



Hedge Fund: Bias Analysis (2009-2013)

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<p>Abstract:</p> <p>Hedge fund has been developed as a complex but, profitable investment area. Financial crisis of (2007-2009) had a negative impact on the overall hedge fund industry. ‘Hedge funds, as a group lost about 20 percent, which was double the loss of 1998, their prior worst year on record’ (Kaiser and Haberfelner, 2011). Financial crisis of 2009, hit back many investors expectations as-well. Although, movement of money was slow, most of the hedge funds were steady in its return and growth. These aspects added numerous doubt and concerns regarding hedge fund return. Past researchers have already expressed concern regarding hedge fund return, which are affected by bias.</p> <p>This research paper shall produce bias figures prevailing in the hedge fund industry. It shall research two prime bias: survivorship and backfill bias and calculate them to inspect, Is bias in hedge fund a crucial factor, while looking for real hedge fund growth? Barclay hedge fund database is used to conduct this research. Overall, 2411 hedge funds operating from (2009-2013) return figures are reviewed, individually.</p> <p>Survivorship and backfill bias of 0.27 percentage and 0.78 percentage in average annually, are reported in this research paper. This research paper conclusion towards survivorship bias is in line with the conclusion drawn by Ackermann et al. (1991) and Brown et al. (2000) in their research paper of bias calculation. However, backfill bias in this paper is lower, compared with the past research done by several researchers on hedge fund bias analysis. Possible reasons can be, several funds who are performing well seeks anonymity rather than publicity, funds operating between (2009-2013) shows some unique returns compared to past researchers research data on different time frame.</p> <p>It shall also report on the alternative to hedge fund as fund of fund (FoF). This research shall end with researcher own comprehensive observation, drawbacks in the methods used to calculate bias and government efforts in the United States and European Union, in the form of new rules and regulation towards hedge fund.</p>	
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FOREWORD

To my Family.

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1 INTRODUCTION

1.1 DEFINITION

‘Hedge funds are lightly regulated active investment vehicles with great trading flexibility. Hedge funds are believed to pursue highly sophisticated investment strategies, and promise to deliver returns to their investors that are unaffected by the variety of financial markets’ (Ramadoria, Naik, Fung and Hsieh, 2008). Hedge funds are secretive, manages billions of dollars by investing on diversified projects with less or without any government supervision with sole motive to earn profit. The complexity in hedge fund and the strategies it uses are broad. ‘Hedge funds should not be considered to behave like general stock. Empirically, hedge funds do not have their worst performance when large shocks effect capital markets’ (Stulz, 2006).

‘Hedge funds are complicated in their ways of operation and use numerous controversial strategy to gain their objective. They are earning large sums whatever the economic climate is’ (Boyson, Stahel, and Stulz, 2006). ‘Empirically, hedge funds do not have their worst performance when large shocks affect capital markets’ (Stulz, 2007). These scenarios certainly raises questions regarding growth of hedge fund industry. Possible and widely accepted explanation can be, hedge fund return is not actual. It is affected by its bias nature.

‘Bias in hedge fund that includes dead hedge fund performance being excluded and hedge funds that satisfy the inclusion criteria of a vendor and only those funds that have “good” performance and are looking to attract new investors want to be included in a database’ (Hsieh and Fung, 2004). While former creates survivorship bias and later creates backfill bias. ‘Survivorship bias results from the fact that poorly performing funds disappear overtime: the calculation of funds returns based on surviving funds only can generate an upward bias in funds return’ (Liang, 2001). Backfill bias generates similar scenario as-well.

Both major biases are ignored, while hedge fund overall return is calculated. In this regard, it is important that, return figure of hedge fund should be adjusted by including bias in it.

1.2 GOALS

Several major financial institutions inject their savings in hedge fund. It is an obvious choice for several financial institutions. Hedge fund, in many cases returns on what it promised for. However, it is still a matter of discussion that, can their overall return figure be trusted? Although, few hedge fund vendors keep key information about their return, their database content and information differ. Hedge fund vendors have their own criterion to include certain hedge fund return in their database. Given criterion can be hedge fund turnover, currency it uses for reporting, growth rate along with others.

Hedge funds are not allowed to advertise their return. Reporting its return figure to hedge fund vendor is an indirect way of marketing for hedge fund. Hedge fund prefers their return to be good, for the sake of its reporting as-well. Many hedge funds in this scenario, reports returns when they are earning good, else hedge funds shall not report. Reporting their return is not mandatory. This framework of not reporting return, unless better growth is not achieved, creates bias, which needed to be fixed.

(Ackerman, 1999) research stated that, hedge funds report performance to commercial databases on a voluntary basis. Hence, they can decide when to begin or when to stop reporting. As a result, they and their databases are prone to several biases, such as self-selection, backfilling, survivorship, and the liquidation bias. These can over- or understate the “true” performance of the market (Kaiser and Haberfelner, 2011).

This research paper shall focus on the calculation of two major bias by studying Barclay hedge fund database. Prime biases in hedge fund helps us to give bias free hedge fund return, to some extent. Mostly, bias in itself is hard to rectify. (Hsieh and Fung, 2004) convey that, ‘Hedge fund started reporting by 1990, but vendors started collecting data from 1993’. It is hard to get access to the universe of hedge fund since, every vendors criteria and method of information collection differs. Limitations are involved while calculating hedge fund. But, accurate level of hedge fund return helps investors to have

correct information, which can give investors with precise benchmarking against a stock market index.

Admittedly, government role in hedge fund is controversial. Their involvement, by designing and implementing new regulations towards hedge fund is to lessen the risk of investors and the overall economy, by increasing information sharing among investors, regulators and hedge fund industry. However, regulations are keeping tight control on hedge fund. Hedge funds movement of money, strategy being used and its viability are constantly checked by respective government authority. It can be a wise step, but in the long term, hedge fund industry might have to lose many opportunities, due to such rules. Regulations towards hedge fund shall be discussed along with the possible alternative to hedge fund. Bias result from this research paper shall be reviewed with past researchers work.

1.3 Division

First part of this thesis shall look at the historic return of hedge funds. Historic return from hedge funds, level of bias in it and the conclusion derived by past researchers shall be discussed. Past research, on the methods for calculating survivorship and backfill bias and their drawbacks shall be covered. This research paper shall also highlight its own choice of method used for the calculating hedge fund bias and the reason behind it.

Second part of thesis shall present its bias result and comparison shall be made to past researchers bias figure. From (2009-2013), annual average growth of hedge fund shall be presented. This shall help to examine real performance of hedge fund. Hedge fund alternative as fund of fund shall be discussed as-well as fund of fund advantages over hedge fund.

New regulations towards hedge fund industry in United States and European Union shall be examined. Higher secrecy in hedge fund industry have created confusion and a sense of insecurity towards investors. Public outcry towards hedge fund has increased, due to its role in 2009 financial crisis which went unchecked by government. Government rules and regulations are implemented to protect investors and the overall

economy from systematic risk. This debate shall be covered in the regulations part of this research paper. Conclusion of this research shall be derived, simultaneously. Researcher own observation towards overall research paper would be presented as-well.

1.4 RESEARCH QUESTION

This research paper prime research questions are-

1. What is the main form of bias and how they occur?
2. What are the methods, available to calculate major bias in hedge fund?
3. What are the past research done on hedge fund bias, researchers conclusion and what is the bias figure during the period of (2009-2013)?
4. Can bias in hedge fund be rectified, else what can be its alternative?
5. What are the regulations in United States and European Union, towards hedge fund industry?

1.5 METHODOLOGY

In this research paper, Malkiel (1995) approach is used to calculate survivorship bias, instead of newer approach, due to its simple and accurate initiative towards calculating survivorship bias. Malkiel used this concept for calculating bias towards mutual fund. We shall apply this approach to hedge fund industry.

The standard procedure for calculating bias, as in Malkiel (1995) is to obtain the population of all mutual funds, (In our case, hedge fund) that operated during a given period. The average return of all hedge funds (live and dead) are compared with that of the surviving hedge funds at the end of period. Return difference is survivorship bias. Malkiel estimated survivorship bias of 0.5 percentage points (pps) a year return.

In this research paper, researcher calculated survivorship bias following above mentioned approach. 2213 live and 198 dead funds annual returns are studied

respectively. Both funds, (live and dead) funds five years mean return from (2009-2013) were calculated and above mentioned method for calculating survivorship bias is implemented, accordingly.

Final result of survivorship bias in this research paper is consistent with Ackermann (1999) and Liang (2000) calculations on hedge fund bias analysis.

On the other hand, backfill bias calculation methods appear to be in the process of development towards more scientific approach. Yet, researcher have used (Hsieh and Fung, 2000) method of calculating backfill bias.

To estimate the magnitude of instant history bias/backfill bias, Fung and Hsieh (2000), 'studied the hedge fund in the TASS database, which reports the inception date of each fund as-well as the date the fund entered the database'. (Fung and Hsieh) 'Measured the bias as the average difference between two portfolio. First, it was observable portfolio, but after dropping the first 12 monthly return of every fund' (Fung and Hsieh, 2002). (Ibbotson, Chen and Zhu, 2010) stated that, '(Hsieh and Fung, 2002) found medium lag of 343 days and delete the first 12 months of all funds' reported returns, finding an instant history bias of 1.4% per year'. While few researchers dropped 24 months return and followed the same approach stated by (Hsieh and Fung, 2002), but this process is not scientific and exclude large number of data.

In this research paper, two portfolios are established. First portfolio is, five years overall mean value of funds return, operating from (2009-2013). Second portfolio is, overall mean return of the fund value for four years, after dropping the first 12 monthly return of every fund from the time period of (2009-2013). Both portfolio difference respectively give us overall backfill bias prevailing in hedge fund industry for five years between (2009-2013).

1.6 REFERENCES USED

Sheer bias analysis for hedge funds are available, but few in number. Malkiel(1995), Ramadorai(2007), Fung and Hsieh(2007), Liang(2000) are some of the researchers,

whose past research papers are reviewed as a reference. Other key references, like newspapers, magazines including The Economist, Hedge Fund Co., Wall Street Journal, The Financial Times, The New York times are examined as-well.

Kaiser and Haberfelner(2010), Liang(2001) and Hsieh and Fung(2009) works are reviewed. They were important to get final conclusion in this research paper.

2 THEORETICAL FRAMEWORK

Hedge fund got controversial with fraud cases and Ponzi schemes. Past researchers, including Malkiel were interested in the reality behind mutual fund return, which was also facing similar criticism. However, it became increasingly clear that hedge fund also, does not represent real growth in its growth figure. (Hsieh and Fung, 2000) approach towards hedge fund bias calculation answer several key questions in this research paper. Their observation that, hedge fund may not be removed completely and past researchers conclusion drawn from their research were vital, to find reality behind hedge fund bias. Although, prime biases were calculated by various researchers in the past, but adding prime bias in the given hedge fund return may not represent real hedge fund return. Several minor biases are excluded in this process. In addition, different database and their own criteria of keeping record of hedge fund return makes researchers research limited to one specific database.

Governments are involved in hedge fund industry to make it more transparent. Regulations, which seek hedge fund to open up itself towards its investors can help to reduce bias in hedge fund industry. But, they are not enough. Governments are facing increasing public pressure, to limit hedge fund activities including several other financial institutions. Hedge fund risk, in case of failure has increased significantly, since it would have impact to the overall economy. Regulations might help to bring transparency, but it lacks to support hedge fund positive aspect of creating liquidity in the economy. Free movement of money by hedge fund has resulted in higher liquidity in the economy. It further increases economic activity. Now, with new regulations in European Union and United States, it might have negative impact on overall economy.

2.1 HEDGE FUND BIAS

Hedge fund bias prevails since hedge fund was created, due to its free nature. It does not need to report its earning to anyone. Many hedge fund reports its return, when it is finally doing fine. Several hedge funds does not report its return on the year of its establishment. New hedge funds rarely makes impressive return. Subsequently, they might wait for impressive return, to report. On the other hand, hedge fund still may not report its return since; it does not want any more publicity of its earning. They do not want new investors in their company. This process creates backfill bias.

It is hard to conclude which hedge fund is new, who are gone out of business and who are staying in the business, who are staying in the business but they not reporting to the vendor. Investors may not be sure with the information they have from hedge fund industry. This might leads to wrong decisions. Investors has right to know, influence of bias in hedge fund. Investors need to have bias figure. It helps investors to compare bias figure with given hedge fund return for better and informed decision. Bias pull or push hedge fund return. Therefore, real hedge fund return need to include bias figure in it.

Bias in hedge funds are divided mainly in two parts due to its ramifications and occurrence. We can further divide biases that are consequences of sampling from an unobservable universe of hedge funds, that we call “natural biases,” and those that arise from the way data vendors collect hedge fund information, that we call “spurious biases (Hsieh and Fung, 2002).

1) Survivorship Bias and 2) Backfill Bias. Other biases are A) Defunct Bias B) Selection Bias C) Instant History Bias. This research paper shall focus on two major bias with their level of influence on hedge fund return.

2.2 PAST TREND

‘Empirically, hedge funds do not have their worst performance when large shocks effect capital markets’ (Boyson, Stahel, and Stulz, 2006). Hedge fund earns, even when economy goes to slump. This is one of the unique characteristic of hedge fund.

‘Hedge fund mangers are paid highly for the returns they earn. However, there is increasing evidence that the behaviour of hedge fund indices can largely be replicated

by machines' (Kat and Palaro, 2006). Investors, who want to achieve certain hedge fund benchmark can have a cheaper alternative to high-cost hedge fund managers. There are alternatives to hedge fund managers. However, Ponzi schemes that lured large banks saving from all over the world made many interested on why such a blind faith to hedge fund company? Do hedge fund delivers what they say? Are their return figure real?

Strategies used by hedge fund managers, whatever the situation can be, are identical but returns of hedge fund differs widely among different hedge fund companies. This feature raises several questions on hedge fund return figure. Key hedge fund strategies can be:

1. Global Macro: This strategy makes investments, that are big in nature, at international level. It includes, investments on the future of currency trading, government issued T-Bills, stocks and the like. Extensive knowledge is required on nations economy, government current and future policy, economic indicators for these types of investment to be successful. These investments, in the form of foreign direct investment (FDI) and foreign portfolio investment (FPI) are often welcomed by foreign nation as it helps to increase nations current account.
2. Long/Short: Strategy, mostly used by hedge fund industry where, company buy back equities whose value are expected to raise in near future and sell off equities whose value is expected to decrease in future. This strategy can be beneficial when long term position pay off more, compared to short term position. Else, hedge fund net return by this strategy can be low or might face loss as-well.
3. Distressed: Hedge fund Industry might invest in companies, which are going through economic hardship or moving out of it. They might involve in covering loans/debt held by banks, private personnel which gives them certain percentage of company ownership in the form of shares, bonds and the like. Hedge fund company have their own future plan, for the company of their investment. In this scenario, most of the hedge fund company seeks to sell off its ownership of a company, when it is finally doing good. This is short term position. In the long term, hedge fund might get involved in day to

day decision making to see company grow. This position is risky but on positive circumstances, it bears profit regularly.

4. Market Neutral: Strategy used by hedge fund company in which it stays neutral to the movement of market and do nothing for a time being. It tries to save its investment from the exposure to the market risk, entirely. Barclay hedge fund database describes it further as, ‘At the core, market-neutral strategies focus on making concentrated bets, usually based on a perceived pricing asymmetry, while limiting general market exposure through a combination of long and short positions. The ultimate goal is to achieve a beta as close to zero as possible to protect against systematic risk’.

Researchers over a decade has identified many replication strategies capable of capturing between 40% to 80% of the average return of many popular hedge fund strategies. Investors are beginning to take notice of these replication strategies, especially because of their rule based, transparent features and the fact that they can be executed at low cost (Fung and Hsieh, 2007).

Investors ignored this particular background. They still rely on the expertise of hedge fund managers. Investors, many of them are not fully aware of what is going on with hedge fund and its return. Growth figures are accepted by investors, unquestionably. This should not be the case. With such a limited strategy in hand, it is insecure to accept growth figure of hedge fund, especially after 2009 financial crisis. Investors, many of them are not be aware of bias in hedge fund, which plays principle role in determining growth figures of hedge fund, on which investors decisions are based.

‘Many hedge funds today have no true hedge at all, rather they increase risk through leverage, concentration, and by trading in illiquid assets’ (Longo, 2009). During the period of economic slump, hedge fund took higher risk for better return. Specific details regarding risky approach by hedge fund company are unknown to many investors. Hedge fund might never disclose it. Hedge fund adopting risky approach can rouse further bias in hedge fund. Lacks of proper regulations have made bias key aspects in discovering real growth in hedge fund.

Few researchers found opposite return in hedge fund, then what was declared. Using the Lipper TASS dataset, (Malkiel and Saha) found that, ‘Hedge fund returns are

significantly worse at the end of their reporting live. Researchers have argued that funds stop reporting when they perform poorly relative to other funds' (Malkiel and Saha, 2006). Except survivorship bias, backfill bias was also widely reported. Researchers also suggested that, hedge fund managers report or start to report only from a period when performance is good. It indicate, bias in hedge fund is a major topic.

Bias not only inflate hedge fund return, but it has long term significance on hedge fund true value. Adjusting bias brings the net return from 14.88% to 7.70% for the equally weighted sample. Over the entire period, this return is slightly lower than the S&P 500 return of 8.04%, but includes a statistically significant positive alpha (Ibbotson, Chen, Zhu and Hom, 2010).

Authors Name	Database	Number of Funds	Time Period	Survivorship Bias
Ackerman al. (1999)	MAR/HFR	547	1988-1995	0,16
Ammann and Moerth	TASS	4014	1994-2005	3,54
Amin and Kat (2003)	TASS	1,721	1994-2001	1,89
Anjilvel et al. (2000)	FRAM	1,130	1990-2000	2,20
Baquero et al. (2004)	TASS	1,797	1994-2000	2,10
Bares et al. (2002)	FRAM	2,308	1996-1999	1,30
Bianchi and Drew (2006)	TASS	3,012	1994-2001	3,01
Brown et al. (1999)	OFFSHORE DIRECTORY	395	1989-1995	0,75
Capocci et al. (2005)	MAR	2,796	1994-2002	1,51
Darst (2000)	MAR	2,202	1995-2000	1,15

Table 1: Survivorship bias reported by researchers.

(Fung and Hsieh, 2000) report, 'survivorship bias of 1.4 percentage per year for funds of hedge funds versus 3 percentage per year for hedge funds', and (Liang, 2003) reports,

‘survivorship bias of 1.18 percentage per year for funds of hedge funds versus 2.32 percentage per year for hedge funds’ (Ammann and Moerth, 2005).

Using annual data from The US offshore Funds Directory, Brown, Goetzman and Ibbotson (1999) investigate the performance and survival of offshore hedge fund. Researchers found that, these hedge fund display positive systematic risk adjustment returns. The superior performance does not appear to steam from the managerial skills, for they find no evidence of performance persistent. However, some of the positive hedge fund return from survival related conditioning biases. Several practitioners using a large sample of hedge funds also find the evidence of superior hedge fund performance (Ackerman, MacEnally and Ravenscraft, 1999).

Authors Name	Database	Number of Funds	Time Period	Deleted Months	Backfill Bias
Edwards and Caglayan (2001)	MAR	1,665	1990-1998	12	1,17
Fung and Hsieh (2000)	TASS	1,742	1994-1998	12	1,40
Ibbotson et al. (2010)	TASS	1995-2010	1995-2010	INDIVIDUAL	4,02
Malkiel and Saha (2005)	TASS	2,065	1994-2003	12	5,74

Table 2. Backfill bias reported by researchers.

Note: Table 1 and 2 derived from (Kaiser and Haberfelner, 2011).

(Posthuma and Sluis), in their research paper used TASS hedge fund database, to determine backfill bias. Central area in their research was, to calculate backfill bias through the use of, exact date the fund decides to report its return in TASS database. With this information, researchers were able to determine for each fund the time period that was backfilled. Subsequently, they were able to remove the backfilled returns from the data set to obtain data set that is free of backfill bias (Posthuma and Sluis, 2003).

They got annual 4 percentage of backfill bias, which is similar to the return of Ibbotson research.

(Fung and Hsieh, 2009), found that, ‘40 percent of the 100 biggest hedge funds do not report performance to databases. They argued that, these firms have reached their high levels of assets under management because of good performance’. For example, Asness et al. (2001), ‘consider the impact of the self-selection bias to be minimal’. Ackermann

et al. (1999), believe that, ‘the overall effects of the survivorship bias and the self-selection bias will cancel one another out’.

Aiken et al. (2010), constructed a dataset of 1,193 hedge funds that have never reported to a database and compare it to hedge funds that have reported performance. They conclude that, between 2004 and 2008, the self-selection bias resulted in an approximately 2 percent per annum overestimate of average hedge fund performance (Kaiser and Haberfelner, 2011).

2.2.1 Essence of Hedge fund Bias

Major bias, that prevails in hedge fund also exist on the same manner in other funds, including mutual fund. But, compared to hedge fund, other funds are less error prone to the major bias, which is of significance in hedge fund. Frequency of bias occurrence in other funds are less, compared to hedge fund. Lack of transparency in hedge fund makes their return figure more questionable.

Hedge fund uses various diversified strategies to gain profit. Some of the strategies as discussed before in this paper are highly controversial including Long/Short, Global macro to name some of them. During 1997 Asian financial crisis, which caused nations with strong economy, often referred as Tiger economies including Thailand, Malaysia to move towards economic slump, Malaysian Prime Minister referred to George Soros, financier as-well as hedge fund manager, for causing the crisis. Economic factors, including pegged currency of tiger economies with dollar, which caused the crisis, that was further triggered by raising inflation in these tiger economy. However, pointing out to the Malaysian Prime Minister above mentioned view, it might be the case that, hedge fund might not have caused the crisis, but they were involved with these economies, speculating on their currency future. It shows that, hedge fund significance has increased further, in today's globalised world.

Nowadays, investments are increasing in hedge fund industry. Investors however, pay large sum to hedge fund company, not only for their investment but, certain percentage of its profit to hedge fund managers skills as-well. Bias prevailing in hedge fund makes it troublesome to inspect, Are there any manager skills involved in hedge fund better

operation or given profit from certain investment is only due to positive market movement? In such situation, when investors are not aware of this fact, they are paying huge amount without considering these facts. These are important features, which are needed to be disclosed. It can happen when real growth of hedge fund is presented, by avoiding bias in it. This makes bias, as a topic in hedge fund more worthwhile.

2.2.2 Survivorship Bias

Most of the researchers suggested, survivorship bias push up the overall performance of hedge fund the most. Survivorship bias is calculated differently by various authors, since they are defined differently as-well.

For example: (i) survivorship bias is about comparison with a sample containing defunct funds with a sample that does not contain defunct funds. (ii) survivorship bias is about comparison with a sample containing all funds with a sample that does not contain defunct funds. (iii) survivorship bias originates from defunct funds, failing to report their last returns. This bias is referred as liquidation bias (Posthumay and Sluiz, 2003).

Survivorship bias is created as a function of manager self-reporting, whereby a constituent index manager has the ability to discontinue reporting performance of their fund as a result of poor performance of which he may not want investors to be aware, implicitly biasing upward the index result because it includes only the subset of funds which continue to report (or excludes those which discontinue to report). While it is possible for self-reporting (or non-reporting) to create a bias, several clarifications are important with regard to this (Hedge Fund Research Inc. presentation to U.S Lab-our Dept, 2011).

Debate is ongoing, regarding the term, dead fund. Some funds, stop reporting and are dead, but they are not liquidated completely. This makes it a wrong judgement to call them dead. These aspects are ignored in most of the survivorship bias calculation. However, it is also hard to get hold of these specified data and the status of hedge funds, which are not reporting.

2.2.3 Past Research

Brown, Goetzmann and Ibbotson (1999), inspected survivorship bias on returns using off-shore hedge funds. They reported an attrition rate of about 14 percentage per year over 1989–1995. Their estimate of the survivorship bias was around a 3 percentage unrealisable return per year. This result is consistent with the 3 percentage estimate provided by Fung and Hsieh (2000) on the TASS database from 1994–1998 (Ibbotson, Chen and Zhu, 2010). Grinblatt & Titman (1989), Brown, Goetzmann, Ibbotson & Ross (1992), and Malkiel (1995) estimated yearly survivorship bias to the range of 0.5 percentage to 1.4 percentage (Bianchi and Drew, 2006).

‘During and after the financial crisis, liquidation of hedge fund increased rapidly. In an environment in which stocks and commodities lost between 35 and 40 percent on average, many hedge funds failed to generate their promised absolute returns’ (Haberfelner, Florian and Kaiser, Dieter, 2011).

2.2.4 Methods of Calculation (Survivorship Bias)

The standard procedure, stated by Malkiel (1995), is used in this research paper, as described before in this research paper. (Liang, 2002), uses a similar method, whereby sum of (Dead and Live) funds were subtracted from live fund, to calculate survivorship bias.

2.2.5 Contradictions

(Hsieh and Fung), were dismissive about the ways survivorship bias can be remedied. Although, both researchers draw great deal of conclusions on the rate of survivorship bias by implementing Malkiel(1995) method. However, researchers does not find those results accurate. They point out different methods being used to collect data and finalise the result. ‘Differences in data collection methodologies could result in different degrees of relation bias and instant history bias. That is, “missing funds” could be a consequence of data collection methodologies’ (Hsieh and Fung, 2002).

Currently, observable hedge funds in databases do not fully reflect the universe of all hedge funds. In time, observable funds may converge to the universe of all hedge funds, and from that point forward, analysts can remedy survivorship bias by analytical methods. Until convergence occurs, however, performance statistics derived from the observable funds remain biased estimators of the population statistics. And time series of returns prior to the “point of convergence” will remain vulnerable to survivorship bias. It was also concluded that, natural bias such as survivorship bias can not be rectified (Hsieh and Fung, 2002).

Survivorship bias and its method of calculation differs among researchers. Several researchers define survivorship bias as, originating from defunct funds, failing to report their last returns. This bias is also called liquidation bias. The trouble with this approach is that, it does not take into account those funds which are dead but has not liquidated completely. In-addition, some funds do not want to report its return because they do not want new investors in their company. Overall, various ways of calculating survivorship

bias including Malkiel (1995) approach, may not take into account these scenarios of hedge funds.

2.3 Backfill Bias

Hedge funds are not allowed to advertise. Most of them start to report when they start to get better performance. This results in the inception date differing from the reporting date of hedge fund performance. This process makes overall hedge fund return calculation unreliable due to few hedge funds, which never mention their real initial return. This creates backfill bias.

2.3.1 Past Research

Fung and Hsieh (2000), studied the ‘distribution across funds of the lag between each hedge fund’s inception date and the date at which it enters the database. They find a median lag of 343 days and delete the first 12 months of all funds reported returns, finding an instant history bias of 1.4 percentage per year’. Malkiel and Saha (2005), also studied the impacts of various reporting biases in the hedge fund data. They estimated that, backfill bias is over 500 basis points higher than the contemporaneously reported returns from 1994 to 2003.

2.3.2 Methods of Calculation (Backfill Bias)

(Fung and Hsieh, 2000) found that, in general, ‘Backfilled data can be rectified by dropping first 12 months period’. Some researchers dropped 24 months, claiming this can further rectify backfill bias.

(Ammann, Huber and Schmidt, 2009), removed backfilling bias (or instant history bias) by deleting all backfilled entries which were added to the database before a fund started reporting to the database. This date is known for roughly 95 percentage of all funds in their sample. For the remaining 5 percentage, researchers followed common practice and delete the first 12 return observations (e.g., Fung and Hsieh, 2000; Edwards and Caglayan, 2001).

2.3.3 Contradictions

It is difficult to know when exactly was the hedge fund established. Some hedge fund started reporting or they were motivated to report when they were gaining positive return.

(Hsieh and Fung, 2002) mentioned that, hedge funds that satisfy the inclusion criteria of a vendor and only those funds that have “good” performance and are looking to attract new investors want to be included in a database of the three major hedge fund database vendors, one (HFR) excludes managed futures programs, but two (TASS and Managed Account Research, MAR) include them. Funds enter a database with, in the words of Park (1995), instant history. Fung and Hsieh (2009), find that 40 percent of the 100 biggest hedge funds do not report performance to databases.

3 RESEARCH DATA

All-together, 2411 hedge funds were individually researched. Researcher set up criteria for the funds to be included in the research paper, which are:

1. Hedge fund trading on three currencies: US dollar, EUR and Pound are only considered.
2. Research is done with funds that registered continuous annual return.

In this research paper, funds that report continuous annual return, from (2009-2013) and all those who meet all the above mentioned criterion are only considered. Hedge funds, which are established after 2009 or on 2013 are not included in this research. Minimum criteria are limited so that, higher numbers of funds are included in this research.

3.1 Final Result

2213 live hedge funds return and 198 dead funds return for five years, from time period (2009-2013) were calculated. Live hedge fund return from (2009-2013), all-together averaged 13.34 percentage.

Most of the hedge funds within Barclay database were revealing pattern of exceptional return per annum. There were few hedge funds with return of over 100 percentage on 2009 but, end with below 1-3 percentage return rate in 2013. This was notable pattern. Some funds have started to report by 2009 but, with a return of 0 percentage for whole

year of 2009. Although these patterns are suspicious but, those funds were included as well in the research.

Figure of survivorship bias is low, with average 0.27 percentage per annum. This result is similar to (Liang, 2000), which showed 0.60 percentage of annual survivorship bias from (1990-1999). Liang expressed that, ‘positive survivorship bias in his findings confirm main reason for a funds disappearance is, poor performance’.

From (2010-2013), each hedge fund average growth were calculated, as shown in the figure below, to get backfill bias figure. Average growth for 4 years (2010-2013), is 9.43 percentage. Average figures were calculated, with up to date data available. Estimating overall figure from our analysis, backfill bias stands at an average 0.78 percentage per annum.

Table 3-5 below shows overall summary of the hedge fund bias calculations from the time period, (2009-2013).

	Live Funds (2009-2013)	Dead Funds (2009-2013)
Number of Funds	2213	198
Average return rate (2009-2013)	13.34%	10.57%

Table 3. Live and Dead hedge fund (2009-2013) return.

	Average of {Live + Dead Fund (2009-2013)} = A	Live Fund = (B)	B-A: Survivorship Bias (2009-2013)
Average growth rate (2009-2013)	11.95%	13.34%	0.27% per annum

Table 4. Survivorship bias calculation.

	{Live Funds (2009-2013)}= C	{Funds growth after dropping the (first 12 monthly return)}= D	(C-D): Backfill bias
Average growth rate	13.34%	9.43%	0.78% per annum

Table 5. Backfill bias calculation.

Although, there is not any specific measure of benchmarking for hedge fund industry, but we shall use S and P 500 to compare hedge fund return before including bias. It will helps us to see how well hedge funds are performing.

Financial crisis of 2009 created economic downturn in several economies. Hedge fund industry average five years mean return stands at 13.34 percentage in this research from (2009-2013). Benchmarking hedge fund return figures of five years with S and P 500, later outbids hedge fund industry by greater margin.

Most of the hedge funds reported annual return to Barclay hedge fund database from (2009-2013) with consistency. However, some funds with annual growth of 2-3 percentage had over 100-300 percentage growth in the middle of 2010-2011 when economy were going through financial crisis. These figures were included as-well, in this research paper but, these figures made significant positive impact on the hedge fund overall return figure.

3.2 Limitation of Research

This research is based on the reporting of hedge funds which are registered in Barclay hedge fund. Barclay hedge fund maintained well and up-to date list of hedge funds, but it does not have the universe of whole hedge funds. Moreover, it does not accept some hedge fund reporting, due to its own criteria of including hedge fund performance in it.

(Ackermann, McEnally and Ravenscraft, 1999), stated that, excluding disappearing funds has virtually no impact on our assessment on overall performance. Self-selection bias has the two implications for hedge funds research. First, some hedge funds may not actively seek new money, because there may be

diminishing returns to their arbitrage strategies. Second, some of the best hedge fund managers may be opting out of the databases (Saha, Malkiel and Greco, 2006).

Result might be, both bias have no impact on the hedge fund return. However, in this research, this is not the case. There are still, limited impact.

(Hsieh and Fung, 2002), supports the idea that instead of looking for hedge fund performance, fund of fund or investors experience can be reviewed for better investment decision. They point out to the fact, that hedge fund cannot be remedied. First, no realistic way exists of verifying that complete records of defunct funds were used to adjust the index returns for survivorship bias, especially prior to the mid 1990s. Second, differences in data collection methodologies could result in different degrees of relation bias and instant history bias. That is, “missing funds” could be a consequence of data collection methodologies (Hsieh and Fung, 2002).

4 Fund of Fund (FoFs)

Barclay hedge fund reported that, ‘A fund of hedge fund is an investment vehicle, whose portfolio consists of shares in several hedge funds. The fund of funds strategy can be applied to any type of investment fund, from a mutual fund to a private equity fund’. It allows investors with broad diversification. Unlike hedge fund, investors can invest to fund which have numerous diversification in one fund.

4.1 Fund of Fund and Bias

(Hsieh and Fung, 2004), expressed that, most direct way to measure hedge fund performance is to observe the investment experience of hedge fund investors themselves the funds of hedge funds. Researchers claimed, about risk characteristics, indexes of fund of fund is more indicative of the demand side dynamics driven by hedge fund investors preferences than are broad- based indexes. They pointed out that fund of fund characteristic in their performance is driven not only by Global scenario, but also by the investors performance.

(Hsieh and Fung, 2004), indicated that, fund of fund do not suffer from survivorship bias due to their reporting style. According to them, most of the fund of fund make audited performance reports to their investors that include investments in successful funds as well as “mistakes,” so a successful investment in a hedge fund that reached capacity constraint and stopped reporting to database vendors will remain in the history.

Fung and Hsieh (2000), revealed survivorship bias in fund of fund returns are less severe than in individual the hedge funds. The reason is that fund of fund, through the natural process of diversification, inadvertently minimise the measurement errors that may arise(Fung and Hsieh, 2004). Researchers also conveyed that selection bias is also not relevant in fund of fund. An individual hedge fund may choose not to participate in a database, but its return is fully embedded in the performance of any fund of fund that invests in it. When a fund of fund adds a hedge fund to its portfolio, the portfolio's history is not affected, so the issue of instant history bias does not arise (Fung and Hsieh, 2004).

4.2 Past Research and Trend

Fung, Hsieh, Naik, and Ramadorai (2007), investigate the performance of funds-of-funds. Authors argued that, the data are much better for funds-of-funds than it is for individual hedge funds and does not suffer seriously from the problems discussed earlier. Researchers considered three separate periods: January 1995 to September 1998; October 1998 to March 2000; and April 2000 to December 2004. They found that average fund-of-funds has a significant positive alpha (Excess return gained by superior manager skills) during the second period they consider, but the alpha is insignificant in the other two periods. The study also distinguishes between two different groups of funds-of-funds.

‘Investors are attracted to fund of fund, but comparing the returns, fund of fund falls short according to one of the report from’ (Bernstein Wealth Management, 2006). There are alternatives to hedge fund, but they lack similar kind of return than, hedge fund provides.

5.0 HEDGE FUND REGULATIONS

Ethical aspects of hedge funds are denounced by critics of hedge fund. ‘Regulators are concerned about the risks of hedge funds for at least four reasons: investor protection, risks to financial institutions, liquidity risks, and excess volatility risks’ (Stulz, 2007). Academia pointed out hedge fund negative role, towards recent Greek economic crisis. Hedge fund pull out most of their money being invested in Greece during its turbulent time, that also had some part to play in Greek economic crisis, to get worse.

Yet, hedge funds often profit by providing liquidity to the markets by buying securities that are temporarily depressed because of market disruptions. The role of hedge funds in making markets more liquid and in reducing market inefficiencies makes it necessary for those who want to restrict their activities to have a compelling case that their possible adverse impact on market volatility outweighs their positive effects (Stulz, 2007).

Keeping this fact in mind, government role with new rules need to focus more on the aspects of transparency in hedge fund rather than restricting its movement.

In the fall of 1999, two bills were introduced before the U.S. Congress directed at increasing hedge fund disclosure (the “Hedge Fund Disclosure Act” [the “Baker Bill”] and the “Markey/Dorgan Bill”). But,

when the legislative firestorm sparked by the Long term capital Management (LTCM) episode finally quieted, there was no new regulation of hedge funds (Edwards, 2003).

Now, situation has changed. Governments needed to make bold decisions. Financial crisis of 2009 forced regulators to make bold move towards hedge fund industry.

5.1 European Union Hedge Fund Regulation

Alternative Investment Fund Managers directives (AIFMD), is one of the crucial policy towards regulating hedge fund and private equity inside European Union (EU). Memo published by EU on Nov., 2010 states that, (AIFMD) would be applied by member states into national law by 2013.

European Commission published document, related to (AIFMD). On its Executive summary of impact assessment on Dec., 2012, it pointed out four key problems on Alternative Investment Fund (AIF), which includes hedge fund as-well. It states, ‘Alternative Investment fund Manager (AIFM) activity to have impact on overall financial stability, investors protection, Micro and Macro prudential risks’.

Several key measures were indicated on the European Commission (EC) executive summary of April, 2009 regarding (AIF). It includes, ‘objective to develop single market for (AIF), ensure that all (AIFM) are subject to appropriate authorisation and registration requirements, enhance public accountability of (AIFM) holding controlling stakes in companies, to name few of them’.

Measures like, common approach towards asset under management, calculation of leverage to determine level of risk being involved, additional own fund to cover professional liability risk, scope of cash monitoring, reporting to competent authority were implemented as described in Executive summary of impact assessment on Dec., 2012. European Union president Barroso stated, in a European Commission statement at the occasion of European Commission vote on the directives of hedge fund and private equity, ‘The adoption of the directive means that hedge funds and private equity will no longer operate in a regulatory void outside the scope of supervisors. The new

regime brings transparency and security to the way these funds are managed and operate, which adds to the overall stability of our financial system’.

European Market Infrastructure Regulations (EMIR), is regulations towards hedge fund industry. It further refines rules towards over-the-counter derivatives, central counter-parties and trade repositories. Derivatives refers to any financial contract whose values are derived from other major entities like Interest. Over-the-counter derivatives refers to, financial dealings held between two parties without any involvement of security and exchange. Trade repositories are central institution that collects information of over-the-counter derivatives. While central counter-parties (CCP) refers to, the middle man who guarantees two parties doing trade that, if one party defaults, central counter-parties would fulfill defaulted party obligations to the other remaining parties. These standards are already implemented by March, 2013.

Market abuse directives (MAD), objective is to protect investors from insider dealings, misleading information and maintain the integrity of the European Financial institution and keep the investors confidence. Severe sanctions and effective investigations are in place, to maintain the objective.

5.2 United States Hedge Fund Regulations

Foreign Account Tax Compliance Act (FATCA), is formed to stop US citizens to avoid tax on their income by investing in offshore funds. Financial institutions including hedge fund, mutual fund need to disclose information to respective authority about their investors. Failing to do so results in heavy fines and other legal proceedings. Investors, who prefers secrecy while investing in offshore hedge fund may not perform same anonymity, like before. It might discourage them to invest. This regulation became law by March, 2010.

Most hedge funds are not required to register with the Securities and Exchange Commission (SEC) under the Investment Company Act of 1940 or the Investment Advisers Act of 1940. In 2004, the Security and Exchange Commission implemented a rule that would have required all hedge fund advisers to register with the Securities and Exchange Commission under the Investment Advisers Act. In the wake of the financial crisis, Congress and President Obama’s Administration debated proposals for financial regulatory reform (Ruane and Seitzinger, 2010).

This debate started a series of reform, targeted towards hedge fund.

In the court case, *Goldstein v. SEC* where, Securities and Exchange Commission request towards hedge fund disclosure was scrapped by District of Columbia court in June 2006. Hedge funds were allowed to practice anonymity just like before. Financial crisis of 2009 changed it all.

Freddie Mae and Freddie Mac failure, which also helped to spread financial crisis in major banking system, forced government to act. There was possibility of systematic risk. It refers to the event, when collapse one entity to have broader impact on the overall financial system, rather than the impact limited to only one entity. Instead of waiting for big credit bubble to burst, which might have negative impact on whole financial institution, American government rescued these troubled institution with tax payers money. Pile of toxic assets were government problem now. These assets were covered by tax payers money. Several voices were raised against the use of tax payers money in these ways. In these situation, government came up with regulations for the security of overall financial institutions. Most importantly, government had to act so that above mentioned scenarios does not occur, again.

Dodd-Frank act: Title IV is specially targeted to fund-managers including hedge funds, which manage huge assets and are prone to such systematic risk. These advisors need to register with Securities and Exchange Commission and Federal deposit Insurance cooperation (FDIC). Fund managers need to disclose informations. This disclosure of information which also includes asset under management, leverage used, trading practices to name few of them. These disclosures helps government designated organization to study particularly, risk involved in certain strategy of these funds, which might have impact on investors investment, towards other financial institutions and might be towards overall economy.

The Dodd-Frank Act requires the Comptroller General of the United States to conduct a study on the appropriate criteria for determining the financial thresholds or other criteria needed to qualify for accredited investor status and eligibility to invest in private funds. Moreover, The Dodd-Frank Act directs the SEC's Division of Risk, strategy, and financial innovation to conduct certain further studies regarding the regulation of short sales. One should expect that there likely will be more regulation of short sales that could impact private equity funds. Dodd-Frank act also seeks (SEC) to study regulation about short sales.

In future it is expected that strict regulation might be enforced in such activity. (Muller and Chertok, 2011).

British Broadcasting Corporation (BBC) on Dec., 2013 reported on Volcker rule. It reports, Volcker rule, named after former Federal Reserve chairman Paul Volcker. Volcker rule bans banks from using their own funds for trading activities. It further states that, Volcker rule stretching to 800 report, at its core, the rule imposes a strict ban on so-called "proprietary trading", which is when banks use their own funds to make trades. While, banks have argued that the rule is too comprehensive and makes it difficult to distinguish between trades made for profit and those done simply to hedge against risk. Banks have still 21 July, 2015 to comply with the rule.

Politicians in United States as-well as in European Union claimed, new rules and regulations towards hedge fund is the right way, to move forward.

USA today on Dec., 2013 reported Mr. Obama saying, "As part of this Wall Street reform, we fought to include the Volcker Rule- a rule that makes sure big banks can't make risky bets with their customer's deposits. The Volcker Rule will make it illegal for firms to use government-insured money to make speculative bets that threaten the entire financial system, and demand a new era of accountability from CEOs who must sign off on their firm's practices. Overall this was the objective of American government, for series of rules towards hedge fund.

5.3 Regulations and Hedge fund Trend

Financial times on October 13, 2013 reported that, Targeted hedge fund rules in both the EU and US, as well as regulations affecting the markets in which hedge funds trade and the manner in which they do so make for an unprecedented set of rules and costs for the once freewheeling hedge fund world to get to grips with. Financial times further states, KPMG, the consultancy survey in which it estimated, hedge funds had spent \$3 billion meeting compliance costs associated with new regulations since 2008 – equating to, roughly, a 10 per cent increase in their annual operating costs.

In future, regulations towards hedge fund might be more strict. Western economy, with changing politics in uncertain landscape might come up with a far more strict regulation, to earn more public support. Hedge funds need to adapt with it and become more transparent in the way of its operation.

There are however, critics towards government policies as-well, especially towards hedge fund.

U.S. Chamber of Commerce Center for Capital Markets Competitiveness (CCMC) President and CEO David Hirschmann is concerned about the future of hedge fund after strict rules were passed through senate against hedge fund. On his personal statement he reported that, "The Volcker Rule is the most complex rule stemming from the already convoluted Dodd-Frank law, and its impacts will have a significant effect on the broader economy. Since it was first proposed, we have warned that the Volcker Rule may harm the ability of businesses to raise the capital needed to grow and operate. The Volcker Rule may shut Main Street businesses out of some markets, raise the costs of capital, and place the United States at a competitive disadvantage in a global economy. That is not a winning formula for sustained economic growth and job creation.

Considering these aspects, new rules and regulations might bring hardship not only on the hedge fund operation but, also on the overall economy. It is not the government responsibility to take care of toxic assets. Some of these assets, which are of no real value are passed from one financial organization to others, which created pile of toxic assets. Few financial organization, in order to be safe from loss, passed toxic assets in cheaper price by hiding its true value as a part of normal buying and selling strategy. This process made toxic assets to spread in overall financial sectors. Instead of one big financial player to pay the price of those toxic assets it purchased, whole financial organizations got involved in it. This created whole financial system in a mess.

Government role here should be to encourage whistle-blowers, who can report wrong doing on time, rather than punishing whole financial system. Government need to punish those individuals who passed these toxic assets around whole financial institutions. Punishing overall financial institutions is not a solution. Although, it is believed that regulators might push for more regulations towards hedge fund to avoid future economic crisis. Such a strategy by any government need to be highly calculated.

6.0 FINAL INTERPRETATION

In this paper, researcher used (2009-2013) time period to investigate real return of hedge fund by comparing it with two major form of bias. Both bias revealed upward trend. Survivorship bias was at average 0.27 percentage annually while, backfill bias with average 0.78 percentage annually. Both bias, if taken into account to form real return of hedge fund, real growth changes to certain degree. But, it shall be inaccurate to present new real hedge fund return after including these bias. There are other bias as-well, which has some impact on hedge fund growth. Considering only prime bias in this case might be unsound. This research paper showed two prime bias as significantly prevailing in hedge fund.

Backfill bias result in this paper is in contrary to several previous researchers conclusion. Dropping 12 months returns from (2009-2013) gave us return, lower than (2009-2013). Period (2010-2013) return stands at 9.43 percentage while, period (2009-

2013) at 13.34 percentage. This behaviour of backfill bias can be the result of various reasons. Bias research in this paper for funds, operating from (2009-2013) differs from, various past researchers bias calculation period. Many funds who are doing good, might not report its return for certain periods. This might be because, they do not seek any public attention to them. Moreover, general observation was that, financial crisis of 2009 might have negative impact on hedge funds return. But, they might have used numerous diversified strategies to full-fill their goals.

Most of the past research on hedge fund bias pose grave question to the overall hedge fund return. In actual, real growth of hedge fund is hard to verify and present it. Excluding all biases in hedge fund can not be done. Government regulations might make hedge funds more transparent. But, most of the regulations in United States and European Union are keeping constant check on hedge fund risky strategy. There is nothing wrong in taking risk. Hedge fund has been operating in such ways and they should be allowed for it. Instead of strict regulations, government could have implemented regulations for whistle blowers, who can be rewarded and protected. They might be able to stop future wrong doings.

Bias figures reported in this research paper, poses investors with another important question. Why hedge fund managers are paid huge amount, if hedge funds are not delivering what it reports? In this research paper, as-well as research papers in the past regarding hedge fund bias, has pointed out positive prime bias in hedge fund. It gives investors some understanding about bias, but these prime bias figures are not enough to reach for final conclusion towards real hedge fund return figure. With such an uncertainty, it is up-to the investors, either to include these prime bias to conclude real return of hedge fund or dismiss it, and seek for alternative to hedge fund.

There are, few but positive hope for hedge fund in future. With increasing regulation for the sake of consumer protection, hedge fund industry can be more transparent. This would provide investors with new information and more options. However, there is no lack of better alternative to hedge fund. The Economist, on-line edition on June 2013 reports, 'investors face a quandary. Cash offers a return of virtually zero in many

developed countries; government-bond yields may have risen in recent weeks but they are still unattractive'. The Economist went further with, 'smart beta can be a new option for the investors. It breaks old tradition where investors instead of buying back stock or bond, investors monitor asset class'. Investors need to be cautious with bias prevailing in hedge fund, as well as newer possibilities in hedge fund industry, before making investment decision.

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