

Fiscal stimulus for demand shock in Indonesia during the Covid-19 pandemic

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Abstract

The Covid-19 pandemic has brought about economic shocks, prompting an economic contraction. The government carried out a fiscal stimulus for the economy to survive. This study aims to examine Indonesia's fiscal stimulus policy during the Covid-19 pandemic. The research data is sourced from the Indonesian Ministry of Health, the Statistic Indonesia, the Ministry of Finance, and the Financial Services Authority. The analysis was carried out using descriptive statistics presented in tables and graphs. The comparison is made for regional growth of the expenditure component between provinces with the highest Covid-19 cases and others. The study results show that the cases of Covid-19 infection are not related to the economic contraction depth because it depends on the dominant output structure of a province. Bali was the province with the highest demand shock resulting from the tourism sector's slowdown, which triggered a decrease in derived demand, such as transportation, hotels, restaurants, and other products or services. The demand side of fiscal policy is lower than the supply side. Funds for the recovery of the tourism sector are allocated as the sector most impacted during the Covid-19 pandemic.

Keywords Fiscal, demand, consumption

1. Introduction

The number of cases of COVID-19 infection in Indonesia as of September 30, 2020, in the top 10 provinces as presented in Table 1 shows a massive increase compared to other provinces, particularly in DKI Jakarta, East Java, Central Java, West Java, and South Sulawesi. The proportion of infection cases in the ten provinces still dominates Indonesia for up to 6 months of Covid-19 infection. However, the proportion tends to decline from 94% on March 31, 2020, to 78% on September 30, 2020. The spread of Covid-19 in the other provinces is not as fast as the provinces in the Top Ten.

The spread of Covid-19, which began at the end of December 2019, has not shown a downward trend. Indonesia ranks 20th out of 218 countries that reported cases of infection on January 1, 2021. Lockdown is one way to contain the spread of Covid-19. Indonesia has never implemented a lockdown policy either nationally or regionally. The policy taken by the Indonesian government to contain the spread of the virus is the large-scale social restriction which is applied to 3 of 34 provinces, namely DKI Jakarta, West Sumatra, and Gorontalo.

The Covid-19 pandemic has harmed the economy, both demand and supply shocks (Brinca, *et al.*, 2020; Hassan *et al.*, 2021). Aggregate demand and labor demand shocks caused by the Covid-19 pandemic brought challenges to the sustainable development of the economy and debt and increased social inequality (Zhang *et al.*, 2021). Fiscal stimulus aims to maintain the economy due to the shock. Demand shocks can be assessed through demand components: Household Consumption, Investment (Gross Fixed Capital Formation), Government Expenditures, Exports, and Imports. This paper describes how the impact of the Covid-19 pandemic on demand shocks in Indonesia and how Indonesia's fiscal stimulus is encouraging the economy to survive. This paper also describes how the demand shock differs between the Top Ten provinces with high infection cases and others.

2. Methods

2.1 Data

The research data consists of cases of Covid-19 infection, Indonesia's GDP growth based on expenditures both on a national and provincial scale in Quarter I-III of 2020, the cost of national economic recovery, bank credit, and third party funds. Bank credit and third-party funds data are used to analyze the public's willingness to spend their money during the Covid-19 pandemic, causing demand shocks. The research data is sourced from the Indonesian Ministry of Health, the Statistic Indonesia, the Indonesian Ministry of Finance, and the Indonesian Financial Services Authority.

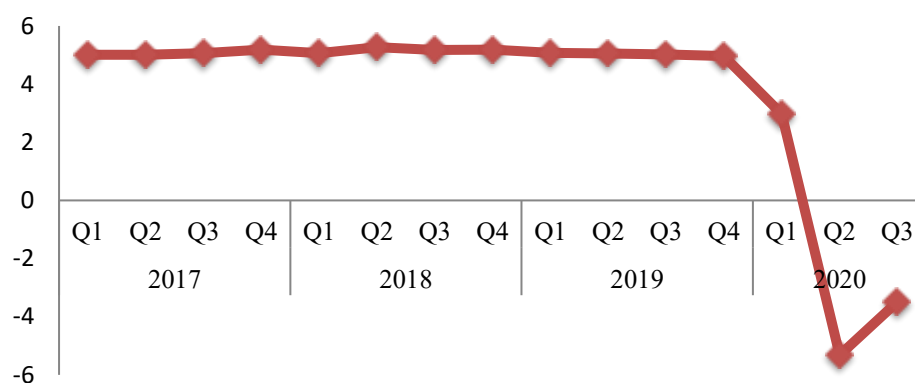
2.2 Research Methodology

Demand shocks are assessed based on expenditure components: household consumption, consumption expenditure of non-profit institutions serving households, gross domestic fixed capital formation, and government spending. After studying the demand shocks in Indonesia, the fiscal policy response is analyzed by separating the demand-side and supply-side stimulus. The analysis was carried out using descriptive statistics presented and in the form of tables and graphs. The comparison is made for regional growth of the expenditure component between 10 provinces with the highest Covid cases and 24 other provinces. In the following presentation, the terms Group 10 and Group 24 are used.

3. Results and Discussion

3.1 Demand Shock in Indonesia

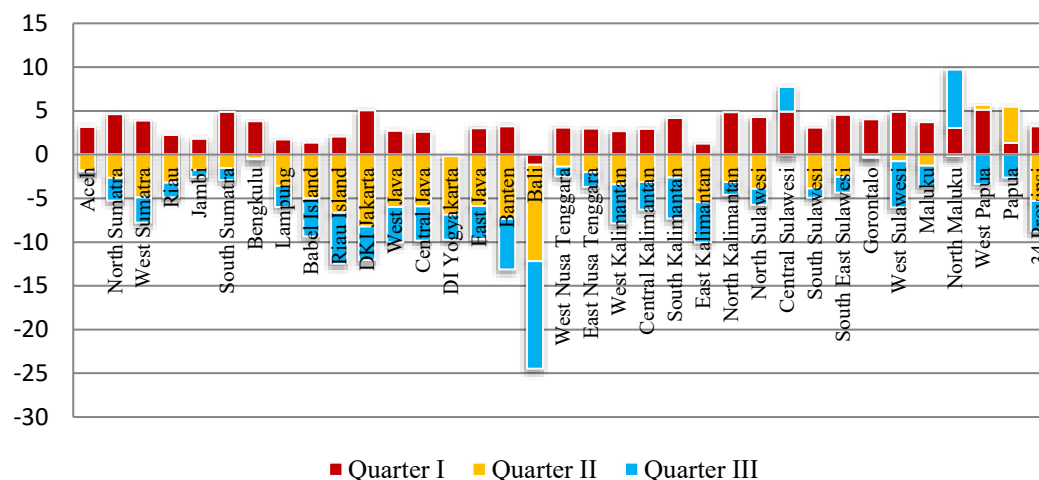
During the Covid-19 pandemic, there was a shock in the Indonesian economy, as shown in figure 1. Economic growth (y-o-y) showed a slowdown since the first quarter of 2020, then in the second quarter, it contracted by 5.32%, and in the third quarter, it contracted by 3.32%. Based on Statistic Indonesia data (2020a), the business fields with the deepest contraction were Transportation and Warehousing, which grew -30.80% in the second quarter, and -16.70% in the third quarter. The next sector that experienced the deepest contraction was Accommodation, Food, and Drink, which in the second quarter of 2020 grew by -22.02% and in the third quarter by -11.86%.



Source: Statistic Indonesia (2020)

Figure 1 Indonesia's GDP Growth by Expenditure

The Transport and Warehousing sector experienced the deepest shocks due to a decline in transportation demand due to reduced travel for tourism, work, and school. The Accommodation, Food, and Drink sector contraction was triggered by lower demand for travel, business trips, and eating out. This is in line with the growth of public expenditure, one of which is at the household level. Statistic Indonesia data (2020) shows that the growth of household consumption expenditure in 2020 on the Transportation and Communication expenditure component was -15.33% in the second quarter and -11.56% in the third quarter; while the expenditure on the Restaurant and Hotel component was -16.55% in the second quarter and -10.90% in the third quarter.



Source: Statistic Indonesia (2020)

Figure 2 Provincial GDP Growth by Expenditure in 2020

Based on the provinces as shown in Figure 2, it appears that Bali was the province with the largest demand shock during the Covid-19 pandemic. In contrast, the Provinces of West Papua and Papua continued to show expansion in spending in the second quarter of 2020 and the provinces of North Maluku and Central Sulawesi in the third quarter of 2020, which also showed expansion in spending. The Top Ten provinces that experienced the most contraction in total regional GDP based on expenditures during the Covid-19 pandemic are presented in table 2.

Table 2. Top Ten Lowest Economic Growth in 2020

No	Quarter I		Quarter II		Quarter III	
	Province	Growth (%)	Province	Growth (%)	Province	Growth (%)
1	Bali	-1.17	Bali	-11.02	Bali	-12.28
2	DI Yogyakarta	-0.16	DKI Jakarta	-8.23	Riau Island	-5.81
3	South Kalimantan	1.27	Banten	-7.34	Banten	-5.77
4	Papua	1.32	DI Yogyakarta	-6.72	West Sulawesi	-5.26
5	Babel Island	1.35	Riau Island	-6.66	South Kalimantan	-4.68
6	Lampung	1.74	West Java	-5.98	East Kalimantan	-4.61
7	Jambi	1.80	Central Java	-5.92	West Kalimantan	-4.46
8	Riau Island	2.06	East Java	-5.90	Babel Island	-4.38
9	Riau	2.23	East Kalimantan	-5.46	West Java	-4.08
10	Central Java	2.61	Babel Island	-4.99	Central Java	-3.93

Source: Statistic Indonesia (2020), processed

Spending growth in the provinces of Bali and DI Yogyakarta has contracted in the first quarter, continuing to increase in the second and third quarters. The deep economic contraction in Bali Province resulted from the cessation of the tourism sector, which triggered a decline in derived demand from the sector, such as transportation, hotels, restaurants, and other products or services. When compared between data from 10 provinces with the highest number of cases of Covid-19 infection (Table 1); and the ranking of the deepest economic contractions (Table 2) shows that in general, cases of Covid-19 infection are not related to the depth of the economic contraction that occurs, because it is very dependent on the expenditure structure of a region. For

example, although DKI Jakarta experienced the highest infection cases in the first and third quarters, which triggered the implementation of the large-scale social restriction, the economic contraction of DKI Jakarta was not as deep as the Bali Province.

The descriptive comparison of expenditure components in Groups 10 and 24 presented in Table 3 shows the average household consumption expenditure contracted in the second and third quarters in both groups. However, the contractions in the third quarter were not as deep as those in the second quarter. In the second quarter, the deepest contraction in group 10 was 9.96%, and group 24 was 6.28%, in contrast to the third quarter, where the deepest contraction was experienced in Group 24 with a growth rate of -6.94%. The maximum household consumption expenditure growth that the province can achieve in the second quarter in Group 10 is -3.26%, and in the third quarter is -0.57%, but in group 24, some provinces can still grow by 0.51% in the second quarter and 2.54% in the third quarter. Based on the standard deviation value, it appears that during the second and third quarters of the pandemic, the variation in consumption expenditure growth between various provinces in Indonesia, both in Group 10 and Group 24, increased.

Table 3 Descriptive Statistics of Expenditure Components by Group

Spending Component	Quarter	Group 10				Group 24			
		Mean	Max	Min	Stdev	Mean	Max	Min	Stdev
Households consumption	Quarter I	3.78	5.72	1.65	1.26	3.86	6.42	1.72	1.09
	Quarter II	-5.25	-3.26	-9.96	1.99	-2.98	0.51	-6.28	2.03
	Quarter III	-2.68	-0.57	-5.76	2.00	-1.91	2.54	-6.94	2.14
Non-profit institutions serving households spending	Quarter I	-4.59	3.14	-12.49	4.64	-4.08	7.66	-20.11	6.09
	Quarter II	-6.97	-3.42	-13.27	3.49	-7.53	-0.06	-15.71	4.69
	Quarter III	-0.98	7.43	-7.61	4.23	-2.29	4.18	-14.69	3.97
Government expenditure	Quarter I	1.47	5.11	-5.68	3.31	1.71	11.63	-18.59	5.44
	Quarter II	-4.46	0.53	-9.14	3.50	-7.27	0.02	-18.93	5.90
	Quarter III	2.59	57.89	-15.95	20.50	-2.72	12.94	-19.33	7.30
Investment expenditure	Quarter I	1.48	7.98	-7.23	4.11	11.63	199.58	-1.95	40.18
	Quarter II	-6.59	-0.85	-14.83	5.40	-1.42	83.25	-19.26	18.90
	Quarter III	-5.75	2.35	-15.77	5.51	-4.29	9.71	-14.65	5.29

Source: Statistic Indonesia (2020), processed

The average consumption expenditure of non-profit institutions serving households contracted in all quarters and in all groups. However, the contraction in the third quarter was not as deep as that in the second and first quarters. The deepest contraction was in Group 10 by 13.27% and Group 24 by 15.71% in the second quarter. Based on non-profit institutions serving households spending, the most impact was experienced by Group 24. This pattern also applies to the third quarter, where Group 24 shows a non-profit institution serving households spending growth value of -14.69%, while Group 10 is -7.6%. In the third quarter, some provinces experienced positive growth of 7.43% for Group 10 and 4.18% for Group 24. The variation in the growth of non-profit institutions serving households expenditure between various provinces in Group 24 narrowed.

Average government spending contracted for the second quarter in both groups. However, in the third quarter, government spending has grown by 2.59% in Group 10 while still contracting in Group 24. This increase in public spending is due to financing the Covid-19 containment strategies and social security (Lanchimbira, Bonilla-Bolaños, and Sánchez, 2020). The highest growth in government spending was carried out by Group 10, reaching 57.89%; while in Group 24, it was 12.94%. Based on the standard deviation value, there is a difference in the growth of government spending in the two groups with a higher gap. This indicates differences in regional government policies in carrying out fiscal stimulus in response to the impact of the Covid-19 pandemic. Provinces that experienced growth in government spending in the second quarter were North Sumatra and Gorontalo, while in the third quarter they were DKI Jakarta, Riau Islands, Bali, East Nusa Tenggara, West Nusa Tenggara, Southeast Sulawesi, Aceh, North Kalimantan, South Sumatra, West Kalimantan, Bengkulu, the Babel Islands, and North Sumatra, respectively. The growth of DKI Jakarta government spending even increased to 57.89%.

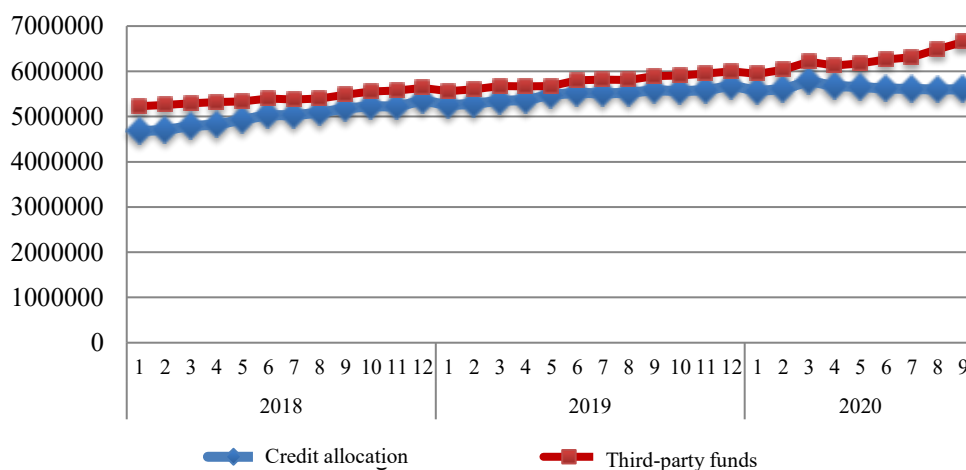
The growth of DKI Jakarta government spending in the third quarter of 2020 was triggered by increased social assistance to overcome Covid-19.

Both groups contracted the average investment expenditure or gross fixed capital formation in the second and third quarters. In the second quarter, the deepest contraction in Group 10 was 14.83%, and Group 24 was 19.26%. The deepest contraction in the third quarter for Group 10 was 15.77%, while in Group 24 it was 14.65%. The maximum investment expenditure growth in the second quarter of provinces in Group 10 was -0.85%, but Group 24 had a positive growth of 83.25%. Investment spending growth in the third quarter in Group 10 has started to be positive, which is indicated by the maximum achievement of 2.35%. Based on the standard deviation value, there is a reasonably high difference in investment expenditure growth in the two groups. The variation of investment expenditure growth for Group 10 shows a widening gap, while the variation of investment expenditure growth in Group 24 shows a narrowing gap.

3.2 Fiscal Stimulus Policy

The contraction in expenditure or demand shows a decrease in income and behavior to avoid the risk of Covid-19 infection. Indications of the decline in people's income are the increasing number of unemployed, decreased working hours, and temporary cessation of work. Statistic Indonesia data (2020) shows that in the August 2020 period, the Covid-19 pandemic affected approximately 29 million workers, of which 2.56 million were unemployed, 1.77 million were temporarily out of work, and 24.03 million had reduced working hours. Research findings Achou *et al.* (2020) show that individuals lost their jobs (22%) due to the Covid-19 pandemic, which resulted in lost income for many households.

The low level of public spending due to the risk avoidance behavior of being infected with Covid-19 is indicated by the increasing public saving, where people have funds for shopping but prefer to save. People who have savings will reduce spending on tertiary needs, including entertainment and tourism, reducing the demand for transportation, restaurants, and hotels. Figure 3 shows an increase in third-party funds in March - September 2020 while the credit allocation decreased.

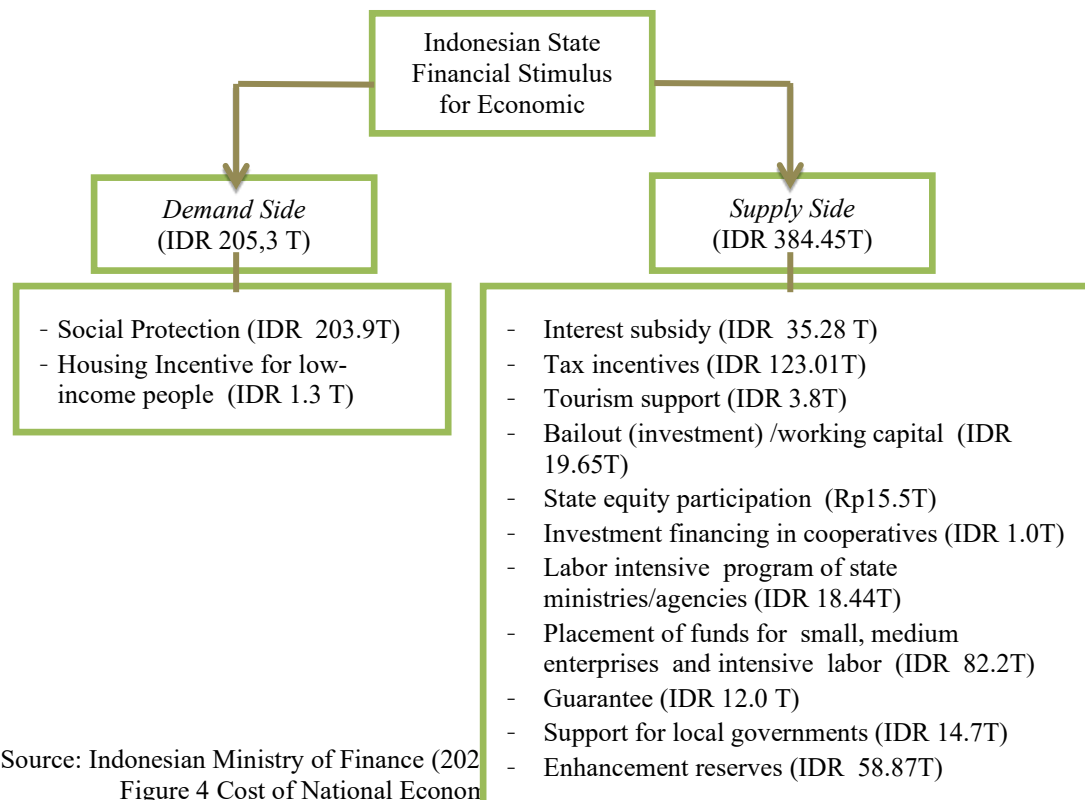


Source: Indonesian Financial Services Authority (2020)

Figure 3 Third-Party Funds and Loan Allocation at Commercial Banks in Indonesia for the 2018-2020 Period

The pandemic has brought a dilemma for the government in encouraging economic expansion. The pandemic that increases vulnerability (Gössling *et al.*, 2020) leaves the government with a choice between reducing infection cases or maintaining the economy (Yu *et al.*, 2020). The Indonesian government has a set of policies in place to respond to demand shocks. These policies consist of policies related to state financial policies and financial system stability. Financial policy or fiscal policy had started before Covid-19 infected Indonesia. The government issued a stimulus policy on February 25, 2020, to strengthen the domestic economy by IDR 8.5 trillion. The stimulus consisted of additional food cards and mortgage interest subsidies. One of the considerations for the stimulus package during a pandemic is the total number of Covid-19 virus infections (Siddik, 2020). After

Covid-19 was detected in Indonesia, on March 24, 2020, Stimulus II was carried out with a total of IDR 22.92 trillion to maintain people's purchasing power and facilitate export and import. While stimulus program III amounted to IDR 405.1 trillion to support health, social protection, and economic recovery, this support continued again in Stimulus IV. The total state financial stimulus amounted to IDR 695.2 trillion.



The policies needed during the pandemic are to encourage public spending and maintain capacity (Czeczeli *et al.*, 2020). Fiscal stimulus due to the pandemic in Indonesia is divided into demand and supply sides. The total cost of national economic recovery without including health sector expenditure is IDR 589.62 trillion, divided into a stimulus to improve demand (demand side) and restore supply (supply side), as presented in Figure 4. Stimulus from the demand side amounting to IDR 205.3 trillion consisting of Social Protection amounting to IDR 203.9 trillion; and Housing Incentives for low-income people of IDR 1.3 trillion. The cost of national economic recovery from the supply side is IDR 384.45 trillion, including interest subsidies, tax incentives, tourism support, labor-intensive, working capital investment, guarantees, expansion reserves, and support for local governments (Indonesian Ministry of Finance, 2020). The size of the tourism sector is positively related to both fiscal and monetary policy responses (Khalid *et al.*, 2021). The economic contraction in the tourism sector prompted a larger stimulus package.

Several studies have shown the effectiveness of fiscal stimulus during the pandemic. Indonesia's fiscal stimulus during the pandemic can maintain the SDGs' attainment progress to a certain extent (Safitri *et al.*, 2021). A cut in labor taxes fiscal stimulus generates larger growth multipliers and contributes relatively more employment than government spending and a cut in consumption tax (Timuno and Eita, 2020). A cut in labor taxes improves trade balance, resulting in a higher accumulation of international reserves and has no Dutch disease effects. Previous studies (e.g., Randelović, 2021) have shown that higher fiscal stimulus will lower average GDP declines in the European Union region. The sectoral fiscal stimulus during the pandemic can reduce unemployment and boost growth in Egypt (Ibrahim *et al.*, 2021). In India, Economic stimulation through fiscal packages is the only way to save the lives and livelihoods of vulnerable workers amidst the Covid-19 pandemic (Thakur *et al.*, 2021).

A study in Malaysia shows that a six-month wage subsidy program, bank loan installation moratorium, and company tax deferment were very well received by most respondents and considered that the government's stimulus packages were the best strategy during the Covid-19 pandemic (Lim *et al.*, 2021). Stimulus package for

investment in the economic recovery post-Covid-19 pandemic in South Africa of ZAR 2.3 trillion with 50% State participation allows the economy to create 2.23 million jobs during the first five years of stimulus investment (among them, 1.74 million will be attributed to the stimulus effect), while 30% State participation is predicted to create 1.67 million additional jobs (Habiyaemye *et al.*, 2021). However, fiscal sustainability is questioned if the stimulus uses funds from debt (Liao *et al.*, 2021) and the extensive tax exemption (Kim & Lee, 2021).

4. Conclusion

The Covid-19 pandemic has had an impact on demand and supply shocks. The most profound economic contraction was experienced by the Transportation and Warehousing sector and Accommodation, Food, and Drink. The Transport and Warehousing sector experienced the most profound shocks due to a decline in transportation demand, impacting travel for tourism, work, and school. Meanwhile, the Accommodation, Food, and Drink sector contraction was triggered by a decline in demand for travel, business trips, and eating out. A contraction in spending or demand indicates a decrease in income as well as infection risk avoidance. The increase in public savings indicates the low level of public spending due to infection risk avoidance behavior. In general, cases of Covid-19 infection are not related to the depth of economic contraction but depend on the dominant output structure of a province. Although DKI Jakarta experienced the highest infection cases, the economic contraction of DKI Jakarta was not as deep as the Bali Province. The economic contraction in Bali Province resulted from the slowdown of the tourism sector due to the pandemic, which triggered a decrease in derived demand from the sector, such as transportation, hotels, restaurants, and other products/services. Government spending only contracted in the second quarter. However, it grew positively in the third quarter of 2020, especially in provinces that experienced severe cases of infection, even the growth of government spending in the capital city of Indonesia, DKI Jakarta, increased to 57.89%. This increase in public spending is due to financing the Covid-19 social security. Fiscal policy is carried out to maintain the economy from both the demand and supply sides. The share of fiscal stimulus on the demand side is lower than the supply side. Most demand-side policies are allocated to social safety net programs, while supply-side policies aim to support local governments and incentives for business actors. Several incentive programs for business actors include bailouts, working capital, investment, labor-intensive, interest subsidies, and tax incentives. Allocating funds for the tourism sector's recovery was also carried out as sectors that had the most impact during the Covid-19 pandemic.

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