portfolio construction

CONFERENCE

Modern Portfolio Theory…
dead or alive?

Tim Farrelly

August 2009

farrelly's

Asset Allocation and Modern Portfolio Theory

- Efficient markets and SAA
- The equity risk premium
- Standard deviation and risk management

farrelly's

Strategic asset allocation

- Based on the Efficient market hypothesis
- Markets are always fairly priced
- Stable equity risk premium
- Identifiable bubbles don’t exist
- Equities outperform in the long term

farrelly’s

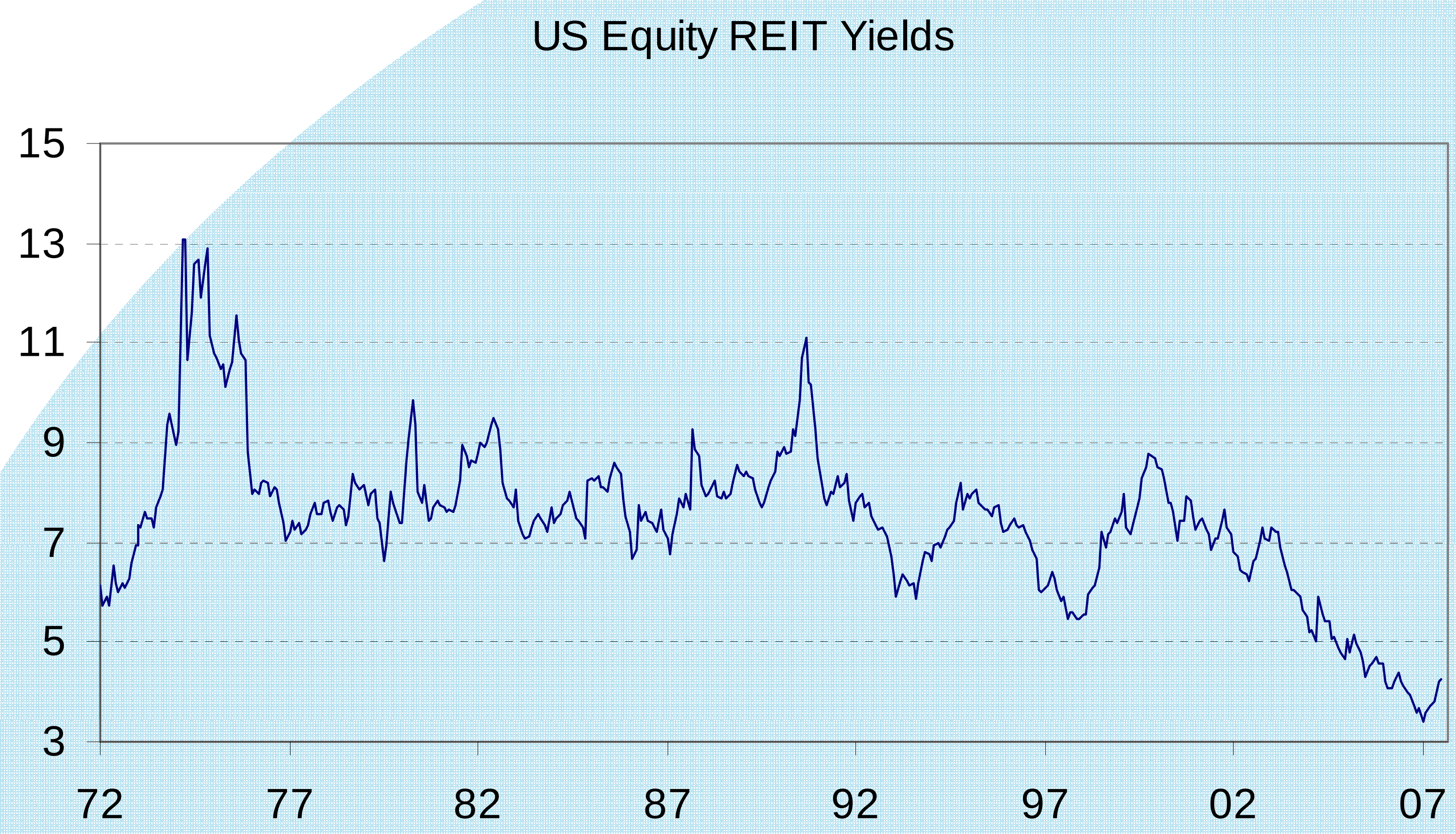
Efficient markets?

- Japan in 1988
- Tech boom in 1999
- China in 2007
- Global REITs in 2007

farrelly's

As at July 2007

US REIT Yields



farrelly's

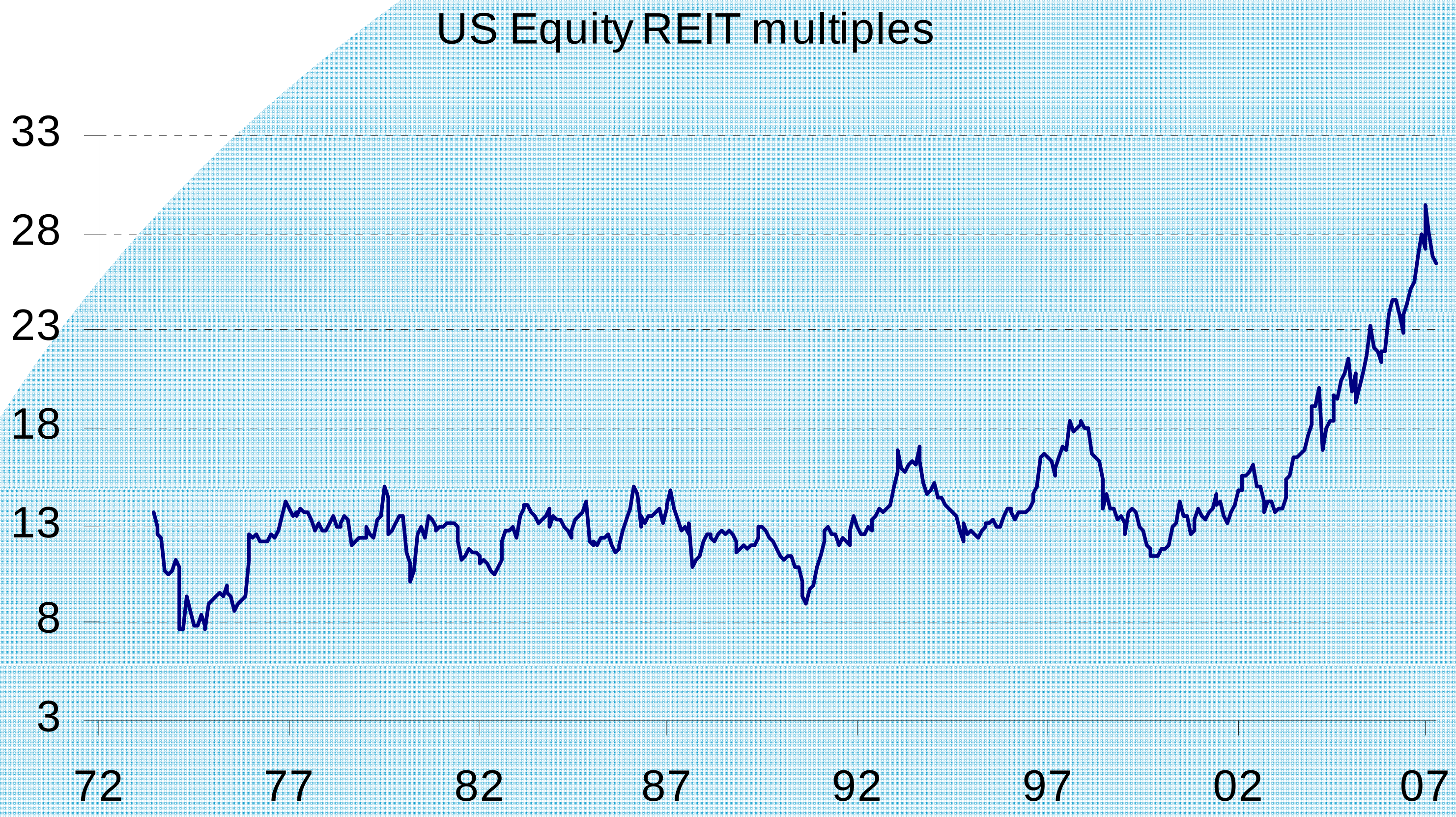
Yields and PE

- Dividend yield is D / P
- D approx = E
- So yield is E / P
- 1/ yield = PE ratio for REITs

farrelly's

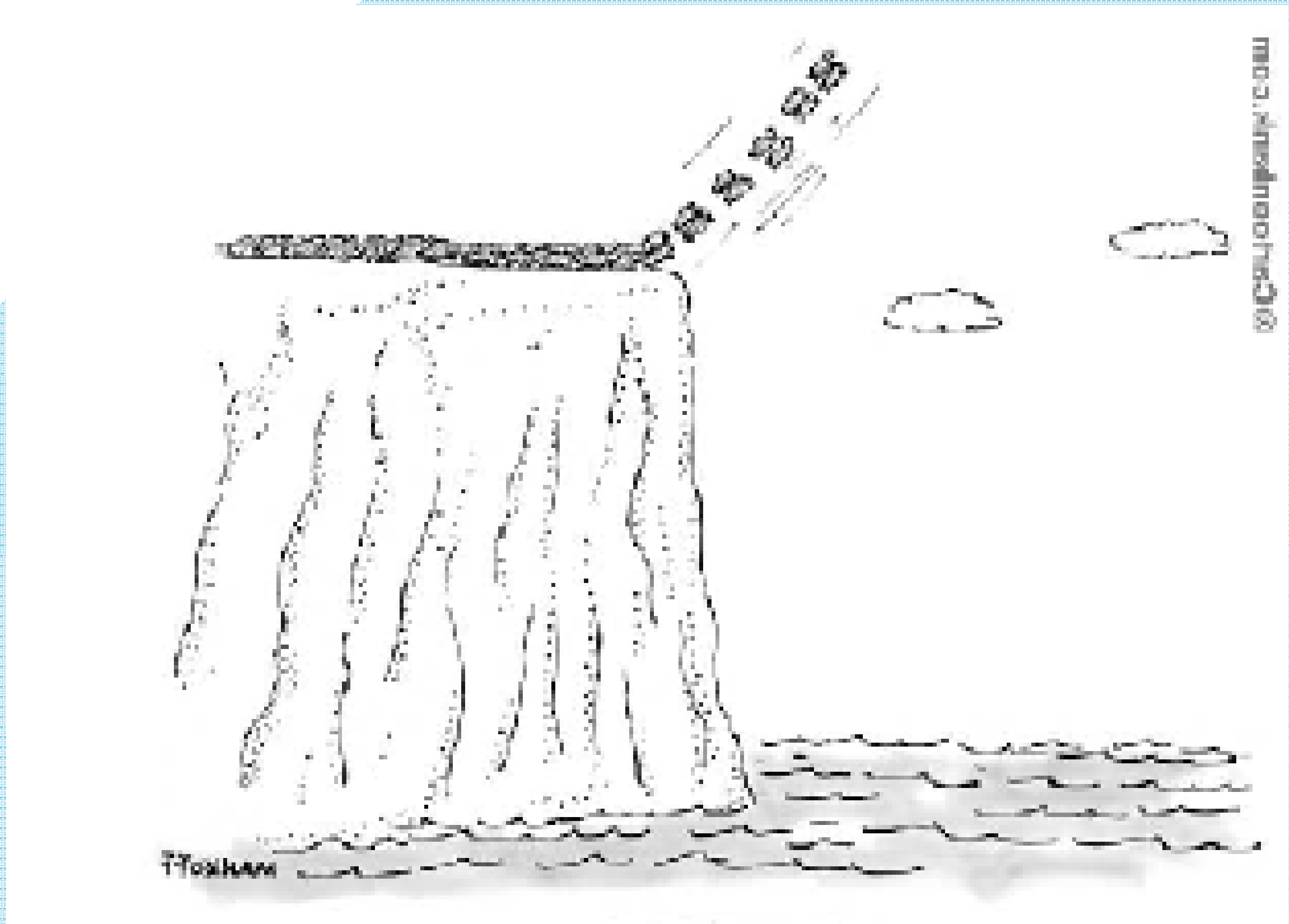
As at July 2007

The bubble of the decade?



farrelly's

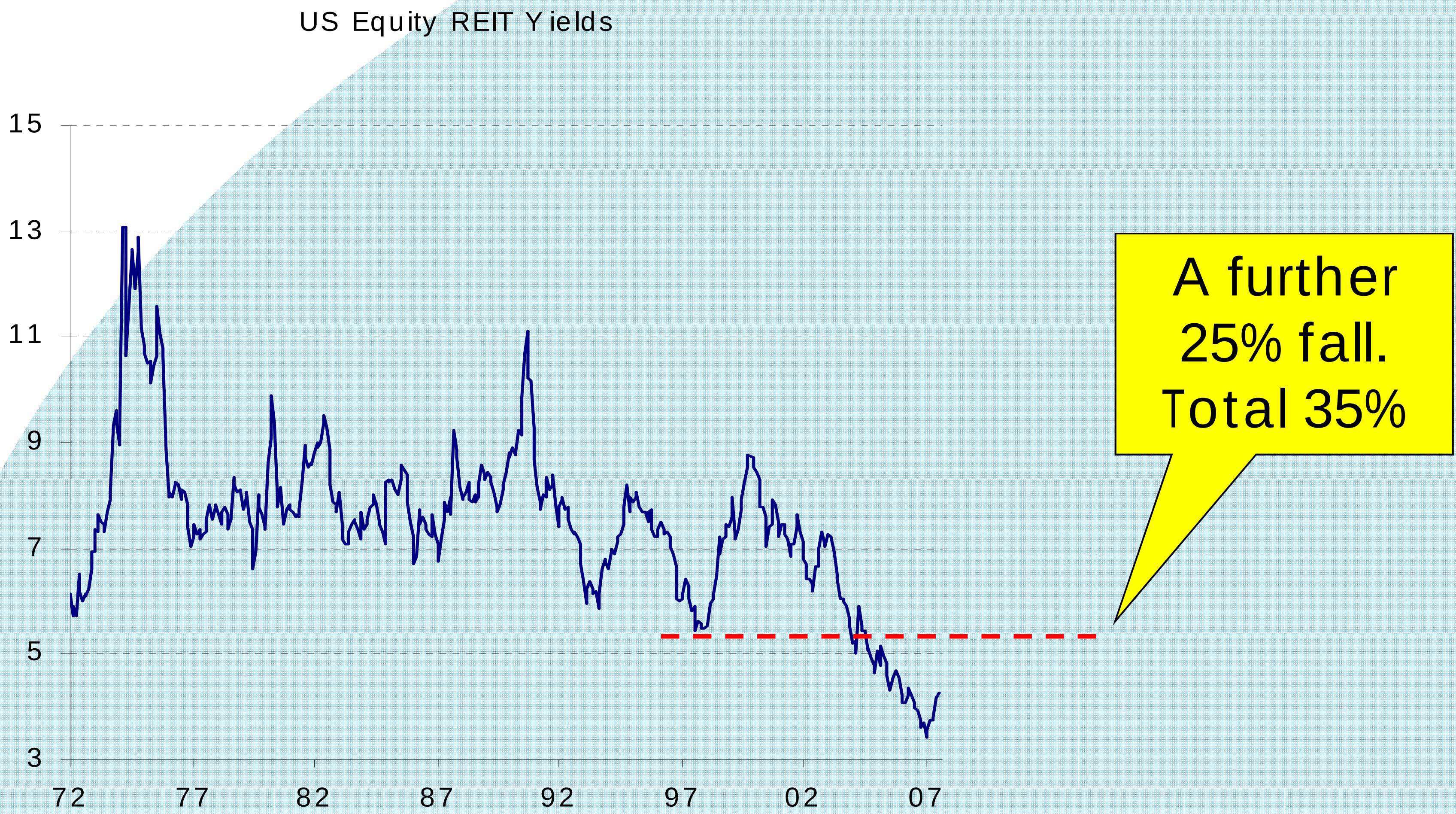
What lemmings believe...



farrelly's

As at July 2007

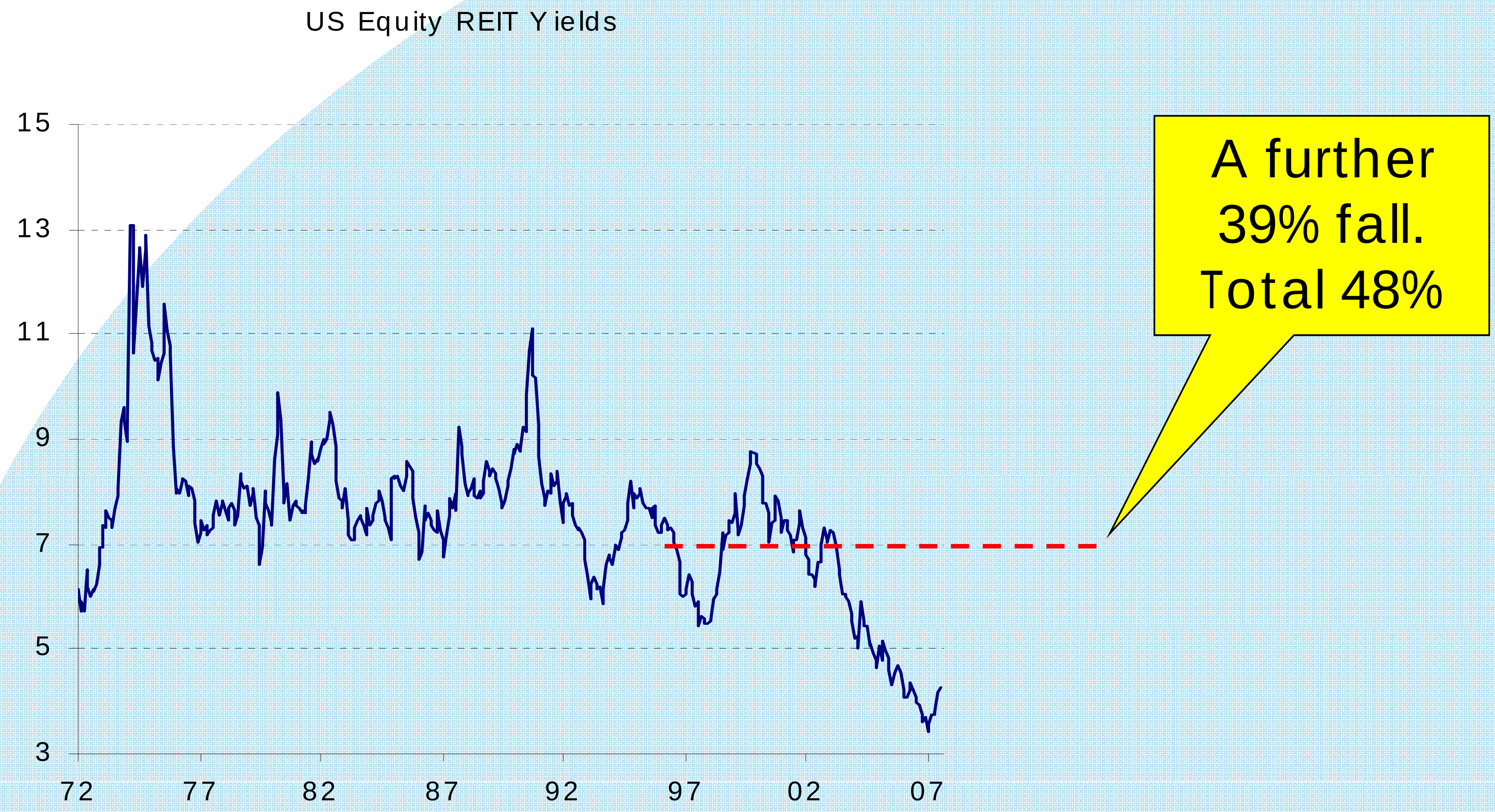
What comes next?



farrelly's

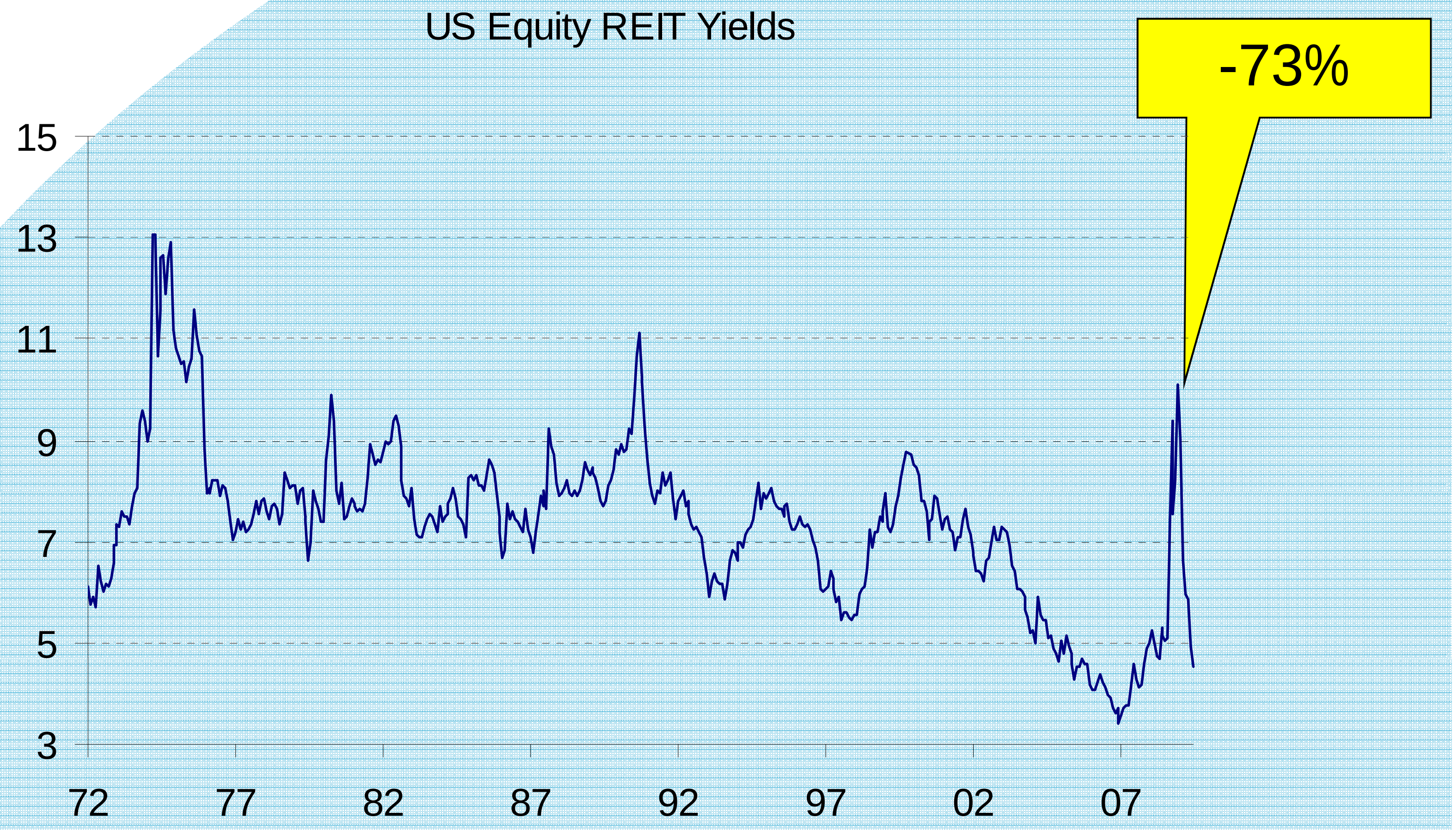
As at July 2007

What comes next?



farrelly's

Actually, quite a bit worse…



farrelly's

Long run returns are driven by three factors

Income

+

Growth in income

+ or -

Effect of change of PE Ratio

farrelly's

Long run returns-an example

EPS	PE	Price	Contribution	
			5%pa	Income
				+
$1.00	10	$10.00		Income Growth
				+
				PE effect
			5%pa	Total

farrelly's

Long run returns-an example

EPS	PE	Price	Contribution	
			5%pa	Income
				+
$1.00	10	$10.00		
			+7%pa	Income Growth
$2.00	10	$20.00		
				+
				PE effect
			12%pa	Total

farrelly's

Long run returns-an example

EPS	PE	Price	Contribution	
			5%pa	Income
				+
$1.00	10	$10.00		
			+7%pa	Income Growth
$2.00	10	$20.00		+
	▼		+7%pa	PE effect
$2.00	20	$40.00		
			19%pa	Total

farrelly's

Long run returns-an example

EPS	PE	Price	Contribution	
			5%pa	Income
				+
$1.00	10	$10.00		
			+7%pa	Income Growth
$2.00	10	$20.00		+
			-7%pa	PE effect
$2.00	5	$10.00		
			5%pa	Total

farrelly's

Long run returns-an example

EPS	PE	Price	Contribution	
			5%pa	**Income**
				+
$1.00	10	$10.00		
			+7%pa	**Income Growth**
$2.00	10	$20.00		**+**
	▼		**+7%pa**	**PE effect**
$2.00	20	$40.00		
			19%pa	**Total**

farrelly's

Forecast REIT returns in 2007

EPS	PE	Price
$1.00	30	$30.00
$1.30	30	$39.00
$1.30	18	$23.40

Contribution

3.5%pa — **Income**

+

+2.5%pa — **Income Growth**

+

-5.0%pa — **PE effect**

1.0%pa — **Total**

farrelly's

Forecast China returns in 2007

EPS	PE	Price
$1.00	70	$70.00
$2.59	70	$175.00
$2.50	15	$38.90

Contribution

1.0%pa	**Income**
	+
+10%pa	**Income Growth**
	+
-16%pa	**PE effect**
-5%%pa	**Total**

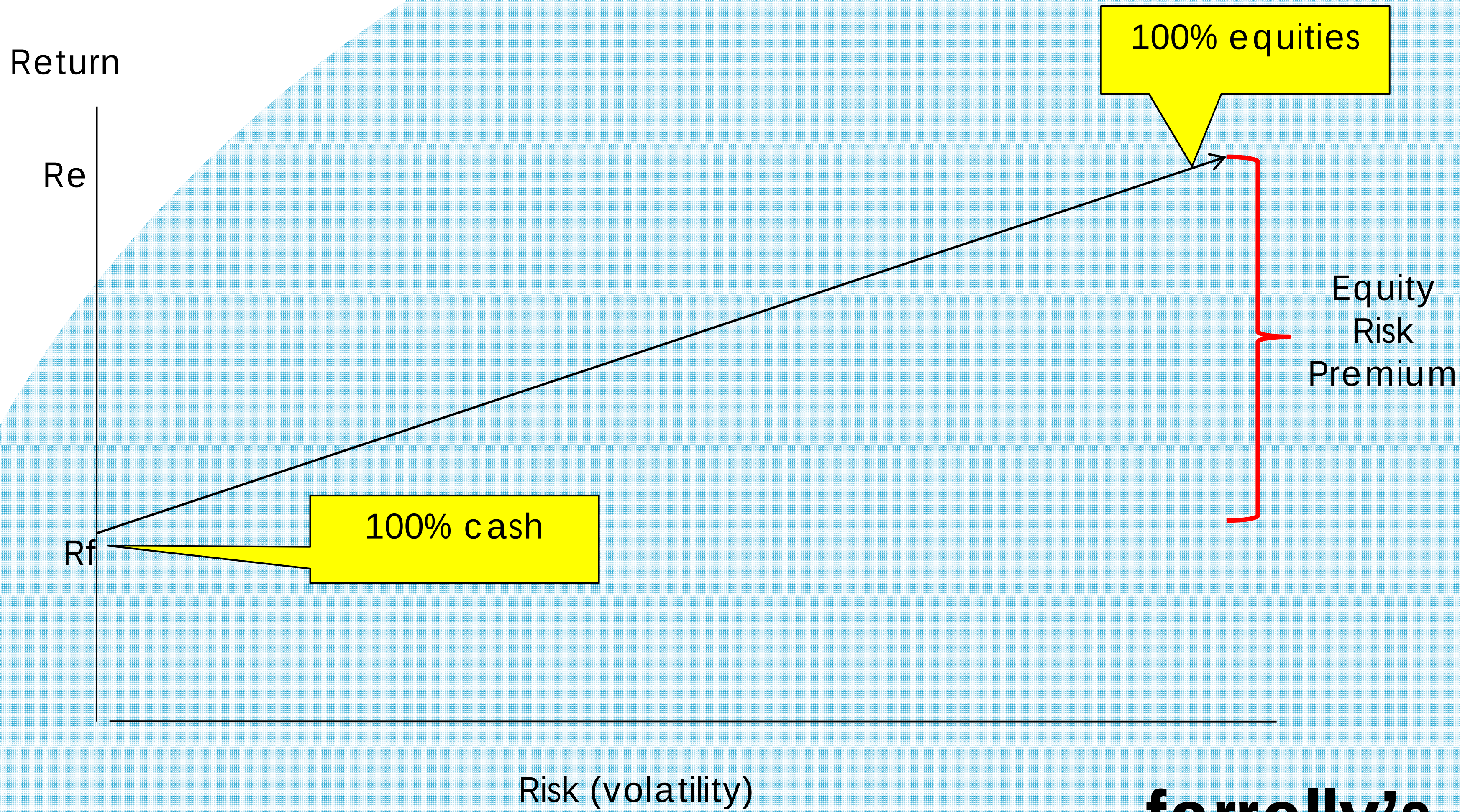
farrelly's

Efficient markets?

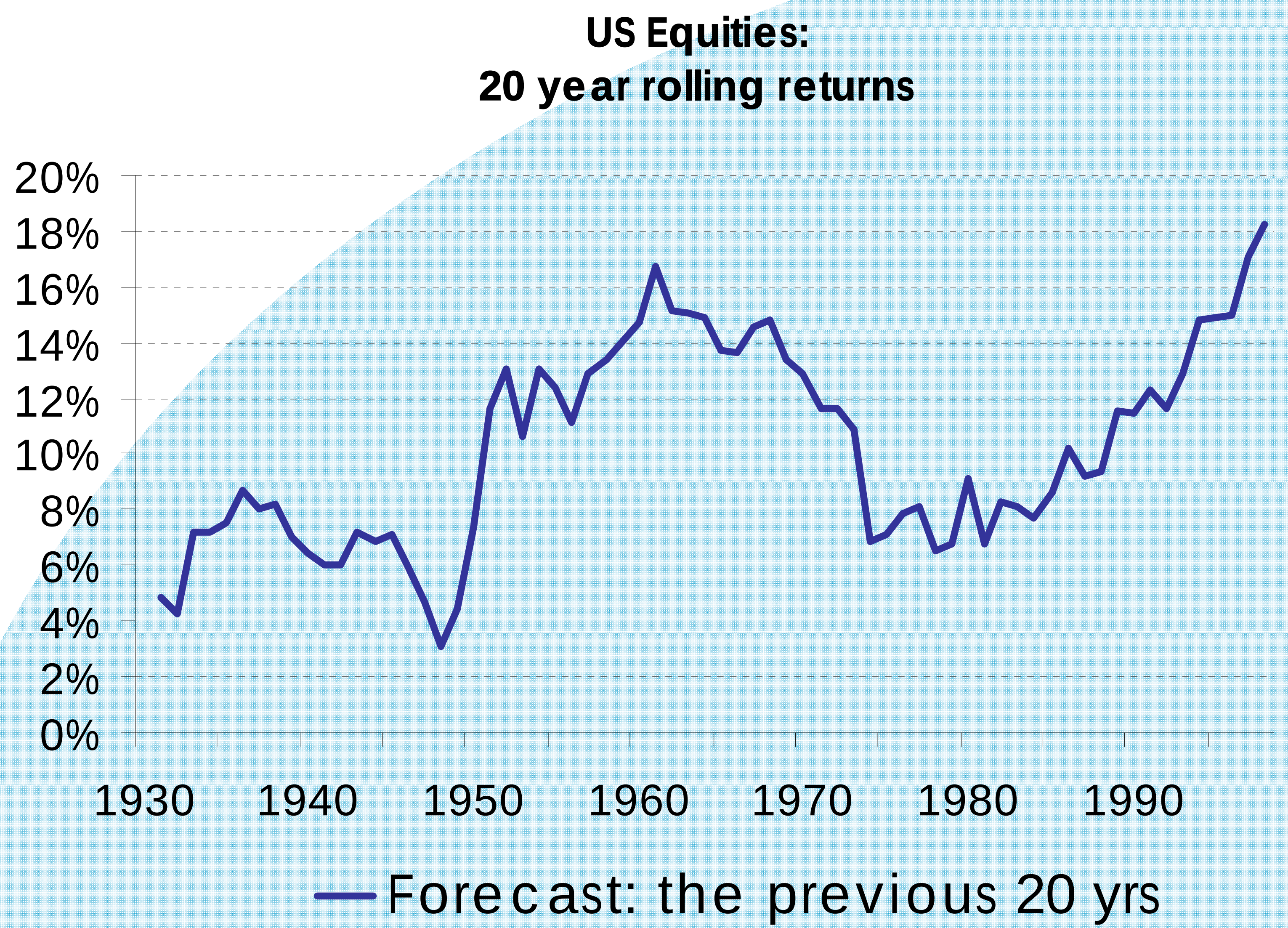
- Bubbles occur regularly
- Utterly identifiable
- SAA puts us in the way of those disasters

farrelly's

The equity risk premium

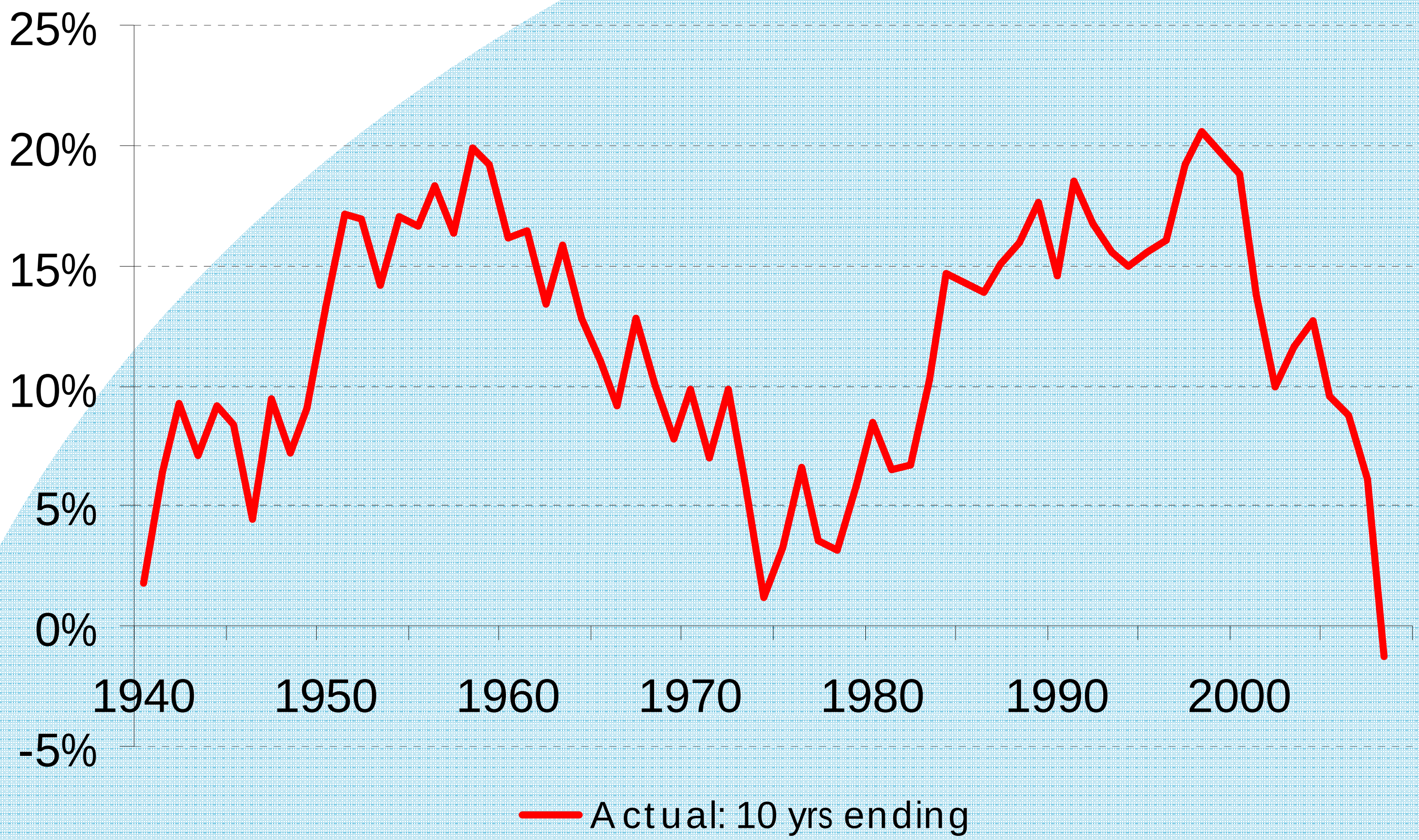


farrelly's


US Equities:
20 year rolling returns
20%
18%
16%
14%
12%
10%
8%
6%
4%
2%
0%
1930
1940
1950
1960
1970
1980
1990
Forecast: the previous 20 yrs

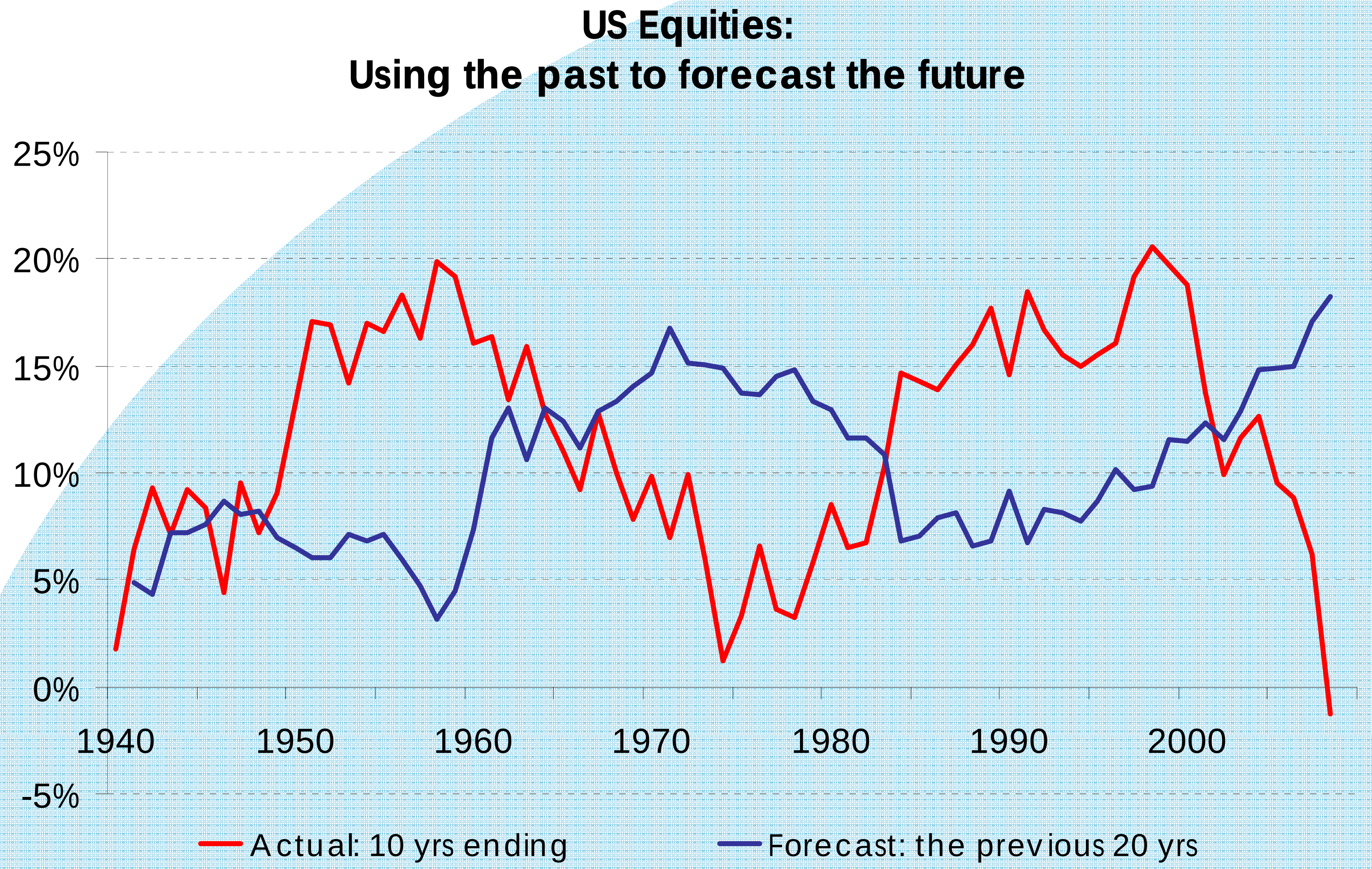
farrelly's

US Equities:
What actually happened



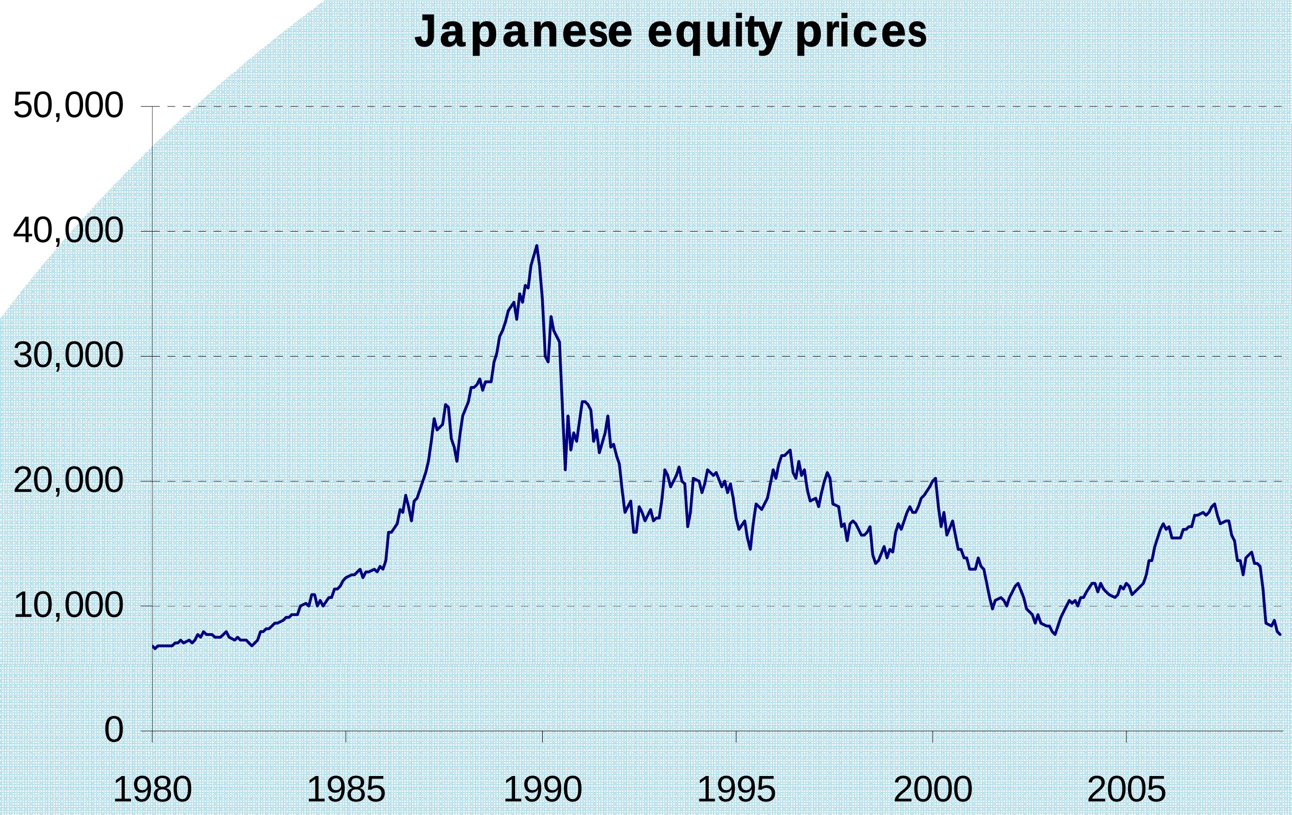
farrelly's

Using the rear view mirror!



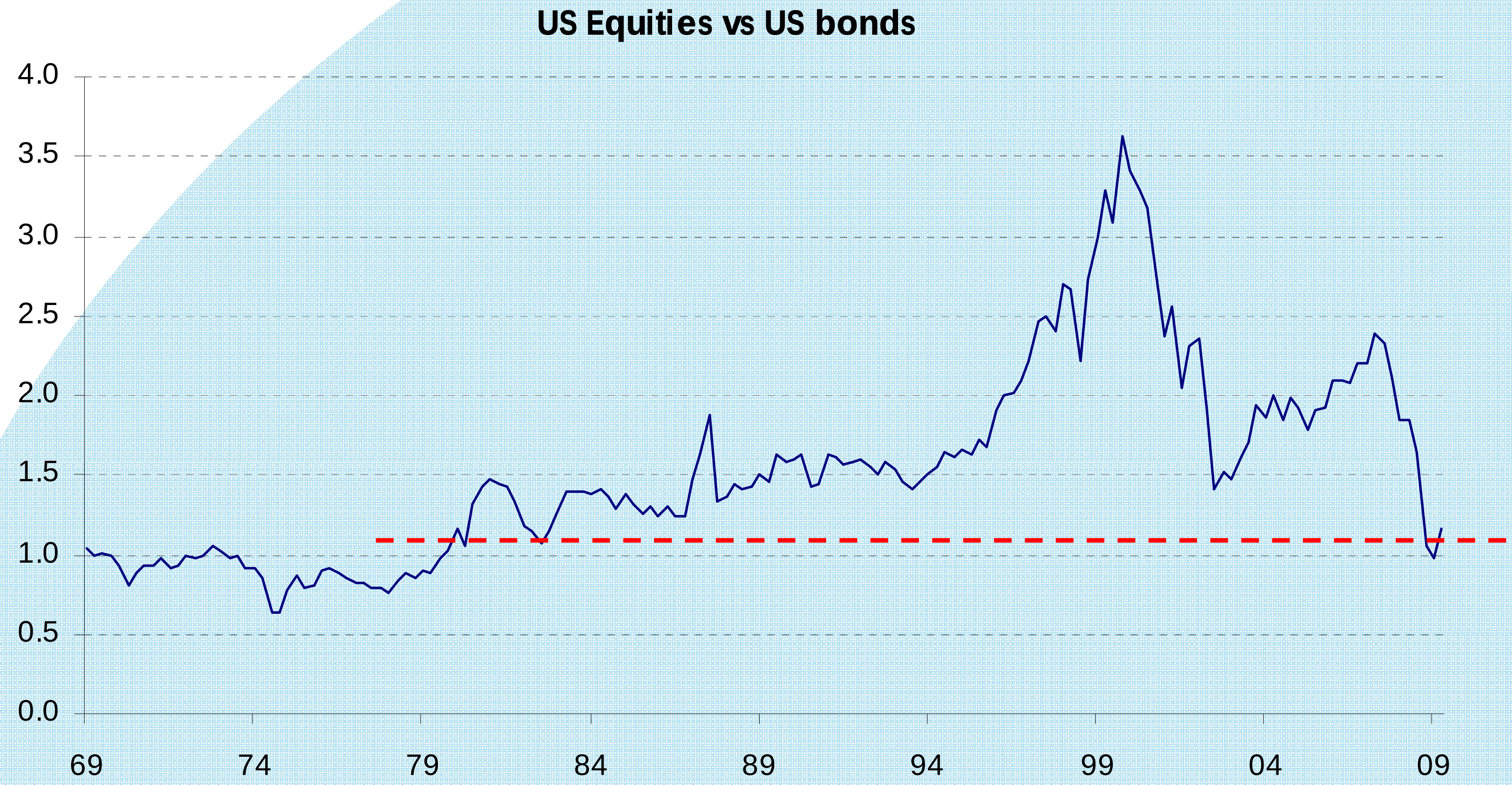
farrelly's

Japanese equities for the long run?



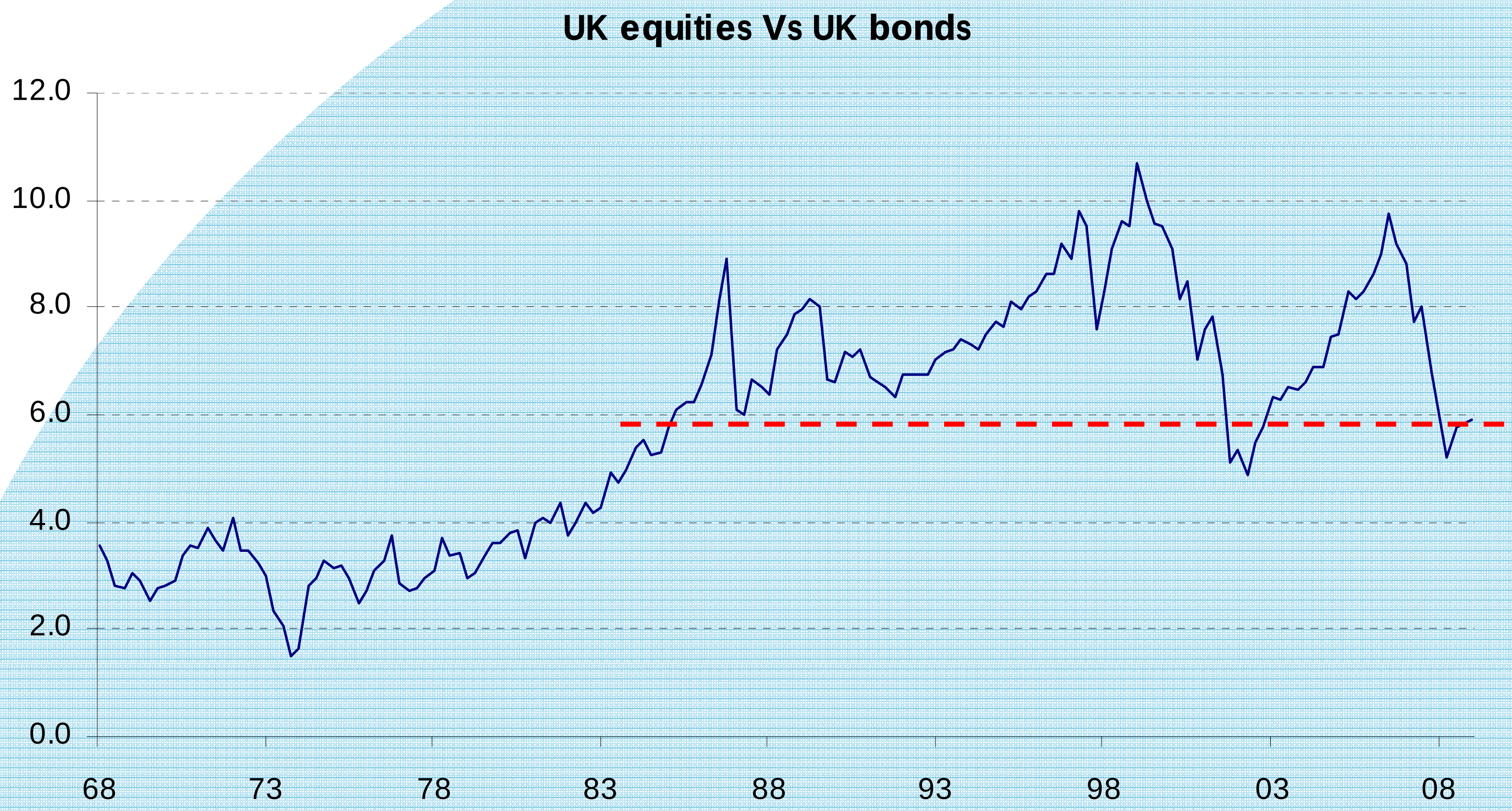
farrelly's

Maybe the US is a better example?



farrelly's

Not in the UK either....



farrelly's

MPT : Volatility = Risk

- Historical volatility = future risk
- Portfolio risk can be measured
  - Historical volatility of components
  - Historical correlations

Manage historical volatility = manage risk

farrelly's

What's wrong here?

- 2006 record low equity volatility = record low equity risk
- Direct property is not risky?
- Correlations in market downturns

farrelly's

SAA/MPT are based on entirely false premises

- Markets are not efficient
- Equities don’t always outperform in the long term
- Historical volatility is a poor measure of risk

farrelly’s

portfolio construction

CONFERENCE