Growth, value, quality and junk

Part 1: The quality of value is not strained[1]

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For Institutional investors only

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Introduction

In most walks of life, higher quality goods or services are deemed to be (or actually are) more expensive. These might be luxury goods and services, or premium products, or – in our case – higher quality companies. At the same time, lower quality items (at worst, let's call them 'junk') tend to be less expensive. However, is this actually (always) true? As we will see below, there is no question that higher quality firms are usually more expensive, but there are many cases and periods where they are not.
Part of the uncertainty of this arises because quality is such a subjective issue. Beauty is in the eye of the beholder, as they say. Within a certain budget (or investment universe) we can attempt to distinguish between good and poor quality, and choose good quality over poor, all else equal. These may not be the absolute highest quality, or indeed the most expensive.
But how do we tell if an item or a service is indeed higher quality, without perfect foresight?

In an investment sense, quality is also a slippery concept with many dimensions. A better quality company can be quantitatively assessed using a variety of measures, which look at one dimension or another, but a composite or holistic measure is not really available.

Most importantly in an investment sense, it is not just what we at Realindex believe is higher quality, *it is what the market believes*. That is, if higher quality firms are preferred to lower quality firms, they will see greater demand, and so will command higher prices. They will - on average - become more expensive.

In the absence of a holistic measure of quality, as usual, differences of opinion or insight matter in the market. In turn, this means that if we use better measures of quality they should be rewarded by the market. A diversified set of quality measures will also approach the (unknown) holistic measure.

One more point before we move to look at this in more detail. The subjective nature of quality, its relative nature within a universe, and the gradual evolution of information into the market mean that while we expect higher quality firms to command higher price, there is no reason to suspect that this will be constant over time. Quality firms can be good value as well.

What do we study here and what do we find?

Popular commentary – often from growth style managers - strongly suggests that the pervasive aspect of the performance of growth and value styles is the quality of the stocks selected. That is, growth stocks are suggested to be higher quality (and so perform better on average) and value stocks tend to be lower quality (or "junk"), and so underperform on average.

Over two papers, we show evidence of these popular conclusions about the quality aspects of growth and value stocks are far too simplistic. This first paper looks at the relationship between value and quality in a number of ways. The second continues with the relationship between growth and quality.

[1] With apologies to William Shakespeare (The Merchant of Venice, Act IV, Scene 1). The use of "not strained" here is an old form of "not constrained".

Our evidence comes from three sets of tests:

- Determining proportion of stocks which are good/bad value and good/bad quality
- Assessing their underlying characteristics (growth, sentiment, uncertainty or risk)
- Comparing the return characteristics of good quality/good value stocks with those for cheap 'junk'.

Our data set is all stocks in MSCI ACWI ex Au from Jan 2000 to Sept 2022, chosen with weekly intervals.

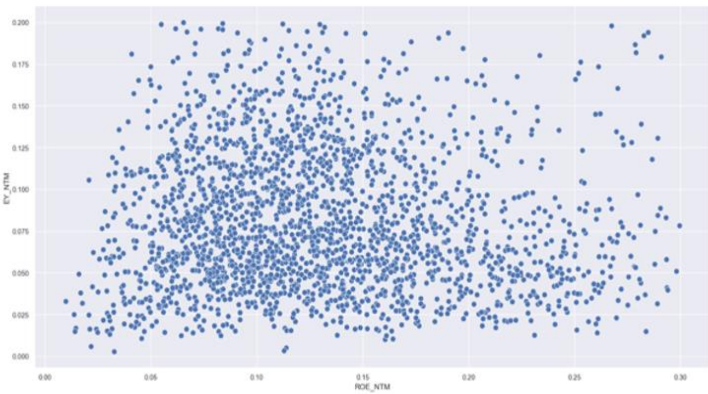
In summary, we find six key results:

- There are plenty of good value stocks that are good quality. *It is these stocks that Realindex seeks to* ***hold*** *in our value portfolios.*
- There are certainly good value stocks that are better termed "cheap for a reason", as their quality is poor. They might be termed 'junk'. *It is these stocks that Realindex seeks to* ***avoid*** *in our value portfolios.*
- The proportions of these stocks is fairly stable over time, so opportunities for the Realindex value style portfolios have always existed.
- There is a positive relationship between quality and growth – better quality names have usually had stronger earnings growth. These stocks can still be good value as well.
- The lowest quality 'cheap' names have low-growth but are also higher risk and have worse market sentiment. High quality good value names tend to have somewhat more positive sentiment as well.
- Good quality value stocks tend to outperform poor quality value (cheap for a reason) stocks through our 20 year sample, although not over the last decade as we know. Value outperforms growth overall, but recently, stocks which are expensive tend to outperform good value stocks. This is especially true if they are higher quality as well.

Splitting value and quality

Below we construct a scatterplot of all stocks in MSCI ACWI ex Au at September 2022. The Y axis is our value measure – earnings yield using 12-month forward forecast consensus earnings divided by current price (called EY_NTM). The X axis is our quality measure, 12-month forward forecast return on equity (or ROE_NTM), which is forecast earnings divided by the average of the last two-years reported shareholder equity.

Chart 1: Scatterplot of value (forecast earnings yield) against quality (forecast ROE) for MSCI ACWI ex Au at Sept 2022



Source: Realindex, Factset

We can see a few things from this chart:

- There are few stocks which are extremely good value and also extremely good quality (top-right corner or NE quadrant)
- There are few stocks which are extremely good value which are also extremely poor quality (top-left corner or NW quadrant)
- The bulk of stocks are both good value and good quality (middle of the chart)
- Many stocks are low quality (poor ROE) but are still expensive (bottom-left corner or SW quadrant)
- High quality stocks tend to be more expensive (bottom-right corner or SE quadrant)

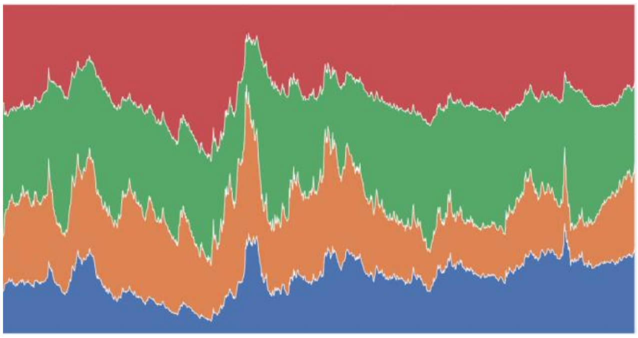
Chart 1 is just a snapshot taken at Sept 2022, and the key point of interest is probably that *a large proportion of stocks are neither poor value nor poor quality, and many are both good quality and good value*. Does this hold over time?

To look at the spread of companies across value and quality we assess *the proportion of stocks in each quadrant of this chart* throughout our sample.[2] See Chart 2 below[3]. We divide the universe at each point of time into the percentage of stocks which are expensive and low quality (SW quadrant, blue), expensive but good quality (SE quadrant, orange), good value but low quality (NW quadrant, green) and good value and good quality (NE quadrant, red). Apart from the GFC period – when expensive good quality stocks (orange) rotated towards cheaper good quality (red) – the proportions are quite stable. Expensive junk (blue) is usually the lowest proportion, although it has grown more recently.

The proportions in each quadrant are:

	Chart 1 (that is, at Sept 2022)	Average (whole sample)
Low quality, poor value (SW, blue)	24.1%	17.3%
High quality, poor value (SE, orange)	26.4%	22.5%
Low quality, good value (NW, green)	28.1%	31.3%
High quality, good value (NE, red)	21.4%	28.8%

Chart 2: Proportion of stocks in value-quality quadrants over time, Jan 2000 to Sept 2022.
Blue – poor value, low quality; Orange –poor value, good quality,
Green –good value, low quality, Red –good value, good quality.



Source: Realindex, Factset

There's plenty of good quality in good value

From this we can see that there is a large proportion of good value stocks that are also good quality. However, this does not tell us the spread of good and poor quality stocks that are just among good value stocks. In other words: *what quality are good value stocks*?

For this we choose stocks which have an EY_NTM of greater than 7.5%, and we split the quality universe up into quintiles[4] of ROE_NTM; 0%-8%, 8% to 12%, and so on[5]. We then plot the proportions of good value stocks in each quintile over time.

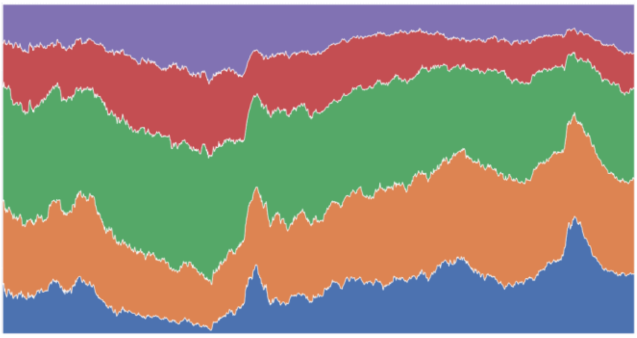
Chart 3: Proportion of stocks of different quality quintiles among good value stocks only, Jan 2000 to Sept 2022.
Worst quality quintile is blue (ROE_NTM between 0 and 8%).
Next is orange (ROE_NTM between 8 and 12%).
Then green (12 to 18%), red (18 to 24%) and finally purple, highest quality (ROE_NTM between 24 and 30%)

[2] The cut offs are: expensive (EY_NTM < 7.5%), cheap (EY_NTM > 7.5%), high quality (ROE_NTM > 12.5%), low quality (ROE_NTM < 12.5%). These are fairly arbitrary but not controversial and the results are not especially sensitive to their selection.

[3] Date references have been dropped on the X axis of the charts below to remove clutter from the images. Dates run from Jan 2000 to Sept 2022

[4] NB: Throughout this paper, we have used the term "quintile" to mean one of five divisions of the data. The "quintiles" here are not chosen be exactly 20% of the sample, instead the aim is to choose consistent and recognisable breakpoints.

[5] To look at sensitivity of results, this was repeated for EY_NTM greater than the median value at each date. The results were very similar. We also drop any outlier stocks with ROE_NTM < 0% and > 30%, and with EY_NTM < 0% and greater than 20%.



Source: Realindex, Factset

So, there are many stocks which are both good quality and good value over time, as we can see from Chart 2. Among good value stocks, Chart 3 shows that there is a wide distribution of quality as well. There is certainly a sizeable proportion of poorer quality stocks among good value (blue and orange), but it is a fallacy to claim that good value equals poor quality when such a large proportion of good value stocks exhibit good quality as well.

Some characteristics of value and quality

A key question we must ask now: if there are many good value stocks across a range of qualities (from good to poor), what characterises them? For example, are good value and good quality stocks higher or lower risk than cheap junk? Do good quality but expensive stocks have great sentiment and low risk?

To keep this simple, we look at this through three lenses:[6]

- Growth: Proxied as trailing five year earnings growth (EG5Y)
- Risk: Proxied as beta and volatility (BETA and VOL)
- Sentiment: Proxied as 12 month price momentum (MOM)

[6] We have not shown the analysis here for brevity, but these results are not driven by region, sector or size.

The full sample average results appear in Table 1 below. It summarises the average values of growth, risk and sentiment across each quality quintile *for good value stocks only*. As noted above, lower quality names among the good value group exhibit higher risk, lower earnings growth and lower sentiment. Higher quality names are usually the opposite of this.

*Table 1: Average metrics **for good value stocks only**, across quintiles of ROE_NTM, Jan 2000 to Sept 2022.*

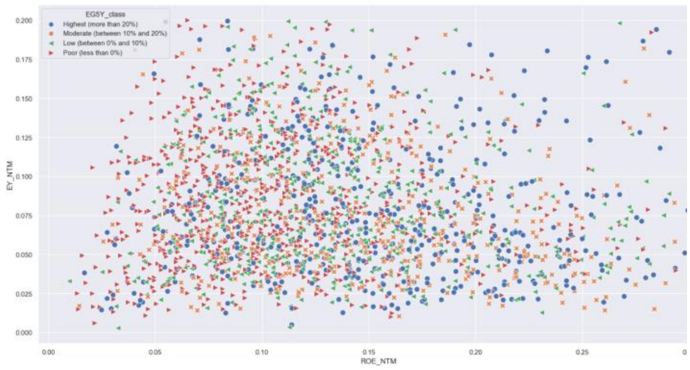
Quality quintile	Average trailing earnings growth	Average volatility	Average beta	Average price momentum	Average EY_NTM
Lowest (Q1)	-2.0%	38.8%	1.02	-0.022	11.4%
Q2	+6.1%	34.5%	0.92	0.072	11.5%
Q3	+12.3%	34.6%	0.91	0.138	11.8%
Q4	+17.5%	36.5%	0.92	0.218	12.0%
Highest (Q5)	+18.9%	39.2%	0.93	0.315	12.4%

Source: Realindex, Factset

Growth

To start, see Chart 4 below. It is the scatterplot we saw earlier, but now each point is colour-coded by a trailing five-year annualised earnings growth class or grouping (blue = highest growth, greater than 20%; orange = moderate growth, between 10 and 20%; green = low growth, between 0 and 10%; and red = poor growth, less than 0%).

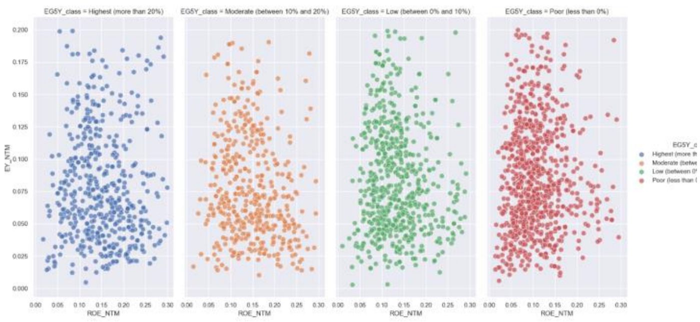
Chart 4: Scatterplot of Value (next 12mth earnings yield, EY_NTM) against Quality (reported ROE_NTM) for MSCI ACWI ex Au at Sept 2022, now colour-coded by trailing five year earnings growth (EG5Y)



Source: Realindex, Factset

This chart gives little indication of a strong relationship between value and quality, even taking into account trailing earnings growth. We can look a little closer here by separately plotting each growth class. See Chart 5 below – same colour code applies.

Chart 5: Separate scatterplots of Value (next 12mth earnings yield, EY_NTM) against Quality (reported ROE) for MSCI ACWI ex Au at Sept 2022, for each class of trailing five year earnings growth (EG5Y)



Source: Realindex, Factset

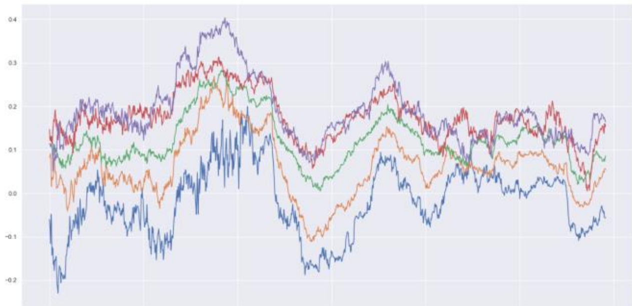
Chart 5 makes Chart 4 much clearer. Within each class or group of trailing growth, there is a wide spread of stocks which are good value and good quality. There is no indication that higher growth implies a shortage of good value stocks, although (as expected) the highest trailing growth firms do tend to be more expensive.

We do note, however, that lowest quality names have a lower earnings trailing growth (compare the red scatterplot with the blue, for example), and that there appear to be are many cheap names among these lower quality and lower growth names.

Seeing this last observation, we have to ask whether good value names with low quality indeed have low growth. As above, we now pick only good value names (EY_NTM > 7.5%). We then calculate the average EG5Y for each ROE_NTM quintile between 0 and 30%. Chart 6 below shows each quintile over time.

Clearly, the worst ROE_NTM stocks in good value have poor trailing growth. As quality improves (blue to orange to green, etc.), the average trailing growth also improves. As these stocks are all good value, we can see that a combination of good value and good quality also corresponds to stronger trailing earnings growth.

Chart 6: Average trailing earnings growth for good value stocks (EY_NTM > 7.5%) across ROE_NTM quintiles[7], Jan 2000 to Sept 2022.
Worst quality quintile is blue (ROE_NTM between 0 and 8%).
Next is orange (ROE_NTM between 8 and 12%).
Then green (12 to 18%), red (18 to 24%) and finally purple, highest quality (ROE_NTM between 24 and 30%)



Source: Realindex, Factset

Risk

We look at both volatility and beta here, starting with volatility[8]. Although we have not included the same scatterplots as above (in the interests of brevity), we can say that:

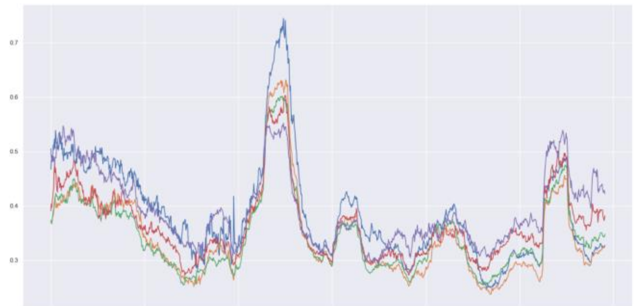
[7] Again note, we have used the term "quintile" here to mean one of five recognisable divisions of the data, not 20% of the sample.

[8] Measured here as 52 week total return volatility

- The cheapest names seem to be mid-range volatility, not high or low, and are perhaps somewhat lower quality.
- The most volatile names are expensive and many are lower quality as well.
- The lowest volatility names also seem to be lower quality.
- There are still many good value names which are good quality at different levels of volatility.

Do good value but poor quality stocks have greater volatility? We can assess this by looking at the following chart. In the same way as above, we now pick only good value names (EY_NTM > 7.5%). We then calculate the average volatility for each ROE_NTM quintile between 0 and 30%.

Chart 7: *Average volatility for good value stocks (EY_NTM > 7.5%) across ROE_NTM quintiles, Jan 2000 to Sept 2022. Worst quality quintile is blue (ROE_NTM between 0 and 8%). Next is orange (ROE_NTM between 8 and 12%). Then Green (12-18%), Red (18 to 24%) and Purple, highest quality (ROE_NTM between 24 and 30%)*



Source: Realindex, Factset

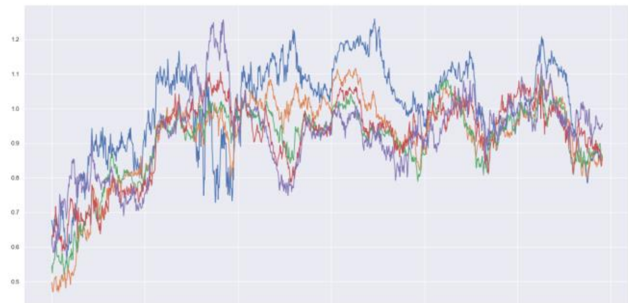
We now turn to beta, and see similar results. Again, we have excluded the scatterplots in the interests of brevity, but we can say that:

- There is some evidence of lower quality among lower beta names, and perhaps these also appear to be more expensive as well.
- If anything, there are few good value high quality stocks that are lower beta as well.

As before, Chart 8 below plots average beta for each quality (ROE_NTM) quintile for good value stocks only. This shows two interesting things:

- Lowest quality stocks (blue, quintile 1) are definitely higher beta consistently over time. The remaining stocks all have very similar beta.
- All good value stocks were quite low beta early in the sample (2000 to about 2005), but have been around an average of 1 or slightly below since then.
- Average beta was highly volatile and variable during the GFC

Chart 8: *Average beta for good value stocks (EY_NTM > 7.5%) across ROE_NTM quintiles, Jan 2000 to Sept 2022.Worst quality quintile is blue (ROE_NTM between 0 and 8%). Next is orange (ROE_NTM between 8 and 12%). Then Green (12-18%), Red (18 to 24%) and Purple, highest quality (ROE_NTM between 24 and 30%)*

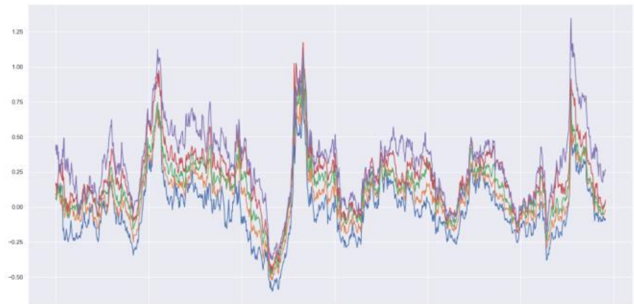


Source: Realindex, Factset

Sentiment

Finally, we look at sentiment characteristics in the spread of EY_NTM and ROE_NTM. For this, we use our 12-month price momentum factor (MOM). Scatterplots are again excluded, however moderate to high momentum names seem somewhat skewed towards lower quality than lower momentum. In Chart 9 we can see that among good value stocks there is little difference in momentum as quality changes, except perhaps that highest quality stocks tend to have higher momentum. Sentiment seems to be more positive for higher quality good value stocks.

Chart 9: Average momentum for good value stocks (EY_NTM > 7.5%) across ROE_NTM quintiles, Jan 2000 to Sept 2022.
Worst quality quintile is blue (ROE_NTM between 0 and 8%).
Next is orange (ROE_NTM between 8 and 12%).
Then Green (12-18%), Red (18 to 24%) and Purple, highest quality (ROE_NTM between 24 and 30%)



Source: Realindex, Factset

Finally, returns to good value and good quality

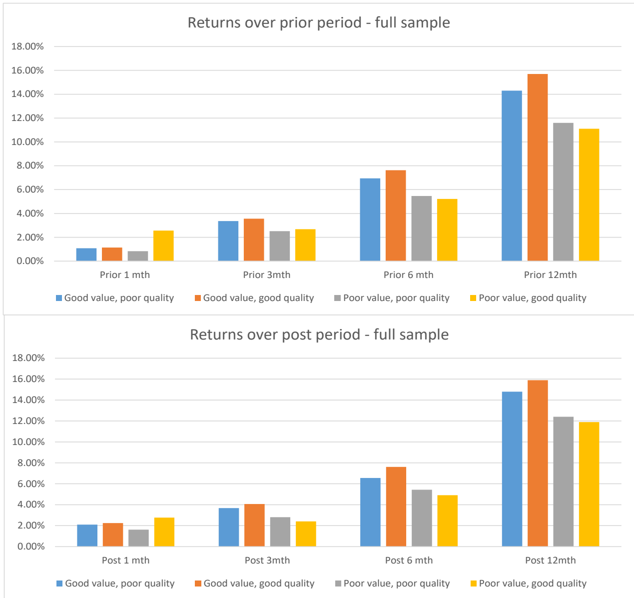
To round out our study, we need to go back to our original split of the universe into the four quadrants of the EY_NTM v ROE_NTM scatterplot. At each point in time, we again divide the universe up of stocks up into four quadrants:

- NW = Good value, low quality
- NE = Good value, good quality
- SW = Poor value, low quality
- SE = Poor value, good quality

Within each quadrant, we look at the total returns preceding and following over 1, 3, 6 and 12 month periods. The idea is to assess whether the market prices in the different value and quality characteristics in the run up, and whether the market then responds positively or negatively after the classification.

We extract these snapshots at the 1, 3, 6 and 12-month sampling intervals, and calculated an equally weighted average of returns preceding and following these sample points of the same periods, so that no overlap in returns is included. Chart 13 shows the results.

Chart 13: Equally weighted average total returns within value/quality quadrants at 1, 3, 6 and 12 months sampling, Jan 2000 to Sept 2022. Returns are non-overlapping



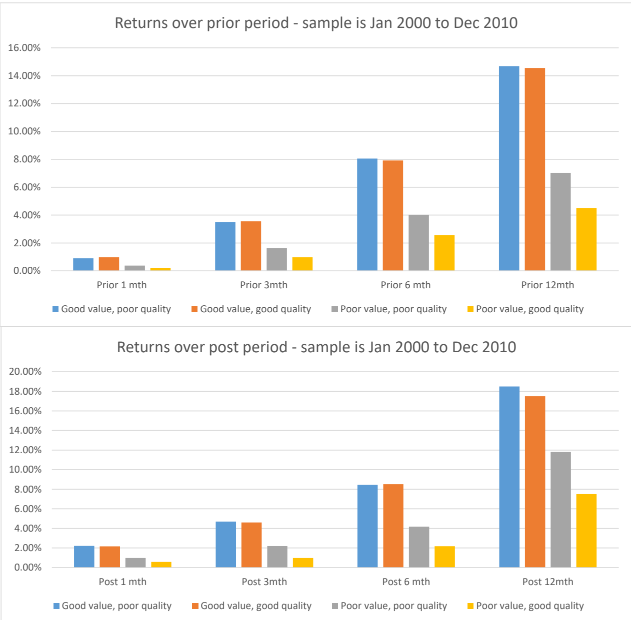
Source: Realindex, Factset

The results are quite clear:

- In the run up to each sample point, returns in more expensive quadrants (SW and SE) slightly underperform are those in good value quadrants (NW and NE). This is true at almost every prior window
- In the run up period, higher quality expensive names (SE) perform similarly to lower quality expensive names (SW)
- Once we classify a stock in each quadrant (i.e., following the event) the better value stocks outperform, with higher quality names performing slightly better.

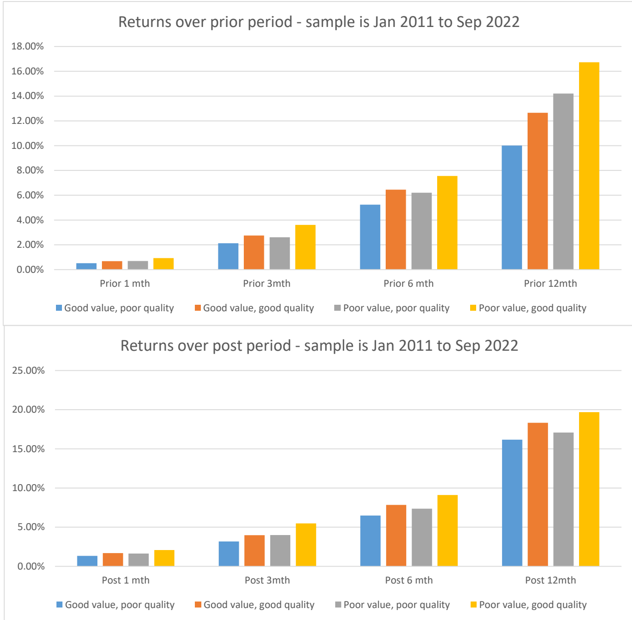
In the last decade we have seen expensive stocks perform strongly against better value stocks, but these charts do not show this. So to examine this we split the full sample roughly in two: Jan 2000 to Dec 2010, and Jan 2011 to Sept 2022. Chart 14 shows these results in Panel A and Panel B separately.

Chart 14, Panel A: Equally weighted average total returns within value/quality quadrants at 1, 3, 6 and 12 months sampling, Jan 2000 to Dec 2010. Returns are non-overlapping



Source: Realindex, Factset

Chart 14, Panel B: Equally weighted average total returns within value/quality quadrants at 1, 3, 6 and 12 months sampling, Jan 2011 to Sept 2022. Returns are non-overlapping



Source: Realindex, Factset

Now the returns to good and poor value over the last decade (when value underperformed significantly) are evident. For the first 10-years of our sample, expensive stocks (especially high quality) underperformed in the prior and post periods. This was a strong time for good value stocks. In post period of the first decade (to Dec 2010), returns to good value stocks were much stronger than for the expensive stocks.

However, from Jan 2011 to Sep 2022, expensive stocks outperformed in the prior (run up) period, but then *matched and even outperformed good value stocks in the post period*. Good quality expensive stocks were much stronger than lower quality – effectively demonstrating (as we know) that expensive stocks just became relatively *more* expensive, rather than allowing good value stocks to rebound.

Conclusion

The aim of this study was to address misconceptions around the quality of good value and expensive stocks. Popular opinion (at least popular among some sections of the market) is that expensive names are always better growth and higher quality than good value names. We have shown here that stocks which are higher quality are also higher growth; there is no reason to suspect that these stocks are uniformly more expensive. In fact, there are many higher quality names, many with high growth, that represent good value, and there are many low quality names that are expensive.

We can summarise our results in more detail as follows:

- Many good value stocks are also good quality. *The Realindex investment process targets these.*
- Many good value stocks are low quality, or "junk". *The Realindex investment process tries to minimise exposure to these.*
- The proportions of these stocks is fairly stable over time.
- Quality and growth are positively related – better quality names have usually had stronger earnings growth, and can also be good value.
- The lowest quality "cheap names" have low growth but are also higher risk and have worse market sentiment than better quality good value names.
- In our full sample, good value stocks tend to outperform more expensive stocks, especially for higher quality names. These expensive names have tended to outperform good value stocks more recently, as we know.

In the next (shorter) paper, we will examine the opposite side of this story – the characteristics of growth names – in the same framework we have used here.

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