Part I

Why Everything You Learned in Business School is Wrong

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Six Impossible Things before Breakfast, or, How EMH has Damaged our Industry*

The efficient markets hypothesis (EMH) is the financial equivalent of Monty Python's Dead Parrot. No matter how much you point out that it is dead, the believers just respond that it is simply resting! I wouldn't really care if EMH was just some academic artefact, but as Keynes noted, 'practical men are usually the slaves of some defunct economist'. The EMH has left us with a litany of bad ideas, from CAPM to benchmarking, and risk management to shareholder value. The worst of its legacy is the terrible advice it offers on how to outperform – essentially be a better forecaster than everyone else. It is surely time to consign both the EMH and its offshoots to the dustbin of history.

- Academic theories have a very high degree of path dependence. Once a theory has been accepted it seems to take forever to dislodge it. As Max Planck said, 'Science advances one funeral at a time'. The EMH debate takes on almost religious tones on occasions. At one conference, Gene Fama yelled 'God knows markets are efficient!' This sounds like a prime example of belief bias to me (a tendency to judge by faith rather than by evidence).
- The EMH bothers me less as an academic concept (albeit an irrelevant one) than it does as a source of hindrance to sensible investing. EMH has left us with a long list of bad ideas that have influenced our industry. For instance, the capital asset pricing model (CAPM) leads to the separation of alpha and beta, which ends up distracting from the real aim of investment – 'Maximum real total returns after tax' as Sir John Templeton put it.
- This approach has also given rise to the obsession with benchmarking, and indeed a new species, Homo Ovinus – whose only concern is where it stands relative to the rest of the crowd, the living embodiment of Keynes' edict, 'That it is better for reputation to fail conventionally, than succeed unconventionally'.
- The EMH also lies at the heart of risk management, option pricing theory, and the dividend and capital structure irrelevance theorems of Modigliani and Miller, and the concept of shareholder value, all of which have inflicted serious damage upon investors. However, the most insidious aspects of the EMH are the advice it offers as to the sources of outperformance. The first is inside information, which is, of course, illegal. The second, is that to outperform

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you need to forecast the future better than everyone else. This has sent the investment industry on a wild goose chase for decades.

- The prima facie case against EMH is the existence of bubbles. The investment firm, GMO defines a bubble as at least a two-standard-deviation move from (real) trend. Under EMH, a two-standard-deviation event should occur roughly every 44 years. However, GMO found some 30 plus bubbles since 1925 – that is slightly more than one every three years!
- The supporters of EMH fall back on what they call their 'Nuclear Bomb', the failure of active management to outperform the index. However, this is to confuse the absence of evidence with the evidence of absence. Additionally, recent research shows that career risk minimization is the defining characteristic of institutional investment. They don't even try to outperform!

What follows is the text of a speech to be delivered at the CFA UK conference on 'Whatever happened to EMH?', dedicated to Peter Bernstein. Peter will be fondly remembered and sadly missed by all who work in investment. Although he and I often ended up on opposite sides of the debates, he was a true gentleman and always a pleasure to discuss ideas with. I am sure Peter would have disagreed with some, much and perhaps all of my speech, but I'm equally sure he would have enjoyed the discussion.

THE DEAD PARROT OF FINANCE

Given that this is the UK division of the CFA I am sure that The Monty Python Dead Parrot Sketch will be familiar to all of you. The EMH is the financial equivalent of the Dead Parrot (Figure 1.1). I feel like the John Cleese character (an exceedingly annoyed customer who recently purchased a parrot) returning to the petshop to berate the owner:

> E's passed on! This parrot is no more! He has ceased to be! 'E's expired and gone to meet 'is maker. 'E's a stiff! Bereft of life, 'e rests in peace! If you hadn't nailed 'im to the perch 'e'd be pushing up the daisies! 'Is metabolic processes are now 'istory! 'E's off the twig! 'E's kicked the bucket, 'e's shuffled off 'is mortal coil, run down the curtain and joined the bleedin' choir invisible!! This is an ex-parrot!!

The shopkeeper (picture Gene Fama if you will) keeps insisting that the parrot is simply resting. Incidentally, the Dead Parrot Sketch takes on even more meaning when you recall Stephen Ross's words that 'All it takes to turn a parrot into a learned financial economist is just one word – arbitrage'.

The EMH supporters have strong similarities with the Jesuit astronomers of the 17th century who desperately wanted to maintain the assumption that the Sun revolved around the Earth. The reason for this desire to protect the maintained hypothesis was simple. If the Sun didn't revolve around the Earth, then the Bible's tale of Joshua asking God to make the Sun stand still in the sky was a lie. A bible that lies even once can't be the inerrant foundation for faith!

The efficient market hypothesis (EMH) has done massive amounts of damage to our industry. But before I explore some errors embedded within the approach and the havoc they have wreaked, I would like to say a few words on why the EMH exists at all.

Academic theories are notoriously subject to path dependence (or hysteresis, if you prefer). Once a theory has been adopted it takes an enormous amount of effort to dislocate it. As Max Planck said, 'Science advances one funeral at a time.'

Figure 1.1 The dead parrot of finance!
Source: SG Global Strategy.

The EMH has been around in one form or another since the Middle Ages (the earliest debate I can find is between St Thomas Aquinas and other monks on the 'just' price to charge for corn, with St Thomas arguing that the 'just' price was the market price). Just imagine we had all grown up in a parallel universe. David Hirschleifer did exactly that: welcome to his world of the Deficient Markets Hypothesis.

> A school of sociologists at the University of Chicago is proposing the Deficient Markets Hypothesis – that prices inaccurately reflect all information. A brilliant Stanford psychologist, call him Bill Blunte, invents the Deranged Anticipation and Perception Model (DAPM), in which proxies for market misevaluation are used to predict security returns. Imagine the euphoria when researchers discovered that these mispricing proxies (such as book/market, earnings/price and past returns), and mood indicators (such as amount of sunlight) turned out to be strong predictors of future returns. At this point, it would seem that the Deficient Markets Hypothesis was the best-confirmed theory in social science.
>
> To be sure, dissatisfied practitioners would have complained that it is harder to actually make money than the ivory tower theorists claim. One can even imagine some academic heretics documenting rapid short-term stock market responses to news arrival in event studies, and arguing that security return predictability results from rational premia for bearing risk. Would the old guard surrender easily? Not when they could appeal to intertemporal versions of the DAPM, in which mispricing is only corrected slowly. In such a setting, short window event studies cannot uncover the market's inefficient response to new information. More generally, given the strong theoretical underpinnings of market inefficiency, the rebels would have an uphill fight.

In finance we seem to have a chronic love affair with elegant theories. Our faculties for critical thinking seem to have been overcome by the seductive power of mathematical beauty. A long long time ago, when I was a young and impressionable lad starting out in my study of economics, I too was enthralled by the bewitching beauty and power of the EMH/rational expectations approach (akin to the Dark Side in Star Wars). However, in practice we should always remember that there are no points for elegance!

My own disillusionment with EMH and the ultra rational *Homo Economicus* that it rests upon came in my third year of university. I sat on the oversight committee for my degree course as a student representative. At the university I attended it was possible to elect to graduate with a specialism in Business Economics, if you took a prescribed set of courses. The courses necessary to attain this degree were spread over two years. It wasn't possible to do all the courses in one year, so students needed to stagger their electives. Yet at the beginning of the third year I was horrified to find students coming to me to complain that they hadn't realized this! These young economists had failed to solve the simplest two-period optimization problem I can imagine! What hope for the rest of the world? Perhaps I am living evidence that finance is like smoking. Ex-smokers always seem to provide the most ardent opposition to anyone lighting up. Perhaps the same thing is true in finance!

THE QUEEN OF HEARTS AND IMPOSSIBLE BELIEFS

I'm quite sure the Queen of Hearts would have made an excellent EMH economist.

> Alice laughed: 'There's no use trying,' she said; 'one can't believe impossible things.'
>
> I daresay you haven't had much practice,' said the Queen. 'When I was younger, I always did it for half an hour a day. Why, sometimes I've believed as many as six impossible things before breakfast.
>
> Lewis Carroll, *Alice in Wonderland*.

Earlier I alluded to a startling lack of critical thinking in finance. This lack of 'logic' isn't specific to finance; in general we, as a species, suffer belief bias. This a tendency to evaluate the validity of an argument on the basis of whether or not one agrees with the conclusion, rather than on whether or not it follows logically from the premise. Consider these four syllogisms:

1. No police dogs are vicious
   Some highly trained dogs are vicious
   Therefore some highly trained dogs are not police dogs.
2. No nutritional things are inexpensive.
   Some vitamin pills are inexpensive.
   Therefore, some vitamin pills are not nutritional.
3. No addictive things are inexpensive
   Some cigarettes are inexpensive
   Therefore, some addictive things are not cigarettes.
4. No millionaires are hard workers
   Some rich people are hard workers
   Therefore, some millionaires are not rich people.

These four syllogisms provide us with a mixture of validity and believability. Table 1.1 separates out the problems along these two dimensions. This enables us to assess which criteria people use in reaching their decisions.

As Figure 1.2 reveals, it is the believability not the validity of the concept that seems to drive behaviour. When validity and believability coincide, then 90% of subjects reach the correct conclusion. However, when the puzzle is invalid but believable, some 66% still accepted the conclusion as true. When the puzzle is valid but unbelievable only around 60% of subjects accepted the conclusion as true. Thus we have a tendency to judge things by their believability rather than their validity – which is clear evidence that logic goes out of the window when beliefs are strong.

All this talk about beliefs makes EMH sound like a religion. Indeed, it has some overlap with religion in that belief appears to be based on faith rather than proof. Debating the subject can also give rise to the equivalent of religious fanaticism. In his book '*The New Finance: The Case Against Efficient Markets*', Robert Haugen (long regarded as a heretic by many in finance) recalls a conference he was speaking at where he listed various inefficiencies. Gene Fama was in the audience and at one point yelled; 'You're a criminal . . . God knows markets are efficient.'

Table 1.1 Validity and belief

		Belief	
		Believable	Unbelievable
Logic	**Valid**	Dogs (VB)	Vitamins (VU)
	Invalid	Cigarettes (IB)	Millionaires (IU)

Source: SG Equity Strategy.

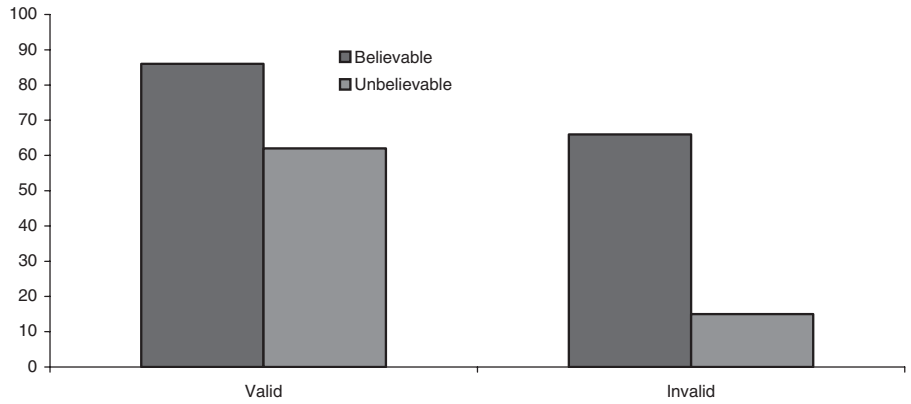

Figure 1.2 Percentage accepting conclusion as true
Source: Evans *et al.* (1983).

SLAVES OF SOME DEFUNCT ECONOMIST

To be honest I wouldn't really care if EMH was just some academic artefact. The real damage unleashed by the EMH stems from the fact that, as Keynes long ago noted, 'practical men. . . are usually the slaves of some defunct economist.'

So let's turn to the investment legacy with which the EMH has burdened us: first off is the capital asset pricing model (CAPM). I've criticized the CAPM elsewhere (see Chapter 2), so I won't dwell on the flaws here, but suffice it to say that my view remains that CAPM is CRAP (completely redundant asset pricing).

The aspects of CAPM that we do need to address here briefly are those that hinder the investment process – one of the most pronounced of which is the obsession with performance measurement. The separation of alpha and beta is at best an irrelevance and at worst a serious distraction from the true nature of investment. Sir John Templeton said it best when he observed that 'the aim of investment is maximum real returns after tax'. Yet instead of focusing on this target, we have spawned one industry that does nothing other than pigeon-hole investors into categories.

As the late, great Bob Kirby opined, 'Performance measurement is one of those basically good ideas that somehow got totally out of control. In many cases, the intense application of performance measurement techniques has actually served to impede the purpose it is supposed to serve.'

The obsession with benchmarking also gives rise to one of the biggest sources of bias in our industry – career risk. For a benchmarked investor, risk is measured as tracking error. This gives rise to Homo Ovinus (Figure 1.3) – a species who is concerned purely with where he stands relative to the rest of the crowd. (For those who aren't up in time to listen to Farming Today, Ovine is the proper name for sheep.) This species is the living embodiment of Keynes' edict that 'it is better for reputation to fail conventionally than to succeed unconventionally'. More on this poor creature a little later.

While on the subject of benchmarking we can't leave without observing that EMH and CAPM also give rise to market indexing. Only in an efficient market is a market cap-weighted

Figure 1.3 Homo Ovinus
Source: Worth1000.com.

index the 'best' index. If markets aren't efficient then cap weighting leads us to overweight the most expensive stocks and underweight the cheapest stocks!

Before we leave risk behind, we should also note the way in which fans of EMH protect themselves against evidence that anomalies such as value and momentum exist. In a wonderfully tautological move, they argue that only risk factors can generate returns in an efficient market, so these factors must clearly be risk factors!

Those of us working in the behavioural camp argue that behavioural and institutional biases are the root causes of the outperformance of the various anomalies. I have even written papers showing that value isn't riskier than growth on any definition that the EMH fans might choose to use (see Chapter 6).

For instance, if we take the simplest definition of risk used by the EMH fans (the standard deviation of returns), then Figure 1.4 shows an immediate issue for EMH. The return on value stocks is higher than the return on growth stocks, but the so-called 'risk' of value stocks is lower than the risk of growth stocks – in complete contradiction to the EMH viewpoint.

This overt focus on risk has again given rise to what is in my view yet another largely redundant industry – risk management. The tools and techniques are deeply flawed. The use of measures such as VaR give rise to the illusion of safety. All too often they use trailing inputs calculated over short periods of time, and forget that their model inputs are effectively endogenous. The 'risk' input, such as correlation and volatility are a function of a market which functions more like poker than roulette (i.e. the behaviour of the other players matters).

Risk shouldn't be defined as standard deviation (or volatility). I have never met a long-only investor who gives a damn about upside volatility. Risk is an altogether more complex topic – I have argued that a trinity of risk sums up the aspects that investors should be looking at. Valuation risk, business or earnings risk, and balance sheet risk (see Chapter 11).

Of course, under CAPM the proper measure of risk is beta. However, as Ben Graham pointed out, beta measures price variability, not risk. Beta is probably most often used by analysts in

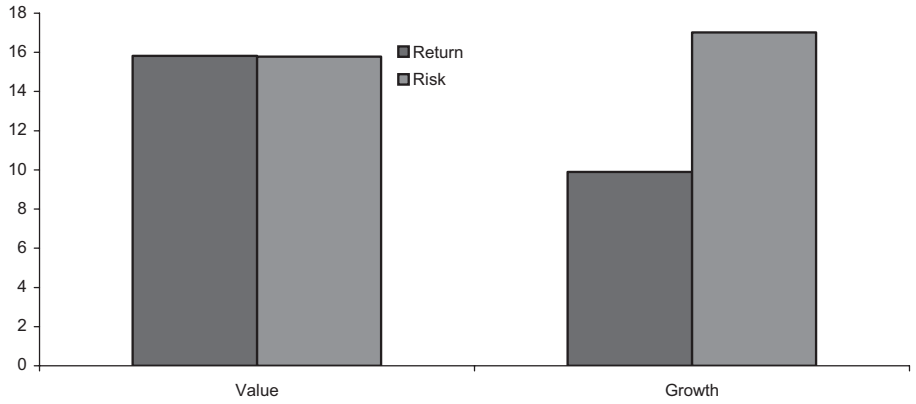

Figure 1.4 Risk and return for value and growth stocks (USA, 1950–2008, %)
Source: SG Equity Research.

their calculations of the cost of capital, and indeed by CFOs in similar calculations. However, even here beta is unhelpful. Far from the theoretical upward-sloping relationship between risk and return, the evidence (including that collected by Fama and French) shows no relationship, and even arguably an inverse one from the model prediction.

This, of course, ignores the difficulties and vagaries of actually calculating beta. Do you use, daily, weekly or monthly data, and over what time period? The answers to these questions are non-trivial in their impact upon the analysts calculations. In a very recent paper, Fernandez and Bermejo showed that the best approach might simply be to assume that beta equals 1.0 for all stocks. (Another reminder that there are no points for elegance in this world!)

The EMH has also given us the Modigliani and Miller propositions on dividend irrelevance, and capital structure irrelevance. These concepts have both been used by unscrupulous practitioners to further their own causes. For instance, those in favour of repurchases over dividends, or even those in favour of retained earnings over distributed earnings, have effectively relied upon the M&M propositions to argue that shareholders should be indifferent to the way in which they receive their return (ignoring the inconvenient evidence that firms tend to waste their retained earnings, and that repurchases are far more transitory in nature than dividends).

Similarly, the M&M capital structure irrelevance proposition has encouraged corporate financiers and corporates themselves to gear up on debt. After all, according to this theory investors shouldn't care whether 'investment' is financed by retained earnings, equity issuance or debt issuance.

The EMH also gave rise to another fallacious distraction of our world – shareholder value. Ironically this started out as a movement to stop the focus on short-term earnings. Under EMH, the price of a company is, of course, just the net present value of all future cash flows. So focusing on maximizing the share price was exactly the same thing as maximizing future profitability. Unfortunately in a myopic world this all breaks down, and we end up with a quest to maximize short-term earnings!

But perhaps the most insidious aspect of the EMH is the way in which it has influenced the behaviour of active managers in their pursuit of adding value. This might sound odd, but bear with me while I try to explain what might, upon cursory inspection, sound like an oxymoron.

All but the most diehard of EMH fans admit that there is a role for active management. After all, who else would keep the market efficient – a point first made by Grossman and Stigliz in their classic paper, 'The impossibility of the informational efficient market'. The extreme diehards probably wouldn't even tolerate this, but their arguments don't withstand the *reductio ad absurdum* that if the market were efficient, prices would of course be correct, and thus volumes should be equal to zero.

The EMH is pretty clear that active managers can add value via one of two routes. First there is inside information – which we will ignore today because it is generally illegal in most markets. Second, they could outperform if they could see the future more accurately than everyone else.

The EMH also teaches us that opportunities will be fleeting as someone will surely try to arbitrage them away. This, of course, is akin to the age old joke about the economist and his friend walking along the street. The friend points out a $100 bill lying on the pavement. The economist says, 'It isn't really there because if it were someone would have already picked it up.'

Sadly these simple edicts are no joking matter as they are probably the most damaging aspects of the EMH legacy. Thus the EMH urges investors to try to forecast the future. In my opinion this is one of the biggest wastes of time, yet one that is nearly universal in our industry (Figure 1.5). About 80–90% of the investment processes that I come across revolve around forecasting. Yet there isn't a scrap of evidence to suggest that we can actually see the future at all (Figures 1.6 and 1.7).

The EMH's insistence on the fleeting nature of opportunities combined with the career risk that bedevils Homo Ovinus has led to an overt focus on the short-term. This is typified by Figure 1.8 which shows the average holding period for a stock on the New York Stock Exchange. It is now just six months!

The undue focus upon benchmark and relative performance also leads Homo Ovinus to engage in Keynes' beauty contest. As Keynes wrote:

> Professional investment may be likened to those newspaper competitions in which the competitors have to pick out the six prettiest faces from a hundred photographs, the price being awarded to the competitor whose choice most nearly corresponds to the average preference of the competitors as

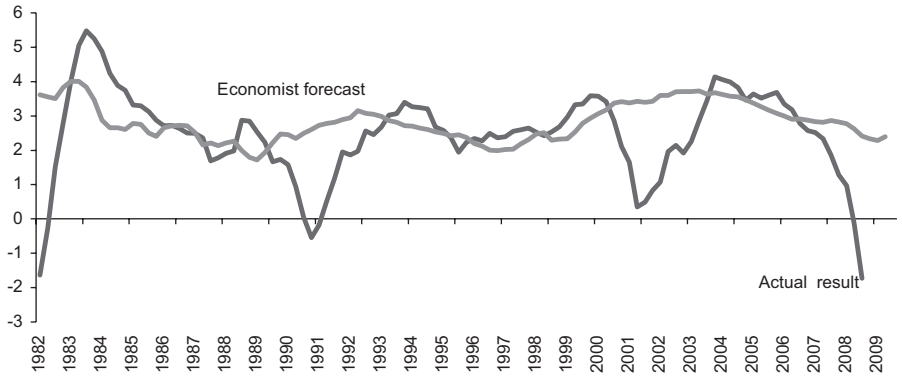

Figure 1.5 Economists are useless at forecasting – US GDP (%, 4q mav)
Source: SG Global Strategy.

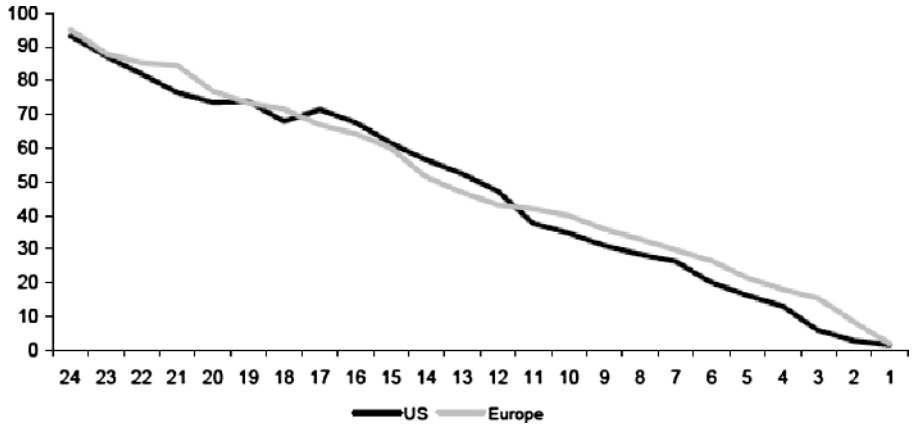

Figure 1.6 Forecast error over time: US and European markets 2001–2006 (%)
Source: SG Global Strategy.

> a whole; so that each competitor has to pick, not those faces which he himself finds prettiest, but those which he thinks likeliest to catch the fancy of the other competitors, all of whom are looking at the problem from the same point of view. It is not a case of choosing those which, to the best of one's judgment, are really prettiest, nor even those which average opinion genuinely thinks the prettiest. We have reached the third degree where we devote our intelligences to anticipating what average opinion expects the average opinion to be. And there are some, I believe, who practice the fourth, fifth and higher degrees.

This game can be easily replicated by asking people to pick a number between 0 and 100, and telling them that the winner will be the person who picks the number closest to two-thirds of the average number picked. Figure 1.9 shows the results from the largest incidence of the game that I have played – in fact the third largest game ever played, and the only one played purely among professional investors.

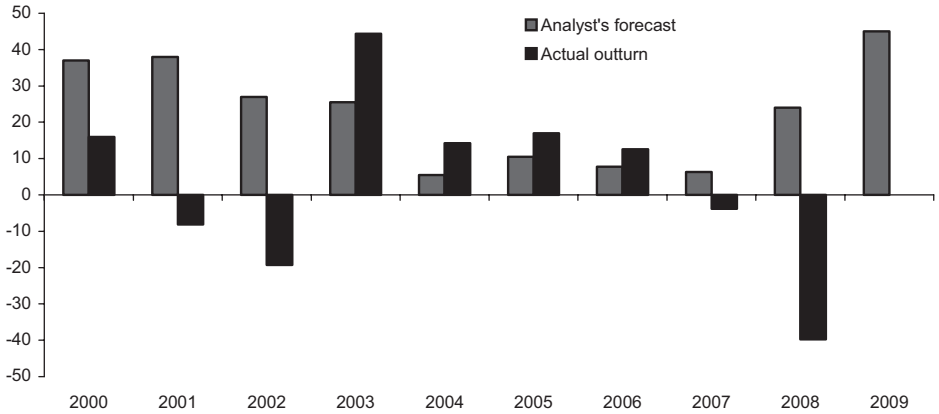

Figure 1.7 Analyst expected returns (via target prices) and actual returns (USA, %)
Source: SG Global Strategy.

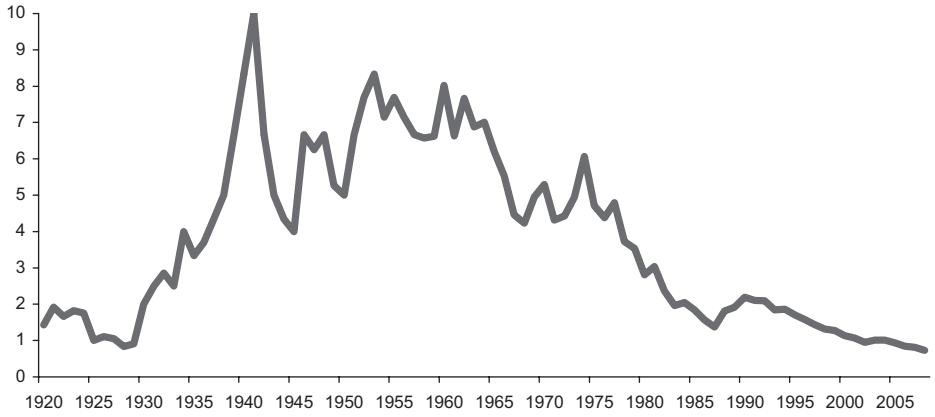

Figure 1.8 Average holding period for a stock on the NYSE (years)
Source: SG Global Strategy research.

The highest possible correct answer is 67. To go for 67 you have to believe that every other muppet in the known universe has just gone for 100. The fact we got a whole raft of responses above 67 is more than slightly alarming.

You can see spikes which represent various levels of thinking. The spike at 50 are what we (somewhat rudely) call level zero thinkers. They are the investment equivalent of Homer Simpson, 0, 100, duh 50! Not a vast amount of cognitive effort expended here!

There is a spike at 33 – of those who expect everyone else in the world to be Homer. There's a spike at 22, again those who obviously think everyone else is at 33. As you can see there is also a spike at zero. Here we find all the economists, game theorists and mathematicians of the world. They are the only people trained to solve these problems backwards. And indeed

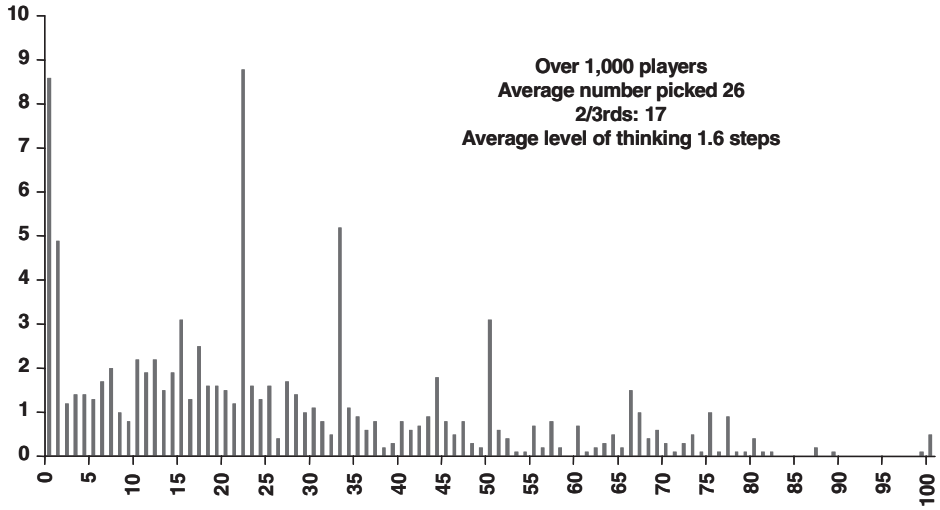

Figure 1.9 Frequency of choices in beauty contest game (%)
Source: SG Global Strategy.

the only stable Nash equilibrium is zero (two-thirds of zero is still zero). However, it is only the 'correct' answer when everyone chooses zero.

The final noticeable spike is at 1. These are economists who have (mistakenly...) been invited to one dinner party (economists only ever get invited to one dinner party). They have gone out into the world and realized that the rest of the world doesn't think like them. So they try to estimate the scale of irrationality. However, they end up suffering the curse of knowledge (once you know the true answer, you tend to anchor to it). In this game, which is fairly typical, the average number picked was 26, giving a two-thirds average of 17. Just three people out of more than 1,000 picked the number 17.

I play this game to try to illustrate just how hard it is to be just one step ahead of everyone else – to get in before everyone else, and get out before everyone else. Yet despite this fact, this seems to be exactly what a large number of investors spend their time doing.

PRIMA FACIE CASE AGAINST EMH: FOREVER BLOWING BUBBLES

Let me now turn to the prima facie case against the EMH. Oddly enough it is one that doesn't attract much attention in academia. As Larry Summers pointed out in his wonderful parody of financial economics, 'Traditional finance is more concerned with checking that two 8oz bottles of ketchup is close to the price of one 16oz bottle, than in understanding the price of the 16oz bottle.'

The first stock exchange was founded in 1602. The first equity bubble occurred just 118 years later – the South Sea bubble. Since then we have encountered bubbles with an alarming regularity. My friends at GMO define a bubble as a (real) price movement that is at least two-standard-deviations from trend. Now a two-standard-deviation event should occur roughly every 44 years. Yet since 1925, GMO have found a staggering 30 plus bubbles. That is equivalent to slightly more than one every three years!

In my own work I've examined the patterns that bubbles tend to follow. By looking at some of the major bubbles in history (including the South Sea Bubble, the railroad bubble of the 1840s, the Japanese bubble of the late 1980s, and the NASDAQ bubble[1]), I have been able to extract the following underlying pattern (Figure 1.10). Bubbles inflate over the course of around three years, with an almost parabolic explosion in prices towards the peak of the bubble. Then without exception they deflate. This bursting is generally slightly more rapid than the inflation, taking around two years.

While the details and technicalities of each episode are different, the underlying dynamics follow a very similar pattern. As Mark Twain put it, 'History doesn't repeat but it does rhyme'. Indeed the first well-documented analysis of the underlying patterns of bubbles that I can find is a paper by J.S. Mills in 1867. He lays out a framework that is very close to the Minsky/Kindleberger model that I have used for years to understand the inflation and deflation of bubbles. This makes it hard to understand why so many among the learned classes seem to believe that you can't identify a bubble before it bursts. To my mind the clear existence and ex-ante diagnosis of bubbles represent by far and away the most compelling evidence of the gross inefficiency of markets.

[1] Two economists have written a paper arguing that the NASDAQ bubble might not have been a bubble after all – only an academic with no experience of the real world could ever posit such a thing.

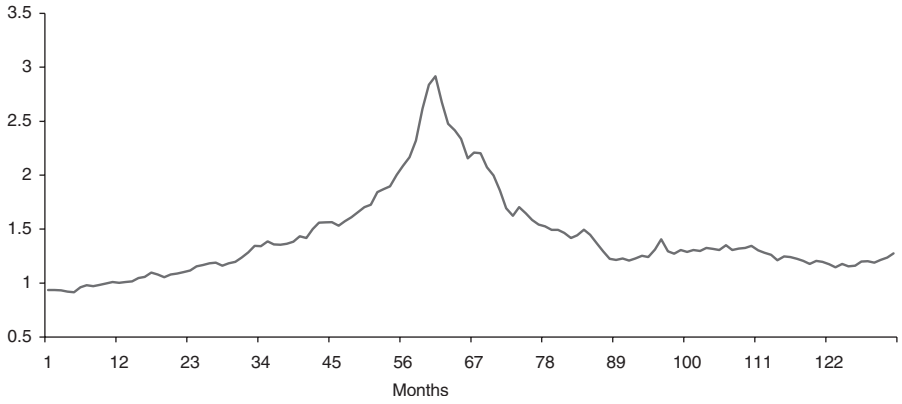

Figure 1.10 Our Bubble Index
Source: SG Global Strategy.

THE EMH 'NUCLEAR BOMB'

Now as a behaviouralist I am constantly telling people to beware of confirmatory bias – the habit of looking for information that agrees with you. So in an effort to avert the accusation that I am guilty of failing to allow for my own biases (something I've done before), I will now turn to the evidence that the EMH fans argue is the strongest defence of their belief – the simple fact that active management doesn't outperform. Mark Rubinstein describes this as the nuclear bomb of the EMH, and says that we behaviouralists have nothing in our arsenal to match it, our evidence of inefficiencies and irrationalities amounts to puny rifles.

However, I will argue that this viewpoint is flawed both theoretically and empirically. The logical error is a simple one. It is to confuse the absence of evidence with evidence of the absence. That is to say, if the EMH leads active investors to focus on the wrong sources of performance (i.e. forecasting), then it isn't any wonder that active management won't be able to outperform.

Empirically, the 'nuclear bomb' is also suspect. I want to present two pieces of evidence that highlight the suspect nature of the EMH claim. The first is work by Jonathan Lewellen of Dartmouth College.

In a recent paper, Lewellen looked at the aggregate holdings of US institutional investors over the period 1980–2007. He finds that essentially they hold the market portfolio. To some extent this isn't a surprise, as the share of institutional ownership has risen steadily over time from around 30% in 1980 to almost 70% at the end of 2007 (Figure 1.11). This confirms the zero sum game aspect of active management (or negative sum, after costs) and also the validity of Keynes' observation that it (the market) is professional investors trying to outsmart each other.

However, Lewellen also shows that, in aggregate, institutions don't try to outperform! He sorts stocks into quintiles based on a variety of characteristics and then compares the fraction of the institutional portfolio invested in each (relative to institutions' investment in all five quintiles) with the quintile's weight in the market portfolio (the quintile's market cap relative to the market cap of all five quintiles) – i.e. he measures the weight institutional investors place on a characteristic relative to the weight the market places on each trait.

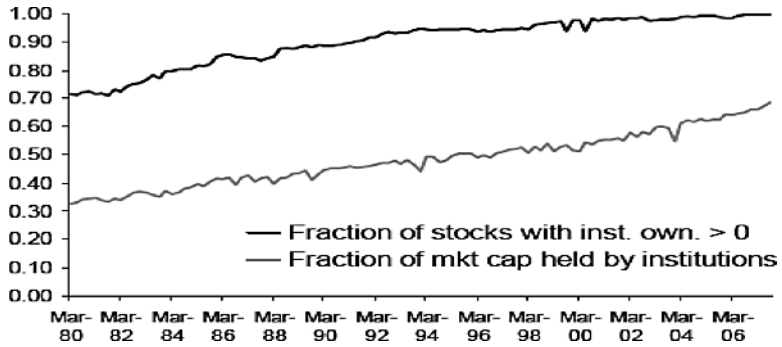

Figure 1.11 Institutional Ownership, USA 1980–2007 (%)
Source: Lewellen (2009).

Figure 1.12 shows the results for a sample of the characteristics that Lewellen used. With the exception of size, the aggregate institutional portfolio barely deviates from the market weights. So institutions aren't even really trying to tilt their portfolios towards the factors we know generate outperformance over the long term.

Lewellen concludes:

> Quite simply, institutions overall seem to do little more than hold the market portfolio, at least from the standpoint of their pre-cost and pre-fee returns. Their aggregate portfolio almost perfectly mimics the value-weighted index, with a market beta of 1.01 and an economically small, precisely estimated CAPM alpha of 0.08% quarterly. Institutions overall take essentially no bet on any of the most important stock characteristics known to predict returns, like book-to-market, momentum, or accruals. The implication is that, to the extent that institutions deviate from the market portfolio, they seem to bet primarily on idiosyncratic returns – bets that aren't particularly successful. Another implication is that institutions, in aggregate, don't exploit anomalies in the way they should if they rationally tried to maximize the (pre-cost) mean variance trade-off of their portfolios, either relative or absolute.

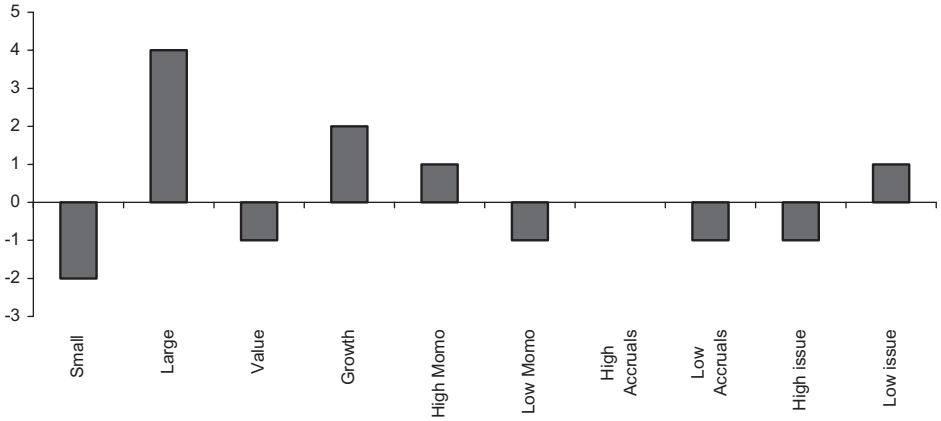

Figure 1.12 Institutional investors vs US market (weight differences)
Source: Lewellen (2009).

Put into our terms, institutions are more worried about career risk (losing your job) or business risk (losing funds under management) than they are about doing the right thing!

The second piece of evidence I'd like to bring to your attention is a paper by Randy Cohen, Christopher Polk and Bernhard Silli. They examined the 'best ideas' of US fund managers over the period 1991–2005. 'Best ideas' are measured as the biggest difference between the managers' holdings and the weights in the index.

The performance of these best ideas is impressive. Focusing on the top 25% of best ideas across the universe of active managers, Cohen *et al*. find that the average return is over 19% p.a. against a market return of 12% p.a. That is to say, the stocks in which the managers display most confidence outperformed the market by a significant degree.

The corollary to this is that the other stocks they hold are dragging down their performance. Hence it appears that the focus on relative performance – and the fear of underperformance against an arbitrary benchmark – is a key source of underperformance.

At an anecdotal level I have never quite recovered from discovering that a value manager at a large fund was made to operate with a 'completion portfolio'. This was a euphemism for an add-on to the manager's selected holdings that essentially made his fund behave much more like the index!

As Cohen *et al*. conclude, 'The poor overall performance of mutual fund managers in the past is not due to a lack of stock-picking ability, but rather to institutional factors that encourage them to over-diversify.' Thus, as Sir John Templeton said, 'It is impossible to produce a superior performance unless you do something different from the majority.'

The bottom line is that the EMH nuclear bomb is more of a party popper than a weapon of mass destruction. The EMH would have driven Sherlock Holmes to despair. As Holmes opined, 'It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts.'

The EMH, as Shiller puts it, is 'one of the most remarkable errors in the history of economic thought'. EMH should be consigned to the dustbin of history. We need to stop teaching it, and brainwashing the innocent. Rob Arnott tells a lovely story of a speech he was giving to some 200 finance professors. He asked how many of them taught EMH – pretty much everyone's hand was up. Then he asked how many of them believed in it. Only two hands remained up!

A similar sentiment seems to have been expressed by the recent CFA UK survey which revealed that 67% of respondents thought that the market failed to behave rationally. When a journalist asked me what I thought of this, I simply said, 'About bloody time.' However, 76% said that behavioural finance wasn't yet sufficiently robust to replace modern portfolio theory (MPT) as the basis of investment thought. This is, of course, utter nonsense. Successful investors existed long before EMH and MPT. Indeed, the vast majority of successful long-term investors are value investors who reject most of the precepts of EMH and MPT.

Will we ever be successful at finally killing off the EMH? I am a pessimist. As Jeremy Grantham said when asked what investors would learn from this crisis: 'In the short term, a lot. In the medium term, a little. In the long term, nothing at all. That is the historical precedent.' Or, as JK Galbraith put it, markets are characterized by 'Extreme brevity of financial memory... There can be few fields of human endeavor in which history counts for so little as in the world of finance.'