

Why We Need a Superfund for Hedge Funds

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Abstract: The current financial crisis has led to numerous calls for regulation of hedge funds. This article argues that the appropriate response is a combination of mechanisms: establishment of a Superfund financed by a tax on hedge funds, whose revenues are then used to conduct market purchases of “toxic” financial assets, along with supporting regulations. This article develops this solution by focusing on the market failures caused by hedge funds, namely the externalities posed by liquidity risks, and the inability of market prices to provide information about the valuation of financial securities. It then considers possible solutions through the prism of our past experiences with environmental protection. This analysis suggests that the Superfund will be not only applicable to this financial crisis, but will remain effective even as hedge funds and their strategies evolve.

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Introduction

For years, many people believed that financial markets behaved similar to the pin-makers in Adam Smith's The Wealth of Nations: traders who sought financial rewards for themselves also ended up providing economic benefits for the entire nation, as if guided by an "invisible hand."¹ However, the events of this past year have led people to drop this notion of the performance of financial markets as inherently efficient. Instead, now, many are making calls for new and more powerful regulation of financial markets. It is thought that this regulation is necessary to prevent (or at least greatly reduce) future financial calamities.

One financial sector that faces pointed calls for regulation is hedge funds. Hedge funds are primarily a mechanism used to pool a large quantity of funds for investment from individuals that can bear a significant amount of risk. Then, because they operate outside of most regulatory restrictions, hedge funds invest these funds in risky enterprises, including the development of new financial instruments.² In doing so, these funds seek returns that "beat the market." They have become very popular, with assets somewhere between one and two trillion dollars.³

The reason for this focus on hedge funds is that, at present, they are relatively unregulated, compared with almost all other financial sectors.^{4,5} Antifraud statutes⁶ apply to hedge funds, and some hedge funds are required to report some of their holdings quarterly.⁷ However, the structure of a hedge fund is designed specifically to enable it to avoid registration requirements, along with restrictions on investment strategies that apply to other financial sectors. The principal justification for the lack of regulation of hedge funds was the restriction on participation in a hedge fund to those who had the financial resources to bear the high risk of its activities. It was thought that this restriction would be sufficient to protect the public.

¹ Smith's invisible hand was the market price, which provided signals to both producers and consumers.

² New instruments themselves can involve significant risks, because of the lack of experience with them.

³ See Louise Story, *Hedge Funds, Unhinged*, N.Y. TIMES, January 18, 2009, at BU1.

⁴ Recently, the major investment banks either went into bankruptcy, were acquired by commercial banks, or themselves became bank holding companies. Consequently, the other remaining relatively unregulated financial sectors are private equity and venture capital. See Brian G. Cartwright, *Speech by SEC Staff: The Future of Securities Regulation* (October 24, 2007), available at <http://www.sec.gov/news/speech/2007/spch102407bgc.htm>.

⁵ It should be noted that this article deals only with the risks generated by the hedge fund sector. Other financial sectors cause similar risks, but they also operate under some form of regulatory control. In the future, it might be possible to extend the Superfund structure proposed by this article for hedge funds to these other sectors.

⁶ Fraudulent behavior related to the sale of any security, including those held by hedge funds, is prohibited by Section 10B of the Securities Exchange Act of 1934 and SEC Rule 10b-5.

⁷ Under SEC Rule 13F, hedge funds with greater than \$100 million in assets under management are required to submit quarterly reports of some of their holdings. However, no disclosure is required for securities that are not publicly traded. See <http://www.sec.gov/divisions/investment/13faq.htm>.

Nonetheless, the events of the past year have shown that there can be significant negative effects on the entire economy that arise due to investment errors made by a hedge fund. As a result, there have been many proposals to regulate hedge funds much more tightly. These regulations could include the imposition of reserve requirements, significant disclosure, and restrictions on investment strategies.

This article suggests that this approach is not the correct one to protect the public from the effects of hedge funds. Instead, using comparisons with our experiences with environmental regulation, this article proposes that the appropriate instrument to address hedge funds is a “Superfund.” With the Superfund, a tax would be collected from hedge funds, and the revenues from this tax would then be used to purchase distressed financial assets when market failures arise due to problems with liquidity and valuation. The magnitude of this tax would be determined by the amount of liquidity risk⁸ posed by the portfolio choices of the hedge fund. Consequently, the imposition of this tax would provide incentives to reduce liquidity risks.

In addition to developing a technique for addressing the social costs of hedge funds, this article also posits an arguably new category of market failure: this market failure exists when market prices fail to provide adequate information about valuation of the underlying good. This market failure is related to other traditional market failures: the consequences of imperfect information and market power. However, discussion of imperfect information as a market failure examines the effects of transaction costs in obtaining information about the non-price characteristics of goods and services, while discussion of market power focuses on inefficient market quantities and corresponding prices.⁹ In contrast, this article highlights the consequences of market prices that no longer provide information about valuation. As with other market failures, this particular failure presents an opportunity for governmental intervention to correct it. One possible mechanism for intervention is for the government to provide limited funding for a competitive market in distressed assets.¹⁰

⁸ Liquidity risk is a particular form of “systemic risk,” which covers all forms of risks to the entire financial system. Liquidity risk is explained more in section IV.A, *infra*. For more on systemic risk, *see* Steven L. Schwarcz, *Systemic Risk*, 97 GEO. L.J. 193, 248 (2008).

⁹ *See* KARL E. CASE AND RAY C. FAIR, *PRINCIPLES OF MICROECONOMICS* (6th ed. 2002), at 258-259 and 263-264.

¹⁰ This idea of a competitive market was first proposed by Lucian Bebchuk. *See* Lucian A. Bebchuk, *A Better Plan for Addressing the Financial Crisis*, 5 THE ECONOMISTS' VOICE (2008), *available at* <http://www.bepress.com/ev/vol5/iss5/art6>.

By addressing both market failures caused by the activities of hedge funds, the Superfund suggested by this article offers a superior alternative to extending command-and-control regulation to the financial sector of hedge funds. In the rest of this article, we begin with a description of the characteristics of hedge funds, and then examine the academic and policy literature addressing their regulation. After that, we describe the market failures that can result from the operation of hedge funds, including the new market failure concerning valuation problems. We then examine potential mechanisms for addressing these market failures, including command-and-control regulation and the Superfund for hedge funds. We conclude with an analysis of how the Superfund for hedge funds would operate, along with a discussion of the role of international coordination in developing an effective solution.

I. What are Hedge Funds, and What Do They Do?

As a consequence of their predominantly unregulated status, there has not been a formal, universally-accepted definition of a hedge fund.¹¹ In the *Goldstein v. S.E.C.* case, the D.C. Court of Appeals noted, “‘Hedge funds’ are notoriously difficult to define. The term appears nowhere in the federal securities laws, and even industry participants do not agree upon a single definition. The term is commonly used as a catch-all for ‘any pooled investment vehicle that is privately organized, administered by professional investment managers, and not widely available to the public.’”¹² Meanwhile, a report to Congress describes a hedge fund as “a privately offered investment vehicle that pools the contributions of its investors in order to invest in a variety of asset classes.”¹³ Hedge funds typically collect two types of fees, a management fee (based on the value of assets managed) and a performance fee (based on the level of profits).¹⁴

¹¹ Frank Partnoy and Randall Thomas, *Gap Filling, Hedge Funds, and Financial Innovation* (2006), 22, available at http://www.brookings.edu/ES/RESEARCH/projects/t5/2006tc_partnoy.pdf; also in, *NEW FINANCIAL INSTRUMENTS AND INSTITUTIONS* (Robert E. Litan and Yasuyuki Fuchita, eds. 2007).

¹² *Goldstein v. SEC*, 451 F.3d 873, 874-75 (D.C. Cir. 2006).

¹³ Secretary of the Treasury, Federal Reserve Board, Securities and Exchange Commission, and Commodity Futures Trading Commission, *A REPORT TO CONGRESS IN ACCORDANCE WITH S 356(C) OF THE UNITING AND STRENGTHENING AMERICA BY PROVIDING APPROPRIATE TOOLS REQUIRED TO INTERCEPT AND OBSTRUCT TERRORISM ACT OF 2001 (USA PATRIOT ACT)* (2002), in *JERRY W. MARKHAM AND THOMAS LEE HAZEN, CORPORATE FINANCE, CASES AND MATERIALS* (2nd Ed. 2008), at 883.

¹⁴ A typical fee structure would be one percent for the management fee, and twenty percent of profits for the performance fee. See Alexander Ineichen and Kurt Silberstein, *AIMA's Roadmap to Hedge Funds* (2008), 29, available at <http://www.aima.org/download.cfm/docid/6133E854-63FF-46FC-95347B445AE4ECFC>. While a twenty percent fee for profits seems high, there are certain benefits to this structure, because this equity share provides a stronger incentive for hedge fund managers to take a long-term perspective, in contrast to the bonus

These descriptions suggest certain characteristics of hedge funds. Hedge funds invest in certain asset classes including derivatives¹⁵ and short-selling¹⁶ of securities, investments that are not always available to other financial sectors such as mutual funds. In order to maintain their access to these assets, hedge funds must be designed in a way such that they do not come within the purview of the securities laws (other than the anti-fraud provisions). They do this by restricting the number of their investors, and by restricting investors to those with high net-worth.¹⁷

As a result of their design and consequent exemption from securities registration and regulation, hedge funds can pursue a wider variety of investment strategies. These strategies can include “convertible arbitrage, distressed securities, equity hedge, ... event driven, macro, ... and relative value arbitrage.”¹⁸ Convertible arbitrage is where a fund tries to take advantage of what it believes to be a pricing error between a security convertible into common stock, and the underlying security. Another strategy is where a fund invests in the securities of a company that is in distress. Equity hedge is where the fund matches long holdings of stock with a hedged portfolio of short sales of related stock or indexes. Event driven funds make predictions about the possibility of a major corporate event such as a merger or bankruptcy, and based on these predictions, acquire either long or short positions in the affected stock. Macro funds allocate investments based on predictions of foreign exchange rates and international stock markets. Relative value arbitrage funds “take offsetting long and short positions in similar or related securities when their values, which are mathematically or historically interrelated, are temporarily distorted.”¹⁹

To take full advantage of these strategies, hedge funds use “leverage.” Leverage magnifies the rate of return of an investment, so that when profits are made, higher returns result.

structure utilized for traders at investment banks. This fee structure can therefore lessen liquidity risks that might be generated by hedge funds.

¹⁵ The value of a derivative depends upon an underlying primary security. Two commonly used derivatives are put and call options, which give the buyer of the option respectively to sell and buy the underlying security at a given price during a specified time frame.

¹⁶ A short sale is when a security is initially borrowed and immediately sold to generate cash, with the promise to deliver the exact same type of security to the original holder at a specified time. A short seller makes a profit when the price of the security declines between the originally borrowing and the ultimate re-delivery. Under Regulation T, the Federal Reserve has a margin requirement of “150 percent of the current market value of the security” in a short sale. Reg. T, § 220.12 (c), 63 Fed. Reg. 2827 (Jan. 16, 1998).

¹⁷ Investment Company Act of 1940, 15 U.S.C. S 80a-2(a)(51)(A).

¹⁸ Hedge Fund Research, Inc., *HFRX Strategy Definitions*, available at <https://www.hedgefundresearch.com/index.php?fuse=hfrx-str>.

¹⁹ Id.

However, when there are losses, leverage again magnifies the amount of those losses. For example, consider the purchase of a \$10 stock when you borrow 90% of the purchase price (\$9). If the stock increases in price by \$1, then you have made a 100% profit on your \$1 up-front investment, even though the stock price itself has only changed 10%. However, if the price falls by \$1, you have lost your entire investment, even though the stock price has fallen by only 10%. This is the nature of leverage.

In addition to these strategies, hedge funds have been a significant player in the market for collateralized debt obligations (CDOs).²⁰ CDOs are a form of a derivative: a CDO is issued by a special purpose vehicle (SPV) – a separate corporate entity – where the SPV owns a portfolio of credit instruments such as mortgages as collateral. The payout to the holder of the CDO depends on its “tranche:”²¹ some are more senior and bear lower risk and lower return, while others are more junior and bear more risk. CDOs have come under intense scrutiny during this financial crisis. The criticisms lodged against CDOs is that their complexity – involving hundreds of different financial instruments – made them difficult to properly assess value and risk, and also that by seeming to pool assorted risk, they gave the false impression that these risks did not need to be scrutinized more carefully. It was thought that by combining a number of different financial instruments, the overall risk would be reduced. However, as the nationwide decline in the housing market led to increased defaults on mortgages, CDOs that were supposed to have very low risks instead were discovered to have assets whose risks were strongly correlated. As a result, these instruments turned out to be much more risky than they initially appeared, and were a primary cause of the fall of Bear Stearns, causing the collapse of two of its internal hedge funds in the summer of 2007.²²

II. Are Hedge Funds Beneficial?

While hedge funds have received a great deal of criticism recently, less has been said about their social benefits. As we consider what to do about hedge funds, it is helpful to consider some of these benefits. As noted above, hedge funds seek risky investment opportunities,

²⁰ For more on CDOs, *see* FRANK PARTNOY, *INFECTIOUS GREED: HOW DECEIT AND RISK CORRUPTED THE FINANCIAL MARKETS* (2003), at 385-92. [hereinafter, *INFECTIOUS GREED*].

²¹ The term *tranche*, French for “slice,” refers to a portion of a pooled debt obligation that is different from other portions according to maturity date, risk level, and other factors.

²² Kate Kelly and Randall Smith, *Market Swoons As Bear Stearns Bolsters Finances*, *WALL ST. J.*, August 4, 2007, at A1.

frequently using and sometimes developing instruments that are unavailable for many other financial sectors. In doing so, hedge funds play critical roles as arbitrageurs and in reallocating risk.

For example, consider the hedge fund strategy of convertible arbitrage, in which a hedge fund attempts to take advantage of relative pricing differences between convertible securities and the underlying common stock. A company offering both common stock and a convertible security does so to increase its flexibility in obtaining financing. However, the market for this financing is not always efficient: due to a variety of reasons,²³ the price available on the market for the convertible security may not reflect the full value of the underlying common stock. Hedge funds that take advantage of this inefficiency directly add to the market for the convertible security. Consequently, by pursuing this strategy, a hedge fund increases the demand for the convertible security, thereby enabling the company to obtain a larger amount of financing by issuing its convertible security. Thus, hedge funds reduce inefficiency by participating in arbitrage.

Hedge funds also enable the reallocation of risk by their development and use of alternative financial instruments. For example, Frank Partnoy in Infectious Greed tells the story of how Bankers Trust developed an “ingenious” technique to allow Japanese insurance companies to invest in Japanese stocks.²⁴ Under Japanese regulatory rules, Japanese insurance companies were forbidden to invest in Japanese stocks, but they were allowed to loan money. Bankers Trust designed a triangular trade in which Canadian investors borrowed Japanese yen, and instead of paying interest as the price for the loan, paid an “option on the Nikkei 225 stock index.”²⁵ An identical option on the Nikkei 225 was then bought from European investors, through Bankers Trust (who was also providing a hedge for the Canadian investors). In the end, “effectively, a Nikkei 225 gamble was being passed from European investors to Bankers Trust to Canadian banks to Japanese insurance companies.”²⁶ Although in this instance, these Japanese insurance companies ended up losing substantial sums in the crash of the Nikkei index,²⁷ the

²³ Such as future risk.

²⁴ INFECTIOUS GREED, *supra* note 20, at 40-41.

²⁵ Id., at 40.

²⁶ Id., at 41.

²⁷ Id.

ability to develop new techniques to reallocate risks can deliver significant benefits to businesses.²⁸

Therefore, as we consider mechanisms to address the social costs of hedge funds, we should also remember the significant social benefits of hedge funds from arbitrage and reallocation of risk.

III. The History of Hedge Funds, and Prior Analysis on the Regulation of Hedge Funds

The first hedge fund was founded by Alfred Winslow Jones in 1949.²⁹ It was extremely successful: “that hedge fund made gains of over 1000 percent in a ten-year period.”³⁰ Organized to avoid registration requirements, Jones’ company was relatively unknown until a 1966 article in *Fortune* by Carol Loomis, “The Jones Nobody Keeps Up With.”³¹ In this article, Loomis coined the term “hedge fund.” This article “spurred others to mimic his success.”³²

Other funds were then organized to avoid registration requirements under the Investment Company and Investment Advisers Acts. Hedge funds avoid regulation under the Investment Company Act of 1940 by utilizing two exemptions within the act. One exemption is for those funds that are “beneficially owned by not more than one hundred persons and which is not making and does not presently propose to make a public offering of its securities.”³³ Another exemption is based on limiting investors to “qualified purchasers” and “qualified clients.” Qualified purchasers have investments valued at \$5 million or more, while qualified clients have net worth of at least one and a half million dollars or have three-quarters of a million invested in that fund. Meanwhile, hedge fund advisers can also escape the registration requirements of the Investment Advisers Act of 1940, by having “fewer than fifteen clients” and not presenting themselves “generally to the public as an investment adviser nor acts as” one for an investment company.

To a great extent, hedge funds enjoyed significant successes until 1997 and 1998. In 1997, a number of Asian countries (in particular Thailand, Indonesia, and South Korea) underwent a financial crisis, causing collapse of Asian currencies and rapid declines in their

²⁸ A similar example is offered about the development of an alternative security to get around prohibitions against investment by U.S. investors in Thailand. See *id.*, at 69-70.

²⁹ MARKHAM & HAZEN, *supra* note 13, at 885.

³⁰ *Id.*

³¹ Carol Loomis, *The Jones Nobody Keeps Up With*, FORTUNE, April 1966, at 237.

³² MARKHAM & HAZEN, *supra* note 13, at 885.

³³ 15 U.S.C. 80a-3(c)(1).

stock market values. This crisis spread to Russia in 1998, leading to the collapse of Russian stock and bond markets, and the eventual decision by the Russian government to devalue the ruble and declare a moratorium on its bonds on August 17, 1998.³⁴

The volatility in financial markets caused by these crises led to significant losses by hedge funds. The most-publicized hedge fund to be harmed during these crises was the Long-Term Capital Management Fund (LTCM). LTCM had been founded in 1994 by John Meriwether, a former top trader at Salomon Brothers, and it included Nobel laureates Robert C. Merton and Myron Scholes as founding principals.³⁵ Nonetheless, despite its sterling reputation and extremely high returns in its initial years, the fund suffered tremendous losses of billions of dollars due to its highly leveraged positions in related securities.³⁶ Eventually, the Federal Reserve Bank of New York organized a rescue of the fund, with a consortium of creditors and banks injecting capital in exchange for ninety percent of the equity in LTCM. It should be noted that less than a year later, after the crisis had abated, the value of LTCM's positions improved significantly, leading to a profit for the consortium members.³⁷

In the aftermath of LTCM, the President's Working Group on Financial Markets (PWG) issued a report on hedge funds in 1999.³⁸ The PWG had been established after the 1987 stock market crash, and it consists of the Secretary of the Treasury, and the Chairmen of the Federal Reserve, Securities and Exchange Commission, and the Commodities Future Trading Commission. The PWG recommended increasing disclosures about transactions by and with "significantly leveraged institutions, including hedge funds."³⁹ However, this report did not recommend requiring the registration of hedge funds.

³⁴ See Abbigail J. Chiodo and Michael T. Owyang, *A Case Study of a Currency Crisis: The Russian Default of 1998*, 84 FED. RESERVE BANK OF ST. LOUIS REV. 7 (2002), available at <http://research.stlouisfed.org/publications/review/02/11/ChiodoOwyang.pdf>.

³⁵ See *Long Term Capital Holdings v. United States of America* (D.Conn. August 27, 2004), at 5, available at <http://www.usdoj.gov/tax/082704JBALongTermUS.pdf>.

³⁶ See *Lakonia Management Ltd. v. Meriwether*, 106 F. Supp.2d 540, 547 (S.D.N.Y. 2000); and ROGER LOWENSTEIN, *WHEN GENIUS FAILED: THE RISE AND FALL OF LONG-TERM CAPITAL MANAGEMENT* (2000).

³⁷ *Lakonia Management Ltd. v. Meriwether*, at 548-549.

³⁸ PRESIDENT'S WORKING GROUP ON FINANCIAL MARKETS, *HEDGE FUNDS, LEVERAGE, AND THE LESSONS OF LONG-TERM CAPITAL MANAGEMENT* (1999), available at <http://www.treas.gov/press/releases/reports/hedgfund.pdf>.

³⁹ *Id.*, at viii.

Nonetheless, in 2004, the Securities and Exchange Commission (SEC) promulgated a rule that essentially required hedge funds to register as investment advisers.⁴⁰ This decision was adopted by a “rare 3-2 margin, with an extensive dissent.”⁴¹ A number of lawsuits were filed to challenge the implementation of this rule. In one of these suits, *Goldstein v. S.E.C.*, the D.C. Circuit Court of Appeals vacated this rule, holding that its reclassification of “client” to include any “investor” was “arbitrary,” and therefore not reasonable.⁴²

Up until the current financial crisis, the literature on the regulation of hedge funds was focused on the two events of the collapse of LTCM, and the SEC’s registration rule along with its undoing in *Goldstein*. In the aftermath of LTCM, Willa Gibson recommends a limited amount of command-and-control regulation of hedge funds.⁴³ What is needed is “public regulation requiring hedge funds to disclose comprehensive information about their trading positions to financial regulators.”⁴⁴ Despite this, Gibson also concludes that command-and-control rules restricting leverage by hedge funds, such as “capital and margin requirements,”⁴⁵ would be “inefficient and unnecessary.”⁴⁶ Instead she suggests, “Private regulation achieved through the exercise of market discipline, both by hedge funds and by those with whom they trade, can provide a more effective means of constraining the use of leverage.”⁴⁷

In two reports,⁴⁸ Randall Dodd first identifies “specific features about financial markets ... that violate the fundamental assumptions” of the “efficient market theory.”⁴⁹ These features include externalities, public goods, and informational problems. Because of these, “financial markets and the overall economy can be made more efficient by the imposition of certain

⁴⁰ *Registration Under the Advisers Act of Certain Hedge Fund Advisers, Investment Advisers Act Release No. IA-2333, 84 SEC Docket 1032* (Dec. 2, 2004). For more on this decision, see Troy A. Paredes, *On the Decision to Regulate Hedge Funds: The SEC’s Regulatory Philosophy, Style, and Mission*, 2006 U. ILL. L. REV. 975 (2006) [recommending the use of a “default rule” rather than a “mandatory rule” for decisions like this].

⁴¹ J.W. Verret, *Dr. Jones and the Raiders of Lost Capital: Hedge Fund Regulation, Part II, a Self-Regulation Proposal*, 32 DEL. J. CORP. L. 799, 808 (2007).

⁴² *Goldstein v. SEC*, 451 F.3d at 884.

⁴³ Willa E. Gibson, *Is Hedge Fund Regulation Necessary?* 73 TEMP. L. REV. 681 (2000).

⁴⁴ *Id.*, at 682.

⁴⁵ *Id.*, at 706.

⁴⁶ *Id.*

⁴⁷ *Id.*, at 682.

⁴⁸ Randall Dodd, *The Economic Rationale for Financial Market Regulation*, FINANCIAL POLICY FORUM SPECIAL POLICY REPORT 12 (2002), available at <http://www.financialpolicy.org/fpfspr12.pdf>; and Randall Dodd, *The Virtues of Prudential Regulation in Financial Markets*, FINANCIAL POLICY FORUM SPECIAL POLICY REPORT 11 (2005), available at <http://www.financialpolicy.org/fpfspr11.pdf>.

⁴⁹ Dodd, *Economic Rationale*, at 3 and 1.

government regulations.”⁵⁰ Due to these, Dodd argues in the second report that a number of new regulations should be imposed, including "reporting and registration requirements," "capital requirements and collateral requirements," and "Orderly Market Rules.”⁵¹

After the *Goldstein* case, a number of articles appeared suggesting that public regulation of hedge funds, even of the limited type recommended by Gibson, would be the incorrect approach. Although advocating some additional indirect controls on the amount of leverage available to hedge funds, Dale Oesterle argues that “extensive direct regulation of hedge funds is unnecessary and may harm the country's trading markets.”⁵² Carl J. Nelson likewise “argues that further hedge fund regulation is unnecessary and could actually negatively affect markets.”⁵³ As a result, “Increased hedge fund regulation should not be implemented because the potential benefits do not outweigh the costs.”⁵⁴ Instead, Nelson offers alternatives that “address regulators’ concerns over providing investor protection and market stability, while allowing hedge funds to operate freely.”⁵⁵ In a similar manner, J.W. Verret concludes, “Caught up in the regulatory zeal, the SEC and banking regulators will burden the nimble traders of the hedge fund world with regulation akin to the mutual fund industry and seek to limit access for institutional investors like trusts and pension funds to this useful asset class.”⁵⁶ Verret instead recommends a private regulatory scheme by the hedge funds themselves.

Until the current financial crisis, policymakers were likewise hesitant to regulate hedge funds. During his nomination hearings in 2004, Alan Greenspan proclaimed, “I see no purpose in regulation [of hedge funds], and I see very significant potential loss in doing so.”⁵⁷ He explained, “If you start to inhibit the number of types of unregulated participants in the financial market from taking the types of risks and supplying the liquidity, I am fearful that we will remove some of the flexibility that we have in our overall system.”⁵⁸

⁵⁰ *Id.*, at 3.

⁵¹ Dodd, *Virtues of Prudential Regulation*, at 1-2.

⁵² Dale A. Oesterle, *Regulating Hedge Funds*, 1 *ENTREPREN. BUS. L.J.* 1 (2006).

⁵³ Carl J. Nelson, Note, *Hedge Fund Regulation: A Proposal to Maintain Hedge Funds’ Effectiveness Without SEC Regulation*, 2 *BROOK. J. CORP FIN. & COM. L.* 221, 222 (2007).

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ Verret, *supra* note 41, at 841.

⁵⁷ Nomination of Alan Greenspan, Hearing Before the Committee on Banking, Housing, and Urban Affairs, United States Senate, One Hundred Eighth Congress (2004), available at <http://www.access.gpo.gov/congress/senate/senate05sh108.html>.

⁵⁸ *Id.*

As recently as February 2007, the President’s Working Group on Financial Markets echoed Gibson in preferring market discipline over command-and-control regulation. In 2007, the PWG examined the need for regulation of hedge funds, and concluded, “Market discipline by creditors, counterparties, and investors is the most effective mechanism for limiting systemic risk from private pools of capital.”⁵⁹

Nonetheless, the current financial crisis has now led academics and policymakers to recommend additional regulation of hedge funds. In a recent article addressing systemic risk across the financial system, Steven Schwarcz concludes that “regulatory measures are appropriate ... because, like a tragedy of the commons, market participants have insufficient incentives, absent regulation, to limit risk-taking in order to reduce the systemic danger to others.”⁶⁰ Included in his recommendations is a “liquidity provider of last resort” (LPOLR),⁶¹ which is somewhat similar to the part of this article’s Superfund, the part that purchases “toxic” securities.⁶² However, the scope of Schwarcz’s LPOLR would be much broader than this article’s Superfund. The LPOLR would address systemic risk across all financial sectors, while the Superfund would address the market failures of liquidity risk and valuation caused solely by hedge funds.

In 2008, the United States Treasury published its “Blueprint for a Modernized Financial Regulatory Structure.”⁶³ In its Blueprint, Treasury recommended a new structure for the regulation of all financial institutions. Included in this structure would be the requirement for all financial institutions to be federally chartered, with hedge funds required to obtain a charter as a federal financial services provider (FFSP). To obtain this charter, hedge funds would be required to meet “appropriate national standards, in terms of financial capacity, expertise, and other requirements. ... For example, these standards would resemble the net capital requirements for broker-dealers.”⁶⁴ Also, the Blueprint assigned the role of “Market Stability Regulator” to the Federal Reserve. In this role, “the Federal Reserve should also have the authority to develop

⁵⁹ PRESIDENT’S WORKING GROUP ON FINANCIAL MARKETS, AGREEMENT AMONG PWG AND U.S. AGENCY PRINCIPALS ON PRINCIPLES AND GUIDELINES REGARDING PRIVATE POOLS OF CAPITAL (2007), at 3, *available at* [://www.treasury.gov/press/releases/reports/hp272_principles.pdf](http://www.treasury.gov/press/releases/reports/hp272_principles.pdf).

⁶⁰ Schwarcz, *supra* note 8, at 248.

⁶¹ *Id.*, at 225.

⁶² *See* section VI.C, *infra*.

⁶³ U.S. DEPARTMENT OF TREASURY, BLUEPRINT FOR A MODERNIZED FINANCIAL REGULATORY STRUCTURE (2008), *available at* <http://www.treas.gov/offices/domestic-finance/regulatory-blueprint/>.

⁶⁴ *Id.*, at 19.

information-reporting requirements for FFSPs ... includ[ing] detailed reports on overall risk management practices.”⁶⁵

Around the same time as the Treasury Blueprint, another proposal was made by the Financial Stability Forum (FSF).⁶⁶ This proposal was in response to a request by the “G7 Ministers and Central Bank Governors ... to undertake an analysis of the causes and weaknesses that have produced the turmoil and to set out recommendations for increasing the resilience of markets and institutions.”⁶⁷ In its proposal, the FSF made a number of recommendations that involved regulation of hedge funds and other financial institutions. One recommendation involved the imposition of “requirements for certain complex structured credit products such as CDOs of asset-based securities.”⁶⁸ Others involved the use of rules for the “management of firm-wide risks” including “stress testing guidance for risk management and capital planning purposes,”⁶⁹ and rules for “enhancing transparency and valuation.”⁷⁰

Recently, the United States Congress has also explored the possibility of regulating hedge funds. In one hearing, a House of Representatives committee heard the testimony of five prominent hedge fund managers: Philip A. Falcone, Kenneth C. Griffin, John A. Paulson, James Simons, and George Soros. These leaders “said they would support new rules that would require their industry, controlling nearly \$2 trillion, to disclose more of its secrets. ... The hedge fund industry’s leaders seem to realize that regulation may be inevitable.”⁷¹ In January 2009, Senators Carl Levin and Charles Grassley introduced the “Hedge Fund Transparency Act” to “impose government oversight of hedge funds.”⁷² Under this bill, hedge funds would be required to register with the SEC, and would also require disclosure of assets.⁷³ This legislation was preceded by the issuance of a report advocating more intensive regulation of hedge funds by the

⁶⁵ *Id.*, at 16. A similar recommendation of apportioning oversight roles based on objectives is derived from an analysis of the social and network effects of investment trading. See Olufunmilayo Arewa, *Trading Places: Securities Regulation, Market Crisis, and Network Risk* (2009), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1324951.

⁶⁶ FINANCIAL STABILITY FORUM, REPORT OF THE FINANCIAL STABILITY FORUM ON ENHANCING MARKET AND INSTITUTIONAL RESILIENCE (2008), available at http://www.fsforum.org/publications/r_0804.pdf.

⁶⁷ *Id.*, at 1.

⁶⁸ *Id.*, at 13.

⁶⁹ *Id.*, at 18.

⁷⁰ *Id.*, at 22.

⁷¹ Louise Story, *Hedge Fund Managers Ask for a Few New Rules*, N.Y. TIMES, November 14, 2008.

⁷² Stephen Labaton, *Senators Bid To Regulate Hedge Funds*, N.Y. TIMES, January 30, 2009. This bill also covers private equity firms.

⁷³ Jenny Strasburg, *Legislators Seek Hedge-Fund Disclosure*, WALL ST. J., February 2, 2009, at C2.

Group of Thirty, headed by Paul Volcker, former Chairman of the Federal Reserve and current advisor to the Obama administration.⁷⁴ Moreover, in February 2009, state legislators in Connecticut likewise introduced three pieces of legislation to enable state regulation of hedge funds.⁷⁵

Meanwhile, there have been many proposals to put a tax on financial services transactions. In 1978, James Tobin proposed a one percent tax on currency transactions in the spot market, in order to reduce short-term currency speculation.⁷⁶ In 1989, Joseph Stiglitz proposed a 0.25% tax on all financial services transactions, likewise to reduce short-term speculation.⁷⁷ Recently, Dean Baker has advocated a tax on all financial transactions that varies according to the type of transaction.⁷⁸

My research then is an attempt to present an alternative structure to dealing with the problems presented by hedge funds, rather than imposing restrictive command-and-control regulation. My article proposes using a tax on hedge funds, but it differs significantly from these previous recommendations to tax financial transactions.

One difference is its more limited scope: it would apply only to hedge funds, and not to other financial institutions that operate under more extensive command-and-control regulation such as mutual funds and investment banks. More importantly, these other tax proposals levy either a flat tax for all financial transactions, or a tax that is differentiated only by type of security (equity, bond, future, option, interest rate swap). In contrast, under my proposal, the level of the tax is adjusted depending on the effect of the hedge fund's transaction on liquidity risk. While flat taxes reduce the activity level of these transactions, only calibrated taxes provide direct disincentives to reduce specifically risky transactions.

IV. The Social Costs of Hedge Funds

⁷⁴ GROUP OF THIRTY, FINANCIAL REFORM: A FRAMEWORK FOR FINANCIAL STABILITY (2009), available at http://www.group30.org/pubs/pub_1460.htm.

⁷⁵ Greg Bordonaro, *Lawmakers Propose Stiff Hedge Fund Oversight*, HARTFORD BUS. J., February 23, 2009, available at <http://www.hartfordbusiness.com/news8031.html>.

⁷⁶ James Tobin, *A Proposal for International Monetary Reform*, 4 EASTERN ECON. J. 153 (1978).

⁷⁷ Joseph E. Stiglitz, *Using Tax Policy to Curb Speculative Short-Term Trading*, 3 J. FINANCIAL SERVICES RESEARCH 101 (1989).

⁷⁸ See Dean Baker, *The Benefits of a Financial Transactions Tax* (2008), available at <http://www.cepr.net/documents/publications/financial-transactions-tax-2008-12.pdf>. Baker's proposal is a fee structure that applies not only to equity trades, but also to bonds, futures, options, and interest rate swaps.

While hedge funds do provide many social benefits, they also can bring significant social costs. Two of the most significant are liquidity risks, which can be considered as an externality, and the inability of markets to provide information on valuation.

A. Liquidity Risks

We begin with a discussion about liquidity in general, followed by an analysis of hedge funds effects on liquidity. Liquidity is the ability to convert certain assets into other assets without suffering losses in value. Universally accepted money – “cash” - is the most liquid asset, because it can be used to acquire other assets without losses in value. Some might think that liquidity (money) does not affect the real economy, because the real economy results from real inputs (labor, capital, land, technology) generating real outputs (goods and services). However, liquidity does have significant effects on the real economy.

This can be understood by considering the indirect production function. The direct production function states that output (Y) is generated by combining inputs (X , a vector of different inputs) according to the functional relationship, $Y = F(X)$. However, in an economy, the production function operates under the following constraint: you must be able to afford your inputs. Therefore, the full direct production function is actually:

$$Y = F(X), \text{ subject to } C = W'X \text{ (where } C \text{ is your available cash, and } W \text{ represents the vector of input prices).}$$

We can rearrange this to solve for the indirect production function:

$$Y = \Psi(W,C).$$

This indirect production function makes it clear that liquidity (C , cash) has a direct effect on the ability of the economy to generate real output (Y).

This effect seen through the indirect utility function can also be understood intuitively. In operating a business, input costs are generally incurred prior to the generation of revenues. As a result, in order to operate production, the firm must obtain short-term financing to pay for inputs prior to the realization of the revenues. Consequently, when credit is tight, i.e. there is a reduction in liquidity, it is difficult to finance operations, and less output is generated.

Because liquidity has effects on the real economy, reductions in liquidity can have detrimental effects. Indeed, reductions in liquidity – liquidity risks – can be considered as an externality, just like pollution.⁷⁹ An externality is generated when the actions of two trading partners have consequences for a third party. A factory may be building a table for purchase by a consumer who lives in another state. However, in constructing the table, the factory also generates pollution that causes negative consequences for neighboring residents. These negative consequences are known as a negative externality, because these residents are not part of the transaction between the factory and the consumer. These externalities are an example of a market failure.⁸⁰

We use a variety of mechanisms for correcting the market failure resulting from pollution: command-and-control regulation, along with economic-incentive-based instruments such as tradable permit systems⁸¹ and tax systems.⁸² Under command-and-control regulation, a government agency prescribes pollution abatement standards for a particular industry that must be complied with by each firm in order to obtain its permit. These requirements may be stated in technological terms, *i.e.* each firm must use specific pollution reduction equipment. They may also be stated in terms of a maximum quantity of pollution emitted. However, to determine this maximum quantity, the agency bases this quantity on the amount emitted when specific pollution reduction equipment is used.⁸³ So, in essence, all command-and-control regulatory systems for pollution reduction are based on rules specifying the use of particular pollution-reduction technology.

Economic-incentive-based instruments are designed to address the overproduction of the good that generates the pollution. Because of the existence of the externality, the firm producing the good does not internalize the full social costs of the good. In figure 1, this effect is seen by

⁷⁹ Just as with liquidity, models of the production function sometimes include pollution as an input. See Maureen L. Cropper and Wallace E. Oates, *Environmental Economics: A Survey*, 30 J. ECON. LIT. 675 (1992); and Don Fullerton and Gilbert E. Metcalf, *Environmental Controls, Scarcity Rents, and Pre-Existing Distortions*, 80 J. PUBLIC ECON. 249 (2001).

⁸⁰ Economists generally identify the principal market failures as externalities, public goods, moral hazard, imperfect information, and firms with market power such as monopolies. See CASE & FAIR, *supra* note 9, at 255-259 and 335.

⁸¹ One such example of a pollution trading system is the RECLAIM emissions market for Southern California. See Dale B. Thompson, *Political Obstacles to the Implementation of Emissions Markets: Lessons from RECLAIM*, 40 NAT. RESOURCES J. 645 (2000).

⁸² The use of a tax for correcting market failures was first suggested by ARTHUR C. PIGOU, *THE ECONOMICS OF WELFARE* (1920).

⁸³ See Dale B. Thompson, *Beyond Benefit Cost Analysis: Institutional Transaction Costs and the Regulation of Water Quality*, 39 NAT. RESOURCES J. 517 (1999).

having the marginal-private-cost curve (MPC) lie below the marginal-social-cost curve (MSC). The difference between the two curves is the social cost of the externality. Because the MPC curve can be understood as the supply curve (in a competitive industry) and the marginal-benefit curve (MB) can be understood as the demand curve, equilibrium quantity⁸⁴ (Q2) is higher than the socially optimal quantity⁸⁵ (Q1). Under a tradable permit system, the quantity of available permits is limited to restrict production to no more than the socially optimal quantity. In a tax system, a Pigouvian tax is imposed to internalize the social costs of that pollution. The amount of the tax is equal to the social cost of the externality (t). A firm paying the Pigouvian tax will have its MPC shifted up by the amount of the tax. As a result, the new MPC curve is now identical to the MSC curve, and the equilibrium quantity will now be the socially optimal quantity.

In a similar way to pollution, transactions that reduce liquidity generate externalities. When liquidity is reduced, the productive capacity of other firms may be reduced. These external effects are a market failure, because the firms engaged in the transaction that reduces liquidity do not consider the effects on other firms. Just as with pollution, we may need governmental intervention to address the externality of liquidity risks.

To better determine how we should address liquidity risks caused by hedge funds, we now examine how hedge funds affect liquidity. A comparison with bank runs, such as those that occurred during the Great Depression,⁸⁶ will aid this analysis. In a bank run, a cycle is created by a lack of confidence in banks. It starts with some loss of confidence in a bank. Then, due to this lack of confidence, depositors feel the need to withdraw funds from the bank. However, due to reserve requirements,⁸⁷ the bank must now acquire more cash in some way. It may have to sell some of its loans which are its current assets, to raise the cash. In doing so, the bank will “deleverage” its loans. However, this deleveraging erodes the values of the loans, which means that the balance sheet of the bank is worse than before. As a result, depositors will lose confidence in the bank even further, and withdraw more funds. This withdrawal of funds

⁸⁴ Equilibrium quantity occurs where supply equals demand, i.e. where $MPC = MB$.

⁸⁵ The socially optimal quantity occurs where the full marginal social cost is equal to the full marginal social benefit.

⁸⁶ Note, however, that there is less need to protect institutional investors in hedge funds than depositors of affected banks, because institutional investors are better able to assess the risk of the fund.

⁸⁷ Under a reserve requirement, banks must hold a certain percentage of their loans as “reserves,” i.e. cash or reserves with the central bank. When deposits of cash reserves flow out, a bank that previously met its reserve requirement no longer has sufficient reserves to cover their percentage of loans.

reduces the amount of loans that the banks are able to make, thereby directly reducing liquidity. And the cycle continues over and over.

The negative impacts of reduced liquidity due to bank runs were a significant factor behind the Great Depression. During the Depression, the government established the Federal Deposit Insurance Corporation (FDIC) to address bank runs. The FDIC provided limited deposit insurance on bank deposits.⁸⁸ Although it was limited to a certain amount, this insurance greatly reduced the possibility of a bank run, thereby reducing liquidity risks.⁸⁹

A similar cycle occurs for hedge funds. The cycle starts when there is an external event that causes a drop in the value of certain assets held by the hedge fund. Under “mark-to-market” accounting principles, this drop in the market value of the fund’s assets must be recorded on the fund’s balance sheet. The deterioration of the fund’s balance sheet has two significant effects: short-term debt financing is more difficult, and the fund may be forced to take actions under covenants in long-term debt instruments.

The fund will hold a portfolio of both long and short-term assets. The effect of the deterioration in the balance sheet is increased pressure to shift the portfolio away from long-term assets and towards short-term assets.⁹⁰ However, just as with banks, this deleveraging of long-term assets erodes their value.

If this is only happening to one fund, then this reduction in value may be negligible. However, the problem is exacerbated by a number of factors present in the operation of hedge funds. As noted above, hedge funds use significant amounts of leverage. This leverage magnifies the effects of losses. Also, hedge funds often are the “counterparties” of other funds in the market for derivatives.⁹¹ Consequently, a complex web of relationships results when the balance sheet for one fund is harmed: that fund’s counterparties now face increased “counterparty risk,” i.e. the risk that the initial fund will default. This counterparty risk in turn

⁸⁸ Under the Glass-Steagall Deposit Insurance Act of 1933 (Banking Act of 1933), 48 Stat. 162, deposits were insured up to \$2500. This amount has been raised many times, and currently stands at \$250,000.

⁸⁹ The FDIC model is another one that might be considered in constructing the Superfund for hedge funds. The FDIC is a long-term solution not a temporary one, and is funded by risk-adjusted insurance premiums collected from banks. Also, it acquires “toxic assets” from banks upon their failure, such as what occurred during the Continental Illinois National Bank failure. *See* “Continental Illinois and “Too Big to Fail””, in FEDERAL DEPOSIT INSURANCE CORPORATION, VOLUME I: AN EXAMINATION OF THE BANKING CRISES OF THE 1980S AND EARLY 1990S (1997), available at http://www.fdic.gov/bank/historical/history/235_258.pdf.

⁹⁰ Note however that “lock-in” provisions of hedge funds, which prohibit withdrawals except at designated times, increase funds’ flexibility in managing their mix of short and long-term loans.

⁹¹ A counterparty is the other party in a derivative contract.

means that the reduction in value will spread, to other funds, causing them to in turn shift their portfolio from long-term to short-term assets.

All of this activity by the funds means that they are making increased demands on the relatively fixed supply of short-run financing. Consequently, the result is to divert cash away from other activities into the funds. This diversion reduces liquidity, the scale of which is amplified by leverage and counterparty risk. Thus, the actions of hedge funds can lead to increased liquidity risks.

B. Valuation Problems

A closely related market failure for hedge funds is the reduction of the ability of market prices to provide relevant information about valuation. This effect has not been noted as a market failure previously, because market failures have been thought to arise when something prevents an efficient trade. However, this view is limiting: it implicitly assumes that the predominant role of a market is to enable transactions. Additionally, markets provide information about valuation through market prices. This information helps consumers make choices, and also helps businesses as they make decisions about future investment possibilities. When market prices no longer provide adequate information about valuation, markets are failing to fulfill their full roles for consumers and businesses. Consequently, recognizing this effect as a market failure is a significant contribution of this article. We will first examine how market prices provide valuation information in general, and then discuss how the market failure may arise. After that, we analyze how hedge funds actions may lead to this market failure.

Two of the most important lessons from an introductory course in economics are that the market equilibrium occurs where supply equals demand, and that economic decision-makers (consumers, producers) maximize their behavior by setting marginal benefit equal to marginal cost. These two lessons are actually closely related.

In a competitive market, the market supply curve can be understood as the marginal cost curve of the producers making the product, and the market demand curve likewise as the marginal benefit curve of consumers. Consider a simple competitive market involving one firm and one consumer.⁹² Let us assume that the firm's marginal cost curve (MC) grows exactly as

⁹² Generally, a competitive market implies we have many firms, but for clarity, we will consider the case with only one here.

quantity (Q) increases: $MC=Q$. Also, assume that the consumer's marginal benefit (MB) declines as quantity increases: $MB=2-Q$. In a perfectly competitive market, the firm will determine the quantity it produces by setting the market price equal to its marginal cost. Similarly, the consumer will determine the quantity it purchases by setting the market price equal to its marginal benefit. In this example, we find the market equilibrium will occur where price equals 1 and quantity also equals 1.⁹³

What we see from this example is one of the significant benefits of markets: the ability of market prices to reflect the valuation of the good, at the margin. The producer sets the market price equal to its marginal cost, and this marginal cost reflects the marginal value of the good to the producer. Likewise, the consumer sets the market price equal to its marginal benefit, and this marginal benefit reflects the marginal value of the good to the consumer. Thus, market prices provide significant information about the marginal valuation of the good for both producers and consumers: these market prices are Adam Smith's "invisible hand."

However, market prices do not provide all of the information we need to know about valuation. For example, consider a corporate acquisition of Alpha Corporation by the Beta Corporation. Under corporate law, this acquisition would have to be approved by the shareholders of the Alpha Corporation, although this approval need not be unanimous. Assume Alpha's share price is currently trading for \$20 per share. Beta proposes a tender offer of \$25 per share for all of Alpha's shares. This represents a 25% premium over the current market price. Although this offer might seem to be "fair" based on the market price, nonetheless corporate law provides an alternative for shareholders of Alpha who wish to dissent from the acquisition: the right to an appraisal of the "fair value" of their shares.⁹⁴

The reason why we need appraisal rights has to do with the range of valuation of different shareholders of the same company, as suggested by the literature known as "heterogeneous expectations."⁹⁵ Consider the following supply and demand diagrams for Alpha Corporation stock.⁹⁶ The demand curve for Alpha Corporation stock represents a set of valuations of Alpha by investors who might purchase the stock: as you reduce price from $\$P_1$ to $\$(P_2)$, the additional

⁹³ See figure 2.

⁹⁴ The appraisal right is the right to a "pro rata" share of a court-determined valuation of the entire corporation. See Delaware General Corporation Law S 262.

⁹⁵ For more on "heterogeneous expectations," see Lynn A. Stout, *Are Takeover Premiums Really Premiums? Market Price, Fair Value, and Corporate Law*, 99 YALE L.J. 1235 (1990).

⁹⁶ See figures 3 and 4.

quantity demanded (Q2 –Q1) means that there are (Q2-Q1) investors⁹⁷ whose valuation of Alpha is between \$P1 and \$P2. In case I, there is not a wide variance in valuation by the different consumers. However, in case II, there is a wide variation: there are some who value Alpha Corporation stock significantly higher than the current market price of \$20. In case I, a \$25 per share tender offer would be “fair” to every shareholder, because it would be greater than or equal to the implied valuation of every shareholder. However, in case II, there are a number of shareholders whose implicit valuation of Alpha exceeds \$25. Appraisal rights would then be necessary to protect these shareholders, who otherwise might be outvoted.

Thus, in this instance, although it does reflect the valuation of marginal shareholders, the market price does not sufficiently capture information about the valuation of Alpha by non-marginal shareholders. Thus, while market prices give good information about valuation at the margin, this no longer applies when we are not at the margin. In this case, this market failure is corrected by the corporate law instrument of appraisal rights.

Due to the nature of their operations, hedge funds can also create situations where we are no longer operating at the margin for some security, and hence market prices will no longer provide sufficient information about valuation. One situation arises due to leverage and the use of derivative instruments. Assume that a fund has determined that there seems to be a pricing discrepancy between a derivative and an underlying security. The fund then decides to use leverage to purchase a large quantity of derivatives. Sometimes these purchases are so large that the quantity of derivatives represents essentially the full quantity of the underlying security⁹⁸ that is reasonably available in the market.

Although not done by a hedge fund, the recent episode of the “short squeeze” that Porsche performed on Volkswagen stock illustrates this well. Since 1960, ownership interests in Volkswagen had been effectively limited by the “Volkswagen law” that prevented any individual shareholder from exercising more than twenty percent of the voting rights in the company.⁹⁹ Starting in 2005, Porsche had begun accumulating Volkswagen stock, but had been stymied in its

⁹⁷ For clarity, we assume that each investor can purchase only one share of stock.

⁹⁸ And sometimes even more than the full quantity, such as was done recently by Amherst Holdings, which sold credit default swaps for mortgages, and then purchased the underlying mortgages, rendering the swaps worthless. See Gregory Zuckerman, Serena Ng and Liz Rappaport, *A Daring Trade Has Wall Street Seething*, WALL ST. J. (6-11-09), C1.

⁹⁹ Commission of the European Communities v Federal Republic of Germany, Judgment of the Court of Justice in Case C-112/05 (2007), available at <http://curia.europa.eu/en/actu/communiqués/cp07/aff/cp070074en.pdf> [hereinafter VW Law case].

efforts to assert greater control over Volkswagen.¹⁰⁰ However, in 2007, the European Union's highest court, the Court of Justice, ruled that this law was a "breach of the free movement of capital."¹⁰¹ After this ruling, Porsche could now begin accumulating a larger ownership interest in Volkswagen.

It did this through the mechanism of "cash-settled options," in which "the buyer [of the option] gets the right not to stock but the cash difference between the options' "strike price" and the market price of the shares when the options are exercised."¹⁰² Sellers of these options "typically hedge their exposure by holding actual shares, ... [thereby taking] these shares out of circulation."¹⁰³ In Germany, while ownership stakes needed to be disclosed if options could be redeemed in shares, no disclosure was required for ownership stakes due to cash-settled options.¹⁰⁴ Consequently, Porsche was able to quietly amass a large ownership stake in Volkswagen.

On October 26, 2008, Porsche announced that it directly owned 42.6% of Volkswagen's common stock, and held cash-settled options on another 31.5% of the shares.¹⁰⁵ At that point, the state of Lower Saxony also held 20% of Volkswagen's stock. Meanwhile, approximately "12.8% of VW shares were on loan, mostly to short sellers."¹⁰⁶ Adding the numbers together, we see that "there weren't enough [Volkswagen shares] to go around."¹⁰⁷ The result was chaos:¹⁰⁸

When financial markets opened Monday Oct. 27, all hell broke loose. Funds that had borrowed VW shares and sold them, expecting no takeover offer and betting the stock would decline, raced to purchase shares to unwind the bets. ... As hedge funds fought for the remaining VW shares, they drove the stock's price ever higher -- deepening their losses. At the height of the short squeeze on Oct. 28, VW stock briefly topped 1,000

¹⁰⁰ Mike Esterl and Edward Taylor, *As Giant Rivals Stall, Porsche Engineers a Financial Windfall*, WALL ST. J., November 8, 2008, at A1.

¹⁰¹ VW Law case, at 1.

¹⁰² Esterl & Taylor, *supra* note 100.

¹⁰³ Id.

¹⁰⁴ Id.

¹⁰⁵ Id.

¹⁰⁶ Id.

¹⁰⁷ Id.

¹⁰⁸ This chaos would play a significant role in the suicide of "Adolf Merckle, the German billionaire whose speculation in volatile Volkswagen stock had pushed his sprawling business empire to the edge of ruin." Carter Dougherty, *Facing Losses, Billionaire Takes His Own Life*, N.Y. TIMES January 7, 2009, at B1.

euros, nearly five times as high as on Oct. 24, making VW the biggest company by stock-market value [in the world] for a few hours.¹⁰⁹

Frank Partnoy in Infectious Greed tells a similar story of how Paul Mozer at Salomon Brothers executed a “squeeze” of the market in newly issued U.S. Treasury notes.¹¹⁰ For this market, there was a “when issued” market for about-to-be-issued Treasury notes. The general trend was for the price to rise in the “when issued” market, followed by a drop in the price after the notes were issued. As a result, there were opportunities for arbitrage that many traders attempted to exploit, by shorting Treasury notes in the “when issued” market and then repurchasing those notes after issue. Mozer realized however that “if he could control the Treasury auction, he could *squeeze* the other dealers doing the arbitrage, ... forcing them to pay a premium to buy the precious, recently auctioned bonds.”¹¹¹ After being warned a number of times by a Treasury official, Mozer was still able to eventually purchase “86 percent of the May auction” of 1991.¹¹² As a result of this position, “The big squeeze was on. The price of the 2-year notes skyrocketed, and the holders of the notes made \$30 million.”¹¹³

What we see from these examples is that hedge funds (and other traders) can establish positions in a small market where they can exert significant market power, due to their control over a large percentage of the available quantity of a specific financial instrument (Volkswagen stock in one case, and a particular Treasury issue in another). When this happens, we are no longer at a marginal market equilibrium for that security, where the market price reflects a trade between a buyer who wants to acquire a marginal quantity of the security, and a seller who wants to sell a marginal amount of that same security, neither of which able to influence the price because their trading partner could easily find another willing seller or buyer.

Another situation where the price does not give information about valuation is closely related to liquidity risk. As noted above, in a liquidity crunch, hedge funds may create a situation in which they need to shift from long-term assets, such as financial derivatives, into short-term ones. This may lead to the result where a number of funds attempt to sell similar

¹⁰⁹ Esterl & Taylor, *supra* note 100.

¹¹⁰ INFECTIOUS GREED, *supra* note 20, at 97-102.

¹¹¹ *Id.*, at 98.

¹¹² *Id.*, at 101.

¹¹³ *Id.*, at 102.

financial derivatives, at a time where there are limited buyers.¹¹⁴ These limited buyers essentially will then have monopsonistic power.¹¹⁵ Similar to above, this then creates a situation where a true market equilibrium price cannot be established because we are no longer operating “at the margin.”

The result of these situations of operating away from the margin is that market prices no longer provide adequate information about value of these financial products. When there is a significant gap between a large group of possible sellers and a small group of potential buyers, we lose the relatively equal bargaining position between the seller and buyer. Instead, the buyer has market power, and can use that market power to extract a low price. As a result, market prices in these transactions no longer reflect marginal valuations.

This market failure has additional consequences. Due to “mark-to-market” accounting principles, hedge funds must use market transaction prices to determine the “market value” of their portfolio. This market failure means that the market prices used for this will inadequately reflect the true value of the affected financial securities. As a result, their balance sheet will be negatively impacted, and hedge funds again will face pressures to shift from long-term assets to short-term ones. This effect then creates a feedback loop that continues the cycle, leading to deeper liquidity risk.

V. Instruments to Address Market Failures

We now turn to examine instruments to address the market failures of liquidity risk and valuation. Typically, we use government intervention to address market failures. However, private institutions can also be used to address market failures. Nonetheless, in the case of hedge funds, our recent experience may cast some doubt on the effectiveness of addressing these failures primarily through private institutions.

In addition to these market failures, there is another market failure that affects financial securities: insufficient provision of the public good of information about the quality of these products due to the high costs of collecting this information. We address this failure somewhat

¹¹⁴ See Hugo Dixon and Richard Beales, *Regulating 'Shadow Banks,'* N.Y. TIMES, February 24, 2009, at B2 (noting that “because the shadow banks moved as a herd, they helped inflate the bubble and worsened the bust”).

¹¹⁵ A monopsonist is a single buyer in a market, and asserts market power similar to a monopolist, who is a single seller in a market.

through mandatory disclosure requirements.¹¹⁶ Nonetheless, even with this information, it is still difficult to assess quality. As a result, a particular set of private institutions have arisen to provide the public good of information about credit securities: credit rating agencies such as Moody's and Standard and Poor's. However, the performance of credit rating agencies as "gatekeepers" during the past ten years has been significantly criticized, with many pointing to their failure as one of the principle causes of the current financial crisis.¹¹⁷ In particular, conflicts-of-interest between the credit agencies and the financial firms evaluated by them but who pay these agencies fees suggests the difficulties in using private institutions in this case.

Instead, we should turn to public institutions, and use government intervention to address the market failures caused by hedge funds. Our experiences with using government intervention to address market failures in environmental protection can be helpful in assessing alternatives for hedge funds. In environmental protection, the principal instrument is that of command-and-control regulation. Others include economic-incentive-based instruments such as tradable permit systems and tax systems.

A. Problems with Command-and-Control Regulation for Hedge Funds

One way to address these market failures would be to closely regulate hedge funds. This regulation could take a number of forms: specific reserve and margin requirements for certain types of trades, and restrictions on other types of trades, and prohibitions on yet other trades. As noted above, a number of commentators have suggested additional regulation of hedge funds. However, there are a number of problems with regulating hedge funds.

Specific reserve and margin requirements would reduce the amount of leverage that a hedge fund can undertake. However, unless the specific requirements are connected to levels of liquidity risk,¹¹⁸ these requirements will not directly address liquidity risk. Indeed, as we have seen from bank runs, reserve requirements themselves can lead to a self-perpetuating cycle that increases liquidity risk.

¹¹⁶ See section III above, discussing disclosure requirements under Federal securities laws.

¹¹⁷ See *INFECTIOUS GREED*, *supra* note 20; Frank Partnoy, *The Siskel and Ebert of Financial Markets: Two Thumbs Down for the Credit Rating Agencies*, 77 WASH. U. L.Q. 619 (1999); and Frank Partnoy, *How and Why Credit Rating Agencies are Not Like Other Gatekeepers*, in *FINANCIAL GATEKEEPERS: CAN THEY PROTECT INVESTORS?* (Yasuyuki Fuchita and Robert E. Litan, eds. 2006).

¹¹⁸ To be connected, the reserve and margin requirements would need to vary according to the level of liquidity risk.

Furthermore, recall the social benefits we derive from the operation of hedge funds, discussed in section II above. Regulations that prohibit strategies employed by hedge funds could eliminate many of these benefits.

More importantly, it is unlikely that any regulatory system would be able to keep up with the rapidly changing strategies of hedge funds.¹¹⁹ Hedge funds are under competitive pressure to innovate, because strategies that were once successful are imitated to the point where competition over the same strategy erodes available profits.¹²⁰ Under constraints imposed by a fixed regulation, a hedge fund might devise a strategy around the regulation that achieves a similar result as the strategy nominally prohibited by the regulation. We have seen this before, in the example of Bankers Trust developing an investment product to get around Japanese regulations restricting stock ownership by insurance companies. Indeed, as noted by Partnoy, the opportunity to work around existing regulations provides hedge funds opportunities to continue to extract significant profits: “Bankers Trust had demonstrated that regulation-avoiding trades were not only very profitable – they had staying power.”¹²¹ The ability to capture these profits will provide strong incentives for hedge funds to innovate around specific regulations, leaving them ineffective.

In the end, these regulations may end up being both detrimental and ineffective. As Richard Thaler has argued, “There’s no evidence ... that regulators could actually determine appropriate leverage for specific investments, for example, and [meanwhile,] ‘heavy-handed regulation’ could shut down financial markets and weaken the economy further.”¹²² Instead, it may be better to try a different approach for government intervention.

B. Economic-Incentive-Based Instruments: Permits & Taxes

In environmental protection, we have seen that command-and-control regulation can lead to significant improvements in environmental quality. However, when additional innovation is necessary, we sometimes turn to economic-incentive-based instruments like tradable permits or taxes. For example, in the 1990s, the Los Angeles area had the strictest air quality controls in the

¹¹⁹ Verret, *supra* note 41, at 799, notes, “These innovative strategies morph so rapidly, and operationally they are so much leaner, that the simple regulatory strategies ... do not lend themselves to cookie cutter application.”

¹²⁰ See INFECTIOUS GREED, *supra* note 20, at 40-41.

¹²¹ *Id.*, at 72. See also *id.*, at 49: “Substantial fees from these complex swaps would persist so long as companies valued the difference in legal treatment between swaps and their regulated brethren.”

¹²² Jeff Sommer, *When Humans Need a Nudge Toward Rationality*, N.Y. TIMES, February 8, 2009, at BU4.

entire country. Nonetheless, additional improvements in air quality were needed. Rather than adopting additional regulations to control nitrogen oxides and sulfur oxides, the regulatory body for Los Angeles – the South Coast Air Quality Management District – decided to use a tradable permit system, RECLAIM, to enable stronger incentives to develop technological advancements in controlling emissions.¹²³

Economic-incentive-based systems are easier to manage in a dynamic environment than command-and-control systems. With economic-incentive-based systems, the regulatory agency uses a single variable to achieve desired environmental quality: with a permit system, the agency controls environmental quality by adjusting the quantity of permits available, and with a tax system, the agency controls quality by adjusting price, i.e. the amount of the tax. With a command-and-control system, the agency has to adjust technological rules imposed on a variety of different industries. And these technologies are constantly shifting.

In theory, a permit system should be able to achieve the same result as a tax system, as seen above.¹²⁴ However, in practice, certain considerations lead to the use of either a permit system or a tax system.¹²⁵ One key consideration is the amount of information needed by the agency. To determine an optimal quantity of permits, the agency needs information about the marginal benefit, marginal private cost, and the social cost of the externality. However, for the tax system, the only information required to determine the tax is the social cost of the externality.¹²⁶ Consequently, a tax system should be simpler to construct to address the externalities caused by hedge funds.

VI. The Superfund for Hedge Funds

We have seen how the operation of hedge funds can lead to two market failures: liquidity risk and problems with using market prices for valuation. In general, it is better to use at least as many instruments as the number of goals to be achieved. Consequently, to address these two market failures, the Superfund for hedge funds will consist of two components: a tax on hedge funds, assessed depending upon the liquidity risk their transactions reflect; and a fund for purchasing securities whose value may not be reflected by current market prices. Additionally,

¹²³ See Thompson, *supra* note 81.

¹²⁴ See section IV.A *supra* and figure 1.

¹²⁵ One big advantage of a permit system is the ability to “grandfather” permits to businesses that had been emitting previously. This grandfathering improves the political feasibility of a permit system.

¹²⁶ Enforcement is also required under both permit and tax systems.

certain components of command-and-control regulation will be needed to implement the Superfund.

A. History of the Superfund under CERCLA

Before examining the details of the Superfund for Hedge Funds, it will be helpful to review the Superfund established to clean up contaminated sites. The Superfund arose out of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980.¹²⁷ This act provided for a “Superfund” to be established to pay for the cleanup of hazardous waste sites when potentially responsible parties (PRPs) could not be found or otherwise could not afford the cost of the cleanup. This Superfund was initially funded by an excise tax on “petroleum, petrochemicals and inorganic chemicals,”¹²⁸ which were the products that were causing the contamination of these sites.¹²⁹ The idea behind this tax was the “polluter pays” principle, which says that we should address the externality of environmental damage through a Pigouvian tax on those responsible for the damage. Because the chemical and petroleum industries were the ones who initially manufactured the products contaminating these sites, this tax was imposed on their products. However, some criticized this tax because it was not calibrated to impose a lower tax on those “who safely handle dangerous substances [and instead acts] to subsidize those who do not.”¹³⁰

Thus, the Superfund under CERCLA contained two components to address two market failures: overproduction of harmful substances (an externality), and inadequate provision of the public good of cleanup. The first was the tax on chemical and petroleum products to provide (imperfect) incentives to reduce the quantity sold of these potentially harmful products. And the other was the pooling of these tax revenues into a trust fund to pay for cleanup of hazardous sites. The Superfund for hedge funds will use a similar structure, although the tax will be calibrated to the level of liquidity risk, in order to provide improved incentives.

B. Pigouvian Tax to Address Liquidity Risk

¹²⁷ 42 U.S.C. § 9601–9675. For more on CERCLA, see Dale B. Thompson, *Valuing the Environment: Courts’ Struggles with Natural Resource Damages*, 32 ENVTL. L. 57 (2002).

¹²⁸ Rashida Belal, *Superfund for Environmental Taxes, 1981 and 1982*, STATISTICS OF INCOME BULLETIN (INTERNAL REVENUE SERVICE) (1983), at 31, available at <http://apps.irs.gov/pub/irs-soi/83rpfallbul.pdf>.

¹²⁹ This tax was last collected in 1995.

¹³⁰ Bruce Bartlett, *The Case Against a Value-Added Tax*, HERITAGE FOUNDATION BACKGROUNDER #468 (1985), available at <http://www.heritage.org/research/taxes/bg468.cfm>.

The principal component of the Superfund will be a tax collected from hedge funds, designed to provide incentives to reduce liquidity risks. The tax should be set at levels that increase as the level of liquidity risk increases.¹³¹ In order to assess this tax then, we will need appropriate models of how the particular strategies pursued by a hedge fund increases liquidity risks. One model that has been popularly used by hedge funds themselves to assess their own risks is the Value-at-Risk (VaR) model.¹³² The VaR model is used to construct an estimate of the maximum loss that can occur with a given probability over a period of time. This model became very popular, particularly after the free availability of the Risk Metrics software package from J.P. Morgan in 1994,¹³³ because it can be applied using a very limited amount of data.¹³⁴ However, many have criticized the use of these models to assess risk, because they make unrealistic assumptions based upon incomplete historical data. For example, Andrew Lo argues that these models inadequately deal with “tail risk,” “nonlinear risks,” and “serial correlation.”¹³⁵ Indeed, some have suggested that overreliance on these models was one of the causes of our recent financial crisis.

Instead, we need to find other models to assess liquidity risks.¹³⁶ Lo has noted that “there has been much progress in the recent literature in modeling ... liquidity risk.”¹³⁷ In particular, he explains, “a more immediate method for gauging the liquidity risk exposure of a given hedge fund is to examine the autocorrelation coefficients P_k of the fund’s monthly returns.” Other

¹³¹ This article explains how liquidity risks lead to market failures, and hence need to be addressed. However, other forms of systemic risk such as counterparty risk could also be addressed by this tax system, with the level of tax calibrated also with the level of other associated risks.

¹³² For more on Value-at-Risk, see MOORAD CHOUDHRY, AN INTRODUCTION TO VALUE-AT-RISK (2006).

¹³³ *Id.*, at 30.

¹³⁴ Under the variance-covariance method, assumptions of normal distribution for returns and constant correlations of risk factors means that all that is needed to assess risk are variances and covariances. More sophisticated techniques such as Monte Carlo simulations can be applied, and use more information. *Id.*, at 33-35.

¹³⁵ ANDREW LO, HEDGE FUNDS: AN ANALYTICAL PERSPECTIVE (2008), at 7-30.

¹³⁶ Developing models to assess liquidity risks associated with hedge funds will be inherently difficult, because hedge funds seek new profit opportunities from trades that are “on the edge.” Nonetheless, it will be important to attempt to assess these risks, in order to institutionalize consideration of the externality effects of liquidity risks from these trades.

¹³⁷ *Id.*, at 25, citing R. Bookstaber, *A Framework for Understanding Market Crisis*, in RISK MANAGEMENT: PRINCIPLES AND PRACTICES (1999); R. Bookstaber, *Understanding and Monitoring the Liquidity Crisis Cycle*, 56 FINANCIAL ANALYSTS JOURNAL 17 (2000); and D. Kao, *Estimating and Pricing Credit Risk: An Overview*, 56 FINANCIAL ANALYSTS JOURNAL 50 (2000).

models for better understanding liquidity and other risks include “small-world” network models;¹³⁸ phase-locking models;¹³⁹ and fractal models.¹⁴⁰

These models would then be utilized to construct estimates of liquidity risk associated with the trading strategies adopted by each fund. The level of tax assessed would then be calibrated to the level of risk. As a result of the tax, trading strategies that involve higher levels of risk will now have lower returns. In particular, leveraged trading strategies that inherently offer higher risks will face a higher tax. The tax then will therefore provide an incentive for hedge funds to choose strategies that have lower liquidity risks, thereby addressing this externality.¹⁴¹

C. Superfund to Fund Purchases of Illiquid Securities

The second market failure that needs to be addressed by the Superfund is the inability of market prices to provide adequate information on market valuation. We have seen that under certain circumstances, the activity of hedge funds can lead to situations where market prices no longer provide sufficient information about the value of financial instruments. This can lead to a cycle in which these valuation problems increase liquidity risks, which in turn increase valuation problems, and so on. Some external action would then be necessary to break this cycle.

To address this, the Superfund for hedge funds would use a trust fund similar to the fund under the Superfund under CERCLA. The CERCLA Superfund provided centralized funding for cleanup of contaminated sites, financed by the tax collected from the chemical and petroleum industries. Likewise, the Superfund for hedge funds would provide centralized funding for attempting to “clean up” the failure of market prices not reflecting valuation. It would do this by actively participating in purchases of the “toxic” financial instruments. By purchasing these

¹³⁸ Network models examine how shocks in one part of a system are passed along to other parts along the network. See D.J. WATTS, *SMALL WORLDS: THE DYNAMICS OF NETWORKS BETWEEN ORDER AND RANDOMNESS* (1999), cited in LO, *supra* note 135, at 26.

¹³⁹ Phase locking models explain how seemingly uncorrelated returns become strongly correlated, due to the occurrence of a previously unobserved event. See LO, *supra* note 135, at 18-22.

¹⁴⁰ Fractal models suggest that returns do not conform with normal / Gaussian distributions (which are implicitly assumed in standard financial models such as the Capital Asset Pricing Model and Value-at-Risk), which state that extreme events occur with low probability. Instead, fractal models suggest that these extreme events may occur with much higher probability. See BENOIT MANDELBROT AND RICHARD L. HUDSON, *THE (MIS)BEHAVIOR OF MARKETS* (2004).

¹⁴¹ It should be noted that power of the tax is to not necessarily micro-manage each specific trade, but more to instill an incentive system in which traders first recognize that risky trades may get taxed more later, and to force that consideration into their decision matrix.

toxic securities at a time when other market participants are unwilling to do so, the Superfund could then break the cycle, and begin to move market transactions back to the point where market prices would reflect marginal valuations.¹⁴²

This trust fund would operate similarly to the Troubled Assets Relief Program (TARP) that is being applied currently by the United States Government. A significant difference though would be that while TARP is a temporary program, the Superfund would continue in operation to address this market failure. Under TARP, the U.S. Treasury can purchase “troubled” assets such as mortgages and other financial instruments. One of the major issues facing the TARP is due to this market failure: how much should the Treasury pay for these “toxic” assets when the market prices no longer adequately reflect their true value?¹⁴³ Underpaying for these assets could “force institutions selling and others holding similar investments to register crushing losses that could deplete their capital and make it harder for them to increase lending,” while overpaying “would bail out the companies ... at the expense of taxpayers.”¹⁴⁴

This article does not attempt to determine the correct way to value these assets. Rather than having the Superfund directly assess the value of these assets, an alternative has been suggested by Lucian Bebchuk.¹⁴⁵ Bebchuk proposes funding a number of financial managers in a competitive market, whereby the managers derive their payoff from long-term returns. For example, the total amount that the Superfund decides to use to purchase “toxic” assets could be divided between twenty different funds. This decentralized approach has significant advantages over a centralized approach conducted by a single government agency. As Bebchuk notes, “Competition among these 20 funds would prevent the price paid for the [toxic] assets from falling below fair value, and the fund managers’ profit incentives would prevent the price from exceeding fair value.”¹⁴⁶ Additionally, provision of competition would erode the monopsonistic market power that can result when there is a liquidity crunch.¹⁴⁷ Bebchuk suggests this

¹⁴² It should be understood that while it is possible and preferable that the Superfund’s activities could break this cycle, other instruments may nonetheless still be necessary under certain circumstances. Nonetheless, the existence of the Superfund could reduce both the need for and the magnitude of these other instruments.

¹⁴³ Vikas Bajaj and Stephen Labaton, *Risks are Vast in Revaluation of Bad Assets*, N.Y. TIMES, February 2, 2009, at A1.

¹⁴⁴ *Id.*

¹⁴⁵ See Bebchuk, *supra* note 10.

¹⁴⁶ *Id.*, at 5.

¹⁴⁷ See section IV.B *supra*.

mechanism could be augmented by auctioning off the right to be one of these funds (and consequently using those auction revenues to help fund the purchases).¹⁴⁸

There are two historical factors that suggest this mechanism might be effective. One is the fact that when deposit insurance was introduced, although this insurance was incomplete (deposits only to a certain amount were covered), it nonetheless was effective in restoring confidence in the banks and reducing the incidence of bank runs. In a similar manner, although this Superfund would also be incomplete in that it would not be able to purchase all “toxic” financial assets,¹⁴⁹ nonetheless by breaking the liquidity risk cycle, it could lead to partial restoration of confidence of private actors in participating in the market for these assets.¹⁵⁰

The Superfund would also benefit from the possibility that given a broad portfolio and sufficient time, the depressed market transaction prices for these assets could eventually recover, to the point where the fund overall could profit from its portfolio. In the case of Long Term Capital Management, we saw that the consortium that purchased a large portion of LTCM’s assets at prices that were substantially depressed due to their associated liquidity risks was eventually able to profit from this purchase, due to the eventual recovery of the market prices for these assets. If the Superfund’s portfolio can show eventual gains, this will increase the feasibility of purchasing the portfolio with a given amount of taxes collected to finance the Superfund.

VII. Command-and-Control Components Necessary to Implement the Superfund for Hedge Funds

In our experiences with environmental protection, we have seen that even when we choose to adopt an economic-incentive-based instrument, these instruments nevertheless may rely on elements from command-and-control regulation. In the 1990s, the air quality management district for the Los Angeles area attempted to implement an economic-incentive

¹⁴⁸ Bebchuk, *supra* note 10. The problem of the “winner’s curse” – in which there is a disincentive to bid because the winning bid represents the highest valuation and hence is almost surely an overestimate – can be addressed by proper auction design, such as allocating the twenty funds according to the top twenty bids, but charging each one a fee equal to the twentieth highest bid.

¹⁴⁹ Recall that the scope of the Superfund for hedge funds is more limited than Schwarcz’s LPOLR.

¹⁵⁰ As noted above, the goal of the Superfund is to be self-perpetuating, continually addressing the market failures caused by hedge funds specifically. It is not designed to address other financial sectors that are currently addressed through regulatory mechanisms. In contrast, the TARP is designed to address the full restoration of confidence in all financial sectors. While the actions of Superfund may be insufficient to achieve a complete restoration of confidence, the more limited goals must be remembered.

based instrument for reducing emissions of three pollutants: nitrogen oxides (NO_x), sulfur oxides (SO_x), and volatile organic compounds (VOCs). It was able to implement an emissions market for NO_x and SO_x but not for VOCs. In an earlier article, this author determined that one of the principal obstacles to the VOC market was the lack of consensus on future VOC emissions abatement technology. For NO_x and SO_x, this consensus had been developed through the regulatory rulemaking process, but because VOCs were relatively unregulated, no similar consensus existed. This experience suggested that “command-and-control regulation may be a necessary prerequisite for the implementation of an emissions market.”¹⁵¹

Therefore, to properly implement the economic-incentive based Superfund for hedge funds, we may also need to adopt certain command-and-control regulatory components. In the RECLAIM example, we saw that in order to allocate permits, we needed to know the inventory of existing emissions, *i.e.* what facilities were emitting how much pollutant. This was needed to provide a baseline, both from which to determine how many permits each firm would receive, and also to assess the universe of firms emitting pollutants. This inventory required both a listing of facilities emitting pollutants, and a detailed list of pollutant emissions from each facility.

In a similar manner, we will need to determine the universe of hedge funds conducting activities that may lead to liquidity risk. In order to do this, we will first need to “inventory” hedge funds. This would be done initially through a requirement to register all hedge funds. Then, we would need to know each individual fund’s “emissions.” This would be done with a requirement to report regularly the entire holdings of a fund. Based upon these holdings, the Superfund authority would then levy a tax on the hedge fund.

The requirement for a hedge fund to disclose its holdings to the Superfund authority would be very controversial. Hedge funds are extremely secretive about their trading strategies: “Trading strategies are highly proprietary and therefore must be jealously guarded lest they be reverse-engineered and copied by others.”¹⁵² As a result, many would contest turning over their complete holdings to a regulator. As Richard Thaler has noted, “The trick is to try and figure out a way of forcing these firms to disclose more of what they're doing without giving away so

¹⁵¹ Thompson, *supra* note 81, at 694.

¹⁵² LO, *supra* note 135, at 2. See also INFECTIOUS GREED, *supra* note 20, at 88 (discussing the secrecy around the trading strategies used by John Meriwether at LTCM, even after close inspection), and at 256 (noting that funds “needed to keep their strategies secret or other investors would mimic them, thereby eroding the profit opportunities”).

much that they can no longer make a living.”¹⁵³ One trick that might work is to have the fund turn over information with a significant lag, such as ninety days. As long as the effective tax on these strategies is transparent, the Superfund could collect lagged information on holdings, and still provide disincentives against strategies that increase liquidity risk. Funds may be more willing to turn over lagged information.¹⁵⁴

Another command-and-control component arises from the calculation of this tax. The Superfund should base this tax on the level of liquidity risk associated with the holdings of the hedge fund. However, this brings up the issue as to how to assess the level of liquidity risk? In Section VI.B, we discussed possible techniques for assessing liquidity risk. However, the Superfund should strive to refine this assessment, and make it as transparent as possible, to increase its incentive effect.¹⁵⁵

The process of refining the accuracy of assessing liquidity risk is similar to determining appropriate technologies for emissions reductions. The process of determining appropriate emissions technologies is done through rulemaking, including notice and opportunities to comment. In a similar manner then, the Superfund should incorporate public rulemaking procedures to determine the best way to assess the liquidity risks of strategies pursued by hedge funds.¹⁵⁶ These public rulemaking procedures would also then improve the transparency of the tax,¹⁵⁷ so that funds would better predict the level of the Superfund tax for a given strategy.¹⁵⁸

¹⁵³ Sommer, *supra* note 122.

¹⁵⁴ Even with a ninety day lag, hedge funds likely will still object to disclosing their trading positions. This is particularly true for funds with longer holding periods, because the lagged holdings will reflect their long-term strategy. Funds might respond by “gaming” the disclosure – adjusting their positions right before their reporting date, and then readjusting after reporting. Despite this possibility, the Superfund would need to rely on the promise of confidentiality to induce funds to report truthfully. This would likely take some time to develop trust in this confidentiality. An opposite response would be to increase the frequency of reporting, and shorten the lag, i.e. the “stick” to the “carrot” of confidentiality.

¹⁵⁵ It should also be noted that assessment of this risk will require not only analysis of the data provided by hedge funds, but also information on trading positions collected under the regulatory structure for other financial sectors.

¹⁵⁶ Rulemaking is also commonly applied to regulation of other financial sectors. For example, see Cindy R. Alexander and Yoon-Ho Alex Lee, *The Dynamics of SEC Rulemaking: Evidence on the Informational Environment around SOX Rules*, Presentation, Midwestern Law and Economics Association 2008 Annual Meeting, October 4, 2008. The author would like to thank participants at this Meeting for this suggestion.

¹⁵⁷ Another concern would be the level of the tax. While the tax should be set high enough to reduce liquidity risks, it should not be set so high that it discourages all trading. This can be accomplished by using a relatively low level of the tax at the beginning and periodically assessing whether the tax is effective at that level. As a pricing system, a tax has a large advantage over a permit system [in which you have to pre-determine the level of permits over time], due to the simpler method of making adjustments based on experience.

¹⁵⁸ As noted above, *supra* note 131, the Superfund tax can also address other types of risks associated with hedge funds’ investment choices. If so, these same rulemaking procedures can be utilized to determine the relative magnitudes of the taxes for different types of risks.

Thus, although the Superfund would primarily utilize market mechanisms to address the market failures of hedge funds, the ability to use these market mechanisms would depend on the application of these command-and-control regulatory components.

VIII. International Coordination

One obstacle that the Superfund would face in addressing these market failures is the possibility that, faced with the reporting and tax requirements of the Superfund, hedge funds would simply relocate out of the jurisdiction of the United States. If so, the effectiveness of the Superfund could be limited. To a certain degree, this possibility can arise under any approach to address the market failures of hedge funds: if full command-and-control regulation is chosen, hedge funds likewise might relocate. However, certain factors suggest this effect may be limited.

One is that the United States could impose its jurisdiction on a fund in which a United States citizen invests. International law would limit the amount of the tax that could be extracted from that fund to the amount represented by the proportional holdings of U.S. citizens in the fund, not the entire balance of the fund. Nonetheless, the registration and reporting requirements could remain valid.

A more effective response to this possibility would be through international coordination. International coordination is extremely difficult, partly due to the “free rider” effect. The “free rider” effect suggests that when faced with the decision as to whether to impose rules that bring concentrated costs on its own citizens but diffuse benefits to its own and other citizens, a jurisdiction will have the incentive to “free ride.” That is, rather than imposing the rules on its own citizens and receiving increased partially increased benefits, the jurisdiction will rely on the diffuse benefits from the rules already imposed on other jurisdictions, thus getting a “free ride” on the efforts of others.

Despite the difficulties of international coordination, there has been a growing recognition that this coordination is necessary for the financial system.¹⁵⁹ The effects of the current financial crisis have spread from the United States to countries around the world.

¹⁵⁹ See Floyd Norris, *High & Low Finance*, N.Y. TIMES, January 30, 2009, at B1 (noting that “there is much talk about how to reform the regulatory systems around the world, and how to standardize regulation to avoid the “regulatory arbitrage” of seeking out jurisdictions with the least stringent rules”).

Consequently, a number of European countries have begun to examine regulating hedge funds also.¹⁶⁰

Although he had previously “supported an industry-led ‘code of conduct’ for hedge funds,” European Central Bank President Jean-Claude Trichet recently proclaimed his support for regulating hedge funds: “The current crisis is a loud and clear call to extend regulation and oversight to all systemically important institutions -- notably hedge funds and credit-rating agencies.”¹⁶¹ Also, Lord Adair Turner, chair of Britain's Financial Services Authority, also advocated possible regulation of hedge funds: “We allowed a series of near banks and shadow banks to grow without being regulated.’ ... In a new regime, ... one rule must be, ‘If it looks like a bank and quacks like a bank, we have to regulate it like a bank,’ ... [including] wide discretion to get information on how hedge funds and other institutions are operating, with the ability to impose regulation if they start to act too much like a bank.”¹⁶²

Meanwhile, international hedge funds themselves see that regulation is coming, and are attempting to preempt it through self regulation. Recently, the Alternative Investment Management Association, a leading British hedge fund association with international membership, announced its planned proposal that “hedge-fund managers agree to changes ... includ[ing] registering with regulators and having regular contact with authorities about their businesses.”¹⁶³ As other countries and the funds themselves recognize that prevention of future crises will require concerted effort, international coordination of approaches to hedge funds will become more feasible.

Conclusion

The depths of the current financial crisis cry out for drastic solutions. Some have called for new regulations, including registration requirements, reporting of assets, reserve requirements, restrictions on leverage, and restrictions on trading strategies. Others have called for taxing all financial service transactions. Others have called for the establishment of a

¹⁶⁰ See Dixon and Beales, *supra* note 114 [noting that “the political momentum for regulating shadow banks is building in advance of a meeting in April in London of representatives of the Group of 20 economies”].

¹⁶¹ Joellen Perry and Gabriele Parussini, *Trichet Backs Increase in Market Regulation*, WALL ST. J., February 24, 2009, at A10.

¹⁶² Norris, *supra* note 159.

¹⁶³ Cassell Bryan-Low, *Crisis on Wall Street: Hedge Funds to Propose Overhaul Plan*, WALL ST. J., February 24, 2009, at C3.

government agency to purchase “toxic” financial assets, thereby becoming a “liquidity provider of last resort.”

This article argues that the appropriate long-term solution to the problems presented by hedge funds is a combination of these approaches: establishment of a Superfund consisting of the market mechanisms of a tax on hedge funds, whose funds are then used to conduct market purchases of “toxic” financial assets; all of which supported by regulations necessary to operate these market mechanisms. This article develops this solution by focusing on the market failures caused by hedge funds, and then considering possible solutions through the prism of our past experiences with environmental protection.

The two principle market failures caused by hedge funds are externalities posed by liquidity risks, and the inability of market prices to provide information about the valuation of financial securities. Our experiences with the difficulties in using command-and-control regulation to reduce the environmental impact of industries engaged in rapid technological change suggest that the use of command-and-control regulation as the primary instrument to address innovative hedge funds will be inappropriate. Instead, these experiences suggest an alternative structure of the Superfund.

While there were many problems with the implementation of the original Superfund for the petroleum and chemical industries,¹⁶⁴ nonetheless, the basic structure was sound: combine a tax to create incentives to reduce risky behavior, and then use the tax revenues to fund cleanup of toxic sites. The Superfund for hedge funds proposed here adopts the same structure to address these two market failures caused by hedge funds: a tax calibrated with the levels of liquidity risk to reduce the incidence of externalities associated with liquidity risk, and then the use of those funds to help “clean up” the problem of illiquid securities whose market prices do not reflect valuation. This cleanup could be done by providing government funding of a number of competitive financial managers, whose compensation would depend upon long-term returns.

Our experiences with environmental protection also suggest that market instruments need to be built upon a foundation of command-and-control regulatory components. Consequently, to implement these market mechanisms to address the market failures of hedge funds, we will likewise need supporting regulatory elements. These elements include registration of hedge funds, reporting of the funds’ assets, and rulemaking procedures to assess liquidity risks.

¹⁶⁴ See Bruce Yandle, *Taxation, Political Action, and Superfund*, 8 CATO J. 751 (1989).

The registration and reporting requirements under the Grassley-Levin legislation is the first step to complete the Superfund package. Additional legislation would be needed to authorize a tax on hedge funds, create the rulemaking procedures for assessing liquidity risks, and enable the use of the hedge fund tax revenues for funding a competitive market in illiquid financial securities.

When completed, the Superfund for hedge funds will provide an adaptive, flexible mechanism for addressing the market failures caused by hedge funds.¹⁶⁵ Unlike command-and-control regulation that would limit investment strategies and the creation of new financial instruments, the tax and market purchase programs would allow innovation by hedge funds. Meanwhile, because they are not tied to any particular strategies or financial securities, the tax and market purchase programs could adapt to these innovations in order to provide incentives to reduce the externalities of liquidity risks, and to provide a mechanism for moving transactions in illiquid financial instruments back to the margin, where market price will then provide useful information on valuation.

We see then that one “invisible hand” – market price – is not sufficient to keep hedge funds along the correct path. But with two more “invisible hands” – the liquidity risk tax and market purchase program for illiquid securities, the Superfund for hedge funds will “nudge” hedge funds in the right direction.

¹⁶⁵ As noted above, this Superfund structure could also be extended to cover other financial sectors.

FIGURES

Figure 1: Externalities

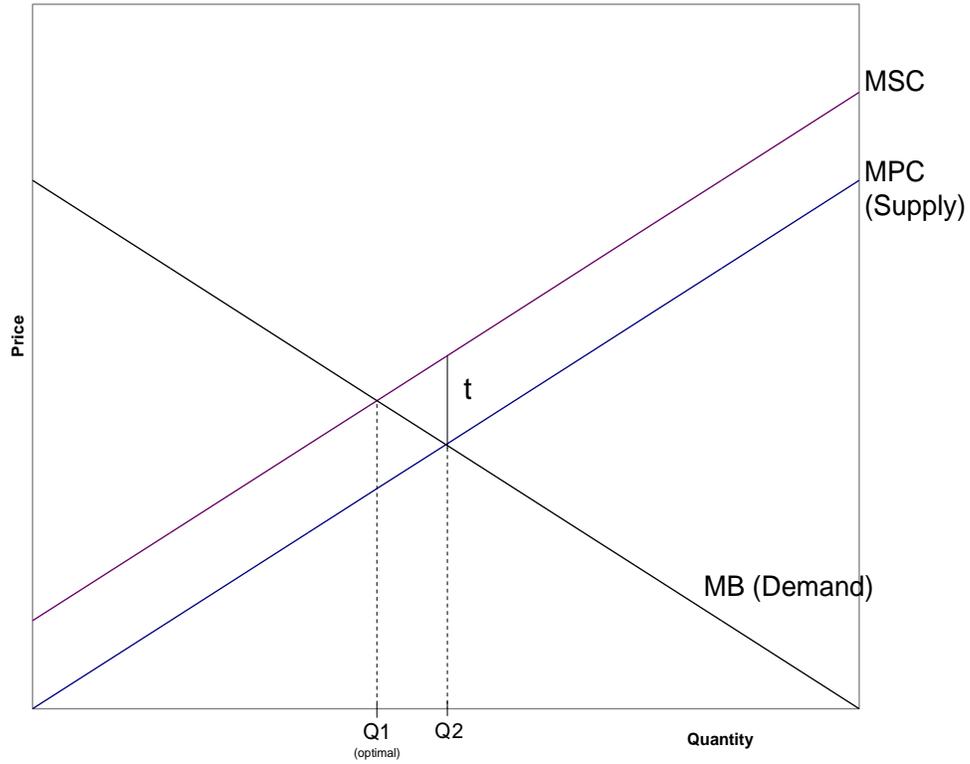


Figure 2: Competitive Equilibrium

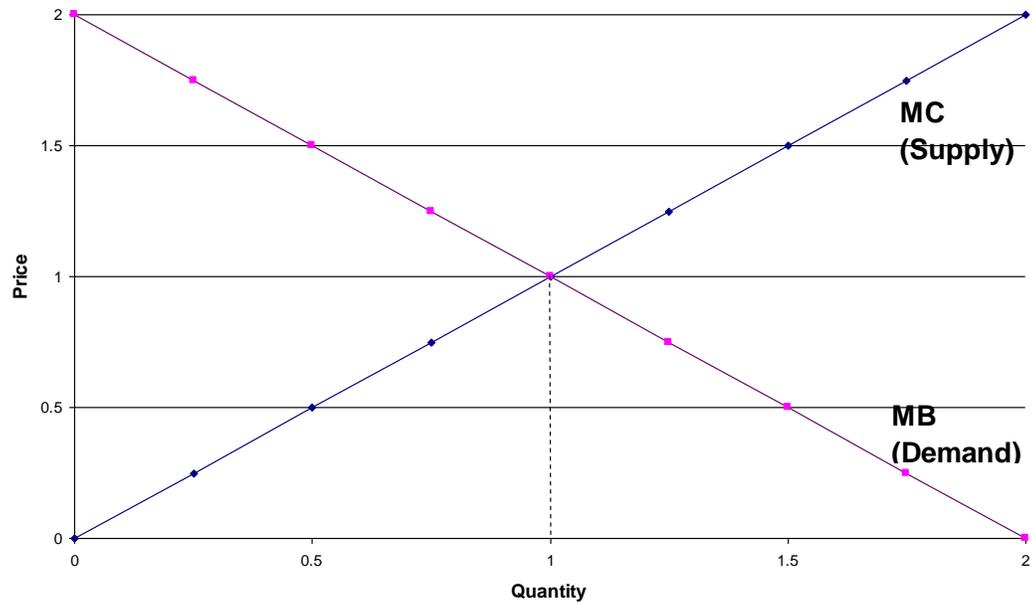


Figure 3: Alpha Stock, Case I

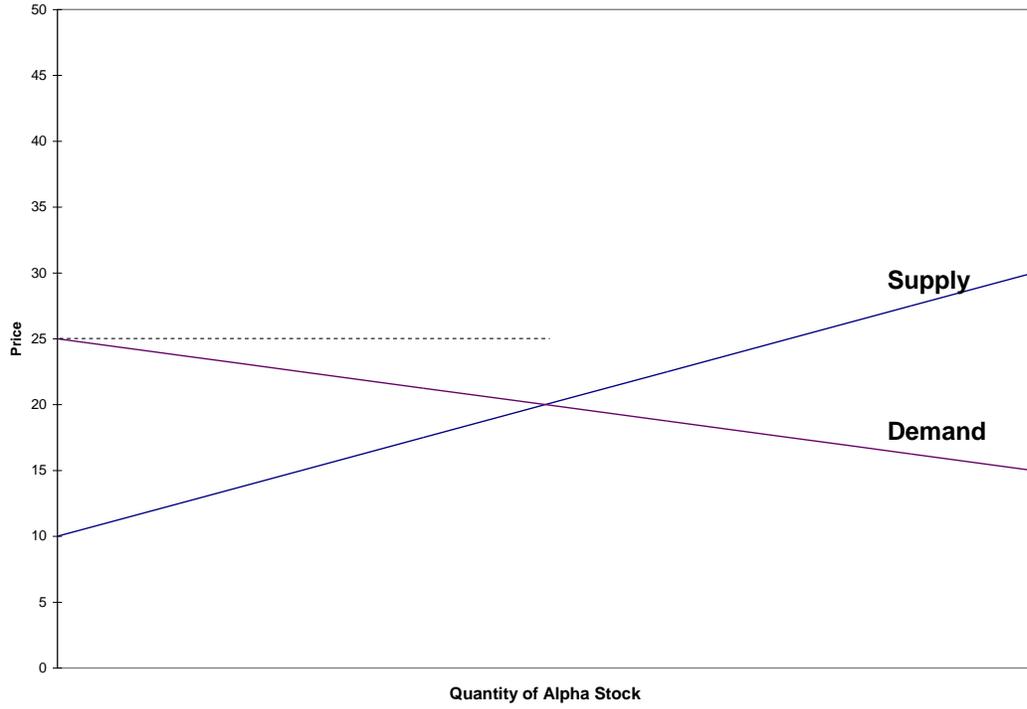


Figure 4: Alpha Stock, Case II

