

## **HEDGE FUND MANAGERIAL INCENTIVES AND PERFORMANCE**

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### **—Abstract —**

The growth of the hedge fund industry over the decades has brought an interesting form of performance contract between the portfolio managers and their investors. The contractual relation has given an impact to the performance of the hedge fund industry, which benefited both fund managers and investors. Furthermore, it has created more investors and fund managers to participate in this high risk and high return investment. Currently, many issues on fee structures and performance-based incentives have been discussed. Do these issues affect the performance of the hedge fund in the market? This paper will investigate the issues in Australian market. It will empirically analyze the hedge fund performance in relation to the market performance and whether managerial incentives and discretions associated with better fund performance.

**Key Words:** *Managerial Performance, Fund Performance, Market Performance*

**JEL Classification:** G2, G11, G15

### **1. INTRODUCTION**

The growth of the hedge fund industry over the decades has brought an interesting relationship between the fund managers and their investors. In the financial services world, the hedge fund managers are highly skill and experienced investors who willing to take risk for high return. Most of them are successful former traders or fund managers who decide to start their own business. For example in Australia, one of the biggest hedge fund managers is Platinum Capital. It was founded by Kerr Neilson and other former employees of Bankers Trust

Australia in 1994. It has AU\$13,695 million assets under management<sup>1</sup>. Currently they have control 45% of the Australian hedge fund and industry. Australia and Japan experienced the fastest rates of hedge fund asset growth in the region<sup>2</sup>. Assets under management by hedge fund managers have almost tripled from AUD26 billion in 2004 to AUD 60.1 billion in 2006<sup>3</sup>. This shows that more investors interested in hedge fund investment. It is also associated with the increasing number of hedge fund managers to 1.44% in 2006<sup>4</sup>.

What cause these numbers to increase? It is believe that hedge fund industry is growing well globally with the performance of the world market. In addition, the performance of the fund is also relevant with the performance of the fund managers. This paper presents a theoretical study of hedge fund performance comparatively with market and managerial incentives affect on the hedge fund return. A comprehensive database of Australian hedge funds was used to identify major variables on performance measures and proxies for the managerial incentives. In this study, the panel ordinary least square regression (OLS) will be employed to determine the relationship and impact between the managerial incentives and fund performance. This study will significantly motivate the fund managers to manage their clients' investments in order to achieve the investment objective. It is therefore will increase the confidence level among investors towards investing in hedge fund markets.

### **1.1. Hedge Funds Performance Studies**

In general hedge fund performance studies can be classified into several major categories such as hedge fund performance, hedge fund investment style, hedge fund correlation analysis and diversification power. Most of the hedge fund performance studies compare the fund return with the classical markets (Ackermann, McEnally, & Ravenscraft, 1999; G.S. Amin & Kat, 2001; Gaurav S. Amin & Kat, 2003; Brown, Goetzmann, & Ibbotson, 1999).

In addition, Ackermann, McEnally and Ravenscraft (1999) and Liang (1998) compare the performance of hedge fund to mutual fund and several indices. Their results show hedge fund constantly obtained better performance than mutual fund. Fung and Hsieh (1997) has found that hedge fund in a portfolio can significantly improves its risk-return profile but weak correlation with other securities. Amin

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<sup>1</sup> Eureka Hedge, 2009

<sup>2</sup> Hedge fund Intelligence Press Release, 27 March 2006.

<sup>3</sup> Source: LCA Group, as at 30 June 2006.

<sup>4</sup> Source: LCA Group, as at 30 June 2006.

and Kat (2001) conclude that single investment hedge fund do not offer superior risk-return profile, Whereas, most funds classified as inefficient on a single investment has produce an efficient payoff profile when combined with the S&P500.

The based measurement of performance is capital assets pricing method (CAPM). Then more measurement on performance has evolved. For example, the basic multi-factor specifications, three-factor model (Fama & French, 1993); international version of three-factor model (Fama & French, 1998); Carhart four-factor model(Fama & French, 1998); extended multi-factor model and asset-based model (William Fung & Hsieh, 2001).

## **1.2. Hedge Funds Performance and Incentives Studies**

Agency theory predicts that the pay-performance sensitivity is higher with the superior managerial performance. However, there is no clear link between incentives and performance. According to Gompers and Lerner (1999) in the private equity industry, no relation between incentive fee and performance. As in the venture capital industry, a study by Das and Sundram (2003) suggests that a higher fee should result in better performance. However, many studies on this have empirically shown mixed evidence. First, the result shows hedge funds that charge higher incentives fee are associated with better performance (Ackermann, et al., 1999; Edwards & Caglayan, 2001; Liang, 1998). Second, the finding shows higher fees fund perform no better than those with lower fees (Brown, et al., 1999). To overcome the mixed results, a study by Agrawal, Daniel and Naik (2009) use delta, the expected dollar increase in the manager's wealth for an increase of 1% in the fund's NAV, as proxy of managerial incentives. They found that managerial incentives are effective in motivating managerial effort to gain higher return.

## **2. DATA AND METHODOLOGY**

### **2.1. Data**

In this paper, we construct a comprehensive Australian hedge funds database from the Hedge Fund Research (HFR). The sample consists of 2760 panel observation on 46 funds. The monthly data is taken from June 1999 to February 2009. Most of the databases start reporting information on 'defunct' funds only after 1994 and this can mitigate the potential survivorship bias. We organized the database in two groups: (1) hedge funds performance, and (2) managerial incentive and discretion.

In both groups, the dependent variable is the fund return. The independent variables for the fund performance are the S&P 500, the Australian Ordinary Shares S&P/ASX 200, 10 year Bond Index and MSCI World Index. Meanwhile, the independent variables are the fund age from the inception date and size of the fund. Other independent variables are the managerial incentives, proxies as incentives fees and management fees. While the managerial discretion, proxies as lockup period, notice period, high-water marks, hurdle rate and redemption period.

## 2.2. Measure of Performance

The primary measure of performance is fund returns. These returns are net of all paid to the fund manager. We estimate alpha from the funds time series regression of excess-net-return from extended multi-factor model. However, due to limitation on the data, we only use four independent variables rather than seven. We measure annual alpha as the sum of the monthly alphas in that year, where monthly alpha is given by the intercept. We apply the following regression model to examine the fund performance:

$$R_p - R_f = \alpha_p + \beta_1(R_{m1} - R_f) + \beta_2(R_{m2} - R_f) + \beta_3(R_{m3} - R_f) + \beta_4(R_{m4} - R_f) + \epsilon$$

where  $R_p - R_f$  is excess net return for fund;  $(R_{m1} - R_f)$  is excess net return for SPI 500 market index;  $(R_{m3} - R_f)$  is excess net return for corporate bond 10 years; and  $(R_{m4} - R_f)$  is excess net return for MSCI World Index. MSCI World; and  $\epsilon$  is the error term.

In order to investigate the relationship between fund excess net return and other market excess net return, we specify the following hypotheses:

$H_1$ : Market return has no significant effect on the fund return

## 2.3 Measure of Managerial Incentives and Performance

In hedge funds several impediments such as lockup period (Lockup), notice period (Notice), high-water marks (Hwm), hurdle rate (Hurdle) and redemption

period (Redeem) applied compare to mutual funds. These discretions have limited the time for capital withdrawals by investors and give flexible time for fund managers in their investment. We estimate the following regression to examine the performance of the fund:

$$\text{Return} = \beta_0 + \beta_1 \text{Size} + \beta_2 \text{Age} + \beta_3 \text{MgtFee} + \beta_4 \text{IncFee} + \beta_5 \text{Hurdle} + \beta_6 \text{Hwm} + \beta_7 \text{Notice} + \beta_8 \text{Redeem} + \beta_9 \text{Lockup} + \epsilon;$$

where Return is the net-of-return of fund; Size is the size of the fund assets in percentage rate; Age is the fund from the inception period; MgtFee is the management fee charge by fund; IncFee is incentive fee given on fund; Hurdle is dummy variable that equals one if the fund has hurdle rate provision, and equals zero otherwise; Hwm is dummy variable that equals one if the fund has high-water marks provision, and equals zero otherwise; Notice is dummy variable that equals one if the fund has notice period, and equals zero otherwise; Redeem is dummy variable that equals one if the fund has redemption period, and equals zero otherwise; Lockup is dummy variable that equals one if the fund has lockup period, and  $\epsilon$  is the error term.

In order to investigate the relationship between fund excess net return and other market excess net return, we specify the following hypotheses:

H<sub>2</sub>: Hedge fund managerial incentives and discretions have no significant effect on the fund performance

### 3. EMPIRICAL FINDINGS

#### 3.1. Hedge Fund Performance

In Table 1, the alphas show that all market index except ASX200 have positive relationship with fund performance. It indicates that fund return is increased when the SPI500 index, 10 year bond index and MSCIW index increase. Contrary, if ASX200 index increase, the fund return is decreased. Fund return has the highest standard deviation compare to the others. This means that investing in the hedge fund is risky. The mean monthly return of funds is 0.5030 which is lower than the other markets. From the t-statistic, it indicates that the excess return is significant at the 5% significant level. The F-statistics for the model are 529.3093 (p=0.0000). From the above statistics, we do not except the null hypotheses 1.

Hypotheses 1 implies other markets performance has significant impact to the fund return. The Adjusted R-squared is 43.37% that shows 43.43% of the variation in fund return can be explained by the independent variables.

**Table 1 : Fund performance comparative with market index**

|                         | Coefficient | Std. Deviation | Mean     | Prob. |
|-------------------------|-------------|----------------|----------|-------|
| C                       | -63.51716   | 1.922712       | 0.503000 | 0.000 |
| ASX200                  | -0.003744   | 0.087350       | 3.674506 | 0.000 |
| SPI500                  | 0.010066    | 0.067140       | 3.093857 | 0.000 |
| Bond10                  | 0.319139    | 0.018019       | 2.181482 | 0.000 |
| MSCIW                   | 0.013354    | 0.0078456      | 3.102847 | 0.000 |
| Adjusted R <sup>2</sup> | 0.433730    |                |          |       |
| S.E. of regression      | 1.687020    |                |          |       |
| Prob(F-statistic):      | 0.000       |                |          |       |
| F-statistic:            | 529.3093    |                |          |       |
| S.D. dependent var:     | 2.241861    |                |          |       |
| Observation             | 2760        |                |          |       |

### 3.2. Managerial Incentives and Performance

Table 2 reports the observation of regression on the managerial incentives and discretions over the fund performance. All variables except size of the fund show insignificant result at 95% confidence level. It means the fund performance is not affected by the incentives and discretions. Meanwhile, the fund size has an impact to the fund performance at 95% confidence level. The F-statistic for the model is 1.644037 ( $p=0.097387$ ). From these statistics, we do not reject the null hypotheses 2. If we compare the coefficient results, the management fee, incentive fee, and lockup period dummy have positive relationship. If these variables increase, the fund return is also increase. The adjusted R-squared is only 0.6181%. It shows that less than 1% of the variables can be explained by the independent variables.

**Table 2: Managerial Incentives and Discretion affect performance**

|                         | Coefficient | Std. Deviation | Mean     | Prob.  |
|-------------------------|-------------|----------------|----------|--------|
| C                       | 0.929597    | 4.06268        | 0.704918 | 0.3500 |
| Size                    | -0.001287   | 199.8981       | 100.6394 | 0.0024 |
| Management Fee          | 0.056069    | 1.839441       | 1.575663 | 0.4682 |
| Incentive Fee           | 0.059397    | 3.552610       | 18.8861  | 0.1408 |
| HWM                     | -0.399991   | 0.217463       | 0.994558 | 0.4566 |
| Hurdle Period           | -0.081587   | 0.500082       | 0.50481  | 0.6779 |
| Redemption Period       | -0.925031   | 0.143178       | 0.979071 | 0.2740 |
| Lockup period           | 0.368616    | 0.19044        | 0.962327 | 0.4654 |
| Notice period           | -0.252122   | 0.420255       | 0.228966 | 0.2562 |
| Age                     | -0.00330    | 31.38866       | 79.48430 | 0.2744 |
| R-squared               | 0.006181    |                |          |        |
| Adjusted R <sup>2</sup> | 0.002421    |                |          |        |
| S.E. of regression      | 4.057758    |                |          |        |
| F-statistic             | 1.644037    |                |          |        |
| Prob(F-statistic)       | 0.097387    |                |          |        |
| S.D. dependent var      | 4.02680     |                |          |        |

### 3. CONCLUSION

This study aim to investigate: (1) the impact of the market performance on the fund return and (2) the impact of the managerial incentives and discretions on the fund return. The study comprises of 46 Australian hedge funds for 54 months period. Our findings in the hedge fund performance do not accept the null hypotheses meanwhile, in the managerial incentives and discretions do not reject the null hypotheses. The finding on the hedge fund performance can be supported by most of the previous researchers (Carl Ackermann, 1999; Fama & French, 2003). In addition, we should include more independent variables to increase the adjusted R-square, for example we should adopt the asset-based model by Fung and Hsieh (William Fung & Hsieh, 2001) in the hedge fund performance study.

Meanwhile, our result in the study of managerial incentives and discretion on the fund performance shows a great different result compare to the previous researches (Agarwal, et al., 2009; Goetzmann, Ingersoll, & Ross, 2003). We believe that many major variables suggested by previous researchers, such as total delta and manager's option delta, have not been adopted in this study. Thus,

further study should be conducted in order to explore and enhance the understanding of the hedge fund managerial incentive and fund performance.

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