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How justified are the record P/E spreads in equity markets?

Fabian Scheler, CFA, FDP[1,2]

[1]*Amadeus Capital SA* [2]*Amadeus Quantamental SARL*

- The outperformance of quality and growth stocks has not been carried by operating performance alone.
- Studying valuation decile breakpoints, we show that more 'expensive' stocks have experienced a dramatic expansion while 'cheaper' corners of the market are as cheap as ever.
- A DCF based analysis shows that falling interest rates and convexity likely explain this phenomenon surprisingly well.
- However, we do not believe that the current level of valuation dispersion is sustainable and are increasingly concerned about it.

December 7, 2021

Late last month, we published an article discussing the relationship between the relative performance of 'cheap' value stocks, interest rates, and inflation. As outlined in this publication, we find only a weak link between value's performance and these factors. However, we notice that over the past decade, dispersion of Price/Earnings Multiples has risen to record levels, and falling rates may have contributed to this.

1 Cheap stays cheap; expensive gets more expensive

Following last year's dramatic slump, equity markets have rebounded at record speed. This has been supported by solid fundamentals, namely a sharp rebound in revenues and profits. Nevertheless, stellar margins

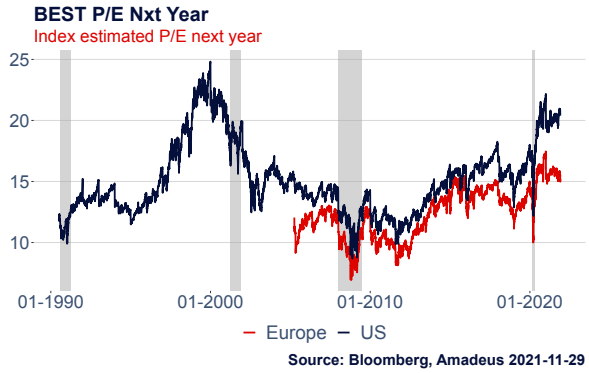

Figure 1: *Aggregate P/E Ratios*

and sparkling balance sheets explain only a part of the story. As Figure 1 illustrates, markets, especially in the US, have also been helped by a substantial degree of multiples expansion. Historically high valuation multiples on top of high margins and solid revenue growth rates have been a matter of concern for years, and we do not intend to join the choir of perma-bears here, calling for the next crash. However, we find it noteworthy that the smooth recovery of the broad equity market hides a dramatic and still increasing dispersion under the surface. Therefore, we ran a couple of factor backtests on stocks included in the S&P 500 and the STOXX 600 index and analyzed the breakpoints between valuation deciles. Figure 2 illustrates the development of the difference in forward Price/Earnings (P/E) multiples between the decile of stocks trading at the highest multiples and the decile trading at the lowest multiples. It thus compares the cheapest of the 10% most expensive stocks with the most expensive of the 10% cheapest stocks. This spread previously reached a

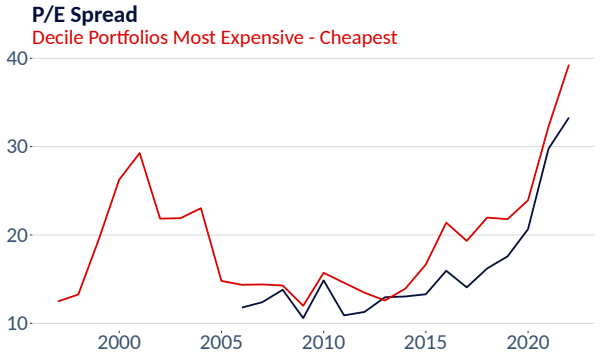

Figure 2: *Intra-Market Bloomberg Consensus Estimates (BEST) P/E Spread*

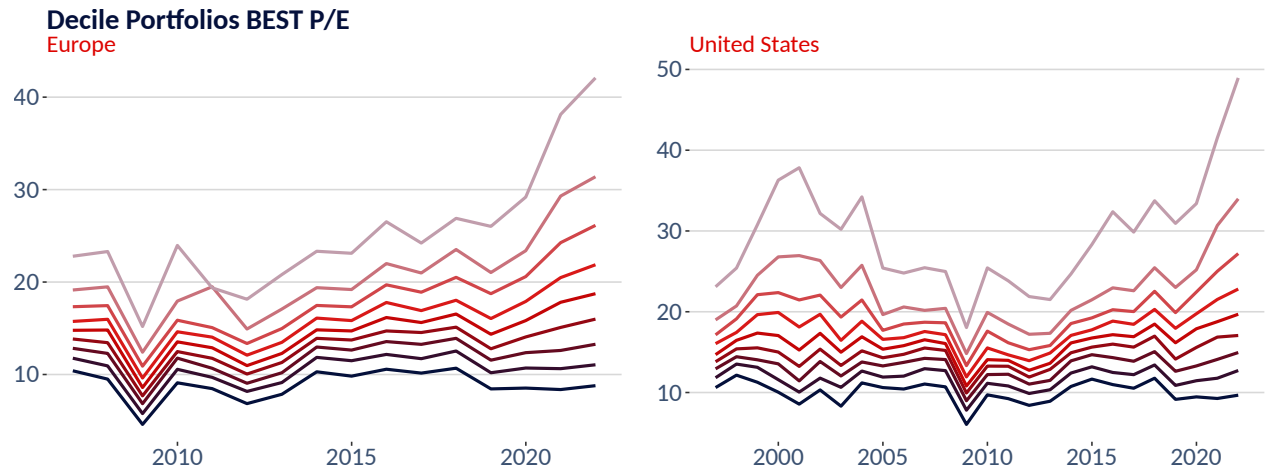

Figure 3: *BEST P/E Breakpoints Decile Portfolios*

high during the Dotcom bubble but has risen rapidly and at increasing speed since around 2012. In 2020 it finally set a new record, and the valuation gap between the highest priced and the cheapest stocks is now clearly above the levels observed in 2000. As Figure 3 shows, this growing dispersion has been driven by increasing valuation multiples among the more expensive firms. In contrast, P/E multiples paid for the 'cheapest' firms have barely changed over the past decade. Anecdotal evidence (#Tesla) and the substantial underperformance of the value factor in recent years let us suspect something like this. However, the magnitude of the dispersion still came as a surprise, and it shows that the phenomenon is not just driven by a handful of 'superstar' firms but pretty broad-based. As

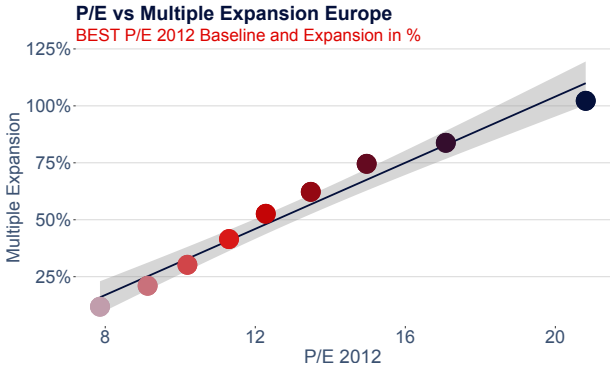

Figure 4: *2012 P/E vs Multiple Expansion 2012-2021*

Figure 4 shows, there has been a near-perfect correlation between 2012 breakpoint levels and multiple expansion since then. In other words, the 'cheapest' corners of the market are still as cheap as a decade ago, while the prices investors are paying for the most 'expensive' firms have risen by 100%. We also note that there is little difference between the U.S. and Europe concerning this phenomenon. In fact, valuation breakpoints have developed more or less in tandem on both sides of the Atlantic, with U.S. stocks demanding a 10% to 20% P/E premium across the board (Figure 5). These simple charts clearly illustrate that the stellar

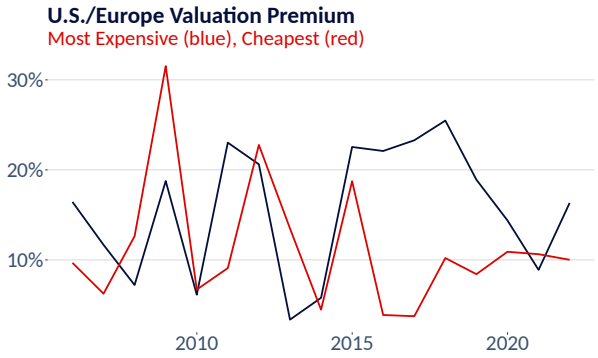

Figure 5: *BEST P/E U.S. vs Europe*

performance of some corners of the market has not been fully backed by earnings growth. This raises the question, why investors are paying so much more for certain companies than they used to.

2 Are the valuation kings simply running faster?

One possibility is that the valuation dispersion reflects a growing gap in operating performance. It is a popular narrative that, backed by strong network effects, some companies can achieve and defend ever stronger market positions and benefit from higher growth rates and profit margins. We, therefore, had a closer look at the intra-market dispersion in revenue growth rates and operating margins.

Again, we formed decile portfolios consisting of S&P 500 and STOXX 600 companies but this time grouped them by five-year revenue CAGR and trailing 12 months EBIT margin. It is crucial to keep in mind that the portfolios formed on valuation are not identical to those created on fundamental performance characteristics. Instead, we are separately looking at the degree of dispersion observable within the market for different variables. As Figure 6 illustrates

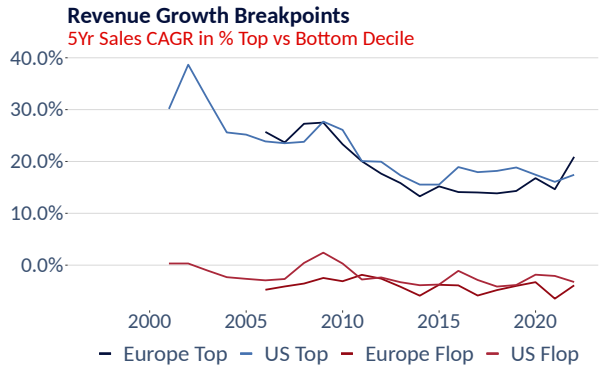

Figure 6: *Revenue Growth Breakpoints*

the breakpoints obtained based on five-year revenue growth. As can be seen, despite a slight uptick in the U.S. in 2021, the gap between the fastest growing and the slowest growing companies has been pretty constant over the past decade. Again, there is not much of a difference between the U.S. and Europe. Figure 7 shows the results of similar analysis on

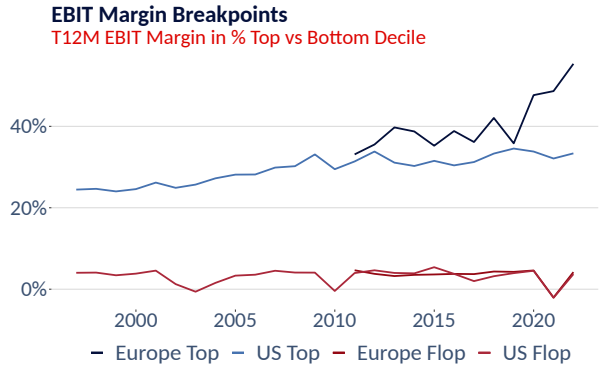

Figure 7: *EBIT Margin Breakpoints*

EBIT margin. The relationship between margins and valuation multiples is less straightforward than the relationship between multiples and growth. However, higher profit margins usually indicate stronger pricing power and a more defendable business model. They also tend to make businesses more resilient in times of crisis. Ceteris paribus, investors are likely to pay a premium for a high-margin business.

Again, we compare the top 10% breakpoint and the bottom 10% breakpoint. The development of this metric looks much more similar to that of the valuation multiples. Most importantly, we note that the margins generated by companies in the bottom decile have not changed at all. In contrast, the most profitable companies have become more profitable, notably in Europe. However, it can also be seen that the breakpoint for the top decile mainly increased before 2012 and has changed very little since then.

3 Implied discount rates and convexity

This brings us back to interest rates. As outlined in our last article, DCF models imply a higher interest rate sensitivity for companies with lower discount rates. Table 1 illustrates this relationship again, for a simple example, but this time including the growth factor (g). It shows that assuming a simple terminal

	Quality/Growth		Value	
Scenario	1	2	1	2
Cashflow	10	10	10	10
Risk Free Rate	3%	1%	3%	1%
Risk Premium	4%	4%	6%	6%
r	7%	5%	9%	7%
Growth (g)	3%	3%	-1%	-1%
r-g	4%	4%	10%	8%
Present Value**	250.0	500.0	100	125
Delta PV	-	100%	-	25%
P/E	25	50	10	12.5

Table 1: *Interest Rate Sensitivity of DCF Models*
**r = Risk Free Rate + Risk Premium where Risk Premium = Beta * (Equity Market Risk Premium - Risk Free Rate)*
***Present Value = CF/(r-g)*

value formula, a 2% decline in (real) interest rates could translate into a 100% increase in the fair P/E ratio of a Quality/Growth stock compared to a rise of only 25% in the P/E of a value stock. This may sound like an extreme example, but it illustrates scarily well what has been happening in the market. To explain this idea, we have derived implied discount rates for each valuation decile breakpoint (here defined as r-g and thus including growth expectations) as of 2012. We then subtracted the change in interest rates between 2012 and today to obtain the discount rates expected for 2021, holding everything else equal. It is

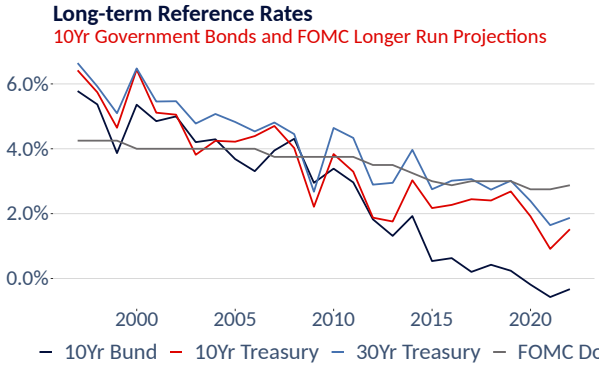

Figure 8: *Interest Rates*

debatable how much interest rates used in valuation models have decreased since 2012. In fact, the yield on the 10 year US Treasury is close to the level it reached at the end of 2012. However, the FOMC Median Long Run Projections decreased from 4% to

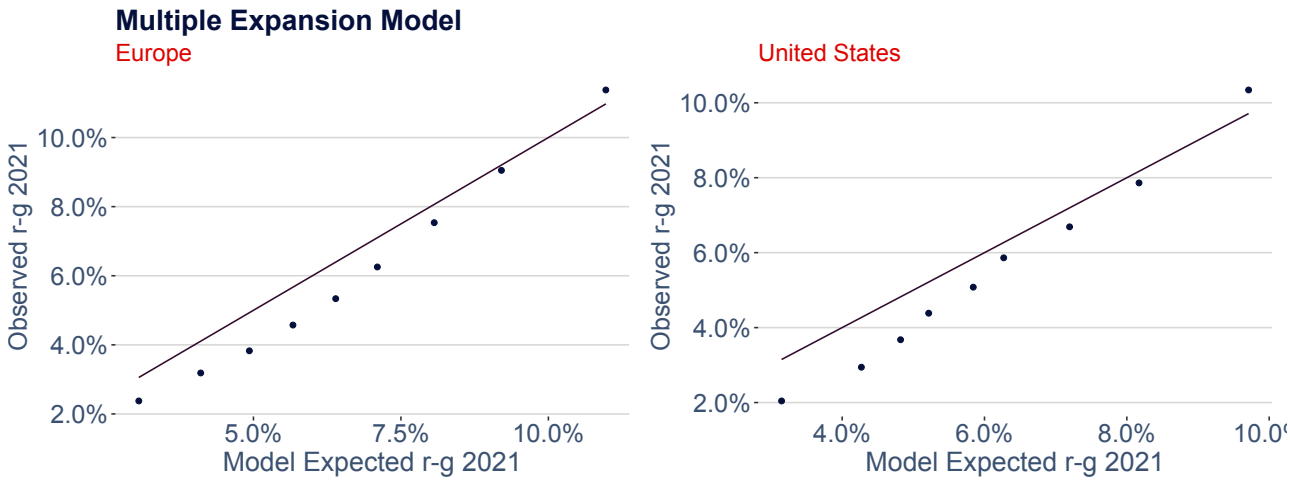

Figure 9: *Multiple Expansion Model based on 10Yr Bund yields and FOMC Dots Longer Run Projections*

2.5% since then and 30 year Treasuries also imply significantly lower interest longer-term interest rates. Also, considering the massive injection of liquidity through Quantitative Easing, we would argue that market participants in the U.S. are likely to discount stocks at lower rates than a decade ago. Figure 9 displays the result of the simple model illustrates above.

We assume a 1.7% decrease in risk-free reference rates for Europe and 1.5% lower reference rates for the United States. On the x-axis, we show the implied discount rate expected based on this decrease in rates and the implied discount rates observed in 2012. The y-axis shows the implied discount rate observed as of today for each decile. As can be seen, the fit is pretty good. However, the 'most expensive' deciles trade at even higher multiples (lower discount rates) as expected by this model, notably in the United States.

4 Conclusion

Discussions on equity market valuation often focus on aggregate broad market valuation levels (as displayed in Figure 1) or on popular examples like Tesla or Rivian. However, we show that the growing dispersion in valuation levels that occurred over the past years is broad-based and observable in the U.S. and Europe. Since 2012, the market's most 'expensive' corners have demanded ever-higher forward P/E multiples while the 'cheapest' stocks are as cheap as ever.

We believe that this dispersion has likely been fuelled by a potent combination of falling interest rates and an increasing gap in operating performance as signaled by profit margins. While the past years have brought extraordinary success to a part of the market, a substantial number of corporations have experienced a lost decade. We thus understand to a certain degree why current valuation spreads may not be entirely off. This being said, we, nevertheless, believe that valuations in the 'expensive' corners of the market look increasingly rich even based on pretty aggressive model assumptions (as presented in Table 1 and Figure 4).

We believe that the investment plight will continue to support elevated aggregate valuation levels and are less concerned about the broad equity market. However, we are increasingly worried about the dispersion outlined above. For active equity investors, this poses a dilemma. Timing factor bets is dangerously tricky, and as we showed in our last article about value, rates, and inflation, it's hard to say what it would need for a large-scale rotation. Moreover, the factors (interest rate, divergence of

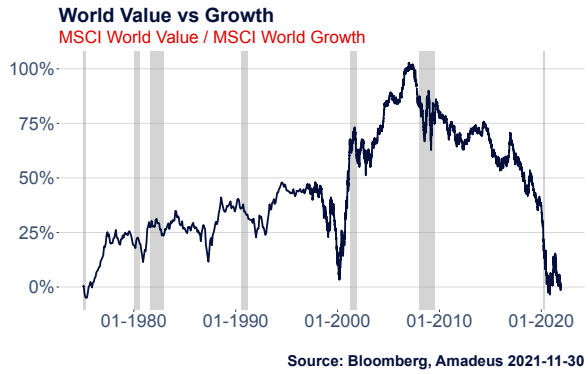

Figure 10: *MSCI World Value/MSCI World Growth Relative Performance*

profit margins) that caused this valuation gap have been declared dead frequently (#ShortOfALifetime), and valuation-based timing is rarely successful. (take this example from AQR published in March 2021). We are, therefore, cautious, calling an end of the quality/growth/momentum rally, but investors should keep in mind that when the tide turns in favor of value, it usually does so quickly (Figure 10). As usual, it comes down to individual time horizons, and in the longer run, valuation always matters.