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HEDGE FUNDS DEVELOPMENT AND THEIR ROLE IN ECONOMIC CRISES

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Abstract

The rapid development of hedge funds and their emanating critical role in the financial markets and the financial system globally, combined with the increased frequency of economic crises during the last 25 years, brought them to the centre of discussions concerning the following issue: «To what extent the operation of hedge funds can affect the birth, peak and even geographic expansion of economic crises?». In this context, the present paper aims to contribute to the limited and sporadic discussion of whether the hedge funds could be held responsible for economic crises. To this extend the growth and the impact of hedge funds on financial crises is analysed and evaluated using the HFR database -in their birth, aggravation or even geographic expansion- both from a historical perspective and in relation to the 2007-today crisis. Based on the evidence presented in this paper, hedge funds cannot be blamed for the birth of the crises of the last 25 years. Comparing the data across the different crises, it becomes obvious that, with the exception of the 2007 subprime crisis, where almost all hedge fund strategies suffered considerable losses, in all other crises studied in the present paper, the hedge fund strategies with a negative return were the ones that had an exposure to the specific sector and/or region that was in the centre of the crisis i.e. Emerging market strategy presented substantial negative monthly performance over the Asian crisis, Convertible arbitrage strategy was affected by the dot-com crisis, etc.

Keywords: hedge funds, financial crisis, ANOVA, kernel density function
JEL classification: G01, G11

1. INTRODUCTION

Hedge funds are loosely regulated alternative asset class, whose popularity grew exponentially in the last 25 years. They employ sophisticated and highly dynamic investment styles, which allow for big trading flexibility, aiming to deliver absolute returns to their investors in both bull and bear markets due to their alleged low correlation with bonds and stocks.

Over the last two decades, hedge funds have gained a great deal of economic and political prominence (Quaglia, 2009). Their size has grown forty-fold globally in terms of assets under management since 1990 and from $41 billion reached approximately $1,7 trillion in 2009. However, according to IMF, their actual exposure, due to the indirect leverage, amounts to 2-3 times the value of their capital. Politically, the activity of hedge funds has come into the spotlight due to the accusations of their role in the UK's exit from the Exchange Rate Mechanism, in the Asian financial crisis in 1997, in the burst of the high-tech bubble in 2000 and in the 2007 subprime crisis. These events emphasized the potential systemic impact that can be driven by the behaviour of hedge funds.

In this framework, the discussion of the role and the impact of hedge funds on economic crises is a frequent issue that arises during and after every financial crisis. Moreover, there are divergent views of the role hedge funds have played in all crises of the last 25 years. On the one hand, hedge funds are believed to exercise a substantial influence on the financial markets in relation to their size due to dynamic and leveraged trading strategies. On the other hand, it is argued (Stromqvist, 2009 and IOSCO, 2009) that hedge funds reduce the likelihood and prevalence of asset bubbles in general by going short on overvalued assets and play an essential role in maximising the impact of available investment capital.

In this context, the present paper aims to contribute to the limited and sporadic discussion of whether the hedge funds could be held responsible for economic crises. To this extend the growth and the impact of hedge funds on financial crises is analysed and evaluated using the HFR database[1] - in their birth, aggravation or even geographic expansion - both from a historical perspective and in relation to the 2007-today crisis.

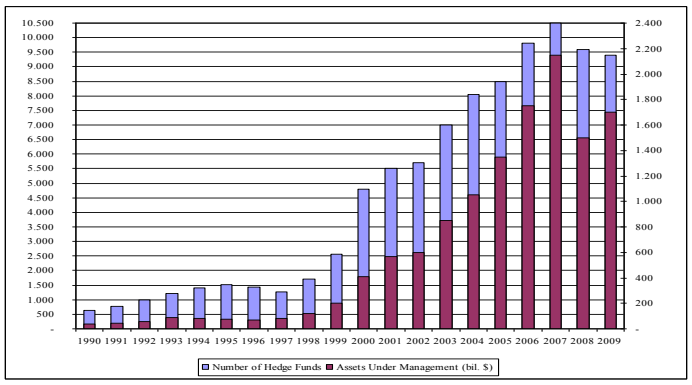
The paper unfolds in two sections apart from the introduction and conclusions. The second section elaborates on the development and basic characteristics of hedge funds and the third section investigates the role of hedge funds in economic and financial crises of the last 25 years.

2. DEVELOPMENT OF HEDGE FUNDS DURING THE PERIOD 1985-2009

The growth of the hedge fund industry between 1990 and end-2009 was exceptional: hedge fund assets increased 41 times, rising from $41 billion to about $1.7 trillion, and the number of firms operating within the industry altered 15 times, rising from 635 to 9,400 (Figure 2.1). One of the key drivers behind the growth of the hedge fund industry was its 'institutionalisation': institutional investments in hedge funds remained comparatively modest up to 2002. Since then they rose so rapidly that by 2007 institutional investors were as important a source of hedge fund capital as were wealthy individuals (Lysandrou, 2012).

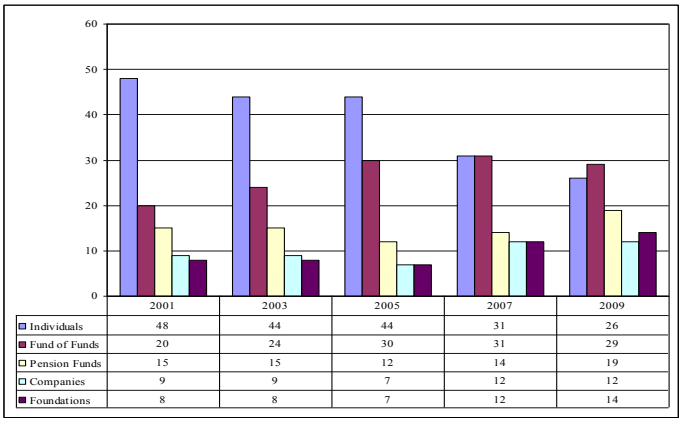
More specifically, in 2001 48% of hedge funds investors were wealthy individuals, 20% were Fund of Funds, 12% pension funds, 8% private companies and 7% Foundations (Figure 2.2). However, in 2009 the share of wealthy individuals decreased by 51% with a

parallel increase of the share of all other categories with Pension Funds and Foundation expanding by 100% and 58% respectively. These changes in the composition of the hedge fund industry investor base were largely the result of the unusually low yields that persisted in all of the major bond markets during the 2002-2007 period (Lysandrou, 2012). Although Collateralised Debt Obligations (CDOs) offered what seemed a good solution to the yield problem that was becoming increasingly acute, the high risk and difficult to trade nature of these financial products meant that the pension and mutual funds and various other institutional investors had to strictly limit their involvement with them and look for additional solutions to the yield problem which were offered by hedge funds.



Source: [IFSL]

Figure no. 2.1 Number of Hedge Funds & Assets Under Management (1990-2009)



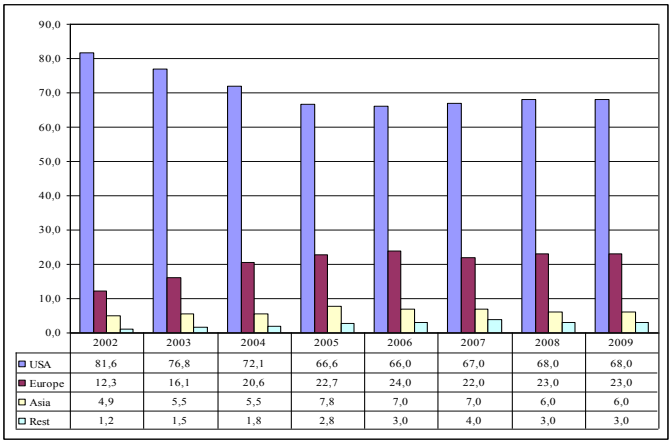
	2001	2003	2005	2007	2009
Individuals	48	44	44	31	26
Fund of Funds	20	24	30	31	29
Pension Funds	15	15	12	14	19
Companies	9	9	7	12	12
Foundations	8	8	7	12	14

Source: [Hennessee Group LLC]

Figure no. 2.2 Percentages of Hedge Fund Investors by Source (2001-2009)

An important aspect of hedge funds development over the last decade was the restructuring of the geographical distribution of their assets. More specifically, in 2002 82% of hedge funds, in terms of assets under management, had its headquarters in the USA, 12% in Europe, 5% in Asia and the remaining 1,2% in other countries (i.e. Brazil). By 2005, the share of hedge fund assets in the USA dropped considerably, strengthening at the same time the portion in all the other geographical regions (Figure 2.3). This change can be attributed

to two factors which were observed at the same time after 2002: First, many hedge funds were founded in Europe, Asia and South America and second, a considerable number of hedge funds took their business from the USA to Asia (Singapore, China, etc) so as to profit from the opportunities offered in this broader emerging area.

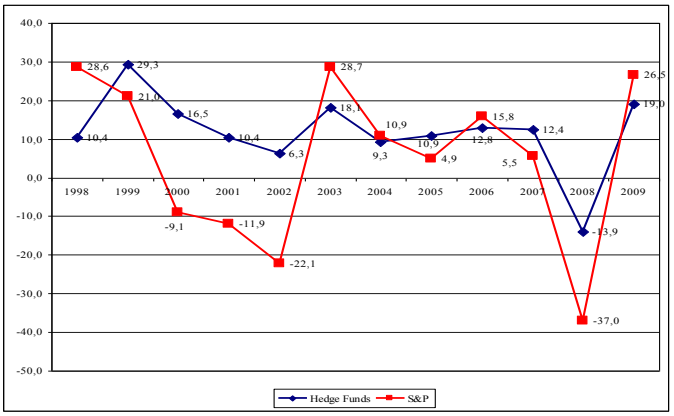


	2002	2003	2004	2005	2006	2007	2008	2009
USA	81,6	76,8	72,1	66,6	66,0	67,0	68,0	68,0
Europe	12,3	16,1	20,6	22,7	24,0	22,0	23,0	23,0
Asia	4,9	5,5	5,5	7,8	7,0	7,0	6,0	6,0
Rest	1,2	1,5	1,8	2,8	3,0	4,0	3,0	3,0

Source: [IFSL.]

Figure no. 2.3 Percentage of Assets Under Management of Hedge Funds per Geographical Region (2002-2009)

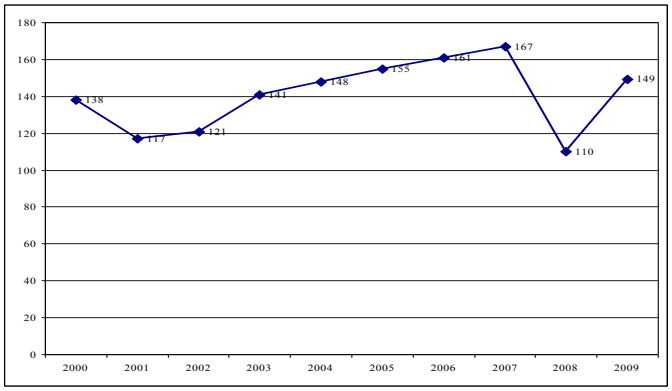
One of the strongest advantages of hedge funds, due to which they attract a large share of global assets, consists in historically higher yields compared to S&P with lower volatility. In fact, for the period 1998-2009 (Figure 2.4) in a total of 12 years only in five cases, the average yearly return of the S&P was higher than the average yearly return of hedge funds. However, this was accompanied by a double standard deviation (the standard deviation of hedge funds and S&P returns is 10,1 and 21,2 respectively) and as a result, a higher risk. It is notable that, whereas a first statistical analysis presents the average annual return of hedge funds to have a high degree of correlation (73,4%) with that of S&P for the period 1998-2009, it drops to 45% when the year 2008 is excluded from the analysis (the peak of the recent economic crisis). The strong correlation of the return of hedge funds and that of S&P in the year of the deep depression reveals that the economic crisis of 2007 had an unexpected common effect on all financial products. On the other hand, the low standard deviation of hedge funds confirms the relative success of their strategy as they offer higher yields with lower risk (even in 2008 the average annual return of hedge funds was -13,9%, when S&P was collapsing losing more than 1/3 of its value).



Source: [Hedgefund Intelligence and Return.blogspot]

Figure no. 2.4 Average Yield of Hedge Funds & S&P (1998-2009)

Finally, in order to have a deep understanding of the development of hedge funds invested assets over the last 10 years we focus on the use of leverage. In particular, throughout the 2000-2009 period, hedge funds operated by leverage which, in 1997 exceeded 160% (Figure 2.5). However, under the pressure of the 2007 crisis and the simultaneous increase of the Preservation Insurance Margin, hedge fund investments (as a percentage of assets) subsided to 110% in 2008 only to return to higher levels (149%) in 2009.



Source: [Hennessee Group LLC, Financial Services Authority]

Figure no. 2.5 Investments of Hedge Funds as % of Capital under Management (2000-2009)

3. THE ROLE OF HEDGE FUNDS IN ECONOMIC CRISES

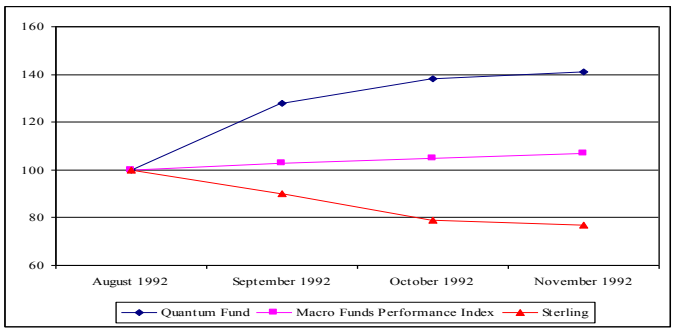
The substantial increase, the last 20 years, of the hedge funds' assets under management, combined with the fact that they are not under the strict microscope of the regulatory authorities, brings the hedge fund industry in the centre of every discussion about their role and impact on economic crises. Concerns have been voiced in relation to systemic issues, investor protection and market integrity (HFSB, 2009 and Stromqvist, 2009). On the

other hand, the in-depth analyses of Fung and Hsieh (2000a and 2000b), Brown et al. (1999 and 2001), Stromqvist (2009) and IOSCO (2006 and 2009), showed that the action of hedge funds does not justify the broad spectrum of the negative side of the discussion around them.

More specifically, hedge funds present a series of advantages, which could have a positive effect on the operation of the financial markets and the economy in general. The main advantages of hedge funds consist in the offer of liquidity to the markets since they constitute important buyers and sellers of financial products, especially of the less traditional ones. In addition, hedge funds finance projects both directly and indirectly which without their presence could never be put in process (such as takeovers, mergers, infrastructure, new business plans, etc). Moreover, a great number of hedge funds aim to achieve returns by stressing the inefficiencies of the market, thus reducing the yield difference between purchase and sale price leading to more effective prices for the financial products. Hedge funds also lead to a better distribution of risk since they are among the main traders in derivative markets.

At the same time, market participants have blamed hedge funds for their role in the economic crises of the last 25 years. Is this the case; No, not at all. Hedge funds caused neither the Asian crisis, for which they have been strongly accused, nor the other major crises of the last two decades. Numerous studies, Ineichen (2001), Fung and Hsieh (2000 and 2008), Stromqvist (2009) and Palaskas and Stoforos (2013), which analysed the role of hedge funds in the macroeconomic imbalances reported during the last two decades, suggest that:

- The aggressive behaviour of hedge funds in some cases accelerated inevitable developments, such as the depreciation of the British pound in 1992, when the Quantum Fund, by shorting the currency, led the sterling away from the Exchange Rate Mechanism (Figure 3.1). It is true that the problem did not spring from the investment behaviour of the Quantum Fund, but from the fact that the sterling was technically overvalued (Stromqvist, 2009). Furthermore, Figure 3.1 shows that not all hedge funds, which adopted the Macro strategy, profited from the depreciation of the British pound, but mainly the Quantum Fund. According to Fung and Hsieh (2000), the Quantum Fund made a profit of £1 billion on its short positions in the British pound alone. Soros, the Quantum Fund manager, came under heavy criticism for his actions but responded that since the currency was obviously incorrectly valued a price adjustment would in any case have been necessary sooner or later (Stromqvist, 2009).



Source: [Stromqvist, 2009]

Figure no. 3.1 Average Monthly Performances of Quantum Fund, Macro Funds Index and Sterling in 1992 (August 1992=100)

• In the case of the Asian crisis in 1997, hedge funds were accused of causing the depreciation of Thailand, Malaysia and South Korea currencies through extensive shorting (Eichengreen et al., 1998). However, there is no evidence to such a conclusion, since hedge funds, which invested in this particular geographical area, suffered considerable losses during the period under study (Table 3.3). Just as in the crisis of 1992, the Asian crisis was not the creation of hedge funds opportunistic moves, but rather the result of the structural imbalances in the financial systems of certain countries (Palaskas and Stoforos, 2013). More specifically, the East Asian Financial Crisis of 1997 had its roots in the high interest rates in the region (Table 3.1), which gave rise to huge capital inflows and a large increase in asset prices (Table 3.2). The rise of interest rates in US (February 1995), led to capital flows to the US instead of Asia and a subsequent dollar appreciation (Tucker, 2009). The value of the pegged Asian currencies did so as well, making Asian exports appearing suddenly more expensive. At the same time, China was emerging as an economic power and East Asian countries' former export customers began to switch to imports from China, particularly as value of the Chinese currency was kept artificially low. For those reasons, the East Asian countries borrowed further to maintain their growth paths and fill the funding gaps, which become more evident when export incomes declined. The mix of excessive gearing and inflated asset market prices eventually led to sharp market corrections (Table 3.2) and Asian companies began to default on their debt obligations. Credit was withdrawn from East Asia, causing sharp fall in currency demand. Consequently, significant capital flight registered from the region and currencies collapsed in value (Table 3.1). The hedge funds were held responsible for the Asian crisis. However, as in the case of sterling in 1992, all that it took for the 'bubble to burst' was the rise in interest rates in other countries, consistent with their business cycles, and the emergence of trade competitors from other regions. Worth reminding that the hedge funds that invested in South East Asia, especially Emerging Markets strategy, suffered substantial losses due to the collapse of these economies (Table 3.3). Finally, according to Brown et al. 1998: 'there have been periods when hedge funds have huge positive and negative exposures to Asian currencies, but these bear no relation to current, past or future moves in exchange rates and the global markets can absorb multibillion dollar positions put on by major currency funds without suffering ill effects'.

Table no. 3.1 Exchange Rate and Interest Rate Spread in Selected Asian Countries

	Exchange Rate (per US$1)			**Interest Rate Spread* (%)**
Country	**June 1997**	**July 1998**	**% Change**	**January 1991 - June 1997 (Average)**
Indonesia	2.380,0	14.150,0	-83,2%	11,5
Korea	850,0	1.290,0	-34,1%	4,1
Malaysia	2,5	4,1	-39,0%	1,6
Philippines	26,3	42,0	-37,4%	6,5
Thailand	24,5	41,0	-40,2%	4,0

**Note:* Local deposit rate less Libor ($)

Source: [Wikipedia, 1997 Asian Financial Crisis and Bird and Rajan, 2000]

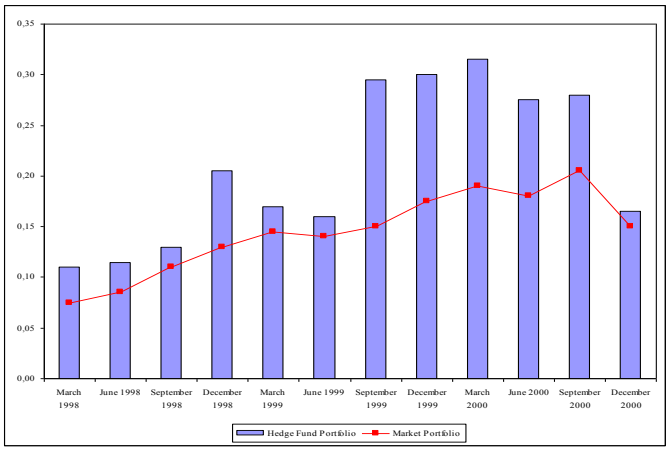
Table no. 3.2 Asian Crisis Countries: Basic Economic and Financial Indicators

		GDP Growth Rate	Exports (real growth)	Imports (real growth)	Net Private Capital Inflows	Stock Market Price Index (Absolute Value & Annual % Change)
Indonesia	1991-95	7,8	10,0	15,5	3,5	418
	1996	8,0	5,5	7,8	6,3	637 (+52,4%)
	1997	4,7	10,2	17,2	1,4	401 (-37,0%)
	1998	-13,7	31,1	-25,4	-3,1	
Korea	1991-95	7,5	13,1	14,8	2,8	813
	1996	6,8	11,4	14,1	5,1	651 (-19,9%)
	1997	5,0	21,1	4,0	-3,1	376 (-42,2%)
	1998	-5,8	13,8	-22,4	-5,5	
Malaysia	1991-95	8,7	15,7	19,3	12,1	888
	1996	8,6	15,4	16,7	7,5	1237 (+39,3%)
	1997	7,7	17,2	13,5	1,3	594 (-52,0%)
	1998	-6,7	-14,3	-14,3	-6,3	
Philippines	1991-95	2,2	8,2	9,9	3,3	2196
	1996	5,8	16,7	2,5	9,4	3170 (+44,4%)
	1997	5,2	13,5	-1,4	0,8	1869 (-41,0%)
	1998	-0,5	-14,3	24,4	0,7	
Thailand	1991-95	8,5	14,2	15,4	9,5	1185
	1996	5,5	-1,8	-0,9	5,6	831 (-29,9%)
	1997	-1,3	6,6	-10,0	-8,8	372 (-55,2%)
	1998	-9,4	5,1	-26,8	-14,5	

Source: [IMF, 1999 and Corsetti et al, 1999]

• In 2000, the world experienced a technology stock crisis, known as the dot-com bubble. The dot-com was a speculative bubble covering roughly the 1997–2000 period during which stock markets in industrialized nations saw their equity value rising rapidly. The value placed by investors on many of the high-tech companies was based entirely on distant projected earnings, whereas most made no current profit at all, with some not even making any current sales. Finally, in March 2000, the bubble burst with Nasdaq eventually falling 78% in value by October 2002. The stock market crash of 2000–2002 caused the loss of $5 trillion –equivalent of 1/3 of today's US annual GDP- in the market value of companies from March 2000 to October 2002. The wider repercussions of this collapse in share prices led to a sharp drop of the investments in the real economy, which is responsible for the slowdown in the US economy, with the Federal Reserve making a sharp cut in interest rates[2] to stimulate the economy back into action. A number of economists subsequently argued that this crisis, and its associated low interest rate environment, sowed the seeds for the subsequent subprime crisis in 2007 (Tucker, 2009). In the dot-com crisis, the role of hedge funds cannot be clearly identified. Hedge funds were among the main investors in the high tech companies taking likewise part in the birth of the bubble (Figure 3.2). However, the cause of the collapse of the stock market cannot be placed solely on hedge funds, since, a large part of them, were among the victims (Table 3.3). In addition, the assumption that an extensive coordination between hedge funds and other investors would be required to burst the bubble seems reasonable, as the capital of the largest hedge funds rarely exceeded $20 billion and total assets under management for the world hedge fund

industry at that time was 408 billion compared to a combined market capitalization of all Nasdaq stocks in excess of $5 trillion in 2000. Moreover, it is important to stress that if hedge funds had played the role of arbitragers, they should have counteracted the exaggerated price increases by taking short positions in high-tech shares. However, Brunnermeier and Nagel (2004) found that the opposite was in fact the case. According to their results hedge funds held extensive long positions in high-tech shares during the bubble and then reduced these holdings before the crash occurred (Figure 3.2).



Source: [Brunkermeier and Nagel (2004)]

Figure no. 3.2 Weight of Nasdaq Technology Stocks (high P/S) in Aggregate Hedge Fund Portfolio vs Weight in Market Portfolio

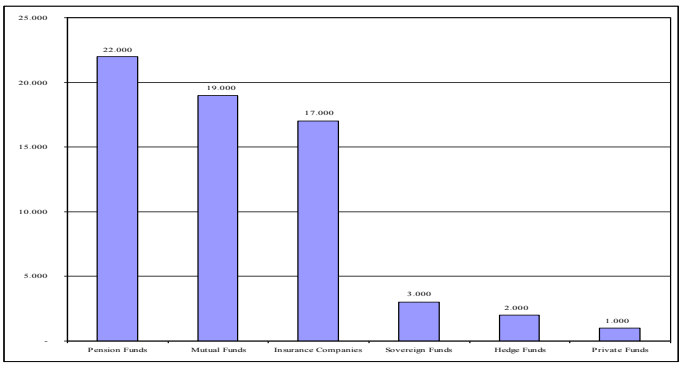
Table no. 3.3 Average Monthly Performance of Hedge Funds Strategies and S&P During Crises

	Asian Crisis 1997		**Dot-Com Crisis 2000**		**Subprime Crisis 2007**	
	Mean	***St. Deviation***	***Mean***	***St. Deviation***	***Mean***	***St. Deviation***
Convertible Arbitrage	**-2,59**	4,22	**-1,05**	4,15	**-1,99**	5,00
Distressed	**-0,87**	3,44	0,24	1,63	**-1,87**	2,52
Emerging Markets	**-6,75**	7,24	**-2,03**	3,59	**-3,01**	4,45
Equity Hedge	**-0,85**	3,15	**-0,21**	3,85	**-2,13**	3,24
Market Neutral	0,35	1,11	1,06	1,05	**-0,40**	1,26
Event Driven	**-1,30**	3,41	0,25	1,97	**-1,69**	2,47
HFRI	**-1,70**	3,26	**-0,36**	2,70	**-1,41**	2,42
Macro	**-0,83**	1,49	0,17	2,22	0,20	1,63
Merger Arbitrage	**-0,41**	2,46	0,85	1,37	**-0,37**	1,26
Relative Value	**-0,22**	2,59	0,87	0,69	**-0,96**	2,59
Short Selling	4,62	7,46	5,97	11,02	2,48	3,56
Multistrategy	0,06	1,11	0,36	1,05	**-1,26**	2,66
Fund of Funds	**-1,70**	2,86	**-0,10**	2,33	**-1,55**	2,37
S&P	**-3,02**	5,91	**-3,85**	3,52	**-3,86**	5,65

Source: [Estimations]

• The discussion of the link between hedge funds and economic crises has arisen once again and more acute in connection to the subprime crisis. Events that triggered this

discussion were: first the fact that hedge funds were the main holders of CDOs (hedge funds held about 47% of all CDOs at end-2006, while the banks held 25% and the insurance companies and asset managers held the remaining 28% (Lysandrou, 2012)) which were in the centre of the crisis; second, the collapse of two Bear Sterns' hedge funds in the beginning of 2007 which had highly leveraged portfolios with credit instruments related to subprime mortgages (Stromqvist, 2009) and; third, the accusations of mainly Iceland and Greece towards hedge funds for speculation against Icelandic currency and Greek bonds respectively. However, the 2007 crisis has impacted hedge funds more than they have affected the crisis (Stromqvist, 2009). The main argument for this is that hedge funds have experienced more problems in handling this crisis than previous crises (Table 3.3) and the reason was that in the subprime crisis, many different asset types have been affected at the same time, and globally. According to Stromqvist, 2009: Normally, hedge funds receive premiums for assuming credit risk, duration risk and liquidity risk. These risk premiums usually constitute a large part of the hedge funds' profits. In the 2007 crisis, however, a higher degree of risk taking has not led to higher profits, on the contrary. The fact that the downturn has affected many different asset types and markets at the same time has also wiped out all of the profits previously gained from these premiums. The increased risk premiums have simply not compensated for the losses made. Within the same framework, it is supported that hedge funds are themselves victims of a crisis (ECB, 2008) caused by the false risk assessment and the management of credit procedures by entities and organizations subjected to a strict institutional framework. One should stress that market instability should be observed by institutional bearers and could be attributed more to the institutional investors who estimate their yields compared with other investors and not to hedge funds which pursue absolute returns. This view is confirmed by the analysis of the data in Figure 3.3, where funds of institutional investors under management are recorded. Despite the noticeable increase in assets managed by hedge funds, they still constitute only 2.9% of the global assets, whereas Pension and Mutual Funds manage more than 58% of the global assets. The citations of these facts confirm that hedge funds alone cannot cause economic crises or even affect the market. Consequently, big changes in the prices of financial products could be caused by the fact that the managers of Pension and Mutual Funds follow the same trend (the herd psychology).



Source: [Economist, January 17, 2008]

Figure no. 3.3 Assets Under Management of Institutional Investors (December 2007, billion dollars)

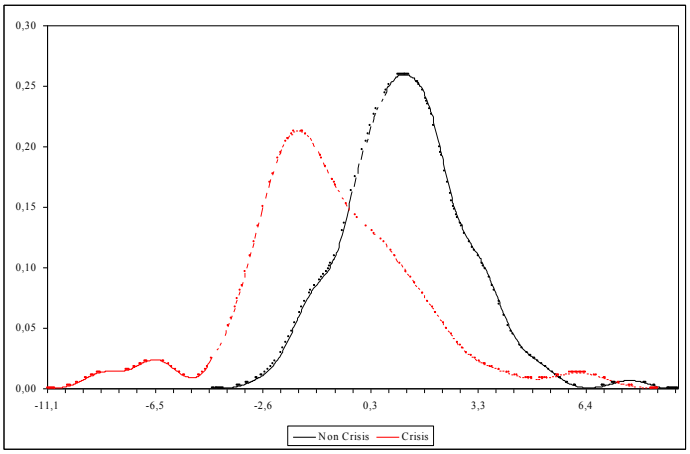
Our discussion about the link between hedge funds investment activities and the birth, aggravation or even geographic expansion of economic crises is also supported with the adoption of the analysis of variance. The analysis of variance (ANOVA) is employed to test the equality of mean performance for each hedge fund strategy within and between crises and non-crises periods. The results of the ANOVA tests show that only in one case, Macro strategy, the equality of means between the three crises -Asian, dot-com and subprime- and the non-crises periods was accepted. For all other strategies the hypothesis of the equality of means was rejected at 95% level of significance, i.e. it is established that the funds average performance was substantially and statistically different between the crises and non-crises periods. The findings quoted in Table 3.4 lead to the conclusion that under the effect of either the Asian, dot-com or the subprime crises hedge funds performance is considerably and negatively affected.

Table no. 3.4 Analysis of Variance

	F	**Sig.**
Convertible Arbitrage	11,80	,00
Distressed	19,24	,00
Emerging	24,23	,00
Equity Hedge	12,50	,00
Market Neutral	7,99	,00
Event Driven	17,05	,00
HFRI	15,91	,00
Macro	**3,69**	**,07**
Merger Arbitrage	7,66	,00
Relative Value	12,25	,00
Short	10,89	,00
Multistrategy	8,78	,00
Fund of Funds	14,21	,00
SP	17,11	,00

Source: [HFRI and Estimations]

The ANOVA results are also substantiated by the findings of the kernel density function (Figure 3.4). The kernel density function answers the following question: «which is the concentration of the average hedge fund yield in the various distribution points between different time periods?». The estimation of kernel distribution of hedge fund yield was based upon data for the HFR index between crises and non-crises periods. As we can see from Figure 3.4, a considerable part of the high density of returns around the median shifts to the left during crises, thus recording the aggravation of the average return. Furthermore, the positive asymmetry of the HFRI index return as well as the existence of a long right tail are quite characteristic for the non-crises periods. On the other hand, in times of crises, the HFRI index returns present negative asymmetry with the existence, at the same time, of a left tail. These results confirm the negative returns of hedge funds under the influence of crises and consequently support the view that hedge funds cannot be crises generators since they are also among the victims.



Source: [Estimations]

Figure no. 3.4 Kernel Density Function for the HFR Index

4. CONCLUSIONS

In global terms, hedge funds have grown exponentially in terms of assets under management since 1990 – although they still account for only 5-10% of assets managed by the global fund industry. In recent years, the role of hedge funds in the financial markets has increased i.e. the trading by hedge funds has accounted for over 50% of the daily trading volume in equities markets. To this end, the hedge fund industry has been attacked for being capable of unduly influencing global economies and corporate activities. Moreover, hedge funds were accused as responsible for the exit of sterling from the ERM, the South East Asian Economic crises in the late 1990s, the high-tech bubble and the recent subprime crisis.

The attempt to connect hedge funds to the recent and still evolving economic crisis as well as to past crises (i.e. the 1997 Asiatic crisis and the price collapse of the new technology stocks in 2000) is not supported by the in-depth analysis of this paper. If hedge funds caused the crises, then they could have profited from the situation. However, although they managed to limit their losses through their strategy, they did not avoid the negative consequences of the crises.

It is true that hedge funds have invested money in the price adjustment of incorrectly valued assets as in the case of sterling in 1992 but is unreasonable to expect that investors who normally employ arbitrage strategies should refrain from doing so during financial crises and that mispricing should be allowed to prevail. In addition, hedge funds cannot easily manipulate asset prices and contribute to the development of financial bubbles because they are not large enough to be able to influence prices on liquid markets, as their capital is small in relation to that of other investors, such as banks and insurance companies.

An important argument in favour of hedge funds as crisis generators, which is related to the 2007 crisis, is that they have been negatively affected on a broad front. The evidence obtained in this paper show that hedge funds lost a large part of their attractiveness when considering the combined effects of mean performance (before, during and after the crises), fat tails and survivorship bias. Furthermore, their status of being considered return enhancers during bear markets as standalone assets, and as risk diversifiers in a portfolio

context due to their alleged low correlation with stocks and bonds has been questioned. In addition, the paper evidences that hedge funds have been affected by the crisis, like many other financial market players, leading to a significant contraction of the sector. However, the fact that hedge funds have been hit by the latest crisis does not rule out that they have played a role in the development of the crisis together with banks and other institutional investors. Bear Sterns' funds were two of the funds that provided liquidity for the complex new credit instruments, which then shook the market when they collapsed.

Overall, it is evidenced in the paper that hedge funds cannot be blamed for the birth of the crises of the last 25 years. Comparing the data across the different crises, it becomes obvious that, with the exception of the 2007 subprime crisis, where almost all hedge fund strategies suffered considerable losses, in all other crises studied in the present paper, the hedge fund strategies with a negative return were the ones that had an exposure to the specific sector and/or region that was in the centre of the crisis i.e. Emerging market strategy presented substantial negative monthly performance over the Asian crisis, Convertible arbitrage strategy was affected by the dot-com crisis, etc. In other words policy makers and politicians should not use hedge funds as an escape goat of economic crises to by-pass endogenous economic inefficiencies. On the opposite hedge funds, given the presence of a well-thought and structured institutional framework, could contribute to the development of the economy by creating jobs and attracting capital flows.

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Notes

[1] The present work is based on data from the HFR database covering the period 1997-2009. In this database, funds are classified by strategy i.e. Convertible Arbitrage, Distressed, Emerging Markets, Equity Hedge, Equity Neutral, Event Driven, Macro, Merger Arbitrage, Relative Value, Short Selling, Multistrategy and Fund of Funds. The HFR Database is currently comprised of over 7000 funds and fund of funds. HFR Database is the foundation for the HFRI Indices, the industry's most widely utilized benchmark of hedge fund performance information. The HFRI Fund Weighted Composite alone is comprised of over 2200 funds from HFR database universe.

[2] Interest rates in US were at 6% in January 2001 and reached 1% by June 2003.