Evolve or perish: The evolution of company valuation

The notion that each company has an intrinsic value – a value based on the fundamentals of its business – may be an obvious concept to those in investment markets.

Despite this, how best to determine a company's value is the topic of much debate. Compounding the discussion is the continual evolution of global economies and accounting standards, which serve as a backdrop for changing perspectives on how to differentiate between what is "cheap" and what is "expensive."

Such evolution can have a profound impact on active equity managers. Those unable to adapt as markets and industries evolve can be left using valuation metrics no longer relevant for the current environment.

The following insight looks at the evolution of global economies, accounting standards, and changing client demands, and the impact these changes have on the concept of "value." The paper then looks at the way in which the Macquarie Systematic Investment team has evolved its approach to value to stay relevant in the 21st century.

What is 'value' investing?

Value investing is a style of investing that favours buying stocks at a discount to their intrinsic value.

The theory is intuitive and compelling; buying "undervalued" stocks may provide above-market returns. It was practiced by some investors for decades before the influential paper by Fama and French (1992), culminating in the definition of value as the "book-to-market factor."[1] This defined stocks with high book value to market value as "cheap," and stocks with low book value to market value as "expensive."

Other reference points for value have since been proposed by academics and practitioners, including dividends, net income, cash flow from operations, and, in corporate finance, discounted cash flow models. While each reference point has its pros and cons, the Macquarie Systematic Investment team believes multiple factors are required to holistically consider whether a stock is appropriately priced.

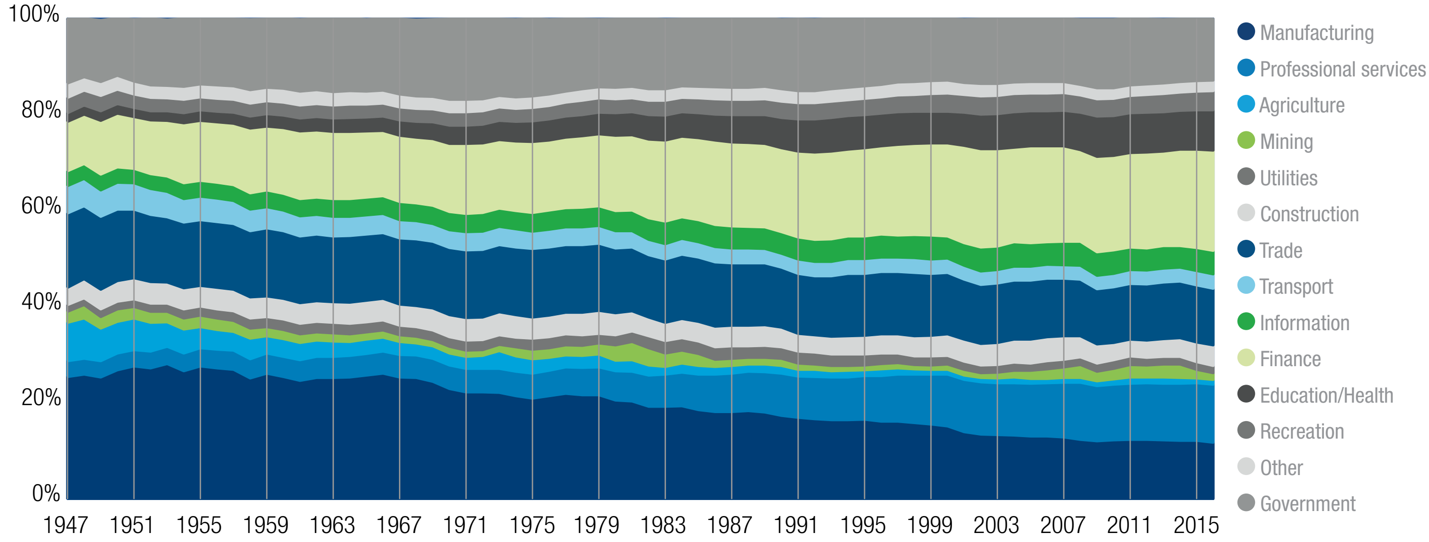
1. Calculated as most recently reported book value of equity scaled by market value of equity.

Shifting composition of the world economy

As economies have evolved over the past century, so too have businesses, along with their relative attractiveness to investors.

Figure 1 shows the change in composition of the US economy since 1947. With its contribution to gross domestic product (GDP) falling from around 25% to slightly more than 11% in 2016, the manufacturing sector is a good example illustrating the evolution of the market and the resulting impact on defining value.

Figure 1: Percentage contribution to GDP by sector in the US.



Professional services include IT services. Information includes Internet services and media. Source: US Bureau of Economic Analysis, December 2016.

One highly relevant characteristic for value investing is return on capital. Businesses that require fixed capital tend to be less scalable, earning a more "constrained" return on capital.

To illustrate the point further, Table 1 shows a hypothetical manufacturing company where machinery is limited to producing a fixed unit of products, each earning a steady margin. To grow earnings, the company needs to invest in more machinery. As both numerator (operating profit) and denominator (capital) increase, return on capital remains unchanged.

Table 1: A hypothetical manufacturing company where a machinery has a maximum production capacity and each unit sold earns a stable margin. The company is assumed to invest in additional machinery in Year 3.

YEAR	1	2	3	4	5
Product/machine	100				
Price/unit	$100				
Cost/unit	$80				
Capital cost	$10,000				
Machines	1	1	2	2	2
Units sold	100	100	200	200	200
Revenue	$10,000	$10,000	$20,000	$20,000	$20,000
Costs (including maintenance)	-$8,000	-$8,000	-$16,000	-$16,000	-$16,000
Profits	$2,000	$2,000	$4,000	$4,000	$4,000
Asset base	$10,000	$10,000	$20,000	$20,000	$20,000
Return on assets	20%	20%	20%	20%	20%

The relevance of book-to-market: Homogeneous versus heterogeneous return on capital

When return on capital is relatively homogeneous across companies, book value will also be more representative of a company's valuation, and we would expect book-to-market to be an effective valuation tool.

In the US economy, professional services, technology, education, and healthcare together with finance have grown significantly at the expense of manufacturing and agriculture. These sectors tend to be "asset-light" by prevailing accounting standards. Business models favoured in the "new economy" tend to be more scalable with low marginal costs per incremental unit of revenue, such as ecommerce, online media, cloud computing, software, and life sciences.

This translates to an economy that is more heterogeneous in terms of profitability, and in which companies may justifiably trade at a more diverse range of book-to-market. In such an economic environment, we would expect book-to-market to be a less effective tool in determining value.

The evolution of accounting standards: Investing through the income statement

The shifting nature of capital has a profound impact on the behaviour of conventional valuation metrics.

Burgeoning technology-related sectors invest heavily in research and development (R&D), and revenue-generating assets are mainly intangible, such as patents, technology infrastructure, and human capital.

Accounting standards have been conservative in recognising the importance of these intangible assets. Investments in intangibles are typically expensed immediately versus investments in real assets which are capitalised. Therefore, low earnings could be indicative of companies investing through their income statements rather than an inability to generate income. As such, book value and earnings become less representative as a reference point for valuations.

Table 2 illustrates the impact of intangibles (R&D) on net income. If capitalised as per traditional asset purchases, net income would be significantly higher.

Table 2: Summary income statement of Alphabet Inc.

$US M (EXCEPT PER SHARE)	2016	2017
Sales	90,272	110,855
Cost of sales	(35,138)	(45,583)
R&D	(13,948)	(16,625)
Other expenses	(17,470)	(22,501)
Operating income	23,716	26,146
Net income	19,478	12,662
Diluted earnings per share (EPS)	27.85	18.00
Class A price (28/02/18)		1,103.92
Price/earnings (P/E) ratio		61.3x

Source: Company reports, Bloomberg.

The impact of the changing characteristics of companies has resulted in a change to the way the market looks at how to capture value.

Keeping value relevant in the 21st century

For the Macquarie Systematic Investment team, defining value to be relevant to the prevailing business environment and accounting standards is an ongoing research topic. In this section, we describe some advancements in refining the value factor.

A holistic view on value: More than book-to-market

Technology is now playing a greater role than ever in shaping businesses. Business models flourishing in the current era are using technology to augment and enhance productivity.

Examples of these transformations include law firms using artificial intelligence (AI) to speed up document reviews that would otherwise take up hundreds of man-hours, and airports using AI to scan through hundreds of camera feeds for security threats.

In recognising that today's world is quite different from when Fama and French first published their research paper on value in 1992, our investment approach has evolved into using a more holistic measure of value, rather than book-to-market alone.

A contemperary value investing strategy should compare stocks on all aspects that are relevant and consistent with shareholder returns, including cash flows, earnings, dividends, and stock buybacks, and should also be aware of persistent differences between sectors, profitability, and growth prospects.

Conclusions

The investment community's focus on trying to differentiate between "cheap" and "expensive" companies will likely see the debate of how best to define a company's value continue for many years yet.

In our view, what best defines value will continue to evolve, along with the global economy and accounting standards.

While still relevant, explanatory power of "conventional" value factors have slowly declined in recent years. New value factors tend to be more holistic, focusing on multiple dimensions of company value. The value factor employed by the Macquarie Systematic Investment team has changed considerably over the years, and will continue to evolve along with the changing investment landscape.

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