“Stock Market Crash of 2002”

How the Drop in the Equity Market Affects Insurers

Southeastern Actuaries Conference Spring Meeting
June 19, 2003

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"Stock Market Crash of 2002"

	01/01/2002	12/31/ 2002	% CHG
• DJIA	10,021.70	8,341.63	**- 16.8%**
• S&P 500	1,148.08	879.82	**- 23.4%**
• Nasdaq Comp.	1,965.18	1,335.51	**- 32.0%**

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Crash is Really a "**PILE-UP**"

Period from 2000 Peak to Present (May 27, 2003) :

	2000 Peak	May 2003	% CHG
• DJIA	11,722.98	8,781.35	**- 25.1%**
• S&P 500	1,527.46	951.48	**- 37.7%**
• Nasdaq Comp.	5,048.62	1,556.69	**- 69.2%**

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Presentation Outline

- Review some impacts of “Equity Market Performance” on insurance companies

- Watch Equity-Based Products compete to be the “Sole Survivor” ?

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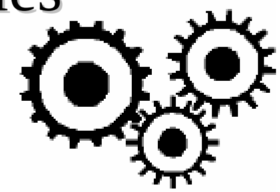
Impact of Recent Equity Market

Many Inter-connected Parts:

Sales

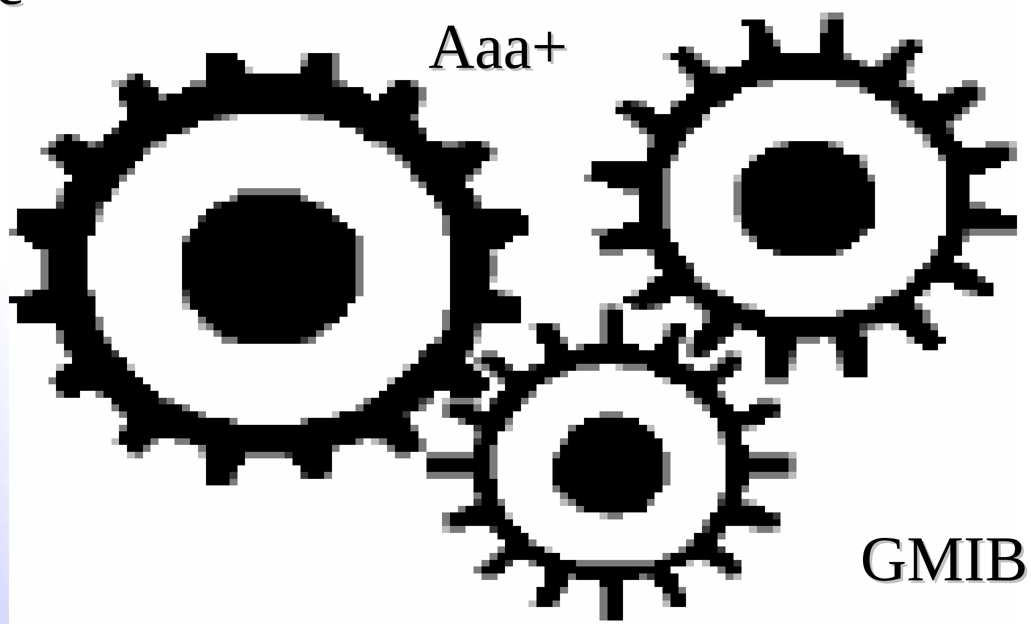


Co. Capital

GMDB

stochastic models

Aaa+



agent demands

D
A
C

stock price

RBC

GMIB

“shrunken” assets

Impact of Recent Equity Market

- Stock Price
- Reduced Sales
- Shrunken Assets and “Revenue at Risk”
- Increased Reserves / Capital Needs
- DAC Write-downs
- Distribution / Consumer Demands
- More Robust Product Models Required

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Insurance Company Stock Price

Period from 2000 Peak to Present (May 27, 2003):

	2000 Peak	May 2003	% CHG
• DJ Insurance, Life Index (US)	435.50	342.41	-21.4%

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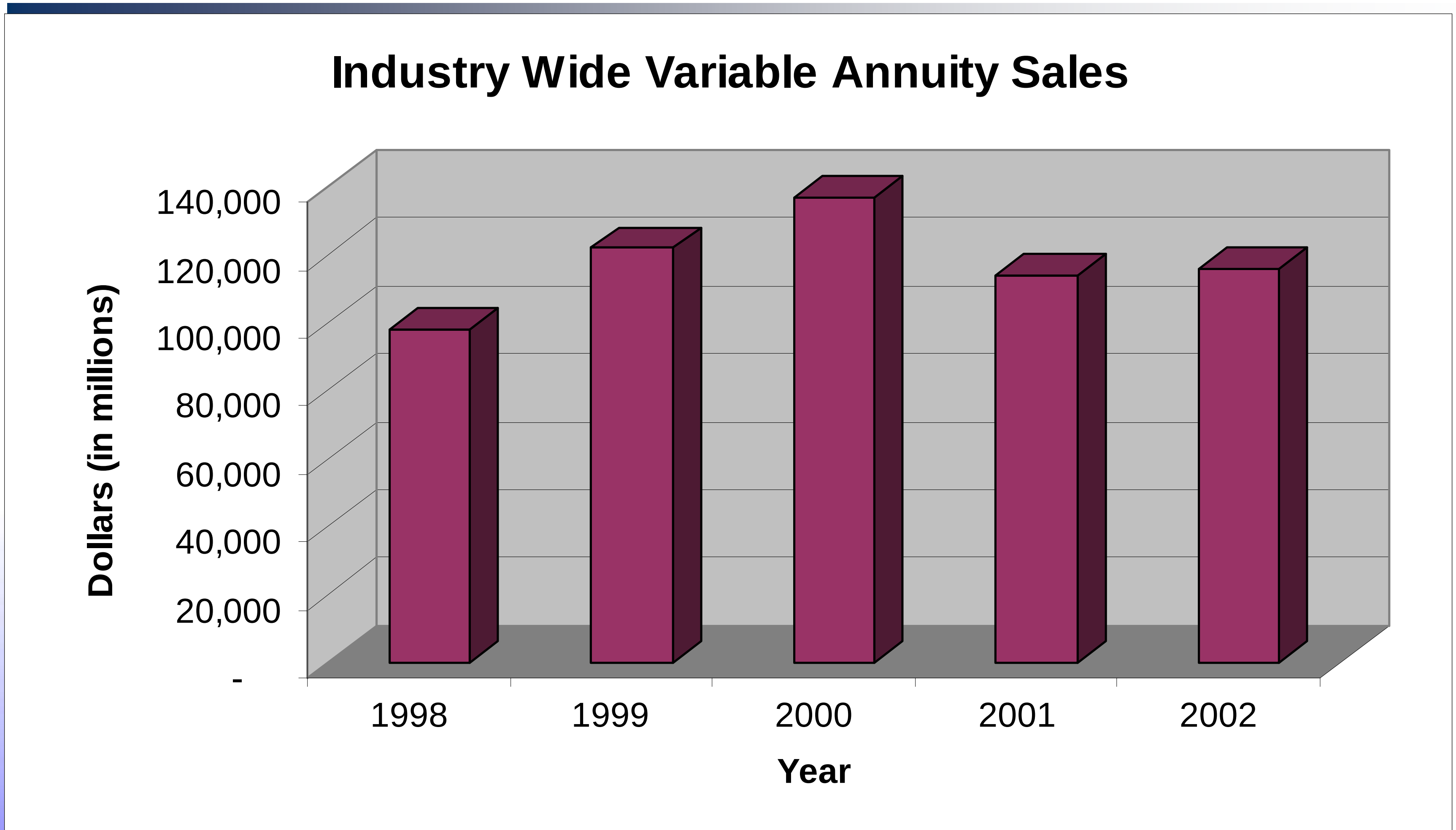
Insurance Company Stock Price

RESPONSE

- Expense Controls
- Product Re-pricing (or exit altogether)
- Sell non-core blocks of business

Reduced Sales



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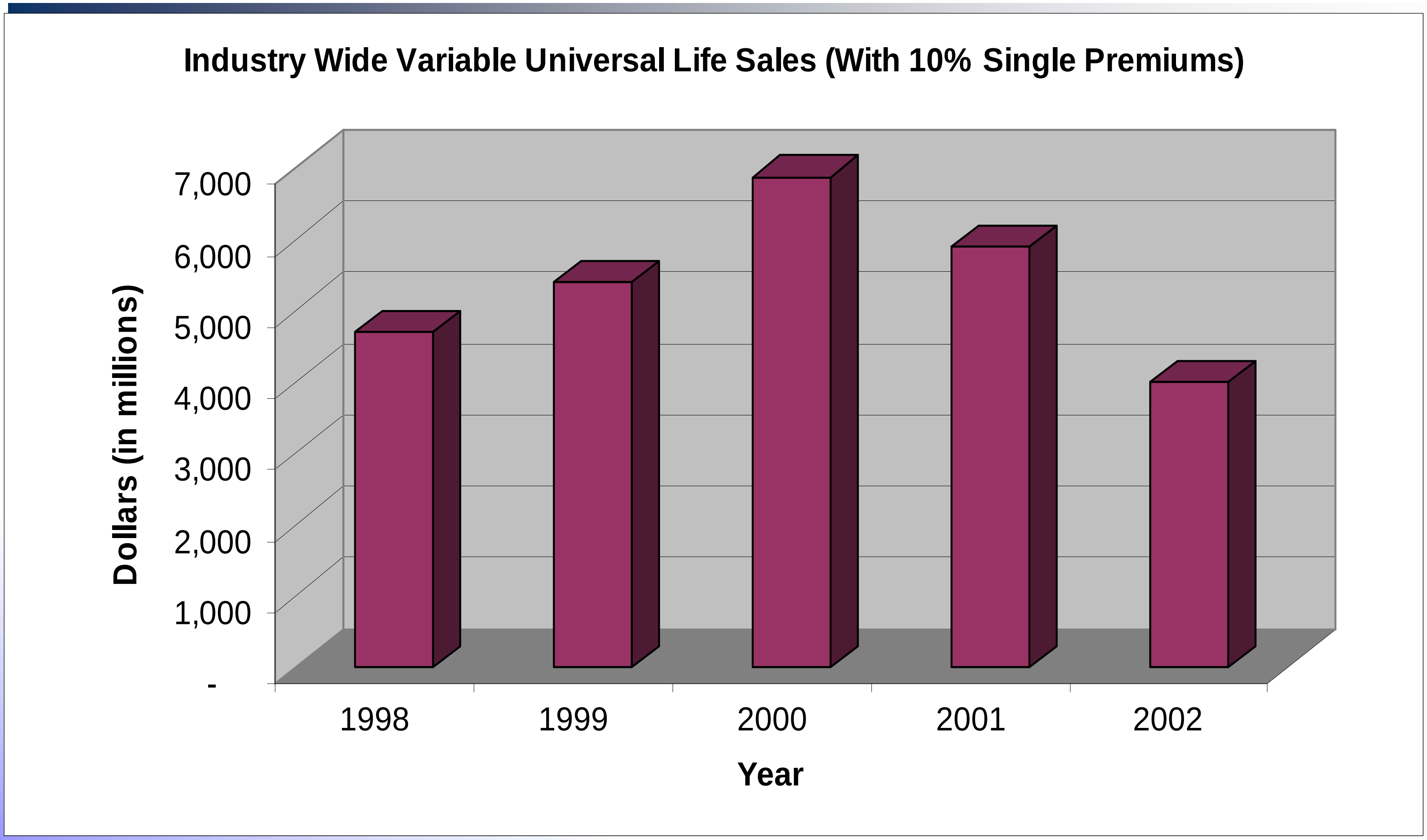
Reduced Sales



Reduced Sales

RESPONSE

- Re-evaluate price and commissions

- New Features ??

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Shrunken Assets and "Revenue at Risk"

Over Last 3 Years:	Alloc.	Assumed Revenue	Annual Perform.	Actual Revenue
Money Market	7%	42bp	2.91%	42bp
Bond	8	66	8.65	68
Equity Growth	85	93	-29.66	49
TOTAL		***87bp***		***50bp***

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Shrunken Assets and "Revenue at Risk"

RESPONSE: (for equity based products)

- Re-negotiate fee sharing with money managers
- Increase Fees (12b -1 share class)
- Develop / require asset allocation (may involve re-filing)

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Reserve and Capital Requirements

Actuarial Guideline 34 for guaranteed death benefits
Actuarial Guideline 39 for guaranteed living benefits
RBC Requirements for “in-the-money” living benefits, and
the list goes on . . .

Forcing reserve and capital requirements
higher !!

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Reserve and Capital Requirements

RESPONSE:

- Companies are re-evaluating their overall risk tolerances and risk capacity.
- Re-establishing their own acceptable levels.
- Possibly resulting in higher prices or suspension of sales.

Deferred Acquisition Cost Write-off

At issue is the immediate write-down of DAC due to revenue shortfalls and excessive claims versus best estimates.

RESULT:

"Double-Whammy" impact on GAAP earnings.

THIRD "WHAMMY":

Forces reconsideration of future best estimates possibly leading to further DAC write-downs.

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Deferred Acquisition Cost Write-off

RESPONSE:

- Product discontinuations thereby limiting future exposure
- Increased prices
- Reduced commissions

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Distribution / Consumer Issues

Company Earnings:

Product discontinuation, increased prices or reduced commission do not sit well with distributors and / or customers (since equity guarantees more popular than ever).

Complaints:

$50,000 VA that is now worth $25,000!!!!!

Distribution / Consumer Issues

RESPONSE:

- Company may need to accept reduced sales
- Create new commission bonus strategies
- Create new less risky but equally marketable features

- Market performance obviously not within control of company; need to address each complaint on own merit.

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Equity Guarantees

Variable Annuities:

• GMAB - Guaranteed Minimum Accumulation Benefit

• GMDB - Guaranteed Minimum Death Benefit

• GMIB - Guaranteed Minimum Income Benefit

• GMWB - Guaranteed Minimum Withdrawal Benefit

• GPAF - Guaranteed Pay-out (Variable) Annuity Floor

Variable Life:

• No Lapse Guarantees

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Equity Guarantees

RESPONSE:

- Withdraw features (not at risk for what you don’t sell)
- Increase Price, Cost-benefit Matching (NAR)
- Limits, limits, limits
- Reinsurance (if available)
- Reduced Commissions
- Improved pricing models (for better understanding risk)

More Robust Product Models

Benchmarks

Low Incidence

High Severity

Mean / Variance

Percentiles

Left Tail Risk

Stochastic Models

RESPONSE

- Establish collection of benchmark fund assumptions
    - Fund mapping process (actual -> benchmarks)
    - Gross return, volatility and correlation

- Establish liability model assumptions
    - Dynamic policyholder behavior

Stochastic Models

Benchmark Fund Return and Volatility Examples

Fund	Gross Return	Volatility
S&P 500	8.0%	16.1%
NASDAQ100	11.0%	30.0%

Policyholder Behavior

- fewer / no surrenders when “in-the-money”

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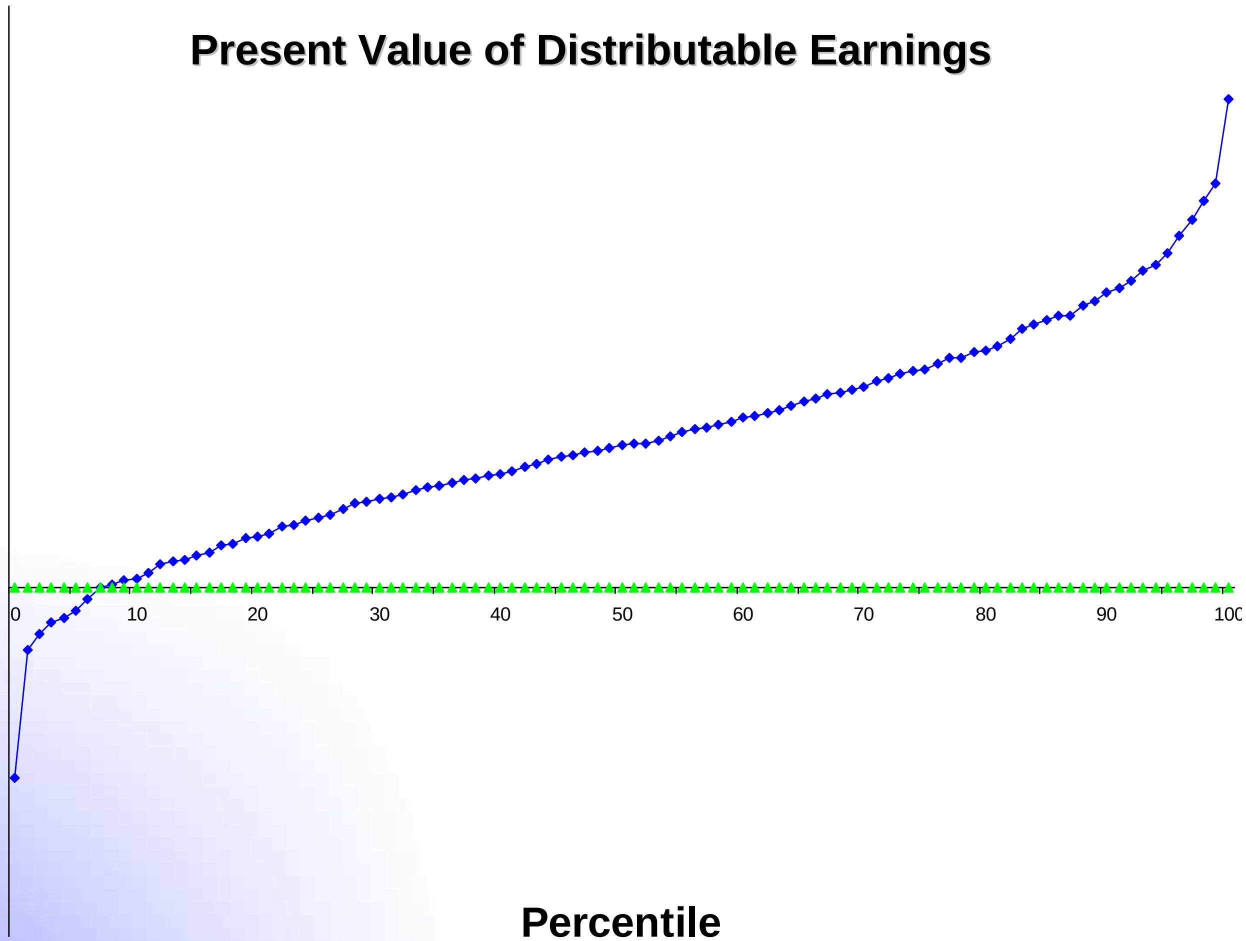
Stochastic Models



Stochastic Models

Modeling Challenges:

- Properly modeling product equity risk
- Models too slow - unable to do sufficient scenarios
- Lack fully integrated model across product lines
- Inconsistent approaches used across company
- Communicating results to management
- Establishing pricing hurdles

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Meeting The Challenges

Pricing Hurdle

Minimum return requirements:

- 85% chance of achieving at least Y% IRR
- 95% chance of achieving at least Z% IRR
- 99% chance that product losses do not exceed $M / %Premium

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“SURVIVOR” - The Product

What to expect!!

- Meet the Product “Contestants”
- Experience the Economic “Environment”
- Relive the “Challenges”
- See what Product will be the “Sole Survivor”

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The Three Product "Contestants"

Variable Annuity

Variable Life

Mutual Fund

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The Product "Contestants"

Variable Annuity

- Asset Based Revenues
  - Mortality & Expense (M&E)
  - Management Fees
  - 12(b)-1 Fees
- Equity Guarantees
  - Guaranteed Minimum Death Benefits
    - Return of Premium
    - High Water Mark
    - Roll-up
  - Guaranteed Income Benefits
  - Guaranteed Accumulation / Withdrawal Benefits

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The Product "Contestants"

Variable Life

- Several Revenue Sources
  - Mortality & Expense (M&E) and Management Fees
  - Cost of Insurance
  - Per Unit Load Structures
- Equity Guarantees
  - Minimum No Lapse Guarantee

Mutual Fund

- Management Fees, 12(b)-1
- No Equity Guarantees

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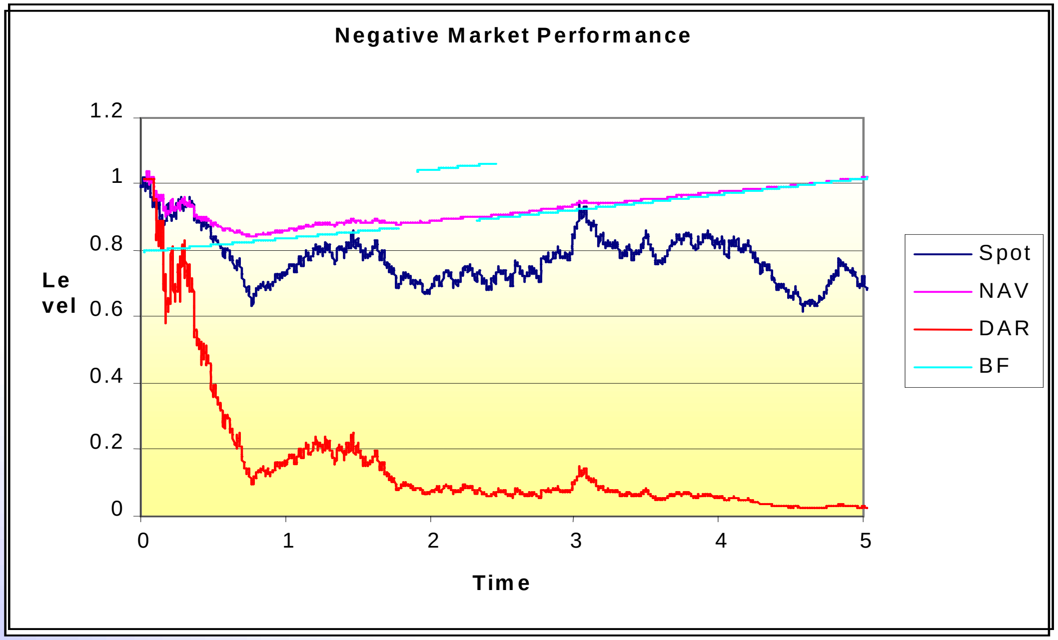
The Economic "Environment"

Contestants will endure months in a down(pour) market.



The "Challenges"

(from insurance company perspective)

- Equity Performance "Jungle"
- "Rainy Season" Revenue at Risk
- "Dreaded" Embedded Option Risk, and
- Other "Venomous" Risks (WSJ $-for-$ article)

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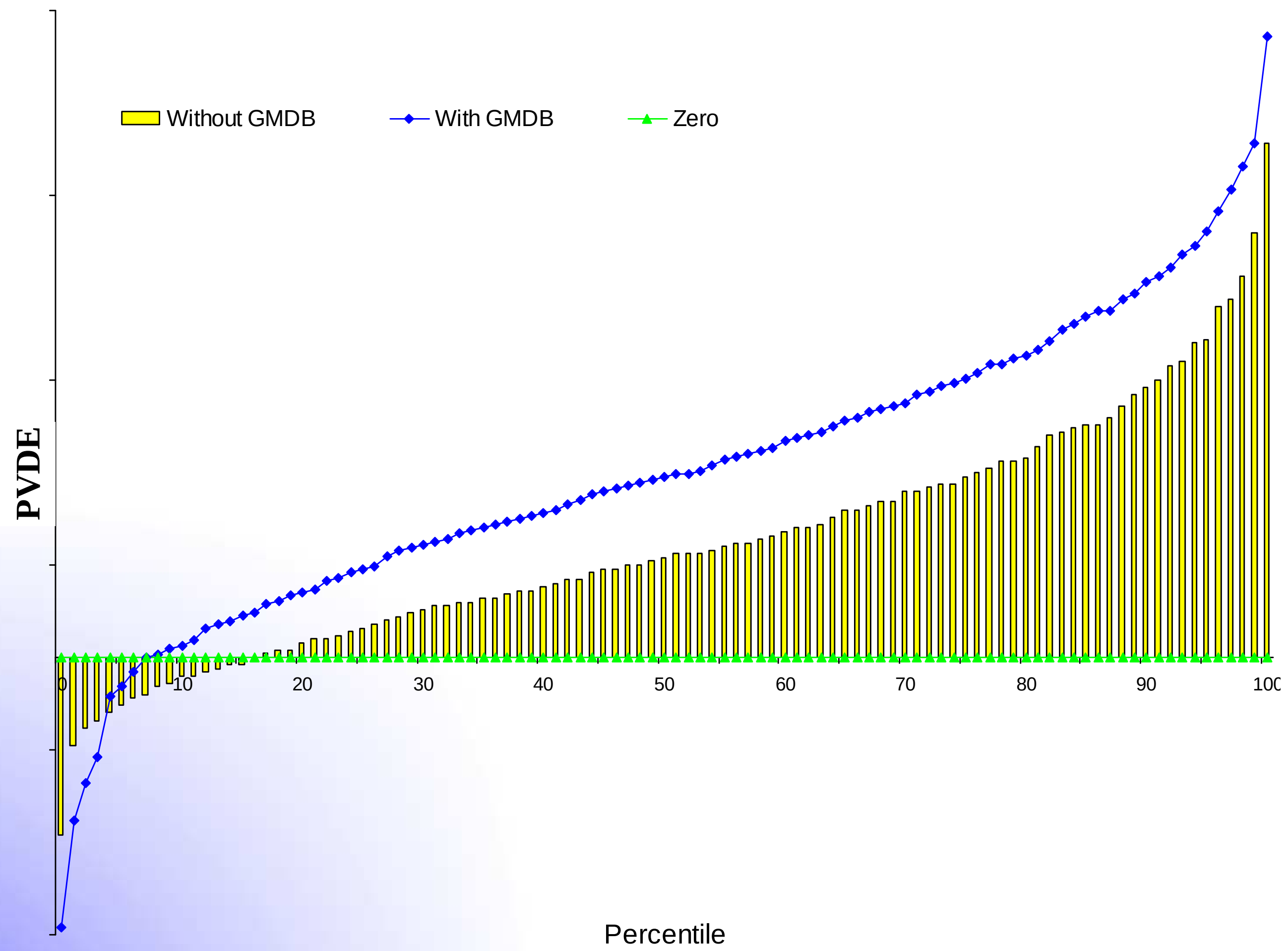
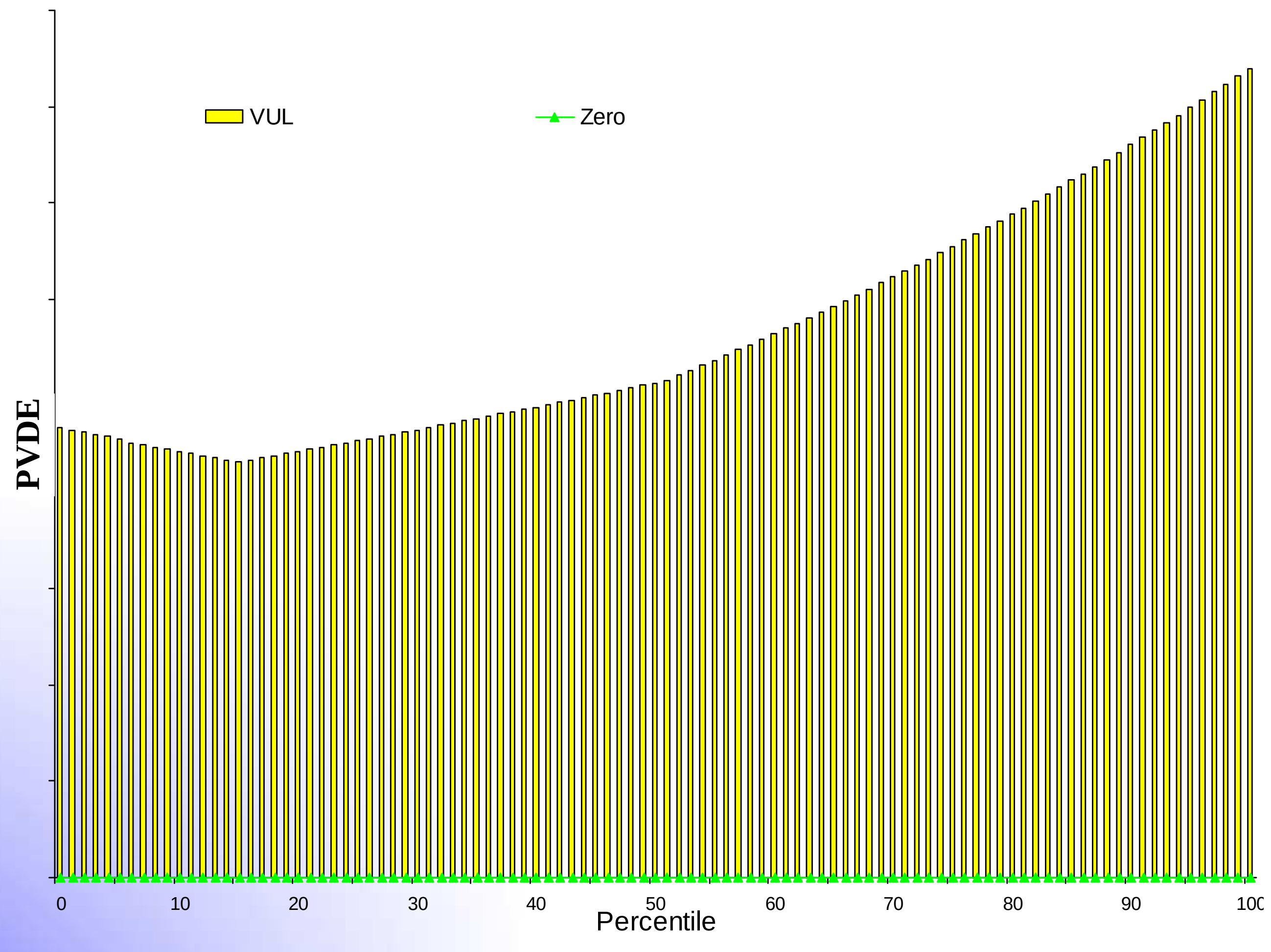
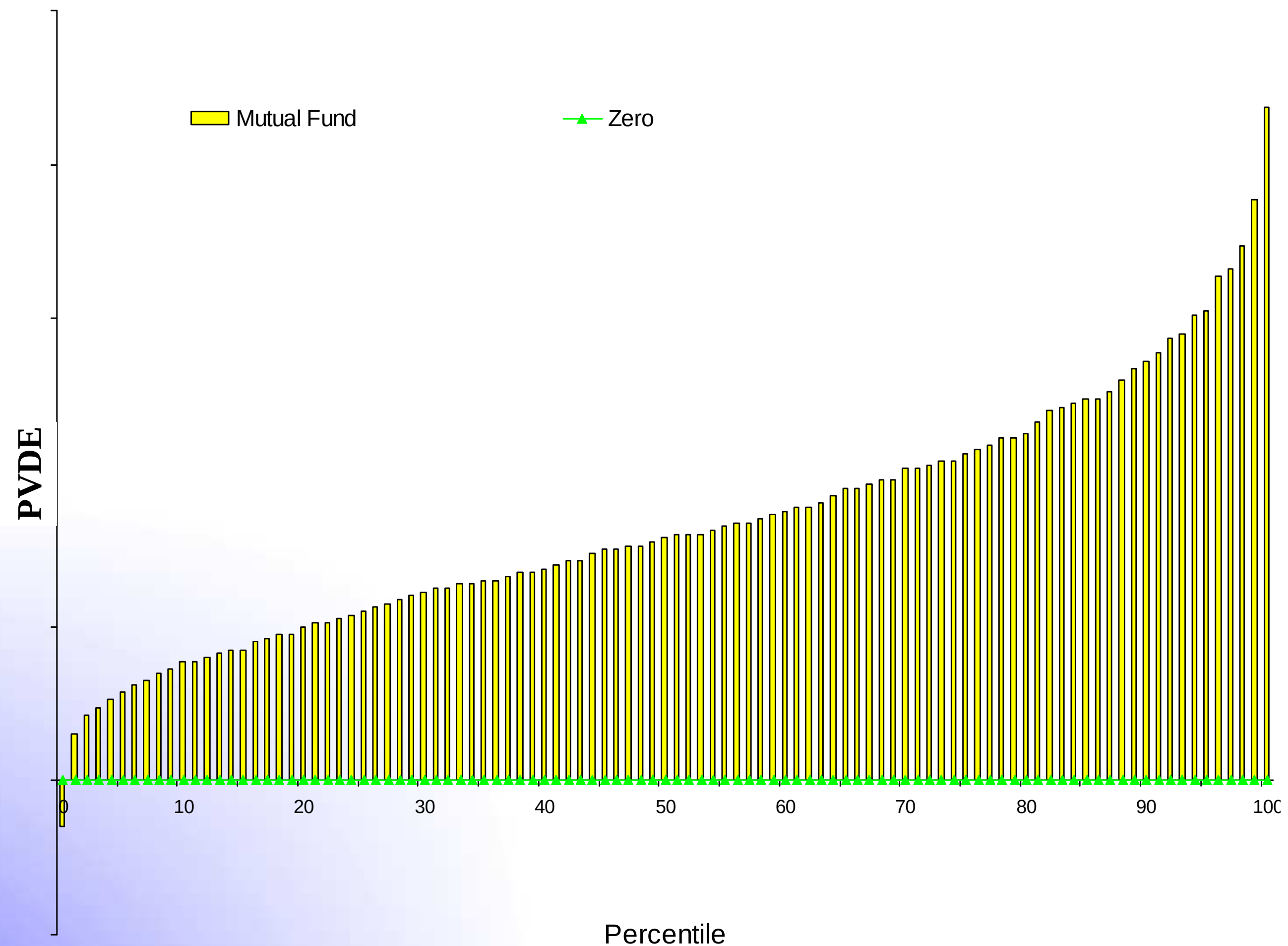
Variable Annuity



Variable Life



Mutual Fund



PVDE
Mutual Fund
Zero
0
10
20
30
40
50
60
70
80
90
100
Percentile

Meeting The "Challenges"

Will the Marketplace accept:

- Elimination of Guarantees
- Increases in the price of Guarantee features
- Imposing limits on Guarantees
- Limiting the number of Guarantees per contract
- Requiring asset allocation

OR . . . Does company need to pursue hedging strategy?

Meeting The "Challenges"

HEDGING

- Use derivatives to create alternative return distributions
- Examination suggests hedging strategies involving buying puts and / or selling calls are not economically viable
- Work involving more complex strategies is necessary

The "Sole Survivor"

You VOTE, will it be:

Variable Life with its COI source of revenue,

An appropriately hedged Variable Annuity

OR

A plain vanilla Mutual Fund ?

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Coming Next Season:

Deflation Island

See how long the contestants' ***inflated*** rafts and egos last !!

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