Impact of The Russia-Ukraine Invasion on Wheat Imports in Indonesia Implications on Economic G rowth in Indonesia

Wali Akbar[1], Heru Subiyantoro[2]
[1,2,3] Universitas Borobudur, Indonesia
Email: waliakba@gmail.com, herusubiyantoro@gmail.com

Corresponding Author: waliakba@gmail.com

KEYWORDS	ABSTRACT
Consumption; exchange rates; and wheat prices.	This study uses secondary data by time series during period 2011 – 2021. The data was collected from various related sources such as literature books, journals and information from the internet. Sources of data that will be used in this study were obtained from relevant agencies, namely the Food and Agriculture Organization of the United Nations (FAO), the Indonesian Wheat Flour Producers Association (APTINDO), Bank Indonesia (BI), the Ministry of Trade of the Republic of Indonesia and the Central Statistics Agency. (BPS). Wheat consumption variable, rupiah exchange rate and wheat price simultaneously have a significant effect on foreign exchange reserves. With the impact of some of the variables above, Indonesia's wheat imports have increased so that full employment opportunities will be achieved and unemployment will decrease. The variable of wheat consumption partially has a significant and positive effect on imports of Indonesian. The exchange rate variable partially has a positive and significant and negative effect on Indonesian wheat imports. The international wheat price variable partially has a positive and significant effect on Indonesian wheat imports. Indonesian wheat import variable partially has a significant and positive effect on economic growth. The increase in Indonesian wheat imports indicates that economic growth will increase. Consumption of wheat flour, exchange rates and wheat prices have a significant effect on the volume of imports of wheat in Indonesia.

1. Introduction

The distribution of wheat on the international market needs to be anticipated given the impact of the Russian-Ukraine conflict. This conflict has made a major contribution to world wheat prices, even in Indonesia," Krisna said in a statement in Jakarta, Saturday (26/2). However, the Russian state has a food buying and selling relationship, one of which is wheat in Indonesia. Apart from wheat, Russia is an oil importer and energy in the world, coupled with America's warning to Russia, will have an impact on the sustainability of food supplies throughout the world.

Wheat is the most produced food commodity in the world compared to rice, even the amount

of production from year to year is increasing. With an average production growth rate of 2-3% per year, wheat is the main crop in the world. The demand for wheat is inseparable from the many product derivations that can be produced from wheat.

In terms of food modernity, wheat is superior to other cereal crops rice. Wheat is a cereal plant that is a source of calories. Almost the same as rice, wheat is harvested in the form of seeds, but cannot be consumed directly, it must be ground first. The result of milling wheat is called wheat flour or what we know as wheat flour.[1]

Indonesian wheat flour market is still very possible. Currently, the average consumption of wheat flour in Indonesia is only 25 kilograms per year, per capita. One of the main factors in increasing consumption of wheat flour is the ease of processing flour into various foods. Noodles, bread, biscuits, cakes, martabak, etc. The ease of processing wheat flour can stimulate large and small food industries, especially the small business sector. The growth of the wheat flour market is also supported by an increase in people's income, so that people need more diverse food.

Indonesia is gradually being recognized as one of the export centers of the food industry, including biscuits made from wheat flour," he added. Bogasari believes the growth of the Indonesian wheat flour industry since it started operating in Indonesia in 2011 and continues to increase until now.

Based on published data (BPS), in 2019 Indonesia became a supplier of 34,467 tons of wheat flour and even experienced an increase of 2.6 million tons if traced to the previous year. In the same year, Indonesia also imported wheat – the main ingredient for wheat flour – reaching 10.69 million tons, experiencing an upward curve of 5 million tons compared to the previous year.[2] Even though wheat imports during January-September 2021 decreased by 8 million tons, this figure is still relatively high.

The Central Bureau of Statistics noted that one of the largest imports of food ingredients in 2017 was wheat and meslin seeds reaching 11.4 million tons, followed by sugar cane at 4.4 million tons, then soybean imports at 2.7 million tons and salt at 2.5 million tons. The increasing domestic demand, which is faster than production, has forced the government to bring in some foodstuffs from abroad.[3] Low productivity is one of the causes of food imports.

The main problem in reducing Indonesia's imports of wheat and wheat flour is that wheat is not native to Indonesia. Wheat plants are rarely found in Indonesia because the physical environment is not suitable for wheat and the population is growing rapidly so that consumption of wheat is increasing. This makes Indonesia the second largest country after Egypt to import wheat.

The availability of wheat in Indonesia is obtained from various countries in the world by import. The volume of wheat imports from year to year is increasing. The increasing demand for the domestic food industry makes BPS, the volume of Indonesian wheat imports in 2017 rose to 11.4 million tons from the previous year. The number of imports of wheat and flour continues to increase.[4] The high rate of consumption and imports of wheat has a negative impact on the Indonesian people, including dependence on imports of wheat and wheat seeds and the depletion of the country's foreign exchange in a fairly large amount. According to Joshep (2008) in 2025, it is projected that wheat imports will triple to 18,679 million tons.[5]

Given the increasing amount of foreign exchange issued, it is necessary to reduce dependence on imported wheat. One of the efforts that must be made to reduce the number of Indonesian supplying wheat is to reduce dependence on supplying wheat by developing domestic wheat with the application of cultivation technology in accordance with agro-climatic conditions in Indonesia (Sovan, 2020).

2. Materials and Methods

Wheat Crops

Wheat (Triticum aestivum L.) can actually grow and produce well in Indonesia, especially in the highland areas with cool temperatures. During the Dutch era, wheat was grown in cold areas in Indonesia. After independence, wheat R&D began in 1969 and cultivation was limited to highland areas. Since then, wheat germplasm has been introduced from abroad including from CIMMYT, India, Thailand and China.[6].

Definition of Import

Import supply of goods in countries around the world, the Republic of Indonesia, includes a lot of transportation that passes through the land, water and airspace above it, even in the zones selected as the main distribution. According to Susilo (2008), this understanding means that import activities involve two countries. In this case the interests of the two companies can be represented between the two countries, where one party acts as a seller (exporter) and the other party as a buyer (importer).

Consumption of Indonesian Wheat Flour

Suherman Rosyidi (2016) Consumption is an activity to spend or reduce the economic value of a good or service. Rate of wheat about 50% over the last 30 years. At present, four flour mills control almost 90% of the wheat market share in Indonesia, and the largest is Bogasari which controls about 65%. The wheat milling industry and the wheat flour market in Indonesia are more characteristic of an oligopoly market than a competitive market.

Instant noodles has comsumption more high is because the derivative products produced are very diverse and the promotion is also very strong. There are many kinds, shapes, flavors and ways of processing noodles, such as wet noodles, soup noodles, instant noodles and other noodle products. Noodle products can be quickly processed, served and consumed with good packaging and variations in noodle prices according to

Exchange rate

According to Salvatore (2010) in Sevianingsih (2016) the exchange rate is the level where the domestic currency is exchanged for another country's currency, it matters that the price of one unit of foreign currency is calculated by domestic currency. According to Salvatore (1997) on Aditama (2015) explained the price of one currency against another currency is called the exchange rate.

International Wheat Prices

International wheat prices are formed on the international market, which is the agreement of all countries around the world as the basis for the entry and exit of wheat to a country.

Demand Theory

Definition Demand for goods and services is a theory that explains the characteristics of the relationship between quantity demanded and price. Based on the characteristics of the relationship between demand and price, a demand curve graph can be made. The analysis in this section will explain the characteristics of the relationship between the demand for prices and the formation of the demand curve.

3. Results and Discussions

A. Regression Analysis.

Table 3.1. The Output of Multiple Linear Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.

C	12.53784	0.888759	15.08785	0.0000
LOG(X1_KONSUM)	0.543765	0.163692	2.344528	0.0463
LOG(X5_KURS)	0.623948	0.073782	5.865987	0.0000
LOG(X6_HARG)	0.876458	0.040935	3.185824	0.0001
R-squared	0.838467	Mean dependent var		24.38822
Adjusted R-squared	0.797403	S.D. dependent var		0.880398
S.E. of regression	0.387466	Akaike info criterion		-1.849673
Sum squared reside	0.328931	Schwarz criterion		-0.478955
Log likelihood	24.87694	Hannan-Quinn criter.		-0.746788
F-statistic	257.4226	Durbin-Watson stat		2.767864
Prob(F-statistic)	0.000000			

Source: Processed Data

Multiple Linear Regression Analysis (Model 1):
The effect of imports, exchange rates and prices of wheat on wheat imports in Indonesia with the equations:
LnY= o + 11LnX1 + 12LnX2 + 13LnX3 +e1=12.53784+0.543765*LOG(X1_KONSUM)+0.0.623948*LOG(X5_EXC HANGE)+ 0.876458*LOG(X6_PRICE)

1) Constant value (0) is 12.53784, it can be explained that statistically if all research variables (flour consumption, exchange rate and wheat prices) do not change, then foreign exchange reserves will increase by 12.53784units.
2) The value of the regression coefficient of the wheat flour consumption variable (1), which is 0.543765, can be explained that the wheat flour consumption variable can explain the wheat import variable in Indonesia of 0.543765. In the Indonesian wheat flour consumption policy model, it appears that the regression coefficient value of the wheat flour consumption variable shows that the constant elasticity is positive at E = 0.163692. the development of Indonesian wheat flour consumption is elastic to wheat imports in Indonesia, the elasticity value of 0.163692 means that every 1 unit increase in exports will be followed by an increase in wheat imports in Indonesia by 0.543765 units or 54.37%.and vice versa a decrease in wheat flour consumption 1 unit will be followed by a decrease in wheat imports in Indonesia by 0.543765 units or by 54.37%.
3) The value of the Regression Coefficient of the EXCHANGE variable (5), which is 0.623948, can be explained that the EXCHANGE variable can explain the wheat import variable in Indonesia of 0.623948In the Indonesian EXCHANGE model, it appears that the regression coefficient value of the EXCHANGE variable shows that the constant elasticity is positive at E. = 0.163692. Based on this value, it can be reduced the value of the elasticity of the EXCHANGE E = 0.163692, the value of E < 1 indicates that the development of the Indonesian exchange rate is elastic to imports of wheat in Indonesia. The elasticity value of
4) 0.623948 will be followed by an increase in wheat imports in Indonesia. Indonesia by units or

62.39% and conversely a decrease in the exchange rate of 1 unit will be followed by a decrease in wheat imports in Indonesia by 0.623948 units or by 62.39%

5) The value of the Regression Coefficient of Investment variable, which is 0.876458, can be explained that the Wheat Price variable can explain the wheat import variable in Indonesia of 0.876458. In the wheat price model, it appears that the regression coefficient value of the Investment variable shows that the constant elasticity is positive. of E = 0.130411. Based on this value, the elasticity of wheat prices can be reduced by E = 0.040935, the value of E < 1 indicates that the development of Indonesian wheat prices is elastic to imports of wheat in Indonesia. The elasticity value of 0.040935 will be followed by an increase in imports. wheat in Indonesia by 0.876458 units or 87.64% and conversely a decrease in wheat imports by unit will be followed by a decrease in wheat imports in Indonesia by 0.876458 units or by 87.64% %.

Simple Linear Regression Analysis (Model 2)
The effect of foreign exchange reserves on economic growth
LN( ) =f(LNŶ) + i

Table 3.2. Simple Linear Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.383824	0.735469	2.758999	0.0085
LOG(I_GNDM)	0.602837	0.049276	7.527389	0.0000
R-squared	0.783790	Mean dependent var		8.849479
Adjusted R-squared	0.648789	S.D. dependent var		0.738833

S.E. of regression	0.178393	Akaike info criterion	-0.648849
Sum squared resid	0.748939	Schwarz criterion	-0.683993
Log likelihood	13.93987	Hannan-Quinn criter.	-0.738393
F-statistic	60.99487	Durbin-Watson stat	2.178399
Prob(F-statistic)	0.000000		

Table 4.2 shows the results of statistical calculations using Eviews Version 10.0 software for model 2, namely the effect of wheat imports in Indonesia on economic growth, the results of a simple linear regression equation are as follows:

LN ( ) = 2.383824+0.602837*LN(Ŷ)

linear regression equation, it can be seen that the contribution of wheat imports in Indonesia to economic growth is interpreted as follows:

Constant value 0 = 0.602837, which means that statistically if the wheat import variable in Indonesia remains (no change) or the estimate is considered 0 (zero), then economic will increase by 0.602837units. The value of the Regression Coefficient, which is 0.602837, can be explained that the wheat import variable in Indonesia can explain the economic growth variable of 0.602837, meaning that statistically if the wheat import variable in Indonesia is estimated

increases by 1 unit then the economic growth variable will increase by 0.602837and conversely a decrease in wheat imports in Indonesia by 1 unit will be followed by an increase in economic growth of 0.262019 units or by 60.28%.

Hypothesis Test 2, Model 1:

Partial effect of wheat consumption variables on wheat imports in Indonesia.

H0 : There is no significant effect of wheat consumption variable on wheat imports in Indonesia.

H1 : There is a significant effect of wheat consumption variable on wheat imports in Indonesia.

The criteria for rejecting the null hypothesis (H0) and accepting the alternative hypothesis (H1) if the Prob value (LN X1) of the value = 5% (0.05). The relationship between wheat consumption variables and wheat imports in Indonesia can be seen through the calculation results in the table above. The value of t-Statistics is 2.344528 with a Prob of 0.0463 where the value of Prob(t-Statistics) = 0.0371 < from 0.05, it can be concluded rejecting H0 and accepting H1, meaning that partially there is a significant and positive influence on the consumption variable wheat to wheat imports in Indonesia.

The partial effect of the exchange rate variable on wheat imports in Indonesia.

H0 : There is no positive and significant effect of the exchange rate on wheat imports in Indonesia's foreign exchange.

H2 : There is a positive and significant effect of the exchange rate on wheat imports in Indonesia.

The criteria for rejecting the null hypothesis (H0) and accepting the alternative hypothesis (H1) if the value of Prob(LN X5) of the value =5% (0.05). The relationship between the EXCHANGE variable and wheat imports in Indonesia can be seen through the calculation results in the table above. The value of t-Statistics is 5.865987 with a Prob of 0.0000 where the value of Prob(t-Statistics) = 0.0000 < from 0.05, it can be concluded rejecting H0 and accepting H2, meaning that partially there is a significant effect of the EXCHANGE variable on imports. wheat in Indonesia.

Partial effect of international wheat price variables on wheat imports in Indonesia.

H0 : There is no positive and significant effect of international wheat price variable on wheat imports in Indonesia.

H3 : There is a positive and significant effect of the international wheat price variable on wheat imports in Indonesia.

The criteria for rejecting the null hypothesis (H0) and accepting the alternative hypothesis (H1) if the value of Prob(LN X5) of the value =5% (0.05). The relationship between international wheat price variables on wheat imports in Indonesia. can be seen through the calculation results in the table above. The t-Statistic value is 3.185824 with a Prob of 0.0001 where the value of Prob(t-Statistic) = 0.0041 < from 0.05, it can be concluded that H0 is rejected and H1 is accepted, meaning that partially there is a positive and significant effect of the Investment variable on Foreign exchange reserves.

Effect of Indonesian wheat imports on Economic Growth.

H0 : There is no significant effect of wheat imports in Indonesia on economic growth.

H4 : There is a significant effect of wheat imports in Indonesia on economic growth.

The criteria for rejecting the null hypothesis (H0) and accepting the alternative hypothesis (H1) if the F-Statistic value of the value = 5% (0.05). The effect of wheat imports in Indonesia on economic growth variables can be seen through the results of the calculations in the table above. The value of F-Statistics is 60.99487 with a Prob (F-Statistics) of 0.00000 where the value of Prob (F-Statistics) = 0.0000 < from 0.05. Thus, it can be concluded that we reject H0 and accept H1, meaning that there is a positive and negative effect, significant and positive variable of wheat

imports in Indonesia on economic growth.

4. Conclusion

Wheat consumption variable, rupiah exchange rate and wheat price simultaneously have a significant effect on foreign exchange reserves. With the impact of some of the variables above, Indonesia's wheat imports have increased so that full employment opportunities will be achieved and unemployment will decrease.

The variable of wheat consumption partially has a significant and positive effect on imports of Indonesian wheat. The high value of wheat consumption will increase imports of Indonesian wheat in the country so that the need for flour in Indonesia is met. The exchange rate variable partially has a positive and significant and negative effect on Indonesian wheat imports.

The international wheat price variable partially has a positive and significant effect on Indonesian wheat imports. Indonesian wheat import variable partially has a significant and positive effect on economic growth. The increase in Indonesian wheat imports indicates that economic growth will increase.

The equation obtained shows an increasing trend. The following are the results of the projected volume of wheat imports in Indonesia in 2018-2032 using the linear trend equation. Consumption of wheat flour, exchange rates and international wheat prices have a significant effect on the volume of imports of wheat in Indonesia.

5. References

[1]   PT. Pollard and Brand Chemical Analysis. Indofood Sukses Makmur Bogasari Flour Mills, Jakarta.
[2]   Central Bureau of Statistics (BPS). 2019. "Volume of Indonesian Wheat Imports". Central Bureau of Statistics, Jakarta.
[3]   Central Bureau of Statistics (BPS). 2019. "Statistics of Foreign Trade Export – Import". Central Bureau of Statistics, Jakarta.
[4]   Central Bureau of Statistics (BPS). 2019. "Imports of Several Food Commodities in 2017". Central Bureau of Statistics, Jakarta.
[5]   Joseph P., Cannon. William, D. Perreault, and Jerome, E. McCarthy. 2008. "Basic Marketing – Global Management Approach". Salemba Empat, Jakarta.
[6]   Halwani, 2002. "International Economics and Economic Globalization". Jakarta: Ghalia Indonesia Publisher.
[7]   Ministry of Trade of the Republic of Indonesia. 2019. "International Price Statistics". Ministry of Trade, Jakarta.
[8]   [FAO] Food and Agriculture. 2019. "Statistical Pocketbook World Food and Agriculture". FAO. Rome : ISBN 978-92-5-131849-2.
[9]   Indonesian Wheat Flour Producers Association. 2016. "Indonesian Wheat Flour Industry Overview". APTINDO, Jakarta.
[10]   Indonesian Wheat Flour Producers Association. 2016. "Indonesian Wheat Flour Consumption and Growth". APTINDO, Jakarta.
[11]   Bank Indonesia. "Several years edition, Indonesian Financial Economic Statistics". Jakarta : BI. Bogasari, Quality Control Laboratory. 1999.
[12]   Hajar, F. 2019. "Analysis of Wheat Imports in Indonesia and Factors Influencing the Period 2002 – 2018". Scientific Journal. Faculty of Economics and Business. Muhammadiyah Surakarta university.
[13]   Department of Resource and Environmental Economics. Bogor Agricultural Institute.
[14]   Sugiyono. 2016. "Quantitative, Qualitative and R&D Research Methods". Bandung : PT Alphabet.
[15]   Utomo, I. P. 2015. "Analysis of Factors Affecting Indonesian Imports from Australia in 1980 – 2013". Scientific Journal. Faculty of Economics. Semarang State University