



Hedge Fund and Private Equity Shakeout: Helping Trustees Understand What Happened in 2008 and What to Expect Going Forward

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James D. Stoker, Chief Investment Officer



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I. Factors that Caused the Financial Crisis

Factors that Caused the Financial Crisis

Deregulation of Financial Markets

- Glass-Steagall Act repealed in 1999
- The wall between commercial and investment banks was torn down

Proliferation of Credit Derivatives

- Commodity Futures Modernization Act of 2000 (de-regulation of derivatives)
- No capital reserve required to issue Credit Default Swaps (CDS)
- \$60 trillion in CDS insuring only \$5 trillion in debt by 2008

Securitization of Mortgages and Other Assets

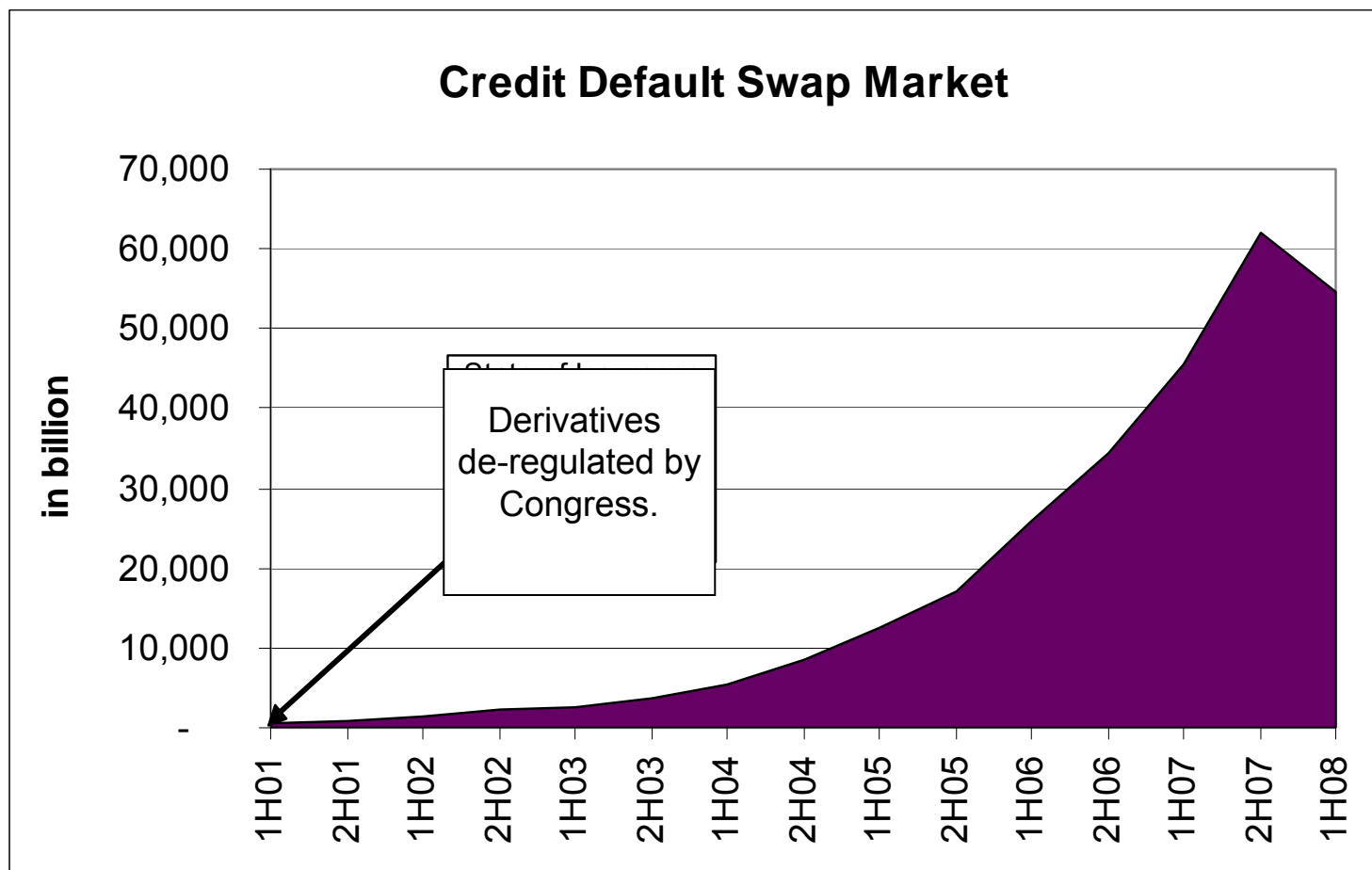
- 2004 SEC permitted investment banks to lever 33:1, up from 12:1 (Rule 15c3-1 Net Capital Requirements for Brokers - Dealers under the Securities Exchange Act of 1934)
- Banks turned from lenders to loan originators

Rating Agency Fraud

- Debt issuers wrote S&P, Moody's, and Fitch paychecks
- In turn, "AAA" rating was awarded to risky assets

Credit Default Swap Market

- \$62 trillion in CDS insurance was issued on less than \$6 trillion in actual debt.



II. Possible Solutions to Restore Confidence in the Financial Markets

Possible Solutions to Restore Confidence

Reinstate a version of Glass-Steagall Act of 1933 and regulatory change

- Restore confidence in financial institutions
- Standardize securitized debt structures
- Create a greater level of transparency

Regulate credit default swaps

- Require CDS be traded on exchange (in progress CME)
- Require standardized ISDA Agreements

Federal Reserve/SEC should regulate maximum leverage for banks

- During the past 10 years banks' share prices increased almost 60% and their balance sheets rose more than threefold
- Returns were supported by bigger balance sheets and financed by higher leverage, all the while ignoring risk

Prohibiting issuers from paying rating agencies

- Allow rating agencies to operate as non-profit institutions to service the financial markets and the public

Is There Still a Case for Hedge Funds?

- As an asset class, hedge funds remain a compelling investment over a long-term investment horizon.

Relative 10-Year Performance

Index	10-Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
S&P 500	-1.4%	-37.0%	5.5%	15.8%	4.9%	10.9%	28.7%	-22.1%	-11.9%	-9.1%	21.0%
MSCI EAFE	1.2%	-43.1%	11.6%	26.9%	14.0%	20.7%	39.2%	-15.7%	-21.2%	14.0%	27.3%
HFRI FOF Composite	5.3%	-21.0%	10.3%	10.4%	7.5%	6.9%	11.6%	1.0%	2.8%	4.1%	26.5%

Source: Zephyr Style ADVISOR (as of 12/31/08)

- With the exception of 2008, hedge funds have provided low correlation and down-side protection to US equities.
- Hedge funds and HFOFs outperformed equities over the last 10 years.

How are Hedge Funds Performing in 2009?

	First Quarter 2009 Return	April 2009	Qtr to Date Return (as of 5/28/09)	Year to Date Return (as of 5/28/09)
HFRX US Global Hedge Fund	0.68%	1.61%	3.90%	4.61%
HFRX Equal Weighted Strategies	0.96%	1.14%	2.68%	3.66%
HFRX US Convertible Arbitrage	9.43%	4.32%	6.47%	16.50%
HFRX US Distressed Securities	-5.16%	0.15%	-1.88%	-6.94%
HFRX US Equity Hedge	0.76%	1.74%	5.17%	5.97%
HFRX US Equity Market Neutral	-2.49%	-1.45%	0.14%	-2.36%
HFRX US Event Driven	2.29%	2.03%	3.68%	6.06%
HFRX US Macro	-0.61%	-1.10%	-2.23%	-2.83%
HFRX US Merger Arbitrage	1.69%	-0.65%	0.50%	2.19%
HFRX US Relative Value Arbitrage	1.45%	4.07%	9.59%	11.18%
HFRI US Absolute Return	-0.52%	-0.50%	-0.91%	-1.43%
HFRI US Market Directional	3.44%	2.50%	6.39%	10.04%
S&P 500 Index	-11.67%	9.39%	12.40%	0.02%

Source: Bloomberg

- Credit markets have started to function
- Fundamentals are beginning to matter again

Drawdown Statistics

Traditional and Alternative asset classes as of April 30, 2009

	Max Drawdown	Max Drawdown Begin Date	Max Drawdown End Date	High Water Mark Date	To High Water Mark
Large Cap US (S&P 500)	-50.95%	Nov-07	Feb-09	Oct-07	71.08%
Small Cap US (Russell 2000)	-52.89%	Jun-07	Feb-09	May-07	68.80%
Developed International (MSCI EAFE)	-56.40%	Nov-07	Feb-09	Oct-07	90.83%
Emerging Markets (MSCI EM)	-61.44%	Nov-07	Feb-09	Oct-07	94.36%
Real Estate (MSCI ACWI/REAL ESTATE)	-67.13%	Nov-07	Feb-09	Oct-07	133.42%
Commodities (Dow UBS Commodity)	-54.26%	Jul-08	Feb-09	Jun-08	109.49%
Low Vol HFOF (HFRI FOF: Conservative)	-20.38%	Nov-07	Dec-08	Oct-07	23.13%
Mid Vol HFOF (HFRI FOF: Diversified)	-21.75%	Nov-07	Dec-08	Oct-07	25.54%
High Vol HFOF (HFRI FOF: Strategic)	-26.82%	Nov-07	Feb-09	Oct-07	34.33%
US Fixed Income (Barclays U.S. Aggr)	-3.82%	Apr-08	Oct-08	Mar-09	0.00%
High Yield Bonds (ML HY Master II)	-33.22%	Jun-07	Nov-08	May-07	19.04%
International Bonds (Citi WorldBIG, 5-7)	-29.94%	Jul-07	Dec-08	Jun-07	23.32%
Senior Bank Loans (CS Leveraged Loan)	-12.53%	Apr-08	Oct-08	Mar-08	5.67%

2009: Credit is Still the Key

Yields	5/29/2009	4/30/2009	3/31/2009	2/27/2009	1/30/2009	12/31/2008	11/28/2008	10/31/2008	9/30/2008	8/29/2008	7/30/2008	6/30/2008
Fed Funds Target	0.25	0.25	0.25	0.25	0.25	0.25	1.00	1.00	2.00	2.00	2.00	2.00
3-Month LIBOR	0.66	1.02	1.19	1.26	1.18	1.44	2.22	3.03	4.05	2.81	2.80	2.78
90-Day T-bill	0.15	0.09	0.16	0.23	0.21	0.02	0.05	0.44	0.79	1.65	1.65	1.76
10-Year Treasury	3.67	2.01	2.73	2.98	2.87	2.11	2.93	4.01	3.85	3.83	4.07	3.99
JPMorgan Muni Bond	4.96	5.06	5.52	5.50	5.85	6.55	6.78	6.65	6.33	5.12	5.29	5.11
Moody's AAA (10-Year)	5.75	5.50	5.45	5.31	5.32	4.74	5.60	6.54	6.01	5.60	5.76	5.60
JP Morgan Global	3.09	2.85	2.73	2.81	2.86	2.56	2.94	3.46	3.52	3.56	3.74	3.85
JP Morgan Emerging	8.1	8.48	9.09	9.35	9.06	8.95	10.04	9.99	7.88	6.92	6.94	7.03
US High Yield	14.17	16.50	18.64	19.24	18.12	19.84	21.78	18.83	13.56	11.47	11.29	10.90
Spreads												
US High Yield	1174	1446	1689	1718	1622	1848	1977	1591	1075	829	781	741
Moody's AAA (10-Year)	208	238	272	233	245	263	267	253	216	177	169	161
JP Morgan Emerging	451	566	644	678	662	733	748	684	442	323	297	308
JP Morgan Muni Bond	250	305	380	343	398	508	476	381	343	209	190	180

Source: Bloomberg

- Credit spreads have narrowed dramatically from their historic highs.
- The Federal Reserve has utilized all the monetary tools at their disposal to revive the credit markets and the government will spend approximately 4 - 5% of GDP to revive the domestic economy.

III. Why Mean Variance, Monte Carlo, and Value-at-Risk (VaR) Models Didn't Work

“As far as the laws of mathematics refer to reality, they are not certain; and as far as they are certain, they do not refer to reality.”

- Albert Einstein

Why Mean Variance & Monte Carlo Simulation Didn't Work?

	Standard Deviation						
	12-Month Moving Windows, Computed Monthly						
	Dec-08	Dec-07	Dec-06	Dec-05	Dec-04	Dec-03	Dec-02
NACUBO 2008 Index Blend	16.7%	5.7%	5.2%	5.6%	5.7%	6.3%	7.5%
60% S&P 500/40% Barclays Aggr Bond	13.7%	5.4%	3.8%	4.7%	4.8%	7.1%	11.4%
S&P 500	21.0%	9.7%	5.6%	7.9%	7.3%	11.4%	20.7%

NACUBO - 2008 Endowment Study - Index Blend* (Annualized Statistics)

	Return	Standard Deviation
10-Years (12/31/98 - 12/31/08)	5.0%	9.0%
Trailing 12-Months (1/1/08 - 12/31/08)	-27.8%	16.7%

Best Case One Year Return - 2 Standard Deviations	29.9%
Worst Case One Year Return - 2 Standard Deviations	-10.5%
Best Case One Year Return - 3 Standard Deviations	40.0%
Worst Case One Year Return - 3 Standard Deviations	-20.6%
Best Case One Year Return - 4 Standard Deviations	50.1%
Worst Case One Year Return - 4 Standard Deviations	-30.7%
Best Case One Year Return - 5 Standard Deviations	60.2%
Worst Case One Year Return - 5 Standard Deviations	-40.8%

Conclusion: Financial institutions and assets were leveraged 3x more than historical inputs, accounting for 4-5 standard deviation events for many funds

*The above analysis was based on a mean variance optimization using a 20-year time horizon. *The NACUBO index blend was created using the corresponding index of the dollar weighted allocation from the 2008 Endowment Study. Sources: Zephyr Style Allocation ADVISOR and NACUBO 2008 Endowment Study.*

VIX Index - Implied Volatility

- The VIX surpassed 80 twice in fourth quarter 2008.
- The average of the VIX Index since 1990 is 19.11.



Diversification Had Limited Utility on the Downside

Correlation between asset classes have converged with the market dislocation

Zephyr StyleADVISOR Correlation Matrix January 1997 - December 2007								Zephyr StyleADVISOR Correlation Matrix January 2008 - December 2008							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)		(1)	(2)	(3)	(4)	(5)	(6)	(7)
1) S&P 500	1.00							1) S&P 500	1.00						
2) Russell 2000	0.73	1.00						2) Russell 2000	0.96	1.00					
3) MSCI EAFE Index	0.79	0.71	1.00					3) MSCI EAFE Index	0.91	0.85	1.00				
4) MSCI EM (EMERGING MARKETS)	0.70	0.70	0.76	1.00				4) MSCI EM (EMERGING MARKETS)	0.84	0.79	0.98	1.00			
5) HFRI FOF: Conservative Index	0.50	0.55	0.55	0.62	1.00			5) HFRI FOF: Conservative Index	0.70	0.64	0.74	0.75	1.00		
6) HFRI FOF: Diversified Index	0.50	0.66	0.58	0.69	0.88	1.00		6) HFRI FOF: Diversified Index	0.70	0.62	0.81	0.83	0.97	1.00	
7) HFRI FOF: Strategic Index	0.59	0.76	0.64	0.73	0.88	0.95	1.00	7) HFRI FOF: Strategic Index	0.74	0.67	0.88	0.91	0.91	0.98	1.00

Source: Zephyr Style ADVISOR

- Correlations jumped on average 35% from previous 10-year period levels
- Major Contributors: Deleveraging and forced selling

Effect of Levered Inputs on Optimization

Portfolio Statistics Case: Allocation Case - WS inputs			Portfolio Statistics Case: Allocation Case - Levered Volatility (3X)		
Portfolio Allocations	NACUBO	60/40 Mix	Portfolio Allocations	NACUBO	60/40 Mix
Group Allocations			Group Allocations		
Domestic Equities	20.00%	60.00%	Domestic Equities	20.00%	60.00%
Alternative Investments	45.60%	0.00%	Alternative Investments	45.60%	0.00%
Intl Equities	20.00%	0.00%	Intl Equities	20.00%	0.00%
Fixed Income	13.10%	40.00%	Fixed Income	13.10%	40.00%
Cash Equivalent	1.40%	0.00%	Cash Equivalent	1.40%	0.00%
Other	0.00%	0.00%	Other	0.00%	0.00%
Portfolio Statistics			Portfolio Statistics		
Expected Return (Annualized)			Expected Return (Annualized)		
One Year	9.70%	8.10%	One Year	9.70%	8.10%
Time Horizon	9.20%	7.70%	Time Horizon	5.30%	4.60%
Expected Risk			Expected Risk		
One Year	10.10%	9.10%	One Year	32.90%	29.00%
Time Horizon	2.30%	2.00%	Time Horizon	6.90%	6.20%
Best Case Return (Annualized)			Best Case Return (Annualized)		
One Year	30.80%	26.90%	One Year	86.80%	75.10%
Time Horizon	13.70%	11.70%	Time Horizon	19.50%	17.20%
Worst Case Return (Annualized)			Worst Case Return (Annualized)		
One Year	-8.90%	-8.60%	One Year	-40.90%	-37.70%
Time Horizon	4.90%	3.80%	Time Horizon	-7.70%	-7.00%
Probability of Target Return			Probability of Target Return		
One Year	50.80%	44.40%	One Year	45.00%	43.50%
Time Horizon	53.60%	26.40%	Time Horizon	28.60%	23.30%
Probability of Negative Return			Probability of Negative Return		
One Year	17.00%	18.70%	One Year	43.40%	43.50%
Time Horizon	0.00%	0.00%	Time Horizon	22.70%	23.30%

Target Return: 9.00% - 20 Year Time Horizon - 95% of Projected Return Distribution

The above analysis was based on a mean variance optimization using a 20-year time horizon. *The NACUBO index blend was created using the corresponding index of the dollar weighted allocation from the 2008 Endowment Study. Sources: Zephyr Style Allocation ADVISOR and NACUBO 2008 Endowment Study.

Asset Allocation Analysis (Levered Volatility by 3x)

Analysis Inputs
Case: Levered Inputs (30%)

Analysis Inputs

	Forecast	Risk	Date		Constraint		Group
	Return		Start	End	Min	Max	
Assets							
Large Cap US Equity	9.50%	45.30%	Jul-07	Dec-08	0%	100%	Domestic Equities
Small Cap US Equity	11.00%	61.20%	Jul-07	Dec-08	0%	100%	Domestic Equities
Global Energy	10.00%	70.20%	Jul-07	Dec-08	0%	100%	Alternative Investments
Global Real Estate	7.50%	51.30%	Jul-07	Dec-08	0%	100%	Alternative Investments
Large Cap Int'l Eq	10.30%	49.20%	Jul-07	Dec-08	0%	100%	Intl Equities
Small Cap Int'l Eq	11.80%	52.80%	Jul-07	Dec-08	0%	100%	Intl Equities
Emerging Mkt Equity	15.00%	72.60%	Jul-07	Dec-08	0%	100%	Intl Equities
US Intermediate Bond	6.00%	11.40%	Jul-07	Dec-08	0%	100%	Fixed Income
High Yield Bond	9.50%	29.10%	Jul-07	Dec-08	0%	100%	Fixed Income
International Bond	7.00%	25.50%	Jul-07	Dec-08	0%	100%	Fixed Income
Emerging Market Bond	9.00%	31.80%	Jul-07	Dec-08	0%	100%	Fixed Income
Commodities	10.00%	52.20%	Jul-07	Dec-08	0%	100%	Alternative Investments
Low Vol Hedge FOF	7.80%	13.80%	Jul-07	Dec-08	0%	100%	Alternative Investments
Mid Vol Hedge FOF	9.80%	19.20%	Jul-07	Dec-08	0%	100%	Alternative Investments
High Vol Hedge FOF	12.80%	26.70%	Jul-07	Dec-08	0%	100%	Alternative Investments
Private Equity	15.50%	45.90%	Jul-07	Dec-08	0%	100%	Alternative Investments
Citigroup 3-month T-	3.50%	1.50%	Jul-07	Dec-08	0%	100%	Cash Equivalent

Groups

Domestic Equities	0%	100%
Alternative Investments	0%	100%
Intl Equities	0%	100%
Fixed Income	0%	100%
Cash Equivalent	0%	100%

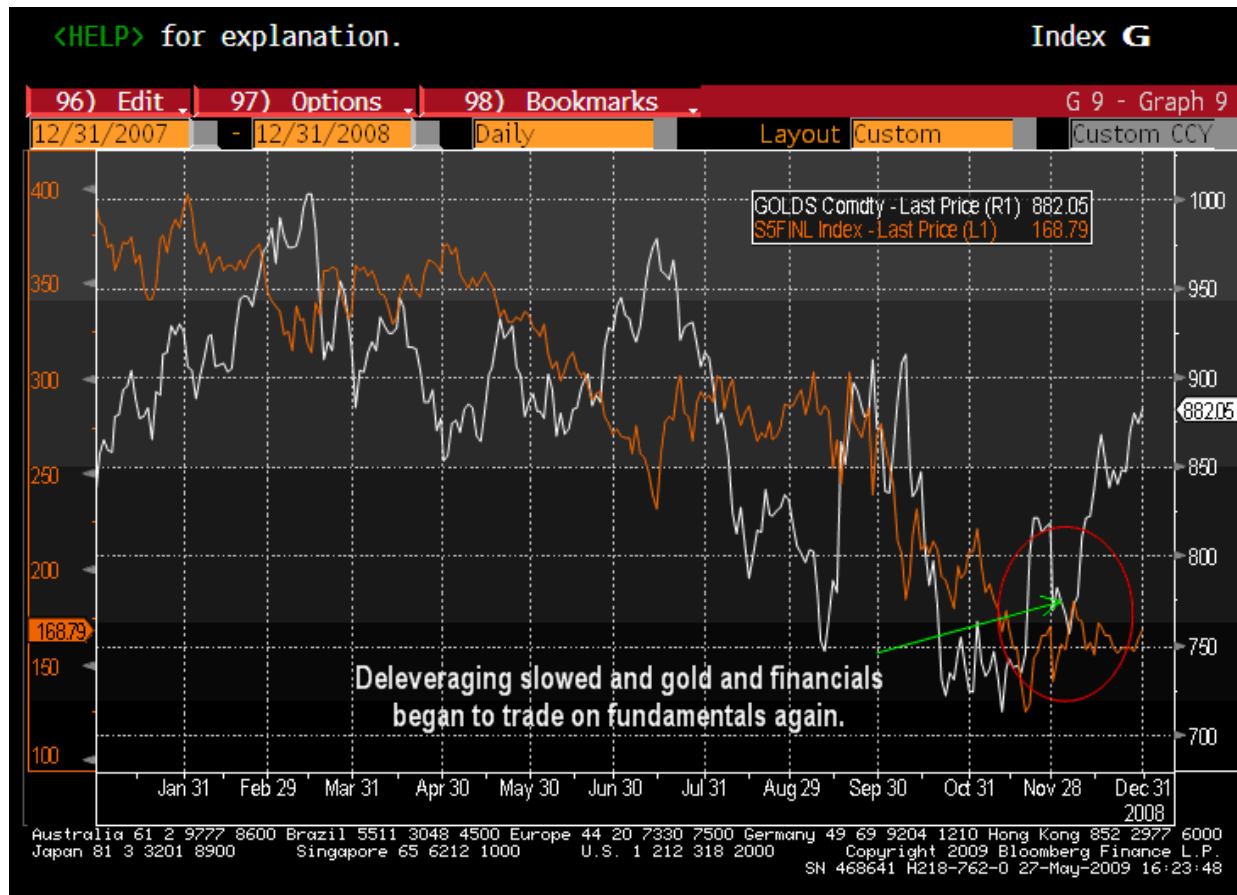
Projection Inputs

Target Return: 9.00%
Time Horizon: 20 Years
Initial Value: \$10,000,000
Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Large Cap US Equity	1.00																
2. Small Cap US Equity	0.94	1.00															
3. Global Energy	0.72	0.58	1.00														
4. Global Real Estate	0.92	0.92	0.59	1.00													
5. Large Cap Int'l Eq	0.91	0.81	0.80	0.88	1.00												
6. Small Cap Int'l Eq	0.85	0.79	0.81	0.85	0.97	1.00											
7. Emerging Mkt Equity	0.83	0.73	0.82	0.82	0.96	0.95	1.00										
8. US Intermediate Bond	0.33	0.26	0.26	0.43	0.47	0.51	0.38	1.00									
9. High Yield Bond	0.90	0.90	0.69	0.94	0.88	0.85	0.79	0.48	1.00								
10. International Bond	0.11	0.08	0.09	0.35	0.36	0.43	0.34	0.75	0.34	1.00							
11. Emerging Market Bond	0.78	0.75	0.63	0.82	0.83	0.86	0.75	0.79	0.86	0.56	1.00						
12. Commodities	0.45	0.35	0.85	0.45	0.59	0.61	0.67	0.20	0.57	0.22	0.50	1.00					
13. Low Vol Hedge FOF	0.68	0.57	0.86	0.54	0.74	0.73	0.78	0.14	0.63	0.04	0.54	0.82	1.00				
14. Mid Vol Hedge FOF	0.69	0.57	0.89	0.56	0.81	0.80	0.86	0.18	0.63	0.09	0.56	0.79	0.97	1.00			
15. High Vol Hedge FOF	0.73	0.61	0.90	0.63	0.87	0.86	0.93	0.26	0.68	0.17	0.63	0.77	0.92	0.98	1.00		
16. Private Equity	1.00	0.94	0.73	0.93	0.92	0.87	0.84	0.34	0.91	0.13	0.79	0.48	0.70	0.71	0.75	1.00	
17. Citigroup 3-month T-	0.27	0.09	0.27	0.21	0.23	0.17	0.34	0.07	0.17	0.18	0.11	0.39	0.46	0.38	0.36	0.27	1.00

IV. Understanding Levered Trades that Blew-Up in 2008

Long Gold/Short Financials Pair Trade



- The reversal in the long gold/short financials trade was violent and sharp. Between 9/30/08 and 11/12/08, gold declined 18.22%. The S&P 500 declined 20.16%.
- During the same time period, correlation increased to 56. 10-year historical correlation of gold to the S&P 500 through 4/30/09 was -0.03%.
- This trade was levered several times. Lenders required managers to substantially reduce position sizes causing forced selling on both sides of the trade.

Yield Curve Arbitrage Carry Trade Blow-Up

	<u>March 2007</u>	<u>August 2008</u>
➤ Borrow cash via the commercial paper market to finance the purchase of municipal bonds and add transaction fees.	- 3.52%	- 3.46%
➤ Invest borrowed proceeds into long municipal bond portfolio - average duration 10 years.	4.40%	4.16%
➤ Buy interest rate swaps to hedge the duration mismatch between short commercial market and 20-year duration collateral.	-0.18%	-0.74%
➤ Net yield carry	0.48%	-0.01%
➤ Leverage on trade	11X's	16X's
➤ Yield on equity	7.25%	-7.82%

Yield Curve Arbitrage Carry Trade Blow-Up

Trade as of March 2007				Trade as of August 2008			
Tax-Exempt TOB Example				Tax-Exempt TOB Example			
Bond Characteristics	Generic Muni Hypo	Assumptions		Bond Characteristics	Generic Muni Hypo	Assumptions	
(A) Par	\$ 1000000	BMA Index*	3.52%	(A) Par	\$ 1000000	SIFMA Index*	2.96%
Coupon	4.40%	2017 Year MMD (AAA Muni)	3.69%	Coupon	4.16%	2017 Year MMD (AAA Muni)	3.69%
Maturity	1/1/2017	1/1/2017 BMA Swap Rate	3.70%	Maturity	1/1/2017	1/1/2017 SIFMA Swap Rate	3.70%
Call	NA	Term (Bond Term until Maturity) (years)	10.16	Call	NA	Term (Bond Term until Maturity) (years)	10.16
Base Yield to Maturity	4.40%	Funding Spread	0.10%	Base Yield to Maturity	4.16%	Funding Spread	0.71%
Standard & Poor's Rating	BBB	Fees (Liquidity, Remarket & Trust Fees)	0.30%	Standard & Poor's Rating	BBB	Fees (Liquidity, Remarket & Trust Fees)	0.50%
Hedge	BMA	Equity Requirement	8.00%	Hedge	BMA	Equity Requirement	8.00%
Notional	\$ 10000000	Yield Spread (Yield - Hedge Coupon)	0.70%	Notional	\$ 10000000	Yield Spread (Yield - Hedge Coupon)	0.70%
(c) Equity Collateral	\$ 800000	Bond Pricing above MMD	0.71%	(c) Equity Collateral	\$ 800000	Bond Pricing above MMD	0.71%
Coupon	3.70%	(B) Purchase of Residual	\$5,000	Coupon	1.66%	(B) Purchase of Residual	\$5,000
Maturity	1/1/2017	<i>*estimate for BMA Index for next 12 months</i>		Maturity	1/1/2017	<i>*estimate for BMA Index for next 12 months</i>	
TOB Structure	\$	Yield		TOB Structure	\$	Yield	
Bond Trade (Trade 1)				Bond Trade (Trade 1)			
(a) Tax Exempt Bond Interest (Fixed)	440,000	4.40%	Bond Annual Yield	(a) Tax Exempt Bond Interest (Fixed)	416,000	4.16%	Bond Annual Yield
(b) Tax Exempt Short Term Leverage (Variable)	-361,819	-3.62%	Trust Pays 7 Day BMA + Funding Spread	(b) Tax Exempt Short Term Leverage (Variable)	-367,000	-3.67%	Trust Pays 7 Day SIFMA + Funding Spread
(c) Fees	-30,000	-0.30%		(c) Fees	-50,000	-0.50%	
(d) Tax Exempt Income (loss) (x)	48,181	0.48%		(d) Tax Exempt Income (loss) (x)	-1,000	-0.01%	
Swap Trade (Trade 2)				Swap Trade (Trade 2)			
(e) Taxable Fixed Payment	-370,000	-3.70%	MCT pays fixed	(e) Taxable Fixed Payment	-370,000	-3.70%	MCT pays fixed
(f) Taxable BMA Floating Payment	352,000	3.52%	MCT receives 7 Day BMA	(f) Taxable BMA Floating Payment	296,000	2.96%	MCT receives 7 Day SIFMA
Taxable Income (Loss) (y)	-18,000	-0.18%		Taxable Income (Loss) (y)	-74,000	-0.74%	
TOB Structure				TOB Structure			
Equity	805,000		Equity Collateral + Residual Purchase (B+C)	Equity	805,000		Equity Collateral + Residual Purchase (B+C)
(g) Equity Collateral Earnings (Interest Income)	28,160	3.50%	Tax Exempt Interest Income	(g) Equity Collateral Earnings (Interest Income)	12,075	1.50%	Tax Exempt Interest Income
(h) TOB Program Return (with hedge)	30,181	3.75%	(TOB Program Return = x+y)	(h) TOB Program Return (with hedge)	-75,000	-9.32%	(TOB Program Return = x+y)
(i) Tax Exempt Return on Equity	58,341	7.25%	Yield on Equity	(i) Tax Exempt Return on Equity	-62,925	-7.82%	Yield on Equity

* Thomson Financial

* Bloomberg

- Bond collateral decreased which resulted in margin calls from lenders.
- Swap financing became very expensive - increased from 0.18% to 0.71%.
- Commercial paper market froze making it impossible to refinance the debt on the long collateral.

Portable Alpha – Another Contributor to Global Leverage

Definition: Portable Alpha involves transferring (porting) excess returns above an objective benchmark such as the S&P 500 or MSCI EAFE Index. This is accomplished by investing in assets (alpha sources) that have the following attributes:

- Non-directional - does not add incremental volatility (risk)
- Non-correlated to index (asset class)
- Not subject to market shocks (provides additional downside protection)
- Returns should exceed the implied cost of carry (financing)
- Should deliver consistent return stream

The effect of using portable alpha strategies amplifies the capital invested.

How Portable Alpha was Employed

- 100% of capital is invested in assets expected to perform in line with the equity index (beta exposure).
- The investor typically employs a capital outlay through borrowing at a fixed or floating rate, buying futures, or entering into an equity swap transaction.
- Ideally, the borrowed capital is invested in an uncorrelated asset that will add additional alpha to the portfolio (portable alpha).

Return of the Index	10%
Portable Alpha Calculation	
1. Return of the hedge fund manager	8%
2. Less: financing cost of short-term debt	-5%
3. Excess return (alpha) over benchmark (1-2)	3%
Total Portfolio Return (Index + Portable Alpha)*	13%

In this example, the 3% excess return is ported in from outside the traditional beta portfolio, hence the name portable alpha

* The actual portable alpha performance is also affected by basis risk between underlying securities and execution of swap contracts.

How Portable Alpha Created Higher Notional Amounts of Invested Capital

Example:

- Creation of swap generates capital invested (100% exposure) \$100
- Capital invested with beta neutral hedge fund-of-funds creates leverage (100% exposure assuming HFOF does not employ leverage) \$100
- Underlying single managers create even more leverage (assumes average gross exposure = 200% - long 100% and short 100%) \$200
 - Total Exposure \$400

What happened to the portable alpha trade in 2008?

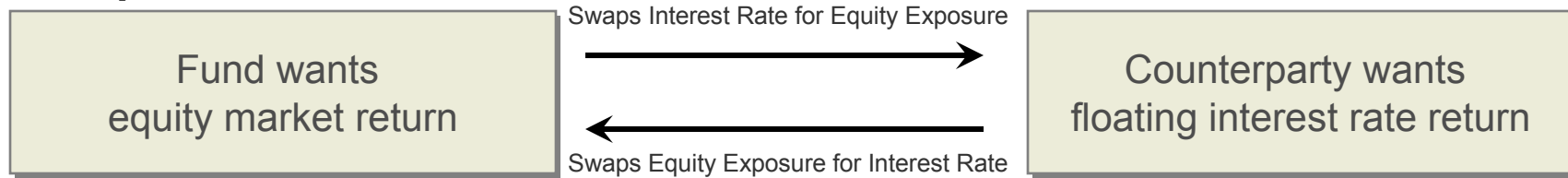
Return of the Index	-37%
Portable Alpha Calculation	
1. Return of the hedge fund manager	-21%
2. Less: financing cost of short-term debt	-5%
3. Excess return (alpha) over benchmark (1-2)	-26%
Total Portfolio Return (Index + Portable Alpha) *	-63%

In this example, the -26% excess negative return is ported in from outside the traditional beta portfolio.

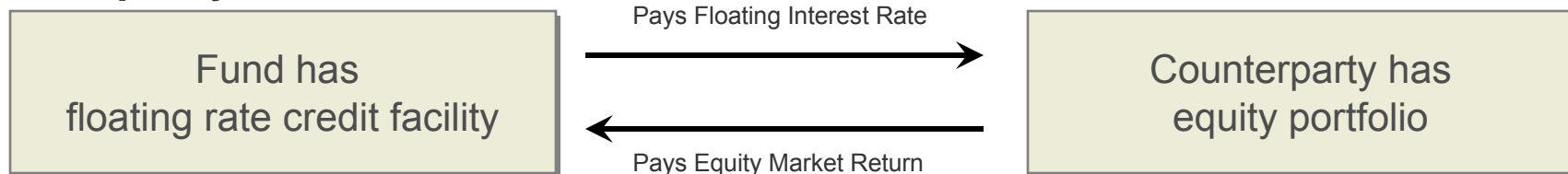
* The actual portable alpha performance is also affected by basis risk between underlying securities and execution of swap contracts.

Equity for Interest Rate Swap Example

Swap Initiation



Swap Payments



Advantages of a swap over futures and options:

- Equity exposure can be reduced by one counterparty without liquidating portfolio.
- Counterparty receiving equity exposure (the Fund) is not subject to irregular cash flows (i.e. not required to make daily mark-to-market cash adjustments due to futures margin).

Limitations of Value-at-Risk Models

VaR Defined: VaR – statistically calculates the maximum amount a portfolio can lose in a specific time period based on historical experience. Most banks calculate daily VaR.

Limitations:

- Typical VaR models base their calculations on a confidence level of approximately 95% or two standard deviations. This might suffice for a broad risk assessment if the securities are liquid and easily priced.
- VaR models are typically linear and assume returns are normally distributed. There has been very little that has been normal in the credit markets recently, especially returns.
- VaR models typically use historical data sets that are relatively short. (Lehman and Morgan Stanley used a four year weighted data set).
- Trusting too much in VaR measures, stress tests, and scenario analysis prompted banks to increase the size of trades in tandem with capital growth.

Question: Why did investment banks/hedge funds experience large losses while employing complex risk management systems?

Answer: The same reason they lost money in 1998 credit bust.

Reasons: Events occurred that have never happened before (3+ standard deviation events – events not modeled by VaR calculations).

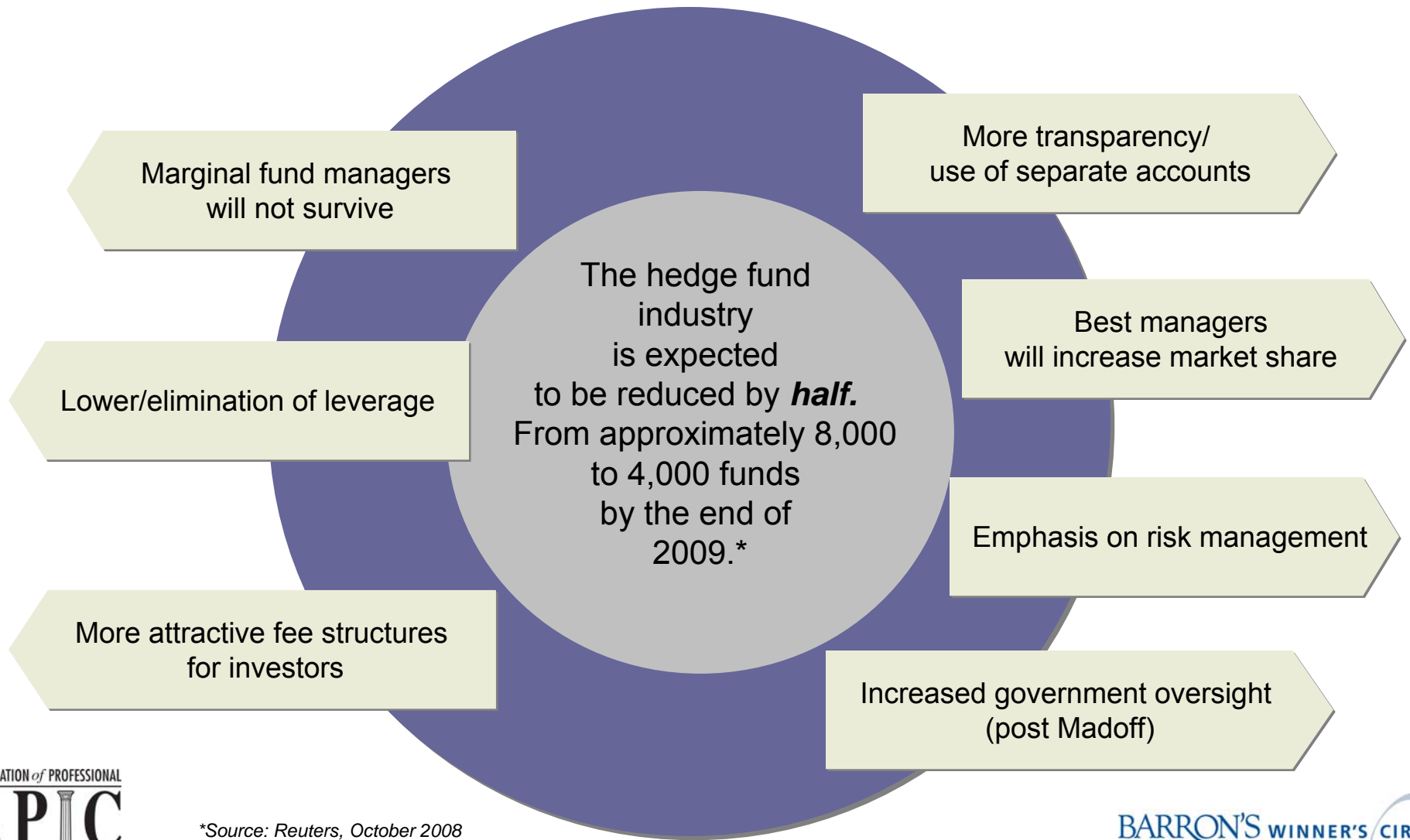
- The unprecedented velocity in which liquidity left the system making it difficult to find bids. (It is hard to model segments of the credit market simply shut down).
- The rapid downgrading of “AAA” rated ABS, CDO, etc.- ratings fraud.
- Extent that derivatives and leverage were employed in securitized debt instruments was vastly underestimated.

Conclusions: Most off-the-shelf VaR Models have marginal utility when dealing with the magnitude of this credit dislocation and the contagion effect it has on equity markets.

*“Those who do not study history are doomed to repeat it.”
- Georges Santayana, Philosopher & Poet*

**V. How the Events of 2008 Caused Massive
Restructuring in the Hedge Fund
Marketplace**

Hedge Fund Shakeout



Where the Industry is Going

- Transparency
 - More managers are moving to separate account format and creating 2.0 versions of their funds.
 - More transparency in the operational due diligence procedures of auditors, custodians, and administrators will be required by investors and consultants.
 - Greater transparency requirements for prime brokers and use of third party verification services.
- Liquidity
 - Consultants will do a better job of identifying illiquidity mis-matches of assets and terms. Fund managers are dramatically reducing illiquid exposures.
- Term Changes -
 - Less frequent withdrawal periods and longer notice periods are being adopted by hedge funds across the board (i.e, quarterly to annual).
- Hedge funds and hedge fund-of-funds will be viewed as long-term assets in the liability term structure of pension funds.
- FAS 157 (mark-to-market) accounting will not be significantly altered.
- In 2008, the vast majority of hedge fund redemptions came from individuals. The latest round of redemptions are coming from unsophisticated institutions who entered the market late.
- Fee Compression.

Fee Compression

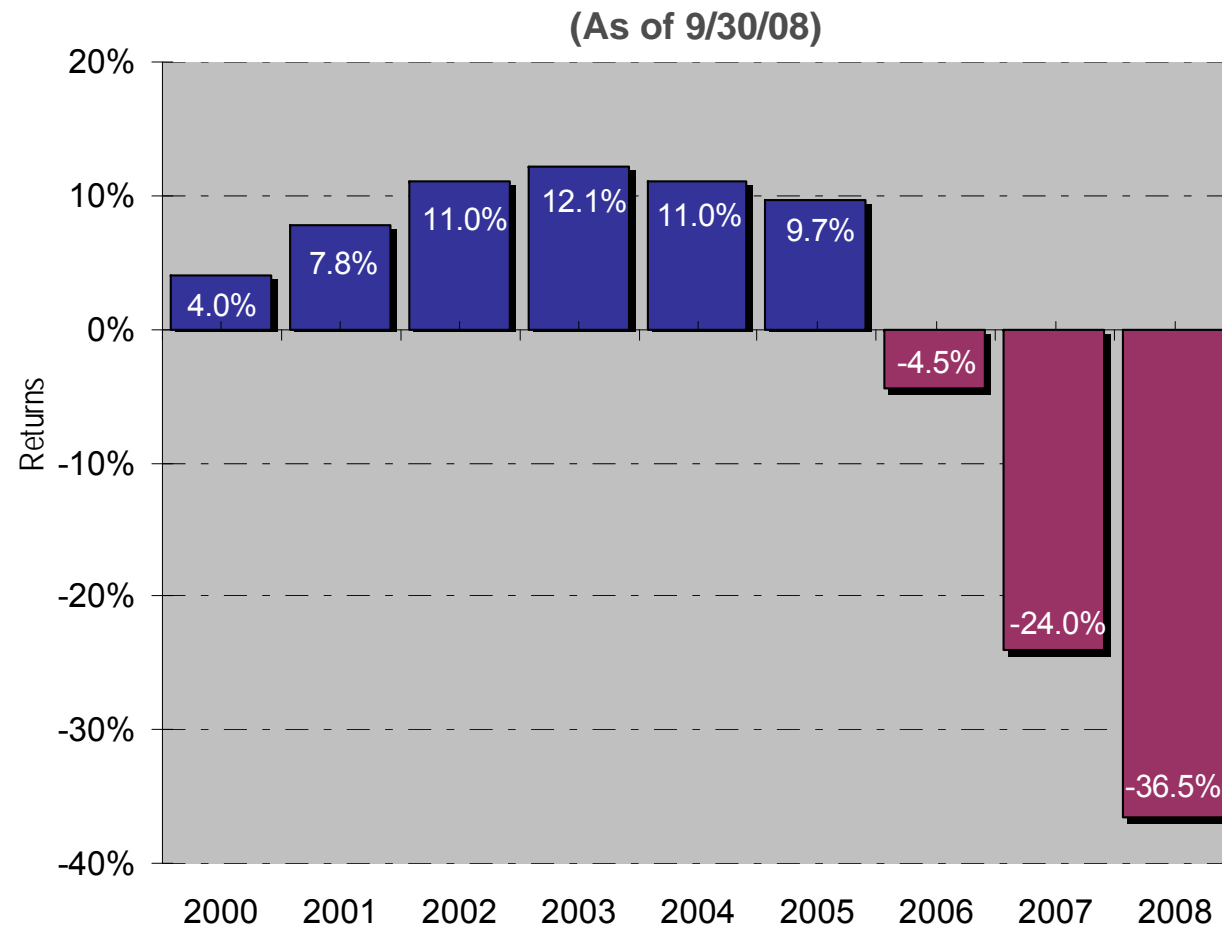
- Hedge fund-of-funds GP fees will be falling approximately 17%.*
 - 0.75- 0.95% for fund-of-funds
- Hedge fund performance fees are expected to decline 25% to 10-15%.*
- Hurdles will be increasingly required by investors (especially for fund-of-funds).
 - Possible minimum rate = Risk free + 200 basis points
- Managers are willing to lower fees in exchange for longer lock-up periods and/or permanent gates.
- Institutional investors are willing to maintain or to even pay higher incentive fees to individual managers if reasonable hurdle rates are established.
- Separate accounts will be utilized more by hedge fund-of-funds managers that have scale and infrastructure.
- Co-mingling of institutional and individual monies in fund-of-funds will be phased out – evolution of version 2.0 (institutions do not want to be in the same partnership with individual investors because of redemption risk).

VI. Private Equity: The Implosion of Recent Year Vintages and What to Expect

Causes of the Private Equity Bubble

- **Availability of Cheap Financing:**
Hundreds of covenant-light loan agreements were consummated.
- **Era of Mega-funds:**
Private Equity Funds raising \$8+ billion in assets (i.e. Blackstone, KKR, TPG, and Carlyle).
- **“Club Deals”**
Several private equity firms team up to make a large acquisition, driving up bid prices.

Private Equity Median LP Returns for Inception Years

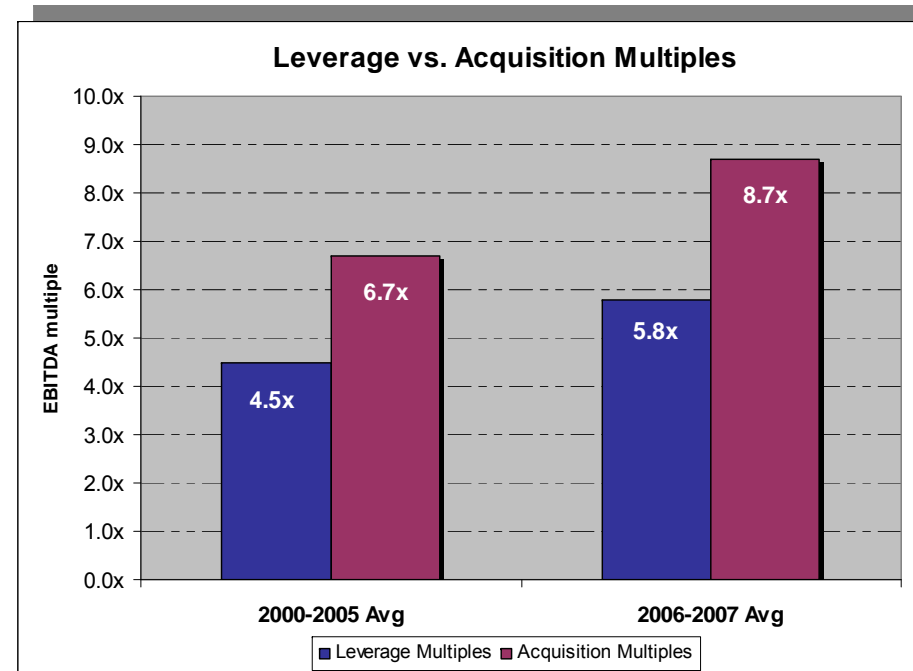
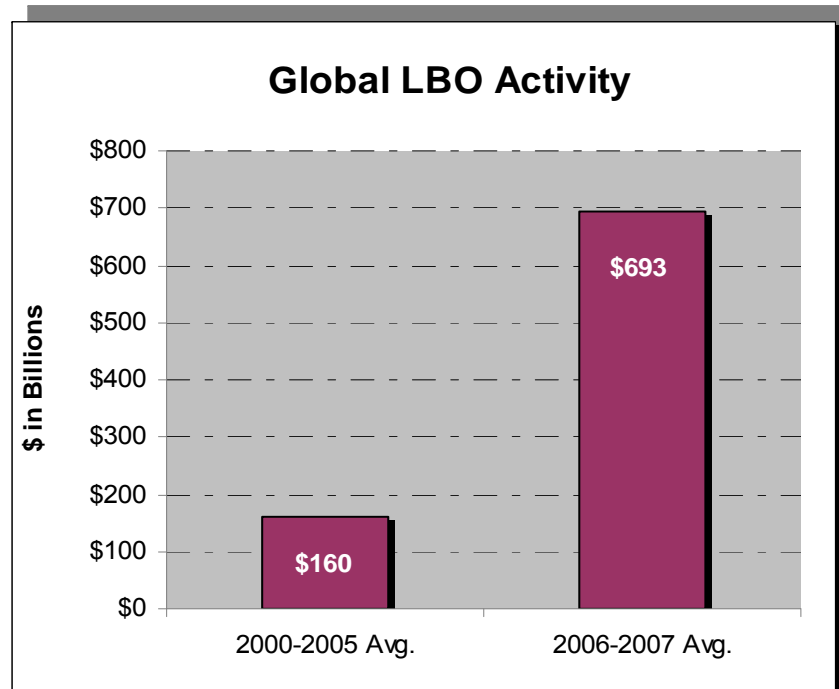


Source: Venture Economics, Thompson Financial

Valuation and Activity in the LBO Market

Build-up to Credit Dislocation

- **2000-2005:** LBO activity reached unprecedented levels and acquisition multiples remained reasonable.



Source: Morgan Stanley, September 2008

Debt Bubble Burst

- **2006-2008:** The bubble created during 2006-2007 burst as debt and acquisition multiples rose above historical norms.

How 2008 Changed the Private Equity Landscape

Impact of Credit Dislocation

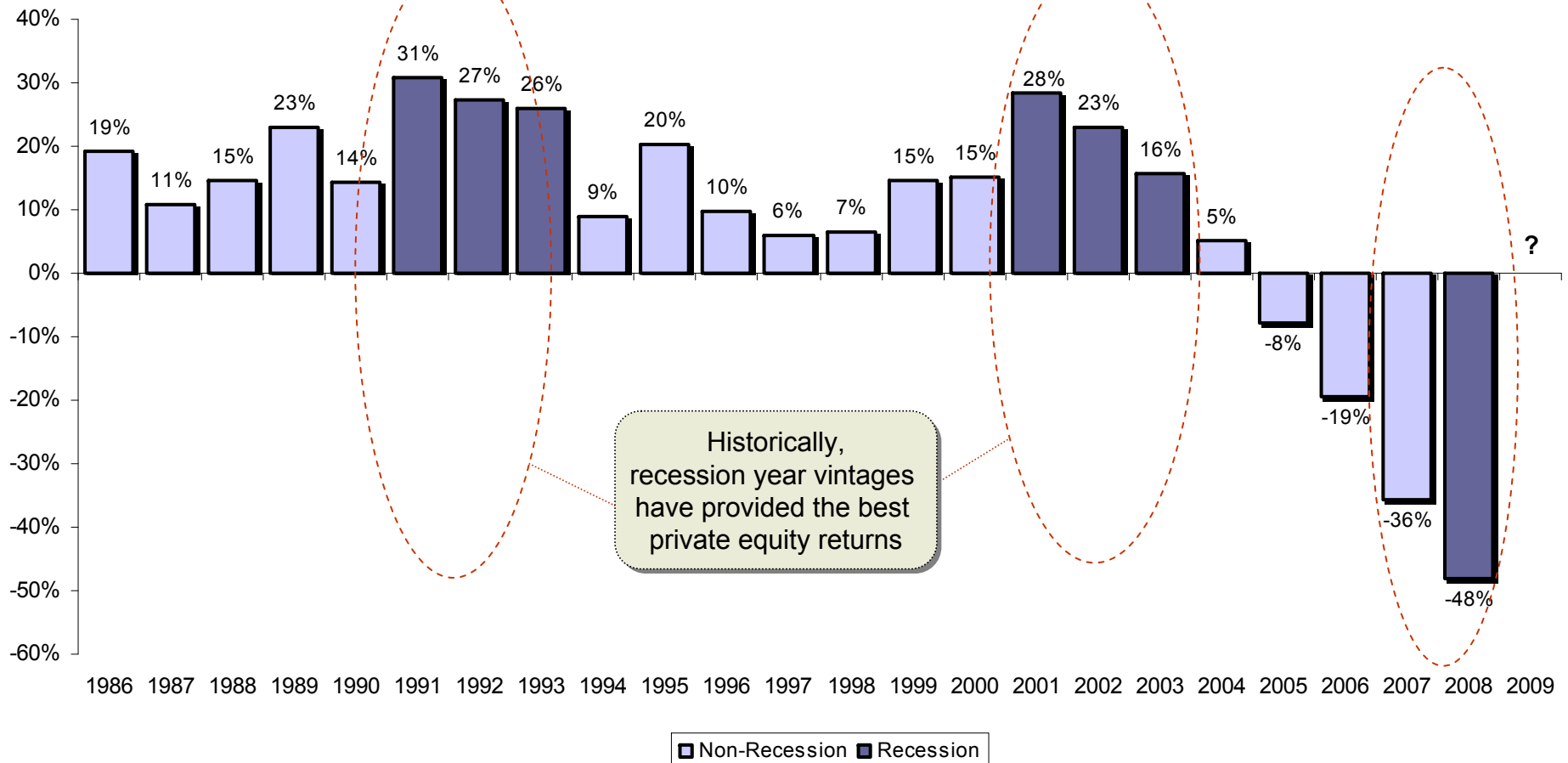
- Fewer lenders & less favorable terms (more equity, smaller deals).
- Less competition from investment & commercial banks.
- Portfolio companies will require longer holding periods until more favorable market conditions return.

Remaining Challenges

- Ability to refinance recent vintage year debt with commercial lenders.
- Investor sentiment is toward more liquid investment vehicles.
- FAS 157: Fair Market Valuation rule came into effective on January 1, 2008. We do not expect significant changes.

2009-2010 Vintage Year PE Funds Should Outperform Historical Returns

Private Equity Vintage Year Performance



Source: Cambridge Associates, LLC, US Private Equity Index and Benchmark Statistics as of September 30, 2008. Pooled mean net IRR to limited partners by vintage year. Based on data compiled from 737 US private equity funds, including fully liquidated partnerships, formed between 1986 and 2007. Returns are net of fees, expenses and carried interest. Vintage year funds since 2004 are immature and have not produced meaningful returns. "Recession Period" includes the recession periods of 1991 and 2001, including the two year periods emerging from the recessionary troughs. Analysis and comparison of partnership returns to benchmark statistics may be irrelevant. **Past performance is no indication of future performance or results.**

VII. Summary

- There is still significant leverage on the system, but deleveraging is progressing in an orderly fashion at the present time.
- Credit markets are beginning to function which should create more liquidity for hedge funds and private equity.
- There will be an increased emphasis on operational due diligence going forward.
- Alternative assets have proven to outperform other asset classes over the long run and will likely continue to do so in the future.
- Old hedge fund model was destroyed in 2008 and the newer version will be more vibrant, transparent, and will once again deliver alpha.
- Great challenges often present the best opportunities.

**VIII. Appendix A:
Operational Due Diligence Process**

Operational Due Diligence Process

Review of Key Documents (e.g. Audited Financial Statements, Due Diligence Questionnaire, Form ADV, Background Checks etc.)

Onsite Visit

- Assess Current Control Environment
- Evaluate Adequacy of Operational/Finance Team
- Review of Legal Department
- Verification of Service Providers
- Assets Accounting & Trading Systems
- Fraud Risk Assessment
- Quantitative Review of Return Data
- Assess Valuation Methodology and Controls

Prepare Comprehensive Due Diligence Report

Ongoing Due Diligence

- Annual Onsite Visits (e.g. Monitor Managers and Funds, Legal Department Review, Annual Internal Controls)
- Ongoing Fraud Risk Assessment
- Annual Financials Review
- Annual Service Provider Interviews
- Quantitative Review of Return Data
- Periodic Background Checks

**IX. Appendix B:
What Consultants/Trustees Should
Require of Hedge Funds and Private
Equity Managers**

Questions to Ask Hedge FOF Managers

Fund-of-Funds Manager Check List:

- ✓ What are the firm's competitive advantages relative to its peers?
- ✓ What kind of transparency does your fund-of-funds manager receive from underlying managers in the portfolio? If separate accounts, do security positions come directly from custodian/prime brokers?
- ✓ What is the due diligence process at the firm?
- ✓ Is the manager intimately involved in the portfolio and can they accurately and concisely describe the process of each underlying manager?
- ✓ What type of risk does the manager measure?
- ✓ What are the risk systems that the manager has in place?
- ✓ Describe any optimization or risk control techniques used to analyze portfolio exposures.
- ✓ Does the firm make investments in managers that invest in illiquid strategies? What do you consider to be illiquid securities?
- ✓ Are currency exposures hedged at the fund-of-funds level?
- ✓ Does the firm have any specific policy regarding use of leverage? If so, how is this tracked?

Questions to Ask Hedge FOF Managers (cont'd)

Fund-of-Funds Manager Check List Cont'd:

- ✓ What type of market would you expect your firm's product to perform well in on an absolute return basis? What type of market would your firm's product perform poorly in on an absolute return basis?
- ✓ How are your new manager positions implemented? What constraints are used when rebalancing portfolios? What type of sell discipline is followed in each fund?
- ✓ What are your firm's growth objectives, and how do you plan to manage that growth? Have you placed limits on the amount of assets your firm can effectively manage? If so, what is that amount, and when do you expect to reach that level?
- ✓ To your knowledge, is your firm or any professionals or officers currently under investigation by the SEC, Dept. of Labor, or any other regulatory body?
- ✓ What is the firm's ownership structure, including any outside ownership and the number of professionals that have direct equity interest in the firm?
- ✓ Who are the firm's third party service providers (administrator, auditor, counsel, etc.)?
- ✓ Do you offer services other than investment management? Is the firm affiliated with a broker dealer?
- ✓ Does the firm have a defined succession plan?

Questions to Ask Hedge FOF Managers (cont'd)

Consultant Check List:

- ✓ What systems do you utilize to identify strategy and geographical attribution of hedge fund/fund-of-funds managers?
- ✓ Are you able to get single manager transparency on your fund-of-funds managers?
- ✓ What percentage of the single managers that you research allow for individual security transparency? Is it delivered directly from custodian/prime-broker?
- ✓ What type of systems do you use to analyze specific manager trades?
- ✓ Do you use third party verification services? What has been your experience?
- ✓ How often are you able to make on-site due diligence visits?
- ✓ Are you able to perform due diligence on third-parties to include custodians, auditors, and fund administrators?
- ✓ Do you have a system or process to analyze counter party risk?
- ✓ How much credence do you put in value at risk models? Why?

“The significant problems we face cannot be solved at the same level of thinking we were at when we created them.”

- Albert Einstein

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Sources and Intent

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References in this presentation are made to the S&P 500 Index, The LB Aggregate Bond Index, NACUBO 2008 Index Blend, 60% S&P 500 / 40% Barclays Aggregate Bond Index, Russell 2000, MSCI EAFE Index, MSCI Emerging Markets Index, HFRI Monthly Indices ("HFRI"), or HFRX Monthly Indices ("HFRX") for comparative purposes only. The Fund may be less diversified than the S&P 500 Index, The LB Aggregate Bond Index, NACUBO 2008 Index Blend, 60% S&P 500 / 40% Barclays Aggregate Bond Index, Russell 2000, MSCI EAFE Index, MSCI Emerging Markets Index, HFRI Monthly Indices ("HFRI"), or HFRX Monthly Indices ("HFRX"). The Indices may reflect positions that are not within the Fund's investment strategy.

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