



Contents lists available at [Journal IICET](https://journal.iicet.org)

JPPi (Jurnal Penelitian Pendidikan Indonesia)

ISSN: 2502-8103 (Print) ISSN: 2477-8524 (Electronic)

Journal homepage: <https://jurnal.iicet.org/index.php/jppi>



Risk management analysis and investment strategy on forex online trading

Hartono Hartono^{1*)}, Nersiwad Nersiwad¹, Mohammad Muslimin¹, Fachrudy Asj'ari², Moses Martins³

¹ Universitas Islam Majapahit, Jl Raya Jabon KM 07 Mojokerto 61367, Indonesia

² Universitas PGRI Adi Buana Surabaya, Jl Dukuh Menanggal XII Kota Surabaya 60245, Indonesia

³ Department of Chemistry, College of Education, Zing, Nigeria

Article Info

Article history:

Received Feb 20th, 2023

Revised Nov 15th, 2023

Accepted Jun 04th, 2024

Keyword:

Risk management,
Investation strategy,
Forex online trading

ABSTRACT

The purpose of this study is to analyze risk management and investment strategies in Forex Online Trading. The method used in this study is a qualitative method with a descriptive description. Data collection techniques using qualitative analysis. The results show that risk management in Forex Online Trading can be reviewed through risks that can be reached by traders, as well as market risks that cannot be reached by traders. The first risk can be reviewed through total equity risk and trading position risk, while market risk can be reviewed through portfolio diversification, understanding price changes and volatility, and understanding leverage and margin. An investment strategy in Forex Online Trading can be considered through four types of methods, namely the Martingale trading strategy, the Trading by News strategy, and the Pending Order strategy.



© 2024 The Authors. Published by IICET.

This is an open access article under the CC BY-NC-SA license
(<https://creativecommons.org/licenses/by-nc-sa/4.0>)

Corresponding Author:

Hartono Hartono,
Universitas Islam Majapahit
Email: Hartono.fe@unim.ac.id

Introduction

Through the data source BAPPEBTI (Commodity Futures Trading Supervisory Agency) can be seen the number of registered futures brokers. This shows that the trading market has developed in Indonesia. May (2011) argues that trading is the process of negotiating prices between buyers and sellers until an agreement is finally reached between buyers and sellers. Furthermore, May (2011) also explains that trading is a form of business, in the form of buying and selling activities, like people buying and selling in fruit markets or supermarkets. If in the market fruit is traded fruit, then in trading what is traded is shares, foreign currencies, commodities, and so on. (May, 2011). Trading itself often offers tempting potential profits, which often makes many beginners jump right in without thinking, get confused, and end up losing the funds they have invested. Elder (2014) explains that a newbie might enter the market, win a few times and begin to feel smart and invincible. It was then that he started taking bigger risks and ended up losing. Trading often seduces beginners to such an extent that they fail to learn how the trading system works and are then succumbed to the urge to get high returns without taking the risk into account. (Elder, 2014)

Trading is also contained in currency or foreign exchange transactions, which in this study is referred to as Forex Online Trading. Darmawan explains that in its development, foreign exchange trade is not only used in international trade activities or export-import, but is also used as an investment instrument or a means to earn profits (Safitri et al., 2022). Foreign exchange transactions have developed very rapidly after the implementation

of the free-floating system, due to the increasing interest of market participants and individual investors who seek to profit from exchange rate movements, so that now many private investors are entering the world of foreign exchange trading solely for profit. In the digital era, foreign exchange transactions are met with ease of access. This certainly simplifies the transaction process and at the same time facilitates access to information on global foreign exchange movements. However, the risks that are present also appear along with the opportunities that exist (Purwanggono et al., 2022). Thus, risk management becomes an urgency that cannot be underestimated considering there is so much unpredictability in today's foreign exchange circulation.

Forex (Foreign Exchange) is the largest financial market in the world, where currencies from different countries are traded (Zyen, 2017). While the profit potential in this market is huge, the risks are also high, and that is why good risk management and investment strategies are indispensable (Sofyanty et al., 2022a). Some important aspects of Risk Management and Investment Strategies in Forex online trading include risk management, investment planning, diversification, use of leverage, market analysis and trading strategies, managing emotions, and learning and practicing (Fauji & Puspasari, 2022). Risk management is an approach that aims to manage the risks in your trading (Sinaga et al., 2023). The goal is to protect your capital from large losses and maintain consistency in your trading results (Suryaningsum et al., 2016). One of the commonly used tools in risk management is stop loss setting, which is setting a specific price level at which a trade will be automatically closed if the price moves against your prediction. The use of stop loss is essential to prevent large losses (Saputra, 2023).

Before starting Forex trading, you need to have a clear investment plan. This includes defining your investment goals, the amount of capital you are prepared to risk, and the time frame of your investment. By having a good plan in place, you can avoid making emotional decisions that could adversely affect your trading (Silaya & Joseph, 2021). Next is diversification which is an investment strategy that involves spreading your capital across different assets and trading instruments (Samsudin et al., 2023). In the context of Forex, diversification can mean not relying on just one currency pair, but trading multiple currency pairs simultaneously (Kusumaningrum & SE, 2017). Diversification can help reduce overall risk and avoid dependence on a single position (Aji et al., 2023). Leverage is a loan from a broker that allows you to trade with a larger amount of capital than you have available (Irfani, 2020). While leverage can magnify potential profits, it also increases the risk of loss (Delvira & Nelvirita, 2013). Therefore, it is important to use leverage wisely and only within the limits that you are comfortable with.

Before trading, conduct market analysis to identify potential opportunities. There are two main types of analysis in Forex trading: technical analysis and fundamental analysis (Artha et al., 2014). Technical analysis uses charts and indicators to understand price patterns and market trends. Fundamental analysis, on the other hand, analyzes the economic, political, and social factors that can affect the value of a currency. A combination of these two types of analysis can help you make better trading decisions. Forex trading can trigger emotions such as greed, fear, and avarice, which can interfere with rational decision-making. It is important to learn to control your emotions and stay calm during the trading process. Forex is a complex and ever-changing market. It is important to keep learning and honing your trading skills. Practicing with a demo account before using real money can also help you understand how the market functions and test strategies without facing financial risk.

Trading strategies aren't always 100% successful, and losses are part of trading. However, with good risk management and the right investment strategy will increase the chances of success. The results of the study by (Dewi, 2022) state that risk management has a significant effect on online forex trading, risk management has a significant effect on profit trading, investment strategies have a significant effect on online forex trading, investment strategies have a significant effect on profit trading, and online forex trading has a significant effect on profit trading. Research by (Hutabarat, 2010) proves that risk management and investment strategy influence significantly forex online trading and investor value added, and forex online trading influence significantly investor's value added. This is shown by the result of data analysis using PLS that T-test value is more than 1,96 for all. Specifically for risk management, having negative influence significantly over investor's value added. This means that by doing risk management, in this case doing averaging, will lower the investor's value added.

From the description above, it is hoped that this research will provide an enlightening description of the risk management that exists in Forex Online Trading, as well as alternative investment strategies that are most likely to be involved in the world of trade, especially in Forex Online Trading. In addition, the results of this study are also expected to enrich references to review how the risks in Forex Online Trading can be overcome and then look for gaps with the highest opportunities to get profits with minimal risk. Forex trading or foreign exchange trading is nothing new in the world of investment, this investment instrument was born thanks to technological advances (Serfiyani et al., 2021). Now forex investment has become a trend that is increasingly in demand by the public, both from professionals such as entrepreneurs, employees, students to housewives. Everyone can

trade anytime, anywhere easily accessible through gadgets. In the digital era, foreign exchange transactions are met with ease of access. This certainly simplifies the transaction process and at the same time facilitates access to information on global foreign exchange movements.

The results of research conducted by (Hutabarat, 2010) at PT. Monex Investindo Futures in Surabaya that risk management has a positive and significant influence on online forex trading, so it can be said that by carrying out risk management, investors who are interested in investing in online forex trading will be encouraged to invest in online forex trading. This is in line with research that has been conducted by (Sofyanty et al., 2022b), it was found that risk in forex trading is the risk of changes that occur unexpectedly causing market conditions to reverse direction, this can be caused by economic and political events that affect market movements. Foreign exchange trading carries high risks, such as a fluctuating market, and economic, social, or political conditions that have the potential to make the market go in the opposite direction, causing customers to lose a certain amount of money in a short time. For this reason, a logical basis for consideration is needed before trading foreign exchange, such as: mastering technical and fundamental analysis, making trading plans, and being disciplined in implementing trading plans to avoid greed which often results in customers losing their money. Customers need to master risk management to mitigate or minimize risk (Sofyanty et al., 2022).

Method

The method in this study uses a qualitative method and is described descriptively. Qualitative research methods are used because of the consideration that the object of study is dynamic and developing. The data collection technique used in this article is a literature study, meaning that the author searches for and collects various references such as books, scientific articles, and so on as far as they are relevant to the research topic and then examines them. The analytical method applied is qualitative analysis with reference to the indicators raised in risk management and investment strategies. The final conclusion is drawn through the data that is sorted and then presented deductively.

Results and Discussions

Forex Online Trading

Forex Online Trading is a type of trade or transaction that is engaged in trading the currency of a country on the currency of another country by involving the main money markets in the world for twenty-four hours continuously. Foreign exchange circulation that moves globally for twenty-four hours can also mean that the forex market lasts for twenty-four hours. The prospect of investing in Forex Online Trading can be said to be high, but at the same time it also contains the same high risk.

Alwiyah and Liyanto (2012) explain that Forex is an acronym for foreign exchange and in Indonesian it is better known as foreign exchange (foreign exchange) is a trade in the currencies of two countries whose value changes from time to time, either changing to strengthen or weaken. A currency is said to be weak if it requires more units of money to buy another currency, and conversely a currency is said to be strengthening if fewer units of money are needed to buy another currency (Liyanto&Alwiyah, 2012). Alwiyah and Liyanto (2012) continue that profit in forex trading comes from price movements of a country's currency against the currencies of other countries being transacted. Price movements are influenced by the level of supply and demand which is manifested in technical factors and is also influenced by fundamental factors of the country concerned. In general, the main players in Forex Online Trading have their own motives, goals, and strategies according to their goals and interests. (Liyanto&Alwiyah, 2012).

In more detail, Hulwati explains that the foreign exchange (forex) exchange is a type of trade or transaction that trades the currency of a country against other countries' currencies (currency pairs/pairs) involving foreign markets (Ramadhan, 2019). major financial markets in the world for 24 hours continuously. The movement of the foreign exchange market revolved from the New Zealand and Australian markets which took place at 05.00-14.00 WIB, then to the Asian markets, namely Japan, Singapore and Hong Kong which took place at 07.00-16.00 WIB, to the European markets, namely Germany and the UK which took place at 13.00. -22.00 WIB, arrived at the United States market which took place at 20.30-10.30 WIB. In its historical development, the Central Banks of countries with the largest foreign currency reserves can be defeated by the forces of the free foreign exchange market. Several parties involved in it, namely:

Central Bank

Central Banks follow monetary policy and they also have their strategy to direct the currency according to that policy. Pressure from the Central Bank can have an important impact on the exchange rate of this currency so

that market participants are required to continue to monitor and be prepared to respond to movements from the Central Bank.

Commercial Bank

Commercial Banks are here to protect their assets and serve the needs of customers. Commercial Bank customers are more often involved in export/import activities, which therefore require foreign currency. Commercial banks buy and resell foreign currency to their customers. This activity is said to be able to provide more than 2/3 of the daily number of forex transactions that have an impact on exchange rates along with changes in supply and demand.

Broker

Brokers serve to provide individual traders with access to trade currencies, commodity markets, as well as stocks. They are the ones who maintain market liquidity and ensure that clients will always meet with sellers, and vice versa.

Other Groups or Rite Investors

These other groups or Rite Investors are in direct contact with various needs with the aim of protecting the value of their assets, protecting them from risks that can arise from the transaction process, and also simply speculating to make money.

Risk Management in Forex Online Trading

Harimurti explains that risk management is a management activity carried out at the executive leadership level, namely the activity of systematic discovery and analysis of losses that may be faced by business entities, due to a risk and the most appropriate method to deal with these losses. raised by the level of profitability of the business entity. In the context of this research, "business entities" can be banks, brokers, governments, individuals (traders), who work in the world of foreign exchange.

Soemitra (2009) explains that in buying and selling between banks and customers such as bank notes, traveller cheques, current accounts or forex deposits, the delivery can be made at the time of the transaction, but for forex transactions carried out in international trade, the delivery can not always be made at the time of the transaction, given the relatively long distance, time difference, and large transaction volume, although in the end all transactions are closed in cash (spot) (Soemitra, 2009). Therefore, there are 4 types of transactions that can be conducted at the forex exchange, namely:

Cash Transactions

In cash transactions, the delivery of forex is usually set 2 business days later. For example, if the forex sale and purchase contract is closed on the 10th, the delivery will be made on the 12th, but if the 12th is a Sunday or a holiday in the home country, the delivery can be made on the next day. The settlement date of such transactions is called the exchange date or value date.

Forward Transaction

In futures transactions, delivery is made over the next few days either on a weekly or monthly basis. The rate is made at the time the contract is made, but payment is made at some time in the future in accordance with the term. As a result, the rate used in this kind of transaction is called a premium and the opposite is called a discount. These futures transactions are often done to hedge against exchange rate fluctuations and guarantee the value of future bills as well as for speculation purposes.

Barter Transaction

Barter transactions in the interbank market are the simultaneous buying and selling of a certain amount of currency with 2 different exchange (delivery) dates. Thus, a barter transaction is a combination between buyers and sellers for two currencies in cash followed by buying and reselling the same currency for cash and futures on a stimulant basis within different time limits. Barter transactions are often called exchange transactions of a currency for a certain period of time and barter transactions of the purchase amount of a currency is always the same as the amount sold, therefore it does not change the position of the profit exchange.

Option Transaction

An option transaction is a financial contract that gives the buyer the right and the seller the obligation to buy or sell something at a certain price, unit, and time. The buyer in this case is the party who transfers the risk to the seller by paying a premium. Through this agreement, the buyer does not want to accept the risk of exceeding the premium paid but has the right to take unlimited profits. While on the other hand, the seller is the party who receives the premium as the maximum profit and is willing to bear unlimited losses. Each type of transaction certainly has risks. To look at the possibilities and efforts to minimize risk, a risk management in forex is needed, and to be able to look towards it, knowledge about the risks that may arise is needed. Reporting from (Alfath&Cahyo, 2021) explained that trading risks are divided into two, namely: (1) Total Equity Risk:

Professional traders usually recommend that total risk be limited to a maximum of only 20-30%. That is, traders only use a maximum of 20-30% of the total equity for forex trading at one time. Cautious traders will share it more specifically, which is around 2-5% per trading position. (2) Risk per Trading Position: Once you have defined the total equity risk limit, then risk management per trading position can be applied. This risk management practice is simple, namely determining and placing a stop loss (SL). There are various methods for determining stop losses, including risk/reward ratios. However, the risks in trading are not only confined to the areas of trading that have the opportunity to be controlled, but there are also risks that are beyond the reach of traders and need to be observed. This type of risk is referred to as market risk. (Alfath&Cahyo, 2021) again describes the alternative countermeasures to overcome the market risk, namely:

Portfolio Diversification

Diversification means collecting various trading instruments so that we don't go bankrupt when we make one prediction. Diversification can be done by collecting various trading instruments based on their correlation. We can also consider not focusing on forex only, but also mutual funds and stocks.

Understanding Price Changes and Volatility

The price of all instruments in the market is always up and down. However, there are instruments that are turbulent and some whose movements are more muted. We need to understand forex price volatility in order to better manage our trades.

Understanding Leverage and Margin

Leverage risk can be defined as the risk that arises due to the use of a capital scale that is larger than the paid-in capital. In forex trading, we can buy or sell an instrument for \$100,000, - by only depositing a guaranteed fund of \$1,000, - and using a leverage of 1:100. The greater the leverage we choose, the smaller the guarantee fund we need to deposit. This condition is profitable at first glance, because we can capture more and more trading opportunities with limited capital. However, what if our position is at a loss? Of course, our security deposit will also run out quickly along with changes in market prices.

Investment Strategy on Forex Online Trading

Suryanto (2002, p. 80) argues that economic actors, hereinafter referred to as investors, seek to maximize the returns invested with various instruments such as financial statement analysis and techniques used to carry out investment actions. In general, there are many ways that are used and are universal in investment that apply over time. With the analysis of financial statements and the techniques used, market participants can maximize the expected return on investment. (Suryanto, 2002). In an effort to invest in Forex Online Trading, a strategy is needed that can increase investment opportunities with minimal risk. (Mesakh et al., 2017) argue that there is a lot of trading in the forex world, and with that offered three types of trading strategies to be applied as an alternative investment strategy in Forex Online Trading as follows:

Martingale Trading Strategy

The Martingale Trading Strategy is one way of forex trading that is often used by traders. Historically, this technique was first formulated in France in the early 18th century where this technique was used by gamblers to win bets (Zhou & Li, 2021). In forex, the Martingale strategy is used to make a profit while closing the total loss of the previous transaction through capital (Menkveld, 2013). Therefore, when using the Martingale strategy, the risk on subsequent transactions always increases as losses increase. The advantage of this strategy is that when you make a transaction of several lots and if the result is a loss, then the next transaction uses 2 times the lot, so that when the last transaction is profitable, the profit can already cover the losses from the previous transaction. The steps are as follows: First, place 1 lot and lose, second place 2 lots (2 times the previous) and lose, third place 4 lots and lose, fourth, place 8 lots and finally win.

Trading Strategy by News

Although Trading by News carries much less risk than other strategies, this does not mean that this type of strategy is completely easy. Observing one by one the characteristics of all is the first step that must be taken in the Trading by News strategy by assessing it through indicators. There are three possibilities for someone to trade without indicators. The first is a fundamentalist so that he trades without using technical indicators, the second is a blind trader, namely a trader who uses mathematical logic and statistics so that he does not use technical analysis to find entry points. Third are technicalists who trade only by reading charts to predict the next market direction. Technicalists believe that market movements are repetitive, so that future movements can be predicted by looking at previous movements and the flow of market movements can be read.

Pending Order Trading Strategy

This strategy is broadly an order that will be executed if it touches a certain price point. Pending Order itself is divided into 4 types, namely: (1) Buy Stop. Installing (by booking) a buy above the current price, with the hope that the running price chart will move up to a certain point, and at that point a buy will automatically be installed

in the hope that the chart can move up again in order to get a profit. (2) Sell Stop. Installing (by booking) sell below the current price, with the hope that if the running price chart drops to a certain point, and at that point a sell will automatically be installed in the hope that the chart can move down again so that it is profitable. (3) Buy Limit. Installing (by booking) buys below the current price, with the hope that if the running price chart moves to a certain point, and at that point a buy will be automatically installed in the hope that after that the chart can move to make a profit. (4) Sell Limit. (5) Installing (by booking) sell above the current price, with the hope that if the running price chart moves to a certain point, and at that point a sell will be automatically installed in the hope that after that the chart can move to make a profit.

Conclusions

Risk management in Forex Online Trading can be reviewed through risks that can be reached by traders, as well as market risks that cannot be reached by traders. The first risk can be reviewed through total equity risk and trading position risk, while market risk can be reviewed through portfolio diversification, understanding price changes and volatility, and understanding leverage and margin. An investment strategy in Forex Online Trading can be considered through four types of methods, namely the Martingale trading strategy, the Trading by News strategy, and the Pending Order strategy.

References

- Aji, G., Febrianti, E., Karima, D. A., Iqbal, A. D., & Setiani, N. E. (2023). Analisis Strategi Pengembangan Bisnis Pada Pt Goto Gojek Tokopedia Untuk Pertumbuhan Jangka Panjang Pasca IPO. *GEMILANG: Jurnal Manajemen Dan Akuntansi*, 3(3), 49–59. <https://doi.org/https://doi.org/10.56910/gemilang.v3i3.606>
- Alfath, R. F., & Cahyo, W. N. (2021). Manajemen Risiko Dalam Bisnis Forex Dengan Metode House Of Risk. *Jurnal Teknologi*, 14(1), 1–9.
- Artha, D. R., Achسانی, N. A., & Sasongko, H. (2014). Analisis fundamental, teknikal dan makroekonomi harga saham sektor pertanian. *Jurnal Manajemen Dan Kewirausahaan*, 16(2), 175–184. <https://doi.org/https://doi.org/10.9744/jmk.16.2.175-184>
- Delvira, M., & Nelvirita, N. (2013). Pengaruh Risiko Sistematis, Leverage Dan Persistensi Laba Terhadap Earnings Response Coefficient (ERC). *Wahana Riset Akuntansi*, 1(1), 129–154. <https://doi.org/https://doi.org/10.24036/wra.v1i1.2317>
- Dewi, D. M. (2022). Relationship between Risk Management and Investment Strategy on Profit Forex Trading Online Gold. *Open Access Indonesia Journal of Social Sciences*, 5(3), 726–740.
- Elder, A. (2014). *The new trading for a living: psychology, discipline, trading tools and systems, risk control, trade management*. John Wiley & Sons.
- Fauji, D. A. Y. U. S., & Puspasari, I. D. (2022). *Manajemen Keuangan Strategik Diskursus Keputusan Pendanaan, Keputusan Investasi dan Kebijakan Dividen*. <http://repository.unpkediri.ac.id/4731/>
- Hutabarat, L. H. (2010). Analisa Manajemen Resiko Dan Strategi Investasi Pada Forex Online Trading Dan Pengaruhnya Terhadap Value Added Investor Di PT. Monex Investindo Futures. *DiE: Jurnal Ilmu Ekonomi Dan Manajemen*, 6(2).
- Irfani, A. S. (2020). *Manajemen Keuangan dan Bisnis; Teori dan Aplikasi*. Gramedia Pustaka Utama.
- Kusumaningrum, R. S. D., & SE, M. P. M. (2017). *Metode Analisis Teknikal dan Fundamental Dalam Forex Trading pada PT. Monex Investindo Futures*.
- Liyanto, L., & Alwiyah, A. (2012). Analisis Teknikal Untuk Mendapatkan Profit Dalam Forex Trading Online. *Buletin Studi Ekonomi*, 17, 44229.
- May, E. (2011). *Smart Traders Not Gamb-Ellen May. pdf*. Jakarta: PT. Gramedia Pustaka Utama.
- Menkveld, A. J. (2013). High frequency trading and the new market makers. *Journal of Financial Markets*, 16(4), 712–740. <https://doi.org/https://doi.org/10.1016/j.finmar.2013.06.006>
- Mesakh, A., Foeh, R. E., & Andriyani, S. (2017). Strategi Trading Mata Uang Asing (Valuta Asing/Foreign Exchange). *Journal of Management Small and Medium Enterprises (SMEs)*, 4(1), 117–137.
- Purwanggono, C. J., Anantadjaya, S. P. D., & Wibowo, T. S. (2022). Analysis of The Effect Earnings Management, Financial Ratios, Governance On Bond. *Quantitative Economics and Management Studies*, 3(6), 965–975.
- Ramadhan, B. (2019). Pengaruh Analisis Teknikal Terhadap Pengambilan Keputusan Sharia Online Trading Dengan Perilaku Maisir Sebagai Variabel Moderating ada Pengguna Akun Forex Di PT. Soegee Futures Surabaya. *Anal. Tek.*

- Safitri, K. I., Abdoellah, O. S., Gunawan, B., Suparman, Y., & Parikesit, P. (2022). Market Pressure Based on International Food Standards in Export-Scale Urban Farming: Political Ecology Perspective. *The Qualitative Report*, 27(5), 1311–1333.
- Samsudin, A., Aritonang, C., Munthe, G. R. A., Monalisa, W., & Hutasoit, Y. G. (2023). Analisis Risiko Investasi Saham Melalui Diversifikasi Portofolio secara Domestik dan Internasional. *El-Mal: Jurnal Kajian Ekonomi & Bisnis Islam*, 4(5), 1330–1351. <https://doi.org/https://doi.org/10.47467/elmal.v4i5.2895>
- Saputra, Y. E. A. (2023). Analisis Tren Saham Cfd, Forex Dan Kripto Menggunakan Pendekatan Fuzzy. *Jurnal Vokasi Indonesia*, 11(1), 1. <https://scholarhub.ui.ac.id/jvi/vol11/iss1/1/>
- Serfiyanti, D. R. C. Y., SH, M. H., Purnomo, I. R. R. S. D., Hariyani, I., & SH, M. H. (2021). *Capital market top secret: Ramuan sukses bisnis pasar modal Indonesia*. Penerbit Andi.
- Silaya, M. A., & Joseph, C. N. (2021). *Illusion of Control Investor Financial Behavior*. Nilacakra.
- Sinaga, I. S. A., Yusrizal, Y., & Rahmadani, S. (2023). Analisis Manajemen Resiko Penggunaan Digital Payment: (Studi Kasus Pada PT. Bank Syariah Indonesia, Tbk KC Medan S. Parman). *JIKEM: Jurnal Ilmu Komputer, Ekonomi Dan Manajemen*, 3(1), 647–685.
- Sofyanty, D., Yanti, V. A., Ong, D., & Suwantica, S. (2022a). Manajemen Risiko dalam Transaksi Perdagangan Valuta Asing. *Jurnal Ilmiah Universitas Batanghari Jambi*, 22(2), 1236–1243. <https://doi.org/http://dx.doi.org/10.33087/jiubj.v22i2.2418>
- Sofyanty, D., Yanti, V. A., Ong, D., & Suwantica, S. (2022b). Manajemen Risiko dalam Transaksi Perdagangan Valuta Asing. *Jurnal Ilmiah Universitas Batanghari Jambi*, 22(2), 1236–1243.
- Suryaningsum, S., Wulandari, R., & Ahmadyansyah, A. (2016). *Manajemen Risiko. Cet 1*. LPPM Universitas Pembangunan Nasional" Veteran" Yogyakarta.
- Suryanto, S. (2002). Strategi Investasi di Bursa Saham. *The Winners*, 3(1), 79–87.
- Zhou, D., & Li, S. (2021). The construction of an automatic trading system with a high return-to-risk ratio based on the model of adding positions following trend. *2021 2nd International Conference on Computer Science and Management Technology (ICCSMT)*, 42–47.
- Zyen, A. K. (2017). Pengembangan Model Support Vector Machines (Svm) Dengan Memperbanyak Dataset Untuk Prediksi Bisnis Forex Menggunakan Metode Kernel Trick. *Jurnal Informatika Upgris*, 3(1). <https://doi.org/https://doi.org/10.26877/jiu.v3i1.1535>