



# UNIVERSITY OF MALAYA

## DATA MINING (WQD7005) Assignment 4

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## 1.0 Comparing KLSE Index with Associated Index Related Stocks

Normally, an investor will look at KLSE index whether it is bullish or bearish before investing in a stock. For example, the common yardstick that investor use is 20 days EMA and 200 Days SMA.

Bullish is defined as the index must crossed 20 Days EMA.

Super bullish means index must cross both 20 days EMA and 200 days SMA.

Bull market is defined as the index must cross 200 Days SMA.

In my analysis, correlation between percent change of stock price with its associated KLSE index are checked.

|    | A                              | B        | C        | D        | E        | F      | G     | H         | I |
|----|--------------------------------|----------|----------|----------|----------|--------|-------|-----------|---|
| 1  | Symbol                         | Open     | High     | Low      | Last     | Chg    | %Chg  | Vol('00)  |   |
| 2  |                                |          |          |          |          |        |       |           |   |
| 3  | FA40                           | 11148.57 | 11187.22 | 11140.34 | 11171.48 | 7.61   | 0.07  | 487,185   |   |
| 4  |                                |          |          |          |          |        |       |           |   |
| 5  | FBM70                          | 14586.67 | 14635.38 | 14540.53 | 14624.19 | 6.65   | 0.05  | 2,700,823 |   |
| 6  |                                |          |          |          |          |        |       |           |   |
| 7  | FBMACE                         | 4706.67  | 4761.69  | 4675.08  | 4752.26  | 37.07  | 0.78  | 3,923,231 |   |
| 8  |                                |          |          |          |          |        |       |           |   |
| 9  | FBMAPMYR                       | 17733.98 | 17801.82 | 17630.46 | 17684.32 | -45.51 | -0.26 | 399,322   |   |
| 10 |                                |          |          |          |          |        |       |           |   |
| 11 | FBMAPUSD                       | 12346.23 | 12401.14 | 12286.06 | 12332.55 | -16.76 | -0.14 | 399,322   |   |
| 12 |                                |          |          |          |          |        |       |           |   |
| 13 | FBMEMAS                        | 11556.64 | 11593.77 | 11534.94 | 11585.54 | 28.16  | 0.24  | 9,748,275 |   |
| 14 |                                |          |          |          |          |        |       |           |   |
| 15 | FBMT100                        | 11374.27 | 11407.82 | 11350.16 | 11398.96 | 29.86  | 0.26  | 4,557,627 |   |
| 16 |                                |          |          |          |          |        |       |           |   |
| 17 | CONSTRUCTION                   | 215.92   | 218.73   | 215.07   | 217.03   | -2.17  | -1    | 3,953,654 |   |
| 18 |                                |          |          |          |          |        |       |           |   |
| 19 | CONSUMER PRODUCTS & SERVICES   | 679.94   | 680.42   | 677.96   | 679.72   | -0.64  | -0.09 | 1,679,455 |   |
| 20 |                                |          |          |          |          |        |       |           |   |
| 21 | FINANCIAL SERVICES             | 16832.48 | 16847.99 | 16806.33 | 16817.76 | 6.22   | 0.04  | 383,531   |   |
| 22 |                                |          |          |          |          |        |       |           |   |
| 23 | INDUSTRIAL PRODUCTS & SERVICES | 168.96   | 170.15   | 168.53   | 170.15   | 1.16   | 0.68  | 2,845,971 |   |
| 24 |                                |          |          |          |          |        |       |           |   |
| 25 | PLANTATION                     | 7209.61  | 7222.91  | 7184.72  | 7192.14  | -16.41 | -0.23 | 332,098   |   |
| 26 |                                |          |          |          |          |        |       |           |   |
| 27 | PROPERTY                       | 936.05   | 936.52   | 929.47   | 935.26   | -7.16  | -0.77 | 2,491,646 |   |
| 28 |                                |          |          |          |          |        |       |           |   |
| 29 | TECHNOLOGY                     | 35.13    | 35.37    | 35       | 35.37    | 0.15   | 0.42  | 544,706   |   |
| 30 |                                |          |          |          |          |        |       |           |   |

Figure 1.1: % Change of KLSE Index on 23/4/2019

|    | board                      | mean(perc_change) | median(perc_change) |
|----|----------------------------|-------------------|---------------------|
| 22 | LEAP : Technology          | 0.00000000        | 0.000               |
| 23 | LEAP : Telco&Media         | 0.00000000        | 0.000               |
| 24 | LEAP Market : Health Care  | 13.64000000       | 13.640              |
| 25 | MAIN : Construction        | -3.59582418       | -1.770              |
| 26 | MAIN : Consumer            | 0.09079511        | 0.000               |
| 27 | MAIN : Energy              | 1.07298969        | 0.000               |
| 28 | MAIN : Finance             | -0.69734043       | 0.000               |
| 29 | MAIN : Health Care         | 10.86937500       | 0.000               |
| 30 | MAIN : Industrial Products | 1.95752841        | 0.000               |
| 31 | MAIN : Plantations         | 0.18492537        | 0.000               |
| 32 | MAIN : Property            | -0.82300578       | 0.000               |
| 33 | MAIN : REITS               | 0.12388889        | 0.000               |
| 34 | MAIN : SPAC                | 0.00000000        | 0.000               |

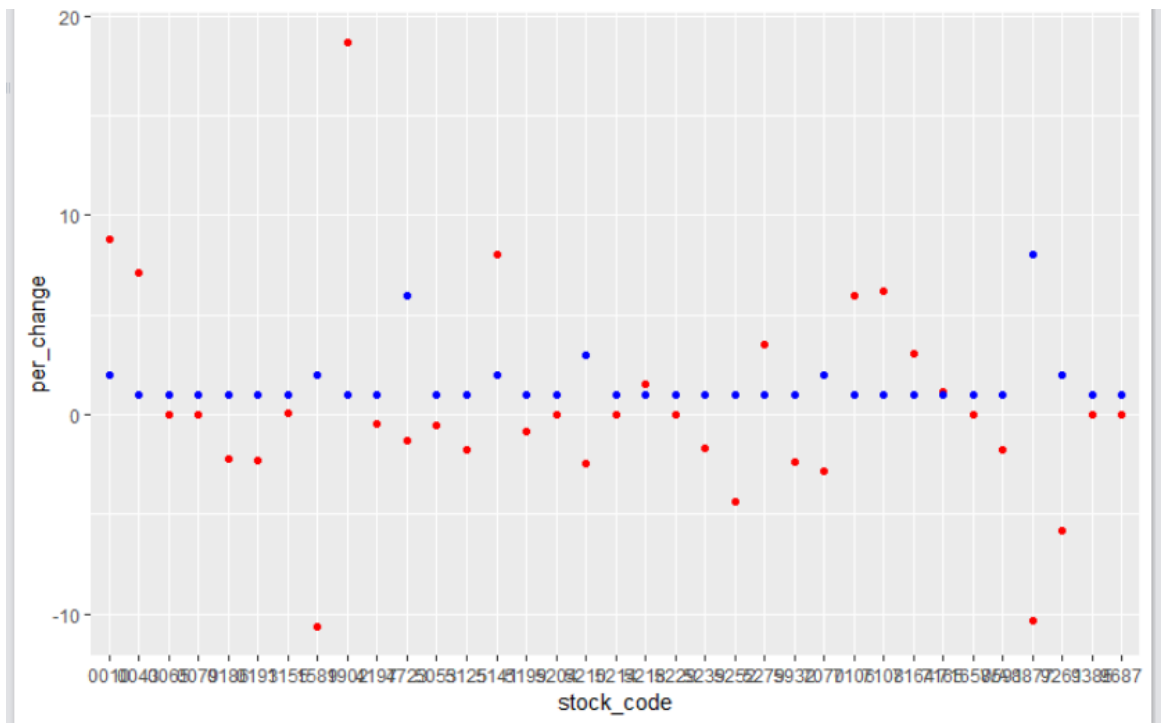
Figure 1.2: Mean and Median of % Change of Stock Price with respect to the Board on 23/4/2019

|                     | KLSE index<br>per_change | Mean Stock price per_change |
|---------------------|--------------------------|-----------------------------|
| Construction        | -1                       | -3.59                       |
| Consumer            | -0.09                    | 0.09                        |
| Energy              | 0.04                     | 1.07                        |
| Finance             | 0.68                     | -0.69                       |
| HealthCare          | -0.23                    | 10.86                       |
| Industrial Products | -0.77                    | 1.95                        |

Table 1: KLSE index\_per change vs Mean stock price per\_change

From above table, the index sometimes is not in the same direction as mean stock price percent\_change.

## 2.0 Number of comments and percent change of stock price correlation.

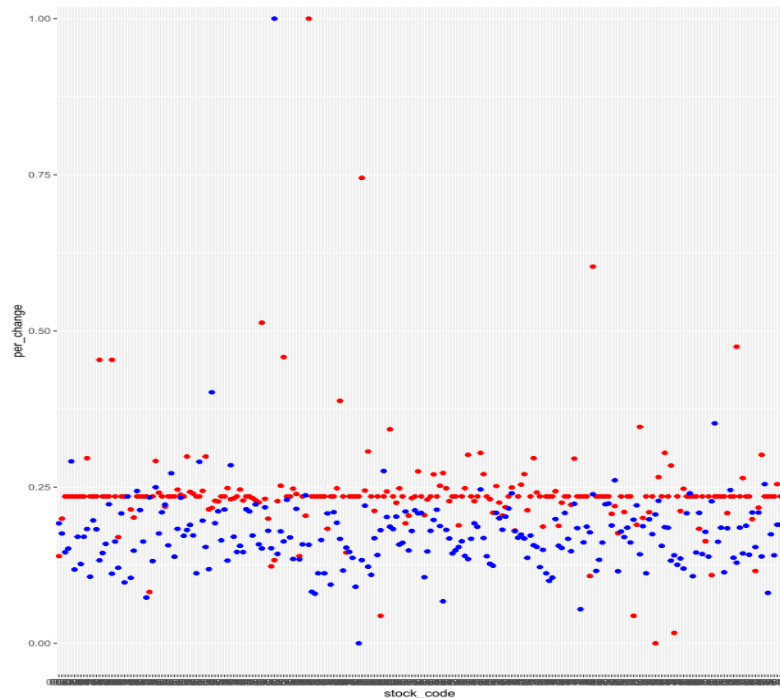


**Figure 2.1: Number of comments & per\_change**

- **Blue Point** = Number of comments on the same day
- **Red Point** = Percent Change of Stock Price

The number of comments does not correlate with percent change of stock price.

### 3.0 Sentiment Scores of Public Comments and Percent Change of stock price correlation.



**Figure 3.1: Sentiment Score of Public Comments and Percent Change**

- **Blue Point** = Sentiment Score of Stock Code
- **Red Point** = Percent Change of Stock Price

There is hardly a correlation between the sentiment score and the percent change of stock price. The sentiment score is generated from the comments of each stock on 23-4-2019. There is a mixture of comments from the public on each day. The stock price change is also affected by a myriad of other reasons. It could be fundamental such as the raw material price which affect the company business, government policy etc. The external different dynamics cause the public comments/sentiments to hardly correlate with the percent change of stock price.

65 people like this.

Showing 50 of 94530 comments. [Show more comments](#)

**ProRoy** What I know is this penang123 his party is the main cause of making Malaysian stock market go down badly even for the rakyat of Malaysia  
27/04/2019 7:52 AM

**TanK0318** oil down Sap uppppp ma~~~ ahahahhha  
27/04/2019 9:05 AM

**wks8732** No big deal done worry lah brent oil do some correction only lah n later shall move up. This up trend can easily moving up for 2 years due to economy environment n supported by powerful hand.  
27/04/2019 9:40 AM

**Penang123** @ProRoy, ppl like you must go immediately mampus  
27/04/2019 10:11 AM

**TanK0318** Nono Proroy is gooooo ! He tell ppl Alam will flyyyy and it did flyyyy 0.005  
maybe he bought a lot hahahaha  
27/04/2019 11:15 AM

**Tongkarat** Ala bau busuk....ala bau busuk....  
Oooooo.... gasing pusing taik  
Keluar dari lobang taik....  
27/04/2019 1:58 PM

**Crash123456buiA** ProRoy parent pass away recently, we forgot his negative mindset  
SAP will move up to 0.40, follow by Personas project 80%  
27/04/2019 2:01 PM

**Crash123456buiA** From James stock analysis , SAP fundamental improve EPS 35. PE 03.9, SAP price should rm1.30 above, now undervalue  
27/04/2019 2:03 PM

**freddiehero** yala. i also said sap unvalue..  
27/04/2019 2:54 PM

**freddiehero** i said armada overvalue. u c tat price 0.27 down 0.23  
27/04/2019 2:54 PM

**MaseratiCoin** Sapura is different  
Now it is undervalued  
27/04/2019 3:24 PM

**MaseratiCoin** Worth it to buy and hold

**Figure 3.2: Mixture of Comments**  
<https://klse.i3investor.com/servlets/stk/5218.jsp>

#### 4.0 Sentiment Score of the News and Closing Price Correlation For Airasia

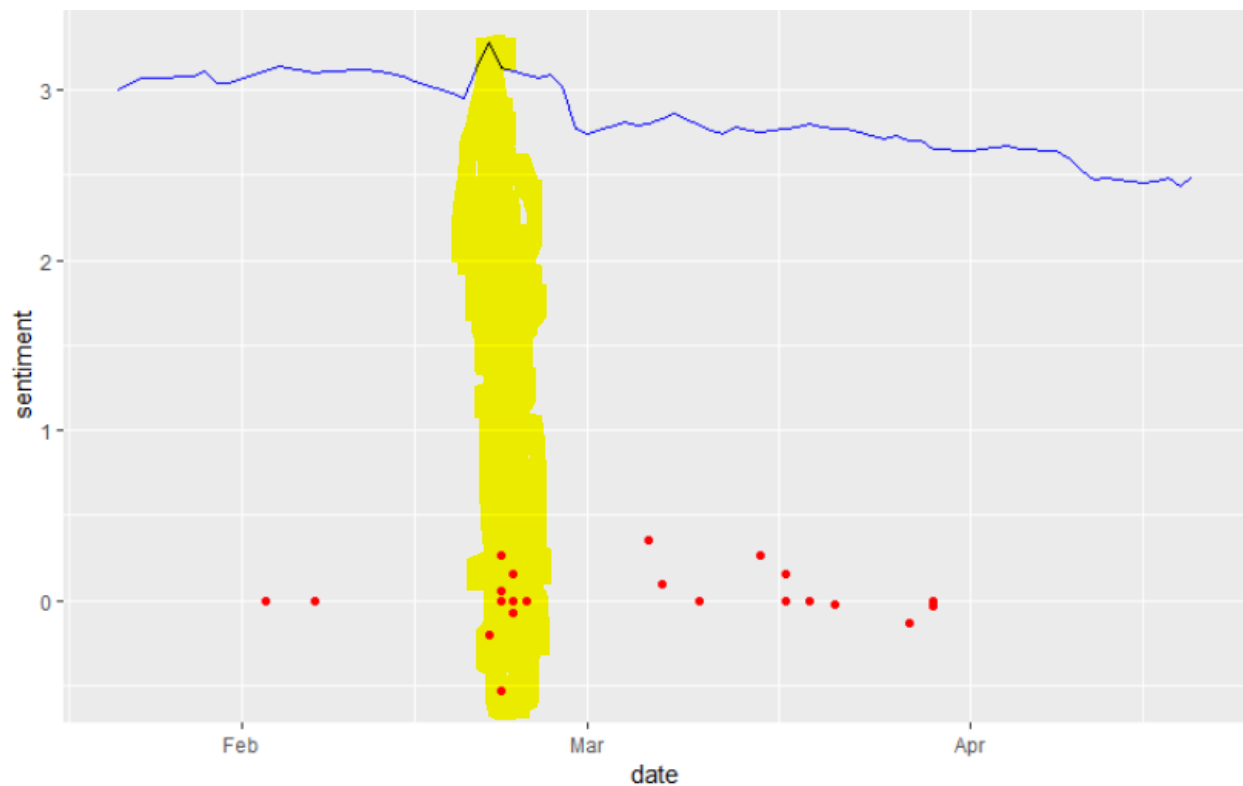


Figure 4.1: Sentiment Score and Closing Price of Airasia Stock vs Date

- **Blue Line** = Airasia Stock Price Change
- **Red Point** = Airasia News Title Sentiment Score

From the graph, we can see that there are a lot of news on the highlighted part. The positive news (sentiment score  $>0$ ) is higher than negative news causes the spike on the Airasia price on those few days.

## 5.0 Sentiment Score of the News and Closing Price for Metal Stocks

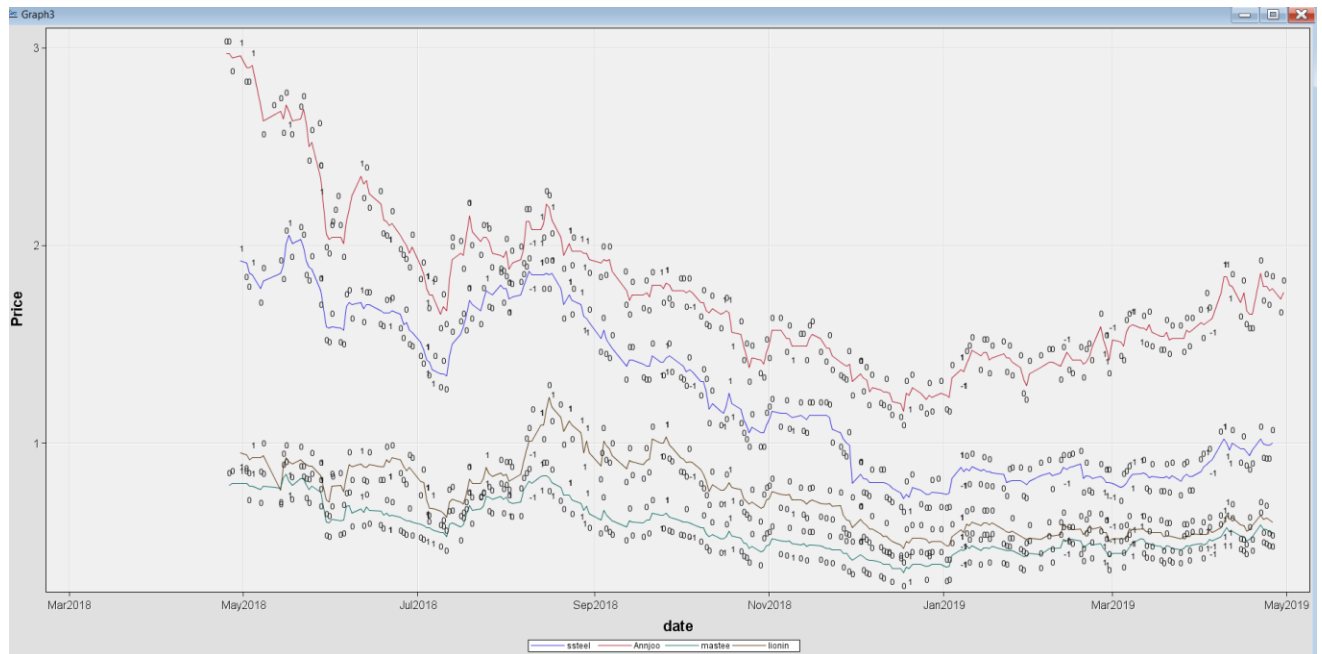


Figure 5.1: Closing Price of 4 Metal Stocks with respect to Time.

There are 4 stocks here which are Ssteel, Annjoo, Masteel and Lionind. All the stocks are in the same business, which are the reasons the trend is the same for all the 4 stocks.

The sentiment score is polarized into positive, negative and neutral. Positive is labeled as 1, negative is labeled as -1, while neutral as 0.

From the graph, most of the positive news injects buying volume which cause the stock price to soar, and vice versa.

Youtube link: <https://www.youtube.com/watch?v=pJQxMrhL-v8&feature=youtu.be>