

Indonesia and its Digital Economy:

A Sub-national 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

Vision and Mission

- 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

Preface

Amidst the ongoing global challenges of the COVID-19 pandemic and geopolitical uncertainty, Indonesia's economy appears to be resilient with a GDP growth of 5.3% in 2022. Domestically, total domestic consumption has increased by 4.93%. Internationally, the total trade volume has increased from USD 427.80 billion to USD 529.43 billion.

While most studies on the Indonesian economy are focused on the national level, the Asia Competitiveness Institute (ACI) at the Lee Kuan Yew School of Public Policy (LKYSPP), National University of Singapore (NUS) recognises the need to focus greater attention on the sub-national level in Indonesia. To achieve this goal, the institute has conducted annual empirical studies that analyse and rank the competitiveness of Indonesia's 34 provincial economies. This study aims to help policymakers understand the strengths and weaknesses of provinces to improve competitiveness at the provincial and regional levels.

This tenth edition of the book continues to track the competitiveness of Indonesia's sub-national economies. Additionally, this year's edition features ACI's analysis of Indonesia's digital competitiveness. Indonesia's digital economy is projected to be among the fastest growing and largest digital economies in the ASEAN region. The pandemic-induced digitalisation has brought significant growth to Indonesia's digital economy, with the Gross Merchandise Value (GMV) increasing from USD 41 billion in 2019 to USD 77 billion in 2022. The demand for e-commerce activity has also increased and facilitated the usage of digital payments. However, as an emerging economy, the country continues to grapple with regional disparities from inadequate infrastructure and uneven human capital development. The urban-rural gap in the number of internet users has also increased from 14.5 to 22.5 percentage points between 2011 and 2021.

This book is timely in providing details on subnational competitiveness so that local governments can address unequal digital development at an early stage. I am confident that the insights from this book will provide valuable guidance to policymakers in addressing disparity and enhancing the country's overall economic growth.

Professor Paul Cheung

Director, Asia Competitiveness Institute

Lee Kuan Yew School of Public Policy

National University of Singapore

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Executive Summary

Indonesia has shown progressive recovery from the pandemic since 2021. Amidst the global economic uncertainties that occurred throughout 2022, Indonesia's economy remained resilient with GDP growth of 5.3%. The growth was primarily attributed to two factors: strong domestic demand and commodity exports. Due to the government's decision to relax mobility restrictions (PPKM), domestic demand has increased and private consumption has grown by 4.93% (y-o-y) in 2022. Meanwhile, the rise in global commodity prices and demand, aided by the implementation of a zero-tariff policy for Crude Palm Oil (CPO), has resulted in strong commodity export growth for Indonesia. As a result, the current account surplus reached a peak of US\$ 13.22 billion in 2022, a record high since 2017.

The study by ACI examines the competitiveness of the 34 sub-national Indonesian economies during the country's recovery phase. **Chapter 1** of the book provides an overview of the country's socioeconomic performance amidst the global economic uncertainties of 2022 as well as its economic trajectory for 2023. This chapter guides readers to identify the main sectors that have contributed to Indonesia's growth and to understand the country's key economic development indicators before and after the pandemic. Finally, a background study of Indonesia's digital landscape is presented to support ACI's new thematic research on digital competitiveness.

Chapter 2 provides an annual update on Indonesia's provincial competitiveness analysis. According to the annual competitiveness ranking of the country's 34 provinces, DKI Jakarta remained the top-ranked province in the competitiveness chart. Its dominance can be seen in its superior performance in all environments, except for Quality of Life and Infrastructure Development (QLID). East Kalimantan has also shown improvement, moving up from the fifth position in 2020 to the fourth position in 2021. This signals a solid foundation for moving the capital city to East Kalimantan in the near future. This chapter concludes with a case study of two provinces, one of which – Bali – has shown steady improvement and the other – South Sulawesi – deterioration, in overall competitiveness rankings between 2013 and 2022. The case study specifically provides an overview of two key drivers that contribute to competitiveness: human capital and infrastructure.

A discussion of the competitiveness of the different regions of Indonesia is presented in **Chapter 3**. According to the overall regional competitiveness results, there is a significant disparity between the Western and Eastern Indonesian regions, with Java and Sumatra continuing to hold the top two positions, while Maluku-Papua remains at the bottom. Despite Java's dominance, the Kalimantan region offers a higher quality of life, as demonstrated by its superiority in terms of quality of life indicators. The positive attributes of Kalimantan provide a solid foundation and may have influenced the Indonesian Government's decision to relocate its capital to East Kalimantan. However, the Kalimantan region remains challenged by intra-regional disparities. A case study

delves into details of provincial development in the region and identifies several key factors driving such disparities, such as infrastructure development, labour productivity, and geographic conditions.

A thematic research for this edition is presented in **Chapter 4**, which examines the digital competitiveness of the 34 Indonesian sub-national economies. According to the study, despite growing digital adoption and a thriving digital economy in Indonesia, the digital disparity is worsening, especially between Java and non-Java regions and between urban and rural areas. This chapter also features a case study on Central Kalimantan and North Sulawesi. According to the study, Central Kalimantan performs well in ACI's annual competitiveness ranking (ACA) but not in the Digital Competitiveness Analysis (DCA). North Sulawesi, on the other hand, excels in terms of DCA, but performs poorly with respect to ACA. The study found that connectivity infrastructure and quality of education are key issues that Central Kalimantan needs to tackle in order to improve its digital competitiveness. Meanwhile, North Sulawesi needs to realise the welfare effect of digitalisation by leveraging the potential of e-commerce activity and mobile payment service.

Acknowledgments

This year's Annual Competitiveness Analysis and Socio-Economic Development of Indonesian Sub-National Economies is supervised by Dr Zhang Xuyao and led by Bima Satria and Hilda Kurniawati.

In this book, we have updated previous sub-national and regional competitiveness studies with the latest available data. Our comprehensive approach to measuring competitiveness takes into account different factors that collectively shape the ability of a nation or region to achieve substantial and inclusive economic development over a sustained period of time. In addition, we apply a novel approach to assigning weights in the form of Shapley values to test the robustness of the findings. Furthermore, we added digital competitiveness analysis of the 34 provinces to the book. We examine how each provinces performed in terms of digital outputs, digital infrastructure, core inputs, and digital utilisation.

This book would not have been possible without the support of our research and administrative colleagues. In particular, we would like to extend our sincere thanks to the competent and dedicated administrative team at ACI, including Cai Jiao Tracy, Nur Lyne PO Lai Yin, Dewi Jelina Ayu Binte Johari, and Atiqah Binte Rahmat. We would also like to note with great appreciation the contributions from ACI Director Professor Paul Cheung and the research staff – Dr Xie Taojun, Dr Ammu George, Dr Lucas Shen, Dr Zhang Chi, Dr Banh Thi Hang, Dr Liu Jingting, Tan Kway Guan, Faith Tan Shih Yun, Fan Litianqi, Ge Yixuan, Li Jingwei, Ng Wee Yang, Rohanshi Vaid, Shubhangi Gupta, Ulrike Sengstschmid, and Yan Bowen.

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We would also like to thank our partners in Indonesia, Coordinating Ministry for Economic Affairs, Indonesian Employers Association (APINDO), Governor of Bali, Governor of Riau Islands, Regional Development Planning Agency (Bappeda) of the 34 provinces, and ACI's academic counterparts in the 34 provinces for their ongoing support and collaboration.

List of Abbreviations

3T	Disadvantaged, Frontier, Outermost Areas (<i>Daerah Tertinggal, Terdepan, dan Terluar</i>)
AFI	Attractiveness to Foreign Investors
APBN	State Budget (<i>Anggaran Pendapatan dan Belanja Negara</i>)
APBD	Local Government Budget (<i>Anggaran Pendapatan dan Belanja Daerah</i>)
ACI	Asia Competitiveness Institute
ACA	Annual Competitiveness Analysis
ASEAN	Association of Southeast Asian Nations
BAKTI	Telecommunications and Information Accessibility Agency (<i>Badan Aksesibilitas Telekomunikasi dan Informasi</i>)
BBPP	Agricultural Training Center (<i>Balai Besar Pelatihan Pertanian</i>)
BI	Central Bank of Indonesia (<i>Bank Indonesia</i>)
BI7DRR	BI 7-Day Reverse Repo Rate
BKPM	Investment Coordinating Board (<i>Badan Koordinasi Penanaman Modal</i>)
BLK	Technical and Vocational Education and Training (TVET) Center (<i>Balai Latihan Kerja</i>)
BLT	Village Fund Direct Cash Assistance (<i>Bantuan Langsung Tunai</i>)
BPMP	Education Quality Assurance Center (<i>Balai Penjaminan Mutu Pendidikan</i>)
BPS	Indonesia's Bureau of Statistics (<i>Badan Pusat Statistik</i>)
BRICS	Brazil, Russia, India, China, and South Africa
BRT	Buss Rapid Transit
BSPI	Indonesian Payment System Blueprint (<i>Blueprint Sistem Pembayaran Indonesia</i>)
BTS	Base Transceiver Stations
CAGR	Compound Annual Growth Rate
CI	Competitiveness Index
CI	Core Inputs
CLMV	Cambodia, Laos, Myanmar, and Vietnam
CPO	Crude Palm Oil
CRSRL	Competition, Regulatory Standards and Rule of Law
DCA	Digital Competitiveness Analysis
DI	Digital Infrastructure
DO	Digital Output
DU	Digital Utilisation
DKI	Special Capital Region (<i>Daerah Khusus Ibukota</i>)

ESDM	Ministry of Energy and Mineral Resources (<i>Kementerian Energi dan Sumber Daya Mineral</i>)
ETPD	Electronification of Local Government Transactions (<i>Elektronifikasi Transaksi Pemerintah Daerah</i>)
FBMC	Financial, Businesses and Manpower Conditions
FDBE	Financial Deepening and Business Efficiency
FDI	Foreign Direct Investment
FFR	Fed Funds Rate
GCI	Global Competitiveness Index
GDP	Gross Domestic Product
GIS	Government and Institutional Setting
GMV	Gross Merchandise Value
GPFS	Government Policies and Fiscal Sustainability
GRDP	Gross Regional Domestic Product
HBS	Hot Backup Satellite
HDI	Human Development Index
HIMBARA	State-Owned Bank Association (<i>Himpunan Bank Milik Negara</i>)
IDR	Indonesian Rupiah
ICT	Information and Communication Technology
IGL	Institutions, Governance and Leadership
IKN	Nusantara Capital City (<i>Ibu Kota Negara</i>)
IMD	International Institute for Management Development
IMF	International Monetary Fund
INDO- DAPOER	Indonesia Database for Policy and Economic Research
IPLT	Sewage Waste Treatment Plant (<i>Instalasi Pengolahan Lumpur Tinja</i>)
JKN	National Health Insurance (<i>Jaminan Kesehatan Nasional</i>)
K-12	From Kindergarten to 12th Grade
KOMINFO	Ministry of Telecommunications and Information (<i>Kementerian Komunikasi dan Informatika Republik Indonesia</i>)
LMF	Labour Market Flexibility
LPG	Liquified Petroleum Gas
ODSK	Local Operation to Alleviate Poverty (<i>Operasi Daerah Selesaikan Kemiskinan</i>)
PPKM	Restrictions on Community Activities (<i>Pemberlakuan Pembatasan Kegiatan Masyarakat</i>)
LKYSPP	Lee Kuan Yew School of Public Policy
MDR	Merchant Discount Rate
MINT	Mexico, Indonesia, Nigeria, and Turkey
MP3EI	Masterplan for Acceleration and Expansion of Indonesia's Economic Development 2011-2015
MRT	Mass Rapid Transit
MS	Macroeconomic Stability

MSMEs	Micro, Small, and Medium Enterprises
NPK	Nitrogen (N) Phosphorus (P) and Potassium (K)
OJK	Financial Services Authority (<i>Otoritas Jasa Keuangan</i>)
OTS	Openness to Trade and Services
PAD	Original Local Government Revenue (<i>Pendapatan Asli Daerah</i>)
PAUD	Pre-school Education (<i>Pendidikan Anak Usia Dini</i>)
PCR	Polymerase Chain Reaction
PDN	National Data Center (<i>Pusat Data Nasional</i>)
PEN	National Economic Recovery (<i>Pemulihan Ekonomi Nasional</i>)
PI	Physical Infrastructure
PKH	Family Hope Program (<i>Program Keluarga Harapan</i>)
PNBP	Non-tax State Revenue (<i>Penerimaan Negara Bukan Pajak</i>)
PP	Productivity and Performance
PPP	Public-Private Partnerships
PPU	Penajem Paser Utara <i>North Penajem Paser</i>
PSN	National Strategic Project (<i>Proyek Strategis Nasional</i>)
QLID	Quality of Life and Infrastructure Development
QRIS	QR Code Indonesian Standard
REV	Regional Economic Vibrancy
RPJMD	Regional Medium-Term Development Plan (<i>Rencana Pembangunan Jangka Menengah Daerah</i>)
RPJMN	National Medium-Term Development Plan (<i>Rencana Pembangunan Jangka Menengah Nasional</i>)
SATRIA	Greater Indonesia Satellite (<i>Satelit Indonesia Raya</i>)
SLESS	Standard of Living, Education and Social Stability
SPBE	Electronic-Based Government Systems (<i>Sistem Pemerintahan Berbasis Elektronik</i>)
SUPAS	Indonesian Intercensal Population Survey (<i>Survei Penduduk Antar Sensus</i>)
TKI	Indonesian Migrant Workers (<i>Tenaga Kerja Indonesia</i>)
TP2DD	Acceleration and Expansion of Regional Digitalisation Taskforce (<i>Tim Percepatan dan Perluasan Digitalisasi Daerah</i>)
TPAKD	Team for Acceleration of Regional Financial Access (<i>Tim Percepatan Akses Keuangan Daerah</i>)
USD	United States Dollar
VA	Volt Ampere
VAT	Value-added Tax
WCY	World Competitiveness Yearbook
WEF	World Economic Forum
y-o-y	year-on-year

List of Provinces

	Name of Province in English	Name of Province in Bahasa	Region
1	Aceh	Aceh	Sumatra
2	Bali	Bali	Bali-Nusa Tenggara
3	Bangka Belitung Islands	Kepulauan Bangka Belitung	Sumatra
4	Banten	Banten	Java
5	Bengkulu	Bengkulu	Sumatra
6	Central Java	Jawa Tengah	Java
7	Central Kalimantan	Kalimantan Tengah	Kalimantan
8	Central Sulawesi	Sulawesi Tengah	Sulawesi
9	DI Yogyakarta	DI Yogyakarta	Java
10	DKI Jakarta	DKI Jakarta	Java
11	East Java	Jawa Timur	Java
12	East Kalimantan	Kalimantan Timur	Kalimantan
13	East Nusa Tenggara	Nusa Tenggara Timur	Bali-Nusa Tenggara
14	Gorontalo	Gorontalo	Sulawesi
15	Jambi	Jambi	Sumatra
16	Lampung	Lampung	Sumatra
17	Maluku	Maluku	Maluku-Papua
18	North Kalimantan	Kalimantan Utara	Kalimantan
19	North Maluku	Maluku Utara	Maluku-Papua
20	North Sulawesi	Sulawesi Utara	Sulawesi
21	North Sumatra	Sumatera Utara	Sumatra
22	Papua	Papua	Maluku-Papua
23	Riau	Riau	Sumatra
24	Riau Islands	Kepulauan Riau	Sumatra
25	South Kalimantan	Kalimantan Selatan	Kalimantan
26	South Sulawesi	Sulawesi Selatan	Sulawesi
27	South Sumatra	Sumatera Selatan	Sumatra
28	Southeast Sulawesi	Sulawesi Tenggara	Sulawesi
29	West Java	Jawa Barat	Java
30	West Kalimantan	Kalimantan Barat	Kalimantan
31	West Nusa Tenggara	Nusa Tenggara Barat	Bali-Nusa Tenggara
32	West Papua	Papua Barat	Maluku-Papua
33	West Sulawesi	Sulawesi Barat	Sulawesi
34	West Sumatra	Sumatera Barat	Sumatra

Note: For analysis purposes, Bali is categorised as Java-Bali region in Chapter 4.

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Chapter 1

Year in Review: Indonesia in 2022

1.1 Structure and Content of the Book

In this book, we present an update of Indonesia's recent economic and social development and the results of Asia Competitiveness Institute's most recent series of studies on Indonesia's regional economies. This edition contains not only the annual competitiveness analysis and simulation studies for Indonesia's provinces and regions, but also the results of ACI's new thematic research on Digital Competitiveness in Indonesia. Along with a descriptive analysis, this book also features an in-depth analysis of the highlighted issues in each chapter, illustrated by case studies.

The book consists of four chapters, including this introductory chapter, which provides an overview of the structure and content of the book. The following is the summary and highlights of the next three chapters. As part of ACI's flagship research project, Chapter 2 presents an annual update of Indonesia's provincial competitiveness analysis. The index evaluates competitiveness as a composite of four environments, spanning: (i) Macroeconomic Stability (MS), (ii) Government and Institutional Setting (GIS), (iii) Financial, Businesses and Manpower Conditions (FBMC), and (iv) Quality of Life and Infrastructure Development (QLID). As part of this chapter, a case study is also presented of two provinces, one of which – Bali – has shown steady improvement and the other – South Sulawesi – deterioration, between 2014 and 2022.

As shown in Table 1.1, the top three positions – DKI Jakarta, East Java, and West Java – have remained unchanged from the previous year. Furthermore, the dominance of DKI Jakarta as Indonesia's capital city can be seen in its superior performance in all environments, except QLID. A significant change was observed in the top-five ranking this year, with East Kalimantan taking the fourth place from Central Java, which ended up in the fifth position. The improvement in performance indicates the potential for East Kalimantan to become the new capital city (IKN) in the near future. However, it should be noted that provinces in the eastern regions, such as Bali-Nusa Tenggara, Sulawesi, and Maluku-Papua, remain at the bottom of the rankings.

Table 1.1: Highlights of ACI's 2021 Overall Competitiveness Ranking of Indonesian Provinces, (Top-5 and Bottom-5 Provinces)

Overall	Province	MS	GIS	FBMC	QLID
1	DKI Jakarta	1	1	1	8
2	East Java	3	5	2	9
3	West Java	2	2	3	15
4	East Kalimantan	5	6	4	1
5	Central Java	4	3	5	11
6	Bali	19	4	9	2
7	Banten	6	7	26	6
8	Riau Islands	7	17	10	5
9	DI Yogyakarta	27	9	13	3
10	South Kalimantan	12	12	18	4
...
25	Lampung	14	19	34	27
26	Jambi	21	31	19	22
27	North Sulawesi	25	29	27	18
28	North Maluku	18	27	31	24
29	Gorontalo	33	24	33	29
30	East Nusa Tenggara	29	22	32	31
31	West Sulawesi	23	23	29	33
32	West Papua	24	34	25	28
33	Maluku	34	33	30	30
34	Papua	28	21	8	34

Java Region	Top-10
Maluku-Papua Region	Middle-14
	Bottom-10

Source: ACI

Chapter 3 examines the competitiveness of the different regions of Indonesia. It applies the same framework used in Chapter 2 to the six regions in Indonesia, where each region is an aggregation of several provinces based on their major island groupings. In line with the findings at the provincial level presented in Chapter 2, we observed that the overall regional results indicate significant regional disparities between the western and eastern regions. Java and Sumatra, both located in western Indonesia, retain the top two positions. On the other hand, the eastern region (Maluku-Papua) remains at the bottom of the rankings, a position it has occupied since last year. The only fierce competition can be observed among the middle-ranked regions, such as Bali-Nusa Tenggara and Sulawesi, which have switched positions repeatedly in the last three years.

Based on the results of Chapter 3, the Kalimantan region has a higher QLID score than Java, which may be attributed to the lower risk of natural disasters. Despite Kalimantan's excellent performance, there is a significant intra-regional disparity in this environment, specifically between East Kalimantan (ranked first) and West Kalimantan (ranked 32nd). A case study analysing intra-regional disparities within the Kalimantan region is included in Chapter 3 to provide readers with a deeper insight into this issue. It is essential to understand that the Kalimantan region, as the future home of Indonesia's capital city, will be an important part of Chapter 3.

In Chapter 4, ACI presents its new thematic research on Digital Competitiveness in Indonesia. This chapter aims to examine digital competitiveness at the sub-national level to identify how digital inequality arises at the provincial level. This study also seeks to provide insights into the aspects and regions that require particular attention to escape the digital divide trap. The digital competitiveness framework is based on ACI's study on digital competitiveness among ASEAN member countries. A few modifications were made to the study, particularly in terms of the number of environments that were adopted. The index evaluates digital competitiveness as a composite of four broad environments, including: (i) Digital Outputs, (ii) Digital Infrastructure, (iii) Core Inputs, and (iv) Digital Utilisation.

Results from Chapter 4 stand in parallel with the overall competitiveness ranking presented in Chapter 2, in which DKI Jakarta occupies the first position, and the top five performers are all dominated by provinces in Java. In addition, provinces with better performance in ACI's annual competitiveness rankings tend to have a higher ranking in digital competitiveness, except for Central Kalimantan and North Sulawesi. In this chapter, a brief case study will also be presented to provide further insights into the performance of these two provinces.

As the country enters the post-pandemic era, tracking the progress and comparative advantages of each province has become increasingly important. The book is expected to provide empirical as well as policy guidance to Indonesia's policymakers, academics, and business players in devising recovery strategies. A compilation of competitiveness outlooks and provincial socio-economic reviews is an invaluable tool for understanding Indonesia's future policy direction, especially in an era of digitalisation.

1.2 Indonesia in 2022

1.2.1 Indonesia's Stable Economic Performance in the Face of Global Economic Challenges

Global economic growth has recovered from -3.1% in 2020 to 3.2% in 2022, and it is expected to grow at a slower rate of 2.7% in 2023. This slow growth was mainly affected by the start of the Russia-Ukraine war on 24th February 2022, which disrupted the global recovery process. In particular, the war has disrupted the global supply chain, resulting in a rise in global commodity prices, especially coal, oil, and gas, due to tighter supplies.

Consequently, the US Federal Reserve has adopted a contractionary monetary policy by increasing interest rates, resulting in a tightening of external financing.

In spite of global economic shocks in 2022, the Indonesian economy remained relatively stable from a macroeconomic, fiscal-monetary, and financial perspective. In Indonesia, the higher commodity prices acted as a double-edged sword that had both positive and negative consequences for its economy.

On one hand, Indonesia's real GDP increased by 5.72% (y-o-y) in Q3 2022, outpacing the global growth rate. It was primarily due to the strong commodity exports that increased the current account surplus from 0.2% of GDP in Q3 2021 to 0.9% of GDP in Q3 2022. The country's Crude Palm Oil (CPO)'s zero export tariff policy also contributed to the strong export growth. The Ministry of Finance Regulation (PMK) Number 115/PMK.05/2022 has been issued to support exporters, by reducing the export levy rate to USD 0. This regulation eliminated the export levy on all CPO products and their derivatives from 15th July to 31st August 2022. Meanwhile, progressive rates will be applied again to export levy prices from 1st September 2022.

On the other hand, higher global commodity prices have prompted the country's inflation rate to rise to 5.95%, significantly higher than in 2021 (1.87%). It should be noted, however, that the impact has been limited due to the Central Bank of Indonesia's price control mechanism. Bank Indonesia has increased its policy rate (BI7DRR) to 4.25% in Q3 2022 in order to control inflation spikes, to avoid higher lending rates in future.

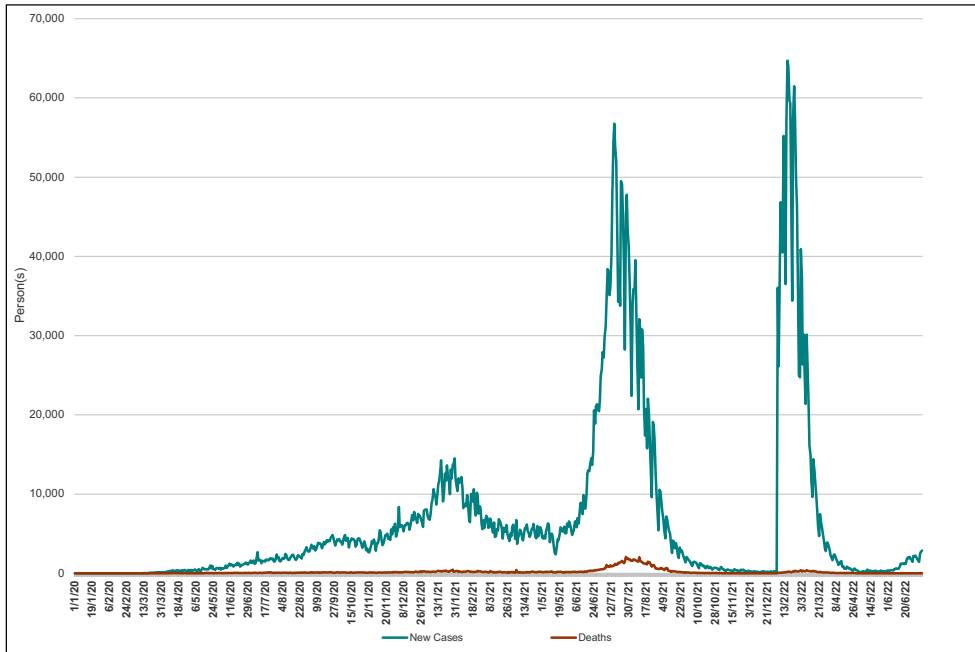
1.2.2 Indonesia's Transition towards the Endemic

Indonesia's strong economic performance has been largely attributed to the improvement in domestic demand and the successful vaccination rate that has improved society's confidence to return to economic activities. As of February 2022, the vaccination rate of the first and second doses has reached 80% and 57% of the total population, respectively, while the vaccination rate of the third dose remained at 3% of the total population ([Ministry of Health \(2022b\)](#)). As a result of this higher vaccination rate, Indonesia was better prepared to deal with the Omicron variant that emerged in mid-February 2022, with 65,000 cases per day. According to [Figure 1.1](#), the number of daily cases associated with mutations in Omicron variants (BA.4 and BA.5) increased between February and March 2022. However, the daily death trend was significantly lower than during the Delta waves of July 2021.

In addition to the successful vaccination rate, greater mobility due to the government's decision to relax mobility restrictions (PPKM), has contributed to the strong domestic demand and private consumption ([The World Bank \(2022\)](#)). During the peak of the Omicron variant, in February and March 2022, the government set the PPKM level to Level 3 for most provinces in Java-Bali, and allowed 50% physical attendance in public areas, such as parks, tourist attractions, and gymnasiums ([CMMIA \(2022\)](#)). Compared to PPKM policies during the peak of the Delta variants in mid-2021, these policies were relatively less stringent. In June and July 2022, the government further relaxed the restriction by allowing 100% physical attendance for offices and places of worship in Level

1 areas (the lowest level of PPKM) ([Ministry of Home Affairs \(2022\)](#)). The requirement to wear a mask outdoors was also lifted. Since August 2022, the government has eliminated the requirement of antigen and PCR tests for domestic travellers who have received their third dose of vaccine and exempted quarantine for foreign travellers who have received their third dose of vaccine and have a negative PCR test ([Ministry of Tourism and Creative Economy \(2022b\)](#)).

Figure 1.1: COVID-19 Statistics and Development



Source: Google Health

As the COVID-19 pandemic in Indonesia was finally under control (the weekly positivity and hospitalisation rates were 3.35% and 4.79%, respectively – with a low death rate of 2.39%), President Jokowi revoked the PPKM policy on 30th December 2022 ([Ministry of Health \(2022a\)](#)). The PPKM removal was in accordance with the instructions of the Ministry of Home Affairs Number 53 of 2022, concerning the Prevention and Control of Coronavirus Disease 2019 during the Transitional Period towards Endemic. However, in order to control the spread of COVID-19 and to prevent a spike in cases, proactive, persuasive, focused and coordinated strategies will be implemented during the transition period to endemic. As part of these efforts, people are still encouraged to wear masks, test for COVID-19 symptoms, and undergo primary and booster vaccinations.

1.2.3 The Recovery of Indonesia's Tourism Sector

The recovery of Indonesia's economy is also reflected in the performance of various business sectors in all regions, particularly tourism. Transportation and storage, as well as accommodation and food and beverage, are two sectors closely related to tourism. During the pandemic era, the growth of these sectors decreased to below zero but in 2022 they achieved 11.38% and 20.96% growth respectively. A significant increase in tourist numbers was also observed in 2022. Approximately 1.2 million foreign tourists visited the country during the first half of 2022. This is a significant increase over the 1.6 million tourists who visited the country during the entire year of 2021.

The revival of the tourism sector was also supported by the G20 Summit held in Bali on 15-16 November 2022. It was recorded that the event increased Bali's economic growth in Q3 2022 to 8% year-on-year compared to 3% in the previous quarter ([Ministry of Tourism and Creative Economy \(2022a\)](#)). The economic contribution of the G20 Summit to the national economy reached USD 533 million or IDR 7.4 trillion and created more than 33,000 new jobs. In addition, hotel occupancy rates in the Nusa Dua area increased by up to 70 % during the G20 Summit. The number of domestic and foreign tourists is predicted to continue to increase, on average, to 24,000 per day, due to the Christmas and New Year holidays ([Ministry of Tourism and Creative Economy \(2022c\)](#)).

1.2.4 Prospects and Challenges Facing Indonesia in 2023

It is forecast that Indonesia will maintain its stable and robust macroeconomic performance in 2023. Continuity in implementing structural transformation is expected to positively impact the country's economic growth, which is predicted to remain strong at 5.3%. Despite a rise in Bank Indonesia's policy interest rate at the end of 2022 to curb inflation, Indonesia's inflation rate in 2023 is forecast to be 3.3% ([The World Bank \(2022\)](#)). This projected lower inflation rate (compared with 5.5% in 2022) would be the result of the government's extended efforts to retain supply availability and distribution. Moreover, the budget deficit is projected to return to below 3% of the GDP in 2023 or equal to IDR 598.2 trillion. The 2023 budget deficit is expected to be below 3% for the first time since the COVID-19 pandemic, in accordance with the mandate of Law no. 2 of 2020 concerning the Ratio of the Budget Deficit to GDP.

As stated in the Indonesian Budget 2023 (APBN 2023), the Indonesian government has anticipated these uncertain global economic conditions by using its state budget as a 'shock absorber' to protect the purchasing power of people. The 2023 fiscal policy will focus on five areas, namely 1) improving the quality of human capital; 2) accelerating infrastructure development to support economic transformation; 3) reforming bureaucratic processes and simplifying regulations; 4) revitalising the industrial sector; and 5) developing a green economy ([Ministry of Finance \(2022a\)](#)).

Table 1.2: APBN 2023 by Sector and Main Priorities

Sector	Main Priorities
Education Rp 612.2 trillion	<ul style="list-style-type: none"> • Achieving universal access to quality education • Improving the quality of infrastructure to support educational activities, especially in the 3T (Disadvantaged, Frontier, Outmost) areas • Strengthening the quality of pre-school education (PAUD) through commitment with the local government • Improving link and match system between job seekers and with the labour market
Social Protection Rp 476 trillion	<ul style="list-style-type: none"> • Increasing the use of integrated data and expanding targeted social protection through Socio-economic Registration (Regsosek) • Intensifying poverty graduation and accelerating extreme poverty reduction • Strengthening lifelong social protection that is inclusive of the elderly and people with disability • Providing support for social protection provision that is adaptive to crisis
Infrastructure Rp 392 trillion	<ul style="list-style-type: none"> • Accelerating infrastructure development to support basic services • Supporting equitable access to information and communication technology (ICT) infrastructure in supporting economic activity • Enhancing infrastructure development that supports economic transformation (energy, food, connectivity, and transportation) • Supporting the gradual and sustainable completion of the national strategic project (PSN) and the development of the National Capital (IKN) • Increasing the synergy of funding between ministries/institutions, central and regional, as well as through the implementation of Public-Private Partnerships (PPP) financing schemes.
Energy Rp 341.3 trillion	<p><i>Energy Subsidy</i></p> <ul style="list-style-type: none"> • Continuing the provision of price difference subsidies for kerosene and fixed subsidies for diesel fuel accompanied by volume control and supervision of groups or sectors that are entitled to utilise; • Transforming 3 kg cylinder LPG subsidies to be based on target recipients and integrated with social protection programs in stages by taking into account economic recovery and people's purchasing power; • Providing targeted electricity subsidies by harmonising economic recovery and people's purchasing power <p><i>Non-energy Subsidy</i></p> <ul style="list-style-type: none"> • Strengthening the implementation of targeted fertiliser subsidies by limiting the types of subsidised fertilisers for urea and NPK to priority commodities; • Improving the quality and innovation of public transportation services and digitising information and communication services; • Increasing business competitiveness and expanding capital for MSMEs and farmers; • Supporting the business world through tax incentives
Health Rp 178.7 trillion	<ul style="list-style-type: none"> • Improving the quality of services for primary and secondary health facilities • Accelerating stunting prevention and control programs • Increasing the benefits of the National Health Insurance (JKN) program • Enhancing quality and improving the distribution of medical equipment and personnel
Food Security Rp 104.2 trillion	<ul style="list-style-type: none"> • Increasing the productivity of strategic food commodities • Encouraging the creation of competitive human capital in agriculture and fisheries sectors by strengthening business institutions (corporations), modernisation, and increased counselling • Encouraging the use of technology and data, as well as the development of an innovation climate • Strengthening the national food logistics system and transforming a sustainable food system • Accelerating the completion of infrastructure development for irrigation systems and dams/reservoirs

Source: Ministry of Finance

Table 1.2 shows the breakdown of the 2023 State Budget ([Ministry of Finance \(2022b\)](#)). In 2023, state revenue is projected to grow by 5% from last year, accounting for IDR 2,463 trillion. This comes from tax revenue of IDR 2,021 trillion, non-tax state revenue (PNBP) of IDR 441.4 trillion, and grants of IDR 0.4 trillion. Meanwhile, next year's state expenditure is expected to reach IDR 3,061.2 trillion, consisting of central government spending of IDR 2,246.5 trillion and transfers to the regions of IDR 814.7 trillion.

As shown in [Table 1.2](#), the education sector receives approximately 20% of the total expenditures. A key focus of the education sector in 2023 will be enhancing the quality of human capital while making quality education more accessible to all, including those living in Disadvantaged, Frontier and Outermost (3T) areas. The next largest expenditure (16%) will be for social protection. The government intends to maintain the state budget (APBN) as a 'shock absorber' to protect Indonesia's economy from shocks arising from uncertain global economic conditions. In addition, 13% of the budget is devoted to infrastructure. The infrastructure budget is mainly used to provide basic infrastructure such as electricity, transportation, and information technology, as well as to support economic transformation through the gradual completion of the national strategic project (PSN) and development of the new capital city in East Kalimantan (IKN).

1.3 Overview of Indonesia's Recent Economic Developments

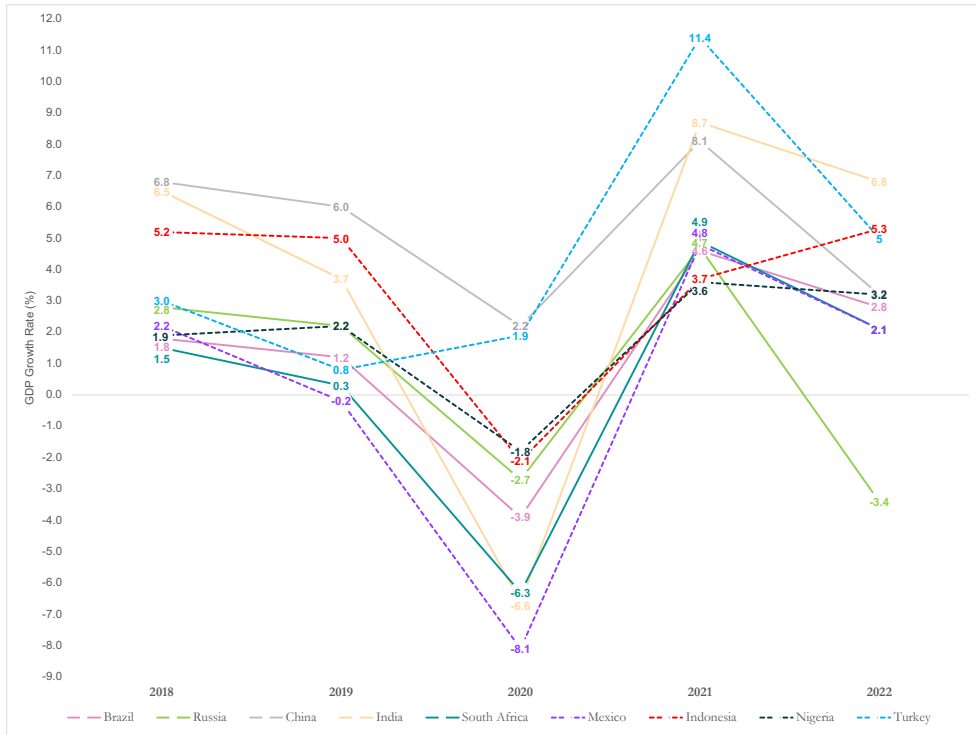
1.3.1 Growth Trends and Prospects

In this section, we will discuss Indonesia's growth trends and prospects, fiscal and monetary trends, trade performance, investment outlook, as well as the labour market and social development. An evaluation of Indonesia's performance during and after the COVID-19 pandemic will be presented.

[Figure 1.2](#) shows GDP growth rates for Brazil, Russia, India, China, and South Africa (BRICS) and Mexico, Indonesia, Nigeria, and Turkey (MINT). The COVID-19 pandemic has caused fluctuations in the GDP growth of these countries between 2018 and 2022. In 2020, most countries experienced negative growth, except for China (2.2%) and Turkey (1.9%). Indonesia is the only country with increasing growth during the recovery years (3.7% in 2021 and 5.3% in 2022).

A similar pattern is observed for the ASEAN-10 countries ([Figure 1.3](#)). The Philippines experienced the greatest drop of -9.5% in 2020, while Singapore achieved the highest growth of 7.6% in 2021. On the other hand, Myanmar experienced a sudden drop in GDP growth after the Myanmar military took control of the country in a coup in early February 2021. Despite the uncertain economic conditions in 2022, all countries achieved positive growth, with Indonesia achieving the fourth-highest among the ASEAN-10 countries.

Figure 1.2: GDP Growth Rate for Indonesia, BRICS Countries and MINT Countries (in Percentage), 2018–2022



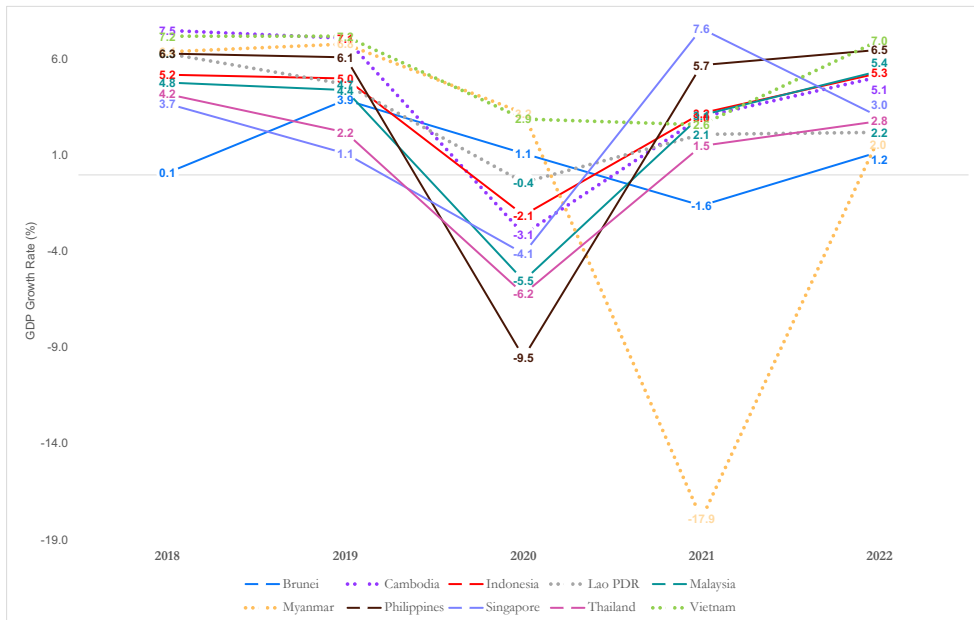
Note: Figures for 2022 are based on preliminary data. Figures at the end of the line indicate growth rates in 2022. Dashed lines represent MINT countries.

Source: International Monetary Fund, compiled by ACI

Indonesia’s quarterly GDP growth trend has improved between 2020 and 2022 (Figure 1.4). It plummeted in 2020 due to the first shock caused by the COVID-19 pandemic, and fluctuated in 2021 during the recovery period. It is important to note that the government’s reintroduction of mobility restrictions in response to the Delta variants caused a drop in GDP growth in Q3 2021.

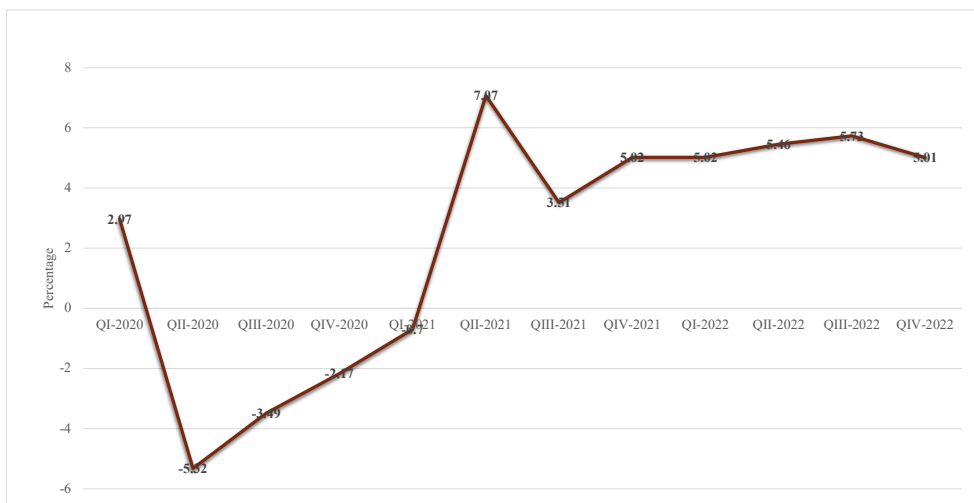
Meanwhile, Indonesia’s quarterly GDP growth rate in 2022 was relatively stable, with an average of 5.31% – a record high since 2014 (Coordinating Ministry for Economic Affairs (2023)). Indonesia’s strong economic performance has been largely attributed to a rise in domestic demand and exports. In addition, the high vaccination rate and relaxed policies have raised society’s confidence in resuming normal economic activities.

Figure 1.3: GDP Growth Rate for Indonesia and ASEAN-10 Countries (in Percentage), 2018–2022



Note: Figures for 2022 are based on preliminary data. Figures at the end of the line indicate GDP growth rate in 2022. Dotted lines represent CLMV countries.
 Source: International Monetary Fund, compiled by ACI

Figure 1.4: Quarterly GDP Growth (Y-o-Y), 2020–2022

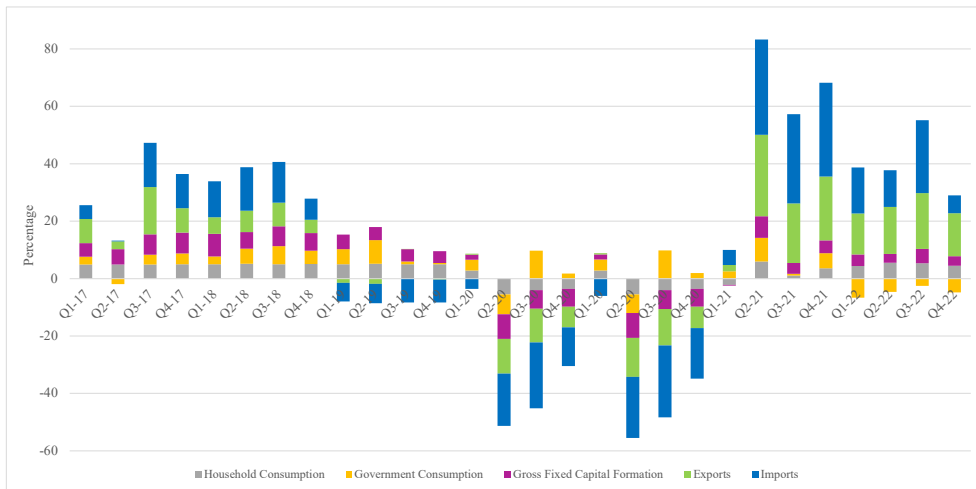


Source: Central Bureau of Statistics (BPS)

The stable growth in Indonesia’s GDP is also reflected in its positive expenditure throughout 2022, except for government consumption (Figure 1.5). As of 2022, household consumption increased by 4.93% (y-o-y), more than double the growth of 2.08% (y-o-y) recorded in the previous year. Likewise, gross fixed capital also grew

steadily at 3.87% (y-o-y) in 2022.

Figure 1.5: GDP Growth Rate by Expenditure (Year on Year Percentage), Q1 of 2017–Q4 of 2022



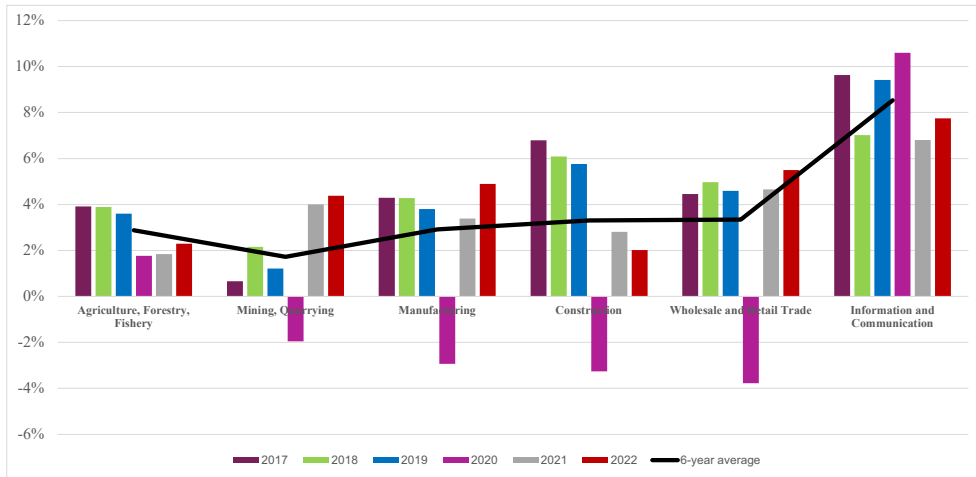
Source: Central Bureau of Statistics (BPS)

This year’s strongest growth has been recorded in the foreign trade sector. Over the course of 2022, exports have performed outstandingly, peaking at 19.41% (y-o-y) in Q3 2022. Several factors contributed to this development, including strong demand from major trading partners and government policies designed to facilitate the export of palm oil, such as CPO’s zero export tariff policy. Consequently, the strong performance of exports and domestic demand resulted in a 15.10% increase in imports in 2022. In spite of this, the growth of government consumption contracted by 4.64% (y-o-y) due to the reduction in government expenditures on goods and social assistance, especially for the handling of COVID-19.

Figure 1.6 illustrates the trend in GDP growth rates for the top six largest industries in Indonesia. Following a negative growth year in 2020, all sectors began to recover and grew positively in 2021 and 2022. In spite of the third wave of Omicron variants that emerged in early 2022, all sectors remained resilient. The fastest growing sectors were Information and Communication (7.7%), Wholesale and Retail Trade (5.5%), Manufacturing (4.9%), and Mining and Quarrying (4.4%), while the agricultural, forestry, fish and construction sectors grew at the slower rates of 2.3% and 2%, respectively.

As shown in Figure 1.6, the Information and Communication sector had the most significant 6-year average growth (8.5%). This improvement indicates that Indonesia’s digitalisation has advanced and that this sector has taken advantage of the opportunities.

Figure 1.6: GDP Growth Rate for Top-6 Largest Industries (Year on Year Percentage), 2017–2022

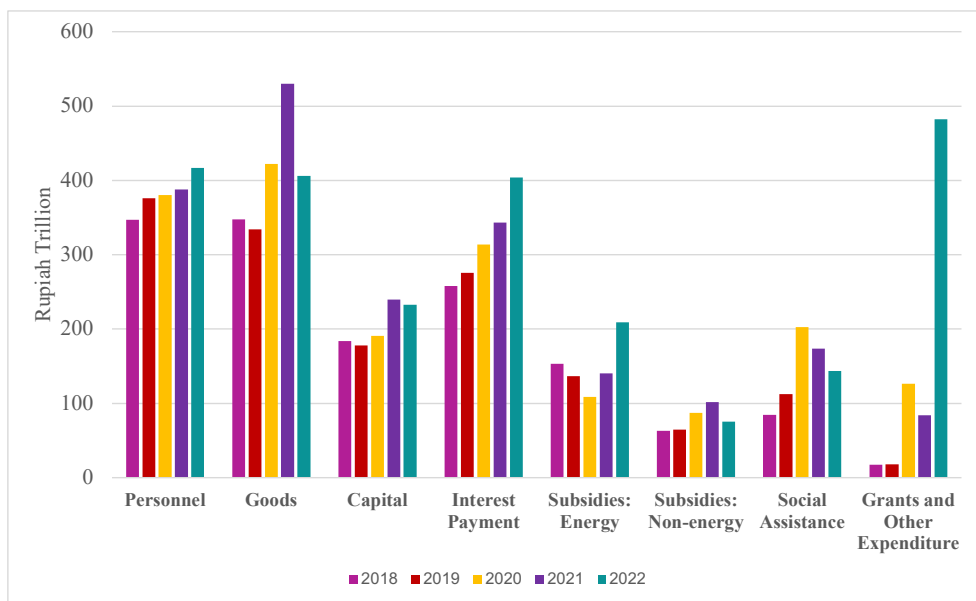


Source: Central Bureau of Statistics (BPS)

1.3.2 Fiscal and Monetary Trends

The previous sub-chapter described the growth trends and prospects for several macroeconomic indicators in Indonesia during and after the COVID-19 pandemic. By examining Indonesia’s fiscal and monetary indicators, this sub-chapter attempts to analyse the country’s recovery from the pandemic.

Figure 1.7: Components of Actual Government Expenditure by Type (Rupiah Trillion), 2018–2022



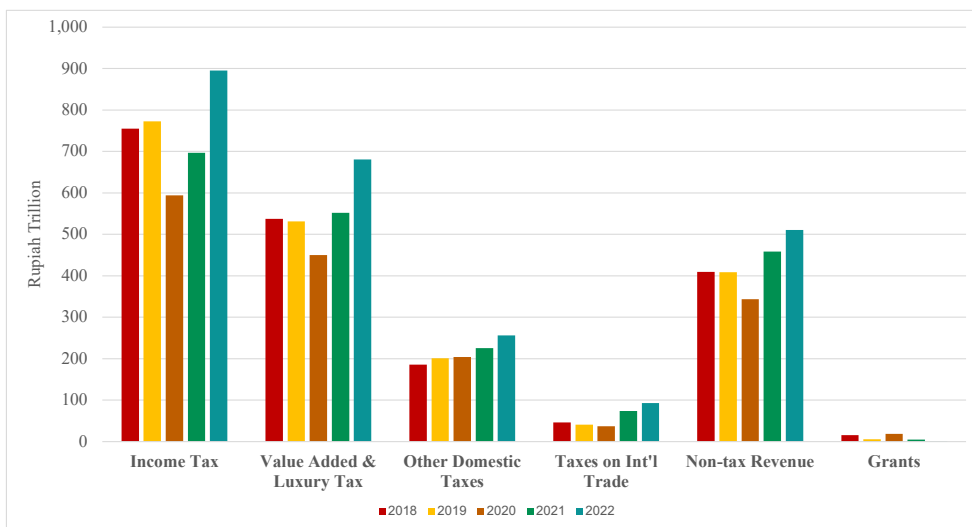
Source: Ministry of Finance

As can be seen in Figure 1.7, Indonesia's budget priorities have changed significantly over the past few years. In 2020, most of the expenditure was devoted to handling COVID-19, as evidenced by the significant increase in social assistance, grants, and other expenses. The government began to focus on the economy's recovery in 2021 and 2022, by reducing its social assistance programs while increasing its expenditure on subsidies to promote economic growth.

In spite of this, the state budget for 2022 has been impacted by various global economic uncertainties. It can be seen that fluctuating interest rates and exchange rates have increased the interest payment expenditure from IDR 343.5 trillion in 2021 to IDR 403.9 trillion in 2022 (Figure 1.7). In response to this vulnerability, the 2022 state budget was primarily used as a shock absorber tool to maintain the national economic recovery momentum and to protect people's purchasing power, particularly those with low income, from persistent inflation (Ministry of Finance (2023a)).

In the past five years, energy subsidies, grants, and other expenditure have reached a record high. A sudden increase in the actual expenditure on energy subsidies was attributed to an increase in the global price of energy commodities. To mitigate the effects on consumers, the government added the budget for energy subsidies and compensation before increasing the cost of subsidised diesel and RON90 gasoline (Pertalite) in September 2022. Miscellaneous expenditure has also increased significantly, reaching almost IDR 500 trillion.

Figure 1.8: Sources of Actual Government Revenue (Rupiah Trillion), 2018–2022

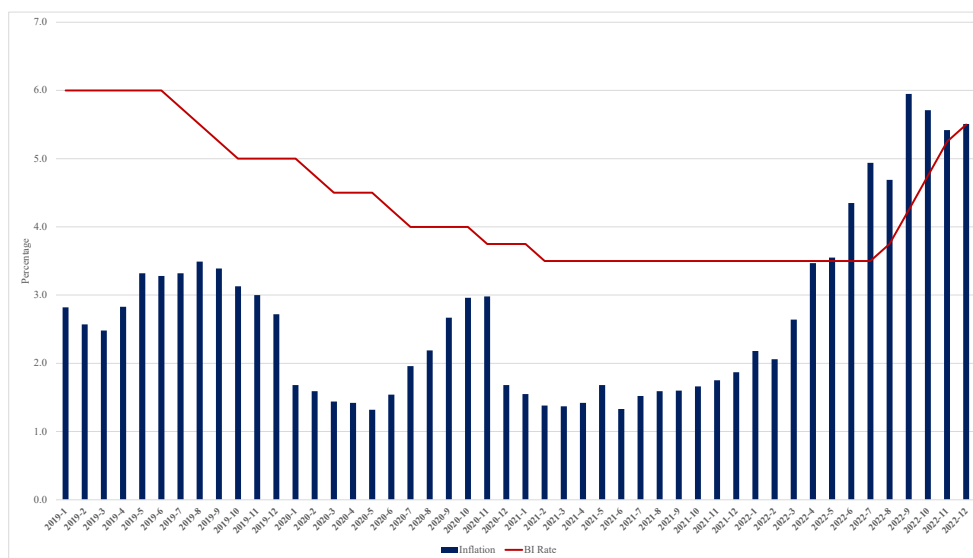


Source: Ministry of Finance

Figure 1.8 illustrates the actual government revenue from 2018 to 2022. Most sources of government revenue began to increase rapidly after 2020, surpassing pre-pandemic levels, except for grants. Value-added and luxury taxes (VAT) have increased due to the implementation of Law Number 7 of 2021 concerning Harmonisation of Tax Regulations. As a result, the VAT rate has increased from 10% to 11% since 1st April 2022. Aside from

the harmonisation of tax regulations, the excellent performance in most revenue sources is the result of an increase in commodity prices and the expansion of the economy.

Figure 1.9: Inflation and Central Bank Policy Rate (Percent), 2017–2023



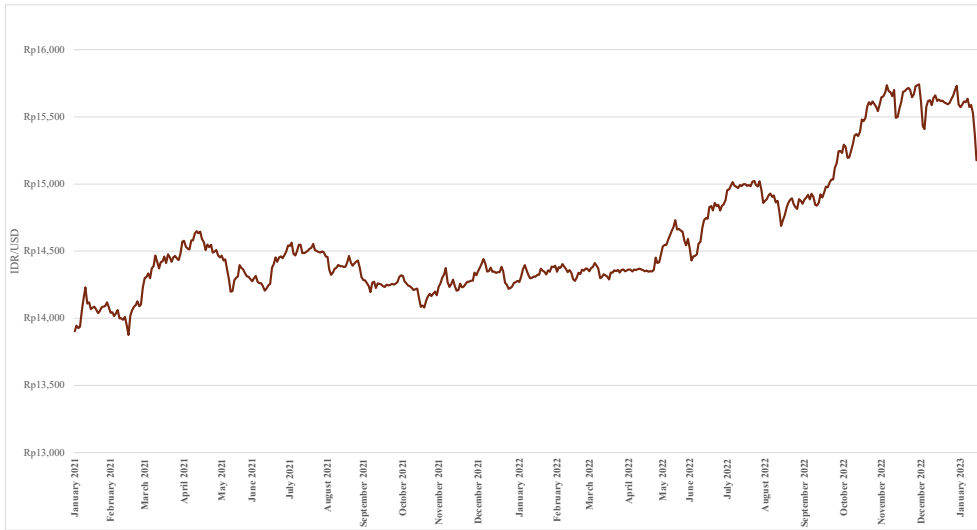
Source: Central Bank of Indonesia

Apart from the fiscal condition, the economic slowdown in 2020 also affected Indonesia's monetary condition, including inflation and the central bank policy rate (Figure 1.9). After a long period of controlled inflation during 2020-2021, it rose from 2.18% in January 2022 to 2.6% in March 2022. It is in line with the rising global commodity prices, particularly energy and food commodities, primarily due to increasing geopolitical tensions. Inflation peaked at 5.95% in September 2022, due to a second round of subsidised fuel price adjustments and persistent high global energy and food prices.

Similarly, global economic uncertainty has also had an impact on the central bank policy rate (BI7DRR). BI has effectively maintained the cost of borrowing and lending during the pandemic period by lowering the BI7DRR from 5% in January 2020 to 3.5% in July 2022. However, from August to December 2022, BI increased its BI7DRR five times to reach 5.5% as a means of maintaining inflation at $3.0 \pm 1\%$.

As shown in Figure 1.10, inflation and high commodity prices also affected Indonesia's exchange rate against the dollar during this period. The rupiah has depreciated by -9.1% (ytd) from IDR 14,270/USD in January 2022 to IDR 15,592/USD in December 2022. Several other factors contributed to the rise in currency pressures, including an increase in portfolio debt outflows since July as a result of the Fed Funds Rate (FFR) (The World Bank (2022)).

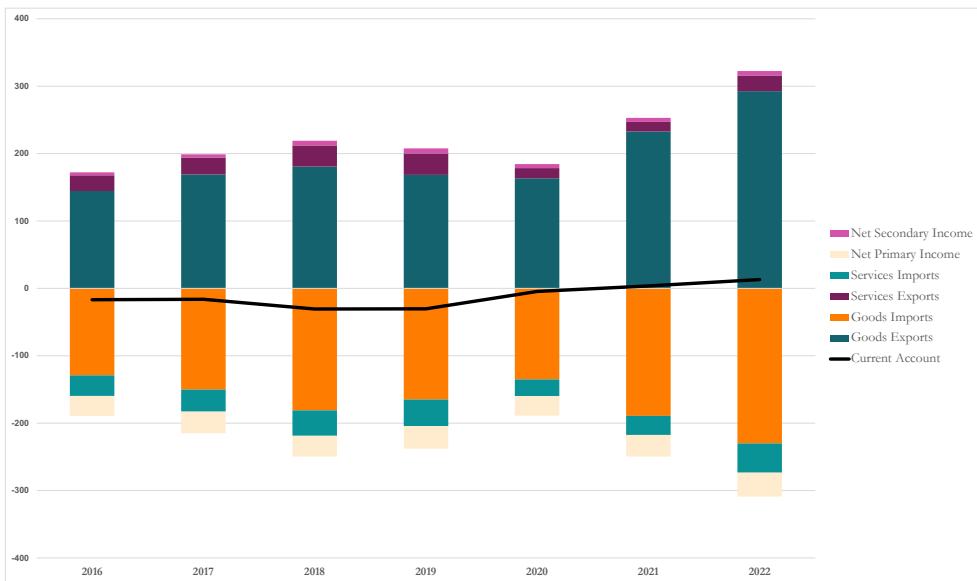
Figure 1.10: Indonesia’s Exchange Rate against USD (IDR/USD), 2021–2023



Source: Central Bank of Indonesia

1.3.3 Trade Performance and Investment Outlook

Figure 1.11: Current Account Components of Indonesia (USD Billion), 2017–2023



Source: Central Bank of Indonesia

During the past year, global economic conditions have heavily influenced Indonesia’s trade performance. Global supply chains and international trade were disrupted by mobility restrictions that many countries, including Indonesia, implemented in response

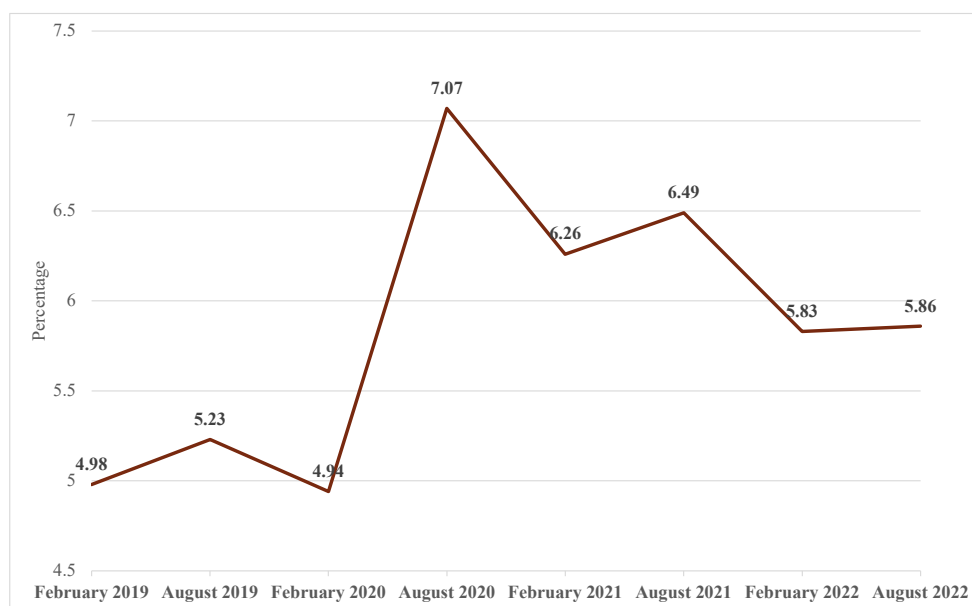
to the COVID-19 pandemic in 2020. As shown in Figure 1.11, all components of Indonesia's current account have deteriorated, particularly services exports (-53%) and services imports (-37%).

Nonetheless, Indonesia's current account performance has gradually improved as the country recovered from the pandemic. It went from a deficit of USD 4.41 billion in 2020 to a surplus of USD 3.51 billion in 2021, reaching a peak of USD 13.22 billion in 2022 – a record high since 2017. As mentioned above, the increase was caused by high oil prices and the government's zero export tariff policy on CPO, which caused the exports and imports of goods to increase by 26% and 22%, respectively. Other sectors also performed well: services exports (68%), services imports (52%) and net primary income (12%).

1.4 Labour Market and Social Development

As mentioned previously, Indonesia's main economic indicators showed a downward trend in 2020, due to pandemic shocks and began to recover gradually in 2021. This recovery can also be seen in labour market and social development indicators, including the unemployment rate (Figure 1.12) and poverty rate (Figure 1.13).

Figure 1.12: Unemployment rate (Percentage), 2019–2022



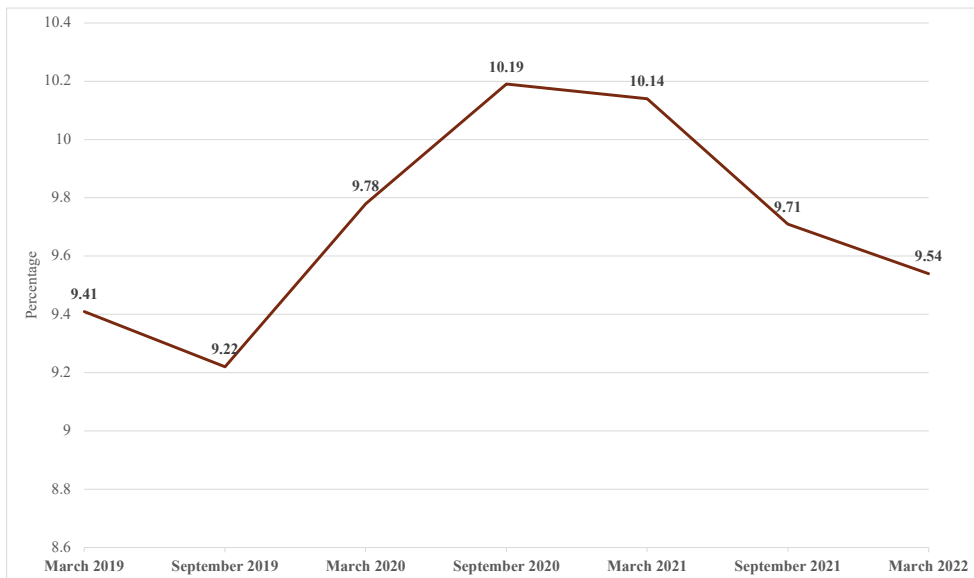
Source: Central Bureau of Statistics (BPS)

The Indonesian government has taken various measures to mitigate the economic impact of COVID-19, both at the household and corporate levels, under the National Economic Recovery Program (PEN). A variety of programs have been implemented between 2020 and 2022, including the Family Hope Program (PKH), provision of food

assistance, expansion of Pre-Employment cards, discounts on household electricity of 450 VA and 900 VA, and Village Fund Direct Cash Assistance (BLT) ([Ministry of Finance \(2023b\)](#)).

As a result, PEN's various programs have successfully reduced unemployment from 7.7% in August 2020 to 5.86% in August 2022. Similarly, the policies have reduced poverty rates from 10.19% in September 2020 to 9.54% in March 2022. Despite these improvements, unemployment and poverty rates remain higher than at the pre-pandemic levels of 4.94% and 9.41%, respectively.

Figure 1.13: Poverty Rate (Percentage), 2019–2022



Source: Central Bureau of Statistics (BPS)

1.5 Indonesia's Digital Landscape

1.5.1 Overview of Digitalisation Sector in Indonesia

A major goal of the Indonesian government in the upcoming years is to become one of the fastest-growing countries in Southeast Asia in terms of its digital economy. As evidence of this optimism, Indonesia's digital economy grew considerably in 2019, with a compound annual growth rate (CAGR) of 49% and a gross merchandise value (GMV) of USD 40 billion, the fastest in Southeast Asia. Furthermore, the number is estimated to grow to USD 130 billion by 2025 ([Bain and Company \(2019\)](#)), and Indonesia's ICT sector is projected to create 3.7 million new jobs in the next five years.

Indonesia has highlighted the urgency of its digital economic transformation at two major events, the G20 Leaders' Summit in November 2022 and the ASEAN Chairmanship

in 2023. Digital transformation is also reflected in Indonesia's projected growth for 2023, as digital transactions are expected to grow significantly, including e-commerce (IDR 572 trillion), digital banking (IDR 67,700 trillion), and electronic money (IDR 508 trillion).

The Indonesian government has translated this ambition into the Digital Roadmap 2021-2024. This roadmap reflects the government's commitment to speed up digital transformation by focusing on four important areas: digital infrastructure, digital governance, digital society, and digital economy. These priority areas are expected to achieve the following key targets:

1. **Digital Infrastructure:** Development of an inclusive, safe, and reliable digital and connectivity infrastructure that provides high-quality services.
2. **Digital Governance:** Enhancement of public services by developing transparent and integrated digital government institutions as well as harmonising regulations and increasing funding to advance innovations.
3. **Digital Society:** Development of a digital culture by utilising Indonesia's demographic advantages and empowering Indonesians to participate in the development of the digital world.
4. **Digital Economy:** Transforming Indonesia from a consumer nation to a technology producer through investment in digital platforms, products, and systems, as well as strengthening the digital capability of the priority sectors to improve geostrategic competitiveness and encourage quality growth. One of the targets involves the digitalisation of Micro, Small, and Medium Enterprises (MSMEs).

With a supportive digital ecosystem, harmonised regulations, and the development of the digital skills of its human capital, Indonesia hopes to accelerate its digital transformation. Each of the following sub-chapters provides details of the government's efforts to achieve digital transformation.

1.5.2 Digital Infrastructure

The Palapa Ring Project

The enhancement of a country's digital infrastructure is crucial to achieving digital transformation. One of Indonesia's major attempts to upgrade digital infrastructure is through the Palapa Ring project, the development of a national fibre optic network backbone covering the entire country ([Ministry of Communication and Information Technology \(2013\)](#)). This project aims to establish an integrated large-capacity telecommunication network infrastructure that can be the primary network for all providers and users. It is hoped that the upgraded digital telecommunication infrastructure will facilitate equity in digital infrastructure through internet access that is high-quality, safe, affordable, and accessible to all.

After three years of development, the backbone network of the first phase of the 12,229 km Palapa Ring fibre-optic cable was put into operation and inaugurated by President

Jokowi in 2019. Since 2020, a feasibility study has been underway for the second phase of the project, the integrated Palapa Ring, and is currently entering the preparation phase ([Ministry of Communication and Information Technology \(2022b\)](#)). Since the first phase went live, a total of 27 telecommunication operators have registered as users at various locations on the Palapa Ring route segment. The Palapa Ring's usage across all segments continues to increase and has exceeded its target. By December 2022, the West Palapa Ring had reached 190 Gbps from the target of 150 Gbps, and the Central Palapa Ring had achieved 213 Gbps from 210 Gbps. A similar result was achieved by the East Palapa Ring, which achieved 4,700 Mbps microwave and 284 Gbps fibre optic compared to the target of 280 Gbps ([Jatmiko \(2023\)](#)).

Base Transceiver Station (BTS 4G) in 3T (Disadvantaged, Frontier, Outermost) Areas

The development of the digital infrastructure also plays a key role in creating new growth centres, such as in the 3T areas. To provide digital connectivity to all levels of society, the Indonesian government intends to enhance 4G connectivity throughout the country by constructing Base Transceiver Stations (BTS 4G). It is part of a government initiative to promote inclusive digital economic growth in Indonesia by ensuring that all areas have equal access to the internet. In order to accelerate the construction, the Ministry of Telecommunications and Information (Kominfo) has appointed the Telecommunications and Information Accessibility Agency (BAKTI). The target of 4,200 BTS 4G locations was divided into two phases. Phase 1A included the construction of BTS in 2,271 locations, while Phase 1B included 1,783 locations.

However, the government faces challenges providing digital infrastructure in 3T areas. Most 3T areas were geographically difficult to reach, have very poor road infrastructure, and are often subject to security and cultural issues ([Ministry of Communication and Information Technology \(2022a\)](#)). Construction of BTS 4G has also been delayed due to the Covid-19 pandemic. Consequently, the construction of phase 1 BTS was delayed and missed its deadline for completion by the end of 2021. As at the end of December 2022, phase 1A had only realised 92.6% of its target and phase 1B 89.7% ([Iswara \(2023\)](#)).

The Greater Indonesia Satellite (SATRIA)-1

The government also launched the Greater Indonesia Satellite (SATRIA)-1 to enhance internet connection. SATRIA-1 is a Government Multifunction Satellite (SMP) funded through a Public-Private Partnership (PPP). SATRIA-1 enhances the 4G Base Transceiver Station (BTS) in public facilities such as schools, local governments, defence, security administrations, and health facilities ([CNN Indonesia \(2022\)](#)). A total of 150,000 such public service points will be served by SATRIA-1 ([Ministry of Communication and Information Technology \(2020a\)](#)). In order to support SATRIA-1's performance, the Kominfo will also provide a backup satellite in the form of a Hot Backup Satellite (HBS) with a capacity of 80 Gbps. By June 2022, the construction of HBS was 51.5% completed. The SATRIA-1 project is scheduled to be operational by the end of 2023.

1.5.3 Digital Governance

The Electronic-Based Government Systems (SPBE)

Digital governance is the second pillar of Indonesia's digital transformation plan. The importance of digital governance was emphasised through the Presidential Regulation No. 95 of 2018, concerning Electronic-Based Government Systems (SPBE). SPBE is a government administration system that uses information and communication technology to provide services to its users, including the government, business players, and consumers. This system aims to achieve clean, effective, transparent, and accountable governance and reliable public services ([Ministry of Administrative and Bureaucratic Reform \(2020b\)](#)).

The SPBE may benefit its users in several ways. First, since the system integrates all data at the local and national levels, it facilitates the realisation of the One Data Portal Indonesia by sharing data among government agencies and regional governments. Second, the system can facilitate the adoption and use of ICT infrastructure at all levels of government. Lastly, information shared among local governments can be stored and shared more securely.

In accordance with Article 4 of the SPBE Presidential Decree, Kominfo has been assigned the responsibility of developing the national SPBE infrastructure and its four general applications: archive, community complaint, human resource, and performance-based budgeting. A national data centre (PDN) will also be developed as part of the National SPBE infrastructure ([Ministry of Communication and Information Technology \(2020b\)](#)).

As of 2020, two general applications have been operational: Srikandi (archive application) and SP4N-LAPOR (community complaint application). Srikandi was designed to improve government administrative efficiency and integrate archive management, while SP4N-LAPOR is a transparent application for public service complaints ([Ministry of Administrative and Bureaucratic Reform \(2020a\)](#)). Meanwhile, Simpegnas – the human resource application – was established in 2021. Simpegnas will facilitate real-time communication and coordination among government agencies regarding staffing, administration and management.

This was followed by the establishment of the National SPBE infrastructure (PDN) in 2022. The PDN aims to consolidate and facilitate the interoperability of data among its 27,000 servers spread throughout Indonesia. It is hoped that effective management of data centres can assist the government in achieving data-driven decision making ([Ministry of Communication and Information Technology \(2022c\)](#)). Last but not least, the government anticipates finishing the performance-based budget application by 2023, in order to integrate planning, budgeting, procurement, evaluation, and monitoring among government agencies and regional governments.

Electronification of Local Government Transactions (ETPD)

Aside from SPBE, the government has also committed to digitising government

transactions for regional expenditure and revenue transactions through the Electronification of Local Government Transactions (ETPD) ([Bank Indonesia \(2022\)](#)). The system is expected to increase the growth of the regional economy by increasing the accountability and transparency of local financial management, while enhancing revenue absorption. The ETPD pilot project, conducted in 12 regions, found that local governments that use electronic transactions experience an increase of 11.1% in local revenue (PAD) each year.

To monitor this program, the Indonesian government established the Acceleration and Expansion of Regional Digitalisation Taskforce (TP2DD). It is in accordance with Presidential Decree No. 3 of 2021, which aims to promote economic growth and development at the national and regional levels. The task force comprises leaders from eight ministries and institutions and 542 TP2DD teams chaired by regional heads ([CMEA \(2022\)](#)). By 20th September 2021, 465 TP2DDs, or 86% of the 542 regional governments, had been formed, including 33 at the provincial level and 432 at the district and city levels.

Accordingly, the Central Bank of Indonesia (BI) has also demonstrated its commitment to digital transformation by creating a digital payment ecosystem that is aligned with the Vision of the Indonesian Payment System Blueprint (BSPI) 2025 ([Bank Indonesia \(2021\)](#)). In addition, BI plays a key role in connecting TP2DD with stakeholders that can assist in efforts to accelerate and expand regional digitalisation, including business associations and industry players. The following are various BI initiatives aimed at accelerating the implementation of ETPD and payment digitalisation:

1. Extend the use of payment instruments and channels, such as the QR Code Indonesian Standard (QRIS).
2. Enhance the interconnection and interoperability of payment systems.
3. Promote the use of e-commerce platforms for payment of taxes and levies.
4. Assist the government in mapping ETPD profiles in all regional governments.
5. Encourage payment service providers to collaborate with local governments

The ETPD is expected to benefit the government's financial system in a number of ways ([Bank Indonesia \(2021\)](#)). First, it can strengthen the financial governance system at the local level. The advantages include simplified administrative processes, the ability to track all transactions, more efficient financial management, and greater accuracy in economic planning. The second benefit is the possibility of achieving more wide-ranging financial access, making a greater variety of cashless payment channels and instruments available throughout Indonesia. Ultimately, this will increase the accessibility to formal banking services for the unbanked.

1.5.4 Digital Society

As Indonesia continues to lag behind its neighbouring countries in terms of digital competitiveness, such as Singapore, Malaysia and Thailand, improving the digital skills

of Indonesia's human capital has also become a priority (IMD (2021)). In terms of overall digital competitiveness, Indonesia is ranked 52nd out of 64 countries, with the digital knowledge factor ranking lowest (60th) compared to other factors, such as technology (49th) and future readiness (48th).

The objective of addressing human capital development is also outlined in the recent National Medium-Term Development Plan (RPJMN) 2020-2024 as one of the priority strategies. Based on the master plan, the main objective for human capital development is to develop dynamic, skilled, hardworking individuals who are proficient in science and technology. Thus, the government has been implementing various programs and policies in order to adapt to the digital age – despite the COVID-19 pandemic.

Digital Literacy Roadmap

In early 2021, the Indonesian government released a Digital Literacy Roadmap, which guides the development of Indonesia's education curriculum and national programs in order to increase digital literacy in the era of digital technology. The government seeks to enhance the cognitive abilities of the labour force so that the skills are not restricted to 'operating' devices. This framework is intended to serve as a guideline to evaluate cognitive and affective competencies in relation to digital technology.

The roadmap features three major Kominfo programs that target all levels of society with three types of basic digital training. The first program is SiberKreasi, which aims to develop the basic skills necessary for digital literacy. The SiberKreasi platform has published 17 articles and news, 1,034 posters on social media, 17 infographics and 78 e-books as well as 38 videos and podcasts on Digital Literacy. Materials and content uploaded by contributors are available for public download under a Creative Commons licence. The Digital Talent Scholarship is Kominfo's second digital training program. This program provides scholarships for individuals to develop various digital technology skills in priority sectors. Meanwhile, the Digital Leadership Academy is the last training program provided by Kominfo. It is specifically designed for professionals and experts in the public and private sectors.

Pre-Employment Card Program

Since March 2020, the Indonesian government has allocated IDR 20 trillion to the Pre-Employment Card Program (Program Kartu Prakerja) as part of the COVID-19 recovery program. It is designed for job seekers, retrenched employees, and workers who wish to enhance their skills and competencies. Participants in this program must be Indonesian citizens, 18 years old or older, and not enrolled in any formal educational institution. Participants who qualify may use their card balance to register for online and offline training programs, up to IDR 3 million and IDR 7 million respectively. In addition to the certifications, the participants will also receive a monthly cash incentive of IDR 500,000 – which will be credited to their card balance – for three months.

As of 2020, the Indonesian government has disbursed 98.17% of the Pre-Employment Card Program budget, or IDR 19.6 trillion. As of 27th June 2021, 8.28 million people have

registered for Pre-Employment Cards. The Pre-Employment Card Program is supported by seven digital platforms (one of which is the Ministry of Manpower's Sisnaker), 222 training institutions, and 1,498 training sessions.

1.5.5 Digital Economy

It is estimated that approximately 99% of all businesses in Indonesia (64 million units) are micro businesses. The MSMEs provide income for the 109.8 million people in Indonesia and contribute 61% of the nation's GDP. The development of MSMEs is considered one of the top priorities in RPJMN 2020-2024. However, based on a survey conducted by Bank Indonesia in 2021, approximately 87.5% of MSMEs were adversely affected by the pandemic (CMEA (2021)). Specifically, approximately 22.9% of MSMEs experienced a decline in sales and demand, 20% had difficulties obtaining raw materials and capital, and 18.83% experienced a delay in production (MCSME (2021)).

MSME Digitalisation Program

Ministry of Cooperatives and SMEs (KemenkopUKM) intends to digitalise 24 million MSMEs in 2023, which is expected to increase to 30 million or 62% of the total MSMEs in 2024 ((MCSME (2021)). These digitalised MSMEs are expected to generate 1.7% more economic growth and create 2 million new jobs (Ministry of Cooperatives and SMEs (2022)). A key objective of the MSME digitalisation program is to accelerate the growth of MSMEs in order to increase their access to markets and make them more competitive.

One of the major prongs of the MSME Digitalisation Program is implemented by the Central Bank of Indonesia. This includes encouraging MSMEs to use payment instruments and channels like QR Code Indonesian Standard (QRIS). During the pandemic, MSMEs have been exempt from the QRIS processing fee and the Merchant Discount Rate (MDR). As a result, about 5.1 million merchants, most of whom are small and medium-sized enterprises, were using QRIS in 2020.

Proudly Made in Indonesia National Movement

The government seeks to optimise the potential and productivity of MSMEs through the Proudly Made in Indonesia National Movement to accelerate the recovery of the national economy after the pandemic. The Indonesian government has provided various stimulus packages to both MSMEs that remain offline and MSMEs that have been digitalised. These include coaching, promotions, loans from the State-Owned Bank Association (Himbara), and placement on government procurement e-catalogues. Through these efforts, MSMEs are expected to take their place in the digital world and sell through various e-commerce platforms.

Furthermore, local governments support this program by holding MSME exhibitions and bazaars to promote their local MSMEs and attract local consumers (Ministry of Education (2022)). A key expectation is that the program will increase the capacity

of MSMEs (supply side) and encourage Indonesians to purchase local products and services from MSMEs (demand side).

References

- Bain and Company, G. . T. . (2019). E-conomy sea 2019 report.
- Bank Indonesia (2021, 3). Bi mendukung percepatan dan perluasan digitalisasi daerah.
- Bank Indonesia (2022, 12). Lima strategi percepat digitalisasi dan akuntabilitas daerah.
- CMEA (2021, 5). Optimalisasi produktivitas umkm melalui go-digital dan go-legal.
- CMEA (2022, 12). Berikan penghargaan bagi tp2dd terbaik, menko airlangga dorong akselerasi elektronifikasi transaksi pemerintah daerah.
- CMMIA (2022, 03). Perpanjangan ppkm Jawa dan Bali 1-7 Maret 2022.
- CNN Indonesia (2022, 10). Satelit satria-1 'on' 2023, sinyal 4g daerah terpencil bisa kencang.
- Coordinating Ministry for Economic Affairs (2023). Pertumbuhan ekonomi tahun 2022 capai 5,31%, tertinggi sejak 2014.
- IMD (2021). *IMD World Competitiveness Yearbook 2021*. IMD: Institute for Management Development.
- Iswara, P. (2023, 2). Nasib proyek bts 4g terancam mandek.
- Jatmiko (2023, 1). Palapa ring timur senilai rp5,13 triliun sepi peminat? ini kata bakti.
- MCSME (2021, 6). Ri kejar 30 juta umkm go digital hingga 2024.
- Ministry of Administrative and Bureaucratic Reform (2020a, 10). Kementerian panrb luncurkan aplikasi umum kearsipan dan pelayanan publik.
- Ministry of Administrative and Bureaucratic Reform (2020b, 5). Sistem pemerintahan berbasis elektronik (spbe).
- Ministry of Communication and Information Technology (2013, 10). Sekilas palapa ring.
- Ministry of Communication and Information Technology (2020a, 9). Kominfo: Satelit satria perkuat ekonomi digital termasuk pembayaran.
- Ministry of Communication and Information Technology (2020b, 10). Penerapan spbe dan rencana pembangunan pusat data nasional.
- Ministry of Communication and Information Technology (2022a, 04). Akselerasi bts 4g desa 3t, dirut bakti: Target tahap 1 tercapai 86%.
- Ministry of Communication and Information Technology (2022b, 10). Lengkapi palapa ring, menkominfo: Palapa ring integrasi tingkatkan layanan internet nasional.
- Ministry of Communication and Information Technology (2022c, 10). Menkominfo resmikan pembangunan pusat data nasional pemerintah pertama di indonesia.

Ministry of Cooperatives and SMEs (2022, 9). Pemerintah incar 30 juta umkm go digital di 2023.

Ministry of Education (2022, 7). Gelar gerakan nasional bangga buatan indonesia, bi ingin bangun kebanggaan produk lokal.

Ministry of Finance (2022a, 09). Ini dia rincian rapbn 2023.

Ministry of Finance (2022b, 12). Pemerintah tetapkan target pendapatan negara sebesar rp 2.463,0 t pada 2023 untuk pendanaan pembangunan sehat dan berkelanjutan.

Ministry of Finance (2023a, 1). Belanja negara tahun 2022 tumbuh positif, menkeu : Tools shock absorber.

Ministry of Finance (2023b, 2020). Respon kebijakan ekonomi indonesia dalam menghadapi tantangan covid-19.

Ministry of Health (2022a, 12). Ppkm di Indonesia Resmi Dicabut.

Ministry of Health (2022b). Vaksinasi Covid019 Nasional.

Ministry of Home Affairs (2022, 06). Ppkm Diperpanjang: Hampir Seluruh Kabupaten/Kota di Indonesia Berada di Level 1.

Ministry of Tourism and Creative Economy (2022a, 11). Imbas ktt g20 perekonomi bali naik hingga 81 persen.

Ministry of Tourism and Creative Economy (2022b, 08). Naik Pesawat Tak Perlu Tes pcr, Simak Aturan Terbaru per 29 Agustus 2022.

Ministry of Tourism and Creative Economy (2022c, 11). Siaran pers: Menparekraf: Presidensi indonesia di ktt g20 jadi momen kebangkitan ekonomi dan kebanggaan bangsa.

The World Bank (2022, 12). Indonesia economic prospects: Trade for growth and economic transformation.