ECONOMIC SITUATION AND STRATEGY

March 8, 2019

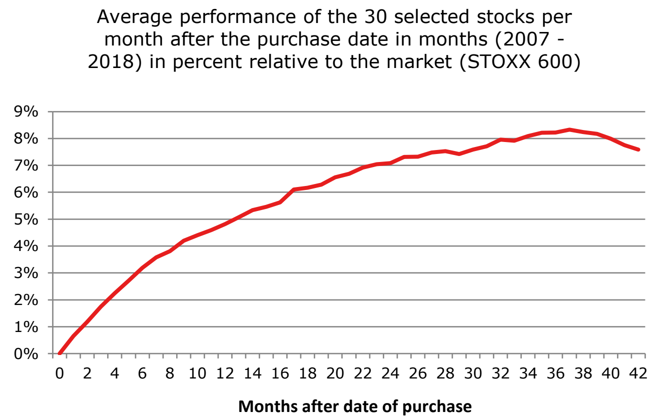
Is there an optimal portfolio size for stock-picking?

It is almost a question of faith for many whether to invest on the stock market as an active picker or only to track whole indexes, or even buy index ETFs, in the framework of a passive investment style. Ultimately, there are good arguments on both sides, but those who know us know we tend to favor the active approach. For, it is simply not true that markets are so efficient that a portfolio weighted by market capitalization cannot be beaten. After all, most of the stocks that get especially heavy weight in the established indexes are "yesterday's winners" due to their previous success and consequent high market capitalization. However, there is no good reason to assume they will necessarily continue to be so successful in the future. But that is exactly what an index structure based on market capitalization weightings implicitly assumes. That is not intended as an argument against index ETFs. On the contrary, there are definitely reasons for them, since they provide inexpensive, but well-diversified access to the broad market.

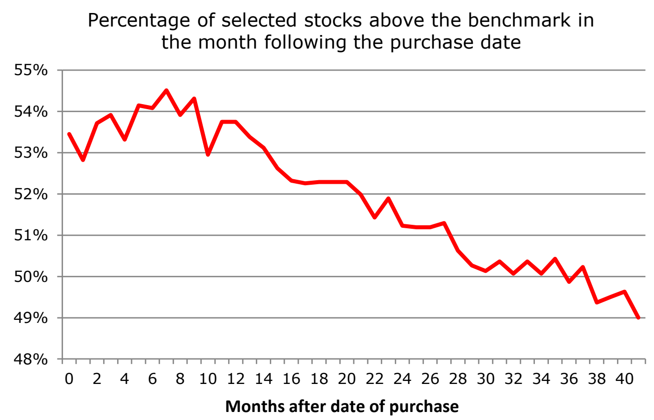
However, we firmly believe one can still do a little better by carefully selecting stocks instead of betting "blindly" on the broad market. But how many stocks should an active picker have in a portfolio to obtain (good) results on a comparatively continuous basis, i.e., that are not simply a temporary product of chance? One would think that by now an answer should have become well-accepted in the market. But no, some investors swear by highly concentrated portfolios of, e.g., 20 stocks, while other pickers often take positions in 200 stocks or more.

To find the answer in an empirically objective way, we set up the following experiment. First, we chose the most attractive 5% of all the stocks in the European STOXX 600 (30 per month) at the respective times for the period 2007-2015 using our quantitative selection model. That model takes into account about 80 different key figures that can be used to describe the topics of valuation, profitability, balance sheet quality, earnings revisions, and volatility. Each stock gets an attractiveness score each month based on these 80 key figures. The scores of the individual key figures are not simply added to obtain a total. Instead, we also take into account interdependencies and trade-offs between factor exposures as they change over time in an elaborate process endogenous to the model. Our aim is to obtain the most comprehensive and objective picture of a company, which does not knowingly or unknowingly consider individual aspects and factors too much or too little in the valuation.

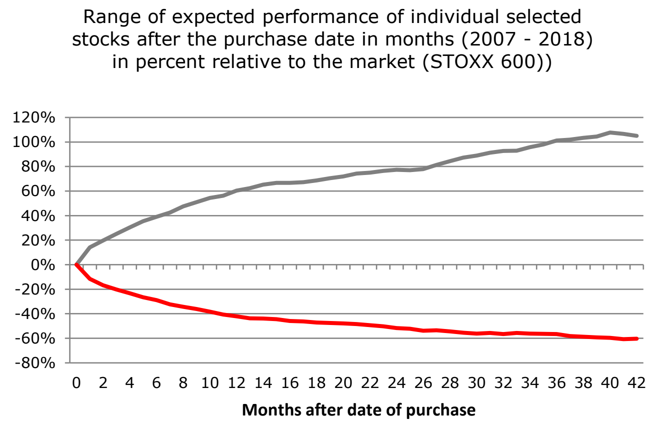
If a company was among the 30 most attractive stocks in a given month, we calculated its performance relative to the broad market for the subsequent three and a half years. In this way, we can easily show how stocks or whole portfolios develop relative to the broad market after their purchase and how these properties vary with changes in portfolio size.



As the chart above shows, our systematic selection approach is basically value-preserving and contributes to outperformance relative to the broad market. Altogether, about 3,000 stocks were purchased in the back-calculation. From 2007 to 2018, they achieved on average a cumulative outperformance of 8% after three years. After that, cumulative outperformance drops off somewhat. At first sight, this looks too good to be true. However, the problem with the result only emerges when one looks behind the scenes. For, good average performance far from implies that every individual decision adds value.

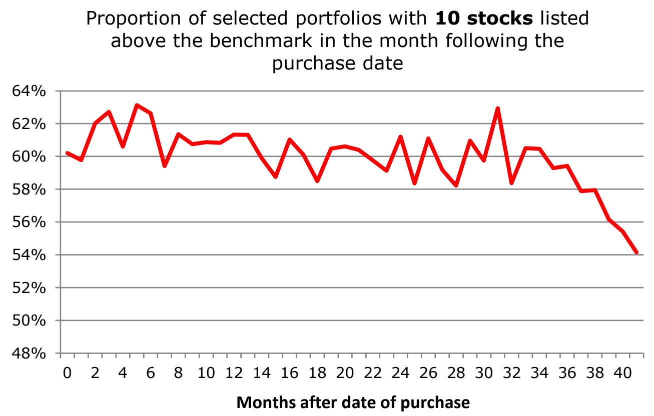


For example, only about 54.5% of the selected stocks are quoting above the benchmark after six months. That figure falls to 50% on a longer holding period and then to 49% at the end. The picture becomes even more extreme if one analyzes the "possibility space" of individual stocks' performance. The chart below shows the best and worst value progressions of selected individual stocks based on this inherently good selection process.

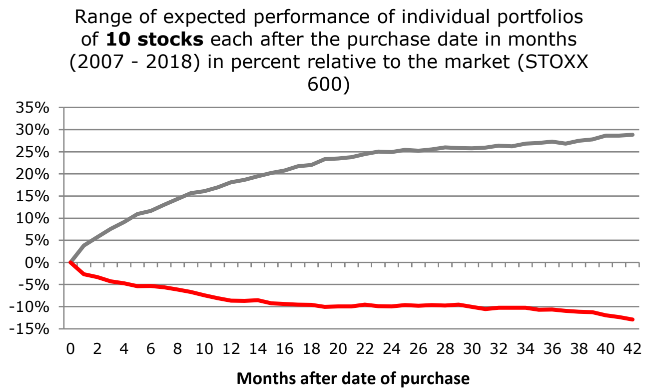


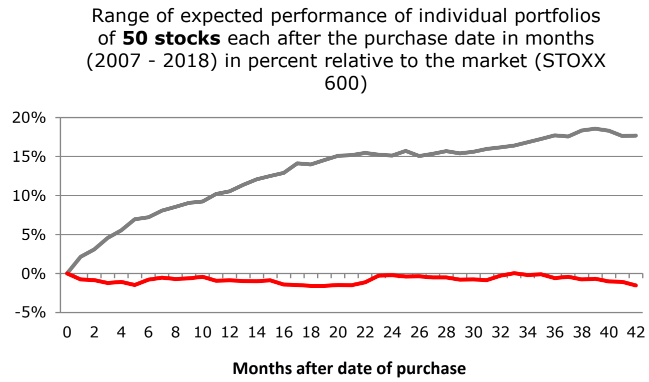
In the worst-case scenario (more precisely, in the 5% quantile of the distribution, whereby 5% of the value progressions were de facto even worse), 60% could be lost with one stock compared with the broad market. Here, at the latest, we clearly see that holding individual stocks without diversification cannot be an option, even if the underlying selection process has very good properties.

But how do things look when at each point not just one, but rather ten stocks are held in an equally weighted portfolio? In that case, the share of outperforming portfolios over longer time is already 68% and only drops back slightly at the end of the holding period.

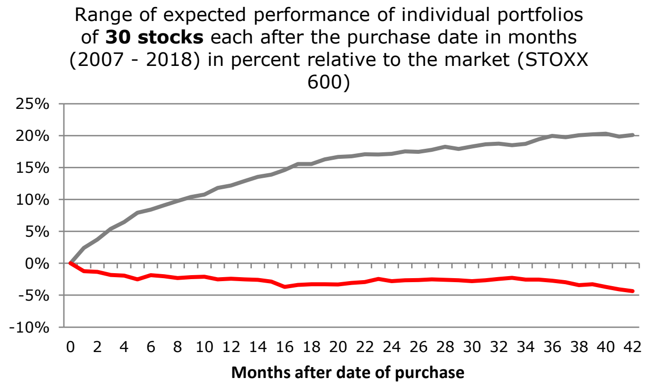


This conclusion proves the power of diversification in textbook fashion. Just spreading the risks over ten stocks changes the risk structure for the investor dramatically. Investors also benefit, among others things, from the effect that the "good" selected stocks tend towards greater positive deviations from the benchmark than the "bad" ones towards negative deviations from the benchmark. This diversification effect also finds significant expression in the representation of the possibility space. As in the case of individual stocks, we have represented the possible range of paths for portfolios with 10 stocks each from the time of purchase onward.

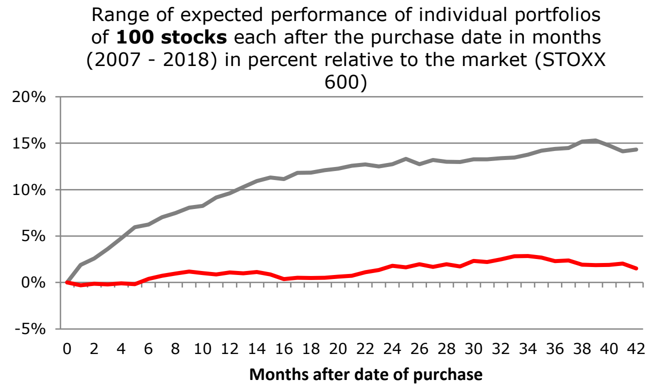




However, this is not yet a perfect solution despite the achieved diversification effects. Some probability remains that even after three years the performance of such an active portfolio will still lag cumulatively 10% or more behind the broad market, which is really not acceptable for an investor. We have therefore further increased the number of stocks successively in order to analyze the resulting effects.



The situation is still not optimal even with 30 stocks. Here, too, one may still expect some probability of cumulative underperformance of 5% after three or more years. Only with about 50 selected stocks in the portfolio does the full "power" of diversification begin to unfold. For, it then becomes possible to outperform the benchmark significantly even with a selection approach that is good but very far from the benchmark – and that with only a very low probability of underperforming the benchmark. The picture then looks perfect with 100 selected stocks in the portfolio, since even the worst-case scenarios compared with the benchmark then start to look good (at least before costs).



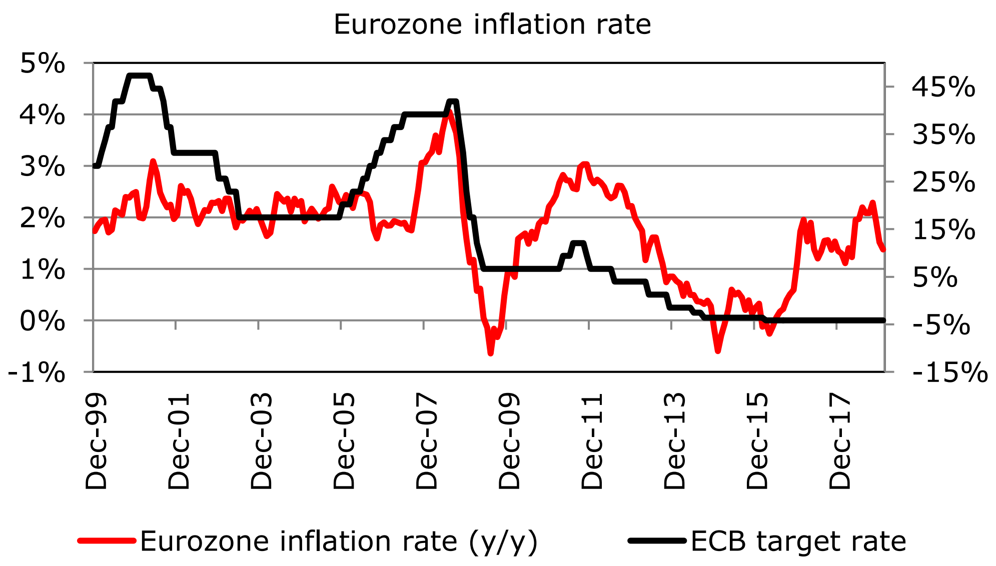
A portfolio with 100 or more stocks is a contradiction in itself for many actively oriented investors, who often assume that holding such a large number of stocks puts one so close to the benchmark that it can no longer be described as active management. That is definitely not the case, in our view. For, even a portfolio with 100 stocks can be structurally quite far from the benchmark and exhibit, e.g., large differences compared with the benchmark's country and sector weightings. And even if it is close to the benchmark, the individual stocks' weightings in the benchmark may diverge dramatically from those in the portfolio. Nevertheless, there is no compelling reason to work with such a high number of stocks. Even a portfolio with 50 stocks delivers roughly the desired effects and has the advantage for the investors of being a little easier to manage. On the other hand, a portfolio of 30 stocks runs the risk of falling significantly below the benchmark at times, even with a good selection mechanism. Long-term investors may find that tolerable. It is nevertheless advisable in active stock-picking, as elsewhere, to utilize the effects of diversification as far as seems possible in each instance.

Weekly Outlook for March 11-15, 2019

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Release
D: Industrial production, m/m	-0.1%	-0.7%	-1.3%	-0.4%	0.3%		March 11
D: Industrial production, y/y	-0.2%	0.6%	-4.0%	-4.0%	-3.5%		March 11
D: Exports, m/m	-0.3%	0.9%	-0.3%	1.5%	-0.2%		March 11
D: Exports, y/y	2.0%	3.3%	-0.1%	1.3%	1.5%		March 11
D: Imports, m/m	0.6%	0.8%	-1.3%	1.2%	0.3%		March 11
D: Imports, y/y	7.8%	7.0%	3.8%	4.0%	4.1%		March 11
D: Consumer prices, m/m - final	0.2%	0.2%	-0.7%	0.0%	-0.8%	0.5%	March 14
D: Consumer prices, y/y- final	1.9%	2.3%	2.1%	1.6%	1.4%	1.6%	March 14
E-19: Industrial production, m/m	-0.7%	0.1%	-1.7%	-0.9%	0.1%		March 13
E-19: Industrial production, y/y	0.6%	1.3%	-3.0%	-4.2%	-3.0%		March 13
E-19: Consumer prices, y/y - final	2.1%	2.3%	1.9%	1.5%	1.4%	1.5%	March 15
E-19: Core inflation rate, y/y - final	1.0%	1.2%	0.9%	0.9%	1.1%	1.0%	March 15

MMWB estimates in red

Chart of the Week: ECB announces new LTRO



The European Central Bank (ECB) today held its second monetary policy meeting this year. The central bankers convened against the backdrop of a flagging economy and declining core inflation. Economic activity is stagnant in large parts of the euro zone, and the core inflation rate recently fell to 1%. Consequently, market participants have been speculating about the possibility of a positive signal regarding the announcement of a new targeted long-term refinancing operation (TLTRO) and expecting a revision of growth forecasts. And that is what has happened. The ECB has corrected its growth forecasts significantly downward to 1.1% for 2019 (previously 1.7%) and 1.6% for 2020 (1.7%). It has also cut its inflation forecasts. It now expects 1.2% for 2019 (1.6%), 1.5% for 2020 (1.7%), and 1.6% for 2021 (1.8%). While reducing its growth forecasts, the ECB has announced new TLTROs, whose surprising aspects are size and maturity. It plans to offer the TLTRO already from September 2019 to March 2021. Its aim is to stimulate lending and ensure refinancing in the banking sector. This measure should especially benefit Italian banks and illustrates the ECB's concerns about a cooling economic trend. We can also see this in the ECB's unexpected announcement that it intends to keep its key interest rate unchanged at least until the end of the year. Before, that only extended to summer 2019.

Market Data Overview

Stock marktes	As of 08.03.2019 11:35	Change versus 01.03.2019 -1 week	07.02.2019 -1 month	07.12.2018 -3 months	07.03.2018 -1 year	31.12.2018 YTD
Dow Jones	25473	-2,1%	1,2%	4,4%	2,7%	9,2%
S&P 500	2749	-2,0%	1,6%	4,4%	0,8%	9,7%
Nasdaq	7421	-2,3%	1,8%	6,5%	0,3%	11,8%
DAX	11434	-1,4%	3,7%	6,0%	-6,6%	8,3%
MDAX	24285	-1,5%	3,4%	7,8%	-6,0%	12,5%
TecDAX	2610	-1,1%	2,9%	3,7%	0,6%	6,5%
EuroStoxx 50	3288	-0,7%	4,4%	7,5%	-2,6%	9,6%
Stoxx 50	3035	-0,1%	3,9%	7,3%	2,1%	10,0%
SMI (Swiss Market Index)	9276	-1,4%	2,7%	6,1%	5,6%	10,0%
Nikkei 225	21026	-2,7%	1,3%	-3,0%	-1,1%	5,1%
Brasilien BOVESPA	94340	-0,3%	-0,1%	7,1%	10,4%	7,3%
Russland RTS	1180	-0,7%	-1,7%	1,9%	-7,1%	10,6%
Indien BSE 30	36671	1,7%	-0,8%	2,8%	11,0%	1,7%
China Shanghai Composite	2970	-0,8%	13,4%	14,0%	-9,2%	19,1%
MSCI Welt (in €)	2061	-0,2%	2,9%	6,4%	7,9%	11,7%
MSCI Emerging Markets (in €)	1044	0,8%	1,3%	7,8%	-2,8%	10,3%
Bond markets						
Bund-Future	164,54	-68	-182	137	511	100
Bobl-Future	132,58	-9	-61	22	161	6
Schatz-Future	111,86	7	-5	-3	-11	-8
3 Monats Euribor	-0,31	0	0	1	2	0
3M Euribor Future, Dec 2017	-0,29	-5	-5	-10	-43	0
3 Monats $ Libor	2,59	0	-10	-18	54	-21
Fed Funds Future, Dec 2017	2,36	-6	-1	-21	-13	0
10 year US Treasuries	2,64	-12	-1	-21	-25	-5
10 year Bunds	0,06	-13	-6	-20	-61	-19
10 year JGB	-0,04	-2	-3	-9	-7	-4
10 year Swiss Government	-0,35	-5	-2	-21	-39	-11
US Treas 10Y Performance	587,45	1,1%	0,4%	3,2%	5,0%	1,2%
Bund 10Y Performance	641,57	1,2%	0,5%	2,4%	7,4%	2,3%
REX Performance Index	489,03	0,2%	-0,1%	0,3%	2,5%	0,3%
US mortgage rate	0,00	0	0	0	0	0
IBOXX AA, €	0,58	-9	-7	-31	-19	-29
IBOXX BBB, €	1,64	-7	-10	-47	26	-42
ML US High Yield	6,91	10	-15	-52	41	-110
JPM EMBI+, Index	825	-0,3%	-0,7%	5,1%	1,7%	4,3%
Convertible Bonds, Exane 25	7111	0,0%	1,0%	2,2%	-2,2%	3,2%
Commodities						
CRB Spot Index	413,56	0,0%	0,0%	-1,0%	-7,3%	1,1%
MG Base Metal Index	316,84	-1,5%	1,7%	3,8%	-9,3%	7,5%
Crude oil Brent	65,18	-0,1%	6,2%	3,5%	-0,2%	22,7%
Gold	1293,80	-0,8%	-1,3%	3,9%	-2,5%	1,0%
Silver	15,04	-1,8%	-4,2%	3,1%	-8,6%	-3,0%
Aluminium	1839,00	-3,0%	-1,7%	-5,7%	-11,4%	-1,3%
Copper	6460,00	-1,0%	3,7%	5,1%	-6,5%	8,6%
Iron ore	86,76	0,9%	-6,0%	30,0%	16,4%	25,4%
Freight rates Baltic Dry Index	657	-1,1%	7,7%	-52,1%	-44,8%	-48,3%
Currencies						
EUR/ USD	1,1212	-1,5%	-1,2%	-1,4%	-9,7%	-2,1%
EUR/ GBP	0,8571	-0,3%	-2,1%	-4,0%	-4,0%	-4,5%
EUR/ JPY	124,60	-2,2%	0,2%	-2,9%	-5,2%	-1,0%
EUR/ CHF	1,1320	-0,4%	-0,3%	0,2%	-3,0%	0,5%
USD/ CNY	6,7197	0,2%	-0,3%	-2,3%	6,3%	-2,3%
USD/ JPY	111,60	-0,3%	1,6%	-1,0%	5,2%	1,8%
USD/ GBP	0,76	1,3%	-0,8%	-2,5%	6,2%	-2,6%

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