

Investment and Portfolio Management: Risk and Return

Marvin Brown is a savvy investor who is always looking for a sound company to include in his portfolio of stocks and bonds. Being somewhat risk-averse, his main objective is to buy stock in firms that are mature and well-established in their respective industries. Wal-Mart is one of the stocks Marv is currently considering for inclusion in his portfolio.

Wal-Mart has four major areas of business: traditional Wal-Mart discount stores, Supercenters, Sam's Clubs, and international operations. Although Wal-Mart was established over 50 years ago, it continues to achieve growth through expansion.

The Supercenter concept, which combines groceries and general merchandise, is extreme success as 75 new Supercenters were opened last year alone. Another 95 will be opening over the next two years. Sam's clubs have also seen success as 99 Pace stores (Pace is one of Sam's former Competitors) were converted to Sam's stores in 1995. In addition to taking over competitor stores, Sam's also opened 22 new stores of its own. Internationally, the picture is equally as rosy.

In Canada, 122 former Woolco stores were converted to Wal-Mart discount stores. Expansion has reached Mexico and Hong Kong as well, as 24 Clubs and Supercenters and 3 "Value Clubs" were established, respectively.

Wal-Mart plans to continue its reign as the world's largest retailer through expansion by developing the previously discussed 95 Wal-Mart discount stores, 12 new Supercenters and 9 new Sam's Clubs. Internationally, 20 to 25 new stores will be built in Hong Kong, China, Argentina, Brazil and Canada. In order to determine if Wal-Mart is a "good buy," Marv has to perform several analyses. First, he must calculate the returns on Wal-Mart's common stock over the past eight quarters as an indicator of how the stock might perform over the next year. He must then calculate the standard deviation of the stock as a proxy for its risk. To aid in his calculation, Marv has gathered the following stock price and dividend data.

Table 1: Quarterly Stock Prices

Quarter Closing	Stock Price
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June 2002	\$55.01
March 2002	\$61.22
December 2001	\$57.41
September 2001	\$49.32
June 2001	\$48.54
March 2001	\$50.16
December 2000	\$52.69
September 2000	\$47.67

Table 2: Quarterly Dividend Payments

Date	Dividend Payment
June 19, 2002	\$0.08
March 20, 2002	\$0.08
December 19, 2001	\$0.07
September 19, 2001	\$0.07
June 20, 2001	\$0.07
March 21, 2001	\$0.07
December 20, 2000	\$0.06
September 13, 2000	\$0.06

Questions

1. Calculate the returns for each of the *seven* quarters.
2. Calculate the standard deviation of the returns from question 1.
3. Assume that Wal-Mart has a Beta of 1.2, the risk-free rate of interest (i.e. as proxied by the return on a 3-month treasury bill) is 5.25%, and the return on the market is 12.2% annually (as proxied by the return on the Standard & Poor's 500). Based on CAPM, what is the required rate of return on Wal-Mart's stock?
4. Using your answer from question 3, if Wal-Mart had an expected return of 14%, would Marv be well advised to purchase the stock? At what minimum expected rate of return would Marv be encouraged to buy the stock?

5. Marv has based his buy decision on quarterly data from the past two years. If the same analysis was performed five years ago or five years from now, do you think Marv might have come to a different conclusion? Discuss the effect that choosing this particular time period might have on Marv's results.