International Conference on Sustainable Economics, Management, and Accounting (ICSEMA 2025)
Proceedings
Vol. 01 No. 01 Year 2025, Page 860-867

BEYOND UNCERTAINTY: DIRECT INVESTMENT OPPORTUNITY AND RISK MANAGEMENT STRATEGY FOR FINANCIAL RESILIENCE IN BPJS KETENAGAKERJAAN

Eko Purnomo[1*], Suharno[2], Diah Setyorini Gunawan[3], Rinny Apriliany Zakaria[4]

[1,-4] Faculty of Economics and Business, University of Jenderal Soedirman, Indonesia
[*]Email corresponding author: eko.purnomo@mhs.unsoed.ac.id

Abstract

BPJS Ketenagakerjaan plays a strategic role in managing social security funds and labor protection programs. Amid significant market uncertainty, efficient and optimal investment fund management is a major challenge, given that its investment instruments -such as equities, bonds, and property- are highly sensitive to economic fluctuations. Therefore, using a mixed-method approach, this study examines direct investment opportunities and appropriate risk management strategies for BPJS Ketenagakerjaan in building financial resilience against market uncertainty. The findings indicate that BPJS Ketenagakerjaan still has substantial investment opportunities, provided that prudent risk management and return considerations are maintained. This research highlights the importance of combining responsible asset allocation, instrument diversification and applying prudential principles to achieve long-term financial resilience.

Keywords: Investment Opportunity, Risk Management Strategy, Financial Resilience

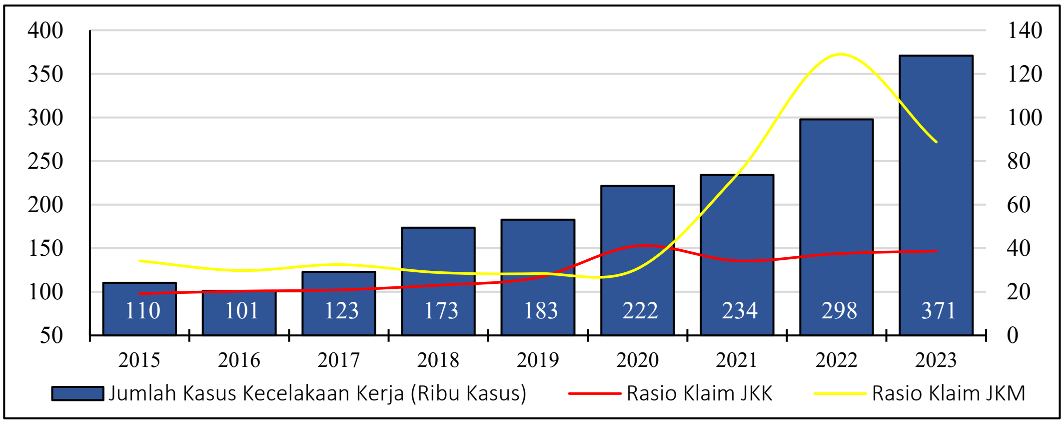
INTRODUCTION

Social security programs are policies designed to provide protection to the community, particularly vulnerable and marginalized groups, such as people with disabilities, the elderly, informal workers, and low-income families. Amid global turmoil and uncertainty, these policies serve as a pillar of social and economic resilience by offering protection against employment risks, enhancing well-being, and fostering inclusive economic development. Empirical evidence from previous studies indicates that social security programs can stimulate the economy, provide protection against poverty and vulnerability, and act as economic and social stabilizers (Cardoso et al., 2025; Sangeetha et al., 2025).

Indonesia already has a comprehensive social security system. The social security system in Indonesia is managed by the Social Security Agency (BPJS), which focuses on public health (BPJS Kesehatan) and employment (BPJS Ketenagakerjaan). Legally, the establishment of BPJS is mandated by Law No. 40 of 2004 on the Social Security System (SJSN), which is implemented through Law No. 24 of 2011 on the Social Security Administration Agency. These two legal foundations give BPJS a legitimate legal standing and establish it as a non-profit state entity tasked with implementing social security programs for the benefit of the people. As the population continues to grow, accompanied by an increasing number of workers—though predominantly in the informal sector—this highlights the pressures on the labor market. The existence of BPJS Ketenagakerjaan is thus required to serve as a financial safety net for workers.

Although the number of BPJS Employment participants tends to increase, the coverage of active BPJS Employment participants still faces several challenges and has not reached all workers. Many microeconomic sectors such as SMEs and informal workers remain unregistered and inactive in paying premiums (Indriani et al., 2024). In Diana & Syarvina (2022) and Septiani et al., (2025), workers with low incomes and education levels, as well as women, have low participation rates, indicating structural gaps and gender bias in accessing social protection services. Several factors were identified, such as insufficient education and information for the public, low compliance among employers, and complex administrative barriers for workers (Agustina et al., 2019; Suryahadi et al., 2014).

Furthermore, the collection of contributions and distribution of BPJS Employment benefits also show a positive trend. However, conditions on the ground indicate that the collection of contributions and the distribution of benefits are still hindered by several challenges, such as low compliance rates among employers, the dominance of the informal sector which is difficult to reach, and inaccuracies in data between government agencies (Chłoń-Domińczak et al., 2023; Putri & Hartini, 2024). Additionally, contributions and benefits under the BPJS Ketenagakerjaan program are primarily allocated to the Social Security for Old Age (JHT) program, which is inherently a long-term social security program. Meanwhile, contributions and benefits for Work Accident Insurance (JKK) and Death Insurance (JKM) remain low, despite these programs providing protection against conditions that can occur at any time and have a short-term dimension. In fact, JKK and JKM are two crucial elements in the social protection program by BPJS Ketenagakerjaan. JKK provides health services for workers, including medical treatment costs, income compensation, disability benefits, and even a Return to Work (RTW) rehabilitation program. Meanwhile, JKM provides death benefits and scholarships for children of BPJS participants who have passed away (Lely et al., 2020).



Sources: (i) Annual Report of BPJS Ketenagakerjaan; (ii) Ministry of Manpower

Figure 1. Number of Work Accident Cases and JKK and JKM Claims

Referring to Figure 1, workplace accident cases in Indonesia remain very high and are likely to continue increasing. Without the JKK and JKM protection programs from BPJS, such incidents could plunge workers and their families into even more severe poverty. Given the conditions on the ground and the facts above, improving workers' health services and access to healthcare has become a priority for the Social Security Administration Agency for Employment (BPJS Ketenagakerjaan). Despite having established partnerships with numerous healthcare facilities and providing a Trauma Center Hospital, there are still several obstacles hindering workers from accessing healthcare services, such as coordination and communication issues that often lack synchronization, which ultimately impede benefit claims, increase healthcare costs, and create disparities in service standards. Therefore, prudent management of contribution funds is necessary to maximize benefits for BPJS participants.

Legally, the management of social security funds at the Social Security Agency for Employment (BPJS Ketenagakerjaan) is regulated by Government Regulation of the Republic of Indonesia No. 99 of 2013 on the Management of Social Security Assets for Employment and Government Regulation of the Republic of Indonesia No. 55 of 2015 amending Government Regulation of the Republic of Indonesia No. 99 of 2013 on the Management of Social Security Assets for Employment. Under these two regulations, BPJS Ketenagakerjaan is required to fulfill its obligations to participants through the management of investment funds, taking into account aspects of solvency, liquidity, prudence, security, and optimal returns. At this point, BPJS

Ketenagakerjaan is faced with two principles: as a non-profit institution, it must also be able to manage investment funds that provide optimal returns. Therefore, this study aims to analyze how to optimize direct investment in the health sector and analyze its impact on society.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

In explaining the relationship between direct investment instruments and risk management in relation to financial resilience, two main theories can be used: the modern portfolio theory by Harry Markowitz and the financial resilience theory by Barbera and Howell. In the context of investment fund management at BPJS Ketenagakerjaan, these two theories describe how to minimize risk from investment instruments, thereby calculating their impact on investment returns amid economic volatility.

The Modern Portfolio Theory developed by Harry Markowitz serves as a reference in analyzing investment strategies, particularly those focused on optimizing returns through asset selection. This theory emphasizes that investors' decisions should not only consider a single type of instrument but also analyze the risk and return levels of the entire portfolio. In his analysis, Markowitz uses the mean-variance approach, which measures risk using the variance of asset return rates, and empowers investors to evaluate their instrument choices based on the trade-off between expected return rates and the risks they will face (Elton & Gruber, 1997; Lord, 2020). As stated by Eom et al., (2015), modern portfolio theory serves as a crucial foundation for developing diversification and portfolio allocation techniques, thereby creating an efficient portfolio that offers high returns and low risk.

Furthermore, other studies such as Praptiningsih (2012) have expanded this theory in various contexts, including the stock market in Indonesia and investment returns on various instruments. In her study, it is mentioned that within the scope of the Indonesia Stock Exchange, portfolio theory is adapted to suit domestic market conditions and investment performance in Indonesia. The research by Lotfi et al., (2021) also confirms that prudent portfolio management will provide maximum returns, even amid economic uncertainty, and proves that portfolio theory is relevant in both academic and practical contexts.

The second theory, financial resilience developed by Barbera, emphasizes an individual's ability to cope with various financial shocks and market uncertainties (Barbera et al., 2020). In the research by Agyeman et al., (2022) and Liu & Chen (2025), financial resilience is defined as the ability to adjust and adapt when financial pressures arise. This concept emphasizes the importance of strategic communication, financial planning, and capability development to enhance financial resilience in a broader context, including the impact of crises (Azmi et al., 2024; Bracci & Tallaki, 2021; Nyang'iye et al., 2022).

There are several significant parallel elements between financial resilience theory and modern portfolio theory. Portfolio theory focuses on optimizing portfolios by minimizing risk while maximizing returns through diversification (Agyemang et al., 2023; Liu et al., 2025). The recommended diversification strategy aligns with the principles of financial resilience, where careful planning and management of income and expenses can reduce financial risk (Boloș et al., 2019). By building a diversified portfolio, individuals and organizations can not only increase potential profits but also strengthen resilience against sudden economic fluctuations, in line with the principle that the strength of the financial system lies in its ability to adapt and recover (Białowolski et al., 2022).
Based on these two theories, the hypotheses developed in this study are:
H1 = Diversification strategies are expected to influence investment return rates.
H2 = Direct investment instruments are expected to influence overall investment return rates.

RESEARCH METHODS

This study uses a mixed-method approach, combining qualitative and quantitative methods, to obtain a more comprehensive picture of investment fund management at BPJS Ketenagakerjaan. This approach provides a deeper understanding, both through descriptive information obtained from BPJS Ketenagakerjaan's annual financial reports and numerical analysis that measures the relationship between investment factors and investment returns.

From a qualitative view, this study focuses on the analysis of secondary data obtained from BPJS Ketenagakerjaan's annual financial reports. These financial statements provide information related to investment fund allocation, the types of instruments used, and the strategies applied by BPJS Ketenagakerjaan in managing social security funds. Quantitatively, this study uses time-series analysis to analyze investment data from BPJS Ketenagakerjaan over a specific period. Linear regression is used to measure the influence of independent variables, namely direct investment instruments and risk management strategies, on the rate of return on investment obtained. The exchange rate variable is also included as a market risk indicator, as exchange rate fluctuations can affect the value of investments in instruments affected by the global market.

$$Y_t = \beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \varepsilon_t$$

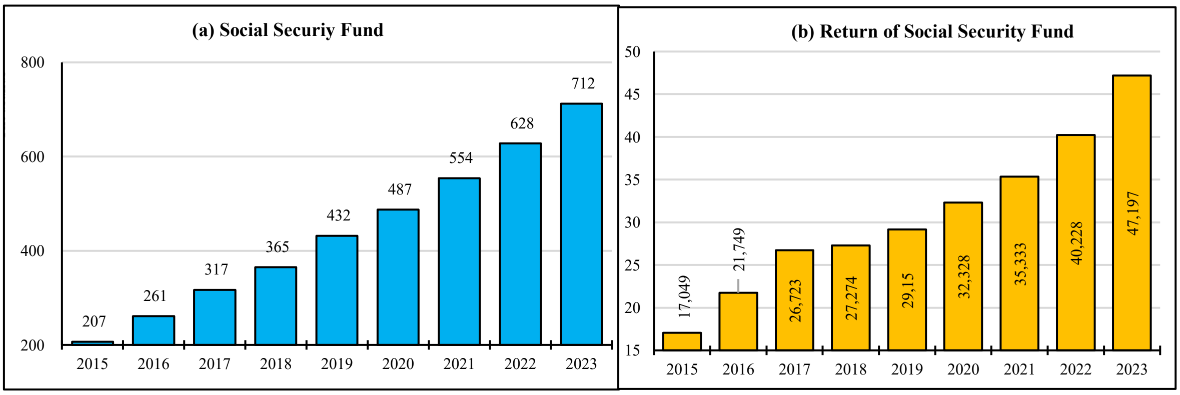
Variables Name	Measure of Variabel
Y_t	Return on Investment (Rp)
X_1	Allocation Funds for Direct Investment Instrument (Rp)
X_2	Risk Management Strategies, measured by Herfindhal-Hearsman Index
X_2	Market Risk, measured by Exchange Rate

Source: Author

Table 1. Definition of Variabels

RESULTS AND DISCUSSION

To address the research objectives, this study employs both qualitative and quantitative approaches. Therefore, the discussion structure in this subchapter begins with a qualitative analysis, presenting an overview of investment fund management at BPJS Ketenagakerjaan, followed by a quantitative numerical analysis showing how direct investment and risk management strategies can improve BPJS Ketenagakerjaan's investment returns.

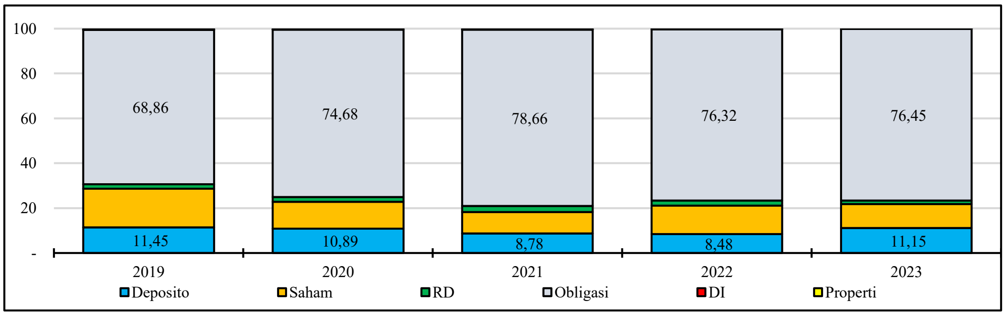


Source: BPJS Ketenagakerjaan Financial Statements

Figure 2. Management and Returns of BPJS Ketenagakerjaan Investment Funds

Based on Figure 2, it is evident that the investment funds managed by BPJS Ketenagakerjaan continue to increase, in line with the returns obtained from these investments. In terms of composition, the allocation and returns for the JHT program are significantly larger compared to other social programs. This figure indicates that during that period, BPJS Ketenagakerjaan's investments were primarily focused on long-term social programs. This underscores that long-term instruments, such as direct investments, are the appropriate choice for achieving higher investment returns.

In essence, BPJS Ketenagakerjaan holds six investment instruments: deposits, stocks, mutual funds, bonds, direct investments, and property. As shown in Figure 3, investment funds are primarily allocated to medium- to long-term instruments, namely bonds and deposits, followed by short-term instruments such as stocks and mutual funds. Meanwhile, direct investments and property have not yet shown significant figures.



Source: BPJS Ketenagakerjaan Annual Report

Figure 3. Investment Instruments in BPJS Ketenagakerjaan

The data in Figure 3 presents a new idea, namely the importance of encouraging investment allocation in direct participation instruments with the aim of improving access to BPJS Employment health services and facilities. This idea illustrates how to allocate investment funds from the JHT scheme into direct investment in the health sector, such as providing medical facilities for workplace accident victims, or direct investment by establishing new hospitals that serve as referral centers in the event of workplace accidents. However, this idea faces several challenges, particularly regarding regulatory constraints that limit direct investments to no more than 5% of the total social security fund investment portfolio and a maximum of 1% per recipient entity of the total investment funds. However, if we look at social security fund management institutions in other countries, it is possible to make direct investments with schemes that provide optimal returns (CPP Investment Board, 20128; Hunter et al., 2025; Sarney & Preneta, 2001; Temasek Singapore, 2021).

Table 2. Market Risk Indicators for BPJS Ketenagakerjaan Investment

Year	Portfolio Sensitivity to JCI Changes	SPI-Market Risk
2018	2.13	-12.18
2019	2.12	-12.37
2020	2.29	-21.86
2021	2.08	-27.82
2022	1.27	-25.18
2023	1.05	-27.81

Source: Financial Statements of JHT BPJS Ketenagakerjaan Fund

In addition, regarding risk management practices, Table 2 shows the sensitivity value of investment funds in BPJS Ketenagakerjaan to changes in market risk, in this case the IHSG. From the table, it can be seen that over the past seven years, investment funds have tended to be insensitive to changes in the IHSG. However, the investment valuation difference (SPI) regarding this sensitivity has tended to increase. This indicates the presence of unobserved variables causing this discrepancy.

Table 3. Regression Results

Independent Variables	Coefficient	Standard Error	Significance
Direct Investment	39.18	15.06	0.04*
Risk Management	308840	6602	0.00*
Exchange Rate	-7.26	2.57	0.03*
Constant	14492	27439	0.61
R-squared = 0.82			
Prob > F = 0.01			
Dependent Variable: Investment Return Yield			

Note: Significant at the 5% level

Source: Processing with STATA

Furthermore, Table 3 shows the statistical results of the regression analysis of direct investment variables (X1) and risk management strategies (X2) on investment returns as the dependent variable. The table also includes exchange rate variables as corrections and indicators of market risk. From this test, it is known that direct investment instruments have a positive effect on investment returns, which is in line with the hypothesis that has been formed. This means that increasing the allocation of direct investment is an appropriate step to enhance investment returns at BPJS Ketenagakerjaan. This finding supports the statement in the BPK release that BPJS Ketenagakerjaan needs to increase the proportion of investments in the form of direct equity investments, which are considered more profitable and consistent with financial health principles (Badan Pemeriksa Keuangan Indonesia, 2017).

Moreover, regarding risk management using diversification strategies, the findings also indicate acceptance of the hypothesis, namely that prudent risk management has a positive impact on investment returns. This finding indicates the need for a diversification strategy for financial instruments at BPJS Ketenagakerjaan, which currently still focuses more on short-term and medium-term instruments. With a diversification strategy, investment managers need to consider allocation to direct investment instruments, which empirically can enhance investment returns.

CONCLUSION

The results of this study confirm that investment opportunities, particularly direct investment in BPJS Ketenagakerjaan, remain quite high. This means that direct investment instruments are a good and safe choice for managing investment funds in BPJS Ketenagakerjaan. However, this decision must be balanced with a prudent risk management strategy, namely considering a diversification strategy in allocating investment funds. The findings of this study may provide recommendations for BPJS Ketenagakerjaan to increase investment allocation in direct investment instruments and strengthen regulations governing such investments.

BIBLIOGRAPHY

Agustina, R., Dartanto, T., Sitompul, R., Susiloretni, K. A., Suparmi, Achadi, E. L., Taher, A., Wirawan, F., Sungkar, S., Sudarmono, P., Shankar, A. H., Thabrany, H., Susiloretni, K. A., Soewondo, P., Ahmad, S. A., Kurniawan, M., Hidayat, B., Pardede, D., Mundiharno, … Khusun, H. (2019). Universal Health Coverage in Indonesia: Concept, Progress, and Challenges. *The Lancet*, *393*(10166), 75–102. https://doi.org/10.1016/S0140-6736(18)31647-7

Agyeman, G., Sakyi, D., & Fosu Oteng-Abayie, E. (2022). External debt and economic growth in selected sub-Saharan African countries: The role of capital flight. *Research in Globalization*, *5*. https://doi.org/10.1016/j.resglo.2022.100091

Agyemang, J., Azure, J. D., Kimani, D., & Arun, T. (2023). Governmental Financial Resilience During Pandemics: The Case of West Africa. *Journal of Public Budgeting Accounting & Financial Management*, *35*(3), 385–414. https://doi.org/10.1108/jpbafm-03-2021-0063

Azmi, R. A., Salloum, C., Pereira, R., Jarrar, H., & Verdié, J.-F. (2024). Strategic Change in Resolving the Efficiency-Equity Dilemma: A Novel Approach to Portfolio Selection. *Strategic Change*, *34*(3), 429–438. https://doi.org/10.1002/jsc.2624

Badan Pemeriksa Keuangan Indonesia. (2017). *Warta BPK: Menyoal Tanggungjawab Hasil Audit BPK*.

Barbera, C., Guarini, E., & Steccolini, I. (2020). How Do Governments Cope With Austerity? The Roles of Accounting in Shaping Governmental Financial Resilience. *Accounting Auditing & Accountability Journal*, *33*(3), 529–558. https://doi.org/10.1108/aaaj-11-2018-3739

Białowolski, P., Cwynar, A., & Węziak-Białowolska, D. (2022). The Role of Financial Literacy for Financial Resilience in Middle-Age and Older Adulthood. *The International Journal of Bank Marketing*, *40*(7), 1718–1748. https://doi.org/10.1108/ijbm-10-2021-0453

Boloș, M.-I., Bradea, I.-A., & Delcea, C. (2019). Neutrosophic Portfolios of Financial Assets. Minimizing the Risk of Neutrosophic Portfolios. *Mathematics*, *7*(11), 1046. https://doi.org/10.3390/math7111046

Bracci, E., & Tallaki, M. (2021). Resilience Capacities and Management Control Systems in Public Sector Organisations. *Journal of Accounting & Organizational Change*, *17*(3), 332–351. https://doi.org/10.1108/jaoc-10-2019-0111

Cardoso, D., Carvalho, L., Lima, G. T., Nassif-Pires, L., Rugitsky, F., & Sanches, M. (2025). The Multiplier Effects of Government Expenditures on Social Protection: A Multi-country Study. *Development and Change*, *56*(1), 172–224. https://doi.org/10.1111/dech.12869

Chłoń-Domińczak, A., Ebbinghaus, B., Granaglia, E., Klös, H.-P., Mathieu, C., Moisio, P., Pacolet, J., Stevens, Y., Szikra, D., & Toots, A. (2023). *The Future of Social Protection and of The Welfare State in The EU*.

CPP Investment Board. (20128). *Investing for Contributors & Beneficiaries*.

Diana, & Syarvina, W. (2022). Analysis of BPJS Employment Membership for Informal Sector Workers in Medan City (Case Study of BPJS Employment, North Medan Branch). *Jurnal Ekonomi Manajemen Akuntansi Dan Keuangan*, *3*(2), 479–484. https://doi.org/10.53697/emak.v3i2

Elton, E. J., & Gruber, M. J. (1997). Modern Portfolio Theory, 1950 to Date. *Journal of Banking & Finance*, *21*(11–12), 1743–1759. https://doi.org/10.1016/s0378-4266(97)00048-4

Eom, C., Park, J. W., Kim, Y. H., & Kaizoji, T. (2015). Effects of the Market Factor on Portfolio Diversification: The Case of Market Crashes. *Investment Analysts Journal*, *44*(1), 71–83. https://doi.org/10.1080/10293523.2015.994448

Hunter, B. M., Chakravarthi, I., Marathe, S., & Murray, S. F. (2025). Financialisation and the Reshaping of Private Healthcare: A Case Study in India. *Sociology of Health and Illness*, *47*(4). https://doi.org/10.1111/1467-9566.70041

Indriani, R., Noviar, H., Hartini, Sani, S. R., & Alisman. (2024). Faktor-Faktor Yang Mempengaruhi Partisipasi Pekerja Informal Perempuan dalam Mengikuti Program BPJS Ketenagakerjaan Cabang Meulaboh. *INNOVATIVE: Journal of Social Science Research*, *4*(4).

Lely, T., Hutagaol, S., Tonggo, A., & Sihombing, M. (2020). Tanggungjawab Pemberi Kerja Terhadap Pekerja yang Mengalami Kecelakaan Kerja Berdasarkan Peraturan BPJS Ketenagakerjaan. *Jurnal Law Pro Justitia*, *IV*, 2020.

Liu, Z., & Chen, J. (2025). Socioeconomic Determinants and Health Outcomes of Financial Resilience Patterns. *Family & Community Health*, *48*(2), 97–107. https://doi.org/10.1097/fch.0000000000000426

Liu, Z., Chen, J., & Xiao, J. J. (2025). Financial Resilience: A Scoping Review, Conceptual Synthesis and Theoretical Framework. *The International Journal of Bank Marketing*, *43*(7), 1541–1576. https://doi.org/10.1108/ijbm-12-2024-0735

Lord, M. (2020). University Endowment Committees, Modern Portfolio Theory and Performance. *Journal of Risk and Financial Management*, *13*(9), 198. https://doi.org/10.3390/jrfm13090198

Lotfi, I., Lamiae, M., & Bouhadi, A. (2021). Asset Allocation by Unsupervised Learning. *Review of Economics and Finance*, *19*, 338–346. https://doi.org/10.55365/1923.x2021.19.34

Nyang'iye, S. A., Iraya, C., & Ochieng, D. E. (2022). Residential Mortgage Portfolio, Product Innovation and Performance of Commercial Banks in Kenya. *European Journal of Business Management and Research*, *7*(3), 184–193. https://doi.org/10.24018/ejbmr.2022.7.3.1439

Praptiningsih, M. (2012). Applying Portfolio Selection: A Case of Indonesia Stock Exchange. *Jurnal Manajemen Dan Kewirausahaan*, *14*(1). https://doi.org/10.9744/jmk.14.1.13-22

Putri, R. H., & Hartini, S. (2024). Overview of Compliance with Payment of Employment Social Security Contributions for the Wage Recipient Segment and Its Improvement Strategy. *Indonesian Journal of Social Technology*, *5*(10). http://jist.publikasiindonesia.id/

Sangeetha, P., Ilayasankar, S., & Johnsi, S. (2025). Reviving Growth: The Role of Fiscal Policy in Post-Pandemic Economic Recovery-An Applied Macroeconomic Analysis. *European Economic Letters*, *15*(2). http://eelet.org.uk

Sarney, M., & Preneta, A. M. (2001). The Canada Pension Plan's Experience with Investing Its Portfolio in Equities. In *Social Security Bulletin* • (Vol. 64, Issue 2).

Septiani, N. P. A., Meydianawati, L. G., & Sukadana, I. W. (2025). The Gap in Social Security Participation of Informal Workers in Indonesia. *Internationa Journal of Multidiciplinary and Analysis*, *08*(06). https://doi.org/10.47191/ijmra/v8-i06-01

Suryahadi, A., Febriany, V., & Yumna, A. (2014). *Expanding Social Security in Indonesia The Processes and Challenges*. www.unrisd.org

Temasek Singapore. (2021). *Tapping Investment Expertise and Diverse Networks to Help Fight the Virus*.