

## **Valuing a Stock, or Is Heinz Worth \$57?**

Did you know that Heinz never actually sold 57 different varieties of food products? Shocking, isn't it? But it's true.

When the company adopted that slogan in the late 19th century, it already had more than 60 varieties of items, from "salad cream" (whatever that is) to mutton broth. Mr. Heinz just thought 57 was a good number, and it sort of stuck. More than a hundred years later, it's a little difficult to think about Heinz without thinking of that number.

Earlier this year Heinz's stock (HNZ) shot up quickly from \$52 to \$55, but it seems to have settled down in the \$53 territory currently. If you look at a three-year chart, though, it seems like it might be on a trajectory to hit that magical number \$57 at some point in the future. Which made us curious: what is Heinz worth?

### **Efficiency, Schmefficiency**

If you ask most people in finance, and certainly almost any business school professor, what a stock is worth, they will tell you that it's worth whatever it's trading for in the stock market. After all, that price is the crowd-sourced price that millions of us have all agreed upon to exchange the stock, based on all the publicly available information that's out there. This idea rests on the Efficient Market Theory (EMT). That is, the market efficiently prices each stock at its true value.

We're not buying it.

Last November, retailer Syms (SYMSQ) filed for Chapter 11 bankruptcy protection. On the morning that this was announced, its stock quickly fell by 26%. By the end of that very same trading day, the stock actually finished *up* 27%. What happened? Apparently, investors realized during the course of the day that Syms owns a good bit of real estate and that it was, therefore, worth much more than they at first realized.

Not every counter-example to EMT is quite so dramatic. Just pull up a one-year chart of Netflix (NFLX) or Abercrombie & Fitch (ANF), and try to convince us that the market is always efficient.

### **The \$57 Question**

But getting back to Heinz. What is it worth? And how should you calculate it?

It's exactly the same as every asset under the sun: Heinz is worth the present value of its future cash flows, discounted at a given rate of return. For certain investments, calculating their present value is relatively quick and easy. For bonds that have an unvarying semi-annual coupon payment with the principal re-paid after a set number of years, it can be as easy as using an HP



calculator. For a pension that pays the same amount every month for the rest of a person's life, you could probably figure it out with an actuarial table and Microsoft Excel.

For stocks, though, cash flows change from year to year. Take Microsoft (MSFT) as an example: in its last four fiscal years, its cash flow has fluctuated from \$16.5B to \$14.8B to \$19.5B to \$23.6B. That's a pretty big range. Can any investor say with certainty what Microsoft's cash flow will be for each of the next, say, 10 years? Probably not.

## Pick a Short Cut

Which is why investors have developed short-cuts. Some investors rely on P/E multiples. A P/E multiple takes a stock's price ("P") and divides it by its annual earnings per share ("E"). Pretty simple. An investor might say that a company growing at around 5% per year should be worth a P/E of 14, while another company growing at around 10% should be worth a P/E of, say, 20.

Other investors rely on other multiples such as EV/EBIT, EV/EBITDA, or P/FCF. In fact, if you ask 10 different investors how they value a certain stock, you will probably hear 12 different answers.

Let's take just two of the short cuts available to us and see how they have fared for Heinz over the last decade.

### **Shortcut #1: Free Cash Flow Multiple**

The first shortcut we'll use is a free cash flow multiple. This multiple is a short way to value a series of future cash flows that grow at a certain rate and then discount them back to today at some other rate.

Heinz's free cash flow over the past ten years has been much more steady than Microsoft's. From a little over \$600M in 2003, they have grown to about \$900M today, which is an average annual growth rate of a little over 4%.

(By the way, for "free cash flow," we are using the simple definition of taking net income, adding back depreciation and amortization, and subtracting capital expenditures.)

To calculate the present value of Heinz's future cash flows, we have to estimate an average growth rate for them from now to perpetuity, and apply an appropriate discount rate. For the sake of argument, let's use a growth rate of about 3% and a discount rate of 10%. The present value of that future stream of cash flows would today be worth about 15 times the most recent year's cash flow.

### **Shortcut #2: The Graham Formula**

For another shortcut to compare that to, let's use something called the Graham Formula, which was popularized by a man named Bob Formula. Just kidding. It comes from none other than Benjamin Graham, the famed investor and former professor of Warren Buffett.



Here is the Graham Formula, which gives the appropriate P/E multiple to value a given stock:  
 $(8.5 + 2g) \times 4.4 \div Y$ .

In words, the Graham Formula says that the right P/E multiple to use in valuing a stock is equal to 8.5 plus twice its expected growth rate over the next five or ten years (g), times 4.4 divided by the prevailing yield on AAA-rated corporate bonds (Y).

The astute reader will immediately see that the formula simplifies to  $(8.5 + 2g)$  if AAA bonds are yielding 4.4%. In an environment like the one we're in now, when AAA bonds are yielding substantially less than 4.4%, the Graham Formula adjusts the P/E multiple upward.

## By The Numbers

Let's see what happens when we apply these two shortcuts to Heinz over the prior ten years.

In early 2005, Heinz had earned about \$800M in free cash flow over the preceding twelve months. Multiplying this by 15 gives a value of \$1.2B, and dividing that by the number of shares outstanding at the time (about 350M) gives an intrinsic value per share of just over \$34.

For the Graham Formula at the time, we can actually cheat a little bit because we know that HNZ's earnings have grown about 4% per year from early 2005 to now. So that makes  $g=4\%$ . The prevailing yield for AAA bonds at that time, or Y, was 5.4%. Together, that makes the formula equal to 13.5. In mathematical terms,

$$(8.5 + [2 \times 4]) \times [4.4 \div 5.4] = (8.5 + 8) \times 0.8 = 16.5 \times 0.8 = 13.5. \text{ That's our "P/E."}$$

Heinz's earnings per share for the preceding twelve months at that time were \$2.24. That's our "E." According to the Graham Formula, Heinz's true value (or "P") in early 2005 was a bit more than \$30 (i.e.,  $13.5 \times \$2.24$ ).

And where was Heinz's stock actually trading at this time? About \$37 or \$38, which is about 10% above our 15xFCF estimate or about 25% above the Graham Formula value. In neither case would HNZ appear to be a "buy."

## But What if I Want to Buy It?

There have been a few times in the past ten years when HNZ traded for less than what the 15xFCF method or the Graham Formula method would have suggested as Heinz's true intrinsic value. The following table shows them:



<b>Time Period</b>		<b>Graham</b>	
	<b>15xFCF</b>	<b>Formula</b>	<b>HNZ</b>
Jul 02	\$37	\$22	\$36
Sep 02 – Apr 03	\$35	\$25	\$32
May 03	\$27	\$31	\$30
Sep 05	\$32	\$35	\$34
Jan 06	\$31	\$35	\$34
Jan 09 – Jul 09	\$43	\$37	\$35

A couple of quick lessons stand out from this analysis.

(1) An investor must be patient. There were only three times in the last decade when Heinz was trading for less than its intrinsic value, according to a 15 times free cash flow metric, or four times using Graham's Formula.

(2) Different shortcuts lead to different values. While the two shortcuts we arbitrarily chose came up with relatively similar values for HNZ in September 2005, they were significantly different from each other in 2002 and 2003.

### Final Thoughts

When using shortcuts like these, there is no magic formula. It is best to use more than one and to err on the side of conservatism when making forecasts.

We should also point out that valuing a stock is just one consideration in deciding whether to buy. A valuation analysis should be used together with other qualitative, but equally important, considerations such as: the competitive advantages of a business and the sustainability of those advantages, the current and future dynamics of the industry, and the quality of management and its record in allocating capital.

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