

MSCI

A Clear View of  
Risk and Return

# Rethinking the Equity Risk Premium

Brett Hammond

Q Group

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The answer is...

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## But what is the question?

- Historical excess return

$$HER_{2001-2010} = R_e - R_{TIPS} = -3\%/yr$$

- Expected equity premium

$$ERP = E(R_e) - E(R_f)$$

# ERP estimates circa turn of the century

<b><u>Source</u></b>	<b><u>Year</u></b>	<b><u>ERP Estimate %</u></b>
Arnott & Bernstein	2002	0.0
Campbell & Shiller	2001	0.0
McGratten & Prescott	2001	0.0
Ross, Goetzmann & Brown	1995	low
Reichenstein	2001	1.3
Phillips	2003	1.0-3.0
Siegel	2002	2.0
Bansal & Lundblad	2002	2.5
Shoven	2001	3.0
Asness	2000	4.0
Graham & Harvey	2001	4.0
Ibbotson & Chen	2003	4.0
Goyal & Welch	2002	3.0-5.0
Fama & French	2002	4.3
Cornell	1999	5.0
Welch	2000	6.0-7.0
Average		2.5
Range		0.0-7.0

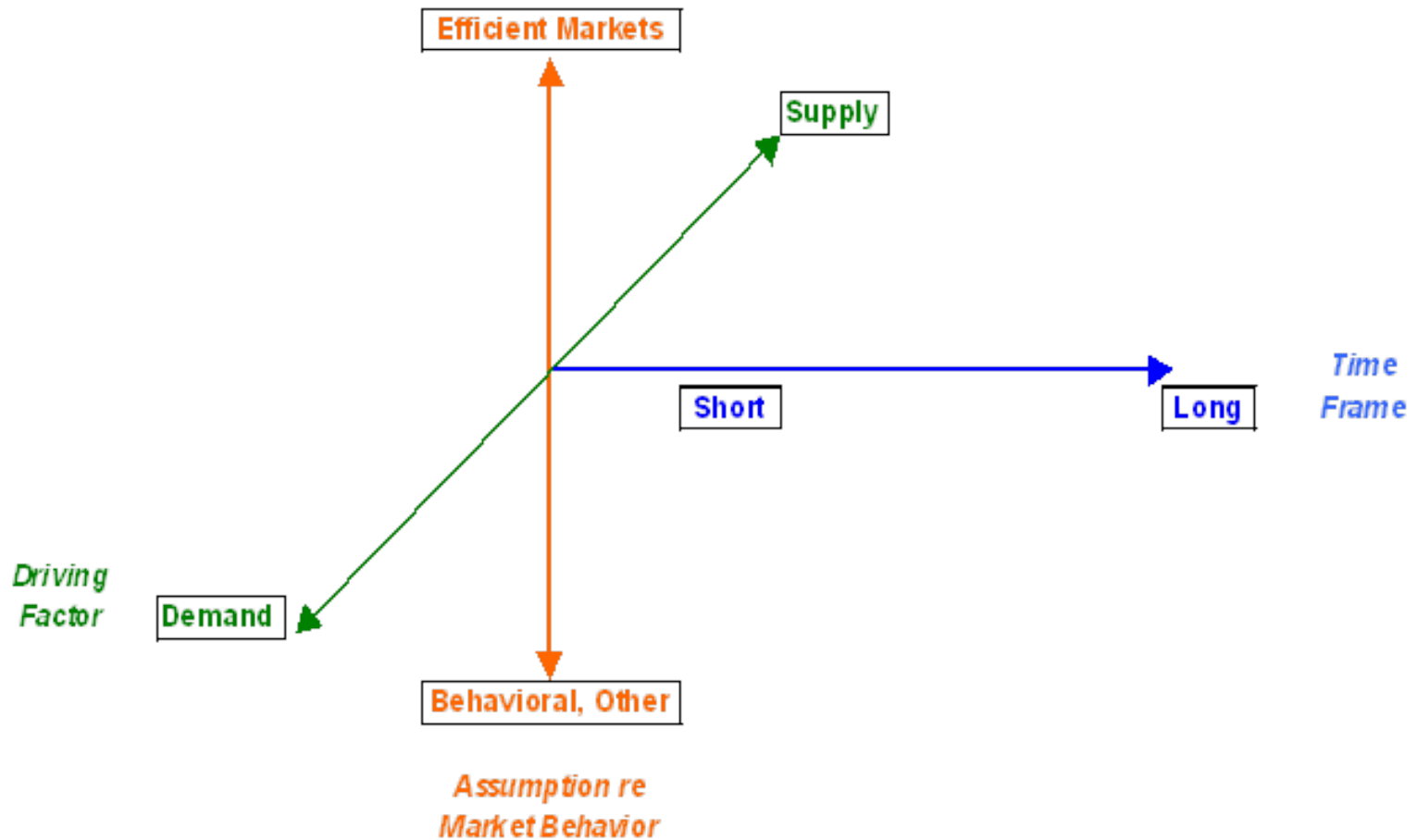
Note: ERP estimates are expected long-term geometric return of equities in excess of the risk-free rate.

# Since the turn of the century

- Extreme market conditions
  - Low risk-free rate
  - Low equity returns
  - High volatility
  - High correlation
  
- Does these conditions affect the ERP circa 2012?

# Views on the ERP

## 3 Dimensional array of views on the ERP



# 2011 Seminar: Rethinking the Equity Risk Premium

10<sup>th</sup> Anniversary seminar and book (Hammond, Leibowitz and Siegel, CFA Institute: 2011):

Brett Hammond and Marty Leibowitz

Roger Ibbotson

Cliff Asness

Elroy Dimson, Paul Marsh and Mike Staunton

Richard Grinold, Ken Kroner and Larry Siegel

Rob Arnott

Antti Ilmanen

Peng Chen

Andrew Ang and Xiaoyan Zhang

Jeremy Siegel

Rajnish Mehra

# Ibbotson

## ■ Users

- Investors: expected returns
- Corporations: cost of capital
- Analysts: discount rate for future cash flow estimates

## ■ Other premia

- Investment horizon – tactical v. strategic view of ERP
- Company size
- Value
- Momentum
- Default risk
- Inflation risk
- liquidity



# Assess

- High P/Es are not an accurate forecast for high future earnings growth rate
- To the contrary, high P/Es imply low future earnings growth and equity returns
- Current E(g) and Shiller P/E imply 4% equity returns.

# Dimson, Marsh, Staunton

- From 1900 to 2011, excess equity returns varied considerably across countries.
- For their world index,
  - annual geometric mean real return was 5.5%
  - Excess return relative to UST bills was 4.5%
  - Excess return relative to long-term bonds was 3.8%.
- Dividend-driven estimate of ERP is 3-3.5%.
- Mean reversion is a weak force.
- Uncertainty (e.g, future mean returns and ERP) predominate.

# Grinold, Kroner, Siegel

$$R \underbrace{\frac{D}{P} - \Delta S}_{\text{Income}} + \underbrace{(i + g)}_{\text{Earnings Growth}} + \underbrace{\Delta PE}_{\text{Repricing}}$$

$$\Rightarrow \text{ERP} = 4\%$$

# Arnott

- ERP is cyclical, dynamic, and relatively small.
- Bonds have outperformed stocks over a significant period.
- Realized return has often been lower than ERP.
- Net stock buy-backs are often lower than assumed.
- Lower earnings yields  $\Rightarrow$  lower future returns.
- Real earnings and prices grow with per-capita GDP.
- D/P is lower now than ever before.
- ERP = negative to slightly positive

# Ilmanen

- Term structure effects are more visible on the bond side of the premium.
- Abnormally high or low valuations have large mean-reversion implications for short to medium term ERP.
- However, even if equity returns for the next decade are “low,” we don’t know how to forecast valuations for starting periods longer than that.
- This implies that long-term ERP must be close to “unconditional” forecast.
- Indicators besides valuation measures (e.g., regression and other econometric techniques) can be used to forecast returns.
- Therefore, it is possible to estimate a full term structure of expected returns.

# Chen

- Could bonds outperform stocks in the future as they have in the recent past?
- Recent outperformance based largely on declining yields.
- Current yields are not sustainable in the long run so expected capital gains are low to negative.
- Stock returns depend on earnings growth and the change in the P/E ratio as well as their yield.
- If expected earnings growth and yields for stocks remain close to historical averages (5% and 2% respectively), then it is hard to see how bonds will outperform bonds.

# Ang and Zhang

- Movements in P/E reflect changes in discount rates (which contain the ERP) AND growth opportunities (expected earnings and cash flow growth).
- Therefore, P/Es can be low (high), either because growth opportunities are high (low) or because expected returns are low (high).
- Historical data shows that the ERP is mean reverting and fairly stable.
- And changes in growth opportunities explain 95% of variation in P/E.

# Siegel

- Little reason to think that the long-term ERP has changed.
- Underperformance of real equity returns from 2000 – 2010, *relative to the historical average of 7%*, was offset by outperformance from 1990 – 2000.
- The average historical P/Es and earnings yields have changed very little over the past decade.



# Mehra

- Is a low ERP still warranted (per Mehra and Prescott 1985)? YES
- Risk-free investment should not be T-bills but rather TIPS or mortgage bonds  $\Rightarrow$  lower ERP.
- Households typically borrow more than they lend  $\Rightarrow$  lower ERP.
- Younger investors have a higher demand for equities but face borrowing constraints  $\Rightarrow$  lower ERP.
- However, it is possible as baby boomers retire, that ERP will be higher in the future.

# “Objective” drivers of the ERP

		Real Interest	Inflation	Other Macro	Earnings	Dividend	ERP	
	Risk-Free Asset	Equity Class	Rate Trend	Expectations	Assumptions	Expectations	Trend	Variations
Examples:	Treasury Bills	U.S. Equities	High	High	Macroeconomy	High	Rising	vol
	Treasury Notes	Global Equities	Medium	Medium	Demographics	Medium	Falling	vol of vol
	Inflation-Linked Bonds	Large-Cap	Low	Low	Globalization	Low		
		Other:						
		Size						
		Value						
		Geography						
		Sector						

# “Circumstantial” drivers of the ERP

<b>Investment Horizon</b>	<b>Liquidity Biased</b>	<b>Rebalancing Requirement</b>	<b>Valuation Sensitivity</b>	<b>Ability to Evaluate Mkt</b>	<b>Risk Tolerance</b>	<b>Trade Orientation</b>
<b>Long</b>	Liquidity	Rebalance	Sensitive	High	Constant	Buyer
<b>Short</b>	Illiquidity	Hold	Insensitive	Low	Variable	Seller
					Range Bound	

# “Circumstantial” investor types

Investor Type	Horizon	Liquidity Stance	Rebalance Requirement	Valuation Sensitive	Risk Tolerance	Buyer or Seller	Example
LSB	Long Horizon			Sensitive		Buyer	Discretionary buyer looking for low premium
LSS	Long Horizon			Sensitive		Seller	Discretionary seller looking for extra premium
LLB	Long Horizon	Liquidity Bias				Buyer	Buyer at nearly any price
LLS	Long Horizon	Liquidity Bias				Seller	Seller at nearly any price
LRB or LRS	Long Horizon		Rebalance			Buyer	Must rebalance when market moves
LCB or LCS	Long Horizon				High Constant		Constant risk tolerance but evaluates and acts on changing market opportunities
LVB or LVS	Long Horizon				High Variable		Risk tolerance depends on market conditions or changing personal circumstances
LRB or LRS	Long Horizon				Range Bound		Constant risk tolerance, except in extreme market move
SSB or SSS	Short Horizon			Sensitive			Daily, weekly, monthly, quarterly performance evaluation
SLB or SLS	Short Horizon	Liquidity Bias					Must remain liquid

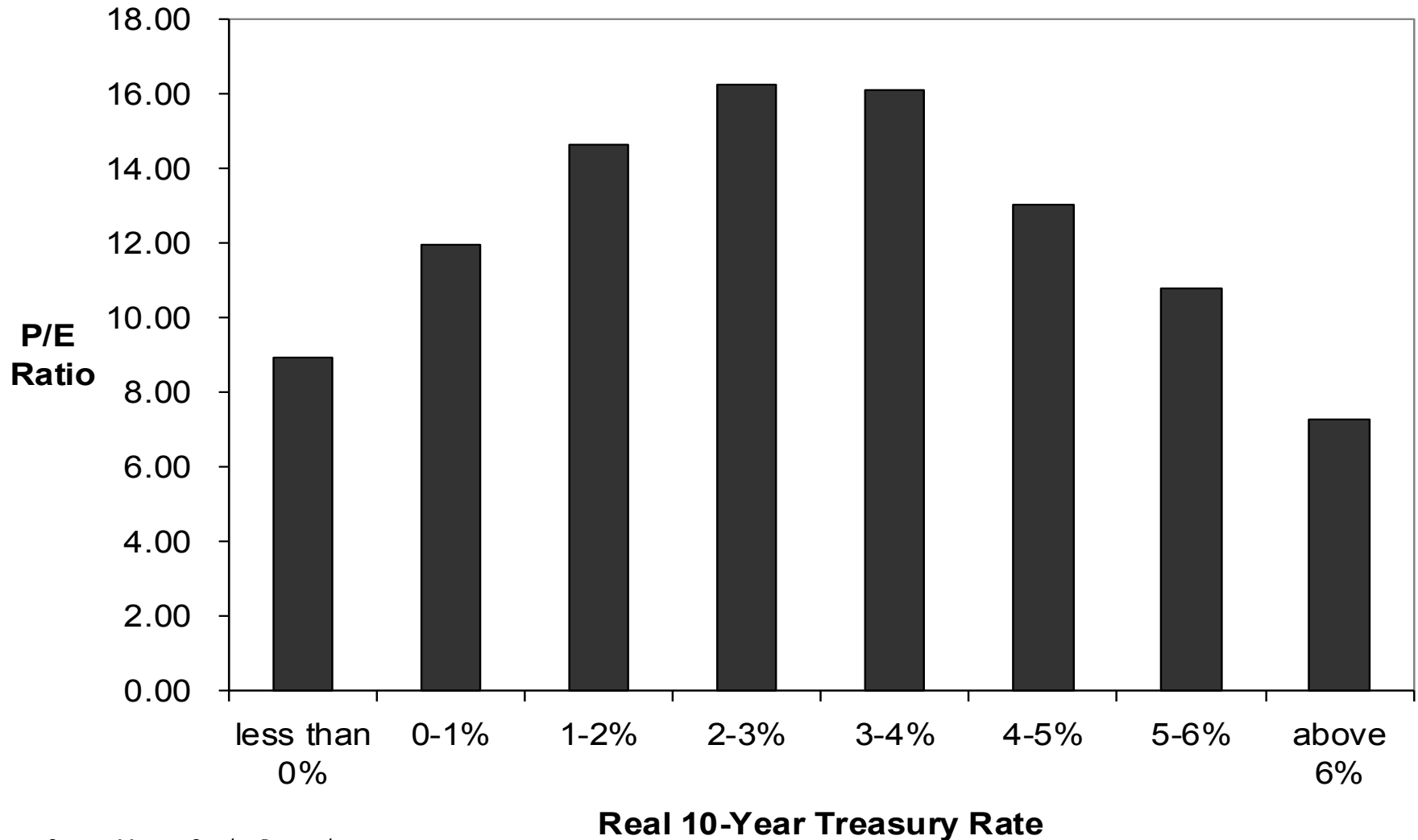
# Real interest rate regimes and the ERP

<b>Factor</b>	<b>Low Rates</b> 0-1%	<b>Sweet Spot</b> 2-3%	<b>High Rates</b> 6+%
Equity risk premium	High (6%)	Low (4 or less%)	High (5%)
Probability of occurrence	Low	High	Low
Financial/economic environment	Dismal	Balanced	Overheated
Inflation expectations	Low (1-2%)	Low/Medium (2-3%)	High (4%+)
Discount rate/cost of capital	Medium (7%)	Medium (7%)	High (11%)
Real growth rate	Very low (2.5%)	Good (4%)	Too high (7%)
Regime persistence	Hopefully brief	Sustainable	Almost surely brief
Sustainability of current earnings	Fair (0.4)	Fair (0.4)	Good (0.7)
New investment profitability	Good when available (6%)	Good (6%)	Squeezed (2%)
"Franchise" value (FV)	Low (4.8)	High (11.4)	Low (3.2)
"Ongoing" or "tangible" value (TV)	Fair (5.7)	Fair (5.7)	Fair (6.4)
Theoretical P/E (FV + TV)	Low (10.5)	Peak (17.1)	Low (9.6)

Source: Leibowitz and Bova [2007].

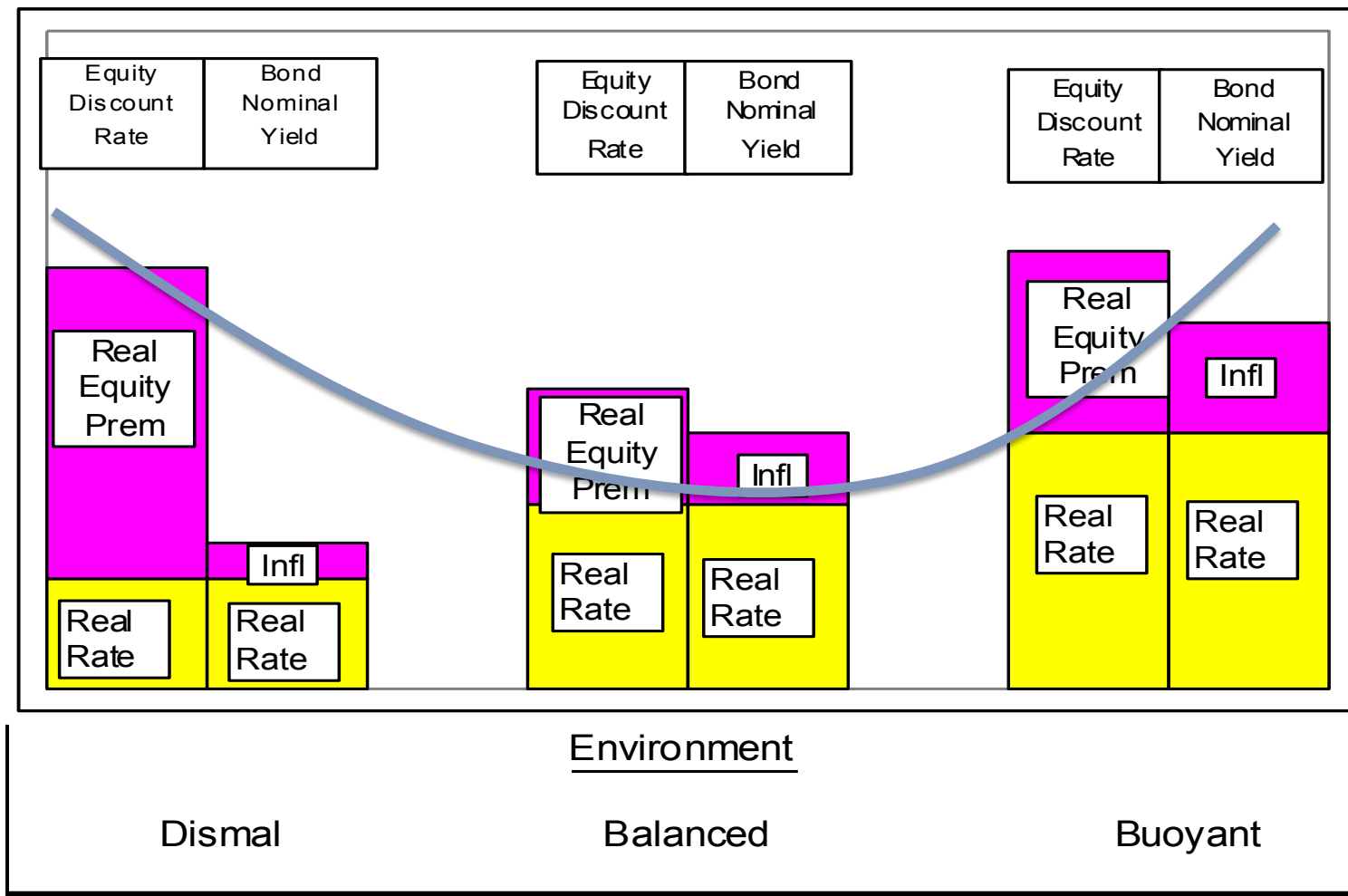
Note: Specific functional values have no empirical validity. They are illustrative of relative values that might be associated with P/E and other valuation components corresponding to the three growth regimes.

# P/E ratios versus real rates: 1978-2011



Source: Morgan Stanley Research

# Real rate conditions and the risk premium smile



Source: Morgan Stanley Research

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