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Value of Value

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Evolution of value investing strategies

Value investing as an investment strategy has existed for at least 100 years, likely longer. At its core, value investing is a fairly straightforward strategy: Investors seek to buy an asset when its price is perceived to be "cheap" relative to measures of fundamental value.

Although the genesis of value investing as a framework is generally attributed to Benjamin Graham's work beginning in the 1920s, investors have almost certainly been seeking values for, well, several millennia. In Old Testament times, Israelite patriarch Joseph was a shrewd value investor, buying up large swaths of land for Pharaoh during the famine from hungry and desperate Egyptians, and paying for it with the grain he had wisely accumulated during the years of plenty.

Some of the earliest data used in research on value investing dates from the 1860s. But modern-day value investing arguably began with Graham and his Columbia University colleague, David Dodd, about 90 years ago. Graham and Dodd are well known for advocating an approach of buying stocks trading at discounts to their intrinsic value. Such opportunities are far scarcer today, but the Graham and Dodd philosophy has lived on, evidenced by a long line of wildly successful disciples, including Warren Buffett.

Over the years since Graham and Dodd, two primary approaches to value investing have emerged: First, there is the fundamental approach in which the investor selects a stock based on an assessment of its valuation (often measured as the stock price relative to some financial statement component such as book value or earnings). Some fundamental value investors (especially in the hedge fund realm) will assemble a heavily concentrated portfolio which consists of only a handful of holdings, relying on their deep understanding of the companies in the portfolio. Others construct somewhat more diversified value portfolios, but the common thread between them is that they buy specific securities perceived to be cheap. The list of storied fundamental value investors is quite long, and in addition to Graham and Buffett includes John Templeton and Marty Whitman.

The second primary approach increasingly being employed is what may be referred to as systematic, or diversified, value investing. The idea here is to capture the value premium generally across a broad group of stocks, and not necessarily through specific in-depth knowledge of individual companies. The purest form of capturing this premium is by going long cheap stocks and shorting expensive stocks. If operational or policy constraints limit shorting, simply going long (or overweighting) the cheap stocks can also add value. Investors employing this method tend to have a quantitative orientation, in part because of the amount of data that needs to be analyzed. Many of the so-called "smart beta" exchange-traded funds are simply systematic value investing strategies.

Performance of the Value factor

The performance of the Value factor is cyclical. It tends to be out of favor when its more fashionable cousin Growth does well, which usually coincides with the overall market showing strong performance. However, when the overall exuberance associated with Growth stocks retreats, it is Value's time to shine. This typically happens either during a market correction or right after the market has rebounded when cyclical stocks are in favor. Historical examples of this are the period after the Internet Bubble, the 2008 Financial Crises, as well as our most recent market correction, which started at the beginning of 2022.

The counter-cyclical performance makes Value a strong diversifier with -40 percent correlation with respect to the Market portfolio (see Table 1). In addition, the Value factor commands a sizeable risk premium (around 3.2 percent), which is especially noteworthy due to the fact that it has a beta of close to zero, by construction, with the Market portfolio.

Table 1: Summary statistics of annual returns across various risk factors (1995 to 2022).[1]

	SMB	HML	MOM	QMJ	MKT
mean	1.79%	3.23%	1.62%	2.95%	11.33%
year 2022		3.15%			-17.94%
std.dev	14.62%	14.15%	10.18%	10.47%	18.34%
corr. coef vs mkt		-40.40%			

Source: QRG data and calculations.

As Figure 1 illustrates, Value factor suffered a prolonged period of underperformance, which started around the beginning of 2014 and lasted until about mid-2021. Since then, the Value factor has been on a tear. To wit, the performance of Value YTD in 2022 has been more than 3 percent (see Table 1), while the Market is down by more than 20 percent during the same time period. [2]

While Value's performance has slowed down in the last couple of months, a key question that many investors are asking regarding Value is this: *"Where do we go from here?"* In what follows, we give our view regarding this question.

Figure 1: Cumulative returns of Russell 1000 (right axis, red line) and HML (left axis, blue line) (1994-2022).
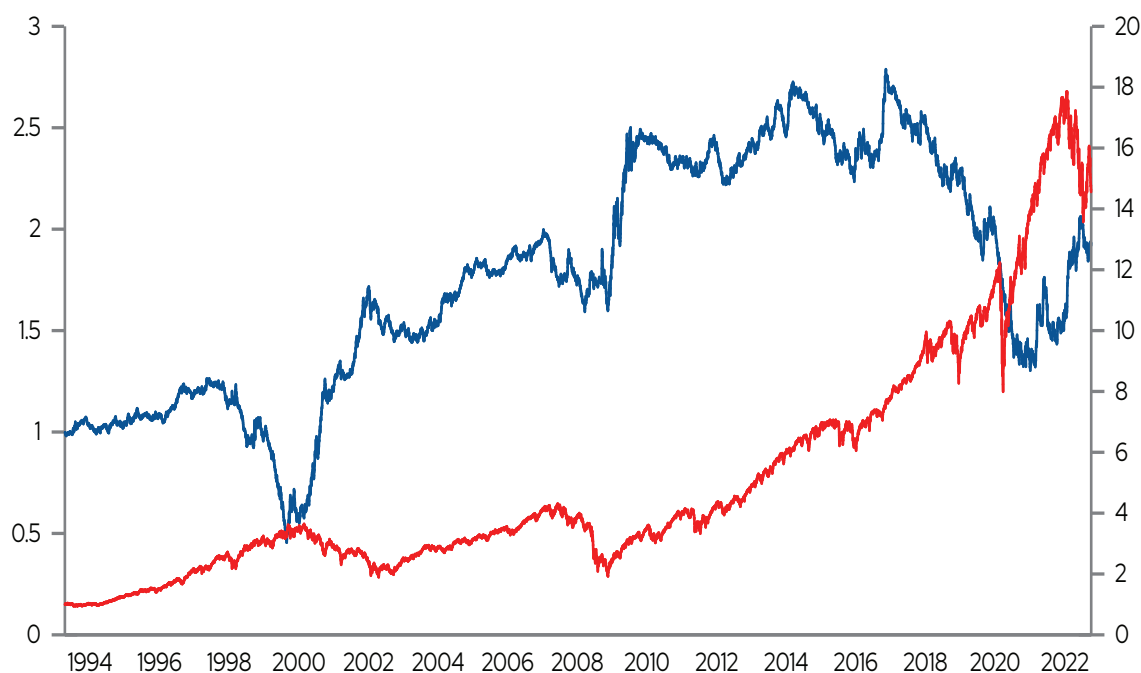
Source: QRG data and calculations.

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1 Here are throughout the text, SMB (Small-Minus-Big) refers to the Size factor, HML (High-Minus-Low) refers to the Value factor, MOM refers to the Momentum factor, QMJ (Quality-Minus-Junk) refers to the Quality factor, and MKT refers to the Market factor, which here is proxied by Russell 1000.

2 Again, it is important to keep in mind that Value is a close to beta zero portfolio, by construction.

Mechanics of the Value factor

To answer the question above, we need to better understand the driving forces of the Value factor's performance. To address this, we take a closer look at the mechanics of the Value factor.[3] It turns out that changes in the pricing multiples play a central role in the performance of the factor.

We first decompose the total return into two components: growth in Earnings-Per-Share (EPS) and growth in P/E multiples.[4,5,6] We then observe the total return and the EPS and P/E growth components of this return for the following two time periods: the first day after the portfolio rebalancing (i.e., the first business day of the year) and the rest of the year. The purpose of delineating the returns into these two time periods is to observe the changes in the EPS and P/E growth components that are caused by the event of rebalancing and separate these changes from those that happen during the holding period.

Table 2: Summary statistics for the Long Side (LS), Short Side (SS) and the factor (HML), broken down into Holding Period (second business day in the year to the last business day of the year), Rebalance Day (first business day of the year) and Overall (all business days of the year). EPS and P/E refer to the EPS growth and P/E growth portions of the return. Time period: 1995-2022.

	Holding Period			Rebalance Day			Overall		
	EPS	P/E	total	EPS	P/E	total	EPS	P/E	total
LS (Value)	-37.50%	52.08%	14.58%	42.85%	-42.52%	0.33%	7.12%	7.73%	14.85%
SS (Growth)	44.23%	-32.69%	11.54%	-43.77%	43.97%	0.20%	1.36%	10.26%	11.62%
factor	-81.73%	84.77%	3.04%	86.62%	-86.49%	0.13%	5.76%	-2.53%	3.23%

Source: QRG data and calculations.

A summary of our observations related to the dynamics of the Value factor is given in Table 2, and we highlight several of these below.

1. As expected from the definition of the Value factor (i.e., overweighting/underweighting low/high P/E stocks), the P/E growth on the long side (LS)[7] of the factor as well as the factor portfolio overall is strongly negative on the rebalance day. That is, the P/Es of the portfolios before and after rebalancing are sharply different. Figure 2 gives a depiction of the P/E of the LS (Value) for the rebalancing day and holding periods, and we can clearly observe the initial drop in P/E due to rebalancing, and then the subsequent increase in P/E during the holding period.[8]

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3   Unbeknownst to us at the time of developing the main ideas in this section, there existed a paper that largely parallels our paper in its approach and conclusions regarding the driving forces behind the Value factor: Jesse Livermore, Chris Meredith, and Patrick O'Shaughnessy (May 2018) "Factors from Scratch: A look back, and forward, at how, when, and why factors work." https://osam.com/Commentary/factors-from-scratch.

4   The starting universe for our Value factor construction is the Russell 1000 index. In addition, we rebalance the factor portfolio once a year, and the factor portfolio rebalancing takes place after the last business day of the year. More details on the factor construction are available upon request from the authors.

5   Total return also contains the dividend component, but, since the Value factor is a close-to-zero-beta portfolio, the dividend component is small in comparison with the capital gains, and we can safely ignore it.

6   Exact expression for the decomposition of total return involves not only a sum of the growth in EPS and growth in P/E, but also the product of these two terms. Dealing with a product, of course, makes things more difficult, especially when these components of the product are sizeable, in which case the product can't be ignored. We resolve this by splitting up the total return into growth in EPS and P/E components that are proportional to the ratio of their respective logs to the total log return.

7   In what follows, we will be referring to the long-side (LS) and short-sides (SS) of the Value portfolio as "Value stocks" and "Growth Stocks", respectively.

8   An interesting side note here is the general richening of the LS of the Value factor (i.e., Value stocks) through time, on an absolute basis. However, as we will see later (refer to Figure 5), relative to the SS of the Value factor (i.e., Growth stocks), Value stocks have become cheaper through time. In other words, while the pricing of Value stocks has increased through time, Growth stocks have gotten even richer still.

Figure 2: P/E of the Long Side (LS) of the HML portfolio, plotted over the first and last business days of the year. Time period: 1995-2022.
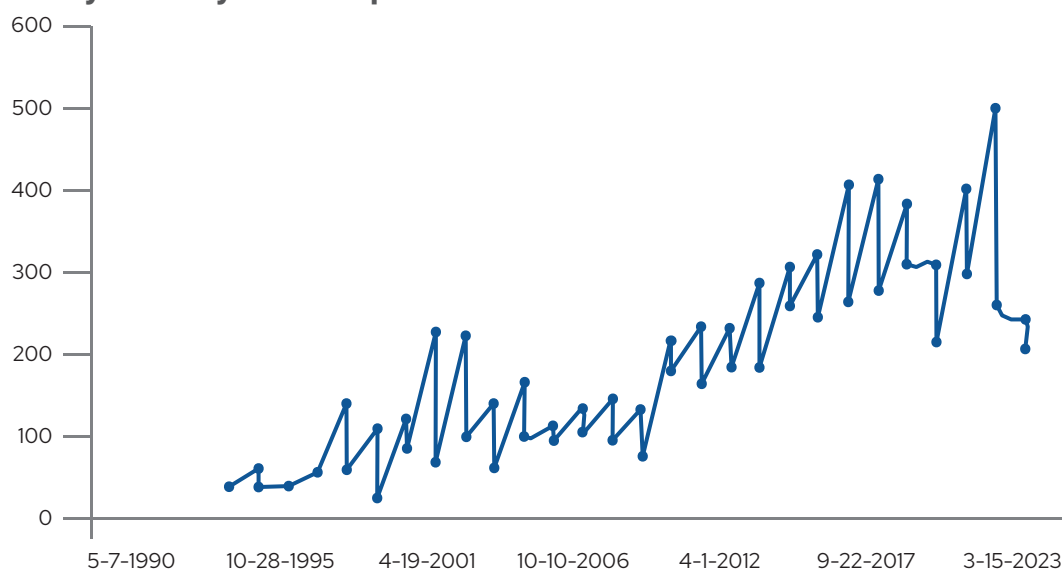
Source: QRG data and calculations.

2. On the day of rebalancing, negative P/E growth (due to rebalancing) gets converted into an almost[9] equal amount of positive EPS growth for the LS of the factor portfolio and vice versa for the SS of the portfolio. This makes sense, as during the portfolio rebalancing, there are no external cash-flows into or out of the factor portfolio, and the purpose of the rebalancing is to decrease/increase the P/E of the LS/SS of the factor portfolio. Consequently, the EPS of the LS/SS has to increase/decrease.

3. The EPS growth of the Value portfolio during the holding period (i.e., throughout the year, except for the first business day) is strongly negative. In particular, the EPS growth rate on the LS of the portfolio is about negative 37 percent, while it is about positive 44 on the short side (SS). This may seem somewhat counterintuitive at first, as Value stocks are viewed as high EPS and dividend stocks. While this is true, it is the <u>level</u>, but not the <u>growth</u> of EPS that is high in Value stocks. On the other hand, true to its name the SS (or Growth) of the portfolio has very strongly positive EPS growth rate.

4. P/E growth contributes strongly positively to the return of the LS and the Value factor, while the opposite is true for the SS (Growth), where EPS growth is what generates the positive return.

5. Without recognizing the importance of the rebalancing on the properties of the factor portfolio, our conclusions regarding the dynamics of the Value factor would be sharply different. In particular, we would (erroneously) conclude that at least half of LS and all of Value factor return comes from growth in EPS, and that most of the SS (Growth) return is driven by an increase in P/E.[10]

The results in Table 2 challenge the widely held notion regarding the main drivers of returns for the Value factor. This view holds that Value stocks deliver high earning stocks for a reasonable price. What we observe, however, is that, while the level of EPS for the LS is much higher than for the SS of the portfolio, the EPS growth rate for the LS stocks is perennially negative. The way that Value stocks and the Value factor generate positive returns is through P/E growth. With this in mind, what is the intuition for this return generation mechanism? We believe that it heuristically works as follows.[11]

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9   If the stock prices were constant during the day after factor portfolio rebalancing, then the P/E and EPS growth components would exactly offset each other. To the degree that they don't, this slight difference reflects the average factor return during one day after portfolio rebalancing.

10   The slight differences between the total returns for LS, SS, and the factor under the "overall" section and the summation of the same across "holding period" and "rebalance day" sections come from return compounding effects (see Table 2).

11   It is the reverse for the SS (Growth).

First, let's say that the market anticipates a drop in the future earnings for a particular stock, for whatever reason (e.g., unanticipated slowdown in sales, turnover of key personnel in the management, etc.). This results in an immediate drop of the stock price, while the observed earnings remain relatively the same,[12] which, in turn, leads to a drop in the P/E. Second, the anticipated earnings drop comes to pass in the ensuing several months. Third, ultimately, the price adjusts upward to account for the initial price overreaction at the unanticipated negative futures earnings.

We believe that the above schematic provides a good intuition for the Value factor dynamics, because investors are not risk neutral. In fact, most investors have loss aversion preferences, where the loss of a certain amount of wealth results in a decrease of one's utility that is much larger, in absolute value, than the utility gained from the same amount of additional wealth. In other words, at the first sign of trouble, most investors would sell first and ask questions later, causing an overcorrection on the downside.

Current multiples and future performance of the Value factor

In the previous section we established that the performance of the Value factor, in general, and the LS of the Value factor, in particular, is driven by the increase in P/E ratios. Therefore, to have the ability to say something about the future returns of the Value factor, it seems reasonable to focus on finding a predictor for the change in P/Es, which would then also have to be positively correlated to future factor returns.

In fact, the current P/E might be such a predictor. The description of the Value factor mechanics above, coupled with the fact that P/Es are mean-reverting, provides an intuition for why the current P/E would be a good predictor for future returns of the Value factor.

Figure 3. Plot of the P/E for the Long Side (LS) if the Value factor on the first business day of the year versus the P/E growth for that particular year. Time period: 1995–2022.
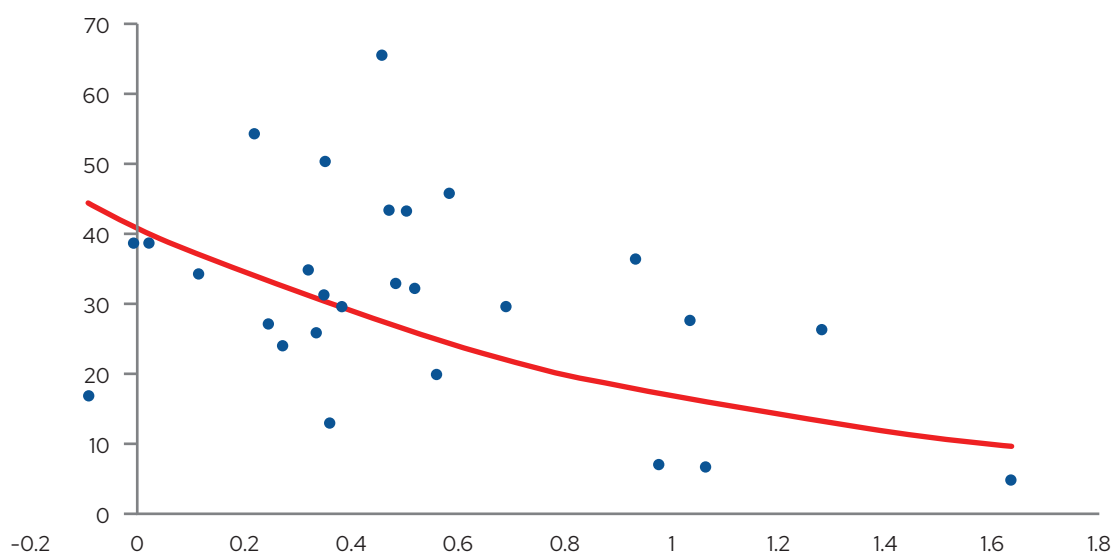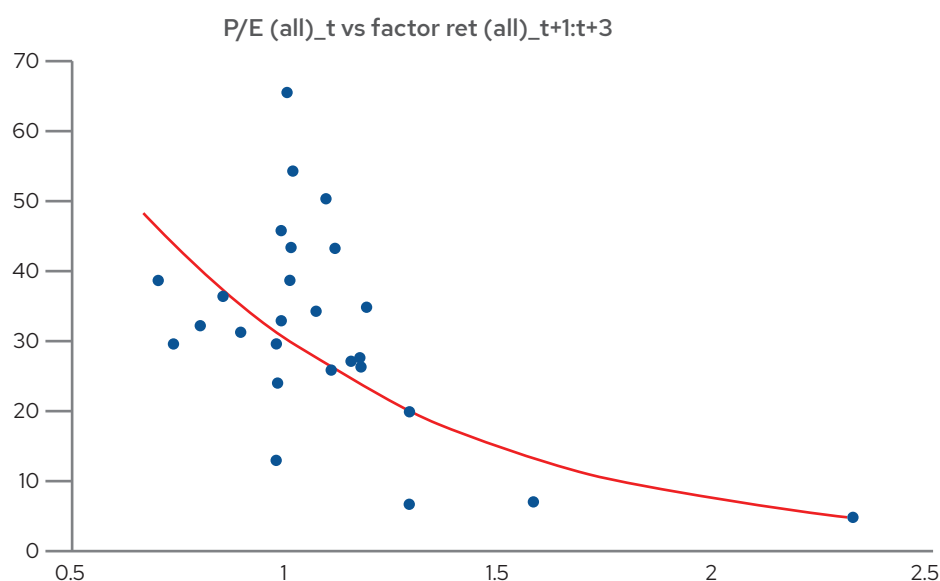

Source: QRG data and calculations.

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12   Note that here we are analyzing trailing 12 months EPS.

To explore this connection, Figure 3 depicts a relationship between the beginning of the year's P/E levels for the factor portfolio and the growth of the P/E for the LS of the portfolio (i.e., the Value portfolio) during that year. When Value stocks are rich, compared to Growth stocks (i.e., when the factor P/E is high[13]), the subsequent LS P/E returns tend to be low, and vice versa. Perhaps, given that P/Es tend to be mean-reverting through time, this is a self-explanatory result.

Since, as demonstrated in Table 2, the P/E growth is the driving force behind Value stock performance, we next hypothesize that there should also be an inverse relationship between the beginning of the period P/Es and the subsequent factor return. The result is given in Figure 4, where we plot the Value factor portfolio P/Es versus subsequent 3-year Value factor returns. As in Figure 3, we again observe an inverse relationship. This is not a novel observation, as this inverse relationship has been observed in previous research, cited above. However, the relationship that we depict in Figure 3 seems to us as the driving force behind this mechanism and clarifies why current P/Es should be related to the overall future factor return.

Figure 4. Plot of the P/E for the Long Side (LS) if the Value factor on the first business day of the year versus the Value factor return over the subsequent three years. Time period: 1995-2022.

P/E (all)_t vs factor ret (all)_t+1:t+3

Source: QRG data and calculations.

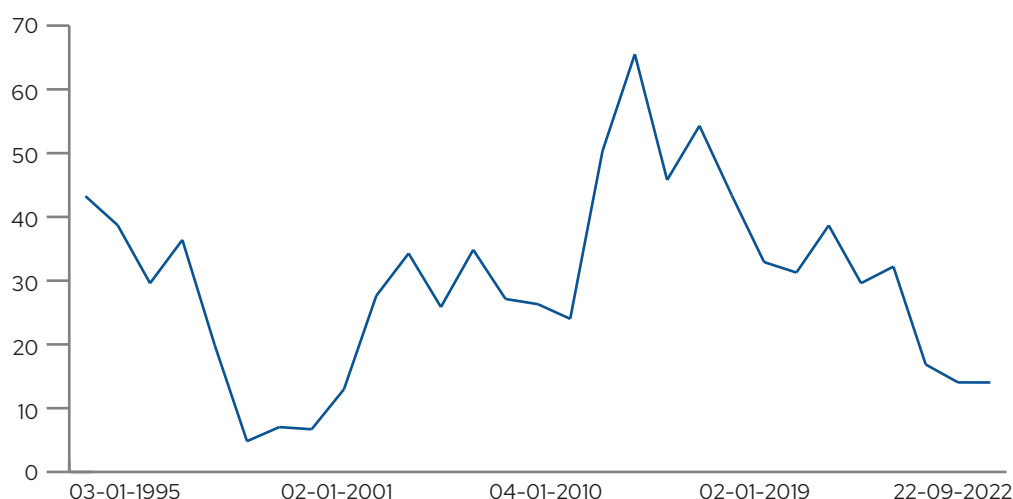13 Note that the price that we use to construct the factor P/Es is a hypothetical construct in the sense that we set this price to a 100 at the beginning of the time series and then advance it along by the total return of the factor. We carry out this exercise separately also for the long and short sides of the factor. The EPS is calculated as the weighted average of the EPS of the individual stocks in the portfolio. Notice that the P/E ratio of the factor calculated in this way moves in an intuitive direction as the underlying components change. For example, it increases (i.e., value stocks are becoming richer compared to growth stocks), when the earnings of the value/growth stocks decrease/increase and/or the returns of the value/growth stocks increase/decrease. There are other versions of the relative price measures (e.g., ratios or differences of the LS to the SS EPS), but they suffer from the problem of having to deal with negative earnings levels, which often show up in the Growth stocks. The negative (and highly volatile) earnings can be so prevalent in Growth stocks that the whole SS portfolio has negative EPS. The usual way of dealing with this is by screening out negative earnings stocks, but this approach can potentially exclude large portions of the universe, rendering the final measure meaningless.

Where do we go from here?

With the above framework in mind, we can now attempt to forecast the return for the Value factor over the next several years. To be able to determine this, we need to first determine the current level of richness of the factor, as given by the factor P/E, which we discussed earlier. As can be seen from Figure 5, the current P/E of the factor is close to the lows not seen for a couple of decades.[14] Using the empirical relationship between the current levels of factor P/Es and the subsequent realized growth in P/Es and factor returns given in Figures 3 and 4 portends sizeable returns for the Value factor portfolio over the next several years.

To summarize, given the relative pricing measure of the factor given in Figure 5, the Value factor currently is priced very cheaply. In addition, as we established in the previous section, when discussing the mechanics of the Value factor, P/E growth is the main contributor to the performance of Value stocks and factor. Finally, as we established in Figure 3, low P/E's tend to predict higher future P/E growth and, therefore (Figure 4) higher Value factor return over several years.

Figure 5: P/E of the Value factor, where the price of the factor is calculated by using a cumulative return through time (price is set to 100 at the beginning of the sample). Earnings for the factor are calculated as a weighted average of individual stock earnings. Period: 1995-2022.

Source: QRG data and calculations.

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14 Note also that the large negative P/E growth during the first business day of the year due to the factor portfolio rebalance does not pay a role in the overall factor return for the year, as it gets canceled out by an (almost) equal amount of EPS growth during the rebalance day (see Table 2 and comment 2 thereafter).