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The Popular Stock Metric That Can Lead Investors Astray

by Rachel Layne

Investors may rely too heavily on a financial measure that no longer reflects the economic fundamentals of modern business. What should investors do? Research by **Charles C.Y. Wang** and colleagues.

What if a bedrock method that investors have relied on for decades to find cheap-but-promising stocks to buy low and sell high no longer works well?

The book-to-market ratio has been used since at least the Great Depression to identify undervalued stocks. But it has become so detached from a modern economy driven by research and intellectual property that it no longer accurately signals so-called value stocks, suggests new research from Charles C.Y. Wang, Harvard Business School's Glenn and Mary Jane Creamer Associate Professor of Business Administration.

Investors use book-to-market ratios to spot potentially underpriced stocks, and major stock indexes and institutional investors lean on the metric as well. Yet, in an examination of thousands of stocks over a period of nearly 40 years, Wang and colleagues find that the book-to-market ratio's correlation with other valuation ratios fell from 75 percent to 45 percent. The metric is no longer accurately predicting future returns and growth while the other valuation metrics continue to do so.

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At a time when some question whether the stock market is overvalued and may experience some volatility as the economy continues to recover, Wang's research suggests that investors may be relying too heavily on a formerly tried-and-true tool that isn't paying off as well today. That means investors may need to do more homework if they want to pinpoint valuable stocks in the future.

"We're taught that there are extremely smart people who work in the market, and therefore we should expect markets to be somewhat efficient," Wang says. "But index providers and institutional investors still rely on an increasingly flawed measure for identifying value stocks."

Wang teamed up with Ki-Soon Choi and Eric C. So from the Massachusetts Institute of Technology's Sloan School of Management to author the new research, entitled Going by the Book: Valuation Ratios and Stock Returns (pdf).

A closer look at stock values

The book-to-market ratio takes a firm's book equity value and compares that to its market capitalization, or market equity value. Book value is the value of a firm's assets, including land, equipment, and patents, and minus value of liabilities like debt—essentially an accounting estimate of the value available to shareholders if the company were liquidated. Market value reflects the total value of a public company's outstanding shares based on the market price for a share. A stock with higher book-to-market ratio, such as when it is higher than 1, is considered relatively cheap, and should presage higher future returns.

To find out how accurately this ratio predicted a stock's returns, the authors gathered data from Standard & Poor's Compustat and The Center for Research in Security Prices, or CRSP, and mutual fund holdings from Thomson Reuters S12. They then examined stocks with positive book values traded on the New York Stock Exchange, Amex, and NASDAQ.

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In all, Wang and colleagues examined 84,837 data points from companies with at least 10 months of metrics from 1980 to 2017. The authors excluded financial firms and companies with share prices lower than $5.

Researchers then compared companies' book-to-market values with four alternative valuation ratios they designed: sales-to-price, gross-profit-to-price, net payouts-to-price, and a composite ratio. The researchers found that although these ratios all performed well in predicting stock returns in the 1980s and 1990s, the book-to-market ratio no longer did well between 2005 and 2017, while the alternative ratios continued to.

"I was really surprised to see how poorly book-to-market is doing, while all the other valuation metrics seem to have preserved this ability to help investors identify value stocks," Wang says.

Why the metric isn't working

One reason the metric became less reliable over time? The transition to a knowledge-based economy, the researchers say.

Corporate investments in intangible assets—building a firm's knowledge and organizational capital, intellectual property, brand recognition, or customer loyalty—have become increasingly important over the past 10 to 15 years, the researchers say. However, generally accepted accounting principles in the US treat such investments as expenses that are deducted from income and do not consider them as assets on the balance sheet. Such investments will therefore depress book equity value.

"WHEN YOU KNOW THE ACCOUNTING, YOU CAN, AND YOU WILL, KNOW HOW TO MAKE ALL THIS WORK."

"For technology or healthcare companies, market values might look high compared to book value. But the market might be thinking, 'Well, these firms have made significant R&D investments that likely have economic value.' It's just that they don't show up on the accounting balance sheet," Wang says. These distortions make the book-to-market ratio difficult to compare across firms that make different types of investments or over time.

Stock buybacks and dividends, which lower cash and the book value of equity, also distort the book-to-market ratio, the researchers argue. It is no accident that the rising popularity of buybacks and the importance of intangible investments in recent years have coincided with the decline in effectiveness of the book-to-market ratio as a return predictor.

"That's ultimately what we want to use these metrics for—to help us identify which stocks are more likely to generate good returns," Wang says.

What's an investor to do?

As a result of this changing landscape, investors should consider alternative valuation ratios or perform detailed intrinsic valuation analyses, Wang advises. Specifically:

Consider a broad set of metrics. Investors who rely on valuation ratios to identify value stocks should consider a broader set of gauges, such as sales-to-price, gross-profit-to-price, net payouts-to-price, and earnings-to-price. That approach would tell an investor whether a stock is cheap or expensive with more confidence.

Go beyond ratios. Consider doing a discounted cash flow analysis to estimate the intrinsic value of the stock. Comparing a stock's intrinsic value to its market price is ultimately the most conceptually correct approach.

Creators of market indexes and funds based on them should also reconsider how a value stock is determined, Wang says.

For instance, the FTSE Russell, the top provider of style indexes in the US, gives book-to-market ratios a 50 percent weight when considering firms for membership in the Russell Value 3000, Russell Value 2000, and Russell Value 1000 indexes. Replacing the book-to-market ratio for more relevant valuation ratios will produce more representative value-stock portfolios, the authors suggest.

"Hope is not lost," Wang says. "We're not saying just ignore accounting because it's useless. In fact, what people should learn from this is that you should really learn the accounting and its nuances. And when you know the accounting, you can, and you will, know how to make all this work."

Rachel Layne *is a writer based in the Boston area.*

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