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Risk Management in Reinsurance

An Integrated Approach

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Views on Risk

Risk-averse society wants to “off-load” risk

- Insurance grows faster than GDP

Capital markets remain focused on return

- Limited application of risk technology
- Low credit spreads
- Growth in non-diversified vehicles

Insurance is primary adapter of risk management tools and technology

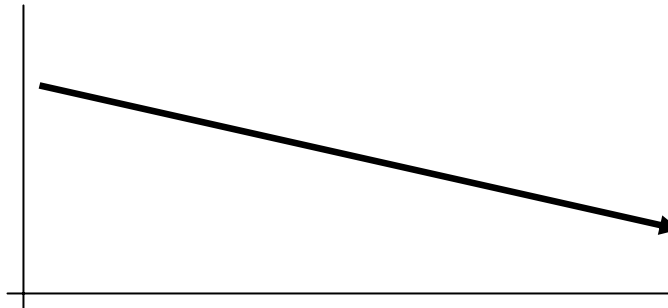
- Very sophisticated application of insurance risk
- Driven by illiquid, long tail nature of exposures



Global Risk Profiles

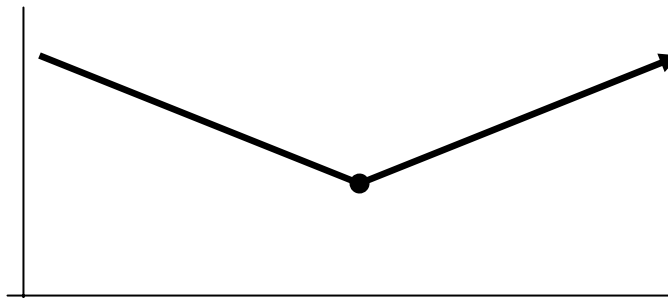
Economic Risk

- Globalization
- Inflation



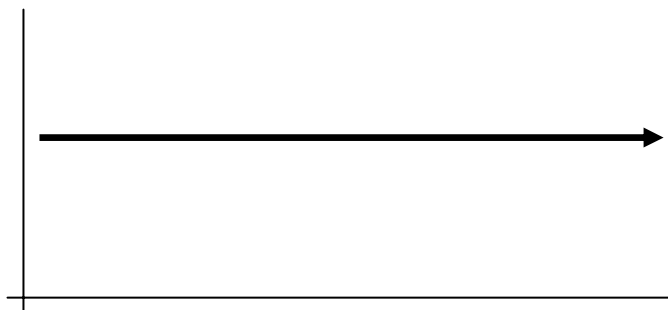
Political Risk

- War
- Instability



Enterprise Risk

- Strategic
- Reputational
- Operational



Reinsurer's Risk Profile

Assumed Risks

Insurance Risk

- Catastrophe
- Casualty Loss Trends
- Longevity
- Mortality
- Aviation
- Marine
- Credit
- Motor Loss Frequency
- etc.

Capital Markets Risk

- Interest rate
- Default risk
- Equity Markets
- Real Estate
- etc.

Capital and Insurance Markets are Merging

Insurance

Historic

Mutual insurance

Stock insurer

Debt of stock insurer

Capital Markets

Historic

Common stock

Debt

Convertibles

New/Future

Cat bonds

Side cars

Cat futures

New/Future

Derivatives

Credit default swaps

Private equity

Integration will cause additional risk



Capital and Insurance Markets are Merging

The Challenges

1. Managing a re/insurer in an integrated risk world

- Need to participate fully in traditional capital markets risk
 - Improved diversification; lower risk
 - Improved gearing of capital
- Need to participate in new capital markets risk products
- Need to improve ability to manage across the risk curve
 - Limit unintended/unknown covariance
 - Diversification credit
 - Skills and tools



Capital and Insurance Markets are Merging

The Challenges

2. Capital markets return-centric view will impact re/insurance markets

- Trading vs. buy and hold
- Volatility vs. tail
- Open ended vs. closed ended
- Management company vs. integrated vehicle
- “Carry” vs. bonus & stock grant

Capital markets characteristics may lead to under pricing of insurance risks

Capital and Insurance Markets are Merging

Critical Management Attributes

Every risk has a capital charge

- Based on volatility and downside

Portfolio of risks have different attributes than some individual risks

Diversification allows capital management

- Strategic and tactical capital/risk/return management

Risk management must be based on an economic view

- Not GAAP, Statutory, SEC or BASEL



Capital and Insurance Markets are Merging

Differing languages, methodologies and metrics

No common view on Return

- Technical ratio
- Combined ratio
- Spreads
- ROI
- Operating Income
- Net Income
- Comprehensive Income

No common metrics for Risk

No common risk adjusted returns

No common diversification metrics

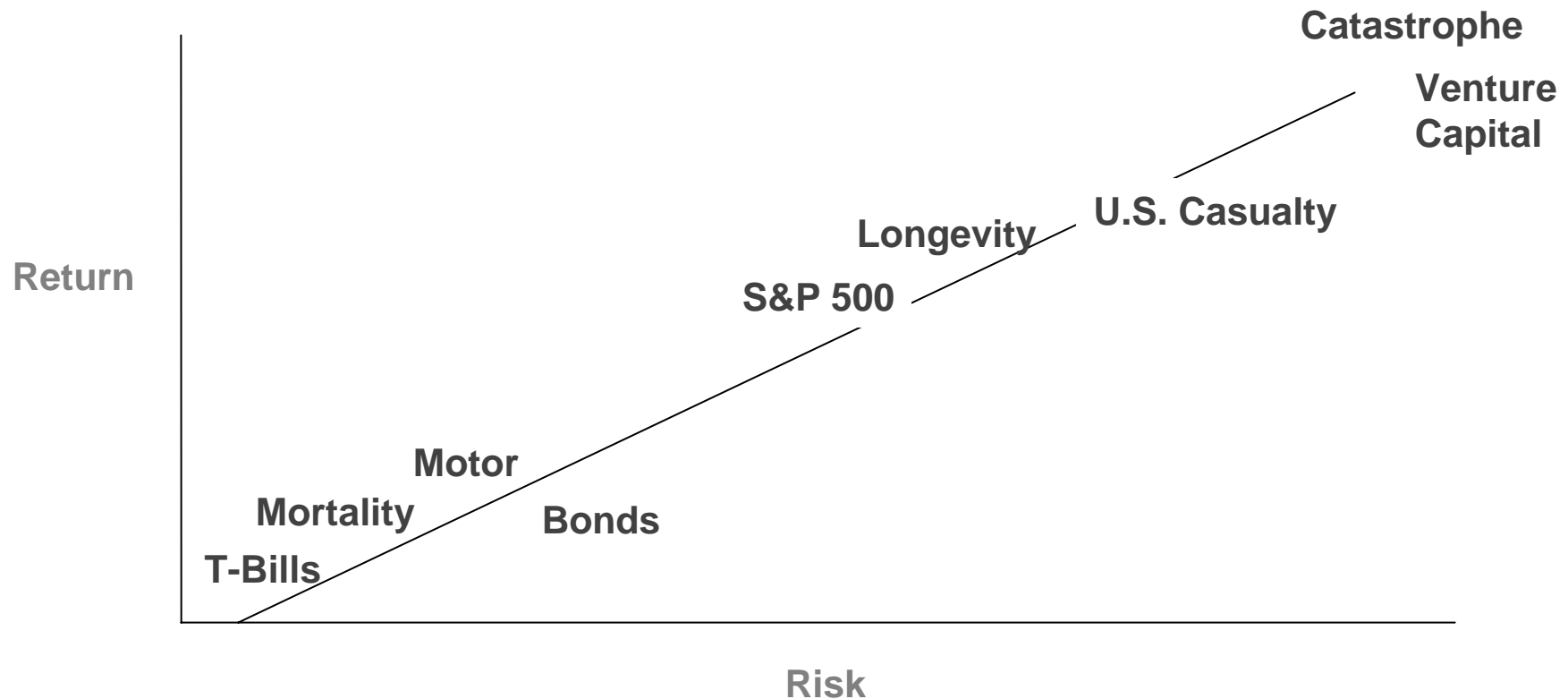


Execution Risk



Capital and Insurance Markets are Merging

One Risk Organization : One Language



Need one Risk Pricing Model (RPM)

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Capital and Insurance Markets are Merging Risk Management in a Merged World

Build one RPM line

Define risk appetite along that line

Determine long-term return goal

Manage portfolio to achieve goal within determined risk parameters

Measure results



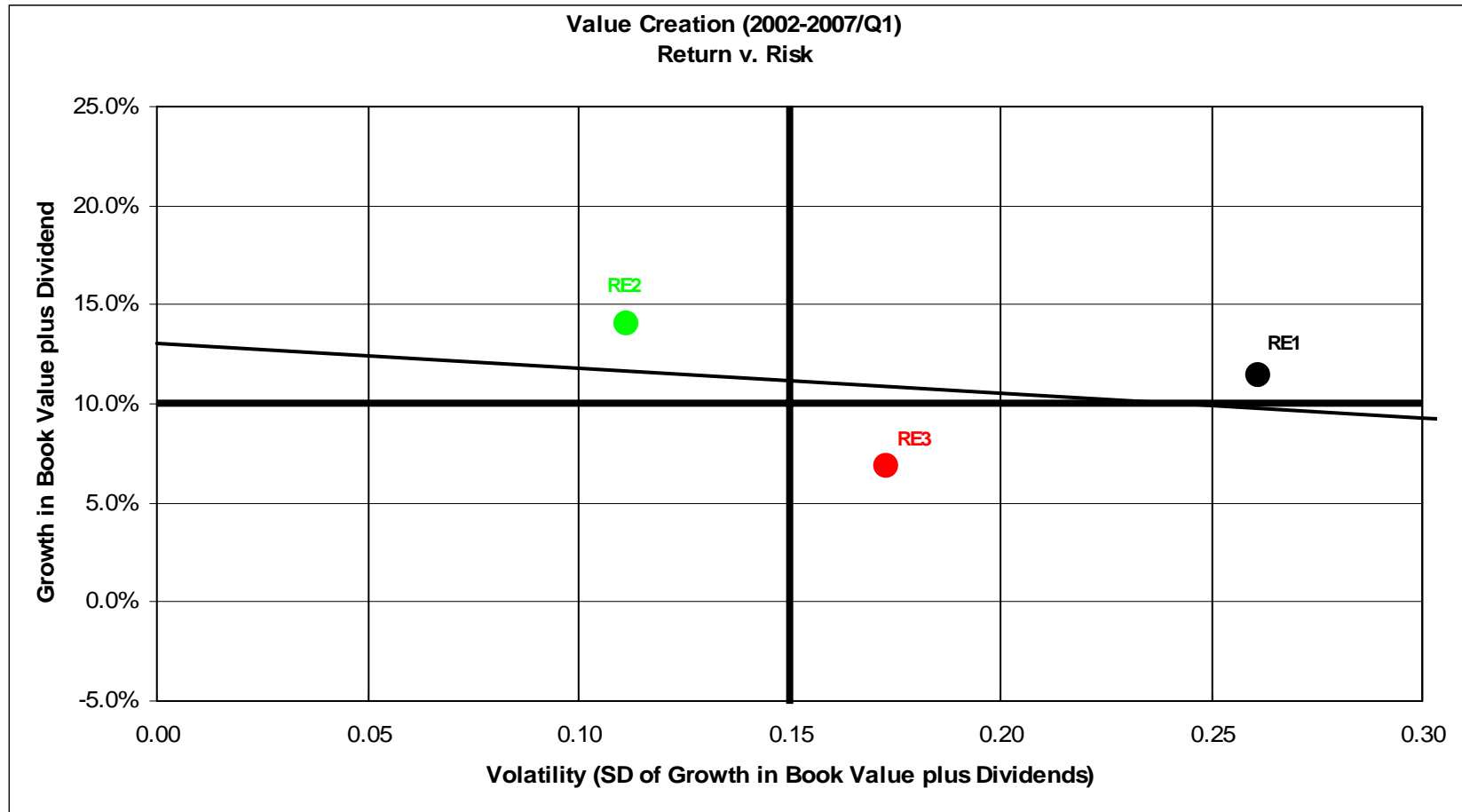
Capital and Insurance Markets are Merging Capital Providers' (Investors') Risk/Return Framework

Currently different standards for insurance and capital markets

Need single risk and return framework that can be applied to all risk takers

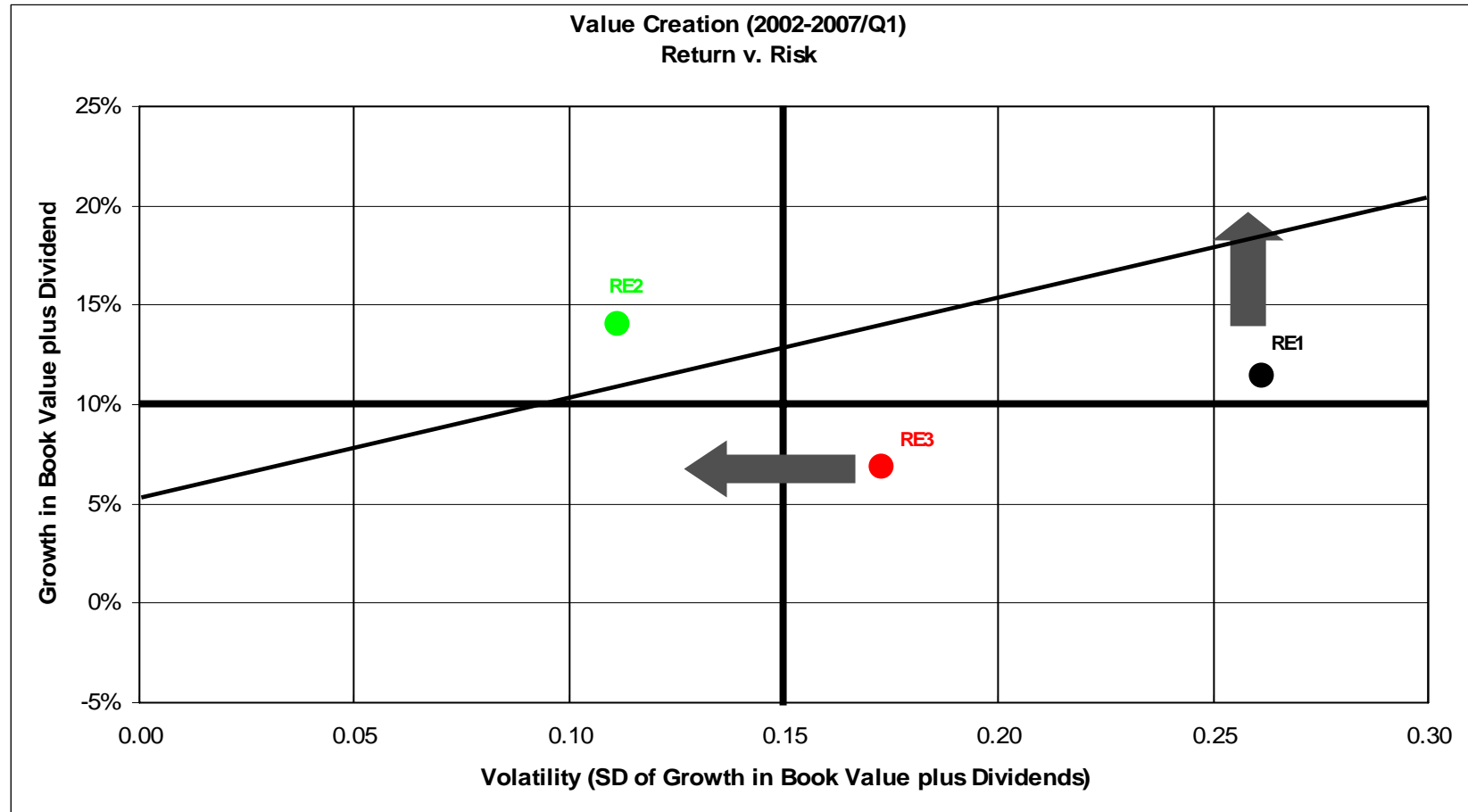
- Return metric: Growth in net asset value (5-plus years)
- Risk metric: Standard deviation of return metric

Historical View: Reinsurance Markets 2002-2006



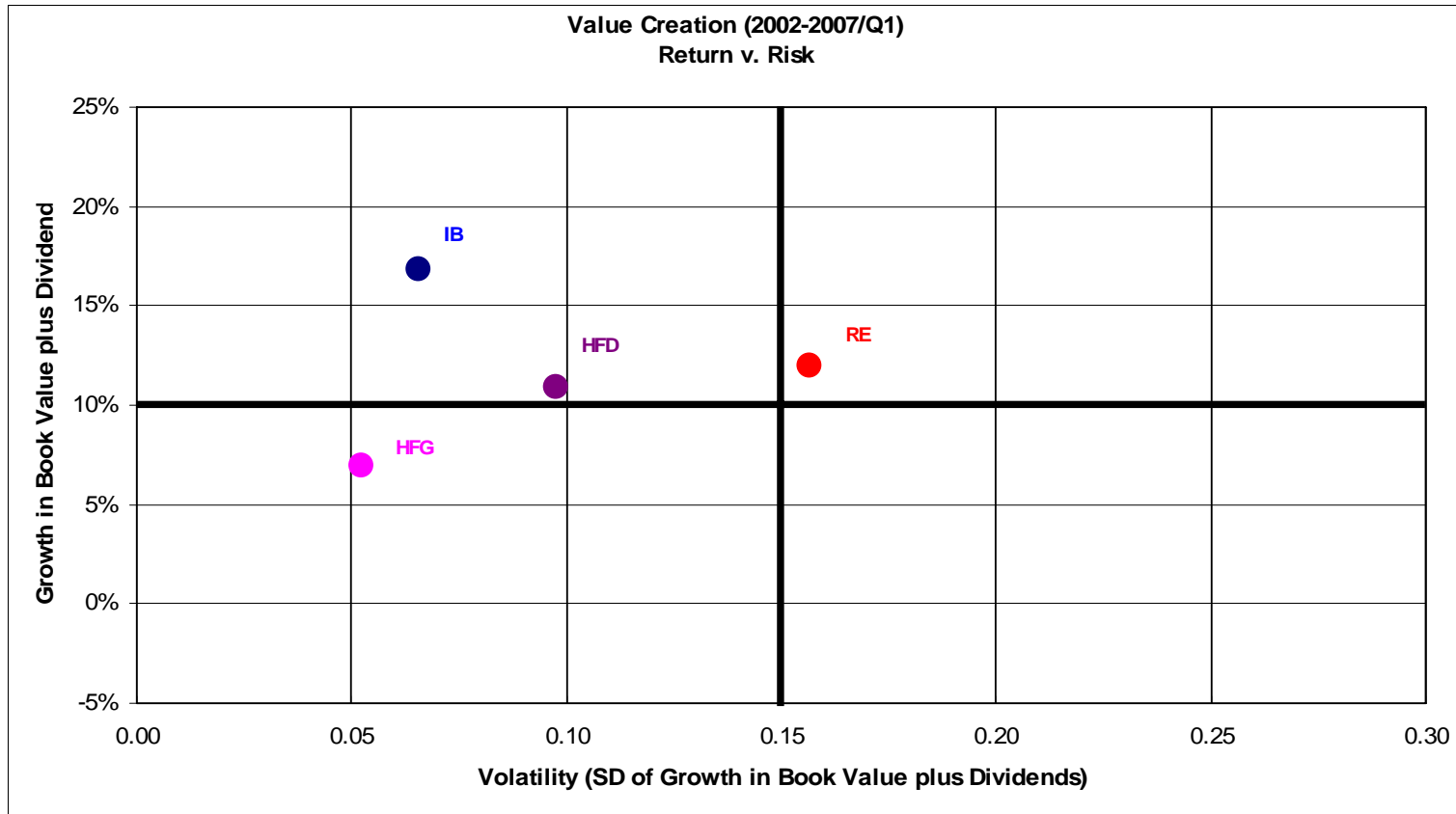
- RE1 – Property Specialty Reinsurers
- RE2 – Mid-sized Global/Bermuda Reinsurers
- RE3 – Scale Reinsurers

Future View: Reinsurance Markets 2002-2007 +



- RE1 –Property Specialty Reinsurers
- RE2 – Mid-sized Global/Bermuda Reinsurers
- RE3 –Scale Reinsurers

Historical View: Reinsurance and Capital Markets 2002-2007/Q1



RE – Reinsurance

HFG – Hedge Fund Index - Global

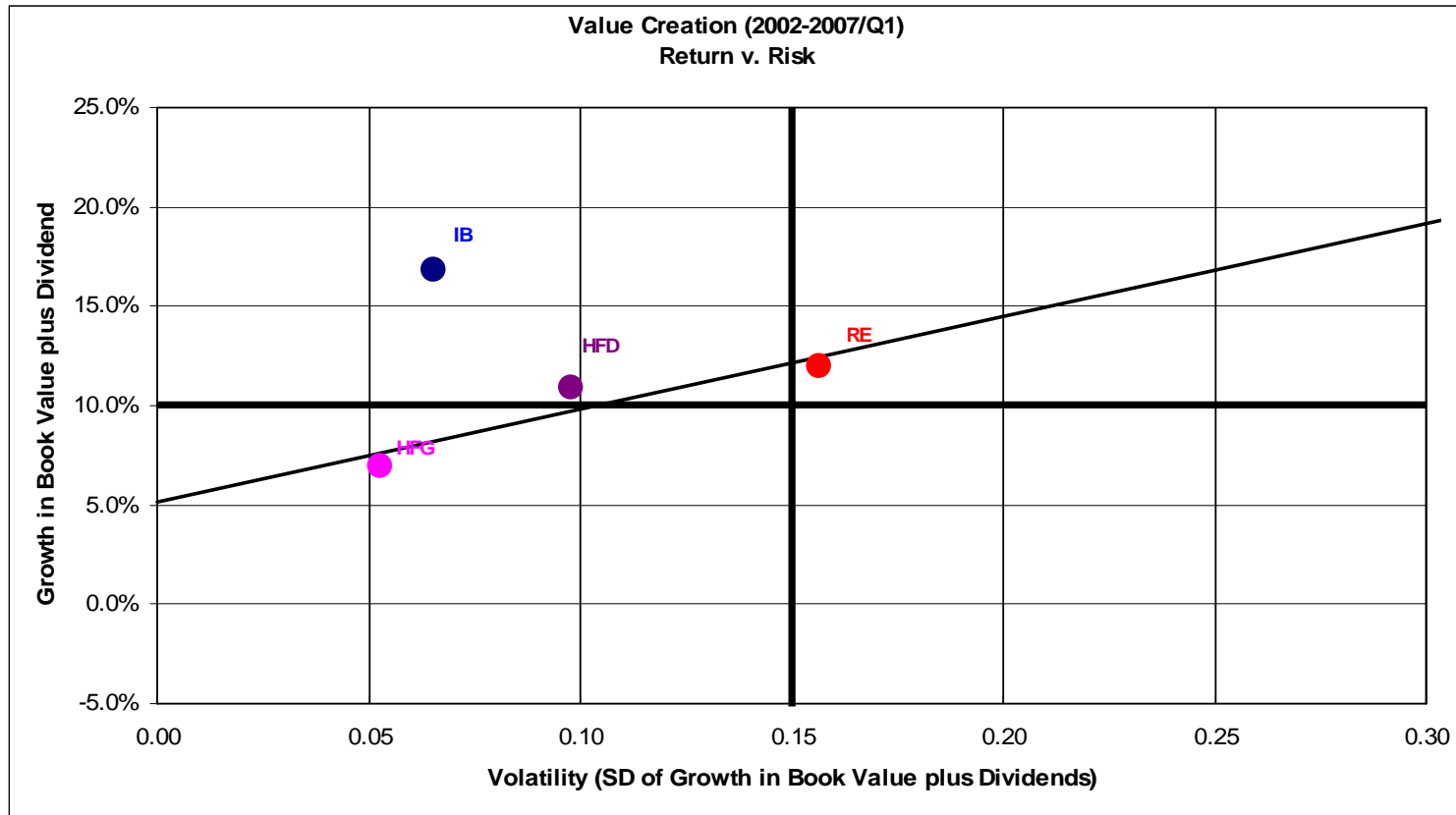
HFD – Hedge Fund Index – Market-Directional

IB – Banks

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Sources: Investment Banks – Bear Stearns, Lehman Brothers, Goldman Sachs, Citigroup, Morgan Stanley, J.P. Morgan Chase - Company reports; Hedge Funds - Hedge Fund Research, Inc. at www.hedgefundresearch.com

Historical View: Reinsurance and Capital Markets 2002-2007/Q1



RE – Reinsurance

HFG – Hedge Fund Index - Global

HFD – Hedge Fund Index – Multi-Directional

IB –Banks

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