

Hedge Funds and the Financial Market

TESTIMONY

Before the House Committee on Oversight and Government Reform

Houman B. Shadab Senior Research Fellow, Regulatory Studies Program The Mercatus Center at George Mason University¹

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Chairman Waxman, Ranking Member Davis, and Distinguished Members of the Committee:

It is a privilege to be asked to testify in this forum today regarding the impact of hedge funds on the ongoing financial crisis. My name is Houman Shadab, and I am a senior research fellow at the Mercatus Center and a participating scholar in the Center's Financial Markets Working Group. The Mercatus Center is a university-based research, education, and outreach organization affiliated with George Mason University and located on the Arlington, Virginia campus. A core mission of the Mercatus Center is to provide a public service by conducting research in law, economics, and other social sciences that is directly relevant to the issues being deliberated by policy makers. My own research focuses on the regulation of securities, derivatives, and investment companies.

Based upon my research on the activities of hedge funds, there are three important findings I would like to share with the Committee. First, hedge funds did not cause the financial crisis and are in fact helping to mitigate its damage and save taxpayers money. This may seem surprising, but in fact hedge funds have historically made markets more stable and helped their investors conserve wealth in times of economic stress. Second, hedge funds' short-selling activities have helped draw attention to the poor management and investment decisions of financial companies in recent years. Indeed, when hedge funds short-sell the stocks of unhealthy companies, they help to divert capital from companies that are fundamentally unstable. This not only prevents stock market bubbles from becoming much worse, but it helps to ensure that companies that make sound decisions are rewarded and are able to provide stable jobs for their employees. Finally, existing laws and regulations should be strictly enforced against hedge funds and their managers, but changing how hedge funds are regulated could actually undermine the interests of investors and increase economic instability. If hedge funds are significantly

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restricted their ability to develop innovative investment strategies, or are required to reveal their strategies to competitors, we all stand to lose from the unique benefits that the funds bring to the economy.

Given the complexity of the issues involved in this inquiry, it is helpful to make the following distinctions to clarify the difference between financial institutions, instruments and activities.

Financial *institutions* include banks, investment funds, insurance companies, and broker-dealers.

Financial *instruments* include securities such as bonds and collateralized debt obligations derivatives such as options and credit default swaps.

Financial activities like using leverage and short-selling.

These distinctions are crucial, because what may at first glance seem like a problem relating to a particular type of *institution* may in fact be a problem having nothing to do with the institution per se but rather a problem relating to a financial *instrument* or *activity*. For example, a small but significant and growing portion of the mutual fund industry engages in short-selling. If a policy issue relating to abusive or manipulative short-selling arises and particular mutual funds are implicated, additional regulation and enforcement is best aimed at the abusive short-selling practices in question, regardless of what type of institution engages in them, and not at mutual funds as a whole, most of which engage in no short-selling whatsoever.

To ignore the distinctions between financial institutions, instruments, and practices can mistakenly lead to holding an entire industry accountable for the conduct of a minor portion of its membership, while also failing to address the real underlying problem.

What is a Hedge Fund?

Although there is no specific definition of "hedge fund" under U.S. securities law, best understood a hedge fund is a private investment fund that compensates its manager in part with an annual performance-based fee. An investment fund is a collection of money, often referred to as a "pool," that gathers capital from investors for the purpose of having that pool of money invested by a manager or investment adviser. Hedge funds thus consist of two separate companies: the management company that controls the fund's activities, and the underlying fund itself. A hedge fund is "private" in two senses. First, hedge funds are not open to all those who seek to invest in them; they are open only to high net worth individuals and highly capitalized institutions. Hedge funds are also private in the sense that they do not advertise or solicit capital from the public, nor do they make disclosures of their investment activities or investment returns directly to the public. In general, hedge funds make very frequent trades in securities and financial derivatives. However, a significant portion of hedge funds make relatively long-term investments and may do so in assets other than financial instruments, such as real estate and film production rights.

Hedge funds are often erroneously lumped together with other types of companies and financial institutions. First, hedge funds are not a part of what is commonly understood to be "corporate America." To the contrary, hedge funds often engage in aggressive shareholder activism against public company executives they think are paid too much or are otherwise not properly running their companies for shareholders. Unlike mutual funds, pensions, and other passive investors, hedge funds are uniquely aggressive and watchful monitors of public companies. A recent study of hedge funds from 2001 to 2006 found that when hedge funds target a company, average CEO compensation declines by approximately \$1 million dollars, and the chances of the CEO being replaced also increases.² Hedge fund activism as corporate shareholders also creates long-term value, not just for other companies' shareholders, but also for their creditors.³ Importantly, when hedge funds help other companies more effectively run their businesses, the funds help employers to create more stable jobs for their employees.

Unlike investment banks, hedge funds do not take part in the process of underwriting new securities, and do not serve as brokers or dealers of securities and derivatives. Investment banks are best understood as financial services conglomerates that, in recent years, used high leverage at levels of 20 or 30 to 1 to profit from their investment operations. This means that for every dollar actually owned by the investment bank, they had borrowed 20 to 30 dollars.

Hedge funds, by contrast, have a single line of business—asset management—and they typically use relatively small amounts of leverage to finance and profit from their investment activities. From 1998 to 2004, researchers at the Bank for International Settlements estimated that average hedge fund leverage dropped from about 8 times assets to 3 times assets.⁴ A 2007 study of hedge fund leverage by a Deputy Director of the Organisation for Economic Co-operation and Development (OECD), which included leverage from borrowed funds and implicit leverage from derivatives, estimated that average hedge fund leverage of leverage coming from derivatives.⁵ As of October 2008, the IMF estimated that average global hedge fund leverage from borrowed funds had a ratio of 1.4 to 1.⁶

Hedge Funds and Mutual Funds

Of all the other types of financial institutions in the marketplace, hedge funds most closely resemble mutual funds. A mutual fund is a publicly registered pooled investment vehicle that seeks to profit by purchasing stocks, bonds, or other debt securities, earning dividend or interest income, and ultimately selling the securities at a higher price than which they were purchased. Mutual funds are distinct from hedge funds in three important ways.

First, the mutual fund industry is far larger. As of the end of June 2008, the global mutual fund industry consisted of over 68,000 mutual funds, with a total of \$24 trillion assets

under management.⁷ As of the same date, there were approximately 10,000 hedge funds globally with just over \$1.9 trillion in assets.⁸ Besides being much smaller than mutual funds, the size of the hedge fund industry is dwarfed by other institutional investors such as pension funds and insurance companies which, in 2006, controlled about \$22.7 trillion and \$17.4 in assets, respectively.⁹ As of January 2007, the total hedge fund industry was less than about one-third the size of the \$5.8 trillion market for mortgage-backed securities.¹⁰

Second, unlike mutual funds, hedge funds are not subject to the Investment Company Act's restrictions on investment activities. Accordingly, hedge funds employ a far wider range of strategies than mutual funds. Hedge funds often utilize leverage, which can come in the form of borrowing funds or using certain trading strategies to increase the potential gains from any single investment position, or to offset the risks involved with others. Leverage is sometimes necessary for hedge funds to create value, because some investment ideas require amplifications to be successfully implemented. Just as some scientific discoveries require the use of a microscope to be utilized, some hedge funds strategies likewise require the magnifying effect of leverage to be economically meaningful.

Hedge funds also often engage in short-selling when analysis indicates that certain stocks or other financial instruments are overpriced. Besides stocks and bonds, hedge funds also invest in a wide variety of financial instruments. Hedge funds invest in futures, options and derivatives based upon the prices of commodities, foreign currencies, interest rates, and credit obligations. The combination of diverse hedge fund investment practices and their employment of many financial instruments and other assets gives rise to the broad universe of actual hedge fund trading strategies. Indeed, as recently noted on the widelyread hedge fund website AllAboutAlpha.com, it is an open question whether hedge funds could even be defined as a single "asset class."

At root, the basic business model of a hedge fund rests upon a type of entrepreneurship: a hedge fund manager believes that she has an underappreciated idea about some aspect of the economic system and, by employing financial instruments, seeks to earn gains for herself and her investors on that basis.

Finally, a third crucial difference between mutual funds and hedge funds are the incentives their respective managers face. Like mutual funds, hedge funds compensate their managers with management fees based upon how large the fund is—how many assets it has under management. Yet unlike mutual funds, hedge funds also compensate their managers with a performance-based fee; typically 20 percent of the profits of the fund. Hedge funds are able to charge this type of performance fee based solely upon profits because hedge funds are not subject to the prohibition on such fees under the Investment Advisers Act of 1940.

Importantly, hedge fund performance fees are typically subject to contractual limitations known as "hurdle rates" and "high-water marks." A hurdle rate limits the performance fee allocation to only those situations where the hedge fund manager has actually made a

profit above a predefined amount for their investors in a given time period, which is typically a year. Unlike public corporations, including investment banks such as Bear Stearns and Lehman Brothers, where managers may earn a large payout despite the fact that their company was performing poorly and their investors suffered massive losses, a hedge fund manager can *never* earn a performance fee unless a genuine profit is made for investors and any prior losses are first recouped. To ensure the manager receives no performance fee until prior losses are recouped, most funds are also subject to a "high water mark" provision that prevents performance fees from being charged until the fund has surpassed its previous all time high. While managers of billion dollar plus hedge funds could earn a substantial income based upon management fee alone, most hedge fund managers rely on this income to cover business costs and rely on the performance fee to incentivize its employees. Since most hedge funds are owner-operated, golden parachutes and other types of guaranteed-compensation agreements are unheard of in the hedge fund world.

Unlike mutual fund managers, a hedge fund manager or advisory firm typically invests in the very funds they manage, thus helping them to strike a healthy balance between taking risks to earn performance fees while still preserving wealth for their investors. Although few empirical studies assess the impact of managerial co-ownership on investor returns, a study of a representative sample of 7,535 hedge funds from 1995 to 2004 found a positive and statistically significant relationship between co-investment and performance.¹¹ Research also shows that hedge fund managers are constrained from excessive risk-taking by career concerns.¹² Overall, hedge fund manager compensation does not seem to create incentives for excessive risk-taking. Empirical evidence finds that managers care more about preventing a fund from collapsing than earning high performance fees, as evidenced by the tendency of managers to cut back on risk-taking to avoid collapse of the fund even though doing so may jeopardize surpassing the high-water mark required to earn a performance fee.¹³

The ability to engage in a wide variety of investment strategies, and the incentives to share in a portion of the profits of a successfully implemented strategy, likely has played a large role in hedge funds living up to their names as "hedges," or fund that protect their investors against overall downturns in the stock market and the general economy. For instance, during the recession and stock market downturn from 2000 to 2002 following the bursting of the dot-com bubble, hedge funds as a whole earned low single digit yet nonetheless positive returns for their investors while the economy went into a recession and the stock market produced three straight years of losses for investors.¹⁴

Even throughout 2008, while hedge funds have experienced the worst losses in their entire history as an industry, they have still managed to shield their investors' wealth from the massive losses experienced by mutual funds and the stock market more generally. From January through October 2008, the U.S. stock market lost 32 percent of its value while the average hedge fund lost approximately 15.48 percent.¹⁵ This hedge fund performance figure is net of fees and includes the nearly month-long ban on short-selling financial companies, which undoubtedly had a negative impact on hedge fund performance.

The conclusion to be drawn from hedge fund performance is straightforward: when viewed from the perspective of helping to diversify an investment portfolio, hedge funds are *less* risky than investing in stocks or mutual funds.

How Are Hedge Funds Regulated?

Although hedge funds are often described as "unregulated," a substantial body of federal and state law restricts the activities of the funds and their managers and requires certain mandatory disclosures. First, hedge funds are fully subject to the prohibitions against fraud under the Securities Act of 1933, the Securities and Exchange Act of 1934 (Exchange Act), and the Investment Advisers Act of 1940 (Advisers Act). Under the latter two statutes, mere negligence is sufficient for being found liable for fraud. And because fraud includes making misleading statements or omissions, hedge funds typically make comprehensive disclosures to avoid later being found liable for omitting any important fact to investors.¹⁶ For instance, under the Advisers Act, a hedge fund can be found liable for lying to investors about investment strategies, experience and credentials, risks associated with the fund, and valuation of the fund's assets.

Second, under the Exchange Act and its regulations, hedge funds are prohibited from trading upon material inside information, from engaging in abusive short-selling, and from manipulating the prices of securities and other financial instruments used by any other type of practice.

Third, hedge funds are also subject to the Exchange Act's disclosure requirements that require any investor to make public disclosures upon making a significant stake in public companies. Accordingly, a hedge fund must make a public disclosure as a large shareholder within 10 days of becoming an owner of more than 5 percent of a public company's voting securities, must make a public disclosure as a company insider upon owning 10 percent or more of a company's securities, and must quarterly disclose all of their stockholdings as a large institutional investor whenever holding more than \$100 million in public company stock or exchange-traded options.

Public Information About Hedge Funds

It is often claimed that hedge funds are secretive and that little is known by the public and regulators about their characteristics, investment activities, and risks they pose to the economy. While it is true that hedge fund operate outside the full regime of disclosure applicable to public investment funds, to comply with the law, hedge funds must and generally do make true, accurate, and comprehensive disclosures to investors.¹⁷ In addition, there is an abundance of information available to the public about hedge funds, much of which is available for free on the Internet.

Hedge funds typically furnish directly to potential investors a private placement memorandum ("PPM").¹⁸ A PPM is widely-utilized standard form disclosure which contains the type of information that would be provided by a registration statement publicly filed under section 5 of the Securities Act, along with the unique facts and circumstances about the fund.¹⁹ Accordingly, hedge funds typically disclose the

following information in connection with a private placement: a basic description of the fund including its investment objectives, strategies, and the types of securities the fund purchases; risks pertaining to its investment strategy and regulatory and tax issues; a description of how fees are calculated and conflicts of interest by the managers or other principals; a summary of the terms of the fund, how it is managed and organized, and how investors can redeem shares; and financial statements including net asset value and how it is calculated.²⁰ Third parties such as Morningstar are also increasingly compiling and making public information relevant to evaluating and investing in different hedge funds.²¹

Furthermore, as competition for investor capital increases and investors become more sophisticated and comfortable with the funds, investors are increasingly demanding that hedge funds disclose information about the types of investments they make, their risk management policies, and other practices.²² Indeed, hedge funds, their investors, and third parties such as trade groups are increasingly recommending substantial transparency as a best practice.²³ As the industry becomes more prominent and institutionalized, and as competition for investors grows, hedge funds are likely to further expand and standardize disclosures to avoid liability and meet investor demand.²⁴

Many hedge funds either choose to or are legally required to make significant additional disclosures. For instance, it is estimated that 50 percent of hedge fund managers voluntarily register under the Advisers Act and submit to its disclosure requirements, and some portion of those do so to signal quality and accountability to investors.²⁵ As of July 2007, about 1,977 hedge fund managers were registered with the SEC,²⁶ and a 2007 fund manager survey found that 87 percent of all managers registered either with the SEC, Commodities Future Trading Commission ("CFTC"), National Association of Securities Dealers, or a state regulatory authority.²⁷

A substantial body of information about hedge funds is in the public domain and much of is accessible to a general audience. This information includes book-length treatments;²⁸ academic, industry, and government studies;²⁹ and massive coverage in the popular press.³⁰ News services, blogs, and other sources of information provide, in near real-time, news and analysis of the industry, including monthly performance figures, asset flows, and employee turnover.

Hedge Funds and the Subprime Mortgage-Initiated Credit Crisis

Because hedge funds are often erroneously lumped together with the institutions and persons that together comprise "Wall Street," hedge funds are likewise erroneously blamed for a crisis that derived in large part from the actions of banking professionals. However, despite being greatly impacted by the financial crisis, hedge funds did not initiate the financial crisis. The financial crisis would have happened even if hedge funds had never existed.

Hedge funds did not make mortgage loans and did not repackage the loans into securities. Hedge funds did not give risky mortgage securities investment grade ratings, and did not cause banks to be unwilling to lend each other money. Unlike investment banks, hedge funds did not routinely make bad investments in long-term mortgage securities and then run out of short-term, commercial paper funding. Through September of 2008, total global write-downs of structured securities by financial institutions was \$760 billion, of which \$580 billion, or 75 percent, were incurred by banks, and \$60 billion or 7.8 percent, were incurred by hedge funds and all other nonbank institutions.³¹ As a result, hedge funds have never needed a penny of taxpayer money throughout this crisis.

The closest point of contact that hedge funds made with one of the root causes of the credit crisis was as purchasers of collateralized debt obligations (CDO). A CDO is a debt security, like a bond, whose payments are backed by other bond-like securities, such as mortgage-backed securities. A mortgage-backed security is a bond that entitles its owner to a stream of payments from an underlying group of bundled mortgages.

CDOs were first developed in 1987, but the annual sales of new CDOs did not surpass \$100 billion until 1998. By 2005, the CDO market consisted of \$1.1 trillion in assets,³² and after the turn of the century was increasingly being comprised of assets backed by mortgages. By 2007, anywhere from one-half to three quarters of CDO collateral was backed by subprime mortgage-backed securities.³³ Large commercial banks such as Wachovia and large investment banks such as Lehman Brothers were the major sponsors and managers of CDOs. Investment bank underwriters issued CDOs in part because they earned millions of dollars in fees by structuring CDOs for investors. For example, in the first eight months of 2005, Merrill Lynch and Citigroup each earned over \$100 million in fees from selling CDOs to investors.³⁴

Some commentators have claimed that hedge funds, by investing in CDOs, helped to fuel the credit bubble.³⁵ The underlying theory would be that hedge funds helped to create an excessive demand for mortgages and other forms of credit by being ready buyers of securities ultimately backed by such loans.³⁶ This view of hedge funds' role in the credit crisis is misleading and is not supported by evidence of their actual activities in the structured credit markets.

First, hedge funds were never the primary drivers of the CDO market. The purchasers of CDOs overwhelming consisted of banks, including those that retained the CDOs they did not sell, insurance companies, pension funds, other special purchase vehicles, and mutual funds.³⁷ These investors often sought to invest in CDOs because federal law or their own policies limited them to investing only in investment grade debt securities. When CDOs are sold, the transaction is structured so that the overwhelming majority of the CDO securities receive an investment grade rating by credit ratings agencies (regardless of whether they actually deserved it).

According to data provided by Credit Suisse and reported by the International Monetary Fund (IMF), as of July 2007, the total size of the U.S. CDO market was \$900 billion.³⁸ Although data on hedge funds' total purchases is difficult to obtain, most sources confirm that it was relatively minor. According to my own estimates based upon data provided to me by HedgeFund.Net, the total size of hedge funds that focused their strategies in CDOs

was somewhere around 7 billion as of July 2007.³⁹ According to a survey of hedge fund prime brokers by Fitch Ratings, the typical hedge fund leverage for hedge funds engaged in trading CDOs was anywhere from six to 10 times their equity in the 2005 to 2007 period.⁴⁰ Thus, even assuming hedge funds that specialized CDOs used the maximum leverage and bought \$70 billion worth of CDO securities, they still would have only accounted for 7.7 percent of the approximately \$900 billion mid-2007 CDO market.

Even based upon even more generous assumptions, hedge funds would not turn out to be the major investors in CDOs. According to Hedge Fund Research, by year-end 2007 the total asset size of hedge funds that invested in CDOs and other asset-backed securities as part of a trading strategy involving the relative value of such securities was \$26.27 billion.⁴¹ Because hedge funds focused in the fixed income debt markets have been estimated to have leverage of up to 10 times their equity,⁴² even assuming that such funds used the maximum leverage and used all of their funds purchase CDOs, they still would have only accounted for 29 percent of the CDO market.

The relatively low participation of hedge funds in the CDO market is also reflected in data reported by the IMF. As of 2007, it is estimated that hedge funds accounted for approximately 10 percent of the investor base of equity CDO securities, the riskiest type of CDO security; where as the primary investors were banks, other structured finance assets managers, insurance companies, and pension funds.⁴³ According to the same IMF data source, an estimated half of all hedge funds' CDO investments were in CDO equity.⁴⁴ Because CDO equity securities typically accounted for 5 or less percent of the value of all of the CDOs issued in a single CDO deal, the fact that hedge funds concentrated their CDO purchases into CDO equity means that hedge funds never even came close to being the primary purchasers of investment grade rated CDO securities.

Looking at the issue from the perspective of the hedge fund industry reveals that only a small portion of hedge funds had anything to do with CDOs. When compared to the size of the hedge fund industry as a whole, even at its peak of \$70 billion in the middle of 2007,⁴⁵ the assets of hedge funds devoted to the structured credit markets was less than four percent of the nearly \$2 trillion industry at the time.

The fact that hedge funds focused their CDO investments in the riskiest type of CDO also suggests that the funds' purchases were not driving CDO deals. This is because the very purpose of a CDO deal is to take lower grade bonds, repackage the priority of payments, and issue investment grade securities. In addition, CDO equity shares are relatively easy to sell, and therefore the CDO manager could have found other purchasers for them besides hedge funds. Indeed, the riskiest types of CDOs are routinely not even sold, and are actually held by the bank issuing the deal.⁴⁶ CDO equity is uniquely attractive to investors for a number of reasons, including because it is a type of nonrecourse loan—meaning that its holders are not liable for any losses of the CDO—and because its value is not as sensitive to collateral losses as are the other types of CDOs.⁴⁷ Hedge funds' interest in CDO equity also undermines the notion that hedge funds were deeply involved with the type of securities that ultimately led to the financial crisis. It was the investment grade rated CDOs that were retained by the banks and that were ultimately downgraded

that instigated billions of dollars of write-downs and the general suspiciousness of credit quality—not the unrated CDO equity securities which were not considered by anyone to be a safe long-term investment.

One reason why hedge funds were relatively small players in both the market for mortgage-backed securities and the CDO market are the incentives faced by hedge fund managers. Because hedge managers share in the profits of the fund and often invest their own money in the fund, they have especially strong incentives to do the research necessary to determine the true worth of any securities they invest in. Furthermore, hedge fund managers were able to approach the market without any preconceived notion about value. Investment banks, on the other hand, had sold CDOs to their clients and retained highly rated CDO securities and therefore had both economic and reputational reasons to believe that CDOs were good investments. For example, in part because investment banks recommended and sold CDOs to clients, the traders at Goldman Sachs had "heated debates" about how much capital to devote to trading against subprime loans, and Deutsche Bank's head trader responsible for profiting from the subprime collapse had to endure significant criticism from his colleagues for taking investment positions against the housing market.⁴⁸ Investment banker incentives were also not as narrowly tailored to creating value for investors (unlike hedge funds). Investment bank professionals engaging in underwriting activities earned performance-based compensation based in large part on the amount of fees they generated for the bank in the previous year, and not on whether the securities they issued produced long-term gains for clients or increased the price of the investment bank's stock.⁴⁹

Accordingly, hedge fund managers routinely ignored evaluations of mortgage-backed securities issued by credit rating agencies and instead did their own proprietary research. One hedge fund manager stated that he could not "rely on ratings agencies or underwriters to" determine whether a credit product is "high-grade" and that mortgage "[d]efaults and delinquency likelihoods and prepayment drop-offs . . . are all, to some extent, knowable if you put the time in" to research. ⁵⁰ And because of hedge funds' abilities to short sell and to trade derivatives at low cost, they were able to actually employ innovative investment strategies to hedge risk and profit from erroneous valuations of subprime-backed securities. A typical hedge fund strategy in this respect in part involved taking a short position in investment grade CDO securities. ⁵¹ To the extent this activity impacted markets more broadly, it told investors that too many mortgages were being made to homeowners. To the extent hedge funds' shorting of CDO slices increased the interest rates that had to be paid out to CDO investors, hedge funds could have actually prevented homeowners from taking out mortgages they ultimately could not afford.

Not only did hedge funds *not* initiate the credit crisis or meaningfully exacerbate it by purchasing securities ultimately backed by mortgages, but they are also helping to solve the crisis. In recent years hedge funds have become significant players in the credit markets. The assets of hedge funds dealing in credit or debt instruments grew to reach over \$300 billion in 2005.⁵² According to one survey, by 2005, hedge funds accounted for one-half of the trading volume in structured credit markets.⁵³ As widely recognized

by academics, market commentators, and intergovernmental organizations such as the IMF, an important effect of hedge funds' involvement in credit markets is to increase liquidity and price discovery.⁵⁴ This means that credit market hedge funds helped to make the overall financial market more stable. Greater liquidity means that someone can sell mortgage-backed securities without suffering even worse losses—often because a hedge fund is willing to make that purchase. Increased price discovery means that the interest rates paid out by credit instruments more accurately reflect the risks involved, thereby helping to prevent unpleasant surprises. Hedge funds and traditional distressed debt investment funds raised significant amounts of capital in 2007 that helped other companies to offload their poorly performing securities, including mortgage-related securities.⁵⁵ The total assets of hedge funds focused on purchasing poorly performing securities from other companies grew to approximately \$108 billion by the third quarter of 2008.⁵⁶ By purchasing poorly performing mortgage-backed securities, hedge funds are helping the market to find a bottom, keeping prices from declining further, and are protecting taxpayers from having to fund the purchase of mortgage debt. Hedge funds are estimated to currently be holding about \$400 billion in cash, some of which may be invested in the parts of our economy which could most use infusions of capital.⁵⁷

In sum, hedge funds did not artificially drive up the prices of securities relating to mortgage-backed loans, and did not thereby create excess demand for mortgage loans which eventually hurt homeowners and the economy. Hedge funds' largest impact on the credit markets was to provide much needed liquidity and money to purchase the bad investments made by banks and other entities.

Hedge Funds and Credit Default Swaps

Another issue regarding hedge funds' involvement with the financial crisis and mortgagebacked securities is the extent to which the funds fueled the supply of credit, not by purchasing CDOs and other types of debt securities, but rather by selling protection on debt securities in the form of credit default swaps. A credit default swap (CDS) is a contract between two parties. In its simplest form, one party, the protection buyer, agrees to pay another party, the protection seller, a specified amount per month in exchange for the protection seller covering some credit risk to which the buyer is exposed. So, if the protection seller made a loan to a third party, the protection seller must cover the loan to the protection buyer in case the original borrower defaults.

The total value of the CDS market is estimated by the Depository Trust Clearing Corporation to be \$34.8 trillion dollars.⁵⁸ Hedge funds are major participants in the CDS market. According to data provided by Greenwich Associates and compiled by Fitch Ratings, in 2004 hedge funds accounted for approximately 29 percent of the outstanding trading volume of CDSs, and by 2006 that number increased to approximately 58 percent.⁵⁹ In 2006, hedge funds were net sellers of CDS protection, estimated to account for 32 percent of the seller's market and 28 percent of the buyer's market.⁶⁰ Hedge funds were not the largest participants, however; in 2006, banks accounted for 59 percent of all protection purchases and 43 percent of all sales.⁶¹

One issue relevant to hedge funds' involvement in the CDS market is the extent to which selling CDS protection made it easier for CDOs and other mortgage-related securities to be issued. Certainly, without the ability to hedge against perceived losses on CDO products, many issuers and investors would likely not have issued them in the first place, and thereby avoided the losses associated with the securities. On the other hand, because hedge funds were willing and able to protect banks and other parties against losses, hedge funds absorbed some of their losses, thereby mitigating what would have been a more disastrous level of write-downs and investment losses to banks, insurers, and other parties.

Furthermore, because hedge funds are both buyers and sellers of CDS protection, hedge funds brought "much-needed liquidity" to the CDS market.⁶² By trading CDS contracts, hedge funds helped the entire market to better discover the true risks associated not only with CDOs and other mortgage related securities, but also with the very health of financial institutions. Accordingly, while hedge funds and other parties to CDS contracts may have increased the issuance of mortgage-related securities, they also helped to stabilize the system once their losses manifested. In this sense, hedge funds provided seat belts to CDO drivers. While CDOs may not have driven so fast without the CDS protection being offered, once the crash came about the seat belts certainly helped to mitigate the damage once the crash came. It seems more appropriate to blame CDO issuers and investors for taking on such risks in the first place, not those who offered and delivered the protection.

The second issue regarding hedge funds' sales of CDS protection is the extent to which the funds agreed to deliver too much protection, and may have suffered massive losses as a result of eventually having to pay up. According to a survey of hedge fund prime brokers by Fitch Ratings, the typical leverage for hedge funds trading CDSs in the 2005 to 2007 period was 20 to 1.⁶³ While many regulators and commentators have expressed concern that losses associated with having to pay out to CDS protection buyers could cause hedge funds to collapse and take other companies down with them, this risk has yet to manifest itself. As demonstrated by the auction on CDS contracts written on bonds issued by Lehman Brothers, hedge funds appropriately managed the risks associated with writing CDS protection, in part by offsetting their exposures by buying CDS protection and increasing their collateral to provide a cushion against Lehman's ultimate bankruptcy. Selling CDS protection has not caused widespread losses among hedge funds. This means that hedge funds have absorbed losses that would likely be borne by banks and, ultimately, American taxpayers.

To the extent there are remaining questions regarding the lack of centralized information regarding outstanding CDS risk exposures, those issues have to do with the nature of CDSs as financial instruments and not with the institutions, hedge funds or otherwise, that utilize the contracts. Indeed, the CDS market is already moving toward centralizing the clearing and settlement function for the vast majority of CDS trades.

Hedge Funds and Short-Selling

Hedge funds' role in the credit crisis has also centered on the extent to which the funds' engagement in short-selling may have caused the collapse of financial institutions such as Bear Sterns and Lehman Brothers. A short-sale is an attempt to profit from the price in the drop of a stock, and it entails a short-seller borrowing a stock, selling it, repurchasing the stock, and then giving it back to the lender. At the outset, it should be noted that only about one-third of the hedge fund industry engages in short-selling stocks as the primary part of their overall investment strategy of also purchasing stocks the hedge fund manager believes to be undervalued. Other short-sellers include dealers in securities and exchange specialists, institutional investors, private investors, and members of the relatively new category of long/short mutual funds.

Federal regulation applies to the activity of short-selling, regardless of who engages in it, in three basic ways. First, it is illegal to short sell a stock without first locating a stock lender and without having the intention to do so by the time the sale settles. Second, institutional investors, such as hedge funds and mutual funds, owning more than \$100 million in stock must through August 2009 disclose their short sales to the Securities and Exchange Commission (SEC) on a weekly basis, in accordance with new rules passed by the Commission. Finally, any attempt to manipulate markets in conjunction with short selling, such as by spreading false rumors about a company that one has engaged a short-sale in, is strictly prohibited, just as spreading false rumors about a company whose stock one has purchased is prohibited.

Although failed executives such as Enron's Ken Lay and Lehman Brothers' Richard Fuld routinely blame short-sellers for causing bankruptcies, academic studies almost universally find that short-selling makes markets more efficient by bringing the price of a stock closer to its true, fundamental value.⁶⁴ In addition, academic studies have never found that short-sellers are able to cause the bankruptcy of otherwise healthy companies merely by engaging in repeated short-sales of their stock. Hedge fund short sellers were the first to draw public attention to the dangers associated with investment banks' involvement with mortgage-backed securities. Short-sellers generally act like watch dogs over public companies, and conduct in-depth research to make sure that financial statements are not being used as a form of subtle company propaganda. Had investors sold their shares in Lehman Brothers when attention was brought to the poor quality of its balance sheet by hedge fund short-seller David Einhorn in March of 2008, they may have been able to avoid the eventual losses for which Mr. Einhorn served as an early warning.

During the recent SEC ban on short-selling (which lasted from September 19, 2008 through October 8, 2008), the shares of nearly a thousand financial companies an exchange traded fund that tracks the stock performance of the financial sector dropped by 38.82 percent—more than it had dropped the entire year up through the ban. Once the short-sale ban was lifted, the stocks of the affected companies did not fall in response to short-sellers being once again permitted to sell their stocks; to the contrary, financial companies stocks actually slightly increased through the month subsequent to the ban being lifted.

On July 13, 2008, the SEC announced that it was conducting investigations into allegations of manipulative short-selling along with the spreading of false rumors regarding the health of financial company stocks. To date, the SEC has yet to bring any enforcement actions relating to short sales of financial companies.

It should be noted that there is nothing about how hedge funds are regulated that makes engaging in illegal or manipulative short-selling any easier for hedge funds than other institutions. While the lack of restrictions under the Investment Company Act makes it *economically* more feasible for hedge funds to engage in short-selling relative to mutual funds, not being required to disclose their stockholdings on a quarterly basis as mutual funds must does not facilitate illegal short sales. For example, in what seems to be the SEC's only 2008 enforcement action for illegally spreading false rumors in connection with short sales, the Commission on April 28 brought an action against a trader at a broker-dealer who disseminated false rumors via an instant messaging system about a data management company⁶⁵—hardly an activity arising from anything having to do with hedge funds.

Evidence demonstrates that hedge funds' involvement with short-selling is overwhelming beneficial for all investors and the integrity of market prices. Given that the SEC already requires hedge funds and other large institutional investors to disclose short positions on a weekly basis, there is no case for bringing additional oversight or regulation to hedge funds on the basis of short-selling without serious consideration of the unintended consequences that would likely result.

Hedge Fund and Systemic Risk to the Economy

A final issue about hedge funds relevant to their role in the financial crisis and public policy is the extent to which hedge funds pose a systemic risk to the entire, or at least large portions of, the financial system.

Systemic risk arises because of the interconnectedness of financial institutions. The theory is that if one large or several large hedge funds experience losses, such losses may spread to other hedge funds or financial institutions and in turn severely undermine the stability of the financial system. Based upon how hedge funds operate and the dangers involved in increasing restrictions on the industry to monitor systemic risk, anything more than the type of ad hoc inspections that the Federal Reserve is already engaged in does not seem warranted.

First, hedge fund losses do not seem to threaten the economy. Although the memory of the failed \$4 billion hedge fund Long Term Capital Management (LTCM) often drives concerns about the risks that hedge funds pose to the economy, the industry has come a long way since LTCM which, in retrospect, did not actually pose a threat to the financial system. In September 2006, for example, the hedge fund Amaranth, which was approximately \$2 billion larger than LTCM, collapsed in about one week without any market disruptions whatsoever.

Although hedge fund losses may spread within the industry, including among funds that employ different trading strategies, financial economists have found that hedge fund losses do not spread to the general economy.⁶⁶ The recent economic turmoil is a case in point. Widespread and sustained losses in the hedge fund industry did not begin until June of 2008, several months *after* the stock market began to experience persistent monthly losses in November of 2007. In August of 2008, when several large quantitative hedge funds experienced losses and the hedge fund industry globally declined by over 2 percent, the U.S. stock market, as measured by the S&P 500 stock Index, actually increased by about 1.3 percent. While some hedge funds have suffered substantial losses throughout this crisis, none of those losses have threatened the broader economy. And while hedge fund investor redemptions have certainly caused stock markets to decline, these losses are second order effects of the credit crisis and are no different than the redemptions and price declines that resulted from mutual fund investors redeeming their shares.

Second, although highly leveraged financial institutions may threaten the stability of the financial system if forced to unwind bad investments, hedge funds should not generally be considered among the class of highly leveraged financial institutions. Average hedge fund leverage is estimated to be anywhere from 1.7 to 3.9 to 1, with the latter figure including leverage not just from borrowings, but also leverage through using derivatives. While some hedge funds may be leveraged up to 10 to 20 times by making investments from short-term borrowings from their prime brokers or other parties, high leverage by itself is not necessarily an indicator of risk, either to hedge fund investors of the economy. Academic studies do not have a clear conclusion regarding whether funds that use more leverage have a higher chance of collapsing.⁶⁷ This is because increasing leverage can be used to offset the risks to which a fund is exposed. Indeed, a 2006 study found that hedge funds that employed leverage through using derivatives were actually safer than hedge funds that did not.⁶⁸ This finding is important, because hedge funds primarily obtain their leverage through derivatives, not borrowing.

In addition, most hedge funds leverage their positions with prime brokers far below the maximum allowed, somewhere between the range of 40 to 60 percent,⁶⁹ which suggests that the funds and their brokers routinely exercise strong risk management by purposely adding a liquidity cushion for times of market stress. Importantly, empirical studies on the issue find that hedge funds become less prone to collapsing as their size grows,⁷⁰ which generally decreases concern about the risk of large fund collapses.

Third, the recently proposed idea of creating a permanent regulatory agency tasked with measuring economy-wide systemic risk ought to be considered with caution as it is unlikely to achieve its purpose and may even increase overall systemic risk. As Federal Reserve Chairman Ben Bernanke noted in May 2006 testimony regarding a proposal for federal regulators to monitor hedge fund liquidity risk, to be successfully implemented, regulators would need to: gather sensitive information from *all* major financial market participants, process the massive and fluctuating data accurately and at least daily, and

respond to a high risk exposure without causing a financial crisis, for example, by forcing funds to simultaneously exit the same risky position.

Chairman Bernanke rejected the idea that regulators should create a database of hedge fund positions. For the very same reasons, any attempt at universal oversight of hedge fund leverage would not only carry the burden of compliance costs, but could also reduce performance of well-performing but leveraged hedge funds, overwhelm regulators in trying to make complex calculations regarding hedge fund risk exposures, and create a false sense of security among prime brokers, investors, and other hedge fund monitors. As an alternative to direct oversight of hedge funds, federal regulators may find it more useful to focus on the risk exposures that banks, broker-dealers, and other regulated entities have to hedge funds.

Conclusion

The financial crisis has brought untold dislocations to our financial systems and is bleeding into the non-financial economy. Hedge funds, like other market participants, have not remained immune from its effects. There are still many questions left unanswered about the nature of the crisis and how best to proceed, and the Committee would be right in seeking further answers. One major issue is whether the credit ratings agencies should be allowed to rate structured products for the purposes of permitting pensions and other investors to purchase structured securities.

Another issue is to the extent to which the restrictions placed upon mutual funds in engaging in hedge fund-like trading strategies should be revisited, as the SEC once suggested. More broadly, the extent to which more investors should be able to participate in the hedge fund market and benefit from the protection they provide against losses deserves inquiry. Other nations, such as Australia, Hong Kong, and Ireland, allow ordinary investors far greater access to hedge funds than allowed in the United States. The impact on investors in those nations is worthy of study.

However, based upon the empirical evidence, it does not seem that changing the already substantial body of law applicable to hedge funds will help to ameliorate this crisis or prevent another one from happening. Restricting the ability of hedge funds to utilize leverage may interfere with their ability to provide value to investors in cases where investment ideas need to be magnified for the trading strategy to be meaningful. Interfering with hedge fund manager compensation agreements could reduce their incentives to engage in in-depth research and costly investment strategies, including those that involve restraining the excesses of public company managers. Furthermore, even sophisticated hedge fund investors do not demand that hedge funds disclose their precise investment positions. It is unclear whether such information could provide meaningful information about the risks that hedge funds pose without, at the same time, inhibiting the incentives for hedge funds to reduce risk in the economy and creating a sense of complacency in the markets.

The financial crisis has deeply impacted the lives of Americans, and we all have a stake in ensuring that the crisis is prudently resolved. While it may be tempting to lump hedge funds in with other financial institutions that were directly involved with the crisis, and hedge fund managers with other highly compensated financial professionals, we must be very careful to make the appropriate distinctions to ensure that the policy responses to the crisis do not end up adding to the damage already done and prevent the economy from ultimately recovering.

¹⁰ IMF Global Stability Report 4 April 2007, Figure 1; HFR Global Hedge Fund Industry Report Q3 2008 11 (Oct. 17, 2008).

¹¹ Agarwal et a. found a positive and significant correlation between managerial ownership and performance such that a one standard deviation increase in ownership increases returns by about 1.5%. Vikas Agarwal, et al., *Role of Managerial Incentives and Discretion in Hedge Fund Performance* 5, 12-13, 36. (Centre for Financial Research Working Paper No. 04-04, April 28, 2006), *available at* http://ssrn.com/abstract=889008.

¹² Stephen J. Brown et al., *Careers and Survival: Competition and Risk in the Hedge Fund and CTA Industry*, 56 J. Fin. 1869, 1884–85 (2001).

¹³ Indraneel Chakraborty & Sugata Ray, *Effort, Risk and Walkaway Under High Water Mark Style Contracts*, 2-3 (University of Pennsylvania Working Paper, Jan. 16, 2008).. *See also* Stavros Panageas & Mark M. Westerfield, *High-Water Marks: High Risk Appetites? Convex*

Compensation, Long Horizons, and Portfolio Choice 4, 14 (Working Paper August 2007), *available at* http://ssrn.com/abstract=616962 (modeling the value of fund continuation as being a disciplining force on risk-taking).

¹⁵ EconStats, S&P 500 (large cap) Index US Monthly Data,

http://www.econstats.com/eqty/eqem_mi_1.htm; HedgeFundResearch, HFRI Monthly Performance Indices.

¹ Much of the background research on hedge funds contained in this testimony is taken from my academic-length treatment of the subject in *The Law and Economics of Hedge Funds: Financial Innovation and Investor Protection*, 6 Berkeley Bus. L. J. (forthcoming 2009), *available at* http://ssrn.com/abstract=1066808. I would like to thank Katelyn E. Christ and Stefanie Haeffele for their invaluable research assistance with preparation of this testimony.

² See Alon Brav, Wei Jiang, Frank Partnoy & Randall Thomas, *Hedge Fund Activism, Corporate Governance, and Firm Performance*, ECGI Working Paper Series in Finance, November 2008. ³ Id.

⁴ Patrick McGuire et al., Time-varying Exposures and Leverage in Hedge Funds, BIS Quarterly Review 69 March 2005.

⁵ Adrian Blundell-Wignall, An Overview of Hedge Funds and Structured Products: Issues in Leverage and Risk, Financial Markets and Trends 48 (2007).

⁶ IMF, Global Financial Stability Report Financial Stress and Deleveraging Macro-Financial Implications and Policy 41 (October 2008).

⁷ Investment Company Institute, Worldwide Mutual Fund Assets And Flows

Second Quarter 2008, http://www.ici.org/stats/mf/ww_06_08.html#TopOfPage.

⁸ HFR Global Hedge Fund Industry Report Q3 2008 11, 21 (Oct. 17, 2008).

⁹ Alexander Ineichen & Kurt Silberstein, AIMA's Roadmap to Hedge Funds 17 November 2008.

¹⁴ See Houman B. Shadab, Fending for Themselves: Creating a U.S. Hedge Fund Market for Retail Investors, 11 N.Y.U. J. Leg. Pub. Pol'y. 251, 269 (2008).

¹⁶ SCOTT J. LEDERMAN, HEDGE FUND REGULATION at § 4:2.2, 4-12 (2007) (noting that "in light of various federal and state anti-fraud provisions, a well advised hedge fund prepares a

comprehensive offering memorandum, even if the offering is directed solely to accredited investors, to ensure that all material information is conveyed.");

¹⁷ *Id.* at § 4:2.2, 4-12 (noting that "in light of various federal and state anti-fraud provisions, a well advised hedge fund prepares a comprehensive offering memorandum, even if the offering is directed solely to accredited investors, to ensure that all material information is conveyed.").

¹⁸ SEC, IMPLICATIONS OF THE GROWTH OF HEDGE FUNDS, STAFF REPORT TO THE UNITED STATES SECURITIES AND EXCHANGE COMMISSION 46 (Sept. 29, 2003) ("Most hedge funds provide written information to their investors in the form of a private offering memorandum or private placement memorandum").

¹⁹ *Id.* at 47-49 (noting the information typically disclosed in a PPM);

²⁰ Id.

²¹ Jeff Benjamin, *Hedge Funds Go Prime Time*, INVESTMENTNEWS, Feb. 28, 2008.

²² Indeed, some hedge fund advisers voluntarily register and submit to the disclosure obligations of the Advisers Act to attract investors. SEC, *supra* note 18, at 22 n.76; Registration Under the Advisers Act of Certain Hedge Fund Advisers, Investment Adviser Act Release No. 2266, 69 Fed. Reg. 45181 (proposed July 28, 2004) (estimating that 30% to 50% of hedge fund managers voluntarily register).

²³ Notably, investors do not typically demand and best practices do not recommend position-level transparency. Nor would such information be generally useful to investors. *See, e.g.*, The Bank of New York, Casey, Quirk, and Associates, Institutional Demand for Hedge Funds 2: A Global Perspective 10 (2006); RICHARD BOOKSTABER, DEMONS OF OUR OWN DESIGN: MARKETS, HEDGE FUNDS, AND THE PERILS OF FINANCIAL INNOVATION 220-21, 225-26.

²⁴ The Hedge Fund 100, INST. INVESTOR, June 2002; Christine Williamson, Institutional Interest Lights Transparency Fire, PENSIONS & INVESTMENTS, Oct. 15, 2007.

²⁵. SEC STAFF REPORT, *supra* note 18, at at 22 n.76; Registration Under the Advisers Act of Certain Hedge Fund Advisers, 69 Fed. Reg. 45,172, 45,181 n.98 (July 28, 2004) (estimating that 30 to 50% of hedge fund managers voluntarily register); *The Hedge Fund 100*, INSTITUTIONAL INVESTOR, June 2002, at 43 (finding that disclosure among the largest 100 hedge fund managers is rising).

²⁶. Siobhan Hughes, *Fund Advisers Deregister*, WALL ST. J., July 9, 2007, at A4.

²⁷. Press Release, Hennessee Group LLC, Hennessee Group LLC Releases 13th Annual Hedge Fund Manager Survey (May 1, 2007), *available at*

http://www.hennesseegroup.com/releases/release20070501.html.

^{28.} See, e.g., BARTON BIGGS, HEDGEHOGGING (2006); RICHARD M. BOOKSTABER, A DEMON OF OUR OWN DESIGN: MARKETS, HEDGE FUNDS, AND THE PERILS OF FINANCIAL INNOVATION (2007).

²⁹ See, e.g., CTR. FOR INT'L SEC. & DERIVATIVES MKTS., THE BENEFITS OF HEDGE FUNDS: 2006 UPDATE (2006), *available at*

http://cisdm.som.umass.edu/research/pdffiles/benefitsofhedgefunds.pdf; BERNSTEIN GLOBAL WEALTH MGMT., HEDGE FUNDS: TOO MUCH OF A GOOD THING? (2006), *available at* https://www.bernstein.com/CmsObjectPC/pdfs/B32267_HF_TooMuchGoodThing.pdf.

³⁰See, e.g., Behind the Hedge, N.Y. MAGAZINE, Apr. 9, 2007,

http://nymag.com/news/features/hedgefunds/.

³¹ IMF, Global Financial Stability Report Financial Stress and Deleveraging Macro-Financial Implications and Policy 15-17 (October 2008).

³² DOUGLAS J. LUCAS, LAURIE S. GOODMAN, FRANK J. FABOZZI, COLLATERALIZED DEBT OBLIGATIONS 3-5 (2006).

³³ Bank for International Settlements, Basel Committee on Banking Supervision, The Joint Forum, Credit Risk Transfer, Developments from 2005 to 2007 5 (July 2008) http://www.bis.org/publ/joint21.pdf?noframes=1. ³⁴ Bloomberg, Analysis: Merrill, Citigroup Record CDO Fees Earned in Top Growth Market, August 30, 2005, http://www.xak.com/main/newsshow.asp?id=50305.

³⁶ Roger Merritt & Eileen Fahey, FitchRatings, Credit Policy, Hedge Funds: The Credit Market's New Paradigm, June 5, 2007 (arguing that since 2005 "CDO issuance continued to expand, in part due to demand from hedge funds for CDO equity exposures.").

³⁷ Bank for International Settlements (BIS), Basel Committee on Banking Supervision, The Joint Forum, Credit Risk Transfer, Developments from 2005 to 2007, 9, 16-17 (July 2008) http://www.bis.org/publ/joint21.pdf?noframes=1.

³⁸ IMF, Global Financial Stability Report, Financial Market Turbulence: Causes, Consequences and Policies, 16 Figure 1.12 (October 2007), http://www.imf.org/External/Pubs/ FT/GFSR/2007/02/index.htm.

³⁹ This calculation is based upon CDO focused funds accounting for 10 percent of the structured credit hedge fund market, which at 2Q07 consisted of approximately \$69.60 billion in assets.

⁴⁰ Roger Merritt & Eileen Fahey, FitchRatings, Credit Policy, Hedge Funds: The Credit Market's New Paradigm 4 (June 5, 2007).

⁴¹ HFR Global Hedge Fund Industry Report Q3 2008 147 (Oct. 17, 2008).

⁴² IMF, *supra* note 31, at 41.

⁴³ The Global Economy and Financial Markets: Where Next? Speech by John Lipsky
First Deputy Managing Director, International Monetary Fund, at the Lowy Institute, Sydney,
Australia, July 31, 2007, http://www.imf.org/external/np/speeches/2007/073107a.htm
⁴⁴ Id.

⁴⁵ HedgeFund.Net, Strategy Focus Report, Structured Credit Hedge Funds, Sept. 9, 2008.

⁴⁶ Markus K. Brunnermeier, Deciphering the 2007-08 Liquidity Credit Crunch, J. Econ. Persp. (forthcoming), Working Paper 3, May 19, 2008, http://www.princeton.edu/ ~markus/research/papers/liquidity_crunch_2007_08.pdf.

⁴⁷ LUCAS et al., *supra* note 32, at 347.

⁴⁸ Kate Kelley, *How Goldman Won Big On Mortgage Meltdown*, WALL ST. J., Dec. 14, 2007; Page A1; Blake et al., *Fourth Annual Trades of the Year*, TRADER MONTHLY 74, February/March 2008.

⁴⁹ See Richard Beales & Rob Cox, Lightly Regulated, Rightly, WALL ST. J., Feb. 11, 2008, at C12 (noting that in contrast to hedge funds "[i]nvestment bankers are often playing with faceless shareholders' money" and that "[b]onuses based partly on individual success are almost always going to outweigh any losses on bankers' stock holdings in a firm that had a bad year").
⁵⁰ See Rich Blake, House Money, TRADER MONTHLY 40, November 207, available at

⁵⁰ See Rich Blake, *House Money*, TRADER MONTHLY 40, November 207, *available at* http://www.traderdaily.com/magazine/article/12161.html;

⁵¹ Gregory Zuckerman, *Trader Made Billions on Subprime*, WALL ST. J. Page A1, Jan. 15, 2008; FINalternatives, *Hedge Fund Gains 1,000%, Preps Short Credit Fund*, Nov. 28, 2007 (reporting that the portfolios of manager Andrew Lahde "hold short positions in AA tranches down to BBB-on the ABX Index"); David Gaffen, *Making Money Off Subprime Declines*, Marketbeat,

WSJ.com, Feb. 8, 2008 (noting that hedge fund manager Don Brownstein profited from subprime by "us[ing] a combination of the ABX and a basket of single name credit default swaps, which we were short"); Mark Pittman, *Betting on a Crash—The Gamble of J. Kyle Bass*, NEW ZEALAND HERALD, Jan. 1, 2008 (reporting that hedge fund manager J. Kyle Bass "used the leveraging effect of derivatives to sell short about US\$1.2 billion of sub-prime securities").

⁵² IMF, World Economic and Financial Surveys Global Financial Stability Report Market Developments and Issues, 56 Figure 2.3 (April 2006)

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⁵³ Euromoney, *Hedge Funds Become the U.S. Fixed-Income Market*, Sept. 2007.

³⁵ See, e.g., Janet Tavakoli, STRUCTURED FINANCE & COLLATERALIZED DEBT OBLIGATIONS: NEW DEVELOPMENTS IN CASH & SYNTHETIC SECURITIZATION 397-99 (2008).

⁵⁴ See, e.g., Adrian Blundell-Wignall, *An Overview of Hedge Funds and Structured Products: Issues in Leverage and Risk*, Financial Markets and Trends 43-44 (2007); Roger W. Merrit et al., FitchRating, Hedge Funds: An Emerging Force in the Global Credit Markets 3 (July 18, 2005); BIS, *supra* note 37, at 7.

⁵⁵ BIS, *supra* note 37, at 8.

⁵⁶ HFR Global Hedge Fund Industry Report Q3 2008 121 (Oct. 17, 2008).

⁵⁷ Svea Herbst-Bayliss, *Hedge Funds Could Help Finance Growth: Lawyer*, Reuters, Nov. 11, 2008.

⁵⁸ DTCC Addresses Misconceptions About the Credit Default Swap Market, Oct. 11, 2008

⁵⁹ Roger Merritt & Eilieen Fahey, FitchRatings, Credit Policy, Hedge Funds: The Credit Market's New Paradigm 2, June 5, 2007.

⁶⁰ David Mengle, *Credit Derivatives: An Overview*, Federal Reserve Bank of Atlanta, Economic Review 8 Fourth Quarter 2007, http://www.frbatlanta.org/filelegacydocs/ erq407_mengle.pdf. ⁶¹ IMF, *supra* note 31, at 79 Table 2.3.

⁶² Merritt et al., *supra* note 54.

⁶³ Roger Merritt & Eileen Fahey, FitchRatings, Credit Policy, Hedge Funds: The Credit Market's New Paradigm 4 (June 5, 2007).

⁶⁴ Asher Curtis & Neil L. Fargher, *Does Short-Selling Amplify Price Declines or Align Stocks with Their Fundamental Values?* available at http://ssrn.com/abstract=817446 (May 2008); Christopher L. Culp & J.B. Heaton, *The Economics of Naked Short Selling*, Vol.31, No.1, Regulation, available at http://www.cato.org/pubs/regulation/regv31n1/v31n1-6.pdf (Spring 2008); Ekkehart Boehmer, Bilal Erturk & Sorin M. Sorescu, *Why do Short Interest Levels Predice Stock Returns?* available at http://ssrn.com/abstract=1019309 (October 2007); Ekkehart Boehmer, Charles M. Jones & Xiaoyan Zhang, *Which Shorts are Informed?* 63 J. Fin. http://www3.interscience.wiley.com/journal/119392457/abstract?CRETRY=1&SRETRY=0 (April 2008); Julie Wu, *Uptick rule, Short selling and Price Efficiency*, First Draft. http://investor.gov/comments/4-520/4520-5.pdf (August 2006).

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⁶⁸ Yong Chen, *Derivatives Use and Risk Taking: Evidence from the Hedge Fund Industry* 1 (Boston College Working Paper, Sept. 12, 2006).

⁶⁹ Roger Merritt & Eileen Fahey, FitchRatings, Credit Policy, Hedge Funds: The Credit Market's New Paradigm 4 (June 5, 2007).

⁷⁰ See, e.g., Roger G. Ibbotson, *The A,B,Cs of Hedge Funds: Alphas, Betas, and Costs,* Yale ICF Working Paper, No. 06-10 14 Sept. 2006, http://s/ssrn.com/abstract=733264; Greg N. Gregoriou & Neal E. Duffy, *Hedge Funds: A Survey of the Literature,* 12 Pensions 24, 27 (2006).

⁷¹ See Michael R. King & Phillip Maier, Hedge Funds and Financial Stability: Regulating Prime Brokers Will Mitigate Systemic Risks, Oct. 30, 2008.