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Indonesian Agricultural Trade Performance with China and the Implications for Indonesia's Economy

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ABSTRACT: Indonesia's trade balance with China is in deficit and it is getting wider during the economic crisis, which is expected to have an impact on the Indonesian economy. This study aims to analyze the performance of Indonesia's agricultural trade with China and its implications for the Indonesian economy. The method of data analysis uses a simultaneous equation system model and is estimated using the Two-Stage Least Square (2 SLS) method. The time series data used are economic and trade data (2000-2018). The results showed that Indonesia's trade balance with China experienced a deficit. During the economic crisis, the performance of agricultural trade, both food and non-food, was more resilient to external and internal changes. If the economic crisis lasts until 2025 followed by depreciation, it will have an impact on the trade balance surplus for agricultural products (food and non-food). Indonesia's GDP has decreased, except for GDP from the agricultural sector during both crisis and non-economic crises. The government's policy of increasing capital expenditures and lowering loan interest rates can increase the agricultural trade balance, however Indonesia's trade balance with China tends to be in deficit. This policy is also effective in increasing Indonesia's GDP, especially from the non-agricultural sector.

Keywords: Trade, Agriculture, Economy.

I. INTRODUCTION

Global economic growth in 2019 slowed down to 2.9% and was followed by a decline in trade volume and world commodity prices (Bank Indonesia, 2020). A number of Indonesia's main trading partner countries experienced an economic slowdown, such as China, India, America, Pakistan and European countries, which had implications for a decline in Indonesia's economic growth (contracted by -5.32 percent) due to a decrease in import demand and lockdown policies in trading partner countries. On the other hand, there is a decline in consumption and investment in Indonesia due to large-scale social restrictions (PSBB) which have implications for a decline in Indonesia's economic activities. The impact of foreign trade on welfare in an economy depends on the magnitude of a country's dependence on international capital markets (Sun & Heshmati 2010).

For Indonesia, China is the main export destination for several superior products. As of 2008, the economic slowdown in China had an impact on lowering demand for Chinese imports. China's economic slowdown occurred again with the Covid-19 pandemic. China's economic growth forecast for 2020 from 5.7% is predicted to fall to 4.8% (Burhanuddin and Abdi, 2020). Prior to the Covid-19 pandemic, MF estimated that China's economy would contribute up to 39.2% of total world economic growth in 2019. Indonesia's economic growth rate can be affected by China's economic growth. China's economic slowdown by 1-2%, it will have an impact on the decline of the Indonesian economy by 0.1-0.3% on the Indonesian economy (Budiyanti 2020). Indonesia's exports to China are in the form of raw materials, energy (coal, oil and gas) and foodstuffs (cooking oil and marine products) (Lindawati and Widyaiswara, 2013 and Nurlatifah, 2011).

Indonesia's GDP growth is estimated to be in the range of 5.6-5.8% while inflation is in the range of 6.8-7.9% for the 2016-2019 period (Maulana, et al., 2017). The increase in positive cases of Covid-19 caused many losses to various sectors in Indonesia. The agricultural sector is predicted to have a risk from supply chain disruption and slumping demand, due to barriers to the mobility of economic actors (Bank Indonesia, 2020). The weakening Rupiah exchange rate (Rp. 14,400 / US $) has an impact on labor on the Indonesian economic sector, including: (1) the threat of health problems and the threat of life because of the risk of increasing cases of up to tens of thousands of people, (2) the threat of loss of income, (3) credit jammed in MSMEs (Mahendra,

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Yoga, Kesumajaya, and Wita, .2015), (4) disrupted corporate systems to banking conditions that can experience liquidity problems, and (5) rupiah depreciation, financial market volatility and capital flights. To deal with this problem, the government through the Ministry of Finance has carried out various stimuli to maintain Indonesia's economic condition, including increasing the Total Additional Expenditure and Financing of the 2020 State Budget for handling the impact of Covid-19 by Rp. 405.1 Trillion (Ministry of Finance of the Republic of Indonesia, 2020), encouraging investment and increasing exports. The economic slowdown and macroeconomic policies implemented by the Indonesian government are expected to have an impact on the performance of agricultural trade and the Indonesian economy.

II. METHODOLOGY

The study used a simultaneous equation system model and was estimated using the Two-Stage Least Square (2 SLS) method. The time-series data used are economic and trade data from 2000-2018.

(1) Production

Indonesian Food Production

$QFI_t = a_{10} + a_{11}PFI_t + a_{12}PAI_{t-1} + a_{13}KAI_{t-1} + a_{14}LAI_t + a_{15}QFI_{t-1} + \varepsilon_{1t}$

…… (1)

Estimated parameters: $a_{11}, a_{12}, a_{13}, a_{14} > 0$, dan $1 < a_{15} < 0$.

Indonesian Non-Food Agricultural Production

$QNFI_t = a_{20} + a_{21}PNFI_t + a_{22}PAI_{t-1} + a_{23}KAI_t + a_{24}LAI_{t-1} + a_{25}QNFI_{t-1} + \varepsilon_{2t}$.....(2)

Estimated parameters: $a_{21}, a_{22}, a_{23}, a_{24} > 0$, dan $1 < a_{25} < 0$.

Indonesian agricultural investment

$IAI_t = a_{60} + a_{61}RI_t + a_{62}(YI_t - YI_{t-1}) + a_{63}(KAI_t - KAI_{t-1}) + a_{64}FDII_t + a_{65}IAI_{t-1} + \varepsilon_{6t}$ ……..……..…. (3)

Estimated parameters: $a_{61} < 0$, $a_{62}, a_{63}, a_{64} > 0$, dan $1 < a_{65} < 0$

Indonesian investment

$II_t = IAI + IOI$

…… (4)

(2) Price

Indonesian Food Consumer Price Index

$PFI_t = b_{10} + b_{11}QFI_{t-1} + b_{12}CFI_{t-1} + b_{13}XFIC_{t-1} + b_{14}XFIR_t + b_{15}MFIC_{t-1} + b_{16}MFIR_t + b_{17}PFI_{t-1} + \varepsilon_7$ … (5)

Estimated parameters: $b_{12}, b_{13}, b_{14} > 0$, $b_{11}, b_{15}, b_{16} < 0$, dan $1 < b_{17} < 0$.

Indonesian Non-Food Consumer Price Index

$PNFI_t = b_{20} + b_{21}(QNFI_t - QNFI_{t-1}) + b_{22}CNFI_{t-1} + b_{23}XNFIC_{t-1} + b_{24}(XNFIR_t - XNFIR_{t-1}) + b_{25}MNFIC_{t-1} + b_{26}(MNFIR_t - MNFIR_{t-1}) + b_{27}PNFI_{t-1} + \varepsilon_8$

…….. (6)

Estimated parameters: $b_{22}, b_{23}, b_{24} > 0$, $b_{21}, b_{25}, b_{26} < 0$, dan $1 < b_{27} < 0$.

Indonesian Agricultural Producer Price Index

$PAI_t = b_{30} + + b_{31}(QFI_t - QFI_{t-1}) + b_{32}QNFI_t + b_{33}CFI_{t-1} + b_{34}CNFI_t + b_{35}PI_t + b_{36}PAI_{t-1} + \varepsilon_{9t}$ ……..... (7)

Estimated parameters: $b_{31}, b_{32} < 0$, $b_{33}, b_{34}, b_{35} > 0$, dan $1 < b_{36} < 0$.

General Consumer Price Index

$PI_t = 0.434*PFI_t + 0.566*PFI_t$ (Nasrudin, 2014)

…..…….……...…… (8)

(3) Consumtion

Indonesian Food Consumption

$CFI_t = c_{10} + c_{11}(YI_t / POPI_t) + c_{12}PFI_t + c_{13}T_t + c_{14}CFI_{t-1} + \varepsilon_{10t}$ …….. (9)

Estimated parameters: $c_{11}, c_{13} > 0$, $c_{12} < 0$, dan $1 < c_{14} < 0$

Indonesian Non Food Consumption

$CNFI_t = c_{20} + c_{21}(YI_t / POPI_t) + c_{22}(PNFI_t - PNFI_{t-1}) + c_{23}CNFI_{t-1} + \varepsilon_{11t}$

…….(10)

Estimated parameters: $c_{21} > 0$, $c_{22} < 0$, dan $1 < c_{23} < 0$.

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Indonesia's Total Consumption

$CI_t = CFI_t + CNFI_t$

…… (11)

(4) Trade

Export of Indonesian Food Products to China

$XFIC_t = d_{10} + d_{11}QFI_t + d_{12}PFI_{t-1} + d_{13}PFC_t + d_{14}GI_t + d_{15}ERIC_t + d_{16}XFIC_{t-1} + \varepsilon_{12t}$ ……(12)

Estimated parameters: $d_{11}, d_{13}, d_{14}, d_{15} > 0$, $d_{12} < 0$, dan $1 < d_{16} < 0$.

Export of Indonesian Non-Food Agricultural Products to China

$XNFIC_t = d_{20} + d_{21}QNFI_t + d_{22}PNFI_{t-1} + d_{23}(PNFC_t - PNFC_{t-1}) + d_{24}GI_t + d_{25}ERIC_t + d_{26}XNFIC_{t-1} + \varepsilon_{13t}$ …… (13)

Estimated parameters: $d_{21}, d_{23}, d_{24}, d_{25} > 0$, $d_{22} < 0$, dan $1 < d_{26} < 0$.

Export of Indonesian Agricultural Products to China

$XAIC_t = XFIC_t + XNFIC_t$

……(14)

Export of Indonesian Non-Agricultural Products to China

$XOIC_t = d_{30} + d_{31}PNFI_{t-1} + d_{32}(PNFC_t - PNFC_{t-1}) + d_{33}GI_t + d_{34}ERIC_t + d_{35}XOIC_{t-1} + \varepsilon_{14t}$ ……(15)

Estimated parameters: $d_{31} < 0$, $d_{32}, d_{33}, d_{34} > 0$, dan $1 < d_{35} < 0$.

Indonesia's total exports to China

$XIC_t = XAIC_t + XOIC_t$

…… (16)

Total Indonesian Exports

$XI_t = XIC_t + XINC_t$

…… (17)

Export of Chinese Food Products to Indonesia

$XFCI_t = d_{40} + d_{41}(PFC_t - PFC_{t-1}) + d_{42}PFI_t + d_{43}(QFC_t - QFC_{t-1}) + d_{44}GC_t + d_{45}ERCI_t + d_{46}XFCI_{t-1} + \varepsilon_{15t}$ (18)

Estimated parameters: $d_{41} < 0$, $d_{42}, d_{43}, d_{44}, d_{45} > 0$, dan $1 < d_{46} < 0$.

Export of Chinese Non-Food Agricultural Products to Indonesia

$XNFCI_t = d_{50} + d_{51}(PNFC_t - PNFC_{t-1}) + d_{52}(PNFI_t - PNFI_{t-1}) + d_{53}QNFC_t + d_{54}ERCI_t + d_{55}XNFCI_{t-1} + \varepsilon_{16t}$ ..(19)

Estimated parameters: $d_{51} < 0$, $d_{52}, d_{53}, d_{54} > 0$, dan $1 < d_{55} < 0$

Export of Chinese Agricultural Products to Indonesia

$XACI_t = XFCI_t + XNFCI_t$

…… (20)

Export of Chinese Non-Agricultural Products to Indonesia

$XOCI_t = d_{60} + d_{61}PNFI_{t-1} + d_{62}GC_t + d_{63}ERCI_t + d_{64}XOCI_{t-1} + \varepsilon_{17t}$ ……..... (21)

Estimated parameters: $d_{61}, d_{62}, d_{63} > 0$, dan $1 < d_{64} < 0$

Total Chinese Exports to Indonesia

$XCI_t = XACI_t + XOCI_t$

…… (22)

Total Chinese Exports

$XC_t = XCI_t + XCNI_t$

…… (23)

Import of Indonesian Food Products from China

$MFIC_t = f_{10} + f_{11}TMFIC_t + f_{12}TMFIR_t + f_{13}CFI_t + f_{14}(PFC_t/PFI_t) + f_{15}ERI_t + f_{16}YI_{t-1} + f_{17}MFIC_{t-1} + \varepsilon_{18t}$ (24)

Estimated parameters: $e_{11}, e_{14}, e_{15} < 0$, $e_{12}, e_{13}, e_{16} > 0$, dan $1 < e_{17} < 0$

Import of Indonesian Non-Food Agricultural Products from China

$MNFIC_t = e_0 + e_{21}TMNFIC_t + e_{22}TMNFIR_t + e_{23}PNFI_{t-1} + e_{24}ERI_t + e_{25}(PNFC_t - PNFC_{t-1}) + e_{26}MNFIC_{t-1} + \varepsilon_{19t}$ ……..(25)

Estimated parameters: $e_{21}, e_{24}, e_{25} < 0$, $e_{22}, e_{23} > 0$, dan $1 < e_{28} < 0$

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Imports of Indonesian Agricultural Products from China

$MAIC_t = MFIC_t + MNFIC_t$

..... (26)

Imports of Indonesian Non-Agricultural Products from China

$MOIC_t = e_{30} + e_{31} TMOIC_t + e_{32}(PNFI_t/PNFC) + e_{33}ERI_t + e_{34}YAI_{t-1} + e_{35}YOI_{t-1} + e_{36}MOIC_{t-1} + \varepsilon_{20t}$.
(27)

Estimated parameters: $e_{31}, e_{33}, e_{35} < 0$, $e_{32}, e_{34} > 0$, dan $1 < e_{36} < 0$.

Indonesia's total imports from China

$MIC_t = MAIC_t + MOIC_t$

..... (28)

Indonesia's Total Imports

$MI_t = MIC_t + MINC_t$

..... (29).

Imports of Chinese food products from Indonesia

$MFCI_t = e_{40} + e_{41}TMFCI_t + e_{42}(PFI_t - PFI_{t-1}) + e_{43}ERC_t + e_{44}MFCI_{t-1} + \varepsilon_{21t}$

..... (30)

Estimated parameters: $e_{41}, e_{43} < 0$, $e_{42} > 0$, dan $1 < e_{44} < 0$

Imports of Chinese Non-Food Agricultural Products from Indonesia

$MNFCI_t = e_{50} + e_{51}TMNFCI_t + e_{52}(PNFI_t - PNFI_{t-1}) + e_{53}ERC_t + e_{52}(YC_t - YC_{t-1}) + e_{54}MNFCI_{t-1} + \varepsilon_{22t}$ ..... (31)

Estimated parameters: $e_{51}, e_{52}, e_{53} < 0$, $e_{54} > 0$ dan $1 < e_{55} < 0$.

Imports of Chinese Agricultural Products from Indonesia

$MACI_t = MFCI_t + MNFCI_t$

..... (32)

Imports of Chinese Non-Agricultural Products from Indonesia

$MOCI_t = e_{60} + e_{61}TMOCI_t + e_{62}TMOCR_t + e_{63}(PNFC_t / PNFI_t) + e_{64}ERC_t + e_{65}(YC_t - YC_{t-1})_t$
$+e_{66}MOCI_{t1}+\varepsilon_{23t}$.....
..... (33)

Estimated parameters: $e_{61}, e_{64} < 0$, $e_{62}, e_{63}, e_{65} > 0$, dan $1 < e_{66} < 0$

Total Chinese imports from Indonesia

$MCI_t=MACI_t+MOCI_t$.....
..... (34)

Total Imports of China

$MC_t = MCI_t + MCNI_t$

..... (35)

Trade balance of Indonesian food products with China

$BOTFIC_t = XFIC_t – MFIC_t$

..... (36)

Trade balance of Indonesian non-food agricultural products with China

$BOTNFIC_t=XNFIC_t-MNFIC_t$..... (37)

Trade balance of Indonesian agricultural products with China

$BOTAIC_t = BOTFIC_t + BOTNFIC_t$

..... (38)

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Trade balance of Indonesian non-agricultural products with China

$BOTOIC_t = XOIC_t - MOIC_t$ ..... (39)

Indonesia's trade balance with China

$BOTIC_t = BOTAIC_t + BOTOIC_t$ ..... (40)

(5) Economy

Indonesia's GDP from the agricultural sector

$YAI_t = a_{30} + a_{31}(IAI_t - IAI_{t-1}) + a_{32}GEII_t + a_{33}LAI_t + a_{34}YAI_{t-1} + \varepsilon_{3t}$ ……...…(41)

Estimated parameters: a_{31}, a_{32}, a_{33}, dan $1 < a_{34} < 0$.

Indonesia's GDP from the non-agricultural sector

$YOI_t = YI_t - YAI_t$ ……..……..... (42)

Indonesia's GDP

$YI_t = CI_t + II_t + GEI_t + (XI_t - MI_t)$ ..... (43)

Indonesian economic growth

$GI_t = (YI_t - YI_{t-1}) / YI_{t-1} \times 100\%$ ..... (44)

China's Economic Growth

$GC_t = (YC_t - YC_{t-1})/YC_{t-1} \times 100\%$ ..... (45)

Information:

$TMFIC_t$	=	Import tariffs for Indonesian food products from China (%)
$MFIR_t$	=	Import tariffs for Indonesian food products from Rest of the World(%)
$TMNFIC_t$	=	Import tariffs for Indonesian non-food agricultural products from China(%)
$TMNFIR_t$	=	Import tariffs for Indonesian non-food agricultural products from Rest of the World(%)
$TMOIC_t$	=	Import tariffs for Indonesian non-food agricultural products from China(%)
$BOTNFIC_t$	=	Trade balance of Indonesian non-food agricultural products with China (US $ thousand)
$MCNI_t$	=	The total value of Chinese imports from non-Indonesians (US $ thousand)
ERI_t	=	Rupiah exchange rate against US $ (Rp/US$)
ERC_t	=	Yuan exchange rate against US $ (Yuan/US$)
YC_t	=	China's GDP (US $ thousand)
YC_{t-1}	=	China's GDP lag (US $ thousand)

Model validation criteria based on Root Mean Squares Percent Error and Theil's Inequality Coefficient. Model simulation consists of historical simulations (2000-2018 periods) and forecasting simulations (2021-2045 periods). As for policy simulations as follows:

a. slowdown in China's economy
b. depreciation of the Rupiah.
c. an increase in government spending on capital expenditures
d. changes in bank loan interest rates.

III. RESULTS AND DISCUSSION

Indonesia's Trade Performance with China

In Figure 1, it is clear that during 2000-2019 Indonesia's trade balance with China tended to be in deficit due to the high value of Indonesia's imports from China compared to the value of Indonesia's exports to China. The largest trade balance deficit occurred in 2015. For China, the

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trade balance deficit with Indonesia occurred during 2000-2007, on the contrary, from 2008 to 2019 there was a trade surplus. This shows that Indonesia's trade cooperation with China has greater benefits for China.

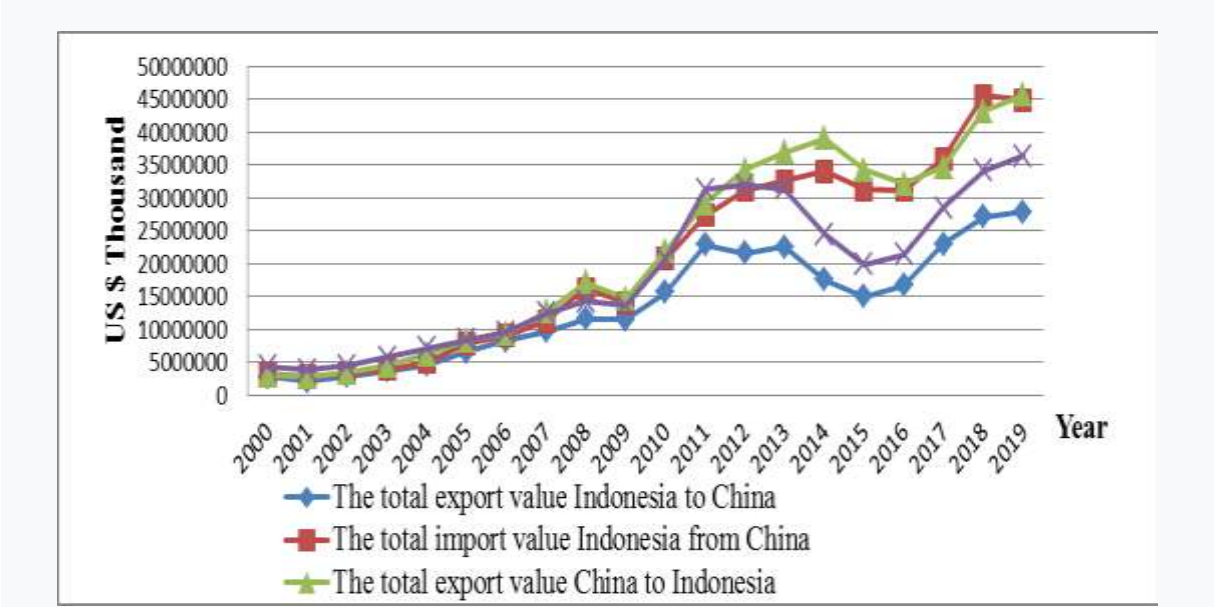

Figure 1. Indonesia's export and import performance with China
Source: UNCTAD, 2020.

The trade cooperation between Indonesia and China, which is established in the China ASEAN Free Trade Area (CAFTA), encourages an increasingly tighter level of global competition for Indonesia (Hutabarat, 2011 and Setiawan, 2012). This cooperation was implemented since January 1, 2010 after the signing of the initial framework on November 4, 2004 and ratified by the Government through KEPPRES No. 48 on June 15, 2004

Indonesia's highest non-oil and gas imports from China amounted to US $ 19,052,020 thousand (2010), increasing to US $ 29,488,605 thousand (2013), with a growth of 54.78 percent. These non-oil and gas imports reached 20.37 percent (2010), increasing to 22.18 percent of Indonesia's total non-oil and gas imports (Jamilah et al. 2016). Demand for non-oil and gas imports from China is mainly dominated by imports of textiles and textile products (TPT), agricultural products, and electronic goods. The high imports from China compared to Indonesia's exports to China caused Indonesia's trade balance with China to experience a deficit. Imports of agricultural products worth US $ 618,920.3 million (2010) to US $ 865,002.3 million (2013), are dominated by fruits, vegetables, fish, cocoa beans and tobacco. Imports of industrial products worth US $ 9,088,731.1 million (2010) to US $ 12,998,538.9 million (2013), are dominated by electrical equipment, measuring instruments, optics, basic

(Directorate of Trade, Investment and International Economic Cooperation, 2011). Indonesia's exports in 2010 showed an increase of 40.4 percent compared to 2009 mainly due to the strong performance of non-oil and gas exports. Indonesia's trade value experienced a surplus of US $ 10.9 billion with a non-oil and gas surplus reaching US $ 11.4 billion but oil and gas revenues experienced a deficit of US $ 0.5 billion (BPS, 2015).

metal products, chemicals, textiles and textile products. Imports of mining products worth US $ 97,740.3 million (2010) to US $ 130,220.1 million (2013), are dominated by coal, granite and copper ore (Bank Indonesia, 2016). China is the largest vegetable and fruit producer in the world. Agricultural imports from China are dominated by three commodity groups, namely vegetables and fruits, processed foods, and fish. Vegetables and fruits are the largest export commodities, which account for 40 percent of total exports (Puspitasari and Prabawati, 2015).

From 2005 to 2013, the export value of Indonesian food products to China was higher than the value of Indonesian food imports from China, on the other hand, for non-agricultural products, the value of Indonesia's imports from China was higher than the value of Indonesia's exports to China (Table 1). For non-food products, between 2005 - 2010, the export value was higher than the import value. However, this is the opposite in 2013.

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Indonesia's agricultural product exports are dominated by coffee beans, shrimp, cocoa beans, fish, spices, tea, vegetable ingredients and fruits. Exports of industrial products are dominated by palm oil, textiles and textile products, electrical equipment, measuring and optical instruments, processed rubber, basic metal products, paper and paper goods. Mining exports are dominated by coal, copper ore and nickel ore (Central Statistics Agency, 2015). Indonesia's exports to China are only in the form of raw materials and energy (coal, oil and natural gas) and foodstuffs such as cooking oil and marine products (Lindawati, 2013).

Tabel 1. The development of exports and imports of food, non-food and non-agricultural products from Indonesia to China, 2000-2018

Year	Export (US $ juta)			Import (US $ juta)		
	Food	Non-Food	Non-Agricultural	Food	Non- Food	Non-Agricultural
2000	217,3	579,2	1.971,2	462,0	478,6	2.573,8
2005	818,9	999,9	4.843,5	386,5	603,7	6.823,3
2010	2.813,6	2.606,5	10.272.5	1.407,6	2.127,2	17.074,5
2015	3.943,9	2.029,1	9.073,3	1.451,2	269,1	29.587,3
2018	4.916,4	2.984,3	19.226,1	2.179,7	509,9	42.846,9

Sumber: UNCTAD, 2015.

A study conducted by Wend and Shao (2005) in Wibowo (2009) shows that ASEAN and China export commodities have a similar structure so that they compete in international markets. For manufactured products, this competition tends to continue to increase and in general Chinese manufactured products have higher competitiveness due to lower production costs compared to ASEAN countries. The value of China's exports to Indonesia in non-agricultural products, namely electronic products, communications, spare parts and toys. Indonesia's exports rely more on natural resource-based commodities and extractive industries, such as: vegetable oil (palm oil), forestry and mining materials. Meanwhile, in the manufacturing sector, Indonesia is unable to compete with China. If this continues and Indonesia is unable to increase the competitiveness and value added of its products, it is estimated that the Indonesia-China trade cooperation will only make Indonesia a supplier of raw materials for China's industry and a market for China's manufacturing industry.

The high import of products from China compared to exports of Indonesian products to China shows the weak competitiveness of Indonesian products. In addition, the Government of Indonesia is considered not fully capable of seizing positive opportunities from the implementation of CAFTA. For example, sectors that are considered unprepared in facing CAFTA are the non-oil and gas sector and processed products such as textiles, electronics and agriculture (Ministry of Trade of the Republic of Indonesia, 2016).

The Influence of Changes in External and Internal Factors on the Performance of Agricultural Trade and the Indonesian Economy

Government spending and loan interest rates as a form of fiscal policy application and monetary policy are expected to affect the condition of the Indonesian economy. The policy of increasing government spending for infrastructure development, increasing resources, and agricultural production efforts can encourage increased investment in the agricultural sector and promote exports of agricultural products. On the other hand, a reduction in loan interest rates can encourage increased investment, both domestic and foreign, to develop agricultural sectors.

The policy to increase government spending (10 percent) has been effective in increasing Indonesia's GDP, especially from the non-agricultural sector. An increase in government spending by 10 percent and a decrease in loan interest rates (Table 2). However, the agricultural trade balance experiencing a surplus of 1 point can increase Indonesia's trade balance with China and Indonesia's GDP from both the agricultural and non-agricultural sectors and encourage increased agricultural investment. If this policy is implemented by Indonesia when the Rupiah exchange rate against US $ depreciates by 15 percent, it will cause Indonesia's trade balance with China to experience a deficit. This condition also applies if the policy of increasing government spending for capital expenditures by 10 percent and decreasing loan interest rates by 1 point are

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imposed during the economic crisis (decline in China's economic growth and Yuan devalution against US $) and the Rupiah depreciates.

Tabel 2. Forecast the impact of the agreement on the elimination of import tariffs, changes in external and internal factors on the performance of agricultural trade and the Indonesian economy, in 2021 - 2030

Performance Indicators	variable	Base value	Sim-1 (%)	Sim-2 (%)
Produksi				
food production	QFI	223.1	0.3586	0.314
non-food production	QNFI	216	2.4537	2.269
Agricultural Investment	IAI	2685.1	2.0409	2.030
Price and Consumption				
Food Consumer Price Index	PFI	419.3	4.1736	4.126
Non-Food Consumer Price Index	PNFI	261.7	14.138	13.145
Agricultural producer price index	PAI	744.3	1.1958	1.075
Consumption food	CFI	48302.6	-3.334	-3.290
Consumption food	CNFI	91614.3	-3.997	-4.273
Indonesian consumption	CI	139917	-3.768	-3.934
Indonesian exports to China				
Food	XFIC	2140.8	-1.238	-1.532
Non-food Agricultural	XNFIC	1608.6	6.5647	4.097
Agricultural products	XAIC	3749.4	2.1097	0.880
Non-Agricultural products	XOIC	7305.8	12.658	8.779
Total exports	XIC	11055.2	9.0817	6.100
Indonesian exports	XI	79596.6	1.2612	0.847
Chinese exports to Indonesia				
Food	XFCI	2124.7	5.2807	-23.448
Non-food Agricultural	XNFCI	556.2	-0.629	-0.485
Agricultural products	XACI	2680.9	4.0546	-18.688
Non-Agricultural products	XOCI	46142.5	5.4967	2.766
Total exports	XCI	48823.4	5.4177	1.588
Chinese exports	XC	2529308	0.1046	0.031
Indonesian imports from China				
Food	MFIC	640.3	-56.57	-56.708
Non-food Agricultural	MNFIC	352	-34.06	-35.341
Agricultural products	MAIC	992.4	-48.59	-49.133
Non-Agricultural products	MOIC	21106.3	-1.079	-1.583
Total imports	MIC	22098.6	-3.212	-3.717
Indonesian imports	MI	114443	-0.62	-0.718
Chinese imports from Indonesia				
Food	MFCI	3609	0.3547	-3.308
Non-food Agricultural	MNFCI	2249.6	-1.454	-13.451
Agricultural products	MACI	5858.6	-0.338	-7.201
Non-Agricultural products	MOCI	18459.6	-2.989	-38.574
Total imports	MCI	24318.2	-2.351	-31.016
Chinese imports	MC	1602152	-0.036	-0.471
Indonesia-China trade balance (BOT) and Indonesia's GDP				

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Food trade balance	BOTFIC	1500.5	22.373	22.013
Non-food trade balance	BOTNFIC	1256.6	17.945	15.136
Agricultural products trade balance	BOTAIC	243.9	45.141	57.401
Non-agricultural products trade balance	BOTOIC	-13800.5	-8.352	-7.068
Indonesia - China trade balance	BOTIC	14044.3	-7.422	-5.948
Agricultural sector GDP	YAI	132483	2.2395	2.231
Non-agricultural sector GDP	YOI	157964	-4.097	-4.374
Gross Domestic Product (GDP)	YI	290447	-1.206	-1.361

Source: Data Processed Results, 2020.

Information:
Basic value = 0% import tariff for agricultural and non-agricultural products.
Sim-1 = Government spending on capital expenditures increased by 10 percent, loan interest rates decreased by 1 point, and depreciation of Rupiah / US $ by 15 percent.

Indonesia's GDP decreased except for GDP from the agricultural sector. The World Bank estimates the potential for production growth in Indonesia, taking into account lower commodity prices, of around 5.5 percent per year. Thus, the government's efforts to increase economic growth to 7.0 percent require massive policy reforms and implementation. The government must focus on increasing production from high value added industries by reducing or limiting the export of raw materials (World Bank, 2015). The highest increases were coal and palm oil, and nickel, which saw a three-fold increase in production volume during 2002 - 2013. In contrast, crude oil production decreased by 35 percent, and gas and tin production remained flat. In the case of nickel and tin, almost all production is exported, both in raw and processed form, as well as coal Ministry of Trade of the Republic of Indonesia, 2016).

For China, the export value of non-agricultural products to Indonesia is higher than the export value of agricultural products. Likewise, the export value of Indonesian non-agricultural products to China is higher than the export value of agricultural products. However, the export value of Indonesian agricultural products to China is higher than the export value of Chinese agricultural products to Indonesia. The results of this study are supported by Wibowo (2009), that China's import value for natural resource-based commodities from ASEAN reaches more than 25 percent of the country's total imports. Meanwhile, exports of Chinese manufactured products to ASEAN reached more than 82 percent. Previously Chirathivat (2002) also found that CAFTA liberalization would improve the trade performance of the two countries, however, because China is much more prepared, China's export performance growth will be much higher than that of ASEAN countries.

Sim-2 = Government spending on capital expenditures increased by 10 percent, loan interest rates decreased by 1 point, depreciation of the Rupiah / US $ (15 percent), China's GDP decreased by 10%, and devaluation of Yuan / US $ (3 percent).

IV. CONCLUSION

Indonesia's trade balance with China experienced a deficit before and after the economic crisis, due to the high value of Indonesia's imports from China compared to the value of Indonesia's exports to China, especially non-agricultural products. This has an impact on decreasing the rate of economic growth in Indonesia. The decline in China's economic growth has an impact on decreasing demand for Chinese imports from Indonesia and the performance of Indonesia's exports to China has also decreased. In this condition, if China devalues the Yuan and the import tariff elimination policy is implemented, the Indonesia-China trade balance will experience a surplus.

If the global economic crisis lasts until 2025 and the Rupiah exchange rate depreciates, the trade balance between Indonesia and China is estimated to still be in deficit. In this condition, if the government increases capital spending and lowers interest rates on bank loans, the agricultural trade balance will increase. This policy is considered effective in encouraging increased Indonesian investment in the agricultural sector. Indonesia's GDP is estimated to decline except for GDP from the agricultural sector.

The implementation of policies to increase government spending and reduce loan interest rates is effective in increasing Indonesia's GDP, especially from the non-agricultural sector if the elimination of import tariffs for Indonesian agricultural and non-agricultural products is imposed.

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