

# With a Steady Hand

Essays on Long-Term Investing

## Number 3

### The index forecasting paradox

- or why today it is much easier to predict a DAX of 20,000  
than to make an accurate year-end forecast -

By Karl-Heinz Thielmann

It is a yearly ritual. At the end of the year we read forecasts made by investment bank strategists and asset managers in the newspapers. They give us their view on the future performance of interest rates, shares, currencies and commodities. Sometimes we also read about their failed predictions from the year before, mostly accompanied by a malicious comment that they were absolutely wrong last year. Indeed, the past shows that practically no one ever succeeds in properly predicting the developments of capital markets.

If we take a closer look at the forecasts of the so-called stock market experts, we can establish an astonishing fact. Every year the majority of specialists predict an increase of approx. 3% - 10% for their stock markets. According to a survey published in the newspaper Handelsblatt on January 2, 2013, this year most forecasts for the German blue chip index DAX until the end of 2013 are once again in the area of 7,800 to 8,400. The average estimate is 8,029, which is the equivalent of an approx. 5.5% increase. Even if different arguments are used to justify these estimates, funnily enough similar predictions are made every time. A pessimist with a very negative forecast only dares to appear now and then, for example the Saxo Bank's DAX forecast of 5,000 for this year. Predictions that the stock market could increase

#### **Speed Read:**

- *Stock market forecasts in general are very similar to the long-term return averages of leading indices. Over a period of one year, however, share prices normally deviate strongly from their long-term growth path. Therefore, year-end forecasts of stock market performance close to these long-term averages are generally completely wrong.*
- *Analysts and stock market strategists know in advance that their forecasts will be wrong. They only make them to fulfil the expectations of the public. Therefore they either adopt a consensus role as a "cautious optimist" and predict a slight increase for the stock market or they adopt the "warning voice" minority role and forecast a strong decline.*
- *Although it is subject to erratic short-term fluctuations, the stock market has a clear long-term return path. Therefore it seems quite reasonable to predict long-term returns, e.g. for the German blue chip index DAX to reach 20,000 within the next 12-15 years..*

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by 20% or even more are relatively rare. Nevertheless, some predictions of this kind were made at the beginning of this year. However, they were justified by outsiders with purely technical arguments based on chart analysis, and were not included in the overview by the Handelsblatt.

There is a reason why forecasts are so similar every year in spite of the volatility of the financial markets. Empirical research has shown that many analysts and strategists do not believe in their predictions themselves, but regard them to be a tiresome procedure. It is only because their customers and the press expect supposedly exact forecasts from them that they make the effort. But in general they don't want to be exposed as the only ones making useless predictions. Therefore they orientate their predictions towards the market consensus, in other words towards the average of the other analysts' opinions. This consensus seems to be influenced relatively strongly by historical average yield values. If the stock market has a historical yield of 8% p.a. and the forecaster is taking a risk discount of 3% into consideration, this results in a 5% forecast for the market. And if a forecaster wants to attract attention by taking a position against the consensus, he simply forecasts a big negative divergence to the consensus opinion.

However, can the forecasters be successful with this method?

Andre Kostolany created a nice metaphor which compares the economy and the stock exchange to a stroller walking his dog.

It is not easy to predict how the man will make headway. There are factors that are known and can be estimated, e.g. his age, the state of his footwear, whether he is well trained or not very athletic and whether he is motivated or lacking energy.

It is much more difficult to estimate the state of the path ahead of him. Is it in good condition and level or does it have obstacles that he will have to overcome or deal with? Nevertheless, it can be assumed that the man will go straight ahead.

In addition, it is practically impossible to predict how the dog will make headway. Sometimes he runs ahead; sometimes he drops back for a long time. Occasionally he disappears into the bushes and then he walks close to his master. He may also get distracted by another dog. If he stubbornly stays back, he may even force the man to stop briefly.

The stroller reflects the overall economy, the dog the stock exchange. The man follows a relatively stable path, but has to deal with interruptions. These are quite difficult to predict as many inexact economic forecasts show every year. However, what the investment strategists have to do is to predict the path of the dog running around erratically. On a short-term basis, this is practically impossible; it is only in the long-term that he follows his master.

To show how difficult this is in practice, the annual performance of the German share index DAX has been analysed since 1990. In contrast to most of the other popular stock market indices, such as the S&P500 or the FTSE100, the DAX is a performance index, including dividends in the calculation of returns. Therefore the DAX seems more adequate for analysing long-term return patterns than most other indices.

A closer look at the performance of the DAX during the past 22 years shows 7 years of losses (approx. 1/3) and 15 years of gains (approx. 2/3). The arithmetic mean of the average nominal yield is 11.3% p.a. The geometric mean, however, which is a better proxy for the long-term growth rate, is 8% p.a.

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DAX returns	inflation		real
	nominal	rate	
1991	12,9%	2,6%	10,3%
1992	-2,1%	5,0%	-7,1%
1993	46,7%	4,4%	42,3%
1994	-7,1%	2,8%	-9,9%
1995	7,0%	1,8%	5,2%
1996	28,2%	1,4%	26,8%
1997	46,2%	1,9%	44,3%
1998	18,4%	1,0%	17,4%
1999	39,1%	0,6%	38,5%
2000	-7,5%	1,4%	-8,9%
2001	-19,8%	1,9%	-21,7%
2002	-43,9%	1,5%	-45,4%
2003	37,1%	1,0%	36,1%
2004	7,3%	1,7%	5,6%
2005	27,1%	1,5%	25,6%
2006	22,0%	1,6%	20,4%
2007	22,3%	2,3%	20,0%
2008	-40,4%	2,6%	-43,0%
2009	23,8%	0,4%	23,4%
2010	16,1%	1,1%	15,0%
2011	-14,7%	2,3%	-17,0%
2012	29,1%	2,0%	27,1%
Ø	11,3%	2,0%	9,3%

Adjusted for inflation, this equals a real value increase of approx. 6% annually for German shares. For almost all periods of at least 20 years that include at least two stock market cycles, a range of 4.9% to 9.5% has been established for the real annual average yields of German shares between 1950 and 2000. It was determined by researchers of London Business School in "The Millenium Book". They found only one exception: the period of 1960-80, which was extraordinary because it started with very high valuations of stocks at the end of the "Wirtschaftswunder" and continued with the oil crises of the 70s. Therefore this figure might also be a realistic proxy value for the average annual performance of German shares in peacetime. Similar figures have been established for the stock markets of Canada, France, the United Kingdom or the USA. Therefore these figures seem to be representative for all of the big stock markets of the developed economies since World War II.

In this respect one might superficially think that a 3 %-10 % annual yield forecast for the stock market cannot be so wrong at all. However, it is worth noting that the results for the single years deviate strongly from the average values.

The actual yield was within this 3 %-10 % zone in only 2 years (1995, 2004). The yield deviated from the average yield by less than 5% in only 4 years. However, there were 8 years in which the performance deviated from the average value by more than 20%. We can already draw one conclusion from this. It is relatively unlikely that a yield forecast will be successful in proposing an average result. A strong divergence from the mean is more likely than an average outcome.

Furthermore, it is striking that there were just as many years with yield variations of more than 40% (so-called "fat tails") as years in which more or less average yields were achieved. The average yield appeared as often as an extreme swing.

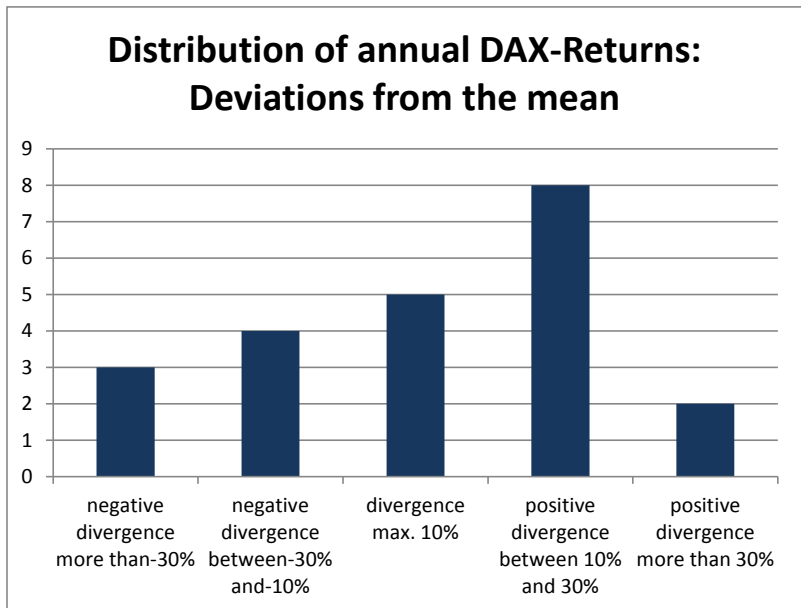
The negative years showed a loss of approx. 19.4% on average. Only one year in which losses were made (2001) came close to this average value. In nearly one third of the years in which losses were made, the losses were more than 40%. During bad years there were more "fat tails" than average results.

During years with stock market gains, the average yield amounted to approx. 25.6% p.a. Therefore, 2012 can be regarded as a relatively average year of gains for the DAX with an increase of 29.1%. At least 6 of 14 profit years were close to the average value; however, 4 profit years were more than 10% above the average value.

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In 10 of 22 years, the DAX produced an investment result of more than 20%. Therefore, for an analyst who estimated a gain of 20% and more for the stock market at the beginning of the year, the likelihood that he was right was much higher than for a strategist who estimated an average performance. Why are forecasts with a high likelihood of success avoided so strongly? There might be two reasons for this. On the one hand, there seems to be great fear of making forecasts that deviate from the market consensus. On the other hand, the analysts know from the start that their



forecasts will be wrong and only serve marketing purposes. In this respect they do not adjust their forecasts to what they themselves expect. Instead, they formulate them in a way that best fulfils the expectations of their customers and the public. They apparently think that they can best present themselves with the image of a "cautious optimist". And a forecast of 3-10% p.a. matches this better than a forecast of 20% p.a., even if the latter is much more likely. Indeed, in view of public reaction, an extremely pessimistic forecast also makes sense because the forecaster can then distinguish himself as a warning voice. And the chances of being confirmed with an extreme forecast are almost the same as those of getting an outcome close to historic averages. However, the returns are higher in terms of public attention, because then you can say retrospectively: "We were the only ones who anticipated the disaster." The rewards of making a bearish forecast at the right time can be enormous, as shown by Elaine Garzarelli, who predicted the stock market crash in 1987. She has become very popular and one of the best-paid strategists on Wall Street despite the rather patchy track record of her forecasts after 1987.

What conclusions can be drawn from these considerations?

- Since 1950 the long-term real yield of the German stock market has relatively consistently remained between 5% and 9.5% p.a. In this respect, real 6% p.a. or nominally 8% p.a. are good mathematical expectations for the average yield of a stock market cycle that lasts several years. However, these are extremely bad forecasting values for the returns of a single year.
- Hence, the analysts who take the long-term average yield as a basis for an annual forecast are usually wrong. They consciously accept this, however, because the image provided by their statement is more important to them than the forecast itself.
- The strategists who predict extreme price movements are only rarely confirmed. However, when they do make a successful forecast, they are celebrated as crash gurus.
- The annual investment results are broadly distributed. There is no particular pattern, especially with regard to years in which losses are made. In years in which gains are made, however, quite a lot of the results are close to the average value of 25.6%.

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- The investment results for all years are not normally distributed, i.e. in the form of a Gaussian bell curve. All risk models that are based on this model necessarily lead to wrong results.
- The performance in one year gives no indication of what performance will be like in the next year. It is only possible in long periods of high gains, such as 1995-1999 or 2003-2007, to conclude that the periods come to an end with violent price corrections.

An annual forecast for the DAX is practically impossible. Nobody can foresee whether it will fall by about 10% in 2013 and rise again by 30% in 2014 or vice versa, or whether it will rise by 20% p.a. in both years and then decline again. Just like we can't predict the exact path a dog will take, it is absolutely impossible to even approximately forecast a year-end result.

However, it is relatively easy to forecast that the DAX will continue to follow its long-term yield path, albeit with violent swings. This is the forecasting paradox. It is much easier to predict a long-term development, because this is based on basic trends, than to make a short-term forecast, because this is distorted by arbitrary factors.

*"It's easier to tell what will happen than when it will happen." Warren Buffet*

The German stock market is currently neither overrated nor undervalued - these are good reasons to believe that we are currently near the real growth path of approx. 5-7% p.a., which should continue in the long term. Providing no global disasters strike, such as world wars, etc., and assuming an inflation rate of about 2% p.a., therefore, I dare to forecast that the DAX will cross 20,000 at some time during the next 12-15 years. But please do not ask me the path it will take to get there and when it will exactly happen. Then I would have to predict the behaviour of the dog and not the stroller.

For 2013, I hope that the DAX hound is not distracted too much and that it produces another average profit year. This would mean a year-end result of at least 9,000. However, I expect the DAX to be at somewhere between 4,200 and 11,000. Unfortunately, a more exact prediction is not possible.

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## Sources:

To explain the behaviour of forecasters, I used my own experiences in the financial industry and two texts by Ekaterina Svetlova (Talking About the Crisis: Performance of Forecasting in Financial Markets(2012). In: Culture and Organization, 18(2), 155-169; and: Plausibility check of consensus: Expectation building in financial markets (2010). In: Journal of Financial and Economic Practice, 10 (1), 101-113). As reference for long-term stock market yields "The Millenium Book – A Century of Investment Returns" by Elroy Dimson, Paul Marsh and Mike Staunton (ABN-Amro/London Business School), London, 2000 was used. With regard to Elaine Garzarelli, see: <http://www.nytimes.com/1994/10/27/business/garzarelli-is-ousted-by-lehman.html?scp=1&sq=Elaine%20Garzarelli&st=cse>. An overview of the current forecasts for the DAX was published in the Handelsblatt of January 2, 2013 on page 5.

The original quote by André Kostolany is from his book "Das ist die Börse" ("That is the stock market"), Stuttgart 1962:

"Imagine a man who is walking his dog along the street. The man is moving forward steadily, he represents industry. The dog runs ahead, jumps around, returns to his master, steals away and comes back again; his path represents the movements of securities."

*"Stellen Sie sich einen Mann vor, der mit seinem Hund eine Straße entlanggeht. Der Mann schreitet gleichmäßig voran; das ist die Industrie. Der Hund stürmt vorwärts, springt hierhin und dorthin, kommt zu seinem Herrn zurück, läuft wieder davon und kommt wieder zurück; sein Weg stellt die Bewegungen der Wertpapiere dar."*

## Curriculum vitae of the author:

**Karl-Heinz Thielmann** holds a degree in Economics from the University of Cologne. His professional career started in 1990 as an Analyst of European stock markets with Dresdner Bank Investment Research. In 1993 he joined Deutscher Investment Trust DIT (today: Allianz Global Investors) as Fund Manager. During his time at DIT, Karl-Heinz Thielmann developed many successful products, e.g. the DIT Wachstum Europa, the first German equity fund to invest explicitly in quality growth shares. Furthermore he received numerous awards for outstanding performance, notably for DIT Großbritannien, a fund dedicated to investments in stocks of the United Kingdom. Since 2001, he has mainly worked as an independent consultant for companies, asset managers and private individuals on matters regarding the capital market. During his years working as an independent adviser, he has helped almost all of his customers to achieve a considerably above-average investment result. Furthermore, he is lecturer for Global Economics at Karlshochschule International University in Karlsruhe.

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