GENERAL MOTORS AT THE CROSSROADS: ASSESSING THE UNDERLYING VALUE OF THE FIRM'S STOCK PRICE

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ABSTRACT

This paper provides a case-like security analysis of General Motors (GM), a firm under great stress from foreign competitors. It is designed to provide a framework of analysis that instructors can use as a teaching note in an investment course. An abbreviated top down approach is used in which the auto industry is assessed in terms of its sensitivity to the economic business cycle, an industry overview and its competitive structure using Porter's five forces analysis. A variation of the Discounted Dividend Model (DDM) is then used to determine the intrinsic value of GM's stock given the company's many current problems. Finally, a relative assessment approach is taken to determine its value compared to other stocks in the same industry.

INTRODUCTION

General Motors, the world's largest automaker, has been a global sales leader for 75 years and currently employs 327,000 people while manufacturing autos and trucks in 33 countries [taken from the GM website].

Nevertheless, GM (as well as its American competitors Ford Motor and Daimler-Chrysler) are now under great stress and have suffered from high costs, tougher competition from foreign competitors and a decline in the popularity of their most profitable pick-up trucks and sport utility vehicles. GM faces continuing pressure to halt its steady slide in market share. Its cost structure, burdened by a strong union which over the years negotiated high wages, healthcare and pension benefits, has taken its toll on the company as foreign competitors have increased production at non-union factories in the U.S. and Canada (Carol Loomis, 2006).

In 2006, GM took steps to improve its financial position. It negotiated healthcare concessions from the United Auto Workers (UAW), convinced thirty-five thousand hourly workers to accept buyout offers and agreed to sell 51 percent of the company's financial arm (GMAC) to raise needed cash (Paul Ingrassian, 2006).

Nevertheless, GM is still under stress. It is burning cash, its core North American operation is not sufficiently profitable and several broad trends in the auto industry are working against its ability to recover market share (Rafferty and Stoll, 2007). Rising

gasoline prices in the summer of 2007 are slowing the sales of trucks and sports utility vehicles that generate most of GM's profit. The consumer market appears to be shifting to the type of vehicles that Toyota and other Asian automakers are very competitive — and where GM's profit margins are thin (Rafferty and Stoll, 2007). The possibility of a transformational deal with the UAW to reduce pension and health care costs, however, has made GM more attractive as a short term trading possibility in the summer of 2007. Because of the persistence of many of the problems described above, there is considerable uncertainty about GM's long-term competitive position.

GM is a firm that is clearly at the crossroads. Given the company's illustrative history as a global giant and its almost intractable problems, it provides an excellent example upon which to base a security analysis

The purpose of this paper is to provide a teaching note as a framework of analysis for instructors to use in an investment class. First, the paper provides an abbreviated top down approach in which the auto industry is assessed in terms of its sensitivity to the economic business cycle. Secondly, a current overview of the auto industry along with an examination of its competitive structure is provided using Porter's five-forces analysis. All of these are critical components of a security analysis that are typically ignored in valuation projects designed for students. Third, a variation of the Discounted Dividend Model (DDM) is used to determine the intrinsic value of GMs stock. Finally, DDM is used to determine its value relative to other stocks in the auto industry. After covering the GM teaching note, instructors may want to consider requiring students to perform their own security analysis on an assigned firm based on the above framework and the instructions provided in Appendix A.

ECONOMIC ACTIVITY AND THE BUSINESS CYCLE

Because the prospects of a firm are tied to the broader economy in which it operates, a security analysis of GM must consider its sensitivity to the business cycle. The business cycle refers to fluctuations of economic activity about its long-term growth trend and is often measured using real gross domestic product (GDP). The cycle involves shifts over time between periods of economic expansion and contraction (or recession).

Not all industries are equally sensitive to the business cycle. As the economy passes through different stages of the business cycle, the relative profitability of an industry can vary. For example, as the economy begins to recover from a recession, those cyclical industries that produce durable goods (like automobiles) and that have above average sensitivity to rising consumers income will tend to out perform other industries. In addition, low interest rates during the early states of an expansion will further enhance demands for high priced consumer durables (Hirt and Block, p. 160).

Alternatively, as the economy slips into recession consumers can easily defer the purchase of expensive durable goods (Bodie, Kane and Marcus, p. 384). Consequently, under these conditions of falling consumer income the automobile industry will tend to under perform other industries.

Given the auto industry's historical sensitivity to the business cycle, what does this suggest about the short-term prospect of GM's stock value? The current economic expansion (through June 2007) has lasted approximately 67 months and helped propel the overall stock market expansion [compare GM's stock performance relatively to the S&P

500 in figure 1]. Furthermore, the expansion phase of this cycle may not last much longer. According to the National Bureau of Economic Research, the average expansion (trough to peak) since 1945 has only lasted 57 months (see www.nber.org/).

The evidence of any sustained economic decline, however, is difficult to find. The Federal Reserve Board's Beige book (June 13, 2007) provides some current anecdotal information about the economy. A majority of District banks report moderate overall growth and little change in auto sales across districts (www.federal reserve.gov/fomc/beigebook/ 2007).

Publicly available economic forecasts also offer a mostly positive outlook of the economy, although sustainable growth raises concern about incipient inflation. The Wall Street Journal's (WSJ) survey of economists predict real GDP to grow at an annualized rate of 2.6 percent in the second half of 2007 and 2.9 percent in 2008 despite a deepening housing slump (Whitehouse, July 2, 2007). This is smaller than the actual 3.3 percent in 2006. WSJ forecasters also expect the consumer price index — including food and energy — to be up 3.1 percent in December 2007 (year/year) and anticipate little change in short-term interest rates controlled by the Federal Reserve.

The picture that emerges in forecasts of the U.S. economy is one of moderate growth through the first half of 2008 that is unlikely to affect the auto industry adversely. Yet, because of their many problems, including vehicle composition, health and pension costs, GM may not be able to take advantage of the favorable economic environment. Value Line's independent assessment (June 2007) of the stock's appreciation potential is not very encouraging [see appendix B].

INDUSTRY OVERVIEW AND COMPETITIVE STRUCTURE

Analyzing an industry is important for the same reason that understanding the broader economy is critical to any security analysis. Many of the problems and opportunities affecting a single firm may be associated with broader based systemic issues impacting an entire industry. This section provides an industry overview and an assessment of the competitive structure of the auto industry using a five-forces analysis.

INDUSTRY OVERVIEW

The rise of foreign competition and its impact on the American oligopoly of Ford, GM and Chrysler (the big three) has been the most significant historical change to have taken place in the auto industry. The import share of the American market increased to 21 percent over the period 1976 to 1983 (Adams and Brock, p. 101). Initially, foreign firms concentrated on the small car segment of the market. When the big three were able to enlist the government's help in establishing import restrictions on this segment of the market, the Japanese firms moved into the midsize segment of the market. Eventually, both Japanese and European producers moved into the higher priced luxury market. In order to circumvent government trade restrictions, foreign producers began building production facilities in the U.S. While the big three continue to account collectively for two-thirds of all new automobile sales in the U.S. (Adams and Brock, p. 101), they are losing market share (in 2007) and encountering the same problems: hefty pension and healthcare costs and a vehicle line up that is inconsistent with rising fuel costs.

The big three enter negotiations this summer (2007) with the UAW in the hope of easing the burden of retiree health care liabilities that add significant cost to each new vehicle produced. They hope to off load \$120 billion in long-term medical liabilities to a new, union run trust fund outside the company (see Value Line Industry Commentary, June 7, 2007). Consequently, the big three are seeking to sell assets in order to help finance the health care trust fund. Ford is considering the sale of Volvo, Jaguar and Land Rover while GM has already agreed to sell its Allison Transmission unit after nearly 50 years of ownership (Stoll, WSJ article, July 17, 2007).

In mid-May (2007) DaimlerChrysler sold 81 percent of its stake in Chrysler to a private equity firm Cerberus Capital Management, a watershed movement in the U.S. auto industry (Value Line Industry Commentary, June 7, 2007). Obviously, Daimler AG (as the German Company will be known) was unwilling to tolerate the grim financial position of its American operation. The following description of Chrysler's situation is symptomatic of the problems encountered by the big three:

"Chrysler's labor costs are \$30 an hour higher than Toyota's, headed for a gap of \$45 by 2009. Chrysler pays the same wage to UAW janitors and skilled craftsmen. It carries idle workers on its books when no jobs are available. Most of all, it's on the hook for untrammeled health-care spending of 134,000 unionized workers, retirees and dependents — an \$18 billion liability that Toyota, Honda and Nissan don't face. This alone adds a cost of \$1,500 per car." (Jenkins, WSJ article, July 17, 2007).

COMPETITIVE STRUCTURE

The competitive structure of an industry is another important component of a security analysis in that it helps identify factors that are a threat to diminish profitability. One of the most efficient ways to assess competitive issues is to consider Michael Porter's five-forces analysis. Porter (1980, 1985) has highlighted five such factors: (1) rivalry between existing competitors, (2) threat of entry by new competitors, (3) price pressure from substitute or complementary products, (4) bargaining power of buyers, and (5) bargaining power of suppliers. The relevant market for this analysis, the American Auto Industry, is hereby defined to include both the big three and foreign firms with production facilities in the U.S.

Internal Rivalry

With the rise of foreign competitors in the 1970's and 80's, rivalry in the American auto industry has become much more intense. Firms compete on both price and non-price dimensions. According to Besanko (p. 316), price competition erodes profits by drawing down price-cost margins while non-price competition (e.g., new car rebates and interest free loans) drives up fixed cost (new product development) and marginal cost (adding product features). Adams and Brock (pp. 107-108) argue that serious competition began to emerge in the 1990's with a flood of new vehicles, designs and concepts. In recent years there has been significant market share variation, another indication of rivalry and its very strong threat to profits.

Entry

The presence of new firms in an industry may force prices down and put pressure on profits. There are, however, barriers to entry that tend to protect established firms. One would expect the production of automobiles to require significant economies of scale, an important barrier to entry. The new entrant would have to achieve substantial market share to reach minimum efficient scale, and if it does not, it may be at a significant cost disadvantage. While the evidence suggests that economies of scale in the auto industry are substantial, there are also indications that large size may not be as important as commonly assumed (see discussion in Adams and Brock, pp. 103-104). Nevertheless, entry would represent a large capital investment to any new firm and the body of research still indicates that economies of scale represent a substantial barrier to entry. Consequently, entry is currently a weak threat to profitability.

Substitutes and Complements

While five-forces does not directly consider demand, it does consider two factors that influences demand — substitutes and complements. Although new cars generally are slightly price elastic, suggesting few real substitutes (e.g., bus and rapid transit), the demand for a particular model is highly sensitive to price because of the availability of close substitutes for a given model (Adams and Brock, p. 98). A change in the price of a complementary product (e.g., gasoline, batteries, tires) could have a significant impact on the demand for automobiles. The rising price of gas, an important complementary product, is likely to affect some firms more than others depending upon the vehicle composition. Recent rising fuel prices are likely to have a greater impact on the big three whose most profitable models are energy inefficient pick-up trucks and sports utility vehicles. On balance, the overall impact on "industry" profitability from substitutes and complements is weak to moderate.

Bargaining Power of Buyers

Buyer power refers to the ability of individual customers to negotiate prices that extract profit from the seller. Individual consumers have some influence over price within a given dealership, but little power over manufacturers. Customers can easily, and with little cost, switch to other auto dealers. Furthermore, customers now have access to market information (prices and costs) from the Internet that enhances their negotiating power. But when you have many individual customers, each representing a small proportion of total sales, they will have little bargaining power with manufacturers and therefore pose a weak threat to industry profit.

Bargaining Power of Suppliers

Auto manufacturers require inputs-labor, parts, raw materials and services. The cost of these inputs can have a significant effect on profitability. Whether the strength of

suppliers is weak, moderate or strong depends on how much bargaining power they can exert. The auto manufacturers have large supplier networks that appear to exert little bargaining power. Nevertheless, the UAW, the only supplier of labor, has historically exerted a great deal of leverage over the benefits and wages provided by the big three. Because of this historical dominance by the UAW and the uncertain results of their current negotiations with the big three, one has to characterize supplier power, at least in this segment of the American market, as a strong threat to profits.

The following table summarizes the results of a five-forces analysis of the automobile industry.

TABLE 1: Five-Forces Analysis

FORCE	THREAT TO PROFIT		
Internal Rivalry	Strong		
Entry	Weak		
Substitutes and Complements	Weak to Moderate		
Buyer Power	Weak		
Supplier Power	Strong		

DISCOUNTED DIVIDEND MODEL

Nearly all-introductory finance textbooks use the discounted dividend model (DDM), or some variation such as the Gordon model, to introduce the topic of valuing stock.³ "While conceptually important, students quickly learn the practical limitations of such a model when growth rates are high leading to either large or even negative estimates of stock value" (Hoover and Sterbenz, Spring 2003). Consequently several investment textbooks use a variation of the Gordon model that contains the same conceptual framework, but provides a more practical application.⁴ The model used to evaluate GM's Stock value will be a combination of the DDM and a price-earnings (P/E) analysis as described by Malkiel (1963), Hoover and Sterbenz (2003):

$$V_0 = \frac{D_1}{(1+r)^1} + \frac{D_2}{(1+r)^2} + \dots + \frac{D_t}{(1+r)^T} + \frac{V_t}{(1+r)^T}$$
(1)

Valuing a stock using (1) is equivalent to valuing the stock under the assumption that it will be sold in T years. This suggests that if V_T (the value of the stock at some future date) can be estimated, the problem of estimating an infinite numbers of dividends can be avoided. V_T can be determined by estimating the firm's earnings at date T and multiplying them by the expected P/E ratio.

The full model as described by Hoover and Sterbenz, becomes:

$$V_{0} = \frac{D_{0} (1+g)^{1}}{(1+r)^{1}} + \frac{D_{0} (1+g)^{2}}{(1+r)^{2}} + \cdots + \frac{D_{0} (1+g)^{T}}{(1+r)^{T}} + \frac{V_{t}}{(1+r)^{T}}$$

$$(2)$$

Where

Vo = current intrinsic value of GM's stock assuming that it will be sold in T years

Do = dividend recently paid

g =expected growth in dividends

r = required return on GM's stock using the Capital Asset Pricing Model (CAPM)

 V_T = expected P/E ratio times expected EPS in T years

CALCULATION OF INTRINSIC VALUE

The advantage of this full model is that GM's intrinsic value can be estimated using available data and forecasts from the *Value Line Investment Survey* (See Appendix B). The beta value and forecasts of earnings, g, Do and V_T will be taken from the *Value Line Survey*.

The Capital Asset Pricing Model (CAPM) was used to calculate the cost of equity and hence the rate of interest to be used in discounting all future values. The CAPM approach to the cost of equity is

$$r = r_{RF} + (r_M - r_{RF}) b$$

Where: $r_{RF} = Risk$ free rate of return

b = beta value

 $(r_m - r_{RF}) = market's return in excess of the risk free rate (market risk premium)$

A 10-year Treasury bond rate (June 1, 2007) of 4.95 % was used as the risk free rate while the 5.0% suggested by Brigham and Ehrhardt (p. 350) was used as the market risk premium. Value Line provides a beta value of 1.35 for GM as Reference A. The GM cost of equity is 11.70%.

$$r = 4.95 + (5.0) \ 1.35 = 11.70\%$$

The equation to be used in estimating the value of GM's stock is as follows:

$$V_{2007} = \begin{array}{ccc} \underline{D_{2008}} & + & \underline{D_{2009}} & + & \underline{D_{2010}} & + & \underline{D_{2011}} & + & \underline{V_{T2011}} \\ (l+r)^1 & & (l+r)^2 & & (l+r)^3 & & (l+r)^4 & & (l+r)^4 \end{array}$$

According to *Value Line*, the annual dividend is assumed to be \$1.00 with zero growth from 2008 and 2011 (Reference B).⁶ The forecasted price earning ratio (P/E) (Reference C) and earnings per share (EPS) (Reference D) in 2011, hence the value of GM's stock in that year is

$$V_{T2011} = P/E \times EPS$$

= 9.00 x 4.55
= 40.95

Therefore,

$$V_{2007} = \frac{1.00}{(1.117)^{1}} + \frac{1.00}{(1.117)^{2}} + \frac{1.00}{(1.117)^{3}} + \frac{1.00}{(1.117)^{4}} + \frac{40.95}{(1.117)^{4}}$$

$$= 29.37$$

If one compares the intrinsic value calculated of \$29.37 with the actual price of \$30.50 (June 1, 2007), the stock is slightly over valued. Nevertheless, some reservations are in order. The value estimated might be sensitive to a change in some parameter used in the model. To a large degree, the accuracy of this estimate depends on the reliability

of *Value Line's* forecasts. That aside, it is important to encourage students to test the sensitivity of their results to a potential change in some parameter (see appendix A). As an example, the appropriate market risk premium to use in calculating the required rate of return is a controversial topic in finance. Brigham and Ehrhardt (p. 350) suggest a plausible range from 3.5% to 6.5%, and then use 5.0% in their own consulting work. When market prices are high, and investors are feeling less risk averse, they use a risk premium at the lower range. Alternatively, if market prices are depressed and investors are feeling more risk averse, they use a number at the high end of the range.

After re-calculating GM's intrinsic value using a 3.5% and 6.5% market risk premium, the result were at first slightly undervalued (\$31.49) and then marginally over valued (\$27.41). The results do not appear to be very sensitive to a change in this one parameter.

Given the uncertainty of the parameters used, Hoover and Sterbenz (p. 54) argue that this variation of the DDM "is likely to provide useful investment advice for an individual stock only when the apparent mispricing is large." Since this is not the situation with GM's stock, other information must be brought to bear on the investment decision.

CONCLUSIONS

In view of the failure of the DDM to identify a significant pricing opportunity for GM's stock, this security analysis must rely even more on other relevant information.

Given the auto industry's historical sensitivity to the business cycle, GM's prospects are tied to the economy's performance. The picture that emerges in forecasts of the U.S. economy (through the first half of 2008) is one of moderate growth that is unlikely to affect the auto industry adversely. Because of its many problems, however, GM may not be able to take advantage of the favorable economic environment.

This is also an industry characterized by intense rivalry, one in which GM is at a competitive disadvantage to foreign manufacturers that have significantly lower labor cost. GM must change its vehicle composition and somehow negotiate much lower health and pension costs with the UAW. In view of GM's current competitive position, Value Lines' assessment (June 1, 2007) of the stocks appreciation potential is not encouraging.

Relative Valuation⁷

The purpose of the above section is to find out if GM is a good buy relative to not buying it. But the identical valuation model can also be used to determine if GM is a good buy or not relative to other firms in the same industry. Taking an approach similar to that of Hoover and Sterbenz (pp. 49-65), Table 2 is used to compare six major firms in the auto industry: General Motors (GM), Ford (F), DaimlerChrysler (DCX), Nissan (NSANY), Honda (HMC) and Toyota (TM).

TABLE 2: Relative Valuation of Automobile Industry

Stock	Do	g	b	r	Po	Vo	Index
GM	\$1.00	0	1.35	11.70%	\$30.50	\$29.37	1.04
F	0	0	1.40	11.95%	\$ 8.35	\$ 6.78	1.23
DCX	\$2.10	4%	1.30	11.45%	\$91.68	\$73.65	1.25
NSANY	\$0.62	15%	0.85	9.20%	\$22.27	\$28.98	0.77
HMC	\$0.70	24.5%	0.75	8.70%	\$35.39	\$49.17	0.72
TM	\$1.55	15%	0.80	8.95%	\$122.94	\$122.86	1.00

Po is the current market price for each stock as of June 1, 2007. The 2007 dividend (Do), growth in dividends (g), beta values (b) were all taken from *Value Line*⁸. The required rate of return (r) was calculated from the CAPM using a market risk premium of 5% and a risk free rate of 4.95%. Vo represents the calculated intrinsic value of each security. The last column shows a valuation index for each firm. That index is the ratio of the current market share price (Po) to the estimated intrinsic value (Vo). Indexes greater than 1 suggest overpricing, while indexes less than 1 indicate under pricing.

Notice that Ford and DaimlerChrysler relative to the industry are the most overpriced securities. Honda and Nissan are apparently the most under priced securities, and hence may represent the best investment relative to other firms in the industry. The two remaining firms relative to the industry are either correctly priced (Toyota) or slightly overpriced (GM). It is interesting to note that although the economic performances of the two are currently diverging, the market (for whatever reason) has apparently priced these securities correctly.

Endnotes

¹ For example, the Hirt and Block (2006) and Bodie, Kane and Marcus (2007) textbooks have extensive material on economic activity, the business cycle and industry analysis. Yet, the peddogical finance literature, where security analysis projects are designed for students, tend not to require this level of analysis.

$$V_0 = D_1 / (1+r) + D_2 / (1+r)^2 + D_3 / (1+r)^3 + \bullet \bullet$$

To make the DDM practical, it is necessary to introduce some simplifying assumptions. The constant growth DD, or Gordon model, assumes dividends grow at some constant rate so that the simplified model becomes

$$V_0 = D_0 (1+g) / (r-g) = D_1 / (r-g)$$

² Another publicly available forecast of the economy is sponsored by the federal Reserve Bank of Philadelphia. Their survey of professional forecasters (May 14, 2007) provides similar overall results as that reported in the Wall Street Journal.

³ The DDM states that the stock price should equal the present value of all expected future dividends into perpetuity

Where Vo is the estimated value of the stock, g is the growth rate of dividends and r is the required rate of return. See for example Ross, Westerfield, and Jordan (2007), Smart, Megginson and Gitmann (2007), Keown, Martin, Petty and Scott (2005)

⁴ See Hirt and Block (pp. 176-188); also Bodie, Kane and Marcus (pp. 411-412)

⁵ The 10-year U.S. Treasury bond rate for June 1, 2007 was taken from the St. Louis Federal Reserve Board (http://research.st.louisfed.org/fred2/).

⁶The far right column of the attached Value Line sheet for GM (Appendix B) provides forecasts of financial data for the period that ranges from 2010 to 2012. These forecast values are assumed to represent the terminal year 2011, the middle interval of that range. There is no apparent increase in dividends anticipated beyond the \$1.00 currently being paid.

⁷ This approach was not included in Appendix A as a requirement for students. Nevertheless, instructors may wish to include this in their assignment.

⁸ Dividend growth rates for DaimlerChrysler, Nissan, Honda and Toyota were taken from each firm's Value Line Investment Survey (see far left column for the period 2005-2011). Given its diminishing prospects, the growth rate of dividends for Ford was determined to be zero.

References

- Adams, Walter and Brock, James, *The Structure of American Industry*, 11th edition, Pearson Prentice Hall, 2005
- Besanko, D., Dranove, D., Shanley, M. and Shaefer, S., *Economics of Strategy*, 4th ed., John Wiley & Sons, 2007
- Bodie, Zui, Kane, Alex, Marcus, Allan J., *Essentials of Investments*, 6th edition, McGraw-Hill Irwin, 2007
- Brigham, Eugene F. and Ehrhardt, Michael C., *Financial Management Theory and Practice*, 11th Edition, Thomson South-Western 2008
- Hirt, Geoffrey A., Block, Stanley B., Fundamentals of Investment Management, 8th edition, McGraw-Hill Irwin, 2006
- Hoover, Scott A. and Sterbenz, Frederic P., "A Reality Based Method for Valuing Stocks," *Journal of Financial Education*, Spring 2003
- Ingrassia, Paul, "Game Theories." Wall Street Journal, October 18, 2006
- Jenkins, Holman W., "Chrysler's New Master," *Wall Street Journal*, May 23, 2007
- Keown, Arthur J., Martin, John D., Petty, William J., Scott, David F., *Financial Management: Principles and Applications*, Pearson Prentice Hall, 2005
- Loomis, Carol, "The Tragedy of General Motors," *Fortune Magazine*, February 6, 2006
- Malkiel, Burton, "Equity Yields, Growth and the Structure of Share Values," *American Economic Review*, 53, December 1963
- Porter, Michael E., Competitive Advantage: *Creating and Sustaining Superior Performance*, New York: Free Press, 1985
- Porter, Michael E., Competitive Strategy: *Techniques for Analyzing Industries*And Competitors (New York: Free Press, 1980)
- Rafferty, Bree and Stoll, John, "For GM, Curves Lie Ahead," *Wall Street Journal*, July 3, 2007
- Ross, Stephen A., Westerfield, Randolph W., Jordan, Bradford D., Essential of Corporate

Finance, 5th edition, McGraw-Hill Irwin, 2007 Stoll, John D., "Asset Sales are Driving Big Three," Wall Street Journal, July 17, 2007.

Value Line Investment Survey, June 1 and 7, 2007

Whitehouse, Mark, "Why this time Economic Growth is Fueling Cause for Concern", *Wall Street Journal*, July 2, 2007

Appendix A

Investments Homework Assignment Valuation of a Security

Semester/Date Instructor

- 1. Begin with an introduction briefly describing the firm and industry assigned to you. Provide an overview that identifies the problems and opportunities of your firm. Discuss any relevant public policy issues. You are encouraged to use *Value Line* as the primary source of your paper and at least two other current articles in the business press (wall Street Journal, Barron's, Business Week, Forbes, The Economist, etc.). Although you are encouraged to use the Internet (e.g., finance.yahoo.com), just make sure they represent legitimate journalistic sources. Copies of the two articles should be attached to your paper.
- 2. Assess the current state of the U.S. economy and how sensitive your industry may be to the business cycle. Your current textbook should be helpful along with the business press listed above and the following websites: Survey of Professional Forecasters (www.phil.frb.org/econ/forecast/) and the Federal Reserve Beige Book (www.federalreserve.gov/FMOC/BeigeBook/).
- 3. Examine the competitive structure of the industry by conducting a five-forces analysis. While there are many academic sources that discuss Michael Porter's five-forces, here are a few websites: QuickMBA (www.quickMBA.com/strategy/porter/); Purdue University Extension (www.CES.purdue.edu/extmedia).
- 4. Finally, using a combination of DDM and P/E analysis, estimate the underlying value of the firm's stock. You should be guided by the calculations presented by your instructor in assessing GM. The Capital Asset Pricing Model should be used to calculate the required rate of return using the current 10-year Treasury bond (from the Wall Street Journal) as the risk free rate. A market risk premium of 5% is recommended. Use *Value Line* to find the beta value (b), growth rate for dividends (g), forecasted EPS and P/E ratio in the terminal year of your analysis.

Identify the source of all data and financial information used in your paper. Defend all assumptions used in your calculations. How sensitive are your results to a small change in some of the parameters values you are using? Explain. Compare your results to the current market value of the stock. What is your overall assessment of the firm based on what you have read in the business press and *Value Line*? Would you buy the stock? Why or why not? Does your current assessment of the economy influence your assessment of the stock? Does your five-forces analysis reveal any insights? Explain.

The paper that you turn in should contain all calculations in an appendix. Copies of the articles about the firm and a copy of the *Value Line* sheet used must be attached to your paper.

Appendix B

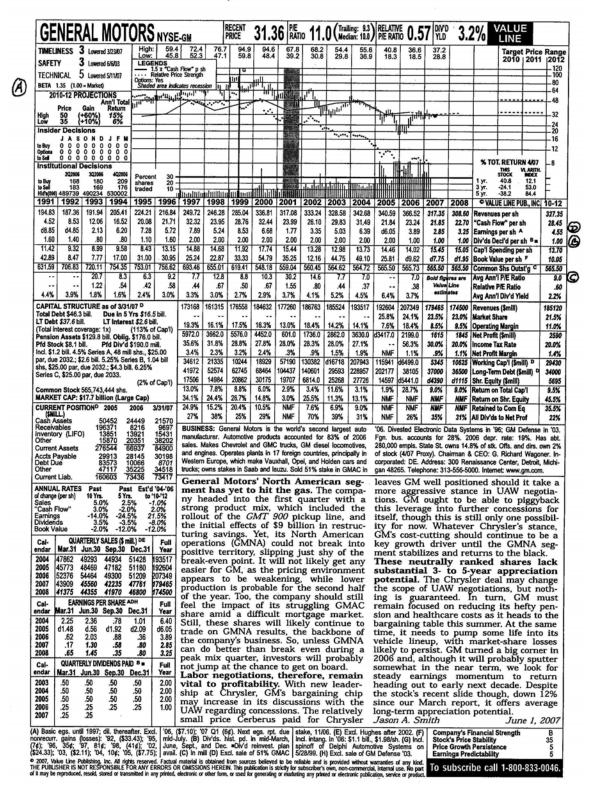


Figure 1

YAHOO! FINANCE

