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Stock exchange rules – myth or reality

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“SELL IN MAY AND GO AWAY (BUT REMEMBER TO COME BACK IN SEPTEMBER)”

Who has not heard of the old stock exchange rule “Sell in May and go away” – sometimes complemented by “but remember to come back in September”. We had a closer look at this adage and have analysed the performance on the global stock exchanges over the past 48 years. To this end, we looked at an index that measures exactly that: the company MSCI launched its MSCI World index on 1 January 1970, This is also the start date of our analysis.

Given that the rule about realising one’s gains in May and returning in September was created in the USA, we are going to look at the performance from the perspective of a US investor as well as from that of a euro investor. These are our premises:

Investor A: fully invested at all times, referential currency USD

Investor B: fully invested with the exception of the months of May to (and including) August, referential currency USD

Investor C: fully invested at all times like A, but referential currency EUR

Investor D: investment pattern like B, but referential currency EUR

The four investors have achieved the following results since 1970:

Investor	A	B	C	D
Return	9.86%	8.96%	11.20%	6.34%
Volatility	15.10%	12.89%	19.08%	13.13%

Source: Bloomberg, Index: MSCI World net. Dividend
Investor B and D receive no interest income on their liquid funds in May to August

Investor B is only invested for eight out of twelve months.

However, his/her return falls only slightly short of the performance of investor A. Statistically speaking, the return of B should be two thirds of that of A (equal distribution of monthly returns), i.e. 6.6%. At 9.0%, the return is significantly higher than that.

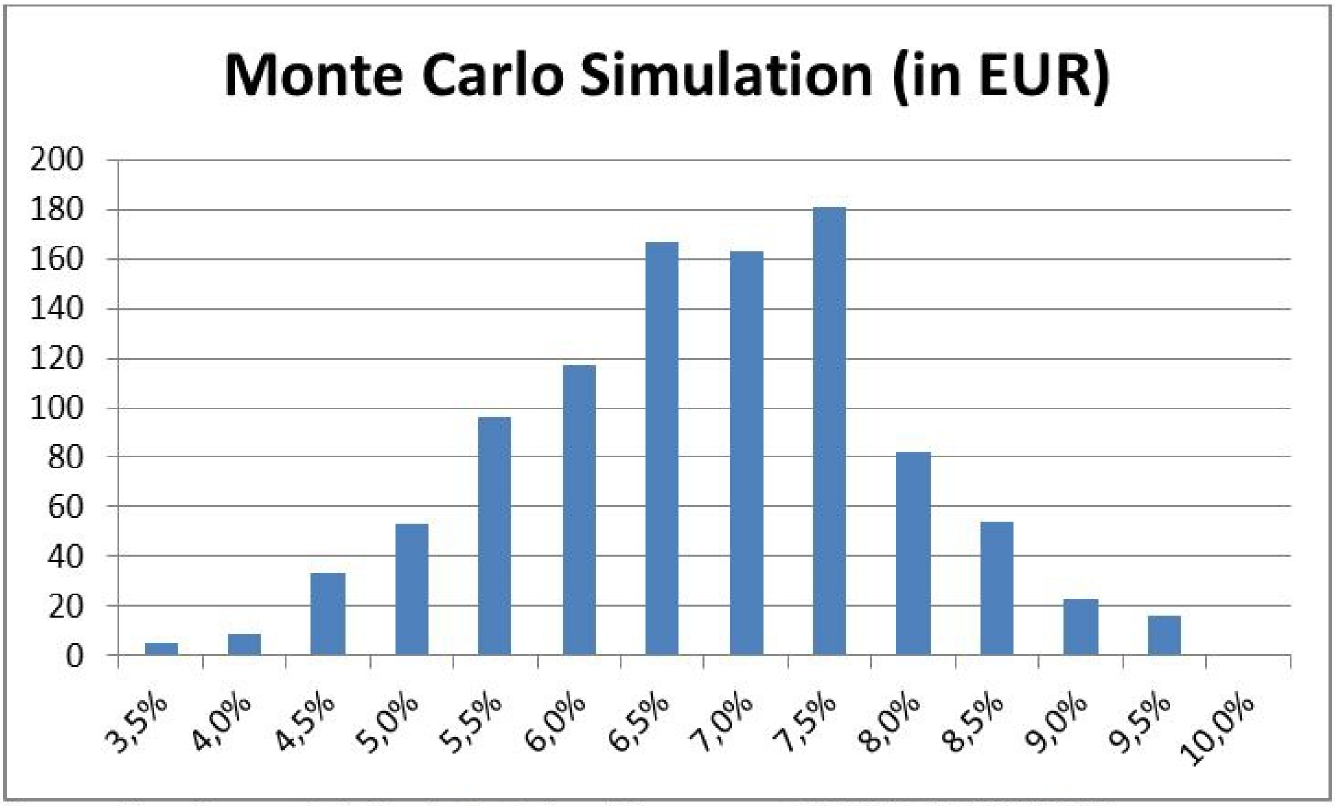
In order to analyse this performance in more detail, we resort to a so-called Monte Carlo simulation, a statistical method that in our case works as follows: we randomly select eight months and calculate the performance on the basis of realised monthly returns. This means that we want to find out whether the deliberate selection of four (non-invested) months deviates from a method that hinges on a random selection of four months. Taking this process through 1,000 iterations, this is the result we get:

Source: Bloomberg, calculation by Erste Asset Management, ERSTE-SPARINVEST

The simulation confirms our earlier hypothesis, i.e. that a performance of 6.5% is the most frequent one. While a performance of 9% is not impossible, it is not very likely. More specifically, a performance of 9% or above occurs with a probability of 3%. In other words, the probability of error is 5% that the performance of investor B is significantly higher than expected.

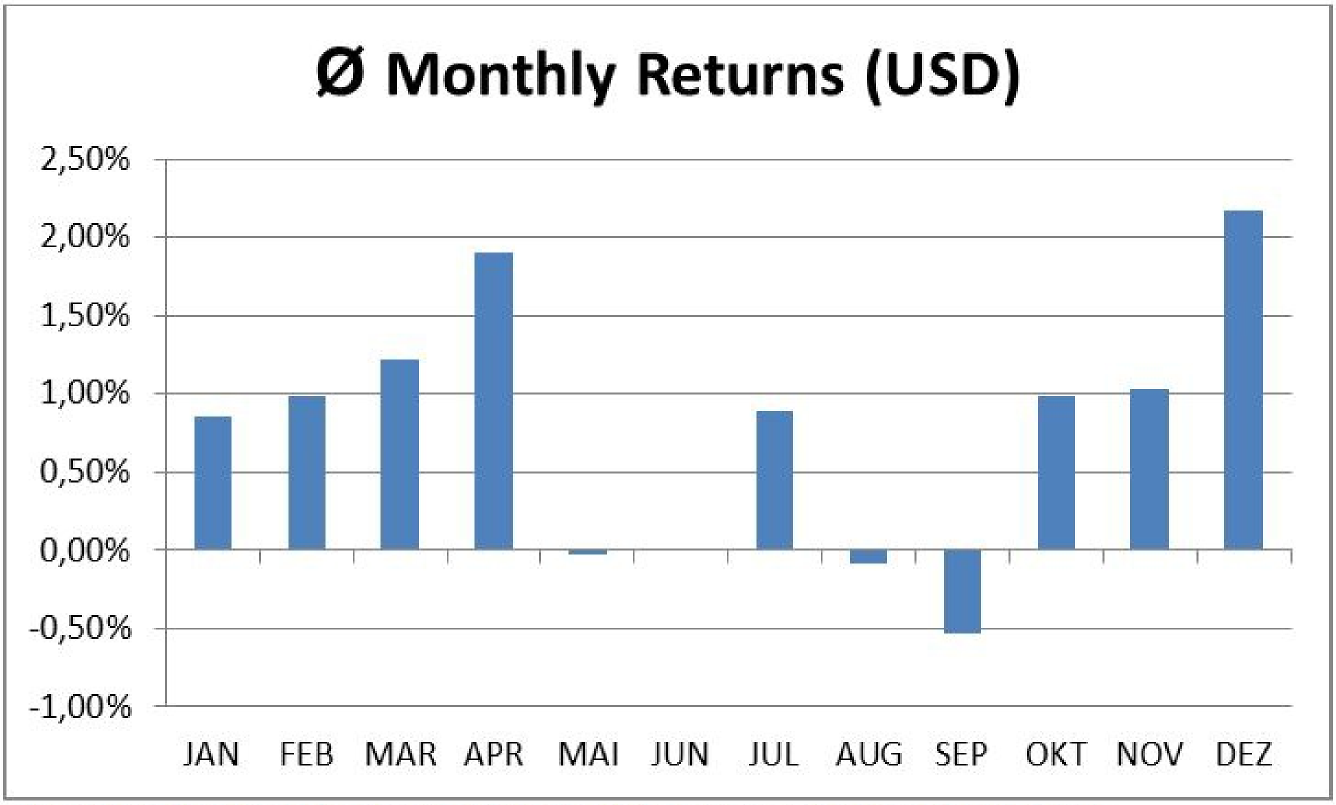
This suggests that the stock exchange rule is justified. While the performance of 9.0% is less than 9.9% (for the case of permanent investment), it still beats the expected value of 6.6% by a significant degree.

We now repeat the procedure for the euro investor. The performance of a buy-and-hold strategy is 11.2%. An investor implementing the stock exchange rule would achieve only 6.3%. The expected value for investor D is 7.5%, which means that the investor did not even match the expected value, let alone the result of investor C. The probability of the result being equal to or above 6.3% is 48%. This means that investor D achieved a result within the realm of expectation. Therefore, the stock exchange rule yielded a result within expectations for the euro investor (and nothing beyond that).



Source: Bloomberg, calculation by Erste Asset Management, ERSTE-SPARINVEST

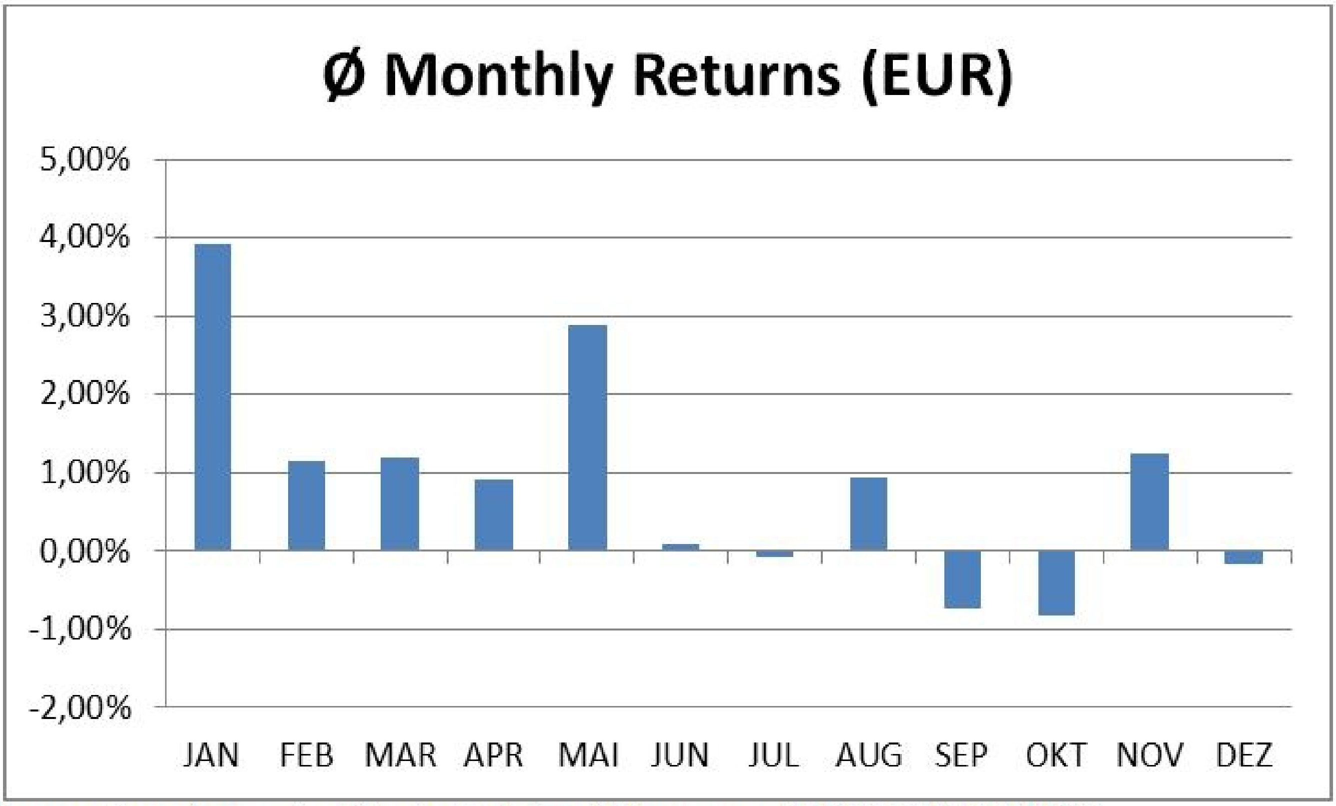
What catches our eye when we are looking at the average performance figures for the US investor across the individual months for the period of 1970 to today is the fact that the performance from October to May is far superior to the performance of May to September (with the exception of July). The chart therefore supports the stock exchange rule according to which being invested from May to September is not really essential.



Source: Bloomberg, calculation by Erste Asset Management, ERSTE-SPARINVEST

The analysis supports another stock exchange rule, which says that winter performance beats summer performance.

However, the performance for a euro investor looks significantly different. A US investor would realise the best result in December, whereas a euro investor would come out best in January. Whereas a US investor on average would not achieve a positive return in May, this month turns out to be the second-best one for a euro investor.



Source: Bloomberg, calculation by Erste Asset Management, ERSTE-SPARINVEST

US dollar has a massive influence on the investment result

Our analysis reveals that the development of the currency strongly influences the result for a euro investor. Overall, the euro investor achieved a slightly better performance (11.2%) than the US investor (9.9%) due to currency gains. January to (and including) May are the best months for a euro investor.

In summary, the stock exchange rule "Sell in May …" is justified for a US investor. While he/she would not achieve a better result than with a permanently invested strategy, the performance is significantly better when taking into account that he/she is invested only for eight out of twelve months. For a euro investor, on the other hand, the rule has no justification, unless the US dollar is hedged against the euro.

But before we dismiss the rule for a euro investor altogether, let us introduce two additional investors E and F, who invest only in European companies (no currency risk).

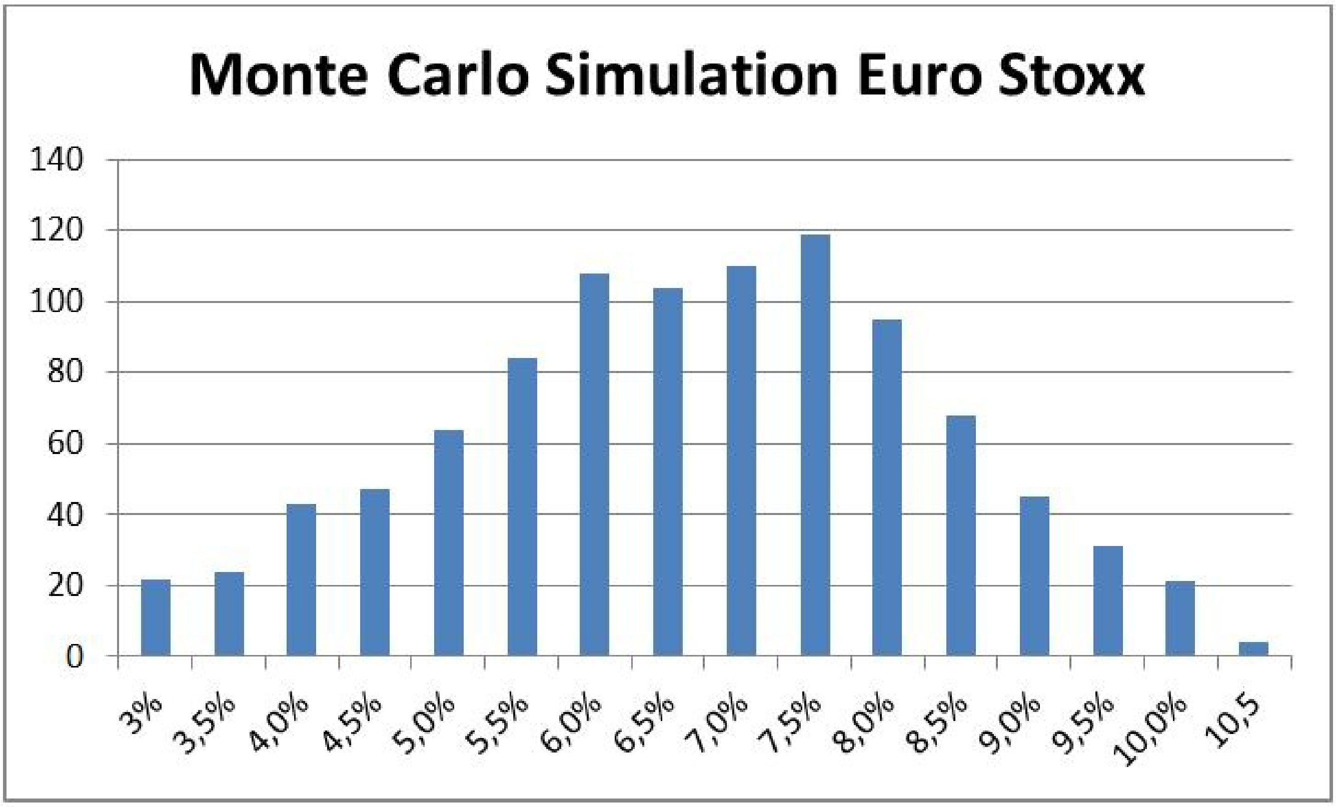
Investor E: fully invested at all times, but Euro Stoxx companies (i.e. referential currency euro)

Investor F: fully invested in Euro Stoxx companies with the exception of the months of May to (and including) September

Investor	A	B	C	D	E	F
Return	9.86%	8.96%	11.20%	6.43%	9.64%	9.68%
Volatility	15.10%	12.89%	19.08%	13.13%	18.34%	15.38%

Sources Bloomberg; Index Euro Stoxx plus dividend (after taxes)

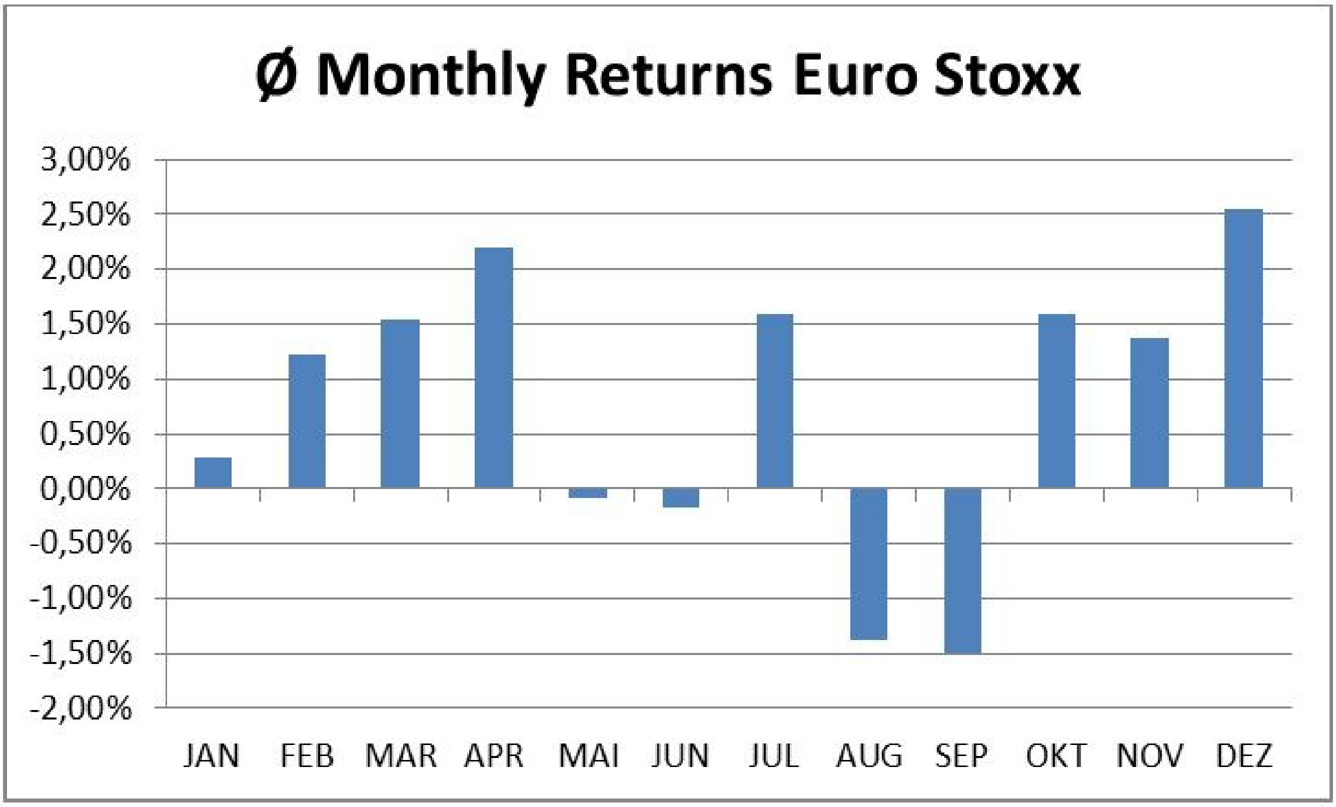
The result is striking: while pulling out for the months of May to September, investor F achieved the same return as investor E who was permanently invested. As a reminder: if I am not invested for four months (i.e. I am invested for 66.67% of the possible months), my return should reflect this shorter term of exposure, i.e. 9.64% x 2/3 = 6.43%.



Source: Bloomberg, calculation by Erste Asset Management, ERSTE-SPARINVEST

The Monte Carlo simulation (investments in eight randomly selected months on the basis of realised monthly returns) suggests a performance of 9.7% to be rather unlikely. The expected value is 6.4%. The probability of a result of >9.5% is 2.5%. This means that at an error probability of 5%, a performance of 9.7% is significantly higher than the expected value, which then re-introduces the rule “Sell in May and go away” as justified after all.

The average monthly returns of the Euro Stoxx index paints a similar picture as the MSCI World index in USD does. The months of May and June are weak. Here, too, July is the exception. Also, it seems there is no hurry when it comes to returning from your summer holidays. Re-investing in October suffices seeing as September would frequently produce negative returns. In fact, the month of September has been the weakest month for the Euro Stoxx index, historically speaking.



Source: Bloomberg, calculation by Erste Asset Management, ERSTE-SPARINVEST

Our analysis shows that the stock exchange rule "Sell in May …" is valid also for a euro investor if he/she only invests in euro-denominated equities.

While this strategy does not necessarily generate a surplus yield, the investor hardly misses out by closing his/her positions for the summer months. In other words, the performance in the months of September to April is significantly higher than in the months of May to August. But this stock exchange rule has not worked in every decade. In the 1980s, an investor following this strategy would have clearly fallen short of the benchmark performance. The following table illustrates the average return for the periods of May to August and September to April by decade.

MSCI World (USD)	70er	80er	90er	00er	10er
Avg. Perf. Mai-Aug.	-0,11%	0,96%	0,41%	-0,17%	-0,18%
Avg. Perf Sep.-Apr.	0,62%	1,66%	1,31%	0,77%	1,11%

Source: Bloomberg, calculation by Erste Asset Management, ERSTE-SPARINVEST

These considerations are interesting for euro investors. Currency fluctuations dilute the performance significantly for internationally diversified portfolios and do not produce the desired improvement in risk-adjusted performance. By investing only in Euro Stoxx companies, one creates a different scenario. The stock exchange rule is valid again.

As a side note, we did not include transaction costs or taxes in our calculations. The purpose of our analysis was of a statistical nature.

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Harald Egger is Chief Analyst and has worked at Erste Asset Management since 2001. Previously he worked for four years as a fund manager and analyst for AXA Investment Management in London. He headed the equity segment within Erste Asset Management and was CIO until April 2013. He has been employed in the finance industry since 1992.