Shiller Barclays CAPE® US Sector Value: A switching strategy between Value and Growth

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Abstract: As investors starts to reposition their portfolio for a potential reawakening of the Value factor in the US, we explore the possibility of implementing such Growth/Value switching strategy and the difficulties to do it correctly by "getting the timing right". We show how the Shiller Barclays CAPE® US Sector Value strategy provides an interesting alternative for investors who want to capture the potential switch between the two factors.

Over the last 20 years, the Value factor in the US equity market, especially its large cap segment, has significantly underperformed the Growth factor to the extent that investors wonder whether value investing has lost its appeal. Most of the gap in performances is due to the tremendous rise of large technological companies. Focusing on 2020, with large section of our economies shut down, the gap between Value and Growth has widened even more (+33% for the S&P 500 Growth NR Index, while the S&P 500 Value NR Index retuned 0.5% and the S&P 500 NR Index 17.75%).

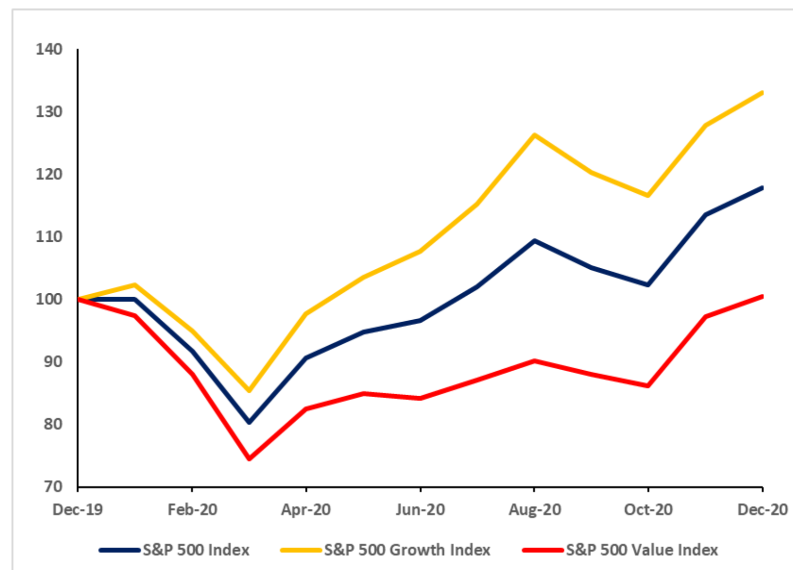

Figure 1: Source: S&P. Data from Dec 2019 to Dec 2020. Calculation in USD.
Base = 100 as of Dec 2019. Indices are Net Returns.

But as investors prepare for the after COVID-19, there is a case to be made for Value stocks and their recovery. If such a scenario will materialize in the months to come, it would be reasonable to expect investors to rotate into Value. The main challenge though is the timing. Getting the timing right when rotating towards Value is key if the recovery of the factor, especially compared to Growth, is fast but short-lived, as it has been in the past.

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In a recent paper (De Franco, 2019) we showed how the Shiller Barclays CAPE® US TR Index (hereafter *Shiller CAPE Strategy*, BXIICUGU Index), a sector rotation strategy that selects US sectors based on their relative valuations, measured by Professor Shiller's CAPE Ratio, offers a valid alternative for investors who want to gain exposure to both growth and value factors. More precisely, we observed that when Growth outperforms Value, the Shiller CAPE Strategy

outperformed Growth (hence Value) while in regimes where Value beats Growth, the Shiller CAPE strategy outperformed Value, hence Growth, over the period under review.

The *Shiller CAPE Strategy* would therefore be an interesting alternative to a more discretionary switching strategy between Growth and Value. Of course, there could be many ways to design and implement a switching strategy between the two factors and comparing all these potential approaches with the *Shiller CAPE Strategy* would be impossible. So instead, we change the problem perspective, and try to answer:

How good should a switching strategy be to beat the *Shiller CAPE Strategy*?

For this we look at the methodology developed in De Franco (2020), to design a theoretical investment process that integrates success rates (e. g. the ability to correctly forecast whether Value outperforms Growth at a given horizon) and the conviction (e. g. the ability to invest accordingly to one's own forecasts, in a concentrated way). More precisely, we assume that a manager is performing the Value-Growth switching strategy as following:

At each rebalancing date (quarterly), the manager invests into the S&P 500 Growth Index and the S&P 500 Value Index according to a) previous data and b) her return expectations for both factors, where of course the forecasts come with uncertainty. More precisely, the weight of the Value factor in the portfolio will be given by:

$$\begin{cases} 1 \;\; if \;\; P(Value \; will \; outperform \; Growth) > 50\% \\ 0 \; if \;\; P(Value \; will \; outperform \; Growth) \leq \; 50\% \end{cases}$$

The manager forecasts the gap between Value and Growth at a given horizon (in this analysis 3 months) and will allocate on Value accordingly. We model the probability that the manager's forecast is correct with her success rate (*SR*). More specifically, the base scenario is the one where the manager assign probability = 1 if Value has recently outperformed Growth, and probability = 0 otherwise (a simple trend following strategy). But the manager can adjust her forecasts based on her skills and knowledge. To model this, we assume that with probability = *SR*, the manager "gets to see the future" and then adjust her forecast accordingly. But with probability = *1 – SR*, the manager will not be shown "the future", so she will have to trade only based on past trends in both factors.

Let us assume that the manager has a success rate *SR* = 0. This means that the manager will allocate to the Value factor if it has outperformed the growth factor over the recent past; she will otherwise allocate to Growth. We have here a pure trend-following strategy. If *SR* = 1, the manager is always able to foresee the future and she will allocate to the best between the two factors in the next periods.

Although nobody gets to see the future when implementing an investment strategy, this simple approach allows us to model the complex behaviour related to active decisions, whose efficiency and ability to forecast the future are variable and precise if the manager is skilled.

Measuring how good a manager should be in switching between Value and Growth to outperform the *Shiller CAPE Strategy* is equivalent to assess how high should SR be to achieve superior returns. Luckily, we can test this model on historical data.

For this, we collect net return data on the S&P 500 Index, the two Value and Growth indices, and the *Shiller CAPE Strategy*. To have the longest possible time series, we complete the Net Return indices, when unavailable, with a combination of Price and Total Return times series,

adjusted for 30% withholding tax. For the Shiller CAPE Strategy, we complete the historical index (which starts in September 2002), with a research backtest back to June 1995[1].

Table 1 shows basic indicators for the two factor indices, the benchmark and the *Shiller CAPE Strategy*.

	S&P 500 Index	Shiller CAPE Strategy	S&P 500 Growth Index	S&P 500 Value Index
Performance	9.19%	14.33%	10.35%	7.44%
Volatility	15.21%	14.40%	16.36%	15.39%
Max. Drawdown	-51.44%	-38.82%	-58.01%	-57.53%
Perf/Vol	0.60	0.99	0.63	0.48
Alpha	0.00%	6.50%	0.82%	-1.44%

Table 1 : Key performance indicators. Data from September 1995 to January 2021 in USD. Source S&P, Barclays. Past performance is not a reliable indicator of future performance.

Over the period September 1995 to January 2021, the S&P 500 Growth Index outperformed the Value index by ~3% annualized. Over the same period, the Shiller CAPE Strategy returned ~4% more than the Growth Index (+14.33% vs 10.35%).

But what would our hypothetical manager retuned, were she successful enough to switch between Value and Growth at the same time? We test our model using Montecarlo simulations and the SR parameter spanning between 0 and 1. The results are shown in Figure 2.

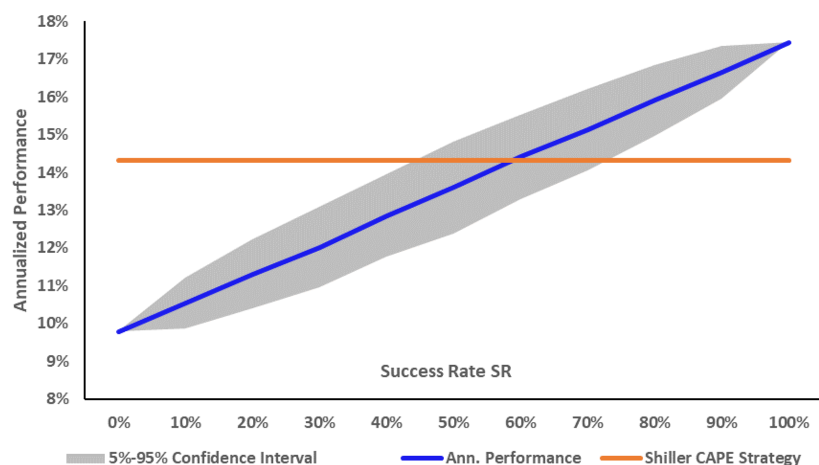

Figure 2 : Annualized performances and 5%-95% confidence interval for hypothetical switching strategies with different success rates. Data from September 1995 to January 2021 in USD. Source S&P, Barclays. Past performance is not a reliable indicator of future performance.

Very interestingly, at ~60% success rate, the switching strategy would give an annualized performance very close to the Shiller CAPE Strategy. To have a high probability that the optimal switching strategy between Value and Growth will outperform the Shiller CAPE Strategy, one would need to have SR = 70%, which is very unlikely to achieve over long period of time. SR = 70% means that in 7 out of 10 occasions, the manager is able to correctly forecast whether over the next three months Value will outperform Growth and trade accordingly. Usually, skilled managers achieve SR around 55% (Shaikh (2019)). SR = 50% is instead equivalent to randomly guessing which factor will outperform.

It should also be noted that in our toy model, we considered a strategy that would switch completely between Value and Growth. Realistically, investors would not switch entirely between their Value and Growth. They would rather adjust their allocation to overweight/underweight the two factors around a given allocation (for example 50%-50%). But as soon as the manager starts to diversify and implement a portfolio that differs from the full

[1] Source: Barclays, S&P in USD.

Value/full Growth ones, she will have to attain highly unlikely success rates to be able to outperform the Shiller Cape Strategy. This is shown in Figure 3.

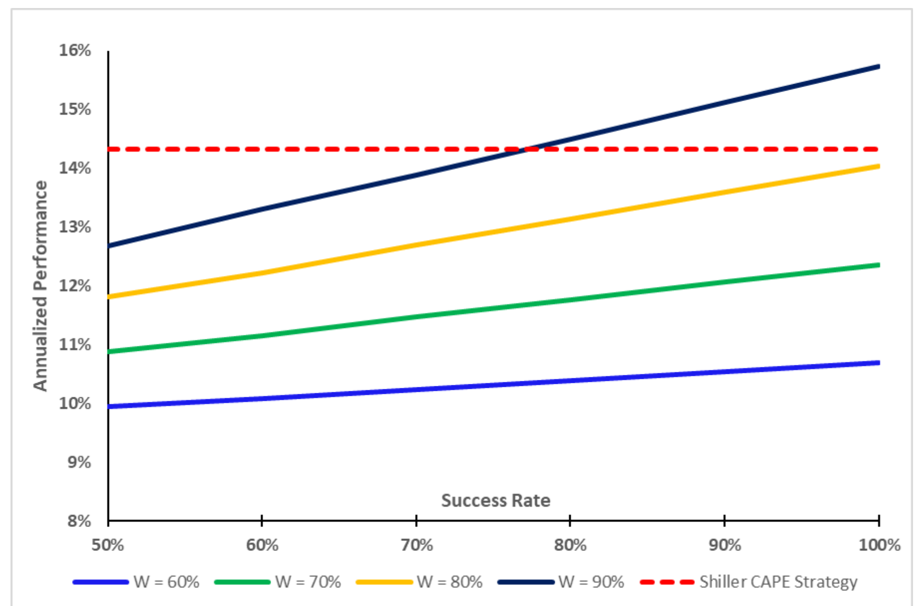

Figure 3: Annualized performances for hypothetical switching strategies with different success rates (SR between 50% and 100%) and different allocation weight to the factor that is expected to outperform (Weight = 60% up to W = 100%). Data from September 1995 to January 2021 in USD. Source S&P, Barclays. Past performance is not a reliable indicator of future performance.

We see for example that if the manager is only willing to build Value/Growth portfolios with a [80%, 20%] allocation (80% to the expected winning portfolio), the orange line in the chart, then she will have to be almost 100% correct in her forecasts, to be able to match the performance of the Shiller CAPE Strategy. Already for a manager that implements [70%,30%] portfolios (the green line), it will be impossible to match that performance, no matter how good she is in forecasting.

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Within our simplified framework it is possible to assess the difficulty to deliver robust performance from optimal switching strategies between Value and Growth. For this to work, a manager must have an extremely unlikely high success rate (e. g. the ability to correctly forecast which of the two factors will outperform over the next quarter). Obviously, this does not mean that it is impossible, and our framework does not cover the cases where the manager complements its Value/Growth switching strategy with a stock picking component (so selecting fewer stocks with greater potential). But it remains clear that for investors only willing to modify their overall allocation between Growth and Value, getting the timing right is the most important thing, which, as we know, is not straightforward. Therefore, the Shiller CAPE Strategy, which naturally switches between value and growth, at least from a performance perspective, represents a valid alternative for investors looking to repositioning their portfolio for a reawakening of Value after years of underperformance.

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