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Research Article

The Influence of Prices of Vegetable Imports from China and the Number of Indonesian Population on the Volume pf Indonesian Vegetable Imports from China for the Period 2010-2022

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ABSTRACT

Vegetable production which is lower than the population's needs encourages Indonesia to import from China which is superior in terms of price and quality. The research aims to determine how much influence the price of Indonesian vegetable imports from China and the Indonesian population have on the volume of Indonesian vegetable imports from China partially and simultaneously. The research method uses quantitative and qualitative data through multiple regression equations during the period 2010-2022. The calculation results show that there is a negative and significant relationship between import prices and the volume of Indonesian vegetable imports from China. Vegetables are normal goods that are essential for health so they must be available in large volumes and at low prices. The population of Indonesia is positively and significantly related to the volume of Indonesian vegetable imports from China. The main factor is the large population creating high purchasing power for imported vegetables from China. Simultaneously, these two independent variables have a significant effect on the volume of Indonesian vegetable imports from China. From a microeconomic perspective, import volume is greatly influenced by low prices of goods and Indonesia's large population. The solution that must be implemented is collaboration between related parties to make vegetables a source of people's welfare.

Keywords: Vegetable Imports, Prices, Population, Import Volume.

BACKGROUND

Since the shift of world economic power from west to east, Indonesia's bilateral trade has focused more on Asian countries (Sugiartiningsih and Eddy Winarso, 2021) [1]. Trade is an activity that is permitted in Islam (Erwandi Tarmizi, 2021) [2]. Al-Hakim in al-Mustadrak brings up Abu Burdah's menstruation which reads: "*The Messenger of Allah was asked: What is the best job? He said: "A person's work is with his hands and every sale and purchase is prosperous*." (Kholid Syamhudi, 2018) [3].

China is a very important trading partner for Indonesia because it has a comparative advantage in the agricultural sector. Indonesia's agricultural Gross Domestic Product (GDP) was in fifth position (US$ 128.34 billion) while China was in first place (US$ 991.02) in 2017 (Gatra Review, t.t.) [4]. The high value of agricultural GDP in China is an opportunity for Indonesia to be able to import various agricultural products that the population needs, especially vegetables.

Vegetables are an important food for meeting vitamin needs (Andris et al., 2016) [5] and creating quality Human Resources (HR) (Sugiartiningsih et al., 2023) [6]. The prevalence rate for children suffering from stunting under five years of age (toddlers) in Indonesia, although decreasing, is still above 20% from 2018-2021 (Hardiyanto Rahman et al., 2023) [7]. The socio-economic factor that causes this is the lack of adequate nutritional intake for pregnant women and toddlers. PUSDATIN in (Andris et al., 2016) [5] reported that at the national level, vegetable production is

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relatively low so that to meet domestic market demand it needs to be balanced with high imports. In 2022, Indonesia's vegetable imports from China will reach 622,776.4 tons or 62% of total national imports. (www.bps.go.id) [8] There are five types of vegetables imported by Indonesia from China, namely garlic, onions, carrots, broccoli and peppers (Adi Ahdiat, 2023) [9].

Another factor after the promulgation of free trade, termed globalization by the WTO in 2010, has had the impact of tight competition (Iskandar Andi Nuhung, 2013) [10] between domestic producers and importers. According to the World Bank in (Dias Cakra Supriatna et al., 2016) [11] imported fresh vegetable products tend to have cheaper prices and better quality compared to local products. This comparative advantage will make it easier for exporters to penetrate the Indonesian market.

The high inflow of vegetable commodities from China will create competition for domestic farmers to be productive in the vegetable sector. For example, domestic garlic prices are higher than China, which has resulted in Indonesia's dependence on garlic imports. Even though Indonesia has vowed that by 2021 it will achieve garlic self-sufficiency (Sugiartiningsih and Ikram, 2020) [12], the reality is that Indonesia's garlic imports have reached 100%. On the other hand, the role of society as consumers prefers to buy vegetables at low prices and high quality (Adi Ahdiat, 2023) [9].

This phenomenon extends to imported carrot commodities which have a better shape and lower price with a sweeter taste. On the other hand, domestic carrots have an elongated shape, the price is higher even though the quality is better. If left unchecked, this gap will shift the competitiveness of domestic vegetables, which will ultimately reduce domestic farmers' interest in producing them because the economic added value is lower. The fact is that many Indonesian farmers do not want to plant soybeans because productivity is lower than rice, so we are the largest importer of soybeans from the United States (Sugiartiningsih, 2015) [13]. Likewise, with vegetables there are often shortages or fluctuations in the market, which is a golden opportunity for China to seize the market in Indonesia, so that Indonesia has the potential to act as the largest vegetable importer in the world. For the period 2018 to 2022, Indonesia's total vegetable imports increased by 3.3% (2021) and reached the largest amount of one million tons (2022) (Adi Ahdiat, 2023) [9].

The development of Indonesian vegetable import prices from China, the population of Indonesia and the volume of Indonesian vegetable imports from China during the 2010-2022 period can be seen in Table 1 below:

Table 1: Prices of Vegetable Imports from China, Number of Indonesian Population and Volume of Indonesian Vegetable Imports from China for the 2010-2022 Period

Year	Price of Vegetable Imports from China USD/kgs (X_1)	Population of Indonesia Million (X_2)	Volume of Vegetable Imports from China 000 Kgs (Y)
2010	0,68	237,641	430.660,5
2011	0,65	241,991	531.847,1
2012	0,60	245,425	504.155,4
2013	0,84	248,818	502.812,5
2014	0,76	252,165	557.605,2
2015	0,78	255,588	547.529,7
2016	1,02	258,497	499.265,4
2017	1,07	261,356	564.813,7
2018	0,87	264,162	603.859,2
2019	1,13	266,912	520.367,1
2020	1,01	270,204	631.337,4
2021	1,12	272,68	645.580,3

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Year	Price of Vegetable Imports from China USD/kgs (X_1)	Population of Indonesia Million (X_2)	Volume of Vegetable Imports from China 000 Kgs (Y)
2022	1,09	275,774	622.776,4
Source	BPS, 2023, Processed	ADB key indicator database, 2023	BPS, 2023 Processed

Source; BPS [8], 2023; ADB key Indicator database [14], 2023 (processed)

Table 1 shows that developments in prices and population do not entirely follow predictions or deviate from the volume of Indonesian vegetable imports from China. When the price of Indonesian vegetable imports from China rose from US$ 0.6752 (2010) to US$ 1.0880 (2022) per kg, the volume of vegetable imports increased from 430,660.5 tonnes to 662,776.4 tonnes. Likewise, from 2011 to 2012, when the price of vegetable imports fell from US$ 0.6452 to US$ 0.6047, the import volume fell from 531,847.1 tonnes to 504,155.4 tonnes. On the other hand, when prices rose from US$ 1.0241 (2016) to US$ 1.0734 (2017), the volume of Indonesian vegetable imports rose from 499,265.4 tons to 564,813.7 tons.

The increase in Indonesia's population per year tends to be accompanied by a decrease in the volume of vegetables imported by Indonesia from China. In 2012, when the population rose from 241,991 million to 245,425 million, the volume of vegetable imports fell from 531,847.1 tons to 504,155.4 tons. Then in 2013 the population rose to 248.818 million, but the volume of vegetable imports fell to 502,812.5 tons. In 2015 the population rose from 252.165 million to 255.588 million but the volume of vegetable imports fell from 557,605.2 tonnes to 547,529.7 tonnes. One year later (2016), when the population rose to 258.497 million, the volume of vegetable imports fell to 499,265.9 tons. In 2019 the population rose from 264.162 million, but the volume of vegetable imports fell from 603,859.2 tonnes to 520,367.1 tonnes. In 2022, when the population increases from 272.684 million to 275.774 million, the volume of vegetable imports will decrease from 645,580.3 tonnes to 622,776.4 tonnes.

Based on the phenomena and reality of deviations above, researchers have been asked to find out how much influence the price of vegetable imports from China and the population of Indonesia have on the volume of vegetable imports from China.

Formulation of the problem

In accordance with the description of the background to the proposed problem formulation, it is:

1. How big is the influence of the price of vegetable imports from China and the population of Indonesia on the partial and aggregate volume of Indonesian vegetable imports?
2. What efforts must be made by related parties in Indonesia to be able to make vegetables a source of prosperity.

Research purposes

The research objective is to find out:

1. How big is the influence of the price of vegetable imports from China and the population of Indonesia on the partial and aggregate volume of Indonesian vegetable imports?
2. What efforts must be made by related parties in Indonesia to be able to make vegetables a source of prosperity.

THEORETICAL REVIEW

Theory of Comparative Advantage

In an open economic system, a country is guaranteed to establish relations with other countries in the form of international trade which is made explicit through exports and imports (Sukirno, 2000) [15]. A country's decision to export or import depends on the advantages that the two trading countries have from the various resources deployed. Classical trade theory outlines that a country can export if it has high efficiency in using labor to produce

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commodities. Meanwhile, imports are carried out if more labor is used to produce the same commodities as trading partner countries (Mahyus Ekananda, 2014) [16].

There are two approaches to classical trade theory, namely the theory of absolute advantage pioneered by Adam Smith and the theory of comparative advantage from David Ricardo. Over time, the theory of comparative advantage is still feasible to practice because of a country's ability to increase the productivity of its workforce. Mathematically, the process of comparative advantage trade theory can be exemplified in Table 2 as follows (N. Gregory Mankiw, 2007) [17]:

Table 2: Production of Potatoes by Farmers and Meat by Ranchers

	Opportunity cost	
	1 Pound of meat	1 Pound of potatoes
Farmer	2 Pound of potatoes	1/2 pound of meat
breeder	1/8 pound potatoes	8 pound meat

A farmer and rancher work 40 hours a week producing potatoes and meat. If the farmer needs 8 hours of work to produce 1 pound of potatoes, while the farmer needs 10 hours to produce potatoes. This statement can be interpreted to mean that to produce 1 pound of potatoes you must sacrifice 8 hours of work that could be used to produce 8 pounds of meat. Thus, the farmer's opportunity cost in producing 1 pound of potatoes is 8 pounds of meat. With the same pattern as the farmer, if the farmer needs 20 hours of work to produce 1 pound of meat, then with 10 hours of work the farmer can only produce 1/2 pound of meat. Therefore, the farmer's opportunity cost in producing 1 pound of potatoes is 1/2 pound of meat.

Based on the calculation results above for:

Farmers: 1 pound of potatoes = 8 pounds of meat or 1 pound of meat = 1/8 pound of potatoes

Farmer: 1 pound of potatoes = 1/2 pound of meat or 1 pound of meat = 1/2 pound of potatoes

Economists call the magnitude of the opportunity costs for both producers the term "comparative advantage". If the opportunity costs borne by producers are lower, they act as exporters, and vice versa, they are called importers. In the case above, the farmer acts as an exporter for meat because to produce 1 pound of meat, 1/8 pound of potatoes is needed, which is lower than farmers who need 1/2 pound of potatoes. Farmers are more precise in producing potatoes because 1 pound of potatoes requires 1/2 less meat than farmers who need 8 pounds of meat.

Differences in production concentration cause farmers to export meat and import potatoes from farmers. On the other hand, farmers export potatoes and import meat from farmers. If in bilateral trade it is determined that 1 meat = 1/3 potato, then farmers will be lucky by importing because the market price (1 meat = 1/3 potato) is lower than the domestic price (1 meat = 2 potatoes) so it will be profitable for farmers: 1 meat = 5/3 potatoes. For farmers, exporting 1 meat = 1/3 potato is much higher than the domestic price of 1 meat = 1/8 potato. The farmer has a profit of 1 meat = 5/24 potatoes.

Import Demand Theory

Imports are purchases of goods and services by residents of a country across national borders (Mahyus Ekananda, 2014) [16]. From a microeconomic perspective, imports are commodity demand which is influenced by six factors, namely: 1. The price of the goods themselves; 2. Prices of other related goods (substitutes, complements); 3. Income; 4. Population; 5. Appetite and 6. Prediction. A negative relationship occurs in the relationship between the variable price of the good itself and the price of complementary goods with the output requested or imported. The remaining variables are price of substitute goods, income, population, tastes and predictions are positively related to the number of goods demanded or imported (Amaliawati and Murni, 2019) [18].

FRAMEWORK FOR THOUGHT AND HYPOTHESIS

Framework

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International trade is a social interaction between exporters and importers to carry out mutually beneficial economic activities (Damsar and Indrayani, 2016) [19]. The basic reason a country imports is because it does not have a comparative advantage in producing goods and services (Sugiartiningsih et al., 2019) [20]. Indonesia is a developing country that is trapped in an Agricultural Trade Balance deficit because its dependence on food imports is quite large (Gatra Review, 2019) [4].

China is Indonesia's largest import destination for vegetable commodities. The fertile land area in Indonesia is predicted to be unable to produce vegetables in accordance with the needs of the increasing population (Gatra Review, 2019) [4]. The impact is that the supply of vegetables in the domestic market often experiences shortages and prices increase greatly, which can reduce people's purchasing power and welfare. These concerns are addressed in the short term through import policies to ensure market stability.

China's success in penetrating the Indonesian export market cannot be separated from micro factors, namely the price of vegetable commodities which is able to compete with domestic vegetable prices. This has encouraged Indonesian people's increasing interest and love for imported vegetables which are flooding the Indonesian market in large volumes and at lower prices. If left unchecked, it will worsen the fate of domestic farmers who are the backbone of the Indonesian economy. Village development is the source of Indonesia's economic growth (ANTARA, 2023) [21].

Apart from import prices, the population of a country is a micro factor that must be considered. Indonesia, as a developing country with a dense population and large productive age, is believed to have a high consumer spirit and has become an export target for China, which has emerged as a developed country in Asia. Indonesia's large population growth will increase the purchasing power of imports of vegetable commodities from China. Supported by the culture of the Indonesian population who like Chinese food which has been introduced by the Chinese tribe, it makes it easier for imported vegetables to be needed by the household sector as well as industrialists.

Based on this statement, the framework of thinking in this research can be described as follows:

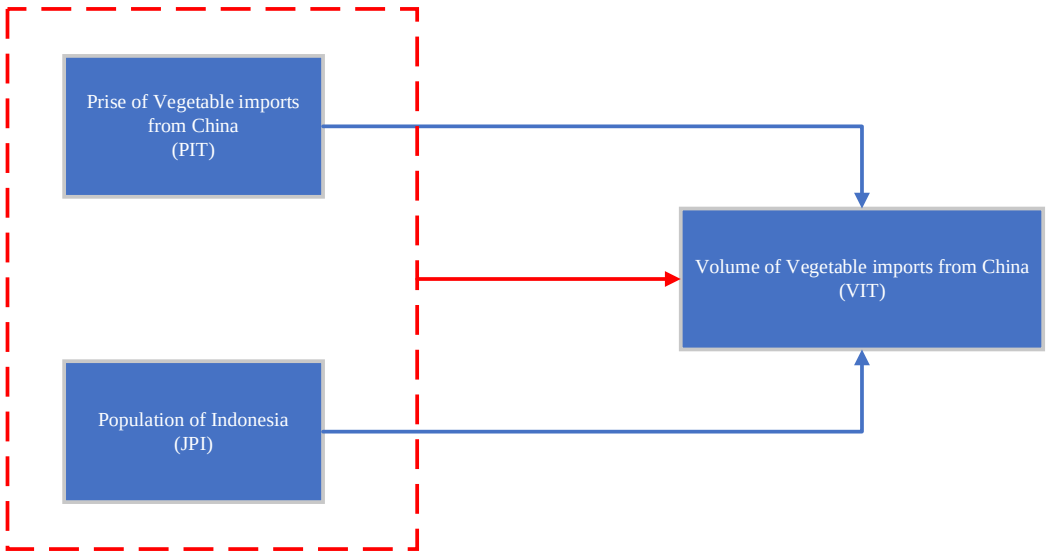

Figure 1. Influence of Import Prices and Indonesian Population Regarding the Volume of Indonesian Vegetable Imports from China.

From Figure 1, the price of Indonesian vegetable imports from China is negatively related to the volume of Indonesian vegetable imports from China. This is in accordance with the law of demand which states that there is an inverse relationship between price and output (Sukirno, 2019) [22]. The main factor is that the decline in vegetable import prices will increase the purchasing power of Indonesian vegetable import commodities from China. This condition is in accordance with previous research (Sugiartiningsih and Eddy Winarso, 2023) [23] that the demand for imports of Indonesian granulated sugar from Australia is negatively related and sensitive to price changes. Likewise, domestic demand for Indonesian granulated sugar (Yusuf et al., 2010) [24] is negatively related to prices and is inelastic.

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Meanwhile, demand for Indonesian rice imports from Vietnam is directly related to the price of Indonesian rice imports from Vietnam because Vietnamese rice is of higher quality so demand for Vietnamese rice is relatively high (Sugiartiningsih and Eddy Winarso, 2021) [1].

Other researchers (Anak Agung Istri Diah Candra Wati and I Ketut Sudiana, 2016) [25] observed from the macro side, namely the influence of GDP, the US$ exchange rate and Indonesian inflation on the volume of vegetable imports on the international market. The results for the inflation variable are not significant because vegetables are urgently needed by the community. Meanwhile, from a micro perspective, the influence of price on demand for Indonesian plywood exports to the United States has a negative and elastic relationship (Sugiartiningsih, 2011) [26].

Hypothesis

Hypothesis 1: Import prices have a negative influence on the volume of Indonesian vegetable imports from China

The price of Indonesian vegetable imports from China and the population of Indonesia simultaneously influence the volume of Indonesian vegetable imports from China. These two independent variables are the main factors that influence demand for Indonesian commodity imports as a developing country. The ability to reduce prices combined with the high purchasing power of Indonesia's large population will be profitable for importers or speculators to import vegetables from China in high volumes. Supporting research on domestic demand for granulated sugar in Indonesia (Yusuf et al., 2010) [24], and demand for Indonesian rice imports from Vietnam (Sugiartiningsih and Eddy Winarso, 2021) [1] is influential and significant. Even the results of demand for vegetable imports in the international market by adding several independent variables other than those above illustrate that there is a significant influence on the volume of Indonesian vegetable imports in the international market (Natalie Jessica Regina Surbakti et al., 2023) [27].

Hypothesis 2: The population of Indonesia has a positive effect on the volume of Indonesian vegetable imports from China

Population size is positively related to demand for Indonesian vegetable imports from China. According to demand theory, the increase in Indonesia's population increases the ability to import volumes of Indonesian vegetables from China.

Vegetables are normal goods that are very urgent (Anak Agung Istri Diah Candra Wati and I Ketut Sudiana, 2016) [25] so they are always needed by Indonesian consumers both by the household sector and related industries. The increase in population has resulted in the need for vegetables increasing so that the volume of vegetable imports from China increases. Supporting research has been carried out (Yusuf et al., 2010) [24] for domestic demand for Indonesian granulated sugar, a positive and significant relationship was obtained.

On the other hand, for demand for Indonesian rice imports from Vietnam, a negative relationship was obtained (Sugiartiningsih and Eddy Winarso, 2021) [1]. Research on vegetable imports in Kaimana Regency (Andris et al., 2016) [5] shows an increase in the number of vegetable import traders and national production which is lower than requirements as the impact of increasing population has pushed the volume of vegetable imports to increase.

Hypothesis 3: Import Prices and the Number of Indonesian Population Influence the Volume of Indonesian Vegetable Imports from China.

RESEARCH METHODS

This research uses quantitative and qualitative data types, the data sources required are secondary data (Dewa Ayu Anom Yuarini, et al., 2015) [28] obtained through literature searches in the form of references to previous research results, journals, articles and other literature from internet sites (Khiki Purnawati Kasim et al., 2022) [29].

Quantitative methods are used to see the causal relationship between the independent variables used, namely the price of Indonesian vegetable imports from China and the population of Indonesia on the volume of Indonesian vegetable imports from China for the 2010-2022 period. Qualitative methods are needed to analyse the results of data processing and the relationship between independent and dependent variables partially and simultaneously (Sugiyono, 2016) [30].

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The 2010 election is in accordance with Indonesia's economic history, China has shifted its position to become a developed country with an increase in economic scale from its workforce. The 2022 limit is due to the condition of Indonesia being the most stable after emerging from the shackles of Covid 19 and not yet entering the political year.

Because it uses two independent variables and one dependent variable, the multiple regression model used can be formulated:

$VIT = a + b_1 PIT + b_2 JPI$

Where:

VIT = volume of Indonesian vegetable imports from China (000 tons)

PIT = price of Indonesian vegetable imports from China (US$/kgs)

JPI = total population of Indonesia (millions)

From the results of data processing using Microsoft Excel, an analysis of the predicted coefficients of the three variables will be carried out.

RESULTS AND DISCUSSION

The results of variable calculations according to the specified modeling obtained results as shown in Table 3 below:

Table 3: The Influence of Vegetable Import Prices from China and the Population of Indonesia on the Volume of Indonesian Vegetable Imports from China for the 2010-2022 Period

	Coefficients	Standard Error	t-Statistic	P-value	Lower 95%	Upper 95%
Intercept	-1238442,26842387	304008,540945646	-4,07370879966589	0,002236819134889	-1915815,50984052	-561069,027007213
X_1	-260638,494599587	92630,1156637418	-2,81375546961137	0,018356263316515	-467031,254173952	-54245,7350252214
X_2	7845,32228735569	1452,24852463801	5,40218988296872	0,000300486197631	4609,51092687	11081,1336478414

In Table 3, the volume of Indonesian vegetable imports from China before being influenced by import prices and population is -1238442.26842 tons. This negative number means that before we import vegetables from China, the volume of vegetables in Indonesia must be available at 1238442.26842 tons. As an agricultural country, Indonesia has the ability to produce horticultural crops in large volumes. The Central Statistics Agency (BPS (2023)) [8] reports that there are 25 types of vegetables produced, including some imported from China, namely carrots, garlic and paprika.

The area of land used and the conducive climate support imported types of vegetables that can be grown and produced by domestic farmers. This means that before imports can be relied upon from within the country to ensure the survival of the Indonesian population of 1238442.26842 tons. The import price coefficient of -260638.4946 illustrates that if the price of imported vegetables increases by US$ 1 per kg, the volume of Indonesian vegetable imports from China will decrease by 260638.4946 tons.

On the other hand, the Indonesian population variable has a coefficient of 7845.3223, indicating a positive relationship with the volume of Indonesian vegetable imports. If the population increases by 1 million, the volume of vegetable imports from China will increase by 7845.3223 tons.

Statistic test

The Influence of the Price of Indonesian Vegetable Imports from China and the Population of Indonesia on the Volume of Indonesian Vegetable Imports from China for the 2010-2022 Period statistical testing of the multiple regression model equation includes partial (t), simultaneous (F) and R^2 tests. Partial test results (t) are as shown in Table 3.

From the processing results, it can be seen that the intercept (a) and the population of Indonesia have a calculated t value of -4.0737 and 5.4022, so it is greater than t table at the 1% significance level (3.169). Meanwhile, the variable

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price of Indonesian vegetable imports from China has a t-value of -2.8138 which is significant at the 5% significance level (t_{table}= 2.228) (Salvatore, 2003) [31]. Partially, both vegetable prices and population have a significant effect on the volume of Indonesian vegetable imports from China.

Then to find out the results of the F and R^2 tests in Table 4 below:

Table 4: Analysis of Variance (ANOVA)

	df	SS	MS	F	Significance F
Regression	2	38284914223,8167	19142457111,9084	23,1000345420713	0,000178367511327
Residual	10	8286765579,09249	828676557,909249		
Total	12	46571679802,9092			

Table 5: Regression Statistics

R^2	0,822064275667917
Standard Error	28786,7427457371
Count of X variables	2
Observations	13
Adjusted R^2	0,786477130801501

The calculation results in Table 5 show that the F_{count} value is 23.10, which means that the price of vegetable imports and population simultaneously influence the volume of Indonesian vegetable imports from China at a significance level of 1% (F_{table} = 7.21) (Gujarati and Porter, 2009) [32]. The variation in the two variables used can represent 82.21% as can be seen from the R^2 value = 0.8221.

Economic Analysis

The Influence of the Price of Indonesian Vegetable Imports from China and the Population of Indonesia on the Volume of Indonesian Vegetable Imports from China for the 2010-2022 Period The price of Indonesian vegetable imports from China partially has a negative influence on the volume of Indonesian vegetable imports from China.

The lower price of Indonesian vegetable imports from China is an attraction for Indonesian consumers to increase the volume of vegetable imports from China. This is in accordance with the microeconomic perspective that vegetables are essential goods that must be available in large quantities to meet individual living needs. The abundant volume of vegetables in the market at prices that people can afford reflects the prosperity of a country.

This strategy is utilized by China, which has a comparative advantage in producing vegetable crops by meeting market segments in Indonesia and at prices that can compete with domestic prices.

Chinese garlic, a food commodity or vegetable, is larger and does not rot easily, while Indonesian garlic is known to be smaller. Although according to experts the cooking ratio for one domestic garlic is equivalent to three Chinese garlic seeds. Likewise, carrots in traditional Indonesian markets are dominated by Chinese with their attractive appearance and prices. Other types of vegetables such as paprika are actually also produced in Indonesia (Dias Cakra Supriatna et al., 2016) [11] which are generally found more often in traditional Chinese markets and supermarkets. Broccolis is a vegetable imported from China which is known to be expensive and is often used by both the household, industrial and government sectors to entertain guests at honourable events such as meetings, weddings and seminars in hotels.

As long as the demand for these vegetables cannot be met by domestic producers in large volumes, the desire of consumers is to get the types of vegetables they demand at low prices and which are available in abundance. Indonesia's position is only as a market for Chinese exporters who can get around this by increasing the economic scale for commodities produced by government intervention through the economic system it adopts.

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First, every Chinese farmer is given the opportunity to produce as many vegetables as possible and then distribute them to the government and buy them at a price that is profitable for both farmers and micro businesses.

Second, the Chinese government issues subsidies to reduce the price of its exports to Indonesia.

Third, vegetable deliveries are carried out in large volumes and have high security so that from a microeconomic perspective it is relatively more effective and efficient (Sugiartiningsih, 2015) [13].

China's ability to follow in Japan's footsteps in selling products abroad cheaper is supported by the empowerment of its workforce with a hard work ethic to create quality human resources through education and training (Sugiartiningsih et al., 2022) [33].

Farmers in villages are supported by high levels of economic and social infrastructure for farmers' needs, from fertilizer, seeds to higher education facilities. Equality of progress between villages and cities has the impact that farmers in villages are more motivated to advance in the agricultural sector.

As a result, the labor productivity of China's vegetable crops is very high and it leads the export market to Indonesia (Adi Ahdiat, 2023) [9]. Logically, high productivity will be able to reduce Average Cost (AC) (Sukirno, 2000) [15] and will be the key to success for China in exporting at low prices to Indonesia.

Indonesia's population has a positive influence on the volume of Indonesian vegetable imports from China.

A healthy population will create quality human resources if they consume nutritious food and implement a healthy living culture. The research results show that the vegetable diet in Indonesia is still below health standards. According to nutrition experts, 93.5% of the Indonesian population aged over 10 years consume 60 gr/day of vegetables, far below the nutritionist's recommendation of 250 gr/day (Andri Setiyanto, 2016) [34].

The main factor is that the Indonesian population's purchasing power for vegetables is relatively small, especially for the lower middle class.

Vegetables are a primary need for the Indonesian population, whose numbers continue to increase due to the failure of Family Planning after reform (Sugiartiningsih et al., 2019) [20]. For the sake of children's health, parents are challenged to provide healthy food with at least five types of coloured vegetables.

A soup dish originating from the Netherlands that has become a culture in Indonesia contains five ingredients: potatoes (yellow), carrots (orange), beans (green), cabbage and onions (white) and shallots. Fulfilling the components of vegetable soup is important for health and regulates the body. It requires a high volume of imported vegetables such as garlic and carrots so that the demand for Indonesian vegetable imports from China increases (Sandra Desi Caesaria, n.t.) [35].

Moreover, the capcay dish, which is translated as 10 types of vegetables, has long been introduced by the Chinese tribe and has become a favourite dish of the Indonesian people which meets health standards (Dyah Ernawati, 2020) [36]. The main vegetable composition of capcay is carrots, cabbage, green mustard greens, white mustard greens, and garlic which is a characteristic of the Micro Enterprise culinary business which has developed rapidly in Indonesia. The superiority of this capcay dish will result in relatively high demand for vegetable imports from China. Another culinary dish that requires a lot of imported vegetables is vegetable nuggets which children like because they have a delicious taste by diversifying the vegetables the body needs, starting from carrots, potatoes, onions and bruccoli (Sugiartiningsih, Kukun Nasution, et al., 2023) [6]. Apart from being delicious for children to consume, the supply of these vegetables must be guaranteed to be stable and at affordable prices. The urgency of vegetables to regulate children's bodies has an impact on our response to imported vegetables being higher.

It turns out that the need for carrots is quite large and must be covered by imported vegetables because they are superior in price and have a stronger structure. broccolis and onions that are originally imported from China are consumed and processed into special dishes that are served at respectable banquets such as seminars at hotels or universities. Likewise, paprika, which has a unique shape, colour and distinctive taste, is often used for prestigious dishes such as weddings and can only be purchased at Chinese markets or supermarkets. All types of vegetables are highly desired by consumers, thereby further strengthening Indonesia's vegetable imports from China.

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The price of Indonesian vegetable imports from China and the population of Indonesia have a significant influence on the volume of Indonesian vegetable imports from China.

Simultaneous trading strategies are inseparable from price and population. According to microeconomic theory, low import prices followed by a large demand for output will produce higher profits compared to high prices but low output. Historically, this difference in profits was applied by Japan through price discrimination in bilateral trade, known as dumping politics. The success of the price discrimination program is due to the elasticity of demand abroad (Indonesia) being greater than at home (Japan) due to differences in population and income levels in the two countries so that it has greater profits as can be seen in Figure 2 below (Sukirno, 2019) [22]:

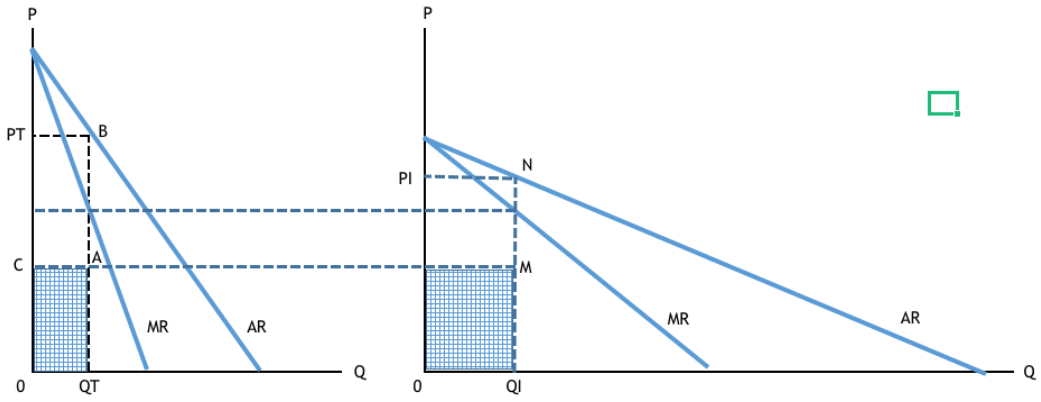

Figure 2. Elasticity of Demand for Indonesia and China

The next relay was carried out by China, imitating it by exporting vegetables to Indonesia at low prices. High competitiveness in vegetable prices according to elasticity theory (Figure 2b) will result in high profits (CMNPI) compared to domestic China (ABCPT) because imported vegetables from China are very much needed by the Indonesian people who are already attached to Chinese food culture. The population's high appetite for dishes made from a variety of vegetable ingredients (capcay), noodles, and so on is predicted to provide two-way benefits. Indonesian consumers can buy it at low prices and high volumes by importing from China, and the same goes for China. Thus, it is very appropriate if vegetable prices and population simultaneously influence the volume of Indonesian vegetable imports from China.

Collaboration of Related Parties in Indonesia to Realize Vegetable Farming as a Source of People's Welfare.

Saving vegetable farming in Indonesia requires collaboration from related parties from farmers to domestic consumers as shown in Figure 3 below:

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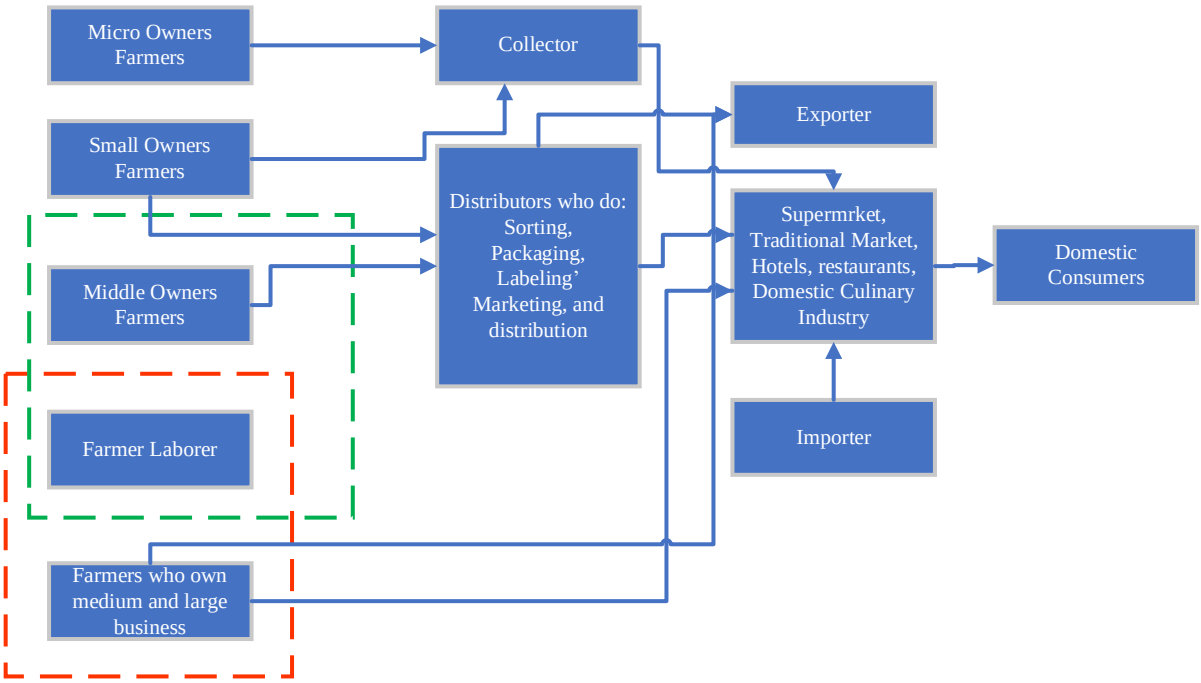

Figure 3. Collaboration of Related Parties in Realizing it Agriculture is the Source of People's Welfare

From Figure 3, problems in the agricultural sector are the responsibility of all related parties, from farmers to final consumers. This is in accordance with the Islamic perspective that "the spirit is like a gathered army". This sentence means that success in the agricultural sector cannot be focused solely on farmer workers, but must involve stakeholders such as micro, small, medium and large domestic farmers, collectors, distributors, exporters, importers, supermarkets and final consumers. To be able to harmonize the chain of all related parties, collaboration must be strengthened through the role of industrialists, government, society, universities and cooperatives in one unified whole or kafah (Abdul Hakim bin Amir Abdat, 2013) [37].

One of the obstacles to the advancement of the agricultural sector in Indonesia is the decline in farmers' interest in growing vegetables due to an unhealthy competitive climate both in terms of production, marketing and distribution (Sugiartiningsih, Suparjiman, et al., 2023) [38].

Indonesia's vegetable production often fluctuates due to the low quality of farmers' human resources and uncertain climate factors. This upstream problem must be corrected by making farmers superior human resources through education and training from universities to be able to determine the cost of goods sold or the vegetables produced; increasing economic scale by introducing intensification of the agricultural sector: increasing digital marketing and fair distribution of agricultural products through the Community Service program of the Centre for Higher Education Studies (Sugiartiningsih, Suparjiman, et al., 2023) [38].

Cost of goods of vegetable production is an important indicator for farmers to be able to measure their welfare (Ismail Djamaluddin et al., 2023) [39]. Experience in the field is that many farmers do not know about cost of production so they do not get high real profits. Farm workers have the principle of just living and partnering with legal entity entrepreneurs who are deployed to grow vegetables and are willing to accept the price set before harvest. The price maker's actions are due to land ownership by entrepreneurs who also incur high operational costs for seeding, fertilizer, treatment and irrigation.

Meanwhile, the position of agricultural workers must be brave enough to bear the risk of crop failure. This condition must be overcome by opening cooperation between farmers and universities to be able to cooperate with farmers' interests and act as collectors, marketers and distributors for the sake of justice for farmers and domestic consumers (Sugiartiningsih and Eddy Winarso, 2023) [23]. Cooperatives are the most suitable business structure for agribusiness communities in rural areas (Edi Susilo, 2013) [40].

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To increase vegetable production, farmers must be guided to become familiar with agricultural technology such as intensification programs and the use of environmentally friendly seeds, fertilizers and pesticides. For example, the organic vegetable program which has been implemented in various regions in Indonesia must be supported by the government through Bank Indonesia (BI) to help provide capital for farmers who want to plant import substitute vegetables. This solution must be implemented through expansionary monetary policy and must be directly controlled by BI and then assisted in its distribution throughout Indonesia (Sugiartiningsih, 2019) [41].

The contribution of industrialists, both backword (fertilizer) and forward (culinary), must be willing to buy vegetables from within the country which are accommodated through vegetable cooperatives. The reality is that in organic vegetable canters the role of cooperatives has not yet developed, so it is necessary to develop cooperatives that can accommodate the living needs of farmers and the needs of consumers, whether household, government or private (Sugiartiningsih and Ikram, 2020) [12]. This is in line with the government's efforts to ensure the sustainability of the granulated sugar industry which is also facilitated through cooperatives (Sugiartiningsih and Eddy Winarso, 2023) [23]. Containing all economic activities from farmers to final consumers in cooperatives will provide justice and prosperity as mandated in the 1945 Constitution (Camelia Fanny Sitepu and Hasyim, 2018) [42].

Furthermore, the role of the community as servants of God is to educate them to be honest consumers and respond to government programs to increase vegetable productivity in Indonesia. Starting from the love of domestic vegetables, people try to substitute the use of imported vegetables with domestic products (Iskandar Andi Nuhung, 2013) [10]. From a nutritional perspective, broccoli has been replaced with Moringa leaves which are easy to grow in the yard, thus reducing foreign exchange expenditures to China. This economic action is only successful if it is followed by socialization from nutritionists to get used to consuming Moringa leaf vegetables which have been proven to be included in the Indonesian superfood group (Dian Mentari Alam, 2023) [43].

This step must be strengthened by the Indonesian government. First, with the issuance of laws and government regulations that can protect farmers in Indonesia by providing minimum price guarantees that can make farmers prosperous. Second, the accuracy of targeting subsidies and government assistance to vegetable farmers in Indonesia from the start of planting until they can compete in international markets. Third, save vegetable farming land in Indonesia from the clutches of foreign investors in Indonesia. For example, the negligence of land owners in Indonesia who rent out land to foreign investors and use it for farming for the benefit of their country. Fourth, increasing farmer sovereignty by synchronizing with laws that can provide freedom for farmers to move and develop (Dwi Andreas Santoso, 2019) [44].

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

Conclusions from the problem formulation as well as results and discussion are as follows:

1. The price of vegetable imports has a negative and significant effect on the volume of Indonesian vegetable imports from China. On the other hand, Indonesia's population has a positive and significant effect on the volume of Indonesian vegetable imports from China.
2. The price of vegetable imports and the population of Indonesia simultaneously and significantly influence the volume of Indonesian vegetable imports from China.
3. Solutions to save vegetable farmers in Indonesia through collaboration between related parties from farmers, universities, cooperatives, industrialists and the government as a whole.

Suggestion

For further research you should:

1. Add other variables besides import prices and population to obtain more real analysis results.
2. Combining several research experts from study programs related to economics, agriculture, biotechnology and the environment so that it can be more accurate in saving the agricultural sector.

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Distribute research results to the government so that they can be patented and applied to all stakeholders in Indonesia.

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