing economies may yet lack sufficient domestic digital infrastructure and capacity to provide a viable alternative to global firms.²⁷

Digital infrastructure is thus another key issue in considerations of cross-border data flows for development. In this regard, attention must be paid to preserving *interoperability* to ensure that desirable levels of cross-border data flows can be achieved. Notably, the provision of digital infrastructure also involves more than the issue of hardware such as submarine cables. It extends to issues such as common data standards, cybersecurity and governance.²⁸ In the realm of hardware interoperability, the escalation of the US-China competition risks fragmenting future technological developments. This has the consequence of diminishing the potential value of investments in the digital economy by limiting the range of potential global partners or raising the costs of operating across borders.

A failure to adopt commonly or globally acceptable standards on the governance of cross-border data flows also risks similar outcomes. At present time, the issue is largely being dealt

²³ See Ciuriak (2018).

²⁴ See Aaronson (2019) and UNCTAD(2021a).

²⁵ See Horwitz and Goh (2021).

²⁶ See UNDP (2021).

²⁷ See Chapter 3 for more on the disparity in digital capacities between ASEAN+ economies.

²⁸ See UNDP (2021).

with in the realm of plurilateral or multilateral trade agreements such as the CPTPP as economies work to reconcile local or unilateral digital policies with those of likeminded partners. Currently, this is not a sufficient safeguard against the risk of a fragmented digital ecosystem. Short of a global standard, the practice simply ensures that parties within agreements maintain **within bloc interoperability**.

Ultimately, it is incumbent upon individual jurisdictions to determine what is an acceptable level of cross-border data flows in consideration of the various trade-offs and properties discussed. In general, there appears to be a growing consensus globally towards the principles of both enabling cross-border data flows and safeguarding data, some of the policy instruments currently in play will be discussed subsequently.

1.3.3 Cross-Border Data Policy Instruments

The body of cross-border data policy instruments can be loosely grouped into two categories, domestic and international. Domestic regulations refer to laws and regulations imposed by individual governing jurisdictions, examples of these include the Personal Data Protection Acts (PDPA) of Malaysia, Singapore and Thailand as well as the General Data Protection Regulation (GDPR) of the European Union (EU). They are typically attempts to govern domestic data use, though provisions may be included with an eye to cross-border data. International instruments are typically agreements between jurisdictions towards common policies.

This section will make extensive reference to the UNCTAD (2021a) mapping exercise of cross-border data flow policies. The UNCTAD (2021a) classifies policy regimes in terms of level of restrictiveness. The definitions of the levels of restrictiveness are as follows:

- *Strict localisation* refers to a legal requirement to store and/or process data in the country, and may potentially include a complete prohibition on cross-border data transfers (even for the purposes of processing).
- *Partial localisation* refers to a legal requirement to store data locally, but does not include a prohibition on transferring or storing copies of the data abroad, although specific compliance requirements maybe imposed for cross-border data transfer and storage.
- A *conditional transfer* requirement means that data can be transferred abroad subject to the data processor complying with specified regulatory requirements. Depending on the design of these compliance requirements, conditional transfers may be categorised as *hard*, *intermediate* or *soft*.
- “*free flow of data*” typically refers to regulations that do not impose any specific restrictions on cross-border data flows, although the regulations may contain rules for ex post accountability for companies.

The categories of unilateral regulatory approaches are defined as follows:²⁹

- A *light-touch approach* implies that all data, including personal data, can generally flow freely across borders with minimal regulatory requirements (if any), and thus relates to measures with the least restrictions on cross-border data flows, i.e. free flow of data. Countries that adopt a light-touch approach may still impose certain exceptional restrictions on cross-border data flows, e.g. in sensitive sectors such as defence or health.
- A *prescriptive regulatory approach* entails that cross-border data flows are subject to rigorous compliance requirements – for instance, in domestic data protection/privacy laws. Most countries in this category tend to focus on personal data. The prescriptive approach falls in the middle of the regulatory spectrum, and typically comprises conditional transfer requirements.
- A *restrictive regulatory approach* means a complete or partial ban on cross-border data flows for reasons of public security, national security and establishing absolute political control over the domestic Internet, including the data accessed and produced by the citizens, often dubbed “data sovereignty”.
- A *guarded approach*, emphasizing the unequal economic impact of unhindered global digitalisation of the economy, thereby focusing on regulatory measures necessary to enable meaningful domestic economic gains from the digital economy. Both the restrictive and guarded approaches tend to focus primarily on localisation regulations, although their predominant policy rationales are quite different.

The framework is illustrated in Figure 1.3. In practice, it is difficult to neatly categorise the various national policy approaches. For instance, a prescriptive regulatory approach with highly onerous compliance requirements may well be restrictive in practice. It is important to note that there is no singularly correct regulatory approach; the preceding sections make clear that there are indeterminate but significant trade-offs involved in the consideration of data related issues.

Figure 1.3 UNCTAD Cross-Border Data Flow Framework



Source: Asia Competitiveness Institute based on UNCTAD (2021a)

In the area of international instruments addressing cross-border data flows, there is currently no single globally accepted agreement. In its place, a wide array of different instruments have emerged across different groupings. These range from the international agreements illustrated in Figure 1.4 to the regional guidelines, frameworks, model contract clauses, standards, etc. in

²⁹ The UNDP report uses the term “national”. For clarity, this study applies the term “domestic” instead to refer to regulations and policies applied by and within governmental jurisdictions; this also allows for better consideration of supra-national blocs like the EU and potentially, for sub-national regulatory bodies like state laws.

Figure 1.5, all with differing levels of commitment required from parties. UNDP (2021) provides extensive and detailed treatment of the various technical aspects of specific policy instruments. As the goal of this study is to provide some basic foundational understanding, we will not delve into these deeper applications at present; subsequent sections will only deal with those that are being applied in ASEAN. The common point for understanding is that the participants in these international instruments recognise the potential value of cross-border data flows as well as downsides to be managed. These agreements thus serve as platforms for likeminded parties to secure mutually acceptable levels of protection and commitments to enabling cross-border data flows.

This patchwork approach brings with it some notable downsides. Firstly, it risks the overall *interoperability* of the global digital infrastructure as groupings emerge. The impact of such a fragmentation will likely most affect developing economies that are ill equipped to operate multiple sets of digital infrastructure. The focus of these instruments are also often times narrow, this risks missing out on much of the potential economic or social costs and benefits discussed in previous sections.

Figure 1.4 International and Regional Agreements Dealing with Data Flows



Source: UNCTAD (2021a)

Figure 1.5 WEF Osaka Track Architecture for Data Governance

		Relevant pillars for international cooperation on data flows			
		Transfer mechanisms	Legal and regulatory cooperation	Technical standards and industrial cooperation	International trade rules
Universal availability	Unilateral openness (no restrictions imposed)	Binding international treaties on legal harmonization (Budapest Convention)	Standard-setting in multistakeholder forums (ISO/IEC, IEEE, 3GPP, among others)	World Trade Organization rules (case law, General Agreement on Trade in Services, and Reference Paper and Annex on Telecommunications) with privacy and other exceptions, along with two-tier test (for least-trade restrictiveness and necessity)	
	User consent and other legitimate grounds for data transfer (e.g. contractual reasons, public interest)				
Limited participation	Accountability-based mechanisms (binding corporate rules and standard contract clauses)	Regional model laws on e-commerce, cross-border data flows and privacy (EU, ASEAN)	National and regional standard-setting, e.g. United Nations Economic Commission for Europe	Ongoing World Trade Organization Joint Statement Initiative negotiations	
	Adequacy decisions to jurisdictions with adequate protection, e.g. EU-Japan reciprocal adequacy, adequacy decision on the EU-US Privacy Shield				
	Certification programmes (under government oversight), e.g. Asia-Pacific Economic Cooperation Cross-Border Privacy Rules				
	"Trusted" entity schemes				
	Principles and guidelines on data flows and privacy (OECD Privacy Guidelines, APEC Privacy Framework)	Exclusive "data spaces" initiatives and consortium	Digital trade commitments (e.g. data flow, prohibition on localization and source code access disciplines derived from the Comprehensive and Progressive Agreement for Trans-Pacific Partnership - CPTPP) developed in the Japan-US Digital Trade Agreement, the United States-Mexico-Canada Agreement (USMCA), EU texts, the Digital Economy Partnership Agreement - DEPA, with varying exceptions		
	Legal assistance through mutual legal assistance treaties or international conventions	Bilateral mutual recognition agreements or equivalence decisions			
	Judicial redress and recourse offered to a list of countries under domestic law				
	Diplomatic instruments and strategic partnerships (e.g. Australia-Singapore Digital Economy Agreement)				

Source: World Economic Forum (2020)

1.3.4 The ASEAN Cross-Border Data Regulatory Environment

The overall data regulatory landscape of ASEAN comprises of a broad array of different domestic and international instruments. Section 1.2 has illustrated that this extends into broader issues of e-Governance as well as the broader digital economy. For a more in-depth analysis, readers should refer to Chapter 3. This section centres on the ASEAN context, specifically, the policies and mechanisms that explicitly deal with cross-border data flows adopted by ASEAN as a bloc. This should be read with the understanding that some related policies and issues will necessarily be insufficiently addressed.

ASEAN as a bloc has collectively endorsed the idea of cross-border data flows being economically beneficial. The cross-border flow of data must, however, first be accompanied by adequate levels of data protections within a circle of trusted partners. To quote one of the desired outcomes in the Work Plan on the Implementation of ASEAN Agreement on Electronic Commerce endorsed in September 2021³⁰:

A4. Cross-Border Transfer of Information:

“Desired Outcome: By 2025, all AMS, where possible, will make progress towards unimpeded cross-border flow of data used for business purposes subject to the appropriate safeguards, including by successfully implementing the ASEAN Cross Border Data Flow Mechanism

³⁰ See ASEAN (2021a).

(CBDFM) comprising Model Contractual Clauses and Certification, while continuing to study and harmonise practices and interoperate with other cross border data transfer mechanisms.”

This draws upon the strategic priorities and principles found in the earlier ASEAN Framework on Digital Data Governance.³¹ A reader familiar with ASEAN will recognise from the above quote the “spaghetti bowl” of ASEAN policies on display as it makes extensive reference to other policy documents, notes the differences in existing approaches adopted by AMS, makes exceptions for domestic laws and sets an aspiration towards a common standard. It is not for no reason that Figure 1.4 simply lists the ASEAN initiatives as “ASEAN data-related frameworks” without explicit mention of the specifics. Complicating this is the membership of AMS in other international groupings and agreements such as the APEC privacy initiatives and CPTPP. What makes the Workplan particularly interesting is that the AMS have also laid out a concrete set of Key Performance Indicators (KPIs) within it that identify the priorities of AMS. These KPIs draw upon the indicators of the ASEAN Digital Integration Index (ADII).³²

With regard to Cross-Border Transfers of Information, the KPIs or desired outcome metrics are as follows:

- 1) Improvement in the score of ADII Indicator 6.4 (Degree to which a government is considered responsive to disruption and change) and 6.5 (Degree to which a legal framework is considered conducive for digital innovation).
- 2) Improvement in the score of ADII Indicator 2.1 (Degree to which data protection measures are in place)
- 3) Improvement of Mapping Study Legislative Coverage, The Mapping Study assesses the adequacy of the legal and regulatory framework for ensuring free flow of data across borders.

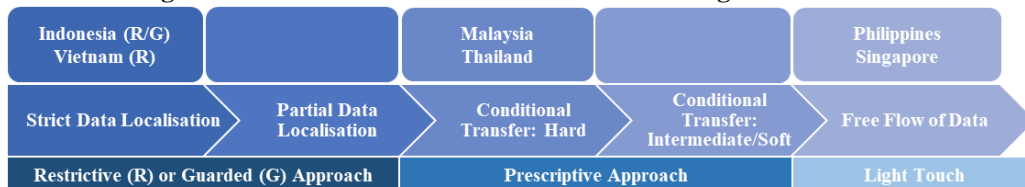
The three KPIs make clear what the AMS consider priorities in the process of enabling cross-border data flows. We start with the third KPI – Improvement of Mapping Study Legislative Coverage as it provides a baseline understanding of the current cross-border data flow regimes within AMS. Unfortunately, the detailed results of the Mapping Study are not publicly available for reference. It is noted in the Workplan that only two AMS have adequate legal and regulatory frameworks for ensuring free flow of data. The other eight AMS are partially adequate.

In the absence of the ASEAN Mapping Study, we refer to the UNCTAD (2021a) mapping study, which also includes six AMS economies. Here in Figure 1.6, we observe that only the Philippines and Singapore are considered to have regimes which allow for free flow of data. The other four AMS (Indonesia, Malaysia, Thailand, and Vietnam) take more restrictive approaches. Of the four AMS not in covered in Figure 1.6 we can refer to Table 1.4. These are Brunei, Cambodia, Laos and Myanmar, all which currently lack critical pieces of data protection legislation. In view of this, it would be inadvisable for these four AMS to have a free flow of data regime at present, especially in consideration of KPI 2.

³¹ See ASEAN (2018).

³² See ASEAN Coordinating Committee on Electronic Commerce (2021).

Figure 1.6 Restrictiveness of Cross-border Data Regimes in ASEAN



Source: Asia Competitiveness Institute based on UNCTAD (2021a)

KPI 2 – Improvement in the score of ADII Indicator 2.1 Degree to which data protection measures are in place, makes clear that data protection is a priority consideration for the AMS in regulating cross-border data flows. This particular indicator draws upon the TRPC Data Protection Index, AMS performance is shown in Table 1.5. It reinforces the earlier point regarding Brunei, Cambodia, Laos and Myanmar. Interestingly Brunei performs significantly better than some of the AMS mapped in Figure 1.6. What is critically lacking is that the data protection in Brunei is not yet a law; at the time of the study, it remains a policy.

Table 1.5 AMS Scores in TRPC Data Protection Index, 2020

Country	Score
Brunei	7.8
Cambodia	0.6
Indonesia	6.4
Lao PDR	0.8
Malaysia	8.3
Myanmar	0.3
Philippines	7.8
Singapore	9.2
Thailand	8.3
Vietnam	2.2

Note: Scores are on a scale between 0 – 10 with 10 being the highest level of data protection

Source: TRPC Pte Ltd (2020)

KPI 1 – Improvement in the score of ADII Indicator 6.4 Degree to which a government is considered responsive to disruption and change and 6.5 Degree to which a legal framework is considered conducive for digital innovation. These deal with the institutional capacities of the AMS in response to developments in the digital economy. Gaps in the institutional capacities of AMS are longstanding issues studied in the ASEAN Annual Competitiveness Index and the ASEAN Digital Competitiveness Index in Chapters 2 and 3 respectively. What is important to keep in mind is the earlier discussions in Section 1.3.1 and 1.3.2 on the difficulties faced by developing economies in implementing data protection policies due to limited institutional capacities.

A further point of interest is objective A4.2: “Keep the Cross-Border Data Flow Mechanism/Model Contract Clauses in compliance with international and other regional requirements and best practices to ensure cross-border interoperability of data transfers beyond the ASEAN or prepare additional data transfer guidelines, if needed.” The AMS recognise the value of maintaining *interoperability* with systems both within and beyond ASEAN. In line with this, ASEAN and the EU have moved to align their respective model contract clauses by

developing an ASEAN-EU Joint Guide on Model Contractual Clauses for Data Transfers.³³ One should note that most AMS including the Philippines and Singapore, and key partner economies such as Australia, China and Japan, maintain some level of data localisation requirements for personal and other types of sensitive data, highlighting a common concern about privacy and data security.³⁴ Taken collectively, the KPIs, objectives and other ASEAN documents highlight that the priority for AMS is to develop the institutional capacity needed to address the negative externalities of cross-border data flows before allowing *access* for trusted partners.

The present agenda for ASEAN has also been identified within the Work Plan, specifically, the development and “implementing the ASEAN Cross Border Data Flow Mechanism (CBDFM) comprising Model Contractual Clauses and Certification”. These are practical mechanisms that are of direct relevance to day to day data users.

Of these, the ASEAN Model Contractual Clauses (MCCs) were endorsed as of January 2021. MCCs are contractual terms that private parties may adopt as a legal basis for the transfer of data cross-borders. These allow users to set out responsibilities, requirements and obligations regarding personal data protection in line with legal requirements for the cross-border transfer of data.

While the MCCs do provide a high degree of flexibility and a legally enforceable way to ensure comparable levels of data protections, there are downsides. The use of MCCs require that the users be able to understand and evaluate the legal requirements of the jurisdictions in question as well as their adequacy, requiring a high degree of legal and technical expertise that many private parties do not possess. This costly exercise also does not deal with the practical issues of ensuring conformity and execution between parties and of enforceability across borders.³⁵

The ASEAN MMCs follow the principles of the ASEAN Framework on Personal Data Protection (2016)³⁶:

- 1) Lawful/Legal Basis for Collection, Use and Disclosure: The Data Exporter warrants that the data is collected, used, disclosed and transferred in accordance with applicable AMS law. In the absence of such law, Data Subjects have been notified and given consent to the purposes, where reasonable and practicable.
- 2) Baseline Data Protection Clauses: The Data Importer will process the data in accordance with baseline clauses derived from the ASEAN Framework on Personal Data Protection (2016) principles related to Collection, Notification, Purpose, Accuracy, Security Safeguards, Access and Correction, Transfers, Retention and Accountability.
- 3) Data Breach Notification: The Data Importer shall notify the relevant authorities and Data Exporter without undue delay or within a reasonable time specified by the parties if it becomes aware of any loss or unauthorised use, copying, modification, disclosure, destruction of, or access to, personal data under the contract.

It is important to note that usage of the ASEAN MCCs are voluntary and users are free to use other contractual templates or make modifications to suit different local data protection requirements. This is a critical point as it allows the user a legally recognised means of navigating the differing data protection regimes within AMS to maintain cross-border data flows. By having

³³ The Guide has yet to be completed nor have details been made public, see ASEAN (2023) for declaration of its ongoing status.

³⁴ See Deloitte SEA (2023)

³⁵ See UNDP (2021)

³⁶ See ASEAN (2016) and ASEAN (2021b)

an agreement across the jurisdictions of the AMS, the ASEAN MCCs also address to some extent the weaknesses of MCCs in terms of enforceability and difficulty of assessing adequacy across borders. The ASEAN MCCs are also with the APEC Privacy Framework or OECD Privacy Guidelines. Users may use the clauses within the MCC to fulfil the obligations for countries with data protection regimes based on the above.³⁷ ASEAN has also emphasised that the ASEAN MCCs are a living document that is intended to change as the regulatory regimes develop.

Certifications is another mechanism that the AMS have formally announced. While the exact details for ASEAN are currently not available, some understanding on certifications in general can be discussed. Certifications provide an indication that an organisation complies with a set of standards regarding data protections. Japan and South Korea have adopted certification systems that help businesses prove that they comply with national data protection regimes. The use of certifications enables parties to assess the data protection standards of counterparts in a more cost-effective manner by having the certifying authority provide the expertise for assessments.³⁸ This address one of the key issues of the MCCs.

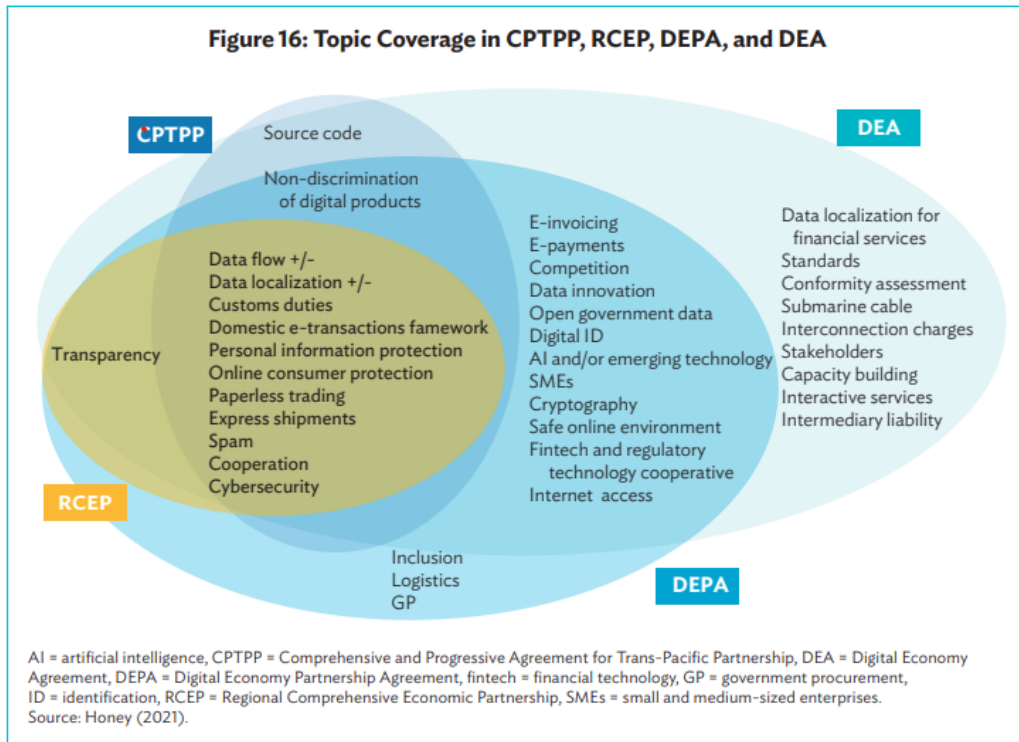
In considering the ASEAN frameworks and discussions above, one should keep in mind that they are, at present, limited by voluntary participation and allow for domestic regulatory autonomy. Regardless, the AMS through the ASEAN CBDFM have made significant progress by taking concrete practical steps to enable cross-border flows by cooperating on usable mechanisms such as the ASEAN MCC and the forthcoming Certifications system. The AMS have also signalled a willingness to maintain interoperability beyond ASEAN by having APEC and OECD compliant mechanisms, and in the work-in-progress ASEAN-EU Joint Guide on Model Contractual Clauses for Data Transfers.

A further body of agreements that ASEAN and individual AMS are party-to are the trade-related agreements. These include the RCEP, CPTPP, Digital Economy Partnership Agreement (DEPA) and Digital Economy Agreements (DEAs). These are broader agreements that deal with the wider issues of the digital economy and trade. An overview of these agreements may be found in Figure 1.7, extracted from an ADB(2022a) report. We observe that the issue of data flows is central to all these agreements. The same report also notes that it is the most contentious issue in negotiations.

³⁷ See PDPC (2021).

³⁸ See UNDP (2021).

Figure 1.7 Topic Coverage in CPTPP, RCEP, DEPA, and DEA



Source: ADB (2022a)

The key point for readers to understand is that the disciplines of these agreements are binding, compared to the ASEAN policy documents and mechanisms previously discussed. Parties to these agreements are broadly required to put in place policies and regulations in-line with the terms agreed to within the agreement. However, they typically do not specify exact mechanisms for practical implementation or make extensive exceptions as in the case of the RCEP. These agreements are a binding way for parties to maintain some level of regulatory coherence and maintain interoperability.³⁹ The agreements also often include measures to build capabilities within parties in key technologies and to promote utilisation of digital technologies and the digital economy more broadly.

1.4 Concluding Remarks

The case study on cross-border data flows has shed some light on one of the fundamental issues of operating in a globalised digital economy. As first discussed in the opening sections of this chapter, ASEAN is a diverse grouping of economies with aspirations towards furthering the development of local and regional economies through the use of digital technologies.

In laying out some of the properties of data and cross-border data flows, some of the key trade-offs in cross-border data flows have been highlighted for consideration when examining cross-border data flow policies. These include the indeterminate potential economic value of data as well as considerations for privacy, sovereignty and security. The case has been made that data,

³⁹ For more on DEPs/DEAs please see Cheung and Xie (2023).

with its non-rival property, should not be considered in the same vein as traditional economic resources and require a different treatment, the core issues being in the ability of developing economies to access and utilise data to create valuable information.

The policy regimes in ASEAN are currently diverse and contain many overlapping documents, frameworks and regulations in the typical ASEAN “spaghetti bowl” fashion. Nevertheless, in spite of differences in institutional capacity, regulatory strictness and levels of development, AMS and other likeminded parties have broadly agreed that cross-border data flows have the potential to be developmentally positive provided sufficient data protection safeguards are in place. The AMS have taken major key steps to ensure that interoperability is maintained across trusted partners as far as possible, most notably by issuing practical mechanisms such as the ASEAN MCCs. These will serve as solid grounding for further development of the ASEAN CBDF and also the upcoming ASEAN Digital Economy Framework Agreement. The region of ASEAN is fast emerging as the centre of a growing international consensus on cross-border data flows embodied by a growing pool of overlapping international agreements and frameworks

While the discussions thus far have mainly dealt with the issue of ensuring equitable access to data for development, this may well be the easy part. Equally, if not more important, is the issue of utilisation, this will require extensive treatment in a variety of domains such as overall economic development, competitiveness, education and infrastructure. Chapter 2 will shed some light on the issues of broader economic development and competitiveness in ASEAN through ACI’s Annual Competitiveness Analysis of ASEAN. In this edition, we have significantly revamped the content to provide a deeper understanding of key developmental policies within individual AMS in the lead-up to the COVID-19 pandemic. This is intended to serve as grounding for ongoing work taking into account the serious global upheavals since 2020. Chapter 3 presents the findings of the second edition of the Annual Digital Competitiveness Analysis of ASEAN+ economies. This will shed light on the key digital economic issues faced by the AMS and key Asian partner economies. Most importantly it deals directly with the issue of utilisation by examining the role of building a trusted environment in promoting the utilisation of digital technologies.

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