

## Basel II and Economic Risk

**PRESENTED TO:** IAFE Annual Meeting

**BY:** Evan Picoult, Managing Director  
Risk Architecture  
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New York, New York

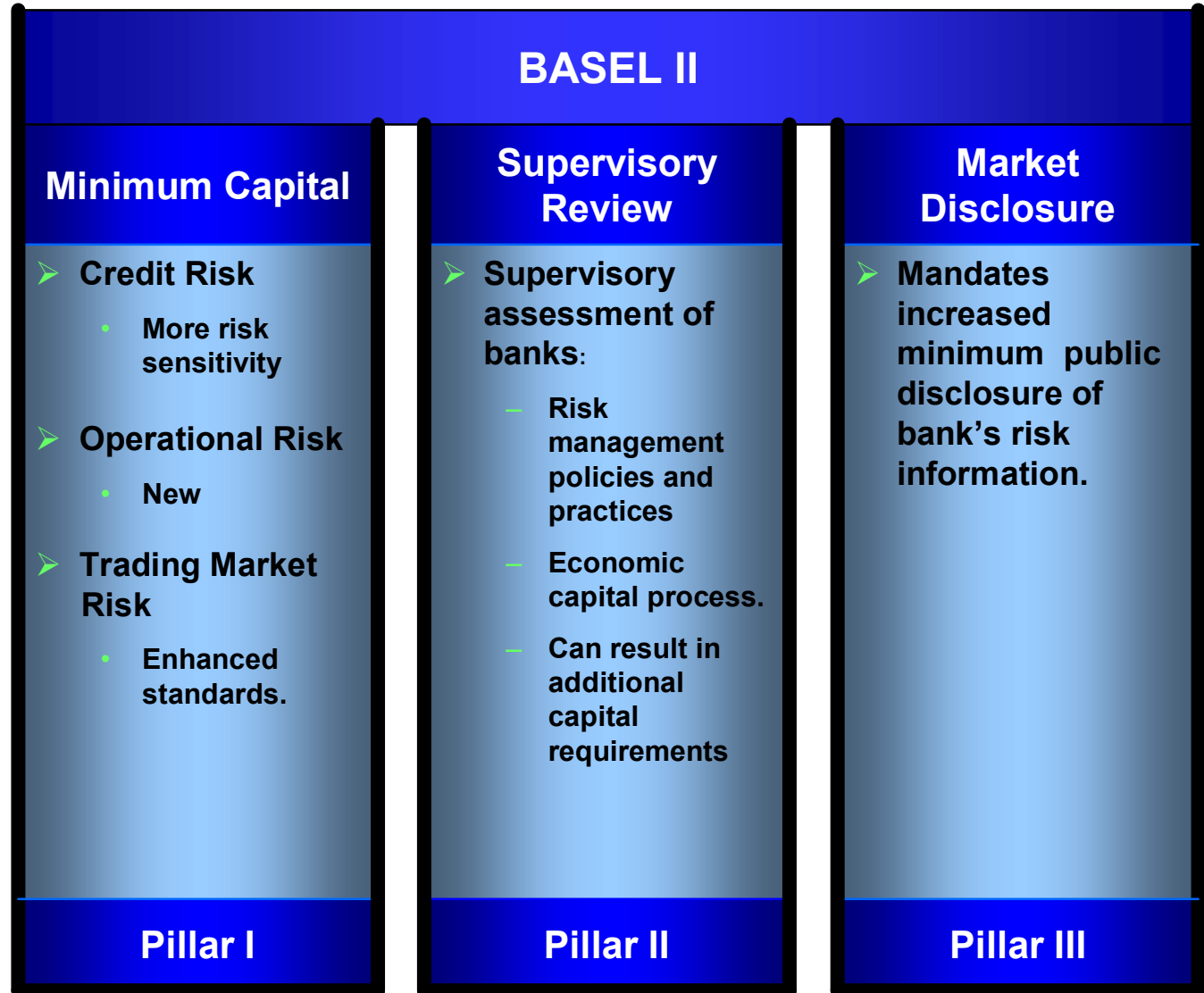
**DATE:** Wednesday, May 24, 2006

**PLACE:** NYC

# Risk Capital – Basic Concepts Summary

	Measurement of risk: Potential unexpected loss over one year at a very high confidence level	Measurement of financial resources to absorb losses and avoid insolvency.
	“How high is the potential flood?”	“How high is the dam?”
Bank’s Internal Measurements	<ul style="list-style-type: none"> <li>• Risk Capital (a.k.a. Economic Capital)</li> <li>• Advanced banks use more sophisticated measures than prescribed by Basel                             <ul style="list-style-type: none"> <li>– Higher Confidence Level</li> <li>– Portfolio Effects</li> <li>– More Risk Types</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Tangible equity is one such measure.                             <ul style="list-style-type: none"> <li>– i.e. Book capital minus goodwill and other intangibles.</li> </ul> </li> </ul>
Basel II’s Measurements	<ul style="list-style-type: none"> <li>• Risk Weighted Assets (RWA)                             <ul style="list-style-type: none"> <li>– <math>RWA = 12.5 * Risk\ Cap_{Basel\ II}</math></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Tier 1 capital</li> <li>• Tier 2 capital</li> </ul>

# Structure of Basel II



**Pillar I will have largest impact for many banks because of:**

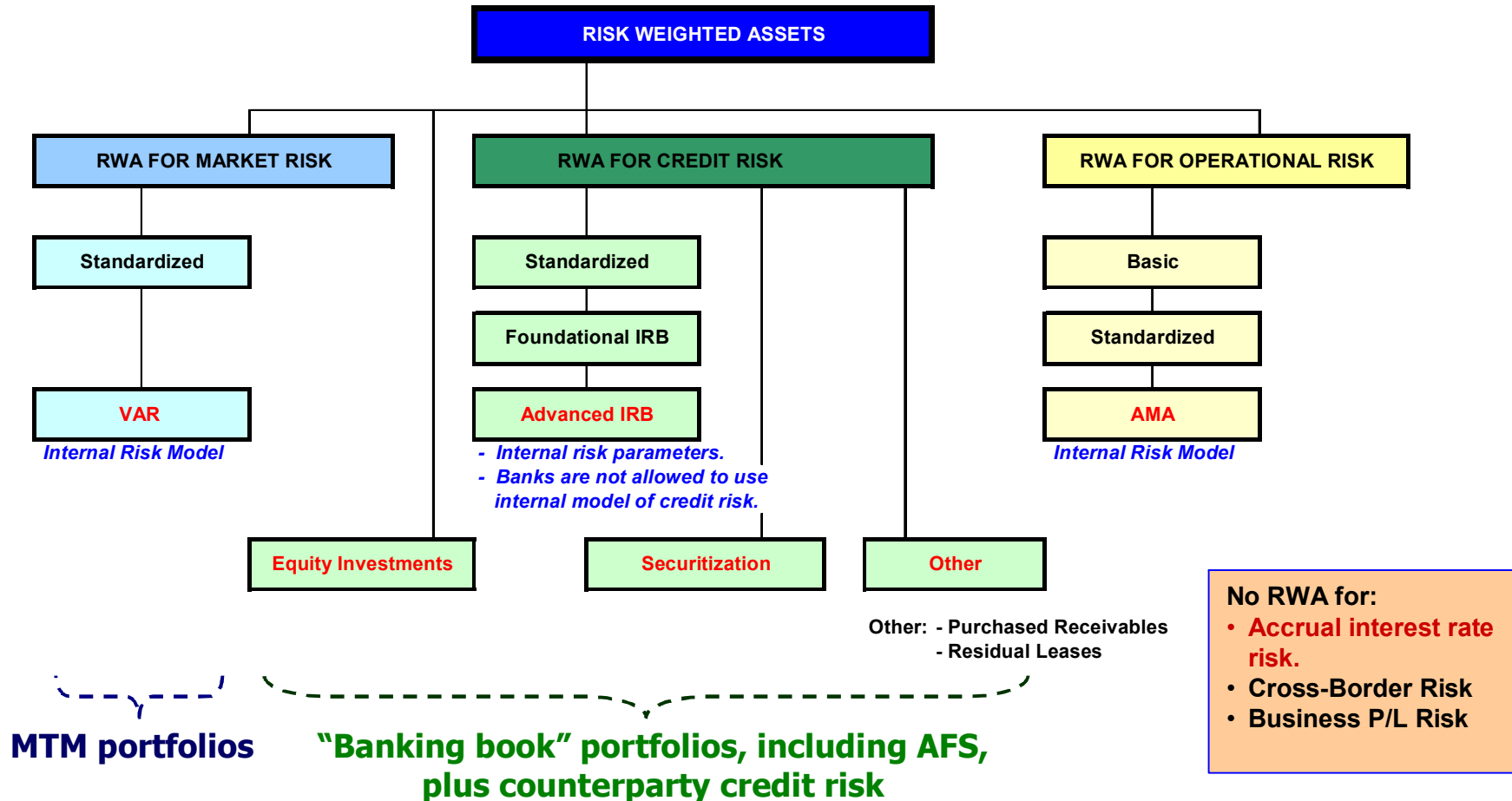
- a) Risk Infrastructure needed for calculation of RWA for credit risk.
- b) Risk Infrastructure needed for calculation of RWA for operational risk.
- c) Enhanced infrastructure for trading market risk.
- d) Differential impact on RWA for each risk type.

**Pillars are intended to be mutually reinforcing and interlinked.**

# Basel II: Methods for calculating RWA (Risk Weighted Assets)

## RISK WEIGHTED ASSETS (RWA)

- Basel II allows several approaches (methods) for calculating Risk Weighted Assets for each of the three risk types it recognizes.
- US regulators will only allow the Advanced Internal Ratings Based Approach for Credit and the AMA for Op Risk.



# Basel II U.S. contrasted with other countries

## UNITED STATES

### Scope of coverage

- The Fed/OCC/FDIC will only require the largest (~10) internationally active banks to implement Basel II.
- Other U.S. banks may choose to implement Basel II or remain on the current rules. Perhaps another 10 or so large commercial banks will implement Basel II.
- U.S. investment banks with operations in Europe need to implement the SEC's Consolidated Supervisory Entity (CSE) approach, which is similar to Basel II. Other investment banks can voluntarily implement the CSE approach.

### Approaches Allowed

- The Fed/OCC/FDIC will only allow the Advanced Internal Ratings Based Approach for Credit Risk and the AMA approach for Operational Risk.

## EUROPE, JAPAN AND OTHER COUNTRIES

### Scope of coverage

- In Europe and Japan all banks will have to implement one of the three Basel approaches.

### Approaches Allowed

- All three approaches for credit and all three approaches for operational risk will be allowed.

# Comparison of Draft NPR to Final Basel II rules

## Timing of Implementation

	Basel II Adopted by EU and others	Draft NPR For US adoption (NPR is expected to be released before the end of June 2006. Banks will have 120 days to respond).
2007	Parallel Run	
2008	Live. Floor = 90%	Parallel Run*
2009	Live. Floor = 80%	Live. Floor = 95%*
2010	Live. No floor	Live. Floor = 90%*
2011	Live. No floor	Live. Floor = 85%*
2012	Live. No floor	Live. No Floor ?*

### \* Notes:

- US will have “transition phases” rather than “transition years”. Approval to go live and to enter each “phase” will require regulatory approval.
- US regulators will recalibrate Basel II if system wide capital requirements fall by more than 10%. This is arbitrary and defeats the purpose of having a risk sensitive measure of credit risk. A study by the four large US banks has found that RWA for wholesale credit (for a fixed portfolio) would be roughly 35% higher during bottom of economic cycle relative to peak of cycle, under the Basel II formula.

# Market Risk In Trading Book: Issues

## Background of Regulatory Concerns

- **Concern Over Composition of Trading Book**
  - Regulators concerned about increasing number of illiquid, complex-structured, credit-sensitive, long-lasting transactions in trading portfolios.
- **Concern Over Increased Incentive for Regulatory Arbitrage**
  - Greater risk sensitivity under Basel II means that unsecured non-investment grade assets in accrual portfolios will have risk weights > 100%. Thus, concern about increased incentive for regulatory arbitrage between banking and trading book.
- **Additional Concerns:**
  - Some US Investment Banks, which are now subject to Basel rules, have essentially no banking book.
  - Changes in accounting rules may allow firms to selectively use Fair Value Accounting for loans.

## Requirements

- **Policies And Procedures:**
  - Firms must have clear set of Policies and Procedures specifying what positions could be included in or excluded from trading book.
- **VAR:**
  - Everything that passes the definition of the trading book can be included in VAR.
- **Minimum Incremental RWA – for particular securitization exposures**
  - The incremental RWA generated by certain securitization exposures must be equal to or greater than what would be calculated with the securitization rules.
  - However, an exception to the above will be made to banks that are dealers in the above exposures when they can demonstrate trading intent, liquid two way market, etc.
- **Required Enhancement of VAR Models.**

# Market Risk In Trading Book: Final Rules

## Banks must enhance their VAR Models:

- Formula for RWA for market risk in current and new Basel proposal:

$$RWA_{\text{Market Risk}} = 12.5 * \text{Basel\_Risk\_Capital}_{\text{Market Risk}}$$

- Under the current method banks were given a choice for calculating Risk Capital based on VAR:

- a) If VAR explicitly models issuer specific event and default risk:

$$\text{Basel\_Risk\_Capital}_{\text{Market Risk}} = 3 * \text{VAR}'_{\text{10-day\_99\%CL}} \quad \text{No bank has been given approval for this.}$$

- b) If VAR only models idiosyncratic risk but does not explicitly model default risk:

$$\text{Basel\_Risk\_Capital}_{\text{Market Risk}} = 3 * \text{VAR}_{\text{10-day\_99\%CL}} + \text{VAR\_Specific}_{\text{10-day\_99\%CL}}$$

- Under the July, 2005 method Basel Risk Capital would have two components:

- a)  $3 * \text{VAR}'_{\text{10-day\_99\%CL}}$  *Including issuer specific event and default risk.*

- b) Incremental default risk for positions for which it will take more than ten days to defease the default risk.

*The standards for defining and measuring incremental default are only vaguely defined in the July, 2005 Document. This is something the regulators and the industry have started to jointly discuss. Firms that already have approved models for specific risk will have until January 1, 2010 to implement the required enhancements..*

*In the limit of an illiquid position that would take one year to defease, the incremental RWA must be at least as large as that derived from the Basel II loan formula.*

## Basel II Concerns

- **Ideal:**

- RWA should be based on a, comprehensive, risk-sensitive measurement of economic risk. It thus would be fully consistent with a rational measurement of internal risk capital, only at a lower confidence level. Therefore, RWA would not be a binding constraint on rational, economic decision making.
- RWA calculations should leverage off of good internal risk management processes and its implementation would then entail only a small incremental cost.

- **Concerns of bad outcome:**

- RWA are disconnected from risk sensitivity because of the imposition of different types of floors.
- RWA becomes a binding constraint because of the imposition of regulatory overrides to an internal economic analysis (in the form of floors, “stressed LGDs”, minimum PDs, lack of full recognition of double default benefit, etc.) makes the effective confidence level unrealistically high.
- Banks have to build expensive internal processes that only serve the purpose of regulatory reporting, not internal risk management.

# **Where is all the Stability? (Or Do Hedge Funds Pose Systemic Risk?)**

**Discussion by:**  
**Richard R. Lindsey**  
*Bear, Stearns Securities Corp.*  
**24 May 2006**

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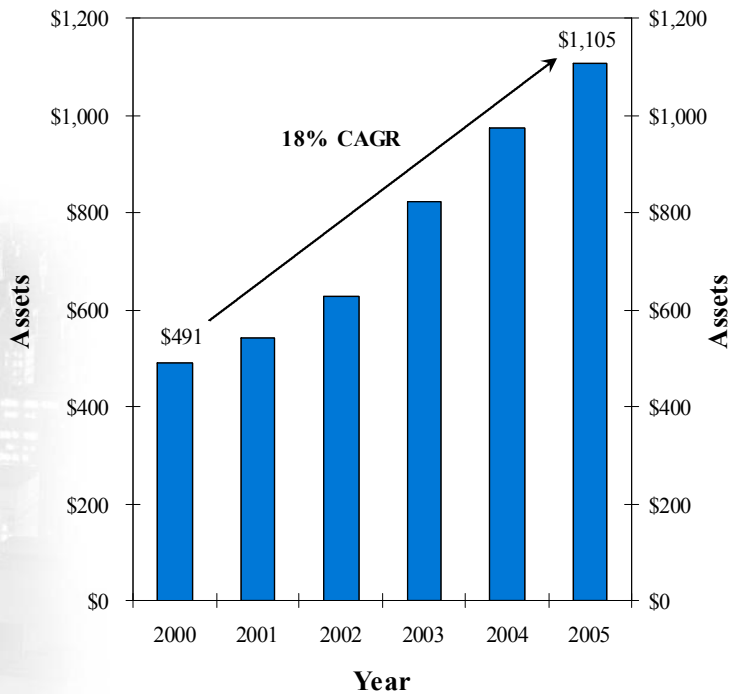
## **“Causes” of Systemic Risk**

- **Exchange Traded Derivatives**
- **Financial Futures**
- **Program Trading**
- **Portfolio Insurance**
- **OTC Derivatives**
- **Junk Bonds**
- **Emerging Markets**
- **CMOs**
- **Credit Derivatives**
- **Hedge Funds!?**

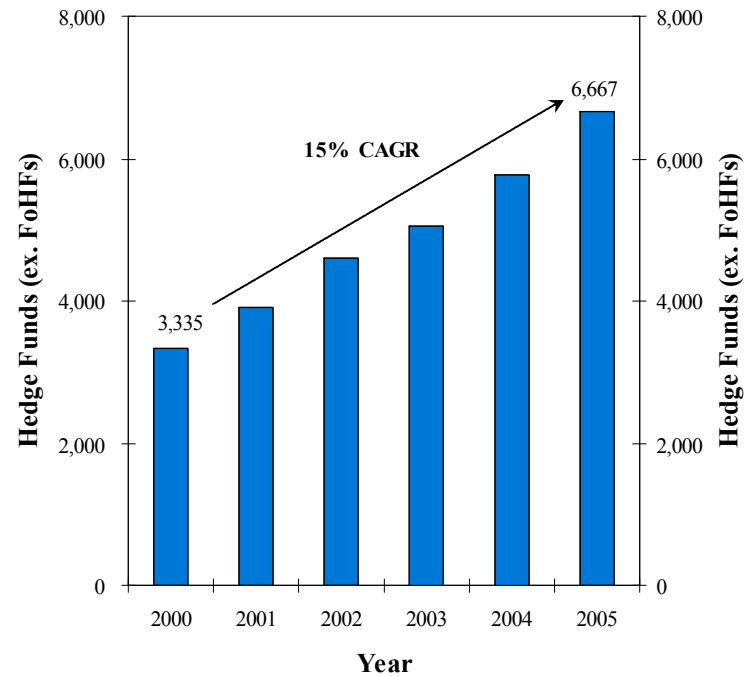


# Hedge Funds Have Expanded Rapidly

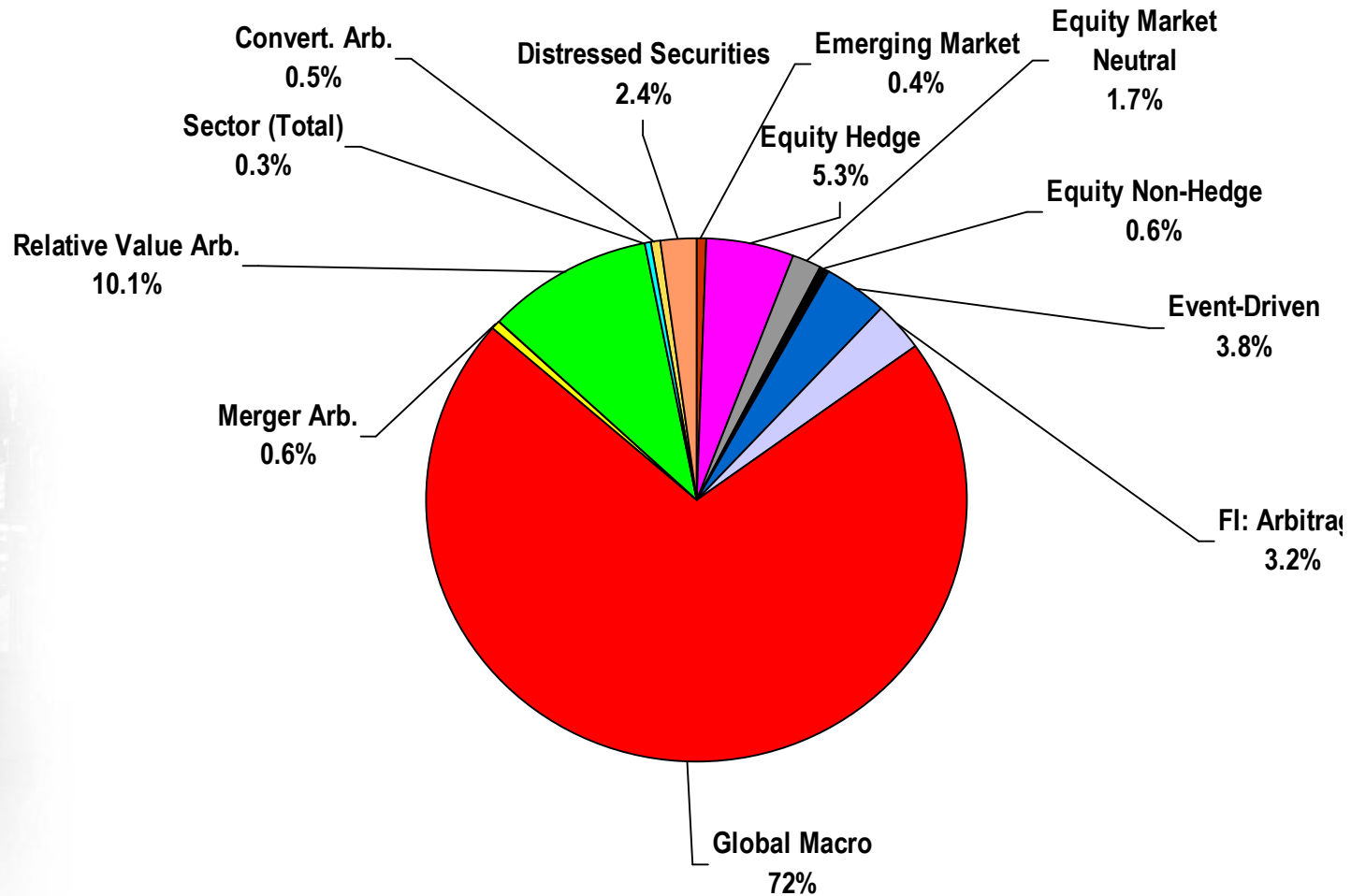
**Worldwide Hedge Fund Assets (\$ in billions)**



**Number of Hedge Funds Worldwide**

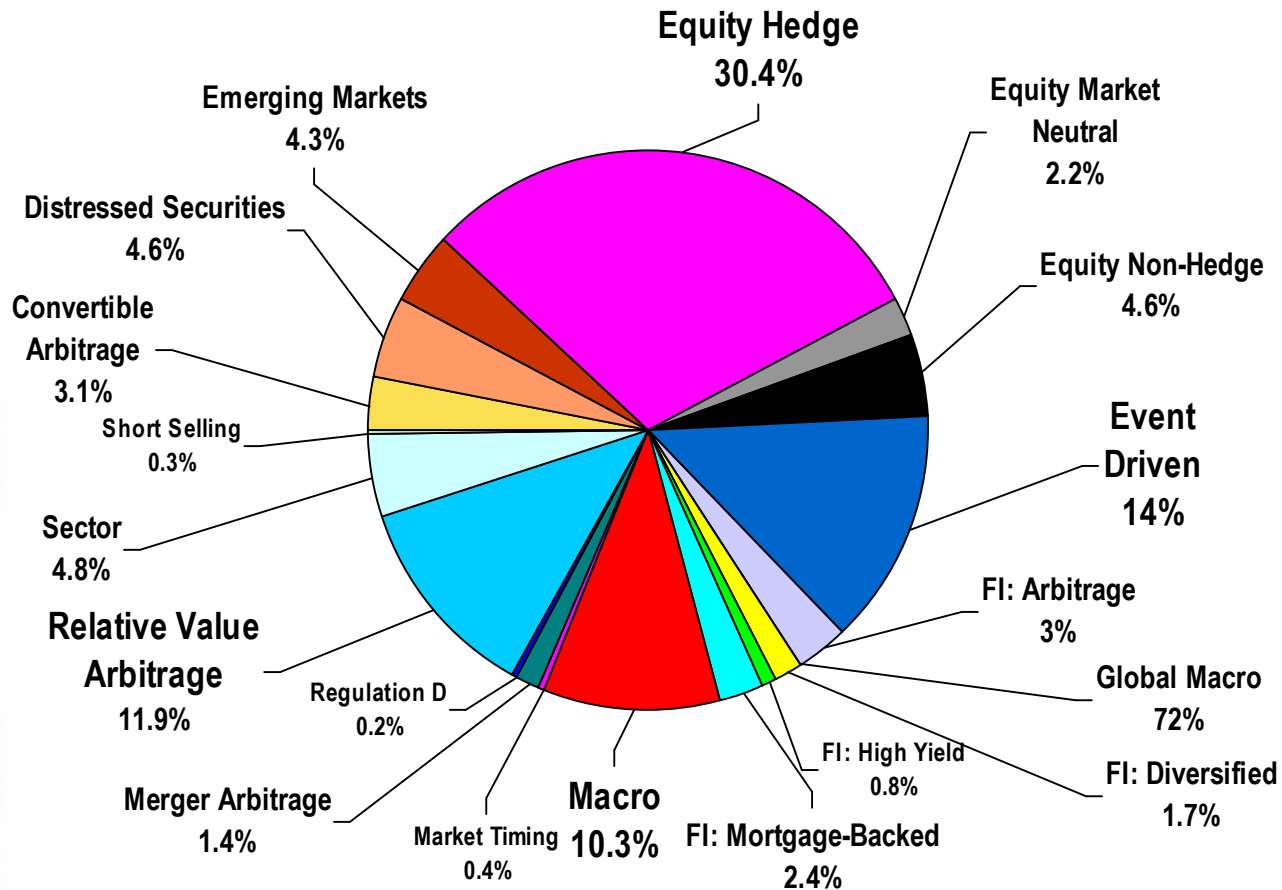


# Estimated Strategy Composition by AUM – 1990

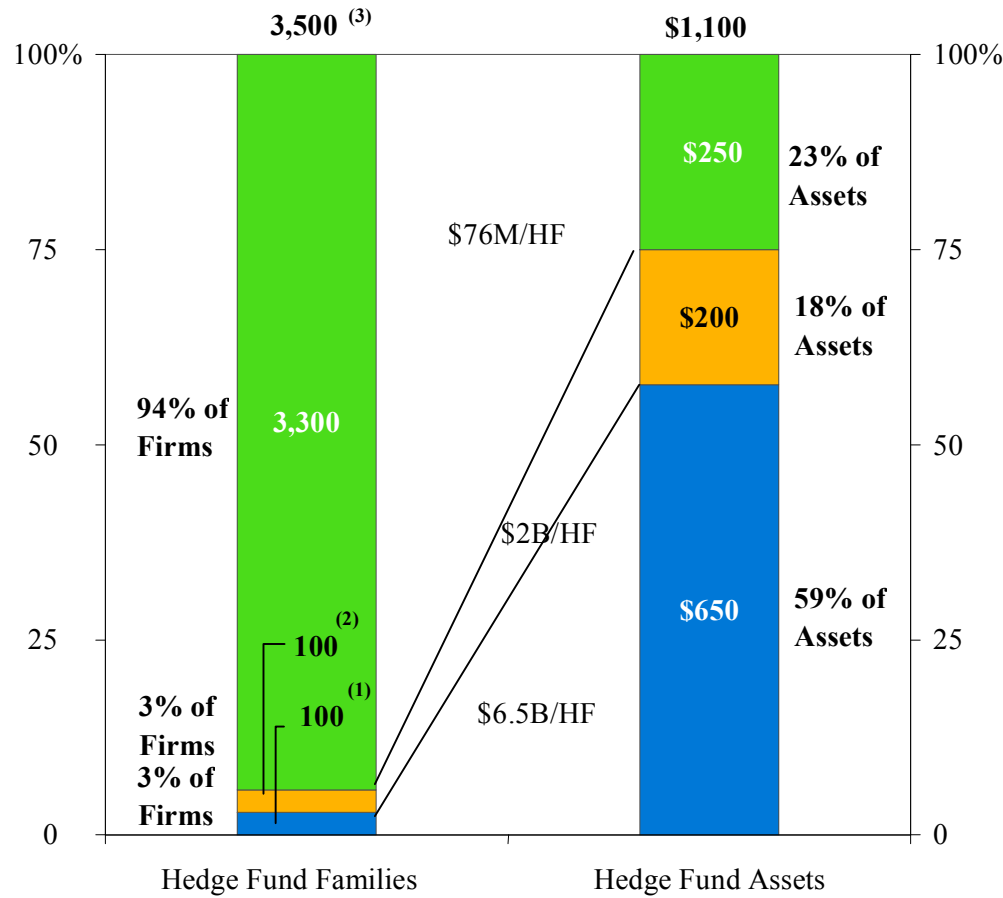


Note: From HFR

# Estimated Strategy Composition by AUM – 2006



# Concentration of Hedge Fund Assets



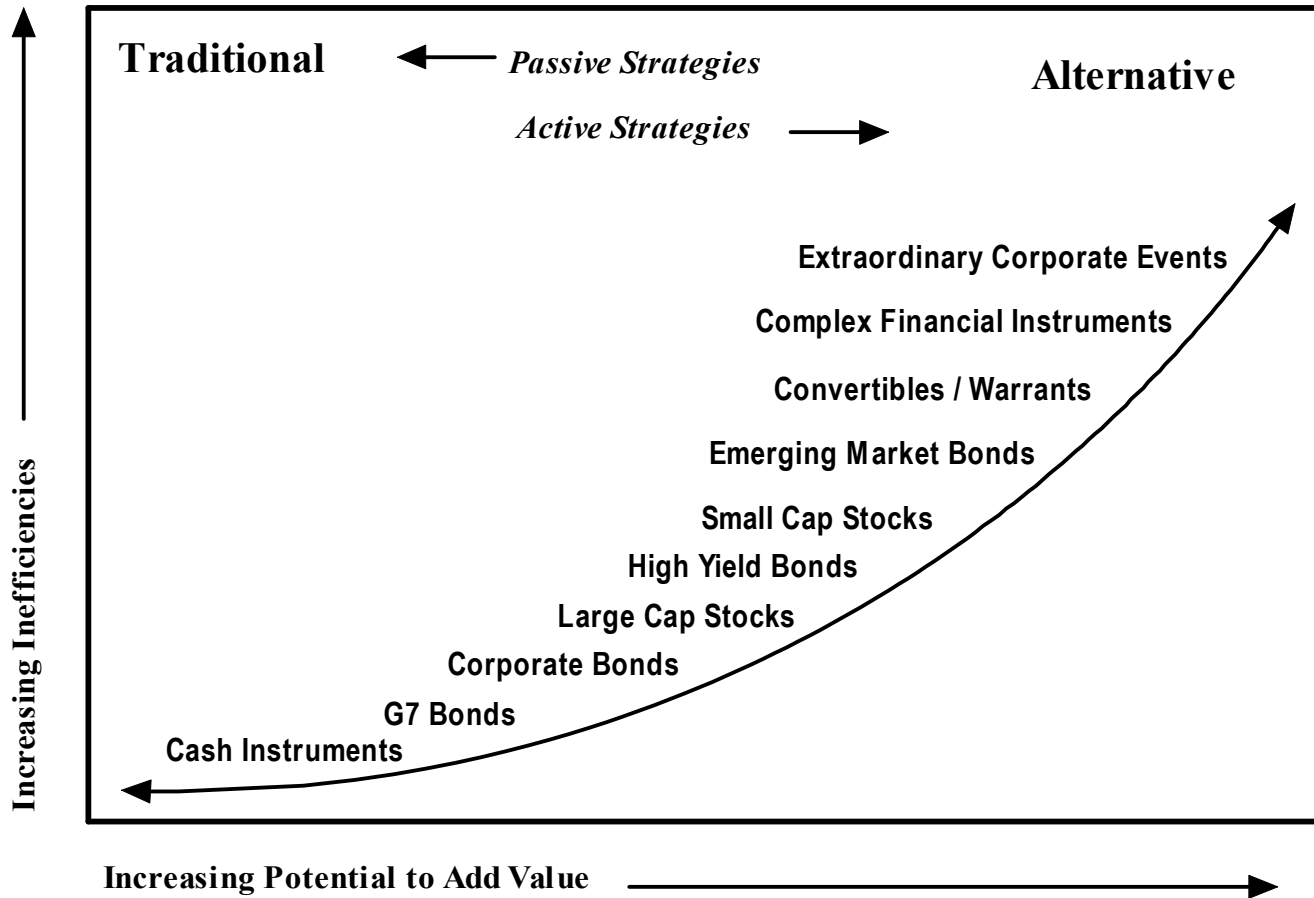
Notes:  
 1. Source: *Absolute Return*, Feb-2006  
 2. Source: "The Hedge Fund 100", *Alpha Magazine*, May/June 2005  
 3. Source: Strategic Financial Solutions estimates 3,500 General Partners based on HF database study

# Hedge Funds are Active Market Participants

- **They Account for 35-40% of Overall Equity Commissions in US and Asia**
- **They Account for 40-50% of Daily Turnover on the New York and London Stock Exchanges**
- **They Dominate Convertible Bond Trading Flows, Accounting for over 70% of Total Volume**
- **They Account for 20-30% of the Credit Default Swap Volume**
- **They Represent 82% of the Trading Volume in US Distressed Debt**
- **They are Almost 33% of Trading in US Speculative-Grade Bonds**
- **They Dominate US Exchange Traded Funds, Controlling 70% of the Volume**
- **They are Heavily into Global Foreign Exchange, Representing 10-15% of Worldwide Volume**



# Investment Opportunities



## **Hedge Fund Leverage**

- **Balance Sheet Leverage**
- **Instrument Leverage**
- **Dry-Powder Agreements**
- **Leverage on Leverage**



## **Institutional Exposure to Hedge Funds**

- **Prime Brokerage**
- **Financing**
- **Counterparty Trading**
- **Correlated Trading**
- **Secondary Market Effects**



# Hedge Funds and Market Efficiency

## ■ **Diversification and Pooling**

- **Low Correlation with Traditional Asset Classes Provides more Diversification Opportunities**
- **Pool Capital from Investors and Professionally Shape its Utilization**

## ■ **Price-Efficiency**

- **Hedge Funds Attempt to Exploit Inefficiencies in Financial Markets**
  - ✓ The Activity of Hedge Funds Provide More Price Information to the Market, Thereby Improving Pricing Efficiency
  - ✓ The Exploitation of Inefficiencies Leads to the Resolution of Inefficiencies

## ■ **Liquidity**

- **Hedge Funds have a Relatively Small Proportion of Investment Assets**
  - ✓ Use Leverage, Short Sales and Derivatives
  - ✓ Can Invest in Special or Ill-Liquid Instruments
  - ✓ Active Trading Volume

## **Who Has the Risk?**

- **Symmetrical Risks?**

- **Hedge Funds Pose Risks to Financial Institutions**
- **Financial Institutions Pose Risks to Hedge Funds**

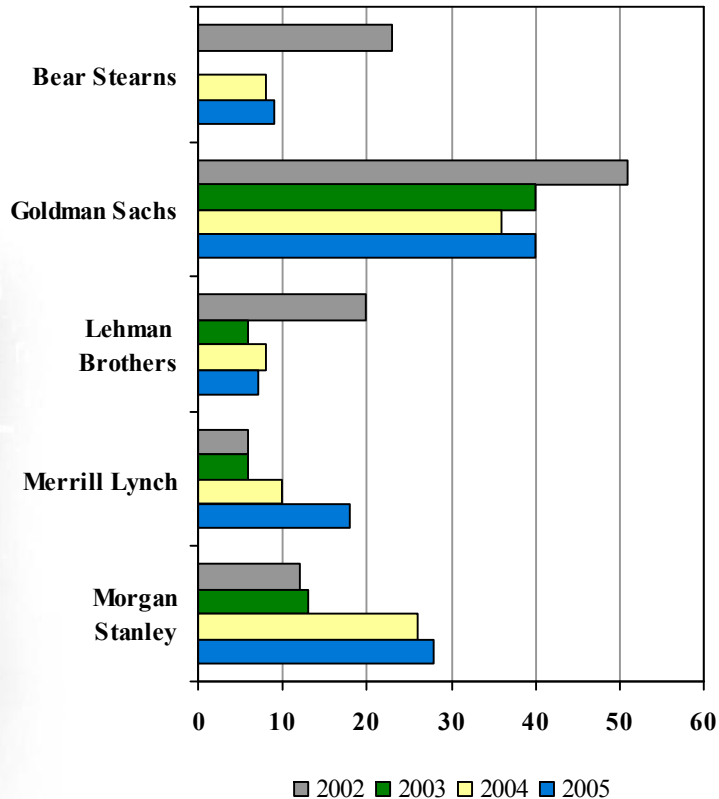
- **Buyers of Risk?**

- **Hedge Funds Take Risk Out of the Regulated Sector**
- **Spread Risk to Investors**
  - ✓ Do Investors Understand?
  - ✓ Economically Efficient?

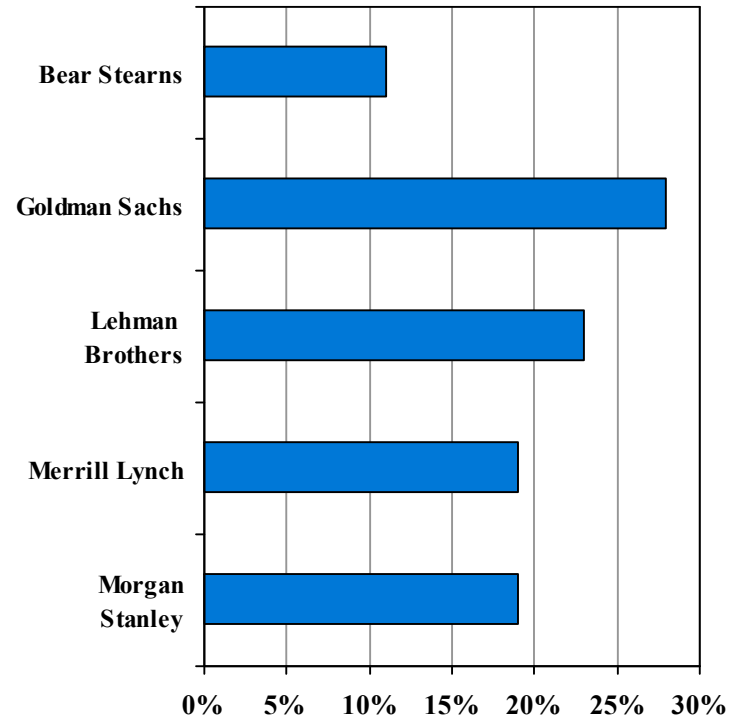


# Trading Volatility

**Negative Trading Days**



**Trading Revenue Volatility**



**Notes:**

- 1) Trading Revenue Volatility measured by standard deviation of trading revenue as % of its mean, over three years to Q4 2005
- 2) Source: Moody's, as reporting in *The Economist* 29-Apr-06