

Overpaying for Growth: Quality and Predictability

Dr. David Walsh, Realindex Investments

For Institutional investors only

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Value investing reflects the long term mean reversion of stocks. That is, expensive stocks will on average decline or revert, and cheap stocks will rise or rebound. But why does this happen, and under what circumstances will this effect be greater or lesser? Here we examine the existence of this effect, when it has and hasn't worked, and look at the role of growth, quality and earnings predictability within it.

Stocks are bid up or sold off for a number of reasons, among them expectations of future growth – for example, growth in earnings per share (EPS). That is:

- Stocks which are bid up on strong future EPS prospects may tend to sell off when these expectations are not met.
- Stocks which are sold off on weak future EPS prospects may tend to rebound when expectations are beaten.

However, what if EPS expectations are met – do prices revert/rebound as much or at all? And what drives this? We suggest that at least two factors could be involved¹:

- Quality of the firm – do better quality expensive firms continue to perform, and do better quality cheaper firms rebound?
- Predictability of the firm's earnings – do expensive firms with more predictable earnings continue to perform, and do cheaper firms with more predictable earnings rebound?

Of course, grouping stocks in this way adds only a simplistic single extra dimension. There are undoubtedly many factors that could be used in combination to make this distinction. However, even with this simple distinction we can demonstrate that there is a marked difference in outcomes.

So we aim to investigate whether a strategy of being overweight Value stocks and underweight expensive stocks can be sharpened by reducing our overweight to Value stocks which are less likely to rebound, and being less underweight expensive stocks which are unlikely to revert.

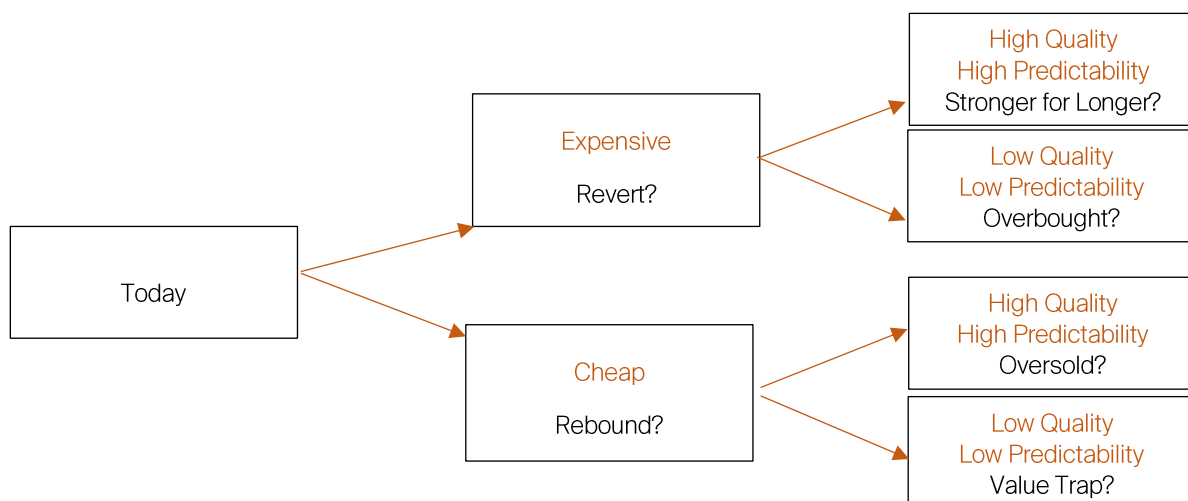
¹ We use 12 month forward expected return on equity (ROE_NTM) as a proxy for Quality, and the standard deviation (dispersion) of 12 month forward EPS forecasts (DISP) as a proxy for Predictability.



Table 1 below summarises - we are effectively asking the following questions:

- Do expensive stocks revert? Do cheap stocks rebound? Both?
- Does the spread between cheap and expensive reflect expected EPS growth?
- Why do some cheap stocks rebound and some not? And why do some expensive stocks revert and some not?
- Does Quality matter? Does Predictability Matter?

Table 1. Summary of Research Questions and Expectations. Pick one of these.



Source: Realindex, 2023

Summary of results

We summarise the high level results below:

- Expensive stocks do not continue to grow and cheap stocks do rebound.
- The decade from 2011 did not see this, which helps to explain the underperformance of Value as a style. The preceding decade did see this.
- Expensive names do indeed deliver EPS growth, but do not continue to become more expensive.
- There is a slow migration out of cheap and expensive groupings which will help to drive the value premium.



Does Quality Matter?

- Yes, but not uniformly. Junk underperforms on average but does rebound for Value. Cheap quality is more consistent.
- Realised EPS growth for good quality cheap stocks is surprisingly strong.
- Quality drives realised future EPS growth, cheap or expensive. Expensive junk stocks also see good future EPS growth, but cheap junk does not.
- For expensive junk stocks, paying up does capture improved EPS growth but the stocks still underperform.

Does Predictability Matter?

- Yes - unpredictable underperforms predictable. And in all cases, cheap still outperforms expensive.
- Realised future EPS growth is better for more predictable stocks, but is weak for unpredictable expensive stocks.
- Our predictability measure works for cheaper stocks - EPS growth continues into the future for more predictable but not for less predictable. Surprisingly, less predictable expensive stocks tend to have very high future earnings growth.

So to answer our original question:

If we tilt our Value strategy towards better quality or greater predictability, we reduce our overweight exposure to “Value Traps”, reduce our underweight exposure to “Stronger for Longer” and generate better returns. Most of this comes from holding a long term value exposure rather than simply trading on Value (that is, the performance comes from holding the Value exposure over time).

Data Sample

We choose the MSCI ACWI X AU universe, from Jan 2000 to Jun 2023, monthly. There are outliers in the data which skew the results so some trimming of outliers is required:

- EY_NTM between -10% and +30%
- ROE_NTM between -10% and + 40%
- FWD_EPS_GWTH between -75% and +100%

The resulting data set covers between 3500 and 4000 stocks for each month in the sample period.

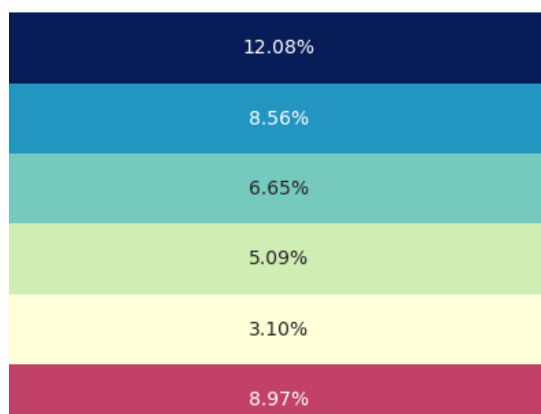


1 Cheap versus expensive

Every three months in our sample², we sort all stocks in the universe into Value quintiles – that is, five groups each of 20% based on Value (here we use 12 month forward earnings yield (EY_NTM). We then look back three months to see what returns preceded this sort, and also forward three months to see what returns followed it.

The average EY_NTM within each quintile is shown in Chart 1.

Chart 1. Average 12 month forward earnings yield with Value quintiles. Full sample.



Source: Realindex, 2023. Data: Jan 2000 to Jun 2023

Over time, migration between these Value quintiles is low but is not zero. Chart 2 shows this.

The average percentage of stocks which remain in their Value quintiles after a number of months is presented in Chart 2. For example, 16.5% of all stocks start in the cheapest quintile (Q1) and are still in that quintile three months later, on average. (If there was no migration at all, the value would be 20%). So as many as 1 in 5 stocks moves out (migrates) from the cheapest quintile (i.e., becomes more expensive) every three months. Roughly the same move out of expensive stocks towards cheaper stocks can be seen. Taken together, this shows us that the repricing of Value is slow.

The migration of cheap and expensive stocks is very slow. Charts 2 also shows the same migration but 1 and 3 years into the future. Even three years ahead, less than 50% of firms which are classified as cheapest are no longer in this quintile. That is, more than half of all the cheapest stocks are still in the cheapest quintile three years later.

This shows that many firms are cheap for a reason and are unlikely to revert. If we build a Value strategy that tilts towards the stocks which will migrate in the future, and away from those that don't, we can capture a much sharper Value investment process.

² We choose three months for no other reason than it gives us a large sample but is less affected by short term price reversal. Using 6 or 12 months yields similar conclusions. Total returns are used.



Chart 2. Average percentage of stocks migrating out of Value quintiles.

Q1 is cheapest, Q5 is most expensive. Full sample.

| | After 3mths | After 12mths | After 36mths |
|---------------------|-------------|--------------|--------------|
| Q1 (cheapest) | 16.5% | 14.3% | 11.4% |
| Q2 | 12.8% | 10.1% | 8.7% |
| Q3 | 12.2% | 9.4% | 8.6% |
| Q4 | 13.4% | 10.7% | 9.1% |
| Q5 (most expensive) | 16.9% | 14.7% | 11.9% |

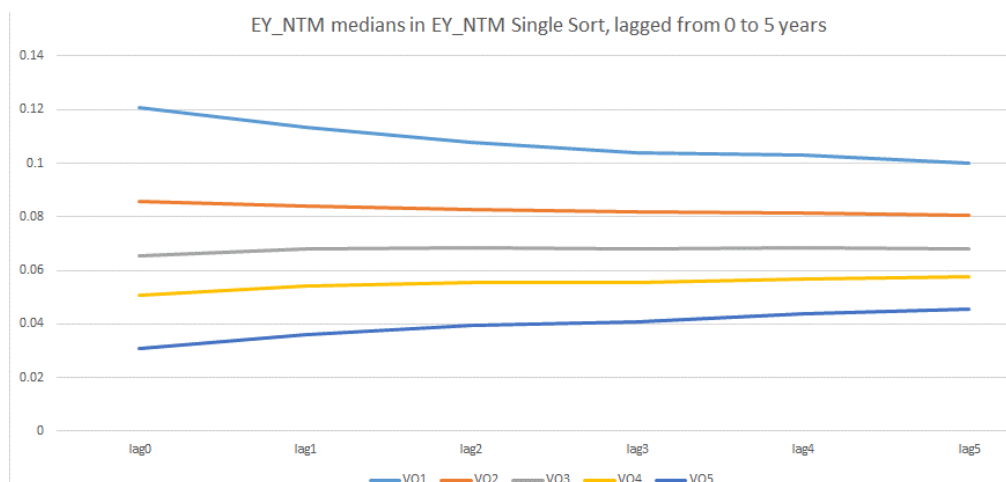
Source: Realindex, 2023. Data: Jan 2000 to Jun 2023

Returning to this topic at hand, we can see from Chart 2 that over three months most stocks in the cheapest and most expensive quintiles stay in place – i.e., they do not migrate. The movement away from quintiles 2 to 4 is greater as they can move both up or down. The migration is not large – most migration is to the nearest quintile on either side. But neither is the migration small.

We can also conclude that a portfolio that holds the same cheapest Value stocks over a long period will drift away from its Value characteristics. If we rebalance every 3 months to hold only the cheapest stocks, we will need to replace about 20% of stocks in the quintile in order to retain the “cheapest” classification.

Chart 3 confirms this in another way. Cheap stocks become slowly more expensive over time, and expensive stocks become slowly cheaper. For each Value quintile (VQ1 to VQ5), we look at the average of the same valuation metric (EY_NTMT) for the same stocks for 1 to 5 years into the future. Lag0 is “unlagged” and so is the same data as in Chart 1.

Chart 3. Future valuation metric for each present day Value quintile. Full sample.



Source: Realindex, 2023. Data: Jan 2000 to Jun 2023



The stocks in the cheapest quintile (VQ1) at time 0 have an average EY_NTM of about 12% when we measure them, but then gradually become more expensive over time, finishing with an EY_NTM of about 10% five years later. The stocks in the most expensive quintile (VQ5) at time 0 have an average EY_NTM of about 3.5% when we measure them, but then gradually become cheaper over time, finishing with an EY_NTM of about 4.3% five years later.³

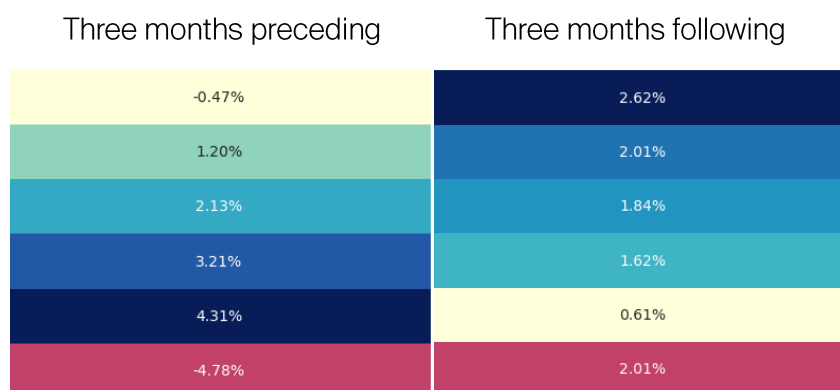
This very gradual reversal shows that (on average) Value investing is a long term positive tailwind.

Returns to Each Quintile

Next we calculate an equally weighted average of total returns within each quintile, and then average across the full sample (Jan 2000 to Jun 2023). Chart 4 shows the results.

Chart 4. Value quintiles: Three month total returns preceding and following. Full sample.

Cheapest quintile at the top, most expensive quintile at the bottom. Red box is the difference between Q1 and Q5



Source: Realindex, 2023. Data: Jan 2000 to Jun 2023

We can clearly see that expensive stocks *become* expensive through price moves in the preceding three months, and then flatten out or slow their run up. Cheaper stocks become cheap in the preceding three months by running up less, or even selling off, but then rebound. So a portfolio that goes short Expensive and long Cheap will win on average.

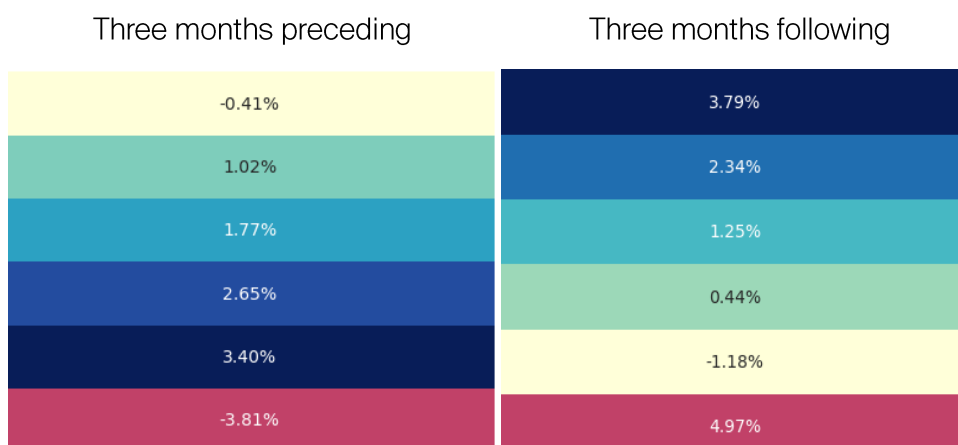
³ Note that we are not saying that the market shows value multiple compression over time. *That is, we do not rebalance or recreate the Value quintiles for each lag.* Instead we simply look at what happens into the future to the stocks that we classify as cheap or expensive today.



This is not always the case however. Chart 5 repeats Chart 4 but with the sample split in two parts: 2000-2010, and then 2011-2023.

Chart 5 a. Value quintiles: Three month total returns preceding and following.

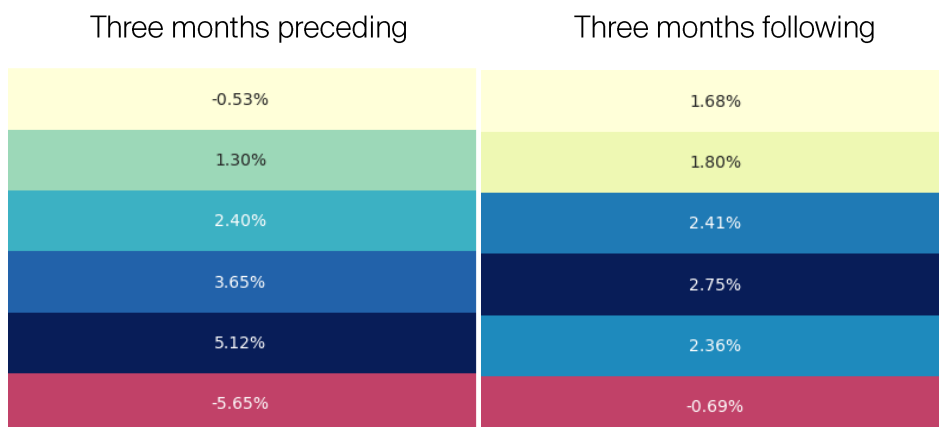
Cheapest quintile at the top, most expensive quintile at the bottom. Red box is the difference between Q1 and Q5



Source: Realindex, 2023. Data: Jan 2000 to Dec 2010

Chart 5 b. Value quintiles: Three month total returns preceding and following.

Cheapest quintile at the top, most expensive quintile at the bottom. Red box is the difference between Q1 and Q5



Source: Realindex, 2023. Data: Jan 2011 to Jun 2023



In the first decade, expensive stocks tend to sell off and cheap stocks rebound strongly. The outperformance is quite strong, which matches our existing knowledge that Value performed well during this period. Cheap stocks outperformed expensive stocks by some margin.

However, in the second decade, *expensive stocks continue to run*. Cheaper stocks do rebound, but cannot keep up with expensive stocks and so we see Value underperform.

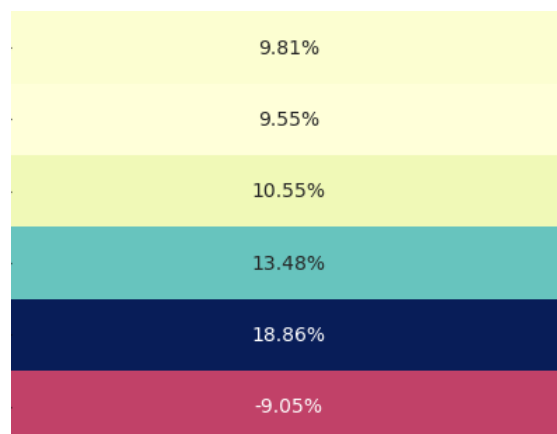
Growth in Value Quintiles

In principle, stocks become expensive due to expectations of future growth (say EPS growth). Do we see this? That is, when we look at the next 12 months' actual EPS growth for each quintile, do expensive stocks have greater realised growth?

Chart 6 shows that expensive stocks *do indeed* have greater EPS growth into the future than cheaper stocks. Realised earnings growth for the most expensive quintile is around 9% higher than the cheapest quintile over the next 12 months.

However, taken with the results on Chart 4 above, it would seem that the market has already bid up this growth in anticipation, and so expensive stocks do not continue to run. On the other hand, the realised growth of cheap stocks seems to help drive the rebound in returns.

Chart 6. Next 12 month realised EPS growth within Value quintiles. Full sample.



Source: Realindex, 2023. Data: Jan 2000 to Jun 2023

2 Which Stocks Revert and Rebound, and Which Do Not: Does Quality Matter?

To evaluate this question we perform what is known as a “double sort” – that is, we sort first into Value quintiles (using EY_NTM) then within each Value quintile we again sort into quintiles, this time based on Quality (using ROE_NTM). The result is a 5 x 5 matrix where each cell contains stocks which match the criteria of that cell.



To interpret this, think of the cell at row 3, column 1. This is the cell of the middle Value quintile which contains the *best quality* middle value stocks. Or, if we were interested in the cheapest junk stocks, we would look to the cell at row 1, column 5.

Chart 7 shows the median EY_NTM and median ROE_NTM within each cell. We see that stocks get slightly more expensive as their quality drops, for both cheap and expensive stocks.

Chart 7 a. Median EY_NTM within a Value-Quality double sort. Full sample.

| | | | | | |
|--------|--------|--------|--------|--------|-------|
| 12.27% | 12.29% | 12.11% | 11.80% | 11.73% | 0.54% |
| 8.49% | 8.53% | 8.57% | 8.55% | 8.44% | 0.05% |
| 6.63% | 6.65% | 6.68% | 6.68% | 6.60% | 0.03% |
| 5.10% | 5.12% | 5.13% | 5.12% | 5.01% | 0.10% |
| 3.35% | 3.32% | 3.26% | 3.14% | 2.14% | 1.21% |
| 8.92% | 8.97% | 8.85% | 8.66% | 9.59% | |

Source: Realindex, 2023. Data: Jan 2000 to Jun 2023

Chart 7 b. Median ROE_NTM within a Value-Quality double sort. Full sample.

| | | | | | |
|--------|--------|--------|--------|-------|--------|
| 21.83% | 16.50% | 13.42% | 10.85% | 7.77% | 14.06% |
| 21.73% | 16.01% | 12.72% | 10.11% | 7.06% | 14.66% |
| 22.63% | 16.50% | 12.73% | 9.58% | 6.22% | 16.41% |
| 23.18% | 16.64% | 12.54% | 8.83% | 5.17% | 18.01% |
| 21.84% | 14.64% | 9.68% | 5.66% | 2.52% | 19.32% |
| -0.01% | 1.86% | 3.74% | 5.19% | 5.25% | |

Source: Realindex, 2023. Data: Jan 2000 to Jun 2023



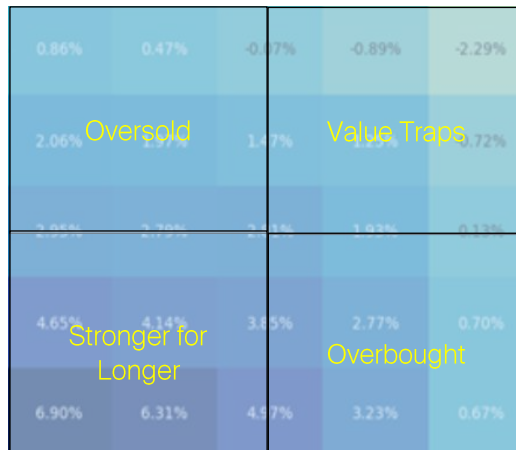
We also see that the worst quality expensive stocks are MORE expensive than the best quality expensive stocks. They are also lower quality than ANY cheap stocks. Finally, cheaper stocks are of similar cheapness no matter what the quality.

Returns to each cell

We repeat the three month before/after analysis here. That is, for the stocks in each cell, we look backward and then forward three months to look at total returns and then average the returns in each cell.

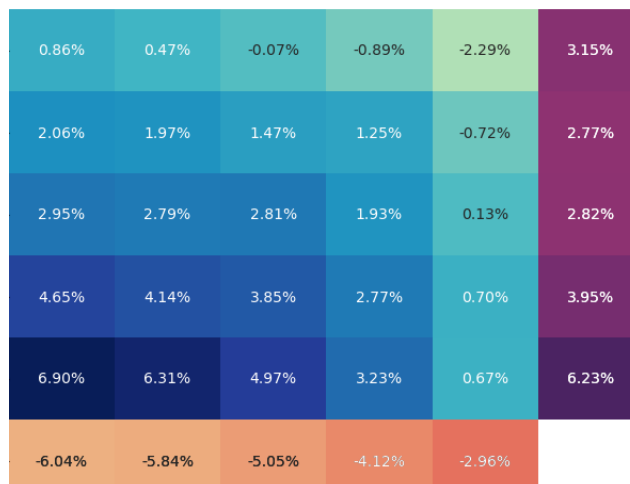
Table 8a shows where we expect to find our potential divisions from Table 1. Charts 8b and 8c show the results.

Chart 8 a. Potential divisions of stocks based on Value and Quality Double Sort



Source: Realindex, 2023. Data: Jan 2000 to Jun 2023

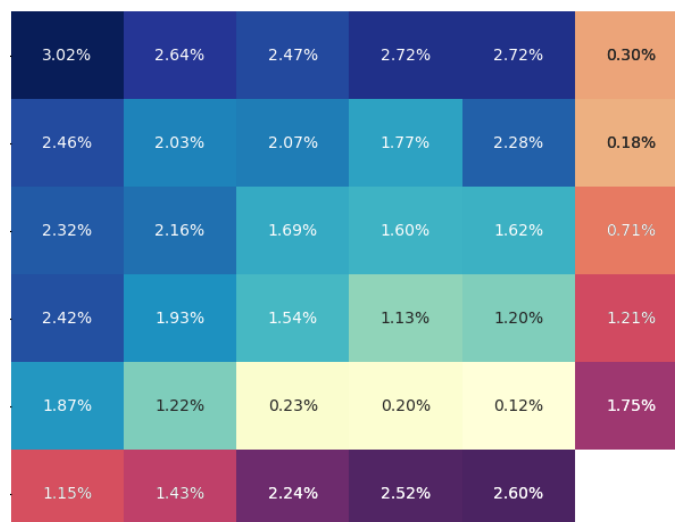
Chart 8 b. Value and Quality Double Sort: Three month total returns preceding. Full sample.



Source: Realindex, 2023. Data: Jan 2000 to Jun 2023



Chart 8 c. Value and Quality Double Sort: Three month total returns following. Full sample.



Source: Realindex, 2023. Data: Jan 2000 to Jun 2023

In the three month run up period:

- The lowest quality cheap stocks underperform significantly (-2.29%).
- The best quality expensive stocks outperform significantly (+6.90%).
- Low quality expensive names (+0.86%) and good quality cheap stocks (+0.67%) perform at a similar level.

In the following three month window:

- Cheap stocks perform similarly to each other (good and bad quality).
- Better quality expensive stocks do continue to trend upwards slightly, but expensive junk stocks stay flat.
- Cheap outperforms expensive no matter the quality.

What can we say about this? It is clear that a portfolio that chooses cheaper stocks will outperform, but that quality among Value stocks is not very important following the classification. Also, expensive stocks that are also good quality perform the best of all, with strong run up and a positive continuation in returns (unlike poor quality expensive stocks) – at least in this data set.



So does quality actually matter when Value investing? The answer is a definite Yes, because:

- Portfolios which target value have a long term strategic tilt towards Value. *This will also capture the run up period*, when good quality Value does better than poor quality Value.
- Value stocks migrate but are sticky – see Chart 2a above. Approximately 80% of stocks in the cheapest quintile at one point will still be present three months later.

This means that to properly capture returns to the Value style, a strategy must:

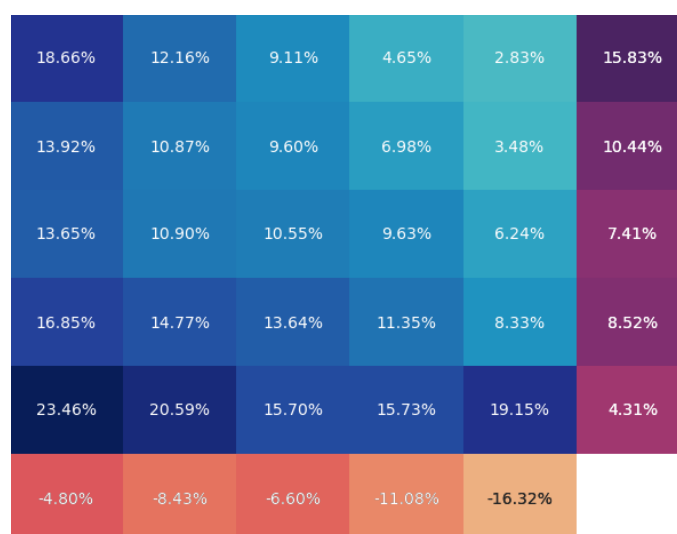
- **Take Profits:** Rebalance regularly to sell stocks which have risen in value and buy cheap stocks
- **Hold Good Quality:** Avoid poor quality cheap names

Earnings growth?

We saw earlier that expensive stocks have greater future realised earnings growth than cheaper stocks. So the market pays up for future growth and receives it – but returns do not follow. Cheaper stocks perform better even though their future earnings growth is not as good.

How does quality affect this? Chart 9 shows the results. Realised future earnings growth is best for the highest quality expensive stocks, but cheap high quality stocks deliver strong earnings growth too. Low quality stocks that are expensive have strong realised future earnings growth, but this falls away sharply as the stocks become cheaper.

Chart 8 c. Next 12 month realised EPS growth within Value-Quality cells. Full sample.



Source: Realindex, 2023. Data: Jan 2000 to Jun 2023



3 Summary and Conclusions

We find that cheap stocks rebound and expensive stocks revert, on average (but this varies over time). This is consistent with previous research and is what (at a high level) drives the Value premium. We also noted that stocks tend to migrate slowly between value quintiles – for example, approximately 80% of firms which are classified in the cheapest quintile are *still in* that quintile 3 months later, which means 20% of these stocks have migrated upwards. Further, on average, cheap stocks gradually become more expensive (and expensive stocks become cheaper) over time.

Interestingly, realised future earnings growth is indeed greater for more expensive stocks, so we know that investors who have paid up for the expected future do indeed see that growth – even if the future stock return does not reflect it.

Recall that we hoped to distinguish between:

- Companies that are cheap for a reason and companies that are likely to rebound.
- Companies that might revert downwards and those which are expensive for a reason.

In other words, we know that not all cheap companies rebound and not all expensive companies fall. What drives these differences? We proposed two characteristics which could allow us to build better Value portfolios – firm quality and earnings predictability. In both cases, we see strong reasons to retain a rotation towards better quality and/or predictability:

- Poor quality or less predictable Value stocks underperform other Value stocks
- Unpredictable or lower quality expensive stocks underperform other expensive stocks.

Recall that a value strategy should be overweight cheaper stocks and underweight more expensive stocks. So if we can reduce the overweight to lower quality or less predictable cheap stocks, we expect that the Value strategy to do better. Also if we can reduce our underweight to higher quality expensive or more predictable expensive stocks, we will also see a return improvement to Value.

Finally, the realised future earnings growth we saw earlier when we looked at Value alone is continued here, but is concentrated in better quality and more predictable stocks. For example, high quality Value stocks have a similar realised earnings growth to low quality expensive stocks, despite not being “bid up” in advance.



Appendix: Which Stocks Revert and Rebound, and Which Do Not: Does Predictability Matter?

The second of our two characteristics (to build better Value portfolios) is earnings predictability. Do we avoid stocks which create a drag to our Value strategy if we rotate towards earnings predictability? Again we “double sort” stocks every three months; firstly into value quintiles using EY_NTM and then within each value quintile we sort again into EPS predictability quintiles, this time using dispersion DISP (standard deviation of FY1 EPS forecasts). Highest predictability (lowest dispersion) is on the right (quintile 5).

The result is a 5 x 5 matrix where each cell contains stocks which match the criteria of that cell – for example, the cell at row 1/column 5 is *the most predictable stocks among the cheapest quintile of stocks*.

Chart A1 shows the median EY_NTM and median DISP within each cell. We see that:

- Among the cheapest stocks, the cheapest are those with the lowest predictability.
- Among the most expensive stocks, the cheapest are those with the *highest* predictability.
- The lowest predictability stocks are the most expensive names, although this is only true for the lowest dispersion.

Chart A 1a. Median EY_NTM within a Value-Predictability double sort. Full sample.

| | | | | | |
|--------|--------|--------|--------|--------|--------|
| 12.35% | 12.25% | 12.17% | 11.91% | 11.70% | 0.65% |
| 8.59% | 8.58% | 8.58% | 8.55% | 8.49% | 0.09% |
| 6.64% | 6.67% | 6.68% | 6.67% | 6.61% | 0.03% |
| 5.04% | 5.08% | 5.09% | 5.12% | 5.14% | -0.10% |
| 2.30% | 3.00% | 3.24% | 3.34% | 3.40% | -1.10% |
| 10.05% | 9.25% | 8.93% | 8.57% | 8.30% | |

Source: Realindex, 2023. Data: Jan 2000 to Jun 2023



Chart A 1b. Median DISP within a Value-Predictability double sort. Full sample.

| | | | | | |
|---------|---------|--------|--------|-------|--------|
| 30.07% | 15.53% | 10.03% | 6.41% | 3.03% | 27.04% |
| 26.96% | 12.93% | 8.06% | 4.96% | 2.13% | 24.83% |
| 27.49% | 12.33% | 7.45% | 4.33% | 1.73% | 25.76% |
| 33.17% | 13.33% | 7.71% | 4.39% | 1.71% | 31.46% |
| 99.85% | 26.40% | 12.78% | 6.68% | 2.58% | 97.26% |
| -69.78% | -10.87% | -2.75% | -0.28% | 0.45% | |

Source: Realindex, 2023. Data: Jan 2000 to Jun 2023

Returns to each cell

We repeat the three month before/after analysis here. As expected, the strongest run up is among the most predictable and expensive stocks, while the worst is among the cheapest and least predictable.

Chart A 2a. Potential divisions of stocks based on Value and Predictability Double Sort

Note: the reversal from the Value-Quality double sort

| | | | | |
|-------|-------|--------|--------|--------|
| 0.86% | 0.47% | -0.87% | -0.89% | -2.29% |
| 2.06% | 1.57% | 1.47% | 1.25% | -0.72% |
| 2.95% | 2.79% | 2.11% | 1.93% | 0.13% |
| 4.65% | 4.14% | 3.45% | 2.77% | 0.70% |
| 6.90% | 6.31% | 4.77% | 3.23% | 0.67% |

Value Traps Oversold

Overbought Stronger for Longer

Source: Realindex, 2023.

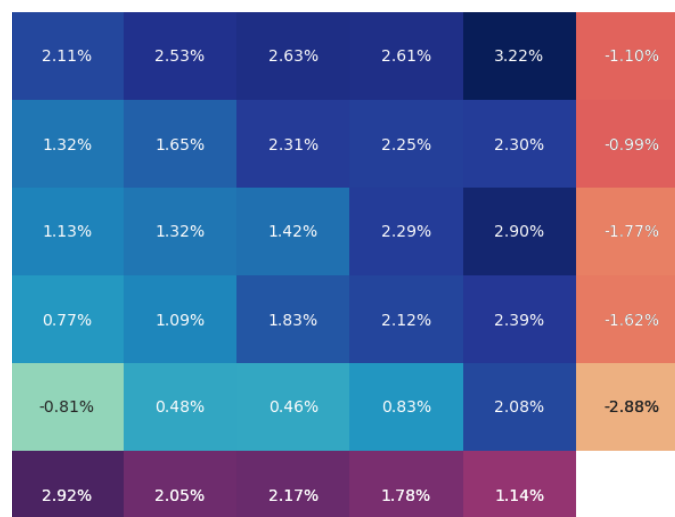


Chart A 2b. Value and Predictability Double Sort: Three month total returns preceding. Full sample.



Source: Realindex, 2023. Data: Jan 2000 to Jun 2023

Chart A 2c. Value and Predictability Double Sort: Three month total returns following. Full sample.



Source: Realindex, 2023. Data: Jan 2000 to Jun 2023

In the three months following, cheaper stocks outperform as we saw earlier. Greater predictability drives better returns and low predictability hurts expensive names the most. *A tilt towards predictability of EPS clearly matters no matter how cheap or expensive, although it matters more for expensive stocks.* A value strategy benefits from a tilt towards greater predictability.



Repeating our observation from earlier: to properly capture returns to the Value style, a strategy must:

- *Take Profits*: Rebalance regularly to sell stocks which have risen in value and buy cheap stocks
- *Hold More Predictable Stocks*: Avoid cheap names which have unpredictable earnings

Earnings growth?

We saw earlier that expensive stocks have greater future realised earnings growth than cheaper stocks. So the market pays up for future growth and receives it – but returns do not follow. Cheaper stocks perform better even though their future earnings growth is not as good.

Chart A3 shows that EPS predictability and actual future earnings growth only matter for cheap stocks. Interestingly, the uncertainty about realised future earnings manifests as considerably larger actual EPS growth, for expensive stocks only. That is, by paying up for unpredictability, the investor is rewarded with large EPS growth but stock returns underperform significantly.

Chart A 3. Next 12 month realised EPS growth within Value-Predictability cells. Full sample.

| | | | | | |
|---------|--------|--------|--------|--------|--------|
| 6.50% | 9.08% | 10.70% | 10.29% | 9.75% | -3.25% |
| 7.79% | 11.17% | 10.43% | 9.48% | 8.78% | -0.98% |
| 9.56% | 10.94% | 10.68% | 10.61% | 10.24% | -0.68% |
| 13.63% | 14.35% | 13.98% | 13.35% | 12.76% | 0.88% |
| 36.70% | 12.30% | 18.95% | 19.02% | 17.36% | 19.34% |
| -30.20% | -3.22% | -8.25% | -8.73% | -7.61% | |

Source: Realindex, 2023. Data: Jan 2000 to Jun 2023



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