



# Outlook for Quant and Current factor allocations

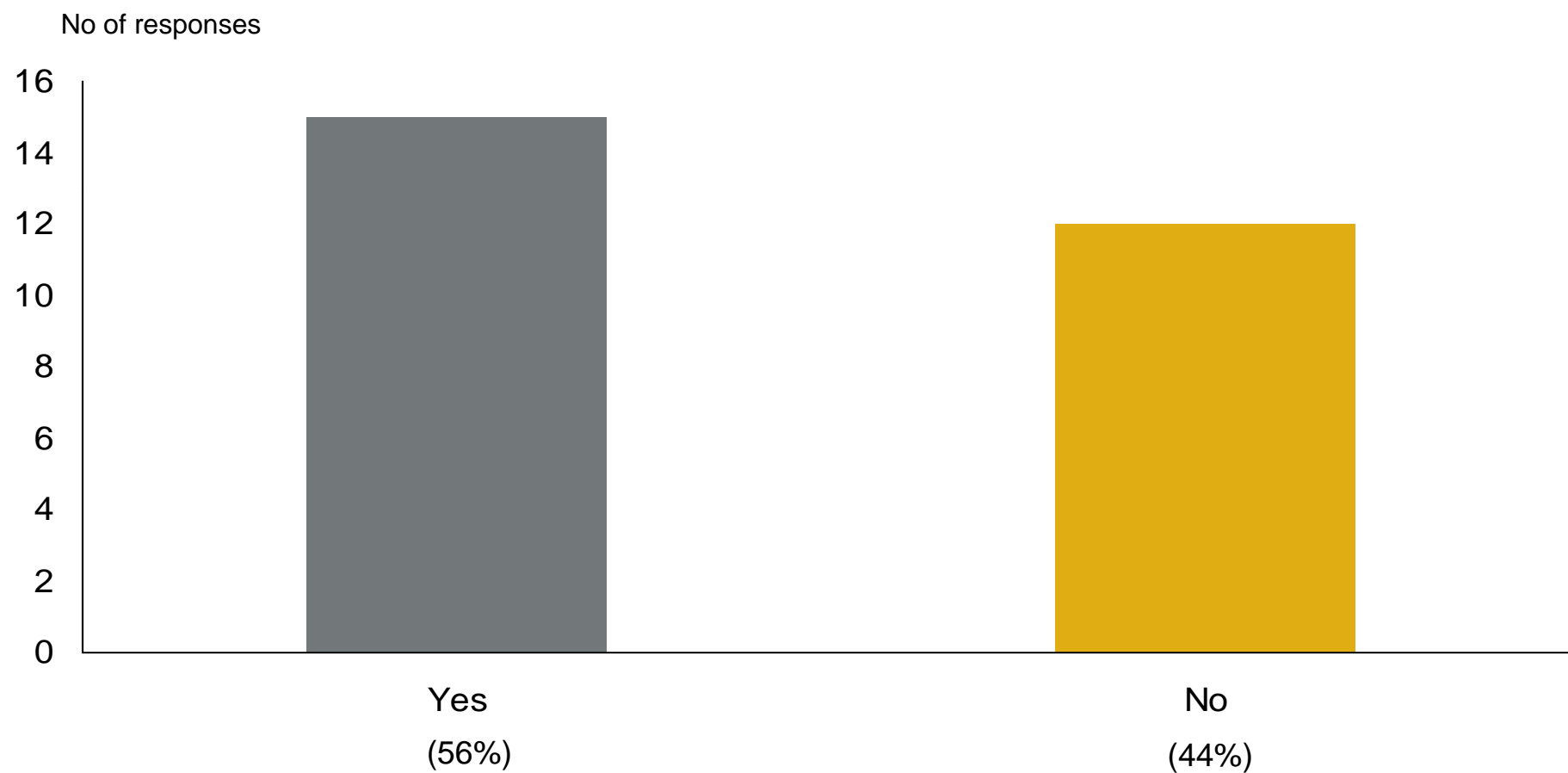
**Inigo Fraser Jenkins**

June 2010

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PAGE 33.

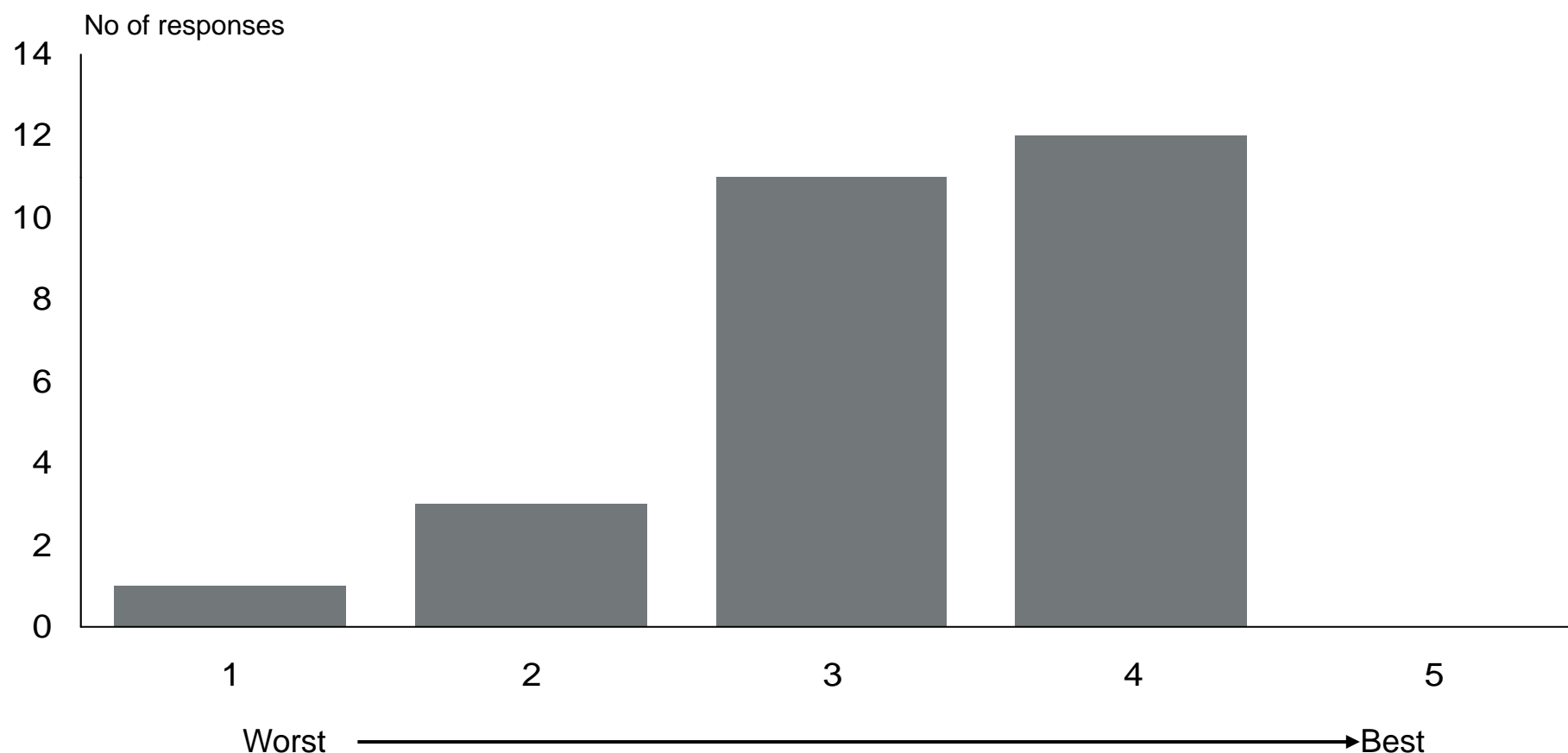
- **The consensus of European quant investors**
- **Outlook for quant**
- **Factor exposure**
- **The case for quality**
- **Management and accounting quality**

## Have you won new mandates over the past year?



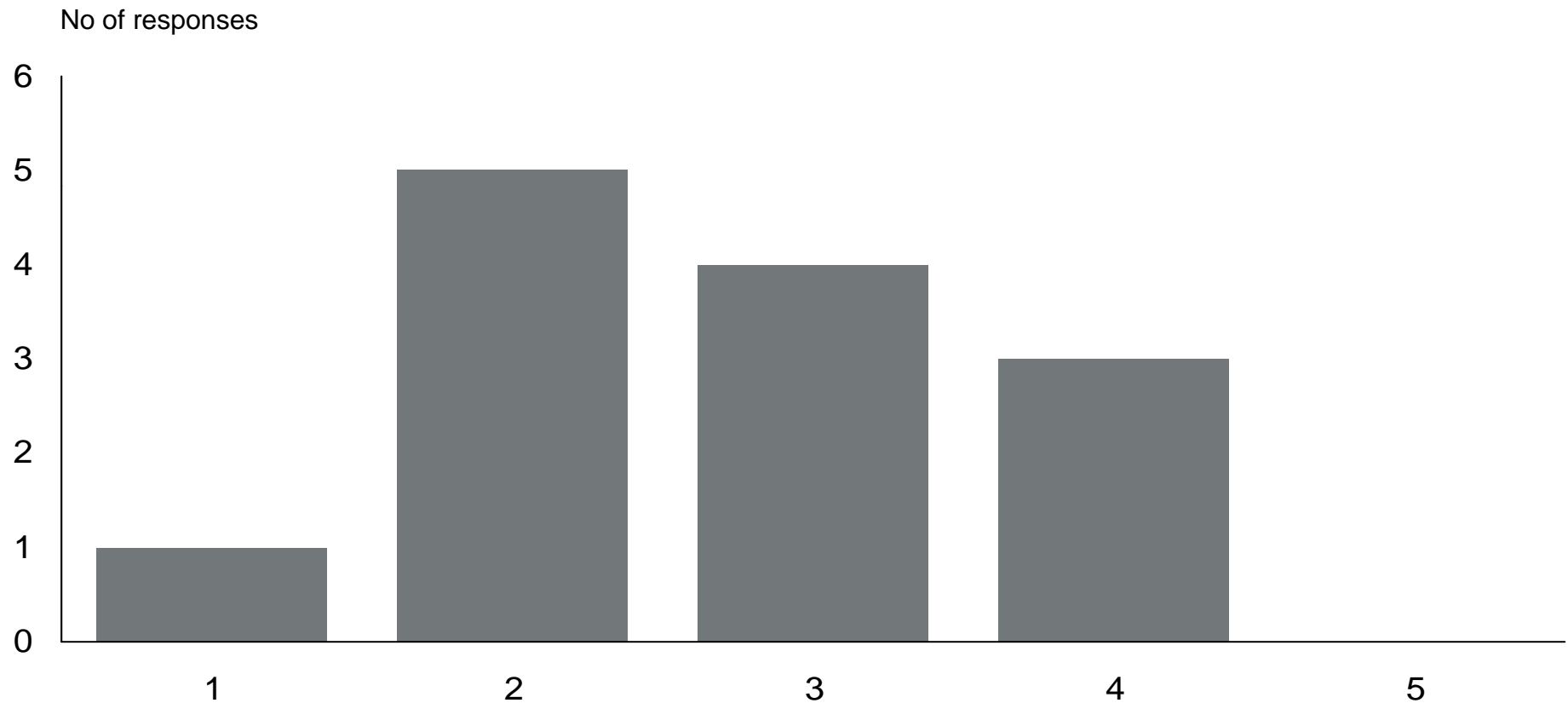
Source: Nomura Equity Strategy

**On a scale of 1 – 5, where 1 was the worst ever period of quant returns and 5 the best, how would you rate the outlook for quant over the next 12 months?**



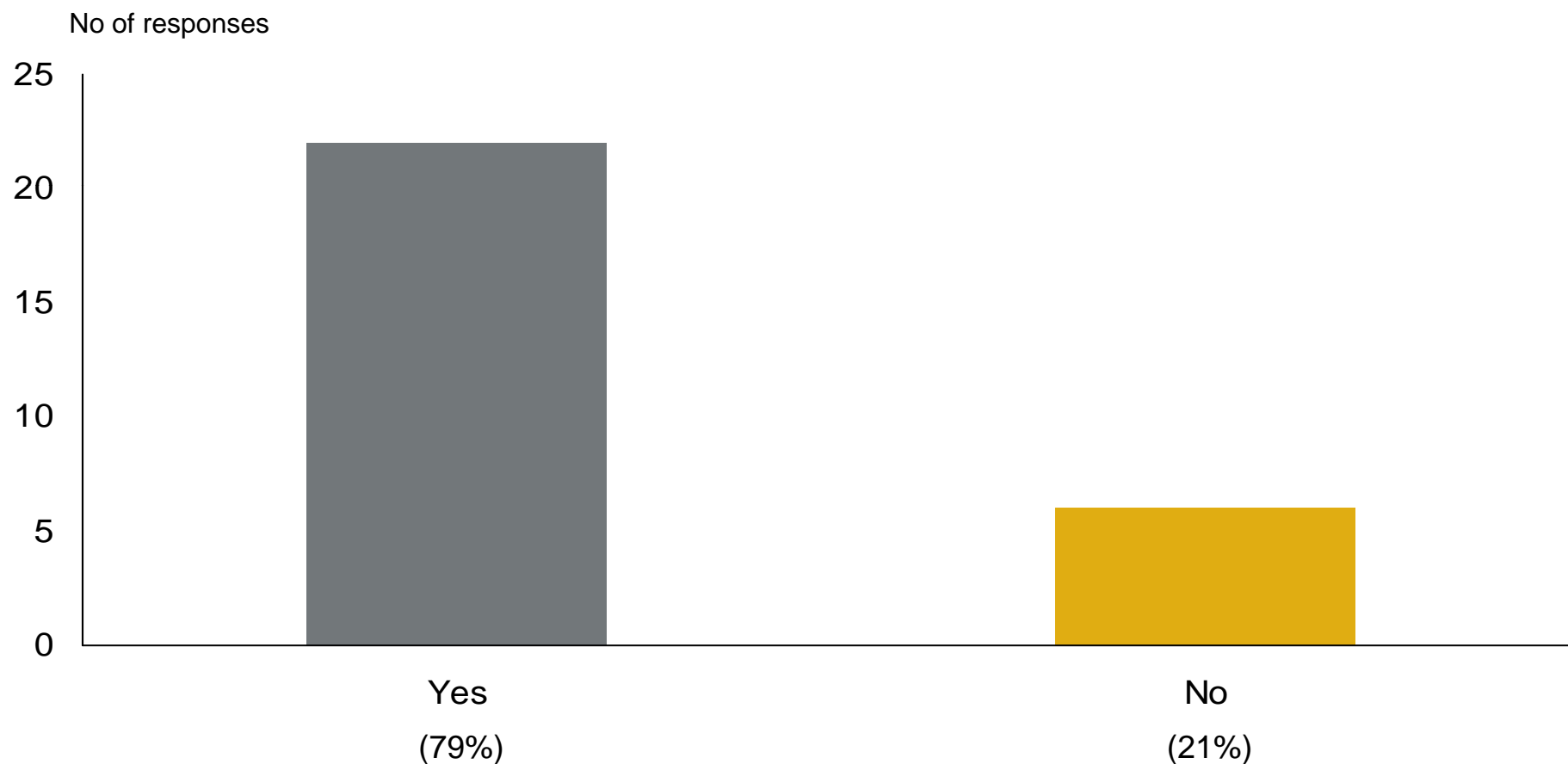
Source: Nomura Equity Strategy

**If your risk budgets have changed, by how much have they changed overall?  
(1 = much lower than a year ago, 5 = much greater than a year ago)**



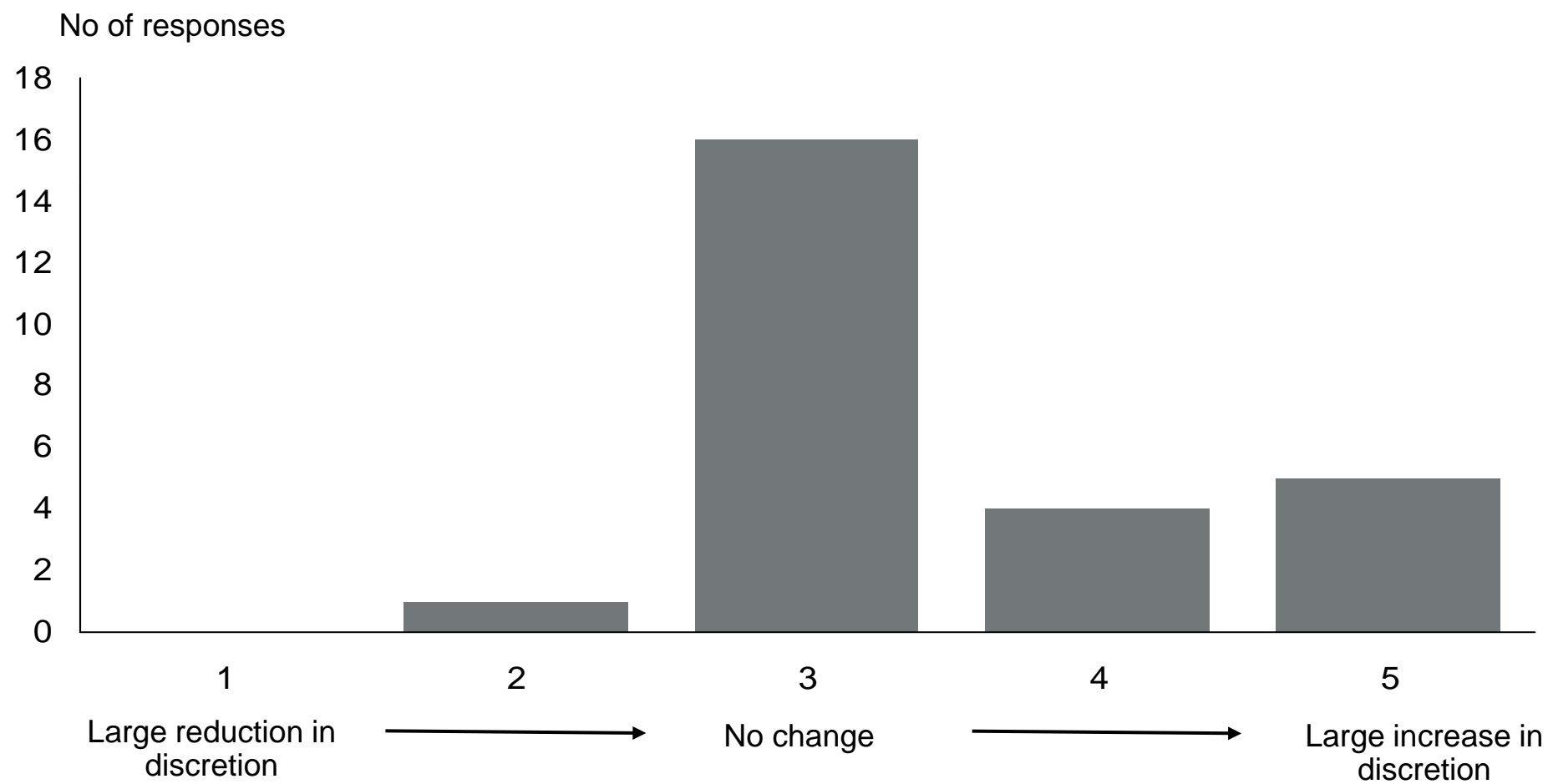
Source: Nomura Equity Strategy

## Does a discretionary overlay have a place in the quant investment process?



Source: Nomura Equity Strategy

## How much have you changed the amount of discretion you allow in the investment process over the last year?



Source: Nomura Equity Strategy

## A Proxy for Quant Hedge Funds



*Note: Shows the return from the Equity Market Neutral Index compiled by Hedge Fund Research.  
Source: Hedge Fund Research*



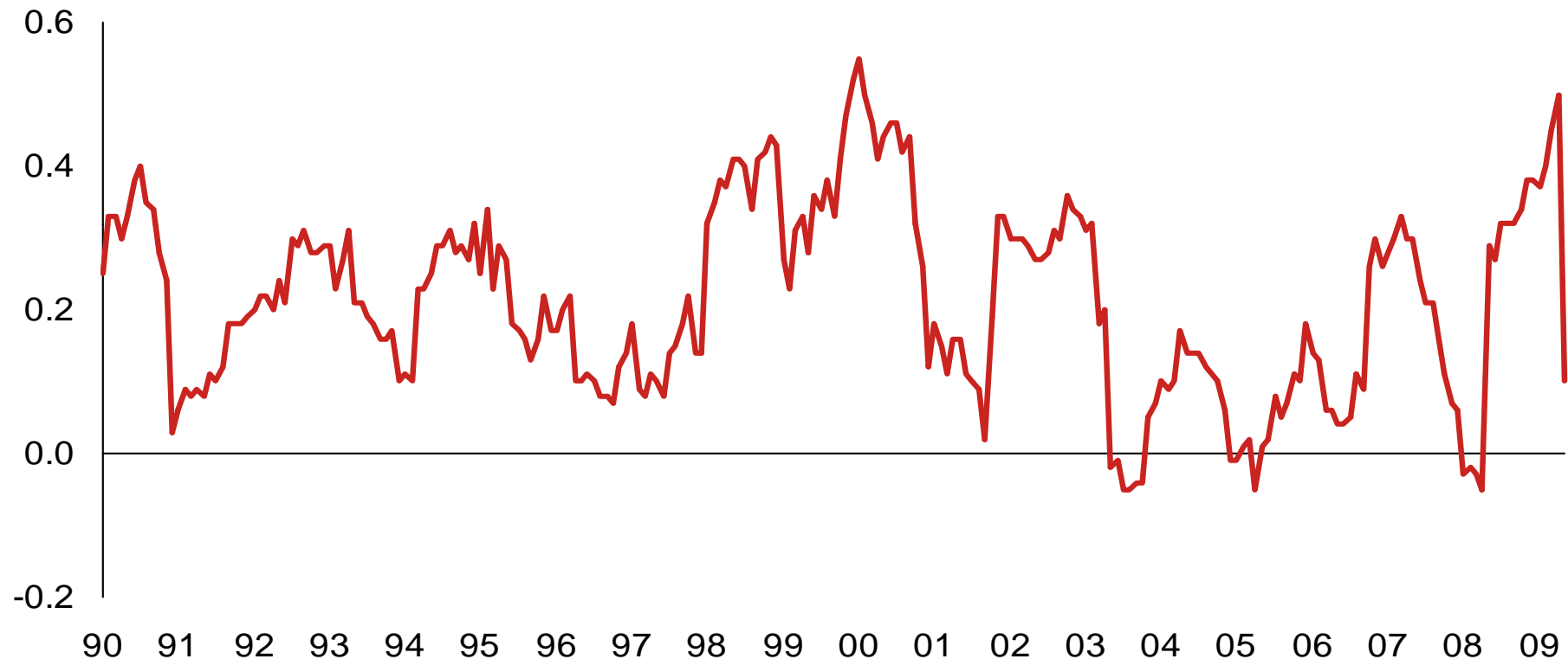
## A Meta Model for Quant

$$r_{t:t+\delta} = \alpha + \beta_1 \text{Correl}_t + \beta_2 \text{Value}_t + \beta_3 \text{Growth}_t + \beta_4 \text{Momentum}_t + \varepsilon$$

	$\beta$	s.e.	t-statistic
Correlation	-14.1	8.2	-1.7
Value	-55.8	9.2	-6.1
Growth	4.1	0.7	6.3
Momentum	-3.6	0.7	-5.5
Constant	-2.8	6.5	-0.4
$R^2$	0.3		

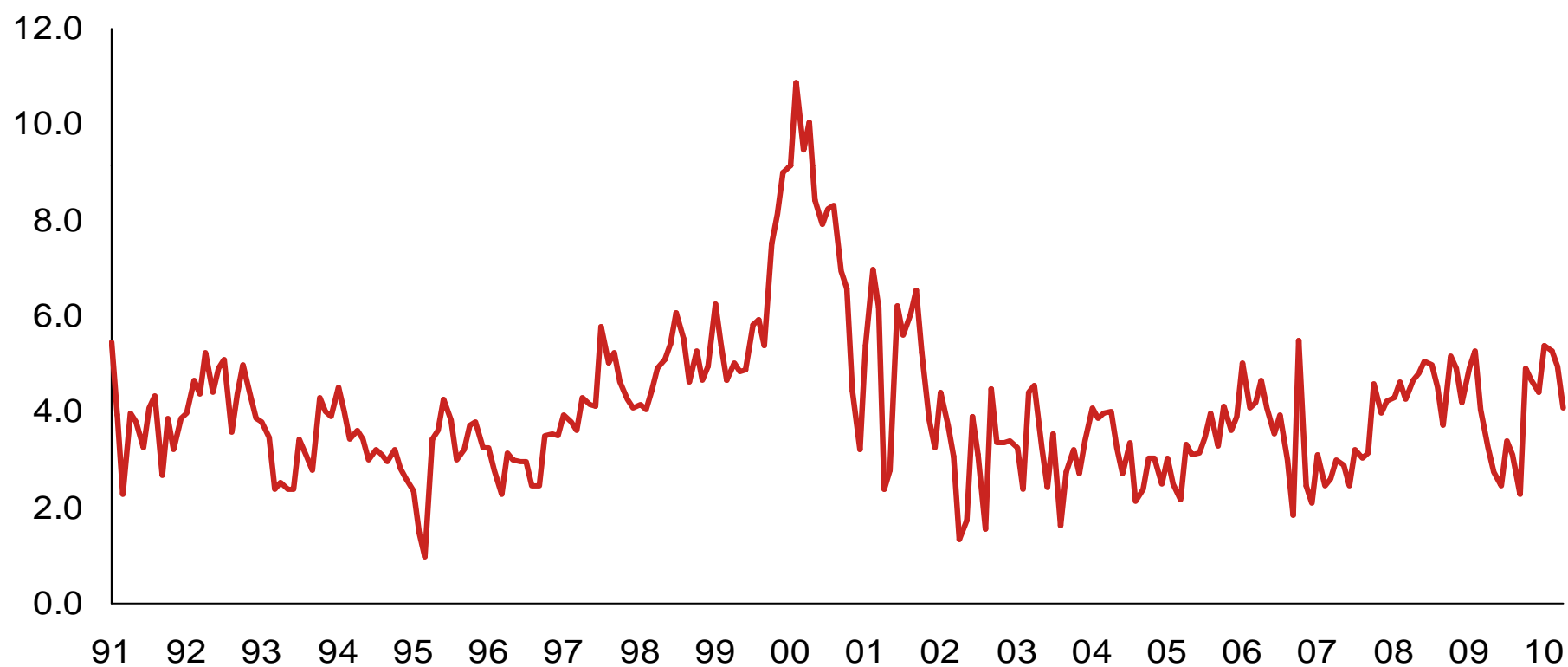
*Note: The quant proxy for which we are forecasting 12-month forward return  $r$  is a sector-neutral blend of PE and 12-month price momentum combined using a simple average approach. The factors used within the correlation are price/book, PE, dividend yield, 6-month earnings momentum, 12-month price momentum, gearing (net debt/equity and interest cover) and a composite growth measure (long-term expected growth, FY0-FY3 growth and internal growth – ROE\*[1-payout ratio]). We measure the spread of returns between the top and bottom quartiles of each measure and measure the pairwise correlation over rolling 12-month windows. Note we take the absolute return of each factor. We are not concerned here about whether the relationship between two factors is positive or negative, just in the degree of co-movement. Dispersion of value, growth and momentum is measured as the inter-octile range on PE, long-term expected growth and 12-month price momentum. For all terms the benchmark universe used for calculation is the 500 largest stocks in the FTSE World index with quarterly rebalancing. Source: Nomura Strategy Research*

## Correlation of Quant Factors



*Note: shows the average pairwise correlation between value, growth, quality and momentum factors. Correlation is over rolling 12-month periods and all factor portfolios are generated on a sector-neutral equal-weighted total return basis. Value uses price/book, EV/EBITDA, forward P/E, dividend yield. Momentum is 12-month price momentum and six-month earnings momentum, growth is a blend of long-term expected consensus growth, consensus FY0-FY3 growth and internal growth ( $ROE \times (1 - \text{payout ratio})$ ). Quality uses net debt/equity. All returns are expressed on an absolute basis so this measures the degree of correlation excluding whether the factors are moving in opposing or the same direction. Source: Nomura Equity Strategy*

## Dispersion of Momentum

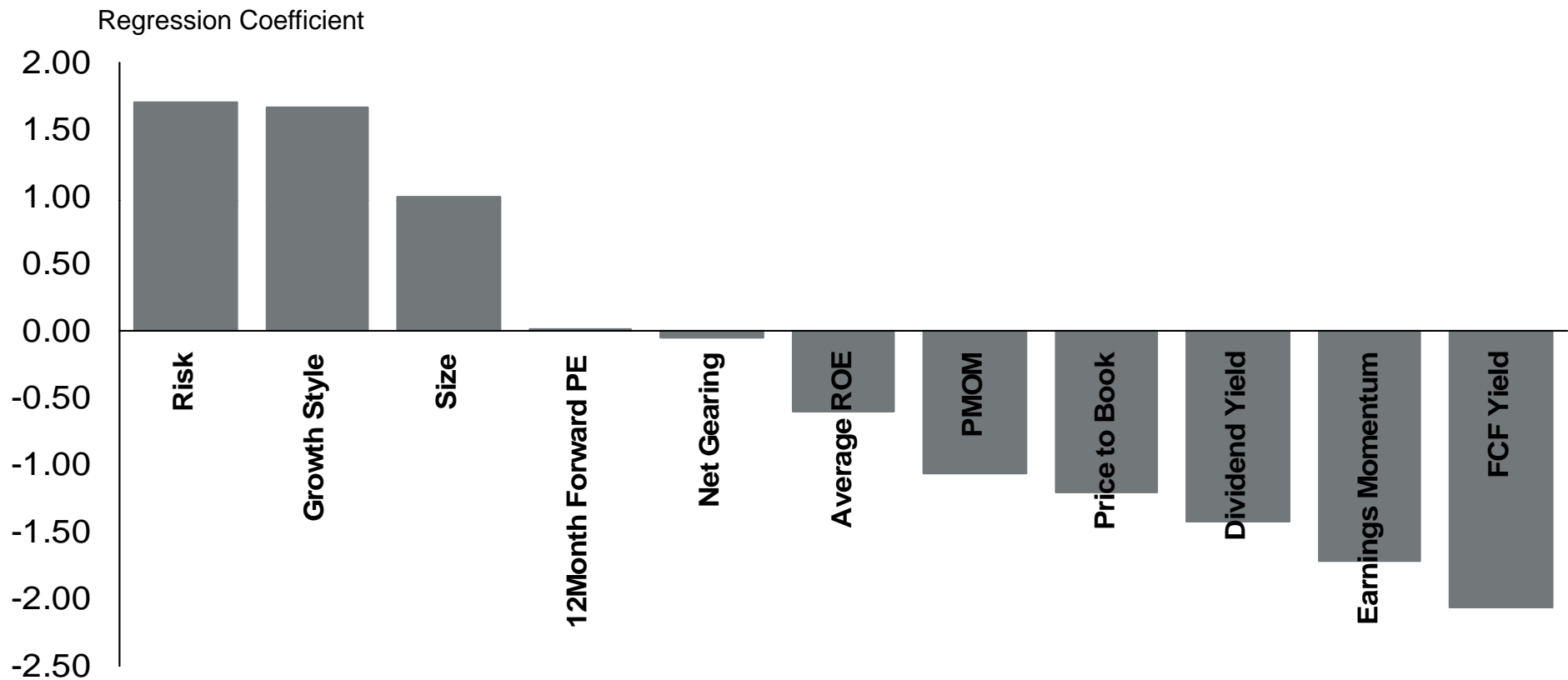


*Note: Shows the return from the Equity Market Neutral Index compiled by Hedge Fund Research.  
Source: Hedge Fund Research*

## Outlook for Quant Models

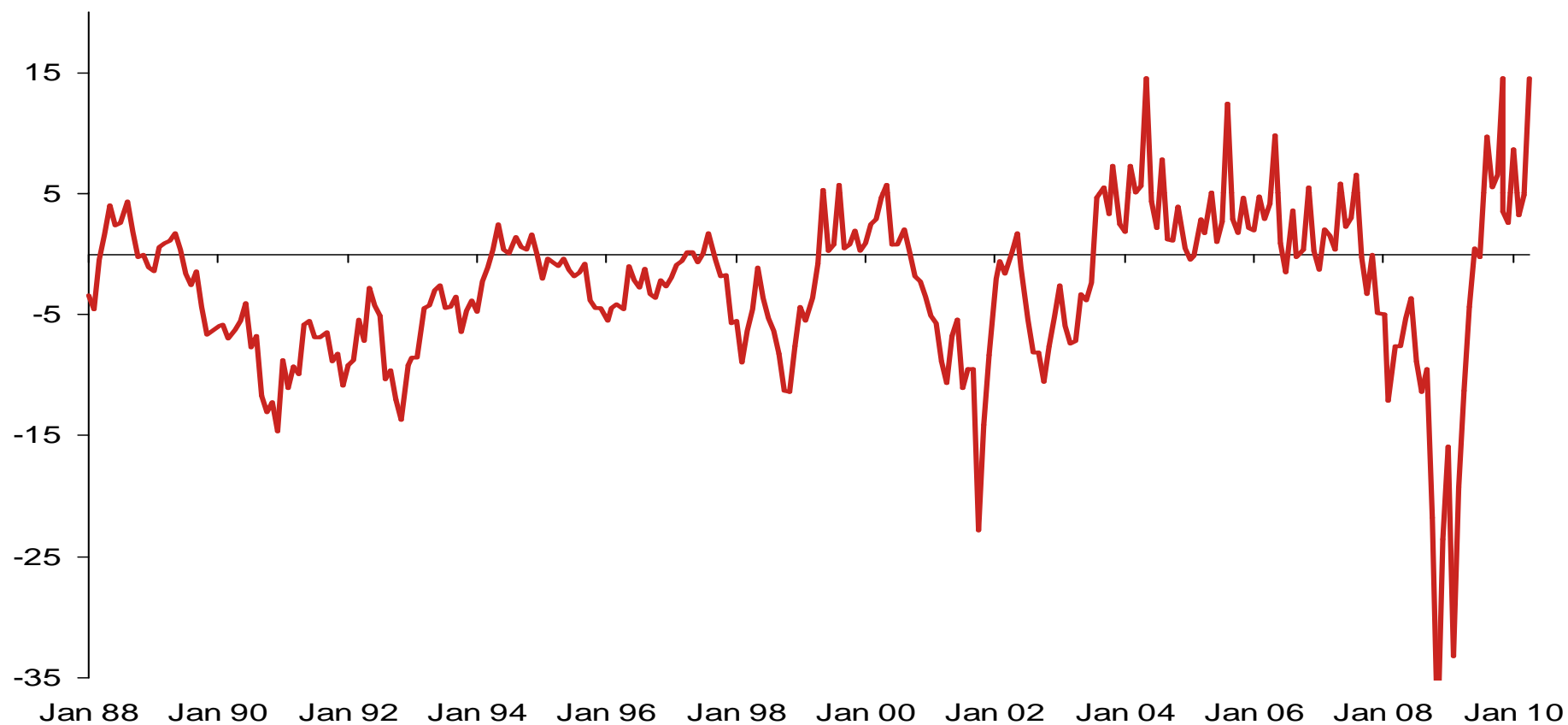
- Forecast 12% long-short return from value+momentum quant proxy
- Average historic return 10%
- So returned to in-line with average outlook for quant

## Factor Exposure of Global Quant Hedge Funds



*Note: Shows the regression coefficients on a regression of the Hedge Fund Research Equity Market Neutral Index and Nomura style indices over the past two months. The scale can be interpreted as showing the return from the hedge fund strategies that would result from a unit move in the factors shown. Data is for a global universe. Source: Hedge Fund Research, Nomura research*

## Global Earnings Revisions Balance



Source: IBES, FTSE, Nomura Equity Strategy

## Valuation of Composite Value Style (Global)



*Note: Shows the relative median valuation of lowest/highest quartile stocks for the Nomura Composite Value style. This is a screening on price/book, PE and dividend yield. The valuation measure is price/book using last reported accounts. Portfolios have been rebalanced quarterly. The benchmark universe is the 500 largest stocks in the FTSE World index. Source: Nomura, WorldScope, FTSE, Exshare*

## The case for Quality

- **Slowing pace of upgrades**
- **Lower dispersion of valuation**
- **Expect market to pay higher premium for sustainable growth**

**... but how should “quality” be defined?**

- **Feedback is that the quants avoid the factor which they regard as “too nebulous”**
- **How to invest in the factor?**



# Quality Measures I

## **Operational Quality**

ROE

ROCE

Margin

Cash rtn on equity

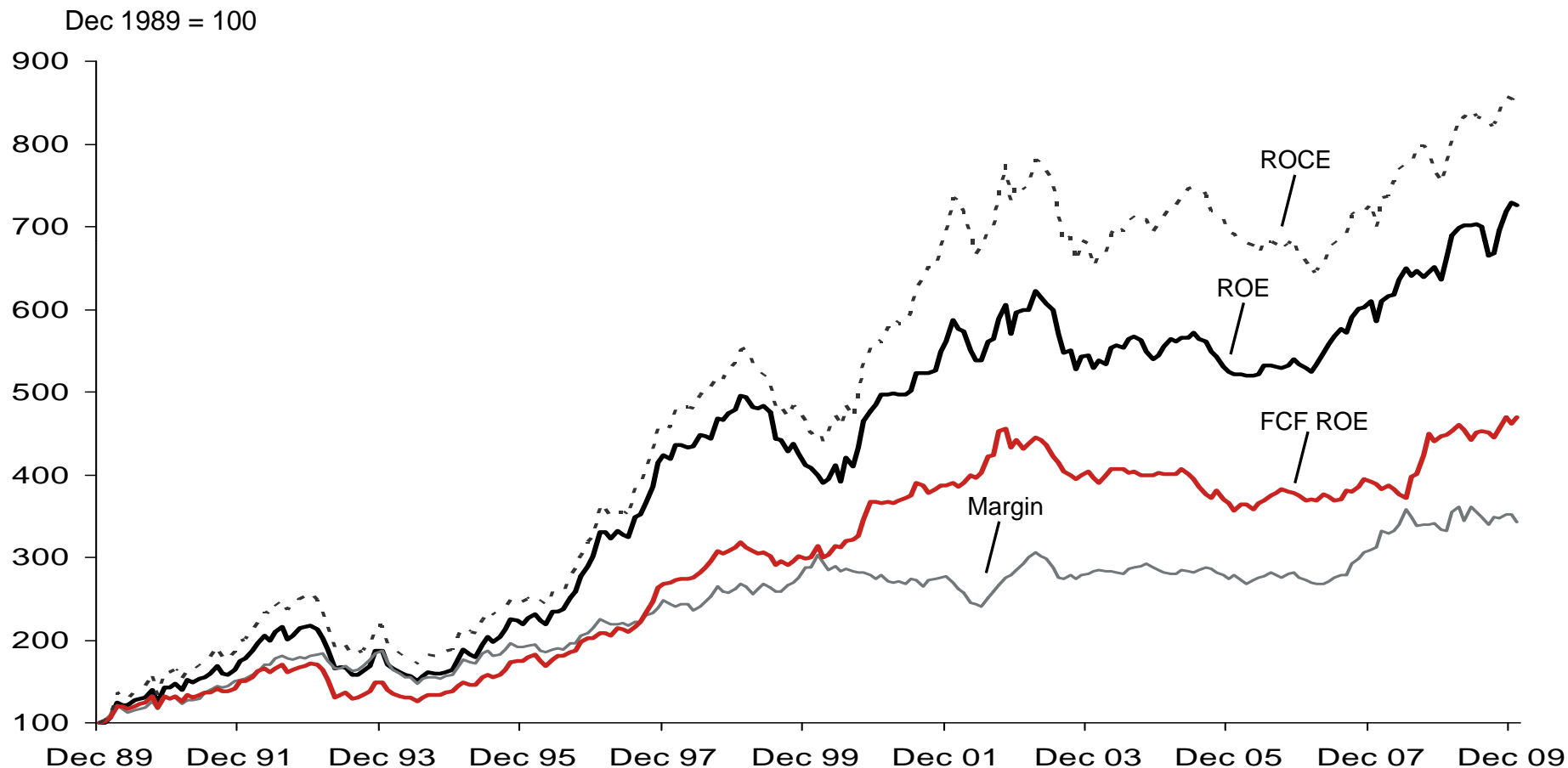
## **Balance Sheet Quality**

Net debt/equity

Interest cover

Credit rating

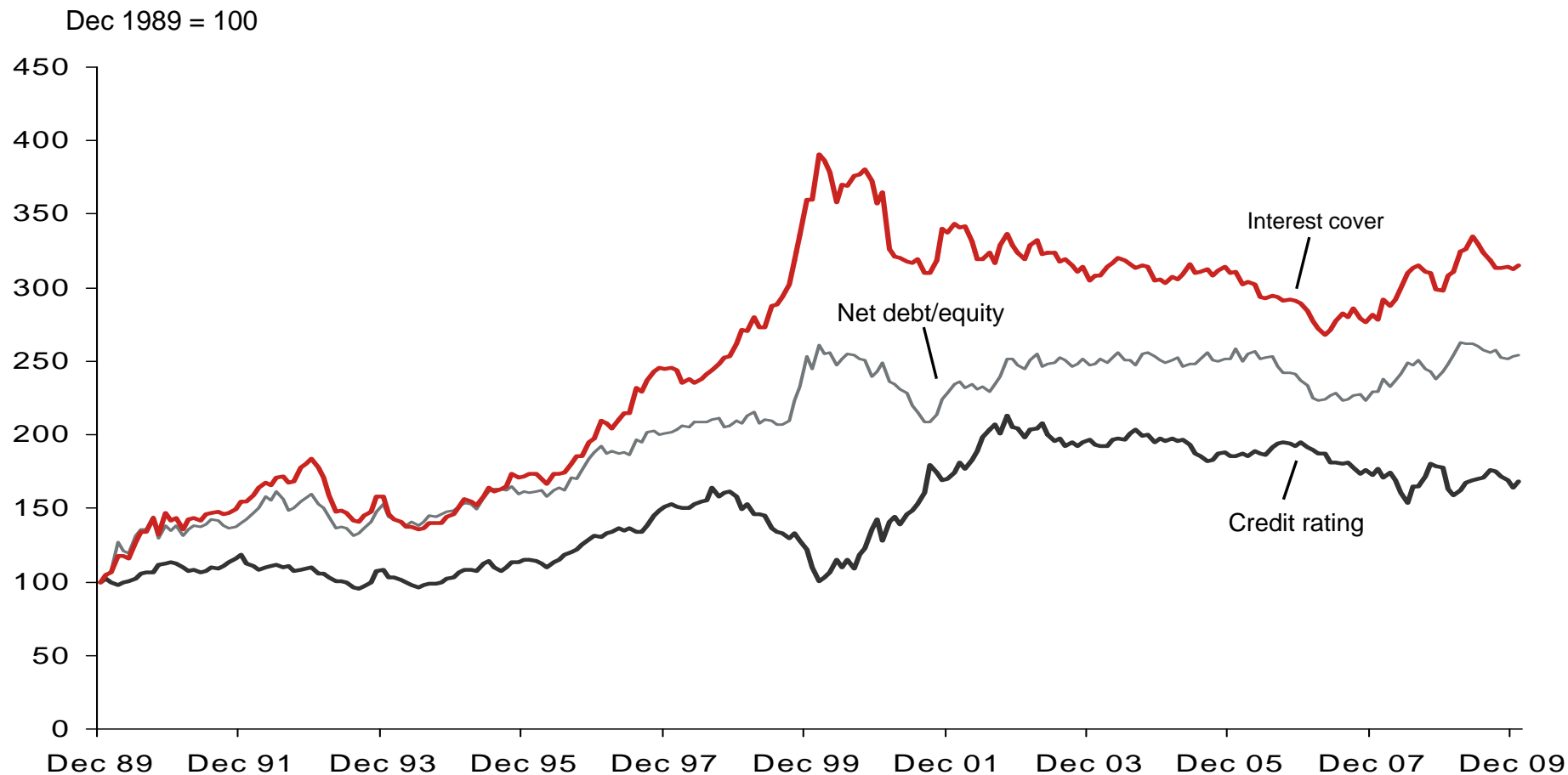
# Performance of Operational Quality Measures



Note: Shows the performance of quality factors on a top-bottom quartile basis. Portfolios are rebalanced each quarter based on the screens shown with the "high quality" quartile being defined as the top quartile in each case. The universe is the 500 largest stocks in the FTSE World index. Performance is on a common currency total returns basis with stocks equally weighted.

Source: Nomura Equity Strategy

# Performance of Balance Sheet Quality Measures



Note: Shows the performance of quality factors on a top-bottom quartile basis. Portfolios are rebalanced each quarter based on the screens shown with the "high quality" quartile being defined as the top quartile in each case. The universe is the 500 largest stocks in the FTSE World index. Performance is on a common currency total returns basis with stocks equally weighted. Source: Nomura Equity Strategy

# Quality Measures II

## Management Quality

### A) Direct Measures

Tenure of CEO/Management team

Other measures of management experience

### B) Indirect Measures

Change in number of shares

Change in number of employees

Change in Assets

## Accounting Quality

Tax/pre tax income

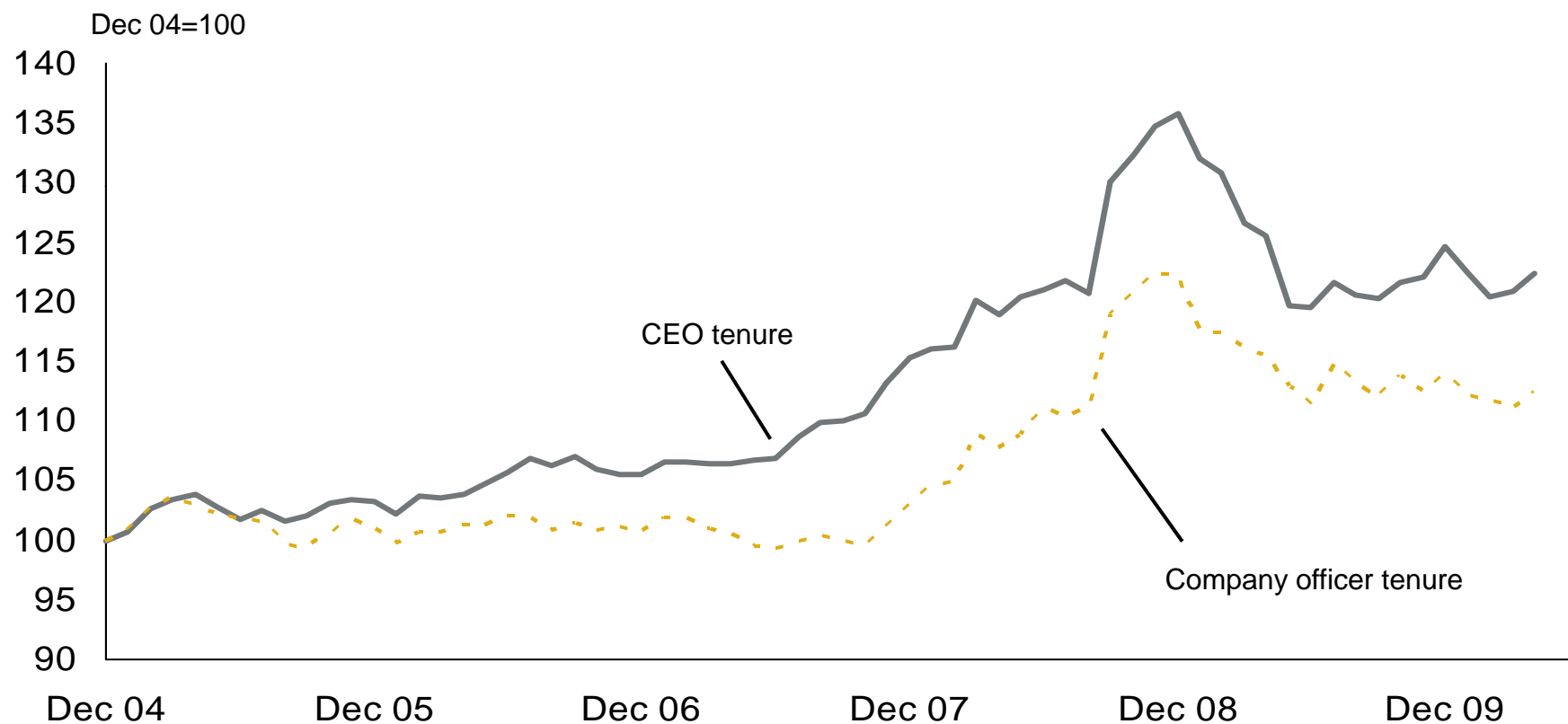
Total Accruals

Discretionary Accruals

Accrual Components

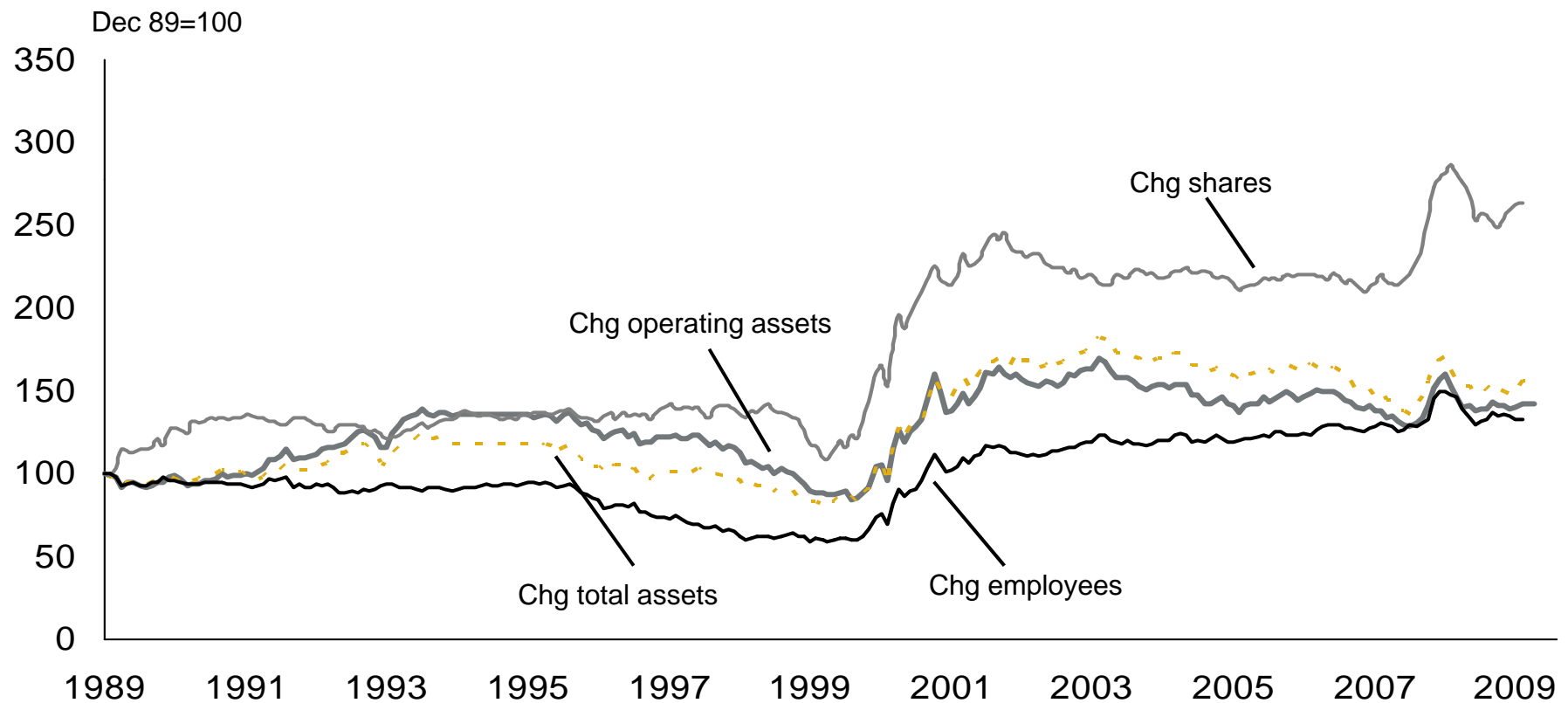
Quality of Accruals

## Direct Measures of Management Quality



*Note: Shows the relative performance of companies with a long tenure of CEOs compared to those with a short tenure. The tenure is measured by the length of service of the CEO with the company. The universe is the 300 largest stocks from the FTSE World US index. Performance is on an equal weighted, total return USD basis. Source: FactSet, Nomura Equity Strategy*

# Indirect Measures of Management Quality



Note: Shows the relative performance of top/bottom quartile portfolios formed screened on the factors shown. Portfolios are rebalanced quarterly. The universe is the 500 largest stocks from the FTSE World index. Performance is on an equal weighted, total return USD basis. Source: Nomura Equity Strategy

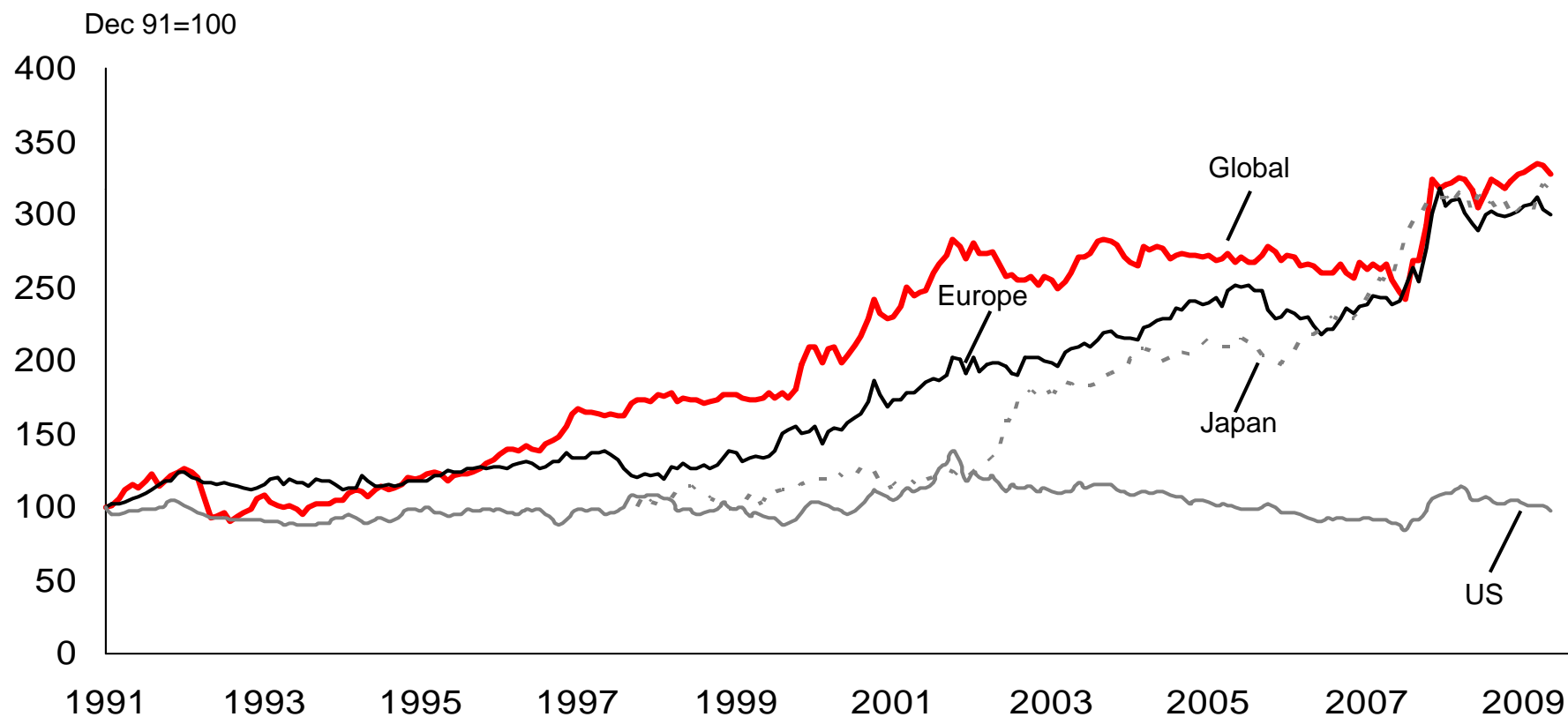
## **Management Quality Summary**

**Direct measures show experienced management teams outperformed during the recent financial crisis**

**Recent academic work – Bloom and Van Reenen (2010) - takes an even more direct approach to measurement through surveys of middle management**

**Indirect measures show outperformance in times of crisis**

# Accruals Strategy Across Regions



Note: Top/bottom quartile sorted on total accruals normalised by earnings. Quarterly rebalance.

Source: Nomura Equity Strategy



**Extensions of the accruals concept:**

**Discretionary Accruals - Chan Chan Jegadeesh and Lakonishok (2001)**

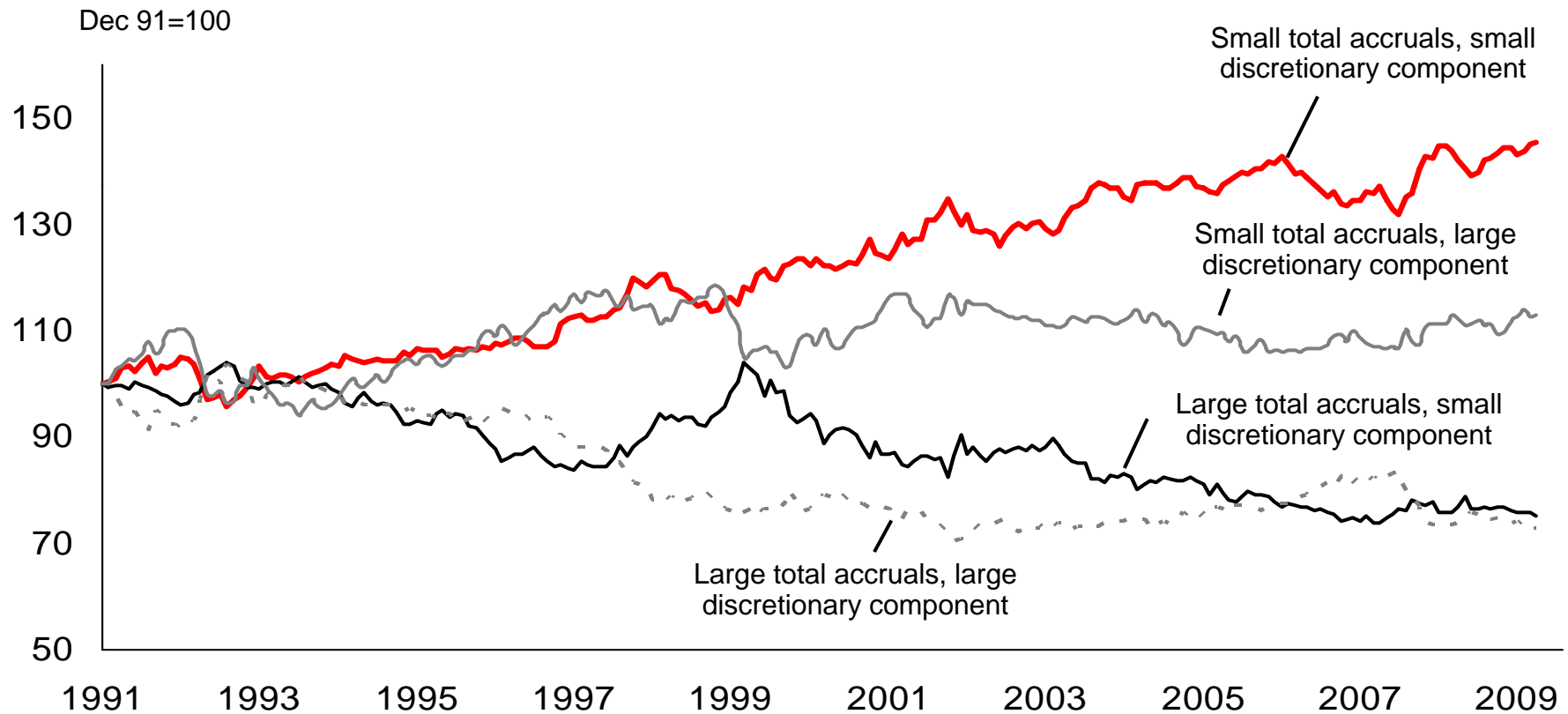
**define expected accruals as**

$$E_t(Accrual_{it}) = \frac{\sum_{k=1}^5 Accrual_{it-k}}{\sum_{k=1}^5 Sales_{it-k}} Sales_{it}$$

**Then define discretionary accruals as**

$$DiscretionaryAccrual_{it} = Accrual_{it} - E_t(Accrual_{it})$$

# Interaction of Total Accruals and Discretionary Accruals (Global)



Source: FTSE

**Extensions of the accruals concept:**

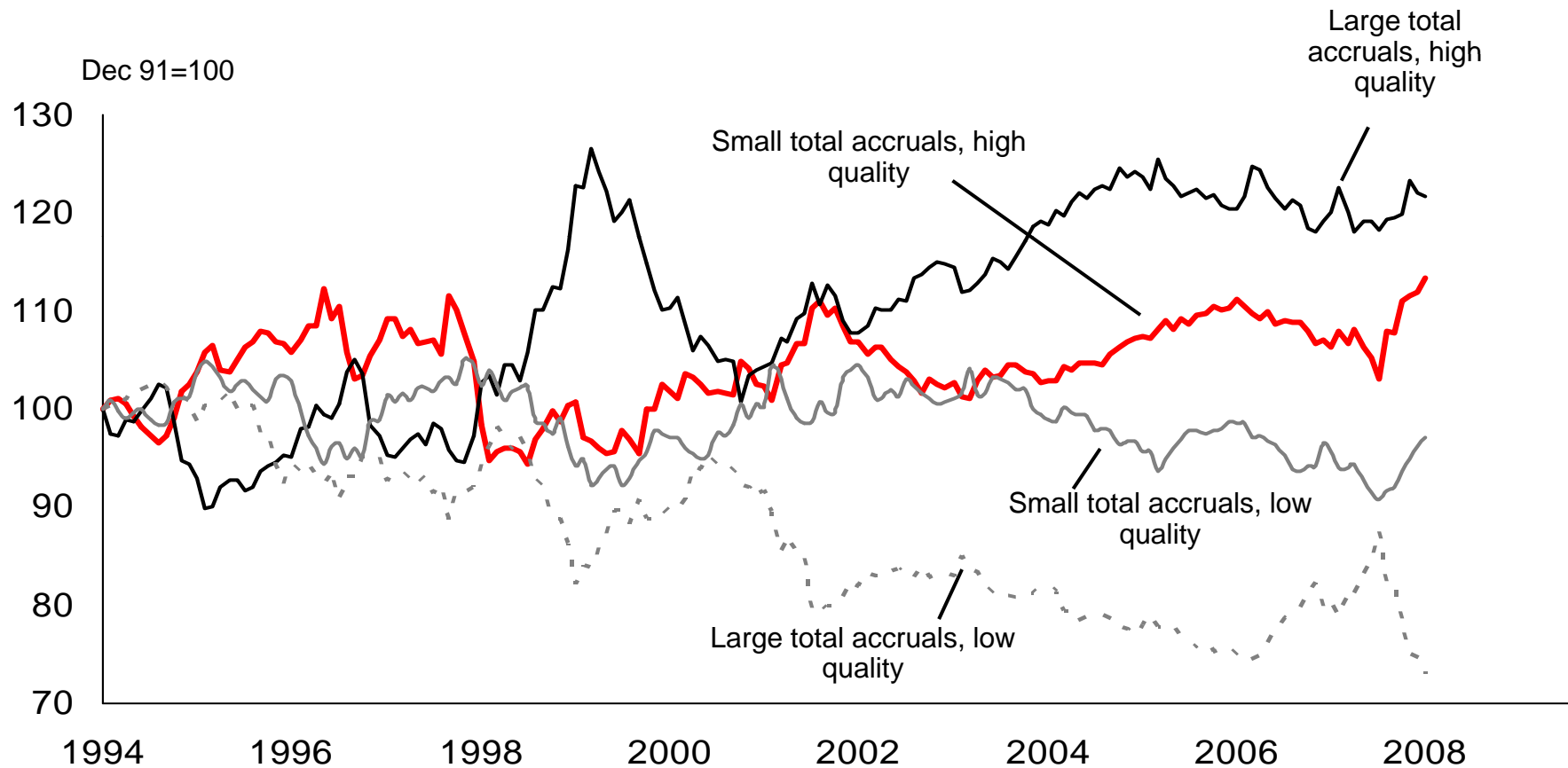
**Quality of Accruals, based on Dechow and Dichev (2002)**

**Try to explain observed accruals by**

$$Accrual_t = \beta_0 + \beta_1 * CFO_{t-1} + \beta_2 * CFO_t + \beta_3 * CFO_{t+1} + \beta_4 * \Delta(Sales) + \beta_5 * PP \& E + \varepsilon_t$$

**Accruals defined as high quality if explained well by this model**

# Interaction of Total Accruals and Quality of Accruals



Source: FTSE

## **Accruals Summary**

**Evidence it works globally and for Europe and Japan. No longer effective in US**

**Measure can be improved by adding discretionary accruals, accrual components and quality of accruals measures**

# Earnings Persistence of Quality Measures

		Persistence Factor	t-stat	Number of observations
<b>Operational Quality</b>				
ROE	high quality	0.06	2.18	2046
	low quality	0.00	-0.10	1977
ROCE	high quality	0.03	1.33	1698
	low quality	-0.01	-0.47	1666
Margin	high quality	-0.06	-1.46	1644
	low quality	0.01	0.61	1691
Cash return on equity	high quality	-0.05	-3.80	2620
	low quality	-0.01	-0.46	1510
<b>Management Quality</b>				
Tax/pre tax income	high quality	0.04	1.05	1187
	low quality	-0.03	-1.31	1170
Change in shares	high quality	0.06	2.12	2257
	low quality	-0.01	-0.64	2258
Change in Employees	high quality	-0.01	-0.74	2080
	low quality	-0.01	-0.79	2095
Accruals	high quality	0.05	1.78	951
	low quality	-0.01	-0.39	943
<b>Balance Sheet Quality</b>				
Credit rating	high quality	0.31	4.00	1359
	low quality	-0.02	-0.67	1347
Interest Cover	high quality	0.13	3.65	1505
	low quality	0.02	0.57	1494
Net gearing	high quality	-0.01	-0.26	1293
	low quality	0.03	1.29	1315

*Note: Shows the result of a regression of earnings growth from  $t_0$  to  $t+12$  months on  $t-12$  to  $t_0$  for all stocks within high and low quality portfolios formed on all the quality measures shown. The regression is run with constituents every December from 1989 to avoid overlapping periods. Source: Nomura Equity Strategy*

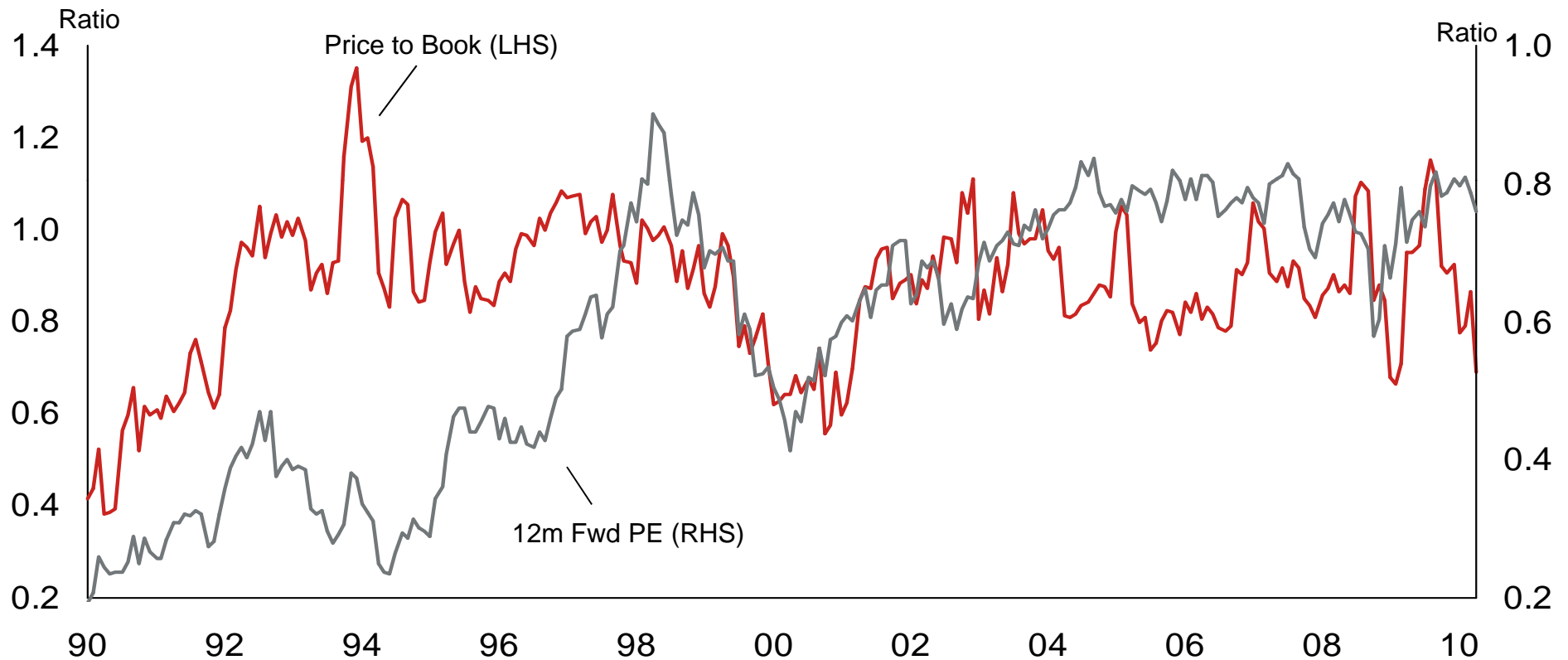
## **Investing in Quality**

- **Increase the weight within multifactor model**

**Or**

- **On univariate basis the factor is expensive...**
- **... so combine with value to form Q-GAARP**

## Valuation of Global Q-GAARP Style



*Note: Shows the relative median valuation of top/bottom quartile stocks for the Nomura Q-GAARP style. The valuation measures are price to book and 12-month forward PE. Portfolios are rebalanced each quarter based on the screens shown with the "higher Q-GAARP score" quartile being defined as the top quartile. The universe is the 500 largest stocks in the FTSE World index. Source: Nomura, WorldScope, FTSE, Exshare*



- **Quants are winning new mandates again**
- **More role for discretion in quant investment**
  
- **Outlook for quant has recovered somewhat; we would forecast an average return for value-momentum models**
  
- **We think the current environment favours quality factors**
- **We seek to quantify these and distinguish between them**
- **Management and accounting quality factors offer opportunities for new investment approaches**

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