SURAT TUGAS
Nomor: 186-R/UNTAR/Pengabdian/I/2024

Rektor Universitas Tarumanagara, dengan ini menugaskan kepada saudara:

MARGARITA EKADJAJA, S.E., M.M.

Untuk melaksanakan kegiatan pengabdian kepada masyarakat dengan data sebagai berikut:

Judul	:	Hedging Training For Export And Import Business
Mitra	:	Logam Nusantara Perkasa
Periode	:	Vol 4 No 4/November 2023
URL Repository	:	https://journal.maranatha.edu/index.php/ice/issue/view/281

Demikian Surat Tugas ini dibuat, untuk dilaksanakan dengan sebaik-baiknya dan melaporkan hasil penugasan tersebut kepada Rektor Universitas Tarumanagara

25 Januari 2024
Rektor

UNIVERSITAS TARUMANAGARA
REKTOR

Prof. Dr. Ir. AGUSTINUS PURNA IRAWAN

Print Security : 68ff3ef24ffbbd4651c69bf0560bba95


ISSN: 2776-0421
Journal of
INNOVATION
and COMMUNITY
ENGAGEMENT
VOLUME 04
Number 04
Pages 219-276
November/2023

Journal of Innovation and Community Engagement

Editorial Team

 e-ISSN: 2776-0421
https://doi.org/10.28932/ice.v4i4.7552

Hedging Training for Export and Import Business

Margarita Ekadjaja*, Amory Takahiro Theja, Wilson Wijaya
Faculty of Economic, Universitas Tarumanagara, Jakarta, 11470, Indonesia

*Correspondence should be addressed to Margarita Ekadjaja; margaritae@fe.untar.ac.id

(Received October 4, 2023; Revised October 30, 2023; Accepted October 30, 2023)

Abstract

Globalization causes changes and provides convenience in trading activities between countries, exports, and imports. This community service program was conducted for a company engaged in the field of iron trading, which deals with imported products from Japan, America, Europe, China, and Taiwan. The main problem faced by this community service partner was the profit uncertainty due to fluctuations in the foreign exchange market. As a way to avoid currency exchange rate uncertainty, companies can hedge. One of the hedging activities carried out by company management in dealing with fluctuations in foreign exchange rates is the alternative use of derivative instruments. The method for implementing the community service activities was in the form of onsite training which was divided into two sessions. In the first session, the community service team gave a lecture on a general overview of hedging. In the second session, the community service team carried out a simulation of calculating the costs of hedging using appropriate tools. This community service program provides results in the form of developing partner's know-how that provides benefits to mitigate risk through hedging capabilities. Based on the simulation results using the hedging cost calculation tool, partners can see that hedging in the money market is more profitable than forward contracts.

Keywords: *forward, hedging, money market*

How to Cite:
Ekadjaja, M., Theja, A. T., & Wijaya, W. (2023). Hedging Training for Export and Import Business. *Journal of Innovation and Community Engagement, 4*(4), 219-231.
https://doi.org/10.28932/ice.v4i4.7552

Introduction

Globalization spurs companies to be able to compete by increasing operational efficiency and keeping up with current developments. On the one hand, globalization creates opportunities for companies to develop and expand their market share, but companies must also be able to compete and innovate to survive. In the era of global trade, cooperation between companies, society, and workers is needed in a mutually beneficial relationship.

Globalization also encourages progress in industrialization, infrastructure, and technology, while attracting global companies to invest in the country. Apart from that, globalization also causes changes and provides convenience in trade activities between countries, exports, and imports. According to Nainggolan (2016), globalization makes the government change its old policies so that international trade in Indonesia can continue to increase.

Table 1. Development of Indonesian exports and imports 2018-2022

Year	2018	2019	2020	2021	2022
Exports	180,013	167,683	163,192	231,609	291,904
Imports	188,711	171,276	141,569	196,190	222,615

Source: www.bps.go.id

Table 1 shows fluctuations in export-import trade in Indonesia in the last five years. The value of exports decreased in 2019 and 2020 due to the Covid-19 pandemic. Then it slowly started to increase significantly in 2021 and 2022. Likewise, the value of imports also decreased due to the lockdown regulations set by the government to avoid transmission of the Covid-19 virus. It can be seen in Table 1 there are similarities in the pattern of export fluctuations with import fluctuations.

In export-import activities, transactions with business people in other countries involve the use of foreign currencies that are better known and recognized globally. One of the obstacles in transacting with foreign currencies is the instability of the exchange rate between the two currencies. This can provide benefits when the exchange rate increases but can also cause losses when the exchange rate decreases. Factors that influence the rise and fall of the exchange rate include exports, imports, GDP, BI rate, money supply, and inflation (Budiastawa et al., 2019).

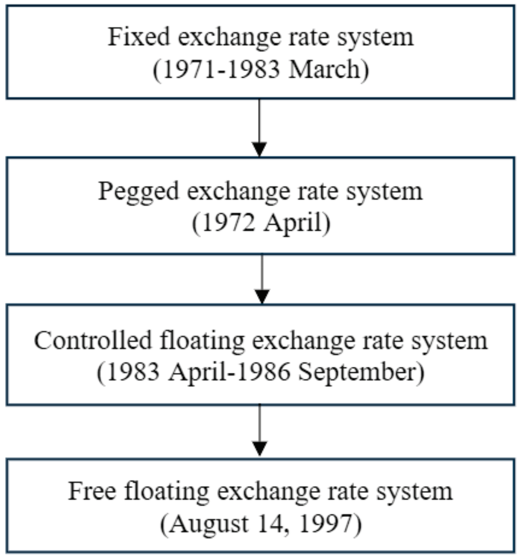

Fig 1. History of the exchange rate system
Source: Pratama & Serafica (2020)

As shown in Figure 1, historically the government controls exchange rates categorized into four value systems, namely; (1) a fixed exchange rate system guided by the mutual agreement at Bretton Woods; (2) a pegged exchange rate system, in this system the government implements a policy to peg the basic value of certain foreign currencies; (3) controlled floating exchange rate system, in this system, Bank Indonesia as the central bank intervenes in exchange rate movements; (4) free-floating exchange rate system, in this system exchange rate fluctuations move according to market forces without any intervention from the government.

The community service program partner is a distributor company for iron pipes, fittings, and valves (Figure 2) with its customers operating in the oil and gas, shipping, food, and mining industries. Partner business location at Pangeran Jayakarta 121 No 71, Central Jakarta. The customers come from various regions in Indonesia, namely Java, Sumatra, Sulawesi, and Kalimantan. The products traded are imported products originating from Japan, Europe, America, China, and Taiwan.

The global integration of the world causes companies to have to use foreign exchange units called exchange rates (Barguellil et al., 2018). In foreign exchange transactions, the terms depreciation vs appreciation and devaluation vs revaluation are known. Both depreciation and devaluation have the same meaning, namely that they occur when the domestic currency required is more expensive to obtain one unit of foreign currency. This causes the price of imported goods to become more expensive in the domestic market. Likewise, appreciation and revaluation have the same meaning, where the domestic currency being exchanged becomes cheaper against a unit of foreign currency, causing the price of imported goods to become cheaper in the domestic market.

Fig 2. Products traded by partner
Source: *Logam Nusantara Perkasa* (2023)

However, what differentiates depreciation from devaluation and appreciation from revaluation is the cause of the fluctuation in foreign exchange rates. Depreciation-appreciation is a fluctuation in foreign exchange rates due to the market, while devaluation-revaluation is a fluctuation in foreign exchange rates due to government policy. Bearing in mind, the volume of foreign exchange transactions carried out by companies is quite large, causing a spillover effect in the price formation process in the foreign exchange market (Hang et al., 2021). The use of financial derivatives has become very popular as a non-financial corporate hedging instrument for risk management (Ayturk et al., 2016).

The problem faced by the partner is that exchange rate fluctuations always occur and can provide significant differences in a short period of time. The partner wishes to mitigate the risk of loss due to exchange rate differences. The partner's solution to overcome the problem was to collaborate with the Universitas Tarumanagara (UNTAR) community service team to get to know the methods and ins and outs of hedging. Through hedging, a fixed exchange rate will be obtained for both currencies in a certain period. Hedging is one way to increase company value (Liu et al., 2023).

The topic of the community service program is "Hedging Training for Export and Import Business". In this community service, the team helped the company which is engaged in iron trading with most of its products imported from Japan, Europe, America, China, and Taiwan.

As exchange rates fluctuate, partners must hedge to minimize the risk of financial losses caused by exchange rate fluctuations.

This community service program is a further development of the research results of the prior community service program of the team leader in the field of foreign exchange hedging entitled "Determinants of Company Decisions Using Derivatives". The prior research shows that the existence of global business causes companies to have to hedge foreign exchange, where only institutional and public ownership variables influence the company's decision to use derivative instruments in hedging foreign exchange (Ekadjaja et al., 2020).

Prior research related to hedging found that one of the company's efforts was to hedge foreign exchange through the use of derivative instruments. These derivative instruments can be used to control financial risk so as to encourage an increase in company value. The research results show that the variables return on assets and company size have a significant positive effect on the company value of derivative users. Meanwhile, capital expenditure and dividend yields show no significant influence on company value and the leverage variable shows a significant negative influence on company value (Ekadjaja et al., 2019).

The strategic issue of this community service program is sustainable entrepreneurship which is an effort to improve the economic welfare of society in particular and the national economy in general. The problem concept for this community service program is to encourage the implementation of sustainable entrepreneurship at the company level and is related to the study of sustainable entrepreneurship practices at the company level, by avoiding and or reducing the company exposure and risk against foreign exchange fluctuations.

Methods

The community service implementation method was carried out onsite at partner business locations and was carried out in the form of training regarding the understanding and application of hedging in export-import transactions. The stages of implementing community service activities can be seen in Figure 3, as follows:

1. Looking for information regarding problems faced by the company (partner) related to its business through initial visits to the partner for discussions.

2. Providing training to provide the partner with an understanding of the importance of hedging related to international business transactions.
3. Helping the partner to choose the best hedging alternative to overcome exchange rate fluctuations using tools for hedging calculation simulations.
4. Evaluating the results of community service implementation as measured by the partner's ability to calculate and make decisions from various existing hedging alternatives.

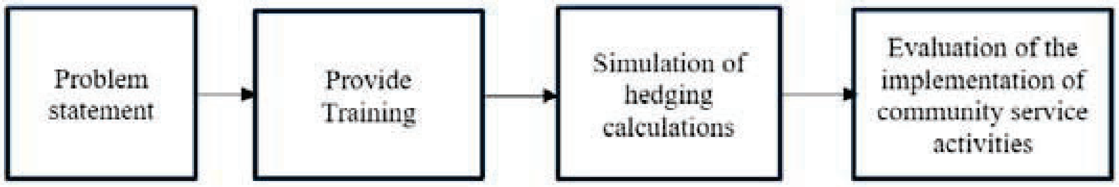

Fig 3. Stages of community service implementation

Based on the problems faced by partners, collaboration was carried out with the UNTAR community service team to seek information and knowledge regarding the most appropriate hedging for their business transactions. In the initial stage, the team conducted training to provide information to partners. Training was carried out onsite and was divided into several sessions. The material discussed was adapted from the book by Moffett et al. (2014) that includes:

1. Information regarding various products transacted on the foreign exchange market such as spot, forward, swap, options, and futures.
2. Benefits of hedging.
3. Hedging tools such as forward contracts, option contracts, futures contracts, and investment in the money market.
4. Hedging costs.

For the training to run well and produce results, the steps taken by the team were:

1. Initial meeting. At the initial meeting, the community service team identified the problems faced by the partner.
2. Discussion of the benefits of hedging in dealing with exchange rate fluctuations. After knowing the partner's expectations, the team held an internal meeting to determine the training topics that would be provided with the aim of opening the partner's insight in determining hedging tools.

3. Discussion regarding the implementation of training. In this step, the partner together with the community service team determine a training schedule to assist the team in preparing training materials.
4. Evaluation. The team measures the partner's ability to understand the training topic through several verbal questions as well as the partner's ability to simulate calculations for several hedging tools.

In choosing the appropriate hedging tool for the partner in running its business, the community service team took several steps as follows:

1. The team analyzed hedging costs if options were chosen as a hedging tool.
2. The team analyzed hedging costs if forward was chosen as a hedging tool.
3. The team analyzed hedging costs if futures were chosen as a hedging tool.
4. The team analyzed hedging costs if the money market was chosen as a hedging tool.

The target of implementing community service activities was that partners could choose the most profitable hedging tools based on the results of hedging cost calculations which were carried out through the partner's participation at each stage of community service implementation, including transparency of problems, and attending full training.

Results and Discussions

Basically, almost all company activities are related to international markets because raw materials still have to be imported. This causes the company's cash flow to be greatly influenced by changes in exchange rates. One of the business activities anticipated by companies whose business involvement is on an international scale requires derivatives in the form of hedging. Hedging in question is hedging reserves in the form of foreign currency against risks that occur as a result of changes in a country's foreign exchange rate, such as forwards, options, money markets, and futures.

The community service partner as a business involved in forex transactions in the business process, is exposed to the risk from foreign exchange fluctuation and therefore needs to know and apply hedging. The implementation of community service activities was carried out on site on Monday, September 11, 2023 (full day) and was attended by one of the company owners and two key company employees (Figure 4.). All training materials had been shared prior to the training for the participants to have a look and be prepared for the subject.

Fig 4. Implementation of community service activities

Implementation of the community service activities takes the form of training which was divided into two sessions. In the first session, the community service team gave a lecture on several basic types of products traded on the foreign exchange market, such as spot including Today (TOD) and Tomorrow (TOM), and derivative transactions such as forward, swap, options, and futures. Contracts in spot transactions are binding and must be completed by the party making the transaction within a maximum of two working days. Spot transactions will gain profits by carrying out arbitrage (Flottmann et al., 2022).

Figure 5 shows that TOD and TOM transactions are generally conducted between individuals to money changers, individuals, and/or corporations to banks.

A forward transaction is a foreign currency sale and purchase transaction contract with settlement in more than two working days, where the forward contract will receive a premium or discount depending on the interest rates applicable in the countries of the two currencies being transacted. Meanwhile, a swap transaction is a financial instrument used to mitigate liquidity risk related to the exchange of cash flows between two parties transacting in the future. Swaps are usually carried out by large corporations because of the large amounts of currency being transacted (EUR, GBP, JPY, CAD, and AUD).

Options are transactions to buy or sell option rights and are contract agreements between the seller and the buyer of option rights to buy or sell a certain amount of currency at a certain price level in the future. Futures are an agreement to sell or buy a number of commodities or financial instruments underlying the transaction for delivery on a predetermined future date.

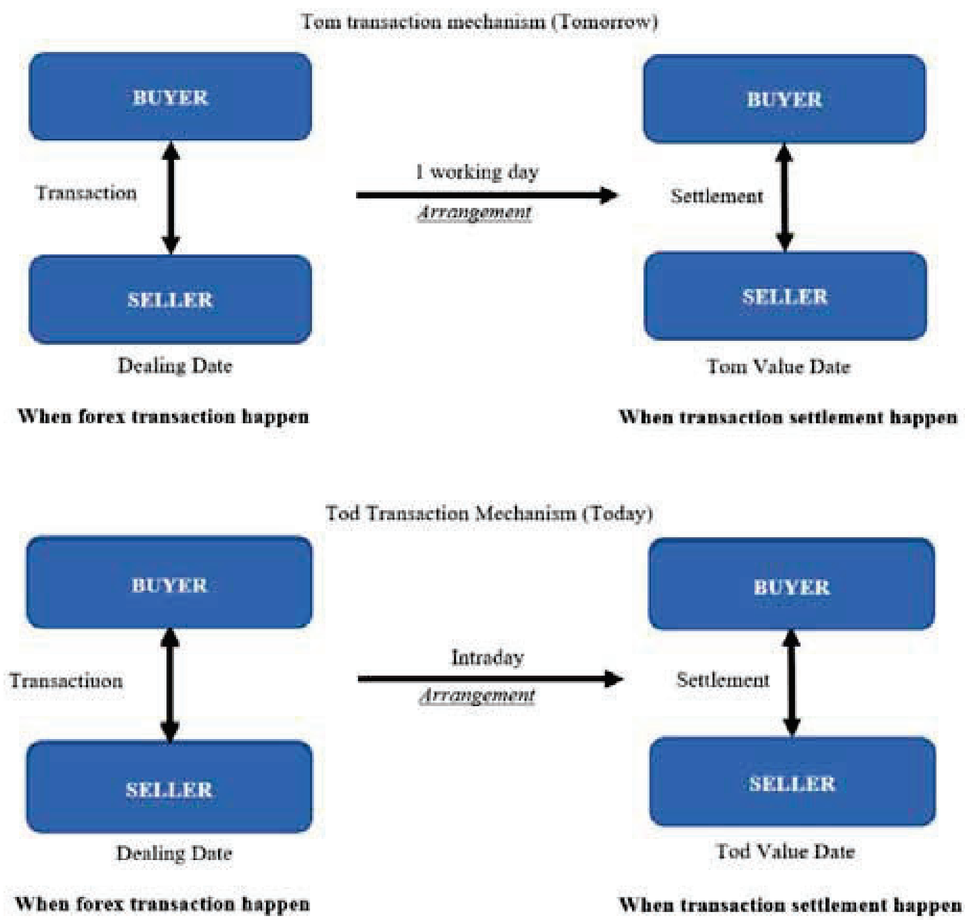

Fig 5. Tod and Tom product transaction flow
Source: processed by the author (2023)

In the second session, the community service team helped partner carry out a simulation of calculating the costs of each hedging tool. Then an analysis of the feasibility of each hedging tool was carried out. To reduce the risk of loss due to exchange rate fluctuation, several anticipation actions were taken by the community service team as follows:

1. Identifying net transaction exposure or consolidation of all inflow and outflow of every forex transaction in a dedicated period.
2. Decide whether or not hedging is needed on the receivable or payable of their transaction.
3. Analyze whether hedging is needed partially or for the whole exposure by hedging tools.

The following is an example of a hedging calculation simulation using spreadsheet software for payment (payable) if it is known that the import transaction from America = USD 250,000 with a payment due date in the next three months and a spot exchange rate of IDR 15,600 per USD and a forward exchange rate of IDR 16,000 per USD, then the calculation of the cost of imported raw materials above basic forward market hedging $250,000 x IDR 16,000 = IDR 4,000,000,000. However, if it is needed to hedge in the money market with a USD deposit interest rate of 2.4% per year and an IDR loan interest rate of 12% per year, then a simulation of the money market hedging calculation for importers can be seen in Figure 6.

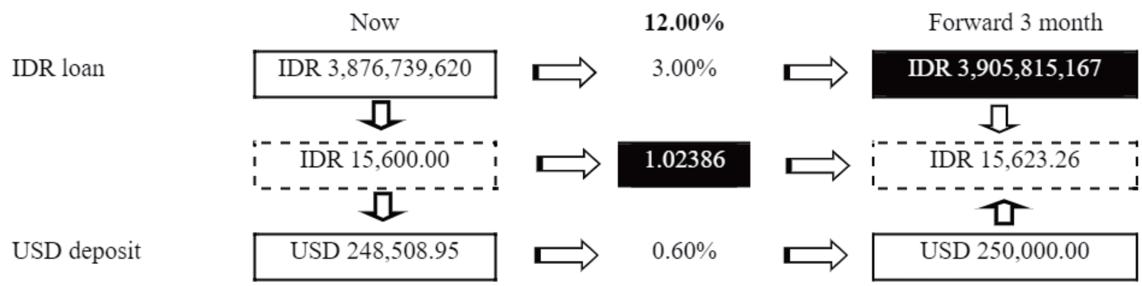

Fig 6. Money market hedging simulation for importers

As shown in Figure 6, the steps that must be taken so that the company does not experience losses due to the increase in the USD exchange rate in the next three months are:

1. Loan funds from the bank amounting to IDR 3,876,739,620 for 3 months with an interest rate of 12% per year.
2. Buy USD at the current exchange rate = IDR 3,876,739,620 /15,600 = US$248,509.00.
3. Make a deposit in US dollars of USD 248,509.00 for 3 months with an interest rate of 2.40% per year.
4. After 3 months the deposit value increases to = USD 248,509.00 x 1,006 = USD 250,000 and is then used to pay USD 248,509.00 for import transactions.
5. The bank loan is paid with interest = IDR 3,876,739,620 x 1.03 = IDR 3,905,815,167.

From the simulation to calculate the costs of hedging alternatives based on the cost calculation of each hedging tool, the money market hedge alternative is the most profitable hedging alternative, because money market hedges require costs (IDR 3,905,815,167) which are cheaper than forward hedges (IDR 4,000,000,000).

An example of a hedging calculation simulation for receivable: a company wants to protect receivable worth SGD 300,000 within 180 days of possible SGD depreciation. USA interest rates for credit is at 5% and deposit is at 4.5%. Singapore interest rates for credit is at 6% and deposit is at 5%. Forward rate 180 days: USD 1.47/SGD. The steps for money market hedging that must be taken in the next six months are:

1. Borrow SGD and convert it into USD and then invest in USD and then use the receivables to pay the loan within 180 days.
2. Loan amount = SGD 300,000 : (1+0.025) = SGD 292,682.93 USD received from conversion SGD = SGD 292,682.93 x USD 1.5/SGD = USD 439,024.39. Accumulated USD after 180 days = USD 439,024.39 x (1+0.0225) = USD 448,902.44. The steps for money market hedging: selling SGD with a forward rate of 180 days, so the USD received: SGD 300,000 x USD 1.47/SGD = USD 441,000.

From the simulation to calculate the revenue of hedging alternatives based on the revenue of each hedging tool, the money market hedge alternative is the most profitable hedging alternative, because money market hedges yielded (USD 448,902.44) which is higher than forward hedges (USD 441,000).

With training, the results obtained by partner are: 1) Able to calculate a certain currency to pay for import transactions; 2) Able to calculate speculative transactions to increase income; 3) Able to mitigate risk by choosing appropriate hedging tools; 4) Able to cover operational costs related to the foreign exchange transaction process. As a continuation of the training, the partner could use the knowledge of the process and purpose of hedging in doing their business and improve their business performance.

Conclusion

The community service partner is one of the business actors whose business activities are greatly influenced by exchange rate fluctuations. The existence of fluctuations in exchange rates is the main problem for the partner because most of its business activities are influenced by exchange rates, thus affecting the company's performance due to differences in exchange rates. The problem faced by the partner is that exchange rate fluctuations always occur and can provide significant differences in a short period of time.

Based on the evaluation results of the community service team, the implementation of this community service program went well. Evaluation measurements by the community service team were based on the partner's ability to understand the methods, benefits, and mitigate risks through hedging. The community service team also assisted partner in simulating the cost calculations of available alternative hedging tools and obtained the most profitable alternative, namely hedging on the money market with the most efficient costs.

The target of this community service program was met, where partners could understand hedging and were able to analyze several hedging tools to apply in their business activities. The results of this community service program are beneficial for companies or institutions, ranging from small ones to multinational companies and governments that carry out various activities related to the export and import of goods and services that require or are related to foreign exchange issues.

Considering the increasingly global nature of business activities, as a suggestion, this community service can be continued by studying further to avoid the risk of transaction exposure when hedging facilities are not available, such as leading and lagging, cross hedging, and currency diversification.

Acknowledgements

Thank you to the Institute for Research and Community Service (LPPM) Tarumanagara University for funding all community service activities. Thank you to the Faculty of Economics and Business, Tarumanagara University, which has helped to facilitate the administration for implementing community service activities.

References

Ayturk, Y., Gurbuz, A. O., & Yanik, S. (2016). Corporate derivatives use and firm value: Evidence from Turkey. *Borsa Istanbul Review*, 16(2), 108-120. https://doi.org/10.1016/j.bir.2016.02.001

Barguellil, A., Ben-Salha, O., & Zmami, M. (2018). Exchange rate volatility and economic growth. *Journal of Economic Integration*, 33(2), 1302-1336. https://doi.org/10.11130/jei.2018.33.2.1302

Budiastawa, I. D. G., Santiyasa, Iw., & Pramartha, C. R. A. (2019). Prediction and accuracy of the Rupiah exchange rate against the US Dollar using a radial basis function network. *Jurnal Elektronik Ilmu Komputer Udayana*, 7(4), 309-317. https://doi.org/10.24843/JLK.2019.v07.i04.p12

Ekadjaja, Margarita., Ekadjaja, A., & Henny1. (2020). Determinants of company decision making for foreign exchange hedges. *International Journal of Innovation, Creativity and Change*, *12*(3), 197-210. https://doi.org/10.31933/jemsi.v1i3.104

Ekadjaja, Margarita, Agustin Ekadjaja & Henny. (2019). The characteristics of users derivative company towards the Company's Value. *Jurnal Akuntansi*, 23(1), 63-78. https://doi.org/10.24912/ja.v23i1.460

Flottmann, J. H., Akimov, A., & Simshauser, P. (2022). Firming merchant renewable generators in Australia's National Electricity Market. *Economic Analysis and Policy*, 74, 262-276. https://doi.org/10.1016/j.eap.2022.02.005

Hang, M., Geyer-Klingeberg, J., Rathgeber, A. W., Alasseur, C., & Wichmann, L. (2021). Interaction effects of corporate hedging activities for a multi-risk exposure: evidence from a quasi-natural experiment. *Review of Quantitative Finance and Accounting*, *56*(2), 789-818. https://doi.org/10.1007/s11156-020-00909-6

Hasundungan, R. T., & Herawati, A. (2018). The influence of working capital and liquidity management on profitability in manufacturing companies in the ceramics, glass and porcelain subsectors listed on the Indonesian stock exchange for the 2009-2016 period. *Jurnal Riset Ekonomi Dan Bisnis*, *11*(1), 1-23. https://doi.org/10.26623/jreb.v11i1.1074

Liu, J., Xia, S., Wang, Z., Nie, J., Ameen, N., Yan, C., & Lim, M. K. (2023). How to balance economic profits and environmental protection: The impacts of cash hedging on remanufacturing firms. *International Journal of Production Economics*, 258,1-16. https://doi.org/10.1016/j.ijpe.2023.108783

Moffett, M., Stonehill, A., & Eiteman, D. (2014). Fundamentals of multinational finance. In *Climate Change 2013 - The Physical Science Basis*. New Jersey : Pearson Education.

Nainggolan, K. (2016). Strategies for improving coordination between the public and private institutions for agricultural and rural development. *Forum Penelitian Agro Ekonomi*, 20(2). https://doi.org/10.21082/fae.v20n2.2002.20-30

Pratama, C. D. (2020) & Serafica Gischa. *Exchange rate system: definition and history* . https://Www.Kompas.Com/Skola/Read/2020/11/09/175750269/Sistem-Nilai-Tukar-Definisi-Dan-Sejarah?Page=all.

www.bps.go.id

SERTIFIKAT

Direktorat Jendral Pendidikan Tinggi, Riset dan Teknologi
Kementerian Pendidikan, Kebudayaan, Riset dan Teknologi Republik Indonesia

TERAKREDITASI

Kutipan dari Keputusan Direktorat Jendral Pendidikan Tinggi, Riset, dan Teknologi
Kementerian Pendidikan, Kebudayaan, Riset dan Teknologi Republik Indonesia

Nomor: 79/E/KPT/2023

Peringkat Akreditasi Jurnal Ilmiah Periode I Tahun 2023

Nama Jurnal Ilmiah:

Journal of Innovation and Community Engagement

E-ISSN: 27760421

Universitas Kristen Maranatha

Ditetapkan Sebagai Jurnal Ilmiah:

TERAKREDITASI PERINGKAT 5

Akreditasi Berlaku selama 5 (lima) Tahun, yaitu:
volume 1 Nomor 1 Tahun 2021 Sampai Volume 5 Nomor 4 Tahun 2025

Jakarta, 11 May 2023

Plt. Direktur Jendral Pendidikan Tinggi, Riset, dan Teknologi

Prof. Ir. Nizam, M.Sc., DIC, Ph.D., IPU, ASEAN Eng
NIP. 196107061987101001