

Basic measures, policy statement, and securities markets



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Corporate Investment Analysis 1 Basic Measures, Policy Statement, and Securities Markets Alvaro Reis Professor Dr. Anthony Criniti. October 16, 2011 Corporate Investment Analysis Abstract 2 Investment world has become in a very competitive arena where every penny is battled.

Financial analysts need different tools to scrutinize the market and identify the most succulent securities available for their clients, to accomplish this objective they utilize different mathematical and statistical calculations like arithmetic mean, geometric mean and standard deviation, this paper shows how to perform these calculations and how they could be used to identify a good investment. Additionally, provides an overview in formulating and justifying investment policies identifying objectives and constraint considerations.

Finally, market transactions are analyzed to explain how limit transactions work in different scenarios as well as how high or low transaction volume will impact on the efficiency of markets. Corporate Investment Analysis 1. During the past five years, you owned two stocks that had the following annual rates of return: Year Stock T Stock B 1 0.19 0.08 2 0.08 0.03 3 -0.12 -0.09 4 -0.03 0.02 5 0.15 0.04 3 a. Compute the arithmetic mean annual rate of return for each stock. Which stock is most desirable by this measure? Arithmetic Mean: a mathematical representation of the typical value of a series of numbers, computed as the sum of all the numbers in the series divided by the count of all numbers in the series. Stock T: $0.19 + 0.08 + (-0.12) + (-0.03) + 0.15 = 0.054 = 5.40\%$ Stock B: $0.08 + 0.03 + (-0.09) + 0.02 + 0.04 = 0.16 = 1.60\%$ Based on the fact that Arithmetic Mean for stock T is greater than for stock B, stock T is more desirable. b. Compute the <https://assignbuster.com/basic-measures-policy-statement-and-securities-markets/>

standard deviation of the annual rate of return for each stock. (Use Chapter 1 Appendix if necessary.) By this measure, which is the preferable stock?

Stock T Years R? 1 0. 19 2 0. 8 3 -0. 12 4 -0. 03 5 0. 15 Arithmetic Mean 0. 054
 $R? = \frac{0.19 + 0.08 + (-0.12) + (-0.03) + 0.15}{5} = 0.0185$
 $(R? -)? = 0.0185 - 0.054 = -0.0355$
 0.0071
 0.0092
 $? = 0.0657$
 $?? / n = ? (R? - R)? / \text{Number of years} = 0.0657 / 5 = 0.013144$
 $? / \text{Variance} = v ?? / n = v 0.013144 = 0.114647 = 11.4647$

% Stock T Years 1 2 3 4 5 Arithmetic Mean R? 0. 08 0. 03 -0. 09 0. 02 0. 04 0. 016
 $R? = \frac{0.08 + 0.03 + (-0.09) + 0.02 + 0.04}{5} = 0.016$
 $(R? -)? = 0.0041$
 0.0002
 0.0112
 0.0000
 0.0006
 $? = 0.0161$
 $?? / n = ? (R? - R)? / \text{Number of years} = 0.0161 / 5 = 0.003224$
 $? / \text{Variance} = v ?? / n = v 0.003224 = 0.056780 = 5.6780$ %

According to Investopedia. com standard deviation is a statistical measurement that sheds light on historical volatility. A volatile stock will have a high standard deviation while the deviation of a stable blue chip stock will be lower. Stock B is preferable because return on the fund is deviating less from the expected normal returns. Corporate Investment Analysis 4 c. Compute the coefficient of variation for each stock. (Use the Chapter 1 Appendix if necessary.) By this relative measure of risk, which stock is preferable? Coefficient of Variation (CV): a statistical measure of the dispersion of data points in a data series around the mean.

It is calculated as follows: Coefficient of Variation = Standard Deviation / Expected Return
 Stock T: $CV = 0.1146 / 0.054 = 2.12$
 Stock B: $CV = 0.0567 / 0.016 = 3.55$
 According to wikipedia. org in the investing world, the coefficient of variation allows you to determine how much risk you are assuming in comparison to the amount of return you can expect from your investment. In simple language, the lower the ratio of standard deviation to

mean return, the better your risk-return tradeoff. Base on the coefficient of variation stock T is preferable over stock b. d.

Compute the geometric mean rate of return for each stock. Discuss the difference between the arithmetic mean return and the geometric mean return for each stock. Discuss the differences in the mean returns relative to the standard deviation of the return for each stock. Geometric Mean: the average of a set of products, the calculation of which is commonly used to determine the performance results of an investment or portfolio the formula for calculating geometric mean is most easily written as follows: $\{Return 1 * Return 2 \dots Return n\}^{1/n} - 1$ Year Stock T HPR = HPY + 1 HPY HPR 1 0. 19 1. 19 2 0. 8 1. 08 3 -0. 12 0. 88 4 -0. 03 0. 97 5 0. 15 1. 15 Stock B HPY HPR 0. 08 1. 08 0. 03 1. 03 -0. 09 0. 91 0. 02 1. 02 0. 04 1. 04 Stock T = $(1. 19 * 1. 08 * 0. 88 * 0. 97 * 1. 15)^{1/5} - 1 = (1. 2616)^{1/5} - 1 = 1. 0475 - 1 = 0. 0475 = 4. 75 \%$ Stock B = $(1. 08 * 1. 03 * 0. 91 * 1. 02 * 1. 04)^{1/5} - 1 = (1. 0738)^{1/5} - 1 = 1. 0143 - 1 = 0. 0143 = 1. 43 \%$ The main benefit to using the geometric mean is that the actual amounts invested do not need to be known; the calculation focuses entirely on the return figures themselves and presents an “apples-to-apples” comparison when looking at two investment options.

Difference between the arithmetic mean return and the geometric mean: Berk/DeMarzo (2010) the main difference is that an arithmetic mean should be used when each item contained in the list is an independent event. If one event happens to perform poorly, the next event chances of doing poor (or well) isn't affected. In other words, each score or value is independent of the all other scores. However, in the world of finance the arithmetic mean is not <https://assignbuster.com/basic-measures-policy-statement-and-securities-markets/>

an appropriate method for calculating an average, when it comes to annual investment returns, the numbers are not independent of each other.

If you lose a ton of Corporate Investment Analysis 5 money one year, you have that much less capital to generate returns during the following years, and vice versa. According to Reilly/Brown (2009) Arithmetic mean return fitting to measure expected return on the shortterm (1 year) and Geometric mean is appropriate to estimate return potential on the long term. Discuss the differences in the mean returns relative to the standard deviation of the return for each stock: Arithmetic Mean 5.40 % Stock T Geometric Mean 4.75 % Standard Deviation 0.1146 Arithmetic Mean 1.0 % Stock B Geometric Mean 1.43 % Standard Deviation 0.5678 According to an article published on Investment in mutual Fund, the mean (arithmetic and geometric) and standard deviation are the first and most simple of the basic statistical concepts used in investing. The mean and standard deviation of returns provide the basic profile of any security with respect to risk and return. The mean, in statistics, is merely the arithmetic average. The mean in investment is used as an estimate of expected future returns because it's the best estimate solely from past data.

So it is uses to project the future and always deliver the obligatory warning that past returns are not necessarily indicative of future returns. On the other hand, standard deviation is a measure of variability which is used as the standard measure of the total risk of individual assets and portfolios of assets. In plain English, the standard deviation is the absolute value of the average deviation from the mean. In summary, the main difference between the mean and the standard deviation is that the mean will provide a <https://assignbuster.com/basic-measures-policy-statement-and-securities-markets/>

estimate of the future and the standard deviation will of past values relative to the mean. 2. Mr.

Franklin is 70 years of age, is in excellent health, pursues a simple but active lifestyle, and has no children. He has interest in a private company for \$90 million and has decided that a medical research foundation will receive half the proceeds now and will be the primary beneficiary of his estate upon his death. Mr. Franklin is committed to the foundation's well-being because he believes strongly that, through it, a cure will be found for the disease that killed his wife. He now realizes that an appropriate investment policy and asset allocations are required if his goals are to be met through investment of his considerable assets.

Currently, the following assets are available for use in building an appropriate portfolio: \$ 45. 0 million cash (from sale of the private company interest, net of pending \$ 45. 0 million gift to the foundation) \$ 10. 0 million stocks and bonds (\$5 million each) Corporate Investment Analysis \$ 9. 0 million warehouse property (now fully leased) \$ 1. 0 million Franklin residence \$ 65. 0 million total available assets 6 a) Formulate and justify an investment policy statement setting forth the appropriate guidelines within which future investment actions should take place.

Your policy statement must encompass all relevant objective and constraint considerations. Mr. Franklin should be now initiating the spending and gifting phase of his investor life cycle, his main goals should be greater protection to his capital. At the same time, he needs to balance his desire to protect the nominal value of his savings with the need to shield himself against the

inflation. Thus, although a big portion of his portfolio must be less risky, he still needs some risky investments for inflation protection. Base on how Mr. Franklin has built a solid assts portfolio it is inferable that has adequate insurance coverage, simple lifestyle can incline the balance to the implementation of a combination of Current Income and Capital Preservation as strategies to accomplish his investments goals. Current Income: He will invest in stocks that pay a consistent and high dividend. Also include some topquality real estate investment trusts and highly-rated bonds. Capital: 30% (\$ 19, 500, 000. 00) Investments: Savings Account : Stocks: Bonds: Foreign stock: \$ 3, 000, 000. 00 \$ 6, 500, 000. 0 \$ 5, 000, 000. 00 (highly-rated bonds) \$ 5, 000, 000. 00 (Japan, Germany and England) Capital Preservation: Mr. Franklin will use this strategy to hold on the detention has. This will take care of the fact that safety is extremely important – even to the extent of giving up return for security. The logic for this safety is clear. If he loses his money through foolish investment, it is unlike he will get a chance to replace it. Capital: 70% (\$ 45, 500, 000. 00) Investments: Bank CDs: U. S. Treasury issues. Municipal Bonds. Real State: Annuity: \$ 5, 500, 000. 0, split in at least 5 banks. \$ 10, 000, 000. 00 \$ 5, 000, 000. 0 \$ 10, 000, 000. 00 (Warehouse and House) \$ 15, 000, 000. 00 Corporate Investment Analysis 3. 7 The stock of the Madison Travel Co. is selling for \$ 28. 00 a share. You put in a limit buy order at \$ 24. 00 for the month. During the month, the stock price declines to \$ 20. 00, then jumps to \$ 36. Ignoring commissions Data: Current Price Limit Order at Month Min Month Max Current Price Requirements: a) What would have been your rate of return on this investment? According to Investopedia. om, a Limit Order is an order placed with a brokerage to buy or

sell a set number of shares at a specified price or better. Depending on the direction of the position, limit orders are sometimes referred to more specifically as a buy limit order, or a sell limit order. The investor in this problem sent to the broker a limit order to buy the stock when it declines to \$ 24. 00. Even the stock declined to \$ 20. 00 the stock would be bought when it was at \$ 24. 00 then the calculation to obtain the rate of return is as follows: $\$ 36. 00 / \$ 24. 00 = 1. 5 = 50. 0 \%$ b) What would be your rate of return if you had put in a market order? Reilly/Brown (2009) market orders are the most frequent type of orders, could be defined as instructions to buy or sell a stock at the best current price. When the investor put the market order the stock value was \$ 28. 00 and the calculation to obtain the rate of return is: $\$ 36. 00 / \$ 28. 00 = 1. 2857 = 28. 57 \%$ c) What if your limit order was at \$ 18. 00. If the investor put in a limit order at \$ 18. 00, the rate of return would be \$ 0. 00 because he would not buy any stock. \$ 28. 0 \$ 24. 00 \$ 20. 00 \$ 36. 00 \$ 28. 00 4. Look up the daily trading volume for the following stocks during the recent five-day period: Sample 1 Date Merck (MRK) 14-Oct-11 10, 786, 803 13-Oct-11 13, 603, 484 12-Oct-11 16, 351, 364 11-Oct-11 15, 585, 093 10-Oct-11 14, 971, 635 Source: Google Finance Anheuser-Busch (BUD) 1, 326, 685 875, 933 1, 395, 364 1, 052, 480 934, 902 Intel (INTC) 44, 894, 100 51, 288, 900 59, 903, 200 50, 604, 700 40, 130, 300 McDonald's (MCD) 3, 702, 249 4, 991, 617 7, 848, 198 6, 868, 544 5, 136, 994 General Electric (GE) 45, 142, 652 46, 136, 083 61, 761, 082 46, 005, 456 56, 216, 314

Corporate Investment Analysis Sample 2 Date 8 Mattel (MAT) 14-Oct-11 9, 967, 232 13-Oct-11 5, 357, 355 12-Oct-11 6, 008, 024 11-Oct-11 4, 240, 906

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10-Oct-11 3, 734, 956 Source: Google Finance Bank of America (BAC) 203, 564, 430 230, 115, 308 284, 617, 666 204, 431, 086 225, 326, 525 Sprint Nextel (S) 123, 310, 642 98, 450, 997 123, 428, 815 145, 541, 579 306, 545, 428 Sirius XM (SIRI) 73, 757, 415 44, 353, 756 58, 672, 777 47, 438, 717 65, 709, 411 TE Connectivity (TEL) 86, 744, 658 11, 684, 626 16, 268, 351 2, 012, 231 1, 289, 443 a) What are the average volumes for the two samples?

Sample 1 individual average volume: Date Merck Anheuser-Busch (MRK) (BUD) 14-Oct-11 10, 786, 803 1, 326, 685 13-Oct-11 13, 603, 484 875, 933 12-Oct-11 16, 351, 364 1, 395, 364 11-Oct-11 15, 585, 093 1, 052, 480 10-Oct-11 14, 971, 635 934, 902 Average 14, 259, 676 1, 117, 073 Sample 2 individual average volume Date Mattel Bank of America (MAT) (BAC) 14-Oct-11 9, 967, 232 203, 564, 430 13-Oct-11 5, 357, 355 230, 115, 308 12-Oct-11 6, 008, 024 284, 617, 666 11-Oct-11 4, 240, 906 204, 431, 086 10-Oct-11 3, 734, 956 225, 326, 525 Average 5, 861, 695 229, 611, 003

Intel (INTC) 44, 894, 100 51, 288, 900 59, 903, 200 50, 604, 700 40, 130, 300 49, 364, 240 McDonald's (MCD) 3, 702, 249 4, 991, 617 7, 848, 198 6, 868, 544 5, 136, 994 5, 709, 520 General Electric (GE) 45, 142, 652 46, 136, 083 61, 761, 082 46, 005, 456 56, 216, 314 51, 052, 317 Sprint Nextel (S) 123, 310, 642 98, 450, 997 123, 428, 815 145, 541, 579 306, 545, 428 159, 455, 492 Sirius XM (SIRI) 73, 757, 415 44, 353, 756 58, 672, 777 47, 438, 717 65, 709, 411 57, 986, 415 TE Connectivity (TEL) 86, 744, 658 11, 684, 626 16, 268, 351 2, 012, 231 1, 289, 443 23, 599, 862

Sample 1 average volume: $(14, 259, 676 + 1, 117, 073 + 49, 364, 240 + 5, 709, 520 + 51, 052, 317) / 5 = 24, 300, 565$ Sample 2 average volume: $(5, 861,$

$695+229, 611, 003+159, 455, 492+57, 986, 415+23, 599, 862)/5 = 95, 302, 893$ b) Would you expect this difference to have an impact on the efficiency of the markets for the two samples? Why or Why not? According to investopedia. com the average volume is the average amount of individual securities traded in a day or over a specified amount of time.

Trading activity relates to the liquidity of a security; therefore, when average trading volume is high, the stock can be easily traded and has high liquidity. As a result, average trading volume can have an effect on the price of the security. If trading volume isn't very high, the security will tend to be less expensive because people are not as willing to buy it. Corporate Investment Analysis 9 When average trading volume increases or decreases dramatically, this is a signal that there has been some news released that has affected people's views on the security.

Usually, higher average trading volumes mean that the security is more competitive, has narrower spreads and is typically less volatile. Stocks are less volatile when they have higher average daily trading volumes because much larger trades would have to be made to have an effect on the price. Reilly/Brown (2009) came up with markets should be more efficient when there are numerous aggressive, profit-maximizing investors attempting to adjust stock prices to reflect new information, so market efficiency will be related to trading volume.

Specifically, more trading in a security should promote market efficiency. Alternatively, for securities with relatively few stockholders and little trading activity, the market could be inefficient simply because fewer investors

would be analyzing the effect of new information, and this limited interest would result in insufficient trading activity to move the price of the security quickly to a new equilibrium value that reflects the new information.

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