

NHH Private Equity Conference
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Market Efficiency and
Active Investing

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Overview

- ◆ Market efficiency
- ◆ Can we identify a superior asset manager?
- ◆ Factor investing
 - F&F 5-factor empirical model
 - Non-stable factor returns: Risk changes or disappearing inefficiencies?
 - Highly correlated historical long-run factor returns
- ◆ Efficient asset management

Market Efficiency

- ◆ Prices reflect all available information
- ◆ New, public information quickly reflected in prices
- ◆ Rational Expectations ?
 - Dot.Com period 1999 - 2002
 - The Big Recession: 2008 -
- ◆ Trading strategies based on publicly available information have zero/negative value for representative investors
- ◆ But, active investors must have incentives to collect & use information; e.g. Grossman & Stiglitz (1980), Berk & Green (2004), Berk & Binsbergen (2015)

Investment outcome = Skill + Luck

- ◆ Amos Kahneman's «Thinking Fast and Slow»: Yearly rankings of 25 investment advisors for 8 years
- ◆ Average of 28 pairwise correlations = 0.01

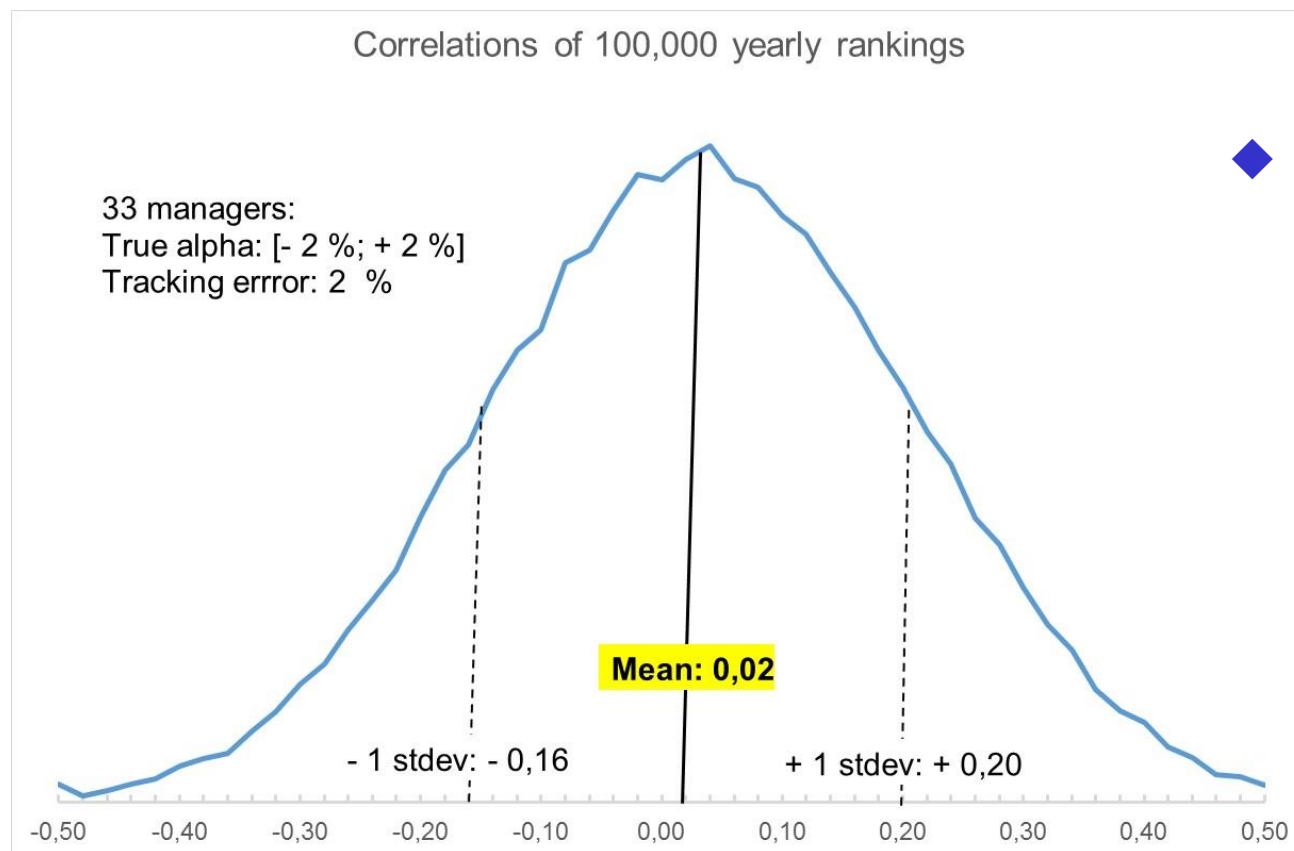
Årsammenlignet		Korrelasjon	
2009	2010	0,15	
2009	2011	-0,01	
2009	2012	0,27	
2009	2013	0,32	
2009	2014	-0,07	
2010	2011	-0,43	
2010	2012	0,23	
2010	2013	-0,18	
2010	2014	0,13	
2011	2012	-0,44	
2011	2013	0,06	
2011	2014	-0,46	
2012	2013	-0,06	
2012	2014	0,33	
2013	2014	0,32	
Gjennomsnitt		0,01	

2015 DNgrafikk/Kilde: Prof. Ola Kvaløy/Oslo Børs VPS

- ◆ Replicated on 6 yearly rankings of 33 Active Norwegian mutual funds (2009 – 14) by prof. Ola Kvaløy
- ◆ Avg. Corr. = 0.01 of the 15 pairs
- ◆ Two claims about active managers:
 - They are paid for luck not skill
 - They can't beat the market (?)

«Mean Veil»: You can only

- ◆ 33 managers: True **alpha** uniformly distributed between - 2 % and + 2%. common tracking error (**TE**) 2 %.
- ◆ Information Ratio (IR = Alpha/TE) between -1.0 and +1.0
- ◆ Need relatively few years to separate the truly good from the truly bad



- ◆ No information in yearly rankings

Overview

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- ◆ Can we identify a superior asset manager?
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Fama-French 5-factors 1980 – 2015 Sep

◆ Return generating factors:

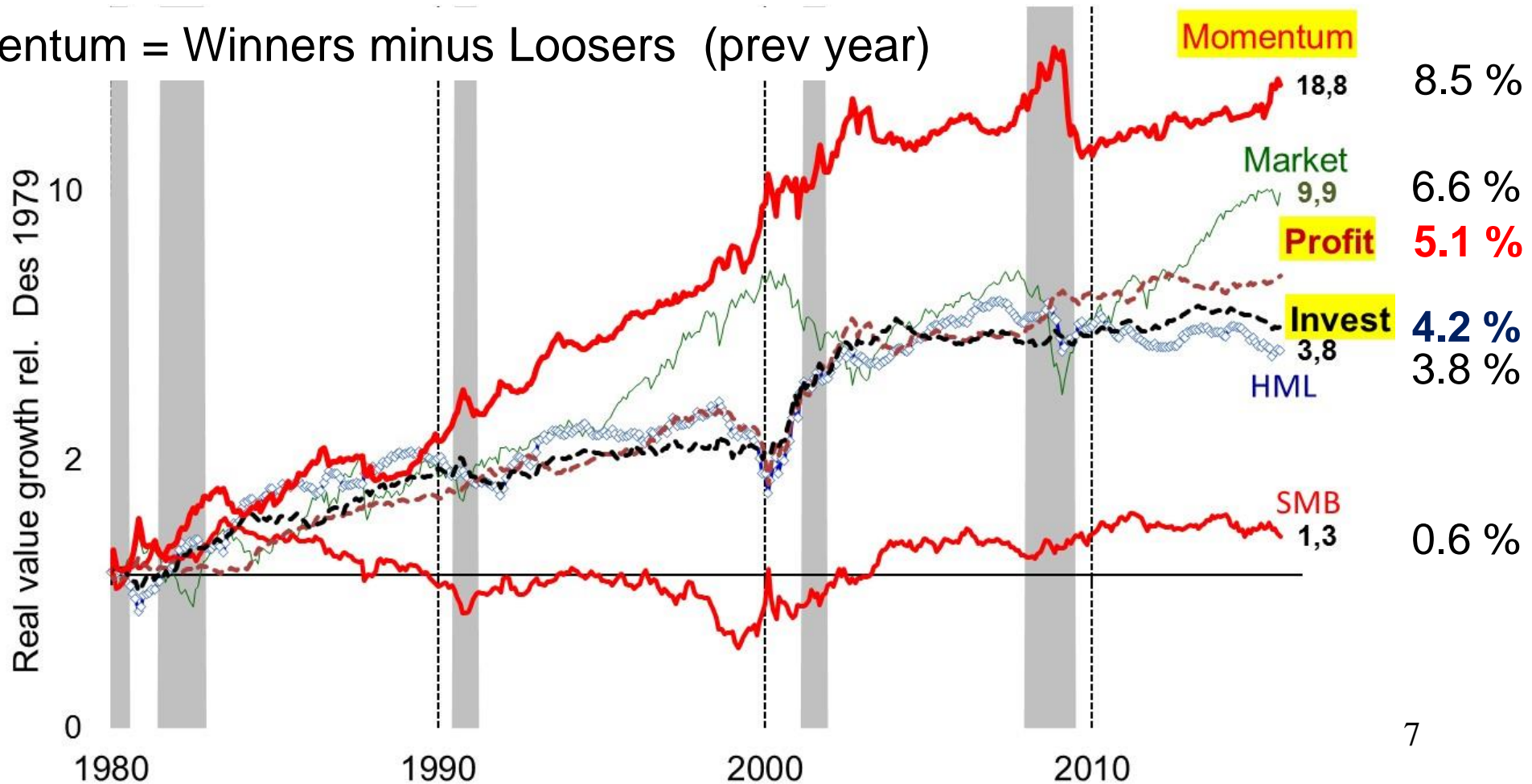
SMB = Small minus Large

HML = Value minus Growth (B/P high - low)

Profitability = High minus Low RoE (prev year)

Investment = Low minus High Inv. (prev year)

Momentum = Winners minus Losers (prev year)



Portfolio characteristics 1980 – 2015 Sep

- ◆ New factors (rel. to SMB & HML): lower risk, much higher Sharpe ratios & negative betas
- ◆ New factors / HML + Market: very high Sharpe ratios, due to negative betas (market correlations < 0)
- ◆ New factors may substitute for HML: positive correlations

	Growth	Stdev	Sharpe	Beta
Market	6,6	18,7	0,35	1,0
SMB	0,6	11,4	0,06	0,2
HML	3,8	12,2	0,31	-0,2
Profitability	5,1	7,4	0,69	-0,2
Investment	4,2	7,0	0,60	-0,2
Momentum	8,5	16,4	0,52	-0,1

Combination w/Market				
SMB	7,1	21,3	0,33	1,2
HML	10,2	15,7	0,65	0,8
Profitability	11,4	15,6	0,73	0,8
Investment	10,8	14,3	0,75	0,8
Momentum	13,7	19,9	0,69	0,9

Correlations (monthly returns):

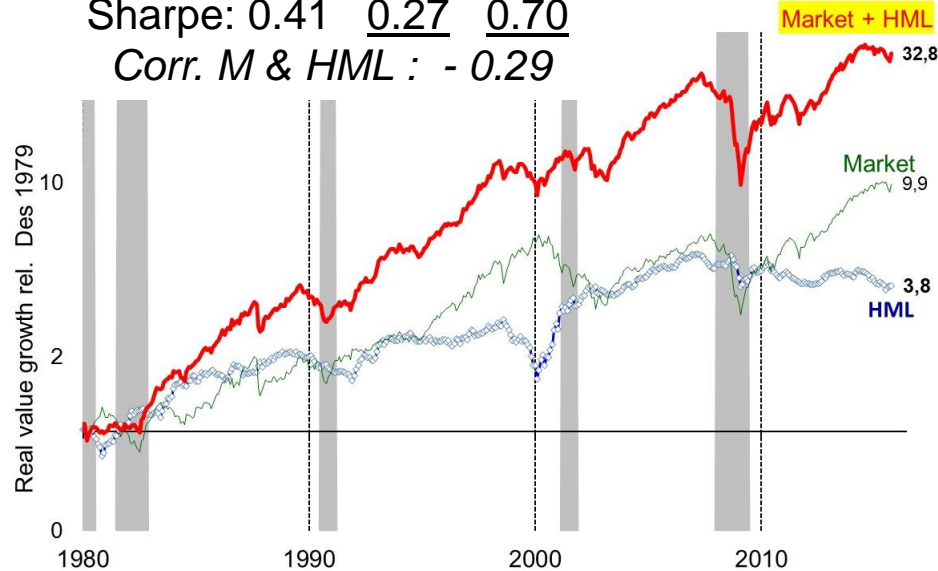
	Market	SMB	HML	Profit.	Investm.
SMB	0,31				
HML	-0,29	-0,22			
Profitability	-0,21	-0,40	0,08		
Investment	-0,38	-0,18	0,71	-0,09	
Momentum	-0,13	0,00	-0,17	0,09	-0,01

- ◆ Small firms are “bad”
- ◆ Other factors serve as hedge

Combination portfolios:

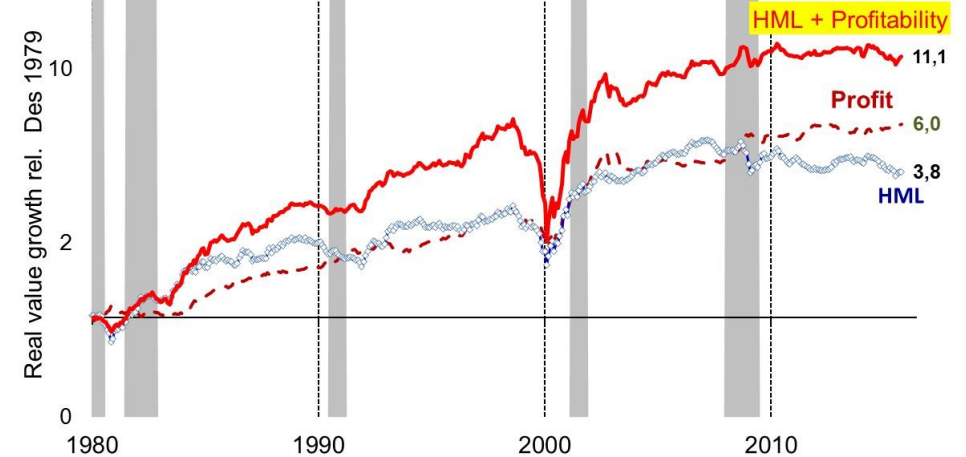
Market + Value (HML)

Sharpe: 0.41 0.27 0.70
 Corr. M & HML : - 0.29



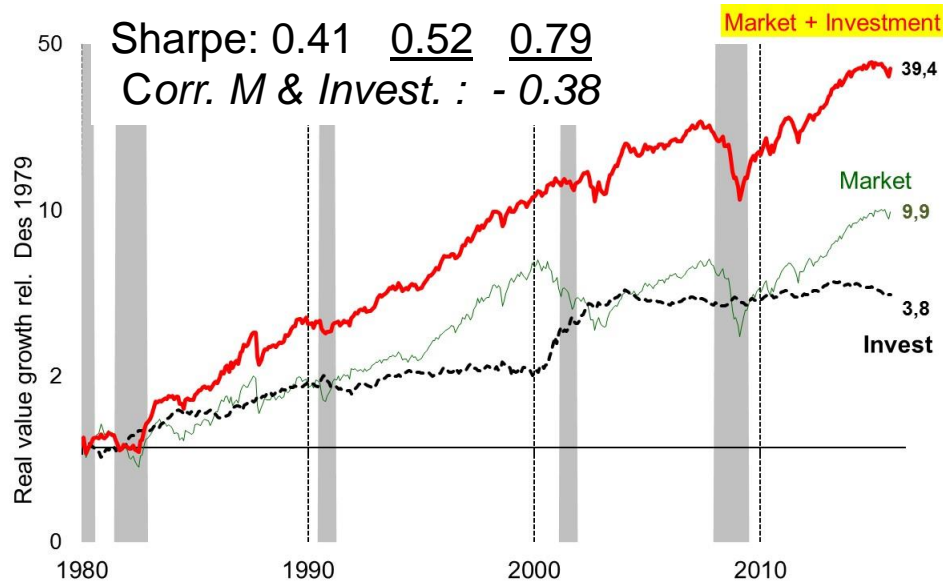
Value + Profitability

Sharpe: 0.27 0.60 0.56
 Corr. HML & Profit : 0.08



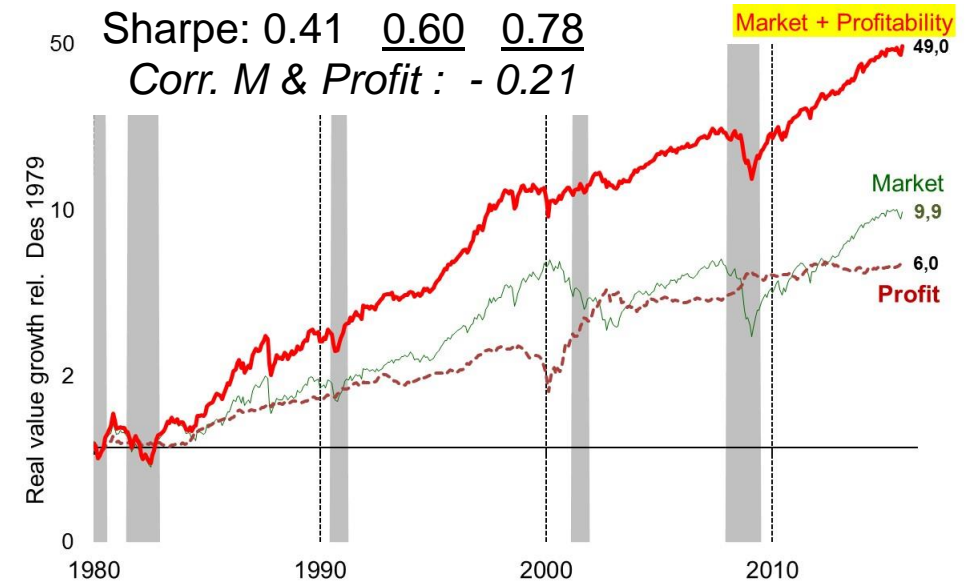
Market + Investment

Sharpe: 0.41 0.52 0.79
 Corr. M & Invest. : - 0.38



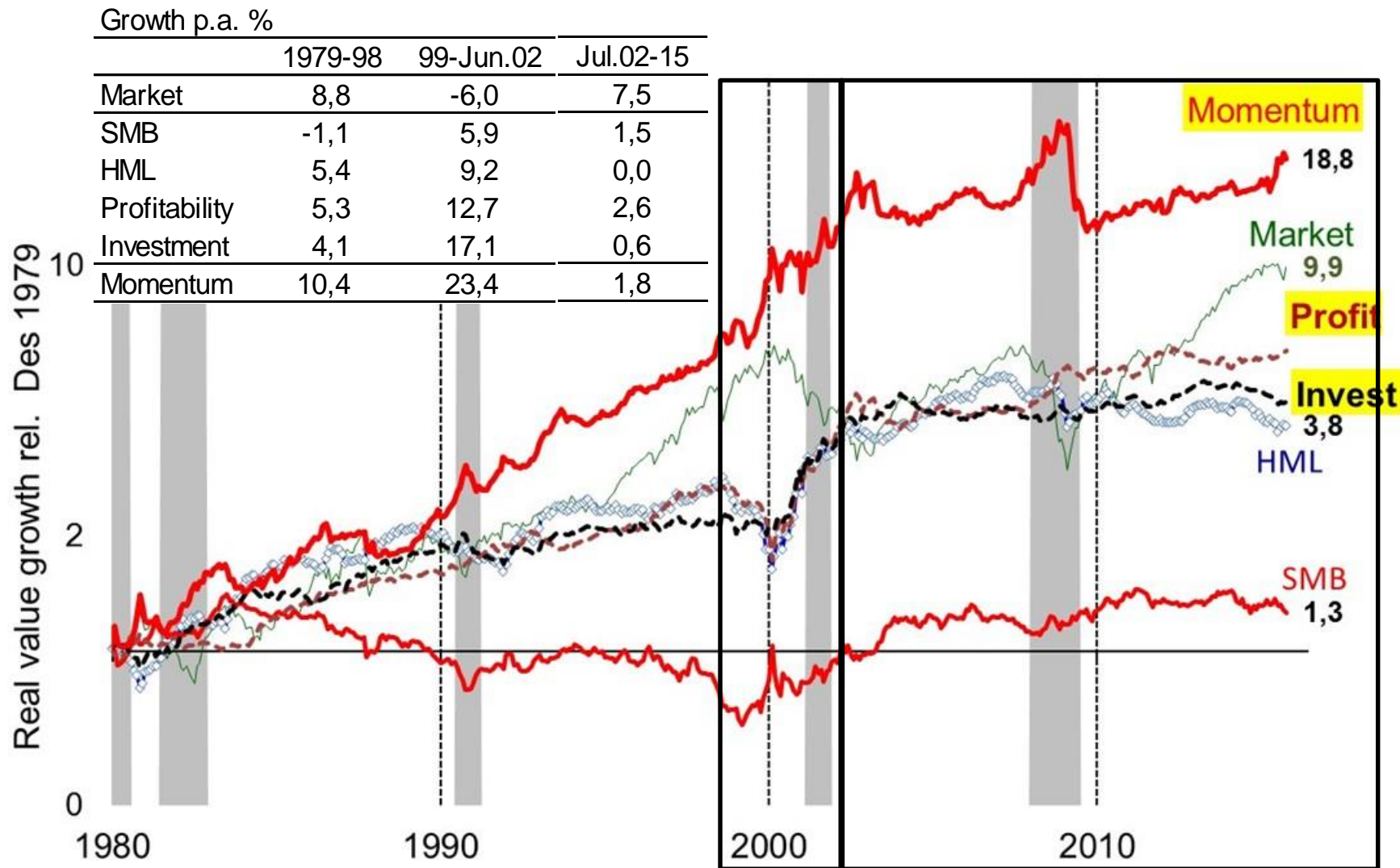
Market + Profitability

Sharpe: 0.41 0.60 0.78
 Corr. M & Profit : - 0.21



Fama-French 5-factors: Lack of stability

- ◆ Cyclical break (rel. to market) in dot.com-period 1999 - 2002
- ◆ Disappearing non-market factor returns thereafter

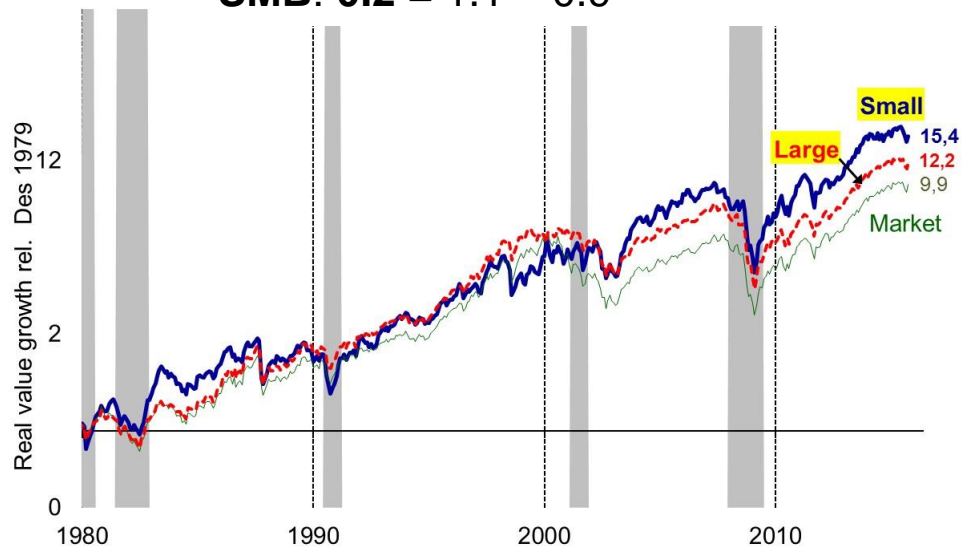


Jan 99 – Jun 02

Long and short factor portfolios: Average growth p.a.

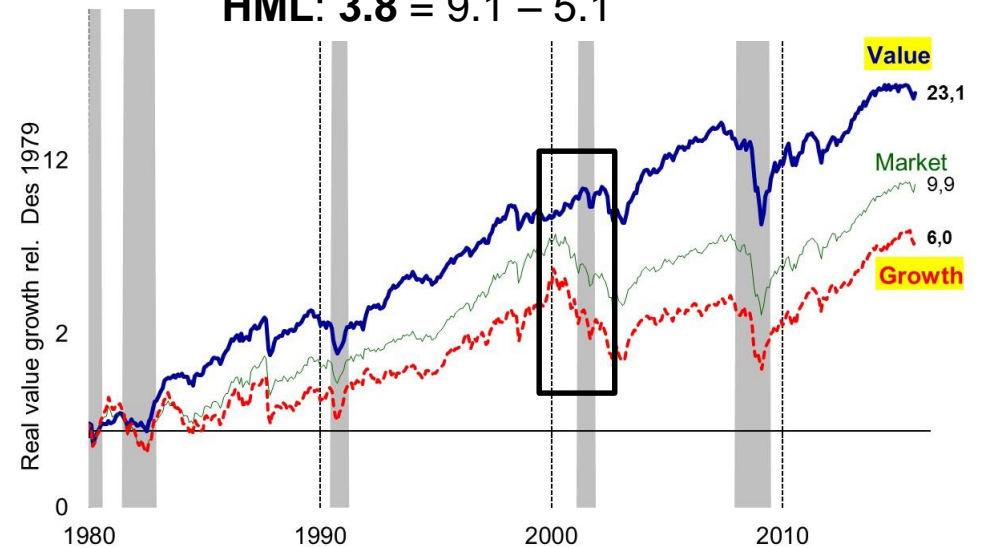
SIZE (SMB)

SMB: 0.2 = 1.1 - 0.9



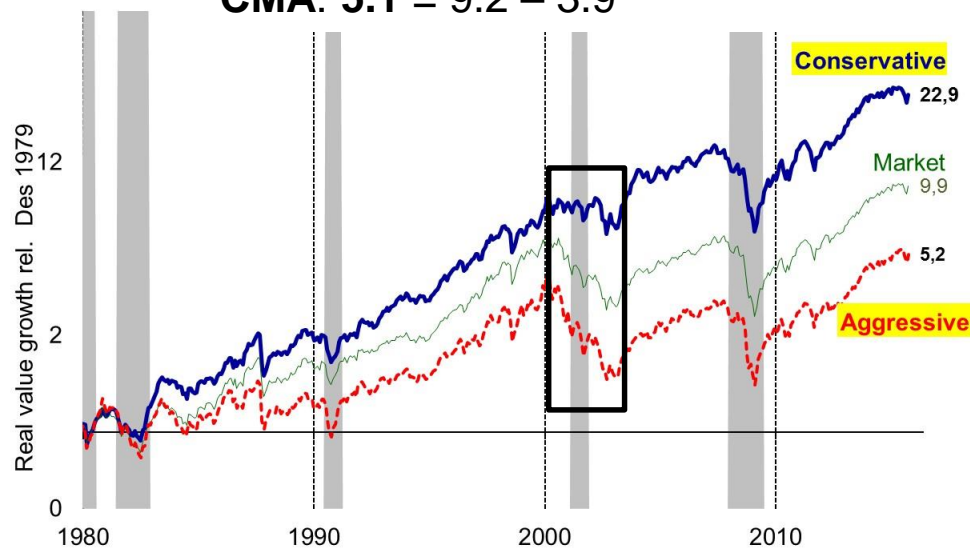
VALUE (HML)

HML: 3.8 = 9.1 - 5.1



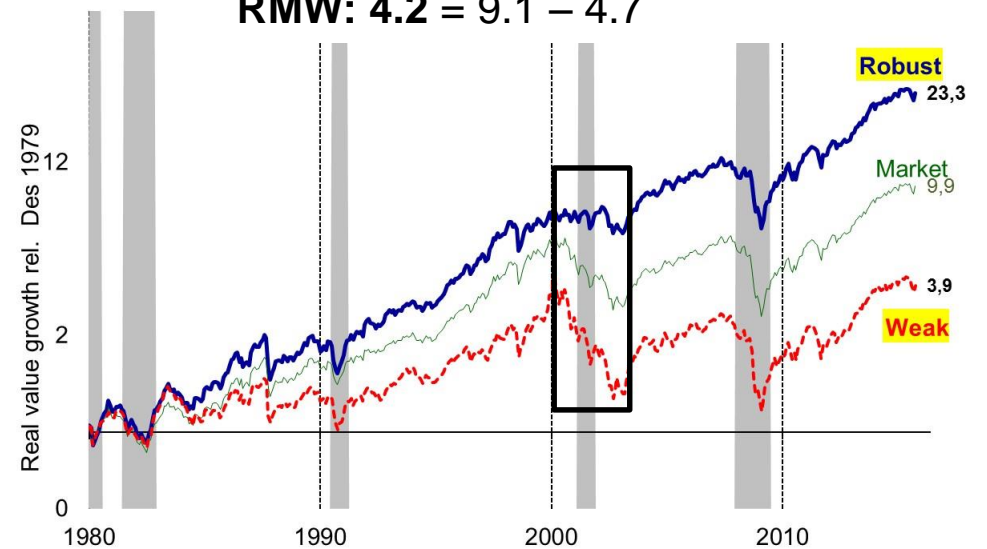
INVESTMENT (CMA)

CMA: 5.1 = 9.2 - 3.9



PROFITABILITY (RMW)

RMW: 4.2 = 9.1 - 4.7



Fama-French 5-factors: Risk factors or inefficiencies

- ◆ Empirical factors: «Data with little or no theory»
- ◆ Cyclical & structural (?) breaks
 - The size factor disappeared after the first F&F paper
 - The yearly factor returns have generally been procyclical, but where countercyclical and highly correlated during the dot.com period 1999 – 2002
 - Very low factor returns following 2002 (relative to the market premium)
- ◆ Strongly countercyclical long-run factor returns, but highly mutually correlated

Rolling 10- years real growth: Correlations with Market & Value

SIZE vs Value (HML)

Value vs Market: **- 0.50**

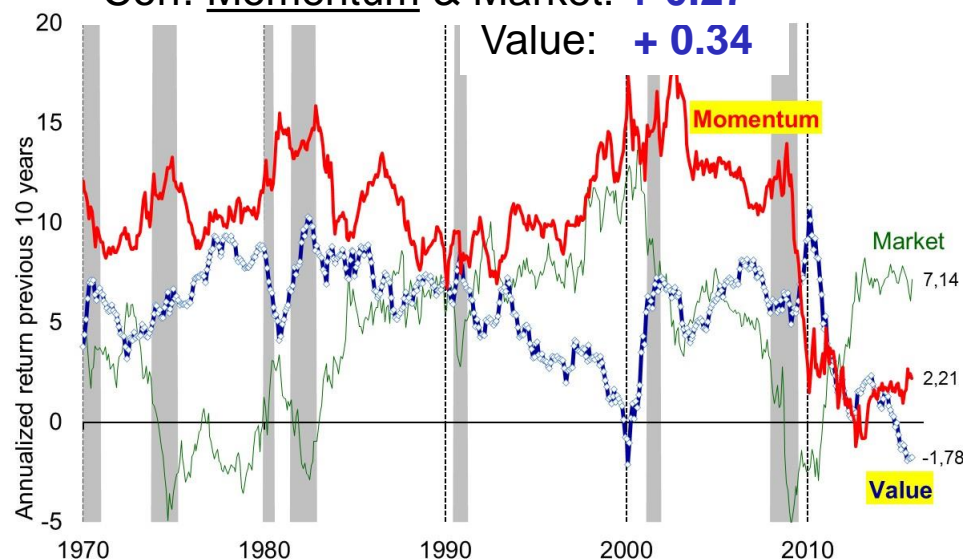
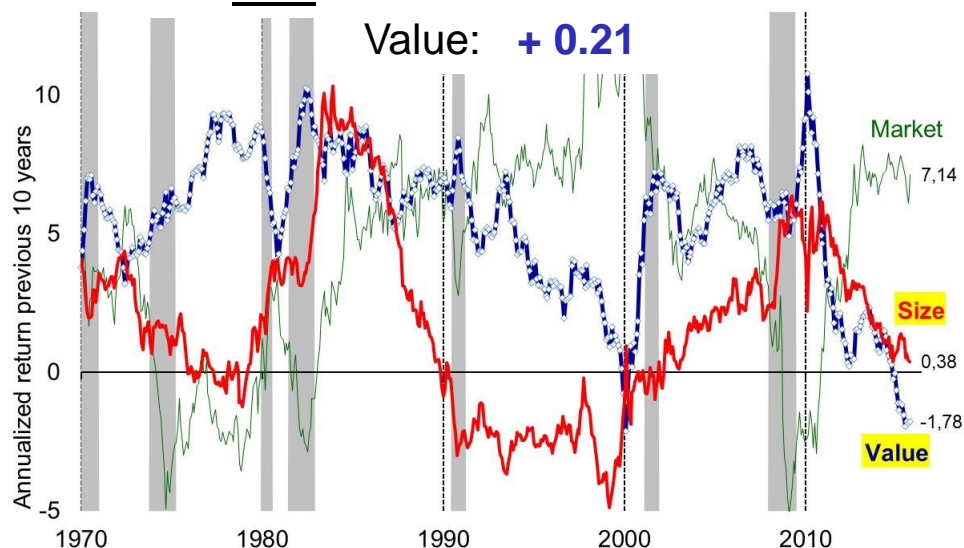
MOMENTUM

Corr. Size & Market: **- 0.72**

Value: **+ 0.21**

Corr. Momentum & Market: **+ 0.27**

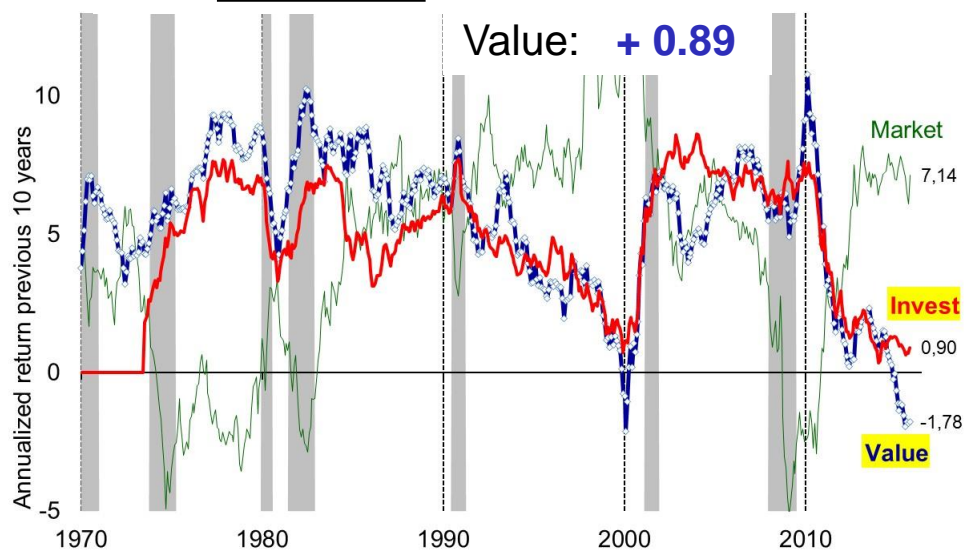
Value: **+ 0.34**



INVESTMENT

Corr. Investment & Market: **- 0.51**

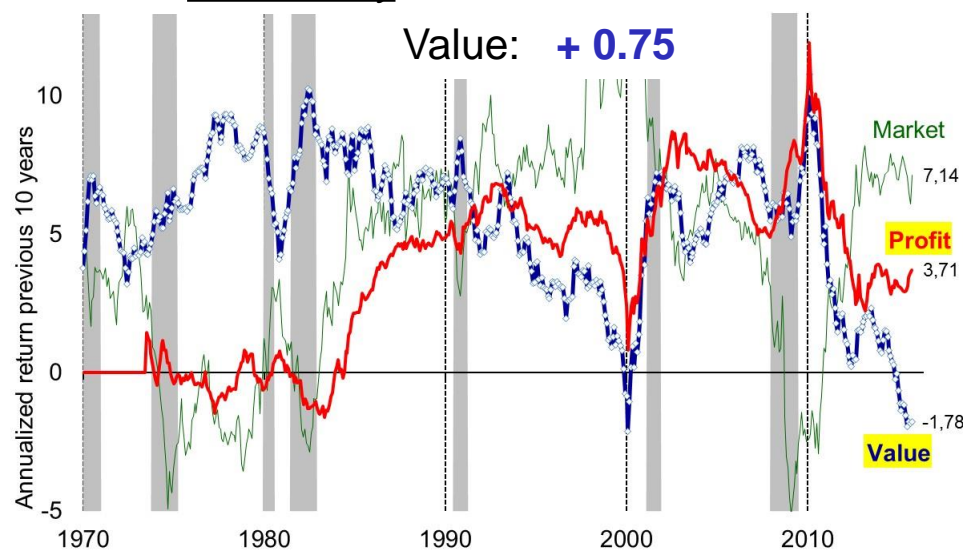
Value: **+ 0.89**



PROFITABILITY

Corr. Profitability & Market: **- 0.57**

Value: **+ 0.75**



Creating Value in a near-efficient market

- ◆ Better information capabilities or lower costs
- ◆ Access to superior (specialized) asset managers – at «low» fees
- ◆ Tactical factor allocation, or reflected in dynamic benchmark?
- ◆ Rebalancing: supplying liquidity
- ◆ Risk and cost control
- ◆ Keep it simple
- ◆ Diversify