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TARGETING HEDGE FUNDS AND ‘REPO RUNS’

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Harry M^cVea

Abstract:

This chapter explores the role of hedge funds in the context of evolving market developments in credit intermediation, in particular, with regard to sale and repurchase transactions (so-called “repos”) —an important and increasingly high profile facet of the shadow banking universe. More pertinently, it seeks to critically analyze the ways in which hedge funds can trigger and, in turn, help to transmit systemic risks in the context of repo transactions. In doing so, the chapter aims to challenge long-maintained claims—both from within the hedge fund sector itself, and amongst certain sections of the academic community—which downplay, or even dismiss, concerns relating to the capacity of hedge funds to cause significant disruption to the wider financial system. The validity or otherwise of these claims has a bearing on the ongoing debate with regard to the need for additional regulatory oversight of hedge fund activities, both in the context of repo transactions and, indeed, more generally.

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A. INTRODUCTION

This chapter sets out to explore the role of hedge funds in the context of sale and repurchase agreements (so-called “repos”)—an important and increasingly high-profile facet of the shadow banking universe.¹ In this respect, the focus is on *bilateral repos*—that is, repo transactions which are negotiated and settled directly between two counterparties without the use of a “triparty agent”.² Hedge funds are major players in such repos³ and these markets are widely regarded as being opaque.⁴ More pertinently, the chapter seeks to critically analyse the ways in which, within the context of repo transactions, hedge funds may trigger and, in turn, transmit “systemic risk”⁵ by way of a so-called “repo run”⁶—either within the shadow banking system

¹ It is estimated that the size of the global repo market is in the region of €15-20 trillion. Richard Comotto, *A Supplementary Note on the Systemic Importance of Collateral and the Role of the Repo Market* (ICMA’s European Repo Council, 7 May, 2013) (at para 4.8).

² A triparty agent’s role—in Europe at any rate—is limited to collateral management. Richard Comotto, *A Primer on Tri-party Repo* (ICMA) (<http://www.icmagroup.org/executive-education/courses/the-icma-guide-to-best-practice-in-the-european-repo-market/a-primer-on-tri-party-repo/>).

³ “[B]ilateral repo is the home of hedge funds” Gary Gorton and Andrew Metrick, “Who Ran on Repo?” (4 October, 2012) (at 1) (<http://faculty.som.yale.edu/garygorton/documents/whorancompleteoctober4.pdf>).

⁴ “[L]arge segments of the repo market remain opaque today. In fact, at present there is no way that regulators or market participants can precisely determine even the overall volume of bilateral repo transactions”: Governor Daniel K Tarullo, “Shadow Banking After the Financial Crisis” (Federal Reserve Bank of San Francisco Conference on Challenges in Global Finance: The Role of Asia, San Francisco, California (12 June, 2012) (at p 11) (<http://www.federalreserve.gov/newsevents/speech/tarullo20120612a.htm>).

⁵ Systemic risk refers to the risk of a severe dislocation of the entire financial network resulting from the collateral damage spawned by the collapse of a single “too-big-to-fail” institution or a single sector in the broader network. The term conjures up the idea of “cascading failure in the financial sector, caused by interlinkages within the financial system”: LSE, Systemic Risk Centre (<http://www.systemicrisk.ac.uk/systemic-risk#sthash.rutIVf4u.dpuf>).

⁶ The term is widely associated with Gorton and Metrick’s seminal work on shadow banking more generally: see, eg Gary Gorton and Andrew Metrick, “Regulating the Shadow Banking System” (2010) *Brookings Papers on Economic Activity*, 261 (referring to “run on repo”). In fact, a number of studies now support the contention that a “repo run” was an important component of the GFC. See, eg, Gorton and Metrick, “Securitized banking and the run on repo” (2012) 104(3) *Journal of Financial Economics* 425; and Adam Copeland, Antoine Martin, and Michael Walker, “Repo run: evidence from the tri-party repo market.” (2011) (No. 506, Staff Report, Federal Reserve Bank

itself, or, in ways which adversely affect, directly or indirectly, the traditional banking sector. In doing so, it sets out to challenge long-maintained claims that hedge funds do not pose serious risks to financial stability,⁷ and to take issue with an enduring body of opinion—prevalent amongst certain sections of the academic community and within the hedge fund sector itself,⁸—which seeks to downplay, or even dismiss, concerns about the capacity of such funds to cause significant disruption to the wider financial system. As leading US scholar, Jonathan Macey has claimed:⁹

“Arguments in favour of increased hedge fund regulation in order to lower systemic risk are flat wrong. Such arguments [fail] to consider that hedge funds pose no systemic risk because of the incredible diversity in their investment strategies, an assertion bolstered by evidence from decades of experience with hedge funds.”

of New York). However, see, Benjamin Munyan, “Regulatory Arbitrage in Repo Markets” (Office of Financial Research Working Paper, 29 October, 2015) (arguing that runs were perhaps only the symptom of more general deleveraging rather than a run on repo and that more evidence is needed) (at p 45).

⁷ “The evidence on hedge funds ... is that they do not pose a systemic risk to stability; hence their regulation may be expected to differ significantly from that applied to banks.” Dan Walters, “Hedge Funds and Private Equity” (Speech by Director of Retail Policy and Themes and Sector Leader, Asset Management, FSA, April, 2008).

⁸ Todd Groome (Alternative Investment Managers Association (AIMA)), “Hedge funds should contribute to stability”, *Financial Times*, 31 January 2010 (“Hedge funds are not systemically ‘important’ institutions, based on the risk they pose to the financial system”); Jack Inglis (AIMA), “Hedge funds do not pose a systemic risk” *Financial News*, 7 April 2014 (“The FCA data [in their 2014 Hedge Fund Survey] supports the thesis that, today, no individual hedge fund or manager is systemically important to the extent that its failure would endanger financial stability in Europe or globally”); Andrew Baker (AIMA), “Hedge funds are not ‘shadow banks’”, *Financial Times*, 15 May 2011 (“[While] it is possible that individual hedge funds could act together to create systemic impacts ... the hedge fund industry’s heterogeneous and proudly contrarian nature makes such unified action highly unlikely. The truth is that systemic risk continues to reside in ‘too big to fail’ institutions. Hedge funds are, as independent academics have noted, rigorously regulated, transparent to their supervisors, not systemic, and ‘small enough to fail’”); and the Managed Funds Association (MFA) (“[hedge funds] aren’t susceptible to runs”) (<https://www.managedfunds.org/hedge-fund-investors/myth-vs-fact/>).

⁹ Jonathan R Macey, *Corporate Governance: Promises Kept, Promises Broken* (Princeton University press, 2010) (“Arguments in favour of increased hedge fund regulation in order to lower systemic risk are flat wrong. Such arguments failed to consider the hedge funds pose no systemic risk because of the incredible diversity in their investment strategies, an assertion bolstered by evidence from decades of experience with hedge funds.” (p 268)). See also, Houman B Shadab, “The Challenge of Hedge Fund Regulation” (2007) 30(1) *Regulation* 36 (“Worries about market failure from contagion are mostly hypothetical. Few academic studies of hedge funds directly address systemic risk, and none conclude that the threat is large or even offer a definitive measure or assessment.”) (at p 39).

Furthermore, as the Managed Funds Association (MFA), which represents the global alternative investment industry and its investors, has argued:¹⁰

“[W]hile hedge funds do liquidate and wind up with some regularity, no hedge fund has ever been bailed-out by the government and hedge fund closures have generally not been identified as a primary source of instability during the financial crisis During the financial crisis, there were special government programs for banks, the Troubled Asset Relief Program and commercial paper guarantees, similar programs for insurance companies, and even direct guarantees of money market funds. However, ... there was no government relief program for hedge funds for a simple reason – though hedge funds suffered investment losses and some closed, hedge funds were not a cause of systemic risk. Hedge funds wind up and merge routinely in transactions that do not disrupt the markets, much less create systemic risk.”

Significantly, the above “narrative” is emblematic of the hedge fund industry’s aggressive approach towards the prospect of greater regulatory oversight of the sector more generally. In Europe, for example, the draft Alternative Investment Fund Managers Directive (AIFMD), which, post-global financial crisis (GFC), sought to establish a harmonised framework for the regulation and supervision of EU-based alternative investment fund managers (AIFM)—including hedge fund managers—provoked a storm of criticism from many industry participants¹¹ and supporters,¹² and led to protracted discussions between the European

¹⁰ MFA Response to FSB and International Organization of Securities Commissions’ (IOSCO) second consultation paper on *Assessment Methodologies for Identifying Non-Bank Non-Insurer Globally Systemically Important Financial Institutions* (29 May, 2015) (<[www.iosco.org/library/pubdocs/479/pdf/Managed%20Funds%20Association%20\(MFA\).pdf](http://www.iosco.org/library/pubdocs/479/pdf/Managed%20Funds%20Association%20(MFA).pdf)>) at p 7 (hereinafter MFA Response).

¹¹ The Hedge Fund Standards Board (HFSB)—a European based self-regulatory organization—criticised it for being “rushed” and “protectionist”; and as offering “significant scope for unintended consequences”: HFSB, *The EU’s*

Commission, the Council of Ministers, and the European Parliament to reach a compromise solution.¹³

More recently, attempts to designate certain asset managers—including certain hedge fund managers—as systemically important financial institutions (SIFIs) (along with the inevitable additional regulation that such a designation would have entailed) have provoked a similarly trenchant response. In this respect, the MFA has claimed that concerns about “forced asset sales” are “misplaced”,¹⁴ and that *direct* regulation of hedge funds by, for example, the Dodd-Frank Act (in the US) and the AIFMD (in the EU), coupled with *indirect regulation* of hedge fund counterparties already serve to mitigate any adverse impact that hedge fund activity might have on the financial system.¹⁵ More generally, the sector suffers from a long-standing tendency to portray itself as having been “wrongly targeted as universal scapegoats” for more

Draft Directive on Alternative Investment Fund Managers (AIFM) Observations from the Hedge Fund Standards Board's Perspective (June 2009) (<http://www.eurocapitalmarkets.org/system/files/AIFM%20Directive-Deinet.pdf>).

¹² For example, George Osborne, then Shadow Chancellor of the Exchequer, UK Conservative Party, described it as being “ill-conceived” and “badly drafted”: *Financial Times* interview (10 July, 2009).

¹³ Even after this compromise, the Directive was still wildly criticized for being “disproportionate” (see: Eilís Ferran, “After the Crisis: The Regulation of Hedge Funds and Private Equity in the EU” (2011) 12 *European Business Organization Law Review* 379 (“Given that [the Directive] is to apply only to a relatively small part of financial market activity, it has a disproportionate feel, implying that it could be the proverbial “sledgehammer to crack a nut” at p 410); and Phillip Inman, “City welcomes signs of EU thaw on private equity regulation” (29 June, 2009) (<http://www.theguardian.com/business/2009/jun/29/private-equity-regulation-eu-ec>) (quoting Sir James Sassoon, Advisor to the UK's Conservative Party on Financial Regulation), and, even, politically motivated (*Financial Times* Editorial (5 July, 2009) (“These are bad measures, politically motivated”).

¹⁴ MFA Response, *supra* n 10, at p 3.

¹⁵ “[R]egulations implemented and market practices adopted since the financial crisis ... mitigate the risk that the liquidation of assets held by one or more hedge funds, even in periods of market stress, could have widespread impact on the financial system or cause any significant harm to a hedge fund's counterparties These regulations, both direct and indirect, ... have had a substantial impact on hedge funds and their managers because banks, broker dealers, swap dealers and other hedge fund counterparties have changed their business practices in order to comply with the new rules.”: *Ibid.*, at p 3-4.

deep-seated weaknesses within the financial system,¹⁶ and to claim that much of the interest in and existing regulation of the sector is in fact politically motivated.¹⁷

Yet, notwithstanding the industry's recent—albeit perhaps only temporary—success in warding off SIFI designation, continued interest in, and close scrutiny of, the hedge fund sector is unlikely to abate any time soon. Indeed, as I seek to show below, in the context of repo activity, much of this attention is wholly merited. Specifically, it is argued that hedge fund involvement in repo transactions can, because of market incentives and short-term decision-making amongst the relevant parties, result in outcomes in which private and public interests are seriously misaligned. More worryingly, this state of affairs can trigger so-called “repo runs”, which, in view of acute interconnections and interdependencies within modern global markets, can potentially require the use of public funds to provide liquidity support to certain systemically important entities—or for the purposes of reviving confidence more generally. Though *individual* hedge funds do not receive this support directly, it is suggested that the hedge fund *sector* nevertheless benefits indirectly from any that has been (or is) provided.

In exploring the role which hedge funds play in propagating repo runs, the focus is largely, albeit not solely, on the European repo market, and the material is structured as follows: Section 2 provides an overview of the shift from the traditional “originate and hold” model of banking towards a new “securitized” or market-based model, which has served to displace the central role formerly occupied by banks in credit intermediation. Section 3 focuses on hedge

¹⁶ Andrew Baker (AIMA), “A Time for Clear Thinking” (*HEDGE magazine*, April 2009); and Florence Lombard (AIMA), “Don’t blame hedge funds for world’s woes” (*Financial Times*, 2 May 2010).

¹⁷ See, for example, Paul Marshall, “Europe’s Classic Exercise in Defending its Interests” (*Financial Times*, 18 May 2009); and Dermot S L Butler, “Regulation Swings ‘Like a Pendulum Do’” (9 December 2013) (<http://www.customhousegroup.com/blog/2013/12/09/regulation-swings-like-a-pendulum-do-with-apologies-to-roger-whittaker/>).

funds as entities that have become increasingly active, important, and visible players within the “shadow banking” sector, and, in particular, on the role that these funds play in relation to *bilateral* repo agreements. Section 4 explores enduring regulatory concerns about systemic vulnerabilities within the global financial system, and explores how the added complexities and interconnections associated with disintermediation—particularly in relation to collateralized repo agreements and the associated risk of a “repo run”—accentuates these concerns. In the concluding Section (Section 5), the threads of the discussion are pulled together.

B. SHADOW BANKING/FINANCIAL “DISINTERMEDIATION”

B.1. The Traditional Role of Banks in the Credit Intermediation Process

Traditionally, retail banks have played a central and distinctive role in helping to resolve one of the fundamental challenges which financial markets are designed to address: matching agents with capital in excess of their needs (eg savers) with agents in need of such capital (eg corporations, and other capital-starved but project-rich entities). Typically, retail savers are able to deposit only relatively small amounts of capital, yet value highly both liquidity, in the form of access to funds, and security, in the form of low or no risk. By contrast, corporate borrowers generally seek to borrow large sums of money spread over a relatively long time frame—factors which concentrate risk and increase the likelihood of default on the loan. Acting as intermediaries, banks interpose themselves between these two groups so as to meet the respective needs and risk preferences of each. In this context, banks are said to utilize their superior information gathering and processing skills to screen and select *ex ante* suitable largescale fund

borrowers (and monitor them *ex post*), while simultaneously providing credit and liquidity services which are largely risk free to retail depositors.¹⁸ In doing so, banks perform the vital roles of size, maturity, liquidity, and credit risk transformation, all of which help to “service” the financing needs of the “real” economy.¹⁹ To the extent that these roles are impaired, socially desirable projects are likely to go unfunded and economic activity—and wealth—to contract.

However, although such size, maturity, liquidity and credit risk transformations are almost universally regarded as affording major societal benefits, they are not without risk to the bank itself and, potentially, the financial system more generally.²⁰ In view of the fact that banks “borrow short and lend long”, they are rendered uniquely vulnerable to market shocks. That is to say, since banks accept short term and very liquid deposits (which are available to savers on demand) and re-package these assets into long-term loans (hence creating assets which cannot be readily liquidated should the need arise), they are uniquely vulnerable to so-called “runs” whereby savers demand instant liquidity. What is more, in order to satisfy savers’ demands for cash, a bank may be forced to dispose of assets at panic driven “fire sale” prices, thus further exacerbating its search for liquid funds.²¹ The losses associated with a bank run rarely “lie where they fall”, but are instead apt to cross-infect or spill over to other healthy banks, as they, too, are embroiled in depositor runs and a search for liquidity. These losses are typically viewed as negative externalities, in that the social costs accompanying bank failures exceed their private

¹⁸ Put simply, banks seek to earn profits from the difference between the rate of interest charged on longer terms loans and the lower rate of interest paid out on deposits.

¹⁹ See, Nicola Cetorelli, Benjamin H Mandel, and Lindsay Mollineaux, “The Evolution of Banks and Financial Intermediation: Framing the Analysis” *FRBNY Economic Policy Review* (July 2012).

²⁰ Turner Review, *A Regulatory Response to the Global Banking Crisis* (Financial Services Authority (FSA), March 2009) (hereinafter *Turner Review*): “[By] holding longer term assets than liabilities [banks] enabling the non-bank sector to hold shorter term assets than liabilities. This absorbs the risks arising from uncertainties in the cash flows of households and corporates, and results in a term structure of interest rates more favourable to long-term capital investment than would pertain if banks did not perform maturity transformation.” (at para 1.1).

²¹ Charles A E Goodhart, “What is the Purpose of Regulating Financial Services?” mimeo (London School of Economics, 1986) at p 16 (on file with the author).

costs. And it is these externalities—these types of market failure—which, traditionally, have been regarded as providing a *prima facie* justification for regulatory intervention in the form of liquidity and capital adequacy requirements and lender of last resort facilities (for banks), and deposit protection (for depositors), in order to avert more widespread banking collapses.

B.2. The Shift Towards More “Market Based” Credit Intermediation—So-called “Disintermediation”

Interestingly and importantly, the central and distinctive role of retail banks in the credit intermediation process has changed over the years, and indications post GFC suggest that this shift is set to intensify. Over time, the traditional model of bank intermediation, where banks held loans to maturity (and where, as a result, credit risk was dangerously concentrated), has been increasingly rivalled by a “securitized” or more market-based model of credit intermediation—so-called “disintermediation”—which is strongly associated with an emergent shadow banking system.²² Though not regulated like banks, it is claimed that shadow banks, such as special-purpose vehicles, money-market funds, securities lenders, investment banks, and hedge funds, are connected along complex intermediation chains which involve the use of securitization vehicles, securities lending, and repos to provide important sources of finance for a wide range of financial institutions. These operations are said to be bank-like in that they result in size, liquidity, maturity, and credit risk transformations—but without the protections associated with traditional banking (eg onerous capital requirements and the lender of last resort facility for banks, and deposit insurance for fund suppliers). What is more, shadow banking is also said to be strongly associated with the “creation of assets that are thought to be safe, short-

²² See *supra* n 2.

term, and liquid, and as such, ‘cash equivalents’ similar to insured deposits in the retail banking system.”²³

Although in the wake of the GFC, regulators initially focused on retail banking issues,²⁴ attention has now turned towards shadow banking in general,²⁵ and securities financing transactions (SFT) in particular.²⁶ SFTs encompass a variety of secured transactions, amongst which securities lending and repo transactions are the most high profile. In essence, repos are collateralized loans which aim to provide a secure means of lending for cash lenders and leverage for borrowers. Although the size of the repo market has shrunk significantly from its peak of 2008,²⁷ it is nevertheless estimated that, globally, it is in the region of €15-20 trillion.²⁸ In terms of its significance, repo markets thus represent a major source of wholesale funding for cash-starved entities and, moreover, are widely understood to play a pivotal role in the efficient workings of global financial markets more broadly.²⁹

Regulatory concerns have focused on the fact that repo transactions involve “bank-like” activities which give rise to maturity/liquidity transformations involving the short term financing

²³ Tarullo, *supra* n 4, at p.1.

²⁴ At a global level, these efforts were primarily directed at Basel III reforms.

²⁵ At the “Seoul Summit” in November 2010, the G20 asked the Financial Stability Board (FSB) to undertake “work in mapping and exploring possible regulatory reform to reduce systemic risk and opportunities for regulatory arbitrage in the shadow banking system” (“The Seoul summit document”, November 2010, Para. 41). For the start of this ongoing programme of work, see, FSB, *Shadow Banking: Strengthening Oversight and Regulation – Recommendations of the Financial Stability Board* (27 October, 2011).

²⁶ See, eg, FSB, *Securities Lending and Repos: Market Overview and Financial Stability Issues* (Interim Report of the FSB Workstream on Securities Lending and Repos, 27 April 2012). Within the EU, the European Parliament recently adopted the European Commission’s Regulation on Transparency of Securities Financing Transactions (known as “SFTR”): (http://europa.eu/rapid/press-release_IP-15-5930_en.htm).

²⁷ Bloomberg, *The Repo Market* (<http://www.bloombergvew.com/quicktake/the-repo-market>).

²⁸ Comotto, *supra* n 1.

²⁹ In particular, repo markets play an important role in helping to distribute government securities and, more generally, in helping to “mobilise the wholesale capital funding required by [retail] banks and other lenders financing the real economy.” Comotto, *ibid.*, at para 1.2.

of longer-term assets³⁰—all outside the traditional banking system, under conditions where there is less transparency, significant inter-connectivity, less regulation, and no access to official liquidity support if assets backing the credit expansion become vulnerable, and, where investors are widely regarded as “well-informed, herd-like and fickle”.³¹ Significantly, *bilateral* repo markets—where the transaction is negotiated and settled directly between the two counterparties involved, and, where accordingly repo markets are at their least transparent—represent a primary source of funding for hedge funds.³² Set against this backdrop, the remainder of the chapter aims to explore the role of hedge funds with regard to repos, and to assess the extent to which hedge fund exposure to repo markets can trigger and, in turn, help transmit systemic risk.

C. HEDGE FUNDS AND REPO MARKETS

C.1 What Are Hedge Funds?

Although not straightforward to define, in essence hedge funds are a species of “alternative” private collective, or pooled, investment vehicle, and targeted in the main at relatively

³⁰ FSB, *Strengthening Oversight and Regulation of Shadow Banking Policy Framework for Addressing Shadow Banking Risks in Securities Lending and Repos* (August, 2013) at ii.

³¹ Zoltan Pozsar, Tobias Adrian, Adam Ashcraft, and Hayley Boesky, “Shadow Banking” *Federal Reserve Bank of New York Staff Reports* (Staff Report no. 458, July 2010) at p 59.

³² “Repo is particularly attractive to institutions that are already highly leveraged (eg securities firms and hedge funds), who would otherwise find it expensive and/or difficult to borrow additional funds in unsecured markets. Indeed, repo is the primary source of funding for such institutions.” Euroclear, *Understanding Repo And The Repo Markets* (March 2009) at p 15. Repo markets represent a large and important short-term source of capital for a range of shadow banking and non shadow banking activities (see, eg, European Securities and Markets Authority (ESMA), *Trends, Risk and Vulnerabilities* (No 1., 2013) (at p 35). Gorton and Metrick, “Who Ran on Repo?” (2012) *National Bureau of Economic Research Working Paper Series* (Working Paper 18455)(“[B]ilateral repo is the home of hedge funds”) (at p 1); and Laura Valderrama, “Macprudential Regulation under Repo Funding” (2015) 24 *Journal of Financial Intermediation* 178, fn 4.

sophisticated—or at least wealthy—investors.³³ In regulatory terms, it is important from the outset to distinguish between a hedge fund (which represents the legal entity in which the fund’s assets are held) and a hedge fund manager (that manages the fund’s assets and determines investment strategy). The distinction is important, because funds are typically based offshore (in tax efficient jurisdictions) and therefore beyond the reach of national regulators, whereas investment managers are typically based onshore and are increasingly subject to regulatory oversight.³⁴

While the sheer diversity of hedge funds makes it difficult to categorize either the funds themselves or their activities, one common approach is to identify certain core governance structures and investment techniques that are typically, albeit not universally, associated with the hedge fund industry.³⁵

Fig. I³⁶

Typical hedge fund characteristics ...	But ...
managers may adopt a wide range of investment strategies (eg more active	Some invest in illiquid assets which trade infrequently and not

³³ In *Goldstein v SEC*, a decision of the DC Circuit, the Court described hedge funds as “any pooled investment vehicle that is privately organized, administered by professional investment managers, and not widely available to the public.” *Goldstein v SEC*, 451 F3d 873, 875 (DC Cir 2006) (quoting President’s Working Group on Financial Markets, Hedge Funds, Leverage, and the Lessons of Long-Term Capital Management (1999) at p 1 (hereinafter PWG 1999 Report), available at (<http://www.treas.gov/press/releases/reports/hedgefund.pdf>) (quotation marks omitted).

³⁴ Globally, hedge funds’ assets under management totalled a record \$2.7 trillion at the end of 2014, well above the pre-crisis peak in 2007 of around \$2.4trillion. Although, London remains the second largest global centre for hedge funds managers, after New York, with a 17% share of the global hedge fund industry, London is by far the largest centre for hedge funds in Europe, with over two-thirds of European single manager hedge fund assets under management. See, TheCityUK, *UK Fund Management: An Attractive Proposition For International Funds* (November 2015) at 24-25.

³⁵ HFSB, *Submission From the Hedge Funds Standards Board (HFSB) to the European Commission Public Consultation on Hedge Funds* (April 2009).

³⁶ Adapted from the HFSB (http://www.hfsb.org/sites/10377/files/what_is_a_hedge_fund.pdf).

trading, engage in short selling)	all managers short sell
managers may have an unlimited investment universe (eg derivatives)	not all managers use derivatives, and an increasing number of “traditional” managers now use derivatives
managers seek leverage	not all employ leverage
have a fee structure, which heavily incentivises good performance (eg emphasis on absolute rather than relative returns)	some “long” only retail funds also adopt performance based compensation in their fee structures
funds are often domiciled in offshore domiciles, such as the Cayman Islands, Bermuda, British Virgin Islands	some hedge funds offer access to their investment management techniques via onshore structures
	offshore funds typically “serviced” by onshore managers, prime-brokers, custodians, administrators
accessible only to institutional / sophisticated investor base (ie high investment limits)	some “traditional” long only managers employ hedge fund type strategies (eg 130/30 funds use short selling)
	some hedge funds are accessible to retail investors (eg. if they are listed)

some jurisdictions allow retail
access to hedge funds

Accordingly, unlike traditional, retail forms of collective investment vehicle (such as mutual funds in the US and unit trusts in the UK), hedge fund managers tend to have a general licence (subject to the manager's mandate from investors) to adopt a broad range of investment strategies (eg to invest both "long" and "short"); as well as an unlimited investment universe, such that managers can invest in an open-ended range of investments, including derivatives instruments. Hedge funds can also employ unlimited amounts of leverage,³⁷ so that investment outcomes are magnified either in favour of the fund or against it.³⁸ Furthermore, remuneration is routinely structured so as to align managers' interests directly with those of their investors through co-investment by the manager in the fund, and (unlike retail investment fund managers) managers typically seek absolute returns rather than relative performance as judged against a set benchmark.³⁹ Finally, fund partnership agreements often contain additional provisions, such as "high water marks" and "hurdle rates", designed to provide further incentives for managers to

³⁷ "Although leverage historically was obtained primarily by purchasing securities with borrowed money, today futures, options and other derivatives contracts may be a major source of leverage." Staff Report to the SEC, *Implications of the Growth of Hedge Funds* (September, 2003) (hereinafter 'SEC Staff Report') at 37. See also, FSA, *Hedge Funds: A Discussion of Risk and Regulatory Engagement* (Discussion Paper 05/04) (hereinafter "FSA DP 05/04") at 30-31.

³⁸ Thus, in the event that the investment strategy proves unsuccessful, not only does the fund sustain a direct loss on its investment, but it must also repay the money borrowed (plus any interest owing on it).

³⁹ Retail investment fund managers are typically benchmarked against market indices, such as the FTSE 100. Thus, in a declining market the manager may claim success for the fund over which s/he has control even if the fund has lost money, provided it has outperformed the chosen benchmark (and vice versa). By emphasising absolute returns, hedge fund managers seek to create profits irrespective of the movement in market indices. Before the recent crash, a typical performance fee was in the region of 20% of the absolute return secured by the fund. Today, however, management fees are much more fluid.

grow the value of the fund. Essentially, these are predetermined thresholds which managers must beat before performance fees are paid.⁴⁰

The legal structure of a hedge fund—whether corporate, business trust, or limited partnership—as well as its location, is determined by a range of factors, critical amongst which is the desire to minimise investors’ liabilities, especially in relation to tax.⁴¹ A consequence of the use of any given structure is that although investors’ liability is limited to their initial investment, investors typically have only limited rights to management. In reality, it is usual for a combination of structures to be utilized, so as to “appeal to the broadest range of investors.”⁴² To a large extent, the term “hedge fund”—with its origins in the idea of “hedging one’s bets”—is a misnomer. Today, despite routinely deploying “hedging” strategies, hedge funds are largely speculative traders seeking “almost exclusively ... to outperform the market average by superior security valuation and successful trading strategies.”⁴³ As active and aggressive traders, hedge

⁴⁰ SEC, Staff Report, *supra* n 37 at p 62. The function of a high water mark is to ensure that losses in previous years are made good before a performance fee can be paid. Consequently, if after making a profit in year one, the fund suffers a loss in year two before making a profit again in year three, the loss in year two needs to be made good before a new performance fees can be paid. Hurdle rates perform a similar function, inasmuch as they establish a minimum level of investment performance which must be exceeded before the fund’s adviser receives any performance fee. Typically the hurdle rate is pegged to some indice which reflects a supposed risk-free rate of return, such as the Treasury bill rate or the London Interbank Offered Rate (LIBOR). James Owen, *The Prudent Investor’s Guide to Hedge Funds: Profiting from Uncertainty and Volatility* (John Wiley & Sons, New York, 2000) 61. Since the investor could have invested in such “safe” investments, the manager must exceed the rate of return on investments of this type before any performance fee is paid.

⁴¹ According to research conducted by the (now defunct) FSA, the “optimal location and form of each entity within the structure is frequently determined according to factors such as tax efficiency, proximity to major markets and appropriate regulatory regime”: FSA, DP 05/04, *supra*, n 37, at pp 11-12.

⁴² See, David Vaughan and Margaret Bancroft, “Structuring Issues for Hedge Funds” in *The Capital Guide to Starting a Hedge Fund—A US Perspective* 31, 32 (ISI Publications, 2002).

⁴³ G Connor and M Woo, “An Introduction to Hedge Funds” (<<http://www.lse.ac.uk/collections/accountingAndFinance/pdf/ConnorIntroToHedgeFundVv3.pdf>>) (p 26). ‘Funds of funds’ hedge funds, invest in other hedge funds, the benefit of which is portfolio diversification.

funds are said to add liquidity and bring stability to markets, and, by exploiting arbitrage opportunities, to promote an efficient allocation of capital.⁴⁴

C.2 What are Repo Markets and How do Hedge Funds Use Them?

It is widely recognized that the repo market is an important source of cash—and thus leverage—for many hedge funds.⁴⁵ As noted above, a repo is a form of secured—or collateralized—loan, whereby a cash borrower sells securities to a cash lender, but agrees to repurchase the same, or similar, securities at a (higher) price at some future date (usually somewhere between one day and one month later).⁴⁶ The price difference between the sale of the securities and their repurchase (which includes a fee paid by the cash borrower for gaining access to the cash) is referred to as the “repo rate”. The collateral “posted” by the cash borrower (eg a hedge fund) represents a form of protection for the cash lender (eg an investment bank) in the event that the hedge fund becomes insolvent, or is otherwise unwilling to return the cash on the date agreed under the repo. In this context, it should be noted that repo collateral is not pledged; but rather it is sold (so that legal title is transferred) and then repurchased at a subsequent date (ie at maturity). Given that the cash lender acquires legal and beneficial title to the collateral, it has a proprietary right either to use the assets until they need to be returned, or, in the event that the cash buyer defaults on the repurchase agreement, to dispose of the assets to recover either some or all of the cash loaned.

Furthermore, although a repo transfers full legal title of the collateralized assets to the cash lender for the full term of the repo, provided the cash borrower remains solvent, the cash

⁴⁴ See *HFSB's Response to House of Lords European Union Committee Call for Evidence on the Directive on Alternative Investment Fund Managers* (9 September, 2009) (at p 2). (http://www.hfsb.org/sites/10377/files/house_of_lords_eu_committee_call_for_evidence_final.pdf)

⁴⁵ Frank Hespeler and Christian Witt, “The Systemic Dimension of Hedge Fund Illiquidity and Prime Brokerage” (ESMA Working Paper No. 2, 2014) 1, p 4.

⁴⁶ This section draws on Euroclear, *Understanding Repo And The Repo Markets*, *supra* n 32.

lender is not exposed to the risk of any depreciation in the value of the assets during that period. That is to say, if the value of the posted collateral deteriorates in any way during the term of the repo, it is the cash borrower that bears the loss. The reason for this is because the cash borrower is contractually committed under the terms of the repo agreement, not only to repurchase the posted collateral on a future date, but to do so at a stipulated price (which includes the original sale price plus a fee for the use of the lender's cash). By the same token, the cash borrower benefits from any increase in the value of the posted collateral, and retains the right to any income streams associated with the collateralized assets, such as coupon payments on bonds.

In essence, this secured, or collateralized, aspect of the repo market helps to reduce the risk associated with lending, and thus makes it an attractive arrangement for risk-averse cash lenders. Since, in turn, this reduced risk leads to lower borrowing costs, it is not surprising that repos represent an important source of cheap finance and leverage for wholesale markets in general, and hedge funds in particular. Furthermore, because cash lenders acquire legal ownership of the posted collateral, this collateral can in fact be redeployed during the term of the repo agreement for the purposes of selling it to a third party, or, indeed, for different repoing purposes—thus converting a cash lender into a cash borrower. That said, a party utilising collateral in this way would need to repurchase the securities, or their equivalent, so as to be able to return the collateral to the original counterparty.

Clearly the quality of the collateral posted is critical to the smooth operation of repo markets, and the identification and valuation of collateral acts as a key protection for cash lenders.⁴⁷ The nature of the collateral to be exchanged by the parties is contractually agreed in advance. If excessive collateral is posted by the cash borrower, the borrower loses the

⁴⁷ Richard Comotto, *Shadow Banking and Repo* (20 March 2012 “collateralized funding, prudently managed, reduces risk at source” (Comotto, 2012, at para 11.6).

opportunity to raise additional cash or engage in additional leverage. If, by contrast, insufficient collateral is posted, there is a risk that the cash lender will be “out of pocket” in the event that the borrower defaults on the agreement and the assets liquidated do not cover the cost of the cash loaned. Accordingly, it is crucial to both counterparties that initial collateral requirements are well-judged and that accurate valuations occur throughout the repo term. In practice, this involves the use of so-called “haircuts” and “initial margins”, whereby adjustments are made to the market value of the initial collateral posted so as “to reflect the risk that the cash realised by the liquidation of collateral securities may turn out to be less than the quoted market value of those securities.”⁴⁸ In practice, haircuts and initial margins serve to over-collateralize the cash lender in a repo,⁴⁹ such that the purchase price of a repo is less than the market value of the collateral posted.⁵⁰ Furthermore, as well as any haircut or initial margin, the collateral posted must also be regularly valued. Any excess capital is then returned to the cash borrower, whereas any deterioration in the value of the collateral posted results in a “margin call”, whereby the borrower is required to make available additional suitable collateral to compensate for any deterioration in the value of the assets initially posted.

In this context, a question which remains moot revolves around the extent to which haircuts and initial margin, as well as addressing collateral risk (ie the risk of a depreciation in the value of the collateral), also take into account counterparty credit risk (ie the risk that the

⁴⁸ European Parliament, *Shadow Banking – Minimum Haircuts on Collateral* (Note, July 2013, IP/A/ECON/NT/2012-29) ([http://www.europarl.europa.eu/RegData/etudes/note/join/2013/507462/IPOL-ECON_NT\(2013\)507462_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/note/join/2013/507462/IPOL-ECON_NT(2013)507462_EN.pdf)). Haircuts are expressed as the percentage difference between the market value of the collateral security and the cash to be loaned through a repo (so a haircut of 5 % means that a security worth 100 can be repoed out for 95). An initial margin is a percentage premium added to the market value of the security that is being offered as collateral in a repo or securities lending transaction.

⁴⁹ Haircuts are seen as potentially useful in restraining the build-up of excessive leverage by acting in a manner similar to reserve requirements on deposits. *Ibid.*, para 1.6.

⁵⁰ However, “[w]here the probability of default and the likelihood of having to liquidate collateral are remote, no haircut/initial margin is typically imposed”: Richard Comotto, *Haircuts and Initial Margins in the Repo Market* (ICMA’s European Repo Council, 8 February, 2012), para 3.8.

supplier of the collateral will default on the repo obligation, requiring the cash provider/collateral taker to liquidate the collateral, potentially at a loss). The evidence—such as it is—is equivocal. One recent Bank of International Settlement (BIS) study of repo market users—namely, banks, prime brokers, custodians, asset managers, pension funds and hedge funds—suggests that parties do increase haircuts or adjust available lines of credit in order to reflect increased counterparty risk.⁵¹ By contrast, a study by Fitch Ratings on US money market mutual funds (MMF) concludes that MMF haircuts are not particularly sensitive to the identity of repo counterparties.⁵² In assessing this evidence, Comotto, a leading commentator on repo transactions, concedes that special haircuts may feed into assessments of counterparty risk in exceptional circumstances—for example, “where ... the counterparty is very large and/or market liquidity has already been critically impaired by a loss of confidence”.⁵³ Nevertheless, he is sceptical about a more general link between special haircuts and counterparty credit risks. And in his work published under the auspices of the European Parliament, he concludes that while “counterparty credit risk is the primary concern of repo lenders” it would not be justified “to link haircuts directly to counterparty credit risk.”⁵⁴

⁵¹ Bank of International Settlement (BIS), Committee on the Global Financial System (CGFS) Paper No.36 on *The role of margin requirements and haircuts in procyclicality* (March 2010) (cited in Comotto, *ibid.*, para 3.10). See also, Dang *et al*, who note that haircuts for the same type of (structured security) collateral of the same rating differ between types of repo counterparty: Tri Vi Dang, Gary Gorton, and Bengt Holmström, “Repo, Haircuts and Liquidity” (Working Paper, July 2011) (also cited in Comotto, *ibid.*).

⁵² Fitch Ratings, “Repo Emerges from the ‘Shadow’” (3 February, 2012) at p 3 (also cited in Comotto, *ibid.*). This does, however, acknowledge that “determining whether haircuts are sensitive to counterparty risk is difficult to examine statistically, since the most active repo market borrowers are highly rated financial institutions, and it would be difficult to control for the quality of collateral when comparing haircuts across different institutions.” Nevertheless, funds calibrate haircuts based on the potential price volatility of the collateral, rather than on the financial strength of the repo counterparty. See also European Parliament, *Shadow Banking – Minimum Haircuts on Collateral*, *supra* n 48: “[h]aircuts are not seen a primary risk management tool, because collateral is judged to be secondary in importance to counterparty credit risk.” (p 12).

⁵³ According to Comotto, in such situations in effect “counterparty credit risk feeds into market liquidity risk”, making it relevant to the size of haircuts. *Supra* n 50, para 3.16.

⁵⁴ European Parliament, *supra* n 48, para 1.3. It should also be noted that the use of haircuts is also less widespread in Europe than in the US: *ibid.*, para 1.

Although repo counterparties often choose to customise their own collateral management arrangements (ie bilateral repos), they may perceive both operational and economic advantages in outsourcing collateral management to neutral “triparty” agents, such as Euroclear Bank.⁵⁵ In practice, however, most repo agreements involving hedge funds are bilateral,⁵⁶ and, indeed, hedge funds are major providers of collateral assets for this market.⁵⁷ In doing so, hedge funds typically acquire cash loans from prime brokers in return for posting some of their relatively illiquid assets (or securitised equivalents) as collateral. Often, prime brokers reuse—or rehypothecate—the posted collateral in repo and money markets. In the event that the seller (eg a hedge fund) fails to return the cash to the buyer (eg a prime broker), the buyer retains the collateral, the amount of which incorporates a margin for risk of default by the seller, for repayment. By repo-ing out their collateral in this way to prime brokers and other market dealers, many hedge funds are heavily reliant on repo markets to fund their positions. This is particularly the case where the fund uses strategies which thrive on higher leverage – such as fixed income arbitrage, convertible arbitrage, and global macro.⁵⁸ According to Singh, repo related financing was in the region of 27% and 32% of hedge fund mark-to-market positions

⁵⁵ It should be noted, however, that a tri-party agent does not act as a trading venue (on which transactions are actually executed); or as a central clearing counterparty (CCP) (which becomes a seller to every buyer and a buyer to every seller and that nets opposite transactions with its counterparties); or even as a central securities depository (CSD) (that is, a settlement venue where securities are delivered/received on behalf of the parties against receipt/delivery of cash). Instead, the tri-party agent’s role—in Europe at any rate—is limited to collateral management. That is to say, tri-party agents are involved in the selection of securities to be posted as collateral; the selection of any new collateral during the life span of the repo; and the issuing of various settlement instructions to a CSD. Richard Comotto, *A Primer on Tri-party Repo* (ICMA) (<http://www.icmagroup.org/executive-education/courses/the-icma-guide-to-best-practice-in-the-european-repo-market/a-primer-on-tri-party-repo/>). In Europe tri-party repo constitutes about 10% of the market; whereas in the US it constitutes around 60% of the market: European Parliament, *supra* n 48, fn 18 (citing ICMA’s semi-annual European repo market survey). The difference “reflects in part the fact that tri-party repo services have been much cheaper in the US, because of greater economies of scale and a much simpler (if riskier) infrastructure”: Comotto, *ibid*. In the US, significant strides have been made to remedy some of the riskier aspects of the US tri-party market which are associated with the so-called “unwind”. See, “US Reform of the Unwind” (Federal Reserve Bank of NY, 24 June, 2015 (Update on Tri-Party Repo Infrastructure Reform (https://www.newyorkfed.org/newsevents/statements/2015/0624_2015.html)).

⁵⁶ Valderrama, *supra* n 32.

⁵⁷ *Supra* n 45, p 4 (and sources cited therein).

⁵⁸ M Singh, “Velocity of Pledged Collateral: Analysis and Implications” (2011, IMF Working Paper No. 11/256) 1, p 6.

(after including leverage in these strategies) in 2007 and 2010,⁵⁹ while in the FCA’s 2015 Hedge Fund Survey, it was found that “[r]epo and reverse repo transactions dominate financial borrowings, and remain the preferred tool by Macro funds.”⁶⁰

There are many motivations for transactions of this nature, but all are rooted in ex ante self-interest. That is to say, both parties—and, indeed, all other parties in subsequent transactions based on the initial agreement—envisage some form of commercial benefit arising from the arrangement, such as liquidity management, hedging, or benefits from short sales. More broadly, such transactions are widely seen as helping to promote market completeness, through improvements in price discovery and enhancements to market liquidity—and, in doing so, to help facilitate financial markets’ broader task of channelling funds from savers to borrowers. Yet while it is widely believed that repo markets offer a number of broader economic and social benefits, there are increasing regulatory concerns about the fragility or otherwise of repo markets and their ability to disrupt intermediation chains within the shadow banking system more generally. The next section traces these concerns by identifying key vulnerabilities within repo markets which indicate that hedge funds have the capacity to trigger and subsequently transmit systemic risk notwithstanding the fact they are different from banks. In order to explore these ideas, I begin by addressing financial stability and systemic risk in general terms before moving on to consider ways in which the involvement of hedge funds in repo transactions can give rise to repo runs that adversely affect the workings of the financial system.

D. REGULATORY CONCERNS

⁵⁹ *Ibid.*,

⁶⁰ FCA, *Hedge Fund Survey* (Nov, 2015), p 6.

D.1. Financial Stability and Systemic Risk

A central concern—if not *the* central concern—for financial regulators the world over is to ensure financial stability. The significance of this policy goal is underscored by the impact that the GFC has had on both global financial markets, and on the “real” economics of jurisdictions most exposed to it. Crockett defines financial stability as a state of affairs where:⁶¹

“the capacity of financial institutions and markets to efficiently mobilise savings, provide liquidity and allocate investment is maintained unimpaired [and where there is an] absence of strains that curtail the intermediation function of the financial system, such as the failure of the banking payments system.”

According to Crockett:⁶²

“[f]inancial stability can be consistent with the failure of individual institutions, and with fluctuations of prices in markets for financial assets. The failure of individual institutions is of concern only if it leads ... to an impairment of the basic intermediation role of the financial system at large. And asset price volatility is of concern only if it leads to a severe misallocation of capital.”

⁶¹ Andrew Crockett, “Strengthening Financial Stability” in Philip Booth and David Currie (eds) *The Regulation of Financial Markets* (Institute of Economic Affairs, 2003) p 44 <https://iea.org.uk/wp-content/uploads/2016/07/upldbook214pdf.pdf>.

⁶² *Ibid.*

Most commentators conceptualise the goal of financial stability in terms of the absence of financial crises. Howard Davies, the former Chairman of the UK's now defunct Financial Services Authority (FSA), defines a “financial crisis” as:⁶³

“a situation in which confidence in financial institutions or markets generally is lost, or where there is an actual or a serious risk of collapse in the whole financial system *which would generate collateral damage even for savers and investors who are not directly linked to the institution or institutions that are the source of the crisis.*”

Recent events demonstrate that even largely stable financial centres such as the US and the EU remain vulnerable to “financial stability events”, and that the cost of these “systemic failures” are significant not only in terms of restoring the financial system to good health, but also in terms of lost output, higher unemployment, and social dislocation in the countries affected.

D.2. Hedge Funds and “Repo Runs”—Triggering and Transmitting Systemic Risk

Orthodox economic thinking posits that systemic risk concerns do not typically extend beyond the realm of retail banking to other financial market players such as hedge funds.⁶⁴ What is more, it is generally accepted by regulators and academic commentators that—for a number of

⁶³ Howard Davies, “Managing Financial Crises” in Booth and Currie (eds), *ibid.*, p 26 (emphasis added).

⁶⁴ Indeed, some commentators even seek to draw a distinction between an “unsterilized” bank run (which is viewed as problematic, since it may be the source of systemic risk) and what is known as a “flight to quality” (which, despite inflicting losses on a weak deposit taking institution, serves the purpose of redistributing bank reserves to better quality institutions without causing any adverse knock on effects): Richard J Herring, Review of Richard S Dale, *International Banking Deregulation: The Great Banking Experiment* (Blackwell, 1992) in (1993) 48(4) *Journal of Finance* 1153, p 1154; George G Kaufman, “Bank Contagion: A Review of the Theory and Evidence” [1994] *Journal of Financial Services Research* 123, p 140-141; and Kevin Dowd “The Case For Financial Laissez-Faire” (1996) 106 (May) *The Economic Journal* 679, pp 682-683

reasons—many of the activities and characteristics of hedge funds are far removed from traditional conceptions of banking.⁶⁵ To begin with, unlike retail bank depositors who have a right to instant liquidity, hedge fund investors are prevented from withdrawing funds on demand as a result of the widespread use of redemption restrictions. Furthermore, ordinarily, hedge funds are less highly-leveraged than banks and typically hold positions which, it is claimed, can, if necessary, be unwound relatively easily in secondary markets. Finally, notwithstanding the existence of “fund of funds” hedge funds, hedge funds do not generally deal directly with retail investors. Accordingly, many of the features which have caused banks to be regarded as special (and thus require the use of liquidity and capital requirements and the provision of lender of last resort support (for banking entities) and deposit protection (for depositors)) do not apply to hedge funds.

However, notwithstanding the obvious differences between retail banks and hedge funds, and long-standing attempts by the hedge fund sector to deflect regulatory attention on this basis, regulators are increasingly targeting shadow banking activities in general, and repo transactions in particular. It is suggested here that hedge funds have the capacity to trigger and transmit systemic risk in two key ways. First, from within the shadow banking system itself—for example, in the form of a “run on repo”, which adversely affects not only those parties directly implicated, but spills over to other shadow banking entities which find it difficult to refinance (ie “rollover”) their short term positions. And, secondly, as a result of the adverse effects of a “repo run” on retail banks’ balance sheets⁶⁶—whether directly (ie following on from the provision by such banks of credit lines to hedge funds, or as a result of counterparty exposures), or indirectly (as a consequence of retail banks’ exposures to other shadow banking entities’ losses). In this

⁶⁵ See for example, the *Turner Review*, *supra* n 20, p 7.

⁶⁶ FSA, *Assessing The Possible Sources of Systemic Risk From Hedge Funds: A Report on the Findings of the FSA’s Hedge Fund Survey and Hedge Fund as Counterparty Survey* (Feb, 2012) p 3.

latter context, as we have already seen, because banks' liabilities are repayable on demand, and their assets are typically comparatively illiquid, banks are vulnerable to "runs"—which, in turn, can adversely affect other viable, but potentially illiquid banks. As a consequence of the complexities and interconnections evident in modern financial arrangements, disruptions within the financial system—whether originating and remaining within the shadow banking system, or, more worryingly, spilling over to the traditional banking system—are likely to result in a severe contraction in the provision of credit to borrowers and/or disruption to the payments system. In the event that socially desirable projects go unfunded, economic output and tax revenues are likely to fall, and unemployment and government borrowing to rise.⁶⁷

D.2.1. Systemic Risk: Within the Shadow Banking System

The use of collateralization in repo arrangements represents a routine and highly effective *ex ante* method by which a cash lender may protect itself. Consequently, in the vast majority of cases, both the cash lender and the cash borrower's interests will be fully aligned, and their respective concerns fully allayed, as a result of the collateralization and margining arrangements adopted under the repo agreement. This is particularly the case where the collateral used is highly liquid—eg government bonds.⁶⁸

However, the use of collateralization, haircuts on collateral, and margin calls are by no means a "fail-safe"; rather, under conditions of market stress, readjustments in collateral

⁶⁷ To the extent that bank-dependent borrowers cannot access alternative sources of funding, investment and economic activity will be curtailed until new relationships are formed and information recreated: John Kambhu, Til Schuermann, and Kevin J Stiroh, "Hedge Funds, Financial Intermediation and Systemic Risk" (2007) December *Economic Policy Review* 1, pp 7-9.

⁶⁸ It is estimated that around 80% of collateral in the European repo market is government securities: ICMA <http://www.icmagroup.org/Regulatory-Policy-and-Market-Practice/short-term-markets/Repo-Markets/frequently-asked-questions-on-repo/34-was-a-run-on-repo-the-cause-of-the-financial-crisis-in-2007/>.

arrangements have the capacity to trigger “bank-like” runs—so-called “repo runs”—which disrupt the smooth operation of the shadow banking system, and, potentially, the traditional banking sector, too. The concept of a “repo run” originating outside the traditional banking sector is rooted in the identification of a key vulnerability which underpins the intermediation arrangement with which repos are typically associated: namely, that short term collateralized loans are liable to be highly unstable during times of market stress.⁶⁹ As a result, any threat to the collateral backing the expansion in credit volume created by the repo, or, indeed, to the solvency of either counterparty, can help to generate—and, through interconnecting chains of complex and potentially opaque transactions, augment and subsequently transmit—systemic risk.⁷⁰

Even where the collateralized assets backing a repo are widely regarded as being of high quality, shock events can still adversely affect asset prices and reduce the value of the posted collateral. Unlike the assets traded in many other markets, the fundamental value of a financial instrument is difficult to determine. This is because the value of a financial instrument today depends, *inter alia*, upon its expected *future* value.⁷¹ In determining where and how much to invest, investors may be influenced by data that is unrelated to the future value of an asset. An example of such “noise trading” occurs where investors, buoyed by a wave of market sentiment, continue to buy shares even after the market has experienced sustained price rises and over-shot its equilibrium price,⁷² or continue to sell unaware that the bottom of the market has already been reached. Furthermore, the means by which equilibrium prices are maintained in the financial

⁶⁹ Antoine Martin, David Skeie, and Ernst-Ludwig von Thadden, “Repo Runs” (2014) 27(4) *The Review of Financial Studies* 957; Gorton and Metrick, *supra* n 6; Adam Copeland, Antoine Martin, and Michael Walker, “The Tri-party Repo Market Before the 2010 Reforms” (2010) *Federal Reserve Bank of New York* (Staff Report No 477).

⁷⁰ ESMA, *supra* n 32.

⁷¹ Crockett, *supra*, n 61, p 49; and Kern Alexander, Rahule Dhumale, and John Eatwell, *Global Governance of Financial Systems* (OUP, 2006) p 253.

⁷² For example, in relation to dot-com stock.

sector operates in a way that is significantly different from other sectors of the economy.⁷³

Somewhat presciently, as Crockett explains, as long ago as 2003:⁷⁴

[i]n the case of credit ... an expansion in supply can, for a time, strengthen economic activity and boost asset prices—and, by improving the balance sheet position of both borrowers and lenders, it can sustain further increases in the supply of credit. Excess capacity and risk can build up unnoticed These problems are exacerbated by the fact that the leverage in financial intermediation can give rise to fragile balance sheets structures. The sudden and sometimes indiscriminate retrenchment of suppliers of funds can cause institutions and markets to be starved of liquidity, intensifying price declines and impairing the functioning of markets.

Shocks which adversely affect the value of repo collateral can cause cash lenders to issue margin calls on existing repos, or to increase haircuts on new repo agreements. The upshot of such adjustments would be to cause leveraged hedge funds to provide more assets to cover any “calls,” and sell more of their assets to generate much needed liquidity. In all likelihood, however, asset sales by hedge funds would increase the risk of more widespread panic-driven “fire-sales”. In such circumstances, assets would “trade at prices far below value in best use, causing severe losses to [hedge fund] sellers.”⁷⁵ Furthermore, increasing the supply of a collateralized asset at a critical time, and thus potentially aggravating price falls, could trigger a self-reinforcing downwards spiral—a so-called “death spiral”—and set in motion yet further margin calls⁷⁶ and more extreme haircuts.⁷⁷ More generally, where other financial institutions hold similar assets classes, and are required to “mark them to market”, additional downward

⁷³ Crockett, *supra*, n 61, p 50.

⁷⁴ *Ibid.*

⁷⁵ Andrei Shleifer and Robert Vishny, “Fire Sales in Finance and Macroeconomics” (2011) 25 *Journal of Economic Perspectives* 29, p 30.

⁷⁶ “[L]enders will increase the margins they require from borrowers if they anticipate having to seize collateral and sell it in a disorderly fashion”: Martin Oehmke, “Liquidating Illiquid Collateral” (2014) 149 *Journal of Economic Theory* 183, p.184.

⁷⁷ Gorton and Metrick, *supra* n 6.

pressure is likely to be exerted on the market price of the assets in question. Any consequent unwillingness amongst other market participants to absorb the risks associated with buying and retaining such assets would, in turn, reduce the availability of reliable prices for collateral valuation and serve to exacerbate price falls. In the face of concerns about the ongoing quality of certain types of collateral (and counterparty credit risk)—as happened at the onset of the GFC—cash lenders would be incentivized to sever credit lines and hoard liquidity, with the result that hedge funds would encounter difficulties in “rolling over” their short-term borrowing, notwithstanding a willingness to collateralize it. Starved of liquidity, the effect in the shadow banking sector would resemble a “run” in the traditional banking sector—but without the “back stop” of official liquidity support. Added pressures would be exerted where hedge funds allowed their posted collateral to be rehypothecated, such that their prime broker could repledge the collateral in a number of different repo transactions.⁷⁸ Collateral “velocity” or “churn” facilitates price discovery and also leverage, but where this leverage is acquired in complex and opaque ways it could also render the underlying collateral highly sensitive to price declines.⁷⁹ What is more, any uncertainty over the ownership of the collateral rehypothecated could intensify price declines, as hedge fund borrowers sought to adjust and protect their positions.

All of the above problems are compounded where the assets that are subject to higher haircuts or additional margin calls are relatively illiquid and/or difficult to value. According to Valukas, “[i]lliquid collateral requires longer time periods for sale at more uncertain prices, with time periods and prices dependent on the type of collateral, the amount of collateral to sell and prevailing market conditions”.⁸⁰ Since illiquid instruments are infrequently traded and have no

⁷⁸ Lutrell, David, Rosenblum, Harvey, and Thies, Jackson, “Understanding the Risks Inherent in Shadow Banking” (2012) *Federal Reserve Bank of Dallas* (Staff Paper No 18) p 35; and, generally, M Singh, *supra* n 58.

⁷⁹ Lutrell *et al*, *ibid*.

⁸⁰ Cited in Oehmke, *supra* n 76, p 184.

public screen price, the fact of selling such instruments is almost certain to adversely affect their price. In potentially febrile markets, this would further accentuate ongoing uncertainty with regard to asset prices. Furthermore, leverage—which is a traditional hallmark of much hedge fund activity—would have the capacity to amplify such problems, by making it even more difficult for hedge funds to fund their positions and rollover their debt.

Similar problems also arise where doubts surface with regard to the actual credit-worthiness of a hedge fund as a counterparty (and its ability to conclude the repo), rather than in relation to the quality of the fund’s collateral. In such circumstances, cash lenders are likely to be tempted to “rush to the exits” to liquidate the collateral that has been “posted” in advance of other lenders motivated to do exactly the same thing.⁸¹ As with hedge funds selling assets to generate liquidity, a glut of such collateral would depress prices further and, in all likelihood, exert self-reinforcing downward pressure on asset prices. Again, where the collateral held by lenders is illiquid/or hard to value—or where a leveraged hedge fund (or group of funds) defaults “while holding positions that are large relative to the markets in which they have invested”—lenders seeking to offload such assets are more likely to hasten price declines by virtue of their attempts to sell.⁸² In turn, this increases the prospect of cash lending counterparties—some of which may be systemically important entities in their own right, or linked to systemically important institutions—sustaining heavy losses.⁸³ While, ideally, lenders would prefer to unwind their positions slowly over time, in practice this is likely to prove extremely difficult for two main reasons: first, lending counterparties to hedge funds are unlikely to be able to unwind positions on a gradual basis because of the existence of balance sheet constraints on, for

⁸¹ “Since most nonbank financial institutions rely heavily on repo financing, understanding the dynamics of liquidations of repo collateral is critical in gauging the impact and repercussions of defaults by financial institutions.” Oehmke, *ibid.*

⁸² *Ibid.*

⁸³ *Ibid.*

example, capital, equity, or leverage;⁸⁴ and, secondly, competition among holders of illiquid collateral is likely to incentivise such lenders to sell the illiquid assets quickly. As Oehmke points out “[w]hen the demand curve for the collateral asset is downward-sloping, competing sellers have an incentive to sell before other sellers drive down the price [even further].”⁸⁵ Delays by lenders may not only result in breaches of their balance sheet constraints, but may also result in lower asset recovery prices, as competitors seek to liquidate assets in advance of “crowded trades”, where multiple sellers rush to the exit at the same time.⁸⁶

At a general level, all of these market adjustments—both in terms of adjustments to collateral (eg increased margin calls and more extreme haircuts) and adjustments to accommodate increased counterparty risk (eg the withdrawal of credit lines and the need to sell collateral swiftly where the credit-worthiness of a hedge fund counterparty becomes suspect)—are likely to be motivated by factors that seem individually rational to the parties directly affected. Nevertheless, there is a clear risk that, at a collective level, such individual attempts at self-preservation may generate a form of collective folly which serves merely to exacerbate the original problem. The result of this disjuncture between private and public interests is an outcome which may render the entire shadow banking network vulnerable to shocks.⁸⁷ That is to say, while losses would initially be borne by a hedge fund (or group of funds), and any adversely affected counterparties, in all likelihood these losses would not lie where they fell, but would spill over—either directly or indirectly—to other interconnected entities within the shadow banking system, or in time to the traditional banking sector.

⁸⁴ *Ibid.*, at p 188.

⁸⁵ *Ibid.*

⁸⁶ *Ibid.*, at p 185.

⁸⁷ “[T]he creditor structure in repo lending involves a fundamental tradeoff between risk sharing and inefficient ‘rushing to the exits’ by competing sellers of collateral after a default.” *Ibid.*, p 184.

D.2.2. Systemic Risk: Within the Traditional Banking System

In addition to the transmission of systemic risk within the shadow banking sector through their involvement in repo runs, hedge funds are also capable of transmitting systemic risk as a result of repo arrangements which adversely impact on banks' balance sheets. This may arise from banks' *direct* or *indirect* exposure to the collapsed hedge fund (or group of funds), or asset class in which a fund (or group of funds) is highly active, the value of which has significantly deteriorated.⁸⁸

Retail banks may be directly exposed to hedge fund repo operations through, for example, the provision of direct credit lines for liquidity purposes, or as a result of counterparty exposures in either exchange-based or over-the-counter (OTC) trades.⁸⁹ Shocks in relation to any of these trades could cause banks to sustain heavy losses and set in motion a domino effect, such that other systemically important financial institutions are in turn affected through “asset price adjustments, liquidity strains, and increased market uncertainty.”⁹⁰ Where vulnerable institutions are deemed “too big to fail”, costly public sector bailouts could ensue.

⁸⁸ See, Kambhu *et al.*, *supra* n 67, pp 7-9.

⁸⁹ ICMA: “[S]ince the crisis ... repo has reportedly been attracting smaller [retail] banks” (<<http://www.icmagroup.org/Regulatory-Policy-and-Market-Practice/short-term-markets/Repo-Markets/frequently-asked-questions-on-repo/5-who-are-the-main-users-of-the-repo-market/>>). Furthermore, the collapse of the Long Term Capital Management (LTCM) Hedge Fund in the summer of 1998 and the timely intervention of the Federal Reserve Bank of New York illustrates all too clearly the problems which arise when a failed hedge fund has an adverse effect on otherwise healthy institutions, in particular banks, many of which had made loans to LTCM and thus enabled it to take on highly leveraged positions. Although the exact origins of the LTCM fund debacle have been variously described, the failure of the fund's quantitative models to cope with irregular market movements caused it to sustain heavy losses—a problem that was compounded by the fund's unusually high degree of leverage. The Federal Reserve orchestrated a \$3.6 billion private sector recapitalisation of LTCM on the basis that a forced liquidation could adversely affect market prices and induce heavy losses for those both directly and indirectly concerned—many of whom were major Wall Street Investment Banks.

⁹⁰ Chairman Ben S. Bernanke, *Hedge Funds and Systemic Risk*, (Speech at the Federal Reserve Bank of Atlanta's 2006 Financial Markets Conference, Sea Island, Georgia May 16, 2006).

Retail banks are, however, more likely to be *indirectly* exposed to shocks which emanate from hedge fund activities in repo markets. For example, investment banks acting as prime brokers, typically execute trades, hold hedge fund assets on margin account, grant credit, and provide risk management, clearance and settlement services on behalf of hedge funds. To the extent that an investment bank, or other exposed counterparty to an ailing fund, is unable to fulfil its commitments to a retail bank, the latter is *indirectly* exposed to risks originating in, and transmitted by, the hedge fund sector.

D.3. Counterparty Risk Controls and the Limits of Market Discipline

It might, of course, be countered that the risk of a repo run as outlined above has been overstated, and that post-crisis regulation—both direct regulation targeted at hedge funds themselves, but also, and more significantly for the purposes of this section, indirect regulation aimed at hedge fund counterparties and improving market transparency (such as the recent Securities Financing Transactions Regulation (“SFTR”))—already operates as a sufficient constraint to mitigate any putative remaining systemic risks. In relation to reliance upon self-help market mechanisms, the argument is that cash lending counterparties can credibly mitigate any remaining exposure to counterparty risk by deploying conventional counterparty risk controls, such as limiting agreements to entities with good credit ratings, calculating and monitoring credit exposures, setting and adhering to risk limits, and so on. In essence, such self-help *ex ante* controls are strongly associated with the benefits derived from market discipline, where well-managed hedge funds are rewarded with more business, and those that are poorly-managed are

penalized.⁹¹ In this way, the interplay of market forces is said to eliminate—or at least reduce—the type of suboptimal behaviour that can give rise to systemic risk.⁹² The significance of identifying and assessing counterparty risk—rather than simply relying upon collateralization arrangements—is explained by Comotto:⁹³

“[c]areful selection of counterparties is vital to the performance of repo. This is because the value of even the best assets will fluctuate and the liquidation of collateral in response to an event of default can be delayed by unexpected operational and legal problems. Moreover, collateralisation does not change the probability of default of a counterparty, so collateral taken from risky counterparties is likely to be tested by a default and may turn out to be worth less than expected. *Consequently, collateral should be treated only as insurance against the default of the seller, not as a substitute for his credit risk. This means that the primary exposure in a repo remains counterparty credit risk.*

Accordingly, it is widely recognised that collateralization is, *ipso facto*, an insufficient basis upon which to ensure that repo transactions are privately beneficial while, at the same time, promoting the public good.

Yet reliance upon existing direct and indirect regulation as supplemented by market discipline in the form of private counterparty risk controls is unlikely to prove an especially robust method of ensuring that private and public interests are sufficiently aligned. The feasibility of this type of market discipline is premised upon the existence of standard neo-classical assumptions about economically rational motivation, competitive market conditions,

⁹¹ Hossein Nabilou and Alessio M Paces, “The Hedge Fund Regulation Dilemma: Direct vs Indirect Regulation” (2015) 6 *William & Mary Business Law Review* 183, p 206.

⁹² “[S]ystemic risk . . . is by definition an externality that internal procedures do not encompass and is not accounted for in the marketplace.” Alexander *et al*, *supra* n 71, p 260.

⁹³ ICMA, *supra* n 89, “Question 15: Is repo riskless?”.

and the availability of full information and the absence of transaction costs.⁹⁴ Although it is widely accepted—even within the hedge fund sector itself—that various post-GFC regulatory measures have helped to remedy some of these problems, significant market failures are nevertheless sure to remain.

In large measure, these failures arise because of the highly complex, opaque, and largely bespoke nature of many of the trades that are undertaken, as well as the speed with which market positions can change.⁹⁵ For example, prime broker counterparties—as well as other entities that “service” hedge funds—will continue to find it difficult to assess hedge fund-trading strategies and asset valuations, especially in relation to hard-to-value illiquid instruments. These difficulties exist not only in relation to making adjustments to haircuts and subsequent margins calls, but also in relation to assessing counterparty risk more generally. Insofar as hedge fund repo business becomes an ever-increasing source of revenue for counterparties, there will exist an incentive—at least in the short run—in taking a more relaxed approach to assessing counterparty risk. In other words, reliance upon counterparties, and other credit providers, to control hedge funds’ leverage and risk might well be misplaced if these entities are first to benefit from a fund’s high levels of leverage and potentially overly risky—albeit profitable—trading strategies.⁹⁶

Furthermore, to the extent that hedge funds receive repo financing from a number of different counterparties, collective action problems are almost certain to arise (especially where

⁹⁴ See John Parkinson, *Corporate Power and Responsibility* (OUP 1993) p 132. See also, Timothy F Geithner, “Hedge Funds and Derivatives and the Implications for the Financial System” (Speech: 15th September, 2006) (www.newyorkfed.org/newsevents/speeches/2006/gei060914) (“the effectiveness of market discipline in constraining the risk-taking behaviour of firms may, however, be compromised by the presence of market failures.”) (p 4).

⁹⁵ FSB, *Securities Lending and Repos: Market Overview and Financial Stability Issues* (Interim Report of the FSB Workstream on Securities Lending and Repos, 27 April 2012) (p 14).

⁹⁶ Paolo Robotti, “Hedge Funds and Financial Stability: Explaining the Debate at the Financial Stability Forum” (May 2006) (<http://www.lse.ac.uk/fmg/workingPapers/discussionPapers/fmgdps/dp560.pdf>) p 23.

individual counterparty exposure to the fund is relatively small). In such circumstances, counterparties will prefer that the full cost of any due diligence and risk assessment of a fund's risk profile be borne by others rather than themselves. That is to say, counterparties have an incentive to “free ride” on the due diligence and risk monitoring efforts of others. The end result is a *general* tendency for firms to economise on counterparty risk assessment and an overall erosion of the disciplinary effects of private monitoring. This collective underinsurance in relation to risk assessment and underinvestment in the infrastructure and policies that help to promote financial stability, mean that it is likely—and perhaps even inevitable—that some hedge fund repo risks will continue to be mispriced. And in turn, this mispricing has potentially serious implications for the stability of financial markets more generally.

Accordingly, the continuing presence of serious informational problems of the type mentioned above, as well as the limitations of economically rational decision-making, makes it unlikely that the operation of market constraints in the form of counterparty risk controls over the hedge fund sector will operate in such a way as to ensure that private interests are fully, or even adequately, aligned with the public good. Naturally, it does not follow that mandatory regulatory measures addressing such problems will necessarily lead to a more socially desirable state of affairs than the status quo, since the costs of formal regulatory intervention could turn out to be greater than any ensuing benefits.⁹⁷ However, in the absence of reliable empirical evidence which demonstrates that this is the case (evidence which is unlikely to be forthcoming), the argument in favour of mandatory regulatory intervention is at least as strong as that in support of the current state of affairs.

⁹⁷ The costs of regulatory intervention include, but are not limited to, moral hazard problems, enforcement problems, overregulation and scope for regulatory capture.

E. CONCLUSION

Today, repo transactions occupy a central place in, and are widely seen as representing an indispensable facet of, the modern global shadow banking system. Here, the claim is not that any given repo transaction inevitably generates economic benefits, but that fully functioning repo markets have a *general* tendency to do so. Specifically, repo markets are said to play an important role in helping to distribute government securities, and to facilitate the mobilization of “wholesale capital funding required by retail banks and other lenders financing the real economy.”⁹⁸ More significantly for present purposes, *bilateral* repo markets have become a primary source of funding for leveraged entities, such as hedge funds.⁹⁹ As the profile of the shadow banking sector has grown, regulators have now begun to turn their attention to the role of hedge funds in the context of so-called “repo runs”. Although concerns about “runs” have long occupied the minds of central bankers and regulators the world over, until relatively recently it was widely assumed that such events were confined to the traditional banking sector. Yet, as the material presented above has sought to demonstrate, hedge fund involvement in repo markets can give rise to situations where private and public interests are seriously misaligned—in particular, where, in the face of a sudden collapse of asset prices and the collateral backing repo transactions, hedge funds’ consequent search for liquidity serves to trigger and subsequently transmit systemic risk at significant public cost. In developing these ideas, the chapter has sought to challenge those claims which suggest that hedge funds are not a serious threat to financial stability, and to take issue with a body of opinion which seeks to downplay or even dismiss

⁹⁸ Comotto, *supra* n 1.

⁹⁹ “Repo is particularly attractive to institutions that are already highly leveraged (eg securities firms and hedge funds), who would otherwise find it expensive and/or difficult to borrow additional funds in unsecured markets. Indeed, repo is the primary source of funding for such institutions.” Euroclear, *Understanding Repo And The Repo Markets* (March 2009) p 15.

concerns—both in the context of repo and, indeed, more generally—relating to hedge funds’ systemic capabilities. Significantly, the validity or otherwise of these claims has an important bearing on establishing a case for additional regulatory scrutiny, extending beyond current regulatory measures directed at the hedge fund sector more generally.

Unsurprisingly, the prospect of any additional regulatory oversight over and above the status quo, is not one that the hedge fund industry is likely to welcome with any degree of alacrity. Although much of the industry’s anti-regulation posturing can be attributed to the sector’s long-standing contrarian tradition towards both financial markets and financial market regulators, in more recent times it has been shaped by creation of narrative about the benign role of hedge funds during the crisis and thereafter. In this context, apologists are quick to claim that notwithstanding the fact that a number of hedge fund were engulfed by the crisis,¹⁰⁰ none involved the provision of public support, and few, if any, of these failures actually caused collateral damage to the broader financial system. This narrative has been further bolstered by the findings of a number of influential post-GFC reports which largely exonerated hedge funds as a major cause of the market disruption,¹⁰¹ in turn, indirectly helping to propagate the myth that hedge funds were in fact victims of the crisis—more “sinned against than sinning”.

¹⁰⁰ For example, two Bear Stearns hedge funds collapsed in the summer of 2007, at in and around the same time that London-based Cheyne Capital Management LLP announced it was writing off €400 million from a hedge fund that had investments in subprimemortgage-backed securities: Robert Stowe England, “Anatomy of a Meltdown” (2007) 67(13) *Mortgage Banking*, 38–53. In August 2007, the largest bank in France, BNP Paribas SA, froze redemptions from three funds with investments in US subprime-mortgage-backed securities rated AAA and AA.” *Ibid*. Furthermore, in March 2008, Citigroup injected \$1 billion into a number of is hedge funds that were hemorrhaging cash. Within six months, US taxpayers injected billions of dollars into Citigroup to prevent a systemic crisis: American Federation of Labor and Congress of Industrial Organizations (AFL-CIO) Response to SEC’s Proposed rule on *Reporting by Investment Advisers to Private Funds and Certain Commodity Pool Operators and Commodity Trading Advisors on Form PF* (<https://www.sec.gov/comments/s7-05-11/s70511-28.pdf>) (at p 3).

¹⁰¹ See, for example, the Turner Review (*supra* n 20) and the *EU High Level Group on Financial Supervision* (February 2009) (the so-called “de Larosire Report”) which both suggested that in so far as hedge funds were implicated in the crisis, they did not help to cause it.

However, *looking back* to hedge fund involvement in the events of the GFC and its aftermath, this narrative turns out to be a selective and tendentious reading of recent financial history. Leaving aside the fate of *individual* hedge funds during the market turmoil—and it is, of course, noteworthy that the implosion of two Bear Stearns-managed hedge funds in July 2007 were harbingers of the disruption that was eventually to ensue—the industry as a whole has routinely failed to face up fully to the implications of its involvement in modern, interdependent, and highly interconnected global financial markets. In this respect, not only did the hedge fund sector benefit from the privatization of financial gains in the run up to and during the crisis, but it also benefited from the more general socialization of losses—in the forms of bailouts and de facto nationalisations of a range of financial entities—which fostered trading opportunities that otherwise would not have been available. Moreover, it is argued that the socialization of these losses helped to disguise any collateral damage hedge fund activity might otherwise have caused the financial system more generally had public support not been forthcoming. Accordingly, claims to special immunity from further regulatory oversight based on the fact that no individual hedge fund received public support directly are, it is suggested, neither “here nor there”—especially in view of the fact that the sector as a whole benefited *indirectly* from the support that was provided, much of which was necessary in order to stave off even wider contagion.

Looking forward, the GFC has irrevocably altered the terms of debate upon which regulators and policy makers’ approach the regulation of financial markets and institutions—and, rightly so, given evidence of the existence of endemic market failures across virtually the whole financial services spectrum. If the experience of the crisis has taught us anything, it is that:

- financial markets are not as robust as politicians, market players, and regulators had previously assumed;

- financial markets are much more interconnected than at any previous stage in history, spilling over from one interconnected sub-sector to another, and, indeed, from one jurisdiction to another;
- problems in financial markets impact adversely on the “real” economy through the loss of jobs and the risk of more general economic stagnation; and
- in the event of large-scale systemic collapses, and irrespective of how these are triggered and transmitted, politicians and policy makers have little choice other than to deploy taxpayer money to bail-out ailing institutions (albeit that there remains scope for debate with regard to when, the extent to which, such bail-outs should occur).

In view of these considerations, *all* private institutions—hedge funds included—with the capacity to trigger and transmit risks which have potentially damaging public consequences, merit ever-closer regulatory scrutiny.

Admittedly, this may only provide a context within which additional regulatory scrutiny is *prima facie* justified, rather than inform us as to which measures are in fact appropriate. Nevertheless, as an important facet of shadow banking in general and securities financing transactions in particular, regulators now have repo markets and repo participants firmly in their “gun sights”. Furthermore, notwithstanding the hedge fund sector’s traditional recalcitrance in the face of ever greater regulatory intrusion, funds must now face up to the fact that they deserve to get caught up in the resulting “crossfire”.

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