AGREGAT: Jurnal Ekonomi dan Bisnis
Volume 6 (1), 2022
http://journal.uhamka.ac.id/index.php/agregat
p-ISSN: 2549-5658 e-ISSN: 2549-7243
DOI: 10.22236/agregat_vol6/is1pp17-35
Pp 17-35

THE EXTERNALITY OF GLOBAL COVID-19 AND POLICY RESPONSE ON MACROECONOMIC STABILITY IN INDONESIA: BACK TO BASIC

Farida[1], **Nur Wahyuni**[2], **Marhalinda**[3], **Nursina**[4], **Estu Mahanani**[5], **Nuryadin**[6]

[1,2,3,4,5,6] University of Persada Indonesia YAI
Corresponding Author: faridawongjowo@gmail.com

Article Info: Received: January 15, 2022; Revised: February 16, 2022; Accepted: February 25, 2022.

Abstract: The Covid-19 pandemic has had an externality impact on the world's economy, including Indonesia's. Considering Indonesia has an open system economy, International economic turmoils, along with the Covid-19 and Indonesia's weak external stability, have cast a dreary outlook of a future crisis. Therefore, capacity-based policies are necessary to encourage economic recovery and avoid a contraction. The applied model is an open-economy simple equation from the aggregate aspects of supply and demand. The research result shows that external financing does not lead to investment spillover in Indonesia. The policy response in this research suggests the need for an expansive fiscal policy that creates jobs. The expected policy implications are to ease the reliance on foreign fundings for development and prioritize support for domestic industries. In alleviating the Covid-19 effect in the short-term, the right policy is to maintain consumption through cash social assistance, but the distribution must be closely monitored.
Keywords: Agregat demand-supply, External-financing, Fiscal-policy, Investment, Open Economy.

Abstrak: Pandemi Covid-19 telah memberikan dampak eksternalitas terhadap perekonomian dunia, termasuk Indonesia. Mengingat Indonesia memiliki perekonomian sistem terbuka, gejolak ekonomi Internasional, bersama dengan Covid-19 dan stabilitas eksternal Indonesia yang lemah, telah memberikan gambaran suram tentang krisis di masa depan. Oleh karena itu, kebijakan berbasis kapasitas diperlukan untuk mendorong pemulihan ekonomi dan menghindari kontraksi. Model yang diterapkan adalah persamaan sederhana perekonomian terbuka dari aspek agregat penawaran dan permintaan. Hasil penelitian menunjukkan bahwa pembiayaan eksternal tidak menyebabkan limpahan investasi di Indonesia. Respon kebijakan dalam penelitian ini menyarankan perlunya kebijakan fiskal ekspansif yang menciptakan lapangan kerja. Implikasi kebijakan yang diharapkan adalah mengurangi ketergantungan pada pendanaan asing untuk pembangunan dan memprioritaskan dukungan bagi industri dalam negeri. Dalam mengurangi efek Covid-19 dalam jangka pendek, kebijakan yang tepat adalah menjaga konsumsi melalui bansos tunai, namun penyalurannya harus diawasi dengan ketat.
Kata Kunci: Ekonomi Terbuka, Investasi, Kebijakan Fiskal, Pembiayaan eksternal, Permintaan-Penawaran Agregat.

AGREGAT: Jurnal Ekonomi dan Bisnis
Volume 6 (1), 2022
http://journal.uhamka.ac.id/index.php/agregat
p-ISSN: 2549-5658 e-ISSN: 2549-7243
DOI: 10.22236/agregat_vol6/is1pp17-35
Pp 17-35

INTRODUCTION

Covid-19 pandemic in Indonesia had its first official response after the first detected case in early March 2020. However, as the Covid-19 is a global pandemic, it has shocked the global economy since early 2020, including causing externality effects in Indonesia. Covid-19 is the most threatening pandemic since the Spanish flu (Ferguson et al., 2020). Based on its death rate, Covid-19 is 30 times more fatal than influenza and 10 times more contagious than SARS (Wilder et al., 2020; Wilson et al., 2020). Many countries had imposed a lockdown at that time, and people have become more restrained in their expenses and consumption. Commerce-whether for goods, services, oil & gas, etc, -were estimated to decline.

The global pandemic hit Indonesia directly, as seen from its shrinking trade balance, declining number of tourists, and foreign portfolio outflow in the first quarter of 2020. Table 1 shows that its current account deficit shrunk compared to the previous quarters as export and imports drop. Note, import declined more than export. Most of Indonesia's import commodities are raw materials and capital goods, accounting for over 85%. As the raw material and capital goods imports declined by -7.7% and -13.3%, respectively, they show weakening real sector activities due to the Covid-19 from the aggregate supply side. The import growth of non-oil-&-gas consumer goods had slowed since the starting quarter of 2020 (table 2) compared to the quarters before Covid-19, signifying the people's weakening purchasing power. Less export and import activities led to declining payments for overseas freight, so the services account deficit narrowed. On the flip side, the services income expected from foreign tourists also plunged as the number of foreign tourists dropped by 35% in the first quarter of 2020 despite the boost for the tourism sector. Since the start of the quarter, many countries had imposed travel bans, whereas Indonesia offered cheap flights to attract foreign and domestic tourists—a move that proved to be counter-productive.

Table 1 Balance of Payment (Billions of USD)

Items	2019				2020
	Q1	Q2	Q3	Q4	Q1
Current account	-6.60	-8.20	-7.5	-8.08	-3.92
- Goods Exports	41.21	40.21	43.67	43.36	41.75
- Goods Imports	-39.94	-39.64	-42.31	-43.06	-37.35
- Services Exports	7.44	7.36	8.42	8.45	6.05

AGREGAT: Jurnal Ekonomi dan Bisnis
Volume 6 (1), 2022
http://journal.uhamka.ac.id/index.php/agregat
p-ISSN: 2549-5658 e-ISSN: 2549-7243
DOI: 10.22236/agregat_vol6/is1pp17-35
Pp 17-35

- Services Imports	-9.02	-9.23	-10.72	-10.43	-7.92
- Primary Income	-8.13	-8.90	-8.40	-8.35	-8.08
- Secondary Income	1.83	1.99	1.97	1.97	1.63
Capital and Financial Account	9.86	6.75	7.45	12.59	-2.93
- Direct Investment	5.98	5.81	5.20	3.17	3.54
- Portofolio Investment	5.20	4.56	4.87	7.06	-5.81
Balance of payment	2.42	-1.98	-0.05	4.28	-8.55
Reserve assets position	124.54	123.82	124.33	129.18	120.97
No. Of traveler inbound (Million)	3.77	3.97	4.40	4.03	2.62

Source: Bank of Indonesia

Another item in Indonesia's current account is the primary income, whose deficit has been climbing from year to year, despite some quarterly fluctuations. This deficit is due to the growing interest payment that comes with more debts. The primary income contributes the most to the current account deficit, reaching USD 33.77 billion in 2019 (graph 1). The secondary income also declined due to less remittance from Indonesian workers abroad. Declining remittance is common in developing countries with many workers abroad, such as India, the Philippines, Pakistan, or large diaspora like Somalia, with many workers in the Middle East, Europe, or the US. This decline may be due to work termination or delayed salary (Khan and Khan, 2020). In terms of remittance, the pandemic has been a more severe hit than the 2008 crisis (Sayeh and Chami, 2020). The fiscal and trade balance will be affected, and a country's capacity in funding and debt payment will weaken. The receiving country will lose income and tax revenue in a time of need (Abdih et al., 2012). The Covid-19 global pandemic directly affects Indonesia's economy, though the outbreak had not reached Indonesia yet at the beginning of the first quarter of 2020.

Table 2 Import on Non-Oil and Gas by Classification

Items (Nominal)	Share (%)		Growth (% yoy)	
	2019	2020	Q4 2019	Q1 2020
Consumption Goods	10.6	10.2	9.0	4.6

AGREGAT: Jurnal Ekonomi dan Bisnis
Volume 6 (1), 2022
http://journal.uhamka.ac.id/index.php/agregat
p-ISSN: 2549-5658 e-ISSN: 2549-7243
DOI: 10.22236/agregat_vol6/is1pp17-35
Pp 17-35

Raw materials	68.5	70.5	-11.6	-7.7
Capital goods	19.4	17.8	-8.0	-13.3

Source: Bank of Indonesia

A financial account surplus in the current year would encourage higher primary income payment in the next years. In other words, the primary income payment in the current year comes from increasing debts from the previous years. While the primary income gives the highest deficit, on the contrary, foreign direct investment (FDI) and foreign portfolio investment (FPI) give the highest surplus to Indonesia's balance of payment.

A bigger surplus in the capital and financial account means Indonesia's debts are also bigger. Fundamentally, the financial account holds a crucial role in Indonesia's balance of payment, not because of the substantial value, but because it tends to increase from year to year and is volatile in case of short-term shocks. Ifan advanced country's interest rate increased, the international capital inflow to a developing country would decrease. Hence, any economy whose performance hinges on such foreign inflow is fragile and unsustainable (Tutan and Campbell, 2015). The main items in the financial account are FDI and FPI. Direct investment in the real sector is more stable in the short and long terms. In case of a shock, foreign investors would not immediately withdraw. In the last two years, direct investment has been increasing, even when Covid-19 broke out in the first quarter of 2020 (table 1); it was not so volatile either, from USD 4.56 billion in Q4 2019 to USD 4.25 billion in Q1 2020, or decreasing by 6.8%. In comparison, Indonesia's direct investment abroad was very volatile; its value is less than 20% of foreign investment in Indonesia.

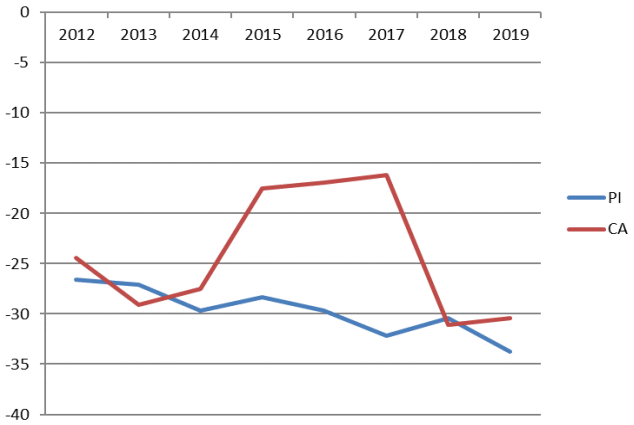

Figure 1 Defisit of Primary Income and Current Account

AGREGAT: Jurnal Ekonomi dan Bisnis
Volume 6 (1), 2022
http://journal.uhamka.ac.id/index.php/agregat
p-ISSN: 2549-5658 e-ISSN: 2549-7243
DOI: 10.22236/agregat_vol6/is1pp17-35
Pp 17-35

The problem lies in a substantial but fluctuating portfolio investment. This phenomenon reflects the expected profit that also comes with investment risks from integrating financial assets in emerging market economies (EMEs). The pull factor from a host-country is that an EME has the prospect of relatively high returns for foreign investors, while the external factors (also called push factors) are the loose monetary policies and low returns in advanced countries (Humanicki et al., 2013). Portfolio investment can be considered "hot money" and vulnerable to domestic or international shocks, as the investors could place or withdraw their investment easily. With the current Covid-19 global pandemic, both onshore and offshore investors have been hit; thus, the investment portfolio has plunged. As the pandemic started during the first quarter of 2020, there was an outflow of investment portfolio by USD 5.7 billion. A lucrative yield could no longer retain the speculators in Indonesia. Slumping global equity and investment safety considerations were people's main reasons for withdrawing their funds from Indonesia's capital and financial markets. The amount of withdrawn investment was substantial. Obviously, it affected the rupiah's exchange rate against the US dollar, leading to a decline in the reserve assets to USD 120.96 billion during that period. This kind of macroeconomic fundamentals is fragile, as even a short-term shock could unhinge the economy. Usually, the financial sector would immediately suffer.

Due to the pandemic, Indonesia's weakening economy would likely worsen in the second quarter of 2020, as some regions had imposed a lockdown. The work-from-home initiative in the second quarter directly hit the informal and real sectors. The real sector could not operate at full capacity, with many factories temporarily cutting down or even stopping production. Work terminations were not uncommon. The number of Covid-19 positive cases increased in the second quarter and was estimated to keep rising until the third quarter of 2020. Hopefully, economic activities will resume under the "new normal"; however, the situation could still rapidly worsen and cause a GDP contraction.

Consequently, the economic performance dramatically decreased in both demand and supply sides. Lower economic activities would cause a chain reaction, such as increasing unemployment and lowering income; the latter decreased the national consumption by 8.1% in the first quarter of 2020 compared to the previous quarter. This reaction would also lead to negative GDP growth. The GDP in the first quarter of 2020 contracted by 2.41 percent compared to the previous quarter (BPS, 2020). All sectors weakened due to the Covid-19 in

AGREGAT: Jurnal Ekonomi dan Bisnis
Volume 6 (1), 2022
http://journal.uhamka.ac.id/index.php/agregat
p-ISSN: 2549-5658 e-ISSN: 2549-7243
DOI: 10.22236/agregat_vol6/is1pp17-35
Pp 17-35

the first quarter of 2020, except for the agriculture, forestry, and fishery sector, the financial and insurance sector, the information and communication sector, the health and social sector, and the real estate sector.

The Covid-19 pandemic has shaken both supply and demand in Indonesia, whether from domestic or international. Unlike in Japan, which is more accustomed to dealing with economic shocks due to earthquakes, Watanabe (2020) sees that Japan's economic setback due to Covid-19 only suffered in the aggregate demand side, especially from the services industry, such as hotel and tourism, but not in the supply side. Based on the above, this study analyzes Indonesia's macroeconomic capacity, from both the aggregate demand and supply sides, to develop a national economic policy to cope with the pandemic and recover the economy afterward.

METHOD

As a country with an open economy and high foreign reliance, reflected from its balance of international trade flow and financial account, Indonesia is affected by foreign and domestic shocks. The Covid-19 has had direct and indirect effects on Indonesia's macroeconomic stability, as mentioned above. Various government policies have been applied to ease the pandemic's effects. This research presents a simple idea by creating and analyzing a "textbook" macroeconomic equation - the simple open-economy model. The simple open-economy model is this research's base in determining a policy for the needed macroeconomic stability in relation to the pandemic that has hit supply and demand. By reverting to a basic economic theory, we hope the macroeconomic policies will be on point—not straying or misdirected in their priorities. The processed data used the quarterly data from Bank Indonesia and the statistics agency (BPS) from 2011:01 until 2020:02. The open-economy model is as follows:

A. Demand Side – Goods Market Equilibrium

$$Y = C + I + G + (X-M)$$

$$C = C(Y,i) \quad \text{..... (1)}$$

$$I = I(i, NFI, M) \text{ ..... } (2)$$

$$M = M(Y, CPI, e) \text{ ..... } (3)$$

Definitioni:

Y = GDP

C = Consumption/Consumer spending

G = Government spending

X = Export of goods and services

M = Import of goods and services

AGREGAT: Jurnal Ekonomi dan Bisnis
Volume 6 (1), 2022
http://journal.uhamka.ac.id/index.php/agregat
p-ISSN: 2549-5658 e-ISSN: 2549-7243
DOI: 10.22236/agregat_vol6/is1pp17-35
Pp 17-35

I = Investment

i = Nominal interest rate

CPI = Consumer price index

NFI= Net Foreign Investment/Capital inflow

e = Exchange Rate

B. Supply side

$Y = Y(CPI, I)$ ..... (4)

The econometrics model for consumption is a function of income and interest rate. A study (Gahtani et al., 2020) added the wealth variable (financial wealth that refers to the broad money supply and market capitalization of the stock market) on top of income and interest rate. Meanwhile, the wealth variable in another study, Coskun et al., (2018), is used as a theory of the life-cycle model. Various studies that use income and wealth variables come to similar results. Hence, this study uses just one variable, income, in-line with the Keynesian general theory of consumption.

The partial regression model in equation (1) is for finding the marginal propensity to consume (MPC) value. The MPC can then be used to determine the additional income to increase consumer spending. Increasing spending will increase consumption. On another front, interest rate has a negative relationship with consumption. The partial regression model for investment (2) determines how much the changes in exogenous factors affect investment. Similar to equation 1, the interest rate variable has a negative relationship with investment. Capital inflow is expected to affect investment positively, therefore revealing external financing's effect on supporting domestic investment. A similar linkage applies regarding Indonesia's import reliance on investment.

In equation 3 in this research, import's main determinants (M) are GDP (Y), consumer price index (CPI), and exchange rate (e), following the study by (Ibrahim and Ahmed, 2017) that used the Johansen co-integration technique to find a long-term relationship. The result proved that GDP affects import volume more than the price ratio and exchange rate do. Meanwhile, this research used the multiple linear regression method. Exchange rate has a negative relationship with import; hence, if the rupiah depreciated, import would decline since import goods would be relatively more expensive. Besides using the consumer price index, one

AGREGAT: Jurnal Ekonomi dan Bisnis
Volume 6 (1), 2022
http://journal.uhamka.ac.id/index.php/agregat
p-ISSN: 2549-5658 e-ISSN: 2549-7243
DOI: 10.22236/agregat_vol6/is1pp17-35
Pp 17-35

study (Ghauri, 2019) used the wholesale price index (WPI) variable to indicate inflation. Equation (4) is an aggregate supply model from an open-macroeconomy model. This model used inflation that is measured with CPI as a factor that positively affects the aggregate supply. The higher the price, the more incentive for producers to increase earnings; thus, the aggregate supply would increase. However, prolonged inflation would disrupt GDP growth after a certain point (Ayyoub et al., 2011). There is a positive non-linear relationship between inflation at a moderate threshold and economic growth (Nazir et al., 2019). But low and double-digit inflation would have a detrimental effect on economic growth. As for investment, it gives a positive push to the aggregate supply by increasing production capacity. Next is measuring each exogenous variable's capacity or capability on an endogenous variable with an elasticity value. By knowing each variable's elasticity, we can determine which policy should be prioritized and needs to be applied in the short or long term. A short-term policy is expected to have an immediate effect on the macroeconomic stability, in this case, to ease the effect of the Covid-19 pandemic.

The elasticity model for each model is as follows:

$$Es = \beta * \bar{X}/\bar{Y} \quad \text{..... (5)}$$

In which,

Es = short-term elasticity

β = coefficient of exogenous variable

$\bar{X}$ = mean of exogenous variable

$\bar{Y}$ = mean of endogeneous variable

To see the long-term elasticity (EL) use the following formula;

$$EL = (1/(1-\beta)) * Es \quad \text{.....} \quad (6)$$

Elasticity shows each exogenous variable's capacity or capability in increasing or decreasing the endogenous variable. If the elasticity value is >1, that variable is elastic, meaning that it can increase or decrease another variable that it affects according to the elasticity value. On the contrary, if the elasticity value is <1, the exogenous variable's change is slow to affect the endogenous variable. This elasticity value is used as a reference by a government to see the response to a certain policy during the pandemic. The independent variables affect the dependent variables, but a government intervention could have immediate or slow effects.

AGREGAT: Jurnal Ekonomi dan Bisnis
Volume 6 (1), 2022
http://journal.uhamka.ac.id/index.php/agregat
p-ISSN: 2549-5658 e-ISSN: 2549-7243
DOI: 10.22236/agregat_vol6/is1pp17-35
Pp 17-35

Linear regression with time series data will often have autocorrelation problems. Detecting an autocorrelation problem can be done with the Durbin Watson test. To solve that problem, we can use a transformation using the Cochrane Orcutt method with the following equation:

$Yt - \rho Yt\text{-}1 = \alpha (1\text{-}\rho) + \beta (Xt\text{-}\rho Xt\text{-}1) + et$ ..... (7)

This study is limited to an economic equation model from the demand and supply sides. The money market equilibrium is not included in this study.

RESULTS

Economic growth is only achievable if the fundamental macroeconomic stability is fulfilled. To have such fundamental stability, first, we need to see the formed structural equation. The result of each structural equation can be briefly presented as follows:

The regression equation is

$C = - 88.6 + 0.609\ Y - 5.20\ r$ (1a)

Table 3 Estimation results of the consumption variable parameters (C)

Variable	Sig.	α = 5%	Elasticity	
			Shorterm	Longterm
Disposable Income (Y)	0.000	Significant	1.07	0.42
Interest rate (r)	0.569	Not sig		
F-Stat = 1308.95 and Prob. F = 0.000				
Coefficient of determination (R^2) = 0.987				
Normality test using Kolmogorov-Smirnov shows *P-value* 0.150 > 0.05 = normal				
Durbin Watson (DW test) = 1.706 > du (1.574) and < 2.294 (4-du) = no autocorrelation				
VIF = 1.316 or < 5 = no multicollinearity, there is no heteroscedasticity using scatterplot				

The consumer spending (C) equation shows that the coefficient directions of all the exogenous variables (X) are in accordance with the initial hypothesis. Meanwhile, the coefficient of determination as a measure of the model's adequacy shows that the consumption level can be determined by the independent variables of disposable income (Y) and nominal interest rate (r) of 0.987, and the rest by other variables that are not included in the model. The classic assumption tests in this model are the normality, autocorrelation, heteroscedasticity, and multicollinearity tests. The regression's estimated result shows that the disposable income variable significantly affects consumption, with an MPC value of 0.61. This high MPC value

AGREGAT: Jurnal Ekonomi dan Bisnis
Volume 6 (1), 2022
http://journal.uhamka.ac.id/index.php/agregat
p-ISSN: 2549-5658 e-ISSN: 2549-7243
DOI: 10.22236/agregat_vol6/is1pp17-35
Pp 17-35

signifies that many people have limited assets, although their precautionary motive is high (Carroll et al., 2017). The previous study of (Carroll et al., 2014) mentions that a high MPC value implies an impoverished emerging-economy country and a large wealth distribution gap. In case of an income shock, such as the Covid-19 pandemic, consumption would plummet owing to low savings.

On the contrary, if income increased, consumption would go up even faster, as shown by the elasticity value of income on consumption of >1 (table 3). The urgent government policy to maintain consumer spending amid the Covid-19 is to protect consumer income in the short term. The policy of giving social assistance to the poor, including the vulnerable middle class (suffering mild shock) that may fall into the poor category, must be well-aimed. A short-term fiscal policy in easing the effect of Covid-19 is not to stimulate the economy, which is impossible (Loazya and Pennings, 2020), but to protect consumer spending and income. Emergency assistance can also be given in the form of stimulus for micro and small enterprises to prevent their employees' work termination and their bankruptcy. The provided social assistance will encourage consumption (aggregate demand) if there is economic activity. On the other hand, social assistance cannot encourage economic activity, except for certain limited parties. For instance, providing staple goods, such economic activity cannot fully bolster consumption. However, if the social assistance was in the form of direct cash hand-out, this could encourage economic activity, and its multiplier effect would be bigger than in providing staple goods. Cash hand-out will give more options to suit a household's needs in spending on primary needs in local stores.

In the long term, the disposable income variable has no material power or influence to encourage consumption because it is inelastic; its elasticity value of 0.42 is <1 (table 3). Therefore, a policy to maintain consumption by maintaining consumer income through social assistance is not effective in the long term. A different fiscal policy is needed, one with a far bigger effect on the economy's sustainability in the medium and long terms when the monetary policy cannot encourage the aggregate demand due to liquidity issues (Normurodova, 2020). For example, stimulus assistance in the productive sector to encourage aggregate supply. Public services that support the economy must be enhanced so that the real sector can immediately recover. The government could lower the tax on the real sector and increase spending to encourage economic activity. A working capital stimulus is also an option, such as facilitating

AGREGAT: Jurnal Ekonomi dan Bisnis
Volume 6 (1), 2022
http://journal.uhamka.ac.id/index.php/agregat
p-ISSN: 2549-5658 e-ISSN: 2549-7243
DOI: 10.22236/agregat_vol6/is1pp17-35
Pp 17-35

access to business credit (KUR), which can be a solution to increase micro-enterprises' revenues in Indonesia (Farida et al., 2016). Stimulus packages for agriculture and fishery also need more attention, such as maintaining the prices of agricultural and fishery commodities. During this pandemic, Indonesia still fares better because its economic structure still relies on the agriculture sector. An economic structure that has shifted to the services sector would suffer a greater blow from the pandemic. The government should also temporarily avoid another form of policy: a balanced budget policy, which would require the country's revenue to rise through increased taxes. Furthermore, the government should also delay any fuel price hike, as its multiplier effect would be immense. The fall of the global oil prices is actually the perfect moment to lower the domestic fuel price amid the pandemic.

Assuming the Covid-19 pandemic lasted until mid-2020 at maximum, the above economic policies would be efficient and effective, considering the disposable income variable's sensitivity to consumption. If the pandemic lasted longer, the short-term fiscal policy in increasing the disposable income would be insufficient to address the rising issues according to the standard macroeconomic theory of the structural equation. If the pandemic lasted indefinitely, Indonesia would inevitably face depression in the next few years.

The regression equation (1a) shows that the interest rate does not significantly affect consumer spending, even though the coefficient direction is already in accordance with the initial hypothesis. In theory, when the interest rate rises, savings will increase, or foreign capital inflow will increase. However, in reality, the interest rate does not affect consumption. So, even though the government has changed the interest rate policy, it does not increase nor decrease consumption.

The regression equation for investmentis as follows:

$$I^* = 151.68 - 49.34r^* + 0.027\ NFA^* + 1.001\ M^* \qquad (2a)$$

Wherein, $I^* = (I_t - \rho I_{t-1})$, $r^* = (r_t - \rho r_{t-1})$, $NFA^* = (NFA_t - \rho NFA_{t-1})$, $M^* = (M_t - \rho M_{t-1})$

Table 4 Estimation Results of The Investment Variable Parameters (I)

Variable	Sig.	α = 5%	Elasticity	
		α** = 10%	Shorterm	Longterm
Interest rate (r)*	0.04	Significant	-0.31	0

AGREGAT: Jurnal Ekonomi dan Bisnis
Volume 6 (1), 2022
http://journal.uhamka.ac.id/index.php/agregat
p-ISSN: 2549-5658 e-ISSN: 2549-7243
DOI: 10.22236/agregat_vol6/is1pp17-35
Pp 17-35

NFA*	0.078	Significant**	0.12	0.12
M*	0.000	Significant	0.66	~~
F-Stat = 13.381 and Prob. F = 0.000				
Coefficient of determination (R^2) = 0.508				
Normality test using Kolmogorov-Smirnov shows *P-value* 0.150 > 0.05 = normal				
Durbin Watson (DW test) = 1.511 > du (1.318) and < 2.489 (4-du) = no autocorrelation				
VIF < 5 = no multicollinearity, there is no heteroscedasticity using scatterplot				

The investment regression equation (I) shows that the independent variables' directions are in accordance with the initial hypothesis. The variables of interest rate (r) and import (M) significantly affect investment, at α = 5%; the inflow of net foreign assets (NFA) also significantly affects investment, at α = 10%. In the short term, the interest rate, NFA inflow, and import variables all have elasticity values of <1 or are inelastic. Therefore, during the pandemic, policies on r, M, and NFA do not have the capacity or power to drive investment substantially. For example, an interest rate cut would not immediately encourage people to obtain loans and invest. People are being cautious and waiting for certainty during the pandemic. On a different note, the NFA in this research does not differentiate between hot money investment and FDI. Characteristically, FDI is more fixed in the short-term compared to portfolio investment. By differentiating between FDI and portfolio investment, we can determine the influence of each on the national investment. Indonesia's foreign investment composition in 2019 is shown in graph 2.

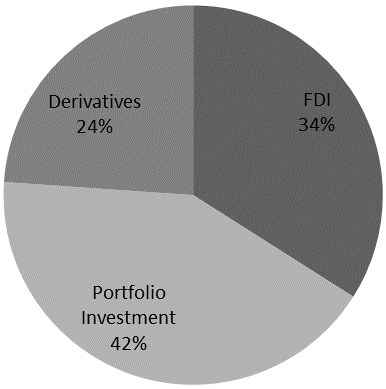

Figure 2 Foreign Investment in Indonesia, 2019

Portfolio investment is temporary and exposed to shocks (e.g., Covid-19) from domestic and foreign sides. This capital flow can come and go easily; hence, it tends to be volatile on the

AGREGAT: Jurnal Ekonomi dan Bisnis
Volume 6 (1), 2022
http://journal.uhamka.ac.id/index.php/agregat
p-ISSN: 2549-5658 e-ISSN: 2549-7243
DOI: 10.22236/agregat_vol6/is1pp17-35
Pp 17-35

external macroeconomic stability. A study (Goyal, 2019) using a panel vector auto-regression model has proven that developing countries receiving inflows of debentures experienced revenue compression more than exchange rate pressure. At the same time, Indonesia's foreign investment composition mostly consists of portfolios. Foreign capital flow has a significant effect at $\alpha = 10\%$ on investment in Indonesia. However, policies regarding short-term foreign capital inflow are inelastic and not influential enough to attract investment during the pandemic. This immensity of portfolio investment makes long-term policies also not elastic enough to push for an increase in the national investment. Consequently, the policies to increase investment in Indonesia must focus on domestic investment, as its cash inflow is inelastic as well. The real sector, such as MSME, must be given higher priority, the ease of licensing, and access to credit (Farida et al., 2015). The economic crises that have hit Indonesia have proven that the country's MSMEs can sustain its economy. The government must have more faith in domestic power. Investments in prime sectors, such as agriculture and fishery, must be prioritized through affordable credit and assistance for equipment and fertilizer. Those sectors absorb plenty of labor; hence, their policies have wide-spread implications. Investments that do not involve labor-intensive domestic sectors and technology transfer should not be prioritized.

Import affects investment. Although its elasticity is <1 on investment in the short term, at 0.66, it is still quite elastic. Government policies in the short-term concerning capital goods imports tend to push investment to increase faster than other factors do, like r and NFA. For the long term, import's elasticity is infinite, meaning that it is perfectly elastic. At a certain import price, consumers or producers will keep buying or importing certain goods. But on another price level, demand for those import goods will stop. If there are no imports for raw materials or capital goods, production will stop. The implication will decrease investment. The government needs to apply policies that facilitate the imports of capital goods to support various industries. The imports of various raw materials and capital goods still require import duty; this import tariffs should be eliminated. Almost 90% of Indonesia's imports are for raw materials and capital goods (table 2). Another policy that could be applied amid the Covid-19 pandemic is the strengthening of domestic industries. At the very least, import policies should maintain the ongoing industries to keep operating amid the pandemic and have long term implications. Besides policies that facilitate the imports of raw materials and capital goods, the

AGREGAT: Jurnal Ekonomi dan Bisnis
Volume 6 (1), 2022
http://journal.uhamka.ac.id/index.php/agregat
p-ISSN: 2549-5658 e-ISSN: 2549-7243
DOI: 10.22236/agregat_vol6/is1pp17-35
Pp 17-35

government should improve the domestic industries to produce those things; hence they would be able to substitute and be less dependent on imports. Industries that can produce raw materials should be prioritized to be able to fulfill domestic needs. High reliance on imports is prone to external upheavals on economic stability. Other import policies that can be applied should see the import determinants in equation 3a.

The regression equation is $M^* = 4.771 + 0.134\ Y^* - 0.08\ e^* + 2.551\ CPI^*$ (3a)

Wherein, $M^* = (Mt-\rho Mt-1)$, $Y^* = (Yt-\rho Yt-1)$, $e^* = (et-\rho et-1)$, $CPI^* = (CPIt-\rho CPIt-1)$

Table 5 Estimation Results of The Import Variable Parameters (M)

Variable	Sig	α = 5%	Elasticity	
			Shorterm	Longterm
Y *	0.00	Significant	0.63	0.73
e*	0.122	Not Significant		
CPI*	0.044	Significant	0.51	-0.33
F-Stat = 7.33 and Prob. F = 0.000				
Coefficient of determination (R^2) = 0.400				
Normality test using Kolmogorov-Smirnov shows *P-value* 0.05 0.05 = normal				
Durbin Watson (DW test) = 1.824 > du (1.656) and < 2.176 (4-du) = no autocorrelation				
VIF < 5 = no multicollinearity, there is no heteroscedasticity using scatterplot				

The regression in table 5 shows that the variables of disposable income (Y) and consumer price index (CPI) significantly affect imports. Those two variables' short-term elasticity is <1, meaning they are inelastic. However, since they are above 0.5, they still have elastic tendencies. The right policies will still have significant effects on imports in the short term. This means that policies regarding exogenous variables would slowly increase imports. The import variable is closely tied to the international market. The R2 determinant coefficient is still low in this research, implying there are still many other variables that should be included in the model. The CPI from the dominating origin country should be included because it is closely tied to the condition amid the pandemic, which has befallen not only this country but also other nations. For instance, Singapore's economy also had a correction, while it is one of Indonesia's main import sources. Therefore, domestic policies to increase imports are blocked from abroad. The

AGREGAT: Jurnal Ekonomi dan Bisnis
Volume 6 (1), 2022
http://journal.uhamka.ac.id/index.php/agregat
p-ISSN: 2549-5658 e-ISSN: 2549-7243
DOI: 10.22236/agregat_vol6/is1pp17-35
Pp 17-35

US-China trade war is also estimated to have negative effects. Many factors come into play regarding a country's imports; inflation alone cannot cause a huge pressure on imports (Islam, 2013). As for the exchange rate (e) variable, although its coefficient direction is as expected, it does not significantly affect imports. This differs from another research (Isnowati, 2015), wherein the exchange rate affects imports in the short and long terms. Using the error correction model (ECM) method, the national revenue in the long term does not affect imports. Traditionally, export performance (and import performance) is affected by the exchange rate and its volatility. Nevertheless, in the context of a global value chain, where export production greatly depends on import inputs, the effect of exchange rate on trade may weaken (Tan et al., 2019). On the other hand, the effect of exchange rate on import in the destination country also works similarly. Based on this assumption, the government's monetary policy in the short term should not be overly concerned about exchange rate volatility in relation to import. The floating exchange rate system will find its equilibrium value on its own in the market without government intervention during the Covid-19 pandemic.

The regression equation for aggregate supply is as follows:

$$Y = 542 + 2.98\ I - 3.42\ CPI \qquad (4a)$$

Table 6 Estimation Results of The GDP Variable Parameters (Y)

Variable	Sig	α = 5%	Elasticity	
			Shorterm	Longterm
I	0.00	Significant	0.96	-0.49
CPI	0.246	Not Significant		
F-Stat = 289.58 and Prob. F = 0.000				
Coefficient of determination (R^2) = 0.400				
Normality test using Kolmogorov-Smirnov shows P-value 0.05 0.05 = normal				
Durbin Watson (DW test) = 1.799 > du (1.574) and < 2.201 (4-du) = no autocorrelation				
VIF < 5 = no multicollinearity, there is no heteroscedasticity using scatterplot				

The multiple linear regression (table 6) shows that investment has a positive effect on the aggregate supply or national income. An investment increase of IDR 1 trillion would increase national income by IDR 2.98 trillion. The short-term elasticity is nearly perfect at 0.96. This means that in the short term, an investment increase could quickly raise national income (GDP).

AGREGAT: Jurnal Ekonomi dan Bisnis
Volume 6 (1), 2022
http://journal.uhamka.ac.id/index.php/agregat
p-ISSN: 2549-5658 e-ISSN: 2549-7243
DOI: 10.22236/agregat_vol6/is1pp17-35
Pp 17-35

Meanwhile, the investment equation (2a) shows that investment is affected by interest rate and imports. Based on non-linear transmission, the national aggregate supply is affected by interest rate and imports. If import increased or the interest rate decreased, the national revenue would increase. In fact, imports declined during the pandemic due to slowing production sector. The supply-side policy to push investment during Covid-19 is by increasing productivity and facilitating businesses, including lowering the import duty, lowering taxation, and building infrastructure to create jobs. Note, the pandemic has led to job losses in various sectors. Investment policies from the supply side can be controlled more easily than from the demand side, as it involves external parties. Policies from the supply side would provide bigger multiplier effects in creating jobs. However, the government must enlarge the portion for the agriculture sector, including fishery, and also for manufacturing. Lately, there has been an economic transformation toward the services sector. Unfortunately, this sector still has limited employment absorption. The CPI variable as an indicator to substitute inflation points toward the negative and is insignificant to the economy. This research is aligned with (Yuliana et al., 2019), wherein the investment variable positively affects economic growth, while inflation does not affect economic growth.

CONCLUSION

Indonesia applies an open economy and is highly dependent on external factors. The Covid-19 global pandemic has deteriorated Indonesia's external resilience. Based on some calculations along with their following indications, we can conclude a few points from this research: First, to mitigate the effect of Covid-19, the government policy that is effective in the short term is to maintain consumer spending through social assistance or emergency assistance to the vulnerable; however, the implementation must be well-aimed. The following policy should provide stimulus for businesses hit by the pandemic to maintain supply and distribution.

The stimulus is expected to prevent job terminations and bankruptcies. For the long term, this kind of stimulus is less effective, as the increased consumption would not have a multiplier effect on employment absorption. Second, the capital inflow to Indonesia mostly consists of hot money that is relatively vulnerable to shocks. In fact, foreign capital flow or external financing does not increase investment in Indonesia. The contagion effect from Covid-19 is only the beginning of a deeper crisis. The foreign direct investment must be increased instead of foreign financing/debts. Third, to increase investment, the government should

prioritize the real MSME sector and facilitate the imports of raw materials and capital goods. For the long term, the government policies should encourage local independence to ease the reliance on imports. To prevent Indonesia's economy from further contracting due to the pandemic, the government must perform expansive fiscal policies. For the medium term, investment gives immediate multiplier effects in recovering the economy.

The fiscal expansion should focus on sectors that can create many jobs—not the services sector since it has limited real added value. The state budget (APBN) deficit should lead to more prudent budgeting with better priorities. The government should avoid counter-productive policies. Fourth, for long term policies, the government should focus on economic recovery through monetary and fiscal policies. However, considering Indonesia's high reliance on foreign debts, those two policy types are less effective due to the limited monetary and fiscal room. Hence, the government is required to maintain the continuation of public services to push the economy and apply prudent development based on priorities. Fifth, a word of advice for the next research is to include models relevant to money equilibrium to determine the needed monetary policy. This research still ignores budget constraints, thus not able to come up with more detailed fiscal policies.

REFERENCES

Abdih, Y., Barajas, A., Chami, R., Ebeke, C. (2012). Remittance Channel and Fiscal Impact in the Middle East , North Africa, and Central asia. IMF Working Paper WP/12/104.

Ayyoub, M., Chaudhry, I.S., Faroog, F. (2011). Does inflation affect economic growth? The case of Pakistan. Pakistan Journal of social sciences, 31(1), 51-64.

BPS. 2020. https://www.bps.go.id/pressrelease/2020/05/05/1736/ekonomi-indonesia-triwulan-i-2020-tumbuh-2-97-persen.html. [Accessed 27 June. 2020]

Carroll, C., Slacalek, J. and Tokuoka, K. (2014). The Distribution of Wealth and the MPC: Implications of New European Data. The American Economic Review, 104 (5): 107–111.

Carroll, C., Slacalek, J., Tokuoka, K., White, M.N. (2017). The Distribution of Wealth and the Marginal Propensity to Consume. Quantitative Economics, 8(2017), 977-1020

Coskun, Y., Atasoy, B.S., Morri, G., and Alp, E. (2018). Wealth Effects on Household Final Consumption: Stock and Housing Market Channels. International Journal of Financial Studies, 6 (57) https://doi.org/10.3390/ijfs6020057

Farida, F., Siregar, H., Nuryartono, N., Intan, E.K.P. (2015). Micro Enterprises' Access to People Business Credit Program in Indonesia: Credit Rationed or Non-Credit Rationed?. International Journal of Economic Perspectives 9(2), 57-70

Farida, F., Siregar, H., Nuryartono, N., Intan, E.K.P. (2016). An Impact Estimator Using Propensity Score Matching: People's Business Credit Program to Micro Entrepreneurs in Indonesia. Iranian Economic Review 20(4), 599-615

Ferguson, N. M., et al. (2020). Impact of Non-Pharmaceutical Interventions (NPIs) to Reduce COVID19 Mortality and Healthcare Demand. Imperial College London. https://www.imperial.ac.uk/mrc-global-infectious-disease-analysis/news--wuhan-coronavirus

Gahtani, G., Bollino, C.A., Bigerna, S., & Pierru, A. (2020). Estimating the household consumption function in Saudi Arabia: an error correction approach. Applied Economics, 52:11, 1259-1271, https://doi.org/10.1080/00036846.2019.1659933

Ghauri, S.P., Ahmed, R.R., Vveinhardt, J., Streimikiene, D., Qureshi, K.S. (2019). The Effects of Remittances on Inflation (CPI and WPI) and Exchange Rate: A Case of Pakistan. Romanian Journal of Economic Forecasting, XXII (2): 146-165

Goyal, A., Sengupta, R., Verma, A. (2019). External Debt Financing and macroeconomic Instability in Emerging Market Economies. Indira Gandhi Institute of Development Research, Mumbai. WP-2019-013.

Humanicki, M., Olszewski, K., Kelm, R. (2013). Foreign Direct Investment and Foreign Portfolio Investment in the Contemporary Globalized World: Should They be Still Treated Separately?. Narodowy Bank Polski Warzawa, NBP Working Paper No. 167

Ibrahim A.A., and Ahmed, E.,M., (2017). The Determinants of Aggregate Demand Function of Sudan. Bus Eco J 8: 309. doi: https://doi.org/10.4172/2151-6219.1000309

Imam, M., & Santosa, D., (2017). Determinants of Indonesia Import in 1981-2014. JEJAK: Jurnal Ekonomi dan Kebijakan, 10(2): 341-349. Doi: http://dx.doi.org/10.15294/jejak.v10i2.11298

Islam, M. A. (2013). Impact of Inflastion on Import: An Empirical Study. International Journal of Economics, Finance and Management Sciences, 1(6): 299-309. doi: 10.11648/j.ijefm.20130106.16

Isnowati, S. (2015). Effect on Exchange rate, nNational Income, and Inflation on Import Price in Indonesia. International Journal of Business, Economics and Law, 7(3).

Khan, D. and Khan, L.Y., (2020). The Economic Impact of Covid-19 on Developing Countries. Opinian [online] http://www.ipsnews.net/2020/04/the-economic-impact-of-COVID-19-on-developing-countries/ [Accessed 26 June. 2020].

Loayza, N.V., and Pennings, S. (2020). Macroeconomic Policy in the Time of Covid-19: A Primer for Developing Countries. World Bank Group, Research and Policy Briefs, No. 28

Nazir, S., Saeed, S., Muhammad, A. (2017). Threshold Modeling for Inflation and GDP Growth. MPRA-paper,79649. https://mpra.ub.uni-muenchen.de/79649/

Normurodova, A. (2020). The Impact of Coronavirus (Covid-19) on Macroeconomic Stability. Economics and Finance Student of WIUT, Tashkent. DOI: 10.13140/RG.2.2.14312.21769

Sayeh, A., Chami, R. (2020). The Covid-19 pandemic treatens to dry up a vital source of income for poor and fragile countries. Finance and Development, 57 (1)

Tan, K. G., Duong, L.N.T., and Chuah, H.Y. (2019). Impact of Exchange Rates on ASEAN's Trade in the Era of Global Value Chains: An Empirical Assessment. The Journal of International Trade & Economic Development, 28(7). https://doi.org/10.1080/09638199.2019.1607532

Tutan, M.U., Campbel, A. (2015). Turkey's Economic Fragility, Foreign Capital Dependent Growth and Hot Money. Journal of Balkan and Near Eastern Studies 17(4): 1-19. DOI: 10.1080/19448953.2015.1063295

Watanabe, T. (2020). The Responses of Consumption and Prices in Japan to the Covid-19 Crisis and the Tohoku Earthquake, Working Papers on Central Bank Communication 020, University of Tokyo, Graduate School of Economics. Available at https://www.centralbank.e.u-tokyo.ac.jp/wp-content/uploads/2020/03/cb-wp020.pdf [Accessed 25 June. 2020]

Wilder-Smith, A., Chiew, C. J., and Lee, V. J. (2020). Can We Contain the Covid-19 Outbreak with the Same Measures as for SARS? The Lancet Infectious Diseases. March 5. https://doi.org/10.1016/S1473-3099(20)30129-8

Wilson, N., Kvalsvig, A., Barnard, L. T., and Baker, M. G. (2020). Case-Fatality Estimates for Covid-19 Calculated by Using a Lag Time for Fatality. Emerging Infection Diseases 26 (6). doi: 10.3201/eid2606.200320

Yuliana, S., Bashir, A., Rohima, S. (2019). The Effect of Investment Toward economic Growth in the Local Economy. Jurnal Ekonomi & Studi Pembangunan, 11(1).