Investing for the long term:

Techniques and perspectives for the European market

By Javier Estrada

Accurately forecasting short term stock returns is next to impossible. But the long term is more knowable.

Illustrations: Andrew Bannecker

Forecasting returns is a mix of art and science, with a fair share of sorcery. In fact, the smaller the number of assets in a portfolio, and the shorter the time period for which forecasts are made, the bigger the role played by this last factor. The differences between short-term financial forecasters, weather forecasters and palm-reading fortune tellers are not substantial.

To make matters worse, you may often find yourself caught between professionals with quantitative skills, whose technical jargon you can barely understand, and TV or newspaper pundits, who in plain language are never shy to tell you what stocks you should buy and sell, or what the market is going to do next. If only they were right *half* the time!

The evidence on short-term financial forecasting is unequivocal: Nobody can do it successfully and consistently over time. In fact, John Bogle, the venerable founder of Vanguard, the company that pioneered index funds, argues that the behaviour of individual securities is largely unpredictable, both in the short term and in the long term, and that portfolios of securities (markets) are largely unpredictable in the short term.

The *long-term* behaviour of *markets*, however, is far more predictable. And, as you will soon learn, no PhD in finance is required to understand how markets evolve in the long term. The simple model we will discuss below will not only help you to assess the long-term perspective of any market; it will also help you to evaluate the plausibility of any expectation you might have about a market. But before we get to that, let us briefly discuss a critical distinction that you should keep in mind at all times.

Investing and speculating

John Maynard Keynes is well known for pioneering macroeconomic analysis, and far less well known for being a shrewd investor. His economic ideas are controversial and have been hotly debated for over 50 years, but his

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investment skills have never been in doubt. Consequently, it is important to keep in mind a critical distinction between two concepts that Keynes called *enterprise* and *speculation*. Enterprise, he argued, refers to the activity of forecasting the yield of an asset over its life. Speculation refers to the activity of forecasting the psychology of the market.

Investing and speculating, then, are two very different activities. Investing follows from enterprise and involves buying a "good" asset, at a price below its intrinsic value, the latter estimated using sound fundamental analysis, and holding it for the long term. Speculating, in turn, involves buying or selling an asset, regardless of its price and quality, and undoing the position just before its short-term trend is about to reverse.

Although the field of finance does provide investors with a solid analytical framework, it provides almost no guidance to speculators – beyond the obvious "don't do it!" Accordingly, if you are reading this article expecting hints on what you should buy this week to quickly sell next week, you might as well move on to the next article in this issue. If, however, you are a long-term investor, you may find the discussion below enlightening.

Exhibit 1: Returns

The Returns Decomposition Model (RDM)

Let us start by defining stock returns, which in any given period are given by the sum of the capital gain (or loss) and the dividend received, both relative to the initial price. Take a look at Exhibit 1 and assume we are at the end of period 1, having observed this period's earnings (E_1=$10.6) and dividends ($D_1$=$4.2), and the prices at the beginning (P_0=$100) and at the end of the period (P_1=$107.8). Then, the return over period 1 (R_1) can easily be calculated as

$$R_1 = \frac{P_1 - P_0 + D_1}{P_0}$$ **Expression (1)**

which is the most common way to express stock returns. You should have no trouble at all calculating that the return over this period is ($107.8–$100+$4.2)/$100=12%.

Before we go any further, take another look at Exhibit 1. Note, first, that over period 1 earnings increase by 6%=($10.6–$10)/$10 and dividends increase by 5%=($4.2–$4)/$4. Note, also, that over period 1 the P/E ratio increases by 1.7%, which is the change between the P/E of 10 (=$100/$10) at the beginning of the period and the P/E of 10.17 (=$107.8/$10.6) at the end of the period; then, 1.7%=(10.17–10)/10.

Finally, note that the dividend yield at the beginning of period 1 (D_0/P_0) is 4% (=\$4/\$100).

Now, it may be a bit less known, but the return over period 1 can also be expressed, approximately, as

$$R_1 \approx \left(\frac{D_0}{P_0}\right) + g_1 + \Delta(\text{P/E})_1$$

Expression (2)

where D_0/P_0 denotes the dividend yield at the beginning of period 1, g_1 denotes the growth of earnings over period 1, and $\Delta(\text{P/E})_1$ denotes the change in the P/E ratio over period 1. No need to panic here, this is just a sum of three terms!

Going back to Exhibit 1, remember that the dividend yield at the beginning of period 1 is 4%; the growth of earnings over period 1 is 6%; and the change in the P/E ratio over period 1 is 1.7%. Then, according to expression (2), the return over period 1 is:

$$R_1 \approx \left(\frac{D_0}{P_0}\right) + g_1 + \Delta(\text{P/E})_1 =$$
$$= 4\% + 6\% + 1.7\% = 11.7\%$$

Note that this figure is very close to the 12% we calculated before. In other words, we can think of expression (2) as a good approximation to expression (1), and, therefore, as an alternative way of calculating returns.

Expression (2) is, in fact, a simplified version of the returns decomposition model (RDM). It simply states that, in any given period, stock returns can be easily calculated by adding the initial dividend yield, the growth of earnings, and the change in the P/E ratio. Regarding the calculation of *observed* returns, that is as much about the RDM as we need to know.

But in this article, we are concerned with *expected* returns. To see how the RDM can be used for forecasting purposes, let's now assume that we are at the *beginning* of period 1. If at that point in time we wanted to *forecast* the return over the forthcoming period 1, what would we need?

According to expression (2), we would need the initial dividend yield, which we observe; the *expected* growth of earnings; and the *expected* change in the P/E ratio. This is, precisely, the insight of the RDM: expected returns over any given period can be forecasted simply by adding three terms, one that we observe and the other two that we have to predict.

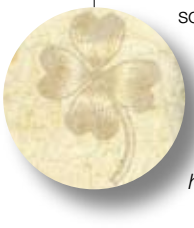
And now, just to make sure you understand how to forecast returns from this model, let us use it to predict the return of the European stock market over the next 10 years.

In Brief

- **Predicting the behaviour of markets is a mixture of art, science and sorcery.**
- **The short-term behaviour of markets is almost impossible to predict; few analysts get it right even half the time.**
- **Long-term behaviour, however, can be predicted with some confidence.**
- **Analysis of long-term market behaviour tells us that despite short-term fluctuations, investors will prosper if they stick to their guns.**

Expected returns

"But how can I predict the growth of earnings and the change in the P/E ratio?" If that is what you just thought, fear not. If we were discussing a forecast for next year, then all bets would be off; in any given year, just about anything can happen. But given that our concern is with the long term, we can make some educated guesses. Curiously, predicting the behaviour of many financial variables is easier in the long term than it is in the short term.



Before we start dealing with numbers, however, an important comment is necessary. All magnitudes below (returns, earnings, dividends) are in dollars. The reason for this is twofold. First, because we will be aggregating the behaviour of many European markets, many of which trade in different currencies, and the aggregation only makes sense if it is done in a common currency. Second, because most data providers still make these aggregations in dollars (as opposed to euros, pounds, or any other currency), particularly for long data series.

Having said that, let us first define the long term, arbitrarily, as the next ten years (2007-2016). Our first question, then, is at what rate are earnings expected to grow in the European market over the next ten years? No crystal ball is needed here; the evidence clearly shows that the growth of earnings is, in general, strongly mean reverting. This is just a fancy way of saying that although the growth of earnings may vary from year to year, over long periods of time earnings tend to grow at a relatively constant (long-term) rate.

What about the market-wide P/E ratio? The evidence here is more controversial, so we will consider two scenarios. The first scenario is, again, mean reversion; this amounts to assuming that, at the end of 2016, the P/E ratio will be equal to the *average historical* P/E. The second

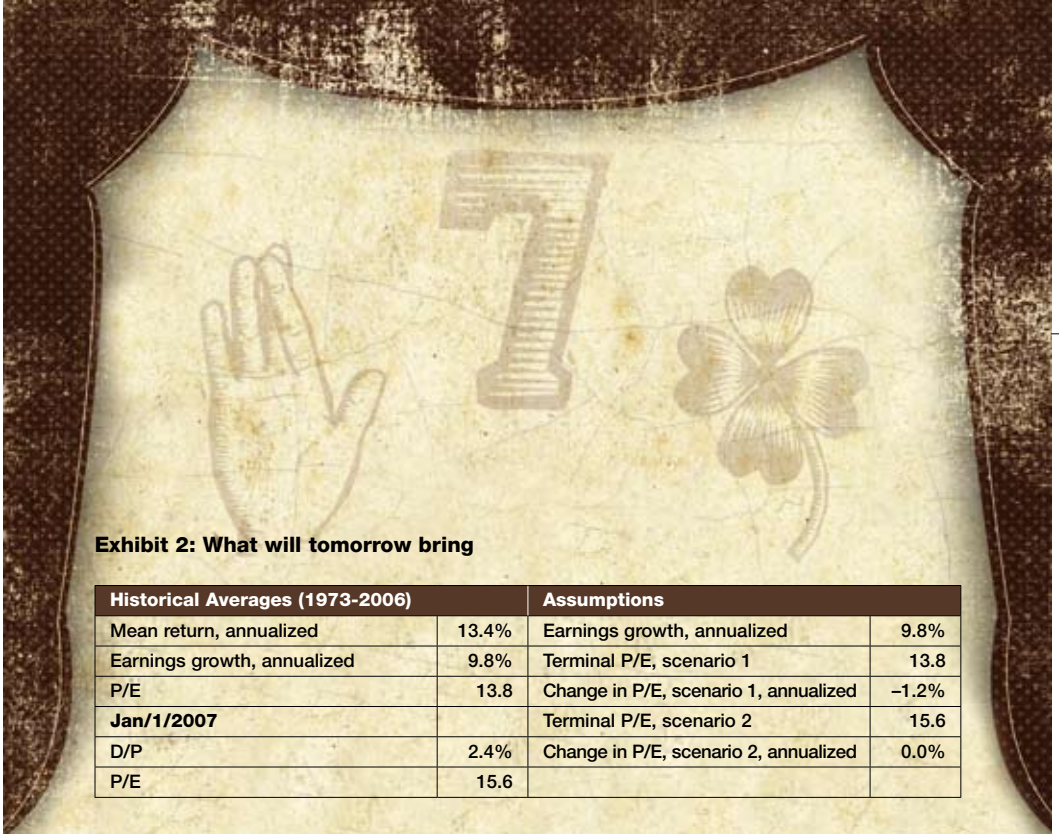


Exhibit 2: What will tomorrow bring

Historical Averages (1973-2006)		Assumptions	
Mean return, annualized	13.4%	Earnings growth, annualized	9.8%
Earnings growth, annualized	9.8%	Terminal P/E, scenario 1	13.8
P/E	13.8	Change in P/E, scenario 1, annualized	–1.2%
Jan/1/2007		Terminal P/E, scenario 2	15.6
D/P	2.4%	Change in P/E, scenario 2, annualized	0.0%
P/E	15.6		

We shouldn't expect the party to last much longer; sooner or later **mean reversion does kick in**

is a random walk scenario; this basically means that P/E ratios are unpredictable, and that our best guess of the P/E ratio at the end of 2016 is the *current* P/E.

Now take a look at Exhibit 2. Note that over the 1973-2006 period the earnings of European companies grew at an annual rate of 9.8%. Let's assume, then, that over the next 10 years, earnings will grow, in line with the historical record, at that 9.8% annual rate.

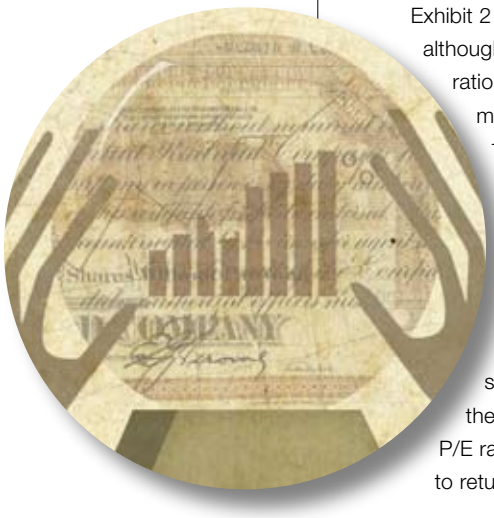


Exhibit 2 also shows that although the average P/E ratio of the European market over the 1973-2006 period was 13.8, at the beginning of 2007 it was 13% higher at 15.6. In the mean reversion scenario, then, at the end of 2016 the P/E ratio is expected to return to its historical average of 13.8. And note that, for that to be the case, the P/E must fall at an annual rate of 1.2%; that is, $15.6(1–0.012)^{10}=13.8$.

In the random walk scenario, in turn, the P/E ratio at the end of 2016 is expected to be the same as that at the beginning of 2007 (15.6). In this case, then, the expected annual change in the P/E is 0%.

One last thing. Exhibit 2 shows that, at the beginning of 2007, the dividend yield of the European market stood at 2.4%; this figure will be the starting point of all our calculations.

So, finally, we're all set. What is, then, the RDM forecast for the European market over the next 10 years? Given an initial dividend yield of 2.4% and an expected annual growth of earnings of 9.8%, the mean annual (compound) return expected over the 2007-2016 period is

$R_1 \approx 2.4\% + 9.8\% – 1.2\% =$ **11.0%**

in the mean reversion scenario,

$R_1 \approx 2.4\% + 9.8\% + 0.0\% =$ **12.2%**

in the random walk scenario.

Perhaps we should think hard and determine which one of these two scenarios is more likely. Instead, let us take a shortcut, assume that they are equally likely, and simply average the two numbers above. If we do that, then the RDM forecast for the 2007-2016 period is a mean annual (compound) return of 11.6%. And because my crystal ball (which I never use to forecast returns) tells me that you may be unhappy with this number, let's think about it a bit.

One reason you may be disappointed is because last year the European market returned 38.3%. And over the past four years, an annualised rate of 29.3%. And over the past 34 years, an annualised rate of 13.4% (as Exhibit 2 shows). But all these numbers are out of line with the long-term historical record: Over the past 80+ years (1926-2006), the annualised return of the European market was 8.8%. In other words, the longer the period for which we assess returns,

the more we realise that the past few years are an historical aberration.

Look at it this way. The years 1995-1999 were great, with annualised returns of 22.7%. The years 2000-2002 were nerve-racking, with annualised returns of –14.7%. The years 2003-2006 were great again, with annualised returns of 29.3%. So you see, in the past and in the present, in Europe and everywhere, markets alternate good years and bad years, good runs and bad runs. And because these past few years were very good, we should not expect the party to last much longer; sooner or later mean reversion does kick in.

Still not convinced? Well, one more thought then, which will also be useful to illustrate an interesting feature of the RDM. Say that, for the next 10 years, you expect an annualised return of 14%, roughly in line with the record over the past 30+ years. Then, beginning from a dividend yield (*observed* at the beginning of 2007) of 2.4%, we get that

$R_1 \approx 2.4\% + g_1 + \Delta(P/E)_1 = 14\%$

And there is no way around this: If you expect annual returns of 14%, beginning from a dividend yield of 2.4%, the annual growth of earnings and the annual change in the P/E ratio *must* add to 11.6%. So now consider:

- If the P/E at the end of 2016 reverts to its long-term mean of 13.8, then it would have to fall at the annual rate of 1.2%, imposing a similar drag on mean annual returns. Then, we can only get 14% annual returns if earnings grow at an annual rate of 12.8% (2.4%–1.2%+12.8%=14%). Possible? Yes. Likely? Not really; that would imply earnings growing at an unprecedented rate.
- If earnings grow in line with the historical record, at an annual rate of 9.8%, then we can only get 14% annual returns if the P/E expands at an annual rate of 1.8% (2.4%+9.8%+1.8%=14%). But at that rate, at the end of 2016 the P/E would be 18.6. Possible? Yes. Likely? Not really; at that level the P/E would be 35% above its long-term average and at levels basically seen only during the internet bubble.

You can play around with these numbers as much as you like, but you just cannot escape from the fact that the three terms of the RDM, one of which will be 2.4%, *must* add to your expected return. And I'm afraid you will not find very plausible scenarios that yield annualised returns of 14% (or higher) over the next 10 years.

Short-term trading is a **losing game** that only brokers can win; long-term forecasting is the only **road to success** in the markets

An assessment

Short-term forecasting and trading is a losing game that only the brokers that charge you the commissions can win. Forecasting the long-term behaviour of markets and investing accordingly is the road to success in financial markets.

The RDM is a useful tool that you can use both to predict the long-term performance of markets and to evaluate the plausibility of any expectation you may have about any market. And although this model yields returns for the European market over the 2007-2016 period lower than those observed over the last several years, *stay invested*. A mean annual compound return of over 11% in dollars is more than what is expected for the US market over the same period (less than 10%), and substantially above both the expected rate of inflation and the yield that can be obtained today on European 10-year government bonds.

As for me, I have another good reason to focus the long term: if I happen to be dead wrong in my forecast, ten years down the road you will probably not remember that you read this article.

Javier Estrada is a professor at IESE Business School. The author would like to thank John Bogle for his kind comments; without his "uncanny ability to recognise the obvious", this article would not have been possible. Gabriela Giannattasio provided valuable research assistance. Readers interested in a more advanced treatment of these issues could look up "Investing in the 21st Century: With Occam's Razor and Bogle's Wit", *Corporate Finance Review*, May/June, 2007.