ANALYSIS OF LIFE INSURANCE INVESTMENT COMPOSITION

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Abstract. Economic recession and global mettle down have brought the question of insurance company investment to the forefront. Growing attention has shifted to the pattern of investments by the insurance and question of how to evaluate such investments. The aim of this research is to evaluate investment compositions which are made by life insurance companies in Indonesia, as well as to know the effects on the performance of Insurance companies.

The number of insurance companies who have been evaluated is 43 life insurance companies, taking into account the composition of the investment made by each company for 3 years, and analyzed using regression equations that serve as a model of analysis to see the influence of the composition of investment on the performance of life insurance companies. Factor Analysis is used in this research to provide a way of explaining the observed variability in the investment pattern of Indonesia life insurance industry.

Of the various types of investments made by insurance industry participants, mutual funds and direct investments indeed affect the investment income. However, in order to avoid the risks and to add various types of investment income, this must still be done with the portion of funds that do not exceed government regulations.

Key words: Investment, Insurance, Risk

INTRODUCTION

Investment is one of important activities in the insurance company in order to manage the fund that they have. Management of the fund in the insurance company basically is done to cover 3 things which are:

1. Liquidity coverage. By protecting the liquidity, insurance company can fulfill its obligation. The claims that are accepted are the unpredictable obligations, hence the company should be liquid.
2. Getting the result or high return. This is very important knowing the revenue of the company is achieved from underwriting and fund allocation.
3. Protecting the solvability. The solvability level is the difference between wealth that are involved in the total obligation and the capital that is stored. Insurance company and reassurance company every single time must fulfill the solvability standard level at minimum of 120 percent from the loss risk which might occur due to the deviation in management of wealth and obligation.

Remembering those things above, hence the awareness principle in managing the fund has to be numbered one.

Many types of investment that are allowed by insurance company and the amount of maximum fund proportion which can be invested for each has been arranged in the Indonesian Finance Minister regulation No. 135/PMK.05/2005. Many types of investment which exist in insurance company are deposit frame, shares, obligation and term nites, valuable documents which are published by the government as well as Indonesian Central Bank, equalization fund unit, direct participation,

Knowing that the insurance company is also one of the business institutions hence the selection of many variety of investment and its combination in the investment portfolio must be done carefully, meticulously so that there will be no important loss that has to be carried. The government regulation that restrict the amount of maximum fund that can be put in a wide range of investment. Investment revenue hopefully can cover up the operational cost and give the advantage to the company. The selection of the investment types and its proportions will determine the revenue that is collected.

From 29 national private companies which operated in 2007 up to 2009, mutual fund had always become the largest proportion of investment. In 2007 and 2008, mutual

fund was followed by the investment in the form of deposit, in 2007 the investment data donated 16 percent from the total insurance company revenue, while in 2009 decreased by 13.96 percent knowing the reduction of revenue that happened as well as the government regulation about the restriction of insurance company investment, hence this research is done in order to know the type of investment which will determine the investment revenue in the life insurance company.

This research aim is to know the investment type which has a significant influence towards the revenue of the life insurance company in Indonesia.

LITERATURE REVIEW

There are three investment theories which are classic theory, asymmetric information theory of investment and manager discretion theory.

The AIT rests on several, rather extreme assumptions. (1) A firm has insufficient cash flows to finance an attractive investment (one with a return greater than its cost of capital), and cannot finance this investment by either issuing debt (it is debt constrained), or cutting dividends (they already are zero). (2) The managers of the firm are aware of both the returns on this attractive investment, and that the existing assets of the firm are worth more than the market perceives. (3) Because of the latter assumption, the firm's shares are currently underpriced. If the firm issued shares to finance the investment, its current shareholders would be harmed because of the market's undervaluation its shares. (4) The firm's managers maximize the wealth of only the current shareholders, and ignore those who would become shareholders if the firm issued equity to finance the investment, and who would in fact benefit greatly from such an action. Under these assumptions it is possible that a firm fails to undertake an investment with an expected return greater than its cost of capital an investment that it would undertake.

The MDT drops the assumption common to both all neoclassical theories and the AIT that managers maximize their shareholders' wealth. Managers have their own goals, as for example increasing or maintaining the growth rate of the firm, and pursue these even when they harm their shareholders. The discretion managers have to allocate their internal cash flows as they choose leads them to favor this source of finance over say bank borrowing or the issuance of debt and equity. Thus, variants on equation (1) could and have been used to test the MDT with a t-1 again capturing the investment opportunities of the firm, CFt-1 the cost (availability) of finance.

METHODOLOGY RESEARCH

Data on Insurance assets were extracted from the Indonesia Insurance Report
This research adopted a factor analytic approach.

The investment portofolio can be described by an n-dimensional random variables X1, X2,....,Xn. The vector random variables Xi have a non singular multi-normal distribution. To describe the data, Xi is represented as an n´p data matrix, observations of the variables x¢ = (x1,…,xn). For convenience E(X) = 0 and the covariance matrix of these responses will be denoted by E(CC¢) = S. The covariance S of the standardized variables is nothing more than the correlation matrix. To develop the factor model in relation to the data matrix and this can be parsimoniously be written as:

$$U = LF + E \qquad (1)$$

Where:
Y = An n´p data matrix
L = The p´k matrix of factor loadings
F = The k´n matrix of factor scores
E = An n´p matrix of residuals or error terms

Here k is a scalar denoting the number of factors to be used. It is always less than p the number of variables. Equation 1 is the fundamental model equation for all forms of R-mode factor. It states that each observed variable is weighted sum of factors plus an error term or residual.

The product LF produces a vector of estimates of X the vector E represents the difference between this estimate and the observed vector. These residuals are assumed to be uncorrelated with the factors. From the properties of the latent variates it follows that the covariance matrix of the observable and common-factor variates can be written as:

$$E[(C - LF)(C - LF)¢] = Y \qquad (2)$$

Evaluation of the expectations in Eq. 2 shows that:

$$S = Y + LL¢ \qquad (3)$$

Where:

S = The p´p population covariance matrix of the observed variables

L = The p´k matrix of factor loadings

y = The p×p residual covariance matrix

The factors are designed to account maximally for the inter-correlations of the variables. The diagonal elements LL' are called the communalities of the responses. By choosing different orthogonal transformations, an infinity of loading matrices can be computed from L which would lead to the same covariance.

Equation 3 presents, in matrix form, the complete factor model for the variance covariance of the observed variables. The model holds for an R-mode factor model; since the relationship within the set of p variables is regarded as reflecting the correlations of each of the variables with k mutually uncorrelated underlying factors. In practice the parameters of the factor models are never known and must be estimated from sample observations. The information in the sample covariance matrix S is sufficient for the estimation of the factor parameters. With uncorrelated factors as in Eq. 3, a reasonable criterion for fitting the model to the data is to make S-LL'-y as small as possible, by choosing L so that the sum of squares of all the elements of S-LL'- y is minimized. But the diagonal elements of y are unique variance that must be estimated from the data, together with the factor loading matrix L. Of course, the magnitude of the communalities LL' is dependent upon the number of factors k, that are retained. If k = p, y will vanish in Eq. 3 and our problem is equivalent to Principal Component Analysis (PCA). In cases where k<p, the matrix of parameters L which are the loadings on the factors and the unique variance y is estimated. The usual assumption is that k<p factors are retained. There are mathematical criteria as well as some subjective decisions involved in determining the number of factors k to be extracted, in locating these factors prior to rotation and in rotating the factor structure. By using Kaiser's varimax criterion for rotation to a simple structure, the best fit or most useful fit of the factors to the data is provided.

RESULT AND DISCUSSION

The government gives a restriction to the amount of fund that has to be invested in order to take a good care of financial health of a life insurance company. The people involved in the life insurance industry plant their fund mostly in the form of mutual fund. Mutual fund has always been the choice to invest fund, even can be seen in the fund proportion that is in the mutual fund that exceeds the allowed proportion. The restriction from the government is 20 percent while the average that is invested reaches 35 percent. After mutual fund, the next choice will be the deposit and deposits certificates. The fund that is invested in this form reaches up to 12 percent. The average fund for the stock or shares, obligation and government valuable documents are relatively the same which is around 10 percent up to 11 percent. A wide range of other investments such as land and buildings, mortgage loans, loan policy and other investments are less then 5 percent.
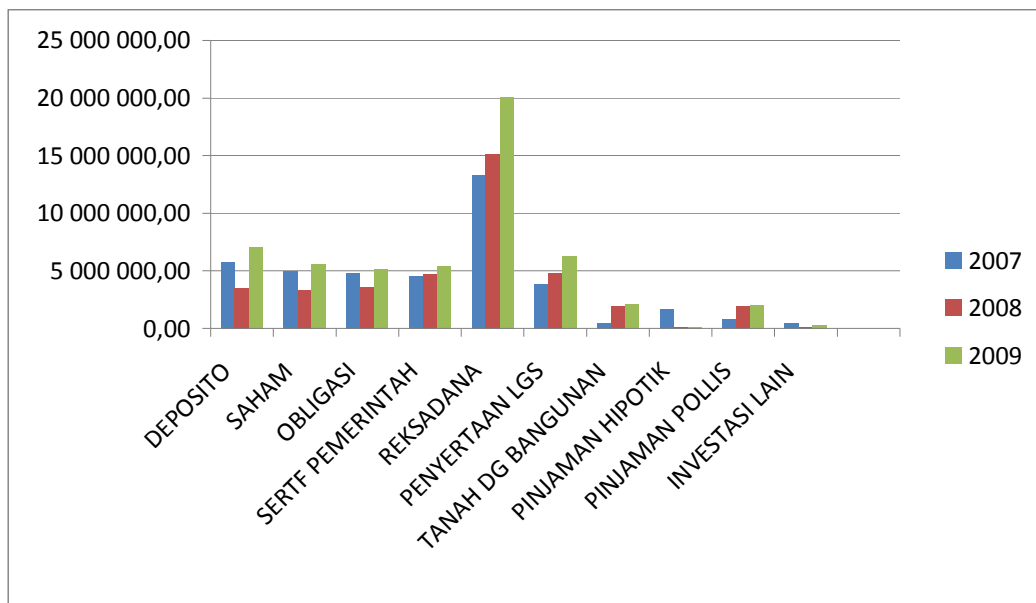
Picture 1. The number of funds invested in the Different Types of Investment

In the period of time between 2007 to 2009, nine investment revenue from several public corporation and national private companies fluctuate as shown in the figure 1. The highest revenue is achieved in 2009 from the mutual fund investment. In the year of 2008 and 2009, the revenue from mutual fund keeps becoming the highest investment revenue. The investment funds in the mutual fund in 2008 is only 47.8 percent from the total fund. Nevertheless, the mutual fund revenue in 2008 is only 16.44 percent from the total revenue, this revenue is still less than the revenue in 2009. In 2009, investment fund proportion in the mutual fund is only 37.13 percent yet the result reaches up to 29.11 percent from the total investment revenue on the same day. In 2007 from 32.38 percent of investment fund that is invested in the mutual fund, the result that is achieved reaches up to 35.32 percent.
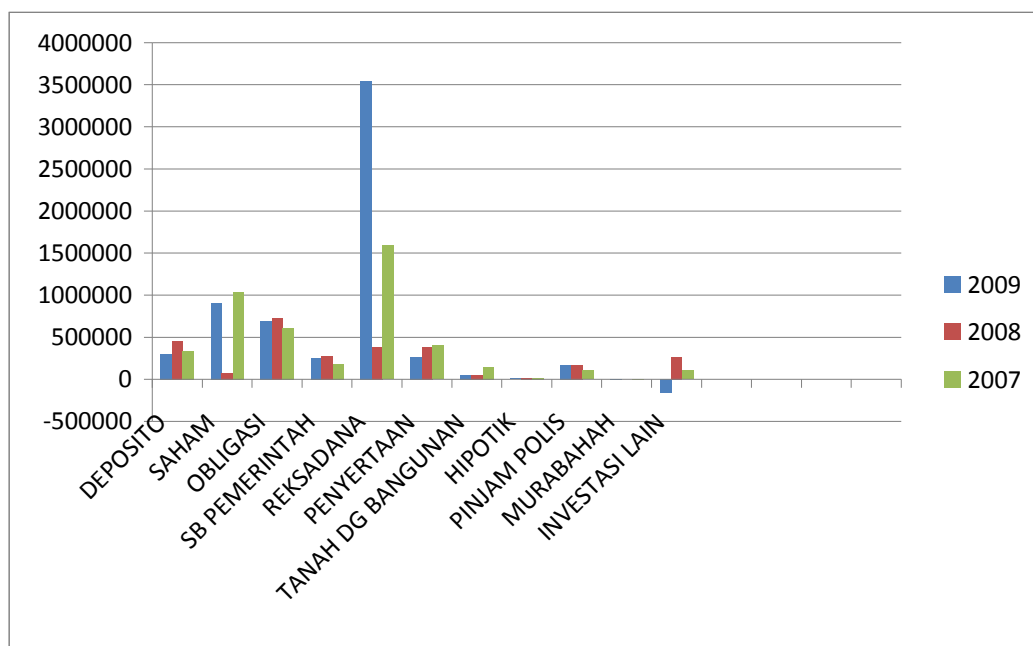

Figure 2: the result of public corporation investment and national private companies in 2007 to 2009

Life insurance industry had a loss from other investments in 2009. If we take a look carefully at the figure shown above, it is clearly visible during 2008, the investment revenue of life insurance companies had a decrease in comparison to 2007. The steepest decrease occurred on the stocks investment.

From the eleven types of investment which is done during 2007 to 2009 by the respondents, individually, the mutual fund and direct participation has the biggest influence towards the investment revenue. The mutual fund and direct participation has a positive influence towards the investment revene. By seeing the strong positive relation between mutual fund and the investment revenue, it can be stated that the additional investment fund on the mutual fund will increase the investment revenue by the assumption of other constant conditions, hence the change of investment fund in the mutual fund will have an influence of 0.158 towards the investment revenue, while the change of direct participation has an influence of 0.100 towards the change in the investment revenue. The loan policy and other investments might even have a negative influence.

The people involved in the life insurance industry mostly do the investment in the financial sector. Based on the data in three years from the factor analysis, it is known that the eleven types of the true investment consists of five groups which are deposit, land with building and valuable government documents, mortgages and other investments, shares and obligation, direct participation, mutual fund and loan policy.

From the result of regression, apparently mortgages and other investments indeed do not influence towards the investment revenue. The group of mutual fund and loan policy become the group that gives the biggest donation towards the investment revenue. The revenue from loan policy is normally certain and definite. The company sets up a certain level of interest for the loan policy to the customers. The higher the acceptance of loan policy from year to year, it means that there is more frequency of loan policy. This condition might become one signal for the company to be more alert and aware. it should be noted that the increase in the frequency of loan policy with the total premium income for a long coverage.

Direct participation has an influence of 0.112 towards the investment revenue. This direct participation is in the form of shareholding which is not recorded in the stock exchange. With the restriction of no more than 10 percent from the total investment fund, the investment fund in the direct participation has an influence that is bigger in comparison to the mutual fund and loan policy.

Partially, the stock and obligation do not influence the investment revenue, yet if both is combined, it apparently affects. Stock investment that is restricted is only for the stock that is issued by the Indonesian legal entity. The maximum fund that can be invested is 20 percent from the total investment fund. That regulation is also applied for the investment in obligations. Stocks and obligation always give the highest revenue, nevertheless, the influence of the stocks and obligation is less than the mutual fund revenue. The combination of stocks and obligation have an influence of 0.077 towards the investment revenue. Investment in the stocks has a higher risk in comparison to the obligation. By that fact, the combination of these two types of investments will reduce the risk of investment on that money market instruments.

Partially, the deposit and deposit certificates, government valuable documents and buildings do not affect investment acceptance. Investment in the form of building is the investment in the form of building with the strata right or land with the building that will be personally used. With this regulation, it is clear that investment in the form of land and building in a short term do not give the revenue. This investment revenue in this form can only be known if there is a change n the land prices, while the value of building keeps on decreasing until there is no more revenue. The revenue from the

valuable government documents can be estimated hence the investor can know in advance about the total revenue which will be received with this kind of investment. Hence, it is understood that this investment does not influence investment revenue.

If deposit, deposit certificate, valuable government documents as well as land and building is formed into one group, hence the this type of investment has an influence of 0.05 on revenue. In this particular group, the deposit has a relationship with the investment revenue which is stronger than any other else.

CONCLUSION

From a wide range of investment types that are done by the people in the life insurance industry, partially, only mutual fund and direct participation that affect the investment revenue. Nevertheless, in order to avoid the risks and to add or increase revenue in a variety of investment types, there is still a need to do with the fund potion which does not exceed the government regulation.

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