

# Social Insurance: Investment and Ability to Pay Claim

\*Alfiana<sup>a</sup>, Ervina CM Simatupang<sup>b</sup>, Kurniawan Saefullah<sup>c</sup>, Erie Febrian<sup>d</sup>,  
<sup>a, b</sup> Widyatama University, Indonesia, <sup>c, d</sup> Padjadjaran University, Indonesia  
\*Corresponding Author Email: HYPERLINK  
"mailto:alfiana.dra@widyatama.ac.id"[alfiana.dra@widyatama.ac.id](mailto:alfiana.dra@widyatama.ac.id),  
[ervina.simatupang@widyatama.ac.id](mailto:ervina.simatupang@widyatama.ac.id), [kurniawan.saefullah@unpad.ac.id](mailto:kurniawan.saefullah@unpad.ac.id),  
[erie\\_febrian@fe.unpad.ac.id](mailto:erie_febrian@fe.unpad.ac.id),

This study aims to find out what investment instruments influence the ability to pay the social insurance industry claims. The data used is secondary data from annual insurance statistics and monthly Indonesian insurance statistics from December 2014 to April 2019, and the research method used is multiple regression with descriptive verification research. The results show that investments in asset backed securities, investment fund real estate, and time deposits negatively affected premium adequacy to claim paid ratio, whereas investment in bond or sharia bonds, building with strata title or real estate for investment, direct investment has no effect on marketable securities issued by Republic of Indonesia. This research is useful for the social insurance industry in the context of placing their funds and for government to make policies so that the ability to pay the claims of the social insurance industry increases.

**Key words:** *Social insurance, investment portfolio, Premium Adequacy to Claim Paid Ratio, Indonesia.*

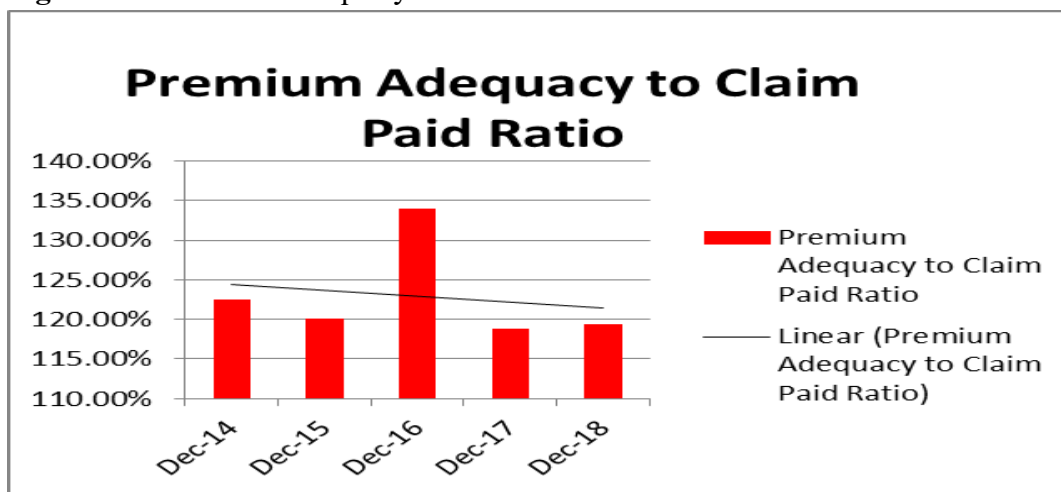
## Introduction

Social insurance as other insurances, is a contractual financial institution in which there is a contract in the form of rights and obligations of both participants and an organization where the social insurance participants pay contributions regularly in the hope of obtaining social security benefits from the organizer.

Social insurance in Indonesia, based on the Republic of Indonesia Law number 24 of 2011 concerning the social security organizing body (BPJS), consists of *BPJS Health* and *BPJS Employment* *BPJS Health* which organizes health insurance programs while *BPJS*

*Employment* organizes life insurance, old age insurance, work accident insurance programs, and pension benefits. Contributions collected from participants are social security funds which under Law No. 24 of 2011 article 1 point 3 trust funds, belong to all participants and are a collection of contributions along with the development results managed by BPJS for payment of benefits to participants and operational financing of guarantee programs social. During the research period of December 2014 until April 2019, there were benefits or claims that exceeded the premium / premium, namely January 2015 and January 2018 with a ratio of 94.06% and 98.24% respectively and there was a tendency to decrease the ability to pay claims, this is a research gap which can be seen in figure 1.

**Figure 1.** Premium Adequacy to Claim Paid Ratio



Source : 2015-2018 monthly Indonesian Insurance Statistics and 2014 Insurance Statistics

The premium adequacy ratio against claims is the simplest insurance industry financial ratio that reflects the insurance business of accepting community contributions, the funds are managed and developed in the hope of being able to pay claims / payments for insurance benefits. In accordance with the Law of the Republic of Indonesia number 24 of 2011 article 1 point 3, in addition to paying benefits to participants, BPJS must also finance operational costs such as general fees, administrative fees and marketing costs. This raises the research problem of social insurance participants and the government experiencing a decrease in the ability to pay claims / social security benefits because the BPJS aims to fulfil the guarantee of basic needs for decent living for each participant and / or family member.

Until now, monthly Indonesian insurance statistics have not provided a monthly income statement such as life insurance, general insurance, reinsurance, for social insurance and mandatory insurance. Insurance statistics have only been collected since 2014, therefore this study only uses a premium adequacy to claim paid ratio for social insurance as a ratio of financial performance to a dependent variable

The results of contributions / premiums collected by social insurance are managed and developed with the limitation of the rules regarding the types and limits of allowable investment, these regulations continue to change starting from the regulation of the finance minister number 53 / PMK.010 / 2012 then the Financial Services Authority (POJK) number 71 / POJK.05 / 2016 and most recently the regulation of the Financial Services Authority number 27 / POJK.05 / 2018 where investment in corporate bonds (Bond syariah and bond), marketable securities issued by the State of the Republic of Indonesia , mutual fund a maximum of 50%. Investment in stocks and securities are issued by multinational institutions up to 40%. Investment in asset backed securities, real estate investment funds, strata tile land and buildings or real estate for investment is a maximum of 20%. Investments in securities issued other than the Republic of Indonesia, direct investment, gold (gold) and secured loans with mortgage interest maximum of 10%. Investments in time deposits are a maximum of 5 % while other investments and securities issued by bank Indonesia are not restricted. How is the social insurance participant premium / premium allocated to the type and amount of the investment so that the results are able to pay the participant's claims / social security benefits and so that the independent variable is investment?

This research is very important because there are 51 million BPJS employment participants and 218.13 million BPJS health participants who expect benefits from participating in social insurance. If the social insurance cannot pay claims or participants do not benefit from the participation of social security, it will have an impact on the overall financial system instability

### **Literature Review**

The insurance according to Law Number 40 of 2014 concerning insurance is an agreement between the insurance company and policy holder, where the agreement becomes the basis of the insurance company to get premium in return:

- a. Provide replacement to the insured or policy holder due to losses, damages, costs incurred, loss of profits, or legal liability to third parties that may be suffered by the insured or policy holder due to an uncertain event; or
- b. Provide payments based on the death of the insured or payment based on the life of the insured with benefits which have been determined and / or based on the results of the management of funds.

There are several types of insurance, namely life insurance, general insurance, reinsurance, compulsory insurance and social insurance.

Social insurance under Law number 40 of 2004 concerning the national social security system is compulsory collection of public funds from community contributions to provide social protection and welfare to participants and / or their families (Saudi et al., 2019).. Social

insurance based on Law number 24 of 2011 concerning the social security organizing body is the BPJS employment and BPJS health. Funds from participant contributions are collected, managed and developed through allowable financial instruments. Regulation of the Minister of Finance Number 53 / PMK.010 / 2012, Regulation of the Financial Services Authority (POJK) number 71 / POJK.05 / 2016 and the Financial Services Authority number 27 / POJK.05 / 2018 regulate the type and maximum proportion of investment in the insurance industry as an application Markowitz portfolio theory (1952), namely how the insurance industry conducts an investment portfolio of various assets to maximize expected returns at a certain level of risk that investors are willing to bear (Sinaga et al., 2019). Diversification and combining various investment instruments into investment portfolios can minimize the risk of the insurance industry so that the results can meet insurance participant claims and finance operations such as general fees, administrative costs and marketing costs. The ratio used is in accordance with the minimum criteria of the financial services authority in the insurance policy report (monthly insurance statistic March 2016; Rauf, 2016) is the Premium Adequacy to Claim Paid Ratio,

Risks can be minimized through diversification and combining various investment instruments into portfolios. Implementing diversification in the pension fund industry by combining investment instruments to produce high returns on investment. Insurance and pension funds are contractual financial institutions so that research in the pension fund industry can be used in the insurance industry as Owusu et al (2016) in Ghana, the results show that: if you want to maximize returns at a minimum risk level of 3.6% you should invest 0.96% to loans and receivables, 10.3% to properties, 28.85% in one-year Treasury bills, 9.22% to investment available for sale, 24.19% to short-term investments, 10.3% to properties and 26.76% to student loans while if you want to minimize the risk is the percentage of the funding allocation of 1.37% in investment held to maturity, 19.56% in short-term investment, 53.65% in student loan, 5.87% in investment available for sale and 19.55% in properties.

Alfiana's (2018) research was conducted on all pension funds in Indonesia, then Alfiana and Andi Santika (2018) investigated employer pension funds that used defined contribution retirement plans, later Alfiana and Siska Putri (2018) researched the financial institution pension plan, and Alfiana, Simatupang, Borshalina (2018), pension funds as a whole while Alfiana, Simatupang, Asikin and Mulatsih (2019) investigated defined benefits from the employer pension plan pension plan. The research looks for investment instruments that have a positive or negative effect on return on investment by looking at the choice of financial instruments and not the proportion.

The results show that there are many differences in investment instruments that have a positive effect on Return On Investment, namely investment instruments in buildings, time deposits, building, government bonds, sukuk and asset backed security. Investment instruments which have a negative effect are shares, land-building, sukuk, direct placement in shares and mutual

funds. The difference in the results of this study is due to differences in the duration of the research, data, significant level and handling of the classic assumption test. If the investment instrument has a positive effect, it will increase the ability to pay claims to participants, meaning the social insurance industry has the ability to pay claims other than participant contributions. If the investment instrument has a negative effect, it will reduce the ability to pay claims to participants, which means there is a decrease in the ability to pay the claims of the social insurance industry.

## Research methods

This research is verificative research using multiple regressions with secondary data in the form of 8 investment instruments and premium adequacy to claim paid ratio sourced from monthly insurance statistics and annual insurance statistics from December 2014 to April 2019 using social insurance data

## Research Model

Premium Adequacy to Claim Paid Ratio =  $\gamma_0 + \gamma_1 \text{Asset Backed Securities} + \gamma_2 \text{Bonds or syaria bonds} + \gamma_3 \text{Building with strata title or real estate for investment} + \gamma_4 \text{Direct Investment} + \gamma_5 \text{Marketable securities issued by Republic Indonesia} + \gamma_6 \text{Real estate investment fund} + \gamma_7 \text{Stocks} + \gamma_8 \text{Time Deposit} + \varepsilon$

Where  $\gamma_0$  : Intercept and  $\gamma_1$  until are 8 are coefficient investment instrument ( *Asset Backed Security, Bonds or syaria bonds , Building with strata title or real estate for investment , Direct investment, marketable securities issued by Republic of Indonesia , real estate investment funds , stocks , time deposits* )

Hypotheses of this research were as follows:

- 1 H1 Investment instrument on Xi partially has no effect on Premium Adequacy to Claim Paid Ratio for social insurance
  - 2 H2 all investment instrument simultaneously has an effect on Premium Adequacy to Claim Paid Ratio social insurance
- Xi was investment instrument in social instrument, there were 8 instrument investments i from 1 to 8

## Hypothesis test

### T Test

- 1 H<sub>0</sub> 1 Xi investment instrument has no effect on Premium Adequacy to Claim Paid Ratio for social insurance

- 2 H<sub>1 1</sub> Xi investment instrument has an effect on Premium Adequacy to Claim Paid Ratio for social insurance  
description: i from 1 to 8  
Investment instruments in social insurance, there were 8 instrument investments, i from 1 to 8.

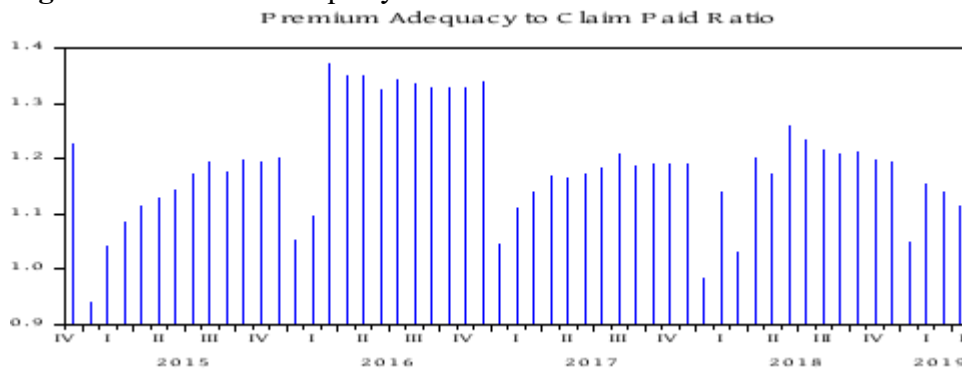
**F Test**

- 1 H<sub>0 2</sub> All simultaneous investment instruments have no effect on Premium Adequacy to Claim Paid Ratio for social insurance  
2 H<sub>1 2</sub> At least there was one influential investment of financial institution instrument on Premium Adequacy to Claim Paid Ratio for social insurance  
the significant level of  $\alpha = 0.05$

**Results and Discussion**

The premium adequacy to claim paid ratio monthly can be seen in figure 2.

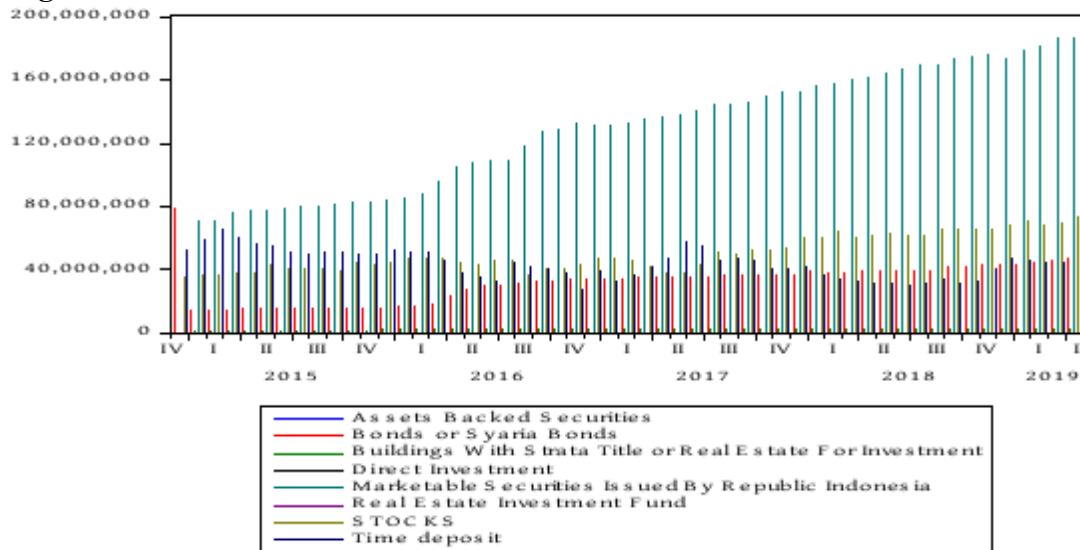
**Figure 2.** Premium Adequacy to Claim Paid Ratio



Sources: 2015-2019 monthly Indonesian Insurance Statistics and 2014 Insurance Statistics

Figure 2 shows fluctuations in the premium adequacy to claim paid ratio where in January 2015 and January 2018 the value is below 1 means that social insurance participant contributions are insufficient for payment of claims in the relevant month, and there is a downward trend in the Premium Adequacy to Claim Paid Ratio so that it is feared a decline in facilities from benefits received by insurance participants. Investment instruments used in social insurance to support payment of claims are shown in figure 3

**Figure 3.** 2014-2019 Social Insurance Investment Instrument



Sources: 2015-2019 monthly Indonesian Insurance Statistics and 2014 Insurance Statistics

In figure 3, there are fluctuations in the placement of social insurance funds in investment instruments of asset backed securities, bond or syaria bonds, buildings with strata title or real estate for investment, direct investment, marketable securities issued by Republic of Indonesia, investment real estate, stocks, time deposits and on average during the study period dominated by marketable securities issued by Republic of Indonesia at 45.55%, stock at 18.07%, time deposit amounting to 15.65%, bonds or syaria bonds of 11.38% and mutual funds of 8.52%.

After processing data, a good and proper research model (fit model) fulfils the classic assumption test by removing the investment instruments because there are multicollinearity problems as can be seen in the R square and F test in table 1. Table 1 shows that the research model has R square 49.14,%, this value indicates that changes in the premium adequacy to claim paid ratio can be explained by changes in changes in investment instruments by 49.14% the remaining 50.86% is influenced by other factors not included in this study such as internal and external factors.

Shown in Table 1 that Problem (F statistic) amounted to 0.000041 where the rate is smaller than the significant level  $\alpha$  of 0.05 means that  $H_0$  2 rejected, research models declared fit / decent. After the research model is formed, a T test was conducted to determine which investment instruments have an effect on the premium adequacy to claim paid ratio, the results on the column problem indicate that Asset backed securities, investment fund real estate and time deposit negatively affect premium adequacy to claim paid ratio because the value on the column problem is smaller than the significant level  $\alpha$  of 0.05, which means that  $H_0$  1 is rejected. Investment instruments bond or syaria bonds, building with strata title or real estate



for investment, Direct Investment, Marketable securities issued by Republic of Indonesia have no effect on premium adequacy to claim paid ratio.

**Table 1:** F Test, R Square and T test

Variable	Coefficient	Prob.
C	1.566190	0.0000
ASSETS_BACKED_SECURITIES	-1.77E-07	0.0039
BONDS_OR_SYARIA_BONDS	-1.42E-10	0.9147
BUILDINGS_WITH_STRATA_TI	-5.91E-08	0.4343
DIRECT_INVESTMENT	-9.77E-09	0.9949
MARKETABLE_SECURITIES_IS	1.90E-10	0.7922
REAL_ESTATE_INVESTMENT_F	-7.08E-05	0.0007
TIME_DEPOSIT	-4.25E-09	0.0177
Prob (F-statistic)	0.000041	
F-statistics	6.212581	
R-squared	0.491457	

Sources: Data Processing Result

Asset backed securities, investment fund real estate and time deposits negatively affect premium adequacy to claim paid ratio, which means an increase in placement of assets in Asset backed securities investment, investment fund real estate and time deposit will reduce the ability to pay claims from the social insurance industry (Hussain et al., 2019). Time deposit gets interest, but sometimes the interest rate is below inflation, and is taxed so that not contributing to the profit that will be used to pay the claim will eventually reduce premium adequacy to claim paid ratio. The real estate investment fund depends on location, price and consumer tastes so that it makes it impossible to sell, which ultimately puts funds in investment instruments

Real estate investment funds are detrimental and do not contribute to the profits paid for paying claims. Asset backed securities have an interest rate risk so that prices fluctuate. Asset backed securities and Asset backed securities prices will drop if there is an increase in interest rates. Repayment of Asset backed securities early will affect the yield received. Investing funds in investment instruments and asset backed securities will experience default if the debtor from a collateral asset goes bankrupt or is unable to pay on time for interest and principal loans. This reason means that planting funds in Asset backed securities will not generate profits nor contribute to the availability of funds for payment of claims that reduce premium adequacy to claim paid ratio. Research that discusses the ability to pay claims for the insurance industry is still very limited, so this research is the first step and paves the way for further research.





## Conclusions and recommendations

Limited regulation, social insurance financial data and research on the allocation of funds in investment instruments in the insurance industry, especially social insurance, have led to limited research in the field of social insurance. This study discusses the premium adequacy to claim paid ratio, which is the only financial performance data on monthly insurance statistics. This research is very important because if there is a decrease in the premium adequacy to claim paid ratio then it causes problems for social insurance participants if claims / insurance benefits are not paid, even though the government is obliged to provide for its citizens and currently 51 million participants of Employment BPJS and 218.3 million BPJS participants are healthy.

The results of this study indicate that of the 16 permitted investments for social insurance, the social insurance industry only uses 8 financial instruments and only 3 financial instruments that negatively affect the premium adequacy to claim paid ratio, namely Asset backed securities, investment fund real estate and time deposit. From these findings, it is advised that social insurance industries reduce the placement of funds in Asset-backed securities, investment fund real estate and time deposits and try other investment instruments as an alternative placement of funds for investment. For the government, this research is a red light for the social insurance industry related to the ability to pay for social insurance claims and can inform other policies especially for *BPJS* health.

## REFERENCES

- Alfiana 2018, The Influence of Portfolio Investment of Pension Fund to Profitability of Pension Fund Industry in Indonesia since The implementation of the Authority of Financial Service Regulations, Proceeding of the 5<sup>th</sup> International Conference on Business and Banking, 2-3 Agustut 2018, Denpasar Bali, ISBN : 978-602-96319-9-9
- Alfiana and Andi Santika 2018, The Effect of Pension Fund Investment Type on Profitability Defined Contribution Pension Plan from Employer Pension fund in Indonesia, Proceedings: 4th International Seminar and Conference 2018, The Society Empowerment though Creative Economics and Education in Disruptive Era November 15 2018, , Jakarta ISBN 978-602-17102-5-8
- Alfiana and Siska Putri 2018, The Impact of Pension Fund Investment Type on Return on Investment Financial Institutions Pension Fund Industry in Indonesia, Proceeding: 4th International Seminar and Conference 2018, The Society Empowerment though Creative Economics and Education in Disruptive Era November 15 2018 , Jakarta ISBN 978-602-17102-5-8
- Alfiana, Ervina CM Simatupang., Tita Borshalina 2018, Investment Portfolio of Pension Funds: Regulation and Implementation, International Journal of Engineering & Technology 7 (4.34) (2018) p.248-252 DOI: [10.14419 / ijet.v7i4. 34.23900](https://doi.org/10.14419/ijet.v7i4.34.23900)
- Alfiana, Ervina CM Simatupang, Bactiar Asikin, Listiana Sri Mulatsih, 2019, The effect of Investment Instrument of the pension fund toward return on investment of defined benefit pension plan from employer pension fund in Indonesia, Journal of Advanced Research Dynamical & Control system vol. 11 03 special issue, p. 190-196
- Financial Service Authority, 2014, statistik perasuransian 2014 viewed 1 Juni 2019 <https://www.ojk.go.id/id/kanal/iknb/data-dan-statistik/asuransi/Pages/Perasuransian-Indonesia-2014.aspx>
- Financial Service Authority, 2015, ikhtisar data keuangan asuransi sosial periode januari-desember 2015 viewed 1 Juni 2019 <https://www.ojk.go.id/id/kanal/iknb/data-dan-statistik/asuransi/Pages/Statistik-Asuransi---Desember-2016.aspx>
- Financial Service Authority, 2016, statistik asuransi desember 2016 viewed 1 Juni 2019 <https://www.ojk.go.id/id/kanal/iknb/data-dan-statistik/asuransi/Pages/Statistik-Asuransi---Desember-2016.aspx>



Financial Service Authority, 2017, statistik asuransi desember 2018 viewed 1 Juni 2019  
<https://www.ojk.go.id/id/kanal/iknb/data-dan-statistik/asuransi/Pages/Statistik-Asuransi---Desember-2017.aspx>

Financial Service Authority, 2018, statistik asuransi desember 2018 viewed 1 Juni 2019  
<https://www.ojk.go.id/id/kanal/iknb/data-dan-statistik/asuransi/Pages/Statistik-Asuransi---Desember-2018.aspx>

Financial Service Authority, 2019, statistik asuransi april 2019 viewed 1 Juni 2019  
<https://www.ojk.go.id/id/kanal/iknb/data-dan-statistik/asuransi/Pages/Statistik-Asuransi---April-2019.aspx>

Financial Service Authority, 2016 Financial Service Authority regulation no. 1/POJK.05/2016 concerning investment in government securities for non bank financial services, January, 11

Financial Service Authority, 2016 Financial Service Authority regulation no. 36/POJK.05/2016 concerning amendments to Financial Service Authority regulation no. 1/POJK.05/2016 investment in government securities for non bank financial services.

Financial Service Authority, 2017 Financial Service Authority regulation no. 56/POJK.05/2017 concerning second amendments to Financial Service Authority regulation no. 1/POJK.05/2016 investment in government securities for non bank financial services. August 28, 2017

Financial Service Authority, 2018, Financial Service Authority regulation no. 27/POJK.05/2018 concerning financial health of the insurance company and reinsurance company, December 10, 2018

Galdeano, D., Ahmed, U., Fati, M., Rehan, R., & Ahmed, A. (2019). Financial performance and corporate social responsibility in the banking sector of Bahrain: Can engagement moderate?. *Management Science Letters*, 9(10), 1529-1542.

Government of the Republic of Indonesia. 2004. Law no. 40 of 2004, concerning national social security system

Government of the Republic of Indonesia. 2011. Law no. 24 of 2011, concerning social security organizing body

Government of the Republic of Indonesia. 2014. Law no. 40 of 2014, concerning insurance



- Hussain, H.I., Grabara, J., Razimi, M.S.A., & Sharif, S.P. (2019) Sustainability of Leverage Levels in Response to Shocks in Equity Prices: Islamic Finance as a Socially Responsible Investment, *Sustainability*, 11, 3260.
- Markowitz, HM 1952 .Portfolio selection, *Journal of Finance*, 7 (1): 77–91.
- Ministry of Finance of the Republic of Indonesia, 2012 regulation no 53/PMK.010/2012 concerning financial health of insurance companies and reinsurance companies
- Owusu, D. Asamoah, Appiah , SK, Omari-Sasu, AY, Owusu 2016, Allocation under the Markowits Asset Pension Model: A Case of National Pension Scheme in Ghana, *Applied Mathematics* 2016 (4): 86-91 Scientific & Academic Publishing, DOI : 10.5923 / j.am.20160604.04
- Rauf, A. L. A. (2016). Financial management practices in small and medium sized enterprises: Empirical evidence from the district of Ampara in Sri Lanka. *International Journal of Economics, Business and Management Studies*, 3(3), 117-126.
- Saudi, M. H. M., Sinaga, O., Roespinoedji, D., & Razimi, M. S. A. (2019). The role of renewable, non-renewable electricity consumption and carbon emission in development in Indonesia: Evidence from Distributed Lag Tests. *International Journal of Energy Economics and Policy*, 9(3), 46-52.
- Ślusarczyk, B., Haseeb, M., & Hussain, H. I. (2019). Fourth industrial revolution: a way forward to attain better performance in the textile industry. *Engineering Management in Production and Services*, 11(2), 52-69.
- Sinaga, O., Saudi, M. H. M., Roespinoedji, D., & Razimi, M. S. A. (2019). The Dynamic Relationship between Natural Gas and Economic Growth: Evidence from Indonesia. *International Journal of Energy Economics and Policy*, 9(3), 388-394.