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A COMPARATIVE HISTORICAL ANALYSIS OF TRADITIONAL ASSET CLASSES IN THE EUROPEAN UNION: THE CASE OF HEDGE FUNDS

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Abstract
The paper at hand provides a comparative historical analysis of the role of hedge funds within the global financial system, with a specific focus on their interactions with traditional asset classes such as equities and bonds. Hedge funds, known for their high leverage, active management, and diverse, often sophisticated investment strategies, have emerged as pivotal players in financial markets. These characteristics enable hedge funds to enhance market efficiency through liquidity provision, price discovery, and offering diversification benefits that are not readily achievable through conventional asset classes. However, their speculative nature, complexity, and reliance on leverage also introduce significant concerns related to financial stability, particularly during periods of market stress.
This study historically analyses how hedge funds and traditional asset classes respond to and recover from systemic shocks. The research methodology includes an analysis of performance metrics, recovery rates, and volatility patterns across various crises, highlighting the differential impacts on hedge funds versus equities and bonds. Empirical findings suggest that hedge funds generally exhibit higher resilience and quicker recovery from financial disruptions. This advantage is largely attributable to their flexible strategies, active risk management, and ability to dynamically reallocate capital in response to changing market conditions. The potential for rapid deleveraging, liquidity crises, and contagion effects during downturns underscores the dual nature of hedge funds as both stabilizers and potential destabilizers within the financial ecosystem.
The findings have critical implications for policymakers, investors, and regulators aiming to strike a balance between fostering financial innovation and maintaining systemic stability. While hedge funds can contribute positively to market efficiency and resilience, their capacity to propagate risk necessitates ongoing regulatory oversight and prudent risk management practices. A deeper understanding of these dynamics is essential for developing frameworks that can harness the benefits of hedge funds while mitigating their potential threats to financial stability.
Keywords: *hedge funds; financial stability; systematic risk; crises management.*
JEL Classification: G28.

1. INTRODUCTION

"Hedge funds often make headlines because of spectacular losses or spectacular gains" (Stulz, 2007; p. 175).

This is not the only quote stating the controversy and impact of the hedge fund industry (Eichengreen and Mathieson, 1999; Asness *et al.*, 2001; Carroters, 2017; Kruttli and Monion, 2013). It was found that "hedge funds seemed to be on the front page of every newspaper in the world" (Edwards, 1999; Bloomberg, 2007) stating their potential to "pose a threat to the stability of the entire financial system, once risks materialize" (Bussière *et al.*, 2015, p. 279).

Hedge funds in the European Union have faced unique challenges and recovery patterns compared to traditional asset classes, shaped by regulatory shifts and market dynamics. In the intricate landscape of modern finance, hedge funds represent a significant and often contentious component. The issue is not new (Haldane, 2014), however changing in size and shape. In the 1990s, hedge funds had grown to influence and shape financial markets. Even more influential than governments (Mallaby, 2019), in a world of increasing relations and dependencies. In response to international exposure to risks and policy implications, hedge funds (HFs) "may increase the risks to financial stability (King and Maier, 2009; Erede, 2013). The type of private, largely unregulated, and not supervised pools of capital are managed by competent investment firms, and they use plenty of complex methods to generate high returns for their investors, defined as "qualified purchasers" (Edwards, 1999). Individuals who make more than two hundred thousand dollars a year or possess a net worth of more than one million dollars exclusively from their primary residence (Achleitner *et al.*, 2009).

Hedge funds serve several key functions in global financial markets. First, they contribute to market efficiency by identifying and exploiting pricing inefficiencies through sophisticated trading strategies such as arbitrage and event-driven investing (Brown *et al.,* 2001). Thereby, hedge funds influence financial stability due to their growing impact and volatility. Many hedge fund strategies exhibit a low correlation with traditional asset classes such as equities and fixed income, making them an attractive investment for institutional investors and high-net-worth individuals seeking alternative sources of return (Stowell and Stowell, 2024).

Overall, an extensive body of literature examines hedge funds from multiple perspectives, including their role in promoting market efficiency, their contribution to liquidity, and their potential to exacerbate financial instability. Scholars have debated whether hedge funds serve as stabilizers or destabilizers within financial markets (Lu *et al.*, 2024). On one hand, proponents argue that hedge funds enhance market efficiency through sophisticated arbitrage strategies, liquidity provision, and the active management of risk (Zhai and Wang, 2023). By capitalizing on mispricing and market inefficiencies, hedge funds ostensibly

contribute to a more accurate reflection of asset values and, in turn, to overall market stability.

1.1. Importance of hedge funds and financial stability

The importance of hedge funds (the statistical units of the paper at hand) comes from the increasing size of the industry to USD 4.74 trillion in assets under management in the year 2024 with official predictions to grow to USD 5.47 trillion by 2029 (Statista Research Department, 2024). Other than the financial implications, the importance of the hedge fund industry also depends on its international basis, as the past showed major events that led to imbalances (Ogotseng, 2017). Thereby, HFs are an important price-setter and "reportedly dominate trading activities in the markets with broader economic importance" (King and Maier, 2009). By trading a volume of 40 percent in the leveraged loan market and more than 85 percent of distressed debt, they are the "key players in high yield debt and emerging market debt" (King and Maier, 2009). Their operational scope, the magnitude of their financial maneuvers, and their attractive returns raise questions about their implications for the stability of the broader financial system. International financial stability (FS) is a cornerstone of economic health, affecting everything from national economies to individual livelihoods (Clifford, 2008). The continuous functioning of the financial system provides essential lubrication that allows commerce, investment, and day-to-day business activities to proceed without significant disruption (Haldane, 2014). It ensures that economic actors can make financial decisions with a reasonable expectation of stability and security. However, the various instruments and strategies that hedge funds employ can introduce elements of volatility and risk, challenging the resilience of this system (Gregoriou, 2005). Thereby, financial stability is central to be considered as its fundamental precondition to achieve the central bank's macroeconomic implications, such as price stability and a strong growing nation (Hellwig, 2014). Hence, connectedness to other financial institutions (FI) is an important determinant of financial stability (Bussière *et al.*, 2015).

Thereby, the global dimension of financial stability cannot be ignored, especially in an era of increased financial globalization. Cross-border capital flows, multinational banking operations, and interconnected financial markets mean that financial instability in one country can quickly spread to others. The global financial crisis of 2008 is a stark reminder of how interconnectedness can amplify systemic risk (Orlando, 2023). As such, international cooperation and coordination are vital in addressing global financial stability. Institutions like the Basel Committee on Banking Supervision, which develops global standards for bank regulation, play a crucial role in fostering international regulatory harmonization and cooperation (Basel Committee on Banking Supervision, 2011).

1.2. Research

The Research at hand is structured into different parts, starting with the literature review to provide a comprehensive examination of existing scholarly work, enabling a nuanced understanding of the topic while identifying gaps and areas for further exploration, Thereby, elucidating the current state of knowledge on hedge funds and financial stability, capturing both theoretical insights and empirical evidence. In the third part, there is the methodology of how the research is organized and the research objective as well as the Analysis addressing the diversity within the hedge fund industry itself. Hedge funds are not a monolithic group, they encompass a wide range of strategies and investment styles, each with distinct implications for financial stability. Strategies such as long/short equity, global macro, and event-driven investing offer different risk profiles and operational dynamics. The heterogeneity within the industry necessitates a granular analysis, recognizing that certain strategies may pose greater systemic risks than others. Research studies frequently employ classification schemes and typologies to dissect the nuanced differences across various hedge fund subcategories, thereby enriching the broader discussion of their impact on financial stability. The Conclusion synthesizes these diverse viewpoints as a discussion part, followed by answering the research question of *how quickly hedge funds recover after major financial crises compared to other asset classes.*

2. LITERATURE REVIEW

Starting to define the terminology concerning financial systems to consider several determinants, measurements, and definitions that influence the relationship as well as the developments within this sector and create a basis for future study. Ultimately, the literature review aims to provide a comprehensive and coherent narrative that situates hedge funds within the broader discourse on financial stability. By bridging theoretical frameworks, empirical evidence, and regulatory considerations, the chapter will offer a robust foundation for understanding the complex dynamics at play. This understanding is essential for informing policy recommendations and regulatory approaches, which will be discussed in the concluding sections of this paper.

2.1. Hedge funds and their history

So, hedge funds and the so-called hedge fund “industry” are often described as a potential transmission channel in the event of shock (King and Maier, 2009). Thereby, hedge funds are supervised as a limited liability partnership with principals that administer the fund and are also investors (Stowell and Stowell, 2024). Controvert, to define the management of the investment instrument called hedge funds it is more complex than one single definition, described as perusing from “a plethora of investment strategies and have different risk-return profiles” (Walden and Lajbcygier, 2023). In general, hedge funding is described as a full

array of hedging techniques to reduce portfolio volatility (Bali and Weigert, 2018). With the main goal of a positive return with limited swings in value and capital preservation. However, the method behind the hedging is rapid price discovery, massive mathematical and statistical processing, risk measurement and control techniques, and leverage as well as active trading in corporate equities, bonds, foreign exchange, futures, options, swaps, forwards, and other derivatives (Chattopadhyaya, 2011).

Emerging in the mid-20th century (Adam and Merkel, 2019), hedge funds have grown significantly in both number and influence, attracting significant sums of capital and becoming influential participants (Achleitner *et al.*, 2009). The strategy of hedge funding differs, and the management has fewer regulations compared to other investment strategies, nevertheless, some have been developed within the time being: The management of HFs is generally located onshore and registered in offshore jurisdictions including the Bahamas, Bermuda, British Virgin Islands, Luxemburg. Dublin, or the Cayman Islands (Edwards, 1999; Carroters, 2017). This is not the case with other mutual funds or regulated private investments. Modeled themselves to fit the US exemption under the Securities Act of 1933, the Securities Exchange Act of 1934, and the Investment Company Act of 1940, bringing little US regulatory oversight for hedge fund industries (Bali and Weigert, 2018). 2010 with the Dodd-Frank Wall Street Reform and Consumer Protection Act hedge funds are officially required registration. One point of the DFA is that investors need to have a net worth above USD one million excluding primary residence. Within private equity, stronger relations exist like the German Securities Act. Improving the creditworthiness of the transaction and thus reducing financial costs (Achleitner *et al.*, 2009). Thereby, hedge fund trading is managed by the Commodities Futures Trading Commission (CFTC) and supervised by the National Futures Association (King and Maier, 2009).

However, modern hedge fund history began with the sociologist and financial journalist Alfred Winslow Jones while writing about market behavior, he developed his Jones Hedge Fund (Ubide, 2006). The main idea was to use the complementary nature of leverage and short selling. Jones thereby used his understanding to create a more risk-averse approach than it sounds like (Zhai and Wang, 2023). When looking at leverage increases in debt-to-equity and short selling isolated from each other it is to be an increased exposure of risk (Ubide, 2006). In comparison to the S&P 500 stock index, the management of Jones Hedge Fund shows fewer negative returns and outperformance of the S&P 500 in the years 1962 until 1968 (Ubide, 2006). The way HFs make money can be laid down for two essential reasons, including diversification and fees (Asness *et al.*, 2001). Diversification consists out of passive market exposure combined with a rather low administrative cost apparatus.

2.2. Traditional asset classes

To gain an overview of other asset classes than hedge funds, as rather special investment vehicles, the literature shows that traditional asset classes include equities (stocks), fixed income (bonds), cash equivalents, real estate, and commodities. Each plays a distinct role in financial stability, balancing risk, return, and liquidity (see Table 1: Comparison of Traditional Asset Classes).

First, Equities (Stocks) represent ownership in companies and offer high return potential but come with significant volatility. Stocks are mainly used for long-term capital appreciation and can be categorized into growth, value, large-cap, small-cap, and emerging market equities (Greer, 1997). Second, fixed income (bonds) are debt instruments issued by governments, corporations, or municipalities (Jacquet, 2021). They provide regular interest payments and return the principal at maturity. Bonds range from low-risk government bonds to high-yield corporate bonds and inflation-linked securities. They serve as a hedge against stock market volatility and provide steady income (Inderst, 2011). Third, cash and equivalents include money market instruments, treasury bills, and bank deposits. They offer low returns but are highly liquid and protect against short-term market fluctuations (Jacquet, 2021). Fourth, real estate provides income through rental payments and potential appreciation. It is considered a hedge against inflation but is less liquid compared to stocks and bonds. Real estate can be held directly (physical properties) or indirectly through REITs (Real Estate Investment Trusts) (Inderst, 2011). Lastly, commodities include natural resources like gold, oil, and agricultural products. They are often used as an inflation hedge and diversification tool, but they can be highly volatile due to supply and demand dynamics (Greer, 1997).

Each asset class has different risk-return characteristics, which is why asset classes have different influences on financial stability (Jacquet, 2021). However, institutions provide solutions on how to guarantee their interplay of them.

Table 1. Comparison of traditional asset classes including HFs

Asset Class	Characteristics	Risk	Return Potential	Liquidity
Equities (Stocks)	Ownership in companies, price driven by earnings, market conditions	High (market, economic, company-specific risk)	High (historically ~7-10% p.a.)	High (public markets)
Fixed Income (Bonds)	Debt securities issued by governments or corporations, provide periodic interest payments	Moderate to Low (interest rate, credit risk)	Lower than equities (~2-5% p.a.)	High (for government bonds, moderate for corporate bonds)
Cash & Cash Equivalents	Short-term instruments (e.g., money market funds, treasury bills, deposits)	Very Low (inflation risk)	Low (~0-3% p.a.)	Very High
Real Estate	Physical or financial ownership of property, can provide rental income and appreciation	Moderate (market, liquidity, regulatory risks)	Moderate to High (~4-8% p.a.)	Low to Moderate
Commodities	Physical goods (gold, oil, agricultural products), value driven by supply-demand dynamics	High (market volatility, geopolitical risks)	Varies widely (~3-8% p.a.)	Moderate to High (depends on futures markets)
Hedge Funds & Alternatives	Actively managed investment strategies, often using leverage, derivatives, short-selling	Varies (strategy-dependent)	Varies (can outperform traditional assets, but higher fees and risks)	Low to Moderate (lock-up periods)

Source: Stockbauer (2025)

2.3. Financial stability

Aspects of financial stability include monetary stability, economic growth, institutions, infrastructure as well as markets and efficiency. One indicator is the "robustness of financial markets and their institutions, the state of expectations, and the reaction of central banks and other authorities" (Garbaravicius and Dierick, 2005). The financial system is stable when it is able to promote the productivity of the economy and prevent financial imbalances (Imanov *et al.*, 2017, p. 320). Measuring the level of financial stability is complex since many actors are involved in the process and may change the supposed outcome by single agreements or actions (Agarwal *et al.*, 2009a). Including the fact banks are responsible for stability and have a systematic relevance and political influence, as "banks are political" (Hellwig, 2014, p. 23). One example is that already simple transactions between countries, political actors, and economically dependent actors create future obligations for all involved parties (Financial Stability Forum, 2002). As a result, dependence is developed and ranges through multilateral networks where many parties interact, mostly even on an international level.

In general, two main functions within the financial system are relevant to the system of action (Sauert, 2014). The first one is the intermediation function to bring "resources accumulated by savers to investors who have identified productive uses for them" (Ubide, 2006). The second one is the payment function providing the most important means for the system to action. Whereby central banks have an essential part in decision-taking and policy implications, especially price changes and rates of exchange, inflation, interest rates, etc. (Hellwig, 2014), which is on purpose flexible to guarantee momentum. "Even though the central bank cannot go bankrupt, risks from the central bank's assets can affect" (Hellwig, 2014, p. 11) the financial system as a whole. Importantly the clearing arrangements through which banks compensate one another for allegations arising from the payments made by their customers (Garbaravicius and Dierick, 2005). Thereby, many types of shocks increase financial stress and weaken the financial stability of households and businesses. Including systematic risks arising from correlations between counterparty credit risks and underlying risks in a complex and highly interconnected system of risk management through derivatives and other hedges (Erede, 2013). Consequently, the conditions of banks and other financial institutions will be weakened and lead to higher market interest rates as investors look for greater returns due to the perception of greater risk (Garbaravicius and Dierick, 2005). Whereas, central banks give access to financial stability reviews, including "current conditions, describe ongoing legal, regulatory, and institutional developments, and discuss proposals" (Chattopadhyaya, 2011, p. 89) to increase financial stability. Paying attention, to the need for financial institutions including the central banks can create interdependence among them by maintaining the public's confidence to survive (Imanov *et al.*, 2017).

3. METHODOLOGY AND DATA

The research is to be done on qualitative literature including a historical and comparative analysis. The literature will consist of several divergent sources, including literature from libraries in Germany as well as online-accessible literature such as peer-reviewed articles, books and news articles, interviews, etc. Thereby, the foremost task in crafting a robust methodology is to lay out the research design. This entails a detailed blueprint mapping the journey from problem identification to the drawing of conclusions based on empirical evidence. Reflecting on the complexities associated with hedge funds and their potential impact on FS, a mixed-methods approach is warranted. By integrating qualitative dimensions, gaining a nuanced understanding that captures both the statistical patterns and the deeper insights into the qualitative facets of financial phenomena. This form of data provides contextual insights, allowing researchers to delve into the social, cultural, and environmental factors that shape human behavior and attitudes (Gomm *et al.*, 2009).

3.1. Methods in research design

Given the complexity of the topic at hand, this paper will systematically examine the development and operation of hedge funds, their interactions with the financial system, and their comparison to other asset classes. It will delve into the concept of financial stability, elucidating how hedge funds can impact stability, both positively and negatively. Through a comprehensive coding of qualitative data, this paper will aim to synthesize current knowledge and identify gaps that warrant further research.

Data collection, a cornerstone of the methodology, spans multiple sources to triangulate findings and bolster the study's credibility (Nahmias-Wolinsky, 2004). Secondary data from financial markets, enriched by proprietary datasets from regulatory bodies, provide a robust qualitative foundation. Triangulation is further achieved by integrating findings from academic literature, industry reports, and policy documents. The dynamism inherent in hedge fund operations, underscored by their diverse strategies and investment philosophies, necessitates rigorous statistical examination. A pivotal component of the methodology will be the deployment of econometric models to analyze secondary data sourced from financial databases such as Bloomberg and Thomson Reuters. These models, augmented by time-series analysis and regression techniques, are instrumental in identifying correlations and causal relationships amid variables such as hedge fund leverage, market volatility, and overall financial stability metrics.

3.2. Applied methodology

The study at hand focuses on the methodology of qualitative data analysis with a focus on the Grounded Theory (Corbin, 2017). The following steps are based on the implications founded in 1960 by Barnes Glaser and Anselm Strauss,

one of the most influential methodologies in qualitative research. Its primary contribution lies in its ability to generate new theories directly from data, without relying on pre-existing hypotheses (Skjott Linneberg and Korsgaard, 2019). Unlike traditional research methods, which often test established theories, Grounded Theory allows researchers to build concepts and theories that emerge naturally through data collection and analysis.

The reason the Grounded Theory methodological approach has been chosen is that it is particularly useful in fields where there is little prior research or where existing theories are insufficient (Corbin, 2017). Its inductive approach is well-suited to exploring topics that are not well understood or where existing theories may be inadequate (Cutcliffe, 2000; Dunne, 2011). Moreover, the iterative and flexible nature of Grounded Theory makes it applicable to a wide range of research contexts. It allows researchers to be responsive to the data, adapting their approach as new insights emerge (Cutcliffe, 2000). This makes Grounded Theory a highly versatile methodology, capable of generating nuanced theories that are grounded in real-world data, which is applicable to the data of the hedge fund industry over a long period. Therefore, the data is coded based on the key concepts and themes mentioned before including the complex structure of the hedge fund industry on the international level (Dunne, 2011).

4. RESEARCH OBJECTIVE

Examining how hedge funds recover from financial crises compared to traditional asset classes such as equities, bonds, and mutual funds. The research will evaluate the speed, magnitude, and sustainability of hedge fund rebounds after market downturns, identifying key factors that contribute to their resilience or underperformance. The thesis aims to assess the performance persistence of hedge funds and their relationship with market efficiency. Performance Persistence of Hedge Funds finds statistically significant performance persistence for hedge funds at quarterly, semi-annual, and annual periods. Investors use a quarterly momentum strategy to achieve superior returns. Thereby, some hedge fund managers consistently outperform others, challenging the idea that hedge fund returns are purely random.

The Market Efficiency applies Shiller's variance bound test to evaluate whether the JSE All Share Index follows the Efficient Market Hypothesis (EMH). Results violate Shiller's three variance inequalities, suggesting that the market shows inefficiencies. This implies that hedge fund managers may have opportunities to exploit market inefficiencies for excess returns.

The study accounts for survivorship bias, where poorly performing funds exit databases, potentially skewing results. Backfill bias is also identified, where funds report historical performance only after achieving positive results. Adjusting for these biases ensures that the study provides a more accurate picture of hedge fund performance. So that investors can benefit from momentum-based strategies in

hedge funds, particularly at quarterly horizons. The hedge fund industry can provide excess returns, but these are not purely due to manager skill, some come from market inefficiencies. Better benchmarking techniques should be developed to distinguish true alpha from beta-driven returns. Regulators should ensure transparent performance reporting to reduce survivorship and backfill bias.

Research question

Hedge funds have demonstrated a capacity to recover more swiftly from major financial crises compared to traditional equities and bonds. This resilience is attributed to their diverse strategies, risk management practices, and ability to capitalize on market inefficiencies, therefore, the research question arises of:

How quickly do hedge funds recover after major financial crises compared to other traditional asset classes?

When looking at the performance during financial crises, starting in 2008 with the Global Financial Crisis (GFC), hedge funds experienced significant losses, with some funds declining by up to 55 percent. However, many managed to recoup these losses by 2012, showcasing a robust recovery trajectory. In contrast, traditional equity markets took longer to rebound, and bond markets faced challenges due to liquidity constraints (Rudegeair, 2024). During the COVID-19 Pandemic in 2020, the early stages of the pandemic, global equity markets experienced sharp declines, with some indices dropping by over 20 percent. Hedge funds, however, demonstrated resilience, with multimanager firms experiencing losses of less than one percent during the same period. This performance underscores hedge funds' ability to navigate extreme market volatility effectively (Rudegeair, 2024). While considering the Risk-Adjusted Returns, over extended periods, hedge funds have consistently delivered superior risk-adjusted returns compared to equities and bonds. For instance, over a five-year horizon, hedge funds achieved a Sharpe ratio of 1.58, surpassing equities at 1.46 and bonds at -0.24. This indicates that hedge funds provide better returns per unit of risk taken (AIMA, 2018).

Different than that, the volatility and drawdowns show that hedge funds typically experience lower volatility and shallower drawdowns compared to global equities. During significant market downturns, such as the GFC, hedge funds' drawdowns were less severe, aiding in quicker recovery times. This resilience is partly due to their diversified investment strategies and active risk management (De Freitas, 2022).

5. HEDGE FUNDS IMPACT ON FINANCIAL STABILITY

The hedge fund industry has been the subject of various academic studies focusing on performance analysis, regulatory frameworks, and market dynamics. Several key pieces of literature provide insights into these areas. First, the performance analysis of HFs whereby a comprehensive study examined the performance of hedge funds with the impact on financial stability.

5.1. Financial stability

Hence, financial instability is likely to involve problems such as bank solvency, not just its liquidity (Hellwig, 2014). This creates challenges for the well-being of the overall economy, which is a threat not solely towards one nation, but due to globalization, it concerns more people and more sectors on an international level. Bringing about hidden insolvencies, that is when "the value of its assets is less than the value of its liabilities" (Christiano and Fischer, 1998; Hellwig, 2014, p. 42). Understanding the meaning of financial stability with the influence of asset classes entails recognizing its multifaceted nature, which encompasses robust financial institutions and markets, effective regulatory frameworks, resilience to shocks, rational behavior by market participants, and a stable macroeconomic environment (Dietz and Jenkins, 2018). The institutional frameworks governing financial stability, particularly the role of central banks and regulatory authorities, are crucial in monitoring and managing risks (Basel Committee on Banking Supervision, 2011). International cooperation and public confidence are also integral to maintaining a stable financial system in a globalized economy. As financial markets continue to evolve, the concept of financial stability will adapt, necessitating continued vigilance and proactive policy measures to address emerging challenges and opportunities for fostering a resilient and inclusive financial system (Erede, 2013).

A key characteristic of financial stability is the absence of systemic risk, which refers to the potential for a financial system-wide collapse stemming from the failure of a single or small group of entities (European Central Bank, 2007) Systemic risk manifests when interconnectedness within the financial system leads to the rapid transmission of financial distress, causing widespread economic fallout. Therefore, monitoring and managing systemic risk is a critical component of ensuring financial stability. Regulatory bodies and international organizations, such as the International Monetary Fund (IMF) and the Financial Stability Board (FSB), consistently assess systemic risks and formulate policies aimed at mitigating them.

Moreover, financial stability is defined by its resilience to adverse shocks (Aramonte *et al.*, 2023). This means that the financial system should be capable of withstanding disruptions originating from various sources, including economic downturns, political instability, and natural disasters. Resilience is bolstered by the presence of well-capitalized banks with adequate liquidity reserves, which can absorb losses without causing major disruptions to their operations (Jensen and Meckling, 1976). Additionally, a diversified financial system, with a wide range of financial products and services, enhances resilience by spreading and managing risk more effectively.

The institutional framework governing financial stability plays a pivotal role in its maintenance. Central banks, financial regulatory authorities, and international financial institutions are key players in this framework

(Garbaravicius and Dierick, 2005). Central banks, through their role in monetary policy and financial regulation, ensure that sufficient liquidity is available in the financial system and oversee the health of financial institutions. Regulatory authorities, such as the Securities and Exchange Commission (SEC) in the United States or the European Central Bank (ECB), monitor compliance with financial regulations and take enforcement actions when necessary. International institutions, like the IMF and the World Bank, provide a platform for cooperation and coordination among countries to strengthen global financial stability (Hellwig, 2014).

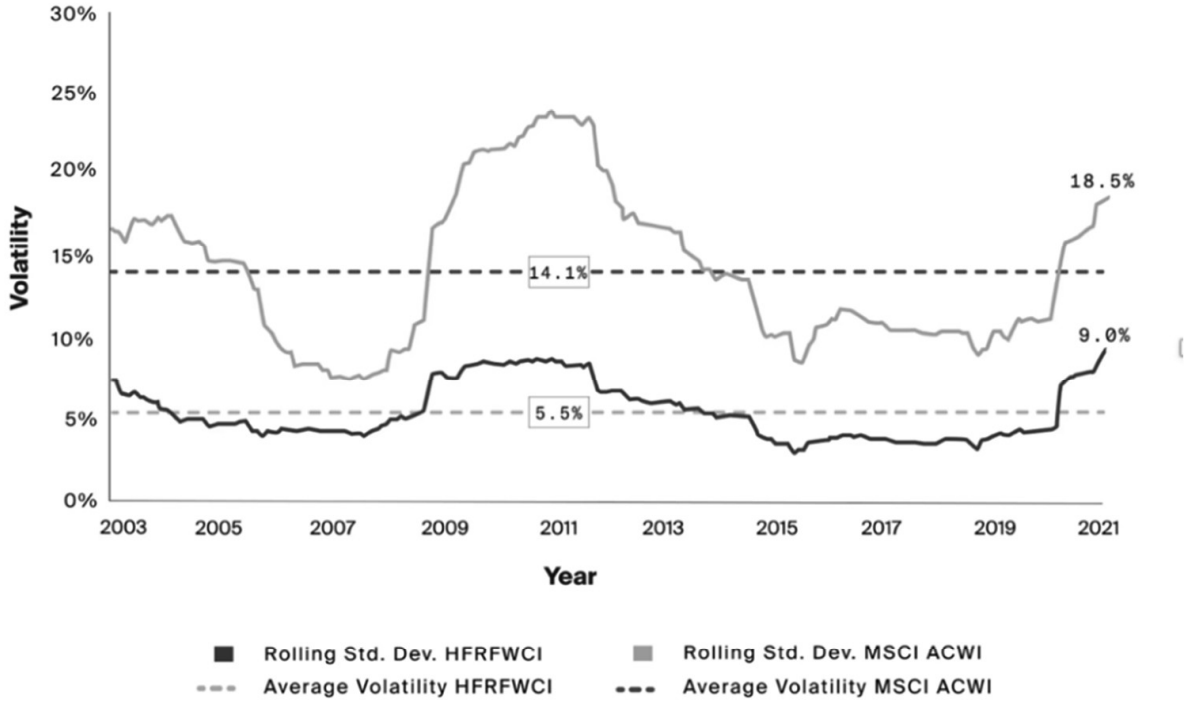
The pursuit of financial stability also necessitates a robust legal and regulatory framework. Effective regulation ensures that financial institutions operate within safe and sound parameters, minimizing the likelihood of excessive risk-taking or fraudulent activities (Al-Azzam, 2019). Regulatory frameworks encompass a range of measures, including capital adequacy requirements, liquidity requirements, and supervision of financial practices. These measures are designed to promote transparency, accountability, and risk management within the financial system (Sauert, 2014).

5.2. Impact of hedge funds

The volatility and Hedge Fund performance (see Figure 1: Hedge Fund Volatility vs Global Equities) focuses on the impact of market volatility on the performance of hedge funds. By incorporating a volatility index into the CAPM, the research aimed to determine how different hedge fund strategies perform under varying volatility conditions (Fieldhouse, 2024). The study highlighted the importance of considering volatility in investment decisions and suggested that certain strategies might be better suited for periods of heightened market fluctuations (Agarwal *et al.*, 2009b; De Freitas, 2022). Whereby the regulatory framework and retail participation, shows the regulation of hedge funds has evolved to balance investor protection with market growth. Research assessing the country's regulatory practices, especially concerning retail participation, indicates that the framework aligns well with international standards (Fieldhouse, 2024). The studies emphasize the need for a regulatory environment that safeguards investors while allowing access to the benefits of hedge fund investments.

Hedge funds both influence and react to market volatility in several ways. On one hand, they can help reduce overall market volatility by providing liquidity and stabilizing mispriced assets (Rudegeair, 2024). Market-neutral strategies, for example, can help balance supply and demand for securities, preventing excessive price swings. On the other hand, hedge funds with high leverage and speculative trading strategies can exacerbate volatility during market downturns (Fieldhouse, 2024). The liquidation of leveraged positions in times of stress can trigger a domino effect, leading to forced selling and increased market turbulence. The

2008 financial crisis highlighted how hedge funds, particularly those heavily exposed to structured credit products, contributed to market instability (Ferrara *et al.*, 2024). Furthermore, the relationship between hedge fund strategies and volatility is dynamic. Some funds thrive in high-volatility environments, such as trend-following strategies that capitalize on market momentum (Rudegeair, 2024). Others struggle during periods of extreme uncertainty, particularly those dependent on stable market conditions to generate returns.



Source: HFR, Bloomberg. As of 1/31/2022, Rolling 36 Months.

Figure 1. Hedge Fund Volatility vs. Global Equities

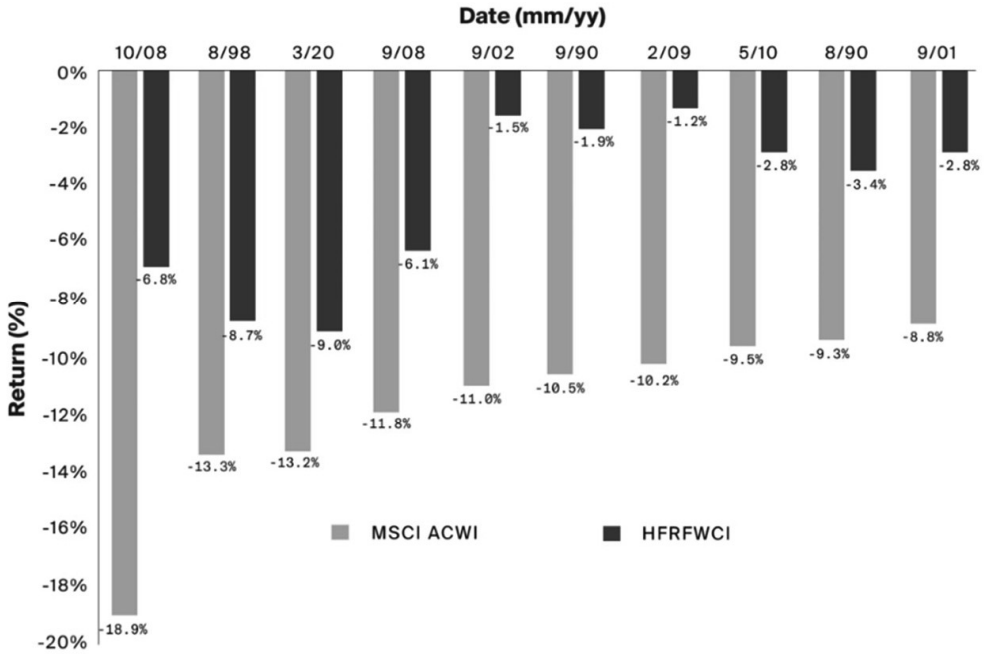
Table2. Performance Comparison in 2008

Asset Class	2008 Return	Drawdown	Recovery Time
S&P 500 (Equities)	**-38.5%**	~50% peak-to-trough	~5.5 years (recovered in 2013)
HFRI Fund Weighted Composite Index (Hedge Funds)	**-19.0%**	~21% drawdown	~3-4 years (recovered by 2012-2013)
HFRI Fund of Funds Index	**-21.4%**	~23% drawdown	~4 years

Source: Aragon (2024)

Table 2 shows that equities suffered severe losses due to the collapse of major financial institutions, a liquidity crunch, and a deep economic downturn. While hedge funds outperformed equities, still declining due to credit market disruptions, investor redemptions, and correlated asset sell-offs. Hence, hedge funds recovered faster than equities, as many strategies capitalized on market dislocations post-crisis. This implication has several arguments such as the hedging strategies using short positions to mitigate losses, particularly long/short equity and global macro funds. Combined with the lower net exposure, unlike the traditional equity classes, hedge funds reduced risk exposure and managed leverage actively, some HFs imposed redemption limits, preventing mass liquidations and forced selling.

In summary, the HF industry has undergone significant developments in performance, (see Figure 2: Hedge Fund Performance) regulation, and market dynamics. While challenges persist, ongoing research and evolving regulatory practices aim to enhance the industry's contribution to the broader financial market.



Source: HFR, Bloomberg. As of 1/31/2022.

Figure 2. Hedge fund performance;
during the 10 worst months of the MSCI ACWI

5.3. Difference to other asset classes

Other than with other asset classes, the strategies behind HFs include anything from leveraging to short-selling and span across a broad spectrum of asset classes. The flexibility of hedge funds is wider, since the investment in alternative strategies such as old and speculative things. Therefore, some

characteristics can be distinguished to show differences among the diverse private pooled investment vehicles, such as mutual funds, which need to be liquidated so that the money can be drawn out within a few or three days, which is not the case with hedge funds lock investors' money and restrict the withdrawal (Stowell and Stowell, 2024). Financial stability also intersects with other policy objectives, such as financial inclusion and economic equity (Jiao, 2013). Ensuring that the benefits of a stable financial system are broadly distributed across society, particularly to marginalized and underserved populations, is crucial for equitable economic development. Financial stability should not come at the expense of excluding segments of the population from access to financial services (Sauert, 2014). Policymakers must strike a balance between maintaining a stable financial system and promoting inclusive growth (Hellwig, 2014).

One major difference is the opportunity to exploit market inefficiencies using the combination of various investment strategies and instruments (Bloomberg, 2007). Thereby employing derivatives and executing short selling using financial engineering techniques. Hence, the growth of hedge funds is attributed to "two factors of the demographics of potential hedge fund investors and the attractive performance of hedge funds" (Edwards, 1999; 193). This leads to one of the reasons that HFs recover faster from crises (see Table 5: Historical Recovery Times).

Table 3. Historical recovery times

Crisis	Equities (S&P 500)	Bonds (U.S. Aggregate Bond Index)	Hedge Funds (HFRI Index)
Dot-Com Bubble (2000-2002)	~5 years (2007)	Bonds had minimal impact, continued growth	~3 years (2005)
Global Financial Crisis (2008-2009)	~5.5 years (2013)	Bonds had positive returns during crisis	~3-4 years (2012-2013)
COVID-19 Crash (2020)	~6 months	Bonds had a minor drop but recovered quickly	~3-6 months

Source: Aragon *et al.* (2024)

6. DISCUSSION

On the one hand, there are policymakers and academics, who acknowledge hedge funds' essential role in increasing profits and effectively diversifying risks in traditional portfolios (Çelik and Isaksson, 2014). Thereby, Alan Greenspan, the former chairman of the Federal Reserve System, mentioned that hedge funds "have become major contributors to the flexibility of the financial system" (Agarwal *et al.*, 2009). Thus, hedge funds not only provide an investment with potentially attractive returns but also offer an investment that has no correlation

with most traditional portfolios (Asness *et al.,* 2001). As seen in Amerikan economics, hedge funds have been used as financial means to support a stable interest rate beyond history (Mallaby, 2019, p. 213). Thus, hedge funds come with light regulatory oversight, and their participation in various markets has been proven fundamental. Achleitner at al. propose that the increasing provision of liquidity, made financial markets more efficient but resilient to financial shocks in past years, including the most recent financial crisis (Achleitner *et al.*, 2009).

Contrary, beginning with the first hedge fund of A. W. Jones uses leverage to have sustainable and substantial capacities for bigger trades, on the other side, being described as risky, especially in times of crisis when investors want their money back (Mallaby, 2019). A common concern following the near failure of Long-Term Capital Management (LTCM) in 1998 is that a single hedge fund creates a systemic risk to the worldwide financial system (Kruttli and Monion, 2013). Claiming that hedge funds are large enough to destabilize markets or even provoke financial crises. Such ongoing concern about the vulnerability paired with the tremendous development and opaque nature of hedge funds, emphasize their probable threat to financial stability (Erede, 2013) combined with its close relationships with other financial institutions such as prime brokers (Bussière *et al.*, 2015). One factor behind this is the illiquidity of assets which are used especially in event-driven hedge funds and in times of crises (Mallaby, 2019, p. 344). As stated by (Walden and Lajbcygier, 2023), there is a "lack of transparency within the hedge fund industry, especially when it comes to pricing, especially fees for the managers" (Walden and Lajbcygier, 2023, p. 154). This makes the process speculative and difficult for regulators and other market participants to assess the potential risks HFs pose to financial stability. The literature on systemic risk provides valuable insights into how interconnectedness and common exposures among financial institutions can propagate shocks throughout the financial system (Aramonte e*t al.*, 2023). Studies such as those by (Adrian and Brunnermeier, 2008) and (Acharya *et al.*, 2010) highlight the systemic risk posed by institutions that are highly leveraged and interconnected, as is often the case with hedge funds. These risks are further magnified in times of market stress, when forced deleveraging and fire sales can precipitate sharp declines in asset prices, thereby exacerbating market turmoil (Aramonte *et al.*, 2023).

7. CONCLUSION

Hedge funds play a vital role in modern financial markets by enhancing liquidity, improving price efficiency, and providing diversification benefits to investors. Their ability to generate alpha through sophisticated strategies makes them an essential component of institutional portfolios. However, hedge fund volatility is highly dependent on the strategy employed, ranging from low-risk arbitrage approaches to high-risk leveraged trading. While hedge funds can act as stabilizers in financial markets, they can also contribute to volatility, especially

when leverage and liquidity risks are involved. Understanding these dynamics is crucial for investors seeking to optimize risk-adjusted returns in hedge fund investments.

The concept of financial stability is continually evolving, shaped by changes in financial markets, innovations in financial products and services, and lessons learned from financial crises (Anton and Afloarei Nucu, 2024). Emerging trends such as fintech, cryptocurrencies, and decentralized finance (DeFi) present both opportunities and challenges for financial stability (see Table 3). On the one hand, these innovations can enhance financial inclusion, reduce transaction costs, and increase efficiency (Imanov *et al.*, 2017). On the other hand, they can introduce new risks, such as cybersecurity threats, regulatory arbitrage, and operational risks (Aramonte *et al.*, 2023). Therefore, maintaining financial stability requires ongoing vigilance, adaptive regulatory approaches, and an openness to harnessing the benefits of innovation while managing associated risks.

So, hedge funds play a crucial role in capital allocation by directing capital toward underfunded or inefficient market segments. Strategies such as distressed asset investing and private credit funding provide liquidity to companies facing financial difficulties, contributing to the overall stability of financial systems (Bali and Weigert, 2018). Importantly, hedge funds act as risk managers by employing strategies designed to hedge against market downturns. For instance, global macro hedge funds use derivatives and short positions to protect portfolios from economic shocks, while tail-risk hedge funds specifically focus on mitigating extreme downside risks (Chattopadhyaya, 2011).

7.1. Differences in asset classes

Separated from other investment vehicles since hedge funds assist high-profile individuals and institutions to get the maximum return from the money they are investing while investment banking itself aids in raising capital for the investees from the investor (Stulz, 2007; Agarwal *et al.*, 2009a). Thereby hedge funds use “aggressive trading strategies designed to earn positive returns” (King and Maier, 2009) in all market environments, including short sales, leverage, program trading, arbitrage, and derivatives. Even though “little is known about these loosely regulated private investment pools, an unstudied reaction to 1998 is to regulate them” (Stulz, 2007). Other than that, alternative investment vehicles operate in other directions. The major difference is the investment horizon, as money in private equity funds is locked up for approximately ten years, whereas money in hedge funds is invested for about ten months. Also reflected in the incentive structure of the fund (Ubide, 2006), HF managers are paid regarding the financial cash flow generated over the term of the fund, whereby HF managers are referred to their periodic marking to market their portfolios (Managed Funds Association, 2003). Overall, it can be said that both investors have a distinct business model, however, when it comes to the reaction after a crisis, hedge funds

use diversification so that their recovery time is to be said four years, while equities take approximately six years to recover after a crisis (McKinsey Global Institute, 2009). The difference is the structure and the mindset behind the divergent systems, comparing investment bankers with hedge fund managers (Asness *et al.*, 2001). The hedge fund industry is unstable, acting like a start-up where managers are willing to stay up all night to make sure the investment is in order. Adding to the fact that most of the time the managers' money is also invested in their hedge fund (Jiao, 2013). Whereby, bankers act in a secure, stable environment with office hours, investing the money of others (comp. Mallaby, 2019).

7.2. Further studies

Recent studies have delved into the intricate relationship between hedge fund volatility and financial stability, offering nuanced insights into how hedge fund activities can influence market dynamics. The ECB has examined the dual role of hedge funds in financial markets (Ferrara *et al.*, 2024). While hedge funds can enhance market efficiency and liquidity, their significant presence, especially in the euro area government bond markets, raises concerns about potential volatility amplification (European Central Bank, 2007).

The ECB's analysis indicates that although hedge funds contribute to market depth, their rapid withdrawal during periods of stress could exacerbate market volatility. This underscores the importance of monitoring hedge fund activities to maintain financial stability. The U.S. SEC has explored how hedge funds manage liquidity, particularly when holding illiquid assets. Findings suggest that hedge funds with lower-than-expected liquidity buffers may outperform benchmarks under normal conditions. However, during market crises, such as the one experienced in 2020, these funds are more susceptible to forced asset sales, which can trigger broader market disruptions. This highlights a policy trade-off: while lower liquidity buffers can enhance returns in stable markets, they may pose systemic risks during periods of financial stress (Aragon *et al.*, 2024).

Research from the Office of Financial Research delves into the risk-shifting behaviors of hedge funds, particularly following periods of underperformance. The study reveals that hedge funds may adjust their risk profiles by altering portfolio volatility, influenced by factors such as investor redemption terms, ownership concentration, and leverage. Understanding these behaviors is crucial, as they can have significant implications for market stability, especially if multiple funds engage in similar strategies simultaneously (Andrews and Gadgil, 2024).

A study published in the *Review of Finance* examines the relationship between hedge funds' idiosyncratic volatility and their future risk-adjusted returns. The research indicates that hedge funds exhibiting higher idiosyncratic volatility tend to achieve superior future risk-adjusted returns compared to their lower-volatility counterparts. This finding suggests that embracing certain levels of

idiosyncratic risk may be a deliberate strategy employed by hedge funds to enhance performance (Bali and Weigert, 2024).

The Bank of England has expressed concerns regarding the potential systemic risks posed by hedge funds, especially those engaging in substantial short positions against government bonds. Such positions, if unwound abruptly, could lead to significant market stress. The Bank emphasizes the need for vigilant monitoring of non-bank financial institutions, including hedge funds, to preempt and mitigate potential threats to financial stability (Arnold, 2024).

In summary, while hedge funds play a pivotal role in enhancing market efficiency and providing liquidity, their activities can also introduce elements of volatility and systemic risk. Ongoing research and regulatory oversight are essential to balance the benefits of hedge fund participation in financial markets with the imperative of maintaining overall financial stability.

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