

The Market Valuation Q-uestion

By Robert Huebscher
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At the close of 2008, with US markets approximately 10% higher than their current levels, PIMCO CIO Bill Gross proclaimed that “today’s Q ratio has almost never been lower, and certainly not since WWII, implying extreme undervaluation...”

At the same time, Russell Napier, a strategist at CLSA, a leading international brokerage and investment firm, said Q ratio values supported his expectation of a “horrific” market bottom and further 55% drop in the S&P 500 Index by 2014.



John Mihaljevic

So who is right?

As with most broad-based valuation tools, the Q ratio does not provide uniform and unambiguous guidance to investors. Understanding its derivation and methodology, however, leads to important insights about economic and market trends.

The Q ratio was developed in 1969 by the late economist and Nobel laureate James Tobin, and the metric is often referred to as Tobin’s Q. It measures the market value of a company (i.e., its stock price) relative to the replacement cost of its assets. A value greater than one indicates that a company’s assets could be purchased more cheaply than the company itself and, hence, the market is overvaluing the company, while Q ratios less than one indicate market undervaluation.

John Mihaljevic, a former research assistant of Tobin’s and a leading expert on the Q ratio, writes the [Equities and Tobin’s Q](#), a quarterly publication with his own estimate of the Q ratio and its implications for investors.

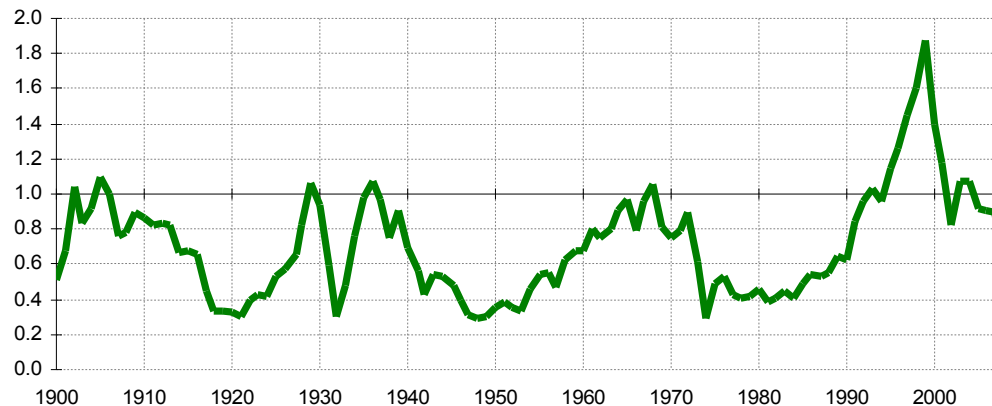
Mihaljevic is “modestly bullish” based on the current Q ratio of 0.43.

Calculating the numerator for the market’s prevailing Q ratio is relatively straightforward, since it equals the market value of the equity and debt of the companies that comprise the S&P 500, less net liquid assets and land value. Calculating the denominator, however, is much more problematic. The replacement value of assets is inherently subjective and can, at best, be estimated. Mihaljevic uses Federal Reserve data to calculate the replacement value of structures, equipment, software, and inventory.



Looking at Mihaljevic's historical data, it is easy to see why Gross believed the market was undervalued:

Tobin's Q Ratio, 1900–2009



Source: The Federal Reserve; Blanchard, Rhee, and Summers; *The Manual of Ideas*.

Currently, the Q ratio is very close to historical bottoms that have corresponded to beginnings of bull markets. At the beginning of March, it reached a low of 0.33, at which point Mihaljevic was strongly bullish – a sentiment that was justified by the ensuing 20% rally.

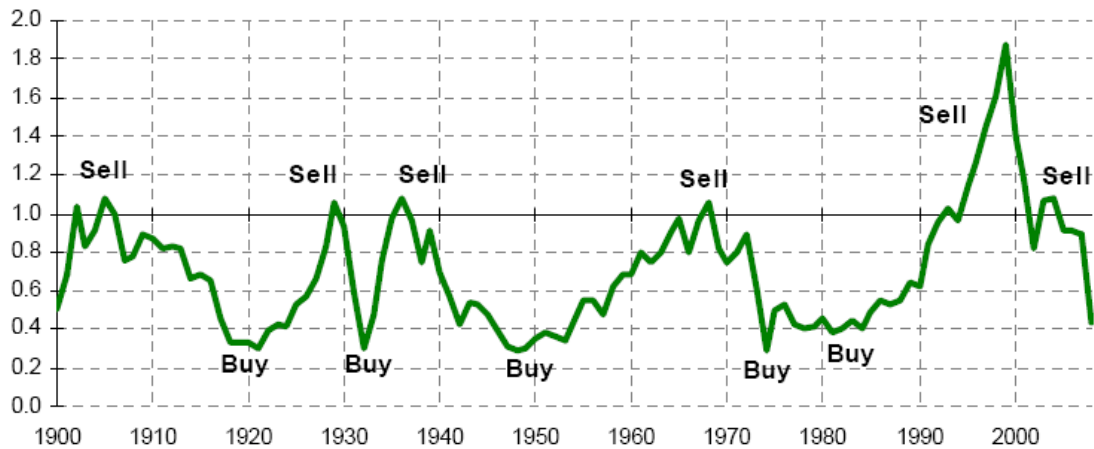
Since 1900, the average Q ratio has been 0.78, and at the beginning of 2008 it was 0.89, declining to 0.55 at the end of last year.

In a 2003 [paper](#), Duke researchers Matthew Harney and Edward Tower showed that the Q ratio offered superior value, as compared to all variants of the P/E ratio, in predicting rates of return over alternative time horizons. They tested the Q ratio against P/E ratios using 30-, 20-, 10-, 1-year moving-averaged earnings. Predictive ability was measured by comparing Q ratio values to subsequent rates of return on the S&P 500 index and ranking the results by R-squared. Incidentally, 30-year P/E ratios offered the second-best predictive value, followed in order by 20-, 10- and 1-year values.

Mihaljevic explored this question further, evaluating predictive value using three different methods for computing the Q ratio. He found that the best strategy was to buy when the Q ratio was below 0.40 and sell when it was above 1.00, as shown in the graph below:



Tobin's Q Ratio — Historical Buy and Sell Signals, 2000–2009 ²



Source: The Federal Reserve; Blanchard, Rhee, and Summers; *The Manual of Ideas*.

Over the past several decades, this strategy would have produced a compounded annual rate of return of several percentage points higher than the S&P 500 Index.

Mihaljevic is confident that Q will reach extreme levels. The ratio hit a low of 0.29 twice over the course of the past century — in 1948 and again in 1974. The ratio was 0.33 or lower in 1918-1921, 1932, and 1949. Those who argue that today's Q sends an extremely bullish signal appear to focus solely on the level of Q, ignoring the direction of change. A ratio of 0.43 is very bullish if Q is on the upswing, but when Q is in decline, a value of 0.43 is only modestly bullish.

Those who say the current Q Ratio is an extremely bearish sign, meanwhile, are missing three key points, Mihaljevic says:

- “Attempting to buy equities at or close to Q’s lows would have caused investors to miss out on decades of strong equity returns.”
- “The relationship between Q and stock prices is not quite linear. We estimate that a 50% drop in Q from current levels would be accompanied by a one-third drop in stock market indices.”
- “Replacement cost, the denominator of the Q ratio, has increased each year since 1946.”

Mihaljevic notes two reasons why critics contend the Q ratio may be losing predictive value. The US economy has become increasingly service-oriented and driven by intellectual property, and the Q ratio does not consider the replacement cost of intangible assets. Those critics should recall, however, that the Q ratio reached excessively high levels at the peak of the Dot Com bubble.



Others contend that the economic rationale behind the Q ratio is sound, but the underlying adjustment mechanism may take longer than most equity market investors can tolerate. Mihaljevic agrees, and he does not advocate using the Q ratio as a short-term market timing tool. When the Q ratio reaches extreme levels (below 0.40 or above 1.50), however, he says it offers meaningful predictive insights for long-term investors.

Although he has never (to our knowledge) explicitly cited the Q ratio, Warren Buffett implicitly embraces the concept. Buffett advocates investing in businesses with “wide moats” – companies that have created defensible barriers to entry, making it difficult for existing or potential competitors to replicate their business model. The cost of replacing such a business would be relatively high, and therefore it would have a low, attractively valued Q ratio.

For more information on the Q ratio, see John Mihaljevic’s web site, the [Manual of Ideas](#).

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