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# The Impact of Rupiah Exchange Rate, Soybean Demand, and Production on Soybean Price Formation in Medan: An Islamic Economic Perspective

Agna Sabrina
Fakultas Ekonomi dan Bisnis Islam, Universitas Islam Negeri Sumatera Utara, Indonesia
agnasabrina02@gmail.com

Nurul Jannah
Fakultas Ekonomi dan Bisnis Islam, Universitas Islam Negeri Sumatera Utara, Indonesia
nurul.jannah@uinsu.ac.id

Muhammad Syahbudi
Fakultas Ekonomi dan Bisnis Islam, Universitas Islam Negeri Sumatera Utara, Indonesia
bode.aries@uinsu.ac.id

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**Abstract:** This study aims to analyze the impact of the exchange rate of the rupiah (X1), soybean demand in Indonesia (X2), and soybean production in Indonesia (X3) on soybean price determination in Medan City (Y), as well as to identify the relationships between these variables within the context of Islamic economics. This research is quantitative in nature, with analysis conducted using multiple linear regression with an ordinary least square (OLS) model. The data used is quarterly data from 2016 to 2023, analyzed using E-Views software. The results of the analysis show that the exchange rate of the rupiah, soybean demand in Indonesia, and soybean production in Indonesia have a significant simultaneous effect, with an F-Statistic value of 37.94889 and a probability value (F-Statistic) of 0.0000 (<0.05). Partially, each independent variable also shows a probability value below 0.05 in relation to the formation of soybean prices in Medan City. Specifically, the exchange rate of the rupiah has a positive effect on soybean prices in Medan City, while the variables of soybean demand and production in Indonesia show a negative effect on soybean prices in Medan City.

***Keywords:*** *Exchange rate of the rupiah, soybean demand, production, price formation, Islamic economics*

**Abstrak**: Penelitian ini bertujuan untuk menganalisis pengaruh nilai tukar rupiah (X1), permintaan kedelai di Indonesia (X2), dan produksi kedelai di Indonesia (X3) terhadap penetapan harga kedelai di Kota Medan (Y), serta untuk mengidentifikasi hubungan antara variabel-variabel tersebut dalam konteks ekonomi Islam. Jenis penelitian ini bersifat kuantitatif, dengan analisis yang dilakukan menggunakan regresi linear berganda dengan model ordinary least square (OLS). Data yang digunakan adalah triwulanan dari tahun 2016 hingga 2023, yang dianalisis menggunakan perangkat lunak E-Views. Hasil analisis menunjukkan bahwa variabel nilai tukar rupiah, permintaan kedelai di Indonesia, dan produksi kedelai di Indonesia memiliki pengaruh signifikan secara simultan, dengan nilai F-Statistic sebesar 37.94889 dan nilai probabilitas (F-Statistic) sebesar 0.0000 (<0.05). Secara parsial, setiap variabel independen juga menunjukkan nilai probabilitas di bawah 0.05 terhadap pembentukan harga kedelai di Kota Medan. Secara khusus, nilai tukar rupiah berpengaruh positif terhadap harga kedelai di Kota Medan, sementara variabel permintaan dan produksi kedelai di Indonesia menunjukkan pengaruh negatif terhadap harga kedelai di Kota Medan.

**Keywords:** *Nilai tukar rupiah, permintaan kedelai, produksi, pembentukan harga, ekonomi Islam*

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## Introduction

Food commodities such as soybeans play a significant role in Indonesia's food and industrial sectors. Indonesia is one of the largest consumers of soybeans globally. The price dynamics of soybeans are influenced by various economic factors, including the rupiah exchange rate, fluctuating consumer demand, and soybean production, both domestic and imported. However, a key issue is that domestic soybean production in Indonesia does not meet demand.

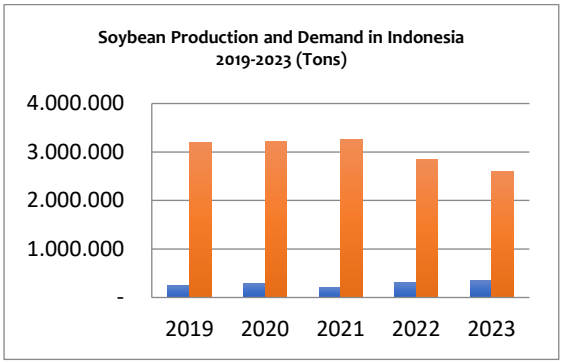


Figure 1. Soybean Production and Demand in Indonesia 2019-2023 (Tons)
*Source: Central Bureau of Statistics (processed data)*

The data in the chart above illustrate that Indonesia has yet to meet its soybean demand. Most of the country's soybean production is used to satisfy domestic consumption, fulfilling only 25-30 percent of national demand. The average soybean production in Indonesia from 2019-2023 was approximately 270,000 tons, while domestic demand reached 3 million tons. Since demand exceeds production, Indonesia relies on imports to meet its needs. When local soybean production falls short of consumer demand, imports are necessary.[1] The Ministry of Agriculture notes that around 80% of Indonesia's soybean demand is met through imports, primarily from Brazil, Argentina, and the United States.[2]


**Figure 2. Average Exchange Rate (IDR per USD)**
*Source: Bank Indonesia (BI)*

The average exchange rate between the rupiah and the US dollar fluctuated between 2019 and 2024. In 2019, the average exchange rate was around Rp. 14,000 per US dollar, but in 2020, it sharply weakened to Rp. 16,000 per US dollar, mainly due to the onset of the COVID-19 pandemic, which affected the country's economic activities.

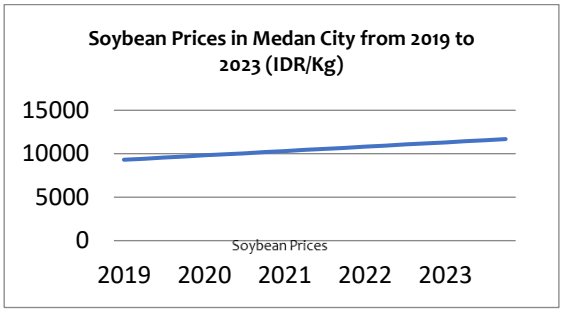


Figure 3. Soybean Price Trends in Medan, 2016-2023
*Source: Department of Industry and Trade of North Sumatra (processed data)*

The figure above shows an upward trend in soybean prices over the years. In 2019, soybean prices were around Rp. 9,000/kg, rising to approximately Rp. 12,000/kg in 2023. Imports are closely tied to the rupiah exchange rate against the US dollar.

[1] Ganang Setyawan and Syamsul Huda, 'Analisis Pengaruh Produksi Kedelai, Konsumsi Kedelai, Pendapatan per Kapita, Dan Kurs Terhadap Impor Kedelai Di Indonesia', *KINERJA*, 19.2 (2022), doi:10.30872/jkin.v19i2.10949.

[2] Kementerian Pertanian, *Analisis Kinerja Perdagangan Kedelai* (Pusat Data Dan Sistem Informasi Pertanian Kementerian Pertanian , 2023).

According to Froyen and Mankiw, import demand is correlated with exchange rates, meaning that imports will decline if the currency strengthens, and vice versa. The cost of importing soybeans to Indonesia can be affected by fluctuations in the rupiah exchange rate. A weaker rupiah increases import costs, which ultimately impacts soybean prices in traditional markets, such as in Medan.

Alfred Marshall posits that production plays an essential role in determining demand and supply. A market's commodities are shaped by the interaction between consumer demand and producer supply. Factors such as consumer income, product price, and consumer preferences influence demand. Meanwhile, supply is determined by production costs, technology, and other factors affecting a producer's capacity to provide goods.

Previous research by Fauzia et al examined how the rupiah exchange rate and garlic stock influenced garlic prices in Medan's bustling traditional markets, concluding that garlic prices in Medan were affected by the rupiah and garlic stock.[3] This aligns with previous researchers such as Zizah et al, (2023) and Rati (2020). However, some researchers found differing results. For instance, Roswita et al. (2022) found that soybean prices did not significantly impact soybean demand in Indonesia. Meanwhile, Mutia et al. (2023) concluded that soybean quantity positively affected soybean prices, while a decrease in exchange rate did not significantly influence traditional soybean prices.

This study aims to explore how these three factors interact and affect the pricing of soybean food commodities in Medan, using an Islamic economic perspective that emphasizes fairness, transparency, and sustainability in economic distribution. This research is expected to contribute to sustainable economic policy-making in line with Islamic economic principles.

## Literature Review

### Rupiah Exchange Rate

The Indonesian Rupiah (IDR) exchange rate is shaped by a range of macroeconomic factors, such as trade balance, inflation, interest rates, and foreign debt, each with significant implications for the economy. Trade balance is a primary factor, with Setiawan et al. noting the essential role of net exports in currency stability, particularly for import-export businesses, [4] while Winarko et al. add that the balance of trade, inflation, and interest rates collectively impacted the IDR during the COVID-19 pandemic's early stages. [5] Inflation also affects the Rupiah, as Kurniasih and Tampubolon find a positive, long-term influence, though Silitonga et al.[6] suggest a more complex relationship. [7]Interest rates further influence the Rupiah's value, with Herawati indicating an inverse relationship

[3] Fauziah Sarah, Fauzi Arif Lubis, and Muhammad Ikhsan Harahap, 'Pengaruh Kinerja Mata Uang Rupiah Dan Stok Bawang Putih Terhadap Pembentukan Harga Bawang Putih Di Pasar Tradisional Sukaramai Kota Medan', *Regress: Journal of Economics & Management*, 2.2 (2022), doi:10.57251/reg.v2i2.695.

[4] Muhamad Yudi Setiawan, Tanti Novianti, and Mukhamad Najib, 'The Impact of Bank Indonesia Regulation No. 17/3/2015 on Exchange Rate: Analysis Using Vector Error Correction Model (VECM)', *Binus Business Review*, 2021, doi:10.21512/bbr.v12i2.6570.

[5] Hilarius Bambang Winarko and others, 'How Do Inflation Rate, BI Rate, and Balance of Trade Directly Affect IDR to USD Exchange Rate and Indirectly Affect IDX Composite Index in Initial Stage of Covid-19 Outbreak?', *Research in World Economy*, 2021, doi:10.5430/rwe.v12n1p56.

[6] Ribka Br Silitonga, Zulkarnain Ishak, and Mukhlis Mukhlis, 'Pengaruh Ekspor, Impor, Dan Inflasi Terhadap Nilai Tukar Rupiah Di Indonesia', *Jurnal Ekonomi Pembangunan*, 2019, doi:10.29259/jep.v15i1.8821.

[7] Cut Endang Kurniasih and Dahlan Tampubolon, 'Pengaruh Inflasi Domestik Dan Utang Luar Negeri Terhadap Nilai Tukar Rupiah', *Ecoplan*, 2022, doi:10.20527/ecoplan.v5i1.378.

and Tarigan et al.[8] connecting interest rates to export values and currency valuation. [9] Additionally, foreign debt impacts the Rupiah, as shown by Anas and Malini et al., who emphasize currency stability's role in managing external obligations.[10] Together, these findings highlight the complex dynamics policymakers must navigate to stabilize the Rupiah and foster economic growth.

**Demand**

Demand, a key economic principle, links the quantity consumers are willing to buy with price, influenced by factors like preferences, income, and prices of related goods. The Marshallian framework shows that, typically, a price increase lowers demand, while a decrease raises it.[11] Demand also fuels economic growth, especially in developing economies, with a bidirectional relationship between growth and domestic demand. [12] Beyond goods, speculative demand affects financial markets through investor behavior, impacting stock returns and volumes. [13] Accurate demand forecasting, essential for business strategy, relies on techniques like Monte Carlo to predict market behavior.[14]

**Production**

Production involves a range of activities to create goods and services, managed strategically through integrating resources like labor, materials, and information for efficiency. Product Lifecycle Management (PLM) supports collaboration across a product's lifecycle,[15] optimizing productivity and reducing costs.[16] PLM systems, including Product Data Management (PDM), enhance IT integration, [17] preventing development errors and accelerating time-to-market, [18] thus providing competitive advantages. [19] Effective PLM demands multidisciplinary collaboration to address rapid technological change and shorter product lifecycles [20], with growing emphasis on sustainability.[21]

[8] Yulinda Tarigan and others, 'The Influence of Exchange Rate on Indonesian Export Value', 2019, doi:10.2991/icaess-19.2019.32.

[9] Mirna Herawati, 'Analisis Perubahan Nilai Tukar Rupiah Akibat Peningkatan Inflasi, Tingkat Suku Bunga SBI Dan Pertumbuhan Ekonomi (Studi Pada Bank Indonesia Periode 2008 – 2017)', *Jurnal Ekonomi*, 2021, doi:10.37721/je.v23i1.759.

[10] Faisal Anas and Eni Setyowati, 'Analysis of the Rupiah Exchange Rate's Response to Interest Rates, Inflation, and Foreign Debt', 2023, doi:10.2991/978-94-6463-204-0_23.

[11] Isha Tachhekar and Chakra Bahadur Khadka, 'Consumers' Decision on Perspective of Rationality Economics and Willingness to Demand Health Insurance', *Economic Journal of Development Issues*, 2020, doi:10.3126/ejdi.v30i1-2.46041.

[12] Jongkers Tampubolon and Aaron Loh, 'The Effects of Domestic Demand and Export on Economic Growth of North Sumatra', *Jurnal Ekonomi Dan Studi Pembangunan*, 2020, doi:10.17977/um002v12i22020p108.

[13] Owain ap Gwilym and others, 'In Search of Concepts: The Effects of Speculative Demand on Stock Returns', *European Financial Management*, 2015, doi:10.1111/eufm.12067.

[14] Swithin S Razu and Shun Takai, 'Reliability and Accuracy of Bootstrap and Monte Carlo Methods for Demand Distribution Modeling', 2011, doi:10.1115/detc2011-47496.

[15] Gang Liu, Rongjun Man, and Yanyan Wang, 'A Data Management Approach Based on Product Morphology in Product Lifecycle Management', *Processes*, 2021, doi:10.3390/pr9071235.

[16] Valentina Gecevska and others, 'Product Lifecycle Management Through Innovative and Competitive Business Environment', *Journal of Industrial Engineering and Management*, 2010, doi:10.3926/jiem.2010.v3n2.p323-336.

[17] Lutz Lämmer and Mirko Theiß, 'Product Lifecycle Management', 2015, doi:10.1007/978-3-319-13776-6_16.

[18] Felix Nyffenegger, Roman Hänggi, and Adrian Reisch, 'A Reference Model for PLM in the Area of Digitization', 2018, doi:10.1007/978-3-030-01614-2_33.

[19] Răzvan Udroiu and Paul Bere, 'Introductory Chapter: Product Lifecycle Management - Terminology', 2018, doi:10.5772/intechopen.81686.

[20] Günther Schuh and others, 'Managing Growing Uncertainties in Long-Term Production Management', 2023, doi:10.1007/978-3-031-44497-5_15.

[21] 'Management and Production Engineering Review', 2022, doi:10.24425/mper.2022.142389.

**Pricing Formation**

Pricing formation is a complex process involving strategies, consumer behavior, and market dynamics that impact profitability and competitive advantage. Abidin highlights the importance of understanding price behavior through a product's lifecycle to achieve pricing goals, balancing value with consumer expectations.[22] Ingenbleek and Lans emphasize the distinction between public pricing strategies and internal pricing practices, crucial for aligning market actions with strategy.[23] Price elasticity, or consumer responsiveness to price changes, informs effective pricing strategies across sectors, with varied sensitivity seen in energy[24], agricultural,[25] and residential markets.[26] In housing, Grimes and Aitken show how supply elasticity moderates price impacts,[27] while Gallet and List reveal elasticity differences across consumer segments, stressing the need for tailored strategies.[28] An integrated approach to pricing enhances market competitiveness by aligning pricing with consumer dynamics and market conditions.

**Price Formation in Islamic Economics Perspective**

Price formation in Islamic economics integrates ethical values, market dynamics, and socio-economic justice, centering on the concept of a "just price" that includes moral dimensions beyond mere market forces.[29] Hakim notes that halal industry pricing should balance supply and demand while upholding fairness.[30] Key principles such as the prohibition of hoarding (*ikhtikar*) aim to sustain market equilibrium and prevent unfair practices.[31] Islamic financial institutions also support fair pricing and growth by using profit-sharing methods aligned with ethical norms,[32] fostering sustainable development.[33] Additionally, macroeconomic factors, like inflation and money supply, influence Islamic pricing, with research showing how Islamic banking is responsive to economic shifts,[34] impacting

[22] Faiz Zainal Abidin and others, 'Pricing Strategies: Determining the Best Strategy to Create Competitive Advantage', *International Journal of Academic Research in Business and Social Sciences*, 2023, doi:10.6007/ijarbss/v13-i6/17593.

[23] P T M Ingenbleek and I A van der Lans, 'Relating Price Strategies and Price-setting Practices', *European Journal of Marketing*, 2013, doi:10.1108/03090561311285448.

[24] Peter Reiss and Matthew W White, 'Household Electricity Demand, Revisited', *The Review of Economic Studies*, 2005, doi:10.1111/0034-6527.00354.

[25] Xiaomei Li and others, 'Optimal Pricing Strategy Research of Fresh Agricultural Products Based on Consumer Choice Behavior', *Destech Transactions on Environment Energy and Earth Science*, 2017, doi:10.12783/dteees/seee2016/6547.

[26] Stranti Nastiti Kusumaningrum, 'The Sensitivity of Residential Electricity Demand in Indonesia', *Signifikan Jurnal Ilmu Ekonomi*, 2018, doi:10.15408/sjie.v7i2.6048.

[27] Arthur Grimes and Andrew Aitken, 'Housing Supply, Land Costs and Price Adjustment', *Real Estate Economics*, 2010, doi:10.1111/j.1540-6229.2010.00269.x.

[28] Craig A Gallet and John A List, 'Cigarette Demand: A Meta-analysis of Elasticities', *Health Economics*, 2002, doi:10.1002/hec.765.

[29] Kumara Adji Kusuma, 'The Concept of Just Price in Islam: The Philosophy of Pricing and Reasons for Applying It in Islamic Market Operation', 2019, doi:10.2991/icaf-19.2019.19.

[30] Ahmad Luqman Hakim and others, 'The Concept of Price Mechanism in the Halal Industry Refers to the Thought of the Price Concept of Yahya Bin Umar and Ibnu Taimiyah', *Likuid Jurnal Ekonomi Industri Halal*, 2023, doi:10.15575/likuid.v3i2.28133.

[31] Arka Damayanti, 'Market Engineering in Supply: Ikhtikar of Perspectives Islamic Economics', *Balanca Jurnal Ekonomi Dan Bisnis Islam*, 2023, doi:10.35905/balanca.v5i2.5793.

[32] Néjib Hachicha and Amine Ben Amar, 'Does Islamic Bank Financing Contribute to Economic Growth? The Malaysian Case', *International Journal of Islamic and Middle Eastern Finance and Management*, 2015, doi:10.1108/imefm-07-2014-0063.

[33] Ryanda Al Fathan and Tika Arundina, 'Finance-Growth Nexus: Islamic Finance Development in Indonesia', *International Journal of Islamic and Middle Eastern Finance and Management*, 2019, doi:10.1108/imefm-09-2018-0285.

[34] Qaisar Ali and others, 'Impact of Macroeconomic Variables on Islamic Banks Profitability', *International Journal of Business Ethics and Governance*, 2018, doi:10.51325/ijbeg.v1i2.14.

price stability. [35] Overall, Islamic pricing models emphasize justice and societal welfare, aligning with broader Islamic economic principles.

## Methods

A time series dataset consists of data organized by specific time intervals for a given variable, allowing researchers to observe changes over a specified period. In this study, secondary data from the quarterly period of 2016 to 2023 will be processed and analyzed using E-Views software. The data sources include publications from the Central Bureau of Statistics (BPS) (bps.go.id), Bank Indonesia (bi.go.id), agricultural data (satudata.pertanian.go.id), and the primary food price information system of North Sumatra (hargapangan.sumutprov.go.id). Additionally, relevant literature, books, articles, and journals are also referenced.

To measure the impact of independent variables on the dependent variable, multiple linear regression analysis using the Ordinary Least Squares (OLS) method is employed. This analysis aims to understand the direction and strength of the influence of the independent variables on the dependent variable.[36] The tests include the classical assumption tests (normality, autocorrelation, multicollinearity, and heteroscedasticity), the coefficient of determination test, the F-test, and the t-test. The multiple regression equation used is as follows

"$Y=\alpha+\beta1X1+\beta2X2+\beta3X3+e$

**Explanation:**

- **Y:** Soybean price variable in Medan City
- **α:** Constant
- **$\beta_1$:** Regression coefficient of the rupiah exchange rate
- **$\beta_2$:** Regression coefficient of soybean demand
- **$\beta_3$:** Regression coefficient of soybean production
- **$X_1$:** Rupiah exchange rate variable
- **$X_2$:** Soybean demand variable
- **$X_3$:** Soybean production variable
- **e:** Error term

## Results and Discussion

### Normality Test

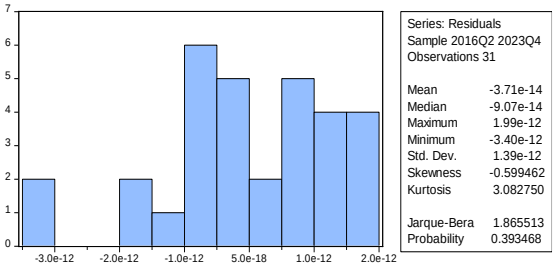


Figure 4.
Source: E-views 10 Output (2024)

The normality test assesses whether the data are normally distributed. The data processing results show that the Jarque-Bera probability is 0.393468, which is >0.05, indicating that the data are normally distributed.

### Multicollinearity Test

Table 1.

| Variable | Coefficient Variance | Uncentered VIF | Centered VIF |
|---|---|---|---|
| C | 8.74E-26 | 1.258741 | NA |
| D(X1) | 1.66E-31 | 1.097469 | 1.084626 |
| D(X2) | 1.15E-35 | 1.181666 | 1.098228 |
| D(X3) | 1.38E-35 | 1.247061 | 1.140134 |

Source: E-views 10 Output (2024)

The multicollinearity test verifies if there is any correlation among the independent variables in the regression model. As shown, the VIF values for all three variables are <10, indicating no multicollinearity.

[35] Rosylin Mohd Yusof and Mejda Bahlous, 'Islamic Banking and Economic Growth in GCC &Amp; East Asia Countries', *Journal of Islamic Accounting and Business Research*, 2013, doi:10.1108/jiabr-07-2012-0044.

[36] Imam Ghozali, *Aplikasi Analisis Multivariate Dengan Program IBM SPSS 25*, 2018.

**Heteroscedasticity Test**

Table 2. Heteroscedasticity Test: Glejser

| Statistic | Value | Prob. |
|---|---|---|
| F-statistic | 0.665897 | 0.5803 |
| Obs*R-squared | 2.135634 | 0.5447 |
| Scaled explained SS | 1.787417 | 0.6177 |

Source: E-views 10 Output (2024)

The heteroscedasticity test determines whether there is a variance difference in residuals within the regression model, with a criterion that probability values >0.05. The Glejser test results show a probability value of 0.5447, indicating no heteroscedasticity in the data.

**Autocorrelation Test**

Table 3. Breusch-Godfrey Serial Correlation LM Test

| Statistic | Value | Prob. |
|---|---|---|
| F-statistic | 0.142295 | 0.8681 |
| Obs*R-squared | 0.348918 | 0.8399 |

Source: E-views 10 Output (2024)

The autocorrelation test evaluates residual correlation patterns in the regression model using the Lagrange Multiplier (LM) method. A probability value greater than 0.05 indicates no autocorrelation, while a value less than 0.05 suggests autocorrelation issues. The analysis shows an R-squared probability of 0.8399 (>0.05), indicating no autocorrelation in the data.

**Multiple Linear Regression Analysis**

Table 4. Linear Regression Analysis

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 10423.13 | 3924.844 | 2.655681 | 0.0129 |
| X1 | 0.409244 | 0.182452 | 2.243018 | 0.0330 |
| X2 | -0.001783 | 0.000555 | -3.213879 | 0.0033 |
| X3 | -0.002593 | 0.000518 | -5.006618 | 0.0000 |

Source: E-views 10 Output (2024)

The multiple linear regression model is as follows:\"Y=10423.13+0.409244X1−0.001783X2−0.002593X3

Interpretation of the regression equation:

1. The constant coefficient of 10423.13 suggests that the soybean price in Medan would be 10423.13 if each independent variable remains constant or at zero.
2. The exchange rate variable (X1) has a coefficient of 0.409244, indicating a positive influence on soybean price in Medan, meaning that an increase in the rupiah exchange rate (X1) results in an increase of 0.409244 in soybean prices (Y) in Medan.
3. The soybean demand variable (X2) has a coefficient of -0.001783, meaning that higher soybean demand in Indonesia has a negative impact on the soybean price in Medan, causing a decrease of 0.001783 in Y for each increase in X2.
4. The soybean production variable (X3) has a coefficient of -0.002593, showing that increased soybean production in Indonesia has a negative effect on soybean prices in Medan, decreasing Y by 0.002593 for each increase in X3.

**T-Test (Partial)**

Table 5. T-Test

| Variable | t-Statistic | Prob. |
|---|---|---|
| C | 2.655681 | 0.0129 |
| X1 | 2.243018 | 0.0330 |
| X2 | -3.213879 | 0.0033 |
| X3 | -5.006618 | 0.0000 |

Source: E-views 10 Output (2024)

The purpose of the t-test is to determine whether the independent variables—Rupiah Exchange Rate (X1), Soybean Demand (X2), and Soybean Production (X3)—individually impact soybean prices in Medan (Y). Conducted at a 0.05 significance level, if the t-test significance exceeds 0.05, Ho is

accepted, and Ha is rejected; otherwise, if the significance is below 0.05, H0 is rejected, and Ha is accepted. The partial data analysis results from Table 5 are as follows:

- **Variable X1**: The t-statistic is 2.2430, with a significance of 0.0330 (<0.05), indicating a significant effect of X1 on Y
- **Variable X2**: The t-statistic is -3.2138, with a significance of 0.0033 (<0.05), indicating that X2 significantly affects Y.
- **Variable X3**: The t-statistic is -5.0066, with a significance of 0.0000 (<0.05), confirming that X3 has a significant effect on Y.

**F-Test (Simultaneous)**

Table 6. F-Test

| Statistic | Value |
|---|---|
| F-statistic | 37.94889 |
| Prob(F-statistic) | 0.000000 |

Source: E-views 10 Output (2024)

The F-test determines whether the independent variables simultaneously affect the dependent variable at a 0.05 significance level. If the significance is greater than 0.05, H0 is accepted, and Ha is rejected; otherwise, if less than 0.05, H0 is rejected, and Ha is accepted.[37] The data analysis results in an F-Statistic of 37.94889 with a probability of 0.0000 (<0.05), indicating that the independent variables (X) significantly influence the dependent variable (Y).

**Coefficient of Determination ($R^2$) Test**

Table 7. Coefficient of Determination

| Statistic | Value |
|---|---|
| R-squared | 0.802604 |
| Adjusted R-squared | 0.781454 |

Source: E-views 10 Output (2024)

This test assesses how much the independent variables contribute to the dependent variable. Table 7 shows an Adjusted R-squared of 0.781454, or 78.14%, meaning that 78.14% of the variance in the dependent variable is explained by the independent variables, with the remaining 21.86% influenced by other factors.

**The Influence of Rupiah Exchange Rate on Soybean Price Formation in Medan**

The data analysis reveals that the Rupiah exchange rate has a significant positive influence on soybean price formation in Medan, indicating a strong dependency on imported soybean materials. A higher Rupiah exchange rate increases the cost of soybean imports, which, in turn, drives up soybean prices in the local market. This finding is consistent with research conducted by Rati, which found that corn prices are influenced by the exchange rate.

This result supports Mankiw's Purchasing Power Parity theory, which suggests that the exchange rate between two countries should reflect the difference in the overall price levels in each country. When the Rupiah weakens against foreign currencies, such as the US dollar, the prices of imported goods, like soybeans, tend to increase in the domestic currency. This occurs because the import cost of soybeans in USD becomes more expensive when converted into a weaker Rupiah, leading to a rise in domestic selling prices.

From the perspective of Islamic economics, the relationship between the Rupiah exchange rate and soybean prices in Medan can be viewed through several economic concepts aligned with Shariah principles. A key concept in Islamic economics is fairness in exchanges (muamalah) and the prevention of exploitation or injustice in economic transactions. Price increases must be

[37] Achmad Wicaksono, 'Pengaruh Tekanan Publik Terhadap Pengungkapan Laporan Tanggung Jawab Sosial Perusahaan', *Akuntansi : Jurnal Akuntansi Integratif*, 5.02 (2020), doi:10.29080/jai.v5i02.230.

managed to avoid harming consumers or causing inequity in food distribution. According to Muhammad, Islam permits currency exchange (sharf) under the condition that values must be equal for the same currency, while for different currencies, it must be in cash. In a related hadith, "Sell gold for silver as you wish, provided that it is hand to hand" (HR. Imam at-Tirmidhi, from Ubadah bin al-Samit). Currency exchange rules include: a) must be in cash, not credit; b) immediate exchange upon contact; and c) equal quantity and exchanged in the same currency. Furthermore, any currency exchange must adhere to Bank Indonesia's regulations on foreign exchange rates.

**The Influence of Soybean Demand on Soybean Price Formation in Medan**

The data analysis shows that soybean demand in Indonesia has a significant negative impact on soybean price determination in Medan. This finding aligns with research by Deni et al., who stated that staple food prices in Medan are influenced by demand levels. If the demand for soybeans in Indonesia increases, soybean prices in Medan tend to decrease. This outcome aligns with the theory of demand elasticity, which states that if soybean demand is elastic (elasticity greater than one), consumers will be highly responsive to price changes. When prices rise, demand will decrease significantly, and vice versa. Increased national demand may exceed soybean supply, with other factors like local production, imports, production costs, and government policies also playing a critical role in price formation.

In Islamic economics, the principle of justice (adl) underscores the importance of balancing profit distribution and economic wealth. As noted in Surah Al-Mutaffifin: 1-3, it emphasizes fairness in trade transactions. Sellers must ensure that they do not cheat or deceive buyers if prices are set by the balance of supply and demand. If soybean demand rises, producers or distributors in Medan could respond by increasing local supply, helping to keep prices fair and prevent harmful speculation or price manipulation. Supriadi explains that in Islamic economics, prices are determined by the balance of supply and demand agreed upon by both seller and buyer. Thus, a commodity's price is influenced by the seller's ability to provide it and the buyer's willingness to pay the set price.

**The Influence of Soybean Production in Indonesia on Soybean Price Formation in Medan**

The data study indicates that soybean production in Indonesia negatively impacts soybean prices in Medan. This finding supports Mutia's view that soybean production affects soybean prices in traditional markets. When soybean production in Indonesia increases, soybean prices in Medan decrease. This outcome is supported by price elasticity theory.[38] If soybean production rises significantly, soybean prices become more elastic concerning production changes. Increased domestic production reduces import dependence, leading to a larger supply to meet demand. Thus, changes in production significantly affect soybean prices in Medan.

From an Islamic economic perspective, increased domestic production aligns with efforts to extend economic benefits to the community. Niken suggests that production activities should adhere to Islamic principles and align with maqashid shariah, as the objective of production in Islamic economics

[38] Mutia Azzahra and Ima Amaliah, 'Faktor-Faktor Yang Mempengaruhi Harga Kedelai Domestik Di Indonesia', *Bandung Conference Series: Economics Studies*, 3.2 (2023), doi:10.29313/bcses.v3i2.9086.

is to achieve well-being and happiness in both this world and the hereafter. As stated in the hadith by Abu Hurairah, the Prophet said, "Whoever reduces the weight and measure, he denies the right of others, and Allah will impose punishment on him" (HR. al-Bukhari and Muslim). This hadith emphasizes that reducing weight and measure in economic transactions is a form of injustice. It refers to deceitful practices that harm others by lowering the quantity or quality of goods without the buyer's knowledge.

Production must prioritize justice, efficient management of natural resources, non-destructive practices, and avoid wastefulness. Additionally, profits should be distributed fairly among all involved parties. Increasing soybean production in Indonesia may lower soybean prices in Medan, which can be considered a positive effect within the context of economic justice.

## Conclusion

The findings from the analysis indicate that soybean demand and production in Indonesia simultaneously influence the formation of soybean prices in Medan. This relationship is statistically significant, demonstrated by an F-Statistic value of 37.94889 and a probability of 0.0000, which is well below the 0.05 threshold. Additionally, the independent variables—the Rupiah exchange rate, soybean demand in Indonesia, and soybean production in Indonesia—each have a partial impact on soybean price formation in Medan, as shown by a probability value of less than 0.05 for each variable.

The analysis further reveals that fluctuations in the Rupiah exchange rate have a direct positive impact on soybean prices in Medan, implying that an appreciation in the Rupiah value leads to an increase in soybean prices locally. Conversely, soybean demand and production in Indonesia exhibit a negative influence on soybean price formation in Medan. This negative relationship suggests that an increase in either soybean demand or production at the national level correlates with a decrease in soybean prices in Medan.

## Credit Authorship Contribution

Agna Sabrina: Methodology, Investigation, Writing - Original Draft, and Supervision. Nurul Jannah: Methodology, Resources, and Writing - Review & Editing. Muhammad Syahbudi: Methodology, Formal Analysis, and Writing - Review & Editing..

## Declaration of Competing Interest

The authors declare no competing interests related to this study. No financial or personal conflicts of interest are present.

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