

Rocky mountain advanced genome essay sample

[Finance](#), [Investment](#)



Rocky Mountain Advanced Genome (RMAG) is headquartered in Colorado Springs, Colorado and has recently been founded by seven research scientists who have taken a leave of absence from major universities and pharmaceutical companies to establish this firm. This company uses gene-sequencing techniques with a computer-driven search algorithm to identify genes in human DNA.

In January 1996, negotiations were coming to the end for a private equity investment by Big Sur Capital Management to buy a 90 percent equity interest for \$46 million in RMAG. The proceeds of the sale would be used to finance the growth of RMAG. Big Sur's saw a highly promising, but a highly risky investment opportunity. Kim McGraw, a managing director with Big Sur was put in the position to negotiate a price and terms of the investment. She based her negotiations on the assessment of RAMG's economic value.

Big Sur Capital Management is located in San Francisco, California and has been organized as a hedge fund since 1968. Over the years it proved more successful in variety of " private equity" investments and had gradually shifted its activities to this area. The firm has \$2 billion under management with 64 investments evenly split between venture capital investments and participations in leveraged buyouts.

Importance of Terminal Value: Terminal value is the lump-sum of cash flows at the end of a stream of cash flows. It is important when trying to value a firm because that are present in the valuation of just about every asset and in the valuation of stocks and whole companies terminal value is usually a very big value driver. The importance of TV is showcased when comparing

terminal value with market prices as it is important to remember that only 10-20% of value of stock is attributable to dividends, this results in 80-90% of the value of stock attributed to “ other factors”, namely terminal value.

Terminal value is the continuing value determined for a company at the end of the forecast period. It is necessary to calculate this value when the company experiences abnormal growth during the first period of its life before reaching a stable, constant growth period. This can be supernormal growth early on, or in the case of RMAG, it can be the period when revenues will be low before their products are finally approved and reach the market. We felt we should use the 15-year forecast horizon that it typically takes to get their products “ from the lab bench to the drugstore.” Terminal value should garner considerable attention when calculating a firm’s value. Despite the possibility being distant in the future, this value must be considered. Without accounting for terminal value you are ignoring the ‘ going concern’ of the business and are calculating value determined only from the period of irregular cash flow growth, a value that does not properly reflect the firm’s true intrinsic value.

Determining Forecast Horizon: When determining the forecast horizon some key points to keep in mind are, you must set the forecast horizon at the point in the future where stability or stable growth begins. Over long periods of time, it is difficult to sustain cash flow growth much in excess of the economy which is measured by the Gross National Product (GNP). The GNP is the total value of all final goods and serviced produced within a nation in a

particular year, plus income earned by its citizens (including income of those located abroad), minus income of non-residents located in that county.

For RMAG we used 15 years as the forecast horizon, because a typical pharmaceutical company can take a drug from inception to the shelf in this time. You can also see in Exhibit 5 how the arithmetic mean of the two companies' forecasts show stable growth in year 15. In the early years RMAG would see negative cash flows because of the research and development of the new drugs and would not realize a profit until year 10 which the most growth coming between year 10 to 13. By year 15, the estimated forecast horizon cash flows are expected to be \$250 million and increase at a rate of 2% to infinity (Exhibit 5).

Terminal Value Estimates: When estimating terminal value there are a few different ways to go about doing it. They are: accounting book value, liquidation value, replacement value, constant growth perpetuity value, discounted cash flows, price/earnings, value/EBIT, and price/book.

Accounting Book Value: Accounting book value estimates look at the original purchase price. We believe that accounting book value should not be used in valuing RMAG because it looks at the original purchase price and undervalues the company because value of RMAG is not in the assets it is in the future revenues. This is important because biotech revenues take years to reach maturity and it does not take into account future cash flows.

Liquidation Value: Liquidation value is the estimated amount of money that an asset or company could quickly be sold for, such as if it were to go out of

business. This method would be used when the market price of equity drops below the liquidation value of the firm, the firm becomes attractive as a takeover target.

The liquidation method is appropriate when selling a business with considerable tangible assets; however it ignores the “going-concern” value. This is a problem when trying to value RMAG. We believe this method should not be used for RMAG because its value is not in its assets and it is in future cash flows.

Replacement Value: Replacement value is the current cost of replacing the firm’s assets less its liabilities. Replacement value uses the market value, which makes this method more appropriate than accounting book value. However, in most cases, value comes from intangible assets and future cash flows as in RMAG case. We believe that this method should not be used because of reasons similar to the accounting and liquidation value limitations. The value will not accurately reflect the value of RMAG’s future cash flows.

Constant Growth Perpetuity Value: Constant Growth Perpetuity Value is calculated from residual cash flows, which RMAG does not pay dividends; also RMAG cannot sustain proposed growth while paying a dividend large enough to please investors (“TV with Dividends”). For these reasons we believe this method should also not be used.

Price/Earnings Valuation: The Price/Earning Valuation is equal to a stock’s market capitalization divided by its after-tax earnings over a 12-month

period, usually the trailing period but occasionally the current or forward period are used.

We believe that this method is too simplistic because it is usually used for startup companies because there is a lack of historic financial data on the company. It reflects expected growth rates, which is subjective, and P/E industry ratio comes from companies that are not structured similarly to RMAG.

We believe that this method should not be used mostly because P/E valuation is simplistic, relies on historic information, and does not account for data specific to RMAG.

Price to Book Valuation: Price to Book Valuation compares the price of a share to its book value, which are the company's net assets minus its outstanding debt. Things to keep in mind when using P/B valuation are the P/B ratio is a measure of relative, not absolute, value since it depends on comparable firms. When accounting standards vary widely across firms, the price-book value ratios may not be comparable across firms. P/B for biotech companies is 6.71.

Discounted Cash Flows (DCF): Discounted Cash Flows is a method of evaluating an investment by estimating future cash flows and taking into consideration the time value of money. It allows for separate valuation of phases in the life cycle which can accommodate life cycle effects. DCF can avoid the difficulties posed by initial growth that is higher than the discount rate, and is very sensitive to input values. Small changes in discount rates or

growth rates can imply large changes in estimated intrinsic value. These inputs are difficult to measure however.

We analyzed four different cash flow forecasts which were a 10- and 15-year forecasts using cash flow forecasts for RMAG performed by both RMAG and Big Sur respectively. The major differences between RMAG and Big Sur analysts were mostly with the revenue that RMAG was expected to receive. RMAG management was more aggressive in the cash flow forecasts anticipating revenue over \$1 billion by 2003 (Exhibit 1). Big Sur analysts believe the Food and Drug Administration (FDA) will slow the process of selling new products thus affecting revenues (Exhibit 2). They also assumed that RMAG would not finance itself with debt. However, both agreed on a 20% weight average cost of capital (WACC).

With the assumptions of growth rates of 0.5% for US population growth, 2.5% for real growth rate in economy (GNP), 5.0% for real growth rate in pharmaceutical industry revenues and a 7.0% RMAG sustainable growth rate projected, we found the enterprise value (EV) at both the 10- and 15-year time horizons with both companies estimated cash flows at each growth rate (Exhibit 1 & 2).

RMAG Valuation Triangulation: Triangulation is an approach to value estimation and analysis that synthesizes values from multiple sources. We decided to use the 5.0% growth rate and a 15-year time horizon for both RMAG and Big Sur, with DCF of \$115.2 million and \$144.8 million, P/E of \$369.0 million and 245.0 million, and P/B of \$73.7 million and \$55.3 million, respectively. Using these values we found Weighted Valuations by

applying a relative weight of 80% to DCF, 10% to P/E and 10% to P/B values to get \$160. 1 million for the RMAG estimates and \$122. 2 million for Big Sur's estimates. Then applying a weight of 50% to each of these values we found a Triangulated Value based on both estimates of \$141. 5 million (Exhibit "Triangulation TV").

Terminal Value Questions: The key questions that we confront are the estimation of when and how transition to stable growth occurs for the firm that you are valuing. Will the growth rate drop abruptly at a point in time to a stable growth rate or will it occur more gradually over time? To answer these questions, we will look at a firm's size (relative to the market that it serves), its current growth rate and its competitive advantages.

For calculating any terminal value certain questions must be asked to establish the proper estimates. First, the future growth rate for the firm's free cash flows must be determined with some certainty. This will determine the value derived from continuing operations, a value that should be considerably more than a liquidation value.

Secondly, the time period before constant growth occurs must be found. This period determines how far back the terminal value must be discounted back to find the present value of the firm. This period of irregular growth will differ depending on the type of firm and the type of growth it will go through before growth stabilization.

You must also have the weighted average cost of capital for the firm in order to be able to discount the terminal value. These three parts allow a terminal

value for a firm to be calculated and to be used in determining the intrinsic value of a firm.

Conclusion & Recommendations: We believe that the offer of \$46 million is undervalued because \$46 million is 90% of \$51.1 million, which is far less compared to the Triangulated Value we found of \$141.15 million. 90% of \$141.15 million equals \$127.04 million. Determining the gain from investment, we figure out the $MV_{\text{Big Sur}} + PV_{\text{RMAG}}$ to be \$2,127,040,000. Then once the $MV_{\text{Big Sur}}$ and the MV_{RMAG} are subtracted out, Big Sur would realize an \$81,040,000 gain in enterprise value from the investment in RMAG (Exhibit TV Triangulation"). This is a 76.18% ROI. We believe Big Sur should invest in RMAG now but keep in mind the risks and have an exit strategy to deploy once value is realized or initial major breakthroughs increase the value of RMAG significantly.

Bibliographies:

Rocky Mountain Advanced Genome case by Robert F. Bruner