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TREND ANALYSIS OF PENSION FUNDS IN INDONESIA FOR PERIOD  
2012-2016

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**ABSTRACT**

Pension Fund is one of most important issue that faced by developing countries including in Indonesia. This research investigates Indonesia Pension Fund condition within 2012-2016 to know what are the phenomenon and critical issue that need attention. The analysis performed using comparison method for each factor through descriptive analysis based on quantitative data from OJK (Financial Services Authority). The results show that participation rate of Pension Fund still low compared to total productive age populations below 7%. On portfolio and performance perspectives, most of the Pension Fund shows stagnancy both on portfolio development that dominated by deposit and saving (26%) and ROI performance below 10%. Redemption methodology preference changes from monthly redemption to lump sum redemption that indicates Pension Fund' challenges on cash flow management in future. Based on stated conditions and challenge, more employer starting to switch its employee's Pension Fund program to third parties-based Pension Fund which managed by financial institution. This research provides better understanding of Indonesia Pension Fund condition by relating number of participant to total managed asset that reflected on portfolio proportion and investing strategy that results better ROI. Furthermore, redemption methods also become important to paid attention of from Pension Fund management in future.

## INTRODUCTION

Indonesia Pension Fund (IPF) is a part of Non-banking financial institution (LKNB) that manage Pension Fund under supervision of OJK (Financial Services Authority). This program is required each employee to contribute certain amount from salary to the Pension Fund that managed by the Pension Fund institution. In Indonesia Pension Fund institution consist of two main groups: Employer Based Pension Fund Institution (DPPK) and third-Party Pension Fund Institution (DPLK). DPPK adopted same retirement plan as in America did, which there are two types of DPPK, those are Defined Contribution Plans (DPPK-PPIP) and Defined Benefits Plans (DPPK-PPMP).

Although structurally the Pension Fund institution established, participation rate of Pension Fund still low compare to total productive age population in Indonesia. Main driver of this condition is low bases of financial and banking awareness of Indonesia population. Result of National Financial Literacy Survey, only 7% of Indonesians understand about financial product and service. Another factor that leads to this condition is the traditional perspective of retirement. More than 20% of Indonesian still plan to rely on their children in retire age. As result, most of productive age population faces the “Sandwich Generation” phenomena, where they are not only financially support their children but also their parents, as a result they are not able to prepare their own Pension Fund.

Performance of Pension Fund investment depends on investing portfolio that manage by each Pension Fund institution. For last decade, Pension Fund portfolio still focusing on low-risk investment product such as deposits and saving, government bonds, and bonds. This strategy leads to conservative ROI of Pension Fund that cannot attract productive age population to join the Pension Fund. Based on projection, number of productive age in Indonesia will be increases 135 million in 2030. It indicates that Pension Fund institute need to manage overfunding of Pension Fund from productive age population in 2030. If Pension Fund institute not change its investing strategy, it can lead to incapability in returning Pension Fund to retired employee.

Redemption of Pension Fund is managed by Government Regulation No. 77 Year 1992 related to Pension Fund. Redemption method still dominated by monthly redemption around 57%, followed by lump sum redemption around 21%. Monthly redemption method is the best way for Pension Fund institute to manage its cash flow. However, more people start to build small business after retirement, so more people choose to redeem their Pension Fund all in one (lump sum redemption). Based on the projection from UN (2015) in the year of 2050 elder people population in Indonesia will reach number of 21.5%. At that time, Pension Fund institution need to be ready to accommodate Pension Fund for retired population.

Due to condition and outlook issues related to Pension Fund in Indonesia, it is important to discuss Pension Fund topic. Several problems that will be discuss in this research are:

1. Current Condition of Pension Fund in Indonesia with variables participant rate, portfolio development, ROI, and redemption preference.
2. Impact of portfolio development and ROI to Pension Fund institute.

3. Impact of future retired age population to Pension Fund institution stability based on its redemption method.

Previous researcher (Walden, 2015) did a similar research investigates Pension Fund through some factors that is limited to variable ROI (Return of Investment). Comparison of ROI between the pension plans defined benefit with 3 portfolios of passive investment in America from year 2003-2012. Therefore, this research conducted to develop the number of variables, which used from previous research. This research will focus on all Pension Fund industries in Indonesia for period 2012-2016 based on data from OJK. This study will compare the variables of total Pension Fund, the number of participants of Pension Fund, ROI, Portfolio Proportion of Pension Fund Investment and Redemption of Pension Fund. The comparison conducted in-order-to get a picture of the performance of the Pension Fund so far and its readiness in the face of the spurt of the retirement age population.

## **LITERATURE REVIEW**

### **Active and Passive Pension Fund**

Pension Fund is one of investment products that is often a consideration for investors to invest their Fund. Ambachtsheer, Capelle, and Scheibelhut (1998) stated that one of the objectives of the Pension Fund is to maximize net return Fund of assets in-order-to achieve a good return in the long term. Alda and Ferruz (2012) further added that the investors who invest their Fund into the Pension Fund is one way to gain financial benefits both in terms of professionalism, security and information. This gives an indication that every Pension Fund investor will likely follow the evolution of market and financial assets in determining diversification of the portfolio that created. Besides that, Martí and Sáez (2008) argued that efficient management of the Pension Fund would be able to provide higher returns than the likelihood of the insured.

Malkiel (2011) observes that the management of Pension Fund was using a passive strategy will show how a diversification is formed with various forms of investment products from all economic sectors that have returns after the cost is greater than long-term investment. Meanwhile, Asebedo and Grable (2004) presented their findings that using active strategies in the management of the Pension Fund at a higher cost would resulting in inferior performance compared to returns with low cost.

### **Pension Fund in Indonesia**

Based on the Regulation of the Republic of Indonesia No. 11 of Year 1992 related to the Pension Fund in Indonesia defined Pension Fund Institution is a legal entity that manages and runs programs of retirement benefits. Indonesia Pension Fund (IPF) managed and supervised directly by appointed board as the authorized organization, Financial Services Authority (Otoritas Jasa Keuangan / OJK). Previously, IPF managed and supervised by Bapepam LK and the Minister of Finance. The benefits of Pension Fund are for raising Fund to improve the welfare of its participants and increase the participation of the community in preserving improvement in national development and sustainable.

Referring to the type, the Pension Fund categorized as below:

1. Employer Based Pension Fund Institution (DPPK) is a Pension Fund institution established by the employers to provide a Pension Fund for the employees. There are two types of Pension Fund in DPPK: Defined Benefit Pension Plan and Defined Contribution Pension Program. Defined Contribution Pension Program (DPPK PPIP), employees are required to contribute certain amount of salary every month and employers will defined its return based on employer's yearly profits. By the end of employees working period, total received pension funds may be different with total contributed amount. There is also Defined Benefit Pension Plan (DPPK PPMP), in which employers must defined the total benefit that employees will received by their retirement age (fix amount of total pension fund).

2. Third Parties Pension Fund Institution / Pension Fund Financial Institution (DPLK) is a Pension Fund established by a bank or an insurance company. DPLK provides Defined Contribution Pension Program for an individual, either an employee or an independent worker.

### **Pension Fund Investment Portfolio**

Investment definition can be an asset or item that is purchased in-order to gain profit in the future. Investors can collect all the investment in one group which is called by Portfolio. Regarding to the Pension Fund, the Fund will be invested into other investment products collected in a portfolio. One portfolio may contain several investment products depends on the product characteristic. Various investment products can be incorporated into the portfolio and thus it can be seen that in 1 portfolio consists of which investment of the existing portfolio that can provide high returns. At last, it will be able to increase the profit for investor. However, Mohamad, Hassan, and Sori (2006) said that investment portfolios based on economic sectors that are relatively independent are more likely to add value and increase the opportunity to eliminate a substantial part of investment risk.

### **Pension Fund Investment Performance**

One of the measuring tools to know the performance of Pension Fund investment is Return on Investment (ROI). Phillips (2011) states that ROI is often used to measure the value of a money that generated and financed from an investment activity. Thus, this ROI can be easily used for returns comparison that generated by other investment products within a portfolio. From the result level of ROI, it indicates that the greater level of ROI generated the better the performance of the Pension Fund investment can be resulted. In contrary, when ROI level is smaller means that the Pension Fund investment performance result can be worst. Then the conclusion is the relationship between ROI and investment performance is inversely proportional.

### **MATERIALS AND METHODS**

This research uses quantitative descriptive analysis approach. The analysis in this research started by comparing the components that related to the Pension Fund in Indonesia. Data collected from statistical reports of Pension Fund sourced from OJK website (report year 2012-2016) that combined with survey that involve 50 respondents from white-collar

employees (25) and lecturers (25). Survey result tested by validity test by using SPSS in order to ensure collected data can reflect the description of research variables. Variables includes number of Pension Fund in Indonesia, number of participants of Pension Fund, establishment of Pension Fund investment portfolio, and Pension Fund performance measurement. Then the results of research will compare the condition of Pension Fund in time series of year-to-year for 5 years with survey result.

## **RESULTS AND DISCUSSIONS**

### **Overlook Pension Fund Condition**

#### **Number of pension fund participants**

The movement of data in the number of participants in this Pension Fund will provide an overview of how much the level of awareness of the Indonesian people about the importance of paying attention and prepare for financial in elder age or the period after retirement. OJK data shows increasing trend of the participants' number in Pension Fund (29%) from 3.4 million (2012) to 4.4 million (2016). However, the penetration rate (Pension Fund participant vs total workforce) only increased by 1% since 2012.

Meanwhile, survey shows that 80% of respondents are the Pension Fund participants and 96% agreed that Pension Fund are important. It reflected the awareness of Pension Fund is high among the educated worker (white-collar employees and lecturer). Survey also shows 88% of lecturers and 72% of white-collar employees are participants. Although most of the respondents are participant, but only 40% agree that Pension Fund information is well communicated. This indicates employer plays significant role in applying the Pension Fund for their employees. However, due to several overlapping regulations of Indonesia Pension Fund, most employers are forced to contribute additional 15% of employees' salary for Pension Fund.

#### **Pension fund investment portfolio**

The OJK data shows the investment portfolio was dominated by deposit and saving in early 2012. As time passes through 2016, investment portfolio still dominated by deposit and saving with small intention to expanded into other investment product such as land and building. As basic investment strategy, more varieties type of investments can generate more varieties return of investment. This will complement the idealism of investors who want to increase the return in their portfolios.

Compare to the data survey, there is only 36% respondents who knows the investment portfolio in Pension Fund. Most of respondents are willing to get more return but don't want to compensate it with higher risk investment (only 20% agreed to have high-risk high return portfolio). That's why the portfolio development preferred to safer investment products. This result is in line with what stated at OJK data where most of investments are allocated in deposit and savings compare to other investment products. Safer investment will provide less return, this is being the main reason of low ROI rate from Pension Fund.

To get higher return, Pension Fund need to start re arrange the investment portfolio. It's important to maintain the existence of Pension Fund meanwhile distribute the Pension Fund to retired population. The good

investor will be able to balance between return and risks, by monitoring and getting more information about movement of investment in capital market. This strategy should be applied carefully since the market value condition affected by many factors such as the economic condition, political factors, liquidity company, etc.

### **Pension Fund Performance**

Based on the data from OJK, average ROI for Indonesia Pension Fund is 8.5%. Highest return comes from DPPK-PPMP (Defined Benefits Pension Program) around 8.8%, following by DPPK-PPIM (Defined Contribution Pension Program) 7.8%, and lastly DPLK 7.2%. In last 5 years periods, ROI of DPPK decreased around 20-40% (2012 vs 2016), while ROI of DPLK relatively flat. After Pension Fund ROI dropped significantly in 2013, DPLK shows highest recovery condition around 87% of previous ROI compare to 71% (DPPK-PPMP) and 58% (DPPK-PPIP). This performance become a factor that drive more employers to switch their employee's pension program from DPPK (in-house manage) to DPLK (3<sup>rd</sup> Party manage).

By entrusting a DPLK, employers can reduce resource to manage the Pension Fund. Instead of DPPK, DPLK has better ability, efficiency and flexibility in managing Pension Fund. That is the reason why more employers prefer to provide Pension Fund through DPLK.

OJK data strengthen the hypothesis of employers switching trend with 8% decrease in DPPK Institution and 154% (2,975 to 7,554) increase number of employers in DPLK Institution comparing 2012 to 2016. This result is quietly different with the survey result, where only 14% respondents choose that DPLK will give greater ROI compare than DPPK while 52% choose neutral, so it can be concluded that most of respondent cannot detect which Pension Fund institution who gives greater ROI. For general view of Pension Fund ROI, less than 26% of respondents agree that Pension Fund ROI is promising compare to other investment. It shows their low expectation of Pension Fund return although they joined the program.

### **Redemption of Pension Fund**

According to the Government Regulations in Indonesia, most of Pension Fund institutions generally apply the Pension Fund redemption system through annuity or gradually for life. Annuity redemption is the best option that can maintain the stability of cash flow both for participant and Pension Fund institution itself. However, OJK data shows there are more participant tend to redeem their Pension Fund all in once (lump sum). Pension Fund recipients by lump sum redemption increased from 15% to 22%. The trend also driven by regulation of Pension Fund redemption that increased the limit of lump sum redemption.

The survey result shows that 52% respondents choose lump sum redemption method instead of annuity redemption method. That means most of them would like to receive all the Pension Fund in one time after retirement and they prefer the Fund could be redeemed automatically proceed while they are in retirement period. However, there are significant gap of redemption type and redemption procedure knowledge where only 28% of the respondents know how to redeem their Pension Fund.

Lump sum method is also a threat for Pension Fund itself, because the cash flow of Pension Fund Institution will be impacted. Especially when the participant of Pension Fund with significant pension benefit value did the redemption. This will affect to the drastic reduction of Fund for the Pension Fund itself.

### Portfolio Development Vs Roi

Pension Fund institution will manage portfolio development. But each institution can manage different allocation of investment. The better portfolio development will automatically gain the ROI to be higher while the worst portfolio development will affect to the low investment quality (ROI) in Pension Fund. Portfolio can be allocated for investment either in money market or equity market and it results different return due to different risk and factors.

ROI will be affected by portfolio development, especially for Pension Fund investment which have boundaries in selecting investment products (based on regulation). To have better description of portfolio difference between DPLK and DPPK, this research did comparison through case study in BNI (DPLK) and Pertamina (DPPK) portfolio development and its relationship to ROI in 2016.

Firstly, BNI as DPLK sample. This data is taken from [www.bni.co.id](http://www.bni.co.id) which breakdown the summary of portfolio development in BNI and the return summary report of each portfolio that they managed.

Table 1. *Portfolio Development and ROI 2016 of BNI*

| Investment Product              | Portfolio Development  | ROI 2016      |
|---------------------------------|--|---------------|
| Simponi Likuid (SL)             | 100% Deposit/Money Market  | 8.32%         |
| Simponi Likuid Plus (SLP)       | 75% Deposit/Money Market & 25% Bonds                             | 8.59%         |
| Simponi Likuid Syariah (SLS)    | 100% Syariah Deposit/Money Market/Bonds                          | 8.41%         |
| Simponi Moderat (SM)            | 50% Deposit/Money Market & 50% Bonds                             | 8.86%         |
| Simponi Berimbang (SB)          | 50% Deposit/Money Market & 50% Mutual Fund/Stocks                | 10.31%        |
| Simponi Berimbang Syariah (SBS) | 50% Syariah Deposit/Money Market/Bonds & 50% Syariah Mutual Fund | 10.43%        |
| Simponi Progresif (SP)          | 50% Bonds & 50% Mutual Fund/Stocks                               | <b>10.86%</b> |

Based on the data above we can conclude that the greater return is more likely resulted by the investment products with combination portfolio development which is not into 100% deposit or money market. This is because deposit or money market is the safest investment and the return is relative low, when the investment started to be put in equity market like bonds, mutual Fund, stocks, etc the risk will be gained up and so do the return. It's like what most people say if you invest in high risk you will get high return.

Secondly, PERTAMINA as DPPK sample, shows below portfolio proportion which is applied in 2016 including the ROI in their annual report 2016:

Table 2. *Portfolio Development and ROI 2016 of Pertamina*

| <b>Investment Allocation</b> | <b>Portfolio Proportion</b> |
|------------------------------|-----------------------------|
| <b>Deposits</b>              | 3.51%                       |
| <b>Stocks</b>                | <b>22.2%</b>                |
| <b>Bonds</b>                 | 14.1%                       |
| <b>State Securities</b>      | 29.2%                       |
| <b>Land and Building</b>     | 21.2%                       |
| <b>Others</b>                | 9.8%                        |
| <b>ROI 2016</b>              | <b>6.7%</b>                 |

Referring to the data above, it's also proved that the greater return is resulted by stocks which has the highest risk rate compare to the others. Based on that result, we can conclude that greater ROI can be reached with portfolio development with composition the put the higher portion for the investment product with little bit riskier to gain more return but it's not meaning to put all the investment into the riskiest investment, the proportion should be balance and be planned.

### **Future Look of Indonesia Pension Fund**

Pension Fund is importance for every people since it directly affects the living quality of their retirement period. Based on several projection for Indonesia population, in next 10-15 years Indonesia will be flooded by productive age population. To ensure the living quality of their retirement period, managing their Pension Fund in early working phase become a crucial thing. As reflected in survey result, awareness of the importance of the Pension Fund is recognized, however the basic information of Pension Fund itself still limited.

Pension Fund need to improve their socialization to all Indonesia population, both formal and informal workers. Based on Indonesia Statistic Bureau 2016 data total working population are 118 million workers. Around 58% of them are informal worker, while out of 42% formal worker, only 35% (17.8 million workers) of them are Pension Fund participants. Since DPPK is managed by employers, it is unlikely they have expertise in managing Pension Fund. DPLK may have more expertise in managing the Pension Fund, however most of DPLK comes from insurance company that may also have limited knowledge in investment. Upgrading knowledge of investment become a basic requirement for Pension Fund Institution. Redemption preference need to be managed by Pension Fund Institution for secure the cash flow. Giving clear understanding of how to wisely manage received fund and how will it affect the living quality of retirement period become important. Managing quota of lump-sum redemption can be another mitigation plan to secure the Pension Fund institution cash flow.

The future projection of total productive age is being one factor which affect to the Pension Fund institution operational and existence. Pension Fund institution needs to be prepared for increasing total managed asset around 30% from additional productive age population. By increasing manageable Fund, institution can explore better strategy to achieve higher return which is targeted to cover institution operational cost and participant total Pension Fund. Increasement Fund may also lead corruption intention for certain party. Therefore, better monitoring system to support



transparency in fund management must be developed, so participant can entrust their Pension Fund plan to Pension Fund institution. At last, redemption preference can lead to sudden drop total asset that caused Pension Fund institution collapse. It causes possibility if all productive age populations will have same retirement period, that means Pension Fund institution need to pay more attention on Pension Fund redemption period to ensure the huge redemption won't affect the existence of Pension Fund.

## CONCLUSIONS

Based on results and discussions above, we can conclude:

(1) Low participant rate leads to limited asset to be managed by Pension Fund. Limited asset forced Pension Fund Institution to play safe in managing the fund. As discussed in previous section, the key of successful investment portfolio is on balancing the risk and return of it. If they have more on hands asset to be manage, Pension Fund Institution can balance the investment product and distributed the risk in better way. To ensure the fund is well-managed, government's role becomes the key driven factor. The regulation should be clear and specific, by doing that it should raise possibility to streamline Pension Fund managing parties and improve the performance.

(2) Pension Fund institution in Indonesia should put more effort in building awareness and willingness of workers to join the Pension Fund. This should be started now so workers can prepare their financial after they are no longer working and should not depend to their children. They still can fulfil their needs through manage their Pension Fund that is redeemed after being retired. They can use it for starting business or doing investment.

(3) Indonesia should prepare and ready to face the possibility of bonus demography in the future. Because of that, Pension Fund institution should be more careful in managing funds and the redemption process since it can be happened simultaneously. At that time, Pension Fund should be ready to control and make sure their cash flow to process the redemption request from every participant. Due to the cash flow management, Pension Fund institution should understand and manage the redemption method of participant. They can combine between two methods of annuity and lump sum, from that method they can control the redemption period and reduce the possibility of redemption explosion in one time. If it has not been monitored, it can result bankruptcy of Pension Fund institution due to lack of cash flow and less or no Fund and assets should be managed.

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## APPENDIX

**Table 1. Number of Pension Fund Participants (in Million)**

| Year                                | 2012 | 2013 | 2014 | 2015 | 2016 |
|-------------------------------------|------|------|------|------|------|
| Number of Pension Fund Participants | 3.4  | 3.6  | 4.0  | 4.2  | 4.4  |
| Number of Workforce                 | 62.6 | 64.2 | 67.0 | 68.0 | 70.2 |
| Penetration                         | 5.3% | 5.7% | 5.9% | 6.2% | 6.3% |

Source : Otoritas Jasa Keuangan (2011-2016)

**Table 2. Proportion Of Pension Fund Investment Portfolio (in %)**

| Year                   | 2012       | 2013       | 2014       | 2015       | 2016       |
|------------------------|------------|------------|------------|------------|------------|
| Deposits & Savings     | 26.3       | 23.0       | 31.0       | 30.6       | 26.2       |
| State Securities (SBN) | 20.3       | 19.7       | 16.8       | 18.1       | 24.0       |
| Bonds                  | 24.3       | 25.5       | 21.2       | 22.2       | 21.4       |
| Stock                  | 16.4       | 16.4       | 15.7       | 13.7       | 12.6       |
| Mutual Fund            | 6.6        | 6.9        | 6.2        | 6.5        | 6.1        |
| Land & Buildings       | 3.1        | 4.8        | 5.4        | 5.3        | 5.9        |
| Others*                | 3.1        | 3.6        | 3.7        | 3.7        | 3.6        |
| <b>Total</b>           | <b>100</b> | <b>100</b> | <b>100</b> | <b>100</b> | <b>100</b> |

\*) Others consist of EBA from KIK-EBA, Participation Unit of KIK Form, Direct Investment in Shares, Other Permitted Investment

Source : Otoritas Jasa Keuangan (2011-2016)

**Table 3. ROI Of Pension Fund (in %)**

| Year             | 2012        | 2013       | 2014       | 2015       | 2016       |
|------------------|-------------|------------|------------|------------|------------|
| <b>DPKK PPMP</b> | 12.1        | 3.7        | 8.6        | 10.6       | 8.9        |
| <b>DPPK PPIP</b> | 13.2        | 3.2        | 7.7        | 7.6        | 7.2        |
| <b>DPLK</b>      | 8.2         | 3.6        | 7.1        | 8.5        | 8.4        |
| <b>Total</b>     | <b>12.2</b> | <b>3.6</b> | <b>8.3</b> | <b>9.8</b> | <b>8.6</b> |

Source : Otoritas Jasa Keuangan (2011-2016)

**Table 4. Number Of Pension Fund Institution**

| Year             | 2012 | 2013 | 2014 | 2015 | 2016 |
|------------------|------|------|------|------|------|
| <b>DPKK PPMP</b> | 200  | 198  | 194  | 189  | 180  |

|                  |            |            |            |            |            |
|------------------|------------|------------|------------|------------|------------|
| <b>DPPK PPIP</b> | 44         | 43         | 48         | 46         | 44         |
| <b>DPLK</b>      | 25         | 24         | 25         | 25         | 25         |
| <b>Total</b>     | <b>269</b> | <b>265</b> | <b>267</b> | <b>260</b> | <b>249</b> |

Source : Otoritas Jasa Keuangan (2011-2016)

**Table 5. Number Of Employers In DPLK**

| <b>Year</b>            | <b>2012</b> | <b>2013</b> | <b>2014</b> | <b>2015</b> | <b>2016</b> |
|------------------------|-------------|-------------|-------------|-------------|-------------|
| Number of<br>Employers | 2,975       | 5,98<br>6   | 6,99<br>8   | 7,333       | 7,554       |

Source : Otoritas Jasa Keuangan (2011-2016)

Table 6. Validity Test Result (SPSS)

| Correlations  |                                       | Participant 1 | Participant 2 | Participant 3 | Participant 4 | Participant 5 | Portfolio 1 | Portfolio 2 | Portfolio 3  | Portfolio 4  | Portfolio 5 | ROI1        | ROI2        | ROI3         | ROI4        | ROI5        | Redemption 1 | Redemption 2 | Redemption 3 | Redemption 4 | Redemption 5 | Total       |
|---------------|---------------------------------------|---------------|---------------|---------------|---------------|---------------|-------------|-------------|--------------|--------------|-------------|-------------|-------------|--------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|-------------|
| Participant 1 | Pearson Correlation Sig. (2-tailed) N | 1<br>50       | .766*<br>50   | -.055<br>50   | .152<br>50    | .074<br>50    | .089<br>50  | .216<br>50  | .033<br>50   | -.233<br>50  | -.094<br>50 | -.004<br>50 | .297<br>50  | .022<br>50   | .051<br>50  | -.101<br>50 | -.068<br>50  | .210<br>50   | -.163<br>50  | .180<br>50   | .166<br>50   | .462*<br>50 |
| Participant 2 | Pearson Correlation Sig. (2-tailed) N | .766*<br>50   | 1<br>50       | .103<br>50    | -.153<br>50   | -.028<br>50   | -.036<br>50 | .133<br>50  | -.136<br>50  | .324<br>50   | -.039<br>50 | .020<br>50  | .218<br>50  | -.013<br>50  | -.090<br>50 | -.182<br>50 | .028<br>50   | .185<br>50   | .075<br>50   | .348<br>50   | .349<br>50   | .416*<br>50 |
| Participant 3 | Pearson Correlation Sig. (2-tailed) N | -.055<br>50   | .103<br>50    | 1<br>50       | .237<br>50    | -.390*<br>50  | -.269<br>50 | -.140<br>50 | -.023<br>50  | .214<br>50   | .175<br>50  | -.259<br>50 | .028<br>50  | -.108<br>50  | -.003<br>50 | .050<br>50  | -.266<br>50  | -.410<br>50  | .070<br>50   | .213<br>50   | -.056<br>50  | -.729<br>50 |
| Participant 4 | Pearson Correlation Sig. (2-tailed) N | .152<br>50    | .153<br>50    | .237<br>50    | 1<br>50       | .078<br>50    | .145<br>50  | .119<br>50  | -.077<br>50  | .019<br>50   | .009<br>50  | .007<br>50  | -.074<br>50 | .115<br>50   | .113<br>50  | .016<br>50  | .007<br>50   | .135<br>50   | .028<br>50   | -.242<br>50  | -.068<br>50  | .292<br>50  |
| Participant 5 | Pearson Correlation Sig. (2-tailed) N | .074<br>50    | -.028<br>50   | -.390*<br>50  | .078<br>50    | 1<br>50       | .713<br>50  | .504<br>50  | .043<br>50   | -.258<br>50  | -.060<br>50 | -.109<br>50 | .404<br>50  | .195<br>50   | .231<br>50  | .320<br>50  | .161<br>50   | -.118<br>50  | .519<br>50   | -.232<br>50  | -.060<br>50  | .540*<br>50 |
| Portfolio 1   | Pearson Correlation Sig. (2-tailed) N | .089<br>50    | -.036<br>50   | -.269<br>50   | .145<br>50    | .713*<br>50   | 1<br>50     | .685<br>50  | .094<br>50   | -.262<br>50  | .093<br>50  | -.024<br>50 | .421<br>50  | .093<br>50   | .025<br>50  | .296<br>50  | .147<br>50   | -.101<br>50  | .587<br>50   | 0.000<br>50  | -.256<br>50  | .621*<br>50 |
| Portfolio 2   | Pearson Correlation Sig. (2-tailed) N | .216<br>50    | .133<br>50    | -.140<br>50   | .119<br>50    | .504*<br>50   | .685<br>50  | 1<br>50     | .001<br>50   | -.167<br>50  | .165<br>50  | .141<br>50  | .532<br>50  | .069<br>50   | .227<br>50  | .288<br>50  | .230<br>50   | -.160<br>50  | .428<br>50   | -.049<br>50  | -.215<br>50  | .675*<br>50 |
| Portfolio 3   | Pearson Correlation Sig. (2-tailed) N | .033<br>50    | -.136<br>50   | -.023<br>50   | -.077<br>50   | .043<br>50    | .094<br>50  | .001<br>50  | 1<br>50      | -.370*<br>50 | .115<br>50  | -.185<br>50 | .065<br>50  | .334<br>50   | -.189<br>50 | .016<br>50  | .062<br>50   | -.044<br>50  | .014<br>50   | .018<br>50   | -.405*<br>50 | .091<br>50  |
| Portfolio 4   | Pearson Correlation Sig. (2-tailed) N | .233<br>50    | .324<br>50    | .214<br>50    | .019<br>50    | -.258<br>50   | -.262<br>50 | -.167<br>50 | -.370*<br>50 | 1<br>50      | -.018<br>50 | .071<br>50  | -.132<br>50 | -.243<br>50  | -.062<br>50 | -.265<br>50 | -.204<br>50  | -.147<br>50  | -.068<br>50  | .059<br>50   | .360<br>50   | -.012<br>50 |
| Portfolio 5   | Pearson Correlation Sig. (2-tailed) N | -.094<br>50   | -.039<br>50   | .175<br>50    | .008<br>50    | -.060<br>50   | .093<br>50  | .165<br>50  | -.018<br>50  | .1<br>50     | .230<br>50  | .041<br>50  | .134<br>50  | -.018<br>50  | .241<br>50  | .296<br>50  | -.263<br>50  | .112<br>50   | -.063<br>50  | -.113<br>50  | .313<br>50   | .027<br>50  |
| ROI 1         | Pearson Correlation Sig. (2-tailed) N | -.004<br>50   | .020<br>50    | -.119<br>50   | .007<br>50    | -.109<br>50   | -.024<br>50 | .141<br>50  | -.185<br>50  | .071<br>50   | .230<br>50  | 1<br>50     | .153<br>50  | -.024<br>50  | -.149<br>50 | -.007<br>50 | .067<br>50   | -.205<br>50  | -.148<br>50  | .031<br>50   | .091<br>50   | .206<br>50  |
| ROI 2         | Pearson Correlation Sig. (2-tailed) N | .297<br>50    | .218<br>50    | -.259<br>50   | -.074<br>50   | .404*<br>50   | .421<br>50  | .532<br>50  | .085<br>50   | -.132<br>50  | .041<br>50  | .153<br>50  | 1<br>50     | .223<br>50   | .025<br>50  | .075<br>50  | .304<br>50   | -.142<br>50  | .530<br>50   | .280<br>50   | -.073<br>50  | .640*<br>50 |
| ROI 3         | Pearson Correlation Sig. (2-tailed) N | .022<br>50    | -.013<br>50   | .029<br>50    | .115<br>50    | .195<br>50    | .093<br>50  | .069<br>50  | .334<br>50   | -.243<br>50  | .134<br>50  | -.024<br>50 | .223<br>50  | 1<br>50      | .309<br>50  | .476<br>50  | .300<br>50   | -.139<br>50  | -.026<br>50  | .021<br>50   | -.203<br>50  | .394*<br>50 |
| ROI 4         | Pearson Correlation Sig. (2-tailed) N | .051<br>50    | -.090<br>50   | -.108<br>50   | .113<br>50    | .231<br>50    | .025<br>50  | .227<br>50  | -.189<br>50  | -.062<br>50  | -.016<br>50 | .149<br>50  | .025<br>50  | .309<br>50   | 1<br>50     | .627<br>50  | .092<br>50   | -.115<br>50  | .038<br>50   | -.304<br>50  | -.001<br>50  | .289<br>50  |
| ROI 5         | Pearson Correlation Sig. (2-tailed) N | -.101<br>50   | -.182<br>50   | -.003<br>50   | .016<br>50    | .320<br>50    | .296<br>50  | .288<br>50  | .016<br>50   | -.265<br>50  | .241<br>50  | -.007<br>50 | .075<br>50  | .476<br>50   | .627<br>50  | 1<br>50     | .356<br>50   | -.319<br>50  | .096<br>50   | -.154<br>50  | -.210<br>50  | .405*<br>50 |
| Redemption 1  | Pearson Correlation Sig. (2-tailed) N | -.058<br>50   | .028<br>50    | .050<br>50    | .007<br>50    | -.161<br>50   | -.147<br>50 | .230<br>50  | .062<br>50   | -.204<br>50  | .296<br>50  | -.067<br>50 | .304<br>50  | .300<br>50   | -.092<br>50 | .356<br>50  | 1<br>50      | -.599<br>50  | .051<br>50   | .074<br>50   | -.071<br>50  | .356<br>50  |
| Redemption 2  | Pearson Correlation Sig. (2-tailed) N | .210<br>50    | .185<br>50    | -.266<br>50   | .135<br>50    | -.116<br>50   | -.101<br>50 | -.160<br>50 | -.044<br>50  | .147<br>50   | -.263<br>50 | -.142<br>50 | -.139<br>50 | -.115<br>50  | -.319<br>50 | -.599<br>50 | 1<br>50      | .237<br>50   | .013<br>50   | .055<br>50   | -.044<br>50  | .762<br>50  |
| Redemption 3  | Pearson Correlation Sig. (2-tailed) N | .163<br>50    | .075<br>50    | -.410*<br>50  | .028<br>50    | .519*<br>50   | .587*<br>50 | .428*<br>50 | .014<br>50   | -.068<br>50  | .112<br>50  | -.148<br>50 | .530*<br>50 | -.026<br>50  | .038<br>50  | .096<br>50  | .051<br>50   | 1<br>50      | .237<br>50   | .015<br>50   | -.245<br>50  | .558*<br>50 |
| Redemption 4  | Pearson Correlation Sig. (2-tailed) N | .180<br>50    | .348<br>50    | .070<br>50    | -.242<br>50   | -.060<br>50   | 0.000<br>50 | -.049<br>50 | .018<br>50   | .059<br>50   | -.063<br>50 | .031<br>50  | .280<br>50  | -.021<br>50  | -.304<br>50 | -.154<br>50 | .074<br>50   | 1<br>50      | .015<br>50   | .415<br>50   | .211<br>50   | .141<br>50  |
| Redemption 5  | Pearson Correlation Sig. (2-tailed) N | .166<br>50    | .349<br>50    | .216<br>50    | -.069<br>50   | -.230<br>50   | -.256<br>50 | -.215<br>50 | -.405*<br>50 | .350<br>50   | -.113<br>50 | .091<br>50  | -.073<br>50 | -.203<br>50  | -.001<br>50 | -.210<br>50 | -.071<br>50  | 1<br>50      | .055<br>50   | -.245<br>50  | .415<br>50   | -.016<br>50 |
| Total         | Pearson Correlation Sig. (2-tailed) N | .462*<br>50   | .416*<br>50   | -.050<br>50   | .292<br>50    | .540*<br>50   | .621*<br>50 | .675*<br>50 | .081<br>50   | -.012<br>50  | .313<br>50  | -.206<br>50 | .640*<br>50 | -.394*<br>50 | .299<br>50  | .405*<br>50 | .356<br>50   | 1<br>50      | -.044<br>50  | .558*<br>50  | .211<br>50   | -.016<br>50 |

\*\*. Correlation is significant at the 0.01 level (2-tailed).

\*. Correlation is significant at the 0.05 level (2-tailed).