

# Calculating beta for compuware co. essay



Calculating Beta for Compuware Corporation Financial websites tend to calculate beta on securities differently for publicly traded companies. Beta is merely an estimable measure of an assets' risk in relation to the market. Because each website has their own underlying assumptions, they compute beta to have different values. In some cases, the variance in beta is as large as 0.50.

To find out what underlying assumptions websites used to compute their betas, we performed a series of regression analysis using the stock return of Compuware against the S&P 500, and Ken French's Fama-French Model. Assumptions: We are assuming both the S&P 500 and the stock return of Compuware Corp. values are calculated on the same days as Ken French's Data from the Fama-French Model. However, this is not true and further research implies subtracting a day, or selecting which day to start the week or month has significant impact on the value of beta. For the purposes of simplicity, we are assuming this factor should be further researched before making any further assumptions.

Also, Ken French's data did not match up with Yahoo finance's data one for one, so we deleted days or weeks that seemed to be doubles or did not match in order to perform the regression analysis. Largest Effects on Beta: Frequency - Basing stock returns on a daily, weekly, or monthly frequency tends to have a large effect on the value of beta. Our calculations displayed beta ranging from 0.8310 to 2.0848, a 1.

2538 difference in value. The main cause of this large disparity was due to the daily frequency. Daily frequencies seemed to have significantly lower

betas, which can be explained by the sheer volume of data points approaching the market efficient value. For instance, if we exclude the daily frequency, the variance of the betas is reduced to 0.

6462. Time Span - Changing the periods of time on a calculation of beta seemed to have considerable effects on the actual value. This could be due to the differing states of the economy in each year. Sometimes we do well, sometimes we are not doing so well, and the value of beta will depend on which span of time we choose to include. Small Effects on Beta Risk Free Rate - As shown in Exhibit 1, we can see the risk free rate having little effect on the overall beta when taken out or included in the estimation.

This is due to a relatively stable risk free rate over the time periods we have analyzed. If the risk free rates were more volatile, we expect to see a larger variation when accounting for or discounting the inclusion of beta. S&P 500 vs. CAPM - As far as the comparison between choosing the excess returns on the S&P 500 against the CAPM model from Ken French's data, we see very little variation in beta calculations.

However, when we compare the S&P 500 against the CAPM in monthly frequencies, we begin to see an effect as we move towards shorter time spans. For instance, we can see a larger variation in the monthly one year betas than the monthly three or five years. Replicating Yahoo Finance and Reuters Since both Yahoo Finance and Reuters publicly state how they calculate their betas, we can easily match their values with ours. They both perform a regression analysis on the excess returns of the S&P 500 against

the company's stock return. However, they differ on their time span parameters. Yahoo chooses a three year time frame giving a beta of 1.

59, while Reuters chose a five year time frame giving a beta of 1.76. As shown in Exhibit 1, you can see our values match their betas under the monthly, three and five year time spans on Table C. Taking Experience With a Grain of Salt Calculating beta is subjective in nature.

Beta seems to be greatly effected by choosing a specific time frame, and how frequently the data should be recorded. Given this, we believe analysts should be skeptical when looking at a beta without knowing how it was calculated. The ability to manipulate the parameters of calculating a beta should be known and warranted. To be more precise, when we calculate beta, we should actually consider it purely an estimation. Exhibit 1 Beta using S&P 500 and Stock Return One Year Three Years Five Years Entire Sample Daily 0.

83100. 86891. 06741. 4751 Weekly 1. 87711. 67631.

71071. 4499 Monthly 1. 80621. 56801.

76102. 0848 Beta using Ken French (Mkt-rf)+rf and Stock Return One Year Three Years Five Years Entire Sample Daily 0. 90230. 89311.

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06761. 4750 Weekly 1. 87791. 68271. 71301.

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4510 Monthly1. 81281. 59101. 76332. 0902 Beta using Ken French Mkt-rf  
and Stock Return-rf One YearThree YearsFive YearsEntire Sample Daily0.

90290. 89361. 13251. 5970 Weekly1. 86581.

57561. 82211. 5313 Monthly1. 58591. 43861.

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