**Curse of the Benchmarks**

1. CURSE OF THE BENCHMARKS AQR Asset Management Institute London Business School Insight Summit 2 NOVEMBER 2016 Dr Paul Woolley London School of Economics and Political Science

2. Outline of talk Market benchmarks cause CHRONIC MISPRICING and IMPAIR FUND PERFORMANCE Cause inversion of risk and return, short-termism, momentum trading, bubbles and crashes, secular over-valuation SOLUTION: benchmark-free but tighter specification of strategies and monitoring

3. Principal/agent problems Cascade of principal/agent problems in asset management Key is where asset owners (or trustees) delegate to external fund managers – agents have better information and different objectives compared to principals – principals uncertain of ability of agent and agent tries to demonstrate competence

4. Customary treatment Trustees constrain managers by imposing market index benchmark with tracking constraints. Typical contract: Add 2% p.a. against MSCI Global Equity index, with tracking error of +/- 5% p.a. – limits scope for damage through incompetence and excessive risk – low level of oversight required – accords with standard theory of efficient markets – agents have foxhole to hide and clear basis to measure/reward performance

5. Ugly feedback effects of market benchmarks Managers must control how far portfolio departs from index weights Vigilant of underweight positions in securities/sectors with volatile and rising weights – if price doubles and investor half-weight, mismatch doubles – if price halves and investor double-weight, mismatch halves Effect strongest when industry sector or asset class rises strongly (tech stocks, quality, emerging) Buffa, Vayanos, Woolley, “Asset Management Contracts and Equilibrium Prices”, 2015

6. Empirical evidence of risk-return inversion Results in over-pricing of high risk and under-pricing of low risk Black et al (1972) first to observe that standard theory of risk/return not in data Frazzini, Pedersen, “Betting against Beta”, JFE, 2012 – inverse relationship between beta and return, and between total volatility and return Database: 80 years of US stocks, 23 years of International markets Both explain on basis of search for leverage

7. Table: the beta anomaly US Equities, 1970-2011 % Return Risk Risk-adjusted return Low beta 10.6 12.5 0.85 High beta 7.2 24.5 0.29 Global Equities, 1984-2011 % Return Risk Risk-adjusted return Low beta 10.1 11.9 0.85 High beta 4.1 24.6 0.16 Source: GMO White paper Nov 2011

8. Predictions of BVW model High risk assets driven up more than low risk driven down – thus markets subject to secular over-valuation – with bubbles The tighter the tracking error, the more extreme the distortion Mispricing of securities has implications for passive and active alike Can never be claimed that competitive markets ensure efficient markets

9. Momentum investors exploit benchmarkers Momentum investors also buy high risk, liquid assets that are rising – momentum players ride the trends but who buys their cast-offs? Value investors no longer interested Must be benchmarked funds closing down their risks that are sacrificial buyers Momentum investors game predictability of benchmarked funds Annual performance reviews explain periodicity of momentum strategies

10. Countervailing forces Beta anomaly/ beta arbitrage well known but under- exploited Hedge funds: one step forward, two steps back – not benchmarked but use momentum – momentum usually delivers quick gains and high rewards Corollary of cash benchmark is need to control agency friction by other means – instead find increased opacity and absence of monitoring

11. Short-termism explained Benchmarked funds seek to reduce short-term risk of underperformance Momentum investors seek short-term gains – both are the essence of short-termism Maximizing short-term portfolio valuation to the detriment of long-term cash flows Implies bulk of trades are motivated by gaming and window- dressing – and bear no relation to fundamental value

12. Strategy options for trustees Three basic strategies: momentum, benchmarked value, pure value Downside of momentum losses not recoverable whereas they can be for value – long-run risk of momentum is sum of short-term risks – for value, long-run risk falls below sum of short-run risks Momentum returns over-stated: greater dispersion of outcomes and higher costs Pure value dominates both over all but short run

13. Consequences for large funds Explains why standard long-only portfolios struggle to outperform – portfolios comprise cheap stocks, but also a bunch of high risk, low return stocks (Cohen, Polk, Silli,”Best ideas”, 2010) Large funds hire one set of managers to exploit another set also in their pay – gaming now a fine art with growth of artificial intelligence Key notion: predictable behaviour always exploited, benchmarkers obvious targets

14. Table 2: Strategy options for trustees Contract Deals with Agency Risk Dominant Strategy Outcome Market Cap Benchmark with tracking error YES Momentum Low return High risk Cash Benchmark NO Momentum Low return High risk Cash Benchmark with Strict monitoring YES Value High return Low risk

15. Code of best practice Specify adoption of pure value and use cash benchmark – introduce progressively e.g. 10-20% of portfolio annually – elevated agency friction calls for greater transparency by manager – limits on turnover (momentum has high turnover, value low) – diagnostic tests to ensure compliance with value strategy – fees to incentivize long run returns only

16. Rewards to pure value Long-term performance data (small universe) show superior returns to pure value – early mover advantage As funds shift to pure value, social gains in form of more stable and higher returns Less short-termism by investors and firms Sensible herd replaces foolish herd

17. Catalyst for change New theory framework educates investors, policy-makers – shows how PRICE is put above VALUE Policy-makers can help by removing mark-to-market, penalising high turnover Revised contracts become fiduciary duty Investment consultants could play a role, but agents themselves Capitalism is failing because asset owners delegate irresponsibly

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