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two stocks, their
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- Introduction

The report is the second part of the SIM and Statistical arbitrage assignment. This report describes the process which has been done in the first part. It includes the collecting of the necessary information and data, a determination of the stocks, analysis of this data and the obtained results.

- Stocks Analyzed

The average return of News Corporation is higher than the average return of Commonwealth Bank of Australia. The standard deviation of the first one is lower than the standard deviation of the second company. Therefore, the stock of the News Corporation is more efficient and stable than the stock of Commonwealth Bank of Australia, because it has the high return and the low risk. On the other hand the return of the stock of the News Corporation is more limited than the second one and this stock (NWSLV. AX) is more inefficiently priced.

The News Corporation (A Non- voting CDI) stock has been selected from the ASIC's most shorted stocks and it has taken the fourth place in this list. This company has been so heavily shorted since it operates in the service sector. This business is changeable, flexible and periodical; so all these changes affect the stock and this stock is very floating. The speculators use these features of the stock for trading strategies.

- Data and the risk-free asset

This section of the report is about the collecting data for the analysis. The list of the short position per stock was retrieved from the official site of the Australian Securities & Investment position (<http://www.asic.gov.au/>). This data was presented for 19 February 2014. The list was shorted and the

fourth most shorted company was selected for analysis. This company is News Corporation (A non-voting CDI).

The second stock was selected Commonwealth Bank of Australia. The S&P/ASX-200 Index was selected as the rate of the market return. The data of adjusted close prices of these stocks and index was retrieved from Yahoo Finance (<https://au.finance.yahoo.com/>). The span of all data is from January 2012 to January 2014. But the span of the stock of News Corporation (A non-voting CDI) is only from 6 June 2013, because Yahoo Finance has not the earlier data of this stock. All rates of the return were computed using next formula: $r_i = \frac{p_1 - p_0}{p_0}$, where p_0 is the price of the stock last period and p_1 is the price of the stock during period.

All prices on the Yahoo Finance were adjusted for dividend and splits. It is possible to do using dividend and split multiplier, the prices are multiplied by these multiplier before the date of dividend payments or splits. For instance, if split is in 5 to 1 then the split multiplier is equal to 0, 2. The dividend multiplier is calculated in the following way: $(1 - \frac{d}{p})$, where d is the amount the dividend on the stock and p is the pre-date close price.

The 30 day bank-accepted bill was considered as risk-free asset and the rate of its return as the risk-free rate. The data was retrieved from the site of the Reserve Bank of Australia (<http://www.rba.gov.au/>). This data was presented as annual percentage, so we divided these values on the 1200 for receiving the monthly rate of return.

We could consider two assets as risk-free assets: the 30 day bank-accepted bill and the 30 day Treasury note. The first one can be sold by the prime banks while the second one can be sold only by government. Both assets is

secured and risk-free, but the rate of return of the BAB is higher and has a very low risk during the bank crises. But we used the data of the BAB because the data of Treasury note has the gaps.

- The Single Index Model

The Single Index Model is used in finance for determination of the return of a stock. This model includes different components and takes in account the characteristics of the market and the particularities of the stock. The following features are considered in the model: the return of the market, risk-free rate, the sensitiveness of the stock to the market, the abnormal return, systematic and non-systematic risks of the stock. The mathematical interpretation is following:

$$r_i - r_f = \alpha_i + \beta_i(r_m - r_f) + \epsilon_i$$

The components of this formula have such meanings: r_i -the return of the stock, r_f -risk-free rate, r_m -the return of the market, α_i -the abnormal return, β_i -the responsiveness of the return of the stock, ϵ_i -the residuals return. Also there are meanings of excess return of the market and excess return of the stock, they express by the formulas $(r_m - r_f)$ and $(r_i - r_f)$ respectively.

- Regression Results

Two stocks are presented in the table above. The data of these stocks includes alpha, beta, standard error and R^2 of the regression. This data has different meanings, we consider these points further.

Alpha is the abnormal return of the stock. The alphas of both stocks are positive and quite high. The alpha of News Corporation company is higher the second stock. I think it is good for both of them.

The second index is beta. It reflects the sensitiveness of the stock to the

changes of the market. And this sensitiveness is appeared in the changes of the stock price. The beta of CBA stock is quite high, so this stock is sensitive to the market changes. The beta of News Corporation is low and this stock is less sensitive to the changes of the market.

The standard error and R^2 reflect non-systematic and systematic risk respectively. The systematic risk of CBA is strongly higher the non-systematic risk of the same stock. Hence, this risk can be diversified. The stock of News Corporation differs from the CBA stock, because it has a very low systematic risk and its non-systematic risk is higher than systematic. We can't diversify this risk.

So, we have two stocks. One stock is sensitive to the changes of the market and has the risk which can be diversified. Second one is low sensitive to the market and has the risk which can't be diversified.

These indices can differ from same indices which are provided by other sources for the simple reasons: they can use the data of other period of time; they can use other model for computing these indices, for instance, the model which uses more one factor or use the functions based on the past data of the same indices.

- Trade Idea

The table below contains the information about two stocks. First stock is from ASIC's shorted stocks list and is heavily shorted. The second one (SPDR S&P/ASX 200 Fund) presents the S&P/ASX-200 index ETF.

The trade idea has to be presented in such combination of these stocks when the risk of the portfolio is minimum. It is possible to get the risk which is approximately equal to zero, if $w_1\beta_n + w_2\beta_s = 0$, where w_1 and w_2 are the

weights of each stock in the portfolio and $w_1 + w_2 = 1$.

When expressing w_1 in the formula $w_1\beta_n + w_2\beta_s = 0$ through w_2 and vice versa, we get the next values of w_1 and w_2 :

$$w_1 = \frac{\beta_s\beta_n - \beta_n}{\beta_s\beta_n - \beta_n}, w_1 = 0, 95072830, 9507283-0, 1405636 = 1, 1735$$

$$w_2 = \frac{\beta_n\beta_n - \beta_s}{\beta_n\beta_n - \beta_s}, w_2 = 0, 14056360, 1405636-0, 9507283 = -0, 1735$$

Hence, the SPDR S&P/ASX 200 Fund stock has to be traded in the short positions and the stock of News Corporation (a non-voting CDI) has to be traded in the long positions. The expected return can be expressed in the following way: $r_i - r_f = w_1\alpha_n + w_2\alpha_s$.

$$r_i - r_f = 1, 1735 * 0, 0261004 - 0, 1735 * 0, 0036626 = 0, 03.$$

But this strategy has some risk. First reason is that other investors can create the same portfolios. In this case, the price of News Corporation stock will increase and the price of the second stock will decrease, but we can get the unexpected values of these changes. Second we can consider the changes of beta, it has been computed using historical prices, but we can't be sure in the further beta behavior. So, the changes of beta can be unexpected too.

References

Australian Securities & Investments Commission. (n. d.). Retrieved from <http://www.asic.gov.au/>;

Reserve Bank of Australia. (n. d.). Retrieved from <http://www.rba.gov.au/>;

S&P Dow Jones Indices. (n. d.). Retrieved from <http://au.spindices.com/>;

Yahoo Finance. (n. d.). Retrieved from <https://au.finance.yahoo.com/>.