Quality's Superior Returns in China A-Shares

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Executive Summary

Quality stocks are those of financially healthy firms with strong and growing profits. Based on a quantitative measure of quality, previous evidence shows that quality stocks provide their investors with superior returns in the U.S. and other developed markets. We find the same to be true in China, especially when investing based on "expected" quality, a forecast of future quality.

Highlights:

- Diversified strategies with a quality focus are rewarded handsomely in developed markets and especially in China, where the quality premium is twice as large as in the U.S.
- In China, value and quality are positively linked: value stocks have higher future quality than growth stocks.
- A forecast of future quality, or expected quality, dominates firms' current quality in predicting returns in China.
- A quality strategy, buying high expected quality and shorting low expected quality, earns 12 percent per year on a market-adjusted basis in China.

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1. Investing in quality pays off around the globe

A time-honored principle of long-term investing is to buy firms of high quality—financially healthy firms with strong and growing profits. Quantitative metrics of quality have been developed and used to build factor products that allow investors to efficiently implement well diversified strategies with a quality focus. Because quality is a multifaceted concept, a quality metric is generally a composite of various measures.

A common approach used by asset managers and index providers when constructing a quality metric is to combine measures of profitability (e.g., gross margin, return on equity, etc.), stability (e.g., earnings variability), growth (e.g., earnings growth), and financial health (e.g., leverage).[1] In a 2019 study, Clifford Asness, Andrea Frazzini, and Lasse Pedersen (hereafter AFP) detail the construction of a quality metric that they use to investigate the presence of a quality premium in the U.S. and 24 other developed markets.[2]

Even though many investors seek quality, the prices of quality firms are evidently not high enough. That is, AFP find that tilting toward quality in a diversified portfolio is rewarded handsomely. For example, in the last decade, a long-short strategy that buys high-quality firms and shorts low-quality firms earns an annualized return spread of 4.28% in the U.S. and 5.31% in a global strategy across developed markets.

Why does a quality premium exist? That is, why are the prices of high-quality stocks too low? AFP provide U.S. evidence suggesting that the market is slow in recognizing the value of quality. For example, financial analysts systematically set target prices too low for quality stocks and too high for the low-quality "junk" stocks.

2. Quality in China

Does a quality premium exist in China? If behavioral biases are the likely source of the quality premium, we expect the premium to be especially strong in the China A-share market. First, the China A-share market is dominated by retail investors, as 82% of the trading volume comes from retail investors.[3] Retail investors are more likely to exhibit behavioral biases. Second, retail investors in China trade much more actively and

1 Examples include the iShare Quality ETF (QUAL) and the Vanguard Quality ETF (VFQY).

2 See Clifford S. Asness, Andrea Frazzini, and Lasse Heje Pedersen, "Quality minus junk," *Review of Accounting Studies*, 2019, vol. 24, pp. 34-112.

3 See Shanghai Stock Exchange 2018 yearbook summary at http://www.sse.com.cn/aboutus/publication/yearly/documents/c/tjnj_2018.pdf. This number remains largely unchanged in 2019 according to FT report: https://www.ft.com/content/a1aa3a25-484d-480d-83bf-8f9c90504f22.

appear to focus more on short-term rather than long-term earning potential, as compared to their U.S. peers. For example, Chinese retail investors recorded an average turnover of more than 700% in 2018.[4] In comparison, the most aggressive individuals in the U.S. have a turnover of 258% per year, as estimated by Brad Barber and Terrance Odean.[5] Being more susceptible to behavioral biases, the Chinese market could be even slower to recognize true quality and its importance for the long term.

To examine the quality premium in China, we begin by constructing a quality measure that follows the AFP methodology. In particular, profitability is based on variables that aim to capture a firm's earning ability: return on equity (ROE), return on assets (ROA), gross profit over assets, gross margin, and cash flow over assets. Growth combines past five-year growth rates in ROE, ROA, gross profit, and cash flow over assets. Safety combines several variables related to risk and financial health: price volatility, financial leverage, and the volatility of ROE. For a given stock i in the A-share market, we denote its quality measure in month t as $Q_{i,t}$.

Next, we construct a quality factor, $F_{i,t}^{Q}$, by sorting stocks at the end of each month into quintiles based on $Q_{i,t}$. We then form a long-short strategy, going long the value-weighted portfolio of stocks in the quintile with the highest $Q_{i,t}$ values and short the corresponding portfolio of the lowest. Our sample period is from 3/2007 through 12/2020, and we eliminate stocks in the bottom 30% of market capitalization, following the rationale of Liu, Stambaugh, and Yuan (2019).[6] We then regress this quality factor on the market's contemporaneous excess return (MKT_t), obtaining the coefficients and t-statistics (in parentheses) reported in Table 1.[7]

Table 1
Quality premium in China A-shares

Dependent variable: quality factor, F_t^Q

Constant (α in %)	0.71
	(2.06)
MKT_t	−0.21
	(−3.97)

4 See the report at https://www.yicai.com/news/100858573.html

5 See Barber, Brad M., and Terrance Odean. "Trading is hazardous to your wealth: The common stock investment performance of individual investors." *The Journal of Finance*, 2000, 55.2, 773-806.

6 See Jianan Liu, Robert F. Stambaugh, and Yu Yuan, "Size and value in China," *Journal of Financial Economics*, 2019, vol. 134, pp. 48---69. As those authors argue, the smallest stocks in China have prices heavily influenced by their companies' being potential shells in reverse mergers.

7 Market factor can be downloaded from http://finance.wharton.upenn.edu/~stambaug/

The factor's monthly alpha of 71 basis points (bps), with a t-statistic of −3.97, reveals a significant quality premium in China. In fact, the magnitude of China's quality premium, 8.52% annualized, is twice as large as the estimated U.S. quality premium. China's A-share market, where retail investors dominate and focus on short-term price appreciation, is evidently even slower to recognize quality than the more developed markets. Quality strongly predicts return by predicting the market's eventual recognition of information that would otherwise be recognized currently if the market were efficient.

3. Expected quality: quality's value twist in China

In such a world of slow recognition, suppose one could predict what a firm's quality will be in the future. If the market is slow to recognize and correctly price even current quality, then one might expect it to be especially slow in recognizing a change in quality that has not yet occurred, even if the most savvy investors could somewhat predict that change by using current information. The latter information seems especially unlikely to be incorporated in prices set by a market that seems slow to recognize even current quality. If so, stocks whose quality one predicts will improve should be attractive purchases, especially to long-term investors. Similarly, stocks with lower predicted quality should be those to avoid or sell. Motivated by this argument, we explore the possibility of predicting future quality in China and then investing based on those predictions.

What might predict future quality, other than current quality? We entertain a couple of clues, related to the fairly unique relation between quality and value in China. First, in China, a firm's earnings-price ratio, EP, contains information about at least one component of current and future quality: profitability. Value stocks in China, those with high EP, exhibit persistently high profitability, both in the past and in the future, in contrast to their value peers in the U.S. Second, China's value factor—long high EP and short low EP—is positively correlated with its quality factor—long high quality and short low quality. In China, value stocks behave somewhat like quality stocks in terms of return co-movement. In contrast, value and quality are negatively correlated in the U.S. and other developed markets, where value stocks co-move with junk stocks.

The positive relation between value and quality is quite surprising, because it suggests that quality companies with desirable characteristics are relatively cheaper. This relation is quite consistent with a rather unique mentality of Chinese retail investors. China's stock market has a heavy presence of individual investors who devote substantial attention to "concept" stocks and other stocks that are seen as essentially offering option-like, positively skewed payoffs. In essence, these investors come closer to eschewing quality stocks rather than favoring them. A high *EP*, to the extent it reflects a price (*P*) depressed by such preferences, could then further reflect high quality.

Motivated by the above clues, we investigated whether *EP* helps predict quality one, two, or three years later. Specifically, let $EP_{i,t}$ denote the earnings-price ratio of stock i at the end of month t, expressed as a cross-sectional z-score. We estimate a panel (Fama-MacBeth) regression of $Q_{i,t+k}$ on $EP_{i,t}$, and $Q_{i,t}$ for $k = 12, 24,$ and 36. Table 2 reports the regression coefficients and *t*-statistics.[8]

Table 2
Ability of EP to predict future quality
Dependent variable: future quality, $Q_{i,t+k}$

	k = 12	k = 24	k = 36
$Q_{i,t}$	0.353	0.187	0.234
	(9.92)	(9.08)	(8.92)
$EP_{i,t}$	0.103	0.069	0.055
	(9.05)	(7.35)	(6.80)

One would expect current quality to predict future quality, as quality is no doubt fairly persistent. (High quality firms remain high quality over many years in the future.) Indeed, we see from Table 2 that $Q_{i,t}$ enters very significantly in predicting all three future years' quality, with *t*-statistics between 9 and 10. More interesting, however, and consistent with our motivation, we see that $EP_{i,t}$ also enters quite significantly in predicting future quality, with *t*-statistics ranging from 9.1 at the one-year horizon to 6.8 at the three-year horizon.

Based on these regression results, we construct a single measure that represents a stock's predicted quality in future years. To do so, we average the stock's regression-predicted quality across horizons of one, two, and three years:

8 Because the dependent variable and the predictors are z-scores with essentially zero cross-sectional means, the intercepts of the regressions are negligible and rounded to zero in deriving the equation presented below.

$$EQ_{i,t} = 0.258 \times Q_{i,t} + 0.076 \times EP_{i,t}. \qquad (1)$$

We define $EQ_{i,t}$ as *expected quality*.

Under our hypothesis of slow recognition, expected quality can have stronger predictive power for future returns than does current quality, as the market is likely to be even slower to recognize expected quality than it is to recognize current quality. We next show that indeed our expected quality measure, which is enhanced by *EP*, predicts returns more strongly than does current quality.

Specifically, we estimate a set of panel regressions in which the dependent variable is $Ret_{i,t+1}$, the return on stock i in month $t+1$, and the independent variables include current quality, $Q_{i,t}$, and expected quality, $EQ_{i,t}$. We also control for a stock's market capitalization, $ME_{i,t}$, expressed as a cross-sectional z-score. Table 3 reports the regression coefficients, t-statistics, and adjusted R-squared values.

We see from the first two columns of Table 3, that both quality and expected quality, $Q_{i,t}$ and $EQ_{i,t}$, predict returns positively and significantly. However, when we include both of them as predictors in the regression, we see that only expected quality enters positively, with a t-statistic of 4.32. In that regression, current quality, $Q_{i,t}$, actually enters negatively. That is, for a stock with high expected quality, high current quality lowers the predicted return. Therefore, of the two quality measures, current versus expected, the one that exhibits a positive relation to future return when entered in a horse race with the other is expected quality.

Table 3
Ability of expected quality to predict future return

Dependent variable: $Ret_{i,t+1}$			
	(1)	(2)	(3)
$EQ_{i,t}$	0.84 (6.36)		1.66 (4.32)
$Q_{i,t}$		0.74 (6.91)	−0.85 (−2.08)
$ME_{i,t}$	−1.17 (−2.58)	−1.03 (−1.74)	−1.21 (−2.01)
Adjusted R^2	0.0289	0.0278	0.0362

4. An expected quality factor: the better side of quality

Based on the above result, we construct an expected quality factor, F_t^{EQ}, equal to the value-weighted return on stocks with expected quality in the highest quintile minus the corresponding return on those in the lowest quintile. Column 1 of Table 4 repeats the same regression as in Table 1, but with the expected-quality factor replacing the quality factor as the dependent variable.

Table 4
Expected-quality premium in China A-shares

Dependent variable: expected quality, F_t^{EQ}		
	(1)	(2)
Constant (α in %)	1.07 (4.44)	0.63 (5.65)
MKT_t	−0.18 (−5.05)	−0.05 (−3.14)
F_t^Q (quality)		0.62 (21.29)

We see that the expected-quality factor's monthly alpha with respect to the market is 107 bps, 12.84% annualized, with a *t*-statistic of 4.44, as compared to the quality factor's alpha of 71 bps with a *t*-statistic of 2.06 (Table 1). Moreover, if we include the quality factor as an additional independent variable, the resulting alpha for the expected-quality factor is 63 bps, with a *t*-statistic of 5.65, as reported in column 2 of Table 4. That is, the expected-quality factor has a substantial alpha even after controlling for the quality factor.

5. Conclusion

Factor strategies aiming to exploit investors' behavioral biases are especially likely to thrive in the China A-share market, given a heavy presence of retail investors, who are more subject to biases. The quality factor is a striking example. Buying high-quality stocks and shorting low-quality stocks earns significant risk-adjusted returns around the globe, most likely because markets are consistently slow to recognize the value of quality stocks. The underreaction to quality is particularly strong in China A-shares, and the quality premium is twice as large as in the U.S. Moreover, when judged by the ability to predict stock returns in China, the better side of quality is expected quality. A factor based on expected quality offers a market-adjusted alpha of over one percent per month in our sample.

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