

Hedge Fund Investment Due Diligence Report Graham Global Investment Fund Ltd. – Discretionary 6V Portfolio Graham Global Investment Fund II Ltd. – Discretionary 6V Portfolio

October 2011

Operations Due Diligence Report provided under separate cover.

Firm Name:	Graham Capital Management, L.P.			
Fund Name:	Graham Global Investment Fund Ltd. – Discretionary 6V Portfolio			
	Graham Global Investment Fund II Ltd. – Discretionary 6V Portfolio			
Fund/Strategy Assets:	\$1.7B			
Style:	Global Macro		Location:	Rowayton, CT
Review Date:	October 2011		Reviewer:	

# Hedge Fund Investment Due Diligence Report

*People and Organization:* Graham Capital Management, L.P. ("GCM," "Graham" or "the manager") is a Connecticut-based asset management company founded in 1994 by Kenneth Tropin. GCM is woned by KGT Investment Partners, which is in turn would owned by Mr. Tropin. GCM began as a systematic global macro trend-following investment firm but expanded in 1999 to include discretionary global macro trading strategies. The discretionary macro traders exclusively managed Mr. Tropin's proprietary capital until 2004, when the firm launched the Discretionary-6V fund ("D6V" or "the fund") and took external capital. Today, the firm manages \$8.6B across systematic and discretionary strategies. The discretionary macro strategies (D6V + D12V) have \$1.7B in assets under management.

*Investment Strategy and Process:* D6V combines 14 of GCM's most successful discretionary trading strategies into a single fund. D6V's underlying component strategies trade all major liquid asset classes globally: rates, credit, commodities, currencies, and equity index markets. Trading strategies vary from relative value-focused to directionally-focused, and time periods vary from short-term (intra-day) to long-term (3 month+). The key to the diversification of D6V is the idiosyncratic nature of each of the 14 underlying strategies' return streams.

*Performance:* The D6V Fund aims to maximize Sharpe ratio with a target volatility of 5-7%. The D6V Fund has generated a 7.12% return with a standard deviation of 5.64% since inception, for a Sharpe ratio of 0.79 over the period June 2004 to August 2011.

*Risk Management:* An eight-person Risk Committee meets daily to review position-level details, current market conditions, performance by strategy, and firm-wide liquidity and counterparty risk. The chief risk officer's four-person risk team monitors daily P&L of the 14 portfolio managers as well as the 10 "farm team" proprietary capital portfolio managers. Each portfolio manager is subject to strict position and concentration limits. Similarly to other global macro managers, the firm applies a stop-loss risk management framework. Portfolio managers are required to reduce risk by 50% as they experience a peak-to-through rolling monthly drawdown in excess of 5%.

*Operations Analysis:* Graham's team of 93 non-investment professionals effectively manages all trading and business operations. The manager has institutional-quality processes and controls related to trade confirmation and reconciliation. The firm is registered with the CFTC and has developed robust compliance and risk monitoring procedures. The independent administrator, where has a dedicated team of 25 to ensure focus on the valuation and maintenance of the official books and records of the firm. No material departures from best practices were identified during Cliffwater's operational due diligence.

# Investment Terms:

D6V charges a 2% management fee and a 20% performance fee subject to a high-water mark. These fees are in line with hedge fund standards and lower than Graham's multi-manager global macro peers. Redemption terms are quarterly with 30-days' notice. There are no lock-ups, hurdle rate, gates or side-pockets. No key man provisions are provided by the fund.

## Recommendation

D6V is recommended for investment in the Global Macro category.

This report reflects information only through the date hereof. Our due diligence and reporting rely upon the accuracy and completeness of financial information (which may or may not be audited by the fund manager) and other information publicly available or provided to us by the fund manager, its professional staff, and through other references we have contacted. We have not conducted an independent verification of the information provided other than as described in this report. Our conclusions do not reflect an audit of the investment nor should they be construed as providing legal advice. Past performance does not guarantee future performance. The information contained herein is confidential commercial or financial information, the disclosure of which would cause substantial competitive harm to you, Cliffwater LLC, or the person or entity from whom the information was obtained, and may be protected from disclosure by applicable law.

# People and Organization

GCM was founded by Kenneth G. Tropin in 1994 as a proprietary trading company. Trading started in 1994 with \$29mm: a \$25mm seed investment from Paul Tudor Jones' Tudor BVI Fund and a \$4mm investment from Mr. Tropin. Originally set up to run systematic macro trend-following strategies, GCM hired discretionary macro traders in 1998 and offered a dedicated discretionary macro vehicle in 2004. Over time, the firm's quantitative and discretionary strategies have evolved to incorporate multiple time frames and trading methodologies. Today, GCM focuses on macro-oriented quantitative and discretionary investment strategies in the global fixed income, currency, commodity and equity markets. The firm has also created blended portfolios that include a combination of quantitative and discretionary strategies. The firm manages \$8.6B across systematic and discretionary macro products.

As the seed investor, Tudor BVI received a minority ownership stake in the firm at inception in 1994. Tudor BVI maintained a direct investment in Graham until 2003, when Mr. Tropin

business and operational professionals and traders share in the overall firm economics.

GCM is managed by Mr. Tropin with the assistance of an experienced team of senior investment and business professionals. The investment side is overseen by Pablo Calderini, the Chief Investment Officer, William Pertusi, the Chief Risk Officer, Barry Fox, the Director of Research and Thomas P. Schneider, the Chief Trader. Meanwhile, the business and operations functions are managed by Paul Sedlack, the Chief Executive Officer and Robert Murray, the Chief Operating Officer.

Kenneth G. Tropin is Chairman, Founder and a Principal of Graham Capital Management. Mr. Tropin's current responsibilities at Graham include oversight of the Firm's quantitative and discretionary portfolio strategies, Chairman of the Firm's Executive and Investment Committees, and Senior Member of the Firm's Risk and Compliance Committees. Additionally, Mr. Tropin is responsible for managing the strategic investment of the Firm's proprietary capital. Prior to founding Graham, Mr. Tropin spent 5 years (1989-1993) as President and Chief Executive Officer of John W. Henry & Company, Inc. and 8 years (1981-1989) as Senior Vice President and Director of Managed Futures at Dean Witter Reynolds. Mr. Tropin has also served as Chairman of the Managed Funds Association and its predecessor organization, which he was instrumental in founding during the 1980's.

Pablo Calderini is the Chief Investment Officer of GCM. Mr. Calderini works closely with the firm's Chairman in managing all aspects of the firm's discretionary trading business and is a member of the Executive, Investment, Risk, Research and Compliance Committees. Prior to joining GCM in August 2010, Mr. Calderini held positions of increasing responsibility at Deutsche Bank, most recently the Global Head of Equity Proprietary Trading. Mr. Calderini commenced his career at Deutsche Bank as Global Head of Emerging Markets and was instrumental in transforming Deutsche Bank into an industry leader in this area. During his tenure at Deutsche Bank, Mr. Calderini also helped manage several groups across the fixed income and equity platforms, including the Global Credit Derivatives Team. Prior to joining Deutsche Bank in 1997, Pablo held trading positions within derivatives and emerging markets at Lehman, JP Morgan and Cargill. Pablo received a B.A. in Economics from Universidad Nacional de Rosario and a Masters in Economics from Universidad del Cema, each in Argentina.

William G. Pertusi, CFA, is Chief Risk Officer and a Principal of GCM. Prior to joining GCM in April 2006, he was a Director and Risk Manager at SAC Capital Advisors, where he was responsible for working with portfolios across all product areas. From 1992 to 1998 and from 1999 to 2002, Mr. Pertusi was employed by Lehman Brothers in various roles: from 1999 to 2002, he was Senior Vice President and Global Head of Content (Internet e-Commerce) for Lehman; from 1995 to 1998, he ran the mortgage repo desk and acted as risk manager within the firm's Central Funding Unit globally; and from 1992 to 1995, he was Senior Vice President in mortgage sales and mortgage trading. In 1998, Mr. Pertusi worked at CSFB as a proprietary trader before returning to Lehman in 1999. Before joining Lehman in 1992, Mr. Pertusi worked in fixed income sales at First Boston and at Salomon Brothers, and before business school, he began his career at Merrill Lynch. Mr. Pertusi holds the Chartered Financial Analyst designation, is a member of the CFA Institute, is a member of the Professional Risk Managers' International Association and is a member

of the adjunct faculty in mathematics at Fairfield University. He earned a B.S. in Electrical Engineering from Lehigh University in 1983, an M.B.A. from Harvard University in 1987, and an M.S. in Mathematics from Fairfield University in 2006.

Barry S. Fox is Director of Research and a Principal of GCM. Mr. Fox joined GCM in August 2000 as a portfolio manager and developed several systematic trading programs. In May 2005, he joined GCM's Research Department, was appointed Co-Associate Director of Research in October 2005, and was appointed Director of Research in April 2007. From March 1991 until April 1998, Mr. Fox held positions of increasing responsibility at John W. Henry & Co. Inc., concluding as the Director of Research. From June 1989 until March 1991, Mr. Fox was a partner at Technical Trading Group in Farmingdale, New York. Mr. Fox received a B.S. in Business Administration from the State University of New York at Buffalo in 1986.

Thomas P. Schneider is an Executive Vice President, Chief Trader and a Principal of GCM. He is responsible for managing GCM's systematic futures and foreign exchange trading execution, including all core and short term quantitative trading strategies. He began managing the systematic trading group when he joined the firm in 1994 and has since formulated the trading department's policies and procedures. In addition, he is responsible for managing GCM's prime brokerage and execution relationships for all systematic trading. Prior to joining Graham, Mr. Schneider worked as Chief Trader for Chang Crowell Management Corporation, a commodity trading advisor in Norwalk, Connecticut, where he was responsible for streamlining operations for more efficient order execution. From 1985 through 1993, Mr. Schneider held positions of increasing responsibility at ELM Financial, Inc., a commodity trading advisor in Dallas, Texas, where he was ultimately Chief Trader, Vice President and Principal responsible for compliance, accounting, and 24 hour trading execution. Mr. Schneider graduated from the University of Notre Dame in 1983 with a B.B.A. in Finance and received his Executive M.B.A. from the University of Texas at Austin in 1997. Mr. Schneider has also been an NFA Arbitrator and has served on the MFA's Trading and Markets Committee.

Paul Sedlack is Chief Executive Officer, General Counsel and a Principal of GCM. He oversees the operation of the finance and administration departments and is also responsible for all legal and compliance matters. Mr. Sedlack began his career at the law firm of Coudert Brothers in New York in 1986 and was resident in Coudert's Singapore office from 1988 to 1989. Prior to joining GCM in June 1998, Mr. Sedlack was a Partner at the law firm of McDermott, Will & Emery in New York, focusing on securities and commodities laws pertaining to the investment management and related industries. Mr. Sedlack received a J.D. from Cornell Law School in 1986 and an M.B.A. in Finance in 1983 and B.S. in Engineering in 1982 from State University of New York at Buffalo.

Robert E. Murray is Chief Operating Officer and a Principal of GCM, responsible for the management and oversight of GCM's client services, systematic trading, risk management and technology efforts. Prior to joining GCM, from 1984 until June 2003, Mr. Murray held positions of increasing responsibility at various Morgan Stanley entities (and predecessors), including Managing Director of the Strategic Products Group, Chairman of Demeter Management Corporation (a commodity pool operator that grew to \$2.3 billion in assets under management during Mr. Murray's tenure) and Chairman of Morgan Stanley Futures & Currency Management Inc. (a commodity trading advisor). Mr. Murray was a member of the Board of Directors of the National Futures Association from 1999 to 2009 and served on its Finance, Membership and Appeals Committees. Mr. Murray has also served as Vice Chairman and a Director of the Board of the Managed Funds Association. Mr. Murray received a Bachelor's Degree in Finance from Geneseo State University in 1983.

GCM has numerous fund offerings but all fall within one of two categories: systematic global macro and discretionary global macro.<sup>1</sup> The various fund strategies are presented in Exhibit 1 below.

<sup>&</sup>lt;sup>1</sup> All of Graham's fund names reference their target volatility. For example, the K4D-10V targets an annualized volatility of 10%.

SYSTEN	IATIC GLOBAL STRATEGIES	MACRO	DISCRE	ETIONARY MA	CRO	DISCRETI	ONARY / SYS	
	Volatility			Volatility			Volatility	
Portfolio	Target	Inception	Portfolio	Target	Inception	Portfolio	Target	<b>Inception</b>
K4D 10V	8% - 12%	Feb-95	Discretionary 6V	5% - 7%	Sep-03	Proprietary Matrix 10V	8% -12%	Jul-99
K4D 15V	12% - 15%	Jan-01	Discretionary 12V	10% - 14%	Sep-03	Proprietary Matrix 20V	16% - 24%	Sep-06
K4D 20V	16% - 24%	Jan-98						

## Exhibit 1 Graham Capital Management, L.P. Investment Strategies

On the systematic side, GCM offers three versions of their flagship K4D fund. Targeting volatilities of 10%, 15%, or 20%, the three K4D funds (K4D-10V, K4D-15V, and K4D-20V) blend 40 different quantitative programs of various markets, time frames, and strategies. On the discretionary side, GCM's 14 top discretionary traders are combined into one portfolio offered at either 6% volatility or 12% volatility (Discretionary-6V Portfolio and the Discretionary-12V Portfolio). Finally, by capitalizing on the low correlation between the discretionary and systematic portfolios, GCM offers a blend of 50% discretionary and 50% systematic. The K4D fund and the D6V fund are combined to form the Proprietary Matrix funds (Proprietary Matrix-10V and the Proprietary Matrix-20V), which is in turn offered as a 10% volatility or 20% volatility vehicle.

In addition to the broadly diversified strategies presented above, in response to investor demand and to accommodate key portfolio managers, GCM has also offered several stand-alone strategies that are managed by a single portfolio manager or investment team. Currently, the Global Monetary Policy Fund, managed by Peter Jepsen, is the only stand-alone macro strategy offered by GCM. Previously, the Fed Policy Fund, managed by Fred Levin, was a stand-alone fund from March 1999 to December 2008. The two portfolio managers have a similar strategic focus on monetary policy but Mr. Levin focuses on US Fed monetary policy while Mr. Jepsen focuses more broadly on global monetary policy. Both funds remain important components of the D6V and Proprietary Matrix funds.

GCM's offering documents list a number of additional fund vehicles, most of which are managed accounts or private client offerings. For example, the Graham Alternative Investment Fund – Systematic Strategies fund (\$88mm) is a private client offering replica of K4D. The Graham Alternative Investment Fund – Blended Portfolio fund (\$450mm) is another private client offering. Nearly identical to the Proprietary Matrix 10V fund, it excludes portfolio managers that trade cash instruments. Finally, the Commodity Focus Fund (\$19mm) was a managed account created for one investor. The account was a subset of commodity-only discretionary and systematic strategies. The account was closed on September 30, 2011.

One of the factors that differentiates GCM from their large global macro peers is their use of proprietary capital to incubate new traders. The firm views their approximately\$1.4B in proprietary capital as "venture capital" to develop innovative quantitative and discretionary investment strategies. Therefore, before client money is invested with either a discretionary PM or a systematic model, it has been properly vetted using the firm's internal proprietary capital. Over 90% of GCM's \$1.4B in proprietary capital belongs to Mr. Tropin and his family, while the remaining capital belongs to other senior executives at GCM.

Of the **systematic** in proprietary capital, 70% is managed by discretionary macro traders and 30% by systematic trading strategies. However, on a risk-adjusted basis, the proprietary capital is roughly evenly split because the systematic capital trades at 10% volatility while discretionary capital trades at 6% volatility.

While 14 portfolio managers constitute the risk taking in the D6V fund, GCM currently retains 10 portfolio manager teams on the "farm team." The new traders are all very experienced traders, but new to GCM. Mr. Tropin's philosophy is "crawl, walk, run" and he is uncomfortable with giving new traders client money

right away. Usually, a trader on the "farm team" will first manage proprietary capital for 6-18 months before "graduating" to the client portfolios. In one-third of the cases, though, the portfolio manager will depart GCM before being given the chance to trade client money. This culling process ensures only suitable and capable portfolio managers are added to client portfolios. The two portfolio managers that were added to the D6V fund as of July 1, 2011 (Daren McCullough and Jim Hochman) had recently "graduated" from the "farm team" to trade client capital.

It should be noted that the proprietary capital is not entirely allocated to the "farm team" or up-and-coming systematic models; it is also invested pari passu with the allocations in D6V. 30% of the \$1.4B is allocated to mature traders to ensure that client interests are aligned with Mr. Tropin's personal investment. Therefore, while Mr. Tropin's capital is not invested in the co-mingled vehicles, he does invest in D6V's underlying master funds.

Graham's current investor base is as follows: fund of funds, and institutional/sovereign wealth funds, and find high net worth and family offices. Geographically, for of investors hail from North America, from Europe, from the Middle East, and from Australia/Asia. Until 2008, fund of funds and hedge fund platforms comprised from the investment base. Since 2008, though, allocations to fund of funds have decreased and GCM now spend the majority of their time with consultants. For of capital has been raised from sovereign governments (SWFs).

GCM's assets have growth gradually over time from \$29mm in 1994 to \$1 billion in 2001. Today GCM manages \$8.5 billion in total across its various funds. While GCM is on the smaller side compared to their multi-manager global macro peers, they are large enough to attract and retain talented traders. GCM sees capacity as a moving target; with the 14 current D6V portfolio managers, Mr. Tropin believes the fund can manage up to \$2.25 billion. However, they are constantly vetting new portfolio managers from the "farm team" that will allow the D6V fund to manage higher levels of capital.

Year End	Total Firm Assets	<u>K4D</u>	Prop Matrix	Fund Assets
1994	\$29			
1995	\$121	\$121		
1996	\$344	\$257		
1997	\$436	\$350		
1998	\$508	\$386		
1999	\$504	\$251	\$41	
2000	\$671	\$214	\$63	
2001	\$1,002	\$596	\$174	
2002	\$2,020	\$1,439	\$278	
2003	\$4,593	\$3,382	\$808	
2004	\$6,375	\$3,686	\$1,111	\$57
2005	\$4,987	\$2,130	\$604	\$401
2006	\$5,014	\$1,614	\$528	\$791
2007	\$5,154	\$1,746	\$365	\$549
2008	\$4,850	\$2,731	\$299	\$331
2009	\$5,830	\$3,107	\$385	\$529
2010	\$7,404	\$3,711	\$680	\$1,252
2011 (Sept)	\$8,453	\$3,995	\$1,000	\$1,715

#### Exhibit 2 Graham Capital Management, L.P. Assets Under Management (\$ millions)

GCM employs 188 individuals. The majority of the employees are located in the firm's headquarters in Connecticut, but the firm maintains a small office in London with two traders. All of the investment and operational staff members are focused on the fund with a breakout by functional area depicted in Exhibit 3 below.

	Involved With		Departures Within Last
	<u>r una otrategy</u>	Firm-Wide	Three Years
Investment Professionals:			
CIO	1	1	1
Portfolio Managers	14	24	2
Research Analysts*	23	50	21
Traders/Trade Assistants	3	16	7
Operations/Back Office:			
Operations/Accounting	6	28	10
Legal/Compliance	2	4	0
Information Technology	7	37	12
Investor Relations	7	13	6
Admin & Other	8	15	2

#### Exhibit 3 Graham Capital Management, L.P. Personnel Count

\* Includes "farm team" portfolio managers, risk and market research team.

Of the 188 people on GCM's team, 91 are on the investment side and 97 are in operations. The investment team has 41 employees dedicated to the discretionary portfolio while the other 50 are dedicated to the systematic trading strategy. The discretionary investment team includes one CIO, 14 portfolio managers, 23 research analysts and three traders.

Another unique aspect of GCM compared to its peers is that the founding partner does not take the majority of the firm's risk, or even trade. In fact, Mr. Tropin has never managed discretionary capital. While Mr. Tropin is very hands-on at the executive level, he has delegated the role of CIO over the years. For seven years until October 2007, Michael Rulle served as CIO. He departed because of philosophical differences after D6V's one losing year, 2007. From November 2007 to June 2009, Mark Werner served as CIO. Mr. Werner also left GCM because of philosophical differences. When he departed in June 2009, Mr. Tropin assumed the role of CIO. In January 2011, Pablo Calderini was appointed CIO, and is currently responsible for oversight of the 14 D6V traders and the 10 "farm team" traders. Barry Fox, Director of Research, is responsible for the oversight of K4D's 40+ systematic models.



Turnover has been relatively high over the past three years. Much of the turnover is attributable to the "farm team" vetting process. Five "farm team" portfolio managers departed in 2009, four in 2010, and five in 2011. Each of these portfolio managers may have had one or more analysts, which accounts for majority of the "Research Analysts" figures. In 2011, nine members of the technology team were made obsolete by a systems upgrade.

Exhibit 4 provides brief biographical data on the firm's key investment and operations personnel.

Exhibit 4
Graham Capital Management, L.P.
Key Investment and Operations Professionals

Name	Title	Years <u>At Firm</u>	Years <u>Exp.</u>	Prior Experience/ Education
Kenneth G. Tropin <sup>1,2,3</sup>	Founder and Chairman	Since inception	30	John W. Henry & Co., Dean Witter, Rosenthal Collins Group, Shearson Loeb Rhoades/Goddard BA
Paul Sedlack <sup>1,2,3</sup>	Chief Executive Officer, General Counsel	13	25	McDermott, Will & Emery, Coudert Brothers/Cornell JD, SUNY BS
Robert E. Murray <sup>1,2,3</sup>	Chief Operating Officer	8	28	Morgan Stanley Dean Witter/Geneseo State BA
Pablo Calderini <sup>1,2,3</sup>	Chief Investment Officer	2	23	Deutsche Bank/Universidad Nacional de Rosario BA, Universidad del Cema Masters in Economics
Jeff J. Baisley <sup>1,3</sup>	Chief Financial Officer	7	20	RBC Dominion Securities, Robert Half & Associates, Perseus Capital, UBS Warburg AG/Fordham BS
William G. Pertusi <sup>1,3</sup>	Chief Risk Officer	5	26	SAC Capital, Lehman Brothers, CSFB, Merrill Lynch/Lehigh BA, Harvard MBA, Fairfield MS
Barry Fox <sup>1,3</sup>	Director of Research	11	25	John W. Henry & Co, Technical Trading Group/SUNY BS
Thomas P. Schneider <sup>1,3</sup>	Chief Trader	17	28	Chang Crowell Management, ELM Financial/Notre Dame BBA, Texas MBA
Sanjeev Gupta	Portfolio Manager	4	25	Proxima Alfa, Vega/Indian Institute of Technology BA, Wharton MBA
Peter Jepsen	Portfolio Manager	5	18	Exis Capital, Argonaut Capital/ Bucknell BA
David Keelan	Portfolio Manager	4	23	Exis Capital, Millennium Partners/NYU MBA, Colgate BA

<sup>1</sup> Member of the Investment Committee

<sup>2</sup> Member of the Executive Management Committee

<sup>3</sup> Member of the Risk Committee

# **Investment Strategy and Process**

D6V combines 14 of GCM's most successful discretionary trading strategies into a single fund. D6V's underlying component strategies trade all major liquid asset classes globally: rates, credit, commodities, currencies, and equity index markets. Trading strategies vary from relative value-focused to directionally-focused, and time periods vary from short-term (intra-day) to long-term (3 month+). The key to the diversification of D6V is the idiosyncratic nature of each of the 14 underlying strategies' return streams.

GCM's philosophy is that attractive absolute and risk-adjusted returns can be best achieved by utilizing diversified investment strategies across a broad range of markets. The firm pursues this philosophy through three primary objectives: 1. to organically develop a diversified portfolio of quantitative investment strategies which pursue profit opportunities across a broad array of markets, time frames, and trading styles. 2. to build a diversified portfolio of non-correlated discretionary investment strategies through identifying and attracting experienced portfolio managers with strong track records. 3. to deploy significant amounts of proprietary capital as "venture capital" to fund a wide range of quantitative and discretionary alpha-generating strategies. GCM's Investment Committee is responsible for managing the firm's

portfolios and runs a thorough process for vetting discretionary and quantitative investment strategies. Considerations for new discretionary and quantitative inclusions include: discrete and comprehensible sources of alpha, ability to demonstrate a repeatable and reliable competitive edge, scalability of the investment strategy, depth and liquidity of markets traded, identifiable market risks to the investment strategy, experience and integrity of the team, compatibility with GCM's infrastructure, correlation to existing GCM strategies, and the firm's overall asset allocation objectives.

The Investment Committee is responsible for determining portfolio construction, changes to asset allocations, risk management, and the selection of new strategies in which to invest proprietary and client capital. GCM carefully constructs and manages its D6V portfolio to achieve specific objectives with respect to volatility, return, risk, and strategy exposures. Tactical allocation decisions are adjusted based upon reviews of risk-adjusted returns, correlations among GCM strategies (as well as relative to various benchmark indices), risk parameters (Value at Risk and various stress test scenarios), trading style, anticipated outlook for specific strategies and capacity considerations.

The Investment Committee employs a quantitatively-based portfolio construction process, utilizing proprietary portfolio allocation models to systematically guide allocation decisions within GCM's multistrategy hedge fund portfolios. D6V portfolio construction is guided by this proprietary allocation tool which aims to maximize the fund's risk-adjusted returns based on the expected performance and volatility of each sub-strategy. A multitude of quantitative parameters, including risk-adjusted return, "tail risk", drawdown, and cross-correlation, are also considered. The model uses Monte Carlo simulation to separately model each individual component strategy's Sharpe ratio and the Sharpe ratio of the overall portfolio, ultimately resulting in a proprietary score, called the Two Tail Expected Sharpe Ratio (TTSR), which is used to guide allocations. The result is a recommended asset allocation, but the Investment Committee has the ultimate decision and will consider exogenous variables, including: strategy viability, the maturity of each underlying program, and current market outlook for the underlying programs when reallocating capital. Overall, the allocation to the underlying sub-strategies does not significantly change month-over-month. The Investment Committee employs a separate allocation model for K4D.

The underlying macroeconomic research for D6V's sub-strategies is conducted by the individual portfolio managers. Each sub-strategy may have a different method for portfolio construction, relying on both technical and fundamental analysis across markets. Portfolio managers continually search for directional trading opportunities or market inefficiencies that may be conducive to successful trade opportunities. Markets that are closely monitored include fixed income, currency, equity indices and commodities. Information sources may include Federal Reserve documents, press releases, US statistical and economic releases from various agencies, as well as subscriptions to other services and publications, including live and historical market reports. Proprietary risk management techniques are tailored to each individual strategy, and the Risk Committee also serves as another level of oversight.

The CIO's role is to monitor the discretionary portfolio in real-time and to try to understand the interrelationships between different portfolios over various market environments. Mr. Calderini monitors the portfolio from the top-down, but he may also spend time helping a trader construct a specific trade or implement a market view from the bottom-up. Mr. Calderini does not manage a book of his own, but instead he deals with traders equally on a need-by-need basis. Usually he will spend considerable time with new members of the "farm team" during the vetting process and to help ensure a successful transition to trading at GCM. Mr. Calderini rarely spends time with Mr. Levin, who has been at GCM for 11 years, or Mr. Gupta, who is one of the most experienced and successful discretionary traders at the firm. While Mr. Jepsen was trading his way through a difficult 12-month period of underperformance, Mr. Calderini spent a full hour with him each day. Mr. Calderini has encouraged the team to trade their books much more tactically in this choppy, macro-led environment.

As discussed above, the D6V fund is comprised of 14 underlying strategies. This number has evolved over time as the fund had 9 strategies of October 1, 2010 and 15 strategies as of September 1, 2011. The fund's allocations to the underlying strategies range from 2.5% to 13.8% with an average allocation of 7.1%. The firm would like to fully diversify D6V with 20 uncorrelated strategies, and they expect that

some of the "farm team" PMs will add diversification to the return stream when they are properly vetted. The current allocation to the underlying strategies is presented in Exhibit 5.



Exhibit 5 Graham Capital Management, L.P. D6V Allocations as of October 1, 2011

A description of the current sub-strategies follows:

Exhibit 6 Graham Capital Management, L.P. D6V Sub-Strategies as of October 1, 2011





# Portfolio Characteristics

D6V's component strategies utilize a variety of discretionary trading methodologies and disciplines that participate primarily in the fixed income, commodity, currency, and equity index markets. The trading strategies gain exposure to their markets through futures, over-the-counter and listed options, swaps contracts and cash instruments. D6V provides clients with an investment that is diversified among highly liquid global markets and has low correlation to traditional and other alternative investments.

In aggregate, D6V will include thousands of line items aggregated up from 14 different portfolio managers. No single position or trade will dominate the portfolio. Exhibit 7 shows the D6V allocations over time. It can be seen that a number of strategies have been discontinued over the years, and this is to be expected. Exhibit 8 shows asset class exposure as of August 31, 2011: fixed income (bonds 35%, short term rates 27%) comprise the majority of the risk, while energy at 22% is also a significant exposure.

A trade example from Mr. Jepsen's Global Monetary Policy Fund



A trade example from Ms. Nagle's Discretionary Energy Focus Fund

Exhibit 7

Graham Capital Management, L.P. D6V Allocations Over Time





Exhibit 8 Graham Capital Management, L.P. Asset Class Exposure As of August 31, 2011

Exhibit 9 is a chart depicting D6V's gross leverage since January 1, 2008. It is interesting to note that the majority of the risk has been in fixed income and to a lesser extent energy. Bonds have driven gross leverage over time, but as shown in Exhibit 8, bonds only constitute a 35% risk allocation when they are considered on a 10-year equivalent basis. Average gross leverage has been 10X over time. It should be pointed out that gross leverage increased sharply starting on January 1, 2009 as GCM added more traders to diversify the D6V fund. Gross leverage is just one way to interpret risk of the fund, and as Exhibit 10 shows, the addition of uncorrelated portfolio managers over this period decreased VaR while gross leverage increased.

Exhibit 9 Graham Capital Management, L.P. Gross Leverage Over Time



Exhibit 10 Graham Capital Management, L.P. VaR Over Time



## Performance

D6V has produced strong absolute and risk-adjusted returns for seven years. From its inception in June 2004 to August 2011, the fund generated an annualized return of 7.12% with a standard deviation of 5.64%, resulting in a Sharpe ratio of 0.79. Exhibits 11 and 12 provide additional statistics and comparative data for the fund.

## Return

D6V's 6.56% annualized return for the past five years slightly exceeds the HFRI Macro (Total) Index which returned 6.39% over the same period. This performance places D6V amongst the top 48% of all global macro funds.

D6V's -6.88% return in 2007 was fund's the worst year. The loss was primarily attributable to two portfolio managers - a fixed income arbitrage portfolio manager that was positioned short volatility going into June 2007 and a fixed income strategy that included agency and non-agency paper. As a result of this experience, GCM turned over both portfolio managers and has decided not to trade non-agency mortgages going forward. GCM overhauled their risk management process as a result of the drawdown, which led to the expansion of the Risk Committee to include daily meetings.

## Risk

Over the past five years, the fund has produced an annualized standard deviation of 6.28%, which is less than half of the universe's annualized median standard deviation of 13.55%. This puts D6V in the lowest 9% of peer group standard deviations.

D6V is designed to target standard deviation in the 5-7% range, and it has been successful in achieving this volatility since inception. For investors that prefer a more aggressive vehicle, a levered version called D12V is available. This fund has been successful at running twice the volatility of D6V and producing roughly twice the returns. The D12V fund charges a 4% management fee and a 20% performance fee.

## Risk-Adjusted Return

Since its inception in June 2004 through August 2011, D6V has produced strong risk-adjusted returns. The fund's Sharpe ratio of 0.79 places it in the top 20% of all funds in the HFRI Universe and the top 19% of all global macro funds over the same time period.

## Betas / Other

The first section of Exhibit 12 shows five year regression coefficients on major market indices. The fund exhibits statistically significant, but low, sensitivity to emerging markets equities, high yield, and commodities. This is in line with the firm's goal of combining multiple portfolio managers with idiosyncratic return streams into a single fund that is uncorrelated to any market. D6V's R<sup>2</sup> of 0.00 indicates that the fund has not been correlated to other hedge funds or global macro hedge funds.



Exhibit 11 Graham Capital Management, L.P. - Performance Analysis As of August 31, 2011

Hedge Fund Research, Inc. ("HFR") is the source and owner of the HFR data contained or reflected in this report and all trademarks related thereto. This report relies upon the accuracy and completeness of financial information obtained through the fund manager, which may or may not be audited by that fund manager. We have not conducted an independent verification or an audit of such information. Past performance does not guarantee future performance. The information contained herein is confidential financial information, which should not be disclosed to third parties except as required by applicable law.



Exhibit 12 Graham Capital Management, L.P. – Risk Characteristics As of August 31, 2011

Hedge Fund Research, Inc. ("HFR") is the source and owner of the HFR data contained or reflected in this report and all trademarks related thereto. This report relies upon the accuracy and completeness of financial information obtained through the fund manager. We have not conducted an independent verification or an audit of such information. Past performance does not guarantee future performance. The information contained herein is confidential financial information, which should not be disclosed to third parties except as required by applicable law.

# **Risk Management**

The application of a disciplined risk management process is the cornerstone of the firm's overall investment philosophy and remains a key consideration in GCM's multi-strategy approach to portfolio construction and strategic use of leverage. Furthermore, GCM's \$1.4B of proprietary capital ensures that the firm's interests are aligned with those of its investors, resulting in a commitment to comprehensive risk management. The overarching goal is to achieve compelling absolute and risk-adjusted returns by strategically managing risk during both favorable and unfavorable market environments.

Similarly to other global macro managers, Graham utilizes a stop-loss approach to cut losing positions as a key risk management discipline. At a 1.25% daily drawdown, a portfolio manager cannot add further risk that day and has to explain his losses to the Risk Committee. At a 5% peak-to-trough rolling 20-day drawdown, the Risk Committee will cut a portfolio manager's risk by 50%. At a 9% peak-to-trough rolling 20-day drawdown, the Risk Committee will cut a portfolio manager's risk by another 50%. A 12% drawdown will prompt the Risk Committee to discuss the viability of the portfolio manager. Both Britton Holland, who ran the Discretionary Energy Trading from January 2007 to September 2011, and Brent Donnelly, who ran the Short Term Global Macro fund from January 2010 to March 2011, had not hit the 12% limits before they were asked to leave. In fact, Mr. Levin is the only discretionary manager who has ever hit the 12% stop loss. In April 2008, the Fed Policy fund lost more than 12%. Mr. Tropin felt that he understood the Fed Policy fund's trading style and the reasons for the drawdown of the portfolio manager, who had almost a decade with GCM by early 2008. The Risk Committee decided in a special vote to keep the Fed Policy positions intact. Mr. Levin's fund recovered from its drawdown and returned +18% in 2008.

The largest drawdown incurred by D6V was -14.8% from June 2007 to June 2008. It took eight months to recover from this drawdown. The fund struggled because of two strategies, one of which was a fixed income arbitrage strategy that was positioned short volatility going into June 2007. The strategy began losing money as uncertainty grew in the US over the subprime crisis and volatility spiked. The other strategy was a fixed income strategy that traded agency and non-agency paper. The mortgage market became impaired in October 2007, and the GCM risk management team made the call to liquidate the illiquid mortgage book by the end of October 2007. As a result of this experience, GCM turned over both portfolio managers and has decided not to trade non-agency mortgages going forward.

Risk management for all of GCM's systematic and discretionary portfolios has developed over the years, particularly after the -14.8% drawdown in 2007-2008. Significant improvements were made to the risk management process, including the expansion of the Risk Committee and the initiation of daily 9am Risk Committee meetings in November 2007. The firm's Risk Committee is comprised of eight senior members of the firm's management team (Ken Tropin, Chairman and Founder; Bill Pertusi, Chief Risk Officer; Paul Sedlack, Chief Executive Officer; Bob Murray, Chief Operating Officer; Pablo Calderini, Chief Investment Officer; Jeff Baisley, Chief Financial Officer; Barry Fox, Director of Research; and Tom Schneider, Head of Quantitative Trading) and meets daily to review position-level information and related risks within the context of prevailing market conditions. At each meeting, the Risk Committee reviews the following analytics: Value at Risk, stress tests, margin/equity ratio, capital usage ratio, cross-correlations, market risks/volatility indices, Greeks (delta/vega/gamma), exposure reports, risk-adjusted return measurements, daily P&L reports, real-time P&L meter, daily volume reports, daily open interest reports, drawdown reports, tail-risks, and RiskMetrics/proprietary tools. The daily Risk Committee process ensures that members of the firm's senior management team are fully informed of the various risks to which the firm is exposed and, if necessary, the Risk Committee will effect a reduction in risk within a particular strategy or across a specific portfolio of strategies.

Risk exposures are calculated daily based on the prior day's closing positions and reviewed each morning by the Risk Committee. In addition, the risk management team monitors intraday exposures as they change. The Risk Committee continuously monitors market developments, paying specific attention to market liquidity and whether markets are exhibiting risk-seeking or risk-avoiding behavior. The Committee then reviews performance from the prior day by strategy, including an attribution of P&L to various risk factors. The Risk Committee reviews a summary of the current day's exposures, including VaR and stress tests by strategy provided by the Risk Department's internal web site. GCM uses a one day 97.5% Monte Carlo VaR to measure risk based on the methodology developed by RiskMetrics. This allows the firm to quickly view a two standard deviation band on P&L. Daily VaR is available via GCM's website.

Bill Pertusi, Chief Risk Officer, oversees GCM's risk management team and the risk management process for all of the firm's strategies. The Chief Risk Officer is a member of the Investment Committee and reports to GCM's Chief Operating Officer. Mr. Pertusi and the risk management team continually monitor the risk of each of the firm's investment strategies using both internal and industry-recognized standards to ensure compliance with firm-wide risk policies, as well as limits established at the portfolio level.

In August 2011, four of the 15 portfolio managers within the D6V fund had the same trade in their books – short Australian fixed income – due to a fundamental view that the market incorrectly priced in rate cuts in the front-end of the Australian curve. However, the Risk Committee became concerned that the D6V fund was too exposed to this trade. At the fund level, the DV01 was 1bp for a 1bp of movement in the curve. The Risk Committee mandated that none of the other portfolio managers could initiate this trade, nor could the four portfolio managers add to the trade. This is the first time the Risk Committee has mandated a top-down decision with respect to a specific trade. The prior Risk Committee intervention was in May 2010, when they cut Jon Titinsky's (Macro Fixed Income) rates trades during the Flash Crash.

## **Investment Terms**

#### Summary Comments

GCM's terms include better-than-average fees and liquidity. The fund charges a 2% management fee and a 20% performance fee. The fund has no lock ups, no gates, and no side pockets. Subscriptions are accepted monthly. GCM takes the netting risk between managers in the multi-manager D6V fund; portfolio managers will get paid based off of their portfolio regardless of the firm's profitability. There is no key-man clause because there is no single key-man.

Term	
Fees and expenses	
Management fee	2%
Performance fee	20%
High water mark	Yes
Hurdle rate	No
Fee payment frequency	Monthly management fees, quarterly performance fees
Fund expenses	The Fund will bear the costs of administration, audit, tax
-	and legal fees associated with the operations of the
	Fund.
Typical fund expenses	The average of these expenses has been between 20 to
	30 bps per annum.
Offsets to expenses	None
Subscriptions	
Minimum initial investment	\$3 million
Minimum subsequent investments	\$50,000
Frequency	Monthly
Timing	First business day of each month
Notification period	4 business days
Other subscription provisions	None
Redemptions	
Frequency	Quarterly
Timing	Last business day of each quarter
Notification period	30 days
Gate	No
Distribution of proceeds	Paid within 15 business days. Distributions can be made
	in cash or in kind.
Suspension provisions	in cash or in kind. The Board of Directors may suspend redemptions
Suspension provisions Other withdrawal provisions	in cash or in kind. The Board of Directors may suspend redemptions None
Suspension provisions Other withdrawal provisions Liquidity	in cash or in kind. The Board of Directors may suspend redemptions None
Suspension provisions Other withdrawal provisions Liquidity Lock-up	in cash or in kind. The Board of Directors may suspend redemptions None
Suspension provisions Other withdrawal provisions Liquidity Lock-up Early withdrawal penalties	in cash or in kind. The Board of Directors may suspend redemptions None None None
Suspension provisions Other withdrawal provisions Liquidity Lock-up Early withdrawal penalties Key man provisions	in cash or in kind. The Board of Directors may suspend redemptions None None None No
Suspension provisions Other withdrawal provisions Liquidity Lock-up Early withdrawal penalties Key man provisions Transferability	in cash or in kind. The Board of Directors may suspend redemptions None None No Only with the prior written consent of the Board of
Suspension provisions Other withdrawal provisions Liquidity Lock-up Early withdrawal penalties Key man provisions Transferability	in cash or in kind. The Board of Directors may suspend redemptions None None No Only with the prior written consent of the Board of Directors
Suspension provisions Other withdrawal provisions Liquidity Lock-up Early withdrawal penalties Key man provisions Transferability Side pockets for illiquid investments	in cash or in kind. The Board of Directors may suspend redemptions None None No Only with the prior written consent of the Board of Directors None
Suspension provisions Other withdrawal provisions Liquidity Lock-up Early withdrawal penalties Key man provisions Transferability Side pockets for illiquid investments Side Letters	in cash or in kind. The Board of Directors may suspend redemptions None None No Only with the prior written consent of the Board of Directors None No. All investors share the same liquidity terms but

Term		
Fees and expenses		
Management fee	2%	
Performance fee	20%	
High water mark	Yes	

Hurdle rate Fee payment frequency Fund expenses	No Monthly management fees, quarterly performance fees The Fund will bear the costs of administration, audit, tax and legal fees associated with the operations of the Fund.
l ypical fund expenses	30 bps per annum.
Offsets to expenses	None
Subscriptions	
Minimum initial investment	\$3 million
Minimum subsequent investments	\$50,000
Frequency	Monthly
Timing	First business day of each month
Notification period	4 business days
Other subscription provisions	None
Redemptions	
Frequency	Quarterly
Timing	Last business day of each quarter
Notification period	30 days
Gate	No
Distribution of proceeds	Paid within 15 business days. Distributions can be made
	in cash or in kind.
Suspension provisions	The Board of Directors may suspend redemptions
Other withdrawal provisions	None
Liquidity	
Lock-up	None
Early withdrawal penalties	None
Key man provisions	No
Transferability	Only with the prior written consent of the Board of Directors
Side pockets for illiquid investments	None
Side Letters	No. All investors share the same liquidity terms but larger investors have preferential fees.

# Appendix: Glossary

Administrator	A service provider such as Citco or International Fund Services that handles administrative responsibilities such as facilitating subscriptions/redemptions, calculating the fund's monthly NAV, reporting performance, and maintaining the official books and records for the fund.
Alpha	That portion of a fund's total return that is attributable only to manager skill and which excludes return attributable to general market (i.e. stock) movements. A fund's total return is comprised of three return components: alpha, beta, and Libor.
Beta	Measure of a portfolio's return sensitivity to a market index. The higher the beta coefficient, the greater the sensitivity to the market. A portfolio with a beta of 1.0 should move directly in line with the market index. Lower beta portfolios have lower risk and hedge funds exhibit an average equity market beta of 0.30. Hedge funds with lower beta are generally viewed as desirable.
Beta Return	That portion of a fund's total return that is attributable to general market (i.e. stock) movements. It is generally calculated by multiplying the fund's portfolio beta times the market return net of Libor. A fund's total return is comprised of three return components: alpha, beta, and Libor.
Credit Default Swap (CDS)	A swap contract that acts as a form of insurance for the buyer against a loan or bond default. The buyer pays a percentage of the security's principal (premium), at periodic intervals in exchange for a guaranteed payment of principal in the event of default. If the borrower/security defaults, the CDS buyer can exchange or "swap" the defaulted loan security for a monetary payment equal to the principal value of the loan. The CDS premium payment is generally equivalent in percentage to the "credit spread" on a risky bond.
Convexity	A measure of the sensitivity of a bond's duration to changes in interest rates. Most fixed income portfolios have <i>negative</i> convexity, meaning that duration rises as interest rates rise, furthering losses in a rising interest rate environment. And when interest rates fall, duration declines, limiting security gains. Mortgage securities, for example, have significant negative convexity. Securities and portfolios structured to have <i>positive</i> convexity are not common and come at a cost of lower yield, but have the advantage in periods of market volatility.
Correlation	A statistical measure of how two securities or indices move in relation to each other. Two securities move perfectly in line with one another if their correlation is 1.0 and move in opposite directions if their correlation is -1.0. This statistic is often cited when gauging the diversification benefits of alternative assets within an equity dominated institutional portfolio and where most traditional equity managers have a correlation of 0.95 or higher with the stock indices. Hedge funds generally exhibit a much lower 0.70 correlation to the equity markets and produce overall diversification benefits where adding more stock managers does not
Credit Strategy	See Hedge Fund Strategies.
СТА	See Hedge Fund Strategies
Delta-adjusted	A concept applied to derivatives, particularly options or securities with option-like features such as convertible securities. Delta measures the change in value of the derivative in relation to the change in value of the underlying security referenced by the derivative, rather than the value of the derivative security itself. For example, the delta-adjusted beta of an in-the-money S&P 500 index option equals 1.0 because the change in option value and index value is the same for a small 1% change in the S&P 500 index. For an out-of-the-money option, the delta-adjusted beta would be less than 1.0. The delta-adjusted exposure of a portfolio is a measure of the extent to which the portfolio as a whole will participate in stock market movements. It is equal to the sum of the weighted deltas of all individual options in the portfolio plus all equity investments.
Derivative	A security whose price is derived from the value of one or more of the underlying reference entity, commonly the price of another security. Examples include options, futures, forwards, and swaps. Derivatives can be used to hedge risk, speculate, or establish arbitrage positions.
Global Macro Strategy	See Hedge Fund Strategies
Distressed Strategy	See Hedge Fund Strategies
Drawdown	Refers to the cumulative investment loss experienced by a hedge fund, measured from the point of peak NAV to the NAV low. <i>Max</i> drawdown refers to the largest drawdown experienced by a hedge fund.

Early Withdrawal Penalty	A fee assessed to investors that redeem assets prior to the expiration of a "soft" lock-up. The penalty is a percentage of assets, typically 2% to 5%, and these fees are generally paid to the fund to the benefit of remaining investors.
Event Driven	See Hedge Fund Strategies
Equity Long/Short	See Hedge Fund Strategies
Expense Ratio	All direct expenses charged to the fund vehicle, divided by NAV. Fund expenses typically include organizational, legal, compliance, audit fees, administrative fees, directors' fees and expenses, and fund-related insurance costs. Fund expenses should exclude costs associated with managing the investment portfolio such as management fees, brokerage fees, and research expenses. Also, charges related to entering into, maintaining, and financing a position are not included in the ratio. The fund expense ratio ranges between 10 and 30 basis points, depending upon the asset size of the fund and what types of expenses are charged to the fund.
Exposure	The value of security positions (excluding cash) as a percent of net asset value (NAV). For example, if security positions are valued at \$100 and NAV also equals \$100, then the portfolio is said to have a long exposure of 100%. If instead, the security positions are valued at \$50 with the rest in cash, the long exposure is said to be 50%. Leverage (borrowing) allows exposures to exceed 100% and shorting can allow exposures to be negative. For example, a manager that holds \$100 in stock (100% long exposure) and also borrows \$100 in stock (from a securities lender) and sells that stock short in the market (100% short exposure), is said to have a total exposure of 200% (100% long exposure plus 100% short exposure).
Notional Exposure	Notional exposure, as opposed to physical exposure, includes the value of reference
,	securities/indexes of derivative securities and swaps in the calculation of exposure. For example, a hedge fund manager with a 50% long exposure to stocks may also have sold a Russell 3000 index futures on contracts worth 50% of fund NAV as a market hedge. While no physical securities are shorted, the futures positions have a "notional" value equal to 50% of NAV. Total gross notional exposure in this example is 100%, equal to the 50% long physical stock positions plus the 50% short futures contract. The most common industry practice is to include notional values in the calculation of portfolio exposures.
Gross Long	The total notional exposure of all long positions in a portfolio. In the example above, gross long exposure equals 50%. Gross long positions benefit from increases in securities prices.
Gross Short	The total notional exposure of all short positions in a portfolio. In the example above, gross short exposure equals 50%, the notional value of the short Russell 3000 futures contracts. Short positions benefit from decreases in securities prices.
Net Exposure	Net exposure equals the difference between a portfolio's gross long and gross short exposures. In the example above, the portfolio has a net exposure of 0%, equal to the 50% gross long exposure minus the 50% gross short position. A positive net long exposure indicates a higher portion of long positions in the portfolio, and that the portfolio should generally benefit from an increase in asset prices. A net short exposure indicates a higher value of short positions in the portfolio, which will likely produce profits if security values fall.
Total Gross	The sum of a portfolio's gross long and gross short exposures. Gross exposure in the example above equals 100%, equal to the 50% gross long exposure plus the 50% gross short exposure.
Fair Value (FAS 157)	FASB Statement No. 157, Fair Value Measurements ("FAS 157"), defines fair value as " <i>the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.</i> " FAS 157 established a fair value hierarchy consisting of three levels described below.
Level 1 assets	Liquid assets with readily observable prices, and therefore a reliable market value. Level 1 assets typically include stocks, bonds, mutual funds, and any other assets that have a regular "mark to market" pricing mechanism, generally via a central exchange.
Level 2 assets	Assets with a value based on market inputs that are not directly observable on a central exchange. These assets are often priced via quotations from dealers. An example of a Level 2 asset is a credit default swap which is typically priced via indicative quotations from broker dealers. Most derivative securities are considered Level 2 assets even though the valuation for the underlying security may be readily available on a central exchange.
Level 3 assets	Illiquid assets with a value that cannot be determined by observable measures. The fair value of a Level 3 asset can only be estimated by using significant assumptions as inputs to the valuation model. Illiquid private equity investments are an example of this type of asset. Each manager may derive its own internal valuation policy regarding the classification of Level 3 assets depending on available pricing sources and other factors.

	Best practice is for the hedge fund manager to use an independent external valuation firm to price Level 3 assets. As a further protection to investors, Level 3 assets are often placed in side pockets by the manager. (See Side Pockets.)
Fund of Funds	An investment vehicle managed by a third party that invests in a portfolio of underlying hedge funds.
Gate	A restriction on the amount that investors can redeem from a hedge fund in a given period. Gates are designed to help prevent problems associated with large redemption requests during a specific period. Fund level gates establish this limit as a percentage of all holdings in the fund, potentially allowing redeeming investors to receive a percentage greater than the gate amount. Investor level gates limit each investor's withdrawal to a specific percentage of their account.
General Partner	In a limited liability partnership, which is the legal form most hedge funds operate within, the general partner is responsible for the management and investment decisions for the hedge fund while the investors are limited partners.
Hedge Fund	An investment portfolio that seeks long term net of fee returns similar to equities (7%–9% annually) with less than one-half the risk of equities.
Hedge Fund Strategies	Hedge funds employ many investment approaches to create non-market related returns. While there is no standard industry classification, the eight strategy descriptions below are often used by practitioners.
Market Neutral	A hedge fund style that aims to profit from the discrepancy in valuation between related securities, which may include equities, fixed income, derivatives, etc. An example is convertible arbitrage, which attempts to exploit the mispricing between embedded options in convertible bonds and the underlying security.
Credit Strategy	A hedge fund style that typically invests in high yield and high grade bonds, bank loans, credit default swaps and structured products. Managers use fundamental credit analysis to identify mispriced debt instruments and express their views through long and short positions.
Distressed	A hedge fund style that seeks to take advantage of corporate securities in default, under
Event Driven	bankruptcy protection, in distress or heading toward such a condition, or in liquidation. Some distressed managers attempt to add value by becoming actively involved in the restructuring process. A hedge fund style that aims to profit from the mispricing of securities related to hard and/or soft catalysts. Examples include mergers (merger arbitrage), restructurings, bankruptcies, litigation, regulatory and legislative changes. Activist investors who seek value creation through heard participation or management changes are also included in this category.
Equity Long/Short	A hedge fund style that primarily allocates capital to long and short positions in equities and equity derivatives. Exposures range from net long to market neutral to dedicated short. Some equity long/short funds focus on specific sectors (e.g., technology and healthcare) or regions (e.g., Asia and Europe).
Macro - Discretionary	A hedge fund style focused on employing a top-down approach to invest in any market in order to capture extended market movements. Global macro managers generally have broad mandates to invest globally across all asset classes. These managers tend to employ leverage and have exposure to global interest rates, currencies, commodities and equities.
Macro - CTA	A hedge fund style that trades currencies, interest rates, equity markets and commodities using technical systems premised mostly on the notion that market indices will trend over time, thus portfolio positions will move in the same direction as markets. "CTA" designates Commodity Trading Advisor, a regulated advisor that generally follows this hedge fund style.
Multi-Strategy	A hedge fund style that opportunistically allocates capital to various hedge fund strategies and uses diversification to reduce asset-class and single-strategy risks. Ideally, multi- strategy portfolio managers tactically shift capital among strategies in order to capitalize on current market opportunities. Some multi-strategy funds act as a collection of traders, while others have a more formal organizational structure.
HFRI	Hedge Fund Research, Inc. (HFRI) is a leading provider of hedge fund manager and hedge fund index information to investors. Dow Jones Credit Suisse is another leading provider of similar information.
HFRI Fund of Funds Index	A monthly return index of approximately 2,000 hedge fund of funds. Returns are self reported, equal weighted, and net of all fees. HFRI reports that the average management fee charged by the fund of funds manager is 1.5% with an average incentive fee of 5%. This is on top of fees charged by the underlying hedge funds.

HFRI Fund Weighted Index	A monthly return index of approximately 3,000 hedge funds. Returns are self reported, equal weighted, and net of all fees.
HFRI Universe	HFRI makes available hedge fund universes and sub-universes in order to rank individual hedge funds against peer groups.
HFRX Indices	HFRI also maintains <i>daily</i> return indices that are equal weighted returns of a small group of hedge funds that offer daily valuation.
High Water Mark ("HWM")	The market value that a portfolio must exceed before performance fees can be assessed. The HWM is the highest net asset value previously achieved, and ensures that the manager does not earn performance fees on gains until previous losses are fully recaptured.
Modified HWM	The less common modified HWM allows the manager to earn a reduced (i.e. one-half) performance fee during recovery, with the full performance fee resuming after recovering earlier losses (e.g. between 150-250% of prior losses). A modified HWM is said to help managers retain talented employees during weak performance periods.
Hurdle Rate	The minimum return a manager must generate before performance fees can be earned. Hurdle rates are uncommon for hedge funds, but when they are present they are often based on cash benchmarks such as 3-month Treasury bills.
Information Ratio("IR")	Commonly used measure of a manager's risk-adjusted alpha. The information ratio equals alpha return divided by alpha risk, where both alpha return and alpha risk are typically calculated using statistical regression where the independent variable is a market index. The information ratio is generally viewed by practitioners as the most significant measure of a hedge fund's performance. Any information ratio above 0.5 is generally viewed as very attractive.
Key Man Provision	A legal provision that permits investors to immediately withdraw from a fund without penalty if certain key professionals are no longer involved in the management of the fund.
Leverage	<ul> <li>The use of explicit debt (i.e. borrowing) or implicit debt (i.e. derivatives) to achieve investment positions that exceed invested capital (NAV). The use of leverage may amplify returns but may also increase risk. However, if leverage is achieved by adding short exposure that offsets an existing long position, portfolio risk might actually decline due to the use of leverage. A common leverage calculation is the ratio of gross notional exposure to invested capital. For example, a \$100 investment in BP stock coupled with a \$100 short sale of Exxon stock yields gross notional exposure of \$200. Leverage in this example can be described in at least two ways: <ul> <li>a. The portfolio has 200% gross exposure (equal to \$200 gross notional exposure divided by \$100 NAV)</li> <li>b. The portfolio is one time (1x) levered (equal to \$100 in debt divided by \$100 NAV)</li> </ul> </li> <li>As illustrated in the example, the \$200 gross notional exposure equals the absolute value total of both \$100 long ("gross long") and \$100 short ("gross short") asset exposures. The measurement of gross notional exposure varies by asset class: <ul> <li><i>Equities</i> – the market value of long and short positions</li> <li><i>Corporate Debt and Municipal Bonds</i> – the market value of long and short positions. <i>US Treasuries (and other highly rated government debt)</i> – the market value of long and short positions, adjusted to a 10 year bond equivalent maturity (approximate 9 year duration), so that a \$100 20 year duration bond. The \$100 3 year duration bond is said to have a \$33 10 year bond equivalent exposure (\$100 times 3, divided by 9)</li> <li><i>Options</i> – the delta adjusted exposure rather than the total notional value of the underlying reference asset. Delta adjusted exposure represents the implied shares/holdings necessary to hedge the options position</li> <li><i>Credit Default Swaps</i> – total notional exposure (approxed as 10-year bond equivalent, per the duration adjustemt process described above) to reference security or index</li> <!--</td--></ul></li></ul>
Limited Partner	Investors are limited partners in the hedge fund and are "limited" in that they have no voice in hedge fund investment or operational matters, and their losses are limited to amounts invested.
Limited Partnership	A legal structure usually consisting of one general partner who is the investment manager and many limited partners who put up assets to form a fund investment. The most important feature of a limited partnership is that the limited partners have limited liability as

	long as they do not participate in the control of the investment fund.
Liquidity	The ease with which a hedge fund can convert its holdings to cash. Funds with greater liquidity can close out of positions more easily and with fewer costs
Lock-up	The period of time before an investor is eligible to redeem assets from a hedge fund. Lock- ups of one or two years are typical. The liquidity of the strategy and underlying positions typically influences the length of the lock-up. For example, distressed funds typically have longer lock-up periods than macro and equity long/short funds.
Hard Lock-Up	Assets can not be redeemed during the lock-up period.
Soft Lock-Up	Assets may be redeemed prior to expiration of the lock-up period, but an early withdrawal penalty must be paid to the fund.
Long positions	Long positions describe securities that were purchased. Long positions benefit from increase in securities prices.
LIBOR (Libor)	Refers to the London Interbank Offered Rate (LIBOR), which is a daily reference rate based on the interest rates at which banks borrow unsecured funds from other banks in the interbank lending market. Libor is a cash rate that serves as the base rate for most floating rate corporate debt and is highly correlated with short-term interest rates. Historically, Libor rates average 20 basis points above Treasury bill rates, a difference often referred to as the TED spread. The TED spread is often viewed as a measure of market stress that can reach levels of 100 basis points or more during financial crises.
Management Fee	Compensation paid by investors to the management company of a hedge fund. Management fees are typically used to pay for the investment manager's operating expenses, including office rent, employee salaries, research and systems. Management
	fees typically range from 1% to 2% of NAV.
Macro - Discretionary	See Hedge Fund Strategies
Margin	Cash posted as collateral with a broker or exchange to satisfy the trading requirements of derivative contracts.
Initial Margin	Cash or positions posted as collateral with a broker or exchange to satisfy the initial regulatory or internal margin requirements of listed or over the counter securities purchased with borrowed funds.
Variation Margin	Cash or positions that may be required to be posted as collateral with a broker or exchange to satisfy additional variation margin requirements of listed or over the counter securities purchased with borrowed funds. Variation margin payments may be required if securities purchased with borrowed funds decline significantly in value from the initial holding date.
Margin-to-equity ratio	The percentage of portfolio capital posted as collateral or "margin" with a broker or exchange (i.e., margin capital divided by total capital) against a portfolio of positions. In a portfolio composed entirely of derivative contracts, this number represents the percentage of encumbered cash in the portfolio. This is a common measure of leverage used by systematic macro managers, since it is proportional to the amount of notional exposure per dollar of capital. For example, if one systematic macro portfolio has a higher margin-to-equity ratio than another, all else being equal, the former portfolio has higher leverage.
Master-Feeder Fund	A fund structure which allows for onshore and offshore fund vehicles to be managed as a
Master Fund	The master fund is that part of a master-feeder structure into which the feeder funds invest
Master Fana	and which manages the single combined investment portfolio. The master fund is generally a non-US corporate entity.
Feeder Funds	Two separate legal entities, one a U.S. onshore partnership and the other a non-U.S. offshore corporation, which accommodates investor groups with different tax and regulatory needs.
Max Drawdown	The greatest investment loss experienced by a hedge fund, measured from peak (prior highest cumulative return) to valley (subsequent lowest cumulative return).
Middle and Back Office	The non-investment side of a hedge fund's operations. Includes accounting, administration, legal, investor relations, compliance and other miscellaneous non-investment functions. Hedge funds may outsource some of these operations to third-party administrators or prime brokers.
Net Asset Value (NAV)	A fund's total assets less total liabilities.
Notification Period	The advance notice period (generally 30 to 90 days) required to submit subscription or redemption documents for investing in or redeeming from a fund.
Offshore Fund	Hedge tunds which are registered/domiciled in offshore jurisdictions such as the Cayman Islands, British Virgin Islands, and Luxembourg. Offshore funds provide eligible investors with tax benefits and regulatory relief. Because offshore funds are administered outside of

	the U.S., non-U.S. investors and tax exempt U.S. investors such as ERISA pension funds and endowments can take advantage of tax benefits.
Onshore Fund Performance (Incentive) Fee	A fund with a U.S. legal domicile that operates under U.S. regulatory authorities and U.S. tax law. Most onshore funds are limited partnerships registered under Delaware law. The general partner's share of the profits, net of management fees and expenses. The performance (incentive) fee is twoically 20% of pet profits.
Prime Broker	A prime broker custodies assets, provides trade settlement, facilitates the financing of positions, and may perform other services. JPMorgan, Goldman Sachs, Morgan Stanley and UBS are some of the largest prime brokers.
Coefficient of Determination (R <sup>2</sup> )	The Coefficient of Determination or R-squared (R <sup>2</sup> ) is the square of the correlation coefficient and identifies the percentage of variability of one variable that is explained by another variable. For example, hedge funds have an average correlation coefficient of 0.70 with the S&P 500 Index. The coefficient of determination (R <sup>2</sup> ) is 0.49, meaning that 49% of hedge fund risk is explained by the movements in the S&P 500 index.
Return	Hedge fund returns represent the percentage change in period to period NAV and are calculated net of all fees and expenses, including accrued manager fees and incentive fees.
Serial Correlation	The correlation between current and past returns. In an efficient market, there should be no correlation between returns from one period to the next. Some hedge funds, particularly credit oriented funds, exhibit positive serial correlation which indicates that security pricing may be "sticky" and not change from period to period.
Sharpe Ratio	Commonly used measure of a manager's risk-adjusted alpha in relation to a risk-free asset (i.e. T-bill or Libor). The Sharpe ratio is equal to total return, minus Libor, divided by portfolio standard deviation. A high Sharpe ratio indicates that a manager has generated high risk-adjusted returns.
Short Position	Short positions describe securities that are borrowed (generally from a dealer or securities lender) and sold. Short positions will benefit from decreases in securities prices.
Side Letter	An addendum to the partnership and subscription agreement which stipulates key terms for a particular investor, such as negotiated fee levels, MFN (Most Favored Nation) clauses, transparency requirements, or special liquidity terms.
Side Pocket	A segregated portion of a portfolio that may be used to hold illiquid, less frequently priced securities. Once a holding is placed in a side pocket, only current investors participate in its performance. Subsequent investors do not share in the gains/losses associated with assets previously placed in side pockets. Performance fees are paid when side pocket investments are realized. Assets placed into side pockets are not available for withdrawal until the investments are sold.
Skew	Skew measures the tendency of returns to deviate from a normal or symmetrical distribution. Given two return distributions with the same mean and standard deviation, the distribution with the higher positive skew would be more desirable. Several hedge fund strategies exhibit return patterns that have negative skew, meaning that losses tend to be larger than gains. A good example is merger arbitrage where profits are limited but more common and losses are less common but larger.
Sovereign Security	A debt security issued by a national government either within a given country or in a major financial center and denominated in either the issuer's currency or a foreign currency.
Stop Loss	A trading order or automated rule to sell a security when it reaches a pre-specified price. The purpose is to limit a manager's loss on an individual security if the position experiences a decline in price.
Standard Deviation	A common quantitative measure of investment risk to show the variability from the expected return or past returns of a manager. A low standard deviation represents a lower level of risk and a high standard deviation indicates a higher level of risk.
Stress Testing	A common risk management tool to evaluate the potential impact of a particularly severe set of market conditions on an individual security or portfolio. Stress testing is intended to simulate the impact on a portfolio of a hypothetical market move (i.e. S&P 500 down -10%, credit spreads widen by 500 bps). Scenario analysis is intended to simulate the impact on a current portfolio of a past market scenario (i.e. September 11 <sup>th</sup> or post-Lehman bankruptcy).
Suspension Provisions	A hedge fund provision that allows the manager to stop all redemptions at their discretion, generally to deal with very extraordinary market circumstances.
Swap	An over-the-counter bi-lateral derivative contract that permits investors to receive one instrument or set of cash flows in exchange for a different instrument or set of cash flows. A common example is an interest rate swap, which permits investors to receive a fixed rate of

	interest in exchange for paying the current floating market rate.
Global Macro	See Hedge Fund Strategies
Tail Risk	A form of risk that arises when portfolio returns deviate from a "normal" or symmetrical distribution and exhibit "fat tails" where there is a greater frequency of large losses and large gains versus what would be predicted. Tail risk is usually associated with downside risk in an extreme scenario.
Tracking Error	Measure of the standard deviation of the manager's excess return versus a benchmark.
Transferability	The terms under which an investor may sell ownership rights to another investor. Typically requires the approval of the manager or administrator.
Unencumbered Cash	Unencumbered cash is equal to cash balances maintained in the portfolio in excess of regulatory or house margin requirements.
Unrelated Business Taxable Income (UBTI)	U.S. pensions and endowments enjoy special tax exempt status for income and gains earned on securities portfolios. However, when those entities are thought to abuse their status, such as when they use leverage to enhance returns or invest directly in businesses, they are subject to unrelated business taxable income, or UBTI. Since many hedge funds use leverage to enhance returns, their gains are potentially taxable to even traditionally tax exempt institutions. ERISA pension plans and endowments who have invested in hedge funds often invest in offshore hedge funds, because the offshore vehicles are structured to avoid UBTI. Public pension systems generally invest in onshore hedge funds despite potential UBTI because they believe sovereignty makes them exempt from federal taxation.