

Annual Competitiveness Analysis and Impact of COVID-19 on Sub-National Economies of Indonesia

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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 the intellectual leadership and network for understanding and developing competitiveness in the Asia region. ACI seeks to contribute to the enhancement of inclusive growth, living standards, and institutional governance through competitiveness research on subnational 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) The development of digital economy and its implications in 16 Asia economies; and (III) Singapore'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.

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Preface

The ongoing COVID-19 pandemic has transformed the economic landscape across the world. Economies have had to adapt their structure whilst ensuring the health of their populations. How will Indonesia adapt? As the largest economy and most populous nation in Southeast Asia, Indonesia has the potential to be an economic powerhouse in Asia alongside China and India. It is now facing significant challenges as a result of the pandemic.

While most studies on the Indonesian economy have been conducted at a national level, the Asia Competitiveness Institute (ACI) at the Lee Kuan Yew School of Public Policy (LKYSPP), National University of Singapore (NUS), has been paying greater attention to the subnational levels in Indonesia. Thus, ACI has been conducting empirical studies annually to analyse and rank the competitiveness of Indonesia's six regional and 34 provincial economies. The information and findings from this current study aims to aid policymakers in understanding each province's strengths and weaknesses, enabling them to enhance competitiveness at the provincial and regional levels. Noting how the country's provinces have been unequally impacted by the pandemic, the objective of this present study has become even more urgent as the 34 provinces chart their respective recovery trajectories.

Currently in its eighth iteration, this year's edition also features ACI's findings from a business expectations survey conducted from July to November 2020 as the repercussions of the pandemic became more clearly felt in the country and its businesses. The findings reveal that while firms of all sizes were affected by the pandemic in the first half of 2020, the information and communication technologies and healthcare sectors gained significantly.

Like many countries around the world, the Indonesian stakeholders of the ACI study are trying their best and are working optimistically towards an economic recovery, in the way each of their localities know how. For international stakeholders interested in Indonesia's socio-economic landscape, this book provides an analysis of the local situation as a compendium to gauge the country's prospects in the year ahead. I am confident that these insights will add to our understanding of the dynamics of competitiveness in the country.

Professor Paul Cheung

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

Executive Summary

Along with most countries in the world, Indonesia's economy received an unprecedented shock because of the COVID-19 pandemic. Just before the pandemic, in 2019, Indonesia's economic growth had steadily hovered around 5 percent. The country's economic stability was upended in 2020: GDP growth plunged to the country's lowest since the Asian Financial Crisis, at -5.32 percent. The pandemic's impact reverberated through the labour market, with unemployment rates increasing from 4.94 percent in February 2020 to 7.07 percent in August 2020. Poverty also rose from 9.78 to 10.19 percent from March to September 2020. While the number of COVID-19 cases continues to rise in the country the cumulative number of cases surpassed 1 million on 26 January 2021 - the economy saw some improvements in Q4 2020, with growth increasing by 3.13 percent to -2.19 percent. This study on the competitiveness of 34 sub-national Indonesian economies by the Asia Competitiveness Institute is committed to tracking the country's diverse progress. This objective has been fundamental in light of the COVID-19 pandemic that has affected the archipelagic nation in different ways. Chapter 1 of the book provides a key guide to the various COVID-19 policies employed by the government to strike a fine balance between protecting public health and sustaining the economy. For international onlookers, the findings and recommendations will be valuable in gauging the aid afforded by the government to different demographics and sectors and, therefore, the opportunities available for them in the New Normal.

The annual competitiveness rankings update has seen a significant number of shifts this year. This is a welcomed change in the nation's bid to redistribute economic development outside the economic center of Jakarta and the Java region. East Kalimantan's progress is most salient, in part because it was slated to be Indonesia's new capital city by President Joko Widodo in 2017. As the prospective capital, infrastructure preparations underway before the pandemic resulted in a 14-rank jump for the province (from 22^{nd} to 14^{th}) under the Government and Institutional setting environment and a four-rank improvement (from 8^{th} to 4^{th}) under the Financial, Business and Manpower Conditions environment.

This iteration of the competitiveness update has also utilized the *What-If* simulation method to assess the early efficacies of the Palapa Ring Project. Completed in 2019, the national project sought to connect all regions of Indonesia with basic internet access. The case study affirmed that the infrastructure project would elevate the connectivity of border provinces of Indonesia. North Maluku presented the largest improvement; other outermost provinces like North Sumatra, Maluku, and West Kalimantan followed closely.

Responding to the economic plunge in 2020, ACI pivoted our survey process to gauge each provincial economy's dynamic situation. The findings from ACI's Business Expectations Survey conducted from July to September 2020 draw upon business owners' sentiments in 26 provinces. The results illustrate how deeply the economic disruption penetrated the economy: Both large corporations and Micro, Small, and Medium

Enterprises (MSMEs) were significantly affected, refuting the common expectation that large firms would be more resilient in times of a crisis.

The industry-differentiated impacts have also highlighted that some industries, like information and communication technologies, healthcare and finance stand to gain from the new economic landscape. Others, like tourism and their related service sectors do not have such an optimistic outlook considering the unpredictable return of travel.

The findings from this paper were used as a springboard for ACI's recent webinar on *Drivers of Indonesia's Economic Growth in 2021*. Representatives from the Embassy of the Republic of Indonesia, the Indonesian Employers' Association (APINDO), and academics from Indonesia and Singapore came together to assess how the latest stimulus and vaccination programmes could elevate businesses' prospects after a year of the pandemic.

ACI ultimately acknowledges that the complexity of Indonesia's economic recovery depends on policies that appropriately respond to each province's specific needs. To facilitate the necessary dialogues on each province's recovery beyond the pandemic, ACI organized a webinar series, *The Inaugural Provincial Dialogue on the Economy and Development 2020,* for a total of 19 provinces. Government officials from key planning agencies, leaders from each province's APINDO chapter and academics who have been tracking the respective local economies took part in it. The key takeaways from the webinars and local insights from ACI's academic collaborators are summarized in the provincial commentaries found in the final chapter of this book.

Acknowledgments

Since 2013, the Asia Competitiveness Institute (ACI) has been providing a yearly update to our flagship study on the provincial and regional competitiveness in Indonesia. This current study was supervised by Dr Zhang Xuyao, led by Doris Liew Wan Yin and Clarice Handoko, with the support of Hilda Kurniawati and Arief Rizky Bakhtiar. This project was initially facilitated by former Co-Director of ACI, Professor Tan Khee Giap.

This year's Annual Competitiveness Analysis and Impact of COVID-19 on Sub-National Economies of Indonesia includes a review of the Indonesian economy's situation during the unprecedented global pandemic. This would not have been possible without the timely participation of longstanding representatives from Indonesia's provincial governments, academics and business stakeholders from the Indonesian Employers' Association (APINDO) across 34 provinces of the country. Apart from their contributions to the perception-based data for the annual dataset, the team also greatly appreciates the insights they provided during the webinar series, *The Inaugural Provincial Dialogue on the Economy and Development* 2020.

Our research findings have also benefitted greatly from the constructive feedback and criticism of our preliminary findings presented during the 2019 World Bank – Asia Competitiveness Institute Annual Conference on "Urbanization Drive and Quality Adjusted Labour Contributions to GDP" from 18-19 November 2019. We would like to thank Professor Firmansyah, the Deputy Dean (Academic and Student Affairs) of Diponegoro University, Central Java, Indonesia, whose discussion notes have been included in this book.

The coordination and execution of field trips would not have been possible without the research and administrative team at ACI, including Yap Xin Yi, Cai Jiao Tracy, Nurliyana Binte Yusoff, Dewi Jelina Ayu Binte Johari and Shanty Citra Eka Vebriani, for ensuring the smooth running of the fieldwork phase. We are also grateful for the efforts of our student research assistants: Andika Eka Satria, Hylda Damayanti Puspida, Tommy Des Mulianta, Dimas Fauzi and Tanya Edwina Belatur.

We would also like to note with great appreciation the contributions from ACI Director Professor Paul Cheung and the research staff, including Dr Xie Taojun, Dr Bian Xiaochen, Tan Kway Guan, Sky Chua Jun Jie, Sumedha Gupta, Mao Ke, Cheah Wen Chong and Sunena Gupta during the research process.

Last but not least, we are immensely grateful for the encouragement from Professor Danny Quah (Dean), Professor Khong Yuen Foong (Vice Dean, Research and Development), Kadir Suzaina (Vice Dean, Academic Affairs) and other colleagues from the Lee Kuan Yew School of Public Policy for making this effort possible. Ultimately, we are indebted to the generous research funding from the Singapore Ministry of Trade and Industry, without which we would not have been able to produce such an extensive research.

List of Abbreviations

ACI	Asia Competitiveness Institute
AFC	Asian Financial Crisis
AI	Artificial Intelligence
APBD	Provincial Budget (Anggaran Pendapatan dan Belanja Daerah)
APBN	State Budget (Anggaran Pendapatan dan Belanja Negara)
APINDO	Indonesian Employers' Association (Asosiasi Pengusaha Indonesia)
APTB	Integrated Bus Network (<i>Angkutan Perbatasan Terintegrasi Bus</i> Translakarta)
ASEAN	Association of Southeast Asian Nations
BAPPENAS	National Development Planning Agency (Badan Perencanaan
	Pembangunan Nasional)
BBK	Batam, Bintan and Karimun
BI	Bank of Indonesia
BIG	Geospatial Information Agency (Badan Informasi Geospasial)
BKPM	Indonesian Investment Coordinating Board (Badan Koordinasi
	Penanaman Modal)
BPS	Central Bureau of Statistics (Badan Pusat Statistik)
BRICS	Brazil, Russia, India, China and South Africa
CEIC	Census and Economic Information Center
CIVETS	Colombia, Indonesia, Vietnam, Egypt, Turkey and South Africa
CMEA	Coordinating Ministry for Economic Affairs
COVID-19	Novel Coronavirus Disease
CPO	Crude Palm Oil
CV	Coefficient Variation
DAD	Dayak Customary Council (Dewan Adat Dayak)
DDI	Domestic Direct Investments
DI	Special Region (Daerah Istimewa)
DKI	Special Capital Region (Daerah Khusus Ibukota)
DPD	Regional Representative Council (Dewan Perwakilan Daerah)
DPR	People's Representative Council (Dewan Perwakilan Rakyat)
DPRD	Regional People's Representative Council (Dewan Perwakilan Rakyat
	Daerah)
E7	China, India, Brazil, Russia, Mexico, Indonesia and Turkey
EAGLEs	Initial grouping comprised of Brazil, China, Egypt, India, Indonesia,
	South Korea, Mexico, Russia, Taiwan, and Turkey. Members are
	updated frequently.
EoDB	Ease-of-Doing Business
EDB	Economic Development Board

EEZ	Exclusive Economic Zone
EU	European Union
FBMC	Financial, Businesses and Manpower Conditions
FDI	Foreign Direct Investments
Forkopimda	Regional Leaders Coordination Forum (Forum Koordinasi Pimpinan
	Daerah)
FTA	Free Trade Agreement
FTZ	Free Trade Zone
FRAND	Fair, Reasonable and Non-Discriminatory
G7	Group of Seven
Gerindra	Great Indonesia Movement Party (Partai Gerakan Indonesia Raya)
Golkar	Party of the Functional Group (Partai Golongan Karya)
GCI	Global Competitiveness Index
GDP	Gross Domestic Product
GERD	Gross Expenditure on Research and Development
GFC	Global Financial Crisis
GFCF	Gross Fixed Capital Formation
GIS	Government and Institutional Setting
GRDP	Gross Regional Domestic Product
GNI	Gross National Income
Hanura	People's Conscience Party (Partai Hati Nurani Rakyat)
HDI	Human Development Index
IAP	International Advisory Panel
ICOR	Incremental Capital Output Ratio
IDI	Indonesian Democracy Index
IHSG	Indonesian IDX Composite
IIPG	Indonesian Institute for Public Governance
ILO	International Labour Organisation
INDO-	Indonesia Database for Policy and Economic Research
DAPOER	
IMD	International Institute for Management Development
IMF	International Monetary Fund
JORR	Jakarta Outer Ring Road
KBM	New Independent City (Kota Baru Mandiri)
KEEZ	Kendal Exclusive Economic Zone
KIPI	International Port Industrial Area (Kawasan Industry Pelabuhan
	Internasional)
KPK	Corruption Eradication Commission (Komisi Pemberantasan Korupsi)
KPPOD	Regional Autonomy Watch (Komite Pemantauan Pelaksanaan Otonomi
	Daerah)
KSPI	Indonesian Trade Union Confederation
LKPD	Provincial Government Financial Report (Laporan Keuangan
	Pemerintah Daerah)

LKPP	Central Government Financial Report (<i>Laporan Keuangan Pemerintah Pusat</i>)
LKYSPP	Lee Kuan Yew School of Public Policy
LRT	Light Rail Transit
MBTK	Maloy Batuta Trans Kalimantan
MINT	Mexico, Indonesia, Nigeria and Turkey
MNC	Multi-National Corporation
MOU	Memorandum of Understanding
MP3EI	Masterplan for Acceleration and Expansion of Indonesia's
	Economic Development (Master Plan Percepatan dan Perluasan
	Pembangunan Indonesia)
MRT	Mass Rapid Transit
MS	Macroeconomic Stability
MSME	Micro, Small and Medium Enterprise
N-11	Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan,
	Philippines, Turkey, South Korea, Vietnam
NasDem	National Democrat Party (Partai Nasional Demokrat)
NCICD	National Capital Integrated Coast Development
NTFPs	Non-Timber Forest Products
NPL	Non-Performing Loans
NSDC	National SEZ Development Council
NU	Revival of the Ulama (Nahdlatul Ulama)
NUS	National University of Singapore
NWC	National Wage Council
OECD	Organisation for Economic Co-operation and Development
OJK	Monetary Authority of Indonesia
OLS	Ordinary Least Squares
ORTD	Online Real Time Digital
p.a.	Per Annum
PAN	National Mandate Party (Partai Amanat Nasional)
PBB	Crescent Star Party (Partai Bulan Bintang)
PDIP	Indonesian Democratic Party of Struggle (Partai Demokrasi
	Indonesia-Perjuangan)
PDR	People's Democratic Republic
PEN	National Economic Recovery
РКВ	National Awakening Party (Partai Kebangkitan Bangsa)
PKPI	Indonesian Justice and Unity Party (<i>Partai Keadilan dan Persatuan Indonesia</i>)
PKS	Prosperous Justice Party (Partai Keadilan Sejahtera)
PLTA	Hydroelectric Power Plant (Pembangkit Listrik Tenaga Air)
PP	Government Regulation (Peraturan Pemerintah)
PPP	The United Development Party (Partai Persatuan Pembangunan)
PSBB	Large Scale Social Restriction

PSDC	Provincial SEZ Development Council
PSI	Indonesian Solidarity Party (Partai Solidaritas Indonesia)
PTEM	Productivity Tracking and Efficiency Monitoring
PTFI	PT Freeport Indonesia
PTSP	National Single Window for Investment (Pelayanan Terpadu Satu
	Pintu)
PVC	Present Value Constraint
PwC	PricewaterhouseCoopers
q-o-q	quarter-on-quarter
QALI	Quality Adjusted Labour Index
QLID	Quality of Life and Infrastructure Development
RPJMD	Regional Medium Term Development Planning (Rencana
-	Pembangunan Jangka Menengah Daerah)
RPJMN	National Medium Term Development Plan (Rencana Pembangunan
	Jangka Menengah Nasional)
RUPM	General Investment Plan (<i>Rencana Umum Penanaman Modal</i>)
RZWP3K	Coastal and Small Islands Zonation Planning (Rencana Zonasi
	Wilayah Pesisir dan Pulau-Pulau Kecil)
SAKIP	Government Performance. Accountability System (Sistem
	Akuntabilitas Kinerja Instansi Pemerintah)
SDG	Sustainable Development Goals
SEDA	Special Economic Development Areas
SEZ	Special Economic Zone
SIPD	Regional Development Information System (Sistem Informasi
	Pembangunan Daerah)
SM	Sei Mangkei
SME	Small and Medium Enterprise
SVI	Standard Value of Indicators
TK	Tanjung Kelayang
TL	Tanjung Lesung
UNDP	United Nations Development Programme
US	United States
VAT	Value-Added Tax
VECM	Vector Error Correction Model
VISTA	Vietnam, Indonesia, South Africa, Turkey and Argentina
WCY	World Competitiveness Yearbook
WEF	World Economic Forum
WHO	World Health Organization
у-о-у	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

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Chapter 1 Introduction

Doris Liew Wan Yin and Hilda Kurniawati

1.1 Structure and Content of the Book

This book introduces Indonesia's economy to the reader and presents the results of ACI's most updated series of research projects on Indonesia's sub-national economies. Aside from the annual competitiveness analysis and simulation studies of Indonesia's provinces and regions, this edition will include a survey analysis of Indonesia's businesses amid COVID-19 along with commentaries on the recent developments of selected Indonesian provinces in 2020.

The book comprises five chapters, including this introductory chapter that serves as a roadmap for the reader. The content of the next four chapters is summarized below to provide a snippet to the rest of the book.

Chapter 2 provides the annual update of Indonesia's provincial competitiveness analysis, which is one of ACI's flagship research projects. The index evaluates competitiveness as a composite of four environments, spanning: (i) Macroeconomic Stability, (ii) Government and Institutional Setting, (iii) Financial, Businesses and Manpower Conditions as well as (iv) Quality of Life and Infrastructure Development.

As shown in Table 1.1, the special capital region (DKI) Jakarta occupies first place in Overall Competitiveness, as it has been for the past eight years since the annual analysis was first published in 2013, while East Java remains as the second most competitive. Overall, it can be seen that provinces in the Java region tend to occupy the top-end of the table, with the top four provinces coming from there. Meanwhile, provinces in the Bali-Nusa Tenggara and Maluku-Papua regions tend to occupy the bottom-end. The performance of provinces in the Kalimantan, Sulawesi, Sumatra as well as Bali and Nusa Tenggara regions tends to be mixed.

Chapter 3 provides a competitiveness analysis of Indonesian regions. It applies the same framework used in Chapter 2 on six regions of Indonesia, where each region is an aggregation of several provinces based on their major island groupings. Consistent with the findings at the provincial level presented in Chapter 2, we observe that the Java region tops the performance on competitiveness, while the Maluku-Papua region holds the last place, as has been the case for the past few years. While the overall rankings remain

2020 Overall Competitiveness		Province	Region
Rank	Std. Scores	11011100	1081011
1	2.629	DKI Jakarta	Java
2	2.241	East Java	Java
3	1.612	Central Java	Java
4	1.591	East Kalimantan	Kalimantan
5	1.551	West Java	Java
•••			
30	-1.058	Bangka Belitung Islands	Bali-Nusa Tenggara
31	-1.064	West Sulawesi	Sulawesi
32	-1.084	North Maluku	Maluku-Papua
33	-1.294	West Papua	Maluku-Papua
34	-1.301	East Nusa Tenggara	Bali-Nusa Tenggara

 Table 1.5: Highlights of ACI's 2020 Overall Competitiveness Ranking of Indonesian

 Provinces, (Top-Five and Bottom-Five Provinces)

unchanged, 2020's results yield interesting observations at the environment level. Our findings here show that Kalimantan and Maluku-Papua regions are making headway towards higher competitiveness level. Readers interested to delve further into this discovery can find its evidence presented in Chapter 3.

Chapter 4 presents ACI's study on Indonesian firms' economic and business sentiments amidst the COVID-19 pandemic. The research team surveyed Indonesian firms in 26 provinces to assess their perceptions on business conditions and future recovery from the pandemic-induced economic downturn.

Chapter 5 provides an overview of recent developments in selected provinces of Indonesia. The chapter is co-written with ACI's longstanding academic partners in the provinces who have also made our yearly survey (discussed in Chapter 2) possible. In the compilation of commentaries, local academics provide key insights to the provincial variations and responses to COVID-19.

As Indonesia braces herself through the ongoing COVID-19 pandemic, it is important not to lose sight of her progress and her regional economy's diverse comparative advantage. ACI's contribution lies in the empirical and policy guidance it provides for Indonesia's policymakers, academics and business owners as they navigate through the crisis. This compilation of situational analysis, competitiveness review, business survey and local academic assessment serves as a useful toolkit for readers seeking to understand Indonesia's state of affairs and policy direction in the current crisis.

Indonesia in 2020

1.2

2020 marked an unprecedented year with the onset of the COVID-19 pandemic. First reported in Indonesia in the capital city of DKI Jakarta, the virus soon spread across the Indonesian islands, sparking a series of healthcare crisis. In a country where healthcare quality is low by international standards, the healthcare sector was severely underprepared to contain the pandemic.¹ A greater concern was the spread of the virus to the less developed parts of Indonesia with even weaker health infrastructure. The cumulative infection count surpassed one million persons, or 0.3 percent of its population, on 26 January 2021. At the same time, more than 28,000 deaths were recorded (COVID-19 Taskforce 2021). The weekly number of tests per confirmed case of infection hovered between 3.8 to 9.2 from March 2020 to February 2021. This is below the benchmark set by the World Health Organization (WHO) of between 10 to 30 tests administered per confirmed case (Ghebreyesus 2020), underlining a system that has much room for improvement.

Although the government has attempted to strike a balance between sustaining the economy and protecting public health, COVID-19 response measures have nevertheless impacted the economy negatively. The latest Gross Domestic Product (GDP) figure shows that Indonesia's economy has been in the red for three consecutive quarters since the second quarter of 2020 (BPS-Statistics Indonesia 2021).

Analysing Indonesia's economy will hence be useful for all stakeholders to navigate through the current crisis. National-level analyses of Indonesia's economy has, in the past, been conducted widely by global organizations such as the World Bank and World Economic Forum, but data and analysis is lacking at the sub-national level. The Asia Competitiveness Institute's (ACI) study on Indonesia's 34 provinces seeks to fill this knowledge gap.

1.2.1 COVID-19 Landscape in Indonesia

1.2.1.1 COVID-19 Timeline in Indonesia

On 2 March 2020, the first two COVID-19 cases were detected in the country (Ministry of Health 2020). The emergence of the disease in Indonesia pushed the authorities to acknowledge the pandemic as a Public Health Emergency on 31 March 2020 and the government released a Presidential Decree through the Government Regulation No. 21 of 2020 on Large Scale Social Restriction (PSBB) (See Figure 1). The regulation allows provincial governments to impose PSBB in times of emergency. PSBB involves school and workplace closure and restrictions of activities in public spaces (COVID19 Taskforce 2021). A second restriction was imposed during Eid-al-Fir that took place in May 2020. It is Indonesia's largest annual event celebrated by the Muslim majority. Traditionally, migrant workers would return to their home province for the celebration with their

¹ Indonesia is ranked 96 out of 140 countries under Health pillar in Global Competitiveness Report 2019 (World Economic Forum 2019).

families, resulting in the mass movement of millions from economic centres in the Java region to the rest of Indonesia (Rozie 2020). This mass movement of people across provinces would risk spreading the virus further, hence prompting the government to ban cross-province travel from 24-31 May 2020.

Date	Timeline	
2-Mar-20	First confirmed COVID-19 cases in Indonesia	
31-Mar-20	Presidential Decree to enable provincial governments to impose Large Scale Social Restriction (PSBB)	
24-Apr-20		
31-May-20	Mudik Ban	
11-May-20	Announced a National Economic Recovery Programme (PEN)	
16-Jun-20	Increased PEN budget to Rp695.2 trilion (US\$ 49.5 billion)	
25-Jul-20	Established the Committee for COVID-19 Mitigation and the National Economic Recovery (KPCPEN)	
14-Sep-20	Jakarta reimposed Large Scale Social Restriction (PSBB) due to spike in the daily cases and fatalities in the Capital City	
18-Dec-20	Mandatory requirements for Rapid Antigen Test for travelers coming to Jakarta and West Java, as well as PCR Swab test for Bali	
31-Dec-20	Arrival of 1.8 million Sinovac COVID-19 vaccine in Indonesia	
1-Jan-21	Closed borders to international visitors for two weeks to prevent the spread of the more contagious COVID-19 variant	
11-Jan-21		
	Public activity restrictions (PPKM) enforced in Java and Bali	
13-Jan-21	COVID-19 vaccination programme kicked off targeting 1.1 million health workers, marked by President Jokowi's first vaccine injection	
21-Jan-21	PPKM in Java and Bali extended to Feb 8 due to continued high COVID-19 cases	
27-Jan-21	Indonesia registered 1.012 million cumulative COVID-19 cases	
17-Feb-21	The second stage of vaccination program kicked off, targeting elderly and public service workers	

Figure 1.1: COVID-19 Timeline in Indonesia

Addressing the economic impacts of the pandemic, the national government introduced the National Economic Recovery (PEN) programme on 11 May 2020, under Government Regulation No. 23 of 2020, targeting affected firms, workers and households. The details of the programme will be outlined in the next section.

As the number of COVID-19 cases continued to rise, the national and provincial

governments implemented various movement restriction measures from the second half of 2020, with some of these set to continue into the first half of 2021. As shown in Figure 1.1, prominent measures include the PSBB in DKI Jakarta in September 2020, the mandatory negative test requirements for travellers entering Jakarta, West Java and Bali, and Restrictions on Community Activities (PPKM) like those in Java and Bali from 11 – 25 January 2021. In addition, the government closed the borders to international visitors from 1-14 January 2021 to prevent the spread of the new and more contagious B119 COVID-19 variant (COVID19 Taskforce 2021). Despite these measures, Indonesia's cases have continued to rise, reaching 1.012 million cases on 27 January 2021.

Nevertheless, the availability of vaccines offers hope that over the next couple of months, the number of COVID-19 infections could be reduced. Indonesia received 1.2 million doses of Sinovac vaccine in early December 2020 and obtained 1.8 million more on 31 December 2020 (COVID19 Taskforce 2021). The vaccination drive in Indonesia kicked off on 13 January 2021 and aimed to vaccinate 1.1 million health workers in its first phase. The second phase that began on 17 February 2021 at Tanah Abang Market aims to inoculate 55,000 traders, 16.9 million public service workers and 21.5 million elderly in Indonesia (COVID19 Taskforce 2021).

1.2.1.2 Distribution of COVID-19 Cases across Indonesia

As described in the earlier section, a high number of COVID-19 cases have been recorded in Indonesia. Notably, the distribution of cases has been highly uneven. As seen from the risk zonation map (Figure 1.2), places with high and moderate risks are more likely to be located in Java island. This is further illustrated in Figure 1.3 where COVID-19 cases are concentrated in several provinces, such as DKI Jakarta, West Java, Central Java, East Java and South Sulawesi. Common characteristics shared by these provinces are high population density, presence of industrial centres and high global interconnectedness.

According to the Indonesian Trade Union Confederation (KSPI), rapid transmission of the disease was found in several companies in the automotive and electronics sectors as well as in labour-intensive firms, such as textile, garment and shoe factories (CNN Indonesia 2020). These clusters mostly occurred in factories that are located in the industrial areas, such as Karawang, Bogor and Bekasi (West Java), Tangerang and Serang (Banten), as well as Sidoarjo (East Java). An example of such a cluster was an outbreak in 34 factories in Karawang Industrial Estate (West Java), which resulted in a sharp increase in the COVID-19 fatality rate (Republika 2020). These clusters were a corollary of poor health and safety distancing protocols in the industrial areas (CNN Indonesia 2020).

Global interconnectedness is also another important factor that may have increased the number of COVID-19 cases in these cities that saw greater volumes of international travel. According to Bowen and Laroe (2006), a similar scenario had played out during the 2003 SARS outbreak, where air transport was identified as one of the key factors for high disease transmissibility.



Figure 1.2: Risk Zonation of COVID-19 in Indonesia

Source: Covid19 Taskforce (2021)



Figure 1.3: COVID-19 Distribution across 34 Indonesian Provinces, by thousand cases

Source: Covid19 Taskforce (2021)

1.2.1.3 Indonesia's National Policies and Stimulus Programme

The Indonesian government allocated Rp695.2 trillion for the National Economic Recovery (PEN) programme in June 2020. As of December 2020, the government had spent Rp579.8 trillion, or 83.4 percent of the total budget. Table 1.2 specifies a list of Indonesia's national policies and stimulus programmes for COVID-19.

Policy Area	National Policies and Stimulus Programmes
Health sector	 Purchase of essential medical equipment Upgrade of referral hospitals and quarantine facility, including <i>Wisma Atlet</i> Upgrade of referral hospitals and quarantine facility, including <i>Wisma Atlet</i> Health incentives for health workers in referral hospitals in central & district areas Death benefits for health workers Subsidies for Covid-19 patients' treatment fee
Social protection	 Family Hope Programme (<i>Program Keluarga Harapan</i>) Basic food assistance programme (<i>Kartu Sembako</i>) Cash assistance (<i>Bantuan Sosial Tunai</i>) Electricity discounts Village fund programme (<i>Program Dana Desa</i>) Pre-employment cards (<i>Kartu Pra Kerja</i>)
MSME sector	Fund placementInterest subsidyLoan structuring and guarantee programme
Tax and fiscal incentives	 Removal of individual income tax for particular sectors Removal of income tax on import and reduction in corporate income tax rates for small and medium industries Electricity discount for industries
Education sector	 Internet quota subsidy for students and teachers

Table 1.6: COVID-19 National Policies and Stimulus Programmes

Health sector

The government spent Rp47.05 trillion for various health incentive programmes in 2020. Additionally, the government provided a monthly incentive for healthcare personnel working in the COVID-19 referral hospitals, ranging from Rp5-15 million per health worker, depending on their role and rank in the health service. Death insurance of up to Rp300 million per health worker was also provided. Both the 2020 State and Regional Budgets also allocated funds for COVID-19 treatment fees for their respective populations.

Social Protection

As of December 2020, the government had spent the budget of Rp220.39 trillion for various social protection programmes. The coverage and budget realization of these programmes are described in Table 1.3 below:

Social protection program	Coverage	Budget Realization in 2020 (in IDR and percent of target)
Family Hope Programme (<i>Program Keluarga</i> Harapan/PKH)	10 million households	Rp36.71 trillion (100 percent)
Basic food cards (<i>Kartu Sembako</i>)	20 million households	Rp41.56 trillion (97.59 percent)
Cash assistance (Bantuan Sosial Tunai/BST)	10 million households	Rp31.58 trillion (97.55 percent)
Electricity discounts	31.2 million households	n/a
Village fund programme	11 million households	Rp47.5 trillion
(Program Dana Desa)		(66.3 percent)
Pre-employment cards (Kartu Pra Kerja)	5.6 million recipients	Rp29.4 trillion (98.91 percent)

Table 1.7: Indonesia's COVID-19 Social Protection Programmes

Micro, Small and Medium Enterprises

Addressing the large percentage of MSMEs in Indonesia, the government has offered financial and loan assistance to affected MSMEs. The Ministry of Finance and Monetary Authority of Indonesia (OJK) implemented the Fund Placement and Provision of Interest Subsidies in June 2020. As of December 2020, aids for MSMEs given in the form of credit restructuring (presently valued at Rp361.98 trillion), interest subsidies (Rp2.5 billion in value so far) and other funding programmes have totalled Rp1 trillion.

Tax and fiscal incentives

The PEN also includes various tax and fiscal incentives. Broadly speaking, in 2020, it sought to ease the tax burdens of labour-intensive industries, the imports of select sectors and MSMEs. Rp20.4 trillion was set aside for these efforts. Additionally, the Ministry of Industry set aside some Rp1.85 trillion to provide industries with electricity discounts and a notable 50 percent discount off electricity bills for eligible businesses from April to September 2020.

Education sector

To support distance learning amid the pandemic, the Ministry of Education and Culture has provided internet quota subsidies for 21.7 million students, 2.8 million teachers, 2.7

million university students and 161,000 university lecturers. The internet data quota assistance provided by the government consists of the general quota and the learning quota. The general quota can be used to access all mobile applications, while learning quota can only be used to access learning pages and applications registered in the Ministry of Education and Culture's website. All students received a monthly learning quota of 35 gigabyte, while teachers and lecturers received 42 gigabyte and 50 gigabyte, respectively.

1.2.2 Challenges and Opportunities during COVID-19

This section aims to highlight the challenges Indonesia faced during the pandemic and identify opportunities for growth and recovery going forward.

1.2.2.1 Challenges During COVID-19: Identifying Indonesia's Systemic Weaknesses

Poor Healthcare System as an Impediment to Effective COVID-19 Response

The efficacy of the healthcare system is pivotal in the control of disease outbreak. Experiences worldwide show two important phases for outbreak management: i) the successful control of virus spread, and ii) the effective distribution of the vaccine.

During the first phase, Indonesia struggled to cope with the virus outbreak because the healthcare system had reached its full capacity. In 2017, several health indicators showed that Indonesia's healthcare capacity was low compared to the world average: 1.2 hospital beds per 1000 population (World average: 2.9) and 0.4 physicians per 1,000 population (World average: 1.6) (World Bank 2021). Indonesia's lack of healthcare efficacy can also be seen through its low COVID-19 test rate of 3.8 to 9.2 tests per confirmed infection case, below WHO's guideline of 10 to 30 tests per confirmed case needed to accurately reflect the extent of the outbreak (World Health Organization 2020). This healthcare constraint resulted in the rapid spread of the virus and daily cases continued to rise in the second half of 2020 till early 2021.

In late 2020, biotech firms announced successful trials of the COVID-19 vaccine, building optimism that the crisis may soon pass. Indonesia has currently secured 146 million Sinovac doses, enough to inoculate a quarter of its population if two doses are required per person (UNICEF 2021). This number, however, is still below the 60-90 percent needed to achieve herd immunity.² Indonesia kicked off the first phase of its vaccination drive on 13 January 2021 inoculating 1.5 million medical workers. The second phase which began on 17 February 2021 aims to vaccinate 55,000 traders, 16.9 million public service workers and 21.5 million of those who are above 60 years old (COVID19 Taskforce 2021).

Indonesia faces two constraints in its vaccination drive. The first is securing enough vaccines to inoculate a majority of its population as soon as possible. The Economist Intelligence Unit (2021) estimated that Indonesia will only be able to secure enough vaccines to inoculate its entire population by 2023. Secondly, it is logistically demanding

 $^{^{2}}$ The numbers depend on the Ro rate and vaccine efficacy. For more, see Anderson et al. (2020).

to store, transport and administer the vaccine across the vast archipelago with 34 provinces that span 17,500 islands. Transporting vaccines to remote parts of Indonesia, such as Jayapura, Papua, is costly and challenging (Hutton 2021).

COVID-19's Impact on Industries: The Case of Tourism and Manufacturing

The tourism and manufacturing industries are most affected by the pandemic. Tourism is one of the key drivers of economic growth and employment in the country, identified in its Medium-Term Development Plan (RPJMN) for 2015-2019 as a priority sector. The plan aimed to increase the contribution of tourism to the economy from 4.2 percent in 2014 to 8 percent by 2019 (National Development Planning Agency 2014). The emergence of the COVID-19 pandemic thwarted the continuation of this plan, as tourism's reliance on foreign visitors made it extremely susceptible to the effects of border closures and global human mobility restrictions. 2020's international air traffic dropped to an all-time low, from 1.29 million arrivals in January 2020, to 140-170 thousand per month from April to December 2020 (BPS-Statistics Indonesia 2021). GDP for tourism-reliant sectors such as accommodation, food and beverage contracted by 10.22 percent while transportation and storage experienced a contraction of 15.04 percent. The duration of this downturn remains uncertain and will depend heavily on 1) whether the current vaccination drives would allow for border reopening, and 2) the efficacy of Indonesia's strategy to revive the tourism industry.

Another important industry for the economy is manufacturing. Based on 2019 figures, the manufacturing sector contributed to a quarter of Indonesia's GDP, the highest sectoral contribution out of 17 recorded sectors. In the same year, this sector employed 14.88 percent of Indonesian workers (BPS-Statistics Indonesia 2019). In 2020, amidst the pandemic, the global supply chain disruption caused a supply shock of raw materials, thereby delaying or reducing production. The subsequent drop in domestic demand (demand shock) and exports also affected the revenue stream of manufacturing firms. In May 2020 for instance, Indonesia's exports constituted only USD10.5 billion, the lowest performance since 2016 (BPS-Statistics Indonesia 2021). The contraction also reverberated through the labour market as employment shrunk by 8.93 percent in 2020, compared to 2019. Despite a year of negative impacts, the current climate shows signs of optimism. As global demand has rebounded and trade activity is picking up, the manufacturing sector is expected to gradually recover in 2021 (World Bank 2020).

Education Setback: Learning Losses during School Closures

The pandemic has led to closure of educational institutions, pushing over 68 million Indonesian children out of the classroom (Yarrow et al. 2020). Remote learning models such as online classrooms and video lessons have replaced physical classroom interactions between teachers and students. Yet, Indonesia's disparate internet connectivity and students' unequal access to hardware and software technologies means that not all students will be able to access online lessons and resources such as these. While home internet penetration in more advanced provincial economies such as Central Java and East Kalimantan is quite high at 98.16 percent and 97.64 percent respectively, this figure stands only at 81.86 percent and 85.22 percent in less advanced economies such as North Maluku and West Papua respectively (BPS-Statistics Indonesia 2020b). This stark divide in digital access has led to learning losses amongst children in low-income households and those who reside in the rural areas where technological infrastructure is poor.

Such learning losses will stunt human capital development in the country and affect the future projected income of Indonesian children. A World Bank report sheds light on the potential income loss: school closure through September 2020 is estimated to cause income losses of USD222.4 billion, or Rp3.3 trillion across 68 million Indonesian children (Yarrow et al. 2020). This figure represents 19.9 percent of its 2019 GDP. Furthermore, as children in low-income households are more likely to have their education disrupted, income losses amongst them will be disproportionately higher, potentially widening income inequality. The effects of learning loss provoked by the pandemic is expected to perpetuate inequality far into the future.

1.2.2.2 Growth Opportunities During and After COVID-19

Digital Integration: Building Block for Industry 4.0

During the pandemic, digital innovation built to virtually connect workers, students and consumers thrived. The change in daily routines of many Indonesians due to home confinement resulted in the creation of new tech firms to meet new demands. As a result, Indonesia's e-commerce market was expected to increase in size by 37.4% in 2020, reaching a valuation of Rp351.1 trillion (GlobalData 2021). The Information and Communication industry also grew by 10.58% in 2020, registering the fastest rate of increase in any given year (BPS-Indonesia 2021). This fast-growing e-commerce market attracted the attention of global tech giants. Seeing potential for its future growth, Google and Temasek plan to invest USD300 million in Tokopedia, an Indonesian e-commerce firm that has gained significant market share during the pandemic. Another global tech firm, Amazon, has also announced a USD2.85 billion investment to construct three data centres in West Java, Indonesia in 2021-2022 (Medina 2020). As this digitalization trend is likely to continue post-pandemic, foreign investments into the Indonesian tech sector are expected to remain strong.

The positive trajectory of the pandemic-induced digital acceleration is complemented by the Indonesian government's policies to further support the growth of the digital economy. The Indonesian President, Joko Widodo, issued five directives: 1) increase access and improve the country's digital infrastructure; 2) devise digital transportation roadmap in strategic sectors such as government, welfare provision, education, health and trade; 3) accelerate the setting up of Indonesia's National Data Centre; 4) prioritize human capital development in the digital sector; and 5) implement supporting regulations and funding schemes for digital transformation (Office of Assistance to Deputy Cabinet Secretary for State Documents & Translation 2020).

The Ministry of Finance has allocated funds in its 2021 budget for digital learning, building technological and ICT infrastructure to improve access and quality of education

services, strengthening digital infrastructure in logistics and connectivity, accelerating digital transformation in governance and public service delivery, fostering digital technopreneurship, improving agricultural productivity using new technology and equipment, and digitalizing law enforcement and procedure (e-court) (Ministry of Finance 2020).

Preparing for The Future of Work: Skilling and Reskilling of Indonesian Workforce

Indonesia's unemployment rates hit 7.07% in August 2020, the highest since 2015. Workers were retrenched across almost all the industries, including manufacturing, construction, accommodation and food services and finance (BPS-Statistics Indonesia 2020a). The Information and Communication industry, however, saw an increase in employment of 10,000 people by August 2020 due to Indonesia's digital transformation discussed in the previous section.

The adoption of Artificial Intelligence (AI), automation and robotics, accelerated during the pandemic, requires the skilling and reskilling of the workforce to meet future industrial needs. The vision of the Indonesian government is to provide opportunities for unemployed workers to train and reskill themselves for Industry 4.0. This will be important not only for Indonesia's immediate recovery but also its long-term growth. Investment to improve the digital knowledge of workers in resilient industries such as manufacturing, healthcare and digital services will ensure a sustained economic growth.

In Indonesia's medium-term national development plan of 2020-2024 (RPJMN 2020-2024), several key initiatives are aligned with this vision. One of them is the allocation of Rp29.1 trillion for the skilling and reskilling of workers in digital skills (National Development Planning Agency 2020). The 2021 budget (Ministry of Finance 2021) further allocates Rp55.9 trillion for national programmes prioritizing human capital development to meet post-COVID-19 industrial needs.

1.3 Overview of Indonesia's Recent Economic Developments

Sections 1.3.1 to 1.3.3 describe the trends in various aspects of the nation's economy during the pandemic year.

1.3.1 Growth Trends and Prospects

Measures taken by many governments in the world to mitigate the effects of the pandemic have put economic growth of countries with susceptible healthcare systems at risk (Blake and Wadhwa 2020). Economies dependent on tourism, global trade and foreign financing have also been severely disrupted in countries that experience high cases of COVID-19 (World Bank 2020). As we have seen, this is especially true for a country like Indonesia that relies heavily on global trade (37.3 percent of its GDP in 2019).

As shown in Figure 1.4, Indonesia's economic growth consistently hovered around

five percent prior to the pandemic (Q1 – Q4 2019). After COVID-19 officially emerged in March 2020, economic growth plunged to 2.97 percent in Q1 2020 and deteriorated further to -5.32 percent in Q2 2020. Nevertheless, even though growth remained negative, Q3 2020 and Q4 2020 saw some improvements, as it rose slightly to -3.49 percent and -2.19 percent respectively. In late 2020, Finance Minister Sri Mulyani noted that Indonesia is optimistic for a recovery in 2021, with the economy expected to grow 4.5 to 5.5 percent.



Figure 1.4: Quarterly GDP Growth (Y-o-Y), 2019 - 2020

Source: BPS-Statistics Indonesia

The pandemic's effect on the labour market has been salient. Prior to the pandemic, Indonesia's unemployment rate had been decreasing. With the onset of the pandemic, unemployment escalated significantly from 4.94 percent in February 2020 to 7.07 percent in August 2020 (See Figure 1.5). According to BPS, the pandemic affected approximately 29 million workers in Indonesia, 2.56 million of whom were only recently retrenched. The sudden rise in unemployment also led to an increase in the poverty rate.³ Figure 1.6 illustrates that the pre-pandemic poverty rate in Indonesia had dropped from 9.82 percent in March 2018 to 9.22 percent in September 2019. However, these improvements were reversed over the course of 2020, with the poverty rate increasing from 9.78 percent to 10.19 percent in March and September 2020. In addition, data from the National Socio-Economic Survey data in September 2020 showed that Papua (26.8 percent), West Papua (21.7 percent) and East Nusa Tenggara (21.21 percent) were among the provinces with the highest poverty rates in Indonesia. These numbers show that the outermost regions of the country suffered most from the pandemic.

³ Poverty rate is measured by the percentage of population with income below the provincial poverty line. The provincial poverty line can be found at BPS-Statistics Indonesia.



Figure 1.5: Unemployment rate (Percentage), 2017-2020





Source: BPS-Statistics Indonesia

Apart from that, the pandemic has also caused the rupiah to depreciate greatly against the dollar. As we can see from Figure 1.7, the Indonesia exchange rate stood at 14,000 (IDR/USD) at the beginning of 2020. Then, the rate depreciated sharply by 4.5 percent in April 2020 to a low of 16,608, the weakest since 1998. In February 2021, the currency recovered and returned to 14,000.

IHSG (Indonesian IDX composite) stood at 5,882 in February 2020, before falling sharply to its lowest (3,937) on 24 March 2020 (See Figure 1.8). On that day, as many as 8 out of 10 sectors in the IHSG weakened, led by miscellaneous industries (-4.57 percent) and the property sector (-2.92 percent). The continued decline of the IHSG was triggered
by low investor confidence due to: i) increasing number of COVID-19 cases in the country and ii) the adverse effects already caused by the pandemic (Mega Sekuritas 2020). As 90 percent of the domestic stock market was dominated by foreigners, the early economic effect from the pandemic resulted in panic selling and high outflow of foreign investments from Indonesia (CNN 2020). However, similar to the trend seen in the exchange rate, the IHSG was able to recover in early 2021, reaching an average level of Rp6,200. This recovery is likely to have been influenced by the January effect⁴ and positive sentiments toward the use of COVID-19 vaccines in Indonesia (Bisnis.com 2021).





Source: Bank Indonesia

As a continuation from the previous book, we will proceed to track and compare the economic progress between Indonesia and other fast emerging economies. Figure 1.9 illustrates the change in GDP from 2016 to 2020 in BRICS and MINT countries. Prior to 2020, most of the economies in these two regions were growing. The pandemic in 2020 caused all the economies, except China, to plunge to negative growth. The most affected country is India, where GDP growth fell from 4.2 percent in 2019 to -10.3 percent in 2020, a change of 14.5 percentage points. Indonesia's growth also dipped into the negative. However, at -1.5 percent GDP growth, it is the second least affected economy, compared to the other seven economies that have a growth rate of below -4 percent.

The impact of COVID-19 also reverberated through the Association of Southeast Asia Nations (ASEAN). Indonesia's economic deterioration in 2020 was moderate compared to other ASEAN members: It fared worse than Myanmar, Vietnam, Laos PDR and Brunei, but relatively less severe than the Philippines, Thailand, Malaysia, Singapore and Cambodia. As illustrated in Figure 1.10, the Philippines and Thailand were two of the

⁴ The January effect is a theory which postulates that stock prices take a dip in December and rise in January.

⁵ BRICS countries are Brazil, Russia, India, China, and South Africa.

⁶ MINT countries are Mexico, Indonesia, Nigeria, Turkey.



Figure 1.8: IDX Composite, 2020-2021

Source: Bank Indonesia

Figure 1.9: GDP Growth Rate for Indonesia, BRICS ⁵Countries and MINT⁶Countries(Percent), 2016-2020



Note: Figures for 2020 are based on preliminary data. Figures at the end of the line indicate growth rates in 2020. Dashed lines represent MINT countries. Source: International Monetary Fund

most heavily affected countries, with their GDP growth figures faltering at -8.3 percent and -7.1 percent respectively.

Figure 1.11 provides the breakdown of quarterly GDP composition by expenditure

type. This allows us to dive deeper into various aspects contributing to Indonesia's economic growth. The year 2020 saw the largest decline in household consumption, gross fixed capital formation, exports and imports, further reflecting the far-reaching effects of the pandemic. Government consumption, growing at 9.76 percent, marked the biggest increase in Q3 2020 out of all quarters from 2015-2020 due to the implementation of the COVID-19 fiscal stimulus program.



Figure 1.10: GDP Growth Rate for Indonesia and ASEAN-10 Countries (Percent), 2016-2020

Note: Figures for 2020 are based on preliminary data. Figures at the end of the line indicate GDP growth rate in 2020. Dotted lines represent CLMV countries. Source: International Monetary Fund

According to Figure 1.12, two sectors remained resilient in 2020. The most resilient sector was Information and Communication, which grew by 10.6 percent in 2020, higher than its 6-year average of 9.2 percent. Prior to 2020, this sector was also experiencing high growth of between 7 percent to 10 percent each year since 2015, illustrating the ongoing digitalization trend in Indonesia. The second most resilient sector was agriculture, forestry and fishery. It reaped a positive growth of 1.8 percent in 2020, albeit at a lower growth rate than previously.

The construction sector experienced the largest decline, deviating by nine percentage points from the year before. This is due to its labour-intensive nature, which made it highly vulnerable to the effect of various mobility restrictions put in place over the past year. The Wholesale and Retail Trade sector experienced the second biggest decline of 8.3 percentage (2019: 4.6 percent; 2020: -3.7 percent). This sector relies heavily on customer mobility and their spending power. The fall of these two factors due to COVID-19 may explain this drop.



Figure 1.11: GDP Growth Rate by Expenditure (Year on Year Percentage), Q1 of 2015 – Q4 of 2020

Note: Figures for 2020 are based on preliminary data. Source: BPS-Statistics Indonesia

1.3.2 Fiscal and Monetary Trends

A challenging year in 2020 warrants a closer inquiry on state finances. The degree of government expenditure on various fiscal stimulus and social support schemes is reflected in the balance sheet. Figure 1.13 shows the components of government expenditure from 2015-2020. As expected, it reflects additional spending during the pandemic. Total budget expansion in 2020 was at 10.2 percent, with additional spending allocated to personnel, goods, capital, interest payment, social assistance, grants and other expenditure.

At the same time, Indonesia was increasingly relying on tax revenue to fund its government operations. Income tax and taxes on luxury and value-added goods have always been the government's main source of revenue. Income tax increased from Rp818.6 trillion in 2019 to Rp929.9 trillion in 2020 while taxes on luxury and value-added goods increased from Rp592.8 trillion in 2019 to Rp685.9 trillion in 2020. Other tax-related revenue streams like domestic taxes increased to Rp207.3 trillion (2019: Rp192 trillion) while taxes on international trade increased to Rp42.6 trillion (2019: Rp39.8 trillion). Non-tax revenue and grants, however, experienced a decrease of 5 percent for the former and 62 percent for the latter.

Figure 1.15 illustrates Indonesia's inflation and central bank policy rate. The drop in domestic demand in 2020 resulted in low inflation rate of between 1.4 percent and -1.7 percent in the first half of 2020, below the central bank target of 3.5 ± 1 percent.



Figure 1.12: GDP Growth Rate for Top-Six Largest Industries (Year on Year Percentage), 2015-2020

Note: Figures for 2020 are based on preliminary data. Source: BPS-Statistics Indonesia

Inflation picked up gradually in the second half of 2020 to 2.98 percent in November and December. However, this is still considered low compared to historical data. This shows that domestic demand, although it was slowly picking up, remained weak.

In response to the ongoing pandemic, the Central Bank of Indonesia (BI) embarked on monetary and macroprudential policies to strengthen macroeconomic stability, reduce volatility in the exchange and financial market, and support the functioning of intermediary banking (Bank Indonesia 2020). One of the most prominent strategies was reducing the BI 7-Day Reverse Repo Rate (BI7DRR).⁷ As reflected in Figure 1.15, this resulted in historically low BI7DRR throughout 2020. The rate dropped continuously, from 5 percent in the beginning of 2020 to 4.5 percent in March, 4.25 percent in June, 4 percent in July and 3.75 percent in December. It was in the interest of BI to keep policy rate low during this period to maintain a conducive environment for economic and business recovery (Bank Indonesia 2020).

1.3.3 Trade Performance and Investment Outlook

Indonesia's trade and investments are linked to the global business climate, and this is reflected in the economy's decrease in goods and services exports in 2020 (see Figure 1.16). Given the disruption of the global supply chain amid COVID-19, the year 2020

⁷ Bank Indonesia (BI)'s policy rate, commonly known as BI 7-Day Reverse Repo Rate or BI7DRR, serves as benchmark interest rate to inform public policy decisions.



Figure 1.13: Components of Actual Government Expenditure by Type (Rupiah Trillion)

Note: Figures for 2020 are based on preliminary data. *Source:* 2020 Indonesian State Budget (APBN) report



Figure 1.14: Sources of Actual Government Revenue (Rupiah Trillion), 2014-2020

Note: Figures for 2020 are based on preliminary data. *Source:* 2020 Indonesian State Budget (APBN) report



Figure 1.15: Inflation and Central Bank Policy Rate (Percent), 2015-2020

marked the lowest exports. Goods exports declined from US\$168.5 billion to US\$163.3 billion by 2020 while services exports fell from US\$31.6 billion to US\$14.9 billion. Despite these declines, 2020's current account balance appeared substantially stronger than previous years'. This is because supplies from the local agriculture market substituted imported food to better serve its huge local consumer base (World Food Programme 2020). Thus, Indonesia's goods imports dropped by US\$29.8 billion in 2020.



Figure 1.16: Current Account Components of Indonesia (US\$ Billion), 2015-2020

Source: Bank Indonesia

Note: Figures are in current prices. Figures for 2020 are based on preliminary data. *Source:* Bank Indonesia

Figure 1.17 illustrates the value and share of goods exports by Indonesia. Manufacturing (e.g. garment) had the highest share of exported goods, increasing over two years to reach 80.3 percent in 2020. The export of agricultural products also increased its share from 2.2 percent in 2019 to 2.5 percent in 2020 due to higher global demand for food produced during COVID-19 (World Food Programme, 2020). On the other hand, the share of exports for mining products (e.g. nickel and gold) and for other goods and products (e.g. pulp and paper products) decreased in 2020.



Figure 1.17: Value and Share of Goods Exports By Type (US\$ Billion, Percent), 2015-2020

Note: Figures are in current prices. Figures for 2020 are based on preliminary data. *Source:* BPS-Statistics Indonesia

Despite the pandemic, foreign investments in the country remained strong, with a total of US\$18.6 billion net injection of Foreign Direct Investments (FDI) in 2020, just slightly lower than the year before. It is also promising to see that all industries (except for agriculture) experienced a positive net FDI inflow. This signifies that investor confidence in Indonesia has remained strong during the current crisis, especially towards the transportation and communication sector (which includes ICT) that saw an increase from net outflow of US\$1.3 billion to net inflow of US\$2.2 billion (See Figure 1.18). As mentioned in section 1.2.2.2., the digitalization of Indonesia's businesses and initiatives taken to virtually connect workers, students and consumers have caught the eyes of global investors as they foresee that Indonesia's digital economy will continue to be the driver of its economic development.

The largest recipient of FDIs in Indonesia was the financial intermediation sector, where the net FDI inflows increased by 40 percent from US\$3.3 billion to US\$4.5 billion from 2019 to 2020. During the COVID-19 lockdown, customers and businesses flocked to e-commerce sites to buy and sell products and services. As take-up rate for e-payment grew and Indonesian consumers became open to digital finance, investors subsequently increased their investments to develop the country's financial technology. This trend is

likely to continue, with major banks such as Bank Jago ready to set up a digital bank in the country (Taja 2021).



Figure 1.18: Net FDI into Indonesia by Industry (US\$ Billion), 2015-2020

Note: Figures are in current prices. Figures for 2020 are based on preliminary data. *Source:* Bank Indonesia

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Chapter 2

2020 Annual Update on Competitiveness Analysis of Indonesian Provinces

Clarice Handoko

2.1 Introductory Notes

Indonesia is a diverse country with over 17,500 islands, and it has long dealt with stark disparities in development and competitiveness across the nation. For instance, provinces in the Java region such as DKI Jakarta and East Java continue to be the key economic drivers of Indonesia. The Indonesian Central Statistics Agency (BPS) announced that in 2020, the Java region had contributed to about 58.7 percent, over half of the nation's gross domestic product (GDP), whereas regions such as Kalimantan and Sulawesi only contributed 8.3 percent and 6.5 percent to the national GDP respectively (BPS 2020).

There are 34 provinces in Indonesia relying on the economic prowess of only a few provinces, which are congregated within one region. This would certainly not enable the country to reach its optimal economic potential. The issue at hand is particularly relevant for the nation's recovery after the pandemic. Having vital information about the competitiveness level of each province will prove pivotal for Indonesia to identify previously untapped sectors that can drive Indonesia's economy in the unprecedented economic landscape (McKinsey 2020). Doing so would aid the nation in its pursuit of navigating the tumultuous global economic environment and possibly make development more equitable across its six regions.

In line with the above objective, the Asia Competitiveness Institute (ACI) has been tracking the competitiveness of Indonesia's provinces across the years since 2013, enabling policymakers to assess the competitiveness profile of each province in Indonesia vis-à-vis their peers' (Tan et al. 2013; 2015a; 2017; Tan, Amri, and Ahmad 2017; Tan et al. 2018a; Tan et al. 2019a). This book contains the eighth iteration of ACI's Annual Competitiveness Analysis of 34 Indonesian provinces, making it the most consistent and regular analysis among similar measurements at the country's sub-national level in recent years.

The following chapter is organised as follows. Section 2.1 provides a snapshot of Indonesia's recent economic development and competitiveness levels. Section

2.2 outlines the methodology comprising a broad sweep of competitiveness review, ACI's competitiveness framework, indicators, data sources, standardised score, *What-if* competitiveness simulation as well as the use of an alternative computation known as Shapley weight that serves as a robustness check. Section 2.3 discusses the empirical findings and Section 2.4 concludes by drawing policy implications.

2.1.1 Broad Sweep of Competitiveness Review

Initially, the term "competitiveness" was closely associated with firms' performance (Porter 1980) based on a notion that it was primarily firms that competed with each other. Over time, the discourse expanded to the national-level (Porter 1990; Berger and Bristow 2009). This is shown also by the establishment of a "Council on Competitiveness" or similar institutions in various advanced industrialised countries. After all, the performance of those firms depend on various national-level factors that are closely related to the firms' location that include, but are not limited to, quality of labour and infrastructure, governance, costs of doing business as well as the performance of competing and complementary firms around the area (Bristow 2009; Camagni 2002; Kitson, Martin, and Tyler 2004).

A more common approach to measure a country's competitiveness is by constructing a benchmarking index, such as that adopted by the two most highly cited crosscountry competitiveness studies: (a) Global Competitiveness Index (GCI) published by the World Economic Forum (WEF) and (b) World Competitiveness Yearbook (WCY) published by the International Institute for Management Development (IMD). The benchmarking index is effective at summarising complex and multi-dimensional factors in a user-friendly and easily digestible format. Thus, information on a country's competitiveness ranking, score and progress over time is easily accessible and can facilitate discussion with the general public to promote key reforms that often require efforts from multiple stakeholders.

Beyond country-level competitiveness, there are more studies delving into the sub-national levels, either at a state/provincial level or a district/city level. For instance, Beacon Hill Institute at Suffolk University has been publishing the annual competitiveness report for 50 states in the United States since 2002. ACI has been analysing sub-national competitiveness not only in Indonesia, but also in India (Tan et. al. 2015b; Tan, Gopalan, and Tandon 2016, 2017; Tan et. al. 2018b; Tan et. al. 2019b) and China (Tan, Yaun, and Yoong 2015; Tan, Yuan, and Xie 2016; Tan, Wang, and Xie 2017; Tan et. al. 2018c; Tan et.al. 2019c). Conducting a competitiveness study at lower levels allows for suggestion of development strategies which are relevant to the specific sub-national economies in order to stimulate productive discussion among key stakeholders at the sub-national level before engaging them at the national level.

2.1.2 Competitiveness Analyses on Indonesia

The competitiveness of Indonesia as a country has been analysed regularly by a number of institutions, including the WEF, IMD and ACI.

In Figure 2.1, ACI's annual competitiveness analysis of the 10-member countries of the Association of Southeast Asian Nations (ASEAN) finds Indonesia at the fifth position since 2002, behind Singapore, Malaysia, Thailand and Brunei (Tan et al. 2015c, 2016; Tan, Nguyen, and Nguyen 2017; Tan et. al. 2018d; Tan et. al. 2019d). Indonesia competed closely with the Philippines for the fifth position in 2000-2002 as well as 2005, but surged ahead and maintained its position from 2006 onwards. After a peak in 2010 at 0.115, its competitiveness score declined steadily to -0.014 in 2012, in line with the negative impact of global growth slowdown and commodity price bust. Its competitiveness score then improved again from 2014 to 2016, mostly due to the stabilising global macroeconomic conditions and the relatively declining performance of the Philippines and Brunei. The country's standardised scores for Overall Competitiveness spiked in 2017 to 0.122, the highest since 2000, amid strong investment and export growth (The World Bank 2017).



Figure 2.1: ACI's Competitiveness Framework, 2000–2017 (ASEAN-10 Countries)

Note: Figures are in current prices. Figures for 2020 are based on preliminary data. *Source:* ACI.

In a similar vein, as shown in Figure 2.2, WEF's GCI shows an improvement in Indonesia's global competitiveness ranking from 2012-2013 to 2014-2015, rising from 50^{th} to 34^{th} ranking (Schwab and Sala-i-Martín 2014). Since then, however, Indonesia slipped down to 41^{st} place in 2016-2017 (Schwab and Sala-i-Martín 2016). In 2017-2018, it began to show signs of improvement by rising to 36^{th} place, driven largely by its sizeable market and fairly robust macroeconomic conditions (Schwab and Sala-i-Martín 2017).

In 2018, WEF updated its methodology from using subjective weights for each subindex to using equal weights for each sub-index under the GCI 4.0 Framework (Schwab 2018). The updated framework has resulted in the incomparability of rankings generated before 2018 and after 2018. However, WEF included a back-casted ranking for the year 2017 using the updated framework that provides a benchmark to compare against the updated ranking generated for the year 2018. The rankings for 2017 and 2018 under the updated GCI 4.0 framework are presented in Figure 2.2 as well. Indonesia ranked 47^{th} in the back-casted ranking for 2017 and the performance dipped in 2019 to 50^{th} position. Similar to ACI'S ranking presented in Figure 2.1, WEF's GCI rankings also reveal that Indonesia is behind Singapore, Malaysia and Thailand but is ahead of Philippines and Vietnam. India and China's rankings have also been included in Figure 2.2 to gain perspective of Indonesia's competitiveness level relative to the two major economic powerhouses in Asia. It is observed that whilst China, ranked 28^{th} , is well ahead of Indonesia, India is behind Indonesia at 68^{th} rank.



Figure 2.2: World Economic Forum Global Competitiveness Index, 2012–2020 (Selected Countries)

Note: Y axis is reversed. Lower rank indicates better performance. *Source:* WEF data; compiled by ACI.

Finally, IMD'S WCY results shown in Figure 2.3 finds that Indonesia's competitiveness dipped in the last year, from 32^{nd} in 2019 to 40^{th} in 2020. IMD has identified that the future of the world will be dependent on its ability to digitalize, and Indonesia's rankings for last year is an indication of the room for improvement that the nation needs to undertake (IMD 2020).

At the sub-national level, there remains a dearth of research that is specific to Indonesian provinces. One study conducted by Bank of Indonesia and University of Padjadjaran measured the competitiveness of provinces, cities and regencies using the input-output framework to identify the productivity of each sub-national entity (PPSK Bank of Indonesia and LP3E FE-UNPAD). The Indonesia Governance Index for all provinces was published subsequently with economic governance as one of the four main sub-indices being analysed (Partnership for Governance Reform 2013). Additionally,

Figure 2.3: International Institute for Management and Development World Competitiveness Yearbook, 2012–2020 (Selected Countries)



Note: Y axis is reversed. Lower rank indicates better performance. *Source:* IMD data; compiled by ACI.

a ranking of economic governance for 243 cities and regencies in Indonesia was also conducted, first in 2006 and later in 2011 (KPPOD and the Asia Foundation 2007; 2011). In 2016, the same team also conducted a ranking of economic governance in 32 provincial capitals of Indonesia (KPPOD 2017).

All these are, in one form or another, efforts to measure the competitiveness of Indonesia's sub-national entities and should be welcomed. However, these studies are not conducted on a regular basis and at a frequent enough interval to enable more timely policy decision-making. The lack of regular analysis on the competitiveness of Indonesia's sub-national entities also makes it difficult to track each province's progress over time.

ACI intends to fill this knowledge gap of the economic profile of Indonesian provinces. ACI chose to explore competitiveness at the provincial level as opposed to the city or regency level because provinces are typically sizeable enough to function as an economy whereas cities and regencies may not. For example, even the least populous province, North Kalimantan, is home to 716,400 people, which is a sizeable population to consider as an economy, while West Java, the most populous province, is home to over 48.7 million people (BPS 2019).

2.2 Research Methodology

2.2.1 ACI's Competitiveness Framework

ACI's approach to competitiveness is a holistic one, encompassing 105 different indicators that collectively shape the ability of an economy to achieve substantial and inclusive economic development over a sustained period of time. In line with this comprehensive approach, ACI defines competitiveness through four different environments and 12 sub-environments as follows:

1. Macroeconomic Stability

This environment encompasses aggregated economic conditions that underline the comparative and competitive advantage of each province based on classic macroeconomic indicators.

(a) Regional Economic Vibrancy

This sub-environment captures the size of each province's economy and its growth trajectory according to the different characteristics in their economic structure. Beyond gross regional domestic product (GRDP), this sub-environment also considers inflation rate as well as capital formation.

(b) Openness to Trade and Services

This sub-environment measures the degree of openness to international trade for each province. All indicators related to exports, imports and the ratio of openness are included.

(c) Attractiveness to Foreign Investors

This sub-environment measures to what extent each province manages to attract both foreign and direct investments. Considering that investments may fluctuate on a yearly basis, we use the average value of the last three years of investments for each province.

2. Government and Institutional Setting

This environment covers the efficacy of government institutions as well as expectations of progress in the public sector.

(a) Government Policies and Fiscal Sustainability

This sub-environment captures the financial capacity of each provincial government to ensure fiscal sustainability to undertake various policies under their jurisdiction. All fiscal-related indicators, such as provincial government's revenue, tax collection, expenditure and fiscal balance, are included.

(b) Institutions, Governance, and Leadership

This sub-environment covers the broad spectrum of governance quality ranging from the prevalence of corruption practices to how well the provincial government coordinates between the different layers of local governments. (c) Competition, Regulatory Standards, and Rule of Law

This sub-environment covers the extent to which each province is able to create and enforce a consistent rule of law and regulations that allow for competition and ease of doing business to thrive.

3. Financial, Businesses, and Manpower Conditions

This environment encompasses the performance and potential of firms as well as the conditions that managers face in running their companies.

(a) Financial Deepening and Business Efficiency

This sub-environment captures the availability of a sound financial system to support growing firms. Additionally, wide-ranging assessments on firms' performance, strategy, human resource and equipment capacity, application of information technology as well as innovation are included.

(b) Labour Market Flexibility

This sub-environment covers the size of each province's labour force, employment and unemployment rate as well as the stickiness of labour market as measured by the monthly minimum wage, ease of recruiting managerial and technical workers as well as relationship between labour unions and management.

(c) *Productivity Performance*

This sub-environment covers all indicators related to productivity as measured by the output per worker, both in general terms and specific to each economic structure.

4. Quality of Life and Infrastructure Development

This environment covers wide-ranging indicators related to physical and technological infrastructure as well as the provision of basic social services.

(a) Physical Infrastructure

This sub-environment not only captures market size as measured by population and urbanisation rate but also physical infrastructure including, air, sea and land connectivity as well as access to water and electricity services.

(b) Technological Infrastructure

This sub-environment captures the rate of information, communications and technology (ICT) adoption in each province. Indicators related to telephone, mobile phone, desktop, and laptop ownership as well as internet access at various locations are included.

(c) Standard of Living, Education, and Social Stability

This sub-environment encompasses access to education and healthcare as well as a broader set of measurements for quality of life such as equality of income distribution, environmental sustainability and accessibility of goods and services. As shown in Figure 2.4, each environment contributes the same weight (25.0 percent) to the Overall Competitiveness Index. ACI's competitiveness framework further develops a nested approach, where each of the four environments are divided into three sub-environments. Therefore, there are 12 sub-environments in total with each sub-environment contributing the same weight (33.3 percent) towards its respective environment's index.

In aggregating sub-environments into environments, and environments into the overall ranking, ACI uses a simple averaging mechanism with equal weights. While assigning different weights for different indicators with varying levels of importance may seem appropriate, the implementation is just as controversial. Thus, to achieve a balanced view of the different factors that make up an overall notion of competitiveness, we use equal weights across all indicators. Going forward, in order to verify the robustness of our results from the subjective assumption on equal weights, we introduce an objective weighting method, namely the Shapley weight, which will be discussed in detail in subsection 2.2.5.





Source: ACI.

2.2.2 Indicators and Data Sources

The ACI 2020 Competitiveness Analysis for Indonesia's 34 provinces¹ utilizes a combination of secondary and primary data with a total of 105 indicators. Although the weights assigned to the four environments and 12 sub-environments are equal, some sub-environments have more indicators than others due to data availability. See Appendix 2 for the complete list of indicators.

2.2.2.1 Formal Government Statistics

Most of the indicators used in this analysis (82 out of 105 indicators) are formal secondary data drawn from various government agencies such as Indonesia's BPS, Bank of Indonesia, Ministry of Trade, Ministry of Health as well as Ministry of Environment and Forestry. Data from the World Bank's Indonesia Database for Policy and Economic Research (INDO-DAPOER) and CEIC Indonesia Premium Database, which cited BPS as their original source, have also been utilised. Due to a lag in data availability, the latest available data at the time of collection in mid-2019 were data for the year 2017.

2.2.2.2 Surveys in Each Province

A smaller portion of the data (23 out of 105 indicators) is based on primary data obtained through perception surveys conducted in each province in the second half of 2019, where responses were obtained from 2,607 respondents. This allows for the analysis to capture the more recent dynamics of competitiveness to complement the time-lags from the secondary data. The surveys also allow us to understand some aspects of competitiveness that are not measured by formal statistical data but reside in the perception of local stakeholders.

Three categories of stakeholders were involved separately in each province as survey participants: (a) business owners and operators, (b) provincial government officials and (c) academics. The surveys relied on purposive sampling where ACI collaborated with local partners representing the three groups of stakeholders to recruit survey participants.

- 1. For business owners and operators, surveys were done in collaboration with the Indonesian Employers' Association (APINDO) wherein local chapters in each province invited their members to participate.
- 2. For the provincial government officials, surveys were supported by the Coordinating Ministry for Economic Affairs, which provided reference letters to the governors. The provincial government, in turn, invited representatives from various departments to participate.
- 3. For academics, ACI collaborated with universities in each province, most often with the faculty of economics and business. The university then invited their lecturers,

¹ There are currently 34 provinces in Indonesia. North Kalimantan, Indonesia's newest province (carved out of East Kalimantan in 2012) is analysed individually in the 2020 Competitiveness Analysis.

researchers and graduate students to participate.

The surveys were conducted using an electronic response system, where questions were presented on a computer and participants keyed in their answers using keypads. Facilitators from ACI were present during each survey to read the questions aloud and provide clarifications when needed.

A total of 2,751 respondents participated in the surveys. Of these, 892 were business owners and operators (32.4 percent), 964 were academics, largely from the faculty of economics and business (35.0 percent) and 895 were provincial government officials from various departments (32.4 percent). The percentages indicate that there was a balanced representation from all three groups of stakeholders. The average number of respondents per province was about 80 (2,751 respondents divided by 34 provinces).

Figure 2.5 illustrates the characteristics of the survey respondents in 2019. For the academic respondents, 17.5 percent had less than 5 years of teaching experience, 11.4 percent had between 5 to 10 years of teaching experience and 17.3 percent had between 10 to 20 years of teaching experience while 12.7 percent had more than 20 years of teaching experience. The remainder 41.0 percent of the academic respondents were graduate students. For the government officials, 3.7 percent had less than a year of experience in the public sector, 9.6 percent had between one to five years of experience, 19.3 percent had between 10 to 20 years of experience and 33.6 percent had more than 20 years of experience. A detailed review of respondents from the business sector is presented in the next section.



Figure 2.5: Characteristics of Provincial Academics and Government Respondents



Source: ACI.

2.2.2.3 Firm Demographics

A total of 892 business owners and operators had participated in the survey. Two classifications were adopted to identify firm size. The first is based on the annual turnover following Indonesia's Law No. 20 of 2008 on Micro, Small and Medium Enterprises² which defines micro businesses as those that have an annual turnover of up to 300 million Rupiah, small businesses are those with an annual turnover of between 300 million Rupiah and 2.5 billion Rupiah, medium businesses have an annual turnover of between 2.5 billion Rupiah, medium businesses have an annual turnover of between 2.5 billion Rupiah. Based on this classification, as shown in Figure 2.6, 35.0 percent of the business owners and operators who responded were involved in micro businesses, 26.1 percent were involved in small businesses, 23.4 percent were involved in medium businesses.

The second classification of firm size is based on number of employees as defined by BPS which states that enterprises with fewer than five employees are considered household/micro industries, those with between five and 19 employees are categorised as small industries, those with between 20 and 99 employees are categorised as a medium industries while those with 100 or more employees are categorised as large industries and those with more than 500 employees are categorised as very large industries (BPS 2018). Based on this classification, 13.6 percent of the business respondents were operating household/micro businesses, 33.0 percent were operating small businesses, 43.5 percent were operating medium business, 7.5 percent were operating large businesses and 2.4 percent were operating very large businesses. In general, there was a balanced representation of firms of different sizes, with each taking up approximately one-fifth of the sample size.

 $^{^{2}}$ Taken from the Law of the Republic of Indonesia Number 20 Year 2008 Regarding Micro, Small, and Medium Enterprises

Figure 2.6 also shows other details of the businesses. It can be observed that the sample consists of a good mix of start-ups and newly established firms as well as those which have been around longer in the market. 20.4 percent of the firms have been operating for less than five years, 24.2 percent have been operating between five to 10 years and 24.0 percent of the firms have been operating between 10 to 20 years. 31.4 percent of the firms have been operating for more than 20 years, indicating that these corporations have had the experience of conducting business even in periods prior to the decentralisation in 1999 which saw fundamental changes to the political and economic autonomy in Indonesia. Thus, these firms would be the most knowledgeable about the changing landscape of the business environment in their provinces.

Zooming in on the industry type, 44.2 percent of the businesses were in the services sector; 18.6 percent of businesses were involved in trading, 17.3 percent of the sample belonged to the processing industry, 13.8 percent were involved in agricultural, livestock and fisheries production, 4.6 percent were involved in mining, oil and gas production and 1.5 percent were involved in electricity, gas and water production. In terms of businesse expansion, 38.5 percent of the businesses have operations in other provinces. To a smaller extent, 12.5 percent of the businesses have internationalised (i.e., had operations in other countries). This further shows that most businesses had kept their operations mainly within their province and would be conversant with the province's business climate, including regulations pertaining to business, manpower or financial conditions.

Taken together, the survey demographics ultimately suggest that the business owners and operators make up a dynamic group of respondents with diverse backgrounds, and that their perceptions would certainly be relevant and would add value to the assessment of both provincial and regional competitiveness in Indonesia.



Figure 2.6: Characteristics of Business Owners and Operators Respondents



2.2.3 The Standardised Score

After data collection, the different types of data were aggregated into a coherent dataset where the value of one indicator is comparable to the value of another. The issue is that each indicator is measured in different units. For example, Government Revenue is measured in thousands of rupiah, while Cargo at International Seaport is measured in tonnes. To resolve these differences, we use the statistical method of 'standardised score'.

The standardised score has no unit of measurement because it simply measures how well a certain province performs in comparison to the average province. In statistical terms, it measures how many standard deviations away each province is from the average province. See Appendix 3 for a detailed and technical explanation. If a province has a standardised score of zero, it is an average performer for that particular indicator. Having a negative score means that the province performs below average, while having a positive score means that the province performs above average. The further away the score is from zero, the further away is the performance of the province from the national average.

2.2.4 What-if Simulation Analysis

A competitiveness ranking in itself identifies which provinces are doing well or facing challenges. However, it stops short of giving constructive advice on improving the rankings. ACI's *What-if* simulation analysis allows us to answer the question: "if a particular province improves its weakest indicators while assuming that other provinces remain constant, how would that province's ranking improve?" It is conducted based on the improvement of each province's top-20 percent weakest indicators and a recalculation of the standardised score based on such improvement.

To conduct the simulation, (1) all the indicators are sorted for each province based on their standardised scores. This allows us to identify the top-20 percent weakest indicators for each province. (2) Next, the values of these indicators are raised to the corresponding average values of all provinces. This improvement is conducted only for indicators with standardised scores that were previously negative. If the standardised scores were already zero or positive (i.e., values were average or above average), no changes are made. (3) Once the values have been raised, the ranking is re-calculated with the assumption that the values of other provinces remain constant. Therefore, this policy simulation is done individually for each province.

2.2.5 Shapley Value

The Shapley value is the most commonly used solution concept in cooperative game theory. Formally, a coalition game (N, v) in cooperative game theory is defined by a set of players N and a characteristic function $v(S) : 2^N \to R$, where it maps coalition S (or subset of players) to a real number. The function describes the expected payoffs the S players can obtain through cooperation. The Shapley value of the coalition game is an n-vector, denoted by $\Phi(v)$, satisfying a set of axioms, i.e., Individual Rationality, Efficiency, Symmetry, Additivity and Null Player.

The *i*-th component of $\Phi(v)$ can be determined by

$$\Phi(v) = \sum_{S \subseteq N \setminus \{i\}} \frac{|S|! (N - |S| - 1)!}{N!} (v (S \cup i) - v (S)).$$

In our context, the players will be the indicators used for the construction of the index. The coalition will be the sub-environments and environments which the indicators belong to. The desirable properties, i.e., the axioms, are meaningful for general index ranking. Individual Rationality ensures that each indicator has a positive contribution to the index score. An indicator must satisfy the Null Player axiom, so that it is economically meaningful for that indicators to be considered relevant to the index. Symmetry guarantees that if two indicators carry the same value, they are equally important in the index scoring. Efficiency and Additivity are also important mathematical properties for the construction of the index.

The application of Shapley value has been well studied in various strands of literature. The concept has been used to solve the taxation and redistribution problem, as described by Aumann and Kurz (1977). It is also used in voting for public goods problems. Aumann and Myerson (1988) for instance have studied the link or coalition formation among players using the Shapley value. Moulin (1992) studied the application of the Shapley value in fair division of unproduced goods under monetary transfer and quasi-linear utilities. Petrosjan and Zaccour (2003) studied the Shapley value cost allocation in a pollution reduction setting. More recently, Hougaard et al. (2017) applied the Shapley value concept to licensing under FRAND terms.³ However, to the best of our knowledge, the Shapley value has not been applied to index ranking analysis before.

As a robustness check to the Equal Weightage Approach, ACI would like to propose an objective weighting method based on the Shapley value – the "Bottom-Up" Approach.

2.2.5.1 Shapley Weightage-The "Bottom-Up" Approach

The Shapley value of each indicator based on the standardised value of the indicator for every province are first computed. According to ACI's definition, it measures the aggregate dispersion of the indicator, thus reflecting the inequality among the provinces. More weights are assigned to indicators with a higher Shapley value. The weights of sub-environments are computed based on both the absolute performance (standardised score) and the relative performance (weights) of indicators under that particular subenvironment. The weights of environments are computed in a similar way by considering the relevant absolute performance and the relative performance of sub-environments. The detailed description of the methodology can be found in Appendix 4.

2.2.5.2 Comparison between the Shapley Method and the Entropy Method

Another objective weight assignment method, commonly applied in the area of decision science, is entropy (Zeleny, 1982). The entropy for the indicator i is defined as

$$Entropy_i = -\frac{1}{\ln(E)} \sum_{e=1}^{E} p_{ei} \ln(p_{ei}),$$

where *E* is the number of economies, $p_{ei} = v_{ei} / \sum_{e=1}^{E} v_{ei}$ and v_{ei} is the characteristic of the raw data x_{ei} . And the weightage of indicator *i* is, then, defined by

$$w_i = 1 - Entropy_i.$$

The interpretation of the entropy of an indicator concerns the information that the particular indicator transmits. The higher the entropy, the less the information carried, implying a lower weight assigned to that indicator. While this method appears to be an improvement over a subjective weighting scheme, one of the important reasons why we cannot apply the entropy method for our analysis is its inability to handle negative values due to the use of logarithm operator. Thus, the alternative standardisation method, other than *z-score*, is required.

³ FRAND is a short notation for Fair Reasonable and Non-Discriminatory.

Economy	Indicator 1	Indicator 2	Indicator 3		
А	10	2	1		
В	1	3	2		
С	1	2	3		
D	1	2	4		
Е	1	2	5		
F	1	2	6		
G	1	2	7		
Н	1	1	8		
Ι	1	2	9		
J	1	2	10		
K	1	2	11		

Table 2.1: Example to Compare the Shapley and Entropy

 Weight Methods

Source: ACI

The report "Assessing Provincial Development under the Five Development Concepts" (Institute of Applied Economics Shanghai Academy of Social Sciences 2016) applied the entropy method to assign weights to indicators. To avoid negative values, they deployed the *max-min standardisation* method, where

$$v_{ei} = \frac{x_{ei} - \min(x_i)}{\max(x_i) - \min(x_i)}$$

The reason why the entropy method is less appropriate than the Shapley method is that, when applied to the field of index construction, the former method is very sensitive to indicators containing outliers.

Consider the following example: There are 11 economies and three indicators with different measurement units. Indicator 1 contains an outlier. All the economies perform equally in Indicator 2. There is a clear divergence of performance among all the economies in Indicator 3. We will use *z*-score standardisation for the Shapley method, while *max-min standardisation* for the entropy method.

Under the entropy method, the weights of indicators are

$$w_1^{Entropy} = 0.866, \ w_2^{Entropy} = 0.045, \ w_3^{Entropy} = 0.089$$

Due to the presence of an outlier under Indicator 1, i.e. Economy A, the entropy method predicts that Indicator 1 carries the most information, thus assigning it a much higher weight relative to the rest.

Under the Shapley method, the weights of indicators are

$$w_1^{Shapley} = 0.308, \ w_2^{Shapley} = 0.229, \ w_3^{Shapley} = 0.463.$$

As we can observe, similar to the entropy method, the Shapley weights assign a relatively higher weight to Indicator 1 than Indicator 2 because of the presence of the outlier. However, the highest weight is assigned to Indicator 3 because of the dispersion observed, overcoming the bias that the entropy method generates due to its inability to handle outliers.

To summarise the foregoing discussion, the derivation of the final index score must be done with the help of the aggregation of all relevant information, implying that all the indicators are the determinants. We should reflect on the importance of indicators which show that the economies are unequally developed (e.g., Indicator 3). However, as noted earlier, the entropy method fails to capture this feature, due to the fact that such indicators convey less information than those with an outlier (e.g., Indicator 1). The Shapley method, on the other hand, offers a better alternative as it captures both the fact that economies are most unequally developed under Indicator 3 as well as the existence of the outlier in Indicator 1.

2.3 Competitiveness Analysis Results

Using the methodology introduced in Sections 2.2.1 and 2.2.3, the competitiveness rankings are derived by sorting the standardised scores of each province as shown in Tables 2.2 to 2.6. Additionally, the rankings are illustrated on maps to provide insights to the geographical distribution of the performance across provinces.

2.3.1 Ranking and Scores for Overall Competitiveness

In Table 2.2, it can be observed that the standardised scores of the provinces for Overall Competitiveness range from 2.629 (obtained by top-ranked DKI Jakarta) to -1.350 (obtained by bottom-ranked East Nusa Tenggara). As the nation's capital, DKI Jakarta remains far more competitive than the rest of Indonesia. From 2019 to 2020, East Java (std. score: 2.241) and Central Java (std. score: 1.612) retained their rankings at second and third positions respectively. In the remaining rankings, only two other provinces retained their 2019 positions. They are West Kalimantan (16^{th}) and East Nusa Tenggara (34^{th}).

Other provinces saw a shift in their rankings, with some making significant improvements or deterioration. Notable new provinces in the top-10 band include: North Sulawesi which improved by 17 positions from 27^{th} to 10^{th} ; Banten which improved by 9 positions from 18^{th} to 7^{th} ; East Kalimantan which improved by 4 positions from 8^{th} to 4^{th} ; North Kalimantan which improved by 2 positions from 10^{th} to 8^{th} .

Almost all of the middle-14 provinces improved their rankings in 2020. Provinces

that made notable improvements include Gorontalo that moved by 9 positions from 29^{th} to 20^{th} ; South Sulawesi, West Nusa Tenggara and Southeast Sulawesi all moved by 6 positions from 21^{st} to 15^{th} , 23^{rd} to 17^{th} and 25^{th} to 19^{th} respectively. Some provinces also saw a significant decrease in rankings. They include: South Sumatra that moved by 14 positions from 9^{th} to 23^{rd} , North Sumatra that moved down 12 positions from 12^{th} to 24^{th} and Lampung that moved down by 9 positions from 13^{th} to 22^{nd} .

By scores, the gaps amongst provinces in the middle-14 are the least prominent, indicating a high possibility for provinces to surpass one another in competitiveness. For instance, Gorontalo (rank: 20^{th} ; std. score: -0.311) and Central Kalimantan (rank: 21^{st} ; std. score: -0.319) have a score difference of only 0.008, indicating a similar level of competitiveness.

At the lower-end of the table, all provinces saw a change in rankings. The only exception is East Nusa Tenggara that remained in 34^{th} position. Some provinces saw a larger drop in rankings than others. Central Sulawesi moved down 10 positions from 17^{th} to 27^{th} ; West Papua moved down by 7 positions from 26^{th} to 33^{rd} ; Bengkulu and Bangka Belitung Islands both moved down by 6 positions from 19^{th} to 25^{th} and 24^{th} to 30^{th} respectively.

DKI Jakarta's high score (std. score: 2.629) skews the score distribution of the 34 provinces upwards. The median is obtained by calculating the average of the middle-ranked provinces that occupy the 17^{th} (West Nusa Tenggara) and 18^{th} (West Sumatra) positions. For Overall Competitiveness, the value of the median is - 0.155. This implies that at least half of the provinces in Indonesia obtained negative scores and performed below average. Based on our findings, only 13 out of 34 provinces scored above average in Overall Competitiveness.

Beyond the observations thus far, it should be noted that the changes in rankings from 2018 to 2020 fluctuated significantly. In total, from 2018 to 2020, 16 provinces improved in rankings but only ten of these provinces improved consistently without experiencing any dips. They are: Banten, North Kalimantan, South Kalimantan, Jambi, West Nusa Tenggara, West Sumatra, Southeast Sulawesi, Gorontalo, Maluku and West Sulawesi. The largest consistent improvement was observed in Banten, by a total of 15 positions from 22^{nd} in 2018 to 18^{th} in 2019 and 7^{th} in 2020. Jambi and Southeast Sulawesi follow closely with a consistent and overall improvement of 12 positions from 26^{th} to 14^{th} and 31^{st} to 19^{th} , for the period of 2018 to 2020. Maluku improved by a total of 5 positions from 33^{rd} in 2018 to 28^{th} in 2020.

The provinces that did improve but did not sustain a consistent upward trend over the years are East Kalimantan, Bali, North Sulawesi, South Sulawesi, Aceh and Papua. East Kalimantan dipped in rankings from 5^{th} in 2018 to 8^{th} in 2019, but saw an improvement in 2020 to 4^{th} position. Bali saw a slight improvement from 7^{th} in 2018 to 5^{th} in 2019, but dipped to 6^{th} position in 2020. North Sulawesi similarly saw a dip from 21^{st} in 2018 to 27^{th} in 2019, but saw an improvement in 2020 to 10^{th} position. South Sulawesi dipped from 14^{th} in 2018 to 21^{st} in 2019, but saw an improvement to 15^{th} position in 2020. Aceh had its rankings lowered from 28^{th} in 2018 to 30^{th} in 2019, but saw an improvement to 26^{th} position in 2020. Papua dipped from 29^{th} in 2018 to 32^{nd} in 2019, before returning

back to 29th in 2020.

There are also provinces that had consistent deterioration in rankings from 2018 to 2020. In total, from 2018 to 2020, 7 provinces saw a consistent deterioration in rankings with the measured drop ranging from three to 21 positions. Central Kalimantan had the least deterioration, from 18^{th} in 2018, to 20^{th} in 2019 and 21^{st} in 2020. West Papua deteriorated the most, with its ranking deteriorating from 12^{th} in 2018, to 26^{th} in 2019 and 33^{rd} in 2020. The other provinces between these two provinces that deteriorated are Riau Islands (6^{th} to 11^{th}), Lampung (9^{th} to 22^{nd}), North Sumatra (10^{th} to 24^{th}), Central Sulawesi (16^{th} to 27^{th}) and Bangka Belitung Islands (15^{th} to 30^{th}).

There are also provinces that have remained stable in their rankings for three consecutive years. DKI Jakarta (first) and East Java (second) have consistently been two of the most competitive provinces in Indonesia, thereby further cementing their positions as the economic powerhouses in the country.

The Overall Competitiveness ranking can also be viewed on a map of Indonesian provinces, as seen in Figure 2.7. On the map, provinces are colour-coded based on three groups: top-10 positions (green), middle-14 positions (yellow) and bottom-10 positions (red). The map shows a noticeable geographic concentration of provinces with high, mediocre and low levels of competitiveness. All six provinces in Java rank in the top-10, and the remaining provinces in the same tier can be found in the regions of Kalimantan and Sulawesi. The middle-14 provinces are more concentrated in the Sumatra region, along with some parts of the regions of Kalimantan and Sulawesi. The bottom-10 provinces are clearly concentrated in the Eastern part of Indonesia, namely the Sulawesi, Nusa Tenggara and Maluku-Papua regions.

These observations allow us to draw several conclusions. Firstly, it is worth reiterating that the assessment of a province's competitiveness is not merely an evaluation of the individual progress made by that province. Rather, it is a relative assessment that compares a province's performance to those of other provinces. Thus, the ranking improvements and deteriorations that took place just within three years (2018 to 2020) indicate that boosting the competitiveness of a province is an ongoing process. It is one that requires consistency in order for a province to stay competitive and ahead of their peers. Secondly, there are provinces which have developed well beyond other provinces. For instance, provinces like DKI Jakarta and East Java each have strengths which give them a competitive edge over other provinces. Likewise, provinces in the eastern parts of Indonesia have remained at the bottom for several years, indicating persistent weaknesses that have hampered their development. These strengths and weaknesses will be further analysed in the following sections, which will discuss the competitiveness performance of each province within the four different environments.

	Rank		- Province	Region	Std. Score		
2018	2019	2020			2020		
1	1	1	DKI Jakarta	Java	2.629		
2	2	2	East Java	Java	2.241		
4	3	3	Central Java	Java	1.612		
5	8	4	East Kalimantan	Kalimantan	1.591		
3	4	5	West Java	Java	1.551		
7	5	6	Bali	Bali-Nusa Tenggara	0.907		
22	18	7	Banten	Java	0.684		
17	10	8	North Kalimantan*	Kalimantan	0.547		
8	6	9	DI Yogyakarta	Java	0.414		
21	27	10	North Sulawesi	Sulawesi	0.364		
6	7	11	Riau Islands	Sumatra	0.321		
20	14	12	South Kalimantan	Kalimantan	0.293		
11	11	13	Riau	Sumatra	0.093		
26	15	14	Jambi	Sumatra	-0.015		
14	21	15	South Sulawesi	Sulawesi	-0.040		
19	16	16	West Kalimantan	Kalimantan	-0.052		
25	23	17	West Nusa Tenggara	Bali-Nusa Tenggara	-0.148		
24	22	18	West Sumatra	Sumatra	-0.161		
31	25	19	Southeast Sulawesi	Sulawesi	-0.169		
30	29	20	Gorontalo	Sulawesi	-0.311		
18	20	21	Central Kalimantan	Kalimantan	-0.319		
9	13	22	Lampung	Sumatra	-0.376		
13	9	23	South Sumatra	Sumatra	-0.432		
10	12	24	North Sumatra	Sumatra	-0.609		
23	19	25	Bengkulu	Sumatra	-0.836		
28	30	26	Aceh	Sumatra	-0.925		
16	17	27	Central Sulawesi	Sulawesi	-0.947		
33	31	28	Maluku	Maluku-Papua	-1.049		
29	32	29	Papua	Maluku-Papua	-1.055		
15	24	30	Bangka Belitung Islands	Sumatra	-1.058		
34	33	31	West Sulawesi	Sulawesi	-1.064		
32	28	32	North Maluku	Maluku-Papua	-1.084		
12	26	33	West Papua	Maluku-Papua	-1.294		
27	34	34	East Nusa Tenggara	Bali-Nusa Tenggara	-1.301		

Table 2.2: 2020 Overall Competitiveness Standardised Scores and Three-Year Rankings,2018-2020

Source: ACI. *Note:* North Kalimantan was assessed as part of East Kalimantan prior to 2018.



Figure 2.7: 2020 Map of Overall Competitiveness Ranking



2.3.2 Ranking and Scores by Four Environments

2.3.2.1 Macroeconomic Stability

As observed in Table 2.3, DKI Jakarta (std. score: 3.394) topped the Macroeconomic Stability environment and maintained the first rank from 2018 to 2020, strengthening its consistent position as the epicentre of Indonesia's economic growth. The top-5 provinces also remained largely the same from 2019 to 2020.

West Sulawesi (std. score: -0.984) ranked at the bottom of 34 provinces in terms of Macroeconomic Stability. Eight provinces remained in the bottom-10 category from 2019 to 2020. Two provinces, namely West Nusa Tenggara (25th) and DI Yogyakarta (27th) were new to the bottom-10 category; they previously ranked 16^{th} and 22^{nd} in 2019. The two provinces that shifted from the bottom-10 category in 2019 to the middle-14 category in 2020 are Southeast Sulawesi (22^{nd}) and West Papua (23^{rd}).

The performance of DKI Jakarta and West Java (std. score: 2.471) have skewed the score distribution upwards, rendering an average province to be positioned between the 9th and 10th ranks. The median is obtained by calculating the average of the middle-ranked provinces that occupy the 17th (Lampung) and 18th (Central Sulawesi) positions. For Macroeconomic Stability, the value of the median is -0.276; more than half of the provinces in Indonesia obtained negative scores and performed below average. In fact, only 9 out of the 34 provinces performed above average in this environment, which is the lowest number of provinces to have scored positively in a given environment.

Nevertheless, compared to 2019, several provinces showed significant improvements in their rankings for Macroeconomic Stability. The largest improvement of six ranks was achieved by North Kalimantan that moved from 21^{st} rank in 2019 to 15^{th} rank in 2020, and Southeast Sulawesi that moved from 28^{th} rank in 2019 to 22^{nd} rank in 2020. Other provinces that made notable progress include South Kalimantan that moved by

five ranks from 15^{th} to 10^{th} . Improving by four ranks are Jambi (from 20^{th} to 16^{th}) and East Nusa Tenggara (32^{nd} to 28^{th}). Provinces that improved by three ranks are Banten (from 9^{th} to 6^{th}), West Sumatra (from 24^{th} to 21^{st}) and West Papua (from 26^{th} to 23^{rd}). It should be noted that these provinces had not made consistent improvements: the latest improvements came after a year of stagnation or deterioration from 2018 to 2019. For example, prior to its latest improvement of six ranks, North Kalimantan had deteriorated by three ranks from 18^{th} in 2018 to 21^{st} in 2019. Also, Banten's progress of three ranks in 2020 came after being in 9^{th} position in 2019 and 2020.

Some provinces also saw a marked deterioration in rankings for Macroeconomic Stability in 2020. West Nusa Tenggara saw the biggest drop of 9 ranks from 16^{th} in 2019 to 25^{th} in 2020. Central Sulawesi also saw a deterioration, albeit to a smaller degree, from 11^{th} in 2019 to 18^{th} in 2020. Other provinces that saw a significant drop in their rankings include Aceh (25^{th} to 31^{st}), DI Yogyakarta (22^{nd} to 27^{th}), Riau Islands (5^{th} to 8^{th}) and South Sumatra (8^{th} to 11^{th}). While West Nusa Tenggara's lowered rank had been a consistent trend since 2018, the remaining provinces that saw a deterioration had seen an improvement from 2018 to 2019. For example, prior to its latest drop of seven ranks, Central Sulawesi had improved by two ranks from 13^{th} rank in 2018 to 11^{th} rank in 2019. Similarly, before its latest deterioration of six rankings, Aceh had improved from 27^{th} rank in 2018 to 25^{th} rank in 2019. The lack of consistency across the provinces reiterates the need for continuous improvement. This is especially necessary for macroeconomic stability that is concerned with the larger fundamental structures that will enable each province to remain competitive.

As mentioned earlier, there are provinces that have maintained their positions. DKI Jakarta has maintained its top ranking for the last three years, and Central Java has done the same in fourth position. West Java and East Java have seen close competition over the last three years with the former eventually scoring 2^{nd} position in 2020, and the latter in 3^{rd} position. East Kalimantan has been hovering between 5^{th} and 6^{th} position over the last three years and is presently in 5^{th} place.

By delving into the sub-environment scores, we seek to identify the underlying driver(s) behind each province's performance in Macroeconomic Stability. Only seven provinces in the top-10 category performed above average in all three sub-environments. The remaining provinces fell short in either (i) Regional Economic Vibrancy, (ii) Openness to Trade and Services or (iii) Attractiveness to Foreign Investors. For instance, despite scoring well and ranking 8th in the overall Macroeconomic Stability environment, Riau Islands performed below average with a standardised score of -0.138 and -0.254 in the Regional Economic Vibrancy and Attractiveness to Foreign Investors sub-environments. North Sumatra (ninth) also performed below average in the sub-environment measuring Attractiveness to Foreign Investors with a standardised score of -0.121. Provinces from the 17^{th} position and below also performed below average, obtaining negative standardised scores in all three sub-environments.

In the Regional Economic Vibrancy sub-environment, DKI Jakarta attained the highest standardised score of 3.947 whereas Maluku obtained the lowest standardised score of -1.137. The difference of 2.211 in the standardised scores between the first-ranked

DKI Jakarta and second-ranked East Java (std. score: 1.736) is substantial, indicating that DKI Jakarta outperforms all the remaining provinces in Indonesia by a large margin. Only 11 provinces performed above average in this sub-environment. A similar trend is observed in the Openness to Trade and Services sub-environment where the large difference of 1.597 is observed in the standardised scores between the top ranked DKI Jakarta (3.557) and second ranked West Java (1.960). Only ten provinces have performed above average. Gorontalo obtained the lowest standardised score of -0.546 in this sub-environment. Finally, West Java attained the highest standardised score of 3.105 and West Sulawesi obtained the lowest standardised score of -1.459 in the Attractiveness to Foreign Investors sub-environment. Only 14 provinces performed above average in this sub-environment.

The map for Macroeconomic Stability (Figure 2.8) shows less apparent geographic concentration among provinces with high, middle and low ranks. Although half of the top-10 provinces are from Java, the remaining five are scattered across the region of Sumatra and Kalimantan. The middle-14 and bottom-10 provinces are even more spread out. The Sumatra region has provinces in all three categories, while provinces in the Bali-Nusa Tenggara, Sulawesi and Maluku-Papua regions belong to either the middle-14 or bottom-10 categories and the Kalimantan region has provinces in either the top-10 or middle-14 categories. Meanwhile, all provinces in the Java region are in the top-10 except DI Yogyakarta. Java and Kalimantan are the only two regions wherein none of their provinces fall under the bottom-10 category.

With regards to Macroeconomic Stability, (i) with the exception of DI Yogyakarta at 22nd position, provinces in Java are highly competitive; (ii) provinces in Sumatra show mixed performance since they fall across all three categories of macroeconomic stability; (iii) provinces in Kalimantan exhibit either especially high or low competitiveness; and (iv) provinces in the Sulawesi, Bali-Nusa Tenggara and Maluku-Papua regions exhibit either low or middle-level competitiveness.

Since the highest and lowest standardised scores for each sub-environment in the Macroeconomic Stability environment are obtained by different provinces, it is clear that there is not a single province that is holistic in terms of its performance. Further analysis of performance at the sub-environment level will clarify the strengths and weaknesses of a province that have to be addressed in order to increase its Overall Competitiveness.

Rank			Decederat	Desien	Std. Score		Sub-environment Std. Scores 2020				
2018	2019	2019 2020	- Province	Region	2020	R	EV	OTS	3	Al	FI
1	1 1	1	DKI Jakarta	Java	3.394	3.947		3.557		1.989	
3	3	2	West Java	Java	2.471	1.849		1.960		3.105	
2	2	3	East Java	Java	2.386	2.435		1.736		2.504	
4	4	4	Central Java	Java	1.076	1.061		0.378		1.572	
5	6	5	East Kalimantan	Kalimantan	0.829	0.739		1.106		0.474	
9	9	6	Banten	Java	0.689	0.016		1.055		0.857	
6	7	7	Riau	Sumatra	0.499	0.373		0.728	1	0.295	
7	5	8	Riau Islands	Sumatra	0.446	-0.138	1	1.640		-0.254	
8	10	9	North Sumatra	Sumatra	0.199	0.344	1	0.333		-0.121	1
12	15	10	South Kalimantan	Kalimantan	-0.017	-0.420	0	0.670		-0.297	
10	8	11	South Sumatra	Sumatra	-0.030	0.041	1	-0.329	1	0.204	
11	12	12	South Sulawesi	Sulawesi	-0.098	0.134		-0.635	1	0.226	
15	19	13	Papua	Maluku-Papua	-0.171	-0.120	1	-0.360	1	0.002	
22	13	14	North Sulawesi	Sulawesi	-0.173	-0.253		-0.590	l	0.360	
18	21	15	North Kalimantan*	Kalimantan	-0.236	0.033		-0.570		-0.122	
17	20	16	Jambi	Sumatra	-0.245	-0.327		-0.470	l I	0.110	
16	14	17	Lampung	Sumatra	-0.248	-0.151	1	-0.122	1	-0.419	
13	11	18	Central Sulawesi	Sulawesi	-0.304	-0.412		-0.091		-0.347	
19	17	19	Bali	Bali-Nusa Tenggara	-0.323	-0.312		-0.752		0.160	1
26	18	20	West Kalimantan	Kalimantan	-0.341	-0.645		-0.578		0.269	
28	24	21	West Sumatra	Sumatra	-0.415	-0.203		-0.510		-0.448	
21	28	22	Southeast Sulawesi	Sulawesi	-0.491	-0.124		-0.617	ĺ .	-0.634	
24	26	23	West Papua	Maluku-Papua	-0.529	-0.382		-0.311	1	-0.785	
20	23	24	Central Kalimantan	Kalimantan	-0.538	-0.357		-0.469		-0.679	
14	16	25	West Nusa Tenggara	Bali-Nusa Tenggara	-0.550	-0.924		-0.599		-0.018	
25	27	26	Gorontalo	Sulawesi	-0.625	-0.546		-0.840		-0.363	
23	22	27	DI Yogyakarta	Java	-0.653	-0.549		-0.759		-0.518	
31	32	28	East Nusa Tenggara	Bali-Nusa Tenggara	-0.718	-0.621		-0.814		-0.573	
30	30	29	North Maluku	Maluku-Papua	-0.748	-0.238		-0.614		-1.241	
29	29	30	Bangka Belitung Islands	Sumatra	-0.813	-0.966		-0.272		-1.036	
27	25	31	Aceh	Sumatra	-0.875	-0.632		-0.810		-1.004	
34	33	32	Bengkulu	Sumatra	-0.927	-0.884		-0.750		-0.960	
32	31	33	Maluku	Maluku-Papua	-0.939	-1.137		-0.639	1	-0.850	

Table 2.3: 2020 Macroeconomic Stability Standardised Scores and Three-Year Rankings, 2018-2020

Source: ACI. Note: REV: Regional Economic Vibrancy; OTS: Openness to Trade and Services; AFI: Attractiveness to Foreign Investors. North Kalimantan was assessed as part of East Kalimantan prior to 2018.


Figure 2.8: 2020 Map of Macroeconomic Stability Ranking



2.3.2.2 Government and Institutional Setting

Table 2.4 shows that East Java (std. score: 2.014) topped the Government and Institutional Setting environment in 2020, maintaining its position from 2019. It is worth noting that only seven provinces maintained their positions in the top-10 category from 2019 to 2020, which indicates that this environment saw the greatest change in the composition of provinces in the top-10 category. East Kalimantan (eighth), Gorontalo (ninth) and West Kalimantan (tenth) progressed from the middle category to the top-10 category from 2019 to 2020. West Nusa Tenggara (11^{th}), DI Yogyakarta (14^{th}) and Lampung (21^{st}) dropped from the top-10 category to the middle-14 category in the same time period.

Only three provinces across Indonesia maintained their 2019 rankings in 2020. Apart from East Java, DKI Jakarta remained in 2^{nd} rank and Aceh in 27^{th} rank. 6 provinces saw an improvement in their rankings. Apart from the ones mentioned above, other notable provinces include Papua that improved by 12 ranks from 30^{th} in 2019 to 18^{th} in 2020, West Sulawesi that improved by nine ranks from 32^{nd} in 2019 to 23^{rd} in 2020, and Banten that improved by eight ranks from 20^{th} in 2019 to 12^{th} in 2020.

West Papua (std. score: -1.543) ranked at the bottom of 34 provinces in terms of Government and Institutional Setting, deteriorating in its rank from 29^{th} in 2019. It is amongst 13 provinces in the middle-14 and bottom-10 provinces that showed a marked deterioration. The province that saw the biggest drop in ranking is South Sumatra, going down by 17 positions from 11^{th} rank in 2019 to 28^{th} rank in 2020. Other provinces that saw a significant drop include Central Sulawesi (18^{th} to 31^{st}) and Bangka Belitung Islands (17^{th} to 29^{th}). Notably, for many of these provinces, the changes to their rankings followed an inconsistent trend. West Papua for example, had improved from 30^{th} rank in 2018 to 29^{th} in 2019 before falling to the lowest rank. Similarly, South Sumatra had previously seen a marked improvement from 20^{th} rank in 2018 to 11^{th} rank in 2019

before falling to its lowest position in 2020. However, there are also some provinces that consistently fell in ranking. This includes Central Sulawesi that ranked 10^{th} in 2018 and then 18^{th} in 2019 before going to 31^{st} place in 2020.

These changes show that while there are provinces that have worked on elevating their scores in this sub-environment, others have not kept up their past progresses. A remaining few have not progressed at all.

By delving into the sub-environment scores, we can identify the underlying driver(s) behind each province's performance in the environment. It can be observed that only five of the provinces in the top-10 category performed above average for all three sub-environments. The remaining provinces all fell short in at least one of the following sub-environments (i) Government Policies and Fiscal Sustainability (ii) Institutions, Governance, and Leadership (iii) Competition, Regulatory Standards and Rule of Law. The five provinces that had at least one sub-environment performing below average despite being in the top-category for the environment include DKI Jakarta (second), which obtained a standardised score of -0.433 in Competition, Regulatory Standards and Rule of Law. The other four provinces that obtained negative standardised scores for the sub-environment on Government Policies and Fiscal Sustainability are North Sulawesi (5th), North Kalimantan (7th), Gorontalo (9th) and West Kalimantan (10th).

In the Government Policies and Fiscal Sustainability sub-environment, DKI Jakarta attained the highest standardised score of 4.643 and North Maluku obtained the lowest standardised score of -0.752. The significant difference of 2.932 in the standardised score between the first-ranked DKI Jakarta and the second-ranked West Java (std. score: 1.711) is substantial, indicating again that the performance of DKI Jakarta far outweighs the remaining provinces. Only 10 provinces performed above average in this sub-environment.

In the Institutions, Governance and Leadership sub-environment, Central Java performed best with a standardised score of 1.646 whereas the lowest performer was North Maluku with a standardised score of -2.486. The difference in the standardized scores of the top-ranked Central Java and the second-ranked North Kalimantan was just 0.058 which shows that improvements among the top rank provinces are within reach. Moreover, more than half, or 19 provinces performed above average in this sub-environment.

For the sub-environment on Competition, Regulatory Standards and Rule of Law, Bali topped the ranks with a standardized score of 1.607 and while West Papua came in last with a standardized score of -2.171. The difference in the standardized scores of the top-ranked Bali and the second-ranked Central Java is 0.058, which again shows that improvements by the other provinces in this sub-environment is highly attainable. 14 provinces performed above average with positive standardised scores in this subenvironment.

	Rank		- Province	Decion	Std. Score	Sub	-environment Std. Sco	Scores 2020	
2018	2019	2020	Province	Region	2020	GPFS	IGL	CRSRL	
2	1	1	East Java	Java	2.014	1.573	1.532	1.504	
1	2	2	DKI Jakarta	Java	1.934	4.643	0.215	-0.433	
3	6	3	Central Java	Java	1.906	1.167	1.646	1.549	
14	5	4	Bali	Bali-Nusa Tenggara	1.268	0.062	1.233	1.607	
15	8	5	North Sulawesi	Sulawesi	1.099	-0.403	1.460	1.458	
5	3	6	West Java	Java	1.052	1.711	0.305	0.391	
23	4	7	North Kalimantan*	Kalimantan	1.032	-0.721	1.588	1.494	
6	22	8	East Kalimantan	Kalimantan	0.961	0.139	0.783	1.277	
4	19	9	Gorontalo	Sulawesi	0.692	-0.658	1.165	1.076	
16	16	10	West Kalimantan	Bali-Nusa Tenggara	0.602	-0.251	0.402	1.227	
19	7	11	West Nusa Tenggara	Bali-Nusa Tenggara	0.503	-0.403	0.960	0.595	
18	20	12	Banten	Java	0.451	0.487	0.002	0.542	
25	15	13	Jambi	Sumatra	0.230	-0.300	0.471	0.355	
12	9	14	DI Yogyakarta	Java	0.072	-0.229	0.557	-0.162	
7	24	15	Southeast Sulawesi	Sulawesi	0.011	-0.570	0.062	0.532	
9	12	16	South Kalimantan	Kalimantan	-0.025	-0.083	0.423	-0.398	
17	13	17	Riau	Sumatra	-0.042	-0.171	0.212	-0.137	
32	30	18	Papua	Maluku-Papua	-0.078	-0.345	0.237	-0.071	
29	23	19	West Sumatra	Sumatra	-0.088	-0.263	0.634	-0.572	
11	14	20	South Sulawesi	Sulawesi	-0.186	0.026	-0.119	-0.333	
8	10	21	Lampung	Sumatra	-0.214	-0.096	-0.236	-0.156	
13	26	22	Central Kalimantan	Kalimantan	-0.328	-0.363	-0.562	0.174	
21	32	23	West Sulawesi	Sulawesi	-0.497	-0.719	-0.200	-0.219	
24	21	24	Riau Islands	Sumatra	-0.576	-0.356	-0.596	-0.367	
33	28	25	Bengkulu	Sumatra	-0.852	-0.557	-1.054	-0.339	
26	33	26	Maluku	Maluku-Papua	-0.855	-0.716	-0.590	-0.650	
22	27	27	Aceh	Sumatra	-0.964	-0.100	-1.202	-0.906	
20	11	28	South Sumatra	Sumatra	-0.994	0.113	-1.579	-0.811	
28	17	29	Bangka Belitung Islands	Sumatra	-1.050	-0.472	-0.757	-1.174	
27	25	30	East Nusa Tenggara	Bali-Nusa Tenggara	-1.260	-0.530	-1.000	-1.354	
10	18	31	Central Sulawesi	Sulawesi	-1.377	-0.483	-1.228	-1.440	
34	34	32	North Sumatra	Sumatra	-1.417	0.244	-1.540	-1.947	
31	31	33	North Maluku	Maluku-Papua	-1.476	-0.752	-2.486	-0.139	
30	29	34	West Papua	Maluku-Papua	-1.543	-0.622	-0.739	-2.171	

Table 2.4: 2020 Government and Institutional Setting Standardised Scores and Three-Year Rankings, 2018-2020

Source: ACI.

Note: Note: GPFS: Government Policies and Fiscal Sustainability; IGL: Institutions, Governance, and Leadership; CRSRL: Competition, Regulatory Standards and Rule of Law. North Kalimantan was assessed as part of East Kalimantan prior to 2018.



Figure 2.9: 2020 Map of Government and Institutional Setting Ranking



The map in Figure 2.9 shows a significant spread of high and low levels of competitiveness in terms of Government and Institutional Setting. Provinces in the top-10 category are concentrated primarily in the Java and Kalimantan regions whereas provinces in the bottom-10 category can be found on all the other regions, primarily on the western and eastern parts of Indonesia, in western Sumatra, Maluku-Papua and Bali-Nusa Tenggara. Notably, this is environment with the fewest number of provinces from Java and Kalimantan in the top-10 band.

Apart from the abovementioned observations, it may be concluded that for Government and Institutional Setting, (i) the Sulawesi region shows the most variation in rankings, as it holds provinces from all three bands; and (ii) the regions of Sumatra, Maluku-Papua and Bali Nusa Tenggara see less of a variation with their provinces ranking either in the middle-14 or bottom-10 categories.

2.3.2.3 Financial, Businesses and Manpower Conditions

As can be seen in Table 2.5, DKI Jakarta (std. score: 2.865) topped the Financial, Businesses and Manpower Conditions environment and maintained its first rank from 2018 to 2020 as it did in the Macroeconomic Stability environment. It is worth noting that nine provinces remained in the top-10 category from 2019 to 2020. Only South Sumatra (currently ranked 12^{th}) dropped from the top-10 to the middle-14 category from 2019 to 2020. West Kalimantan (currently 10^{th}) progressed from the middle-14 category to the top-10 category in the same time period.

Aceh (std. score: -1.427) ranked at the bottom of 34 provinces in terms of Financial, Business and Manpower Conditions. Unlike the top-10 category, there were more shifts in the bottom-10 category. Seven provinces remained in the bottom-10 category from 2019 to 2020. Three provinces, namely Papua (currently ranked 15^{th}), North Sulawesi (currently ranked 22^{nd}) and Southeast Sulawesi (currently ranked 24^{th}) progressed from the bottom-10 to the middle-14 category. Bengkulu (currently ranked 26^{th}), Bangka Belitung Islands (currently ranked 29^{th}) and Central Sulawesi (currently ranked 30^{th}) replaced the three improved provinces by dropping from the middle-14 category to the bottom-10 category from 2019 to 2020.

The performance of DKI Jakarta and second ranked East Java (std. score: 2.427) skewed the score distribution upward, rendering the average province to be positioned between 12th ranked South Sumatra and 13th ranked Jambi. The median is obtained by calculating the average of the middle-ranked provinces that occupy the 17th (Lampung) and 18th (Central Kalimantan) positions. For Financial, Businesses and Manpower Conditions, the median value is -0.180. The negative median value indicates that more than half of the 34 provinces performed below average, obtaining negative standardised scores. In fact, only 12 provinces obtained positive standardised scores and performed above average in this environment.

Within the three years from 2018 to 2020, several provinces showed improvements in their rankings, ranging from a change of one to 17 positions for Financial, Businesses and Manpower Conditions environment. The largest improvement was observed in the rankings of Papua, which improved by 17 positions from 32^{nd} rank in 2019 to 15^{th} rank in 2020. Banten also improved significantly by seven positions from 18^{th} rank in 2019 to 11^{th} rank in 2020. Its progress is closely followed by West Kalimantan that improved by six positions and North Sulawesi by five position. East Kalimantan, West Nusa Tenggara, East Nusa Tenggara, Central Kalimantan, South Sulawesi, Jambi, Gorontalo, Riau Islands, North Kalimantan, Southeast Sulawesi, West Papua and West Sulawesi are the other provinces that made improvements of between one to four positions.

Of the improved provinces mentioned above, a few are notable for their consistent progress. Banten improved by a total of 11 positions since its 22^{nd} rank in 2018, West Nusa Tenggara by total of five positions since its 25^{th} rank in 2018, Southeast Sulawesi by a total of seven positions since its 31^{st} rank in 2018, Gorontalo by three positions since its 30^{th} rank in 2018, East Nusa Tenggara by a total of four positions since its 27^{th} rank in 2018 and West Sulawesi by a total of two positions since its 34^{th} rank since 2018.

There are provinces which deteriorated consistently in rankings from 2018 to 2020. Central Sulawesi saw the largest drop in rankings by 13 positions, from 16^{th} in 2018 to 17^{th} in 2019 and 30^{th} in 2020. Bangka Belitung Islands also saw the same trend, dropping by five positions from 15^{th} in 2018 to 24^{th} in 2019 and 29^{th} in 2020. Dropping by a total of four positions over the same period is North Sumatra, Lampung and Aceh that currently rank at 16^{th} , 17^{th} and 34^{th} respectively. West Java, despite being in the top-10 category, also showed a consistent deterioration, with its ranking lowered by two positions from 3^{rd} in 2018 to 5^{th} in 2020.

Bali, DI Yogyakarta, South Sumatra, North Sumatra, Bangka Belitung Islands, Riau, South Kalimantan, West Sumatra, Bengkulu and Maluku deteriorated in their rankings by between one to seven positions from 2017 to 2019 but the decline was not consistent as improvements were also observed for some of them over a year between the three-year period. Also, only one province, North Maluku, maintained its position from 2019 to 2020 at 28th rank.

What are the underlying driver(s) behind each province's performance in this

environment? Let us examine the sub-environment scores to find out. None of the provinces in the top-10 category performed above average for all three sub-environments. All provinces fell short in at least one of the following sub-environments: (i) Financial Deepening and Business Efficiency (ii) Labour Market Flexibility (iii) Productivity and Performance. Even DKI Jakarta that is the top performing province in this environment scored below average in the sub-environment on Labour Market Flexibility.

In the Financial Deepening and Business Efficiency sub-environment, DKI Jakarta attained the highest standardised score of 2.741 whereas Aceh obtained the lowest standardised score of -1.620. The top-ranked DKI Jakarta and second-ranked East Java differ in their standardized scores by 0.665, which indicates an attainable opportunity for improvement. 16 provinces performed above average in this sub-environment.

For the sub-environment on Labour Market Flexibility, East Java obtained the highest standardised score of 3.267 whereas West Maluku obtained the lowest standardised score of -1.440. The scores of the top three provinces for this sub-environment range from 2.539 to 3.267. However, the score difference between the third and fourth ranked province is significantly large at 1.727. Only 11 provinces scored above average and obtained positive standardised scores. The remaining 23 provinces scored below average. It should be noted that even DKI Jakarta scored below average at -0.655 in this sub-environment despite ranking first at the environmental level.

For the sub-environment on Productivity Performance, DKI Jakarta scored the highest at 3.954. There was a significant score difference of 1.322 between DKI Jakarta and the second ranked province, East Kalimantan (std. score: 2.632). Only seven provinces performed above average with positive standardised score whereas the remaining 27 provinces obtained negative standardised scores and performed below average. East Nusa Tenggara scored the lowest (std. score: -0.867).



Figure 2.10: 2020 Map of Financial, Businesses and Manpower Conditions Ranking

Source: ACI.

	Rank		Duovinco	Dogion	Std. Score 2020		e Sub-environment Std. Scores 2020					
2018	2019	2020	Province	Region			FD	BE	LMF		l	PP
1	1	1	DKI Jakarta	Java	2.865		2.741		-0.655		3.954	
2	2	2	East Java	Java	2.427		2.076		3.267		-0.226	
4	3	3	Central Java	Java	1.698		1.362		2.830		-0.611	
5	8	4	East Kalimantan	Kalimantan	1.463		0.918		-0.465		2.632	
3	4	5	West Java	Java	1.418		0.884		2.539		-0.434	
6	7	6	Riau Islands	Sumatra	0.787		0.948		-0.785		1.495	
7	5	7	Bali	Bali-Nusa Tenggara	0.606		0.894		0.812		-0.428	
8	6	8	DI Yogyakarta	Java	0.442		0.973		0.633		-0.673	
17	10	9	North Kalimantan*	Kalimantan	0.353		0.071		-0.496		1.170	
19	16	10	West Kalimantan	Kalimantan	0.329		0.889		0.221	1	-0.416	
22	18	11	Banten	Java	0.272		0.884		-0.113		-0.198	
13	9	12	South Sumatra	Sumatra	0.025		0.258		0.073		-0.278	
26	15	13	Jambi	Sumatra	-0.046		-0.017		0.072		-0.152	
11	11	14	Riau	Sumatra	-0.065		-0.785		-0.503		1.151	
29	32	15	Рариа	Maluku-Papua	-0.098		-0.206		-0.174		0.172	
10	12	16	North Sumatra	Sumatra	-0.114		-0.186		0.083		-0.139	
9	13	17	Lampung	Sumatra	-0.175		-0.306		0.411		-0.472	
18	20	18	Central Kalimantan	Kalimantan	-0.184		0.146		-0.324		-0.211	
14	21	19	South Sulawesi	Sulawesi	-0.199		-0.091		-0.245		-0.083	
25	23	20	West Nusa Tenggara	Bali-Nusa Tenggara	-0.219		0.026		0.285		-0.773	
20	14	21	South Kalimantan	Kalimantan	-0.243		0.136		-0.177		-0.472	
21	27	22	North Sulawesi	Sulawesi	-0.398		0.058		-0.709		-0.188	
24	22	23	West Sumatra	Sumatra	-0.414		-0.311		-0.249		-0.312	
31	25	24	Southeast Sulawesi	Sulawesi	-0.472		-0.482		-0.180		-0.333	
12	26	25	West Papua	Maluku-Papua	-0.708		-1.183		-1.044		0.734	
23	19	26	Bengkulu	Sumatra	-0.795		-0.895		-0.178		-0.602	
30	29	27	Gorontalo	Sulawesi	-0.845		-0.705		-0.444		-0.632	
32	28	28	North Maluku	Maluku-Papua	-0.882		-0.405		-0.842		-0.612	
15	24	29	Bangka Belitung Islands	Sumatra	-0.919		-1.124		-0.648		-0.165	
16	17	30	Central Sulawesi	Sulawesi	-0.931		-1.259		-0.404		-0.300	
27	34	31	East Nusa Tenggara	Bali-Nusa Tenggara	-1.120		-1.338		-0.157		-0.867	
34	33	32	West Sulawesi	Sulawesi	-1.213		-1.596		-0.395		-0.566	
33	31	33	Maluku	Maluku-Papua	-1.219		-0.755		-1.140		-0.676	
28	30	34	Aceh	Sumatra	-1.003		-1.620		-0.899		-0.488	

 Table 2.5: 2020 Financial, Businesses and Manpower Conditions Standardised Scores and Three-Year Rankings, 2018-2020

Based on the geographic concentration shown in Figure 2.10, the top-10 provinces for Financial, Businesses and Manpower Conditions are generally in labour-intensive Java, resource-rich Kalimantan and Sumatra (see Figure 2.10). In fact, these are the only regions with provinces that are competitive in this aspect. The Sumatra region has provinces with a diverse range of competitiveness, with the most competitive being Riau Islands (seventh) and South Sumatra (ninth). Meanwhile, Sulawesi, Bali-Nusa Tenggara and Maluku-Papua have provinces that are mediocre or low-performing.

In summary, (i) provinces in Java tend to be competitive, except for Banten which has not performed as well; (ii) provinces in Sumatra show the highest variation in performance; (iii) provinces in Kalimantan are averagely competitive, with the exception of East Kalimantan that has performed well; (iv) provinces in Sulawesi and Bali-Nusa Tenggara have a mix of average and less competitive provinces; and (v) all provinces in the Maluku-Papua region are characterized by lower levels of performance in this environment.

2.3.2.4 Quality of Life and Infrastructure Development

While DKI Jakarta topped the ranking in the previous aforementioned environments, East Kalimantan ranked first for Quality of Life and Infrastructure Development, with a standardized score of 2.130. The bottom-ranked province at 34^{th} place was Papua (std. score: -3.223). In general, there are significant shifts across the rankings for this environment.

The new entrant to the top-10 provinces is Banten that ranked fifth, up from 11^{th} in 2019. The average province is the least skewed in this environment, found between Jambi (17^{th}) and Central Kalimantan (18^{th}) . The median is obtained by calculating the average score of these two provinces and the standardized score is -0.135. Since the median hovers close to zero, the number of provinces below and above average are equal.

In the three years from 2018 to 2020, several provinces showed consistent improvements in their rankings for this environment. The largest consistent improvement of eight positions was observed in Jambi as it ranked 25^{th} in 2018 and improved to rank 20^{th} in 2019 and 17^{th} in 2020. Other provinces that showed consistent improvements rose four to five rankings in 2020. They are: North Sulawesi (8^{th}), Southeast Sulawesi (12^{th}), Maluku (24^{th}), North Maluku (25^{th}) and West Kalimantan (29^{th}).

It should be noted that several other provinces, namely Banten, Central Java, West Sumatra and Gorontalo also improved in rankings from 2018 to 2020. However, their improvements were not consistent across the three-year period. For example, Gorontalo had previously deteriorated in rankings from 24^{th} in 2018 to 29^{th} in 2019, but later improved by seven positions to 22^{nd} in 2020. In total, 13 provinces improved their rankings from 2018 to 2020, but only six of these provinces achieved consistent improvement over the three-year period.

Several provinces, namely DKI Jakarta, Aceh, Central Sulawesi and Lampung showed consistent decline in their performance from 2018 to 2020. The largest consistent decline

of eight positions was observed in the performance of Lampung as it ranked 19^{th} in 2018, deteriorated to 25^{th} in 2019 and later to 27^{th} in 2020. The second largest decline was observed in the performance of Aceh as it dropped from 9^{th} rank in 2018 to 15^{th} rank in 2019 before subsequently ranking 16^{th} in 2020. The remaining provinces declined consistently either by four (DKI Jakarta) or six (Central Sulawesi) positions over the three-year period.

It should be noted that there are provinces, namely South Kalimantan, Riau Islands, West Java, Central Kalimantan, Riau, South Sumatra, North Sumatra, Bangka Belitung Islands and West Papua that also fell in ranking over the three-year period albeit in a less consistent manner. Central Kalimantan for example, ranked 15^{th} in 2018, deteriorated to 21^{st} in 2019 but later improved to 18^{th} rank in 2020. Despite its latest improvement, its position deteriorated overall by three ranks. The remaining provinces that showed lower rankings fell by between one to four positions.

Once again, the sub-environment scores can help us to identify the underlying driver(s) behind each province's performance. The three sub-environments are (i) Physical Infrastructure (ii) Technological Infrastructure (iii) Standard of Living, Education and Social Stability. Only five provinces, namely DI Yogyakarta, Bali, North Sulawesi, North Kalimantan and Riau Islands performed above average in all three sub-environments in 2019. All the remaining 29 provinces scored below average and obtained negative standardised scores in at least one of the three sub-environments.

In the Physical Infrastructure sub-environment, Banten obtained the highest standardised score of 2.514 whereas West Papua obtained the lowest standardised score of -1.289. Only 12 provinces obtained positive standardised scores and performed above average in this sub-environment. While the difference in score between the first-ranked and second-ranked province (South Kalimantan std. score: 2.481) is only 0.033, this sub-environment appears to be a weakness for the top players in the overall environment rankings. Second-ranked DI Yogyakarta obtained a negative standardised score of -0.636, notably its lowest score among all three sub-environments.

For the sub-environment of Technological Infrastructure, DKI Jakarta obtained the highest standardised score of 2.447 whereas Papua obtained the lowest score of -1.816. The difference in score between DKI Jakarta and second-ranked DI Yogyakarta (std. score: 2.248) is 0.199, which indicates the high degree of competitiveness among the top provinces.17 provinces scored above average in this sub-environment.

Finally, for the sub-environment on Standard of Living, Education and Social Stability, DI Yogyakarta obtained the highest standardised score of 1.586 whereas Papua obtained the lowest standardised score of -3.602. Similar to the other sub-environments, the top provinces are highly competitive and narrowly differentiated in terms of standardized scores. One notable exception in this sub-environment is the large gap between the second-last province Banten and the 34th province Papua that differ in standardized scores by 2.096. This indicates the large leap in living standards, education and social stability that Papua needs to make before becoming on par with the other provinces. 18 provinces scored above average in this sub-environment.

	Rank		Drovinco	Degion	Std. Score	e Sub-environment Std. Scores		ores 2020	
2018	2019	2020	- Province	Region	2020	PI	TI	SLESS	
1	1	1	East Kalimantan	Kalimantan	2.130	1.464	1.545	1.419	
2	3	2	DI Yogyakarta	Java	1.538	-0.636	2.248	1.586	
4	2	3	Bali	Bali-Nusa Tenggara	1.518	0.874	1.565	0.717	
3	4	4	South Kalimantan	Kalimantan	1.277	2.481	0.628	-0.455	
6	11	5	Banten	Java	0.902	2.514	0.868	-1.506	
10	10	6	Central Java	Java	0.774	1.412	0.443	-0.247	
7	5	7	East Java	Java	0.756	1.983	0.376	-0.787	
12	9	8	North Sulawesi	Sulawesi	0.704	0.026	0.457	0.982	
5	6	9	DKI Jakarta	Java	0.703	-0.777	2.447	-0.209	
22	7	10	North Kalimantan*	Kalimantan	0.701	0.032	0.461	0.965	
8	8	11	Riau Islands	Sumatra	0.429	0.343	0.365	0.184	
17	13	12	Southeast Sulawesi	Sulawesi	0.381	-0.039	0.456	0.376	
16	16	13	West Sumatra	Sumatra	0.370	-0.061	-0.252	1.083	
14	12	14	South Sulawesi	Sulawesi	0.349	0.294	0.485	-0.053	
11	17	15	West Java	Java	0.309	1.298	0.786	-1.441	
9	15	16	Aceh	Sumatra	0.136	-0.444	-0.500	1.227	
25	20	17	Jambi	Sumatra	0.010	-0.412	-0.245	0.678	
13	21	18	Central Kalimantan	Kalimantan	-0.028	-0.769	0.030	0.680	
15	14	19	Riau	Sumatra	-0.077	-0.229	-0.316	0.385	
23	19	20	West Nusa Tenggara	Bali-Nusa Tenggara	-0.235	-0.016	-0.657	0.184	
21	22	21	Bengkulu	Sumatra	-0.255	-0.655	-0.450	0.575	
24	29	22	Gorontalo	Sulawesi	-0.275	-0.256	0.141	-0.458	
18	18	23	South Sumatra	Sumatra	-0.462	-0.429	-0.330	-0.201	
28	26	24	Maluku	Maluku-Papua	-0.539	-0.708	-1.472	1.060	
29	27	25	North Maluku	Maluku-Papua	-0.561	-0.424	-1.012	0.269	
20	24	26	Central Sulawesi	Sulawesi	-0.594	-1.149	-0.442	0.356	
19	25	27	Lampung	Sumatra	-0.637	-0.577	-0.761	0.013	
26	28	28	North Sumatra	Sumatra	-0.728	0.394	-1.574	-0.333	
33	31	29	West Kalimantan	Kalimantan	-0.766	-0.688	-0.521	-0.383	
27	23	30	Bangka Belitung Islands	Sumatra	-0.800	-0.508	0.053	-1.208	
31	33	31	West Sulawesi	Sulawesi	-0.904	-0.807	-0.413	-0.660	
32	32	32	East Nusa Tenggara	Bali-Nusa Tenggara	-1.305	-0.956	-0.958	-0.800	
30	30	33	West Papua	Maluku-Papua	-1.597	-1.289	-1.637	-0.395	
34	34	34	Papua	Maluku-Papua	-3.223	-1.284	-1.816	-3.602	

Table 2.6: 2020 Quality of Life and Infrastructure Development Standardised Scores and Three-Year Rankings, 2018-2020

Source: ACI. Note: QLID: Quality of Life & Infrastructure; PI: Physical Infrastructure; TI: Technological Infrastructure; SLESS: Standard of Living, Education & Social Stability. North Kalimantan was assessed as part of East Kalimantan prior to 2018.







The geographical concentration of low performing provinces is spread across the nation as shown in the map in Figure 2.11. All provinces from the easternmost region of Maluku-Papua are part of the bottom-10 group, while provinces belonging to the middle-14 group are congregated in the middle within the regions of Java, Kalimantan, Sulawesi and Bali-Nusa Tenggara. In general, (i) provinces in Java tend to be better performers, (ii) provinces in Sumatra, Kalimantan, Bali-Nusa Tenggara and Sulawesi regions show mixed performance; while (iii) provinces in Maluku-Papua have the most room for improvement.

2.3.3 What-if Simulation Analysis on Overall Competitiveness

The methodology for *What-if* competitiveness simulation has been explained earlier in Section 2.2.4. The scenario is to raise each province's top-20 percent weakest indicators to the average values. Afterwards, the standardised scores are re-calculated based on such improvement with the assumption that all other provinces' performance remain unchanged. Each province's top 20 percent weakest and strongest indicators can be found in the provincial profiles in Appendix 6.

The complete simulation results are shown in Tables 2.7 to 2.11, which compare the ranking and score of each province before and after the simulation. The simulation hopes to assist provinces in prioritising key areas for improvement so that they can grow in competitiveness.

For Overall Competitiveness (Table 2.7), improvements to the standardized scores range from 0.274 to 1.0672. These increases indicate that there still exists a range of improvements to be made. However, the pattern also shows that substantial changes in ranking are less likely to occur among the top-10 provinces as competition is already intense.

The What-if competitiveness simulation works on the ceteris paribus assumption, i.e.,

when simulation is conducted for one province, other provinces are held to be constant. As a result, some provinces may end up improving their ranking to a position that is similar to what other provinces would have attained. For instance, there are three provinces, Central Java, East Kalimantan and West Java, that ranked third after the simulation.

Some provinces emerged with considerably higher rankings, demonstrating their potential to improve competitiveness. For instance, the largest increase in rank by 15 positions in the simulation was achieved by Papua, progressing from 29^{th} to 14^{th} rank. The second largest improvement of 13 positions was observed for West Papua as it was pushed from 33^{rd} rank to 20^{th} rank. With the simulation, North Sumatra improved by 11 positions from 24^{th} to 13^{th} rank.

Overall, the range of improvements in rank after simulation was between 1 and 15. Regardless of large or small rank improvements, the potential progress for each province shown in this exercise should serve as an impetus for provinces to expedite their development and growth. The next section discusses in greater detail the improvements that can be achieved in each environment of competitiveness.

Province (In Alphabetical Order)	Raı	nk	Std. Score		
riovince (in Alphabetical Order)	Before	After	Before	After	
Aceh	26	18	-0.9249	-0.1858	
Bali	6	6	0.9069	1.2295	
Bangka Belitung Islands	30	20	-1.0584	-0.2169	
Banten	7	6	0.6837	1.1710	
Bengkulu	25	20	-0.8363	-0.3202	
Central Java	3	3	1.6118	2.0135	
Central Kalimantan	21	13	-0.3189	0.1468	
Central Sulawesi	27	20	-0.9475	-0.2590	
DI Yogyakarta	9	7	0.4138	0.8519	
DKI Jakarta	1	1	2.6289	3.3093	
East Java	2	1	2.2412	2.5751	
East Kalimantan	4	3	1.5908	1.8645	
East Nusa Tenggara	34	24	-1.3015	-0.5558	
Gorontalo	20	13	-0.3114	0.1365	
Jambi	14	10	-0.0154	0.3628	
Lampung	22	13	-0.3763	0.1351	
Maluku	28	20	-1.0495	-0.3192	
North Kalimantan	8	6	0.5469	0.9359	
North Maluku	32	23	-1.0839	-0.4307	
North Sulawesi	10	7	0.3642	0.7728	
North Sumatra	24	13	-0.6088	0.2327	
Рариа	29	14	-1.0552	0.0120	
Riau	13	9	0.0932	0.4900	
Riau Islands	11	7	0.3210	0.7730	
South Kalimantan	12	7	0.2931	0.6662	
South Sulawesi	15	12	-0.0396	0.3095	
South Sumatra	23	13	-0.4317	0.0774	
Southeast Sulawesi	19	13	-0.1688	0.1911	
West Java	5	3	1.5515	2.0622	
West Kalimantan	16	11	-0.0520	0.3436	
West Nusa Tenggara	17	11	-0.1483	0.3189	
West Papua	33	20	-1.2938	-0.3123	
West Sulawesi	31	21	-1.0635	-0.3458	
West Sumatra	18	13	-0.1615	0.2711	

Table 2.7: 2020 What-if Simulation on Overall Competitiveness

Source: ACI.

Note: North Kalimantan was assessed as part of East Kalimantan prior to 2018.

2.3.4 What-if Simulation Analysis on Four Environments

The *What-if* simulation was also conducted for each of the four environments, allowing us to focus on the improvements that each province could attain in more specific areas. For Macroeconomic Stability (Table 2.8), 11 provinces maintained their ranks after the simulation. The largest increase in rank by 14 positions in the simulation was achieved by DI Yogyakarta as it improved from 27^{th} to 13^{th} rank, pushing it from the lower end of the bottom-10 category to the middle-14 category. The second largest improvement of 11 positions was observed in the simulation for Gorontalo with an improvement from 26^{th} to 15^{th} rank. Bengkulu improved by ten positions from 32^{nd} to 22^{nd} after the simulation. This is followed by Bali, West Sumatra and West Nusa Tenggara that improved by nine positions each. Overall, the range of improvements in rank after simulation was between one and 14.

The Macroeconomic Stability environment has the highest number of provinces with unchanged rankings across all four environments after the simulation exercise. Of the 11 provinces, five remain unchanged in both their rankings and standardized scores, indicating that none of their top-20 percent weakest indicators belonged to the Macroeconomic Stability environment. This suggests that the provinces have done comparably better in macroeconomic aspects since their scores for these aspects are not in the lowest 20 percent of all the indicators used in the assessment.

Table 2.9 shows the results for the What-if simulation on Government and Institutional Setting. Unlike the Macroeconomic Stability environment, the Government and Institutional Setting environment shows plenty of opportunities for provinces to increase their competitiveness by prioritising governance reforms. This can be seen particularly in provinces from the bottom-10 category where substantially large improvements were achieved after simulation. The largest improvement by 19 ranks was obtained by North Sumatra, moving from 32^{nd} to 13^{th} rank. This improvement would elevate it from the lower end of the bottom-10 category to the upper end of the middle-14 category. This is the largest improvement by a province for the *What-if* simulation exercise across all four environments. The second largest improvement by 14 ranks was achieved by South Sumatra that improved from 28^{th} to 14^{th} rank. This is followed by West Papua that improved by 13 positions from 34^{th} to 21^{st} rank. Several other provinces, such as Lampung, Central Kalimantan, Riau Islands, Aceh, Bangka Belitung Islands, East Nusa Tenggara, Central Sulawesi and North Maluku also improved substantially in the simulation exercise, with an increase by between 8 to 10 ranks.

Four provinces retained the same rank even after simulation. These provinces include East Java (ranked 1^{st}), Bali (ranked 4^{th}), West Nusa Tenggara (ranked 11^{th}) and DI Yogyakarta (ranked 14^{th}). Two of these provinces are from the top-10 provinces, while the remaining two are from the middle-14 provinces.

Table 2.10 shows the results for the *What-if* simulation on Financial, Businesses and Manpower Conditions. The largest improvement by 13 positions was achieved by West Papua as it ranked 25^{th} before simulation but ranked 12^{th} after simulation. The second largest improvement was obtained by Maluku which improved by 11 positions from 33^{rd}

to 22^{nd} rank, progressing from bottom-10 to middle-14. North Sulawesi follows as it moved by ten positions from 22^{nd} to 12^{th} rank. East Nusa Tenggara and North Sulawesi improved by 11 ranks after simulation. The largest potential improvements can be seen mostly in the bottom-10 category. Overall, improvements range from 1^{st} to 13^{th} positions. There are five provinces that remained constant in rankings after the simulations. They are DKI Jakarta (ranked 1^{st}), East Java (ranked 2^{nd}), Central Java (ranked 3^{rd}), Riau Islands (ranked 6^{th}) and South Sumatra (ranked 12^{th}).

Finally, Table 2.11 shows the results for the *What-if* simulation on Quality of Life and Infrastructure Development. The largest improvement of 19 positions was achieved by West Sulawesi, elevating it from 31^{st} to 12^{th} rank. This improvement is comparable to the top improver in the Government and Institutional Settings sub-environment. Following that, the second largest improvement of 15 positions was achieved by North Sumatra, improving from 28^{th} to 13^{th} position. Bangka Belitung islands follow with an improvement of 14 positions from 30^{th} to 16^{th} position. Two provinces, Papua (from 34^{th} to 21^{st}) and West Kalimantan (from 29^{th} to 16^{th}), show the potential to improve by 13 positions. Another two provinces, Lampung (from 27^{th} to 16^{th}) and West Java (from 15^{th} to 4^{th}) demonstrated the potential to improve by 11 positions. Only one province, East Kalimantan, retained its ranking after simulation (1^{st} position).

This is the only environment where two other provinces (DI Yogyakarta and DKI Jakarta) achieved the first position after simulation. This implies that they have similar improvement gaps and can overtake one another if they improve their top-20 percent weakest indicators.

Province (In Alabebatical Order)	Rai	nk	Std. Score		
Province (in Alphabetical Order)	Before	After	Before	After	
Aceh	31	26	-0.8745	-0.5936	
Bali	19	10	-0.3232	0.0390	
Bangka Belitung Islands	30	23	-0.8130	-0.5067	
Banten	6	6	0.6890	0.7712	
Bengkulu	32	22	-0.9273	-0.4452	
Central Java	4	4	1.0762	1.0998	
Central Kalimantan	24	20	-0.5381	-0.3389	
Central Sulawesi	18	13	-0.3036	-0.1460	
DI Yogyakarta	27	13	-0.6528	-0.1383	
DKI Jakarta	1	1	3.3937	3.4171	
East Java	3	3	2.3864	2.3864	
East Kalimantan	5	5	0.8290	0.8985	
East Nusa Tenggara	28	26	-0.7178	-0.6254	
Gorontalo	26	15	-0.6253	-0.2465	
Jambi	16	11	-0.2454	-0.0358	
Lampung	17	13	-0.2477	-0.1586	
Maluku	33	26	-0.9386	-0.6093	
North Kalimantan	15	10	-0.2356	0.0161	
North Maluku	29	22	-0.7483	-0.4816	
North Sulawesi	14	10	-0.1725	0.0868	
North Sumatra	9	9	0.1989	0.1989	
Papua	13	13	-0.1709	-0.1709	
Riau	7	7	0.4991	0.6520	
Riau Islands	8	7	0.4463	0.6377	
South Kalimantan	10	10	-0.0169	0.0982	
South Sulawesi	12	10	-0.0979	0.1483	
South Sumatra	11	11	-0.0298	-0.0298	
Southeast Sulawesi	22	15	-0.4914	-0.1921	
West Java	2	2	2.4712	2.4891	
West Kalimantan	20	13	-0.3411	-0.1576	
West Nusa Tenggara	25	16	-0.5505	-0.2529	
West Papua	23	23	-0.5286	-0.5286	
West Sulawesi	34	28	-0.9843	-0.6743	
West Sumatra	21	12	-0.4150	-0.0952	

Table 2.8: 2020 What-if Simulation on Macroeconomic Stability

Source: ACI.

Note: North Kalimantan was assessed as part of East Kalimantan prior to 2018.

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Province (In Alphabetical Order)	Rai	nk	Std. Score		
Frovince (in Alphabetical Order)	Before	After	Before	After	
Aceh	27	17	-0.9645	-0.0451	
Bali	4	4	1.2676	1.3830	
Bangka Belitung Islands	29	19	-1.0497	-0.0971	
Banten	12	10	0.4506	0.6163	
Bengkulu	25	23	-0.8524	-0.4199	
Central Java	3	1	1.9056	2.1096	
Central Kalimantan	22	13	-0.3282	0.3972	
Central Sulawesi	31	22	-1.3768	-0.2839	
DI Yogyakarta	14	14	0.0723	0.1894	
DKI Jakarta	2	1	1.9335	2.4913	
East Java	1	1	2.0139	2.1144	
East Kalimantan	8	5	0.9606	1.1156	
East Nusa Tenggara	30	22	-1.2601	-0.3236	
Gorontalo	9	8	0.6919	0.9474	
Jambi	13	9	0.2295	0.8029	
Lampung	21	13	-0.2136	0.2597	
Maluku	26	23	-0.8548	-0.3685	
North Kalimantan	7	5	1.0315	1.2462	
North Maluku	33	25	-1.4759	-0.6999	
North Sulawesi	5	4	1.0987	1.4824	
North Sumatra	32	13	-1.4168	0.2137	
Рариа	18	13	-0.0782	0.4237	
Riau	17	14	-0.0417	0.1610	
Riau Islands	24	16	-0.5760	-0.0152	
South Kalimantan	16	13	-0.0252	0.3576	
South Sulawesi	20	15	-0.1863	0.0337	
South Sumatra	28	14	-0.9945	0.0804	
Southeast Sulawesi	15	13	0.0108	0.3654	
West Java	6	4	1.0516	1.3673	
West Kalimantan	10	9	0.6018	0.7547	
West Nusa Tenggara	11	11	0.5032	0.5032	
West Papua	34	21	-1.5434	-0.2348	
West Sulawesi	23	21	-0.4970	-0.2098	
West Sumatra	19	13	-0.0880	0.4094	

Table 2.9: 2020 What-if Simulation on Government and Institutional Setting

Source: ACI

Note: North Kalimantan was assessed as part of East Kalimantan prior to 2018.

	Rai	nk	Std.	Std. Score		
Province (In Alphabetical Order)	Before	After	Before	After		
Aceh	34	25	-1.4266	-0.5560		
Bali	7	6	0.6063	0.8033		
Bangka Belitung Islands	29	22	-0.9187	-0.3506		
Banten	11	7	0.2716	0.7358		
Bengkulu	26	18	-0.7945	-0.1985		
Central Java	3	3	1.6981	2.0743		
Central Kalimantan	18	13	-0.1844	-0.0219		
Central Sulawesi	30	22	-0.9314	-0.3422		
DI Yogyakarta	8	7	0.4423	0.7111		
DKI Jakarta	1	1	2.8653	3.4895		
East Java	2	2	2.4269	2.6577		
East Kalimantan	4	3	1.4633	1.9244		
East Nusa Tenggara	31	25	-1.1203	-0.5900		
Gorontalo	27	25	-0.8449	-0.5255		
Jambi	13	12	-0.0460	0.1204		
Lampung	17	12	-0.1746	0.0901		
Maluku	33	22	-1.2190	-0.3741		
North Kalimantan	9	6	0.3535	0.8586		
North Maluku	28	23	-0.8821	-0.4302		
North Sulawesi	22	12	-0.3980	0.1606		
North Sumatra	16	12	-0.1145	0.0287		
Papua	15	12	-0.0984	0.1712		
Riau	14	9	-0.0652	0.3937		
Riau Islands	6	6	0.7867	0.9653		
South Kalimantan	21	13	-0.2428	-0.0155		
South Sulawesi	19	12	-0.1987	0.0489		
South Sumatra	12	12	0.0254	0.1245		
Southeast Sulawesi	24	17	-0.4717	-0.1535		
West Java	5	3	1.4176	1.9444		
West Kalimantan	10	8	0.3291	0.4421		
West Nusa Tenggara	20	12	-0.2193	0.2430		
West Papua	25	12	-0.7084	0.0455		
West Sulawesi	32	25	-1.2129	-0.6487		
West Sumatra	23	22	-0.4135	-0.2570		

Table 2.10: 2019 What-if Simulation on Financial, Businesses and Manpower Conditions

Source: ACI *Note:* North Kalimantan was assessed as part of East Kalimantan prior to 2018.

Province (In Alphabetical Order)	Rar	nk	Std. Score		
rovince (in Alphabetical Order)	Before	After	Before	After	
Aceh	16	11	0.1362	0.5650	
Bali	3	2	1.5180	1.9506	
Bangka Belitung Islands	30	16	-0.7999	0.2254	
Banten	5	2	0.9022	1.8313	
Bengkulu	21	18	-0.2554	-0.0184	
Central Java	6	2	0.7737	1.5771	
Central Kalimantan	18	11	-0.0281	0.4598	
Central Sulawesi	26	20	-0.5941	-0.1042	
DI Yogyakarta	2	1	1.5381	2.1249	
DKI Jakarta	9	1	0.7026	2.1405	
East Java	7	2	0.7561	1.6553	
East Kalimantan	1	1	2.1296	2.3878	
East Nusa Tenggara	32	23	-1.3054	-0.3293	
Gorontalo	22	16	-0.2754	0.2866	
Jambi	17	14	0.0098	0.3412	
Lampung	27	16	-0.6373	0.2656	
Maluku	24	16	-0.5385	0.2757	
North Kalimantan	10	5	0.7010	1.0555	
North Maluku	25	16	-0.5612	0.1577	
North Sulawesi	8	6	0.7042	0.8937	
North Sumatra	28	13	-0.7275	0.3493	
Рариа	34	21	-3.2230	-0.3830	
Riau	19	11	-0.0769	0.4541	
Riau Islands	11	5	0.4290	1.0373	
South Kalimantan	4	2	1.2768	1.8080	
South Sulawesi	14	6	0.3491	0.8160	
South Sumatra	23	17	-0.4619	0.0869	
Southeast Sulawesi	12	11	0.3813	0.6273	
West Java	15	4	0.3090	1.2533	
West Kalimantan	29	16	-0.7657	0.1270	
West Nusa Tenggara	20	11	-0.2350	0.5882	
West Papua	33	23	-1.5973	-0.3374	
West Sulawesi	31	12	-0.9043	0.3664	
West Sumatra	13	6	0.3702	0.8591	

 Table 2.11: 2020 What-if Simulation on Quality of Life and Infrastructure

 Development

Source: ACI *Note:* North Kalimantan was assessed as part of East Kalimantan prior to 2018.

Case Study on The Palapa Ring Project: Prospects for Sub-National Competitiveness

a) Overview

The Palapa Ring project was a national undertaking first floated in the 1990s and finally completed in late 2019. The project aimed to build a fibre optic backbone network connecting all 34 provinces of Indonesia. In 2014, when the official presidential decree number 96 on Indonesia Broadband Plan was put in motion, the Ministry of Information and Communications (Kominfo) reported that the national percentage of households with internet access was just slightly over 32 percent (Kominfo 2014). Notably, all other regions apart from Java had recorded lower percentage of households with internet access, they were: Maluku-Papua (16.46 percent); Bali-Nusa Tenggara (24.42 percent), Sumatra (28.36 percent), Sulawesi (30.33 percent) and Kalimantan (31.63 percent). These variations in ICT infrastructure development showed development has been unequally concentrated in the Java region. Responding to this gap, the Ministry of National Development and Planning was tasked to establish always-on internet connectivity with triple-play capability, enabling resilient and secured information sharing, and broadband speeds of 2Mbps for fixed broadband and 1Mbps for mobile broadband.

The need for better ICT infrastructure Indonesia was made more urgent by regional agreements as well. The master plan on ASEAN connectivity documented the regions' aspirations for integration through many aspects, with digital innovation being a key area of the ASEAN vision by 2025. Under the plan, disruptive technologies were highlighted for its potential to draw some \$220-625 billion in economic impact to the region and it was tabled that ASEAN member governments should see to the building of backbone infrastructures to make this a reality. This would greatly ease the initial burdens faced by potential investors. In 2016, Indonesia had much ground to cover as it was ranked 105th by the World Economic Forum for its Infrastructure Readiness (World Economic Forum 2016). The implementation of the Palapa Ring project that took place in three geographical phases- Palapa West, Centre and East, executed over the period of 2017-2019, was a long-awaited move for Indonesians and international onlookers.

b) Simulating the potential impacts of The Palapa Ring Project on Sub-national competitiveness using the ACI Competitiveness Index

The following section seeks to corroborate the potential advantages that had been expected of the Palapa Ring project, on a sub-national level. This is possible as ACI's competitiveness index is made up of a unique set of indicators that shows socioeconomic competitiveness at a more detailed provincial level. The framework of the index has also been structured to recognize the role of technological infrastructure, under the environment of Quality of Life and Infrastructure Development. The indicators used for this simulation are:

4.2.02 Handphone Ownership
4.2.03 Desktop Ownership
4.2.04 Internet Access at Home
4.2.05 Internet Access at Office
4.2.06 Internet Access at School
4.2.07 Internet Access on Handphone

The simulation uses the data set utilized in the 2020 Competitiveness Rankings update in this book (2017 hard data and 2019 survey data). The rankings projected in Table B.1 and B.2 are therefore based on the provinces' progress in 2017, before the Palapa Ring Project was fully completed. Table B.1 presents the results of the simulation on Overall Competitiveness Rankings and Table B.2 presents the results for the simulation on the Quality of Life and Infrastructure Development (QLID) environment.

Province	Rai	nk	Std.	Score
(In Ascending Order of Rank Changes)	Before	After	Before	After
North Maluku	32	28	-1.0839	-0.9891
Рариа	29	26	-1.0552	-0.8554
West Sulawesi	31	28	-1.0635	-0.9706
North Sumatra	24	22	-0.6088	-0.3902
Maluku	28	26	-1.0495	-0.8841
Lampung	22	20	-0.3763	-0.2690
West Kalimantan	16	14	-0.0520	0.0211
Bangka Belitung Islands	30	28	-1.0584	-1.0182
East Nusa Tenggara	34	33	-1.3015	-1.1947
West Nusa Tenggara	17	16	-0.1483	-0.0449
West Sumatra	18	17	-0.1615	-0.0730
Riau Islands	11	10	0.3210	0.3884
South Sumatra	23	22	-0.4317	-0.3753
Central Sulawesi	27	26	-0.9475	-0.9165
Central Kalimantan	21	20	-0.3189	-0.2899
East Kalimantan	4	3	1.5908	1.6184
Southeast Sulawesi	19	18	-0.1688	-0.1508
West Papua	33	33	-1.2938	-1.1833
Jambi	14	14	-0.0154	0.0750
Riau	13	13	0.0932	0.1476
Bengkulu	25	25	-0.8363	-0.7921
Aceh	26	26	-0.9249	-0.8817
Gorontalo	20	20	-0.3114	-0.2770
Central Java	3	3	1.6118	1.6434
DKI Jakarta	1	1	2.6289	2.6545
North Kalimantan	8	8	0.5469	0.5664
South Sulawesi	15	15	-0.0396	-0.0205
East Java	2	2	2.2412	2.2591
West Java	5	5	1.5515	1.5669
South Kalimantan	12	12	0.2931	0.3078
Banten	7	7	0.6837	0.6932
North Sulawesi	10	10	0.3642	0.3673
Bali	6	6	0.9069	0.9069
DI Yogyakarta	9	9	0.4138	0.4138

 Table B.1: 2020 Comparing Overall Ranking and Score Changes after simulating improvements to Internet Access

Source: ACI.

Province	Rai	nk	Std.	Score
(In Ascending Order of Rank Changes)	Before	After	Before	After
North Sumatra	28	17	-0.7275	0.0128
Maluku	24	17	-0.5385	0.0315
Lampung	27	22	-0.6373	-0.2743
North Maluku	25	20	-0.5612	-0.2334
West Sulawesi	31	26	-0.9043	-0.5850
West Kalimantan	29	24	-0.7657	-0.5183
West Nusa Tenggara	20	17	-0.2350	0.1148
DKI Jakarta	9	6	0.7026	0.8047
North Kalimantan	10	7	0.7010	0.7670
West Sumatra	13	11	0.3702	0.6697
Riau	19	17	-0.0769	0.1072
Bangka Belitung Islands	30	28	-0.7999	-0.6605
Gorontalo	22	20	-0.2754	-0.1588
Central Sulawesi	26	24	-0.5941	-0.4877
South Sulawesi	14	12	0.3491	0.4137
West Papua	33	32	-1.5973	-1.2226
South Sumatra	23	22	-0.4619	-0.2708
Jambi	17	16	0.0098	0.1782
Bengkulu	21	20	-0.2554	-0.1035
Central Kalimantan	18	17	-0.0281	0.0703
East Java	7	6	0.7561	0.8242
Southeast Sulawesi	12	11	0.3813	0.4423
West Java	15	14	0.3090	0.3642
Рариа	34	34	-3.2230	-2.5735
East Nusa Tenggara	32	32	-1.3054	-0.9385
Riau Islands	11	11	0.4290	0.6562
Aceh	16	16	0.1362	0.2863
Central Java	6	6	0.7737	0.8856
East Kalimantan	1	1	2.1296	2.2211
South Kalimantan	4	4	1.2768	1.3262
Banten	5	5	0.9022	0.9341
North Sulawesi	8	8	0.7042	0.7144
Bali	3	3	1.5180	1.5180
DI Yogyakarta	2	2	1.5381	1.5381

 Table B.2: 2020 Comparing Ranking and Score Changes in QLID Environment after simulating improvements to Internet Access

Source: ACI.

c) Discussion of Results: Connecting the Outermost Regions of Indonesia

From the Overall Ranking and Score changes presented in Table B.1, it may be deduced that the Palapa Ring Project has had far-reaching benefits for Indonesia. With better internet access, a total of 32 provinces should see an improvement in competitiveness. Upon closer analysis, it may also be deduced that 17 provinces will benefit more prominently, with ranking changes of one to four positions and score changes ranging from 0.018 to 0.0948. These 17 provinces are notably provinces outside the region of Java, where economic development has been largely concentrated.

The Palapa Ring Project's particularly positive effect on the competitiveness of the outermost regions in Indonesia can be seen from Figure B.1 that illustrates the geographical distribution of rank changes. The provinces with the top three improvements of between four and three positions, North Maluku $(32^{nd} \text{ to } 28^{th})$, Papua $(29^{th} \text{ to } 26^{th})$ and West Sulawesi $(31^{st} \text{ to } 28^{th})$ are three of the outermost regions in Indonesia, known historically to have been slow to benefit from the nation's development (Frankema & Marks 2010, Kurniawan et. al 2019).



Figure B.1: Geographical Distribution of Improved Provinces (By degree of changes to Overall Rankings)

Provinces that did not show either ranking or score changes are also significant to the present case study. Out of 34 provinces, only two, namely DI Yogyakarta and Bali, did not see an improvement to their overall rankings or their standardized scores. One reason could be due to the fact that these two provinces are tourist hotspots whose

Source: ACI.

development as a travel destination would have motivated the early development of internet access for the convenience of prospective tourists (Law et al. 2016, Wijaya and Polina 2014).

ACI's four-environment framework allows us to look at the provinces' strengths and weakness on a more detailed level. As the Palapa Ring Project namely targets each province's technological infrastructure, the simulation was also done for the QLID environment (See Table B.2).

A similar geographical pattern can be seen where the majority of the provinces that show an improvement, 20 out of 23 provinces to be exact, are from non-Java regions. The top three improving provinces are also from the outlying peripheries of Indonesia, such as North Sumatra (28^{th} to 11^{th}), Maluku (24^{th} to 17^{th}) and West Kalimantan (29^{th} to 25^{th}). The range of improvements in this environment range from 1 to 11, a much wider range compared to the changes in overall rankings. What this indicates is that the improvement in internet access holds a large stake for provinces' performance in this environment.

Interestingly, an analysis on the environmental level shows that three provinces from Java, DKI Jakarta, West Java and East Java, stand to gain from better internet access. The capital province can expect to improve by three rankings while the latter two provinces can improve by one rank each. From this, it may be inferred that despite the regions' high level of development, it has yet to enable its residents to harness the potential of internet access.

d) Harnessing the sub-national potential of Indonesia's new Internet infrastructure

Having illustrated the sub-national potential for growth that may be derived from the development of the Palapa Ring Project, the following section attempts to assess whether Indonesia's provinces have been experiencing the upward trajectory in internet uptake. The province of North Maluku has been chosen as it is a prime example of an outermost province that could expected significant improvements on both the overall level of competitiveness and also that of the QLID aspect.

The growth of the national GDP and North Maluku's GRDP are presented in Figure B.2 for a comparison of North Maluku's progress. Barring the global economic disruption caused by the COVID-19 pandemic in 2020, North Maluku experienced a steep increase in growth from 2016 to 2017 of 1.9 percent and continued to see an improvement up into 2018, albeit by a smaller magnitude of 0.3 percent. In 2019, it saw a sharp decrease that continued well into the year of the pandemic.



North Maluku's progress from 2015-2020 on the six indicators used to assess internet access in the province is presented in Figure B.3 and B.4.

The national averages have also been plotted for comparison. While the present analysis is a preliminary overview of the province's internet development, it may be inferred that individuals in the province have been able to increase their internet usage. The percentage of the population with handphones (4.2.02), desktop computers (4.2.03) have been increasing over the years. Moreover, internet access on handphones (4.2.07) have been increasing alongside the uptake of personal digital devices. It has been trailing close to the national average since 2017.

However, improvements to internet access in more shared settings like the home, schools and offices are not readily observed (See Box F). North Maluku has remained lower than the national average for internet access at home (4.2.04) and the disparity has been increasing in the last few years. For internet access in the office (4.2.05), the province has seen a steadily decreasing trend over the years.



Figure B.3: Increase in Individual Internet Access in North Maluku, 2015-2020 (Percent)

Internet access in school (4.2.06) has also seen an overall decrease, with some fluctuations over the years. The province's result on these three measures provides evidence that improved internet access has not penetrated shared spaces, which might be necessary if the province were to harness the digital economy for its development. More digital harmonization is necessary, for example, to increase internet access at the office before it can use digital tools to improve productivity at the workplace. Greater internet access in schools would also be required to increase the digital literacy of the next generation. Calls for greater synchronicity has also become more urgent during the pandemic. Digitally-administered contingencies, like the Ministry of Education and Culture's initiatives in 2020 to provide free internet quotas for teachers and students (Kemendikbud 2020), remained out of reach for students in the outer-most provinces (Yarrow et al. 2020).



Figure B.4: Decreasing Internet Access in Shared Spaces in North Maluku, 2015-2020

Note: * 2018 data was calculated using the average of 2017 and 2019 due to data unavailability.

e) Plugging the gaps in Indonesia's Internet Infrastructure

North Maluku's mixed performance on internet-related indicators, even after the completion of the Palapa Ring Project, warrants a more in-depth study to ascertain where the gaps in internet access and uptake lie for other outermost provinces. From the overview of internet access in this case study, a plausible explanation could be that internet usage is presently confined to the needs of the individual consumer. According to the e-Conomy Report by Temasek, Google and Bain & Company (2020), e-commerce and media are the leading sectors in 2020, growing by some 32 percent and 24 percent respectively. As the country charts its path towards an internet economy projected to record a gross merchandise value of US\$124 billion by 2025 (*ibid.*), more can be done, through public-private sector collaborations, to unleash its potential for workplace productivity and also in preparing the next generation of technologically-skilled labour for a digital future (Vineles 2017, Funfgeld 2019).

2.3.5 Median and Maximum Competitiveness Web Analysis

The median competitiveness web analysis in Figure 2.12 plots the attained scores across the 12 sub-environments of DKI Jakarta (ranked first) and East Nusa Tenggara (ranked last), along with the median scores of the 34 provinces of Indonesia. Generally, the median scores in 10 out of the 12 sub-environments are negative, suggesting that at least half of these provinces are performing below the national average in many aspects of competitiveness.

DKI Jakarta fares above the median scores in nine sub-environments, with the largest difference found in (i) Openness to Trade and Services, (ii) Government Policies and Fiscal Sustainability and (iii) Regional Economic Vibrancy. The province, however, scores slightly below the median in (i) Institutions, Governance and Leadership, (ii) Physical Infrastructure and (iii) Standard of Living, Education and Social Stability. East Nusa Tenggara, on the other hand, scores below the median in 11 sub-environments, except Labour Market Flexibility. In that sub-environment, it scores slightly above median by a difference of 0.056.



Figure 2.12: 2020 Median Competitiveness Web Analysis: Top and Bottom Performing Provinces

Source: ACI.

In Figure 2.13, the scores for DKI Jakarta and East Nusa Tenggara are also plotted along with the maximum scores among the 34 provinces of Indonesia. As the number one province, DKI Jakarta sets the maximum scores in six out of 12 sub-environments. The province becomes the nation's highest benchmark in (i) Regional Economic Vibrancy, (ii) Openness to Trade and Services, (iii) Government Policies and Fiscal Sustainability, (iv) Financial Deepening and Business Efficiency, (v) Productivity Performance as well as (vi) Technological Infrastructure. In contrast, East Nusa Tenggara's scores are quite distant from the maximum scores. The widest gaps—with more than five standard deviations apart—are found in (i) Government Policies and Fiscal Sustainability, (ii) Productivity Performance and (iii) Regional and Economic Vibrancy.

It is also worth noting that despite DKI Jakarta's dominance, there are other provinces which perform better in certain sub-environments. For instance, West Java achieved the maximum scores for Attractiveness to Foreign Investors; Central Java for Institutions, Governance and Leadership; Bali for Competition, Regulatory Standards and Rule of Law; East Java for Labour Market Flexibility; Banten for Physical Infrastructure, and DI Yogyakarta for Standard of Living, Education and Social Stability. That the maximum scores have been achieved by such a diversity of provinces is an optimistic sign for Indonesia's attempts to redistribute development from DKI Jakarta. It also indicates that DKI Jakarta's competitiveness is not all-encompassing and more importantly, that good standards of competitiveness can be exemplified by other provinces with best practices.

Figure 2.13: 2020 Maximum Competitiveness Web Analysis: Top and Bottom Performing Provinces



Source: ACI.

2.3.6 Shapley Value: Comparing Competitiveness Results based on Equal and Shapley Weightage

In this section, the competitiveness results which are derived based on the Equal weight method are compared with results that are computed based on the alternative weight assignment in the Shapley method. Figure 2.14 below shows the weights of each environment under both Equal (left) and Shapley (right) methods. Unlike the Equal weight method where each environment is assigned 25.0 percent weightage (or 1/4), the Shapley weight method shows a diverse distribution of weights of the environments. Some 22.1 percent of the total weightage is associated with Macroeconomic Stability and 27.8 percent is assigned to Government and Institutional Setting. Financial, Businesses and Manpower Conditions and Quality of Life and Infrastructure Development have weights of 25.1 percent and 24.9 percent respectively.



Figure 2.14: 2020 Comparison of Weights for Each Competitiveness Environment



In section 2.2.5, we explained that the Shapley weight of an environment measures the unequal performance among all the 34 provinces of Indonesia. Consequently, a greater divergence in performance of provinces within a given environment would render a higher Shapley weight for that specific environment. Thus, the weightage of an environment represents its relative importance (compared to other environments) in contributing to the Overall Competitiveness. A province will thus receive a higher score if it performs well in an environment in which there is higher disparity across all assessed provinces (i.e. higher weightage). Unequal development across different provinces is thus accounted for and captured by this Shapley weightage approach.

The relatively higher weightage for the environment Government and Institutional Setting (weighted at 27.8 percent) reflects the unequal development of governance amongst provinces of Indonesia. Correspondingly, the environment with the least divergence of provincial performance can be found in Macroeconomic Stability, as denoted by its relatively low weight of 22.1 percent.

Despite the different weights, the Shapley weight of each environment does not substantially deviate from the equal weightage assignment of 25 percent per environment. Mathematically, there are two plausible scenarios that could account for this phenomenon. Firstly, the minimal deviations could mean that every province is equally developed in all aspects, across all indicators, sub-environments and the corresponding environments. This is, however, highly unlikely given that performance disparities across provinces and regions in Indonesia still largely persist. The other more plausible explanation is that the aggregate dispersion i.e. the Shapley values of each indicator, sub-environment and corresponding environment for all provinces has been equalised. To put it simply, in most aspects of competitiveness, the strong-performing provinces continue to excel while the weak-performing provinces continue to lack behind the others.

2.3.6.1 Comparison of Results for Overall Competitiveness based on Equal Weight and Shapley Weight Methods

Table 2.12 shows the Overall Competitiveness ranking and standardised scores computed under both the Equal weight and Shapley weight methods. There are no substantial ranking and score differences between the two methods, thereby indicating the robustness of the equal weight approach. This can also be observed in Figure 2.15, which shows minimal deviation of the Shapley-weighted ranking (solid line) from the equal-weighted ranking (dotted line). Even though equal weight is assigned on account of subjective assumption, its results remain consistent with those obtained from the objective Shapley approach.

Nonetheless, under the Shapley method, certain provinces obtained a fairly different ranking from the standard Equal weight method. The largest deviation is observed in the ranking of Jambi which ranks 18th under the Equal weight method and 13th under the Shapley method, incurring a difference of five positions. Lampung incurred a difference of two positions, being 15th under the Equal weight method and 17th under the Shapley method. Provinces such as North Sulawesi, West Nusa Tenggara and South Sulawesi obtained a lowered ranking by one position each.

There are two possible explanations that can account for these differences. A province with a lower rank under the Shapley method could have performed better in indicators that are associated with less weights. These indicators are associated with less weights because under these specific aspects, all other provinces have also performed similarly or just as well as the province. Secondly, the same province with a lower rank could have performed poorly in indicators with higher weights (i.e., there is a more diverse range of achievements amongst provinces), and the province happens to be among the lower-performing economies. The antithesis of both situations would also explain why provinces obtain a higher rank under the Shapley method.

Figure 2.15: Summary of Differences in Overall Competitiveness Ranking Based on Equal Weight and Shapley Weight Methods



Source: ACI.

Province	Ra	ank	Std.	Std. Score		
(In Ascending Order of	Equal	Shapley				
Rank by Equal Weight)	Weight	Weight	Before	After		
DKI Jakarta	1	1	2.6289	2.6187		
East Java	2	2	2.2412	2.2270		
West Java	3	3	1.6118	1.5940		
Central Java	4	4	1.5908	1.5752		
Bali	5	5	1.5515	1.5394		
DI Yogyakarta	6	6	0.9069	0.8932		
East Kalimantan	7	7	0.6837	0.6726		
North Kalimantan	8	8	0.5469	0.5358		
South Kalimantan	9	9	0.4138	0.3974		
Riau Islands	10	10	0.3642	0.3505		
South Sumatra	11	11	0.3210	0.3098		
Riau	12	12	0.2931	0.2714		
North Sulawesi	13	14	0.0932	0.0789		
West Nusa Tenggara	14	15	-0.0154	-0.0301		
Lampung	15	17	-0.0396	-0.0583		
Banten	16	16	-0.0520	-0.0580		
South Sulawesi	17	18	-0.1483	-0.1644		
Jambi	18	13	-0.1615	0.2711		
Central Sulawesi	19	19	-0.1688	-0.1840		
West Sumatra	20	20	-0.3114	-0.3248		
Bangka Belitung Islands	21	21	-0.3189	-0.3262		
Central Kalimantan	22	22	-0.3763	-0.3923		
West Kalimantan	23	23	-0.4317	-0.4418		
Southeast Sulawesi	24	24	-0.6088	-0.6273		
Bengkulu	25	25	-0.8363	-0.8502		
Aceh	26	26	-0.9249	-0.9394		
North Sumatra	27	27	-0.9475	-0.9586		
Gorontalo	28	29	-1.0495	-1.0669		
West Papua	29	28	-1.0552	-1.0571		
North Maluku	30	30	-1.0584	-1.0695		
Maluku	31	31	-1.0635	-1.0774		
East Nusa Tenggara	32	32	-1.0839	-1.0929		
West Sulawesi	33	33	-1.2938	-1.3010		
Papua	34	34	-1.3015	-1.3149		

 Table 2.12: 2020 Comparing Results based on Equal Weight and Shapley

 Weight Methods Overall Competitiveness

Source: ACI.

2.3.6.2 Comparison of Results for Four Environments based on Equal Weight and Shapley Weight Methods

A comparison of the results of the two methods are also obtained for the four environments (see Tables 2.13 to 2.16). Generally, there are minimal changes to the ranking and score between them.

Under Macroeconomic Stability (see Table 2.13), 24 out of 34 provinces obtained the same rank using both the Equal weight and Shapley weight methods. For the remaining provinces with changes to their ranking, differences are minimal. The largest difference of nine positions is observed in West Sumatra.

For Government and Institutional Setting (see Table 2.14), 26 out of 34 provinces attained the same rank under both the Equal and Shapley weight methods. The remaining provinces experience minimal rank changes of mostly one position each. The exception is South Kalimantan and West Sumatra that saw a change of two and six positions respectively.

Of the 34 provinces, 30 provinces obtained the same rank (in both Equal and Shapley weights) for Financial, Businesses and Manpower Conditions (see Table 2.15). The only exceptions, North Sulawesi and West Sumatra, saw a difference of one position each.

For Quality of Life and Infrastructure Development (see Table 2.16), 27 out of 34 provinces remained in the same positions in both methods. The remaining provinces experienced minimal rank changes of mostly one position each. The exceptions are West Sumatra, with a change of seven positions, and DKI Jakarta with a change of two positions.

Province	Rank		Std. Score	
(In Ascending Order of	Equal	Shapley	Before	After
Rank by Equal Weight)	Weight	Weight		
DKI Jakarta	1	1	3.3937	3.3908
West Java	2	2	2.4712	2.4700
East Java	3	3	2.3864	2.3816
Central Java	4	4	1.0762	1.0680
East Kalimantan	5	5	0.8290	0.8222
Banten	6	6	0.6890	0.6828
Riau	7	7	0.4991	0.4910
Riau Islands	8	8	0.4463	0.4391
North Sumatra	9	9	0.1989	0.1901
South Kalimantan	10	10	-0.0169	-0.0259
South Sumatra	11	11	-0.0298	-0.0393
South Sulawesi	12	13	-0.0979	-0.1092
Рариа	13	14	-0.1709	-0.1810
North Sulawesi	14	15	-0.1725	-0.1839
North Kalimantan*	15	16	-0.2356	-0.2469
Jambi	16	17	-0.2454	-0.2566
Lampung	17	18	-0.2477	-0.2582
Central Sulawesi	18	19	-0.3036	-0.3131
Bali	19	20	-0.3232	-0.3347
West Kalimantan	20	21	-0.3411	-0.3517
West Sumatra	21	12	-0.4150	-0.0952
Southeast Sulawesi	22	22	-0.4914	-0.5027
West Papua	23	23	-0.5286	-0.5393
Central Kalimantan	24	24	-0.5381	-0.5488
West Nusa Tenggara	25	25	-0.5505	-0.5618
Gorontalo	26	26	-0.6253	-0.6374
DI Yogyakarta	27	27	-0.6528	-0.6647
East Nusa Tenggara	28	28	-0.7178	-0.7298
North Maluku	29	29	-0.7483	-0.7597
Bangka Belitung Islands	30	30	-0.8130	-0.8238
Aceh	31	31	-0.8745	-0.8864
Bengkulu	32	32	-0.9273	-0.9392
Maluku	33	33	-0.9386	-0.9502
West Sulawesi	34	34	-0.9843	-0.9960

Table 2.13: 2020 Comparing Results based on Equal Weight and Shapley

 Weight Methods: Macroeconomic Stability

Source: ACI.
Province	Ra	ink	Std. Score	
(In Ascending Order of	Equal	Shapley	Poforo	After
Rank by Equal Weight)	Weight	Weight	Defore	After
East Java	1	1	2.0139	1.9882
DKI Jakarta	2	2	1.9335	1.9226
Central Java	3	3	1.9056	1.8736
Bali	4	4	1.2676	1.2630
North Sulawesi	5	5	1.0987	1.0836
West Java	6	7	1.0516	1.0249
North Kalimantan*	7	6	1.0315	1.0268
East Kalimantan	8	8	0.9606	0.9409
Gorontalo	9	9	0.6919	0.6754
West Kalimantan	10	10	0.6018	0.5999
West Nusa Tenggara	11	11	0.5032	0.4796
Banten	12	12	0.4506	0.4376
Jambi	13	14	0.2295	0.2141
DI Yogyakarta	14	15	0.0723	0.0639
Southeast Sulawesi	15	16	0.0108	-0.0104
South Kalimantan	16	18	-0.0252	-0.0651
Riau	17	17	-0.0417	-0.0589
Рариа	18	19	-0.0782	-0.0881
West Sumatra	19	13	-0.0880	0.4094
South Sulawesi	20	20	-0.1863	-0.2096
Lampung	21	21	-0.2136	-0.2377
Central Kalimantan	22	22	-0.3282	-0.3273
West Sulawesi	23	23	-0.4970	-0.5224
Riau Islands	24	24	-0.5760	-0.5830
Bengkulu	25	25	-0.8524	-0.8633
Maluku	26	26	-0.8548	-0.8738
Aceh	27	27	-0.9645	-0.9754
South Sumatra	28	28	-0.9945	-0.9993
Bangka Belitung Islands	29	29	-1.0497	-1.0618
East Nusa Tenggara	30	30	-1.2601	-1.2747
Central Sulawesi	31	31	-1.3768	-1.3854
North Sumatra	32	32	-1.4168	-1.4384
North Maluku	33	33	-1.4759	-1.4786
West Papua	34	34	-1.5434	-1.5505

Table 2.14: 2020 Comparing Results based on Equal Weight and ShapleyWeight Methods: Government and Institutional Setting

Province	Ra	ank	Std. Std.	Score
(In Ascending Order of	Equal	Shapley		
Rank by Equal Weight)	Weight	Weight	Before	After
DKI Jakarta	1	1	2.8653	2.8638
East Java	2	2	2.4269	2.4253
Central Java	3	3	1.6981	1.6959
East Kalimantan	4	4	1.4633	1.4622
West Java	5	5	1.4176	1.4148
Riau Islands	6	6	0.7867	0.7835
Bali	7	7	0.6063	0.6026
DI Yogyakarta	8	8	0.4423	0.4382
North Kalimantan*	9	9	0.3535	0.3500
West Kalimantan	10	10	0.3291	0.3255
Banten	11	11	0.2716	0.2675
South Sumatra	12	12	0.0254	0.0208
Jambi	13	13	-0.0460	-0.0506
Riau	14	14	-0.0652	-0.0698
Рариа	15	15	-0.0984	-0.1023
North Sumatra	16	16	-0.1145	-0.1197
Lampung	17	17	-0.1746	-0.1797
Central Kalimantan	18	18	-0.1844	-0.1891
South Sulawesi	19	19	-0.1987	-0.2045
West Nusa Tenggara	20	20	-0.2193	-0.2247
South Kalimantan	21	21	-0.2428	-0.2478
North Sulawesi	22	23	-0.3980	-0.4026
West Sumatra	23	22	-0.4135	-0.2570
Southeast Sulawesi	24	24	-0.4717	-0.4773
West Papua	25	25	-0.7084	-0.7133
Bengkulu	26	26	-0.7945	-0.8018
Gorontalo	27	27	-0.8449	-0.8508
North Maluku	28	28	-0.8821	-0.8885
Bangka Belitung Islands	29	29	-0.9187	-0.9246
Central Sulawesi	30	30	-0.9314	-0.9383
East Nusa Tenggara	31	31	-1.1203	-1.1278
West Sulawesi	32	32	-1.2129	-1.2197
Maluku	33	33	-1.2190	-1.2253
Aceh	34	34	-1.4266	-1.4353

Table 2.15: 2020 Comparing Results based on Equal Weight and ShapleyWeight Methods: Financial, Businesses and Manpower Conditions

Province	Ra	ink	Std. Score	
(In Ascending Order of	Equal	Shapley	Poforo	After
Rank by Equal Weight)	Weight	Weight	belore	Alter
East Kalimantan	1	1	2.1296	2.0991
DI Yogyakarta	2	2	1.5381	1.5059
Bali	3	3	1.5180	1.4881
South Kalimantan	4	4	1.2768	1.2562
Banten	5	5	0.9022	0.8856
Central Java	6	7	0.7737	0.7503
East Java	7	8	0.7561	0.7326
North Sulawesi	8	9	0.7042	0.6876
DKI Jakarta	9	11	0.7026	0.6743
North Kalimantan*	10	10	0.7010	0.6813
Riau Islands	11	12	0.4290	0.4075
Southeast Sulawesi	12	13	0.3813	0.3683
West Sumatra	13	6	0.3702	0.8591
South Sulawesi	14	14	0.3491	0.3262
West Java	15	15	0.3090	0.2938
Aceh	16	16	0.1362	0.1219
Jambi	17	17	0.0098	-0.0086
Central Kalimantan	18	18	-0.0281	-0.0375
Riau	19	19	-0.0769	-0.0955
West Nusa Tenggara	20	20	-0.2350	-0.2488
Bengkulu	21	21	-0.2554	-0.2696
Gorontalo	22	22	-0.2754	-0.2849
South Sumatra	23	23	-0.4619	-0.4754
Maluku	24	24	-0.5385	-0.5571
North Maluku	25	25	-0.5612	-0.5672
Central Sulawesi	26	26	-0.5941	-0.6032
Lampung	27	27	-0.6373	-0.6505
North Sumatra	28	28	-0.7275	-0.7523
West Kalimantan	29	29	-0.7657	-0.7698
Bangka Belitung Islands	30	30	-0.7999	-0.8046
West Sulawesi	31	31	-0.9043	-0.9039
East Nusa Tenggara	32	32	-1.3054	-1.3125
West Papua	33	33	-1.5973	-1.5946
Papua	34	34	-3.2230	-3.2017

Table 2.16: 2020 Comparing Results based on Equal Weight and ShapleyWeight Methods: Quality of Life and Infrastructure Development

				Four En	vironments	
Province		Overall		Government	Financial, Businesses	Quality of Life and
riovince		Competitiveness	Macroeconomic	and	and Manpower	Infrastructure
			Stability	Institutional Setting	Conditions	Development
DVI Jaharta	Rank	1	1	2	1	9
DNI Jakarta	Score	2.629	3.394	1.934	2.865	0.703
Eact Java	Rank	2	2	1	2	7
East Java	Score	2.241	2.386	2.014	2.427	1.164
West Iava	Rank	3	4	3	3	6
west Java	Score	1.612	1.076	1.906	1.698	0.066
Control Jovo	Rank	4	3	8	4	1
Central Java	Score	1.591	0.829	0.961	1.463	0.464
Bali	Rank	5	2	6	5	15
Dall	Score	1.551	2.471	1.052	1.418	1.699
DI Vogyakarta	Rank	6	4	4	7	3
	Score	0.907	-0.323	1.268	0.606	1.650
Fact Kalimantan	Rank	7	6	12	11	5
Last Kannantan	Score	0.684	0.689	0.451	0.272	1.717
North Kalimantan	Rank	8	5	7	9	10
	Score	0.547	-0.236	1.032	0.353	0.754
South Kalimantan	Rank	9	27	14	8	2
South Kalimantan	Score	0.414	-0.653	0.072	0.442	1.322
Riau Islands	Rank	10	6	5	22	8
	Score	0.364	-0.173	1.099	-0.398	0.609
South Sumatra	Rank	11	8	24	6	11

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	Score	0.321	0.446	-0.576	0.787	0.053
Diau	Rank	12	7	16	21	4
Niau	Score	0.293	-0.017	-0.025	-0.243	0.152
North Culourosi	Rank	13	7	17	14	19
north Sulawesi	Score	0.093	0.499	-0.042	-0.065	0.484
West Nuce Tonggone	Rank	14	8	13	13	17
west husa tenggara	Score	-0.015	-0.245	0.230	-0.046	0.029
Lampung	Rank	15	12	20	19	14
Lampung	Score	-0.040	-0.098	-0.186	-0.199	-0.417
Banton	Rank	16	9	10	10	29
Danten	Score	-0.052	-0.341	0.602	0.329	0.438
South Sulawori	Rank	17	25	11	20	20
South Sulawesi	Score	-0.148	-0.550	0.503	-0.219	0.281
Iambi	Rank	18	10	19	23	13
Jambi	Score	-0.161	-0.415	-0.088	-0.414	0.010
Control Sulawooi	Rank	19	22	15	24	12
Central Sulawesi	Score	-0.169	-0.491	0.011	-0.472	-0.256
West Sumatra	Rank	20	11	9	27	22
west Sumana	Score	-0.311	-0.625	0.692	-0.845	0.110
Bangka Bolitung Islands	Rank	21	24	22	18	18
Daligna Dentulig Islands	Score	-0.319	-0.538	-0.328	-0.184	-0.178
Control Volimenter	Rank	22	12	21	17	27
	Score	-0.376	-0.248	-0.214	-0.175	-0.062
West Kalimantan	Rank	23	11	28	12	23
west Kalimantan	Score	-0.432	-0.030	-0.994	0.025	-0.975

Courth an at Curley was	Rank	24	13	32	16	28
Southeast Sulawesi	Score	-0.609	0.199	-1.417	-0.114	0.198
Popalaulu	Rank	25	32	25	26	21
Deligkulu	Score	-0.836	-0.927	-0.852	-0.795	-0.113
Acob	Rank	26	14	27	34	16
Acen	Score	-0.925	-0.875	-0.964	-1.427	0.134
North Sumatra	Rank	27	18	31	30	26
Inorun Sumana	Score	-0.947	-0.304	-1.377	-0.931	-0.705
Corontalo	Rank	28	15	26	33	24
Gorontaio	Score	-1.049	-0.939	-0.855	-1.219	-0.884
Minch Deress	Rank	29	13	18	15	34
west rapua	Score	-1.055	-0.171	-0.078	-0.098	-0.921
North Malulu	Rank	30	16	29	29	30
	Score	-1.058	-0.813	-1.050	-0.919	-0.632
Malular	Rank	31	34	23	32	31
Ivialuku	Score	-1.064	-0.984	-0.497	-1.213	-0.599
East Nues Tonggara	Rank	32	17	33	28	25
East Nusa Tenggara	Score	-1.084	-0.748	-1.476	-0.882	-1.473
West Sulawosi	Rank	33	23	34	25	33
vvest Sulawesi	Score	-1.294	-0.529	-1.543	-0.708	-1.800
Damua	Rank	34	18	30	31	32
rapua	Score	-1.301	-0.718	-1.260	-1.120	-3.204

Source: ACI.

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Chapter 3

2020 Annual Update on Competitiveness Analysis of Six Indonesian Regions

Doris Liew Wan Yin

3.1 Introductory Notes

Indonesia is an archipelago, with land area of over 1.81 million square kilometres (The World Bank 2020), spanning across five major island groups: Sumatra, Java, Kalimantan, Sulawesi and Papua. The vast territories of Indonesia causes every locality to have a different history, endowment, population characteristic and economic profile.

In terms of socio-economic development, it is well established that there exist unequal development and income level between Western Indonesia (Java, Kalimantan and Sumatra) and Eastern Indonesia (Nusa Tenggara islands, Sulawesi and Maluku-Papua regions). Gross Regional Domestic Product (GRDP) per capita of more developed regions such as Java and Kalimantan, valued at Rp39.5 million and Rp 52.9 million respectively, are significantly higher than their less developed counterparts in the East; the Sulawesi region has only almost half the per capita GRDP of the Java region, at Rp20.9 million (BPS 2020).

This unequal development is largely a corollary of past government's policies which were Java-centric. Development policies that were concentrated in the Java region, home to Jakarta, the capital, were common under the Suharto era from 1967-1998. During this period, agglomeration of wealth in the Java region caused income inequality between regions to soar and the regional development gap widened. Many scholars agree that the resulting economic disparity persists until today (Kurniawan, Groot and Mulder 2019; Nugraha and Prayitno 2020).

Following the end of President Suharto's realm in 1998, the new democratic government was keen to close the developmental divide between Java and the rest of Indonesia. In its formative years, the new government, under the leadership of President B. K. Habibie, sought to elevate economic development throughout Indonesia through decentralization. Decentralization policies such as the Law of Indonesia No. 22/1999 and No. 32/2004 granted local government at the provincial, district and regency levels greater autonomy in determining policies pertaining to trade, investment, infrastructure

and social welfare (Nasution 2016). The decision to decentralise was inspired by the concept that local governments are best situated to make policies that fit the local geographical, economic and social context.

Now, after two decades, it is opportune to examine the result of this decentralization effort. It brought about rapid economic growth nationally: Indonesia's 2019 GDP, at US\$1.204 trillion, was 280% of its GDP in1999. However, regional disparity continues to haunt the nation as statistics reflect the uneven distribution of economic progress across Indonesia.

As shown in Figure 3.1, 80 percent of the national GDP in 2018 was concentrated in just two regions, Java (58.8%) and Sumatra (21.1%). The remaining four regions of Kalimantan, Sulawesi, Bali-Nusa Tenggara and Maluku-Papua contributed less than 10 percent each to the national GDP.



Figure 3.1: Regional share of GDP, FDI, Exports and Labour (Percent)

Source: Indonesia's Statistical Agency (BPS), compiled by ACI

The size of the two economies is also reflected in other macroeconomic indicators such as foreign direct investments (FDIs) and exports. Java received the highest injection of foreign investments, followed by Sumatra at 16.5%. Yet again, the remaining four provinces received less than 10% of FDIs: 7.9% in Sulawesi, 6.7% in Kalimantan, 6.1% in Maluku-Papua and 4.6% in Bali-Nusa Tenggara. The extent of this disparity, however,

varied. For instance, the share of exports saw better distribution. While Java exported the most, its share of national exports at 41.8% is lower than in other macroeconomic variables. This figure also illustrates the presence of Sumatra and Sulawesi's export industry, consisting of 25.3% and 14.5% of goods exported in the country respectively.

Looking at the labour market condition, there was an agglomeration of workers in Java. In 2018, it consisted of approximately three out of five members of the labour force in Indonesia. The proportion of labour also matches closely to the share of GDP and FDI, suggesting that concentration of economic activities possibly led to higher employment.

ACI's competitiveness study on the six regions in Indonesia aims to track the progress yielded by the six economic corridors established in the Masterplan for Acceleration and Expansion of Indonesia's Economic Development 2011-2015 (MP3EI) (See Figure 3.2) (Coordinating Ministry for Economic Affairs 2011). Under the leadership of Susilo Bambang Yudhoyono, the President of Indonesia from 2004 to 2014, the country's governing authority introduced MP3EI to accelerate growth in regions outside of the economic epicentre of Java (Setiawan 2014). The masterplan aimed to achieve this by distributing economic activities across the six regions through a series of infrastructure projects and development plans that matched the comparative advantage of each regions (Van der Schaar Investments B.V. n.d.). The masterplan underlined six economic corridors, as follows:

- 1. Sumatra: Centre for production and processing of natural resources and energy reserves
- 2. Java: Economic centre for industry and services
- 3. Kalimantan: Centre for production and processing of mining and energy reserves
- 4. Sulawesi: Centre for production and processing of agricultural produce, oil and gas, and mining
- 5. Bali-Nusa Tenggara: Gateway for tourism and food produce
- 6. Maluku-Papua: Centre for food development, energy processing and mining

Analysing Indonesia's competitiveness dynamic through the lens of the six economic corridors is highly relevant for three reasons. First, even though the masterplan was an agenda from the Yudhoyono administration, the Nawacita programme, introduced by the current Jokowi's administration, serves to complement the progress made through MP3EI in the last decade (Coordination of Acceleration of Infrastructure and Regional Development 2015). Second, development plans such as those employed by the Coordinating Ministry of Economic Affairs continue using the geographical landscape delineated in the masterplan to inform policy decisions.¹ Third, the six economic corridors continue to exist as the geographical benchmark for government transfers in the form of General Allocated Funds, Special Allocated Funds, Revenue Sharing Funds and Specific Autonomy Fund (Muti'ah 2017).

¹ One example of such plan is the Special Economic Zones development strategy (The National Council for Special Economic Zones, 2021).



Figure 3.2: Map of the Six Economic Corridors

Source: ACI based on regional classification adopted in MP3EI.

A regional study will hence help us to understand the regional dynamics and how the six economic corridors aided localised development. ACI's annual competitiveness analysis on the six regions will first provide an avenue for deeper understanding of regional economic progress and subsequently lay the groundwork for the ongoing discussion on regional disparity².

This section has provided an overview of the six economic corridors and the ongoing disparity between the regions. The remainder of this chapter is organized as follows. Section 3.2 outlines the research methodology used in aggregating the data from the provincial to the regional level. Section 3.3 presents the empirical findings of regional competitiveness which is dissected into Overall Competitiveness, the four environments and the 12 sub-environments. Section 3.4 discusses the conclusions.

3.2 Research Methodology: A Note on Regional Data Aggregation

This section describes the methodology used to analyse regional competitiveness. The analytical framework is adopted from the competitiveness framework applied to provinces in Chapter 2, but with aggregation of data done at the regional level. The 2019 result is based on 2016 secondary data collected from official sources as well as 2018 primary data which were obtained from the ACI perception survey.

The primary concern in extending competitiveness ranking and analysis from the provincial to the regional level is that of data aggregation, given that each region consists of several provinces. The ACI has adopted three approaches to data aggregation, the use of which depends on the type of data at hand.

² See previous ACI Publications on Indonesia's competitiveness in Tan, Liew and Handoko (2020) and Tan et al. (2013, 2015a, 2015b, 2016a, 2016b, 2017a, 2017b, 2018, 2019).

In the first approach, the indicator value for the region is obtained by summing up the values of all the constituent provinces in that region. This approach is useful for indicators that are based on absolute quantities such as 1.1.01 Gross Regional Domestic Product (GRDP) and 4.1.01 Population. In these contexts, regional value can be obtained through simple summation i.e. the addition of data across all provinces within the region.

Approach 1: Simple Sum

Example: Indicator 1.1.01 GRDP (Unit: Million rupiah, 2010 Constant Prices) For Region A with n provinces at time *t*,

$$GRDP_{A,t} = \sum_{i=1}^{n} \text{Real } GRDP_{i,t}$$

The second approach deals with indicators that are defined as ratios or proportions. In this case, aggregation can be computed directly according to the definition of a particular indicator. Firstly, absolute quantities of the individual components of the indicator are summed up before calculating the final regional value based on the definition of that particular indicator. For instance, indicator 2.1.03 Tax Revenue/Government Revenue is defined as the ratio between tax revenue and government revenue for a particular region. Since both the numerator and denominator are absolute quantities, the two components are aggregated separately across all provinces within the region. The final regional value is obtained by dividing the numerator with the denominator.

Approach 2: Sum of Proportions

Example: Indicator 2.1.03 Tax Revenue/Government Revenue (Unit: Ratio) For Region A with n provinces at time t,

$$Tax \ Revenue/Government \ Revenue_{A,t} = \frac{\sum_{i=1}^{n} Tax \ Revenue_{i,t}}{\sum_{i=1}^{n} Government \ Revenue_{i,t}}$$

The third approach is that of average-weighting an indicator by the population of the province. This approach is adopted for indicators collected through the ACI surveys as well as indicators that reflect proportions / percentages. An example of this is indicator 4.2.01 Telephone Ownership, which reflects the percentage of households that own a telephone in each province.

Approach 3: Sum of percentages

Example: Indicator 4.2.01 Telephone Ownership (Unit: Percentage of Households) For Region A with n provinces at time t,

$$Telephone \ Ownership_{A,t} = \sum_{i=1}^{n} \left(Telephone \ Ownership_{i,t} x \ \frac{Population_{i,t}}{\sum_{i=1}^{n} Population_{i,t}} \right)$$

For a complete list of indicators that are used for the regional competitiveness analysis (which have also been used for the provincial analysis in Chapter 2), please refer

to Appendix 2. A more comprehensive explanatory note on how to derive regional indicator data from provincial data can also be found in Appendix 5. The computation of regional competitiveness after aggregation follows that used in Chapter 2. The technical explanation of the algorithm is also provided in Appendix 3.

3.3 Competitiveness Analysis Results

3.3.1 Ranking and Scores for Overall Competitiveness

Table 3.1 presents the regional ranking and scores for overall competitiveness. In 2020, Java was ranked first while Maluku-Papua remained at the sixth position. The Java region, with a score of 1.9, was well above the other five regions. This gap in the scores indicates a high degree of inequality amongst the regions. Kalimantan, as the second-ranked region, has seen a spike in development activities in recent years and is targeted by President Joko Widodo as the next capital city of Indonesia (President Secretariat of Indonesia 2019). Despite its rapid development, its score in 2020, at 0.538, was still about four times below Java. Maluku-Papua's score of -1.283 is three times lower than Bali-Nusa Tenggara's score of -0.461. This wide gap underscores a challenge for the Maluku-Papua region to close the development gap and catch up with the rest of Indonesia.

It is also notable that while the two top regions performed way above the national average, the remaining four regions fell below the national average with negative scores. This represents the concentration of economic competitiveness in only two regions out of all the regions in Indonesia. The middle-ranked regions are closer in development level: the scores for Sumatra, Sulawesi and Bali-Nusa Tenggara regions are narrow, with Sumatra edging slightly higher at -0.346.

2019 Rank	2020 Rank	Region	2020 Std. Score
1	1	Java	1.900
2	2	Kalimantan	0.538
3	3	Sumatra	-0.346
5	4	Sulawesi	-0.349
4	5	Bali-Nusa Tenggara	-0.461
6	6	Maluku-Papua	-1.283

Table 3.1: 2020 Overall Competitiveness: Ranking and Scores

Source: ACI.

Figure 3.3 is a geographical illustration of the Overall Competitiveness rankings in the six Indonesian regions. A darker shade signifies a more competitive region whereas a lighter shade shows a less competitive region.



Figure 3.3: 2020 Overall Competitiveness: Geographical Spread



The map shows that the more competitive Java and Kalimantan are located in the central part of Indonesia, followed by Sumatra in Western Indonesia. The congregation of the lower performing regions of Sulawesi, Bali-Nusa Tenggara and Maluku-Papua in the eastern part of Indonesia is a result of entrenched disparity, which will be discussed further in this sub-section.



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Sulawesi

Bali-Nusa Tenggara

Maluku-Papua

Figure 3.4: Overall Competitiveness Ranking, 2014–2020

Source: ACI.

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From Figure 3.4, it can be seen that Java, Kalimantan and Maluku-Papua's positions have been consistent since 2014. The ranking persistency for the top and bottom economies shows that the regional disparity is deeply entrenched. Sumatra, Sulawesi and Bali-Nusa Tenggara that have historically unchanging rankings have however, shown significant changes in the recent two years. The Sumatra region moved up one position to third position in 2019, and remained so in 2020. Bali-Nusa Tenggara also improved

by one position in 2019, but it reverted back to fifth position in 2020. While Sulawesi experienced a drastic drop in 2019 by two positions, it regained some of its losses in 2020, albeit still below its pre-2018 level.

Java	DKI Jakarta, 1 DI Yogyakarta, 9	Highest-ranked Province Lowest-ranked province
Kalimantan	East Kalimantan, 4	Central Kalimantan, 21
Sumatra	Riau Islands, 11	Bangka Belitung Islands, 30
Sulawesi	North Sulawesi, 10	West Sulawesi, 31
Bali-Nusa Tenggara	Bali, 6	East Nusa Tenggara, 34
Maluku-Papua		Maluku, 28 West Papua, 33

Figure 3.5: 2020 Overall Competitiveness: Top and Bottom Performing Provinces in

Looking within each region, Figure 3.5 above shows that huge differences in rankings amongst provinces exists. The greatest disparity can be seen in Bali-Nusa Tenggara, where the best performing province, Bali, is ranked sixth overall and the region's lowest performing province, East Nusa Tenggara, is ranked the bottommost province amongst 34 provinces in Indonesia. The Maluku-Papua region has the least disparity in rankings, with differences of only five positions. However, all provinces in this region fall under the lowest rankings. Provinces in the Java region, on the other hand, are all ranked at the top.

Other than the top and bottom regions, intra-region disparity in provincial rankings can be observed in the four remaining regions. This points to a need to redirect development strategies towards ensuring an equal economic distribution across Indonesia. One such strategy introduced by the central government is the allocation of resources to disperse wealth and economic activities from the Java region. Other region-specific development policies could be key to improve the competitiveness of the country as a whole and introduce strong economic foundations across all the provinces.

Mirroring the analysis pertaining to provincial competitiveness, a competitiveness analysis at the regional level was also conducted at the environment and subenvironment levels using the competitiveness framework outlined in Chapter 2. The next section in this chapter will discuss the results in detail. The methodology of data aggregation and data sources in the rest of this chapter follows the overall competitiveness framework that has been outlined in Section 3.2.

Source: ACI.

3.3.2 Ranking and Scores by Four Environments

3.3.2.1 Macroeconomic Stability

Under the Macroeconomic Stability environment, the top four positions remained consistent from 2019, with Java being the macro-economically developed region. Based on Table 3.2, the gap between Java and second-ranked Sumatra is considerably large, undermining Sumatra's attempts to overtake Java in the near future. As macroeconomic indicators such as GRDP, exports and FDI form the majority of this environment, Java's high score reflects its dominating share of Indonesia's economy. As mentioned in section 3.1, Java contributed to 58.8 percent of the national GDP, 41.8 percent of national export and 51.2 percent of FDIs. Moreover, Java's high score inevitably skews the distribution of performance amongst the remaining five provinces. Four out of six provinces scored below the national average with negative standardised scores.

2019 Rank	2020 Rank	Region	2020 Std. Score
1	1	Java	2.116
2	2	Sumatra	0.106
3	3	Kalimantan	-0.166
4	4	Sulawesi	-0.460
6	5	Maluku and Papua	-0.785
5	6	Bali-Nusa Tenggara	-0.810

Table 3.2: 2020 Macroeconomic Stability: Ranking and Scores

Source: ACI.

Maluku-Papua overtook Bali-Nusa Tenggara in 2020, but it is notable that the difference in standardised scores is relatively small. Bali-Nusa Tenggara performed poorly in indicators related to GRDP, exports and FDIs, while Maluku-Papua had much to improve on its investment promotion and management. These indicators mark the macroeconomic health and could explain the close performance between the two regions.

From figure 3.6, it can be observed that Java has been the top region in the Macroeconomic Stability environment for the past five years. Sumatra and Kalimantan's positions have also been consistent in recent years despite a brief interchange of ranking in 2016 and 2017. Similarly, Maluku-Papua and Bali-Nusa Tenggara have been alternating between fifth and sixth position since 2017, and this close competition might continue, considering the two regions' close scores and showings in the macroeconomic indicators discussed in the previous section.

Regional development can also be assessed at the sub-environmental level. Figure 3.7 displays each region's performance in the three sub-environments of the macroeconomic environment: Regional Economic Vibrancy, Openness to Trade and Services, and Attractiveness to Foreign Investors.



Figure 3.6: Macroeconomic Stability Ranking, 2014–2020







Source: ACI.

The distribution is highly skewed towards Java, where it far exceeded the national average for all the three sub-environments, with a score exceeding 2 for Regional Economic Vibrancy and Attractiveness to Foreign Investors. This agglomeration of high performing sub-environments explains its ongoing dominance in the macroeconomic

rankings. This reflects the structure of the Indonesian economy that is highly reliant on the Java region as the economic centre; it includes the capital city, DKI Jakarta, and big cities like Semarang (Central Java) and Surabaya (East Java).

The second and third placed regions showed a mixed performance: i) Sumatra performed above national average for Regional Economic Vibrancy and Openness to Trade and Services, but below average for Attractiveness to Foreign Investors; and ii) Kalimantan excelled in Openness in Trade and Services but performed poorly for the remaining two sub-environments. All the regions, except java, underperformed in the Attractiveness to Foreign Investors sub-environment. This reaffirms the economic attractiveness of the Java region which continues to receive a high influx of foreign investments.

The remaining regions performed below the national average across all three subenvironments. This indicates that more could be done to improve the macroeconomic foundations across the three regions of Sulawesi, Maluku-Papua and Bali-Nusa Tenggara.



Figure 3.8: 2020 Macroeconomic Stability: Top and Bottom Performing Provinces in Each Region

Source: I	ACI.
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Figure 3.8 shows that inequality exists even within a region. The big cities in each region performed far ahead of its regional neighbours. The top region, Java, also has the largest disparity, with a ranking difference of 26 placings between its top province, DKI Jakarta and bottom province, DI Yogyakarta. The tourism dependent province of DI Yogyakarta has not developed sufficient infrastructure and trade openess, resulting in underperformance of its exports as well as secondary and tertiary activities. If it improves its competitiveness level in the near future, DI Yogyakarta has the potential to attract foreign and domestic investment. In the longer term, diversifying its economic activities

is essential to give the province a stronger macroeconomic foothold.

3.3.2.2 Government and Institutional Setting

2019 Rank	2020 Rank	Region	2020 Std. Score
1	1	Java	1.845
4	2	Kalimantan	0.521
2	3	Bali-Nusa Tenggara	0.021
3	4	Sulawesi	-0.270
6	5	Maluku-Papua	-0.999
5	6	Sumatra	-1.119

 Table 3.3: 2020 Government and Institutional Setting: Ranking and Scores

Source: ACI.

In 2020, Java continued being the most competitive region in the Government and Institutional Setting, with an above average score of 1.845. All the other provinces underwent a shift in ranking. The Kalimantan region showed a remarkable improvement, by two positions, from fourth to second placing. This showing set the Bali-Nusa Tenggara and Sulawesi regions back by one placing each. The Maluku-Papua region was another gainer in this environment, from sixth to fifth position. Three regions performed below average: Sulawesi (-0.27), Maluku-Papua (-0.999) and Sumatra (-1.119).

Figure 3.9 illustrates the region's competitiveness rankings over the past seven years. Java is the only region where the ranking has remained consistent over the years. Competition tightened in the three regions of Kalimantan, Bali-Nusa Tenggara and Sulawesi after 2018. Kalimantan experienced a slight dip to fourth placing in 2019, but showed remarkable improvement in 2020, rising up to second placing. President Joko Widodo's announcement and plans to move the capital city from DKI Jakarta to East Kalimantan may have resulted in positive sentiments in East Kalimantan and its surrounding provinces in the Kalimantan region. Bali-Nusa Tenggara's huge jump in 2019 was short lived as it immediately fell to third placed in 2020. Sulawesi presents the most consistent decline, dropping by one position each in the recent two years.

Figure 3.10 elaborates each region's performance for each sub-environment under the Government and Institutional Setting. They are (i) Government Policies and Fiscal (ii) Institutions, Governance and Leadership, and (iii) Competition, Regulatory Standards and Rule of Law. Java has strong governance and institutions, such that it performed above a score of 1.2 for all three sub-environments. Kalimantan and Bali-Nusa Tenggara's positive scores for two sub-environments point to the presence of good governance and strong institutions, rule of law and regulatory standards. However, both regions fall short



Figure 3.9: Government and Institutional Setting Ranking, 2014–2020







Source: ACI.

in government policies and fiscal sustainability, highlighting the need for both regions to relook at government budget and finance to ensure fiscal health.

The bottom three regions, Sulawesi, Maluku-Papua and Sumatra, underperformed

in almost all of the three sub-environments. Sumatra has an average level showing in Government Policies and Fiscal Sustainability but performed the worst out of the six regions in Institutions, Governance and Leadership and Competition, Regulatory Standards and Rule of Law, bringing in -1.456 and -1.574 of standardised scores for the respective two sub-environments. The repercussions resulting from poor governance and weak rule of law, widely discussed and documented in academic research, have shown to affect social and economic development (Acemoglu et al. 2003; Acemoglu, Johnson & Robinson 2005; Rodrik, Subramanian & Trebbi 2004). It is, therefore, no coincidence that the Sulawesi and Maluku-Papua regions with below average performance in all of the sub-environments here also consistently underperformed in all other environments, such as in the Macroeconomic Stability environment discussed previously. These three regions therefore need to refocus their effort to strengthen their governing capabilities and legal institutions as a precursor to greater social and economic development.



Figure 3.11: 2020 Government and Institutional Setting: Top and Bottom Performing Provinces in Each Region

Moving on to a provincial analysis, Figure 3.11 presents the rankings of each region's top and bottom performing province. There exist huge disparities in provincial ranking within each region. The top region of Java showed a difference of 13 positions between its top province East Java and the bottom province DI Yogyakarta. The largest disparity is observed in the Bali-Nusa Tenggara and Sulawesi regions, with 26-position differences between their best and worst performers. This illustrates the varying degree of development in government and institutional capabilities at the local level.

Source: ACI.

2020 Rank	Region	2020 Std. Score
1	Java	1.896
2	Kalimantan	0.668
3	Sumatra	-0.173
4	Maluku-Papua	-0.713
5	Sulawesi	-0.767
6	Bali-Nusa Tenggara	-0.912
	2020 Rank 1 2 3 4 5 6	2020 RankRegion1Java2Kalimantan3Sumatra4Maluku-Papua5Sulawesi6Bali-Nusa Tenggara

Table 3.4: 2020 Financial, Business and Manpower Conditior	ns:
Ranking and Scores	

Source: ACI.

3.3.2.3 Financial, Businesses and Manpower Conditions

The 2020 rankings for the Financial, Business and Manpower Conditions environment remained unchanged for the top three regions, compared to 2019. Regional disparity is also apparent in this environment, with Java and Kalimantan performing way above average, securing a score of 1.896 and 0.668 respectively. The bottom three contenders saw greater competition amongst them between 2019 and 2020. In 2020, Maluku-Papua jumped two spots, emerging from the bottommost region to fourth position.





The topmost ranked region Java has remained at this position since 2014. The unchanging ranking of Java can be attributed to its status as the national economic and

financial centre. To date, the country has not successfully diversified its economic and financial activities beyond the border of Java, as seen in Figure 3.1 above, in which Java, occupying a tenth of Indonesia's land area, mades up 58.8% of its GDP and employs 57.3% of its workers. The migration of workers from the five other regions to Java for economic purposes has also been an ongoing contributor to the inequality (Pardede, McCann and Venhorst 2020).

The second and third-ranked regions have seen some competition between them during the past seven years. In 2019, Kalimantan clinched the second position and remained so in 2020. Identified as the new capital city region of Indonesia, economic activities intensified in Kalimantan to meet the infrastructure development goal. Investments into the region also spiked as businesses were hopeful of the economc prospect of the soon-to-be capital city (Aditya 2020).

Pre-2020, two regions, the Maluku-Papua and Bali-Nusa Tenggara regions, were engaged in close competition, alternating in each year's rankings. In 2020, not only did Maluku-Papua overtake its longtime rival, it also surpassed Sulawesi to take fourth placing. Its financial development and increasing labour productivity in the secondary and tertiary sectors may have contributed to its rise.



Figure 3.13: 2020 Financial, Business and Manpower Conditions: Sub-environment Spread

The sub-environment spread presented in Figure 3.13 is thus useful for understanding the 2020 rankings. As the financial centre, Java excelled in the sub-environments of Financial Deepening and Business Efficiency and Labour Market Flexibility, emerging way above the rest of Indonesia. However, its economic productivity lagged behind the Kalimantan region, which saw the greatest Productivity Performance out of the six

Source: ACI.

regions, with a score of 1.356. As productivity is measured by output per unit of labour, Kalimantan's high score may be attributed to its resource-intensive oil and gas sector. Similarly, Maluku-Papua's mining intensive economy could be a contributor to its positive score in the Productivity Performance sub-environment. However, the region scored the lowest in Financial Deepening and Business Efficiency and Labour Market Flexibility, with a score of -0.818 and -1.045 respectively. As the least developed region in Indonesia, this further points to the region's inability to sufficiently develop its financial sector and manpower.





Source: ACI.

Figure 3.14 presents the top and bottom performing provinces in each region for this environment, portraying the within-region inequality in this environment. In each of the regions, the top-ranking province house the financial and business centres of the region. Balikpapan, the capital city of East Kalimantan, is the main economic and financial hub of the Kalimantan region, while Makassar of South Sulawesi is the financial capital of the Sulawesi region. In the Java region, the concentration of economic and financial activities in the Indonesian capital DKI Jakarta brought spill over effects to economies in the region, such that the lowest ranked Java province, Banten, performed better than the financial centre of the Sulawesi and Maluku-Papua regions. This fits the narratives in existing studies that the spread of industry and economic development follows the spatial agglomeration model (Bosker and Garretson 2009; Porter 1994).

That being said, the lack of financial development in provinces outside of the main economic centres hinders the economic growth of provinces in these regions. Economic papers by Beck, Demirguc-Kunt and Levine (2008) and Luintel et al. (2008) argue that credit market and banking system correspond to greater economic development. Hence, provincial and national governments should pay closer attention to financial deepening and broadening, particularly in less economically-developed provinces, to close the ongoing development divide.

3.3.2.4 Quality of Life and Infrastructure Development

2019 Rank	2020 Rank	Region	2020 Std. Score
2	1	Java	0.914
1	2	Kalimantan	0.894
4	3	Sulawesi	0.253
3	4	Bali-Nusa Tenggara	0.059
5	5	Sumatra	-0.048
6	6	Maluku-Papua	-2.072

 Table 3.5: 2020 Quality of Life and Infrastructure Development:

 Ranking and Scores

Source: ACI.

The final environment on Quality of Life and Infrastructure development saw the greatest movements in rankings in 2020. Java surpassed Kalimantan while Sulawesi overtook Bali-Nusa Tenggara to emerge first and third respectively. The inequality gap in this environment is lower than in the three environments presented above, as can be seen from less deviation of its std. score.

Figure 3.15: Quality of Life and Infrastructure Development Ranking, 2014–2020



Figure 3.15 presents the changes in regional ranking for Quality of Life and Infrastructure Development environment since 2014. Java and Kalimantan have remained as the top two regions since we first tracked this index. Kalimantan briefly overtook Java in 2019, but returned to the second position in 2020. As these two regions are also the most economically advanced regions in Indonesia, these results seem to suggest that economic development in Indonesia does improve well-being and infrastructure development.

Sulawesi, Bali-Nusa Tenggara and Sumatra are more volatile. The Sulawesi region rose from the fourth position to third placed from 2017. It briefly dropped by one position in 2019, but regained its placing in 2020. The Bali-Nusa Tenggara region also saw a rise in this environment in 2019 and 2020, breaking through the fifth position. This may be driven by the regional focus in developing its social infrastructure as it performed favorably in several social indicators such as net school enrolment rate, student-teacher ratio and population per health facility (Bank Indonesia 2018).



Figure 3.16: 2020 Quality of Life and Infrastructure Development: Sub-environment Spread

Source: ACI.

Figure 3.16 shows the quality of life and infrastructure sub-environments, divided into (i) Physical Infrastructure, (ii) Technological Infrastructure and (iii) Standard of Living, Education and Social Stability. While the Java region, due to its centralised location, has the most advanced physical and technological infrastructure, it has overlooked its social infrastructure. This can be seen in its negative score for Standard of Living, Education and Social Stability. Its Gini ratio is amongst the lowest in Indonesia and its educational indicators have also scored poorly. The lack of social progress points to the inability of the provincial and regional government to translate economic growth into tangible social benefit.

Kalimantan is the only region with a positive and balanced development across these three sub-environments. The improvement in Kalimantan's competitiveness across all the four environments as discussed so far further indicates a healthy synergy in all aspects of its development. While Kalimantan's performance is commendable, three regions showed a mixed development. The Sulawesi, Bali and Nusa Tenggara regions scored above average in the Technological Infrastructure and Standard of Living, and Education and Social Stability sub-environments, but scored low on Physical Infrastructure. This is a longstanding concern of the region, where poor physical connectivity (such as the lack of paved roads) has hindered economic progress (Bank Indonesia 2018).





Source: ACI.

Figure 3.17 shows the top and bottom performing provinces in each of the region. The fact that the top performing province does not belong to the top region further shows the erosion of social progress in the Java region. Within Java itself, the top performing province is DI Yogyakarta, the province which ranked the bottommost in Java for the environments of Macroeconomic Stability and Government and Institutional Setting. DKI Jakarta, as the top performer in Macroeconomic Stability and Financial, Business and Manpower Conditions, came in ninth under this environment. This illustrates that the economic progress of a province does not necessarily lead to an improvement in its standard of life. Thus, while provinces across Indonesia seek economic progress, they should also pay close attention to social and infrastructure development.

3.3.3 Median and Maximum Competitiveness Web Analysis

This section will analyse the sub-environments in greater detail, comparing each region's performance to the median and maximum performance in each of the 12 sub-environments. In this section, the competitiveness web analysis for the 12 sub-environments in each region will be presented by alphabetical order.



Figure 3.18: 2020 Median and Maximum Web Analysis: Bali-Nusa Tenggara



Figure 3.18 illustrates the comparison between the competitiveness of Bali-Nusa Tenggara and the regional median and maximum score. Most of the region's sub-environments are close to regional median. It performed well in (i) Labour Market Flexibility, (ii) Institutions, Governance and Leadership and (iii) Competition, Regulatory Standards and Rule of Law. This reflects the region's strong institutions in providing a secure investment and labour climate – a key consideration for prospective investors. However, the region lagged behind in terms of (i) Productivity Performance and (ii) Openness to Trade and Services. This points to the region's dire need to introduce open market policies to better secure trade and investment.

According to Figure 3.19 Java recorded maximum scores for 10 out of 12 environments, reiterating its dominance in almost all aspects of competitiveness. Despite its economic prowess, Java only score slightly above national median in its Productivity Performance. This may be due to the region's low Primary and Secondary Industry Productivity, attributable to its labour-intensive industrial structure. For example, the garment industry located in the Central and West Java provinces requires large numbers of manual



Figure 3.19: 2020 Median and Maximum Web Analysis: Java

Source: ACI.

workers (Bank Indonesia 2018). Riding on its robust economy, the region is in a good position to invest in human capital development to further improve its productivity level.

Of greater concern is Java's severe underperformance in the Standard of Living, Education and Social Stability sub-environment, in which it scored far below the regional median. Its accelerating economy has caused inflation to rise and living in the city centre becomes more unaffordable over time. The region's deteriorating environmental quality and dearth of welfare provision further erodes living standards. The region's need for a greater degree of social and environment protection is made more dire with the region's vulnerability to the wrath of climate change: climate scientists from the World Economic Forum present alarming evidence that Jakarta is sinking due to "rising sea levels and over-extraction of groundwater" (World Economic Forum 2019).

Figure 3.20 shows that Kalimantan attained above median scores for 10 subenvironments. For the other two sub-environments of (i) Attractiveness to Foreign Investors and (ii) Labour Market Flexibility, its score is only slightly below the national median. The region excelled in labour productivity, registering the highest score in Productivity Performance. Kalimantan's abundance of oil and gas produce may have contributed to its high output per worker, particularly in the primary industry. Moreover, the region's favourable performance in Competition, Regulatory Standards and Rule of Law is poised to attract future investments that will further increase its labour productivity.

In Figure 3.21, it can be seen that Maluku-Papua scored below the national median across all sub-environments. Only one sub-environment, Productivity Performance, comes relatively close to the national median. This is also the only sub-environment that registered a positive score of 0.188. The region's severe underperformance in



Figure 3.20: 2020 Median and Maximum Web Analysis: Kalimantan



Figure 3.21: 2020 Median and Maximum Web Analysis: Maluku-Papua



Source: ACI.

almost all elements of competitiveness proves that the region has not caught up with economic progress in other parts of Indonesia. Its scores in Physical Infrastructure and Technological Infrastructure denote the reality of poor connectivity in the region. Improving inter-region and intra-region access should therefore be a priority in its regional development planning, as good connectivity is a pre-cursor to developing a favourable business climate – a key consideration for investors and business leaders.



Figure 3.22: 2020 Median and Maximum Web Analysis: Sulawesi

Source: ACI.

Figure 3.22 shows that Sulawesi's scores mainly hover close to the median scores for most of the sub-environments, portraying a wide gap between the region and its highest performing counterparts. In particular, it has much to improve in (i) Openness to Trade and Services, (ii) Financial Deepening and Business Efficiency and (iii) Physical Infrastructure. These factors are a corollary of Sulawesi's underdeveloped financial and physical connectivity. If these three elements improve, they could collectively enhance the business climate of the region.

The final web in Figure 3.23 illustrates Sumatra's mixed performance across all subenvironments. It performed above median score in eight out of 12 sub-environments, excelling in macroeconomic variables such as (i) Regional Economic Vibrancy and (ii) Openness to Trade and Services. However, it scored the worst out of the six regions in (i) Institutions, Governance and Leadership and (ii) Competition, Regulatory Standards and Rule of Law. This demonstrates the region's pressing need to form strong institutional foundations that could enhance the governance and regulatory climate of the province.



Figure 3.23: 2020 Median and Maximum Web Analysis: Sumatra

Source: ACI.

3.4 Concluding Notes and Policy Implications

The analysis presented in this chapter shows that the regional rankings, largely unchanged prior to 2018, has seen some movement in the recent two years. While Java still remains as the top region in all the environments, the other five regions have seen some ranking shifts across the environments. Notably, Kalimantan has inched closer to the top spot by overtaking the Bali-Nusa Tenggara and Sulawesi regions in Government and Institutional Setting and surpassing Sumatra in the Financial, Business, and Manpower Conditions. Kalimantan's improvement could be driven by the acceleration in business activities and infrastructure development in East Kalimantan and its surrounding provinces as a corollary of President Joko Widodo's policy to re-locate the capital city region from Java to Kalimantan.

Another important observation is Maluku-Papua's improvement. While still remaining as the bottommost region overall, the region has for the first time clinched fourth position in Financial, Business and Manpower Conditions. The region's progress is also echoed in the Macroeconomic Stability and Government and Institutional Setting environments, where it emerged from the bottommost region to fifth placing. Future tracking is needed to see if this improvement is sustained. This finding reflects the policy focus on developing Maluku-Papua: the Papua and West Papua provinces are amongst President Joko Widodo's top priority in his Nawacita program, with infrastructure development projects of the Trans Papua highway, full electrification and seaports (Humas 2017). Statistical numbers showed an increased injection of foreign direct investments and the elevation of its labour force participation rate and labour
productivity in these two provinces in 2017.

Besides tracking regional competitiveness in a broad sense, this chapter has also underscored each region's strengths and weaknesses, with the intention of guiding development strategies based on each region's unique characteristics. Through a comparison of the regional scores against the maximum and median scores, it is found that Sumatra, Kalimantan and Sulawesi have a good standard of living and education infrastructure. However, they each have their own need of improvement in various aspects of competitiveness: Sumatra is in need of improving its governing institution; Kalimantan can edge closer to the top position by introducing better labour policies and Sulawesi needs to open up its economy to attract investments.

Findings from this study thus provide useful insights to the inter- and intraregion competitiveness in Indonesia. The top provinces typically exhibit one common characteristic: they are the economic centre of their respective regions. The intraregional disparity shows that economic activities in the main city has not spilled over to surrounding provinces in the region. The lack of connectivity is the main reason impeding the spill over effect. The infrastructure development plan, trademark of President Joko Widodo's leadership, would thus be particularly useful for improving connectivity and aiding economic development across the archipelago.

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Chapter 4

Charting the Global Pandemic from an Indonesian Subnational Perspective: Businesses Expectations amidst COVID-19

Doris Liew Wan Yin, Clarice Handoko and Zhang Xuyao

4.1 Introduction

The onset of the COVID-19 pandemic negatively affected the global economy in 2020. Global Gross Domestic Product (GDP) growth was forecasted to be -4.9% in 2020 (International Monetary Fund 2020). In Indonesia, economic growth, which has averaged above 5% since 2000, shrunk to -5.32% in the second quarter of 2020. Indonesia's Ministry of Finance forecasted that third quarter GDP would shrink further by another 1% to 2.9%, pushing Indonesia into recession, the first in over two decades (Ministry of Finance Indonesia 2020).¹

This contractionary expectation is caused by a highly uncertain global economic situation. For one, the healthcare crisis is still ongoing in many parts of the world and Indonesia has not been left unscathed. National lockdowns worldwide have devastated Indonesia's economy, which has grown to be more dependent on external trade and tourism in recent years (Tambunan 2008). The situation is further exacerbated by a high number of local COVID-19 cases, which hit over 463,000 recorded cases by 16 November (World Health Organization 2020).

Efforts to limit the spread of the pandemic have created a 'New Normal'. The issuance of a Presidential decree, dated 31 March 2020, enabled provincial governments to react to the pandemic based on their local situation and needs (Nur Hakim 2020). Largescale social restrictions, known locally as Pembatasan Sosial Berskala Besar (PSBB) were implemented based on findings from the Ministry of Health, but differed widely based on the provincial government's directives. Apart from PSBB, the Acting Minister for Transport put into effect a Mudik Ban on 23 April (Nurbaiti and Roidila 2020). Mudik is the annual exodus of Indonesia's Muslim majority in preparation for the Idul Fitri celebration. The ban aimed to reduce transmissions of COVID-19 from what was then

¹ The last recession in Indonesia is in the year of 1999, in the aftermath of the 1997 Asian Financial Crisis.

pandemic epicenters (Red Zones) of Greater Jakarta and West Java to other parts of the country. This was done by preventing private travels by land, air, sea and rail from areas declared as 'Red Zones' (Nurbaiti and Roidila 2020). These social movement restrictions are just some of a larger set of government initiatives that characterize the New Normal that is expected to last well into early 2021.

As part of measures aimed at alleviating the socio-economic impact of COVID-19, Indonesia announced a Rp695.2 trillion state budget on 16 June 2020 for its National Economic Recovery Program (PEN). Continued revision of the budget saw an increase in this budget to Rp744.28 trillion on November 2020. The scope of the stimulus intends to provide economic, social and health protection to businesses and the general populace. Out of the Rp744.28 trillion, about a third was allocated for the Family Hope Program, Stable Food Program and Pre-Employment cards, covering 20 million family and 5.6 million laid off workers, informal workers and SMEs.

About eight months into the pandemic, the consequences of the global economic downturn encroached further into Indonesia's economy and the economic repercussions for local businesses became a tangible reality. Using survey data collected from members of the Indonesian Employers' Association (APINDO), the remainder of this chapter will illustrate the perception of Indonesian businesses on the present economic and business conditions, the effect of government's policies on business operations, and their overall economic recovery outlook.

4.2 Providing an Indonesia-specific economic snapshot of the pandemic

This Business Expectations Survey complements the Asia Competitiveness Institute (ACI)'s existing studies on the economic development of Indonesia and its provinces. ACI's flagship project studies the sub-national competitiveness of Indonesia's 34 provinces using hard data from Indonesia's statistical agencies and perception surveys conducted with each province's government, business and academic sectors. The findings aim to provide greater details for national-level studies done by the likes of the World Bank (*Ease of Doing Business*) and the World Economic Forum (*The Global Competitiveness Report*). The sub-national analyses seek to aid provincial government agencies, business owners and prospective investors with findings that are directly relevant to their locales.

In line with ACI's objective of tracking sub-national economic developments in Indonesia, the Business Expectations Survey was conducted to assess the changing economic and business sentiments in Indonesia during the Covid-19 pandemic. ACI also facilitated conversations on the pandemic's economic impact with members of the government, business and academic sectors. The present chapter rounds up the project's research cycle for 2020 by discussing the potential developments and implications to be expected as the pandemic continues.

4.3 Survey Methodology

The time delay for hard data publication is a common problem faced by major statistical agencies. It has made it challenging to assess the impact of COVID-19 on every nation's economy and their business conditions. Business expectations surveys have been useful in place of hard data publications for analysing the short-term and on-the-ground perceptions in a dynamic situation.

Some business expectations surveys have tapped on high frequency survey exercises to track changes in business sentiments before and during Covid-19 (Bartik et al 2020; Fairlie 2020; Buchheim et al. 2020). Such surveys have provided timely data by collaborating with pre-existing survey cycles that have not been deterred by the pandemic. Another group of surveys are more targeted in measuring the efficacies of Covid-19 oriented policies such as movement restrictions (Chetty et al 2020; Spelta et al 2020). Other surveys approach business expectations from a resilience angle that seeks to understand how long businesses are confident of lasting during a crisis (Buchheim et al. 2020; Rappaccini et al. 2020)

ACI's survey sought to adapt the existing models but also take into account the granularity of firms' profile, including measures such as firms' size, industry and location (province). This was made possible by the ongoing partnership with APINDO that has been providing access to businesses across Indonesia with a good representation of the different sectors. This access was highly valuable in assessing the varied impacts of Covid-19 for different types of businesses. In terms of time frame, questions were set to assess business sentiments retrospectively in the first half (H1), or January to June 2020 when the pandemic was still in its early stages, and also respondents' expectations in the second half (H2), or July to December 2020 when the extent of the pandemic on businesses was more tangible.

Participant recruitment for the survey began in June 2020, when ACI made contact with each provincial APINDO chapter's heads, who then appointed a staff to promote the survey amongst the association's members. Participants who were recruited are management-level executives of businesses in the provinces, positions which ensured access to key knowledge of their firms' economic situation. In July 2020, when the survey was launched, recruited participants received an invitation via e-mail with a personalized web browser link which they accessed to complete the survey. Due to the staggered coordination timeline with 34 provincial APINDO chapters, recruitment of participants and completion of the survey were done progressively till October 2020, a month before the survey closed in November 2020.

4.4 **Profile of Survey Respondents**

The survey collected a total of 766 respondents as of 31 September 2020, consisting of firms across 26 provinces. Figure A.1 in the Annex summarizes the distribution of

responses across provinces, firm assets and revenues, manpower and industries. Using firm revenue as an indicator of size, the distribution of the surveyed firms is as such: 33% of the survey respondents are micro firms, 24% are small firms, 19% are medium firms and 24% are big firms.

This chapter will also undertake some analyses on the differentiated impact of COVID-19 on various industries. The five sectors used for the analysis below, with the percentage of respondents from each industry, are: Non-tourism related service sector (37%); Mining, Electricity, Water and Construction (20%); Manufacturing (17%); Tourismrelated services (15%); Agriculture (11%). Figure 4.1 illustrates the industry-level profile of our survey respondents.





In total, 26 provinces have been represented in the survey data. A detailed illustration of the provincial spread of responses can be found in Figure A.2.

4.5 Results

This section will present the extent of COVID-19 disruption on Indonesian firms using four broad parameters: i) understanding firm's business sentiments; ii) navigating the impact of COVID-19 pandemic on firms' operations; iii) impact of government policies; and iv) pathway to recovery.

4.5.1 Understanding Firms' Business Sentiments

4.5.1.1 Firms' Business Sentiments in H1 and H2

We first evaluate the early effects of the COVID-19 pandemic in Indonesia by asking the respondents to rate their firms' business situation in H1 of 2020. Figure 4.2 shows that a majority of the firms surveyed (582 firms, 76% of the businesses) considered the business

condition to be 'bad' in H1. 16% of firms reported 'satisfactory' business conditions, and only a small percentage (8%) rated business conditions 'good' in the same period. As our survey covers the major provinces of Indonesia, this distribution shows that even during the early stages of pandemic in H1, the negative impact of the pandemic had already reverberated through Indonesia's economy.

Figure 4.3 further shows that in H1, the economic impact from COVID-19 had affected firms of all sizes, regardless of manpower, assets or revenue. A clear majority of firms (>70%) across all categories reported "bad" business conditions. This finding runs in contrast with other countries' experience where small firms were disproportionately affected by COVID-19 compared to larger firms (Bartik et al. 2020; Wijaya 2020; Fairlie 2020).



Figure 4.2: Firms' Business Sentiments in H1 2020

Figure 4.3: Firm's Business Sentiments in H1 2020, by Firm Profile









Subsequently, to assess if the negative business sentiments would persist or improve, the survey asked respondents to evaluate their firms' outlook for the second half of 2020 (H2). It can be seen in Figure 4.4 that majority of the firms (43%) expected business conditions to remain the same as in H1 and more than one-third of the firms expected business conditions to deteriorate in the near future. Only 18% of the firms expected to see an improvement in business conditions in H2. Comparing MSMEs and large corporations, the trend persists (see Figure 4.5), implying that Indonesian firms of all sizes are expecting a prolonged business and economic downturn that could last beyond the end of 2020.





Figure 4.5: Firm's outlook on Business Conditions in H2 2020, by Firm Size



Figure 4.6 analyses the changes in business sentiment from H1 to H2. Most of the

firms that were optimistic in H1 expected business conditions to improve in H2 (43%) or remain as positive as they had experienced it (45%). This suggests that firms that managed to tide through the first half of the year in a pandemic were in a better position to navigate its prolonged effects in the second half of the year. The converse can also be observed in Figure 6. Among firms that reported "bad" business sentiments in H1, a majority expected the unfavourable conditions to continue. 39% of them predicted business conditions to remain as bad as in H1 and 46% expected further deterioration from H1 to H2. These findings imply that the pandemic is set to widen existing disparities in businesses' crises-management abilities, which in turn affect their chances of survival in a prolonged crisis.



Figure 4.6: Comparing Business Sentiments in H1 2020 with Outlook on Business Conditions in H2 2020

We proceed to further analyse the responses at the sectoral level and to assess the effect of industry type on business sentiment and outlook.

Tourism-related services was the most affected industry in H1 2020 with 4 out of every 5 firms in the sector reporting bad business conditions (See Figure 4.6). Moreover, 83% of the firms that responded so in H1 2020 expect either a similar business situation or a deterioration in H2 2020 (See Figure 4.7). The tourism industry was badly hit due to the loss of both domestic and international tourism revenue from border closure. Indonesia allowed domestic travel to resume in June 2020 in order to soften the impact of the tourism downturn. However, only about 19% of the firms under this sector expected an improvement in H2 business conditions and 38% believed that the condition would deteriorate further. According to Indonesia's Bureau of Statistics, Indonesia's international passenger capacity decreased by 89% to 158,256 in June 2020, compared to June 2019. The room occupancy rate of classified hotels in January 2020 also dropped by more than 50% to 19.7% in June 2020 (BPS 2020). The rate increased slightly to 28.07% and 32.93% in July and August 2020 respectively, possibly due to the resumption of domestic air travel.

Mining, utilities and construction was the second most affected industry in H1 (See Figure 4.7). Most respondents from firms in this sector also expected further deterioration in H2. As seen in Figure 4.8, out of the firms that reported bad business conditions in H1, 55.4% expected a greater deterioration in H2. Bank Indonesia (2020) postulates that mobility control is likely to be a cause for slowdown in the labour-intensive mining and construction activities across the archipelago. In the mining sector, the decrease in domestic demand for coal, Crude Palm Oil (CPO) and biodiesel during the pandemic, coupled with the natural declining oil supply and depressed global commodity prices for these commodities are likely factors explaining the pessimism in our survey result (Bank Indonesia 2020). Under President Joko Widodo's infrastructure acceleration plans, the construction sector has grown tremendously. However, due to extensive movement restrictions during the pandemic, construction projects were postponed from May to June 2020. Even when projects resumed gradually from July 2020, firms had to implement new safety measures and were subject to sudden stoppages whenever a COVID-19 infection case was detected. This led to uncertainty in the business outlook of construction firms (Wantoro 2020).

Non-tourism services was also significantly affected in H1 2020 (See Figure 4.7). This sector, which includes information and communication (ICT), financial and real estate services is particularly vulnerable to the slow domestic demand during the pandemic. For the ICT firms, spending in Indonesia was expected to shrink by 7.1% in 2020, instead of the forecasted 7.5% growth before the onset of the COVID-19 pandemic, and hardware spending was expected to drop by 7.7%, as opposed to 9.9% positive growth in 2019 (GlobalData 2020). For the finance industry, the decline in economic activities across the archipelago resulted in a reduced financial transaction volume. Financial transaction volume, through the Real Time Gross Settlement system, shrunk by 6.6% and 20% y-o-y in the first and second quarter of 2020 respectively (Bank Indonesia 2020). Notably, some firms in this sector which were less affected in H1 did expect an improved H2. Our survey data shows that 52.2% of firms that reported good business conditions in H1 and 24.4% of firms reporting satisfactory H1 business conditions expected to see an improvement in H2 2020. A further dissection of our survey shows that this result is fuelled by the ICT and finance sectors. Firms in this sector are likely to harness the increase in demand for digital goods and platforms resulting from the rise in e-commerce marketplace and work-fromhome technologies, thus explaining this renewed optimism (Chan, Trihermanto and Sebastian 2020). Also, the introduction of money market instruments by Bank Indonesia, including quantitative easing and assuring sufficient liquidity in the banking system, spurred the lending market on in the second half of 2020. This led to greater resilience in associated industries such as financial firms and intermediaries (Suksmonohadi and Indira 2020).

The **manufacturing** industry was greatly affected as well with 74% of the respondents indicating "bad" business conditions in H1. Of these firms, 32% expected the situation to remain the same and 55% expected the situation to get worse in H2. The industry experienced a negative growth of 6.19% in the second quarter of 2020 (BPS 2020). The manufacturing industry is particularly vulnerable to supply shock from mobility

restrictions and demand shock from a decrease in domestic demand and a drop in export due to a decrease in global demand (Bank Indonesia 2020).

Out of the five sectors, the **agricultural** industry was the least affected, with the lowest percentage of firms (62%) reporting "bad" rating business conditions in H1. The remaining 27% and 11% of the respondents reported "satisfactory" and "good" respectively in the same period. This industry was less affected mainly due to two reasons. Firstly, the second quarter coincided with the annual food harvesting season, leading to greater produce. Secondly, domestic demand for food is generally inelastic (Bank Indonesia 2020).



Figure 4.7: Business Sentiments in H1 2020, by Industry

Figure 4.8: Comparing how "Bad" Business Sentiments in H1 2020 affected Outlook on Business Conditions in H2 2020, by industry ².



 $^{^2}$ Due to the small sample size of firms that respondent "good" or "satisfactory" in H1, graphs in Figure 7 were restricted to respondents who reported "bad" business sentiments in H1.



4.5.1.2 Firms' Expected Change on 2020 Provincial Economy

Next, we asked the respondents to gauge the severity of the pandemic's impact on their province's economy (See Figure 4.9). 47% of the respondents believed that the Gross Regional Domestic Product (GRDP) of their respective provinces would shrink by more than 2% in 2020. This expectation coincides with the national GDP growth of 2.97% in Q1 and -5.32% in Q2 of 2020. As mentioned in the previous section, this GDP growth was forecasted to drop by 1% to 2.9% in the third quarter (Ministry of Finance 2020). The COVID-19 crisis is by far Indonesia's worst economic and health crisis in recent decades. It is the first time since 2001 that Indonesia's economic growth dropped to a negative level. Even during the 2009 global financial crisis, Indonesia's economy remained resilient and grew above 4%. On top of the demand shock and the supply chain disruption, the inability of the healthcare services to cope with the COVID-19 pandemic may have also dampened business and consumer confidence.



Figure 4.9: Firm's Expected Change on the 2020 Provincial GRDP

4.5.2 Navigating the Impact of COVID-19 Pandemic on Firms' Operations

4.5.2.1 Firms' Expected Change on Business Revenue

Most firms expected a decrease in Business Revenue during the pandemic. As seen in Figure 4.10, more than 90% of the firms expected their company's revenue to decrease compared to the previous year. 44.5% of firms foresaw a severe drop of more than 20%; 18% expected a mid-range decrease of 11%-20% and 28% expected some decrease of 1%-10%. The majority of firms across all sectors expected a decrease in revenue, in line with the analyses done in the previous sections (See Figure 4.10). Tourism-related services suffered the greatest impact, with 97% of firms in the sector expecting a decrease, and only 3% foreseeing little or no impact in revenue. The least affected sector is agriculture, which has a lower proportion, 86%, of firms noting an expected decrease in revenue, but also a significant 14% of firms expecting an increase despite the less than favourable business environment.



Figure 4.10: Expected Change on Business Revenue

Figure 4.11: Expected Change on Business Revenue, by Industry



4.5.2.2 Firms' Expected Changes in Manpower and Wages

To understand the impact of Covid-19 on manpower and wages, the survey asked firms about their expected change in manpower from 2019 to 2020. Figure 4.12 shows the results across all firms. 83% of firms expected a decrease in manpower. 9% more firms expected a larger decrease of more than 10% of its manpower, compared to firms that expected a smaller decrease of 0%-10% in manpower. While a majority of the surveyed firms expected manpower cuts, there remain a few, 17% of respondents, who predicted an increase in manpower.

To see if the differentiated impact of Covid-19 on industries would affect manpower change differently, we further analysed the distribution in Figure 11 according to



Figure 4.12: Expected Change in Manpower, 2019 to 2020

industries. The results are presented in Figure 4.13. Across each industry, more than 80% of firms expected to see a decrease in manpower. Mining, utilities and construction, and tourism-related services presented the highest proportion of firms that expected a decrease in manpower, at 89% and 88% respectively.

Conversely, in each industry, only a minority of firms expected an increase in manpower. The manufacturing sector stands out with the highest percentage of firms, 22%, expecting an increase in manpower. This is followed by non-tourism related services and agriculture, both of which reported 18% of firms predicting an increase in manpower.



Figure 4.13: Expected Change in Manpower, 2019 to 2020, by Industry

Despite the less than favourable labour conditions, our survey findings also show that firms are more likely to keep the salaries of their remaining workers stable (See Figure 4.14). 46% of firms indicated that they did not expect to impose a salary freeze or pay cut. This is 10% more than firms who indicated that they did expect to impose a salary

freeze or pay cut.

Across industries, firms' plans to impose a salary freeze or pay cut show less of a consistent trend (see Figure 4.15). All industries except tourism-related services have more firms without plans to impose a salary freeze or pay cut, as compared to those who do. The manufacturing industry showed a clear majority of 54% of firms indicating they would not freeze or cut workers' pay. Non-tourism related services showed the least difference between firms' plans to freeze or decrease workers' pay.

The generally pro-labor sentiments among firms could be a result of Indonesia's labour laws. The revised Omnibus bill for job creation that was passed in October 2020 was controversial for the potential negative repercussions it could have on workers, such as the removal of certain severance benefits. Labour sentiments were therefore especially fragile during the pandemic. Firms that had to balance their working relations with their laborers - and keep them hired - might eventually have to address the pressing financial losses during the pandemic. For this reason, a comparison between expected salary changes in 2020 and 2021 might prove valuable in assessing whether firms managed to achieve the balance between labor retention and minimizing firm losses.





Figure 4.15: In view of COVID-19, are you expecting your firm to impose a salary freeze or pay cut? By industry.



4.6 Impact of Government Policies

4.6.1 Navigating Measures in the New Normal

While COVID-19 has affected all industries in one way or another, the degree to which industries are exposed to the effects of Covid-19 would be dependent on the province's geographical location, urban density, regional and international connectivity. Across the country, provincial governments have attempted to take a precautionary stance towards Covid-19. In the survey, we sought to understand the impact of newly-initiated regulations. Particularly we asked about the ease of implementing them. On the national level, about 90% of respondents indicated moderate to significant changes in their firms' operation due to these regulations (See Figure 4.16). This large percentage could be explained by the significant costs that firms had to incur to implement safety measures.

The responses were further analyzed on an industrial level, with the expectation that different industries would have varying safety regulations. As seen from Figure 4.17, more than half of firms in **tourism-related services** indicated significant impact on operational costs. This was predictable because as domestic tourism returned, the industry had to meet the travelers' high expectations for hygiene and safety.

The **agriculture** industry was least affected by the implementation of new Covid-19 regulations, with just 44% of firms indicating a significant impact. This may be explained by agriculture operations' largely outdoor and dispersed nature. Firms that were significantly affected could have been inconvenienced by the need to stagger workers' hours and the implementation of contact tracing mechanisms, which were a prerequisite determined by the government for firms intending to have their employees go back to their workplaces.



Figure 4.16: Impact of New COVID-19 Regulations and Measures on Business Operation

Figure 4.17: Impact of New COVID-19 Regulations and Measures on Business Operation, by Industry



4.6.2 Impact of Province-specific Measures on Firms

Two questions in the survey sought to understand the variations in impact given the differing conditions imposed by the two bans on social movements. The first asked about PSBB restrictions that had a staggered time frame and impacted firms' operations within a province, while the second asked about the Mudik ban, that had a uniform time frame for all affected provinces, and affected firms that had inter-province movements. The data for this section has been restricted to provinces that had officially implemented the large-scale movement restrictions to be discussed. Thus, only 7 out of the total 26 provinces were used for this section's analysis.

Figure 4.18 compares the responses to the two questions and illustrates how firms were more affected by PSBB than by Mudik. The percentage of firms who felt their operations were affected "To a great extent" by PSBB were twice as high as those who were affected by the Mudik Ban to the same degree. This may indicate that firms have greater operations within the province than with external provinces that are not their own.

Responses to the PSBB ban were further aggregated based on industries in Figure 4.19. Across all industries situated in provinces with PSBB, a clear majority of firms were inconvenienced by PSBB. **Tourism-related services** and **mining**, **utilities and construction** were the most impacted industries, with all firms indicating some degree of impact. **Tourism-related services** was most affected, with 88% of firms in the industry reporting being affected "To a great extent" or "somewhat". The responses in **Mining**, **utilities and construction** formed just a slightly lower 86%.

Agriculture was the least affected industry, with only 6% reporting being affected by PSBB to a large extent. The majority of firms, 67%, felt only "somewhat of an impact". It may be inferred that due to the necessary continuity of agricultural supplies, the sector was largely untouched by the disruptions caused by social restrictions and mass movement bans.



Figure 4.18: What are the differentiated impacts of the Mudik Ban and PSBB?

To gauge the extent of the New Normal, the survey also asked respondents in PSBB provinces whether working from the office had been set as the default practice. From the responses, it was found that about a third of the firms in provinces under PSBB maintained normalcy and had their employees work everyday in the office (See Figure 4.20). Less than 2 out of every 10 firms implemented a total Work From Home Model.

By industry, **tourism-related services** had the lowest percentage, 25%, of firms maintaining in-person operations everyday. **Agriculture** had the highest percentage with 39% of firms maintaining in-person operations everyday. These two findings fit with the

previously discussed drop in tourism-related businesses and the continued stability of agricultural work.



Figure 4.19: Extent of PSBB Impact on Business Operations, by Industry

Figure 4.20: Percentage of Respondents Working from Office, PSBB Provinces Only



4.7 Pathway to Recovery

4.7.1 Firms' Expected Business Recovery Time

The results above show how business conditions have deteriorated greatly for many firms in Indonesia. Our question on the expected duration for firm recovery from the crisis



Figure 4.21: Frequency of Working from Office in PSBB Provinces, by Industry

intends to find out firms' level of confidence to make it through the pandemic-induced crisis.

From the survey results, the largest group of firms (22%) believed that their business operations would recover in 4-6 months (See Figure 4.22). Only 9% of the firms expected a short business recovery period of 1-3 months. A large proportion of firms were less hopeful about their recovery prospect. About 1 in every 2 firm believed that their business recovery would take more than half a year, and 21% expected recovery to take more than a year. About 15% of the firms reported "Not sure", suggesting that there is high uncertainty in the economic and business environment in Indonesia.





Based on industries (See Figure 4.23), the **non-tourism related services** and **manufacturing** industries had the quickest recovery expectations. 1 in 3 firms from





non-tourism related services and manufacturing sectors expected their businesses to recover within half a year after COVID-19. Three predominant strategies and trends may explain the quick recovery expectation in the **non-tourism related services** industry, that includes the healthcare, finance and ICT industries. Firstly, there is a total of Rp87.6 trillion government injection into improving healthcare services thus far, allocated with the purpose of increasing healthcare capacity to cope with the ongoing COVID-19 pandemic (Ministry of Finance Indonesia, 2020). Secondly, the Central Bank's monetary policy, explained in previous sections, have spurred lending activities, which in turn builds optimism in the finance firms (Suksmonohadi and Indira, 2020). Thirdly, the increasing use of e-commerce, online social channels and remote working platforms by Indonesians have increased demand for ICT products and services (Bank Indonesia, 2020). On the **manufacturing** front, a new two-pronged strategy adopted by the Indonesia government to assist (i) priority industry (i.e. automotive and textile) and (ii) resilience industry (i.e. pulp and paper, petrochemical and nickel) in time of crisis may have improved business recovery sentiments (Bank Indonesia, 2020).

Tourism-related services expects the slowest recovery. 64% of the firms in this sector expected recovery to last beyond 2020, and 24% expected their businesses to recover only in late 2021. The uncertain recovery is likely to remain as border restrictions in the rest of the world remains, with no end in sight, affecting international tourism.

4.7.2 Firms' Optimism on Provincial Economy's Ability to Recover

Figure 4.24 illustrates firms' optimism in the provincial economy's ability to recover quickly after the social distancing or lockdown measures are lifted. Despite the gloomy economic outlook, 7 in 10 surveyed firms showed optimism in provincial economic

recovery, and only 8% indicated pessimism. This could mean that the Indonesian firms are generally confident of the provincial government's ability to implement the right economic strategies for a post-pandemic recovery. In fact, provincial governments across Indonesia have already announced several post-COVID-19 economic recovery strategies. They include Central Java's prioritization of the creative and e-commerce industry and East Kalimantan's improvement plans for labour capital and infrastructure connectivity (Firmansyah 2020; Prakoso 2020).





4.8 Conclusion

At the time this chapter was being written, Indonesia had entered into its eighth month of the pandemic. Both large and small-scale lockdowns had been implemented and then eased, only to be repeated as case numbers rose again, such that the 'New Normal' may be defined by a constant flux. The analyses of the survey data gathered from July to September 2020 show that economic repercussions are felt more in specific sectors, such as tourism-related services. At the same time, the pandemic has presented economic opportunities for minor gains in some industries that are more confident of their post-pandemic recovery.

While the survey data cannot claim to be representative of Indonesia's landscape, the knowledge of business sentiments and outlook remains useful for gauging the local situation in different industries. This chapter hopes that the industrial variations shown through an analysis of the survey data may provide policymakers and business executives with key insights for effective recovery strategies.

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Annex







Figure A.2: Provinces included in Q3 Survey Data



Chapter 5

Commentary on Recent Developments in Indonesian Provinces

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5.1 Introductory Notes

This chapter aims to build on the findings of the previous chapters by providing snapshots of the socio-economic conditions of the Indonesian provinces. During the period of July to November 2020, Indonesian academics from our partner institutions were invited to submit a short paper in Bahasa Indonesia. The papers were then translated into English and where necessary, edited for clarity. In addition to supplementing our evidence-based study that pays close attention provincial specificities, this chapter is also a culmination of ACI's commitment to take the collaboration with our local academic partners to a deeper level. The commentaries have been arranged according to the provinces' names in an alphabetical order.

The period of writing, July to November 2020, notably coincided with the peak infection rates for some provinces in Indonesia. Unlike previous iterations of this book, some of the commentaries to follow will cover the full extent of the pandemic-induced economic downturn that was gradually coming into view. Changes to the economy and social life during the New Normal will be discussed by the authors. For social, economic and business onlookers, the commentaries will also highlight government policies and private sector initiatives formulated at a local level. Knowledge of these dynamic responses to the pandemic can serve as a gauge of whether and how each subnational economy will get through the global economic disruption.

5.2 Economic, Social, and Political Developments in Aceh Province, 2019-2020

By: Abd. Jamal Universitas Syiah Kuala

Economic Conditions in Aceh Province

The COVID-19 pandemic has caused severe disruptions to Aceh's economy. Almost all sectors stagnated in terms of growth in 2020. According to (BPS 2020a), only a few sectors grew positively y-o-y. These positive cases include construction (23.94 percent), mining and quarrying (23.32 percent), as well as the information and communication (17.26 percent) sector. Meanwhile, electricity and gas, financial and insurance activities, education, agriculture, forestry and fishing sectors grew at a slower rate. The three major sectors in Aceh with negative growth rate were transportation and storage (-50.68 percent), accommodation and food service activities (-15.38 percent), as well as wholesale and retail trade (-9.38 percent) (BPS 2020b).

From the abovementioned data, it can be seen that the impact of the COVID-19 pandemic was experienced on both general and sectoral levels. Even though not all sectors were negatively impacted by the pandemic, those with negative growth are considered as vulnerable sectors. The deepest plunge of Aceh's economic growth in Q2 2020 (-1.82 percent) was caused primarily by large-scale social restrictions (PSBB) implemented by the provincial government, leading to the stoppage of numerous economic activities.

Despite the bleak overview, Aceh's economy did see some improvement in Q3 2020 with economic growth recorded at 0.11 percent (Bank Indonesia 2020). This may be attributed to the slow return of economic activities that nevertheless occurred under new health protocols. In the expenditure, export, government and household consumption sectors, all demonstrated negative growth of -28.11 percent, -4.63 percent and -0.90 percent respectively (BPS 2020c). The high negative growth experienced by Aceh's export sector was caused by the stagnation in the transportation and storage sectors.

In 2020, inflation fluctuated in Q2 (-0.31 percent) and Q3 (0.46 percent). Negative inflation, or deflation, was caused by low household demand. However, inflation showed a positive sign towards Q4, particularly in October, which was a positive indication of some degree of economic growth.

Social Conditions in Aceh Province

With regards to poverty and unemployment rates, Aceh has seen a negative trend over the recent years, but there was a slight improvement in 2020. Poverty rate decreased slightly from 15.01 percent in 2019 to 14.99 percent in 2020, and unemployment rate decreased from 6.20 percent in 2019 to 5.42 percent in 2020 (Bank Indonesia 2020).

With regards to social conflicts, in the last year there were no conflicts between workers and employees, immigrants and locals, and also none among religious adherents. Differences in perspectives remained but were expressed within reasonable boundaries. These differences usually become more apparent during the provincial government and presidential elections, but the situation usually returns to normal once the elections are over.

Aceh's HDI score also increased to 71.90 in 2019, slightly below the national average of 71.92. This indicates that Aceh had improved its various HDI indicators, and improvements to HDI can be seen also in several regencies and cities. Life expectancy in Aceh also improved to 69.87 years in 2019, compared to 69.94 years in 2018. Also, the average years of schooling increased from 9.09 years in 2018 to 9.18 years in 2019 – with a school life expectancy recorded at 14.30 years. Meanwhile, the average household expenditure per capita increased from Rp9,186,000 in 2018 to Rp9,603,000 in 2019. This progress shows that the province is undergoing significant developments both on economic and social terms. A notable initiative is the welfare development program for rural communities and conflict victims in Aceh. It has helped to increase locals' awareness of the value of development and diversity of attitudes and political views.

Provincial Government Regulations

Since 2016, Aceh has not seen any regulations attempting to direct investments to the province. This is due to the absence of a definitive governor, following the involvement of the ex-Aceh Governor in a legal case. In November 2020, the Minister of Foreign Affairs finally elected the Vice Governor to the vacant Governorship. Since then, the provincial government has been trying to encourage businesses to invest in Aceh. The impact of past conflicts remains the main challenge to persuade and convince businesses that Aceh is now a conducive place to invest, with high security that has enabled economic activities to occur around the clock. A proof of this is the implementation of the provincial government's regulation to convert all conventional banks to the shariah banking system in 2020. The process was carried out and completed smoothly in the province.

Both the national and provincial government have taken into consideration the establishment of the Arun Lhokseumawe Special Economic Zone and Ladong Industrial Park to develop various areas in the province. Yet, the progress of these developments has been sluggish even though they were predicted to generate positive economic impacts on East and North Aceh.

Opportunities and Challenges of Aceh's Economy

Aceh's economic growth has yet to take off, as high unemployment, poverty rate, trade balance deficit, vulnerability to inflation, lack of banking intermediation efficiency and lack of natural resources management all continue to persist. These challenges can be overcome if all economic potential in the province is optimally well-managed. Managerial and political issues are the two major problems that hinder Aceh's development.

There are at least three major sectors in Aceh's economy that have great potential for development: Agriculture, tourism, and local fisheries. Aceh has highly fertile land that is yet to be maximized by agricultural businesses. When that occurs, other agriculturerelated businesses will stand to benefit as well. The province also boasts of beautiful natural scenery in almost all regencies and cities that should be developed by the tourism sector, particularly in the area of halal tourism. Along the province's coastline - the longest in Sumatra - there are plenty of opportunities for fisheries. The realization of all these sectoral potentials will require coordination on the provincial government's part and a political commitment to use economic growth to address social welfare issues in the province.

5.3 Socioeconomic Development of Bali Province Amid the COVID-19 Pandemic

By: I Putu Gede Diatmika Universitas Pendidikan Ganesha

The development, advancement and promotion of Bali tourism have not always gone smoothly. Despite tourism's positive impact on the regional income and on the improvement of the local community's welfare, the province continues to face issues associated with unplanned tourism development. These issues cause various adverse consequences, such as environmental damage, traffic congestion and change in agricultural land use, due to the conversion of land previously set aside for local farmers into touristic places such as hotels, restaurants and attractions. These problems will continue to reduce the role of agriculture in Bali, as well as for the province in a situation like COVID-19, where the tourism sector has been badly hit.

The COVID-19 pandemic has heavily impacted the global tourism industry. Bali's tourism sector has been paralyzed by the situation, with a reported monthly loss of Rp9.7 trillion (Kompas 2020). The present decline is the worst in Bali's history: Occupancy rate in almost all hotels in Bali has reached zero percent; nearly 96 percent of hotels in Bali have been closed since April 2020 due to the absence of tourists who come to Bali amid the pandemic; it is predicted that the absence of tourists will remain to the extent where foreign tourists will no longer be seen as they have been encouraged to return home to prevent a further spread of the pandemic. The tourism sector's losses have reached billions of Rupiah daily. Prior to the pandemic, the province saw 16,000-17,00 tourists daily, with an average spending of Rp20 million per person. The drastic reduction in tourist numbers and the decimation of local businesses have made it imperative for the government to maintain morale amongst locals, for the recovery of the province.

How can Indonesia and Bali, in particular, recover and rise again? What measures can be done to overcome these issues? To answer this, it is important to take stock of damage so far (Diatmika 2020a). First and foremost, when will the pandemic end? Who is going to answer this? No one knows exactly when this will end because COVID-19 is an unprecedented event. However, it is important to persevere with a clear direction out of the pandemic. There are several measures that can be taken, such as building predictive models of the COVID-19 response and using past data from the SARS pandemic in 2003 for comparison. Data has shown that SARS in 2003 had previously caused China's economic growth to plunge from 11.1 percent in Q1 to 9.1 percent in Q2. Nevertheless, China's economy recovered and returned to its normal growth of 10 percent in the Q3 and Q4 of the same year. Industries in China also experienced a decline but were later able to recover. If it is true that the SARS pandemic can be used for comparison, Indonesia could use this opportunity to predict its levels of recovery and motivate locals to work towards it. Specifically, for Bali's tourism sector, the government can assist businesses by providing subsidies for the airline, accommodation and local transport industries, to

keep businesses afloat during this time (Diatmika 2020b). These initiatives can, at the very least, maintain some degree of operation as health protocols remain.

Apart from combating the immediate downturn, Bali still needs to adopt the concept of sustainable tourism. To achieve this, the tourism sector must preserve the province's natural environment, minimizing pollution and implementing reforestation. The latter is especially important considering the amount of farming land that has been converted for tourism use. Business owners must commit to *go green*, which may involve the adoption of green technology to maintain the local environment and also to preserve the local Balinese culture. This includes accommodating the local cultural values adhered to by the Balinese. The real sector, particularly those related to Micro, Small and Medium Enterprises (MSME), have been particularly affected by the pandemic. Apart from the tourism sector, the MSME sector has also potential to be the key driver of Bali's economy (Balipost 2020a). It is important to put more focus on the development of the MSME sector so that Bali's economy will not only rely on tourism. The provincial government of Bali should also pay more attention to the digital program for MSME (Balipost 2020b). This is because the program can help MSME players to expand their businesses, thereby strengthening the MSME sector in Bali after the Covid-19 pandemic.
5.4 Impacts of the COVID-19 Pandemic: A Deep Contraction in the Economy of Bangka Belitung Islands

By: Eddy Jajang Jaya Atmaja Universitas Bangka Belitung

The COVID-19 pandemic has destroyed the global economy. This is no exception for the Bangka Belitung Islands (Babel), a province that is well-known for supplying white pepper and is the world's biggest producer of tin. In this province, the COVID-19 pandemic began on 30 March 2020. To prevent the further transmission of the coronavirus, the provincial government of Babel implemented the Work-From-Home and Study-From-Home policies in the same month. However, the impact of the COVID-19 pandemic had disrupted the economy from the very beginning. Babel's economy experienced sluggish growth in the last year. Despite having an economic growth of 1.35 percent in the first quarter of 2020, this figure is much smaller compared to Q1 2019 y-o-y, which was 2.81 percent. This is most evident in the production and expenditure sectors, which recorded significant contractions (Bank Indonesia 2020).

From the production side, the slow growth of Babel's economy was caused by the decline of the two major sectors that have the biggest contribution to the economy - mining and quarrying as well as manufacturing. As for expenditure, the sluggish growth was heavily influenced by the gross fixed capital formation (PMTB) and the export sector. The growth of both sectors declined in the first quarter of 2020. The export value of Bangka Belitung Islands in May 2020 was USD73.2 million. This figure had decreased by 52.49 percent compared to the same month in 2019. Similarly, export value of tin and non-tin commodity had also decreased by 54.67 percent and 42.51 percent respectively. Various components of Babel's GRDP experienced the deepest contraction y-o-y. This includes mining and quarrying (-1.41 percent), manufacturing (-1.05 percent), wholesale and retail trade and repair of motor vehicles and motorcycles (-1.49 percent), as well as transportation and storage (-1.13 percent). The remaining sectors contracted by less than 1 percent. Only the growth of the agriculture, forestry and fishing sector remained positive (1.05 percent). The province's overall GRDP saw a drastic drop from Rp13.99 trillion in Q1 2019 to Rp1.20 trillion in Q2 2020. Babel's export demand for the province's main commodities, such as tin and Crude Palm Oil, also declined steeply by 20.65 percent from 2019 to 2020. This is a result of COVID-19's disruptions to global export demands.

Inflation Before and Amid the Covid-19 Pandemic

The lowest pressure on inflation was derived from the group of transportation commodities with an inflation rate of -3.72 percent y-o-y. The highest inflationary pressure in the same quarter was in the education sector, which accounted for 7.59 percent y-o-y. This was influenced by the surge in spending on universities.

Food, beverage, and tobacco commodities also put a high pressure on inflation. This

was highly driven by the price of particular commodities such as onion, yellowtail and selar fish. Inflation pressure on garlic was due to the inadequate port capacity and the restrictions on operational activities at both seaports and airports due to the Covid-19 pandemic. The gap between supply and demand led to inflation in the fishing industry. Only fishermen with big ships could have more access to distant fishing areas. Meanwhile, fishermen in the province had a limited number of big ships, which hindered them from supplying more fishery products.

To overcome the inflationary pressure in Babel, the provincial government, along with the local stakeholders, have taken several inflation control measures discussed during high-level meetings. These measures include: (1) Shifting market operations online to aggregate local commodities; (2) Controlling prices via online and mobile market sampling; (3) Developing households' self-sufficiency of through *rumah pangan lestari* (Sustainable Food House); (4) Optimizing social assistance and the prosperous rice program, *Rastra*; (5) Developing the People's Business Loans Scheme (KUR) for SMEs in agriculture, livestock, and fisheries sector; (6) Regulating stock control of strategic food commodities (7) Initiating cross-regional cooperation on strategic commodities; and (8) Developing the distribution channel of goods, especially emergency relief staples.

Fortunately, the macroeconomic performance of the labor market in Babel province did not undergo drastic changes. This may be attributed to Babel's labour distribution, the majority (26.89 percent) of which is in agriculture, forestry, and fishery sectors. The unemployment rate is forecasted to decrease in the near future, once the effects of the interruptions to activities such as in the hospitality sector due to the Covid-19 pandemic, have been mitigated.

Gini Ratio and Poverty

In Q1 2020, the percentage of the people in Bangka Belitung who lived in poverty reached 4.53 percent, a 0.03 percent increase, compared to the figure in Q3 2019. The Gini ratio in Q1 2020 improved slightly from 0.269 in Q1 2019 to 0.262 in Q1 2020

Finance of the Bangka Belitung Provincial Government

Overall, there has been a reduction in the Regional Budget and Expenditure (APBD) of Bangka Belitung. The APBD ceiling of 2019 was Rp2.92 trillion, while in 2020 it only reached Rp2.49 trillion, which is a decrease of 14.79 percent. There are several components of the APBD with a reduced budget ceiling. They include operations expenditure, goods expenditure, grants expenditure, financial assistance expenditure, capital expenditure, unexpected expenditure as well as transfers. The decrease in APBD was in tandem with the reduction in budget ceiling. The data shows that the total income in 2019 was Rp9,555.08 billion, while in 2020 it only accounted for Rp8,345.73 billion, which is a decrease of 12.75 percent.

The Condition of MSMEs amid the Covid-19 Pandemic

The worst impact of the Covid-19 pandemic was felt by the export-based Micro, Small, and Medium Enterprises (MSMEs), as well as those in the craft and tourism sector. Many

MSMEs implemented several measures to survive in this situation. For instance, the cutting down of production, increase of sales online, reduction of the number of workers, and diversion of attention to the local market segments have enabled MSMEs to operate.

Apart from being known as the central producer of tin commodity, Babel is also widely known as the tourist destination in Indonesia. However, the government has reduced the number of flights from and to the province amid the pandemic. As a result, the tourism sector in the province has been severely affected, especially the hospitality industry. The number of air traffic passengers arriving at Bangka Belitung province in May 2020 was 420 passengers, a significant drop by 95.52 percent compared to the previous month. A similar trend can also be observed with sea traffic passengers. The number of passengers departing Babel in May 2020 was approximately 1,370 passengers, 12.40 percent lower than the previous month. In comparison with the same period in 2019, the number of departures in 2020 had decreased by 49.93 percent (BPS 2020).

Amid the COVID-19 pandemic, the provincial government of Babel has put great attention on the MSME sector. Apart from being the 'locomotive' of Babel's economic growth, the sector is also considered to have high potential as it employs approximately 84.67 percent of the total workers in the province.

In view of the impact of COVID-19 thus far, regional policy recommendations should include (1) identification and mapping of the Covid-19 impacted sectors; (2) reopening of the tourist destination; (3) investment acceleration; (4) budget absorption acceleration; (5) improvement of export capacity; (6) digital optimization to drive the economy; and (7) credit distribution acceleration for MSMEs with low interest rate.

5.5 Accelerating Banten's Economy: Towards Deindustrialization or Reindustrialization?

By: Hady Sutjipto Universitas Ageng Tirtyasa

Banten is strategically located at the gateway of both Sumatra and Java islands. The province has become the center for economic agglomeration as well as the main support for the capital city of Indonesia. There are four cities and four districts in the province, with the Northern regions being more economically dominant due to the concentration of manufacturing businesses. The areas of Cilegon City, Tangerang City, Serang District, and Tangerang District have become highly attractive as a destination for migration. In the South of Banten that includes the Lebak and Pandeglang Districts, agriculture and mining industries dominate the economic landscape.

Banten has grown rapidly since it was established as a province 20 years ago. Its GRDP reached Rp664.96 trillion in 2019 and its economic growth has always surpassed the national average. In 2019, the province recorded an economic growth of 5.53 percent, while the national growth was 5.02 percent. There are five main sectors that provided the largest contribution to Banten's GRDP in 2019. They are manufacturing (30.59 percent), wholesale and retail trade and repair of motor vehicles and motorcycles (12.85 percent), construction (11.05 percent), transportation and storage (10.88 percent), and real estate (7.91 percent) (BPS Banten 2020A). There are also 12 main industrial estates in Banten that specialize in petrochemical goods, cement, steel, footwear and food. The development of the manufacturing sector in Banten is supported by its trade center and the province's accessible transportation infrastructure. That includes the Merak seaport, the Merak-Jakarta toll road and the Soekarno-Hatta international airport.

Although it has been the leading contributor of Banten's GRDP, the manufacturing sector's contribution is notably decreasing. In 2000, at the beginning of its establishment as a province, the manufacturing sector's contribution to GRDP was 50.41 percent. Ten years later, it had decreased to 42.52 percent. In 2019, the sector's contribution had declined to 30.59 percent.

The global economic situation has changed because of the ongoing pandemic. This has affected Banten's economy. It experienced a contraction of 7.40 percent in Q2 2020 y-o-y. Due to the structure of the provincial economy, the manufacturing industry also saw the biggest contraction of 9.11 percent y-o-y. This was due to the decrease in demand for exported manufacturing products as a result of lockdown policies implemented by several major trading partner countries.

Does the manufacturing sector's decline in GRDP contribution signal a pending deindustrialization? It has become necessary for the province to question whether it will be able to decrease its reliance on the sector and what transformation strategies the local government should undertake.

Deindustrialization in Banten

Jalilian and Weiss (2000) and Rowthorn and Coutts (2004) have studied how the decline in the share of the manufacturing sector's contribution to GDP/GRDP will be followed by a corresponding decrease in the percentage of its workers in the workforce. Meanwhile, Islami and Hastiadi (2020) have also proven that deindustrialization has been happening in Indonesia, as evidenced by the decline in value-added products, trade performance and manufacturing sector productivity.

Banten has been regarded as one of the centers for both technology/capital-intensive and labor-intensive industries. There are several factors leading to the decreasing performance of the manufacturing sector. *First*, the rise of the minimum wage every year. This has caused many companies in Banten to relocate their factories to other regions with relatively lower minimum wage. The highest provincial minimum wage (UMP) in the province can be found in Cilegon City, Tangerang City, and Tangerang District, with an average of 2.4 million rupiah per month. *Second*, most of the manufacturing firms in Banten are oriented to the export market, such as chemical, metal, textile and footwear, as well as food and beverages. So, when the demand in the export destination countries (i.e. China and the US) decreases, it puts pressure on Banten's economy.

A decrease in the number of factories operating in Banten due to relocation efforts or the COVID-19 pandemic has resulted in various labor issues in the province. Banten's Labor Force Participation Rate was 64.48 percent in August 2020. This caused the open unemployment rate in Banten to reach 10.64 percent in August 2020, the second-highest in Indonesia (BPS Banten 2020).

The sluggish growth of the manufacturing sector will hinder Banten's economic growth if the province continues to depend on the sector. The central government has anticipated deindustrialization by implementing the Economic Package Policy reform in the manufacturing industry. For instance, they achieved this through the establishment of Law No. 3 of 2014 on Manufacturing Industry, followed by the first Economic Package Policy (PKE), which includes deregulation to improve manufacturing sector competitiveness. Additionally, the government also released the second PKE which aims to provide fast investment licensing services within 3 hours. For the fourth PKE, the government gives additional incentives in terms of ease of investment for 8 Special Economic Zones (KEK).

Reindustrialization Strategy in Banten

Banten's Industrial Development Plan (RPIP) 2020-2040 has identified 10 core industries and 5 priority industries. These include base metal and coal, food, upstream agriculture, textile, footwear and miscellaneous industry. Meanwhile, the Central Region of Industrial Growth (WPPI) is located in the Cilegon-Serang-Tangerang region. The development of downstream industry becomes necessary to increase value-addedness of industries located in Banten's WPPI. This should be followed by technological advancement in the production industry to achieve 'greener' and 'energy-efficient' use of factors of production.

The industrial sector in Banten has to focus more on the structure, supply of raw

materials, production sustainability, incentives and regulation, as well as the optimization of the use of domestic products. The import substitution policy is expected to stimulate the development of the manufacturing industry and to attract domestic investors.

The re-industrialization concept refers to an attempt to change and improve the industrialization process in a comprehensive and holistic manner. This is a strategic move to reposition the industrial sectors that have sustainable competitiveness. According to (Sugiharti, et al. 2020), the re-industrialization effort was made under the Master Plan for Acceleration and Expansion of Indonesian Economic Development (MP3EI) and implemented due to the deep contraction of global demand and price.

There are various policies and strategies that can be implemented to face the economic challenges faced by the Banten province and to revive the dominant contribution of the manufacturing sector. These include:

- First, the acceleration of infrastructure development that leverages on potential economic sectors and new industries. Examples of these include the enhancement of the Serang-Panimbang toll road project, the development of the Jakarta-Merak KM 86 interchain, as well as the construction of road connectivity in South Banten.
- Second, prioritising developments in the North Banten region that will strengthen the manufacturing sector (e.g., petrochemicals, steel, textiles and footwear) into a strategic and nationally competitive industry; and prioritising development of the agriculture and tourism sector as well as agro-industries, such as cold storage, manufacturing, packaging and distribution of the agricultural products in the South Banten region.
- Third, improving literacy on law and policy/regulation so that a conducive business climate is achieved in order to attract businesses that will help develop a competitive manufacturing sector.
- Fourth, establishing vocational/polytechnic/academy-based education in the industrial region, as a collaboration between the private sector and educational institutions, to improve human resource quality in the industrial sector.
- Fifth, providing support in areas of product guarantee, product standardisation, and digital system transformation from offline to online. This would enable SMEs to be a part of the national or global supply chains, thus strengthening the production scale and increasing the capacity of the Small and Medium Enterprises (SMEs).

5.6 Socio-economic Development and Challenges in Central Java Province

By: Firmansyah Universitas Diponegoro

Economic Condition of the Province

In 2020, the global COVID-19 pandemic affected the national and Central Java economy badly. The Central Java economy experienced significant pressure, with sluggish growth of 2.6 percent in Q1 2020 compared to the same quarter in 2019. Furthermore, the economic performance of Central Java in Q1 2020 was also lower compared to the national growth of 2.97 percent and also contracted by 0.90 percent compared to Q4 2019 (BPS 2020a). In the Q2 2020, the economy also experienced a contraction of 5.94 percent, compared to the same quarter in the previous year. The figure was relatively behind the national economic growth of -5.32 and contracted by 5.17 percent compared to Q1 2020 (BPS 2020). Following that, both Central Java and the national economy remained negative in Q3 2020, accounting for -3.93 percent and -3.49 percent respectively (BPS 2020b). Nevertheless, the Indonesian economy began to improve with a 4.66 percent growth in the economy from Q2 to Q3 2020 (BPS 2020c).

On the demand side, household expenditure contributed to more than 60 percent of Central Java's GRDP. The dominance of household expenditure put pressure on Central Java's economy from Q1 to Q3 2020. In Q1 2020, household expenditure experienced a positive growth of 3.46 percent, then dropped to -4.16 percent in Q2 2020 and grew slightly to -0.62 percent in Q3 2020. The aggregate investment also experienced a similar trend, which contributed to 30 percent of the economy. In Q2 and Q3 2020, investments in Central Java grew by -12.69 percent and -10.78 percent respectively, compared to the same periods 2019. All other components in the demand side in Q2 and Q3 also demonstrated a negative growth (BPS 2020d; BPS 2020e).

From a sectoral standpoint, the Covid-19 outbreak had put pressure on all sectors in Central Java, especially in Q2 2020. The manufacturing sector, which contributes to as much as 35.17 percent of Central Java GRDP, contracted by 4.4 percent compared to Q2 2019 and decreased by 7.1 percent in Q3 2020. The most affected sector in the province was the transportation and storage sector, where growth dropped to -62.95 percent and -37.68 percent in Q2 and Q3 2020 respectively. It is interesting that this sector experienced a severe decline despite its minimal contribution to Central Java's GRDP (1.26 percent in Q2 2020 and 2.15 percent in Q3 2020). On the other hand, the agriculture sector, the second biggest contributor to the economy, grew positively by 2.15 percent and 6.39 percent in Q2 and Q3 2020 respectively. A similar trend occurs in the information and communication sector which experienced positive growth of 18.79 percent in Q2 2020 and 18.96 percent in Q3 2020.

Social Condition and Development

Central Java's HDI score has been increasing: In 2019 and 2020, it improved from 71.71 and 71.87 respectively (BPS 2020f), marking the province's highest scores. Despite COVID-19, Central Java's HDI continues to improve because social conditions have been supported by several government programmes that have enhanced the quality of education, purchasing power, and life expectancy.

Life expectancy, a component of HDI, has improved consistently. In 2020 it reached 74.37 years, a 0.19 percent increase from 2019 (BPS 2020g). Other components, such as expected and mean years of schooling in Central Java, have continued to increase, even though there is still room for improvement as the school dropout rate in the province remains high. In 2020, the mean years of schooling for the population aged 25 and above was 7.69 years. This is similar to the expected years of schooling which also improved by 0.02 years from 2019, reaching 12.70 years in 2020 (BPS 2020). The main factor behind the school dropout rate in Central Java is family income. Various initiatives targeting challenges such as unemployment and poverty continued even during the pandemic. Expenditure per capita, as the third HDI component, which is calculated using purchasing power parity, experienced a decline in 2020. It decreased by Rp172,000 from 2019, to Rp10,930,000 in 2020 (BPS 2020h).

Since the agriculture sector absorbs the highest employment in Central Java, the Farmers Exchange Value (*Nilai Tukar Petani* or NTP), which is also an indicator for welfare measurement, increased from July to November 2020. Even though it experienced a contraction during January – June 2020, the figure grew from 100.77 in July 2020 to 102.9 in November 2020. However, the NTP figure in November 2020 remained lower compared to NTP in November 2014. At the end of 2020, the government increased the minimum wage rate to boost household expenditure. Despite experiencing an economic crisis caused by the pandemic, the policy is still being implemented according to the instruction of the Indonesian Ministry of Manpower (Kontan.co.id 2020).

Apart from a terrorism-related arrest and incidences of religious tolerances, there were no large-scale incidents that could have had a widespread impact on the Central Java province. (Kompas.com 2020a; Kompas.com 2020b). Other than these, in October 2020, there was a labor demonstration and the rejection of the Omnibus Law (Law on Job Creation) by university students in Semarang City and several other cities in Central Java (Detik.com 2020).

In response to the spread of the Covid-19 pandemic, the government has implemented tighter health measures. These have been implemented locally, along with locale-specific preventive measures to prevent the further spread of the pandemic. The provincial government also provided 82 quarantine places for positive patients who are required to serve self-isolation, made up of houses, government buildings, and hotels (Jatengprov.go.id 2020). The *Jogo Tonggo* programme, established according to the Governor Instruction of Central Java No. 1 of 2020 (Covid19.go.id 2020), aims to encourage citizens to take an active role in maintaining health protocols to minimize the spread of Covid-19 at the neighborhood-level. This programme has received an award from the Ministry of Administrative and Bureaucratic Reform of the Republic of

Indonesia as one of the top three most innovative provincial programmes. Moreover, the provincial government also formed the Covid-19 Response Acceleration Task Force at the provincial level, under the supervision of the Governor himself, involving experts from the health, sociology, psychology and economic fields. This task force has been responsible for creating and executing public health strategies efficiently.

MSME Development in 2020 and Investment Advancement in 2021

Despite the ongoing pandemic, the economic conditions in Central Java remains relatively stable due to the continuous increase in investment, decline in poverty, improvement in income equality achieved before the Covid-19 pandemic. Nevertheless, the provincial government's projected economic growth of 7 percent will not come easy as the pandemic continues.

An innovative economic strategy that aligns with the current health measures will be crucial to keep the economy stable during the pandemic. Consider the large-scale social distancing measures that were carried out in many parts of Indonesia, and also in Central Java province: they significantly impacted the MSME sector, which makes up a large part of the business in Central Java. This in turn increased local unemployment rates, decreased purchasing power and also elevated poverty rates.

A study conducted by the United Nations Industrial Development Organization (UNIDO) on the impact of COVID-19 on MSMEs in Indonesia emphasized how the sector has suffered the most. As many as 6 percent of MSMEs in the study estimated that half of their employees would not be re-hired. However, respondents from the study were also optimistic that growth and recovery could occur if the social distancing policy is removed. The study also shows that the main challenge faced by MSMEs in Indonesia is finance-related. This is similar to the survey by BPS (2020) in Central Java that showed how MSMEs were mostly hit by a drastic decline in revenue, with a decrease in consumer demand being the biggest obstacle.

The Indonesian government has prepared a COVID-19 response plan with a value of Rp695.2 trillion to aid particularly the vulnerable households and the economy's recovery (Firmansyah 2020). The provincial government has utilized these central government programs and maximized the strategic policy collaboration between central, provincial, and city/regency-level government. Several provincial government policies that aimed to support local MSMEs include market collaborations and the MSME Virtual Expo 2020. The provincial government also continues to implement a special credit scheme for MSMEs to enhance financial inclusion and access to finance in Central Java. Lastly, deregulation policy in form of simplification of business licensing is another policy that has been implemented by the provincial government.

The central government's "*Bali Baru*" tourism initiative that includes the Borobudur Temple in Central Java as one of the top ten tourist destinations, had to be postponed due to the COVID-19 outbreak. The tourism sector has experienced significant decline due to the social distancing measures that have greatly reduced tours and operations for tourist destinations. Some degree of re-opening was allowed in the second half of 2020 with tight health protocols still preventing a total return to normality. The economic recovery strategy of Central Java after the Covid-19 pandemic will revolve around investment and the development of infrastructure and industrial estates in 2021. According to DPMPTSP (2020) and Bappeda (2020), the strategies will include: (i) constructing toll roads connecting Semarang-Kendal, Semarang-Demak, Bawen-Jogja, and Solo-Jogja; (ii) beginning the construction of Kendal seaport, developing Tanjung Emas Semarang seaport, and optimizing the train network that connects main and secondary cities in the Northern, Southern, Western, and Central area of Central Java (iii) enhancing the capacity of existing power plants by 7,483 MW in Batang, Tanjung Jati, and Cilacap, all of which are under construction; (IV) constructing the gas pipeline between Cirebon (West Java), Semarang-Gresik (East Java) and Semarang (Central Java), along with the gas port in Batang; (V) developing the Special Economic Zone (SEZ) in Kendal and the new Industrial Estate (KI) in Brebes and Batang, optimizing other existing KIs.

5.7 The Impact of COVID-19 on Central Kalimantan's Economy

By: Fitria Husnatarina Universitas Palangka Raya

The slowdown of economic growth in a region during the pandemic can impact the welfare of the people, and it is no different for the Central Kalimantan Province. Some foreseeable effects include the increase in unemployment that cannot be absorbed by new jobs, unfavourable business conditions and the decrease in income that in turn lowers the purchasing power of the people.

During the COVID-19 pandemic, global economy grew by just 2.5 percent in 2020, lower than the predicted 3.0 percent. Indonesia's economy contracted by 4.2 to 4.6 percent in 2020, lower than the predicted growth of 5.0 to 5.4 percent. For Central Kalimantan, the economy grew by 5.6 to 6.0 percent. However, this was lower than the predicted 6.0 to 6.4 percent and also lower than 2019's growth of 6.16 percent.

The decline in private investment and the overall economic uncertainty during the pandemic can be expected to affect projects carried out by the private sector, especially those whose businesses are directly affected by the pandemic. This has been attributed to declining exports, especially that of coconut oil, and is set to deteriorate further to -9.40 percent compared to -6.60 percent in 2019.

Although crude palm oil (CPO) prices were relatively higher in 2020, it did not help the economy due to the slow demand from several countries that were affected by the closing of selected industries. Meanwhile, there was also low demand seen for agricultural products and coal. The implementation of health protocols to curb the spread of COVID-19 also affected Central Kalimantan's economic growth in 2020.

Both supply and demand sides were affected by the pandemic. From the demand side, we can see that all sectors contracted, as presented in Table 1.

Demand Component	Q1	Q2	
Household Consumption	5.11	-1.12	
LNPRT Consumption	2.63	-0.58	
Government Consumption	0.76	-1.29	
PMTB	4.10	-2.41	
Inventory Changes	11.94	1.58	
Export	-9.14	-13.38	
Import	-9.34	-11.85	
GRDP	2.95	-3.15	

Table 1. Economic Growth of Central Kalimantan (Demand), Q1 and Q2 2020 (%)

Source: Bank Indonesia (2020)

Table 2 shows that from the supply side, gas and mining contracted by 11.56 percent, accommodation and F&B contracted by 11.10 percent, construction contracted by 16.35 percent, services by 23.96 percent and other services by 24.24 percent.

Supply Component	Q1	Q2
Forestry, Agriculture and Fishery	1.16	3.25
Mining and Extraction	13.04	-11.56
Processing Industry	0.75	3.58
Electricity and Gas	17.50	18.33
Water, Waste Management and Recycling	7.85	7.17
Construction	10.39	16.25
Wholesale and Retail Trade; Repair of Cars and Motorcycles	3.31	2.34
Transportation and Storage	1.36	8.24
Accommodation, Food and Beverages	3.41	-11.10
Information and Communications	0.03	1.12
Finance and Administrative Services	9.85	10.53
Real Estate	2.58	-6.29
Business Services	-2.32	-23.96
Government Services	2.17	-0.71
Education	3.30	0.95
Health and Social Services	4.58	-4.14
Other Services	-2.46	-24.24
GRDP	2.95	-3.15

Table 2	Fconomic	Growth of	Central k	alimantan	(Supply)	O1 and	O2 2020 (%)
Table 2.	LCOHOIIIIC	GIOWIII OI	Central r	ammantan	(Suppiy),	QLanu	Q2 2020 (/0)

Source: Bank Indonesia (2020)

Similarly, another survey has indicated the slowdown of supplies from businesses' perspective (See Figure 1). Based on the survey, the sectors most affected are construction, transportation and logistics, accommodation and F&B, manufacturing, and services.



Figure 1. Six of the most affected business activities due to COVID-19 in Central Kalimantan

Source: Badan Pusat Statistik (2020)

The large-scale social restrictions (PSBB) in Central Kalimantan affected the income of hotels, restaurants, micro, small and medium enterprises (MSMEs). The transportation sector was also heavily affected as people were asked to stay home and refrain from travelling during the PSBB.

The social restrictions also decreased the public's demand for a number of products and services which further reduced the income of private sectors. Due to the decline in private sector's income, employers had to reduce operational costs particularly that of the workforce. This resulted in a number of layoffs or salary deductions. Nevertheless, an interesting result shows that more than 50 percent of operational activities carried out by private sectors were operating as usual. Only 10 percent of the surveyed business actually stopped operating as shown in Figure 2 below. Still, the loss of income is salient in the province (See Figure 3).

All of the above situations have led to the sharp decline in the province's economic growth. Various efforts have been made by the government, such as the reallocation or refocusing of government project budgets from previous physical and non-physical infrastructure plans. The reallocation efforts aim to minimize the impact of the Covid-19 pandemic on the regional economy and reduce the burden on people's lives during this pandemic.



Figure 2. Level of Business Operations during COVID-19 in Central Kalimantan Province

Source: Badan Pusat Statistik (2020)



Figure 3. Changes to Income during COVID-19 in Central Kalimantan Province

Source: Badan Pusat Statistik (2020)

The government will prioritize efforts to maintain economic growth for the welfare of the people, as detailed in the government regulation (PERPPU) No. 1 of 2020. It will regulate the immediate, massive and coordinated steps required to combat COVID-19. In addition, it will also serve as a legal umbrella for dealing with the long-term repercussions of the pandemic. Hopefully with several initiatives for economic acceleration in the Central Kalimantan Province, the economy will see an improvement in Q3 and Q4 2020 despite the much-expected lower growth compared to 2019.

5.8 Commentary on Socioeconomic Development of Special Region of Yogyakarta, 2018-2020

By: Taufiq Adiyanto and Muhammad Irfan Ardhani Universitas Gadjah Mada

Socioeconomic Condition in the Region

Over the period of 2018-2019, the Special Region of Yogyakarta (DIY) economy grew by 6.60 percent, higher than the national average growth of 5.02 percent. The highest growth was experienced by the construction sector, accounting for 14.39 percent y-o-y, followed by water supply and sanitation (8.90 percent) and accommodation sector (8.89 percent). The number of investments in the DIY in recent years also showed a positive growth. In 2019, the cumulative investment grew by 32.47 percent, with investment inflow of Rp26.6 billion. However, it was predicted that the amount of investment would fall in 2020 due to the Covid-19 pandemic.

DIY recorded total exports of USD403.7 million in value during 2019. This was a drop of USD21.0 million (4.94 percent) compared to 2018 figures. DIY's most exported commodity in 2019 based on the HS code was Apparel and Clothing Accessories (not Knitted or Crocheted product) (HS 62), accounting for 36 percent. Meanwhile, the DIY import in 2019 had reached USD95.4 million, declining by 6.60 million (6.47 percent) compared to 2018. The most imported commodity in 2019 was Artificial Filament (HS 54), accounting for USD 21.3 million (22.33 percent).

Infrastructure development in DIY has also been satisfactory. The Yogyakarta International Airport (YIA) project with a capacity of 8 million passengers per year achieved the target in December 2019. Several new toll roads such as Bawen-Yogyakarta, Solo-Yogyakarta and Yogyakarta-Cilacap will be constructed to support connectivity that is integrated with the YIA (TribunJateng.com 2019). The construction of these toll roads is expected to consider other infrastructure development such as the Jogja Outer Ring Road (JORR) and Southern Causeway (JJLS).

The DIY province has seen fair development in terms of social conditions. Its HDI score in 2019 was 79.99, which is categorized as "high" based on the UNDP standards and ranks second out of all provinces in Indonesia. Meanwhile, DIY's life expectancy in 2019 was 74.9 years. Additionally, the school life expectancy (population aged 7 years old) in the province was 15.6 years. These two indicators are the highest rank nationally. Despite these achievements, the DIY provincial government still encounters various challenges, such as poverty and unequal distribution of welfare.

Impact of the Pandemic on Socio-economic Conditions

The Covid-19 pandemic placed great pressure on DIY's economy in 2020. Its economy experienced negative growth of -0.17% and -6.75% y-o-y respectively (BPS DIY, 2020) in the first two consecutive quarters in 2020. The biggest shock on DIY's economy came from the steep decline on the demand side due to the disruption of tourism activities and

education (Tagar.id 2020). Despite having a negative trend, there were several sectors which managed to grow, such as agriculture, information and communication, as well as the health services.

Likewise, the number of investments in 2020 also declined compared to 2019. The investment realization for the first semester in 2020 was Rp1.5 billion. This was dominated by the transportation as well as storage and telecommunication sector, accounting for 1.23 billion rupiah (81.90 percent) (DPPM DIY 2020). The export and import performance of DIY in early 2020 signaled a deterioration that was caused by the declining demand from the foreign market. Notwithstanding, the trade account of DIY still reflects a surplus.

The Central Bureau of Statistics (BPS) of the DIY reports that there has been an increase in the poverty rate over the past year. The province's poverty rate in September 2019 was 11.44% and escalated to 12.28% in March 2020. Furthermore, there is still room for improvement for the DIY provincial government to reduce the inequality between urban and rural communities. According to the BPS data, the distribution of urban population expenditure, especially for non-food consumption, has always been higher than that of the rural population over the last decades.

Challenges for DI Yogyakarta's Economic Recovery

Organized by ACI, the "Inaugural Provincial Dialogue on the Economy and Development of DI Yogyakarta 2020" webinar was held in September 2020, involving various stakeholders such as the provincial government (Regional Development Planning/Bappeda DIY), business representatives (APINDO DIY) and academics (PSPD UGM). There was a general consensus amongst the speakers that in dealing with the impact of the pandemic, the DIY provincial government has been responsive in implementing the economic recovery strategy by balancing both health and economic needs. The provincial government shared how it has implemented preventive measures to curb the spread of Covid-19 through the implementation of health protocols and provision of hygiene/health facilities in tourist destinations (Tirto.id 2020). The province's strategy focuses on short-term economic recovery, such that it is not surprising that the DIY provincial government has been providing economic stimulus and advisories for businesses to return, based on the types of businesses and their differentiated risk of exposure to COVID-19.

Meanwhile, both the business and academic sectors have proposed solutions for the DIY economy to become more resilient in facing a crisis, such as the pandemic. An increase in the number of manufacturing firms is the key driver for economic recovery in the DIY. Apart from its ability to generate bigger value-added, the manufacturing industry is also regarded as capable of reaching wider markets, even at the global level. Additionally, there are considerable opportunities to boost industrialization in the DIY, given that it has adequate availability of land and high quality of education.

In the authors' opinion, the provincial government has taken a right economic recovery strategy for the DIY. For the short-term, the mitigation of economic disruption should be the main priority. The large-scale social distancing policy has indeed affected

the tourism and education sectors, which have been the main drivers of the economy. Without tourists and students, the consumption sector that has been the backbone of the DIY economy experienced a significant decline. To save the consumption sector, business players have to reach consumers by taking advantage of digital technology, especially the online marketplace, thereby reaching more consumers from various regions. This is essential because not all featured products in the DIY, such as culinary products like the *gudeg, mangut lele,* and *bakpia,* are durable. Thus, collaboration with the food manufacturing industry, such as the food packaging sector, is very crucial.

The solutions offered by both the business and academic sector to make the DIY economy more resilient in the future must be critically analyzed. Data shown by the business sector has proved that the manufacturing sector in the DIY has been resilient amid the pandemic. Nevertheless, structural change in the DIY economy will take a long time. The DIY has good infrastructure in the transportation, education and tourism sector, but they are less adaptive to the pandemic (Pemda DIY 2020). This has resulted in a sluggish transition towards manufacturing, which requires a large amount of investment. The pandemic could serve as the stepping stone to carry out diversification towards other sectors that are more resilient, especially sectors that are capable of conducting remote activities, such as the digital economy and the manufacture of tradable goods. The government should start improving the quality of digital infrastructure and human resources in the digital sector to meet investor demand.

5.9 Recent Socioeconomic Development and Competitiveness of DKI Jakarta During the COVID-19 Pandemic

By: Y.B. Kadarusman Universitas Prasetiya Mulya

Economic Condition and Development

From 2018 to Q1 2020, Jakarta's GRDP was relatively stable, ranging from 5.02-5.17 percent annually. In Q1 2020, Jakarta's economy grew by 5.06 percent, higher than the national average growth of 2.97 percent (BPS Jakarta 2020). In addition, the contribution of Jakarta's GRDP to the national GDP is still the highest. DKI Jakarta remains the locomotive of the economy and the barometer of Indonesia's economic growth.

From the industry point of view, Jakarta remains highly competitive for its business and financial services as well as an active automotive industry. The importance of the services sector and the automotive industry highlights how Jakarta relies on sectors that are high in value-added goods, in other words, those that require human resources of high quality, along with capital and technology. The biggest contributor to Jakarta's economy is the household consumption and the gross fixed capital formation (PMTB) (Bank Indonesia 2020). The high GRDP per capita and the significant role of Jakarta as a trade center make public consumption expenditure a major contributor in terms of expenditure. Apart from the consumption expenditure, Jakarta remains attractive to investors for its productivity. Jakarta has become the main destination for domestic investment in Indonesia. The plan to relocate the capital city to East Kalimantan has not reduced investment in Jakarta. Continuous infrastructure development and public services, as well as the guarantee of the availability of high quantity and quality of human resources, has helped Jakarta to stay competitive in attracting investment (Berita Jakarta 2020).

Social Condition and Development

Social conditions in Jakarta remain well-managed. In 2019, Jakarta's HDI score was 80.76, the highest in Indonesia, much higher than the national average of 71.92. This fact cannot be separated from the province's high expenditure per capita and high average years of schooling. The province's HDI achievements speak of the province's high quality of life and human resources.

However, inequality between income groups remains high in Jakarta. In September 2019, its Gini ratio reached 0.391, higher compared to the national average of 0.380. The relatively high figure of Jakarta's Gini ratio is not because of high poverty rate but due to the relatively high open unemployment rate. In August 2019, Jakarta's open unemployment rate reached 6.22 percent, higher compared to the national average of 5.28 percent. This high figure of open unemployment rate indicates that the economic

potential of the industry has not been optimized. The weaker performance in these indicators may be attributed to the labor demand in Jakarta (e.g. services sector) that requires more formal workers with high educational background and qualification. In 2019, the percentage of formal workers in Jakarta reached 68.45 percent, considerably higher than the national average of 44.28 percent.

Provincial Government Policies and Competitiveness After the Pandemic

The COVID-19 pandemic, which began in March 2020, is still ongoing and has had negative impacts on people's life and economic activities in Jakarta. Jakarta's economic growth in the second quarter of 2020 reached -8.22 percent y-o-y, significantly smaller than the national average growth of -5.32 percent y-o-y. This is due to the fact that Jakarta has seen the highest cases of COVID-19 because of the province's position as the center of services and economic activities, which requires intensive interaction between people.

The contraction experienced by Jakarta's economy in Q2 2020 has been deeper than the national average. It has given the provincial government the task of an urgent recovery, ideally, in a "V" shape trend. To do so, it is crucial to for the provincial government, business actors and academics to collaborate productively, to make significant improvements on both the demand and supply sides.

First, the social and economic shock brought on by COVID-19 needs to be controlled effectively. Various policies such as large-scale social restrictions (PSBB) and the transitional PSBB carried out by Jakarta provincial government have to be enforced continuously to reduce the spread of the Covid-19. Yet, this should be implemented while maintaining priority and essential economic activities that will ensure the availability of goods and services for the community. In addition, the law must be enforced for locals who violate PSBB & transitional PSBB policy, as compliance is key to reducing the number of COVID-19 cases.

Second, the implementation of policies and stimulus from both the demand and supply side are also necessary. From the demand side, the purchasing power has to be maintained continuously to encourage consumption. Social assistance that is given by the Jakarta provincial government becomes one of the efforts to sustain the purchasing power of the low-income and middle to low-income group that are negatively affected by the pandemic (i.e., being laid off). Policies and stimulus are also important to boost consumption of the middle to high income group and to accelerate the recovery of public consumption.

From the supply side, economic stimulus is required to lessen the costs of the business sector, including both Micro, Small, and Medium Enterprises (MSMEs) and the big firms. Tax relaxation/regional retribution and bank loans for the business sector are attempts to retain supply and production of goods without causing loss to businesses. Business licence and other efforts to ease businesses must be maintained and improved to attract investment and to increase production capacity. Despite suffering from the pandemic and budget difficulties, the Jakarta provincial government has decided to continue its development project conceived in 2019 to boost infrastructure and public services.

Lastly, it is important to manage the expectations of Jakarta's citizens amidst the

uncertainty of the pandemic. The Jakarta provincial government must signal optimism to consumers and businesses that the pandemic will soon be over, and that life and the economy will recover and return to pre-pandemic conditions. Such positive expectations will encourage people to continue their consumption, production and investment, which are not only needed during this pandemic, but also after the pandemic. Given this situation, it is hoped that Jakarta will be ready to return as the locomotive and barometer of the national economy.

In conclusion, the competitiveness of the DKI Jakarta province after the pandemic will greatly depend on its ability to recover the economy, income and quality of life of the community, as well as to maintain its quality and availability of human resources, infrastructure, and public services.

5.10 Economic Development in East Java, 2019-2020

By: Rudi Purwono Universitas Airlangga

In 2019, the economic growth of East Java was recorded at 5.52 percent y-o-y. It was higher than 2018, which was 5.50 percent y-o-y. East Java's economic growth was also higher than the national average in 2019, which was 5.02 percent y-o-y.

From 28 April to 25 May 2020, the provincial government of East Java decided to implement large-scale social restrictions (PSBB) in the Greater Surabaya area (Surabaya, Sidoarjo, and Gresik) to prevent the spread of COVID-19 in the province. As the consequence of the restrictions in movement, East Java's economic growth contracted from 3.02 percent in Q1 2020 to 5.90 percent in Q2 2020. With regards to expenditure, investment declined by 7.55 percent, following a contraction in household expenditure (4.79 percent), government spending (1.06 percent) and exports (0.27 percent).

In terms of production, East Java has three major sectors contributing to its GRDP. First is the manufacturing sector which contributed 30.05 percent of the total GRDP of East Java. In the second quarter of 2020, the performance of the manufacturing sector had decreased to 5.8 percent. Second is the trade sector with a share of 17.4 percent of East Java's GRDP. This sector also experienced a deep contraction to 12.25 percent due to the restriction on economic activities during the PSBB period. The third sector is the agriculture sector which contributed to 14.11 percent of East Java's GRDP. This sector performed quite well in the second quarter of 2020 and was able to achieve high growth of 7.46 percent as the period coincided with the harvest season. Other sectors that experienced a steep decline in their performance were accommodation and food service activities (-18.60 percent); transportation and storage (-27.66 percent); and other services (-35.54 percent). However, there were several sectors that performed quite well, showing significant growth despite the pandemic and therefore have the potential to be developed further. They include information and communication (10.40 percent); human health and social work activities (8.95 percent); real estate activities (4.30 percent); and education (3.57 percent).

Political Condition in East Java

To implement the development strategy plan, the provincial government of East Java is committed to building a government service that is transparent and accountable. This includes the implementation of CETTAR, which stands for Fast, Aware, Transparent, and Responsive (*Cepat, Tanggap, Transparan, dan Responsif*).

With an application-based approach, CETTAR is a platform for the community to voice their complaints. Here, they can also monitor the progress of responses made by the incumbent provincial government. According to Maxwell and Schwarz (2012), this is an innovation in the public services sector implemented by the Indonesian Government to build direct communication with the public and to deal with the bureaucratic issues that

are faced by society. Going forward, this application is expected to be used for assessing the efficacies of policies after their implementation.

The provincial government of East Java has obtained several recognitions from the central government. Recently, the provincial government received two awards for 'Regional Innovation in the New Normal' and for being 'Safe during COVID-19', both of which were awarded by the Ministry of Home Affairs. These two achievements were awarded in view of the province's management of the East Java Food Barn (*Lumbung Pangan Jatim*) and management of the tourism sector.

Policy coordination and integration is one of the development issues in Indonesia. The central government released the Presidential Regulation No. 80 of 2019 on Economic Development Acceleration in the *Gerbangkertosusila; Bromo-Tengger-Semeru;* and *Selingkar Wilis* and *Lintas Selatan* Region. Following the release, the East Java provincial government conducted a coordination meeting with all districts and cities. The Governor intended to set up the Provincial Project Management Office (PPMO), after which the PPMO will discuss the implementation of the central government's regulation with the district/city RPJMD (Regional Medium-Term Development Plan). Regardless of the COVID-19 pandemic, there has been a commitment made by the incumbent government to realize synergy, integration, and coordination of development strategies between the central and provincial governments. From the political perspective, the existence of this integration and coordination gives hope that both the central and provincial government agenda. This in turn increases the likelihood that the province's competitiveness and productivity will be enhanced.

East Java Provincial Government Policy

Currently, the biggest challenge for the East Java provincial government is the spread of COVID-19. The East Java province is a key contributor to the number of Covid-19 cases in Indonesia. The provincial government has implemented various measures to reduce the spread of the pandemic. For instance, approximately 2.384 trillion rupiah of East Java's local government budget (APBD) was utilized for COVID-19 management policies. This made-up 6.8 percent of the total APBD in 2020. The policies funded by it is crucial, especially to protect vulnerable groups in society, such as low-income groups and MSMEs, and for better management of public health. With regard to health management policy, the East Java provincial government has budgeted 925.6 billion rupiah - 39 percent of the total budget for COVID-19 management fund - to improve healthcare facilities for COVID-19 detection and treatment. There are two policies that address the economic aspects of the pandemic. The first policy aims to strengthen the social safety net in order to maintain the livelihood of groups who have been severely affected by the pandemic. The total budget spent on this policy is 995.04 billion rupiah or 42 percent of the total budget for the management of COVID-19 management. The second policy aims to protect the business sector. In this case, the total budget for the economic recovery is 464.15 billion rupiah or 19 percent of the total budget for the management of COVID-19.

5.11 Socio-economic Conditions in East Kalimantan Province During the COVID-19 Pandemic

By: Rian Hilmawan Universitas Mulawarman

The economic performance of East Kalimantan did not make significant progress in terms of cross-sectoral GRDP in 2020. The global spread of COVID-19 in almost all countries has affected the economy of this province. The data released by the Statistics Bureau of East Kalimantan (2020) indicated that the primary commodity-oriented sectors, such as coal, experienced a negative growth over the year. This is in line with the prediction of several studies, in which countries that rely on raw commodity exports is likely to be threatened by a weakening global demand that triggers commodity prices, especially that of minerals, to plunge (Laing 2020, Troster 2020).

The mining and quarrying sector, which is dominated by coal mining and contributes at least 40 percent of the real GRDP, declined significantly by 6.88 percent in Q2 2020 y-o-y. Indonesia's coal reference price had gradually decreased since August 2018 (Kementerian Energi dan Sumber Daya Mineral 2020). Furthermore, the pandemic worsened the coal business climate which triggered a large cutback in production.

Likewise, the manufacturing sector's performance decreased to -7.74 percent, compared to the similar quarter in the previous year. Nevertheless, the growth of this sector has always been negative. In other words, the manufacturing sector's performance continues to weaken consistently. In the transportation sector, especially those that support tourism-related activities are severely affected by the COVID-19 pandemic. These sectors experienced GRDP contraction by 16.91 percent and 13.43 percent respectively. Consumers are likely to change their consumption behavior due to the economic impact of the pandemic, making primary consumption a priority while reducing spending on secondary and tertiary consumption. This will have an impact on the entertainment sector and its supporting sectors, such as accommodation, to decline drastically.

During the pandemic, the trade sector also experienced a negative growth of -1.11 percent. The trade sector has been the backbone of the East Kalimantan economy. This is in line with the massive digital penetration which has the potential to open up opportunities for the trade sector to grow (in the form of reselling or drop shipping systems). Despite being the positive contributor to the economy, there is speculation that this province may not be the main target for both local or foreign markets, considering that East Kalimantan is not an industrial-based region.

Despite the economic growth contraction due to the Covid-19, there are several sectors that have benefitted from the pandemic. For instance, the health services sector grew by 9.03 percent in the second quarter of 2020 y-o-y. This is followed by the communication and information sector that also grew by 6.07 percent. The expansive growth of these sectors is due to the surge in demand for health-related products and services and

communication services during the Work-From-Home period.

Furthermore, we have discovered an interesting finding from the Gini ratio. The Gini ratio shows an inequality in household expenditure that decreased by -0.007 in March 2020. Why did the Gini ratio fall amidst the impending economic recession that is likely to occur in Indonesia or specifically in East Kalimantan? Our analysis predicts that a decrease in Gini ratio is not reflected by an increase in spending of the low-income group (the lowest 40 percent). Rather, it may be due to the high-income group (the highest 20 percent) experiencing a decrease in wealth due to the declining performance of the mining (coal) and the oil & gas-based manufacturing sector, resulting in reduced spending.

Challenges for East Kalimantan's Economic Recovery

This section will outline key takeaways from the "Inaugural Provincial Dialogue on the Economy and Development of East Kalimantan 2020" organized by ACI.

During the webinar, the Regional Development Agency (Bappeda) presented a comprehensive set of recent economic and social indicators amid the COVID-19 pandemic. There are several interesting facts to be noted. For instance, the investment target from 2015 to 2020 has yet to be achieved since 2016. However, the presentation did not mention factors causing the bottleneck that hindered investment realization in the previous years.

Although Bappeda's presentation mentioned the uncertain price of mining commodity that threatens the economic stability of East Kalimantan, it did not describe the short-term strategy related to economic stability if the global economic imbalance continues to exist due to the uncertainty regarding the duration of the pandemic. Several studies have predicted that there will be a shock in the global value chains during and after the pandemic. This is due to the fall in demand and/or the rise in the protectionist-nationalist policies to strengthen the domestic stability, such as the industrial sector sovereignty (Oldekop, et al. 2020). Based on the presentation, Bappeda will benefit from studying the impact of global value chains on the province's economic recovery.

Bappeda had also identified that infrastructure and human resources quality issues are the two major challenges that hinder structural transformation in East Kalimantan. Nevertheless, the types of human resource competencies required to accelerate transformation in the province could have been explored further.

In addition, it also stated that palm oil is a potential commodity for the East Kalimantan economy in the future. This argument is relevant as many studies have discussed the great potential of palm oil in Indonesia (Khatiwada, Palmén and Silveira 2020). The implementation of this plan has been realized through the palm oil down streaming, such as the Maloy Batuta Trans-Kalimantan Special Economic Zone (KEK) development project in East Kalimantan that functions as an industrialized area for palm oil-derived products. More research has yet to be conducted and is necessary to understand the spill-over effects in other economic sectors. For instance, it would be interesting to find out the strength of the linkage to the primary and tertiary sectors and how much labor potential is absorbed. There was also a lack of explanation on

sustainability and environmental impacts of the palm oil plantation, given the possibility of future expansion, from both domestic and international demand.

The province will benefit from more discussions about the non-natural resource sectors that have the potential to become the backbone of the provincial economy in the future. The government has focused on Derawan Island in Berau Regency but can afford to look to the economic impact in other areas. For example, the Berau Regency on the Northern part of East Kalimantan has the potential to bring key structural transformation on a macro-level, or bring spatial positive impacts to other cities and regencies, such as those located in the South of East Kalimantan.

The Central Bank of Indonesia's representative office for East Kalimantan (BI Kaltim) also presented comprehensive information on the development and prospect of the East Kalimantan economy. A key takeaway was that although East Kalimantan's economic growth was sluggish in the second quarter of 2020, the province managed to maintain a positive growth due to the manufacturing sector's performance, particularly the palm oil and fertilizer industry.

BI Kaltim also presented their findings about COVID-19's impact on Micro, Small, and Medium Enterprises (MSMEs) in East Kalimantan. It was found that the decline in sales and the difficulty in paying installments are the two dominant issues in the province. In our opinion, the issue of delayed payments should be further investigated, to see if it will have further impact on increasing the risk of Non-Performing Loans by lending banks and its relation to payment stability. Furthermore, innovations to improve digital payment systems - expected to be the leverage for MSME's expansion and to reduce the spread of the Covid-19 - will be a key form of support for non-mining economic activities. In the long-term, there are possibilities for the economic sector acceleration to become more efficient, especially for MSMEs in the non-oil and gas manufacturing industry, as well as trade and services sector. BI's plans to operationalize the natural resources-based sector's downstream process in East Kalimantan is also important for realizing the province's future economic transformation.

5.12 MSMEs and Ultra-Micro Enterprises Resilience Amid the COVID-19 Pandemic

By: Simon Sia Niha Universitas Katolik Widya Mandira

Before and during COVID-19, Micro, Small, and Medium Enterprises (MSMEs) played a significant role in driving economic growth and development. One of the crucial roles played by MSMEs is their ability to absorb a high number of the labor force and their contribution to the province GRDP. The regional office of Bank Indonesia in East Nusa Tenggara (NTT) shows that the GRDP growth of the province is fairly good, in which 99 percent of the GRDP contributors come from the businesses classified as MSMEs (Beritasatu.com, 2020). Given the vital role of MSME, the next immediate step for recovering economic growth is to aid both owners and managers of these MSMEs, so that the sector might grow and contribute to an increase in employment.

Data released by (BPS NTT 2020) demonstrates that the NTT's economy in the first quarter of 2020 grew by 2.84 percent, slightly smaller than the national economic growth of 2.97 percent in the same period. This data shows that even though they are facing the COVID-19 pandemic, MSMEs still play a key role in contributing to economic growth on a regional and national scale. Therefore, the focus of the provincial government should be directed towards this sector. The provincial government's attention in this matter can be in the form of capital and cooperation with various sectors, including the education sector (i.e. supervision and training of MSMEs). This is because the MSME sector has proven to be more resilient in facing different kinds of economic crisis.

Although the MSME sector still has unresolved unemployment issues amid the COVID-19 pandemic, it has made significant contributions in terms of both economic growth and employment. According to (BPS NTT 2020), the unemployment rate of NTT in February 2020 reached 2.80 percent, a slight decrease from the same period in the previous year (3.10 percent). The data also indicates that the total unemployment in February 2020 was 73,700 workers, which was 4,800 less than the number recorded in 2019. This number signifies the magnitude of job increments in the MSME sector, as a result of the COVID-19 pandemic.

Further, as shown by (BPS NTT 2020), the total labor force in NTT in February 2020 was 2.64 million people, an improvement by 100,000 people compared to the labor force in February 2019 (2.54 million people). Meanwhile, the total employment in February 2020 reached 2.56 million people, which also increased by 100,000 people compared to the same period in 2019. This increase can be attributed, in particular, to the ultramicro enterprises that have created more jobs during the pandemic. Yet, a majority of them are still neglected and excluded from various government programmes and assistance realised through the banking system because they do not have access to financial institutions and are not registered in the Coordinating Ministry for SMEs. Due to the lack of financial support, the prospects for these ultra-micro enterprises to scale up

are low.

Nevertheless, according to the (BPS 2020) data in February 2020, the number of informal workers who are classified in ultra-micro enterprises is 70 million people, equivalent to 56.5percent of the total labor force in Indonesia. This data shows that the role of both MSMEs and ultra-micro enterprises in the midst of the COVID-19 pandemic is essential because they have contributed to economic recovery as well as overcoming spikes in unemployment that occurred in the midst of pandemic. In general, although most of the ultra-micro enterprises received less assistance from the government, either in the form of venture capital or capacity building, they have enormous potential to boost economic growth, reduce poverty and increase employment.

It is common that in a pandemic, many large businesses may evade and divert their capital abroad in search of security, then return when the economy and political situation have recovered. It is interesting that in this difficult condition, such as in the COVID-19 pandemic, those who will survive are owners and managers of the MSMEs, including the ultra-micro enterprises. This includes street vendors, mobile vegetable sellers, fishmongers as well as other ultra-micro entrepreneurs. They are the ones who will, in the end, keep the economic wheels spinning.

Therefore, the central government has budgeted a grant assistance of 2.4 million rupiah for each enterprise through the "Presidential Assistance" program (Bisnis.com 2021). It is important to note that these are grants and not loans, specifically aimed at around 12 million micro and ultra-micro enterprises. To keep MSMEs alive, *PT. Jaminan Kredit Daerah (Jamkrida)* NTT targeted 20,000 MSMEs to be able to avail of credits in 2020. However, currently only 10,775 MSMEs, in the form of both companies and individuals, have availed of credits from *PT Jamkrida* NTT. Being acutely aware of the MSMEs' potential lack of access to the necessary banking infrastructure, the Revolving Fund Management Institution (*Lembaga Pengelola Dana Bergulir/LPDB*) focuses on protecting and connecting MSMEs and the banks (LPDB KUMKM n.d.). It is hoped that with this small amount of capital, they can grow their business and keep the economy going.

5.13 Covid-19 Pandemic and Its Impact on Socio-economic Conditions in North Maluku

By: Muhammad Asril Arilaha Universitas Khairun

Latest COVID-19 developments in North Maluku

In 2020, WHO declared COVID-19 as a global pandemic considering its effect on all aspects of life. The experience for North Maluku has not been an exception. The health of the provincial population and their socio-economic conditions were badly hit during this time. To respond to the pandemic, the provincial government issued several policies and initiatives such as social distancing, restriction of social activities, and working and schooling from home. It also introduced precautionary measures such as social safety nets, distribution of social assistance, and budget refocusing and reallocation. Despite these efforts, the low rate of public trust resulted in low rates of compliance and discipline amidst the large and small-scale social restrictions (PSBB and PSBK). Hoax and disinformation on social media in August 2020 also hampered efforts preventing the spread of the virus. COVID-19 patient data were overly aggregated, rendering the data unreliable for the formulation of effective public health strategies.

The rate of COVID-19's spread, however, slowed down in North Maluku from March to August 2020. At the time this paper is being written in the last quarter of 2020, the total cumulative cases in North Maluku reached 2,232 people with 1,946 recovered cases and 75 fatalities. Based on these, case fatality index is at 3.36 percent while recovery rate is 87.19 percent. It should be noted that this has not been a result of effective policies but due to the lack of testing capacities. The province only has access to testing laboratories in Makassar and Manado, such that it took at least two weeks to get the result of the PCR test. The PCR device from the National Disaster Management Board (BNPB) also only arrived in June 2020. The situation points to the need to upgrade the province's health superstructure and infrastructure to address the pandemic. Bureaucracy reform on public health is also required to ensure that public has timely access to health services.

COVID-19's Impact on the Local Economy

North Maluku's economy has been deteriorating. In 2019, growth was recorded to be 6.43 percent, which was lower than the 7.92 percent recorded in 2018. During the pandemic, economic growth contracted to 1.35 percent q-o-q in Q2 2020. This was due to the negative growth seen in almost all sectors. On the expenditure, gross fixed capital formation contracted to -15.18% in Q2 2020 and improved to -7.82% in the Q3 2020. Accommodation and F&B, mining and gas, and transportation and logistics saw the highest growths during the period. National policies related to the ban on the export of minerals and raw materials also hindered investments in the form of imports of capital goods for electricity development, smelter construction and cold storage in North Maluku. Capital spending was meant to support investment on mining, although it did

not have significant impact on the GDP.

Export saw an increase of 21.15 percent from 2019. In 2020, the cumulative value of North Maluku's export until Q3 reached USD565.4 million - a 0.50 percent increase compared to 2019's exports that was valued at USD562.6 million. Import value up to Q3 2020 reached USD1.22 billion - a 119.13 percent increase from the same period in 2019. Minerals and machineries contributed the most to the province's imports. From the supply side, agriculture, forestry, and fisheries remained the largest contributor to the GDP, although the economy has started to see a shift to mining and construction services.

Social Development in the Province

COVID-19 has presented multisector challenges in society. Income has decreased as people have not been able to work as much. This is especially so for the poor and vulnerable working in the informal sector. Household expenditure has also been impacted as people have not been able to leave the house to carry out purchases. Schoolchildren and university students who have had to learn from home have seen a stark decrease in the quality of their education. This is due to the lack of the necessary internet access and cellular signal. Notably, 115 out of 1199 villages do not even have cellular signals. Apart from their formal education, they are also losing out on the character-building aspect of education. The impact of disrupted learning can be expected to cause a decrease in school enrolment. Compounded with a struggling economy, many children in the province will be forced to help contribute to the family's income.

With regards to the health sector, the already ailing health infrastructure has worsened. Pregnant women have been turned away from community health clinics altogether because of the fear that they might get infected with COVID-19. Integrated-services clinics have been ill-prepared with the lack of medical personnel and the knowhow to handle positive COVID-19 cases.

In terms of employment, the pandemic has affected the labour market. 1,700 people are out of jobs, 87,800 people have seen a decrease in work hours and 6,400 people have been temporarily suspended (BPS 2020b). The informal sector has been the lifeline for these people who have taken up odd-jobs such as being Grab and motorcycle drivers, canteen vendors and manual labourers, just to name a few of such occupations.

According to BPS (2020a), poverty rates reached 4.53 percent in March 2020, which is an increase of 0.29 percentage points compared to September 2019. Rural poverty, however, did show a slight decrease of 0.29 percentage points from 7.99 percent in September 2019. The overall worsening of the poverty situation is due to the restrictions in production and delays in investments that have caused a change in market and consumption behaviors. The relocation of several mining companies should have provided job opportunities for locals, but in reality, it seems to have increased the number of migrant workers instead, decreasing the chances for locals to move above the poverty line.

5.14 Economic Structure and Social Condition of Papuan Society

By: Julius Ary Mollet Universitas Cenderawasih

Economic Structure

Papua's economic performance in Q2 2020 saw a positive growth of 4.5 percent, higher than 1.48 percent in Q1 2020. This positive growth can be attributed to the performance of the mining and construction sectors (Bank Indonesia 2020). The mining sector contributed significantly to Papua's GRDP due to the performance of PT Freeport Indonesia, where it reached a total production of 321 million pound (PT Freeport Indonesia 2020). On the other hand, due to the lockdown, several sectors also saw a contraction, namely transportation and logistics with growth recorded at -49.6 percent, accommodation and F&B at -24.43 percent and services at -13.5 percent (BPS Papua 2020a).

The improved performance of PT Freeport Indonesia was due to the improved production capacity as it aimed to reach the target of producing 120 tons of gold in 2020, higher than the 108.2 tons produced in the previous year (Ministry of Energy and Natural Resources 2020). In addition, infrastructure development of eleven sporting venues has also played a major part as Papua gears up for the National Sports Week (PON) in 2021 with total budget of Rp3.8 trillion (Papua Provincial Government 2020).

Total export of Papua in August 2020 reached USD196.04 million, an improvement of 81.6 percent compared to July with USD107.92 million, with the top destinations being China, Spain, Japan, Philippines, India and South Korea (BPS Papua 2020b). On September 2020, Papua's deflation was 0.22 percent (BPS Papua 2020c). Total employment reached 1.76 million in February 2020, lower than the previous year with 1.77 million. Unemployment rate reached 3.65 percent, higher than the 3.4 percent in 2019 (BPS Papua 2020d). Lastly, poverty rate reached 27.53 percent on March 2020, higher than 26.55 percent in 2019 (Bank Indonesia Papua 2020).

Poverty rate increased as the Government implemented lockdown policies, limiting social and economic activities. Due to this situation, 2082 people were fired in May 2020 in Jayapura City, Jayapura Regency, Keerom and Merauke (Antara 2020).

Social Condition

On average, virtual schooling is still hampered by the lack of internet access. Although virtual schooling in the bay area has been relatively well-implemented, it faces challenges in the mountainous areas that have limited connection to 2G networks. A study has also shown that some 73,000 university students have been unable to access virtual learning, affecting the quality of the graduates from Papuan universities (Cendrawasih Post 2020).

In the health sector, several areas have been labeled as the infectious "red" zone, such as Mimika, Merauke, Jayawiya, Jayapura Regency and Jayapura city. The main challenge

for public health is the lack awareness of health protocols amongst the people, leading to high rates of COVID-19 infections in the provinces. The provincial government has implemented quarantine in several places such as hospitals, hotels and public facilities. Some patients have fully-recovered but are now dealing with the psychological impacts of the quarantine.

Civil service recruitment rules have become an interesting topic in Papua. Based on the Law on Special Autonomy No. 21/2001, it is mandatory to recruit 80 percent of Papuan citizens and 20 percent of migrants. There have been a notable number of instances where this recruitment condition has not been met, and in such cases, it has raised public protests in areas such as Mamberamo Raya and in Keerom.

Local government elections will be conducted on 9 December 2020 for 11 regencies. During the candidates' campaigns, many people have ignored the health protocol, notably in Pegunungan Bintang and Yalimo. There were also incidences of horizontal conflicts much like the one that occurred in Intan Jaya in 2017. As separatist groups continue to prevail in the province, The Free Papuan Movement attacked several workers in Nduga and destroyed places such as PT Freeport Indonesia's facilities. Reconciliation involving all stakeholders is one way to address the conflict and to build peace in Papua.

5.15 Updates on Riau Islands' Economy during COVID-19

By: Dwi Kartikasari Politeknik Negeri Batam

On Riau Islands: Why is it weakening? What needs to improve?

According to ACI's yearly update, Riau Islands' (Kepri) competitiveness has been weakening consistently from the 9th rank in 2018 to 10th rank in 2019, and 11th rank in 2020. Bambang Hendrawan, the government representative during the inaugural provincial dialogue organized by ACI, analyses that this situation is due to the low score on government and public institution, where government's capacity ranks the lowest. Respondents' pessimism in this sector may be due to several factors, such as the absence of power in the provincial government. Governor Isdianto filed for leave only 2 months after his oath-taking, leaving Kepri to be led by an acting Governor, not the Governor and Vice Governor as it happens in other provinces. Another occasion of absence of power was also when Governor Nurdin was accused of corruption and Governor Sani passed away. Corruption also emerges as a serious issue as two of the latest four Governors were arrested for corruption. Furthermore, political dynasty is a long-standing challenge (Panca 2020) as Governor Isdianto is the brother of Governor Sani. Isdianto was never elected as the Governor by Kepri's people.

Nevertheless, despite the lack of strong governance, macroeconomic condition in this province is stable. The financial, business, and labour environments are conducive, with a competitive infrastructure and quality of life. These aspects are in turn supported by trade openness, productivity of primary industries and a competitive private sector that was derived from the implementation of free trade zone in Batam, Bintan, Karimun, and Tanjungpinang (BBKT). In addition, the Government has also implemented the special economic zone (SEZ) Galang Batang in Bintan. However, although the SEZ was introduced three years ago and employs 3,000 people, the impact towards the province's competitiveness remains limited.

What about the SEZ in Kepri? Is it fine?

Currently Kepri has one SEZ and is planning to propose other zones. Managing the SEZ in Galang Batang itself was quite challenging, due to the difficulties in the movement of skilled foreign labourers who had obtained licences but were facing rejection and demonstration from the local people. The demonstration happened in protest of 39 unlicensed foreign workers in Galang Batang SEZ on April 2020. To address this issue, the Head of Research and Development Agency of Kepri Nazaruddin promised to raise awareness about the needs and required skills of foreign talents that were lacking in this province. One scholar, Bambang Hendrawan, provided his views that one way to address this issue was by providing vocational education to the people.

Another challenge is logistics, where logistical cost of travelling from Batam to Hong Kong is twice higher than from Tanjung Priok (Jakarta) to Hong Kong, even though it is geographically closer to Hong Kong. The Government is expected to improve the efficiency of the port system, infrastructure and customs to reduce the logistical costs as this will affect the business environment. As an archipelagic province, Batam has high potential to develop its air and sea transportation.

Another challenge of the SEZ is the mismatch between incentives given and the needs of the SEZ (Sihaloho and Munda 2016). This problem was raised by the Head of APINDO, Rafki Rasyid, on an ACI webinar; he highlighted that tax holiday, for example, only applied to 18 selected sectors.

Will SEZ be effective in improving the competitiveness?

Given the current situation, it is evident that SEZ in Kepri has not delivered on its promises. Yet, the provincial government keeps proposing another SEZ such as the Nongsa Digital Park for creative industries, Batam Aero Teknik for airline maintenance, Tanjung Sauh for cargo and trans-shipment and Pulau Asam for natural gas. The first three SEZs will be based in Batam while the last will be based in Karimun.

Despite the lack of clear guidelines and regulation from the provincial government, it is evident that the private sector is running as usual. These professionals are one of the main strengths of Kepri. However, they will need to be supported by the government.

What's next? Do we have a chance after Covid-19?

Apart from domestic politics, bureaucracy efficiency and cross-sectoral coordination needs to be improved. Barriers of communication is one of the most common issues in the SEZ (Putri 2017) leading to miscommunication and mismanagement of regulations. The merging of Batam Authorities with Batam City Government is expected to address this issue.

At the time that this is being written, several Covid-19 clusters of infection have emerged in the biggest manufacturing industries in Kepri and will bring about negative repercussions. Prior to this, Covid-19 had affected tourism, construction, and services (Bank Indonesia 2020). The economic contraction leads to the increase of poor communities and Gini ratio, as well as a slowing down of the progress of infrastructure development. However, it also opens an opportunity for the government, private sector and education sector to maximize the use of technology to deliver their services.

5.16 Socio-economic Developments in Riau Province, 2020

By: Sri Indarti and Yelly Zamaya Universitas Riau

In 2020, the world struggled with the COVID-19 pandemic that affected all aspects of life, not least on economic terms. In August 2020, many nations - the European Union, United States, Hong Kong, South Korea and Singapore - reported recessions in their economy. The process of economic recovery after the reported recession will need time and the appropriate strategies. As this paper is being written, Indonesia has also been significantly impacted, but has been able to sustain its economy with the government's efforts and cooperation with relevant economic stakeholders. The government has tried to balance COVID-19 measures with continued economic activities, in the hope that the Indonesian economy will not fall into an irreparable recession. Before the pandemic, Indonesia's economy was predicted to show an economic growth of 5.3 percent in 2020. However, in current conditions, economic growth has been corrected to -0.4 to 2.3 percent (Hendartyo 2020).

Riau Province's Economic Growth in 2020

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The COVID-19 pandemic has forced countries and locales to rethink their development plans (Muhyiddin 2020). The Riau province has followed suit and revised the macroeconomic indicators that have been previously targeted under the province's RPJMD. The revisions are summarized in Table 1 below:

Macroeconomic	Past Years' Performance		2020		2021		
Indicator	2017	2018	2019	Projected	Adjusted	Projected	Adjusted
Economic	2.00	2.27	2.94	2.01	1 42 2 14	2.02	1.80 2.40
Growth (%)	2.66	2.37	2.84	2.81	1.43 – 2.14	2.93	1.80 - 2.49
Inflation (%)	4.20	2.45	2.36	2.37	2.70 - 2.90	2.29	2.60 - 2.80
Human							
Development	71.79	72.44	73.00	72.97	73.09 - 73.50	73.13	73.49 - 73.89
Index							
Open	6.22	6 20	5.07	6.02	6 20 6 02	5.06	578 684
Unemployment (%)	0.22	0.20	5.97	0.02	0.20 - 0.92	5.90	5.78 - 0.84
Poverty (%)	7.41	7.21	6.90	6.75	6.94 - 6.95	6.62	6.77 – 6.79
Gini Coefficient	0.325	0.327	0.334	0.296	0.339 - 0.340	0.284	0.338 - 0.340

Table 1: Adjusted Macro	peconomic Indicators in	Riau Province's RPJMD
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Source: Bappeda Riau Province (2020)

Policy Directions for the Local Economy

In view of the pandemic, every province in Indonesia has had to make policy and budget adjustments. Riau's provincial government follows the Government Work Plan (RKP), that is formulated based on national policies and the RPJMD targets. Currently, all local economic policies and strategies have been focused on restoring economic conditions and achieving an adjusted growth of 1.80-2.49 percent in 2021. The strategy covers the industrial, agriculture, tourism, infrastructure and human resources sectors (Bappeda Riau Province 2020).

The strategies that have been included are: 1) Growing the provincial industries, which would involve partnerships between small and medium enterprises and focusing on downstream processes that will value add to the products from the agriculture, forestry and fishery industries. It will also look to recover the productivity levels achieved by the Centre for Small and Medium Industries (SIKIM), advancing priority industries and aid for MSMEs; 2) Developing the agriculture sector by addressing food security and increasing labour-intensive activities in the relevant industries; 3) Developing the tourism sector by organizing tourism events that would attract foreign and domestic tourists, enhancing tourists destinations in the province and entering key cooperative terms with other industry players that may include players in the creative economy (mainly MSMEs); 4) Managing the local infrastructure and environment to ensure a smooth economic recovery; 5) Investing in the province's human resources by enhancing basic education, providing access to health services and reducing the overall unemployment rate (Bappeda Riau Province 2020).

The National Development Planning Agency (Bappenas) is currently reviewing eight post-Covid-19 economic recovery strategies that can be taken up and harmonised together with the said provincial recovery strategies. These eight aspects will likely target the acceleration of investment drives in order to mobilize the economy, strategise what might be the most optimal recovery for local industry trade and deepen the financial infrastructure of the province, the regional tourism cooperations and the social development programmes (Widyasanti 2020).

Analysing Riau's Performance in ACI's Competitiveness Index

In ACI's 2020 Competitiveness rankings, Riau experienced a deterioration in the Financial, Businesses and Manpower Conditions Ranking, dropping from 11^{th} position in 2019 to 14^{th} this year. Considering the four sub-environments included in ACI's framework for this environment, the deterioration may be explained by the lack of management in the province's use of natural resources, the need for human resource development and better infrastructure development.

In the Inaugural Provincial Dialogue organized by ACI in 2020, the business representative noted that the province's most affected industry are the local hotels. Although this is true, the larger tourism sector should not be forgotten. The province now needs an effective policy that will serve to maintain public health regulations but at the same time allow some degree of operations for tourism businesses, such as restricted operation hours and guidelines on the capacities of touristic destinations that will comply

with COVID-19 safety measures.

At this point in time, MSMEs are keeping the nation afloat. MSMEs that have been badly affected by COVID-19 can benefit from credit restructuring and interest subsidies (Setiawan 2020). Policies for MSMEs currently benefit only those who have met the criteria determined by banks. Many small businesses that have not been incorporated into the banking system are losing out. For this matter, it is necessary for additional policies that will facilitate the process for such micro-businesses. One possible solution is direct cash assistance for capital, based on MSMEs' profile. The government should also work on its marketing with the help of players from the private sector.

Ultimately, the successes of the government's COVID-19 strategies can be measured by the increase in people's purchasing power, industries' production capacity, the uptake of information technology and an economic environment that champions the local, including raw materials but also human resources.
5.17 Economic Recovery of South Kalimantan Province amid the COVID-19 Pandemic

By: Arief Budiman Universitas Lambung Mangkurat

South Kalimantan, a province that is bounded by Central Kalimantan and East Kalimantan, has a population of 4.3 million people. The main industry in South Kalimantan is agriculture and it counts heavily on natural resources, particularly black gold or coal commodities. Moreover, the province also relies on palm oil as an export commodity to increase the Regional Original Income (PAD). Previously, South Kalimantan was dependent on natural rubber products as the main source of income that can drive the economy. However, the global price of natural rubber products has not improved, which resulted in the natural rubber industry becoming less attractive.

It is not surprising that the economy of South Kalimantan has been unsatisfactory because the prices of leading commodities of South Kalimantan, such as coal and palm oil, have not recovered in the past few years. The economic growth of South Kalimantan in Q2 of 2020 contracted by 2.61 percent y-o-y, which was lower than the growth in the previous quarter of 4.18 percent y-o-y (Bank Indonesia 2020). It can be predicted that this was caused by the decline in global demand and the COVID-19 pandemic. For instance, demand for coal from China had decreased because of the import restriction imposed by the Chinese government. This is in tandem with the Indian government who implemented lockdown due to the COVID-19, which also reduced the coal demand for their industry. This was exacerbated by the decline in coal commodity prices, which fell from USD66.63/ton in Q1 of 2020 to USD59.95/ton in Q2 of 2020 (BPS 2020). Therefore, it is the time for the provincial government not to rely on the natural resources sector as an economic driver. The provincial government of South Kalimantan should look for renewable sources of income, such as the tourism sector, which might thrive after the COVID-19 pandemic.

The COVID-19 pandemic that has hit almost all the countries in the world, including Indonesia, has placed a big stress on the economy. An increase in layoffs and a decline in purchasing power, which led to an economic slowdown, also occurred in South Kalimantan. Banjarmasin, the capital city of South Kalimantan, along with several other regencies and Banjarbaru city, implemented Large Scale Social Distancing (PSBB) that had a significant effect on the economy. It caused household consumption in South Kalimantan to decline. During the PSBB period, the majority of business activities, retail trade centers and mass gathering activities were restricted to limit mobility and interaction, so that the spread of COVID-19 infections can be minimized.

Rising unemployment caused by the pandemic occurs mostly in the services sector such as hospitality and transportation. It has brought about a decrease in purchasing power and has restricted general activities, making it hard to look for a job in South Kalimantan. Furthermore, the temporary suspension of flight services from Banjarmasin to other big cities was one of the factors causing the economic slowdown in South Kalimantan. The province had just constructed an international airport, inaugurated by President Joko Widodo, to accommodate the surge in the number of passengers that had been increasing from year to year. However, the Syamsudin Noor International Airport has not had a chance to be operated optimally in order to serve as one of the key drivers of the South Kalimantan economy.

The Micro, Small, and Medium Enterprises (MSMEs) in South Kalimantan were also affected by the consequences of COVID-19. Many of the MSME players went bankrupt or shut down their businesses due to the absence of consumer demand. This particularly happened in the hand-craft industry, such as *purun* or other hand-craft products. These MSME players did not receive orders for souvenirs or seminar kits, which were usually requested by private or government institutions, due to the PSBB. Many of them discontinued their production and were forced to lay off their employees. Likewise, MSMEs in the food and beverages sector also faced a similar situation. They were not able to sell their food products as the majority of consumers stayed at home (worked from home). Many people chose to cook at home instead of buying food from restaurants or stalls. This certainly affected the business continuity of the MSMEs.

The central government has released several policies to support the MSMEs, such as the electricity bill assistance, offering discount on tariffs for VA users to lighten cost burdens and to increase purchasing power. In addition, the central government relaxed the terms for installment payments for MSMEs affected by COVID-19. This definitely can help MSMEs to survive during this difficult situation. Unfortunately, this stimulus was not mirrored by the South Kalimantan provincial government who should have implemented policies to support MSMEs in South Kalimantan, for example, by giving assistance in terms of tax relief at the provincial level.

The provincial government of South Kalimantan only relies on the National Economic Recovery (PEN) policies established by the central government, thus making the South Kalimantan provincial government seem less in favor of MSMEs. Challenges faced by MSMEs becomes more complicated due to the impact of the COVID-19 pandemic. For instance, the place for marketing becomes limited due to the PSBB and work-from-home. Because of this, they require assistance for marketing training in order to take advantage of online platforms, so that they have access to more customers via bigger e-marketplaces, such as Bukalapak or Tokopedia that are based in Indonesia. This is where the government's role is important to support the MSMEs in South Kalimantan, in terms of providing training or provision of knowledge. By becoming more technologically savvy, MSMEs, particularly those in the culinary sector, will be able to survive in the long-run as their products can then be delivered between islands because of online marketing. If the South Kalimantan government can implement this in collaboration with relevant agencies, MSMEs in the province may find the help that they need so much to survive.

5.18 Perspectives on Recent Development of South Sulawesi Province Before and During the COVID-19 Pandemic

By: Muhammad Sabranjamil Alhaqqi and Abdul Rahman Kadir Universitas Hasanuddin

Before the first case of COVID-19 in South Sulawesi, in March 2020, the province had started the year with a relatively good economic performance. In Q1 2020, the provincial economy grew by 3.07 percent y-o-y (BPS 2020c). However, this figure did signal an economic slowdown when compared to Q1 2019's economic growth of 6.58 percent. Compared to Q4 2019, the economy also shrunk by 2.91 percent (BPS 2020c), indicating that the onset of COVID-19 did have notable impact. Several business sectors that experienced a slowdown in Q1 2020 are manufacturing, wholesale and retail trade as well as repair and automotive (BPS 2020c). In contrast, there was a significant growth of 9.42 percent and 7.21 percent experienced by the health and education services sector respectively. These changes are a result of the changes in society's behaviour during the early phases of COVID-19 in South Sulawesi.

The provincial economy declined further in Q2 2020 due to the major impact of COVID-19, contracting by 3.87 percent y-o-y and 0.41 percent q-o-q (BPS 2020d). These trends were also seen on a national level, where national economic growth was recorded to be -5.32 percent y-o-y in Q2 2020.

Inflation rates remained quite steady at 2.3 percent y-o-y in Q2 2020 (Bank Indonesia, 2020) and stayed below the actual and national inflation target of 3 ± 1 percent (Bank Indonesia, 2020). However, the inflation stability in Q2 2020 needs to be examined further to understand how it was brought about by the decline in household consumption during the implementation of Large-Scale Social Distancing Measures (PSBB).

South Sulawesi's poverty rate increased from 8.69 percent in March 2019 to 8.72 percent in March 2020 – at both city and village levels (BPS 2020a). Specifically, the percentage of low-income households in cities and villages in March 2020 was 4.49 percent and 11.97 percent respectively (BPS 2020d). Overall, there was a surge in all poverty indicators in 2020 compared to March 2019. Despite the surges, however, the province's poverty rate remained below the national average of 9.78 percent in March 2020.

In terms of labour, there was a rise in the unemployment rate in South Sulawesi at the beginning of 2020. The province's labour force participation rate decreased from 65.29 percent in February 2019 to 64.53 percent in February 2020 (BPS 2020a). Following the decline, there was an increase in open unemployment within the same period, from 5.42 percent in 2019 to 6.07 percent in 2020 (BPS 2020e).

The province's HDI score had been steadily improving from 2010-2019 (BPS 2020f). In 2019, the HDI of South Sulawesi reached 71, a 0.76-point increase compared to the

previous year (BPS 2020a). At the regency and city-level, Makassar City achieved the highest HDI, classified as "very high", while Jeneponto Regency scored the lowest HDI, with a "moderate" status. Majority of the regencies fell between the range of moderate and very high, with 16 out of 24 regencies/cities attaining "moderate" HDI status.

The Impact of COVID-19 Measures

The government of South Sulawesi implemented the first PSBB from 24 April-7 May 2020 for Makassar City and from 4-17 May 2020 for Gowa City to minimize the spread of COVID-19 infections. Makassar's PSBB was further extended to 22 May 2020. The PSBB significantly affected the province's GRDP in Q2 2020, particularly in the transportation and storage sector that declined by 51.15 percent y-o-y, as well as the accommodation and business activities sectors that decreased by 30.91 percent and 27.34 percent y-o-y respectively (BPS 2020d). On the other hand, there were also sectors that in grew Q2 2020 y-o-y, such as information and communication (10.48 percent), electricity and gas (7.91 percent), as well as agriculture, forestry and fishing sector (2.54 percent). These growths indicate locals' adjustment to the new normal and a change in economic activities, as the PSBB made it necessary to improve services, utilities, food products, as well as internet and communication.

Tourism was the most affected sector in Q2 2020, due to the significant decline in the number of foreign tourists at the beginning of February 2020. During Q2 2020 itself, there were no foreign tourists at all due to the PSBB in the capital city of South Sulawesi and also that of other cities (BPS 2020d). This also explains the negative growth in the accommodation sector. Addressing these impacts, the provincial government implemented the 'Covid-19 Tourism' programme, a collaboration between the provincial government, the accommodation services sector and the Covid-19 task force. It placed individuals who tested positive for COVID-19, especially those who were asymptomatic, in assigned hotels (Sindonews 2020). This initiative helped to maintain hotel occupancy rates and encouraged patients to undergo self-isolation without completely burdening the hospitals. The program deserves credit for minimizing the drawbacks of PSBB, where self-isolation had to be done at home, which in turn made it less effective due to lack of social compliance and the resources needed to check on positive cases (BPS 2020b).

In terms of combatting COVID-19, the PSBB was effective especially in Makassar City, where the growth of cases declined from 71.29 percent to 29.7 percent (Detiknews 2020). However, the socio-economic trade-offs for the province were significant and social policies could not be implemented effectively due to the overall lack of social safety nets prior to the pandemic and inadequate coordination among provincial agencies (Celebes 2020, Detiknews 2020). The spread of COVID-19 particularly hampered businesses that failed to adapt to the New Normal and were badly affected by bouts of PSBB and Work-From-Home arrangements. Considering how the structure of the South Sulawesi economy has been relatively concentrated in Makassar City, the provincial government will need to be more considerate when implementing PSBB or other lockdown measures of varying degrees, as several sectors such as manufacturing, accommodation, as well as food and beverages, are concentrated around COVID-19 hotspots. In view of the

situation, the provincial government decided to stop reimplementing PSBB and instead, focus on running the COVID-19 Tourism and the 3T (Testing, tracing and treatment) programme to reduce the spread of the pandemic in Q3 2020. The government should seek other win-win solutions for the manufacturing sector and other affected sectors as well.

5.19 Commentary on Recent Economic Development in West Kalimantan Province, 2020

By: Sri Kurniawati Universitas Tanjungpura

The Economic Condition of the Province

The economic growth of West Kalimantan province in the last three years has been sluggish. In 2017, the economic growth was 5.17 percent, then declined in 5.07 percent in 2018 and in 5.00 percent in 2019 (BPS Kalimantan Barat 2020). The West Kalimantan economy experienced a decline since the first quarter of 2018, caused by lower government expenditure and restrained household consumption due to falling demand after the New Year.

The province's targeted economic growth was 5.35 percent (Bappeda Kalimantan Barat 2020), an optimistic goal for the provincial economy during the COVID-19 pandemic. It grew by 2.49 percent y-o-y in the first quarter of 2020, slower compared to the economic growth in the previous period (Bank Indonesia 2020). This was caused by the decline in consumption, including both household and government spending. With pandemic-induced mobility restrictions on the economic activities, the discontinuation of business operations, especially for restaurants and cafes, and layoffs of employees, caused a decline in both income and purchasing power of consumers, particularly in the last quarter in 2020. In view of COVID-19, the government also had to reallocate local budgets to combat the pandemic. This led to a sub-optimal realization of local government spending in Q1 2020 that contributed to the province's declining economic performance.

The province's Local Government Revenue and Expenditure Budget (APBD) in Q1 2020 was 17.49 percent, smaller than Q1 2019 (22.59 percent) and Q2 2019 (53.62 percent). In Q1 2020, the realization of APBD was 7.08 percent, lower than Q1 2019 (7.31 percent). These declines can be attributed to the reduction in spending for almost all expenditure components of the APBD.

West Kalimantan's economic performance was supported by Foreign Direct Investment (FDI) and Domestic Direct Investment (DDI) which reached Rp10.88 trillion in Q1 2020 (Pemprov Kalimantan Barat, 2020). The province's DDI and FDI realization amounted to Rp4.54 trillion in Q2 2020. The DDI realization in Q1 2020 reached Rp3.28 trillion, a 27.36 percent improvement from Q4 2019. This can be explained by an increase in the tertiary sector, namely the Kijing Port development project in Mempawah Regency. This improvement was sector-distinct and was not found in the primary sector which experienced a decline, especially in the food crops, plantations and livestock industries. There was a parallel decrease in this sector's DDI from Rp1.54 trillion in Q1 2019 to Rp562.11 billion in Q1 2020.

FDI realisation in Q1 2020 reached USD213.09 million, an increase of 15.10 percent from Q2 2019 (USD172.99 million). This improvement was a result of the Crude Palm

Oil (CPO) manufacturing plant in Mempawah Regency. The lower FDI in Q2 2019 was caused by a decline in the secondary sector - electricity, gas and water businesses - from USD37.01 million in Q2 2018 to USD7.62 million in Q2 2019. Decreased investment in the West Kalimantan Steam-electric Power Station (PLTU) in Bengkayang has been a contributing factor.

West Kalimantan's economy is also driven by exports and imports. However, since Q2 2018, rubber and aluminium exports have been decreasing due to falling demand from several countries. In Q2 2019, export values declined further, especially for aluminium, bauxite, and CPO.

Social Conditions and Development in West Kalimantan

West Kalimantan's HDI improved from 2018 to 67.65 in 2019. Over the next three years, the RPJMD will focus on increasing the provincial HDI as it is currently below the national average.

In March 2020, the overall poverty rate was recorded to be 7.17 percent. Specifically, it was 4.69 percent for the urban population and 8.50 percent for the rural population. The food and non-food commodities determining the poverty threshold can also be explained by the drivers of an increased inflation rate, recorded at 2.08 percent in the period of January to June 2020 (Tribunnews 2020). They are: food and beverages/restaurant (1.52 percent); food, beverages, and tobacco (0.84 percent); recreation, sports, and culture (0.25 percent); real estate, water, electricity, and household fuel (0.25 percent); information, communication, and financial services (0.18 percent); health (0.16 percent); and equipment, tools and household regular maintenance sectors (0.14 percent).

The province's open unemployment rate in February 2020 had begun to increase from the previous year (4.45 percent) to 4.99 percent (BPS Kalimantan Barat 2020). The declining job situation was also evident in the province's decreasing labour participation rate that was 71.47 percent in February 2019 and became 70.28 percent in February 2020.

Key takeaways from The Inaugural Provincial Dialogue on the Economy and Development in West Kalimantan 2020

West Kalimantan has been classified in the moderate category under ACI's Competitiveness rankings with several notable improvements in the last three years (ACI NUS 2020). These may be attributed to the geographical potential of the province, considering how it has five regencies along its borders and is located on an island that intersects three countries.

In the provincial webinar organized by ACI in 2020, the head of Bappeda, Ir. Yuslinda MM, noted that the province is still facing several issues, such as high poverty rates and low HDI figure (ranked 29th out of 34 provinces). Various policies will be focused on addressing these issues, especially economic shocks induced by the COVID-19 pandemic. Such development policies will be harmonized with regional and national priorities as well.

The academic representative, Dr. Meiran Panggabean from the Faculty of Economics and Business at Universitas Tanjungpura, noted that a key policy that will be realised by the end of 2020 is the completion of the Kijing smelter and port that has a budget of Rp14.45 trillion. The port will be the largest international standard port on Kalimantan Island. Its existence will be integrated with the Mempawah Special Economic Zone (KEK) and is expected to increase West Kalimantan's economic growth through its multiplier effects.

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Appendix 2

List of Indicators for the 2020 Competitiveness Index and Ranking for Indonesian Provinces and Regions

No.	Indicator	Unit	Source	
1	MACROECONOMIC S	TABILITY		
1.1	Regional Economic Vib	orancy		
1.1.01	Gross Regional	Rupiah (Million),	BPS, Statistics Indonesia	
	Domestic Product	2010 Constant		
	(GRDP)	Prices		
1.1.02	Gross Regional	Rupiah (Million),	BPS, Statistics Indonesia	
	Domestic Product	2010 Constant		
	(GRDP), Non-oil &	Prices		
	gas			
1.1.03	GRDP Growth	Percentage Change	BPS, Statistics Indonesia	
		Per Annum, 2010		
		Constant Prices		
1.1.04	GRDP Per Capita	Rupiah (Million),	BPS, Statistics Indonesia,	
		2010 Constant	GRDP of Provinces in	
		Prices	Indonesia by Industrial Origin	
1.1.05	GRDP Per Capita,	Rupiah (Million),	BPS, Statistics Indonesia,	
	Non-oil & gas	2010 Constant	GRDP of Provinces in	
		Prices	Indonesia by Industrial Origin	
1.1.06	GRDP of Primary	Rupiah (Million),	BPS, Statistics Indonesia,	
	Industry	2010 Constant	GRDP of Provinces in	
		Prices	Indonesia by Industrial Origin	
1.1.07	GRDP of Secondary	Rupiah (Million),	BPS, Statistics Indonesia,	
	Industry	2010 Constant	GRDP of Provinces in	
		Prices	Indonesia by Industrial Origin	
1.1.08	GRDP of Tertiary	Rupiah (Million),	BPS, Statistics Indonesia,	
	Industry	2010 Constant	GRDP of Provinces in	
		Prices	Indonesia by Industrial Origin	

No.	Indicator	Unit	Source
1.1.09	Gross Domestic Fixed	Rupiah (Million),	BPS, Statistics Indonesia,
	Capital Formation	2010 Constant	GRDP of Provinces in
		Prices	Indonesia by Expenditure
1.1.10	Inflation (R)	Percentage Change	BPS, Statistics Indonesia,
		Per Annum	Statistical Yearbook of Indonesia
1.2	Openness to Trade and	Services	
1.2.01	Exports	Rupiah (Million),	Ministry of Trade,
		2010 Constant	PUSDATIN,
		Prices	
1.2.02	Exports, Non-oil & gas	Rupiah (Million),	Ministry of Trade,
		2010 Constant	PUSDATIN,
		Prices	
1.2.03	Imports	Rupiah (Million),	Ministry of Trade,
		2010 Constant	PUSDATIN,
		Prices	
1.2.04	Imports, Non-oil & gas	Rupiah (Million),	Ministry of Trade,
		2010 Constant	PUSDATIN,
		Prices	
1.2.05	Openness to Trade	Ratio	(indicators 1.1.01, 1.2.01,
			1.2.03)
1.3	Attractiveness To Foreig	n Investors	
1.3.01	Foreign Direct	Rupiah (Million),	BPS, Statistics Indonesia,
	Investment, Last 3	2010 Constant	Statistical Yearbook of Indonesia
	Year Average	Prices	
1.3.02	Domestic Direct	Rupiah (Million),	BPS, Statistics Indonesia,
	Investment, Last 3	2010 Constant	Statistical Yearbook of Indonesia
	Year Average	Prices	
1 2 02	Investment Promotion	Index	ACI Survey, 2019
1.3.03	and Management		
	Based on responses by b	usiness owners, acade	mics, and government
	officials in each province	e, to the following surv	rey questions:
	1. The Provincial Govern	nment has a clear strate	egy to attract investors;
	2. The Provincial Govern	nment has done well to	o market the province to
	investors;		
	3. The Provincial Govern	nment channels money	v for appropriate
	development purposes/ projects.		

No.	Indicator	Unit	Source
2	GOVERNMENT AND	INSTITUTIONAL SE	TTING
2.1	Government Policies	s and Fiscal	
	Sustainability	I	
2.1.01	Government Revenue	Rupiah	BPS, Statistics Indonesia,
		(Thousand), 2010	Financial Statistics of Province
0.1.00		Constant Prices	Government
2.1.02	Tax Revenue	Kupian	BPS, Statistics Indonesia,
		(Thousand), 2010	Financial Statistics of Province
0.1.00	T D	Constant Prices	Government
2.1.03	Tax Revenue per	Ratio	(indicators 2.1.01, 2.1.02)
0104	Government Revenue	D 1	
2.1.04	Government		BPS, Statistics Indonesia,
	Expenditure	(Inousand), 2010	Financial Statistics of Province
0 1 05	E: 1D 1	Constant Prices	Government
2.1.05	Fiscal Balance		(indicators 2.1.01, 2.1.04)
		(Inousand), 2010	
		Constant Prices	
2.2	Institutions Covernand	a and Laadarshin	
2.2	Lack of Corruption	Index	ACI Survey 2019
2.2.01	Luck of Colluption	Index	1 C1 Sul Vey, 2017
	Based on responses by b	usiness owners and ac	ademics in each
	province, to the followin	g survey questions:	
	1. Corruption is not a se	vere problem:	
	2. Corruption is not a co	mmon practice among	firms in the province;
	3. Public contracts are av	warded based on merit	tocracy (not favoritism or
	kickbacks).		
2.2.02	Public Reports of	Number of Reports	Corruption Eradication
	Corruption per	per Rp100,000,000	Commission, Indonesia,
	Government (R)	Government	Annual Report
		Expenditure	
2.2.03	Government Auditor	Classification	Financial Audit Board of the
	Opinion		Republic of Indonesia,
			Summary of Semester Audit
			Results (IHPS)

No.	Indicator	Unit	Source	
2204	Government	Index	ACI Survey, 2019	
2.2.04	Inclusiveness			
	Based on responses by business owners, academics, and government			
	officials in each province, to the following survey questions:			
	1. In this province, the g	overnment makes sign	ificant efforts to	
	communicate policies ar	nd regulations to busin	esses and citizens;	
	2. In this province, the g	overnment carefully co	onsiders the voice of	
	businesses and citizens i	n making their policy	decisions;	
	3. In this province, gove	rnment officials have h	igh sense of	
	accountability.			
2205	Government Progress	Index	ACI Survey, 2019	
2.2.00	and Expectation			
	Based on responses by b	usiness owners and ac	ademics in each	
	province, to the followin	g survey questions:		
	1. The current government is committed to improve its performance;			
	2. The government in this province has improved its performance in the			
	past 3 years; 3. The government in this province will improve its			
	performance in the next 3 years.			
2.2.06	Government Efficiency	Index	ACI Survey, 2019	
	Basad on responses by b	usiness owners and as	adomics in each	
	province to the following survey questions:			
	1 Cost of dealing with permits and other public documents or matters			
	is not hurdensome.			
	2 Time to deal with permits and other public documents or matters is			
	not burdensome;	I I I I I I I I I I I I I I I I I I I		
	3. Administrative requir	ement to deal with per	mits and other public	
	documents or matters is	not burdensome.		
2207	Coordination of Local	Index	ACI Survey, 2019	
2.2.07	Governments			
	Based on responses by b	usiness owners, acade	mics, and government	
	officials in each province	e, to the following surv	ey questions:	
	1. Laws and regulations	across different local g	overnments in the	
	province are harmonized	d;		
	2. There is good collabor	ration and coordination	n among local	
	governments within the province.			

No.	Indicator	Unit	Source
22.08	Provincial Governing	Index	ACI Survey, 2019
2.2.00	Capacity		
	Based on responses by business owners, academics, and government		
	officials in each province, to the following survey question:		
	1. There is good coordin	ation among governm	ent agencies at the
	provincial level.		
2.2.09	Government	Index	Ministry of Home Affairs,
	Performance		Provincial Government
	Evaluation		Implementation Report (LPPD)
2.2.10	Quality of Democratic	Index	BPS, Statistics Indonesia,
	Institutions		Indonesia's Democracy Index
2.3	Competition, Regulato	ry Standards and	
	Rule of Laws		
2 3 01	Regulatory	Index	ACI Survey, 2019
2.0.01	Governance		
	Based on responses by b	usiness owners, acade	mics, and government
	officials in each province, to the following survey questions:		
	1. In this province, the government has made regulations pertaining to		
	 my business clearer (more transparent); 2. In this province, the government has made regulations pertaining to my businesses less burdensome; 3. My business receives fair treatment from regulators in this province. 		
2.3.02	Rule of Law	Index	ACI Survey, 2019
	Based on responses by business owners and academics in each		
	province, to the followin	g survey questions:	
	1. In the province, contra	acts are respected and	enforced;
	2. In the province, judici	ary bodies are indeper	ndent and fair;
	3. In the province, judici	ary services are readily	y accessible;
	4. In this province, the g	overnment regulators	follow closely the laws
	and regulations in their	enforcement.	
2.3.03	Vibrancy of	Index	ACI Survey, 2019
	Competition and		
	Collaboration		
	Based on responses by b	usiness owners and ac	ademics in each
	province, to the followin	g survey questions:	
	1. Competition among f	rms is tair;	
	2. My firm has close rela	tionship with local su	ppliers;
	3. Demand by customer	s in the province is stro	ong and sophisticated;
	4. Firms in the province	has good platforms an	ad incentives for
	collaboration.		

In general, survey responses range from 1 = "strongly disagree" to 9 = "strongly agree".

Source: Asia Competitiveness Institute.

No.	Indicator	Unit	Source	
2 2 04	Security	Index	ACI Survey, 2019	
2.3.04	Based on responses by business owners and academics in each			
	province, to the following survey questions:			
	1. The political condition	n (including ethnic and	l religious relations) in	
	the province is stable;			
	2. Control of crimes and violence in the province is effective;			
	3. Businesses and citizens don't have to worry about their property			
	rights			
2.3.05	Crime rate (R)	Rate Per 100,000	BPS, Statistics Indonesia,	
		population	Statistical Yearbook of Indonesia	
2.3.06	Crime Clearance Rate	Percentage	BPS, Statistics Indonesia,	
			Percentage of Crime Clearance	
			Rate	
2.3.07	Civil Liberty	Index	BPS, Statistics Indonesia,	
			Indonesia's Democracy Index	

3	FINANCIAL, BUSINESSES AND MANPOWER CONDITIONS		
3.1	Financial Deepening	and Business	
	Efficiency		
3.1.01	Bank Deposits	Rupiah (Million),	Bank of Indonesia, Indonesia
		2010 Constant	Banking Statistics
		Prices	
3.1.02	Bank Loans	Rupiah (Million),	Bank of Indonesia, Indonesia
		2010 Constant	Banking Statistics
		Prices	
3.1.03	Non-Performing	Rupiah (Million),	Bank of Indonesia, Indonesia
	Loans (R)	2010 Constant	Banking Statistics
		Prices	
3.1.04	Non-Performing	Ratio	(indicators 3.1.02, 3.1.03)
	Loans per Total Bank		
	Loans (R)		
3.1.05	Number of Bank	Number	Bank of Indonesia, Indonesia
	Branches or Offices		Banking Statistics
3.1.06	Population per	Ratio	(indicators 3.1.05, 4.1.01)
	Number of Bank		
	Branches or Offices		
	(R)		

No.	Indicator	Unit	Source	
3107	Ease of Dealing With	Index	ACI Survey, 2019	
5.1.07	Banks			
	Based on responses by business owners in each province, to the following survey questions:1. Administrative requirement to borrow money from banks is not			
	burdensome;			
	2. Interest rate for borroy	wing money from banl	ks is not burdensome;	
	3. Banks are generally responsive to your firm's needs.			
3108	Firms' Performance	Index	ACI Survey, 2019	
5.1.00	Based on responses by b	usiness owners in each	n province, to the	
	following survey question	ons:		
	1. This year (2013) your	firm's revenue is estim	nated to;	
	2. Next year (2014) your	firm's revenue is expe	ected to;	
	3. This year (2013) your	firm's employment fig	jure is estimated to;	
	4. Next year (2014) your	firm's employment fig	gure is expected to;	
	And based on responses	by academics in each	province, to the following	
	survey question:			
	1. Firms in this province	generally perform ver	y well compared to firms	
	in other provinces			
3109	Firms' Human	Index	ACI Survey, 2019	
0.1.07	Resource Capacity			
	Based on responses by b	usiness owners, acade	mics and government	
	officials in each province, to the following survey questions:			
	1. The skills of your emp	oloyees are adequate fo	or their job requirements;	
	2. Your firm has invested	d substantially in empl	oyee training programs	
	the past 3 years;			
	3. Your firm will invest s	substantially in employ	ee training programs the	
	next 3 years.		1	
3110	Firms' Equipment	Index	ACI Survey, 2019	
0.1.10	Capacity			
	Based on responses by b	usiness owners in each	n province, to the	
	following survey question	ons:		
	1. The technology and e	quipment used for you	r firm's main production	
	process is up-to-date;			
	2. Your firm is using the	technology and equip	ment to its optimal	
	capacity;			
	3. Your firm will invest i	n upgrading its equipr	nent over the next five	
	years.			

No.	Indicator	Unit	Source
2 1 11	Firms' Application of	Index	ACI Survey, 2019
5.1.11	IT		
	Based on responses by business owners in each province, to the		
	following questions:		
	1. Your firm has invested substantially in IT in the past three years;		
	2. Your firm will invest s	ignificantly in IT over	the next three years;
	3. The status of your con	npany's internet conne	ection;
	4. The status of your con	npany's website.	
3.1.12	Firms' Innovation	Index	ACI Survey, 2019
0.1.12	Based on responses by b	usiness owners in each	n province, to the
	following survey question	ons:	
	1. Your firm has introdu	ced many new produc	ts or product features
	over the past three years	.,,	
	2. Your firm has applied	many innovative meth	nods in production
	process over the past thr	ee years;	
	3. Your firm spends subs	stantially on Research a	and Development.
	And based on responses	by academics and gov	rernment officials in each
	province, to the followin	g survey question:	
	1. Firms in this province are generally very innovative, compared to		
2.2	those in other provinces	· ·	
3.2	Labour Market Flexibili	lty	PDC Chatiatian Indonesia
3.2.01	Labour Force	Number	DP5, Statistics Indonesia,
2 2 02	Labour Fores	Datio	(in disatary 2.2.01, 4.1.01)
3.2.02	Labour Force	Katio	(indicators 3.2.01, 4.1.01)
2 2 02	Farticipation Kate	Niccoshare	PDC Chatiatian Indonesia
5.2.05	Employment	Number	Statistical Varihook of Indonesia,
2.2.04	Encelarum an tân	Niccoshara	BBC Statistica Index esis
3.2.04	Employment in	Number	DP5, Statistics Indonesia,
2.2.05	Frimary industry	Niccoshara	Statistical Tearbook of Indonesia
3.2.05	Employment in	Number	BPS, Statistics Indonesia,
	Secondary industry		Statistical Yearbook of Indonesia
3206	Employmont in	Numbor	BPS Statistics Indonesia
5.2.00	Tortiary Industry	INUITIDEI	Statistical Vearbook of Indonesia
3207	Linemployment Rate	Percentago	(indicator 3.2.01) & BPS
5.2.07	(R)	reiteinage	Statistics Indonesia Statistical
			Varbok of Indonesia
3208	Minimum Wago Por	Runiah Current	BPS Statistics Indonesia
5.2.00	Month (P)	Market Prizes	Statistical Varbook of Indonesia
		warket r rices	Simisticul teuroook of Indonesia

Note: (R) = Reversed Indicator. In general, survey responses range from 1 = "strongly disagree" to 9 = "strongly agree". Source: Asia Competitiveness Institute.

No.	Indicator	Unit	Source		
2200	Labour Relations	Survey Data	ACI Survey, 2019		
3.2.09	Based on responses by business owners, academics and government				
	officials in each province, to the following survey questions:				
	1. It is not difficult to recruit skilled production workers;				
	2. It is not difficult to rec	ruit skilled professiona	als and management staff;		
	3. Workers generally hav	ve good discipline and	motivated to work;		
	4. There is no tension be	tween labour unions a	nd management.		
	And based on responses by academics and government officials in each				
	province, to the followin	g survey questions:			
	1. Workers generally hav	ve good discipline and	motivated to work;		
	2. There is no tension be	tween labour unions a	nd management;		
	3. Firms in this province	generally treat their w	orkers fairly, compared		
	to firms in other provinces.				
3.3	Productivity Performan	ce			
3.3.01	Overall Labour	Rupiah (Million)	(indicators 1.1.01, 3.2.03)		
	Productivity	per person-year,			
		2010 Constant			
		Prices			
3.3.02	Overall Labour	Rupiah (Million)	(indicators 1.1.02, 3.2.03)		
	Productivity, Non-oil	per person-year,			
	& gas	2010 Constant			
		Prices			
3.3.03	Primary Industry	Rupiah (Million)	(indicators 1.1.06, 3.2.04)		
	Productivity	per person-year,			
		2010 Constant			
2.2.04		Prices			
3.3.04	Secondary Industry	Rupiah (Million)	(indicators 1.1.07, 3.2.05)		
	Productivity	per person-year,			
		2010 Constant			
2205	Tractice and the design of the	Prices	(in line terms 1, 1, 00, 2, 2, 0, ()		
3.3.05	Droductivity	Rupian (Million)	(indicators 1.1.08, 3.2.06)		
	rroductivity	per person-year,			
		2010 Constant			
		Prices			

No.	Indicator	Unit	Source
4	QUALITY OF LIFE AN	D INFRASTRUCTUR	E DEVELOPMENT
4.1	Physical Infrastructure		
4.1.01	Population	Persons	BPS, Statistics Indonesia,
			Statistical Yearbook of Indonesia
4.1.02	Population Growth	Percentage Change	BPS, Statistics Indonesia,
		Per Annum	Statistical Yearbook of Indonesia
4.1.03	Urban Population	Percentage of Total	ACI's estimates based on
		Population	data by INDO-DAPOER,
			World Bank Group
4.1.04	Length of Paved Roads	Kilometres	BPS, Statistics Indonesia,
			Land Transportation Statistics
4.1.05	Registered Motor	Ratio	(indicator 4.1.04) & BPS,
	Vehicles per		Statistics Indonesia, Statistical
	Kilometres of Paved		Yearbook of Indonesia
	Road (R)		
4.1.06	Cargo at Inter-island	Tons	BPS, Statistics Indonesia,
	Seaport		Statistical Yearbook of Indonesia
4.1.07	Cargo at International	Tons	BPS, Statistics Indonesia,
	Seaport		Statistical Yearbook of Indonesia
4.1.08	Passengers of	Number	BPS, Statistics Indonesia, Air
	Domestic Air Traffic		Transportation Statistics
4.1.09	Passengers of	Number	BPS, Statistics Indonesia, Air
	International Air		Transportation Statistics
	Traffic		
4.1.10	Households with Pipe	Percentage of	BPS, Statistics Indonesia,
	Water Services	Households	Statistical Yearbook of Indonesia
4.1.11	Households with State	Percentage of	BPS, Statistics Indonesia,
	Electricity Services	Households	Statistical Yearbook of Indonesia
4112	Ease of Acquiring	Index	ACI Survey, 2019
1.1.12	Property		
	Based on responses by b	usiness owners, acade	mics and government
	officials in each province	e, to the following surv	vey questions:
	1. It is not difficult to acc	quire land for opening	or expanding business in
	the province;		
	2. The cost of renting lar	nd/ office space in the	province is not
	burdensome.		

No.	Indicator	Unit	Source	
4 1 1 2	Quality of Physical	Index	ACI Survey, 2019	
4.1.13	Infrastructure			
	Based on responses by business owners and academics in each			
	province, to the following survey questions:			
	1. Quality of Power supply;			
	2. Quality of Water supply;			
	3. Quality of Roads;			
	4. Quality of sea port	.;		
	5. Quality of airports	.;		
	6. Quality of public trans	sportation		
4.2	Technological Infrastru	cture		
4.2.01	Telephone Ownership	Percentage of	BPS, Statistics Indonesia,	
		Households	Welfare Statistics	
4.2.02	Handphone	Percentage of	BPS, Statistics Indonesia,	
	Ownership	Households	Welfare Statistics	
4.2.03	Desktop Computer	Percentage of	BPS, Statistics Indonesia,	
	Ownership	Households	Welfare Statistics	
4.2.04	Internet Access at	Percentage of	BPS, Statistics Indonesia,	
	Home	Population Above 5	Welfare Statistics	
		Years Old		
4.2.05	Internet Access at	Percentage of	BPS, Statistics Indonesia,	
	Office	Population Above 5	Welfare Statistics	
		Years Old		
4.2.06	Internet Access at	Percentage of	BPS, Statistics Indonesia,	
	School	Population Above 5	Welfare Statistics	
		Years Old		
4.2.07	Internet Access in	Percentage of	BPS, Statistics Indonesia,	
	Handphone	Population Above 5	Welfare Statistics	
		Years Old		
4.2.08	Quality of	Index	ACI Survey, 2019	
	Technological			
	Infrastructure			
	Based on responses by b	usiness owners and ac	ademics in each	
	province, to the followin	g survey questions:		
	1. Quality of mobile pho	ne coverage;		
	2. Access / coverage of in	nternet;		
	3. Speed of internet access			

No.	Indicator	Unit	Source
4.3	Standard of Living, Education and Social		
	Stability		
4.3.01	Adult Illiteracy Rate	Percentage of Total	BPS, Statistics Indonesia,
	(R)	Population	Trends of Selected
			Socio-Economic Indicators of
			Indonesia
4.3.02	Mean Years of	Years	BPS, Statistics Indonesia,
	Schooling		Trends of Selected
			Socio-Economic Indicators of
			Indonesia
4.3.03	Net School Enrolment	Percentage	BPS, Statistics Indonesia,
	Rate (Primary)		Trends of Selected
			Socio-Economic Indicators of
			Indonesia
4.3.04	Net School Enrolment	Percentage	BPS, Statistics Indonesia,
	Rate (Junior High)		Trends of Selected
			Socio-Economic Indicators of
			Indonesia
4.3.05	Net School Enrolment	Percentage	BPS, Statistics Indonesia,
	Rate (Senior High)		Trends of Selected
			Socio-Economic Indicators of
			Indonesia
4.3.06	Student-Teacher Ratio	Ratio	BPS, Statistics Indonesia,
	(Primary) (R)		Statistical Yearbook of Indonesia
4.3.07	Student-Teacher Ratio	Ratio	BPS, Statistics Indonesia,
	(Junior High) (R)		Statistical Yearbook of Indonesia
4.3.08	Student-Teacher Ratio	Ratio	BPS, Statistics Indonesia,
	(Senior High) (R)		Statistical Yearbook of Indonesia
4.3.09	Human Development	Index	BPS, Statistics Indonesia,
	Index		Human Development Index
4.3.10	Life Expectancy at	Years	BPS, Statistics Indonesia,
	Birth		Human Development Index
4.3.11	Gini Ratio (R)	Ratio	BPS, Statistics Indonesia,
			Statistical Yearbook of Indonesia
4.3.12	Population per Health	Ratio	Ministry of Health
	Facility (R)		
4.3.13	Population per	Ratio	Ministry of Health
	Medical Worker (R)		
4.3.14	Environmental	Index	Ministry of Environment,
	Quality Index		Environmental Quality Index

Note: (R) = Reversed Indicator. In general, survey responses range from 1 = "strongly disagree" to 9 = "strongly agree". Source: Asia Competitiveness Institute.

No.	Indicator	Unit	Source		
4.3.15	Fatalities due to	Number	BPS, Statistics Indonesia,		
	Natural Disaster (R)		Statistical Yearbook of Indonesia		
4.2.16	Quality of Education	Index	Source: ACI Survey, 2019		
	Based on responses by business owners, academics and government				
	officials in each province, to the following survey questions:				
	1. Quality of secondary / vocational education in this province is very				
	good compared to other provinces;				
	2. Quality of higher education / university in the province is very good				
	compared to other provinces.				
4017	Quality of Healthcare	Index	Source: ACI Survey, 2019		
4.2.17	Based on responses by business owners, academics and government				
	officials in each province, to the following survey questions: 1. Quality of basic health services in this province is very good				
	compared to other provinces;				
	2. Quality of general health services in this province is very good				
	compared to other provinces;				
	3. Quality of advanced health services (specialists, etc.) in this province				
	is very good compared to other provinces.				
4.2.18	Affordability and	Index	Source: ACI Survey, 2019		
	Accessibility of Goods				
	Based on responses by business owners, academics and government officials in each province, to the following survey questions:				
	1. The price of staple goods in this province is quite affordable for most people;				
	2. In this province, secondary/luxury goods are quite easy to find, for those who can afford them.				

Appendix 3

Algorithm for Computation of the Provincial and Regional Competitiveness Index and Ranking using Equal Weights

A step-by-step description of the ranking process is described below for N regions (or provinces respectively), M indicators and C environments, with each environment comprising S sub-environments.

Algorithm: Ranking Methodology

1. Compute the mean value of practical indicator j (j = 1, ..., M),

$$\overline{X}_j = \frac{1}{N} \sum_{i=1}^N X_{ij}$$

where X_{ij} represents the value that city i (i = 1, ..., N) takes for practical indicator j.

2. For each practical indicator j (j = 1, ..., M), calculate its standard deviation (SD),

$$SD_j = \sqrt{\frac{1}{N} \sum_{i=1}^{N} (X_{ij} - \overline{X}_j)^2}$$

3. Compute the standardised value of indicator (SVI) that each city i (i = 1, ..., N) takes under each of the practical indicators j (j = 1, ..., M),

$$SVI_{ij} = \frac{X_{ij} - \overline{X}_j}{SD_j}$$

4. Compute the 'ranked' standardised value of indicator (RSVI) that each city *i* (*i* = 1, . . . ,*N*) takes under each of the practical indicators *j* (*j* = 1, . . . ,*M*):

$$RSVI_{ij} = \begin{cases} SVI_{ij}, \text{ if a higher value is better} \\ -SVI_{ij}, \text{ if a lower value is better} \end{cases}$$

5. For each of the practical indicators j (j = 1, ..., M), a ranking can be obtained for cities: cities with a higher value of RSVI for indicator j are ranked ahead of those with a lower value.

6. For each city *i* (*i* = 1, . . . ,*N*), calculate the RSVI for each sub-environment *k* (*k* = 1, . . . ,*S*) belonging to environment *l* (*l* = 1, . . . ,*C*),

$$Raw_RSVI_{i,lk} = \frac{1}{y_{lk}} \sum_{p=1}^{y_{lk}} RSVI_{i, j_{lk, p}}$$
$$Mean_RSVI_{lk} = \frac{1}{N} \sum_{i=1}^{N} Raw_RSVI_{i,lk}$$

$$SD_RSVI_{lk} = \sqrt{\frac{1}{N} \sum_{i=1}^{N} (Raw_RSVI_{i,lk} - Mean_RSVI_{lk})^2}$$
$$RSVI_{i,lk} = \frac{Raw_RSVI_{i,lk} - Mean_RSVI_{lk}}{SD_RSVI_{lk}}$$

where y_{lk} is the total number of practical indicators under sub-environment k of environment l and $(RSVI_{i,j_{lk,1}}, \ldots, RSVI_{i,j_{lk,y_{lk}}})$ are the RSVIs for city i that make up sub-environment k of environment l.

7. For each city *i* (*i* = 1, . . . ,*N*), calculate the RSVI for each environment *l* (*l* = 1, . . . ,*C*),

$$Raw_RSVI_{i,l} = \frac{1}{S_l} \sum_{k=1}^{S_l} RSVI_{i, \ lk}$$
$$Mean_RSVI_l = \frac{1}{N} \sum_{i=1}^{N} Raw_RSVI_{i, \ l}$$

$$\begin{split} SD_RSVI_l &= \sqrt{\frac{1}{N} \sum_{i=1}^{N} \left(Raw_RSVI_{i,l} - Mean_RSVI_l \right)^2} \\ RSVI_{i,l} &= \frac{Raw_RSVI_{i,l} - Mean_RSVI_l}{SD_RSVI_l} \end{split}$$

where $(RSVI_{i,l1}, \ldots, RSVI_{i,lS})$ are the RSVIs for the *S* sub-environments under each environment *l*.

8. Overall rank score of city i (i = 1, ..., N),

$$Raw_R_i = \frac{1}{C} \sum_{l=1}^{C} RSVI_{i,l}$$
$$Mean_R = \frac{1}{N} \sum_{i=1}^{N} Raw_R_i$$

$$SD_R = \sqrt{\frac{1}{N} \sum_{i=1}^{N} (Raw_R_i - Mean_R)^2}$$
$$R_i = \frac{Raw_R_i - Mean_R}{SD R}$$

Regions with a higher *Ri* are ranked ahead of those with lower *Ri*, and the region with the highest *Ri* is the most competitive region.

Step (5) provides the ranking of each region for each individual indicator. To achieve this ranking, Step (4) adjusts the value of the SVIs so that a higher value will lead to a better ranking in terms of 'competitiveness'. Depending on the nature of the indicator in question, a higher or lower value may reflect a more 'competitive' region. Take for instance the sub-indicators 'Gross Regional Domestic Product (GRDP)' and 'Unemployment Rate'. A higher GRDP but a lower 'unemployment rate' suggest better economic performance, which makes a region more 'competitive'. In most cases where a higher value is better (e.g. GRDP), the SVIs of the regions are considered, and those with a higher SVI value will have a better ranking. However, for indicators where the inverse is true (e.g., Unemployment Rate), the 'negative SVI' values are compared between regions and a lower SVI value will lead to a better ranking. Step (4) thus seeks to make all standardised values of all indicators consistent for ranking purposes.

Step (6) determines the sub-environment rankings of each region. The average RSVI of all the indicators in the sub-environment are calculated, re-standardised across all the regions and compared to other regions. Regions with a higher average RSVI rank better in the sub-environment. Although the number of indicators varies for each sub-environment, there are three sub-environments for each of the four environments. The aggregate score for each sub-environment is given an equivalent weighting: 33.33% of their respective environment's score.

To arrive at the ranking for each environment, the RSVIs of the sub-environments are averaged and re-standardised across all the regions as detailed by Step (7). Finally, Step (8) requires the RSVI values of each environment to be averaged and re-standardised across all the regions to determine the overall ranking of the region. Regions with a higher RSVI are ranked ahead of those with a lower RSVI.

Identical weights are assigned to each environment as they represent equivalent significance to the computation of Overall Competitiveness Index. This method is repeated and applied consistently across all the regions to ensure precision in the rankings. Mathematically, this can be illustrated as follows:

Overall Competitiveness Index:

- = 25% × (Macroeconomic Stability)
 - $+25\% \times (\text{Government and Institutional Setting})$
 - $+25\% \times$ (Financial, Businesses, and Manpower Conditions)
 - $+25\% \times ($ Quality of Life and Infrastructure Development)

Appendix 4

Algorithm for Computation of the Provincial and Regional Competitiveness Index and Ranking using Shapley Weights

A.4 Shapley Weightage

We will present the "Bottom-up" approach in this appendix. We start with indicator level computation, then sub-environment and environment level computation, and finally the index construction.

A.4.1 Indicator level

For each indicator $i \in I$ and each region (or provinces respectively) $e \in E$, the standardised value (or z-score) is

$$SV_{ei} = \frac{X_{ei} - \overline{X_i}}{SD_i},\tag{1}$$

where X_{ei} is the data input for region e in indicator i, $\overline{X_i} = \frac{1}{E} \sum_{e=1}^{E} X_{ei}$ is the mean value of the indicator i, and $SD_i = \sqrt{\frac{1}{E} \sum_{e=1}^{E} (X_{ei} - \overline{X_i})^2}$ is the standard deviation of the indicator i.

Now, let v^I be the characteristic function of the indicators, where $v^I : 2^I \to \mathbb{R}$. Then for each indicator $i \in I$, $v^I(i) : \mathbb{R}^E \to \mathbb{R}$, which reflects that the value of indicator i is derived from X_{ei} for all $e \in E$. Since we involve a large number of indicators in our case studies, for the ease of numerical computation, we simply define that

$$v^{I}(i) = \sum_{e=1}^{E} |SV_{ei}|.$$
 (2)

The absolute value is used, as (1) it guarantees the positiveness of v(i) which is required by the definition of Shapley value; and (2) the simple sum of the z-scores is zero, i.e. $\sum_{e=1}^{E} SV_{ei} = 0.$ We further assume the Additivity of the characteristic function v^{I} , i.e.

$$v^{I}(i \cup j) = v^{I}(i) + v^{I}(j) \text{ for any indicator } i, j \in I.$$
(3)

With all these defined, we are able to proceed with the computation of the Shapley value Φ_i^I of indicator $i \in I$.

$$\Phi_i^I = \sum_{\mathbb{I} \subseteq I \setminus \{i\}} \frac{|\mathbb{I}|! (I - |\mathbb{I}| - 1)!}{I!} (v^I (\mathbb{I} \cup i) - v^I (\mathbb{I})) \text{ for all } i \in I$$
(4)

With the assumption Additivity, equation (4) can be simplified as

$$\Phi_{i}^{I} = \sum_{\mathbb{I} \subseteq I \setminus \{i\}} \frac{|\mathbb{I}|! (I - |\mathbb{I}| - 1)!}{I!} (v^{I} (\mathbb{I} \cup i) - v^{I} (\mathbb{I}))$$
$$= \sum_{\mathbb{I} \subseteq I \setminus \{i\}} \frac{|\mathbb{I}|! (I - |\mathbb{I}| - 1)!}{I!} v^{I} (i) = v^{I} (i)$$
(4*)

Then the indicator weight w_i^I based on Shapley value is simply

$$w_i^I = \frac{\Phi_i^I}{\sum_{j=1}^I \Phi_j^I} = \frac{v^I(i)}{\sum_{j=1}^I v^I(j)}.$$
(5)

Economically, the Shapley value of each indicator i, Φ_i^I , measures the inequality among all the regions. The higher the Φ_i^I of an indicator i, the more divergent the performance across different regions. More weight, w_i^I , will thus be assigned to i. If a government has the aim of reducing inequality, it should implement policies to improve the indicators with more weight.

A.4.2 Sub-Environment Level and Environment Level

For each region $e \in E$, the computed data of any sub-environment $s \in S$ is determined by the indicators comprised, i.e. I_s . Equation (5) has determined the weight of each indicator, and let $w_i^{I_s}$ be the weight of indicator $i \in I_s$. Thus, formally, the computed data of any sub-environment $s \in S$ for any region $e \in E$ is

$$X_{es} = \sum_{i=1}^{I_s} w_i^{I_s} SV_{ei}.$$
 (6)

Similar to the indicator level analysis, the standardised score for sub-environment $s \in S$ is SV_{es} .

Let $v^S : 2^S \to \mathbb{R}$ be the characteristic function for the sub-environments. Then for each sub-environment $s \in S$, $v^S(s) : \mathbb{R}^S \to \mathbb{R}$ represents that the value of sub-environment s is derived from X_{es} for all $e \in E$. We have
$$v^{S}(s) = \sum_{e=1}^{E} |SV_{es}|.$$
 (7)

By the Additivity assumption, the Shapley value of each sub-environment $s \in S$ is

$$\Phi_s^S = v^S(s), \qquad (8)$$

and the weight of each sub-environment is

$$w_s^S = \frac{\Phi_s^S}{\sum_{j=1}^S \Phi_j^S} = \frac{v^S(s)}{\sum_{j=1}^S v^S(j)}.$$
(9)

The construction of Shapley value and the weight associated with each environment is similar to the analysis above, and thus is omitted. Let $v^N : 2^N \to \mathbb{R}$ be the characteristic function for the environments. The Shapley value of each environment $n \in N$ is

$$\Phi_n^N = v^N(n), \qquad (10)$$

and the weight of each environment is

$$w_n^N = \frac{\Phi_n^N}{\sum_{j=1}^N \Phi_j^N} = \frac{v^N(n)}{\sum_{j=1}^N v^N(j)}.$$
 (11)

The economic interpretation of Φ_s^S and Φ_n^N are the same as the indicators'. They capture the inequality across all the regions at the sub-environment level and environment level respectively. The higher the weight w_s^S and w_n^N , the more divergent the performance across different regions. Thus, government attention should be drawn to such sub-environment and environment.

A.4.3 Index Construction

In order for us to construct the final index to rank all the regions, we first found the final computed score for each region $e \in E$, i.e.

$$F_e = \sum_{n=1}^{N} w_n^N S V_{en},\tag{12}$$

where SV_{en} is the standardised value for region e under environment n. Then, we standardised the final computed score,

$$R_e = \frac{F_e - \overline{F}}{SD_F},\tag{13}$$

where $\overline{F} = \frac{1}{E} \sum_{e=1}^{E} F_e$ and $SD_F = \sqrt{\frac{1}{E} \sum_{e=1}^{E} (F_e - \overline{F})^2}$ All the regions, $e \in E$, will be ranked according the value R_e , which is also the index score for each region.

Appendix 5

Notes on Data Aggregation of Competitiveness Indicators from Provincial to Regional Level

No	No. Indicator Unit		Reversed	Calculated			
110.			Indicator	as in			
1	MACROECONOMIC STABILITY						
1.1	Regional Economic V	ibrancy					
1.1.01	Gross Regional	Rupiah (Million),		Approach 1			
	Domestic Product	2010 Constant					
	(GRDP)	Prices					
1.1.02	Gross Regional	Rupiah (Million),		Approach 1			
	Domestic Product	2010 Constant					
	(GRDP), Non-oil &	Prices					
	gas						
1.1.03	GRDP Growth	Percentage Change		Approach 2			
		Per Annum, 2010					
		Constant Prices					
1.1.04	GRDP Per Capita	Rupiah (Million),		Approach 2			
		2010 Constant					
		Prices					
1.1.05	GRDP Per Capita,	Rupiah (Million),		Approach 2			
	Non-oil & gas	2010 Constant					
		Prices					
1.1.06	GRDP of Primary	Rupiah (Million),		Approach 1			
	Industry	2010 Constant					
		Prices					
1.1.07	GRDP of Secondary	Rupiah (Million),		Approach 1			
	Industry	2010 Constant					
		Prices					
1.1.08	GRDP of Tertiary	Rupiah (Million),		Approach 1			
	Industry	2010 Constant					
		Prices					

Na	Tu di seten	T Les 24	Reversed	Calculated
INO.	Indicator	Unit	Indicator	as in
1.1.09	Gross Domestic	Rupiah (Million),		Approach 1
	Fixed Capital	2010 Constant		
	Formation	Prices		
1.1.10	Inflation	Percentage Change	R	Approach 3
		Per Annum		
1.2	Openness to Trade an	d Services	1	
1.2.01	Exports	Rupiah (Million),		Approach 1
		2010 Constant		
		Prices		
1.2.02	Exports, Non-oil &	Rupiah (Million),		Approach 1
	gas	2010 Constant		
		Prices		
1.2.03	Imports	Rupiah (Million),		Approach 1
		2010 Constant		
		Prices		
1.2.04	Imports, Non-oil &	Rupiah (Million),		Approach 1
	gas	2010 Constant		
		Prices		
1.2.05	Openness To Trade	Ratio		Approach 2
1.3	Attractiveness to Fore	ign Investors		
1.3.01	Foreign Direct	Rupiah (Million),		Approach 1
	Investment, Last 3	2010 Constant		
	Year Average	Prices		
1.3.02	Domestic Direct	Rupiah (Million),		Approach 1
	Investment, Last 3	2010 Constant		
	Year Average	Prices		
1.3.03	Investment	Index (Survey		Approach 3
	Promotion and	Data)		
	Management			

No	Indicator	Unit	Reversed	Calculated				
		Olit	Indicator	as in				
2	GOVERNMENT AND INSTITUTIONAL SETTING							
21	Covernment Deligion and Fingel System - hility							
2.1	Government rolicies a	Covernment Durick Remick						
2.1.01	Boyonuo	(Thousand) 2010		Approach				
	Kevenue	(Inousand), 2010						
21.02	Tax Povonuo	Pupiah		Approach 1				
2.1.02	lax Revenue	(Thousand) 2010		Approach				
		(Inousand), 2010						
21.03	Тах	Ratio		Approach 2				
2.1.05	Povonuo / Covornmont	Ratio		Approach 2				
	Revenue/Government							
2104	Covernment	Rupiah		Approach 1				
2.1.04	Expenditure	(Thousand) 2010						
	Lapenditure	Constant Prices						
21.05	Fiscal Balance	Runiah		Approach 1				
2.1.05	Tiscal Dalatice	(Thousand) 2010		Approach				
		Constant Prices						
22	Institutions Governat	ce and Leadershin						
2 2 01	Lack of Corruption	Index (Survey		Approach 3				
2.2.01	Each of Corruption	Data)		rippiouento				
2202	Public Reports of	Number of Reports	R	Approach 3				
2.2.02	Corruption per	per Rp100 000 000	IX .	rippiouento				
	Government (R)	Government						
		Expenditure						
2.2.03	Government Auditor	Classification		Approach 3				
	Opinion							
2.2.04	Government	Index (Survey		Approach 3				
	Inclusiveness	Data)						
2.2.05	Government	Index (Survey		Approach 3				
	Progress and	Data)						
	Expectation							
2.2.06	Government	Index (Survey		Approach 3				
	Efficiency	Data)						
2.2.07	Coordination of	Index (Survey		Approach 3				
	Local Governments	Data)						
2.2.08	Provincial	Index (Survey		Approach 3				
	Governing Capacity	Data)						

No	Indicator	TIn:4	Reversed	Calculated
INO.	Indicator	Unit	Indicator	as in
2.2.09	Government	Index		Approach 3
	Performance			
	Evaluation			
2.2.10	Quality of	Index		Approach 3
	Democratic			
	Institutions			
2.3	Competition, Regulate	ory Standards and Ru	le of Laws	
2.3.01	Regulatory	Index (Survey		Approach 3
	Governance	Data)		
2.3.02	Rule of Law	Index (Survey		Approach 3
		Data)		
2.3.03	Vibrancy of	Index (Survey		Approach 3
	Competition and	Data)		
	Collaboration			
2.3.04	Security	Index		Approach 3
2.3.05	Crime rate (R)	Rate Per 100,000		Approach 3
		population		
2.3.06	Crime Clearance	Percentage		Approach 2
	Rate			
2.3.07	Civil Liberty	Index		Approach 3

3	FINANCIAL, BUS	SINESSES	AND	MANPO	VER
	CONDITIONS				
3.1	Financial Deepening	and Business	s Efficienc	у	
3.1.01	Bank Deposits	Rupiah (M	illion),		Approach 1
		2010 Const	ant		
		Prices			
3.1.02	Bank Loans	Rupiah (M	illion),		Approach 1
		2010 Const	ant		
		Prices			
3.1.03	Non-Performing	Rupiah (M	illion),	R	Approach 1
	Loans	2010 Const	ant		
		Prices			
3.1.04	Non-Performing	Ratio		R	Approach 2
	Loans per Total Bank				
	Loans				
3.1.05	Number of Bank	Number			Approach 1
	Branches or Offices				

Na	In diastan	Theit	Reversed	Calculated
INO.	Indicator	Unit	Indicator	as in
3.1.06	Population per	Ratio	R	Approach 2
	Number of Bank			
	Branches or Offices			
3.1.07	Ease of Dealing With	Index (Survey		Approach 3
	Banks	Data)		
3.1.08	Firms' Performance	Index (Survey		Approach 3
		Data)		
3.1.09	Firms' Human	Index (Survey		Approach 3
	Resource Capacity	Data)		
3.1.10	Firms' Equipment	Index (Survey		Approach 3
	Capacity	Data)		
3.1.11	Firms' Application of	Index (Survey		Approach 3
	IT	Data)		
3.1.12	Firms' Innovation	Index (Survey		Approach 3
		Data)		
3.2	Labour Market Flexib	ility		
3.2.01	Labour Force	Number		Approach 1
3.2.02	Labour Force	Ratio		Approach 2
	Participation Rate			
3.2.03	Employment	Number		Approach 1
3.2.04	Employment in	Number		Approach 1
	Primary Industry			
3.2.05	Employment in	Number		Approach 1
	Secondary industry			
3.2.06	Employment in	Number		Approach 1
	Tertiary Industry			
3.2.07	Unemployment Rate	Percentage	R	Approach 2
3.2.08	Minimum Wage Per	Rupiah, Current	R	Approach 3
	Month	Market Prices		
3.2.09	Labour Relations	Index (Survey		Approach 3
		Data)		
3.3	Productivity Performa	ince		
3.3.01	Overall Labour	Rupiah (Million)		Approach 2
	Productivity	per person-year,		
		2010 Constant		
		Prices		
3.3.02	Overall Labour	Rupiah (Million)		Approach 2
	Productivity, Non-oil	per person-year,		
	& gas	2010 Constant		
		Prices		

No	Indicator	Unit	Reversed	Calculated
110.	Indicator	Ont	Indicator	as in
3.3.03	Primary Industry	Rupiah (Million)		Approach 2
	Productivity	per person-year,		
		2010 Constant		
		Prices		
3.3.04	Secondary Industry	Rupiah (Million)		Approach 2
	Productivity	per person-year,		
		2010 Constant		
		Prices		
3.3.05	Tertiary Industry	Rupiah (Million)		Approach 2
	Productivity	per person-year,		
		2010 Constant		
		Prices		

4	QUALITY OF LIFE AND INFRASTRUCTURE							
	DEVELOPMENT							
4.1	Physical Infrastructur	e						
4.1.01	Population	Persons		Approach 1				
4.1.02	Population Growth	Percentage Change		Approach 2				
		Per Annum						
4.1.03	Urban Population	Percentage of Total		Approach 2				
		Population						
4.1.04	Length of Paved	Kilometres		Approach 1				
	Roads							
4.1.05	Registered Motor	Ratio	R	Approach 2				
	Vehicles per							
	Kilometres of Paved							
	Road							
4.1.06	Cargo at Inter-island	Tons		Approach 1				
	Seaport							
4.1.07	Cargo at	Tons		Approach 1				
	International Seaport							
4.1.08	Passengers of	Number		Approach 1				
	Domestic Air Traffic							
4.1.09	Passengers of	Number		Approach 1				
	International Air							
	Traffic							
4.1.10	Households with	Percentage of		Approach 3				
	Pipe Water Services	Households						

No	Indicator	Unit	Reversed	Calculated
110.	Indicator	Unit	Indicator	as in
4.1.11	Households with	Percentage of		Approach 3
	State Electricity	Households		
	Services			
4.1.12	Ease of Acquiring	Index (Survey		Approach 3
	Property	Data)		
4.1.13	Quality of Physical	Index (Survey		Approach 3
	Infrastructure	Data)		
4.2	Technological Infrast	ructure		
4.2.01	Telephone	Percentage of		Approach 3
	Ownership	Households		
4.2.02	Handphone	Percentage of		Approach 3
	Ownership	Households		
4.2.03	Desktop Computer	Percentage of		Approach 3
	Ownership	Households		
4.2.04	Internet Access at	Percentage of		Approach 3
	Home	Population Above 5		
		Years Old		
4.2.05	Internet Access at	Percentage of		Approach 3
	Office	Population Above 5		
		Years Old		
4.2.06	Internet Access at	Percentage of		Approach 3
	School	Population Above 5		
		Years Old		
4.2.07	Internet Access in	Percentage of		Approach 3
	Handphone	Population Above 5		
		Years Old		
4.2.08	Quality of	Index (Survey		Approach 3
	Technological	Data)		
	Infrastructure			
4.3	Standard of Living, E	ducation and Social St	ability	
4.3.01	Adult Illiteracy Rate	Percentage of Total	R	Approach 3
		Population		
4.3.02	Mean Years of	Years		Approach 3
	Schooling			
4.3.03	Net School	Percentage		Approach 3
	Enrolment Rate			
	(Primary)			
4.3.04	Net School	Percentage		Approach 3
	Enrolment Rate			
	(Junior High)			

No	Indicator	Unit	Reversed	Calculated
INU.	Indicator	Unit	Indicator	as in
4.3.05	Net School	Percentage		Approach 3
	Enrolment Rate			
	(Senior High)			
4.3.06	Student-Teacher	Ratio	R	Approach 3
	Ratio (Primary)			
4.3.07	Student-Teacher	Ratio	R	Approach 3
	Ratio (Junior High)			
4.3.08	Student-Teacher	Ratio	R	Approach 3
	Ratio (Senior High)			
4.3.09	Human	Index		Approach 3
	Development Index			
4.3.10	Life Expectancy at	Years		Approach 3
	Birth			
4.3.11	Gini Ratio	Ratio	R	Approach 3
4.3.12	Population Per	Ratio	R	Approach 3
	Health Facility			
4.3.13	Population Per	Ratio	R	Approach 3
	Medical Worker			
4.3.14	Environmental	Index		Approach 3
	Quality Index			
4.3.15	Fatalities due to	Number	R	Approach 3
	Natural Disaster			
4.3.16	Quality of Education	Index (Survey		Approach 3
		Data)		
4.3.17	Quality of	Index (Survey		Approach 3
	Healthcare	Data)		
4.3.18	Affordability and	Index (Survey		Approach 3
	Accessibility of	Data)		
	Goods			

Appendix 6 2020 Competitiveness Profile of Indonesian Provinces

Appendix 5 provides a summary of the competitiveness results for each Indonesian province, based on ACI's 2020 Annual Update on Competitiveness Analysis of Indonesian Provinces.



Each profile consists of five sections, each presenting various components of the ACI Competitiveness Index:

2020 ACI Competitiveness Index: Ranking and Scores This section presents the province's ranking and standardised scores for overall competitiveness as well as

standardised scores for overall competitiveness as well as the four environments of competitiveness.

ACI Competitiveness Index Ranking: 2013 – 2020 The bar-line chart depicts the five-year trend of the province's overall competitiveness ranking (line) and the ranks of the four environments of competitiveness (bars) since the beginning of ACI's analysis in 2013.

2020 ACI Competitiveness Index: Ranking and Scores by Sub-Environments

This web chart indicates the province's ranking and standardised scores for the 12 sub-environments of competitiveness relative to the median and maximum scores of 34 provinces of Indonesia.

2020 ACI Competitiveness Index: Top-20 Percent Strongest and Weakest Indicators

The table on the left lists the top 20% indicators with the *highest* standardised scores while the table on the right lists the bottom 20% indicators with the *lowest* standardised scores among 100 indicators.

2020 ACI Competitiveness Index: *What-if* Simulation Ranking and Scores

This table shows the province's competitiveness rankings and standardised scores before and after the *what-if* simulation for overall competitiveness and the four environments. The scores are derived by improving the province's top-20 percent weakest indicators (listed in table on the right in section 4)

Aceh Sumatra Region



- Aceh

– Maximum

······ Median

^[] shows rank out of 34 provinces

Aceh Sumatra Region

2	2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators							
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	td. Score	Envmt.	
1	Student-teacher ratio (senior high)	1.897	QLID	85	Minimum wage per month	-1.003	FBMC	
2	Student-teacher ratio (primary)	1.601	QLID	86	Rule of Law	-1.012	GIS	
3	Net school enrolment rate (senior high)	1.397	QLID	87	Openness to trade	-1.023	MS	
4	Public Reports of Corruption per Government Expenditure	1.318	GIS	88	Quality of education	-1.049	QLID	
5	Population per medical worker	1.270	QLID	89	Labour force participation rate	-1.089	FBMC	
6	Student-teacher ratio (junior high)	1.073	QLID	90	Quality of technological infrastructure	-1.092	QLID	
7	Environmental quality index	1.011	QLID	91	Quality of healthcare	-1.117	QLID	
8	Internet access at school	0.925	QLID	92	Provincial governing capacity	-1.117	GIS	
9	Net school enrolment rate (junior high)	0.884	QLID	93	Firms' equipment capacity	-1.127	FBMC	
10	Gini ratio	0.821	QLID	94	Quality of Democratic Institutions	-1.197	GIS	
11	Mean years of schooling	0.817	QLID	95	Government inclusiveness	-1.213	GIS	
12	Non-performing loans per total bank loans	0.715	FBMC	96	Affordability and accessibility of goods	-1.285	QLID	
13	Households with state electricity services	0.668	QLID	97	Investment promotion and management	-1.329	MS	
14	Government expenditure	0.662	GIS	98	Firms' application of IT	-1.386	FBMC	
15	Ease of acquiring property	0.617	QLID	99	Tax revenue/Government revenue	-1.408	GIS	
16	Government revenue	0.580	GIS	100	Quality of physical infrastructure	-1.425	QLID	
17	Adult illiteracy rate	0.437	QLID	101	Labour relations	-1.443	FBMC	
18	Length of paved roads	0.416	QLID	102	Crime Clearance Rate	-1.857	GIS	
19	Civil Liberty	0.384	GIS	103	Firms' human resource capacity	-1.957	FBMC	
20	Net school enrolment rate (primary)	0.375	QLID	104	Government Performance Evaluation	-2.813	GIS	
21	Non-performing loans	0.346	FBMC	105	Ease of dealing with banks	-2.873	FBMC	

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting; FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness							
			Before		After			
	Rank		26	_	18			
	Score		-0.925		-0.18	6		
Macroeconomic Stability Government and Institutional Setting					tutional Setting			
	Before		After		Before	After		
Rank	31		26	Rank	27	17		
Score	-0.875		-0.594	Score	-0.964	-0.045		
Financial, Businesses and Manpower Conditions					lity of Life and Infrastru	cture Development		
	Before		After		Before	After		
Rank	34		25	Rank	16	11		
Score	-1.427		-0.556	Score	0.136	0.565		

Bali Bali-Nusa Tenggara Region



[] shows rank out of 34 provinces

Bali Bali-Nusa Tenggara Region

2	020 ACI Competitiven	ess Inde	x: Top	20% S	trongest and Weakest	Indicato	rs
Rank	20% Strongest Indicators St	d. Score	Envmt.	Rank	20% Weakest Indicators S	td. Score	Envmt.
1	Passengers of international air traffic	3.284	QLID	85	Gross Regional Domestic Product (GRDP)	-0.361	MS
2	Labour force participation rate	2.636	FBMC	86	Primary industry productivity	-0.390	FBMC
3	Internet access at office	2.243	QLID	87	Overall labour productivity	-0.421	FBMC
4	Unemployment rate	1.999	FBMC	88	Cargo at international seaport	-0.441	QLID
5	Households with pipe water services	1.805	QLID	89	Employment in primary industry	-0.457	FBMC
6	Government progress and expectation	1.794	GIS	90	GRDP of secondary industry	-0.463	MS
7	Government inclusiveness	1.526	GIS	91	Cargo at inter-island seaport	-0.472	QLID
8	Telephone ownership	1.472	QLID	92	Gini ratio	-0.510	QLID
9	Coordination of local governments	1.450	GIS	93	Adult illiteracy rate	-0.596	QLID
10	Affordability and accessibility of goods	1.429	QLID	94	Domestic direct investment, last three year average	-0.597	MS
11	Labour relations	1.428	FBMC	95	Fatalities due to natural disaster	-0.603	QLID
12	Net school enrolment rate (senior high)	1.399	QLID	96	GRDP of primary industry	-0.605	MS
13	Tax revenue/Government revenue	1.342	GIS	97	Export, non-oil and gas	-0.630	MS
14	Civil Liberty	1.269	GIS	98	Export	-0.659	MS
15	Internet access at home	1.228	QLID	99	Student-teacher ratio (senior high)	-0.726	QLID
16	Investment promotion and management	1.225	MS	100	Secondary industry productivity	-0.765	FBMC
17	Desktop computer ownership	1.154	QLID	101	Population growth	-0.840	QLID
18	Human development index	1.133	QLID	102	Openness to trade	-0.917	MS
19	Crime rate	1.124	GIS	103	Student-teacher ratio (junior high)	-1.005	QLID
20	Urban population	1.112	QLID	104	Ease of acquiring property	-1.176	QLID
21	Firms' performance	1.080	FBMC	105	Lack of corruption	-1.574	GIS

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting;

FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness									
			Before							
	Rank		6	_	6					
	Score		0.907		1.229					
Macroeconomic Stability				Government and Institutional Setting						
	Before		After		Before	After				
Rank	19		10	Rank	4	4				
Score	-0.323		0.039	Score	1.268	1.383				
Finan	Financial, Businesses and Manpower Conditions			Quality of Life and Infrastructure Development						
	Before		After		Before	After				
Rank	7		6	Rank	3	2				
Score	0.606		0.803	Score	1.518	1.951				

Bangka Belitung Islands

Sumatra Region



[] shows rank out of 34 provinces

Bangka Belitung Islands

Sumatra Region

2	020 ACI Competitiven	ess Inde	x: Top 2	20% S	trongest and Weakest	Indicato	rs
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.
1	Gini ratio	2.232	QLID	85	Quality of physical infrastructure	-0.962	QLID
2	Internet access at home	1.625	QLID	86	Minimum wage per month	-1.085	FBMC
3	Lack of corruption	1.100	GIS	87	Firms' human resource capacity	-1.108	FBMC
4	Unemployment rate	0.732	FBMC	88	Net school enrolment rate (senior high)	-1.165	QLID
5	Population growth	0.721	QLID	89	Labour relations	-1.240	FBMC
6	Public Reports of Corruption per Government Expenditure	0.717	GIS	90	Government progress and expectation	-1.290	GIS
7	Population per number of bank branches/offices	0.688	FBMC	91	Investment promotion and management	-1.351	MS
8	Households with state electricity services	0.621	QLID	92	Government efficiency	-1.363	GIS
9	Ease of acquiring property	0.562	QLID	93	Provincial governing capacity	-1.533	GIS
10	Fatalities due to natural disaster	0.547	QLID	94	Internet access at school	-1.551	QLID
11	Openness to trade	0.516	MS	95	Firms' innovation	-1.632	FBMC
12	Crime rate	0.483	GIS	96	Households with pipe water services	-1.653	QLID
13	Population per medical worker	0.427	QLID	97	Student-teacher ratio (junior high)	-1.680	QLID
14	Adult illiteracy rate	0.406	QLID	98	Coordination of local governments	-1.855	GIS
15	Government Performance Evaluation	0.404	GIS	99	Quality of healthcare	-1.986	QLID
16	Firms' performance	0.397	FBMC	100	Non-performing loans per total bank loans	-2.014	FBMC
17	Internet access at office	0.386	QLID	101	Inflation (from 2015 onwards, $2012 = 100$)	-2.277	MS
18	Urban population	0.378	QLID	102	Affordability and accessibility of goods	-2.341	QLID
19	Non-performing loans	0.358	FBMC	103	Regulatory governance	-2.394	GIS
20	Registered motor vehicles per kilometre of paved road	0.353	QLID	104	Rule of Law	-2.404	GIS
21	Net school enrolment rate (primary)	0.305	QLID	105	Quality of education	-3.073	QLID

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting;

FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness									
		Befor	re	After						
	Rank	30		2	20					
	Score	-1.05	68	-0.	.217					
Macroeconomic Stability				Government and Institutional Setting						
	Before	After		Before	After					
Rank	30	23	Rank	29	19					
Score	-0.813	-0.507	Score	-1.050	-0.097					
Finan	Financial, Businesses and Manpower Conditions			Quality of Life and Infrastructure Development						
	Before	After		Before	After					
Rank	29	22	Rank	30	16					
Score	-0.919	-0.351	Score	-0.800	0.225					





[] shows rank out of 34 provinces

Banten Java Region

2	020 ACI Competitiver	ness Inde	x: Top	20% S	trongest and Weakest	Indicato	rs
Rank	20% Strongest Indicators	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.
1	Passengers of domestic air traffic	5.070	QLID	85	Government inclusiveness	-0.386	GIS
2	Passengers of international air traffic	4.527	QLID	86	Rule of Law	-0.450	GIS
3	Tax revenue/Government revenue	1.952	GIS	87	Primary industry productivity	-0.473	FBMC
4	Firms' performance	1.762	FBMC	88	Gini ratio	-0.510	QLID
5	Foreign direct investment, last three year average	1.667	MS	89	GRDP of primary industry	-0.535	MS
6	Crime rate	1.509	GIS	90	Quality of education	-0.538	QLID
7	Internet access at office	1.439	QLID	91	Registered motor vehicles per kilometre of paved road	-0.581	QLID
8	Cargo at inter-island seaport	1.354	QLID	92	Length of paved roads	-0.748	QLID
9	Internet access in handphone	1.281	QLID	93	Labour force participation rate	-0.847	FBMC
10	Firms' equipment capacity	1.268	FBMC	94	Net school enrolment rate (senior high)	-1.033	QLID
11	Cargo at international seaport	1.228	QLID	95	Inflation (from 2015 onwards, 2012 = 100)	-1.079	MS
12	Openness to trade	1.206	MS	96	Households with pipe water services	-1.089	QLID
13	Urban population	1.177	QLID	97	Government efficiency	-1.174	GIS
14	Firms' application of IT	1.116	FBMC	98	Affordability and accessibility of goods	-1.225	QLID
15	Export, non-oil and gas	1.045	MS	99	Student-teacher ratio (junior high)	-1.474	QLID
16	Firms' innovation	0.998	FBMC	100	Student-teacher ratio (primary)	-1.500	QLID
17	Export	0.915	MS	101	Environmental quality index	-1.571	QLID
18	Firms' human resource capacity	0.881	FBMC	102	Population per number of bank branches/offices	-2.289	FBMC
19	Internet access at home	0.817	QLID	103	Unemployment rate	-2.310	FBMC
20	Households with state electricity services	0.773	QLID	104	Student-teacher ratio (senior high)	-2.423	QLID
21	Labour relations	0.748	FBMC	105	Population per medical worker	-2.866	QLID

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting;

FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness									
			Before							
	Rank		7	_	6					
	Score		0.684		1.171					
Macroeconomic Stability			Government and Institutional Setting							
	Before		After		Before	After				
Rank	6		6	Rank	12	10				
Score	0.689		0.771	Score	0.451	0.616				
Finan	Financial, Businesses and Manpower Conditions			Quality of Life and Infrastructure Development						
	Before		After		Before	After				
Rank	11		7	Rank	5	2				
Score	0.272		0.736	Score	0.902	1.831				





[] shows rank out of 34 provinces

Bengkulu Sumatra Region

2	2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators											
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.					
1	Non-performing loans per total bank loans	1.091	FBMC	85	Export	-0.694	MS					
2	Population per medical worker	0.962	QLID	86	Quality of education	-0.695	QLID					
3	Net school enrolment rate (senior high)	0.877	QLID	87	Foreign direct investment, last three year average	-0.698	MS					
4	Minimum wage per month	0.793	FBMC	88	GRDP of primary industry	-0.725	MS					
5	Unemployment rate	0.751	FBMC	89	Secondary industry productivity	-0.768	FBMC					
6	Student-teacher ratio (senior high)	0.750	QLID	90	Quality of physical infrastructure	-0.771	QLID					
7	Student-teacher ratio (junior high)	0.642	QLID	91	Labour relations	-0.791	FBMC					
8	Net school enrolment rate (junior high)	0.636	QLID	92	Urban population	-0.811	QLID					
9	Fatalities due to natural disaster	0.615	QLID	93	Firms' performance	-0.813	FBMC					
10	Labour force participation rate	0.602	FBMC	94	Affordability and accessibility of goods	-0.815	QLID					
11	Ease of acquiring property	0.591	QLID	95	Firms' innovation	-0.820	FBMC					
12	Civil Liberty	0.517	GIS	96	Openness to trade	-0.821	MS					
13	Adult illiteracy rate	0.429	QLID	97	Government progress and expectation	-0.898	GIS					
14	Registered motor vehicles per kilometre of paved road	0.417	QLID	98	Firms' application of IT	-0.975	FBMC					
15	Non-performing loans	0.405	FBMC	99	Crime rate	-1.018	GIS					
16	Student-teacher ratio (primary)	0.385	QLID	100	Investment promotion and management	-1.033	MS					
17	Population per number of bank branches/offices	0.384	FBMC	101	Firms' equipment capacity	-1.149	FBMC					
18	Households with state electricity services	0.362	QLID	102	Inflation (from 2015 onwards, 2012 = 100)	-1.195	MS					
19	Net school enrolment rate (primary)	0.358	QLID	103	Government efficiency	-1.384	GIS					
20	Gini ratio	0.289	QLID	104	Ease of dealing with banks	-1.658	FBMC					
21	Environmental quality index	0.267	QLID	105	Public Reports of Corruption per Government Expenditure	-1.944	GIS					

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting; FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness									
			Before	After						
	Rank		25	_	20					
	Score		-0.836		-0.320					
Macroeconomic Stability				Government and Institutional Setting						
	Before		After		Before	After				
Rank	32		22	Rank	25	23				
Score	-0.927		-0.445	Score	-0.852	-0.420				
Finan	Financial, Businesses and Manpower Conditions				Quality of Life and Infrastructure Development					
	Before		After		Before	After				
Rank	26		18	Rank	21	18				
Score	-0.795		-0.198	Score	-0.255	-0.018				





[] shows rank out of 34 provinces

Central Java Java Region

2	2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators										
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.				
1	Employment in secondary industry	3.098	FBMC	85	Handphone ownership	-0.422	QLID				
2	Employment	2.669	FBMC	86	Non-performing loans	-0.425	FBMC				
3	Labour force	2.624	FBMC	87	Overall labour productivity, non- minerals	-0.450	FBMC				
4	Population	2.450	QLID	88	GRDP per capita	-0.477	MS				
5	Employment in primary industry	2.448	FBMC	89	Adult illiteracy rate	-0.496	QLID				
6	Employment in tertiary industry	2.333	FBMC	90	Primary industry productivity	-0.522	FBMC				
7	Quality of physical infrastructure	2.311	QLID	91	Overall labour productivity	-0.541	FBMC				
8	Government efficiency	2.249	GIS	92	Secondary industry productivity	-0.556	FBMC				
9	Length of paved roads	2.214	QLID	93	Tertiary industry productivity	-0.571	FBMC				
10	Affordability and accessibility of goods	2.146	QLID	94	Student-teacher ratio (junior high)	-0.748	QLID				
11	Investment promotion and management	1.986	MS	95	Desktop computer ownership	-0.817	QLID				
12	Number of bank branches/offices	1.872	FBMC	96	Net school enrolment rate (senior high)	-0.913	QLID				
13	Crime Clearance Rate	1.821	GIS	97	Environmental quality index	-0.922	QLID				
14	GRDP of secondary industry	1.805	MS	98	Student-teacher ratio (senior high)	-0.935	QLID				
15	Life expectancy at birth	1.785	QLID	99	Lack of corruption	-0.994	GIS				
16	Crime rate	1.766	GIS	100	Mean years of schooling	-1.099	QLID				
17	Government progress and expectation	1.694	GIS	101	Population per medical worker	-1.264	QLID				
18	Minimum wage per month	1.666	FBMC	102	Population per number of bank branches/offices	-1.313	FBMC				
19	Government inclusiveness	1.593	GIS	103	Population growth	-1.487	QLID				
20	Quality of technological infrastructure	1.534	QLID	104	Civil Liberty	-1.569	GIS				
21	Ease of dealing with banks	1.518	FBMC	105	Fatalities due to natural disaster	-3.173	QLID				

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting;

FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

Overall Competitiveness									
			Before						
	Rank		3	_	3				
	Score		1.612		2.013	3			
Macroeconomic Stability				Government and Institutional Setting					
	Before		After		Before	After			
Rank	4		4	Rank	3	1			
Score	1.076		1.100	Score	1.906	2.110			
Finan	Financial, Businesses and Manpower Conditions			Quality of Life and Infrastructure Development					
	Before		After		Before	After			
Rank	3		3	Rank	6	2			
Score	1.698		2.074	Score	0.774	1.577			

Central Kalimantan

Kalimantan Region



[] shows rank out of 34 provinces

Central Kalimantan

Kalimantan Region

2	2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators										
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.				
1	Lack of corruption	1.845	GIS	85	Number of bank branches/offices	-0.493	FBMC				
2	Crime Clearance Rate	1.358	GIS	86	Gross Regional Domestic Product (GRDP)	-0.495	MS				
3	Civil Liberty	1.276	GIS	87	Public Reports of Corruption per Government Expenditure	-0.519	GIS				
4	Non-performing loans per total bank loans	1.230	FBMC	88	Government expenditure	-0.542	GIS				
5	Student-teacher ratio (primary)	1.103	QLID	89	Firms' equipment capacity	-0.559	FBMC				
6	Quality of Democratic Institutions	1.031	GIS	90	Telephone ownership	-0.598	QLID				
7	GRDP growth	0.973	MS	91	Households with pipe water services	-0.621	QLID				
8	Internet access in handphone	0.952	QLID	92	Rule of Law	-0.714	GIS				
9	Ease of dealing with banks	0.881	FBMC	93	Quality of physical infrastructure	-0.717	QLID				
10	Crime rate	0.880	GIS	94	Quality of technological infrastructure	-0.774	QLID				
11	Gini ratio	0.874	QLID	95	Households with state electricity services	-0.778	QLID				
12	Population growth	0.857	QLID	96	Regulatory governance	-0.841	GIS				
13	Internet access at home	0.738	QLID	97	Vibrancy of competition and collaboration	-0.854	GIS				
14	Firms' human resource capacity	0.737	FBMC	98	Firms' application of IT	-0.890	FBMC				
15	Student-teacher ratio (senior high)	0.720	QLID	99	Government efficiency	-0.919	GIS				
16	Quality of education	0.709	QLID	100	Provincial governing capacity	-1.035	GIS				
17	Adult illiteracy rate	0.671	QLID	101	Internet access at school	-1.073	QLID				
18	Student-teacher ratio (junior high)	0.639	QLID	102	Investment promotion and management	-1.226	MS				
19	Handphone ownership	0.623	QLID	103	Net school enrolment rate (senior high)	-1.228	QLID				
20	Unemployment rate	0.484	FBMC	104	Government inclusiveness	-1.533	GIS				
21	Fatalities due to natural disaster	0.479	QLID	105	Government progress and expectation	-1.568	GIS				

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting; FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness									
			Before		r					
	Rank		21	_	13					
	Score		-0.319		0.14	7				
Macroeconomic Stability				Government and Institutional Setting						
	Before		After		Before	After				
Rank	24		20	Rank	22	13				
Score	-0.538		-0.339	Score	-0.328	0.397				
Finan	Financial, Businesses and Manpower Conditions			Quality of Life and Infrastructure Development						
	Before		After		Before	After				
Rank	18		13	Rank	18	11				
Score	-0.184		-0.022	Score	-0.028	0.460				

Central Sulawesi

Sulawesi Region



[] shows rank out of 34 provinces

Central Sulawesi

Sulawesi Region

2	020 ACI Competitiven	ess Inde	x: Top	20% S	trongest and Weakes	t Indicato	rs
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.
1	Quality of education	1.273	QLID	85	Security	-0.679	GIS
2	GRDP growth	1.223	MS	86	Net school enrolment rate (junior high)	-0.695	QLID
3	Population per medical worker	0.813	QLID	87	Lack of corruption	-0.703	GIS
4	Openness to trade	0.784	MS	88	Investment promotion and management	-0.756	MS
5	Student-teacher ratio (primary)	0.761	QLID	89	Crime Clearance Rate	-0.777	GIS
6	Unemployment rate	0.716	FBMC	90	Life expectancy at birth	-0.800	QLID
7	Civil Liberty	0.682	GIS	91	Inflation (from 2015 onwards, $2012 = 100$)	-0.975	MS
8	Student-teacher ratio (junior high)	0.678	QLID	92	Urban population	-1.004	QLID
9	Minimum wage per month	0.628	FBMC	93	Firms' application of IT	-1.098	FBMC
10	Internet access at school	0.454	QLID	94	Quality of technological infrastructure	-1.225	QLID
11	Foreign direct investment, last three year average	0.448	MS	95	Vibrancy of competition and collaboration	-1.318	GIS
12	Non-performing loans per total bank loans	0.428	FBMC	96	Ease of dealing with banks	-1.359	FBMC
13	Gini ratio	0.395	QLID	97	Firms' performance	-1.371	FBMC
14	Adult illiteracy rate	0.386	QLID	98	Regulatory governance	-1.465	GIS
15	Non-performing loans	0.356	FBMC	99	Firms' human resource capacity	-1.533	FBMC
16	Public Reports of Corruption per Government Expenditure	0.331	GIS	100	Government efficiency	-1.607	GIS
17	Student-teacher ratio (senior high)	0.299	QLID	101	Government inclusiveness	-1.640	GIS
18	Registered motor vehicles per kilometre of paved road	0.275	QLID	102	Government progress and expectation	-1.763	GIS
19	Population per health facility	0.246	QLID	103	Labour relations	-1.892	FBMC
20	Internet access in handphone	0.197	QLID	104	Quality of physical infrastructure	-2.153	QLID
21	Environmental quality index	0.189	QLID	105	Crime rate	-2.211	GIS

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting; FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness									
			Before	After						
	Rank		27	_	2	0				
	Score		-0.947		-0.2	259				
Macroeconomic Stability			Government and Institutional Setting							
	Before		After		Before	After				
Rank	18		13	Rank	31	22				
Score	-0.304		-0.146	Score	-1.377	-0.284				
Finan	cial, Businesses ar	nd Manp	ower Conditions	Quality of Life and Infrastructure Development						
	Before		After		Before	After				
Rank	30		22	Rank	26	20				
Score	-0.931		-0.342	Score	-0.594	-0.104				





[] shows rank out of 34 provinces

DI Yogyakarta Java Region

2	020 ACI Competitiven	ess Inde	x: Top	20% S	trongest and Weakest	Indicato	rs
Rank	20% Strongest Indicators St	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.
1	Internet access at school	2.558	QLID	85	Gross Regional Domestic Product (GRDP)	-0.488	MS
2	Labour force participation rate	2.339	FBMC	86	Gross domestic fixed capital formation	-0.488	MS
3	Net school enrolment rate (senior high)	2.320	QLID	87	Overall labour productivity, non- minerals	-0.503	FBMC
4	Human development index	2.277	QLID	88	Cargo at inter-island seaport	-0.523	QLID
5	Desktop computer ownership	2.204	QLID	89	GRDP per capita	-0.528	MS
6	Affordability and accessibility of goods	2.077	QLID	90	Domestic direct investment, last three year average	-0.623	MS
7	Life expectancy at birth	2.037	QLID	91	Overall labour productivity	-0.641	FBMC
8	Internet access at office	1.819	QLID	92	Export, non-oil and gas	-0.643	MS
9	Minimum wage per month	1.735	FBMC	93	Primary industry productivity	-0.646	FBMC
10	Internet access at home	1.612	QLID	94	Export	-0.672	MS
11	Quality of education	1.417	QLID	95	Length of paved roads	-0.684	QLID
12	Urban population	1.371	QLID	96	Foreign direct investment, last three year average	-0.718	MS
13	Firms' human resource capacity	1.319	FBMC	97	Secondary industry productivity	-0.775	FBMC
14	Net school enrolment rate (junior high)	1.311	QLID	98	GRDP of primary industry	-0.801	MS
15	Internet access in handphone	1.259	QLID	99	Population growth	-0.832	QLID
16	Quality of healthcare	1.254	QLID	100	Openness to trade	-0.902	MS
17	Firms' innovation	1.161	FBMC	101	Registered motor vehicles per kilometre of paved road	-1.058	QLID
18	Unemployment rate	1.148	FBMC	102	Crime Clearance Rate	-1.171	GIS
19	Mean years of schooling	1.119	QLID	103	Ease of acquiring property	-1.677	QLID
20	Public Reports of Corruption per Government Expenditure	1.101	GIS	104	Environmental quality index	-1.747	QLID
21	Civil Liberty	1.026	GIS	105	Gini ratio	-2.133	QLID

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting;

FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness									
			Before							
	Rank		9	_	7					
	Score 0.414				0.852					
Macroeconomic Stability			Government and Institutional Setting							
	Before		After		Before	After				
Rank	27		13	Rank	14	14				
Score	-0.653		-0.138	Score	0.072	0.189				
Finan	Financial, Businesses and Manpower Conditions			Quality of Life and Infrastructure Development						
	Before	After			Before	After				
Rank	8		7	Rank	2	1				
Score	0.442		0.711	Score	1.538	2.125				





[] shows rank out of 34 provinces

DKI Jakarta Java Region

2	020 ACI Competitiven	ess Inde	x: Top	20% S	trongest and Weakest	Indicato	rs
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators S	td. Score	Envmt.
1	Fiscal balance	5.614	GIS	85	Regulatory governance	-0.625	GIS
2	Import, non-oil and gas	5.532	MS	86	Quality of education	-0.676	QLID
3	Bank deposits	5.521	FBMC	87	Government inclusiveness	-0.745	GIS
4	Bank loans	5.501	FBMC	88	Employment in primary industry	-0.780	FBMC
5	Tertiary industry productivity	5.423	FBMC	89	GRDP of primary industry	-0.864	MS
6	Import	5.409	MS	90	Population growth	-1.105	QLID
7	GRDP per capita, non- minerals	5.069	MS	91	Unemployment rate	-1.128	FBMC
8	Overall labour productivity, non-minerals	5.046	FBMC	92	Rule of Law	-1.253	GIS
9	Telephone ownership	4.811	QLID	93	Gini ratio	-1.308	QLID
10	Tax revenue	4.677	GIS	94	Government progress and expectation	-1.322	GIS
11	GRDP of tertiary industry	4.594	MS	95	Internet access at school	-1.369	QLID
12	Government revenue	4.416	GIS	96	Provincial governing capacity	-1.386	GIS
13	Gross domestic fixed capital formation	4.353	MS	97	Ease of acquiring property	-1.560	QLID
14	Government expenditure	3.891	GIS	98	Student-teacher ratio (senior high)	-1.701	QLID
15	GRDP per capita	3.876	MS	99	Student-teacher ratio (primary)	-2.044	QLID
16	Overall labour productivity	3.864	FBMC	100	Security	-2.108	GIS
17	Number of bank branches/offices	3.433	FBMC	101	Student-teacher ratio (junior high)	-2.214	QLID
18	GRDP, non-minerals	3.406	MS	102	Minimum wage per month	-3.020	FBMC
19	Gross Regional Domestic Product (GRDP)	3.247	MS	103	Environmental quality index	-3.133	QLID
20	Urban population	2.888	QLID	104	Non-performing loans	-5.235	FBMC
21	Internet access at office	2.665	QLID	105	Registered motor vehicles per kilometre of paved road	-5.376	QLID

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting;

FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness									
			Before	After						
	Rank		1	_	1					
	Score 2.629				3.30	9				
Macroeconomic Stability			Government and Institutional Setting							
	Before	After			Before	After				
Rank	1		1	Rank	2	1				
Score	3.394		3.417	Score	1.934	2.491				
Finan	Financial, Businesses and Manpower Conditions				Quality of Life and Infrastructure Development					
	Before		After		Before	After				
Rank	1	<u> </u>		Rank	9	1				
Score	2.865		3.490	Score	0.703	2.140				





[] shows rank out of 34 provinces

East Java
Java Region

2	2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators										
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.				
1	Employment in primary industry	4.224	FBMC	85	Ease of acquiring property	-0.149	QLID				
2	Domestic direct investment, last three year average	3.771	MS	86	Overall labour productivity	-0.233	FBMC				
3	Length of paved roads	3.551	QLID	87	Secondary industry productivity	-0.252	FBMC				
4	Employment	3.239	FBMC	88	Households with pipe water services	-0.326	QLID				
5	Labour force	3.163	FBMC	89	Handphone ownership	-0.328	QLID				
6	Population	2.914	QLID	90	Crime Clearance Rate	-0.340	GIS				
7	Gross Regional Domestic Product (GRDP)	2.875	MS	91	Lack of corruption	-0.386	GIS				
8	GRDP of primary industry	2.847	MS	92	Net school enrolment rate (senior high)	-0.401	QLID				
9	GRDP of secondary industry	2.840	MS	93	Desktop computer ownership	-0.429	QLID				
10	GRDP, non-minerals	2.829	MS	94	Primary industry productivity	-0.475	FBMC				
11	Employment in tertiary industry	2.764	FBMC	95	Civil Liberty	-0.506	GIS				
12	Employment in secondary industry	2.665	FBMC	96	Student-teacher ratio (senior high)	-0.625	QLID				
13	Firms' equipment capacity	2.650	FBMC	97	Adult illiteracy rate	-0.818	QLID				
14	Number of bank branches/offices	2.550	FBMC	98	Mean years of schooling	-0.983	QLID				
15	Gross domestic fixed capital formation	2.252	MS	99	Population per number of bank branches/offices	-0.988	FBMC				
16	Vibrancy of competition and collaboration	2.248	GIS	100	Environmental quality index	-0.990	QLID				
17	GRDP of tertiary industry	2.244	MS	101	Non-performing loans	-1.182	FBMC				
18	Export, non-oil and gas	2.010	MS	102	Gini ratio	-1.468	QLID				
19	Export	1.999	MS	103	Population growth	-1.720	QLID				
20	Government expenditure	1.985	GIS	104	Population per medical worker	-1.855	QLID				
21	Government revenue	1.752	GIS	105	Fatalities due to natural disaster	-3.917	QLID				

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting;

FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness									
			Before	After						
	Rank		2	_	1					
	Score 2.241				2.575	i				
Macroeconomic Stability		bility	Government and Institutional Setting							
	Before	After			Before	After				
Rank	3		3	Rank	1	1				
Score	2.386		2.386	Score	2.014	2.114				
Finan	Financial, Businesses and Manpower Conditions				Quality of Life and Infrastructure Development					
	Before	After			Before	After				
Rank	2		2	Rank	7	2				
Score	2.427		2.658	Score	0.756	1.655				

East Kalimantan

Kalimantan Region



[] shows rank out of 34 provinces

East Kalimantan

Kalimantan Region

2	020 ACI Competitiven	ess Inde	x: Top	20% S	trongest and Weakest	Indicato	rs
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.
1	Primary industry productivity	4.297	FBMC	85	Fiscal balance	-0.248	GIS
2	Secondary industry productivity	3.224	FBMC	86	Passengers of international air traffic	-0.300	QLID
3	Overall labour productivity	2.888	FBMC	87	Employment in tertiary industry	-0.319	FBMC
4	GRDP per capita	2.850	MS	88	Population	-0.381	QLID
5	GRDP of primary industry	2.810	MS	89	Student-teacher ratio (primary)	-0.385	QLID
6	Cargo at international seaport	2.638	QLID	90	Labour force	-0.389	FBMC
7	Desktop computer ownership	2.152	QLID	91	Employment	-0.395	FBMC
8	Export	1.993	MS	92	Employment in secondary industry	-0.402	FBMC
9	Vibrancy of competition and collaboration	1.721	GIS	93	Quality of Democratic Institutions	-0.429	GIS
10	Life expectancy at birth	1.640	QLID	94	Employment in primary industry	-0.471	FBMC
11	Households with pipe water services	1.636	QLID	95	Labour force participation rate	-0.474	FBMC
12	Firms' equipment capacity	1.608	FBMC	96	Length of paved roads	-0.495	QLID
13	Rule of Law	1.536	GIS	97	Student-teacher ratio (senior high)	-0.520	QLID
14	Quality of technological infrastructure	1.529	QLID	98	Crime rate	-0.530	GIS
15	Handphone ownership	1.511	QLID	99	Student-teacher ratio (junior high)	-0.609	QLID
16	Ease of acquiring property	1.502	QLID	100	Minimum wage per month	-0.625	FBMC
17	Export, non-oil and gas	1.492	MS	101	Lack of corruption	-0.650	GIS
18	Government efficiency	1.414	GIS	102	Unemployment rate	-0.996	FBMC
19	Ease of dealing with banks	1.363	FBMC	103	Internet access at school	-1.176	QLID
20	Human development index	1.338	QLID	104	GRDP growth	-1.383	MS
21	Quality of healthcare	1.314	QLID	105	Non-performing loans per total bank loans	-2.492	FBMC

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting; FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness									
			Before	After				_		
	Rank		4	_		3				
	Score 1.591					1.864				
Macroeconomic Stability			Government and Institutional Setting							
	Before	A	fter			Before	After			
Rank	5		5	Rank	8		5			
Score	0.829	0.	899	Score	0.961		1.116			
Finan	Financial, Businesses and Manpower Conditions				Quality of Life and Infrastructure Development					
	Before	After				Before	After			
Rank	4		3	Rank	1		1			
Score	1.463	1.	924	Score	2.130) —	2.388			

East Nusa Tenggara

Bali-Nusa Tenggara Region



2020 ACI Competitiveness Index: Ranking and Scores by Sub-Environments



[] shows rank out of 34 provinces

East Nusa Tenggara

Bali-Nusa Tenggara Region

2	020 ACI Competitiven	ess Inde	x: Top 2	20% S	trongest and Weakest	Indicato	rs
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators S	Std. Score	Envmt.
1	Minimum wage per month	1.294	FBMC	85	Internet access in handphone	-0.961	QLID
2	Unemployment rate	1.010	FBMC	86	Security	-0.982	GIS
3	Inflation (from 2015 onwards, 2012 = 100)	0.879	MS	87	Lack of corruption	-0.990	GIS
4	Quality of Democratic Institutions	0.702	GIS	88	Population per number of bank branches/offices	-0.996	FBMC
5	Length of paved roads	0.600	QLID	89	Openness to trade	-1.006	MS
6	Crime rate	0.585	GIS	90	Handphone ownership	-1.043	QLID
7	Population per health facility	0.573	QLID	91	Ease of acquiring property	-1.147	QLID
8	Crime Clearance Rate	0.560	GIS	92	Mean years of schooling	-1.273	QLID
9	Non-performing loans per total bank loans	0.559	FBMC	93	Life expectancy at birth	-1.278	QLID
10	Registered motor vehicles per kilometre of paved road	0.550	QLID	94	Urban population	-1.322	QLID
11	Internet access at office	0.388	QLID	95	Provincial governing capacity	-1.323	GIS
12	Non-performing loans	0.370	FBMC	96	Desktop computer ownership	-1.337	QLID
13	Households with pipe water services	0.256	QLID	97	Coordination of local governments	-1.434	GIS
14	Government Auditor Opinion	0.174	GIS	98	Human development index	-1.500	QLID
15	Student-teacher ratio (senior high)	0.169	QLID	99	Labour relations	-1.507	FBMC
16	Employment in primary industry	0.146	FBMC	100	Rule of Law	-1.655	GIS
17	Net school enrolment rate (senior high)	0.130	QLID	101	Regulatory governance	-1.738	GIS
18	Fatalities due to natural disaster	0.074	QLID	102	Ease of dealing with banks	-1.756	FBMC
19	Student-teacher ratio (primary)	0.061	QLID	103	Vibrancy of competition and collaboration	-2.067	GIS
20	Gini ratio	0.023	QLID	104	Households with state electricity services	-2.130	QLID
21	Government progress and expectation	0.016	GIS	105	Firms' human resource capacity	-2.275	FBMC

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting; FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

Overall Competitiveness						
	Before			After		
Rank		34		_	24	
Score		-1.301		-0.556		
Macroeconomic Stability				Government and Institutional Setting		
	Before		After		Before	After
Rank	28		26	Rank	30	22
Score	-0.718		-0.625	Score	-1.260	-0.324
Financial, Businesses and Manpower Conditions			Quality of Life and Infrastructure Development			
	Before		After		Before	After
Rank	31		25	Rank	32	23
Score	-1.120		-0.590	Score	-1.305	-0.329




[] shows rank out of 34 provinces

Gorontalo Sulawesi Region

2	2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators									
Rank	20% Strongest Indicators	Std. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.			
1	Internet access at school	1.719	QLID	85	Net school enrolment rate (senior high)	-0.680	QLID			
2	Crime Clearance Rate	1.683	GIS	86	Human development index	-0.683	QLID			
3	Government efficiency	1.609	GIS	87	Desktop computer ownership	-0.702	QLID			
4	Provincial governing capacity	1.595	GIS	88	Number of bank branches/offices	-0.706	FBMC			
5	Rule of Law	1.466	GIS	89	Export, non-oil and gas	-0.708	MS			
6	Coordination of local governments	1.347	GIS	90	Government expenditure	-0.727	GIS			
7	Ease of acquiring property	1.174	QLID	91	Export	-0.732	MS			
8	Government inclusiveness	1.126	GIS	92	Telephone ownership	-0.738	QLID			
9	GRDP growth	0.980	MS	93	Secondary industry productivity	-0.741	FBMC			
10	Regulatory governance	0.969	GIS	94	Foreign direct investment, last three year average	-0.742	MS			
11	Public Reports of Corruption per Government Expenditure	0.864	GIS	95	Firms' equipment capacity	-0.777	FBMC			
12	Security	0.821	GIS	96	GRDP of primary industry	-0.783	MS			
13	Vibrancy of competition and collaboration	0.625	GIS	97	Tax revenue/Government revenue	-0.820	GIS			
14	Student-teacher ratio (junior high)	0.610	QLID	98	Life expectancy at birth	-0.869	QLID			
15	Government progress and expectation	0.557	GIS	99	Length of paved roads	-0.881	QLID			
16	Fatalities due to natural disaster	0.547	QLID	100	Net school enrolment rate (junior high)	-1.023	QLID			
17	Adult illiteracy rate	0.540	QLID	101	Openness to trade	-1.080	MS			
18	Handphone ownership	0.513	QLID	102	Mean years of schooling	-1.099	QLID			
19	Unemployment rate	0.454	FBMC	103	Crime rate	-1.185	GIS			
20	Registered motor vehicles per kilometre of paved road	0.452	QLID	104	Gini ratio	-1.202	QLID			
21	Internet access in handphone	0.438	QLID	105	Firms' human resource capacity	-1.387	FBMC			

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting;

FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness										
			Before								
	Rank		20	_	13						
	Score		-0.311		0.136						
Macroeconomic Stability		Government and Institutional Setting									
	Before		After		Before	After					
Rank	26		15	Rank	9	8					
Score	-0.625		-0.247	Score	0.692	0.947					
Finan	Financial, Businesses and Manpower Conditions			Qua	lity of Life and Infrastru	cture Development					
	Before		After		Before	After					
Rank	27		25	Rank	22	16					
Score	-0.845		-0.525	Score	-0.275	0.287					

Jambi Sumatra Region



[] shows rank out of 34 provinces

Jaml	oi
Sumatra F	Region

2	2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators									
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.			
1	Government efficiency	1.623	GIS	85	Desktop computer ownership	-0.406	QLID			
2	Provincial governing capacity	1.587	GIS	86	GRDP, non-minerals	-0.409	MS			
3	Government progress and expectation	1.284	GIS	87	Employment in tertiary industry	-0.416	FBMC			
4	Investment promotion and management	1.272	MS	88	Employment in secondary industry	-0.418	FBMC			
5	Labour relations	1.216	FBMC	89	Gross domestic fixed capital formation	-0.440	MS			
6	Quality of physical infrastructure	1.184	QLID	90	Government revenue	-0.451	GIS			
7	Coordination of local governments	1.134	GIS	91	GRDP of secondary industry	-0.456	MS			
8	Student-teacher ratio (junior high)	1.007	QLID	92	Vibrancy of competition and collaboration	-0.461	GIS			
9	Security	0.966	GIS	93	Passengers of domestic air traffic	-0.472	QLID			
10	Regulatory governance	0.916	GIS	94	Export, non-oil and gas	-0.486	MS			
11	Rule of Law	0.764	GIS	95	Government expenditure	-0.495	GIS			
12	Government inclusiveness	0.694	GIS	96	Firms' performance	-0.520	FBMC			
13	Gini ratio	0.688	QLID	97	Internet access in handphone	-0.646	QLID			
14	Affordability and accessibility of goods	0.681	QLID	98	Foreign direct investment, last three year average	-0.690	MS			
15	Unemployment rate	0.678	FBMC	99	Firms' innovation	-0.734	FBMC			
16	Firms' human resource capacity	0.630	FBMC	100	Internet access at office	-0.784	QLID			
17	Student-teacher ratio (senior high)	0.609	QLID	101	Urban population	-0.786	QLID			
18	Ease of dealing with banks	0.540	FBMC	102	Quality of education	-0.798	QLID			
19	Non-performing loans per total bank loans	0.532	FBMC	103	Public Reports of Corruption per Government Expenditure	-1.163	GIS			
20	Student-teacher ratio (primary)	0.521	QLID	104	Crime rate	-1.262	GIS			
21	Life expectancy at birth	0.515	QLID	105	Government Performance Evaluation	-3.090	GIS			

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting; FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness										
		Before		After							
	Rank	14	_	10							
	Score	-0.015		0.363							
Macroeconomic Stability		Government and Institutional Setting									
	Before	After		Before	After						
Rank	16	11	Rank	13	9						
Score	-0.245	-0.036	Score	0.230	0.803						
Finan	Financial, Businesses and Manpower Conditions			lity of Life and Infrastruct	ure Development						
	Before	After		Before	After						
Rank	13	12	Rank	17	14						
Score	-0.046	0.120	Score	0.010	0.341						





[] shows rank out of 34 provinces

Lampung
Sumatra Region

2	2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators									
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.			
1	Lack of corruption	1.847	GIS	85	Government progress and expectation	-0.466	GIS			
2	Internet access at school	1.114	QLID	86	Overall labour productivity	-0.475	FBMC			
3	Labour relations	1.011	FBMC	87	Telephone ownership	-0.570	QLID			
4	Firms' human resource capacity	0.939	FBMC	88	Government inclusiveness	-0.593	GIS			
5	Affordability and accessibility of goods	0.889	QLID	89	Mean years of schooling	-0.611	QLID			
6	Gini ratio	0.715	QLID	90	Rule of Law	-0.621	GIS			
7	Non-performing loans per total bank loans	0.701	FBMC	91	Foreign direct investment, last three year average	-0.627	MS			
8	Quality of education	0.635	QLID	92	Net school enrolment rate (senior high)	-0.651	QLID			
9	Employment in primary industry	0.524	FBMC	93	Environmental quality index	-0.767	QLID			
10	Vibrancy of competition and collaboration	0.516	GIS	94	Provincial governing capacity	-0.833	GIS			
11	Crime rate	0.496	GIS	95	Internet access in handphone	-0.905	QLID			
12	Tax revenue/Government revenue	0.494	GIS	96	Government efficiency	-0.922	GIS			
13	Fatalities due to natural disaster	0.479	QLID	97	Urban population	-0.951	QLID			
14	Inflation (from 2015 onwards, 2012 = 100)	0.462	MS	98	Population growth	-0.960	QLID			
15	Quality of Democratic Institutions	0.449	GIS	99	Civil Liberty	-1.027	GIS			
16	Crime Clearance Rate	0.444	GIS	100	Coordination of local governments	-1.127	GIS			
17	Unemployment rate	0.428	FBMC	101	Population per medical worker	-1.220	QLID			
18	Minimum wage per month	0.390	FBMC	102	Internet access at office	-1.335	QLID			
19	Length of paved roads	0.381	QLID	103	Desktop computer ownership	-1.413	QLID			
20	Net school enrolment rate (primary)	0.351	QLID	104	Households with pipe water services	-1.514	QLID			
21	Firms' equipment capacity	0.333	FBMC	105	Population per number of bank branches/offices	-2.542	FBMC			

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting; FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

The matching businesses, and manpower conditions, QLD. Quanty of Life and initiastructure Development

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness									
			Before							
	Rank		22	_	13					
	Score		-0.376		0.135					
Macroeconomic Stability		Government and Institutional Setting								
	Before		After		Before	After				
Rank	17		13	Rank	21	13				
Score	-0.248		-0.159	Score	-0.214	0.260				
Finan	Financial, Businesses and Manpower Conditions			Qua	lity of Life and Infrastru	cture Development				
	Before		After		Before	After				
Rank	17		12	Rank	27	16				
Score	-0.175		0.090	Score	-0.637	0.266				

Maluku Maluku-Papua Region



[] shows rank out of 34 provinces

Maluku
Maluku-Papua Region

2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators									
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.		
1	Non-performing loans per total bank loans	1.207	FBMC	85	Investment promotion and management	-0.754	MS		
2	Mean years of schooling	1.189	QLID	86	Secondary industry productivity	-0.797	FBMC		
3	Student-teacher ratio (senior high)	1.122	QLID	87	GRDP per capita	-0.813	MS		
4	Gini ratio	1.034	QLID	88	GRDP of primary industry	-0.817	MS		
5	Student-teacher ratio (junior high)	1.030	QLID	89	Government inclusiveness	-0.926	GIS		
6	Net school enrolment rate (senior high)	0.879	QLID	90	Firms' equipment capacity	-0.956	FBMC		
7	Environmental quality index	0.756	QLID	91	Quality of technological infrastructure	-0.975	QLID		
8	Households with pipe water services	0.689	QLID	92	Lack of corruption	-1.065	GIS		
9	Student-teacher ratio (primary)	0.684	QLID	93	Tax revenue/Government revenue	-1.230	GIS		
10	Adult illiteracy rate	0.681	QLID	94	Firms' application of IT	-1.302	FBMC		
11	Quality of physical infrastructure	0.646	QLID	95	Firms' performance	-1.324	FBMC		
12	Population per number of bank branches/offices	0.608	FBMC	96	Internet access at office	-1.476	QLID		
13	Quality of education	0.583	QLID	97	Internet access in handphone	-1.494	QLID		
14	Net school enrolment rate (junior high)	0.542	QLID	98	Life expectancy at birth	-1.535	QLID		
15	Security	0.488	GIS	99	Firms' innovation	-1.724	FBMC		
16	Population per medical worker	0.459	QLID	100	Ease of acquiring property	-1.838	QLID		
17	Registered motor vehicles per kilometre of paved road	0.435	QLID	101	Labour force participation rate	-2.085	FBMC		
18	Ease of dealing with banks	0.424	FBMC	102	Crime Clearance Rate	-2.131	GIS		
19	Non-performing loans	0.417	FBMC	103	Internet access at home	-2.171	QLID		
20	Fatalities due to natural disaster	0.412	QLID	104	Unemployment rate	-2.312	FBMC		
21	GRDP growth	0.383	MS	105	Inflation (from 2015 onwards, 2012 = 100)	-2.757	MS		

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting;

FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness										
			Before								
	Rank		28	_	20						
	Score		-1.049 -0.319								
Macroeconomic Stability		Government and Institutional Setting									
	Before		After		Before	After					
Rank	33		26	Rank	26	23					
Score	-0.939		-0.609	Score	-0.855	-0.369					
Finan	Financial, Businesses and Manpower Conditions			Qua	lity of Life and Infrastruc	ture Development					
	Before		After		Before	After					
Rank	33		22	Rank	24	16					
Score	-1.219		-0.374	Score	-0.539	0.276					

North Kalimantan

Kalimantan Region



2020 ACI Competitiveness Index: Ranking and Scores by Sub-Environments



[] shows rank out of 34 provinces

North Kalimantan

Kalimantan Region

2	2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators									
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.			
1	Population growth	3.367	QLID	85	Passengers of domestic air traffic	-0.559	QLID			
2	Primary industry productivity	1.732	FBMC	86	GRDP, non-minerals	-0.560	MS			
3	Government inclusiveness	1.624	GIS	87	Quality of technological infrastructure	-0.560	QLID			
4	Civil Liberty	1.597	GIS	88	Export, non-oil and gas	-0.562	MS			
5	Desktop computer ownership	1.527	QLID	89	Gross Regional Domestic Product (GRDP)	-0.580	MS			
6	Firms' human resource capacity	1.482	FBMC	90	Export	-0.596	MS			
7	Environmental quality index	1.423	QLID	91	Affordability and accessibility of goods	-0.598	QLID			
8	Coordination of local governments	1.400	GIS	92	Employment in tertiary industry	-0.604	FBMC			
9	Regulatory governance	1.360	GIS	93	Foreign direct investment, last three year average	-0.605	MS			
10	Provincial governing capacity	1.345	GIS	94	Government revenue	-0.629	GIS			
11	Rule of Law	1.281	GIS	95	Labour force	-0.633	FBMC			
12	GRDP per capita	1.271	MS	96	Employment	-0.636	FBMC			
13	Handphone ownership	1.257	QLID	97	Population	-0.647	QLID			
14	Gini ratio	1.247	QLID	98	Minimum wage per month	-0.661	FBMC			
15	Overall labour productivity	1.196	FBMC	99	Government expenditure	-0.663	GIS			
16	Life expectancy at birth	1.169	QLID	100	Internet access at school	-0.732	QLID			
17	Ease of dealing with banks	1.127	FBMC	101	Employment in primary industry	-0.735	FBMC			
18	Vibrancy of competition and collaboration	1.116	GIS	102	Number of bank branches/offices	-0.761	FBMC			
19	Population per medical worker	1.102	QLID	103	Tax revenue/Government revenue	-1.082	GIS			
20	Urban population	1.100	QLID	104	Length of paved roads	-1.093	QLID			
21	Government progress and expectation	1.037	GIS	105	Non-performing loans per total bank loans	-2.492	FBMC			

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting; FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness								
			Before		After				
	Rank		8	_	6				
	Score		0.547		0.93	6			
Macroeconomic Stability			Government and Institutional Setting						
	Before		After		Before	After			
Rank	15		10	Rank	7	5			
Score	-0.236		0.016	Score	1.032	1.246			
Finan	Financial, Businesses and Manpower Conditions			Quality of Life and Infrastructure Development					
	Before		After		Before	After			
Rank	9		6	Rank	10	5			
Score	0.353		0.859	Score	0.701	1.055			

North Maluku Maluku-Papua Region



2020 ACI Competitiveness Index: Ranking and Scores by Sub-Environments



[] shows rank out of 34 provinces

North Maluku

Maluku-Papua Region

2	2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators									
Rank	20% Strongest Indicators	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.			
1	Inflation (from 2015 onwards, 2012 = 100)	1.934	MS	85	Crime Clearance Rate	-0.895	GIS			
2	GRDP growth	1.597	MS	86	Vibrancy of competition and collaboration	-0.903	GIS			
3	Crime rate	1.381	GIS	87	Government progress and expectation	-0.991	GIS			
4	Student-teacher ratio (junior high)	1.200	QLID	88	Labour relations	-1.011	FBMC			
5	Student-teacher ratio (senior high)	1.134	QLID	89	Urban population	-1.028	QLID			
6	Households with pipe water services	1.067	QLID	90	Government Performance Evaluation	-1.081	GIS			
7	Non-performing loans per total bank loans	0.989	FBMC	91	Provincial governing capacity	-1.082	GIS			
8	Public Reports of Corruption per Government Expenditure	0.831	GIS	92	Quality of healthcare	-1.089	QLID			
9	Gini ratio	0.794	QLID	93	Quality of education	-1.209	QLID			
10	Environmental quality index	0.699	QLID	94	Coordination of local governments	-1.282	GIS			
11	Civil Liberty	0.698	GIS	95	Internet access at home	-1.282	QLID			
12	Registered motor vehicles per kilometre of paved road	0.680	QLID	96	Tax revenue/Government revenue	-1.307	GIS			
13	Net school enrolment rate (junior high)	0.647	QLID	97	Handphone ownership	-1.388	QLID			
14	Population per medical worker	0.647	QLID	98	Firms' application of IT	-1.405	FBMC			
15	Adult illiteracy rate	0.589	QLID	99	Quality of technological infrastructure	-1.427	QLID			
16	Population growth	0.556	QLID	100	Labour force participation rate	-1.488	FBMC			
17	Security	0.512	GIS	101	Affordability and accessibility of goods	-1.737	QLID			
18	Firms' human resource capacity	0.498	FBMC	102	Firms' innovation	-1.840	FBMC			
19	Population per number of bank branches/offices	0.461	FBMC	103	Investment promotion and management	-1.888	MS			
20	Firms' equipment capacity	0.423	FBMC	104	Quality of Democratic Institutions	-1.986	GIS			
21	Non-performing loans	0.418	FBMC	105	Government Auditor Opinion	-5.745	GIS			

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting; FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness								
		Before		After					
	Rank	32	_	23					
	Score	-1.084		-0.43	:1				
Macroeconomic Stability				Government and Institutional Setting					
	Before	After		Before	After				
Rank	29	22	Rank	33	25				
Score	-0.748	-0.482	Score	-1.476	-0.700				
Finan	Financial, Businesses and Manpower Conditions			Quality of Life and Infrastructure Development					
	Before	After		Before	After				
Rank	28	23	Rank	25	16				
Score	-0.882	-0.430	Score	-0.561	0.158				

North Sulawesi Sulawesi Region



2020 ACI Competitiveness Index: Ranking and Scores by Sub-Environments



[] shows rank out of 34 provinces

North Sulawesi

Sulawesi Region

2	2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators									
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators S	td. Score	Envmt.			
1	Government inclusiveness	2.132	GIS	85	Population	-0.484	QLID			
2	Government progress and expectation	2.070	GIS	86	Labour force	-0.487	FBMC			
3	Coordination of local governments	2.061	GIS	87	Foreign direct investment, last three year average	-0.487	MS			
4	Regulatory governance	1.999	GIS	88	GRDP of secondary industry	-0.492	MS			
5	Rule of Law	1.904	GIS	89	Employment	-0.493	FBMC			
6	Investment promotion and management	1.807	MS	90	Government revenue	-0.498	GIS			
7	Provincial governing capacity	1.743	GIS	91	Gross Regional Domestic Product (GRDP)	-0.519	MS			
8	Vibrancy of competition and collaboration	1.568	GIS	92	Government expenditure	-0.548	GIS			
9	Government efficiency	1.499	GIS	93	Export, non-oil and gas	-0.557	MS			
10	Security	1.337	GIS	94	Lack of corruption	-0.560	GIS			
11	Ease of acquiring property	1.235	QLID	95	Export	-0.591	MS			
12	Affordability and accessibility of goods	1.206	QLID	96	Employment in primary industry	-0.592	FBMC			
13	Population per number of bank branches/offices	1.126	FBMC	97	GRDP of primary industry	-0.628	MS			
14	Firms' innovation	1.023	FBMC	98	Labour force participation rate	-0.678	FBMC			
15	Labour relations	1.011	FBMC	99	Gini ratio	-0.909	QLID			
16	Firms' application of IT	0.970	FBMC	100	Population growth	-1.026	QLID			
17	Mean years of schooling	0.968	QLID	101	Quality of Democratic Institutions	-1.083	GIS			
18	Internet access in handphone	0.937	QLID	102	Unemployment rate	-1.147	FBMC			
19	Inflation (from 2015 onwards, 2012 = 100)	0.917	MS	103	Minimum wage per month	-1.234	FBMC			
20	Quality of healthcare	0.916	QLID	104	Crime rate	-1.941	GIS			
21	Adult illiteracy rate	0.810	QLID	105	Firms' performance	-2.665	FBMC			

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting;

FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness								
			Before		After				
	Rank		10	_	7				
	Score		0.364		0.773	3			
Macroeconomic Stability			Government and Institutional Setting						
	Before		After		Before	After			
Rank	14		10	Rank	5	4			
Score	-0.173		0.087	Score	1.099	1.482			
Finan	Financial, Businesses and Manpower Conditions		Quality of Life and Infrastructure Development						
	Before		After		Before	After			
Rank	22		12	Rank	8	6			
Score	-0.398		0.161	Score	0.704	0.894			

North Sumatra

Sumatra Region



[] shows rank out of 34 provinces

North Sumatra

Sumatra Region

2	2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators									
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.			
1	Lack of corruption	1.771	GIS	85	Civil Liberty	-0.960	GIS			
2	Length of paved roads	1.737	QLID	86	Student-teacher ratio (senior high)	-1.055	QLID			
3	GRDP of primary industry	1.016	MS	87	Desktop computer ownership	-1.061	QLID			
4	Employment in primary industry	0.974	FBMC	88	Internet access at office	-1.153	QLID			
5	Mean years of schooling	0.794	QLID	89	Quality of education	-1.271	QLID			
6	Number of bank branches/offices	0.784	FBMC	90	Vibrancy of competition and collaboration	-1.288	GIS			
7	Tax revenue/Government revenue	0.738	GIS	91	Quality of healthcare	-1.339	QLID			
8	Gini ratio	0.661	QLID	92	Crime rate	-1.377	GIS			
9	Export, non-oil and gas	0.648	MS	93	Coordination of local governments	-1.428	GIS			
10	Adult illiteracy rate	0.632	QLID	94	Government efficiency	-1.432	GIS			
11	Population	0.605	QLID	95	Quality of physical infrastructure	-1.442	QLID			
12	Employment	0.550	FBMC	96	Regulatory governance	-1.516	GIS			
13	Labour force	0.548	FBMC	97	Provincial governing capacity	-1.518	GIS			
14	Households with pipe water services	0.542	QLID	98	Rule of Law	-1.669	GIS			
15	GRDP, non-minerals	0.541	MS	99	Public Reports of Corruption per Government Expenditure	-1.692	GIS			
16	Export	0.539	MS	100	Government inclusiveness	-1.772	GIS			
17	Employment in tertiary industry	0.507	FBMC	101	Security	-1.781	GIS			
18	Handphone ownership	0.504	QLID	102	Internet access at home	-1.928	QLID			
19	Net school enrolment rate (senior high)	0.486	QLID	103	Government progress and expectation	-1.954	GIS			
20	Net school enrolment rate (junior high)	0.470	QLID	104	Labour relations	-1.985	FBMC			
21	Gross Regional Domestic Product (GRDP)	0.468	MS	105	Internet access in handphone	-3.721	QLID			

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting;

FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness								
			Before		After				
	Rank		24	_	13				
	Score		-0.609		0.233				
Macroeconomic Stability			Government and Institutional Setting						
	Before		After		Before	After			
Rank	9		9	Rank	32	13			
Score	0.199		0.199	Score	-1.417	0.214			
Finan	Financial, Businesses and Manpower Conditions		Quality of Life and Infrastructure Development						
	Before		After		Before	After			
Rank	16		12	Rank	28	13			
Score	-0.114		0.029	Score	-0.728	0.349			

Papua Maluku-Papua Region



[] shows rank out of 34 provinces

Papua
Maluku-Papua Region

2	2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators									
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.			
1	Labour force participation rate	1.695	FBMC	85	Gini ratio	-1.015	QLID			
2	Inflation (from 2015 onwards, 2012 = 100)	1.426	MS	86	Internet access at home	-1.120	QLID			
3	Environmental quality index	1.383	QLID	87	Security	-1.144	GIS			
4	Public Reports of Corruption per Government Expenditure	1.053	GIS	88	Student-teacher ratio (junior high)	-1.189	QLID			
5	Government efficiency	1.048	GIS	89	Desktop computer ownership	-1.304	QLID			
6	Ease of dealing with banks	1.013	FBMC	90	Government Performance Evaluation	-1.304	GIS			
7	Tertiary industry productivity	0.941	FBMC	91	Minimum wage per month	-1.389	FBMC			
8	Unemployment rate	0.820	FBMC	92	Internet access at school	-1.506	QLID			
9	Provincial governing capacity	0.810	GIS	93	Life expectancy at birth	-1.634	QLID			
10	Regulatory governance	0.784	GIS	94	Tax revenue/Government revenue	-1.646	GIS			
11	Government inclusiveness	0.630	GIS	95	Quality of Democratic Institutions	-1.680	GIS			
12	Civil Liberty	0.580	GIS	96	Net school enrolment rate (senior high)	-1.780	QLID			
13	Registered motor vehicles per kilometre of paved road	0.573	QLID	97	Non-performing loans per total bank loans	-1.994	FBMC			
14	Fatalities due to natural disaster	0.547	QLID	98	Mean years of schooling	-2.481	QLID			
15	Government progress and expectation	0.536	GIS	99	Human development index	-2.657	QLID			
16	Government expenditure	0.523	GIS	100	Student-teacher ratio (primary)	-3.448	QLID			
17	Population per medical worker	0.520	QLID	101	Handphone ownership	-3.921	QLID			
18	Population per number of bank branches/offices	0.519	FBMC	102	Households with state electricity services	-4.227	QLID			
19	Firms' performance	0.462	FBMC	103	Net school enrolment rate (junior high)	-4.396	QLID			
20	Crime Clearance Rate	0.424	GIS	104	Adult illiteracy rate	-4.495	QLID			
21	Secondary industry productivity	0.423	FBMC	105	Net school enrolment rate (primary)	-5.629	QLID			

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting; FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness								
			Before		After				
	Rank		29	_	14				
	Score		-1.055		0.012	2			
Macroeconomic Stability				Government and Institutional Setting					
	Before		After		Before	After			
Rank	13		13	Rank	18	13			
Score	-0.171		-0.171	Score	-0.078	0.424			
Finan	Financial, Businesses and Manpower Conditions			Quality of Life and Infrastructure Development					
	Before		After		Before	After			
Rank	15		12	Rank	34	21			
Score	-0.098		0.171	Score	-3.223	-0.383			





^[] shows rank out of 34 provinces

Riau Islands

Sumatra Region

2	2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators										
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.				
1	Openness to trade	4.005	MS	85	Domestic direct investment, last three year average	-0.591	MS				
2	Primary industry productivity	2.597	FBMC	86	Government expenditure	-0.598	GIS				
3	Firms' performance	2.188	FBMC	87	Government efficiency	-0.618	GIS				
4	Urban population	1.969	QLID	88	Vibrancy of competition and collaboration	-0.651	GIS				
5	Population growth	1.704	QLID	89	Ease of acquiring property	-0.667	QLID				
6	Firms' equipment capacity	1.576	FBMC	90	Minimum wage per month	-0.670	FBMC				
7	Net school enrolment rate (senior high)	1.507	QLID	91	Lack of corruption	-0.675	GIS				
8	Mean years of schooling	1.491	QLID	92	Length of paved roads	-0.694	QLID				
9	Firms' application of IT	1.480	FBMC	93	Quality of Democratic Institutions	-0.736	GIS				
10	Overall labour productivity, non-minerals	1.423	FBMC	94	Employment in primary industry	-0.739	FBMC				
11	GRDP per capita, non- minerals	1.372	MS	95	Student-teacher ratio (primary)	-0.739	QLID				
12	Overall labour productivity	1.348	FBMC	96	Security	-0.798	GIS				
13	Handphone ownership	1.334	QLID	97	Quality of healthcare	-0.804	QLID				
14	Population per number of bank branches/offices	1.300	FBMC	98	Quality of education	-0.959	QLID				
15	Desktop computer ownership	1.299	QLID	99	Unemployment rate	-1.136	FBMC				
16	GRDP per capita	1.299	MS	100	Student-teacher ratio (junior high)	-1.178	QLID				
17	Human development index	1.171	QLID	101	Coordination of local governments	-1.211	GIS				
18	Net school enrolment rate (junior high)	1.159	QLID	102	Affordability and accessibility of goods	-1.221	QLID				
19	Internet access at office	1.048	QLID	103	Provincial governing capacity	-1.320	GIS				
20	Government Performance Evaluation	1.036	GIS	104	Internet access at school	-2.108	QLID				
21	Secondary industry productivity	0.959	FBMC	105	GRDP growth	-2.124	MS				

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting;

FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness								
			Before		After				
	Rank		11	_		7			
	Score		0.321		0.7	73			
Macroeconomic Stability			Government and Institutional Setting						
	Before		After		Before	After			
Rank	8		7	Rank	24	16			
Score	0.446		0.638	Score	-0.576	-0.015			
Finan	Financial, Businesses and Manpower Conditions		Quality of Life and Infrastructure Development						
	Before		After		Before	After			
Rank	6		6	Rank	11	5			
Score	0.787		0.965	Score	0.429	1.037			

Riau Sumatra Region



[] shows rank out of 34 provinces

Riau
Sumatra Region

2	2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators										
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.				
1	GRDP of primary industry	2.369	MS	85	Minimum wage per month	-0.454	FBMC				
2	Secondary industry productivity	2.173	FBMC	86	Population per medical worker	-0.464	QLID				
3	Export	1.478	MS	87	Ease of acquiring property	-0.471	QLID				
4	Export, non-oil and gas	1.305	MS	88	Firms' equipment capacity	-0.483	FBMC				
5	Population growth	1.264	QLID	89	Firms' human resource capacity	-0.529	FBMC				
6	Overall labour productivity	1.124	FBMC	90	Firms' application of IT	-0.529	FBMC				
7	GRDP per capita	1.001	MS	91	Quality of technological infrastructure	-0.536	QLID				
8	Overall labour productivity, non-minerals	0.997	FBMC	92	Unemployment rate	-0.619	FBMC				
9	Primary industry productivity	0.979	FBMC	93	Quality of education	-0.645	QLID				
10	Coordination of local governments	0.978	GIS	94	Internet access at office	-0.702	QLID				
11	Gini ratio	0.928	QLID	95	Vibrancy of competition and collaboration	-0.732	GIS				
12	Crime rate	0.893	GIS	96	Fiscal balance	-0.736	GIS				
13	GRDP per capita, non- minerals	0.875	MS	97	Public Reports of Corruption per Government Expenditure	-0.749	GIS				
14	Handphone ownership	0.798	QLID	98	Ease of dealing with banks	-0.851	FBMC				
15	Adult illiteracy rate	0.689	QLID	99	Internet access in handphone	-0.913	QLID				
16	Government efficiency	0.613	GIS	100	Labour force participation rate	-0.965	FBMC				
17	Life expectancy at birth	0.603	QLID	101	Affordability and accessibility of goods	-1.040	QLID				
18	Student-teacher ratio (senior high)	0.547	QLID	102	Firms' innovation	-1.316	FBMC				
19	Human development index	0.508	QLID	103	Inflation (from 2015 onwards, 2012 = 100)	-1.329	MS				
20	Investment promotion and management	0.463	MS	104	GRDP growth	-1.678	MS				
21	GRDP of secondary industry	0.462	MS	105	Households with pipe water services	-1.747	QLID				

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting;

FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness									
			Before	After						
	Rank		13	_	·	9				
	Score		0.093		0.4	490				
Macroeconomic Stability			Government and Institutional Setting							
	Before		After		Before	After				
Rank	7		7	Rank	17	14				
Score	0.499		0.652	Score	-0.042	0.161				
Finan	cial, Businesses an	d Manp	ower Conditions	Quality of Life and Infrastructure Development						
	Before		After		Before	After				
Rank	14		9	Rank	19	11				
Score	-0.065		0.394	Score	-0.077	0.454				

South Kalimantan

Kalimantan Region



[] shows rank out of 34 provinces

South Kalimantan

Kalimantan Region

2	2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators										
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators S	td. Score	Envmt.				
1	Cargo at inter-island seaport	5.229	QLID	85	Telephone ownership	-0.374	QLID				
2	Cargo at international seaport	4.659	QLID	86	Mean years of schooling	-0.402	QLID				
3	Households with pipe water services	2.779	QLID	87	Overall labour productivity	-0.404	FBMC				
4	Openness to trade	2.107	MS	88	Gross Regional Domestic Product (GRDP)	-0.417	MS				
5	Quality of Democratic Institutions	1.698	GIS	89	GRDP, non-minerals	-0.432	MS				
6	Internet access at home	1.392	QLID	90	Minimum wage per month	-0.433	FBMC				
7	Lack of corruption	1.198	GIS	91	Secondary industry productivity	-0.438	FBMC				
8	Internet access in handphone	1.007	QLID	92	GRDP of secondary industry	-0.451	MS				
9	Student-teacher ratio (primary)	0.977	QLID	93	GRDP per capita, non-minerals	-0.454	MS				
10	Handphone ownership	0.942	QLID	94	Public Reports of Corruption per Government Expenditure	-0.455	GIS				
11	Ease of acquiring property	0.904	QLID	95	Gross domestic fixed capital formation	-0.476	MS				
12	Crime Clearance Rate	0.842	GIS	96	Government efficiency	-0.481	GIS				
13	Tax revenue/Government revenue	0.766	GIS	97	Overall labour productivity, non- minerals	-0.486	FBMC				
14	Labour force participation rate	0.669	FBMC	98	Tertiary industry productivity	-0.507	FBMC				
15	Affordability and accessibility of goods	0.619	QLID	99	Life expectancy at birth	-0.533	QLID				
16	Fatalities due to natural disaster	0.615	QLID	100	Internet access at school	-0.564	QLID				
17	Internet access at office	0.589	QLID	101	Vibrancy of competition and collaboration	-0.576	GIS				
18	Adult illiteracy rate	0.531	QLID	102	Net school enrolment rate (junior high)	-0.717	QLID				
19	Student-teacher ratio (junior high)	0.521	QLID	103	Net school enrolment rate (senior high)	-0.944	QLID				
20	Population per medical worker	0.518	QLID	104	Civil Liberty	-2.526	GIS				
21	Households with state electricity services	0.518	QLID	105	Population per health facility	-5.586	QLID				

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting; FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

Sweet 1 material, Businesses, and Manpower Conditions, QLD. Quanty of Life and infrastructure Development

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

Overall Competitiveness										
			Before		After					
	Rank		12	_	7					
	Score		0.293		0.666					
Macroeconomic Stability			Government and Institutional Setting							
	Before		After		Before	After				
Rank	10		10	Rank	16	13				
Score	-0.017		0.098	Score	-0.025	0.358				
Finan	cial, Businesses an	d Manpo	ower Conditions	Quality of Life and Infrastructure Development						
	Before		After		Before	After				
Rank	21		13	Rank	4	2				
Score	-0.243		-0.016	Score	1.277	1.808				

South Sulawesi

Sulawesi Region



[] shows rank out of 34 provinces

South Sulawesi

Sulawesi Region

2	2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators										
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.				
1	Internet access at school	1.351	QLID	85	Cargo at international seaport	-0.321	QLID				
2	GRDP growth	1.295	MS	86	Mean years of schooling	-0.344	QLID				
3	Investment promotion and management	1.106	MS	87	Inflation (from 2015 onwards, 2012 = 100)	-0.347	MS				
4	Quality of healthcare	1.042	QLID	88	Internet access in handphone	-0.354	QLID				
5	Length of paved roads	0.882	QLID	89	Internet access at office	-0.358	QLID				
6	Passengers of domestic air traffic	0.764	QLID	90	Foreign direct investment, last three year average	-0.383	MS				
7	Student-teacher ratio (primary)	0.746	QLID	91	Fatalities due to natural disaster	-0.400	QLID				
8	Handphone ownership	0.701	QLID	92	Net school enrolment rate (junior high)	-0.506	QLID				
9	Labour relations	0.672	FBMC	93	Export, non-oil and gas	-0.531	MS				
10	Student-teacher ratio (junior high)	0.637	QLID	94	Net school enrolment rate (senior high)	-0.555	QLID				
11	Desktop computer ownership	0.604	QLID	95	Export	-0.567	MS				
12	Households with pipe water services	0.587	QLID	96	Coordination of local governments	-0.584	GIS				
13	Environmental quality index	0.570	QLID	97	Civil Liberty	-0.667	GIS				
14	Government Performance Evaluation	0.563	GIS	98	Openness to trade	-0.785	MS				
15	Quality of education	0.521	QLID	99	Minimum wage per month	-0.852	FBMC				
16	Tax revenue/Government revenue	0.481	GIS	100	Adult illiteracy rate	-0.853	QLID				
17	Households with state electricity services	0.427	QLID	101	Population growth	-1.049	QLID				
18	Firms' innovation	0.402	FBMC	102	Crime rate	-1.069	GIS				
19	Quality of technological infrastructure	0.375	QLID	103	Labour force participation rate	-1.155	FBMC				
20	Registered motor vehicles per kilometre of paved road	0.369	QLID	104	Ease of dealing with banks	-1.201	FBMC				
21	Internet access at home	0.360	QLID	105	Gini ratio	-1.840	QLID				

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting;

FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness										
			Before								
	Rank		15	_	12						
	Score		-0.040		0.310						
Macroeconomic Stability			Government and Institutional Setting								
	Before		After		Before	After					
Rank	12		10	Rank	20	15					
Score	-0.098		0.148	Score	-0.186	0.034					
Finan	cial, Businesses ar	d Manp	ower Conditions	Quality of Life and Infrastructure Development							
	Before		After		Before	After					
Rank	19		12	Rank	14	6					
Score	-0.199		0.049	Score	0.349	0.816					

South Sumatra

Sumatra Region



[] shows rank out of 34 provinces

South Sumatra

Sumatra Region

2	2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators									
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.			
1	Firms' equipment capacity	1.073	FBMC	85	Cargo at inter-island seaport	-0.456	QLID			
2	Households with pipe water services	0.966	QLID	86	Population growth	-0.526	QLID			
3	Firms' application of IT	0.952	FBMC	87	Firms' performance	-0.538	FBMC			
4	Firms' human resource capacity	0.827	FBMC	88	Urban population	-0.552	QLID			
5	Civil Liberty	0.766	GIS	89	Internet access at school	-0.581	QLID			
6	GRDP of primary industry	0.744	MS	90	Government efficiency	-0.581	GIS			
7	Internet access at home	0.673	QLID	91	Desktop computer ownership	-0.657	QLID			
8	Employment in primary industry	0.626	FBMC	92	Vibrancy of competition and collaboration	-0.657	GIS			
9	Fiscal balance	0.595	GIS	93	Coordination of local governments	-0.682	GIS			
10	Quality of healthcare	0.591	QLID	94	Quality of education	-0.688	QLID			
11	Adult illiteracy rate	0.560	QLID	95	Minimum wage per month	-0.740	FBMC			
12	Foreign direct investment, last three year average	0.560	MS	96	Internet access at office	-0.782	QLID			
13	Labour force participation rate	0.538	FBMC	97	Net school enrolment rate (senior high)	-0.817	QLID			
14	Tax revenue/Government revenue	0.396	GIS	98	Rule of Law	-0.877	GIS			
15	Unemployment rate	0.392	FBMC	99	Government inclusiveness	-0.882	GIS			
16	Crime Clearance Rate	0.332	GIS	100	Lack of corruption	-0.904	GIS			
17	Net school enrolment rate (primary)	0.301	QLID	101	Regulatory governance	-1.318	GIS			
18	Domestic direct investment, last three year average	0.292	MS	102	Ease of acquiring property	-1.418	QLID			
19	Households with state electricity services	0.243	QLID	103	Security	-1.452	GIS			
20	Length of paved roads	0.235	QLID	104	Provincial governing capacity	-1.581	GIS			
21	Inflation (from 2015 onwards, $2012 = 100$)	0.235	MS	105	Public Reports of Corruption per Government Expenditure	-3.599	GIS			

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting; FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness										
			Before								
	Rank		23	_	13						
	Score		-0.432		0.077						
Macroeconomic Stability			Government and Institutional Setting								
	Before		After		Before	After					
Rank	11		11	Rank	28	14					
Score	-0.030		-0.030	Score	-0.994	0.080					
Financial, Businesses and Manpower Conditions					Quality of Life and Infrastructure Development						
	Before		After		Before	After					
Rank	12		12	Rank	23	17					
Score	0.025		0.124	Score	-0.462	0.087					

Southeast Sulawesi

Sulawesi Region



Business Efficiency [24th]

Southeast Sulawesi - - - Maximum

------ Median ------ Southea

[] shows rank out of 34 provinces

Southeast Sulawesi Sulawesi Region

2	2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators										
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.				
1	Ease of acquiring property	1.716	QLID	85	GRDP, non-minerals	-0.494	MS				
2	Inflation (from 2015 onwards, 2012 = 100)	1.503	MS	86	Government revenue	-0.494	GIS				
3	Lack of corruption	1.170	GIS	87	GRDP of secondary industry	-0.509	MS				
4	GRDP growth	1.000	MS	88	Gross Regional Domestic Product (GRDP)	-0.511	MS				
5	Unemployment rate	0.995	FBMC	89	Number of bank branches/offices	-0.517	FBMC				
6	Quality of technological infrastructure	0.939	QLID	90	Labour force participation rate	-0.517	FBMC				
7	Population per medical worker	0.931	QLID	91	Government expenditure	-0.526	GIS				
8	Student-teacher ratio (junior high)	0.925	QLID	92	Telephone ownership	-0.530	QLID				
9	Internet access at school	0.911	QLID	93	Internet access at office	-0.610	QLID				
10	Provincial governing capacity	0.891	GIS	94	Export, non-oil and gas	-0.644	MS				
11	Student-teacher ratio (senior high)	0.861	QLID	95	Civil Liberty	-0.647	GIS				
12	Security	0.834	GIS	96	Export	-0.673	MS				
13	Firms' performance	0.816	FBMC	97	Public Reports of Corruption per Government Expenditure	-0.692	GIS				
14	Internet access in handphone	0.804	QLID	98	Investment promotion and management	-0.701	MS				
15	Crime rate	0.804	GIS	99	Government inclusiveness	-0.767	GIS				
16	Population growth	0.623	QLID	100	Urban population	-0.775	QLID				
17	Internet access at home	0.521	QLID	101	Firms' application of IT	-0.814	FBMC				
18	Student-teacher ratio (primary)	0.518	QLID	102	Tax revenue/Government revenue	-0.826	GIS				
19	Labour relations	0.504	FBMC	103	Firms' human resource capacity	-0.897	FBMC				
20	Crime Clearance Rate	0.481	GIS	104	Firms' equipment capacity	-1.097	FBMC				
21	Rule of Law	0.475	GIS	105	Gini ratio	-1.175	QLID				

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting;

FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness										
			Before		er						
	Rank		19	_	13						
	Score		-0.169		0.1	91					
Macroeconomic Stability			Government and Institutional Setting								
	Before		After		Before	After					
Rank	22		15	Rank	15	13					
Score	-0.491		-0.192	Score	0.011	0.365					
Finan	cial, Businesses ar	nd Manp	oower Conditions	Quality of Life and Infrastructure Development							
	Before		After		Before	After					
Rank	24		17	Rank	12	11					
Score	-0.472		-0.154	Score	0.381	0.627					





[] shows rank out of 34 provinces

West Java Java Region

2	020 ACI Competitiven	ess Inde	x: Top	20% S	trongest and Weakest	Indicato	rs
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.
1	Export, non-oil and gas	3.966	MS	85	Labour force participation rate	-0.383	FBMC
2	Foreign direct investment, last three year average	3.908	MS	86	GRDP per capita	-0.414	MS
3	Employment in tertiary industry	3.864	FBMC	87	Primary industry productivity	-0.445	FBMC
4	Population	3.721	QLID	88	Fiscal balance	-0.458	GIS
5	Export	3.686	MS	89	Non-performing loans per total bank loans	-0.585	FBMC
6	Employment in secondary industry	3.598	FBMC	90	Tertiary industry productivity	-0.589	FBMC
7	GRDP of secondary industry	3.558	MS	91	Households with pipe water services	-0.814	QLID
8	Labour force	3.431	FBMC	92	Lack of corruption	-0.860	GIS
9	Employment	3.328	FBMC	93	Gini ratio	-0.882	QLID
10	Domestic direct investment, last three year average	2.654	MS	94	Civil Liberty	-1.082	GIS
11	GRDP, non-minerals	2.565	MS	95	Net school enrolment rate (senior high)	-1.228	QLID
12	Gross Regional Domestic Product (GRDP)	2.538	MS	96	Non-performing loans	-1.431	FBMC
13	Government expenditure	2.432	GIS	97	Quality of Democratic Institutions	-1.441	GIS
14	Number of bank branches/offices	2.400	FBMC	98	Fatalities due to natural disaster	-1.482	QLID
15	Tax revenue	2.010	GIS	99	Student-teacher ratio (primary)	-1.543	QLID
16	Government revenue	2.005	GIS	100	Environmental quality index	-1.702	QLID
17	Length of paved roads	1.885	QLID	101	Unemployment rate	-1.720	FBMC
18	Firms' innovation	1.714	FBMC	102	Population per number of bank branches/offices	-2.009	FBMC
19	Gross domestic fixed capital formation	1.701	MS	103	Student-teacher ratio (junior high)	-2.136	QLID
20	GRDP of tertiary industry	1.660	MS	104	Student-teacher ratio (senior high)	-2.482	QLID
21	Tax revenue/Government revenue	1.577	GIS	105	Population per medical worker	-2.815	QLID

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting; FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

Overall Competitiveness								
			Before	After				
Rank 5			3					
Score			1.551 2.062					
Macroeconomic Stability			Government and Institutional Setting					
	Before		After		Before	After		
Rank	2		2	Rank	6	4		
Score	2.471		2.489	Score	1.052	1.367		
Financial, Businesses and Manpower Conditions		Quality of Life and Infrastructure Development						
	Before		After		Before	After		
Rank	5		3	Rank	15	4		
Score	1.418		1.944	Score	0.309	1.253		

West Kalimantan

Kalimantan Region



[] shows rank out of 34 provinces

West Kalimantan Kalimantan Region

2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators								
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.	
1	Quality of education	1.527	QLID	85	GRDP per capita	-0.506	MS	
2	Civil Liberty	1.445	GIS	86	Overall labour productivity	-0.513	FBMC	
3	Labour relations	1.393	FBMC	87	Openness to trade	-0.538	MS	
4	Ease of dealing with banks	1.252	FBMC	88	Export	-0.539	MS	
5	Regulatory governance	1.141	GIS	89	Primary industry productivity	-0.554	FBMC	
6	Ease of acquiring property	1.064	QLID	90	Net school enrolment rate (junior high)	-0.667	QLID	
7	Firms' performance	0.918	FBMC	91	Adult illiteracy rate	-0.683	QLID	
8	Provincial governing capacity	0.911	GIS	92	Urban population	-0.687	QLID	
9	Government inclusiveness	0.843	GIS	93	Internet access at office	-0.700	QLID	
10	Gini ratio	0.821	QLID	94	Households with state electricity services	-0.714	QLID	
11	Government efficiency	0.801	GIS	95	Lack of corruption	-0.723	GIS	
12	Government progress and expectation	0.742	GIS	96	Student-teacher ratio (junior high)	-0.747	QLID	
13	Non-performing loans per total bank loans	0.725	FBMC	97	Desktop computer ownership	-0.757	QLID	
14	Quality of healthcare	0.705	QLID	98	Handphone ownership	-0.862	QLID	
15	Firms' application of IT	0.698	FBMC	99	Human development index	-0.870	QLID	
16	Firms' innovation	0.663	FBMC	100	Net school enrolment rate (senior high)	-1.074	QLID	
17	Environmental quality index	0.662	QLID	101	Inflation (from 2015 onwards, $2012 = 100$)	-1.123	MS	
18	Crime rate	0.650	GIS	102	Quality of Democratic Institutions	-1.262	GIS	
19	Coordination of local governments	0.627	GIS	103	Mean years of schooling	-1.331	QLID	
20	Crime Clearance Rate	0.626	GIS	104	Student-teacher ratio (senior high)	-1.339	QLID	
21	Vibrancy of competition and collaboration	0.616	GIS	105	Households with pipe water services	-1.435	QLID	

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting;

FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

Overall Competitiveness								
			Before	After				
Rank 16			11					
Score -0.052			-0.052	0.344				
Macroeconomic Stability			Government and Institutional Setting					
	Before		After		Before	After		
Rank	20		13	Rank	10	9		
Score	-0.341		-0.158	Score	0.602	0.755		
Financial, Businesses and Manpower Conditions			Quality of Life and Infrastructure Development					
	Before		After		Before	After		
Rank	10		8	Rank	29	16		
Score	0.329		0.442	Score	-0.766	0.127		

West Nusa Tenggara

Bali-Nusa Tenggara Region



[] shows rank out of 34 provinces

West Nusa Tenggara

Bali-Nusa Tenggara Region

2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators								
Rank	20% Strongest Indicators	Std. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.	
1	Quality of Democratic Institutions	2.248	GIS	85	Export	-0.561	MS	
2	Student-teacher ratio (junior high)	2.019	QLID	86	Firms' performance	-0.648	FBMC	
3	Student-teacher ratio (senior high)	1.577	QLID	87	Telephone ownership	-0.650	QLID	
4	Inflation (from 2015 onwards, 2012 = 100)	1.236	MS	88	Population growth	-0.666	QLID	
5	Security	1.172	GIS	89	Tertiary industry productivity	-0.688	FBMC	
6	Government Performance Evaluation	1.164	GIS	90	Overall labour productivity	-0.699	FBMC	
7	Quality of technological infrastructure	1.126	QLID	91	GRDP per capita	-0.708	MS	
8	Affordability and accessibility of goods	1.104	QLID	92	Overall labour productivity, non- minerals	-0.719	FBMC	
9	Households with pipe water services	1.084	QLID	93	Internet access at office	-0.726	QLID	
10	Firms' innovation	1.068	FBMC	94	GRDP per capita, non-minerals	-0.730	MS	
11	Minimum wage per month	1.044	FBMC	95	Human development index	-0.790	QLID	
12	Student-teacher ratio (primary)	1.041	QLID	96	Population per medical worker	-0.803	QLID	
13	Unemployment rate	0.987	FBMC	97	Handphone ownership	-0.810	QLID	
14	Non-performing loans per total bank loans	0.954	FBMC	98	Secondary industry productivity	-0.860	FBMC	
15	Quality of physical infrastructure	0.951	QLID	99	Environmental quality index	-1.036	QLID	
16	Vibrancy of competition and collaboration	0.947	GIS	100	Population per number of bank branches/offices	-1.091	FBMC	
17	Firms' application of IT	0.908	FBMC	101	Mean years of schooling	-1.250	QLID	
18	Quality of education	0.865	QLID	102	Desktop computer ownership	-1.392	QLID	
19	Labour relations	0.823	FBMC	103	Life expectancy at birth	-1.477	QLID	
20	Investment promotion and management	0.783	MS	104	Adult illiteracy rate	-1.778	QLID	
21	Net school enrolment rate (junior high)	0.772	QLID	105	GRDP growth	-3.358	MS	

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting;

FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

Overall Competitiveness								
	Before				After			
Rank 17			11					
	Score		-0.148	0.319				
Macroeconomic Stability			Government and Institutional Setting					
	Before	After			Before	After		
Rank	25		16	Rank	11	11		
Score	-0.550		-0.253	Score	0.503	0.503		
Financial, Businesses and Manpower Conditions		Quality of Life and Infrastructure Development						
	Before		After		Before	After		
Rank	20		12	Rank	20	11		
Score	-0.219		0.243	Score	-0.235	0.588		




[] shows rank out of 34 provinces

West Papua Maluku-Papua Region

2	2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators								
Rank	20% Strongest Indicators	Std. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.		
1	Secondary industry productivity	2.184	FBMC	85	Internet access at office	-1.152	QLID		
2	Environmental quality index	1.800	QLID	86	Coordination of local governments	-1.163	GIS		
3	Population growth	1.343	QLID	87	Government efficiency	-1.170	GIS		
4	Population per number of bank branches/offices	1.257	FBMC	88	Rule of Law	-1.190	GIS		
5	Net school enrolment rate (senior high)	1.135	QLID	89	Government Performance Evaluation	-1.305	GIS		
6	Mean years of schooling	1.108	QLID	90	Non-performing loans per total bank loans	-1.401	FBMC		
7	Public Reports of Corruption per Government Expenditure	1.071	GIS	91	Quality of education	-1.416	QLID		
8	Firms' performance	0.970	FBMC	92	Life expectancy at birth	-1.565	QLID		
9	Civil Liberty	0.937	GIS	93	Firms' human resource capacity	-1.596	FBMC		
10	Inflation (from 2015 onwards, 2012 = 100)	0.918	MS	94	Human development index	-1.685	QLID		
11	Overall labour productivity	0.726	FBMC	95	Firms' innovation	-1.698	FBMC		
12	GRDP per capita	0.717	MS	96	Labour relations	-1.718	FBMC		
13	Registered motor vehicles per kilometre of paved road	0.650	QLID	97	Tax revenue/Government revenue	-1.750	GIS		
14	Fatalities due to natural disaster	0.615	QLID	98	Quality of healthcare	-1.801	QLID		
15	Openness to trade	0.569	MS	99	Vibrancy of competition and collaboration	-1.838	GIS		
16	Net school enrolment rate (junior high)	0.558	QLID	100	Internet access at home	-2.471	QLID		
17	Ease of dealing with banks	0.522	FBMC	101	Quality of physical infrastructure	-2.488	QLID		
18	Student-teacher ratio (senior high)	0.502	QLID	102	Security	-2.755	GIS		
19	Population per medical worker	0.422	QLID	103	Firms' application of IT	-2.790	FBMC		
20	Population per health facility	0.410	QLID	104	Crime Clearance Rate	-2.799	GIS		
21	Desktop computer ownership	0.393	QLID	105	Quality of technological infrastructure	-3.330	QLID		

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting;

FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

	Overall Competitiveness								
			Before		er				
	Rank		33		20				
	Score		-1.294		-0.312				
Macroeconomic Stability				Government and Institutional Setting					
	Before		After		Before	After			
Rank	23		23	Rank	34	21			
Score	-0.529		-0.529	Score	-1.543	-0.235			
Finan	Financial, Businesses and Manpower Conditions				Quality of Life and Infrastructure Development				
	Before		After		Before	After			
Rank	25		12	Rank	33	23			
Score	-0.708		0.045	Score	-1.597	-0.337			

Note: Ranking and scores after simulation are derived by improving the province's top 20% weakest indicators.

West Sulawesi Sulawesi Region





[] shows rank out of 34 provinces

West Sulawesi

Sulawesi Region

2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators									
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	Std. Score	Envmt.		
1	Ease of acquiring property	2.514	QLID	85	Firms' application of IT	-0.762	FBMC		
2	Internet access at school	1.162	QLID	86	Handphone ownership	-0.783	QLID		
3	Non-performing loans per total bank loans	1.162	FBMC	87	Net school enrolment rate (senior high)	-0.989	QLID		
4	Unemployment rate	1.045	FBMC	88	Government inclusiveness	-0.990	GIS		
5	Public Reports of Corruption per Government Expenditure	1.013	GIS	89	Length of paved roads	-0.991	QLID		
6	Student-teacher ratio (primary)	1.004	QLID	90	Mean years of schooling	-1.017	QLID		
7	GRDP growth	0.908	MS	91	Internet access at office	-1.044	QLID		
8	Affordability and accessibility of goods	0.876	QLID	92	Quality of physical infrastructure	-1.051	QLID		
9	Environmental quality index	0.691	QLID	93	Tax revenue/Government revenue	-1.052	GIS		
10	Internet access in handphone	0.637	QLID	94	Civil Liberty	-1.087	GIS		
11	Fatalities due to natural disaster	0.615	QLID	95	Households with state electricity services	-1.118	QLID		
12	Student-teacher ratio (junior high)	0.609	QLID	96	Internet access at home	-1.156	QLID		
13	Gini ratio	0.555	QLID	97	Firms' human resource capacity	-1.203	FBMC		
14	Student-teacher ratio (senior high)	0.437	QLID	98	Urban population	-1.308	QLID		
15	Non-performing loans	0.422	FBMC	99	Human development index	-1.358	QLID		
16	Population growth	0.399	QLID	100	Net school enrolment rate (junior high)	-1.398	QLID		
17	Population per health facility	0.388	QLID	101	Firms' performance	-1.933	FBMC		
18	Quality of technological infrastructure	0.373	QLID	102	Life expectancy at birth	-1.940	QLID		
19	Crime rate	0.342	GIS	103	Investment promotion and management	-2.203	MS		
20	Regulatory governance	0.340	GIS	104	Quality of healthcare	-2.734	QLID		
21	Registered motor vehicles per kilometre of payed road	0.263	QLID	105	Firms' equipment capacity	-2.813	FBMC		

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting;

FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

		Overall Co	mpetitive	eness		
Before				After		
	Rank	31		21		
	Score	-1.064		-0.346		
	Macroecono	mic Stability	Government and Institutional Setting			
	Before	After		Before	After	
Rank	34	28	Rank	23	21	
Score	-0.984	-0.674	Score	-0.497	-0.210	
Finan	cial, Businesses ar	nd Manpower Conditions	Qua	lity of Life and Infrastruct	ure Development	
	Before	After		Before	After	
Rank	32	25	Rank	31	12	
Score	-1.213	-0.649	Score	-0.904	0.366	

Note: Ranking and scores after simulation are derived by improving the province's top 20% weakest indicators.

West Sumatra

Sumatra Region



[] shows rank out of 34 provinces

West Sumatra

Sumatra Region

2020 ACI Competitiveness Index: Top 20% Strongest and Weakest Indicators									
Rank	20% Strongest Indicators S	td. Score	Envmt.	Rank	20% Weakest Indicators	td. Score	Envmt.		
1	Quality of Democratic Institutions	2.114	GIS	85	GRDP per capita	-0.370	MS		
2	Lack of corruption	1.699	GIS	86	Provincial governing capacity	-0.408	GIS		
3	Net school enrolment rate (senior high)	1.517	QLID	87	Export, non-oil and gas	-0.410	MS		
4	Quality of physical infrastructure	1.340	QLID	88	GRDP of secondary industry	-0.419	MS		
5	Vibrancy of competition and collaboration	1.301	GIS	89	Quality of healthcare	-0.428	QLID		
6	Gini ratio	1.274	QLID	90	Domestic direct investment, last three year average	-0.438	MS		
7	Student-teacher ratio (junior high)	1.073	QLID	91	Public Reports of Corruption per Government Expenditure	-0.443	GIS		
8	Student-teacher ratio (senior high)	1.066	QLID	92	Export	-0.453	MS		
9	Inflation (from 2015 onwards, $2012 = 100$)	1.051	MS	93	Openness to trade	-0.458	MS		
10	Internet access at school	0.829	QLID	94	Secondary industry productivity	-0.492	FBMC		
11	Quality of technological infrastructure	0.792	QLID	95	Firms' application of IT	-0.500	FBMC		
12	Quality of education	0.733	QLID	96	Internet access at home	-0.656	QLID		
13	Population per health facility	0.692	QLID	97	Foreign direct investment, last three year average	-0.665	MS		
14	Security	0.671	GIS	98	Population growth	-0.721	QLID		
15	Adult illiteracy rate	0.624	QLID	99	Ease of dealing with banks	-0.735	FBMC		
16	Handphone ownership	0.423	QLID	100	Internet access at office	-0.802	QLID		
17	Registered motor vehicles per kilometre of paved road	0.413	QLID	101	Crime rate	-0.967	GIS		
18	Households with state electricity services	0.410	QLID	102	Crime Clearance Rate	-0.991	GIS		
19	Net school enrolment rate (junior high)	0.383	QLID	103	Ease of acquiring property	-1.135	QLID		
20	Human development index	0.371	QLID	104	Internet access in handphone	-1.841	QLID		
21	Length of paved roads	0.355	QLID	105	Civil Liberty	-2.365	GIS		

Note: MS: Macroeconomic Stability; GIS: Government and Institutional Setting;

FBMC: Financial, Businesses, and Manpower Conditions; QLID: Quality of Life and Infrastructure Development.

2020 ACI Competitiveness Index: What-if Simulation Ranking and Scores

-									
	Overall Competitiveness								
			Before		fter				
	Rank		18		13				
	Score	ore -0.161 0.271				271			
Macroeconomic Stability				Government and Institutional Setting					
	Before		After		Before	After			
Rank	21		12	Rank	19	13			
Score	-0.415		-0.095	Score	-0.088	0.409			
Finan	Financial, Businesses and Manpower Conditions				Quality of Life and Infrastructure Development				
	Before		After		Before	After			
Rank	23		22	Rank	13	6			
Score	-0.414		-0.257	Score	0.370	0.859			

Note: Ranking and scores after simulation are derived by improving the province's top 20% weakest indicators.