



ICE - New Functions from Old



Figure 1: Former WWF superstar "Mankind" armed with his notorious sock puppet "Socko."

Home to such eccentric characters as "Mankind" (see Figure 1¹) the World Wrestling Federation is currently the largest organization in the field of professional wrestling promotion and merchandising². Although widely regarded as little more than a gang of muscle-bound and scantily clad men who pretend to beat each other up (see Figures 2 and 3³) World Wrestling Federation Entertainment Inc. is a substantial, publicly traded company (NYSE: WWF) with annual revenues nearing half a billion dollars.

Financial analyst David Forrest⁴ notes:

"Before you dismiss these guys as a bunch of men (and women) running around in their underwear pretending to beat each other up, you should know that the WWF is broadcast in

more than 150 countries in nine different languages. They do more than 200 shows a year ... regularly selling out places like Madison Square Garden, the Skydome in Toronto, and the Arrowhead Pond in Anaheim, CA.

Their flagship television program "Monday Night Raw" on the USA network had the distinction earlier this year of being the highest rated cable television show ever, and is consistently on top of the ratings. Their Thursday night program ... the raucous "Smackdown" has virtually saved UPN from extinction. ... This is big business and they're not likely to go away anytime soon."

WWFE, Inc. made its first public offering of stock in 1999 which valued the company on the first day of trading at about \$2.3 billion. The value has declined somewhat since then, but the WWFE has retained its billion-dollar market capitalization⁵. Furthermore, in August 2000 the prestigious

¹ Image source: <http://www.art.com/>

² Source: <http://www.fool.com/duelingfools/1999/duelingfools991215wwfe001.htm>

³ Image source: <http://therock.com>

⁴ Source: <http://www.fool.com/duelingfools/1999/duelingfools991215wwfe001.htm>

⁵ Source: Jordan Roban and William Chu. "WWFE: Unique branded media franchise now part of the American psyche." WIT Capital Company Report, November 22 1999.

publication “Business Week” ranked WWE, Inc. as number 3 on its list of the top 100 small businesses⁶.



Figure 2: As night fell on Monday March 19, then WWF World Heavyweight champion “The Rock” strode down the ramp to the squared circle (a). In a blatantly unfair handicap match, “The Rock” faced Kurt Angle, Chris Benoit and William Regal. Astonishingly, the referee did not seem to notice as “The Rock” was illegally double-teamed (b) and trapped in a devastating sleeper hold, (c). It seemed certain that as night fell on that fateful evening, “The Rock’s” darkest hour had surely come . . .



Figure 3: (a) Yet life still stirred within “The Rock.” Stunned and groggy from the relentless assault of three wrestlers, “The Rock” glimpsed his championship belt at the edge of the ring, and summoning the strength of a true champion, struggled to his feet. (b) Sensing that his nemesis was vulnerable, former WWF champion “Stone Cold” Steve Austin seized the opportunity to finish “The Rock” off once and for all. Somehow sensing his peril, the wounded “Rock” caught Austin as he entered the ring and applied the devastating “Rock Bottom” (c). A few “Peoples’ Elbows” later, and the reinvigorated “Rock” towered, victorious, over his unconscious attacker.

So, far from simply being a violent form of theater, pro wrestling is big business and an investment opportunity. The main question is: how good an investment opportunity is it?

In this activity, you will analyze actual financial data in ways suggested by professional financial analysts⁷.

Most people running around today are familiar with stock market mantras such as “Buy low, sell high.” Knowing that mantra and being able to put that mantra into practice are two very different things. For example, how do you know when the price of a stock is low? The answer is valuation: determining the worth of a share.

⁶ Source: <http://www.businessweek.com>

⁷ Source: <http://www.fool.com/school/introductiontoevaluation.htm>

Earnings-based valuations: Profit

The first thing to determine is how much money the company actually earns (i.e. the profit). Profit is the difference between revenues (money collected) and costs (money spent).

- Figure 4 (below) shows the revenue and cost curves for WWFE, Inc. from 1996-2000⁸. Using these two curves, sketch a graph showing the profits⁹ of WWFE, Inc. between 1996 and 2000.

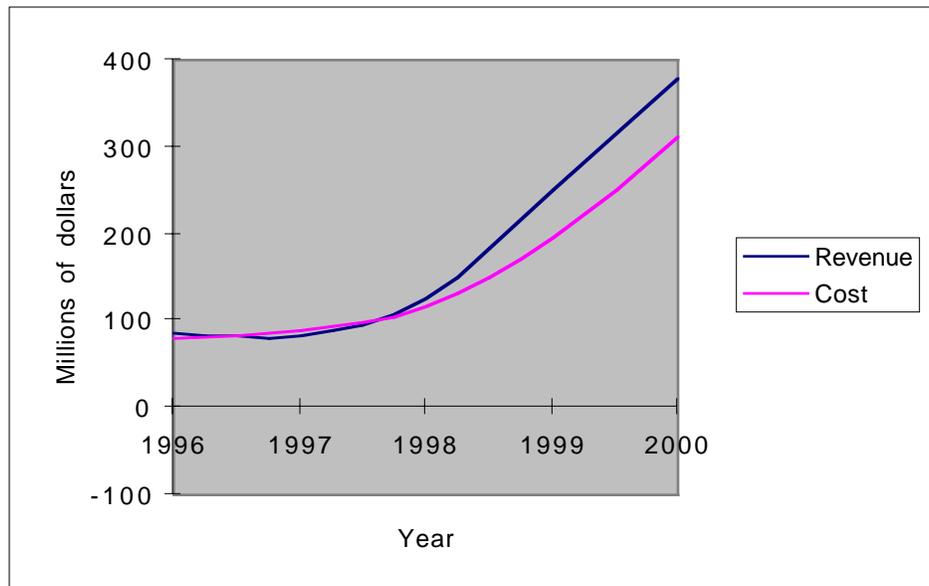


Figure 4: Revenue and cost curves for World Wrestling Federation Entertainment, Inc.

- Some specific values of the revenue and costs generated by WWFE, inc. are given in Table 1 and Table 2 below. Use the data to complete Table 3.

wwfe ss							
	A	B	C	D	E	F	G
1	Year ends	4/30/96	4/30/97	4/30/98	4/30/99	4/30/00	4/30/01
2	Total revenue	85.8	81.9	126.2	251.5	379.3	386
3	(\$ millions)						

Table 1: Total revenues (millions of dollars) for World Wrestling Federation Entertainment, Inc.

wwfe ss							
	A	B	C	D	E	F	G
5	Year ends	4/30/96	4/30/97	4/30/98	4/30/99	4/30/00	4/30/01
6	Cost of revenue	55.2	61	88	147	221	No data
7	Total expenses	25.3	27.6	27.8	47.3	90	No data
8	Total costs	80.5	88.6	115.8	194.3	311	#VALUE!
9	(\$ million)						

Table 2: Total costs (millions of dollars) for World Wrestling Federation Entertainment, Inc.

⁸ Data source: United States Securities and Exchange Commission, Form 10-Q for World Wrestling Federation Entertainment Inc. 1998-2001 and <http://ir.shareholder.com/wwfe/aincome.cfm>

Note: The figures given here are all pre-tax figures, so any profits that you calculate will be pre-tax profits.

⁹ On financial statements, the “profit” that you are calculating is usually called the “operating income.”

Year	4/30/96	4/30/97	4/30/98	4/30/99	4/30/00	4/30/01
Profit (\$ millions)						

Table 3: Profits (millions of dollars) for World Wrestling Federation Entertainment, Inc.

Earnings-based valuations: P/E Ratio

By itself, the profit that a company shows does not give you the whole story. For example, if you simply compared the profits of WWFE, Inc. and Microsoft then you are comparing apples and oranges. Microsoft is a much larger company than WWFE, Inc. so it usually generates larger profits. That alone will not tell you whether their stock is a good investment or not.

A very commonly used indicator of stock value is the price to earnings ratio (or PE ratio). This ratio is published in financial newspapers such as the Wall Street Journal. The definition of the PE ratio is:

$$PE \text{ Ratio} = \frac{\text{Share price}}{\text{Earnings per share}} = \frac{(\text{Share price}) \cdot (\text{Total number of shares outstanding})}{\text{Total profit (i.e. operating income)}}$$

World Wrestling Federation Entertainment, Inc. went public on August 3, 1999. Prior to that the company did not have any publicly traded stock. The number of shares that WWFE, Inc. has issued, $N(t)$, is modeled by the equation:

$$N(t) = 55450740 \cdot (1.135376099)^t,$$

where t is the number of years that WWFE, Inc. stock has been publicly traded. Figure 5¹⁰ (below) shows the share price (in dollars).



Figure 5: Share price for stock in World Wrestling Federation Entertainment, Inc. from August 3, 1999 to October 3, 2001.

¹⁰ Data source: Yahoo Financial Services.

- Calculate the PE ratio for WWFE, Inc. stock to complete the table shown below.

Date	August 3, 1997	August 3, 1999	August 3, 2000	August 3, 2001
PE ratio				

The PE ratio was introduced by financial analyst Ben Graham (who employed many indices to value stocks, not just the PE ratio). The importance of the PE ratio has been simultaneously exaggerated and oversimplified. Many people think something like:

“Low PE ratio = Good stock to buy”

but this is not the whole story. A low PE ratio can suggest that the stock is reasonably priced (whatever that means). However, a low PE ratio can also suggest that the company is in some trouble and their future prospects do not look good.

The most common use of a PE ratio is to compare the PE ratio with the company’s projected growth in earnings over the next year. If the PE ratio and the percentage that the company expects to increase earnings by are roughly the same, then this is a sign that the stock price is not unreasonable.

- According to the PE ratios that you have calculated, how much growth in earnings will WWFE, Inc. have to create in order for their stock to be not unreasonably priced?

- Suppose that the share price of WWFE, Inc. stock remains close to \$12.00 per share for the foreseeable future. How much growth in profits does the company have to generate each year in order to keep their PE ratio from rising?

Revenue-based valuations: The Price to Sales Ratio

Generally speaking, when valuing stocks it is unwise to base your entire assessment of a stock’s value on one index (such as the PE ratio). A second index that is much less well-known than the PE ratio is the Price to Sales Ratio or PSR. This index is defined by the equation:

$$PSR = \frac{(Number\ of\ shares\ outstanding) * (Current\ share\ price) + Long\ Term\ Debt}{Total\ Revenues}$$

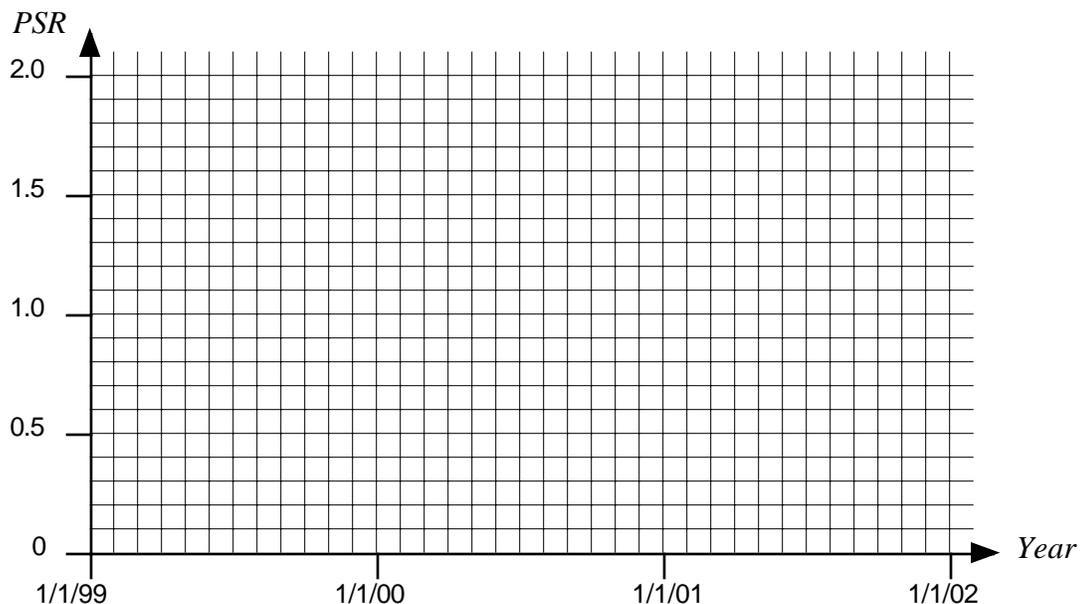
The long term debt¹¹ of WWFE, Inc. are shown in Table 4 (below).

Date	Long term debt (millions of dollars)
4/30/2000	10.4
7/28/2000	10.226
10/27/2000	10.142
1/26/2001	10.002
4/30/2001	9.903
7/27/2001	9.756

Table 4: Long term debt of World Wrestling Federation Entertainment, Inc.

• Enter the data from Table 4 into your calculator. Plot the data and use your calculator to find an equation that does a reasonable job of representing the relationship between long term debt and time.

• Use the equation that you have found, along with any other information that you have found in the ICE, to plot a graph showing the PSR of WWFE, Inc. as a function of time.



Financial analyst Ken Fisher is the person who is most well-known for advocating the use of the PSR to value stocks. Generally, speaking the lower the PSR the better the stock price. Fisher looks for companies with PSRs of less than 1. The PSR can also help to identify companies that might be worth investing in but which failed to show a profit in the last financial year, as the PSR is based on revenue rather than on profit (operating income).

End note: The PE Ratio and the PSR are not the only indices available for valuing stocks. If you are interested in this sort of thing and would like to learn more, you can find a lot of information at:

<http://www.fool.com/School/IntroductionToValuation.htm>

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¹¹ Data source: United States Securities and Exchange Commission, Form 10-Q for World Wrestling Federation Entertainment Inc. 1998-2001.