Introducing Fundamental Factor Investing

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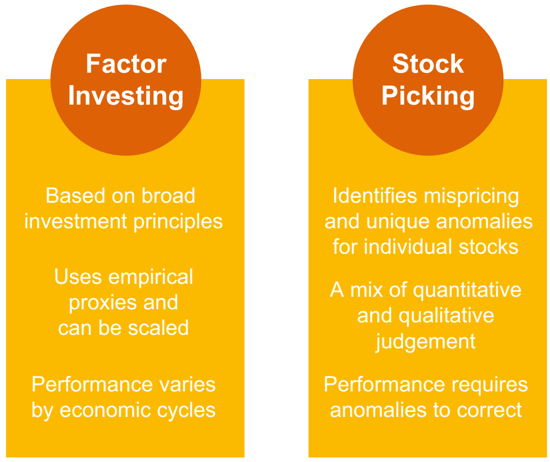
Sound investment principles have a long and illustrious history of being passed down from generation to generation of traders, merchants and investors all over the world. Concepts of value investing, forecasting cash-flows and avoiding unknowable risk have been recorded in most civilizations from ancient aboriginal tribes bartering in Australia to modern-day stock-market investors[1].

Investment principles contain guiding philosophies or rules about how money should be invested, with ideas like looking for bargains (attractive prices), understanding the details of businesses and knowing what the market (and other investors) expectations are. Investment principles therefore represent the essence of good investment practices, and act as a guide for investment decisions.

In equity investing, the empirical embodiment of an investment principle is known as a 'factor'. For example, 'value factor' is a ranking that differentiates between the 'cheap' and the 'expensive' stocks for a given market[2]. There is some subjectivity as to how factors should be defined to best capture the essence of the investment principle, which requires thorough research. For example, understanding how to best capture how 'cheap' something is can vary by geography, by industry and across different types of stocks[3].

Figure 1: Factor Investing and Stock Picking



Source: Rosenberg Equities

[1] Graham and Dodd (1934) was the first modern application of value investing to equity markets, and served as the founding principle to many famous investors including Warren Buffett and Michael Price. [2] In the academic literature, this is often represented by a ratio like Book of Value of Equity to Share Price, which represents the shareholder value inherent in the stock per unit of price. The higher this ratio, the more 'value' the shareholder is regarded to have purchased by buying a single stock. [3] See 'Around the world in four factors', 2017.

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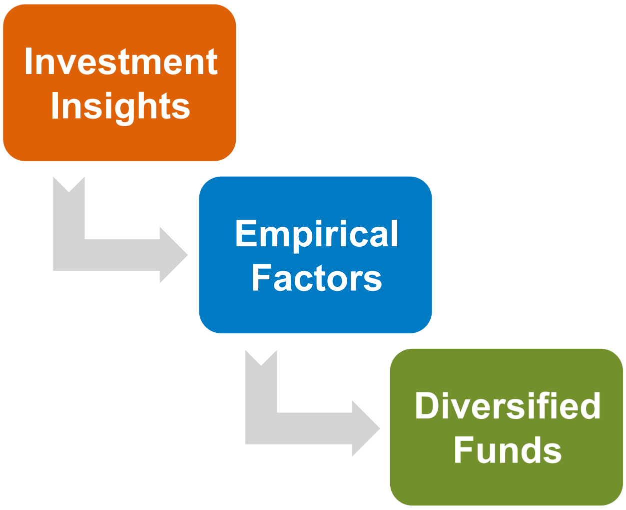
Because factors are empirical representations, they are able to cover a wider range of companies than a single person's subjective opinion can. Put differently, factors are essentially 'industrial scale' representations of investment principles that can apply across a broad range of different stocks globally. Each factor provides a different investment view of a broad range of stocks based on a particular principle.

Factors are normally leveraged to build large, liquid, and diversified portfolios using active views on thousands of companies globally. This is mostly because, as a portfolio gets larger and more diversified, so the unique attributes of a particular company (idiosyncratic information) gets less important. In other words, the idiosyncratic characteristics are diversified, leaving behind the (common) factor information. Picture a single black sheep in a paddock. It has unique characteristics, like its age, its shape and whether it is running or sleeping. Now imagine adding hundreds of thousands of black sheep, each slightly different, but still black in colour. The first sheep's uniqueness dissipates in the bigger picture, and what remains are the common characteristics of the herd, i.e. that they are all black in colour.

Figure 2: Using fundamental factors

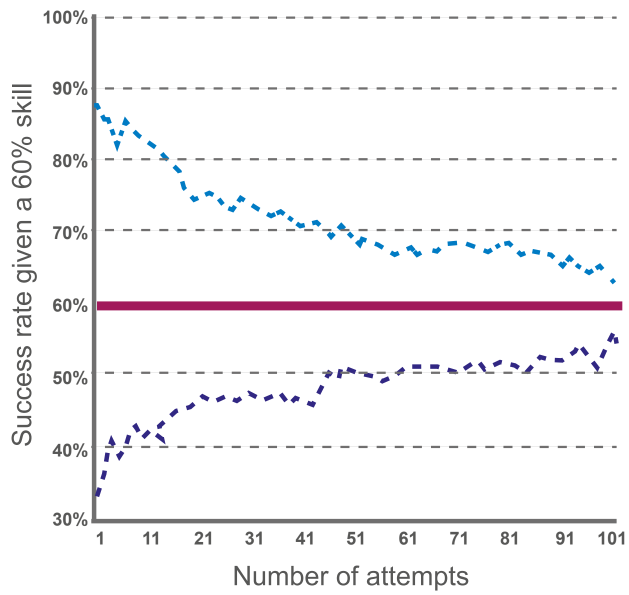


Source: Rosenberg Equities

Diversification is also powerful because it reduces uncertainty when forecasting the future. An investment principle when applied on a single occasion could be wrong or right with perhaps similar probability. For example, for most residential property investors, they may own a single property in their lifetime. Even if they are very skilled investors, it is difficult to prove this by looking at changing prices.

Diversification allows investors to increase the number of attempts at exercising their investment insight. In the same example, the skilled property investor can now buy small pieces of thousands of properties, and this allows them to invest in the residential property 'factor'. As a hypothetical example, the graph below shows how the outcome for a skilled investor (who has a 60% chance of making a good investment) improves with the number of opportunities. A single investment by a skilled investor can be successful 90% to 30% of the time, but as the number of investments increases (more attempts), there is convergence to the true skill (60%), which improves the outcome.

Figure 3: Realisation of skill with more attempts



Source: Rosenberg Equities

Factor investing allows investors to achieve enormous scale through diversification which allows them to exercise their investment skill much more efficiently.

Meet the factor family: value, quality, low volatility and sentiment

There are many important academic studies on factors, the most famous being those written by the Nobel prize winning Eugene Fama and Kenneth French as well as a stream of follow-up studies. The first papers identified three common factors, which then later grow to four and eventually five.

In the many follow-up papers, there were many more factors identified, as many as there are investment principles, and these continue to grow and evolve in the academic literature.[4]

The factors that are commonly identified by both academics and investors as persistent are: (i) value, (ii) market sentiment or momentum, (iii) quality and (iv) low volatility. Academic studies also identify firm-size as a risk factor (the 'small-cap effect')[5], but it is less evidenced as to why smaller firms should provide persistently positive returns.

Why do factors generate active returns?

We believe that factors can represent information about the future business success of companies (a kind of forecast). While factors like value and quality help us identify stable, under-priced companies, factors like market sentiment can also help us identify those companies that may achieve extraordinary growth and success in the future.

We believe that factor investing has to be an active, research-based discipline because it has to produce returns above a (mostly efficient) market benchmark. Investment skills, experienced analysis and clean data are vital components to translating the core investment principles into factors, and ultimately into diversified portfolios.

A second explanation likens the returns to factor investing as a kind of 'risk-premia', arguing that a factor's returns are a compensation for taking additional risk[6]. This appeases the notion of market efficiency, and extends asset pricing to include many factors that could drive returns, so long as they also represented a compensation for undiversifiable (or latent) risk.

However, for many factors, the persistent returns are harder to link directly to latent risks. For example: factor investing focused on low-volatility and quality companies has been the bedrock of many early SmartBeta products because of their strong returns, but it is less clear why these companies should carry a risk premium, if they actually carry lower business risks than others.

The returns to factors over cycles

While factor investing can carry persistent returns above a benchmark over a cycle, the returns to an individual factor are not always positive. Market cycles and risk-aversion often influence if a factor has positive returns over a particular market cycle ('state-dependence'). This is a critical difference between factor investing and stock-picking. Stock-picking identifies anomalies in prices and/or company fundamentals, and seeks to capitalise on these without reference to a larger market cycle. A given factor's returns, on the other hand, will be smoother on average, but potentially have years of mild underperformance if the market cycle is unfavourable. We examine the relationship between factor returns and macro-economic states like inflation, interest rate cycles and earning cycles in later pieces.

Multi-factor portfolios are created by combining factors together, and essentially diversifying the different behaviours over the market cycle for a collection of factors.

Conclusions

Factor investing represents empirical manifestations of some common principles of investing. Using empirical proxies allows active investors to represent these principles on enormous scale across a wide range of stocks globally. When creating factor portfolios, investors rely on diversification across a broad cross-section of stocks to emphasise the importance of factors and effectively decrease stock-specific effects.

The common fundamental factors identified in studies are:

(i) Value and valuation
(ii) Quality
(iii) Low volatility
(iv) Market sentiment (momentum)

Empirical representation of factors requires careful research and implementation, and the returns to factors can vary by market cycle as well as by region.[8] Factors can be used to generate returns, but can also be used to target client preferences like equity dividends or ESG considerations. This allows factors be deployed in portfolios with the dual purpose of return generation and a customised exposure for clients.

[4] Hou, Xue and Zhang (2017) find that there are 447 factors and recorded anomalies in the academic literature to date. [5] Factors can also be drivers of risk between stocks, but not provide positive returns. These are commonly referred to as risk factors and appear in many fundamental risk models used for long-only investing. The term 'unrewarded risk' often refers to exposure to these risk factors that are deemed to be unrewarding because they don't have a long term return associated. [6] Factors were found to produce persistent positive returns over a benchmark, which posed some difficulties for efficient market theories at the time. [8] See 'Around the World in four factors', 2017.

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