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Stock picking in the US market and the effect of passive investments

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For Professional Investors Only

Introduction

Has stock picking in the US equity market become too complex that investors have finally decided to look at this asset class only through the lens of passive investment? This is a question that even the most successful stock pickers ask themselves, especially considering a recent appetite for passive investments from investors. According to Morningstar(Morningstar, 2019), for the first time passively managed US equity funds have caught up with actively managed ones, after a trend of eleven out of twelve years of outflows from active to passive funds. We do not plan to enter the debate of active versus passive approaches, which continues to rag on in the financial community and has raised questions from regulators. For this, there is extensive literature on the pros and cons of active versus passive approaches (see for example Sharpe (1991); Arnott and Darnell (2003); Woolley and Bird (2003); Stein (2003); Blitz (2014)).

Regulatory and international institutions have also looked at the rise of passive investments globally, from the point of view of systemic risk and effects on financial markets. For example, Anadu et al. (2018) explore the effect of ETFs on liquidity transformation, market volatility, asset management industry concentration and, finally, on valuation and co-movements. With a similar perspective, Sushko and Turner (2018) look at the effects of ETF on security prices as well as resilience of changes in fund flow dynamics. It is still not clear what the impact of this profound shift will be, and some recent research provides evidence that at least for now these effects are relatively limited. For instance, Easley et al. (2018) argue that *"... ETFs are not resulting in less active markets and that prices are not less informative. So, the informational concern regarding ETFs seems overblown..."*. Bhattacharya and O'Hara (2020) recognize that the use of ETFs emphasizes common factors within stocks and investors, which in turn could increase systematic risks or herding behaviour.

One of the critiques of the rise of passive investments is that it allegedly makes financial markets inherently inefficient. Indeed, according to the theory of *informed traders* (Grossman and Stiglitz, 1980), markets need informed active traders who convey costly and difficult -to- access information in the market, so that prices can reflect this information in the most efficient way. According to Wermers (2020) for example, active investment plays a role in the efficiency of small and mid-cap markets.

These are important questions for both investors and regulators as well as, more generally, market participants, and further research is needed to quantify the impacts and prevent a systemic risk to grow and go unchecked. A side effect of the rise of passive investments over the last fifteen years has been the almost equivalent outflows that active managers have experienced in the US equity market especially. Of course, this is true at the aggregate levels, and many successful active managers have indeed been able to attract investors and inflows. Nevertheless, it is not uncommon to hear traditional active managers point at fundamental changes in the market such as activity from central banks and the rise of passive investments, to explain the trends in investor flows.

But this is not what we see from the data. At least from a long-term point of view, the last ten years have not been substantially different from the previous four decades if we look at the dispersion of stock returns. Instead, we still see a significant proportion of stock price fluctuations unexplained by common factors. And this pattern is consistent with the past, where neither the action of central banks nor the rise of passive investments can be advocated as the reasons for disappointing results of stock picking strategies. Of course, we do not claim that nothing has changed in the last ten years. But the claim that stock picking suffered because of central banks or passive investments is not supported by the data. After the analysis on a macro level, we turn to the micro analysis and test the hypothesis that stock picking strategies may have lost some of their ability to outperform because the US equity market today requires a higher success rate compared to the past. Typically, stock picking strategies concentrate their active bets into few positions. To be successful then the strategy needs a relatively high success rate (i.e. the number of profitable active bets). So it may be possible that, while in the past success rates slightly above the base rate of 50% (which roughly correspond to randomly chosen stocks for the investment universe)[1] were enough to implement successful stock picking strategies, this is no longer the case. Somehow then, the market has become more challenging and requires extremely high success rates which are, of course, difficult to achieve over the years.

This is an objectively difficult claim to test because each stock picking strategy is somehow unique, and the process that takes place and ends with the implementation of the portfolio is extremely complex to model. Managers may use all sorts of data, information, analysis, experience and sentiment to determine which stock to invest in. Modelling such a complex process is not realistic, but with respect to our goal, it is enough to simplify the framework and understand the interplay between the few parameters that finally determine the effectiveness of any stock picking strategy: the success rate and conviction. We first show that with a decent success rate a basic stock picking strategy would be able to deliver significant and consistent outperformance in the last fifty years. The US equity market then did not require managers to be more successful of late than in the past.

To make our experiment more realistic, we also account for the variability of the success rates, trying to model the well-known natural cycle of success of stock picking managers. Even in this case we do not see evidence that the last ten years have been different from the past. For example, in the case of variable success rate over time, even an occasional low 30% success rate would have severely compromised the possibility of stock picking strategy to outperform. If on top of that one also includes transaction costs and management fees, the gap versus the benchmark starts to widen signifi-

cantly. Perhaps the most striking evidence is that in the decade between 2000 and 2010 low success rates were extremely penalizing, given the impact of two major financial events (dot-com bubble and GFC).

It is perfectly natural for stock picking strategies, even the most successful ones, to undergo a period of underperformance. But for the evidence that this research produced we do not see this as the result of external changes in the US equity markets. It is likely though that investors now have an easy-to-access and low-cost alternative to traditional stock picking strategies, and with more scrutiny on performances and fee pressure, active stock picking strategies find the environment more challenging. From this perspective then one can argue that the rise of passive investments is correlated to the disappointing performance of the (average) active stock picking strategy. Although there is little evidence that the shift toward passive investments has made stock picking more difficult, it remains a possibility that the disappointing (on average) performance of actively managed strategies has been indeed a factor behind it.

Data

We source stock prices and total returns from the CRSP/Compustat database, spanning the period January 1962 to February 2020. Unless specified otherwise, the investment universe (the *Benchmark*) is a capitalization weighted portfolio made of the largest 500 stocks in the US. Since July 1964, the investment universe has been reviewed quarterly at the end of January, April, July and October. The Benchmark is a proxy for the well-known S&P 500 Index. We also collect the gross total return index for the S&P 500 Index and the Fama-French total market factor MKT.

In this paper a *stock picking strategy* is a long-only equity strategy in the US market, whose goal is to select individual stocks and weight them to outperform the benchmark. We recognize that our definition is both very generic (apart from the benchmark itself, any portfolio can be thought as a stock picking strategy) and quite reductive (it does not include for example long-short or complex, hedge-fund like strategies). We shall mainly refer to strategies that are clearly marketed as such, typically highly concentrated and with a clear goal to outperform the benchmark from their ability to choose stocks. For this perspective we exclude those strategies that try instead to outperform the benchmark by tilting the portfolio towards well-known equity factors (such as value, momentum, low volatility or size) even if, technically speaking, they too would qualify as stock picking strategies (because their portfolios are made of active bets on single stocks, although typically more diversified).

Stock dispersion

There is a widespread belief that effective stock picking in the US has become extremely difficult over the last few years for stock picker managers. Many reasons have been put forward to explain this phenomenon: The action of central banks and liquidity; the rise of passive investments; the existence of common factors that move stocks in the same direction, reducing the ability of managers to implement efficient stock picking strategies. Especially with respect to the rise of passive investments, many managers and investors point to the fact that as more and more investments are redirected from actively managed funds to passive funds (ETFs and index tracking funds, the majority of them being cap-weighted), stocks tend to co-move, irrespective of fundamentals. While we agree in theory - if every investor would use index tracking funds and ETFs, stock prices would move with fund flows rather than with fundamentals and market expectations - in reality, the effect of passive investments (or other alleged causes, for that matter) are almost invisible from a long-term point of view.

To see if something has fundamentally changed in the US equity market, we look at the Ratio of Explained Variance - REV. This is the ratio of a stock return variance explained by a given factor model compared to the total stock return variance. In econometric analysis this is also known as the R^2. REV close to one would signal that the stock movements are well captured by the model, which in turns implies that the stock movements are driven by (few) factors. Low values for REV correspond instead to stocks that do not move in line with the model, since a large portion of the total variance is left unexplained. Of course, this can be due to poor model choice. In any case, for low values of REV, the idiosyncratic component of the stock return is very significant. In a CAPM-like framework, one has

$$REV^i = \beta_i^2 \frac{Var\left(R^{MKT}\right)}{Var\left(R^i\right)}$$

where R^i is the return of stock i, R^{MKT} is the return of the market and β is the CAPM beta, while in a multi-factor framework one obtains

$$REV^i = \frac{Var\left(\boldsymbol{\beta}' Factor\right)}{Var\left(R^i\right)}$$

In a market where stock REVs are all close or equal to one (assuming alphas are zero on average) stock picking would essentially be a bet on the market direction. Analysts usually look at stock return volatility dispersions (i.e. how spread out the single stock volatilities are around their average). While interesting per se, it does not necessarily give us guidance on whether high dispersion is the best environment for stock picking.

Indeed, high stock dispersion appears when markets are volatile, which clearly favour some type of stock picking strategies over others. If the rise of passive investments has significantly changed the landscape for stock picking strategies, then we should be able to see a clear break point in the historical REVs. To test this hypothesis, we look at stock REVs from the CAPM model where proxy the market factor with the S&P 500 Index. Exhibit 1 shows both the arithmetic and weighted averages REVs using market capitalizations.

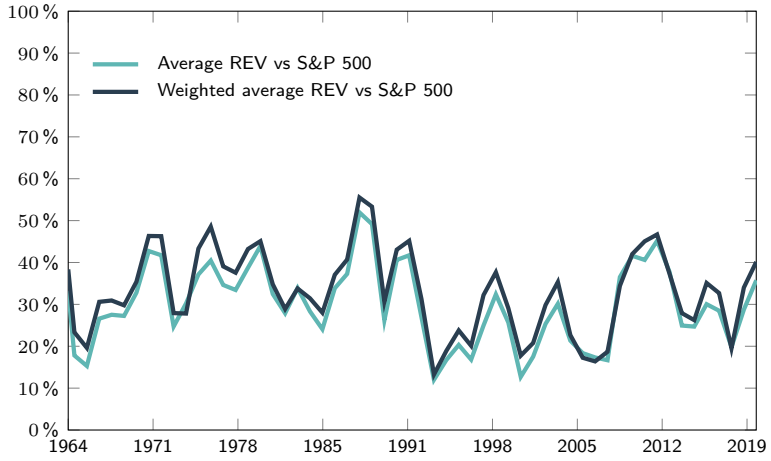


Exhibit 1: Cross sectional average and weighted average REV of the top 500 stock variance explained by the market factor, proxied by the index S&P 500 Index. Betas and variances are calculated over the previous 24 months.

We remark that the historical trend for both average lines is similar. They both moved in the range 10%-60% and, more importantly, we do not see any specific break in the last ten years, signalling that from the point of view of REV, the last ten years are perfectly in line with the previous forty years. REV picked in late 2012 at around 50% decreased to a low of 20% and back to 40% in the last 18 months. This movement is very similar to what happened for example between 1985 and 1989 or between 1993 and 1998.

The results are consistent with the set of stocks we consider in the analysis (Exhibit 2), to the proxy of the market factor (S&P 500 Index versus the Fama-French market factor, Exhibit 3-Left panel) or the price model (CAPM versus three-factor Fama-French model, Fama and French (1993) (1993) Exhibit 3-Right panel).

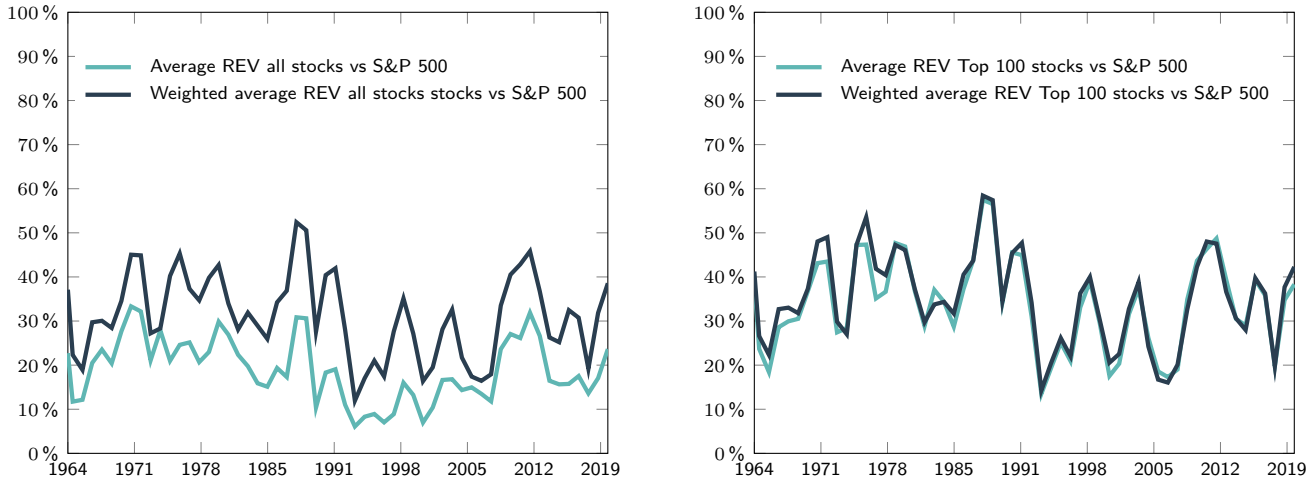


Exhibit 2: Cross sectional average and weighted average REV of all (Left) and top 100 (Right) US stock variance explained by the market factor, proxied by the index S&P 500 Index. Betas and variances are calculated over the previous 24 months.

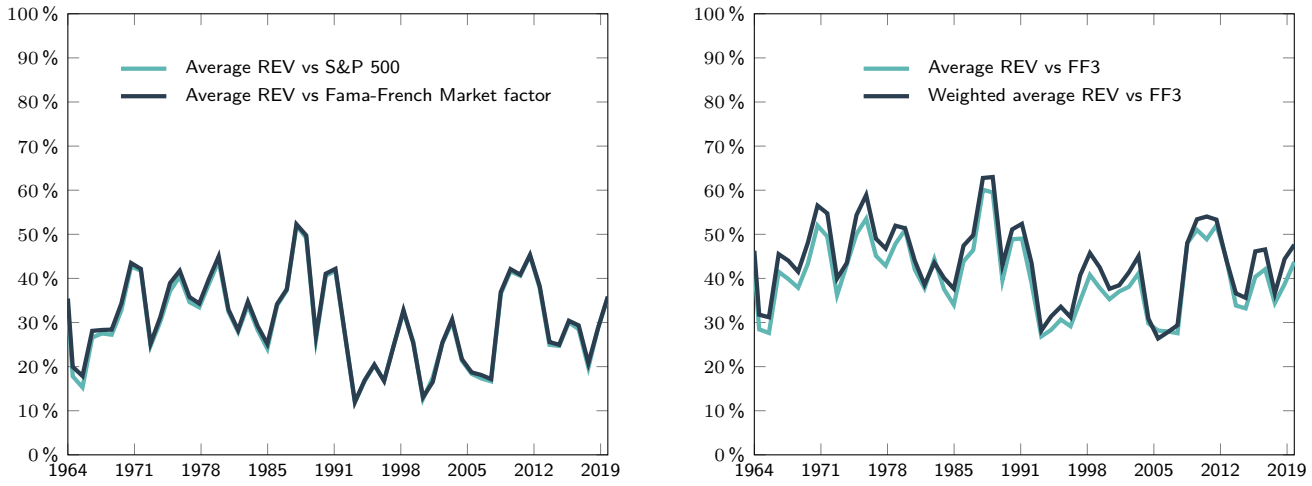


Exhibit 3: Left: Historical effect on REVs when using the S&P 500 Index and the Fama-French total market as proxies for the market factor. Right: Cross sectional average and weighted average REV of the top 500 stock variance explained by the three-factor Fama-French model (FF3). Betas and variances are calculated over the previous 24 months.

Finally, we look at the historical distribution of the covariance matrix eigenvalues to see if any noticeable pattern emerges. The left panel of Exhibit 4 shows the relative weight of the most significant eigenvalues (first one, three and five) while the right panel shows the historical inverse Herfindahl index of the normalized eigenvalues. The total contribution of the first eigenvalues, which drive the structure of the covariance matrix, has changed over time, with a minimum at 15% and a maximum of 50%, but no particular trend is visible, especially in the last decade. The behaviour is very much in line with the historical pattern, which signals that, from a structural point of view, the covariance matrix has been relatively consistent.

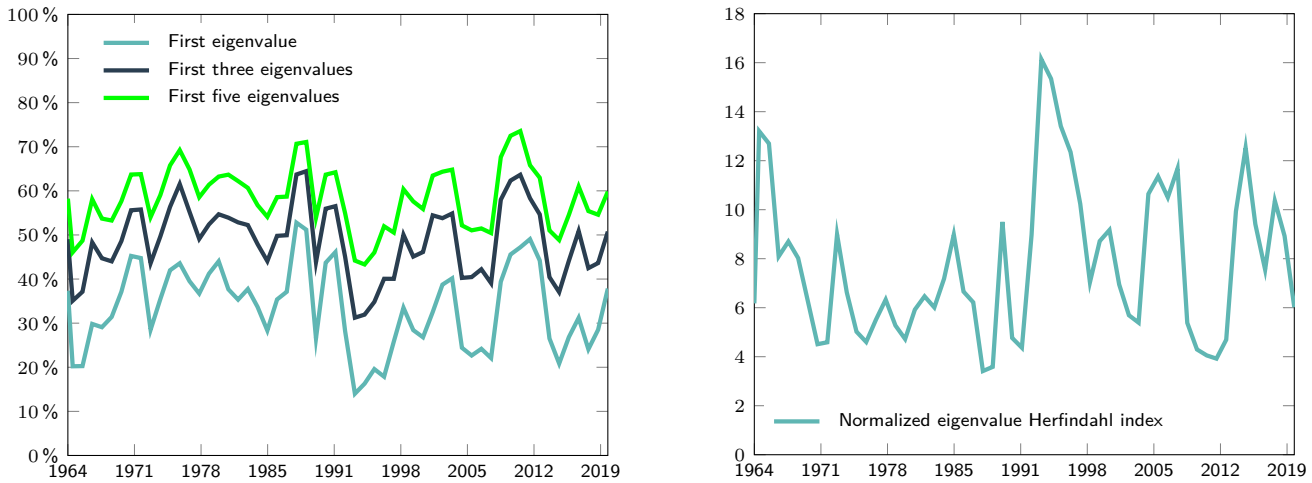


Exhibit 4: : Left: Historical proportion of the most significant eigenvalues. Right: Historical inverse Herfindahl values of normalized eigenvalues. Covariances are calculated over the previous 24 months.

To summarize, there is little evidence that the last ten years have been structurally different from the previous forty or so. This is not to say that the market today is behaving as it was forty years ago. But the assumption that stock prices move with global macro factors (central banks) or flows (passive investment), squeezing the space for effective stock picking hold little evidence.

If we can confidently exclude that the market has become more complex for stock picking, then the difficulties should lie in the ability of stock pickers to be regularly successful. We shall explore this in the next section.

Stock Picking

In this section we take a micro approach and look at the stock picking problem from the point of view of an individual manager. If we simplify to the maximum extent, we can reasonably assume that for a stock picking strategy to be effective, one needs

- A sufficiently high *Success Rate*
- Ability to act according to one's own beliefs (*Conviction*)
- Consistency over time (*Consistency*)

Stock picking strategies are effective when they select and overweight (avoid or underweight) stocks that will outperform (underperform) the market on average. And in doing so, one should be more right than wrong. The success rate is then a proxy for the ability of a manager to distinguish between opportunities and risks, while the conviction measures by how much a manager can tilt the portfolio away from the benchmark. Finally, consistency measures the ability of a manager to be repeatedly successful over time.

Our goal is to test whether the success rates in the past forty years are no longer sufficient for stock picking strategies to deliver strong results. More precisely, do stock picking strategies need to achieve higher success rates compared to the past, to outperform the benchmark? If this were true, then we could argue that the market has indeed become more challenging. It is difficult to achieve and sustain high success rates over time.

Designing such a test is extremely complex because we do not know how stock pickers came up with their investment decisions. They use many different sources of information, data and analysis, as well as experience and intuition, all of which are objectively difficult to model. Furthermore, the great diversity in stock picking strategies makes modelling even superfluous, as we would in theory need a model for each one of them. Therefore, we change the perspective of the problem and focus on the three common characteristics of a stock picking strategy: Success rate, conviction and consistency. More precisely, we try to assess whether reasonable values for these characteristics proved to be effective in the past but not anymore. If this is true, we would know that stock picking has become more challenging in the last ten years since what in the past was enough to outperform no longer is. The formal definition of the success rate for a given strategy is:

$$SR(w) := \frac{1}{n} \# \left\{ \left(w_i - w_i^B \right) \left(r_i - r^B \right) > 0 \right\}$$

where n is the size of the investment universe, w^B denotes the weights in the benchmark, r^B is total return and r is the return of each individual stock. We can reasonably assume that the base success rate is 50%, which usually corresponds to select stocks randomly from the investment universe. The success rate SR does not consider the magnitude of the excess return $r - r^B$.

The *conviction* translates the willingness of a stock picker to implement large tilts $w - w^B$ whenever she has a strong belief to do so. Because individual stock pickers may use diverse sources of information and may carry over different beliefs, we model the base strategy with random tilts, above and below, the benchmark weight:

$$w = w^B * (1 + tilt), \qquad tilt \sim U(-b, b)$$

where $b > 0$ is the amplitude of the tilts. In the rest of the paper we shall set $b = 50\%$. Of course, this is not to say that individual stock pickers build their portfolios by randomly tilting stock weights. Instead, we assume randomness in the tilts to model the large diversity of stock picking strategies. To embed the success rate SR in the portfolio construction, the most delicate part of our design, we nudge each individual tilt up (or down) to match a given SR rate.

More precisely, on a quarterly basis:

- Select, randomly, $SR * n$ stocks in the investment universe. These are the stocks for which the base stock picking strategy will be successful at determining if they are opportunities or risks.

- Among these $SR * n$ stocks, we shift rightward the (random) tilt if these stocks will outperform the benchmark in the next period:

$$w = w^B * (1 + tilt), \qquad tilt \sim U\left(-b + nudge, b + nudge\right), \text{ if } r_i > r^B$$

where $nudge > 0$ is a given parameter. We shift instead leftward the (random) tilt is the stocks underperform:

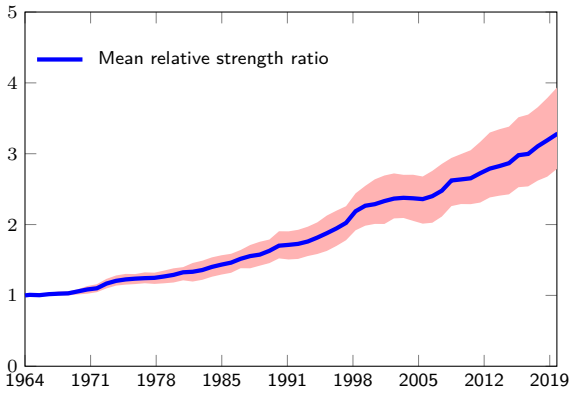
$$w = w^B * (1 + tilt), \qquad tilt \sim U\left(-b - nudge, b - nudge\right), \text{ if } r_i < r^B$$

- For the remaining $(1 - SR) * n$ stocks the base strategy has not been successful, so the shifts are done in the inverse order: Rightward for underperforming stocks and leftward for outperforming stocks. The strategy tends to overweight underperforming stocks and underweight outperforming stocks when unsuccessful.

It is important to note that this strategy cannot be implemented in practice, because to match the desired success rate we are looking into the future and nudge the base strategy tilts in the right (or wrong) direction. However, this is not necessarily a significant drawback from the point of view of our test. Indeed, our goal is to see if in the last ten years the market has required higher success rates or higher conviction from stock picking strategies to be effective. Therefore, the objective is not to compare total returns, but rather excess return over the benchmark, for a given success rate, in the last ten years and compare it with the excess returns in the previous decades.

We assume that the success rate SR is 54% and nudge=1. More precisely, for successful trades, if the strategy is nudged up (i.e. the stock will outperform), it will overweight the stock with a tilt over the benchmark in the range $[0.5, 1.5]$. For example, if the stock represents 1% in the benchmark, the strategy will invest with a weight (randomly chosen) between 1.5% and 2.5%. Similarly, if the strategy is nudged down, it will tilt downward by a (random) tilt in the interval $[-1.5, -0.5]$.

We further assume that the manager does not take short positions, that the maximum weight is capped at 10% and s tocks whose weight is below 0.25% are removed, the remaining weight being redistributed proportionally to the remaining stocks. We run Monte-Carlo simulations across 500 trajectories over the period July 1964 to February 2020. The results are collected in Exhibit 5.



	Benchmark	Mean Portfolio	Pct 10	Pct 90
Ann. Performance (%)	9.57	11.94	11.61	12.31
Ann. Volatility (%)	15.88	16.44	16.56	16.39
Excess Performance (%)	-	2.37	2.04	2.74
Performance/Volatility	0.6	0.73	0.7	0.75
Beta	1	1.03	1.03	1.02
Alpha (%)	-	2.08*	1.75*	2.55*
Tracking Error (%)	-	1.96	2.38	2.14
Information Ratio	-	1.21	0.86	1.28
Ann. performance by decade in % for the benchmark		Excess return		
1964-1970	5.53	1.32	0.39	2.03
1971-1980	7.31	2.19	1.83	2.3
1981-1990	14.05	2.88	2.62	3.57
1991-2000	17.17	3.52	3.29	3.87
2001-2010	1.76	1.52	1.33	1.48
2011-2020	11.04	2.64	2.47	3.19

Exhibit 5: The relative strength ratio averaged across simulation and the 10th-90th confidence interval. Success rate = 54%, Tilt 50% up and down. Nudge=1. Stars refer to statistically significant alphas.

The stock picking base strategy averaged over simulations (Mean Portfolio) would have delivered an annualized return of 11.94% versus 9.57% for the benchmark, leading to 2.37% excess return. With very similar volatility and beta, the Mean Portfolio would have achieved an annualized and statistically significant alpha of 2.08%. On the left chart of Exhibit 5 we plot the relative strength averaged across simulations and their 10th-90th percentile confidence intervals. A rising ratio signals outperformance of the strategy over the benchmark.

The bottom of the table in Exhibit 5 contains decade-by-decade annualized excess returns over the benchmark, which allow us to see the impact of both the success rate and the nudge over time. In the first two decades (1964- 1970 and 1970- 1980), the excess return between the Mean Portfolio and the benchmark has been 1.32% and 2.19%. It was up to 2.88% and 3.52% in the next two decades ending in 2000, down to 1.52% in the decade 2000- 2010 and it has finally picked up to 2.64% in the last decade ending in February 2020.

The conclusion here is straightforward: For a stock picking strategy with a decent success rate (54%, given the base rate of 50%) and the ability to implement according to its own beliefs (nudge = 1) the excess return would have been relatively consistent over the last five decades. We are aware that realistic stock picking strategies are more complex than the ones we modelled. Moreover, managers cannot foresee the future and need therefore to rely only on their own stock return expectations. Nevertheless, this simplified test shows that it would have been possible to implement effective stock picking strategies and deliver consistent excess returns, if only one can show a decent success rate and the conviction to act.

At least from this perspective, we do not find evidence that the US equity market has become more challenging in a way that success rates, as managers had to in the past, are no longer sufficient. This is not to say that designing and implementing effective stock picking strategies is simple. On the contrary, it was and remains a difficult task. But it is as difficult today as it was in the past.

Our results so far offer evidence that the possibility of stock picking strategies to deliver robust results remains intact. Common factors still leave plenty of room for stock pickers to choose successful companies and, given a decent success rate as well as the ability to tilt away from the benchmark, the US equity market still offers potential for higher performance.

It is obviously unrealistic to assume that managers show a constant success rate since we know that any strategy goes through periods of higher and lower success rates. To make our test more realistic, we shall then introduce a time-varying component in the success rate. We decided to model it as a three-state process representing a high, average and low success rate. More precisely, we set

$$SR = \begin{cases} h & \text{probability } p_h \\ m & \text{probability } p_m \\ l & \text{probability } p_l \end{cases}$$

where of course $p_h + p_m + p_l = 1$ and $0 \leq l < m < h \leq 1$.

The goal here is to test whether a stock picking strategy that is too often unsuccessful (p_l is high) or when unsuccessful, it is very much so (l is very low), or both, is the reason why stock picking can severely underperform. For our test we chose m=54% as in our base scenario in Exhibit 5, we set l=35% and h = 60%. The choice of the triplet (p_l, p_m, p_h) is key to model the consistency of a stock picking strategy over time. We test the following portfolios:

- $Static$: This corresponds to the triplet $(0, 1, 0)$.
  This is the strategy tested in Exhibit 5, where $SR = 54\%$ all the time.

- $3/5/2$: This corresponds to the triplet $(30\%, 50\%, 20\%)$. This portfolio represents a stock picking strategy that is successful at 54% half of the time, that is only 35% successful for 30% of the time and very successful at 60% only 20% of the time.

- $2/6/2$: Similarly, this corresponds to triplet $(20\%, 60\%, 20\%)$.

- $1/7/2$: Similarly, this corresponds to triplet $(10\%, 70\%, 20\%)$.

Exhibits 6–7 show the average stock picking strategies with dynamic success rates and their 10th-90th confidence intervals. The first result we obtain from this simulation is that the portfolio $3/5/2$ underperforms the benchmark (since the average relative strength ratio finishes below 1 together with its 10th-90th confidence interval). Moreover, the underperformance seems to accelerate in the last 15 years. The portfolio $2/6/2$ finishes in line with the benchmark, but the confidence interval is quite large.

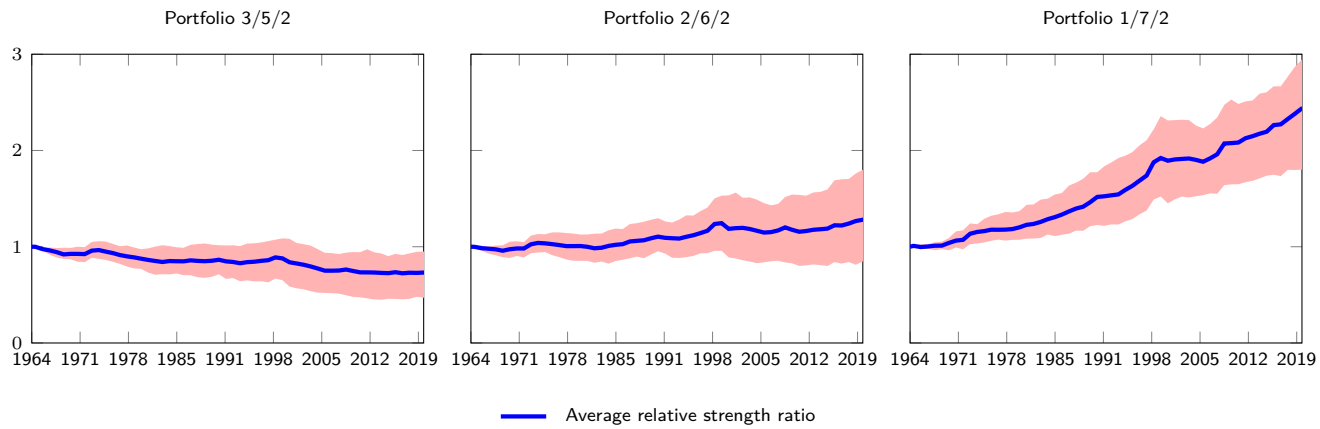


Exhibit 6: The relative strength ratio averaged across simulation and the 10th-90th confidence interval for the three portfolios with time-varying success rates. Tilt 50% up and down. Nudge=1.

On average, a strategy that is unsuccessful 30% of the time ($3/5/2$) underperforms the benchmark (8.96% versus 9.57%). And even the version $2/6/2$, which is successful 8 out of 10 times, is just slightly above the benchmark (10.06% versus 9.57%). Given the statistical errors in these numbers, it is fair to assume that both versions fail to outperform the benchmark. Only the $1/7/2$ version seems to deliver substantial outperformance.

		Mean Portfolio			
	Benchmark	Static	3/5/2	2/6/2	1/7/2
Ann. Performance (%)	9.57	11.94	8.96	10.06	11.35
Ann. Volatility (%)	15.88	16.44	16.04	16.24	16.47
Excess Performance (%)	-	2.37	-0.61	0.49	1.78
Perf./Vol.	0.6	0.73	0.56	0.62	0.69
Beta	1	1.03	1.00	1.01	1.03
Alpha (%)	-	2.08*	-0.61*	0.39*	1.49*
Tracking Error (%)	-	1.96	1.72	1.97	1.96
Information Ratio	-	1.21	-0.35	0.25	0.91
Ann. performance by decade in % for the benchmark		Excess return			
1964-1970	5.53	1.32	-1.25	-0.29	1.01
1971-1980	7.31	2.19	-0.75	0.19	1.55
1981-1990	14.05	2.88	0.03	1.15	2.44
1991-2000	17.17	3.52	-0.36	0.83	2.62
2001-2010	1.76	1.52	-1.35	-0.26	0.97
2011-2020	11.04	2.64	-0.03	1.28	1.97

Exhibit 7: Key performance indicators for the three portfolios with time-varying success rates. Tilt 50% up and down. Nudge=1.

The gaps in performance each decade between the benchmark and the $3/5/2$ strategy do not seem to worsen in the more recent years. The decade 2000- 2010 was particularly bad, most likely because of the dot-com bubble burst and the GFC — certainly not ideal — and the final annualized underperformance is an annualized -1.35%. Recently though we do not see a significant underperformance compared to the benchmark: Since 2010 the $3/5/2$ portfolio would have, on average, underperformed by a small 0.03%. Our results confirm the findings in Kacperczyk et al. (2014) for which stock picking is found to be more effective during booming market regimes.

Even if we need to carefully consider the statistical error associated with Monte Carlo simulations, it is particularly striking to observe that even in a simplified framework such as ours, by being unsuccessful in a period with two major events (dot-com bubble burst and GFC) has been extremely costly for stock picking strategies. But even in a relatively favourable configuration, the $3/5/2$ delivers quite disappointing results. After all, this portfolio has a quite high success rate at 70% of the time (50% the average SR and 20% the above-average SR). Nevertheless, this is not enough to deliver consistent outperformance. If one also adds typical management fees, we end up with an investment opportunity that consistently underperforms the benchmark, even though the overall success rate is more than decent.

For the portfolio $2/6/2$ the decade between 2000 and 2010 was not great, even if it managed to be only 0.26% below the benchmark. But it delivered an annualized 1.28% outperformance over the benchmark in the last decade.

Discussion

In this paper we strove to provide evidence about the alleged structural changes in the US equity markets that have dramatically reduced the potential for stock picking strategies to work.

In the first part of our study, we designed a simple test that looks, from a macro point of view, at potential common factors that would drive stock prices synchronously. The results are very robust and reject the claim that something structural has changed in the US equity market in the last ten years (allegedly as consequence of the action of central banks, liquidity or the rise of passive investments) which in turn has made stock picking more challenging. We do not claim that the market today is as it was forty years ago. Nevertheless, if the potential stock picking is high when the idiosyncratic component of stock returns is high, then the situation today is in line with the pattern we have seen since 1964. If one agrees that the US market today offers as many opportunities for stock picking as it did in the past, then the issue may be related to the effectiveness of stock picking strategies themselves. Therefore, we changed the perspective and looked at the problem from the point of view of a stock picking manager. We identified three basic characteristics of stock picking strategies (success rate, conviction and consistency) and investigated whether the market has changed in a way that what used to work in the past is no longer working. We focused on the role played by the success rate of stock picking. For this, we designed a test that reveals how a decent success rate would have delivered solid results over time, both in the last ten years and in the previous forty. With all the limitations of such a test, we can at least draw the conclusion that with a decent success rate stock picking strategies would have delivered outperformance.

When we embed a time-dependent component in the success rate we start to see how even overall successful stock picking strategies fail to outperform the benchmark. And the effect is particularly true in the decades starting from 2000 forward, characterized by at least two major financial crises (dot-com bubble burst and GFC).

In our view, even successful stock picking strategies undergo periods of underperformance (like our strategy 3/5/2). But the difference between forty years ago and today is that investors can now have access to passive and low-cost investment vehicles. This in turn increases pressure for stock picking strategies to deliver. But to do so, one needs to increase her own success rate, especially during financial events, when wrong choices are costly, which is objectively a difficult thing to do. On the other hand , greater competition and ease to trade has made investors eager to revisit their choice of manager (overall a positive thing) but also to chase past winners (see, e.g., Malkiel (1995); Carhart (1997); Jain and Wu (2000); Wilcox (2003); Weiss-Cohen et al. (2019); Ferguson et al. (2018)).

One potential side effect is the concern about closet indexing. As we have seen, for a stock picking strategy to be effective, one must show high success rates consistently over time, and some degree of conviction. But this can be a double-edged- sword since high conviction can amplify unsuccessful trades. To limit these effects, some strategies do not deviate much from their benchmark and in the end are closer to an index-tracking investment strategy. There is extensive literature on these topics as well as regulatory concerns (see, e.g. Taylor (2004); Cremers et al. (2016); Petajisto (2013); Cremerst and Curtis (2016)).

On the positive side, the great competition that passive investments have brought to the industry, including the hybrid active-passive approaches (active in the conception and deviations from the benchmark, passive as usually implemented through factor or smart beta indices) has increased the choice for investors.

Some managers recognize this and have rightly started to embrace new technologies, new data, alternative ways of building portfolios and other tools that should, in theory, increase their success rate.

Notes

[1]This is not necessarily true in theory because the benchmark is weighted by market capitalization and few stocks could dominate the total benchmark performance. In practice though even the simplest strategies to split the investment universe, such as looking at past performances as a guide of future performances, yield success rates very close to 50%.

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