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By

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Submitted:

Approved by Professor Dallin Tang, Project Advisor

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## **Abstract**

The purpose of this interactive qualifying project was to learn stock market and investment strategies with an aim to make profit. A six-week stock market simulation was conducted to achieve that goal. Seven companies were selected with experimental or historical reasons. By the end of this simulation, the portfolio had a 3.87% return during the six-week simulation while the S & P 500 index returned 0.915% at the same time. The knowledge about stock market and different strategies acquired during this project can be applied in future investments.

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# 1. INTRODUCTION

## 1.1 Goals and General plan

The main purpose of this IQP lies in the understanding of how stock market is operating and the approach to analyze trading strategies through a short-term stock marketing simulation. Also various strategies learning is required in order to infer a reasonable choice that can assist me in gaining profits. These strategies will be discussed in chapter 2. Basically, I plan to simulate on seven different stocks for six weeks with \$100,000 as starting fund and each buying and selling with data will be recorded, reported, and analyzed. The companies I selected will be introduced in chapter 3. And the simulation process will be completely recorded in chapter 4. In the end, I will compare profits earned with those strategies and report what I learned from this project.

## 1.2 History of the Stock Market

Stock markets are one of the most important parts of the contemporary economy society. Almost all countries in the world depends on stock markets for economic growth. However, the history of stock market is not as long as people imagined.

The first real stock market can be tracked back to 1500s. Nevertheless, the predecessor that acted as a role similar to stock market already exists in 1100s, when men in France traded agricultural debts effectively. Later on, the merchant in Venice traded government security in 13<sup>th</sup> century. Soon after, bankers in nearby Italian cities also began trading government securities.

The East India Company is widely recognized as the world's first publically traded company. There was only one simple reason for that, which is risk. The result of danger on sailing to other places is way too huge that a single company cannot afford. And in fact, few of those who went to East Indies for fortune and opportunities ever made home since their ship just simply got lost



in the sea. With this circumstance at that age, financiers realized that they have to make some attempt to mitigate the risk. Consequently, the corporation called “Governor and Company of Merchants of London trading with the East Indies”, a company that uses a limited liability formula was founded. This company enables ‘investors’ to ‘buy’ a ship so that they can gain profit if the ship they bought came back successfully and safely while losing their money when the ship is gone. Investors soon found that “put all eggs into one basket” is a fairly stupid choice in East Indies trading since if the stock of ship they bought got captured by pirates, they lose everything but if they separate their investment into 3 or 4 ships, even one of the ships got captured, they may still at least keep their cost back or sometimes even gain profits. With the fact that the formula ended up acting fairly successful as an insurance protection, other businesses throughout England, France, Belgium and the Netherlands soon began to apply this formula in their companies.

In 1602, The Dutch East India Company officially became the world’s first publically traded company when it released shares of the company on the Amsterdam Stock Exchange. From then stocks and bonds were issued to investors and each of them shared a fixed percentage of East India Company’s profits.

Before the first stock market was actually formed, business was conducted in coffee shops with handwritten stocks on paper. Judging from the fact that stock market is the place where people buy and sell stocks, the coffee shops were in fact the first real stock market. However, it didn’t take long before someone realized that if he creates a marketplace just for stock market, life of businessman will be much easier since they don’t need to cross the crowded coffee shop and buy a coffee before they can conduct stock transactions.

The first stock exchange, London Stock Exchange, was officially formed in 1801. However, the exchange is limited in London Stock Exchange since companies were not allowed to issue shares until 1825. Nevertheless, the creation of NYSE in 1817 was a huge milestone in history since NYSE enabled investors to trade stock on the first day opening. Also, the position of NYSE also helped it to replace Philadelphia Stock Exchange instantly, which was actually the first stock exchange in United States.

Nowadays, Stock market, virtually or physically, exist in every country and trillions of dollars are traded on stock markets around the world. Most developed countries established their stock market during 19<sup>th</sup> or 20<sup>th</sup> centuries. For example, United States established NYSE in 1817, Canada developed its first stock exchange in 1861. Therefore, people have to admit the global importance of stock markets and their role as engines of the capitalist world.

In the foreseeable future, it's almost impossible for stock market to disappear, since the stock market had already been a driving economic force in almost every country [1].

## **1.3 Types of Investment**

### **1.3.1 Stock**

Stock, also known as equity or share, signifies the ownership in a corporation and represents a claim on part of the corporation's assets and earnings. Basically, one gets partial ownership of a public company if he owns its stock. For most investors, a large percentage of their portfolio should be made up of stocks.

### **1.3.2 Real Estate**

Real estate is property comprised of land and buildings as well as the natural resources on this land including uncultivated flora and fauna, farmed crops and livestock, water and minerals. However, home does not fall under this category since it fulfills a basic need.

### **1.3.3 Precious Objects**

Precious objects mainly include precious metals, arts, collectables, etc. In most cases, they share the same meaning as precious metals such as gold, silver, platinum since the metal transactions are much more popular than other. Typical precious objects can be considered an ownership-type of investment if the intention is to resell them for profit.

### **1.3.4 Business**

Some people devote their time or money into starting their own Business—a product or service meant to earn a profit, is also a kind of ownership investment [2].

## **2. TRADING STRATEGIES**

### **Introduction**

In this chapter, I will discuss several strategies commonly used in stock market by investors during trading, choosing several and applying them during my simulation. These popular strategies include breakouts, day trading, swing trading, momentum trading, technological trading, fundamental trading, trend trading, reverse trading and retracement trading. After carefully considering each strategy, I picked day trading, swing trading, reverse trading, and trend trading for my simulation.

### **2.1 Breakout**

Breakout is one of the most normal techniques people use in the market. The concept of breakout is fairly simple and does not have a large requirement to the understanding of support and resistance. Basically, investors identify a key price and then apply buying or selling, and if the price is powerful enough to break the current level no matter going upwards or downwards, the price will be likely to continue the trend.



Figure 2.1 A triangle breakout(Investopedia.com&Prophet.net)

Figure 2.1 above shows a triangle breakout, clearly the price of this stock kept staying between the resistance line during October to next February. However, in the mid-February, it broke the resistance line and kept growing in an incredible extent for another month. Moreover, in most circumstances the more times the price of a stock hits the support and resistance lines, the more considerable the outcome will appear.

When investors are trying to trade breakouts, a significant factor they need to consider is the underlying stock's support and resistance levels. If the stock touches these areas frequently, there's a high chance that these levels are valid boundaries and will become important compass in future observation.

Nevertheless, there are still plenty of factors that investors must consider such as the formations, consistency and the length of time that a stock price has adhered to the support or

resistance levels. If all these factors are considered acceptable then the stock should be a preferable candidate for breakout trading. Figure 2.2 shows an example of reactions to support.



Figure 2.2 Multiple Reaction to support(investopia.com&prophet.net)

After investors found the perfect stock that they want to trade, they can process to the next part, planning the trade. The first task is to search for the entry point, in other words, when exactly should investors purchase the stock? Fortunately, the picking of entry point appears pretty obvious for breakout. Investors can establish either a bullish position when prices are travelling close above a resistance level or a bearish position when prices are travelling close below a support level.

A crucial point that needs to be emphasized here is that there exist situations in chart that resembles the breakouts but does not guarantee the price continues the trend. Some people call that a “Fake Out” when price open beyond a support or resistance level but ended up winding

back into the prior range before by the end of day. If investors act too quickly or thoughtlessly, they may have to face the fact that the price didn't continue to the new territory as they imagined.

After investors finished determining the entry, the next task is to find out the reasonable exit so that they can ensure satisfying profit or stay away from future loss. Basically, when trading breakouts, there are three exit plans to arrange before establishing the position, exit with a profit, exit with a loss, and set a stop order. I will discuss the three plans separately in the following paragraphs.

First, I'm going to discuss how to exit with a profit. We will need to look at the stock's recent behavior to determine a reasonable objective. Basically two methods are used. One is base the target on the recent price. Another is to set the target as the average recent price swings. Figure 2.3 shows a simple way to measure the price target.

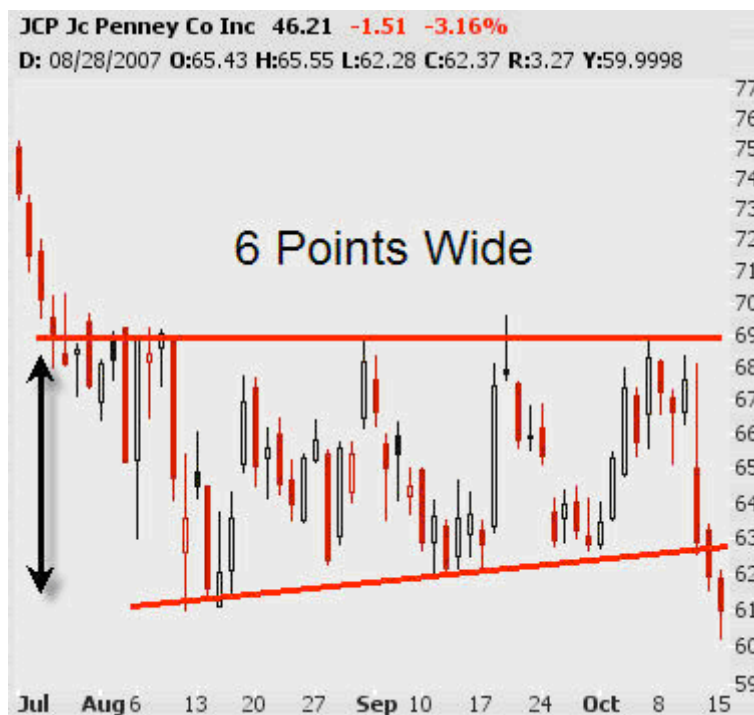


Figure 2.3 Measuring a price target(investopia.com&prophet.net)

Second, investors have to know when a trade has failed. Breakout, as a strategy friendly to new investors, offers this insight pretty clearly. After a breakout, the former resistance levels are turned into new support and former support levels should act as new resistance. An important point to keep in mind is that if a trade fails, then exit it quickly, since loss can accumulate if investors are too avid or left a room to loss.

Last but not least, when investors are pondering where to exit with a loss, a good plan is to place a stop comfortably within the parameters like resistance and support. This can be a safe way to protect a position without losing too much when risk happened. However, setting a stop higher than this probably will trigger the exit faster than investors would like it to develop.

In summary, the process for doing the breakout is identifying the stock, waiting for the breakout (entry and exit point), setting a target, staying prepared for the level break, knowing if the trade/pattern has failed, stopping trades near the market close, and exiting at the target [3].

## **2.2 Day trading**

As its name indicates, day trading stands for buying and selling in a rapid pace within a single trading day, which is actually a high-risk-high-profit double edged sword. This strategy can be applied in any marketplace but commonly in foreign-exchange market(forex) and stock market. A typical day trading investor need to be well educated and well-funded since he/she has to utilize the high amount of leverage and short-term trading strategies to increase a little price movement or a small bullish in highly liquid stocks or currencies considerable times. If the quantity is small, even if the investor sells the stocks at a little higher price, maybe he/she will actually lose money due to the service fee in stock market.

Different from breakout trading that does not require much understanding of stock market and almost available to everyone, day trading requires several important characteristics and



knowledge to progress. First, day traders need to possess enough knowledge and experience in the market. Individuals who do not have enough knowledge about stock marketing fundamentals often end up losing money in it when they attempt day trading. Second, they need to have sufficient capital which can afford to lose since there is always risk to lose in day trading. This not only helps them keep calm and eliminate the negative effect on emotion but also helps protect financial loss. Last, they need at least one strategy. A trader needs to know strategies that they can utilize in day trading such as swing trading, arbitrage, and trading news etc. Since trading news is a strategy that depends on time and environment a lot, I do not plan to discuss this in this paper, but I will discuss other strategies later in this paper.

There are two types of professional day traders: those who work alone or those who work for a larger institution. Most day traders who trade for living work for large institution. And in reality those who work for institutions have many advantages like direct line to dealing desk, analytical software which plays a critical role in the trading while individual traders always end up losing money. In fact, day trading requires some special, or even complex services. First, they will need an access to the trading desk. When a sharp price movement occurs, the direct access to trading desk can help traders execute instantaneous orders, which can be fairly important in this kind of real time trading. Second, they also need to have access to multiple news sources. There's a famous saying in economy goes that "Time and news are money". This perfectly describes the condition of day traders since they get most of the opportunities from news. So the advantage had already been set up if they are the first to know something big happens. Third, they also need analytical software. However, individual day traders cannot afford high-level software which contains feature like automatic pattern recognition, generic and neural

applications, broker integration, and back testing. Judging from the points above, it is easy to see why so many individual investors lose money in day trading.

In conclusion, although day trading is somewhat controversial, its existence can actually help stock market by keeping the markets efficient and liquid. Everything in the world has its pros and cons. One cannot deny that day trading is always risky, but he/she also have to admit that it is a viable way to gain profit. Although day trading is becoming increasingly popular these days, investors should better gain the knowledge and resource need before attempting day trading [4].

## **2.3 Swing Trading**

Swing trading is also one type of fundamental trading strategy in which positions are held for longer than one single day. The reason lies in the fact that some changes in a corporate requires several day or even a week to cause a price movement significant enough for investors to gain reasonable profit.

The feature of swing trading lies on its period, which sits in the middle of day trading and trend trading. In day trading investors never hold a stock for more than one day while in trend trading investors need to examine a long-term fundamental trends of a stock so they may hold it for a few weeks or months. Swing traders hold the stock for a few days or two weeks, which is apparently between those extremes.

The first factor to consider in a strategy is always the picking of a stock. The best candidates for swing trade are large-cap stocks, which means the stock from a company with more than 5 billion market capitalization. In an active market, the large-cap stocks, especially those that are most actively traded will swing between broadly high and low extremes and the traders will create a wave in one direction and switch to another side when the stock reverses the direction.

One point that investors need to take care of is in either of bear or bull market extremes, swing trading will become much more difficult since when the extremes are reached, almost none of the stocks will act same or predictable oscillations that they appeared to be in stable period. In these extremes, momentum will generally carry stocks for the long-term stable change in one direction only. Consequently, the best strategy is to trade on the long-term trend in that case.

Clearly, the key factor of gaining profit in swing trading and trend trading depends on the possibility investors can correctly figure out the market type that is currently in the stock market.

Figure 2.4 shows an easy way to know how swing trading works.

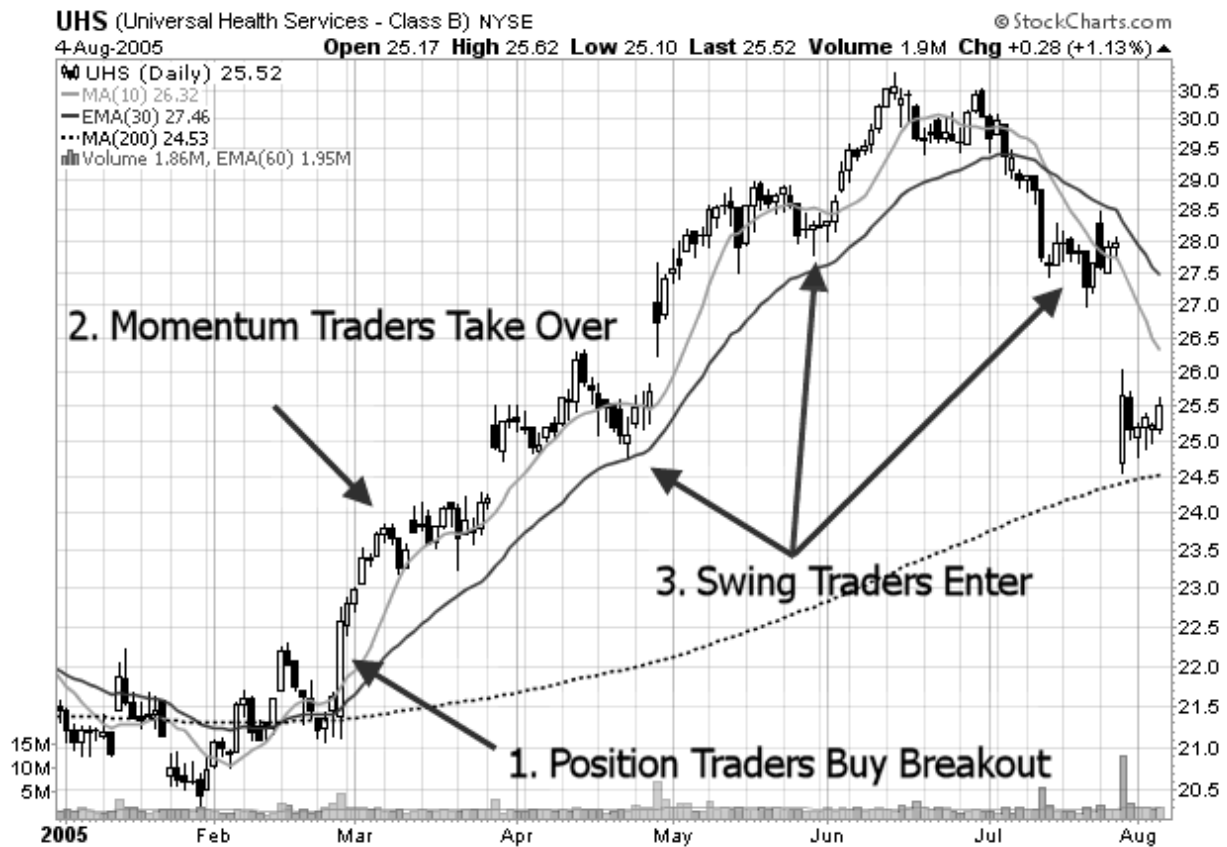


Figure 2.4 How Swing Trading Works(www.swing-trade-stocks.com)

After many researches had been conducted, people found that in swing trading there exists a baseline value that can be calculated and derived on a chart with an exponential moving average(EMA). Investors will decide to go long or short based on the EMA and the trend of the stock. That's why swing traders, not like day traders, are not looking to hit the purchase key at the perfect time but would instead decide to buy when they are sure that the trend is going up after the stock reached the baseline.

Another problem that raises with the increase of stock price swing traders hold is the timing to sell and take profits. Swing traders always want to exit the trade when the stock reach exactly the highest place, but meanwhile increasing the risk of missing the best opportunity. Basically, in strong market they can wait until the channel line is reached since normally it is safe but in a weaker market they may take their profits before the line is hit to ensure safety.

As it looks, swing trading is one of the best trading strategy for beginner trader to try on how to conduct transactions and also unbelievably offers considerable profit potential, and the number will even increase for intermediate or advanced traders [5].

## **2.4 Momentum Trading**

In momentum trading, traders focus on stocks that are increasing their price obviously on high volume. Normally a momentum trader simply focuses on the stocks that are increasing more rapidly than others or increases when the whole market is decreasing. After they handled the chart of those stocks and believe that one or several of them had the power to breakout and is about to raise, they will start to purchase the stocks [6].

## **2.5 Technical Trading**

In technical trading, traders not only look for the chart of stocks as momentum traders, but also look back to history and use the patterns of past data to predict the trend that may happen in the future. However, this strategy ended up becoming one that is not as good as former ones since many challenges appear on their track, for example the number of technical indicators. There are so many indicators that make it impossible to analyze all of them before making a decision and none of the indicators can be asserted best.

In a word, technical trading is not the best solution but at least can be a good place to start [7].

## **2.6 Fundamental Trading**

Fundamental trading is a strategy in which the traders pay their attention on the specific event of company to determine the stock and timing to buy. Fundamental Trading is more a buy-and-hold strategy than a short-term trading. However, in some special cases, trading on fundamentals can also generate considerable profits in a short period.

However, getting the two of the most closely watched fundamental factors for investors everywhere are the earnings announcements and analyst upgrade and downgrades. Both of which are extremely difficult in even getting an edge with the thousands of eyes on the Wall Street.

Basically, earning announcement happens when a company issues a statement that states whether it will meet, exceed, or fail to meet the earnings expectations. A short-term momentum opportunity will likely to become available immediately after that.

Similarly, analyst upgrade and downgrade take place when, for example, a prominent analyst unexpectedly downgrades a stock, the price action will have a quick downgrade and vice versa.

So traders have to be nimble when considering the selling decision. This part is more like momentum trading but the traders care more about those unexpected or earning announces.

In conclusion, if fundamental traders have faith in their ability to identify the position of stocks and the subsequent price movements, they stand a fairly good chance of executing successful trades [8].

## **2.7 Trend Trading**

Basically, the definition of Trend Trading is based on the trading followed by non-emotional sets of trading principles derived by math model of market behavior. Trend Traders utilize their intuition and decision-making ability to design their own market models and trading systems.

Trend Traders believe that an established trend can assist them to gain profits, all financial successes come from the repeatedly identification of the high-probability stocks candidates and gain profit in the market momentum. However, this is a never an easy task, candidates need several important abilities and pay attention to several factors in order to utilize trend trading.

The first factor a trend trader must possess is the ability to identify trend. Obviously traders without this factor will lose miserably in the war of finance. Nevertheless, if a trader can break down the trend time frame and figure out the increase trend, since the yearly, monthly, and weekly trends can possibly be in different directions, it's important to see stocks that has several internal increase force together so that they can increase in the largest time frame.

Second, a crucial factor is the knowledge of breakout, which was introduced in former section. Normally, trend traders use breakout strategy to assume the future of s stock by analyzing the new high/low on a monthly, weekly or monthly interval basis.

As long as a trader has these abilities and access to the daily market condition and data every day, he/she is prepared to earn profit in the stock market. Moreover, there are several privileges

for trend strategy. For example, trend traders do not need to buy and hold, analyze, read news or predict the future stock price any more.

Nevertheless, there exists several rules for trend trading. First, traders have to learn to believe in the real chart in their sight instead of what they read in news or hear from others. Only the price patterns in the chart can accurately reflect the underlying power of this stock. Second, the market varies greatly one day from another, the traders have to determine the direction of the market and establish the trend before trading – which is exactly the reason why trend trades follow chart instead of news.

Like I mentioned, there's never a perfect strategy in stock marketing. Trend trading also has its disadvantages. One is called false start and the other is called shakeouts. False start, also known as Whipsaw, happens when the setup gives the signal that the stock is increasing but a reversal happened soon after the increase while Shakeout happens when a dramatic change occurs in stock market including uncertainty or bad economic news that forces investors to sell their stocks even with a loss.

In conclusion, in the developing of trading system, trend traders should take the timeframe they are trading, their transaction costs, their ability to endure frequent stops and strong corrections into consideration as well as making a decision whether to trade fast-moving but highly volatile stocks or slower but safer stock [9].

## **2.8 Reverse**

Reversal happens when a stock changed its direction of price trend suddenly. Reversal can be in either way, upward price becoming downward or downward price becoming upward. Just as it looks like, reversal trading is actually the riskiest strategy I will discuss here and also one of the

riskiest strategy in the stock marketing. In reverse trading, there are three main patterns: double bottom, double tops, and head-and-shoulders.

The first pattern, double bottom pattern looks like letter "W" while the confirmation line is at the middle of peak of the W and the bottom points. Normally, the difference between the two bottom points should not last less than ten days and can last several months. Figure 2.5 shows an example of Double Bottom graph.

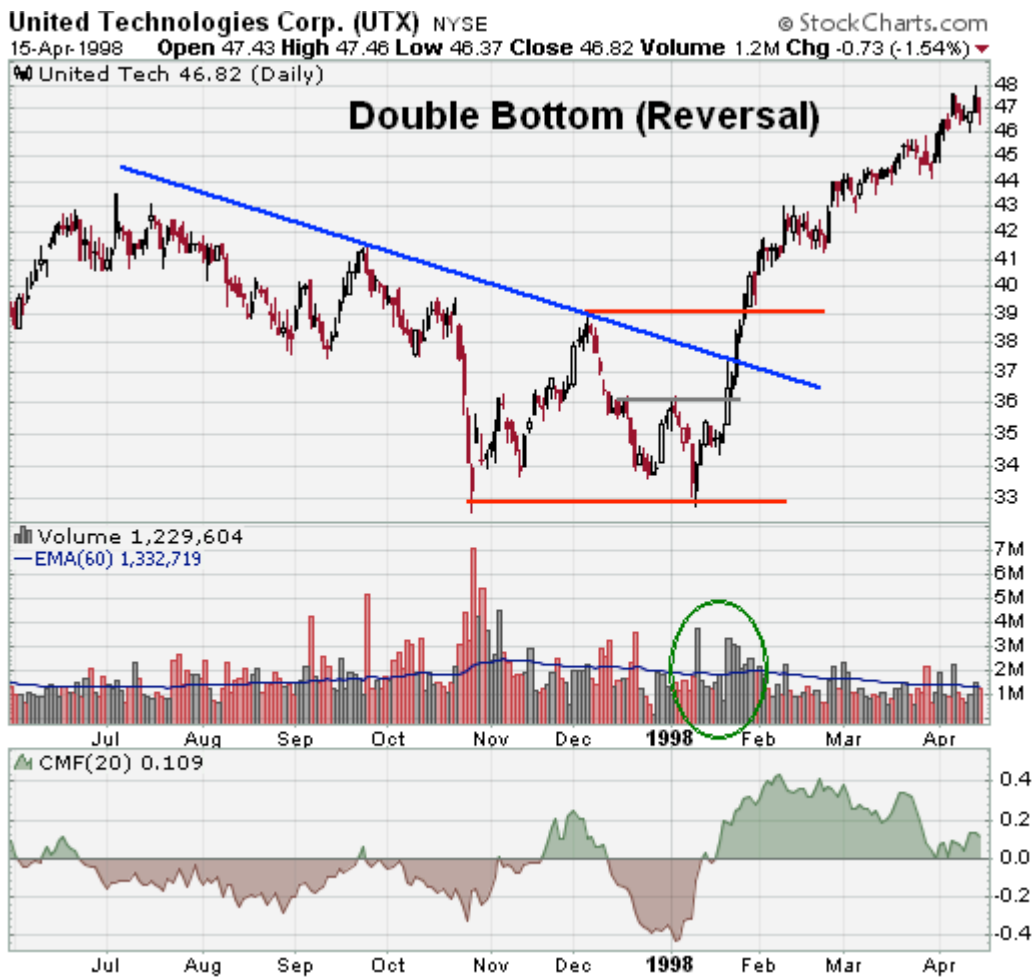


Figure 2.5 Double Bottom example (stockcharts.com)



The second pattern, the double top pattern is actually just the opposite of double bottom which looks like a M now as the figure below shows. In double top pattern, price will always decrease after the second top. However, investors always fail to buy stocks after the first top since they didn't consider that the price will drop down. Figure 2.6 shows an example of Double Top graph.

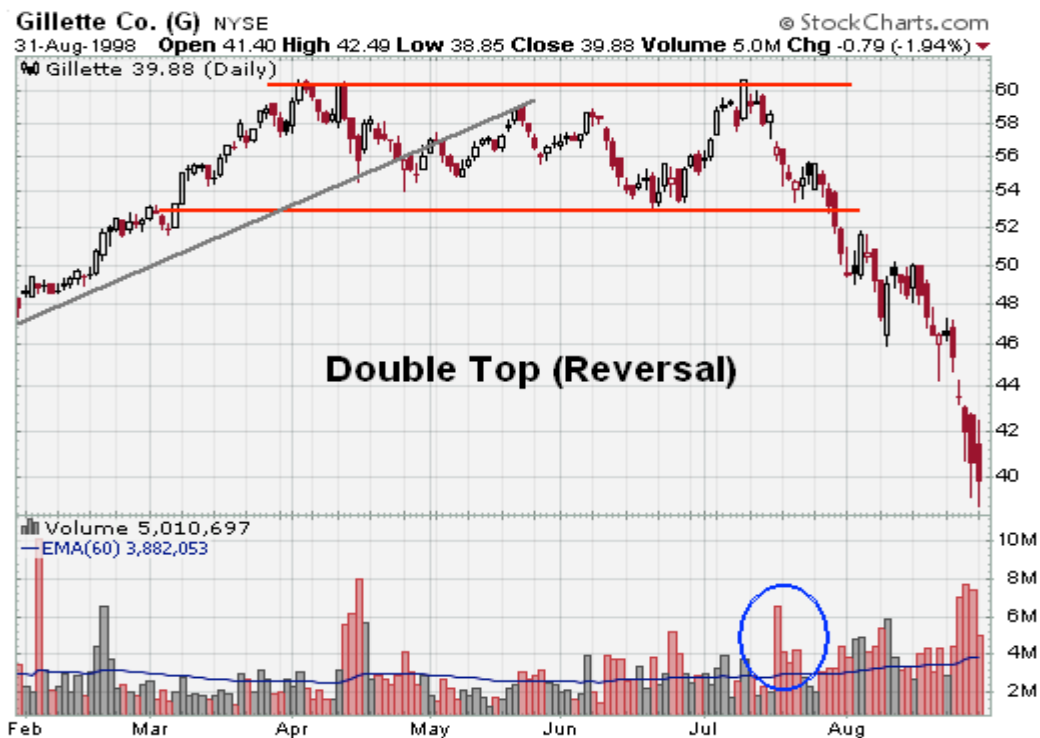


Figure 2.6 Double Top Example (stockcharts.com)

The third and last pattern is triple top, or head-and-shoulders. It has three tops and the one in the middle is the highest. The confirmation line connecting two low points is called neckline. If the price hit the neckline, a price decline can be foreseen. Figure 2.7 shows an example of Triple Top graph.

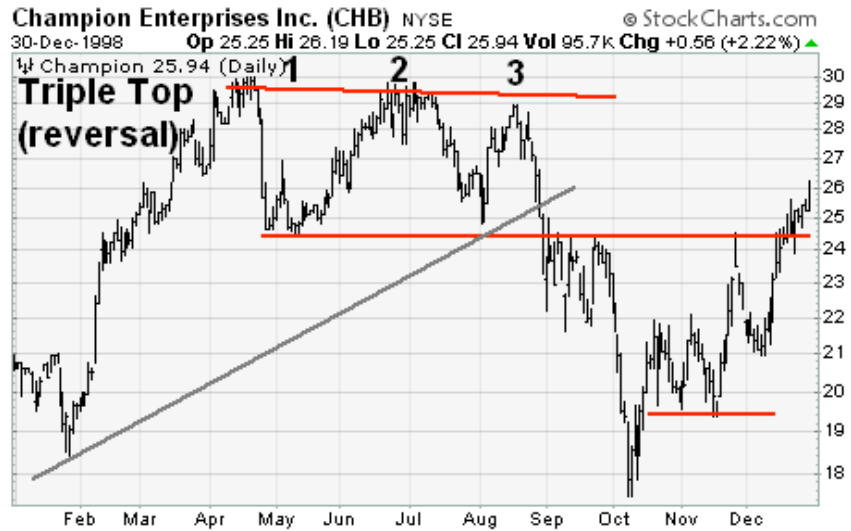


Figure 2.7 Triple Top example (stockcharts.com)

The timing to trade reversals is extremely hard to decide since traders will lose money no matter buying or selling too early or too late. A safe way to balance risk and profit is to enter the market only when the stock price becomes stable instead of entering it recklessly when the price is hitting top or bottom points [10].

## 2.9 Retracement

The last strategy I will introduce is retracement. Retracement is pretty similar to reverse but they have some vital differences. The definition of retracement is that after the price of stock kept staying in one long trend moving in one same direction, the price will retrace a certain of percentage before moving further. In retracement, investors need to complete some analysis before coming to an answer, which made this strategy pretty complicated. Below is an example of retracement. Figure 2.8 shows an example of Retracement graph.



Figure 2.8 Retracement Example (investopedia.com)

Basically, investors set up a price as their initial point and trade around the price using some calculation including resistance levels and support levels. With this strategy, investors can buy at low price before price rises and sell at high point before price falls.

## **3. COMPANY HISTORY**

### **Introduction**

In this chapter, I will bring some insights into companies that I will mainly do stock transactions on and the experimental or historical reason why I choose these companies.

#### **3.1 Alibaba Group(BABA)**

Alibaba Group Holding Limited is a Chinese e-commerce company that provides consumer-to-consumer, business-to-consumer and business-to-business sales services via web portals. It also provides electronic payment services, a shopping search engine and data-centric cloud computing services [11].

Alibaba Group Holding Limited was listed on NASDAQ and priced on NYSE on September 19<sup>th</sup>, 2014 with a starting price of \$92.7 per share. However, the price of Alibaba per stock kept decreasing since the end of 2014 and start of 2015, when the price already reached \$105-\$108 per share. Although its price already fell down to around \$80 now, with the reviving wind in Chinese e-commerce atmosphere I believe there's a chance for this stock to rise up. Figure 3.1 shows the stock chart of BABA in recent years. As the figure shows, the stock price of BABA resembles the triple reverse in reverse trading introduced before, so I plan to apply reverse trading.



Figure 3.1 BABA Stock Chart(Finance.yahoo.com)

### 3.2 Lending Club (LC)

Lending Club is a US peer-to-peer lending company, headquartered in San Francisco, California. It was the first peer-to-peer lender to register its offerings as securities with the Securities and Exchange Commission (SEC), and to offer loan trading on a secondary market. Lending Club offers a lending platform that enables borrowers to acquire a loan [12].

Lending Club went public in December 11<sup>th</sup> 2014 with a starting price of \$24.75 per share and had been decreasing for whole two years. However, from the figure below it's easy to see that the price of the stock is increasing recently after the long time decrease. Figure 3.2 shows the stock chart of LC in recent years. A piece of information we can derive from the figure is that the base price of LC is not as high as other stocks', so applying day trading on this stock should be a preferable choice.



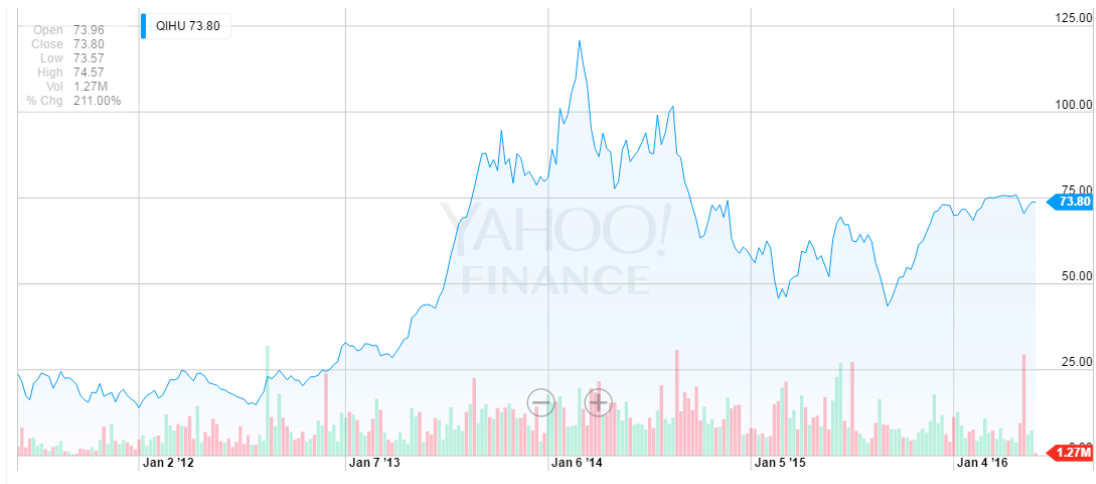


Figure 3.3 Qihoo Stock Chart(Finance.yahoo.com)

Qihoo 360 first appeared on NASDAQ in March 30<sup>th</sup> 2011 with opening price of \$27, the price of Qihoo 360 stayed between \$15- \$40 until May 2013, when the stock price raised critically from \$40 to \$110 in seven months' time. Research data indicated the fact that in March 2014, Microsoft China declared their cooperation with Qihoo to protect Windows XP system safety protection and the upgrade to Windows 8, which may act as a reason of the boosting of price. The reason I pick this stock is that Qihoo had many dispute with other software corporations in China, I want to see if their stock price is affected or not. Also from the figure, after a huge increase and shake, QIHU's price is becoming stable now, so applying trend trading should be a sensible choice on this stock.

### 3.4 Facebook, Inc. (FB)

Facebook is a social networking website founded by Mark Zuckerberg, a student in Harvard University who launched "The Facebook" website in February 2004. Over 1,200 students already signed up during the end of the first day launching and soon the network extended to

other universities, such as Boston University, New York University and the other Ivy League Universities. In August 2005, “The Facebook” formally became Facebook.com. So far Facebook covers 53% of US citizens and owns the largest online communication in the US [14].

Figure 3.4 shows the stock chart of FB in recent years.

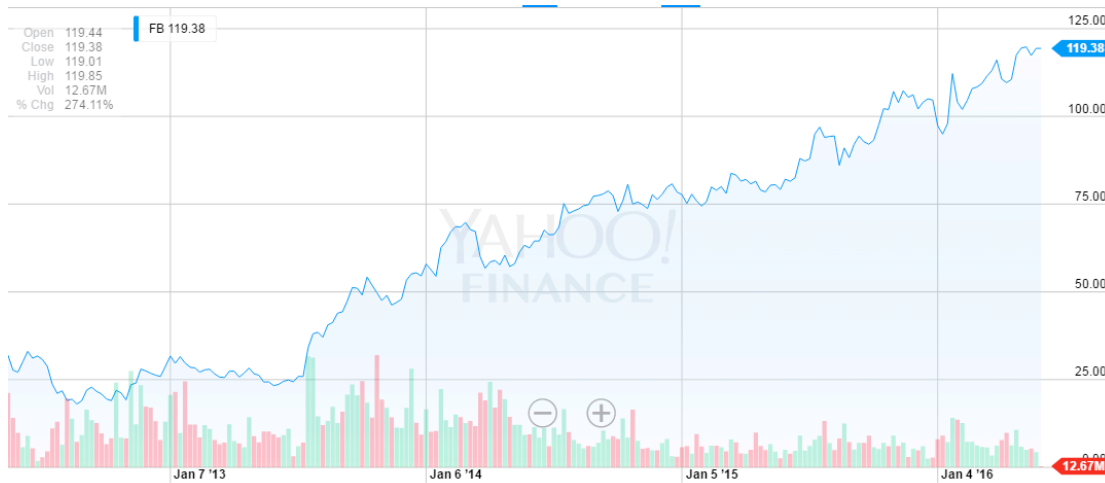


Figure 3.4 Facebook Stock Chart(Finance.yahoo.com)

Facebook is listed in May 18<sup>th</sup> 2012 on NASDAQ with a starting price of \$42.05 but has, as the figure shows, dropped for more than 10% due to the overestimation of public and single investors. After the decrease period finished, FB stock price started to grow boldly.

Facebook is picked mainly because its population and dominant place in social media realm. Besides, since people are becoming increasingly dependent on Facebook, I believe the price of stock will continue to increase so it will be a nice target to apply swing trading.



### 3.5 Tesla Motors, Inc. (TSLA)

Tesla Motors, Inc. is an American automotive and energy storage company that designs, manufactures, and sells electric cars, electric vehicle powertrain components, and battery products. Tesla Motors is a public company that trades on the NASDAQ stock exchange under the symbol TSLA [15]. Figure 3.5 shows the stock chart of TSLA in recent years.



Figure 3.5 Tesla Stock Chart(Finance.yahoo.com)

Tesla was listed in June 29<sup>th</sup> 2010 on NASDAQ with a starting price of \$19 and did not had big price change until 2013, when Tesla Model S started to gain positive evaluation. During whole 2013, more than 22.3 thousand Tesla Model S were sold. With the success of Model S, the stock price value started to grow.

Because of the fact that Tesla Model 3, which owns acceptable price and high performance, has just been published and ready to accept order, I consider Tesla Car Company as a good choice for this project. Also judging from the continuous 'W' look chart, I think it will be a preferable choice to apply reverse trading.

### 3.6 Apple, Inc. (AAPL)

Apple, Inc. is an American multinational technology company headquartered in California that designs, develops and sells consumer electronics, computer software, and online services. Almost everyone knows, or even holds at least an application or device developed by Apple [16]. Figure 3.6 shows the stock chart of AAPL in recent years.



Figure 3.6 Apple Stock Chart(Finance.yahoo.com)

Apple was listed on December 12<sup>th</sup> 1980 with an open price of \$28.75, and the price kept growing gradually and reached \$649.90 in June 6<sup>th</sup> 2014 and got 7:1 stock split into \$92.70 per stock. After that, the price of apple still kept increasing until June 2015.

The reason why I pick apple is pretty straightforward with. The decrease rate of apple's stock growing greater recently, I think this is a signal to perform day trading since the price should change with rumor and information about new device coming out. Moreover, because of the size and population of Apple, Inc., I can also apply swing trading on this stock.

### 3.7 JD.com/Jingdong Mall(JD)

JD.com, formerly 360buy, is a Chinese electronic commerce company whose headquarter is in Beijing. It is the largest B2C online retailers in China by transaction quantity and revenue. JD was founded in July 1998 and went online in 2004 [17]. Figure 3.7 shows the stock chart of JD in recent years.



Figure 3.7 JD Stock chart(Finance.yahoo.com)

The reason I picked JD is that JD serves as a rival to Alibaba, Inc. I assumed if one of their stock value decreases, the other will increase since probably the money consumption in online shopping remains a fixed value, and each one holds a portion of it. However, I also considered the fact that maybe the decrease in one stock probably only means a slump occurred in the realm, which will lead to a decrease in the other's stock price too. The price of JD kept shaking with a slow decrease for more than one year and started come back recently so I believe that the price will rise soon, swing trading should be the appropriate strategy in this case.

### **3.8 Assigning Strategy to Stocks**

I picked four strategies to apply simulation with during this project, they are reverse trading, swing trading, day trading and trend trading. The companies chosen all fit in at least one type of proper strategy when applying investment. After analyzing I plan to apply swing trading on FB and JD, reverse trading on BABA and TSLA, day trading on AAPL and LD, trend trading on QIHU.

## **4. SIMULATION**

### **Introduction**

This chapter records all transaction decisions and progresses during the several weeks' simulation. I hope these records will act as aids in the final analyzation and comparison of the strategies and also market status in the following weeks.

#### **4.1 Week 1 (6/6 - 6/10)**

##### **4.1.1 Swing Trading**

In this week, FB's price trend kept increasing and decreasing critically as Figure 4.1 shows, the price of FB started from \$118.44 this week and reached more than \$119.3 on Monday, but soon kept decreasing and closed at Friday with a price lower than \$117.25. Moreover, I figured out that the price chart looked like a short breakout in which the price kept staying between \$118.5 and \$117.75 during Tuesday to Thursday and broke out downward on Friday. I followed the rule of staying safe and after observing the unstable opening price and closing price and decided not to purchase FB shares this week. The final stats of FB also proved that my decision is correct.



Figure 4.1 FB Stock Chart This Week (Finance.yahoo.com)

Similar but worse than FB price this week, JD's price kept decreasing beside Thursday afternoon as Figure 4.2 displays, when price rose back for a little bit. The price decreased from \$23.5 to \$21 during this whole week. It's hard to find a reason for purchase JD stocks this week.



Figure 4.2 JD Stock Chart This Week (Finance.yahoo.com)

## 4.1.2 Reverse Trading

The first stock I decided to purchase in this project is BABA, whose price always keeps a low change rate in stock market. Figure 4.3 shows the stock chart of BABA this week.



Figure 4.3 BABA Stock Chart This Week(Finance.yahoo.com)

For most time, BABA's stock price kept staying at a stable price during this week, but I found a position on June 5<sup>th</sup> 9:30 am when the price started at a low price at \$77.07, I decided to buy in 1000 shares and sell them later in the same day, when the price came to \$77.54 after an increase and decrease. The profit finally came to \$820. This successful transaction brought me confidence in future investment.

I realized that in former days Tesla model had been losing the value of its stock, so when I saw a low open price on Friday, June 10<sup>th</sup> I considered that as a good chance to buy, so I bought 300 shares in 9:30am at the price \$226.86. However, this ended up becoming an incorrect choice. Fortunately, I jumped out of the decrease before the reducing trend went further later at same day

with the price \$223.94 per share, which brought me \$2.92 loss per share and \$876 in total. Figure 4.4 shows the stock chart of TSLA in latter half of this week.



Figure 4.4 TSLA Stock Chart on Thursday and Friday (Finance.yahoo.com)

### 4.1.3 Day Trading

The price of AAPL this week is affected more by the opening price each day and clearly in Figure 4.5, the opening price differs from the closing price last day almost every day to a large extent in this week, also due to the negative attitude the TSLA transaction brought, I lost confidence in dealing with the shaking price so I decided not to purchase AAPL stock this week.





Figure 4.5 AAPL Stock Chart This Week (Finance.yahoo.com)

Just when I considered I'm done this week, I found a sudden drop of stock Lending Club in 1 pm Friday, June 10<sup>th</sup>, so when I thought it already reached the bottom and is going to bounce back at 2:28 pm, I bought 12000 shares at the price \$4.22 per share, and sold it at \$4.27 per share in 2:52 pm since I thought it already reached the highest place that day. The trend after that proved my guess. Although I only earned \$0.05 for each stock but 12000 shares brought me \$600 profit. Figure 4.6 shows the stock chart of LC this Friday.



Figure 4.6 LC Stock Chart on Friday(Finance.yahoo.com)

#### 4.1.4 Table for Transactions this week

The table below (Table 4.1) shows the transaction process of the first week mentioned in the front.

Date	Symbol	Buy/sell	Price	Shares	Net Cost/Proceeds	Profit/Loss	Total Cash	Total Profit
							\$100,000	
06/05/16	BABA	Buy	\$77.07	1000	\$77080		\$22930	
06/05/16	BABA	Sell	\$77.54	1000	\$77530	\$450	\$100450	450
06/10/16	TSLA	Buy	\$226.86	200	\$45382		\$55068	
06/10/16	TSLA	Sell	\$223.94	200	\$44778	(\$604)	\$99846	(154)
06/10/16	LC	Buy	\$4.22	12000	\$50640		\$49206	
06/10/16	LC	Sell	\$4.27	12000	\$51230	\$590	\$100436	436

Table 4.1 Week1 – Trading Transactions

### **4.1.5 Conclusion**

During this week's simulation, I actually applied day trading on a reverse trading stock since I considered this project as a real market simulation, the real stock market will never let someone follow strictly to one strategy that had been set up as a place to earn money, or even a battlefield. As an investor, I should always pick the way that can maximize profit, so I followed my mind. The outcome also proved that my choice is right and helped me to gain profit. Another experience I gained is to sell the stock fast if the decrease trend won't come back. The more I hesitate, or even get grudge in mind, the more money I will lose.

## **4.2 Week 2 (6/13 - 6/17)**

### **4.2.1 Swing Trading**

The stock price of FB, as it appears in the Figure 4.7, shook in a wide extent this week, the price will get lower than starting price fairly soon every day, which made me doubt if this stock can really help me earn money during this week, plus the fact that the pattern last week appeared like a breakout that broke downward last Friday. After taking those into considerations I planned to keep watching FB's stock price for another week. This choice, however, ended up becoming an inadvisable one. Although the prices got low all days before noon, they all increased back during afternoon. From this point I started to deny that always keeping safe is a choice good enough in stock market.



Figure 4.7 FB Stock Chart This Week (Finance.yahoo.com)

I mentioned in Chapter 3 that I'm pretty interested in the relation of stocks in same realm. So I purchased 200 shares of JD and 200 shares of BABA at the same time, which was 2 pm on Thursday June 11<sup>th</sup> with share price \$20.20 for JD since after my analysis, I believe both these two stocks' prices are at their low points that time. Figure 4.8 shows the stock chart of JD this week.



Figure 4.8 JD Stock Chart This Week (Finance.yahoo.com)

I also mentioned in Chapter 3 that Apple Inc. can also be used to apply swing trading. From the figure below, clearly the stock price of Apple is decreasing overall. However, due to the fact that Apple is going to release new items recently and the existence of positive news about Apple on newspaper and website, I believe the stock price will rise gradually as the information of new devices coming out, so I decided to buy some stock and hold them for a while to see if the price will rise. I purchased 500 shares of AAPL at price \$96.43 on Thursday 12:00 pm and planned to hold these stocks for a while and figure out a preferable timing to sell. Figure 4.9 shows the stock chart of AAPL this week.



Figure 4.9 AAPL Stock Chart This Week(Finance.yahoo.com)

## 4.2.2 Reverse Trading

I also purchased 200 shares of BABA with JD at 2 pm Thursday June 11<sup>th</sup> at \$77.87 per share for comparison. If both these two stocks brought me profit, I can draw the conclusion that the online shopping website in China is experiencing a reviving wind recently, or vice versa.

However, if one of these two companies ended up decreasing value, I believe the reason will be at least one of these: news, policies, company maintenance, or fixed total online buying power.

Figure 4.10 shows the stock chart of BABA this week.

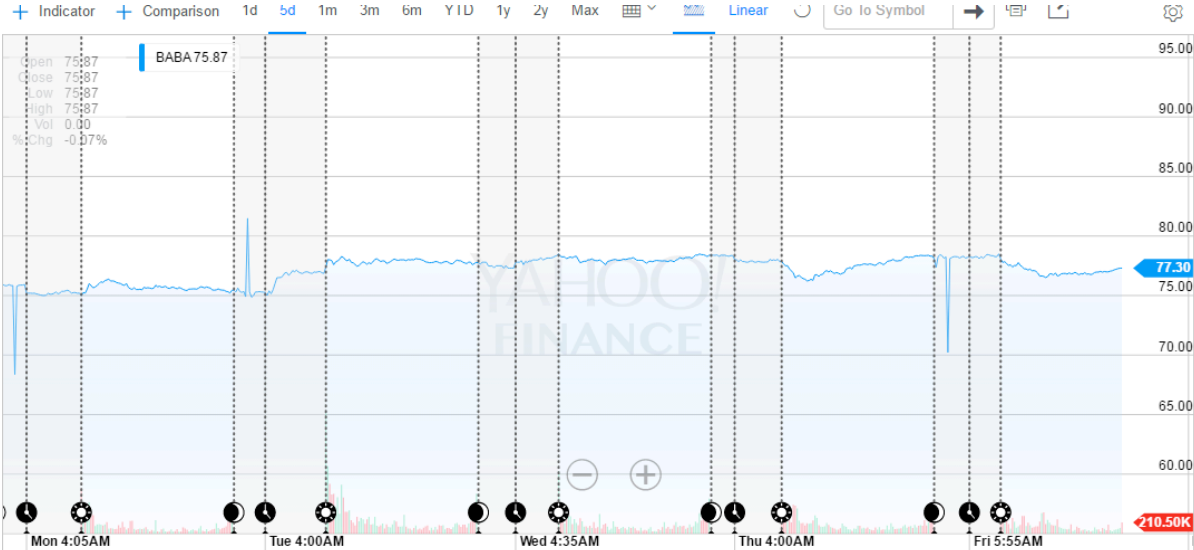


Figure 4.10 BABA Stock Chart This Week(Finance.yahoo.com)

TSLA stock price this week appeared exactly same as the double bottom shape in reverse trading, as I introduced in strategy part, purchase before the trend end is not a good choice, so I decided to purchase in after the trend becomes stable or this transaction may become fairly risky.



Figure 4.11 TSLA Stock Chart This Week (Finance.yahoo.com)

### 4.2.3 Trend Trading

After viewing the former chart of QIHU, I believe that the price of QIHU will increase if I hold some shares for a while, and the stock chart of QIHU always looks like breakout when I check them out. Consequently, I picked QIHU for trend trading testing and purchased 200 shares of QIHU at Friday June 17<sup>th</sup> 12:30 pm with a price of \$72.92 per share. Figure 4.12 shows the stock chart of QIHU this week.



Figure 4.12 QIHU Stock Chart This Week(Finance,yahoo.com)

#### 4.2.4 Table for Transactions this week

The table below (Table 4.2) shows the transaction process in week 2 mentioned in the front of the chapter.

Date	Symbol	Buy/sell	Price	Shares	Net Cost/Proceeds	Profit/Loss	Total Cash	Total Profit
							\$100,436	
06/05/16	APPL	Buy	\$96.43	500	\$48225		\$52211	
06/10/16	BABA	Buy	\$77.87	200	\$15574		\$36637	
06/10/16	JD	Buy	\$20.20	200	\$4050		\$32587	
06/10/16	QIHU	Buy	\$72.92	200	\$14594		\$18263	

Table 4.2 Week2 – Trading Transactions

#### 4.2.5 Conclusion

After the simulation this week finished, I suddenly realized that ‘want to keep safe so only purchase the stock that will definitely grow value’ is pretty a nonsense. Stock price will wait for



nobody; as an investor I have to catch the changes that are written in water. Besides, swing trading is mostly buy and hold, so I plan to hold them until next week to see if this strategy is effective enough.

### **4.3 Week 3 (6/20 - 6/24)**

#### **4.3.1 Transactions**

An embarrassing incident happened during this week: I have no money in hand to purchase more stocks so I cannot buy any stock. So I plan to focus on finding perfect place to sell all prior stocks in hand in order to purchase more in the following weeks.

The price of AAPL decreased for a little bit after my purchase finished last week and did not have critical change in the first four days this week, the price kept staying below or same as the price I purchased. At first I want to hold the stock a little bit longer, but on Friday morning the price decreased to less than \$94, I'm afraid that it may decrease more so I sold the stocks I held at 12:00 pm with the price \$94.04 per stock. If the trend continues I will buy some stock back again at low point and see if it can rise back again. This transaction brought me \$1.99 loss per share. Figure 4.13 shows the stock chart of AAPL this week.

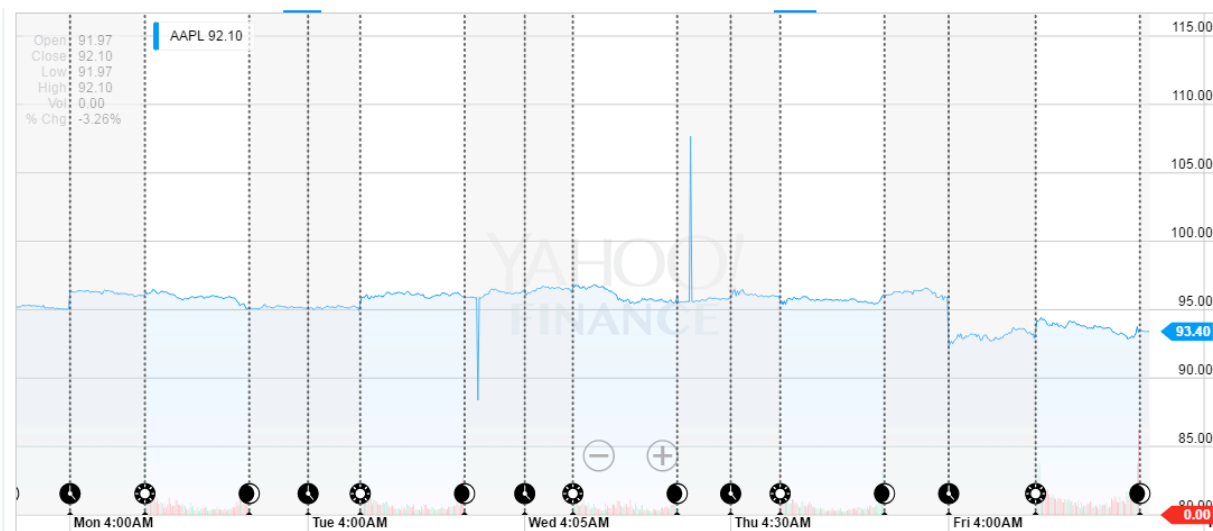


Figure 4.13 AAPL Stock Chart This Week(Finance.yahoo.com)

The price of BABA did not have critical change in first four days this week either so I kept holding them and anticipated a continuous rise. But the price decreased instantly from \$79 to \$77 on Friday morning almost same as the AAPL stock chart so I sold all stocks in hand at \$77.15 with a loss of \$0.72 per share on 10:15am. However, the stock price of JD, on the other hand, went up and down in contrast to BABA's stable at first and sudden change. On Monday afternoon the price even reached \$21.84 but I missed this preferable timing to sell since I expected the price to grow a little further while the price just dropped back to \$21. Finally, on 3pm in Wednesday, June 22<sup>nd</sup> I sold all shares at price \$21.24 with acceptable profit of \$1.04 per share. Figure 4.14 and 4.15 show the stock chart of BABA and JD this week separately. I anticipated a clear factor that affects the price of these two stocks, but the outcome this week cannot prove that BABA had negative news or element in company since most stocks had a lower starting price on Friday morning compared to the closing price on Thursday.



Figure 4.14 BABA Stock Chart This Week(Finance.yahoo.com)



Figure 4.15 JD Stock Chart This Week(Finance.yahoo.com)

### 4.3.2 Table for Transactions this week

The table below (Table 4.3) shows the transaction process this week mentioned in the front of the chapter before.

Date	Symbol	Buy/ sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Profit
							\$18263	
06/21/16	JD	Sell	\$21.24	200	\$4238	\$188	\$22501	865
06/22/16	BABA	Sell	\$77.15	200	\$15430	(\$144)	\$37931	44
06/24/16	APPL	Sell	\$94.04	500	\$47010	(\$1215)	\$84941	(1171)

Table 4.3 Week3 – Trading Transactions

### 4.3.3 Conclusion

This week I finished most of the swing trading attempting and I have to say that I thought swing trading was pretty straightforward and can be pretty simple for investors to use in earning profit since finding the low point to purchase and selling at high point while keep staying calm, the keys to success in swing trading are not hard to master. But I failed miserably this week due to my blind trust to big companies and thus bad stock selection. Investors need to sharpen their eyes when attempting swing trading and find the right stock to trade. Also, an important point to memorize is that always make sure there's some money in account since chance to earn profit will wait for nobody. Moreover, I plan to set the purchase and sell into one week in further simulation because I realized that the simulation time is not long enough for me to hold stocks for a long time.

## **4.4 Week 4 (6/27 - 7/1)**

### **4.4.1 Swing Trading**

During last week, the stock price of Facebook appeared as a typical breakout pattern and broke out at Friday, which caused the price to shrink from \$113.5 to around \$111.8. But after I read some positive news about new technology Facebook mastered recently, I anticipated a fast increase after the decrease trend. The price tendency this week proved my guess, Facebook started with a price at \$111.10 and decreased critically to \$108.2 on Monday afternoon. However, I wasn't able to wait until last second of this current and purchased 400 stocks at \$109.43 per share on 1:15pm Jun 27<sup>th</sup>, which is actually a pretty low price this week. On Tuesday, the price grew back again to around \$111.8 and started to shake around \$112. I regarded that as a signal of decrease in a short time and doubted if the technology was satisfying or accepted, so I sold all FB stocks in hand. Nevertheless, the price continued to increase unexpectedly to around \$114. When I realized the trend of increase never ceased, I purchased 400 stocks again at price of \$113.87 on 9:55 am June 29<sup>th</sup>, and sold them at Friday morning 11:05 am at \$114.80 and managed to catch the tail of the massive increase with \$0.97 profit per share. Figure 4.16 shows the stock chart of FB this week.



Figure 4.16 FB Stock Chart This Week(Finance.yahoo.com)

I calculated the ideal price of JD this week after monitoring the price recently and set the buy in price to \$19.5 per share. However, the bearish trend of JD stopped after the price reached \$20 per share and even went back to \$21.32, which surprised me so I missed the timing to purchase.

#### 4.4.2 Reverse Trading

I purchased 300 shares of BABA stock on 11:10am Jun 27<sup>th</sup> at \$73.92 per share. Originally I planned to sell them soon but the price trend gradually went upward so I choose to hold them for a while, the price already reached \$79.6 on Friday afternoon but I didn't want to sell them this week as long as the tendency was still available. Figure 4.17 shows the stock chart of BABA this week.



Figure 4.17 BABA Stock Chart This Week (Finance.yahoo.com)

For Tesla, I purchased 200 stocks on Tuesday noon at \$200.49 and the price kept growing upwards but on Thursday the trend became slow, I dealt that as a starting signal of decrease trend, especially after I viewed some other automobile stocks and realized that most of them were losing value, so I sold all stocks at \$212.37. But the price, in reality, grew continuously to \$216.5 on Friday, which shocked me since I never saw a stock rising more than \$20 during a single week's time before. Figure 4.18 shows the stock chart of TSLA this week.

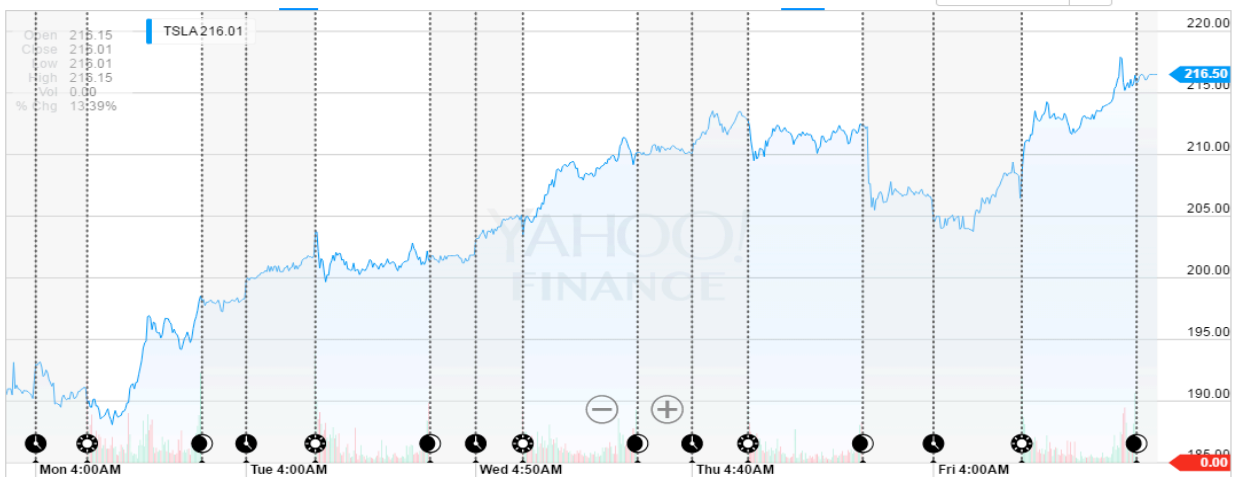


Figure 4.18 TSLA Stock Chart This Week (Finance.yahoo.com)

### 4.4.3 Day Trading

Lending Club's prices in former half week appeared exactly as left side of letter 'M'. I realized that the average price on Tuesday and Wednesday were higher than that on Monday, and the price started to decrease on Wednesday afternoon. So I waited until Thursday, when the price returned back down and imagined the price rising again as the letter 'M' and purchased 2000 stocks at 11:45am with \$4.38 per share. However, the chart didn't follow my anticipation and the price continued to decrease so I sold all shares in 2:45 pm with \$4.295 per share with a total loss of \$170. Figure 4.19 shows the stock chart of LC this week.

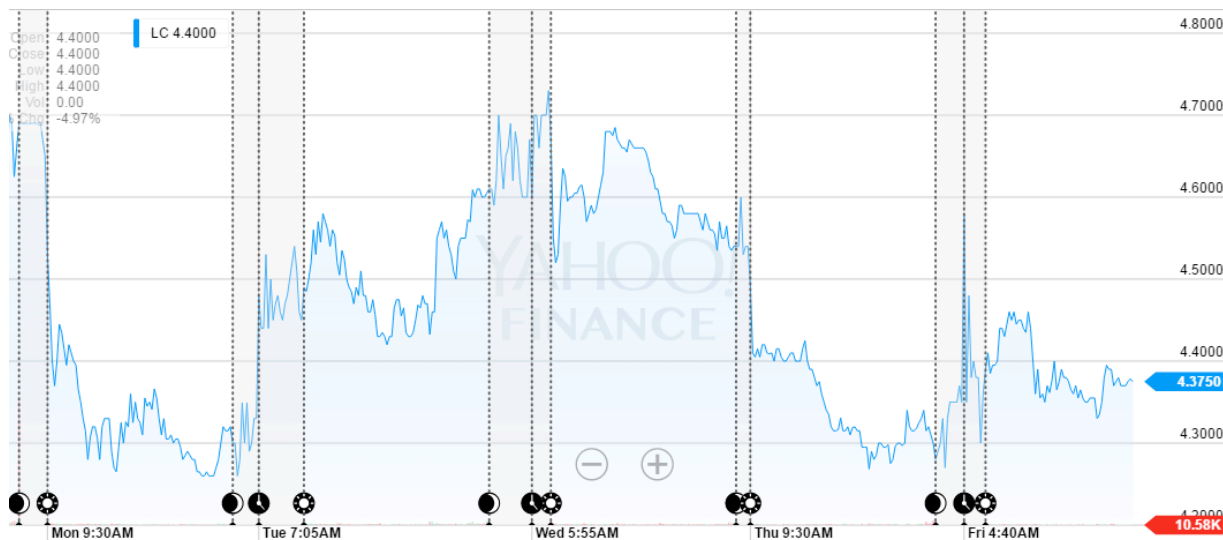


Figure 4.19 LC Stock Chart This Week (Finance.yahoo.com)

The price of AAPL appeared pretty stable inside weekly chart but there are several chances for day trading so I applied two transactions on Apple stock this week. On Wednesday morning 10:10am I purchased 150 shares at \$94.16 per share and sold them at \$94.35 on 12:10pm. Although the sharp price reduction after I purchased until less than \$93.75 frustrated me at first, I was able to insist on holding the stocks and waited the price to raise back again. I



purchased 200 shares of Apple again at \$95.46 on 11:55am on Thursday and sold them at \$95.58 on 3:15 pm at same day. This transaction came out safer since the price kept decreasing and the only factor need to consider is the timing to sell, but the profit also matches the safety, was rare.

Figure 4.20 and 4.21 show the stock chart of AAPL on Wednesday and Thursday separately.



Figure 4.20 AAPL Stock Chart This Wednesday(Finance.yahoo.com)



Figure 4.21 AAPL Stock Chart This Thursday(Finance.yahoo.com)

#### 4.4.4 Trend Trading

I did not sell QIHU stocks this week since I wasn't able to figure out the perfect place to sell it with. This actually means the perfect place to sell has not arrived yet. I decide to keep holding them for a while and see if the price will get to the desired price.

#### 4.4.5 Table for Transactions this week

The table below (Table 4.4) shows the transaction process this week mentioned in the front of the chapter before.

Date	Symbol	Buy/ sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Profit
							\$84941	
06/27/16	FB	Buy	\$109.43	400	\$43782		\$41169	
06/27/16	BABA	Buy	\$73.92	300	\$22276		\$18993	
06/28/16	FB	Sell	\$111.8	400	\$44710	938	\$63793	938
06/28/16	TSLA	Buy	\$200.49	200	\$40108		\$23695	
06/29/16	AAPL	Buy	\$94.16	150	\$14124		\$9571	
06/29/16	AAPL	Sell	\$94.35	150	\$14142.5	18.5	\$23723.5	956.5
06/30/16	LC	Buy	\$4.38	2000	\$8770		\$14953.5	
06/30/16	LC	Sell	\$4.295	2000	\$8580	190	\$23533.5	766.5
06/30/16	TSLA	Sell	\$212.37	200	\$42464	2366	\$65997.5	3132.5
06/30/16	AAPL	Buy	\$95.46	200	\$19102		\$46895.5	
06/30/16	AAPL	Sell	\$95.58	200	\$19106	4	\$66001.5	3136.5
06/30/16	FB	Buy	\$113.87	400	\$45558		\$20443.5	
06/31/16	FB	Sell	\$114.80	400	\$45910	352	\$66353.5	3488.5

Table 4.4 Week4 – Trading Transactions

#### 4.4.6 Conclusion

In my opinion, the market status this particular week was pretty friendly to investors, most of the stock I examined and analyzed had a bullish trend that enables investors to earn. Investors

should trust the trend they feel after calculation or analyzation. I was not confident enough during the transactions this week which led to the early selling of most stocks before they reach top and missed profit to some extent. About strategies, day trading again proved its difficulties when attempting to apply, but swing trading and reverse trading both revealed the power to help investors in obtaining a piece from the massive financial cake, especially in such a bullish week.

## **4.5 Week 5 (7/5 - 7/8)**

### **4.5.1 Swing Trading**

FB's price this week experienced a rise that resented it to the price it used to be a month ago after the low price during whole June. However, I wasn't able to catch the rise trend from the very start on Wednesday during which the price rose from \$113 to \$116 since I wanted to wait the price to shake a little bit and fall down before buying. The condition actually appeared on Thursday noon, after which I purchased 200 share at price \$115.87 in the afternoon and sold them on Friday morning with the price at \$116.88 per share with a \$1.01 profit per share. Figure 4.22 shows the stock chart of FB this week.



Figure 4.22 FB Stock Chart This Week(Finance.yahoo.com)

The stock price of JD declined critically from \$21.31 per share last Friday to \$20.45 on Tuesday so I thought this was a chance to buy and I purchased 1000 stocks with price of \$20.72 per share. Nevertheless, in Wednesday the price dropped to \$20.10 in the morning, I sold all stocks at that price to prevent further loss. This reckless transaction brought me \$620 loss in total cash. I dare not purchase JD stock anymore this week even the price was growing back slowly. Figure 4.23 shows the stock chart of JD this week.



Figure 4.23 JD Stock Chart This Week(Finance.yahoo.com)

## 4.5.2 Reverse Trading

BABA, in contrast to FB, suffered from a low price period this week, the price decayed suddenly on Tuesday after market opened from \$79.66 to \$78.46, which made its chart similar to JD's this week. After careful calculation I choose to sell all shares on Tuesday at price \$78.54 and not to purchase BABA this week while purchase some JD. The outcome proved that this is an acceptable choice, although the price raised back on Thursday, it's hard to continue holding these stocks and pass Tuesday since the huge price drop and the stable low price after that were threatening. Figure 4.24 shows the stock chart of BABA this week.



Figure 4.24 BABA Stock Chart This Week(Finance.yahoo.com)

Similar to the former stocks, the price of TSLA also experienced a fairly obvious price decrease in the start of this week so I didn't purchase Tesla shares until Thursday afternoon when I'm sure that the price will keep increasing at \$216.81 per stock and sold all 150 shares on Friday afternoon at \$217.21 per stock with \$0.4 gain per share. Figure 4.25 shows the stock chart of TSLA this week.



Figure 4.25 TSLA Stock Chart This Week(Finance.yahoo.com)

### 4.5.3 Day Trading

This week I only applied one day-trading on AAPL. The chance for day trading is way too hard to confirm, but I still found one on Wednesday morning, when the price of AAPL fell from \$95.38 to \$94.44 in one hour's time. I purchased 300 stocks of AAPL on 10:44 am at \$94.57 per share and sold them at \$95.11 on 11:14 am. Figure 4.26 shows the stock chart of AAPL this week.



Figure 4.26 AAPL Stock Chart On Wednesday(Finance.yahoo.com)

### 4.5.4 Trend Trading

QIHU's price this week also decreased continuously and even fell under the price on which I purchased. However, I still believe that the price is shaking within the breakout interval and the trend will end up increasing, so I plan to keep holding and see if the price will rise back. Figure 4.27 shows the stock chart of QIHU this week.



Figure 4.27 QIHU Stock Chart This Week(Finance.yahoo.com)

#### 4.5.5 Table for Transactions this week

The table below (Table 4.5) shows the transaction process this week mentioned in the front of the chapter before.



Date	Symbol	Buy/ sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Profit
							\$66353.5	
07/05/16	JD	Buy	\$20.72	1000	\$20730		\$45623.5	
07/05/16	BABA	Sell	\$78.54	300	\$23552	1276	\$69175.5	1276
07/06/16	AAPL	Buy	\$94.57	300	\$28381		\$40804.5	
07/06/16	AAPL	Sell	\$95.11	300	\$28523	142	\$69327.5	1418
07/06/16	JD	Sell	\$20.10	1000	\$20090	640	\$89417.5	778
07/07/16	FB	Buy	\$115.87	200	\$23184		\$66233.5	
07/07/16	TSLA	Buy	\$216.81	150	\$32531.5		\$33712	
07/08/16	FB	Sell	\$116.88	200	\$23366	182	\$57078	960
07/08/16	TSLA	Sell	\$217.21	150	\$32571.5	40	\$89649.5	1000

Table 4.5 Week5 – Trading Transactions

### 4.5.6 Conclusion

From the simulation this week, I understood that an important factor in stock marketing when trying to find the best price for transaction is patience no matter purchasing or selling. Sometimes although the price should increase by the calculation and analysis, the price will reduce for a short time before pick up and grow further as expect. However, this patience does not share the same meaning as hesitation, investors need to analyze from their study and react to seize the best timing to purchase in their heart fast.

## 4.6 Week 6 (7/11 - 7/15)

### 4.6.1 Swing Trading

The price of FB this week experienced slow reducing in first four days from the starting price and a steel decrease on Friday morning.

I purchased 200 stocks on Wednesday morning at price \$117.33 per share. Although I thought this should be the lowest point, the price, yet get lower in an accelerated speed until it reached \$116.9 and started shaking around that point. I immediately sold all stocks at Thursday noon, when the stock price bounced back to \$117.26 with \$0.06 profit per share since I'm satisfied enough that I didn't lose money from this transaction. Figure 4.28 shows the stock chart of FB this week.



Figure 4.28 FB Stock Chart This Week(Finance.yahoo.com)

The price chart of JD this week is pretty similar to FB's, which followed a feature every day in this week. No matter how the starting price is, the stock price would grow up for a little and

then start to decay. When I realized this rule on Thursday, I planned to purchase 1000 stocks when the stock market would open on Friday and sell then at noon. Finally, I purchased at price \$21.50 per share and sold at price \$21.60 with merely \$0.1 profit per share. Figure 4.29 shows the stock chart of JD this week.



Figure 4.29 JD Stock Chart This Week(Finance.yahoo.com)

## 4.6.2 Reverse Trading

BABA's price this week resembled a letter 'M' this week with low price at starting points on Monday, ending points on Friday, and whole Wednesday while high price at Tuesday and Thursday.

After I saw the continuous increasing trend on Monday, I supposed that the price will keep growing at least during Tuesday so I purchased 300 stocks at price \$82.49 per stock when market opened Tuesday. However, as I described, the price started to fall during Tuesday and kept

shaking at Wednesday so I sold all stocks with a loss of \$80.74 per stock with a total loss of \$525. When the price raised back to \$82 per share I considered to purchase again. I purchased 200 stocks with price \$82.00 at Thursday noon but the price decreased again so I sold them at \$81.89 per stock three hours later. This failed transaction reminded me the description in strategy chapter: purchasing during the reverse pattern appears is pretty risky, the ideal point to purchase is when the chart became stable again. Figure 4.30 shows the stock chart of BABA this week.



Figure 4.30 BABA Stock Chart This Week(Finance.yahoo.com)

TSLA this week started with a pretty high price but suffered critical drops during Wednesday and Friday morning. I considered TSLA as a powerful stock at first and that it should possess the power to keep increasing the value of its stocks so I purchased 100 shares at \$224.75 in Tuesday afternoon when the price dropped. Nevertheless, the price experienced a steel drop on Wednesday morning from more than \$224 to less than \$221. I had no choice but to sell them at Wednesday afternoon with \$222.16 with a huge loss of \$2.59 loss per share. Figure 4.31 shows the stock chart of TSLA this week.



Figure 4.31 TSLA Stock Chart This Week(Finance.yahoo.com)

### 4.6.3 Day Trading

The price of AAPL shook between \$96.9 and \$97.5 during first half week but the price increased critically in Thursday morning to more than \$98.5 in one hour and kept shaking around \$98.8. I purchased 300 stocks at \$97.68 on Thursday morning after I see the high starting price and sold them one hour later at \$98.42, when I realized the price started shaking. Figure 4.32 shows the stock chart of AAPL this week.



Figure 4.32 AAPL Stock Chart This Week(Finance.yahoo.com)

#### 4.6.4 Trend Trading

The stock price of QIHU kept increasing steadily but slowly in the first three days this week, which even cause my faith in this stock disappearing since the price still had no signal of boosting. Nevertheless, when I thought that I was about to sell the shares anyway on Friday, the opening price on Thursday jumped to \$76.58 suddenly. I decided to sell the stocks at \$76.73 at once on Thursday morning. Figure 4.33 shows the stock chart of QIHU this week.



Figure 4.33 QIHU Stock Chart This Week(Finance.yahoo.com)

## 4.6.5 Table for the Transactions this week

The table below (Table 4.6) shows the transaction process this week mentioned in the front of the chapter before.

Date	Symbol	Buy/ sell	Price	Shares	Net Cost/ Proceeds	Profit/ Loss	Total Cash	Total Profit
							\$89649.5	
07/12/16	BABA	Buy	\$82.49	300	\$24757		\$64892.5	
07/12/16	TSLA	Buy	\$224.75	100	\$22485		\$42407.5	
07/13/16	FB	Buy	\$117.33	300	\$35209		\$7198.5	
07/13/16	BABA	Sell	\$80.74	300	\$24212	545	\$31410.5	545
07/13/16	TSLA	Sell	\$222.16	100	\$22206	279	\$53616.5	824
07/14/16	JD	Buy	\$21.50	1000	\$21510		\$32106.5	
07/14/16	AAPL	Buy	\$97.68	300	\$29314		\$2792.5	
07/14/16	AAPL	Sell	\$98.42	300	\$29516	202	\$32308.5	622
07/14/16	QIHU	Sell	\$76.73	200	\$15336	742	\$47644.5	120
07/14/16	FB	Sell	\$117.26	300	\$35168	41	\$82812.5	79
07/14/16	BABA	Buy	\$82.00	200	\$16410		\$66402.5	
07/14/16	BABA	Sell	\$81.89	200	\$16368	42	\$82770.5	37
07/15/16	JD	Sell	\$21.60	1000	\$21590	80	\$104360.5	117

Table 4.6 Week 6 – Trading Transactions

## 4.6.6 Conclusion

During this week the price trend of most stocks kept altering rapidly and widely, which instead created plenty of chances for diligent and clever investors. I performed several unthoughtful transactions which caused considerable money loss. Also I completed trend trading this week, the outcome proved that the stock I picked was the right one for trend trading and the key to successful trend trading lies mostly on the picking of stock.

## 5. ANALYSIS AND CONCLUSION

By the end of the six-week simulation of day trading, swing trading, reverse trading and trend trading, I consider the data enough before applying analyze about these strategies. Among these four strategies, swing trading produced a pretty satisfying amount of profits, but day trading ended up losing some money. In swing trading, the total money I spent was about \$194,023 and the profit gained was about \$1,059, which is around 0.5% pay back of the total money spent on swing trading. Figure 5.2 shows the profit each week using swing trading. The total money spent for day trading is \$198,556 and the profit gained is \$-448.5, which is around -0.22% the total money spent. However, according to the content in Chapter 2, day trading is extremely hard for investors who are not expert in stock marketing to master and investors always need to pay some tuition before grasping complicated techniques, I consider this loss as an acceptable quantity. Figure 5.3 shows the profit gained each week with day trading. The money spent on reverse trading reached \$296,693.5, which was a pretty large amount of cost, and the profit gained was around \$2,518, which was around 0.85% the total money spent. Figure 5.4 shows the profit gained each week with reverse trading. And the money spent for trend trading was only \$14,594 and the profit came out to be \$742, which was about 5.1% the money spent. Due to the restriction of money, I wasn't able to apply too many trend trading, but I think the big success can be dealt as inevitable due to the sensible selection in stock. Overall, the money I spent in these six weeks reached \$703,866.5 and the total profit was \$3870.5, which is about 0.5% of the money spent. Although the percentage looked small, but considering the fact that the value of start fund was only \$100,000, these profit are already 3.87% of the money I put into stock market and I'm pretty satisfied with this outcome. Figure 5.1 shows the earn and loss stats during the 6 weeks. From the figure, my transactions are pretty successful except for the



third week when I sold AAPL stock with a loss of \$1215 during its decrease trend to prevent further loss.

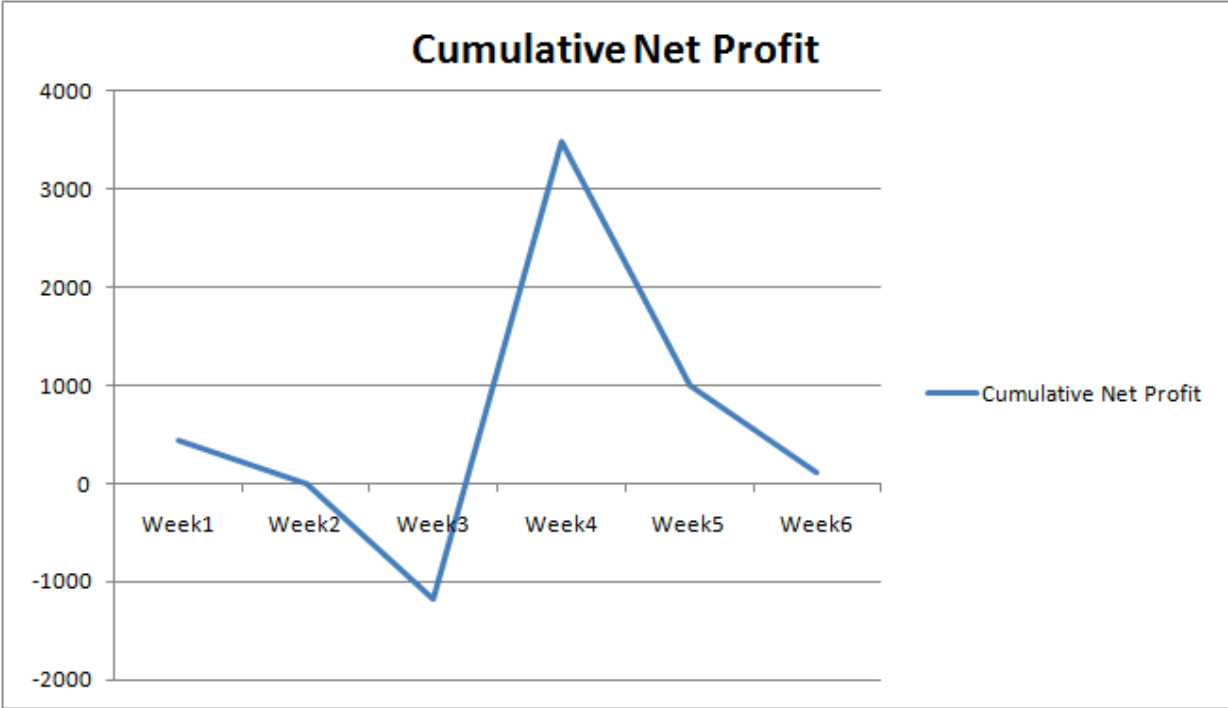


Figure 5.1 Net profit each week during project

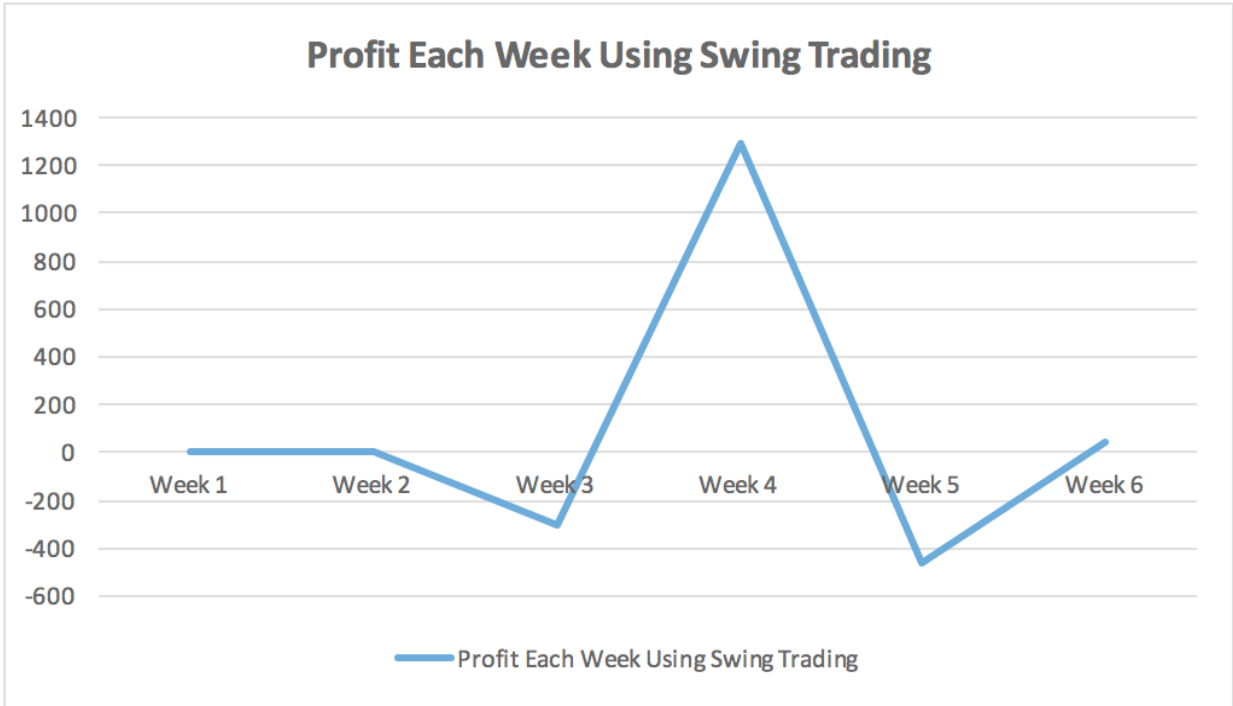


Figure 5.2 Profit each week gained with swing trading



Figure 5.3 Profit each week gained with day trading

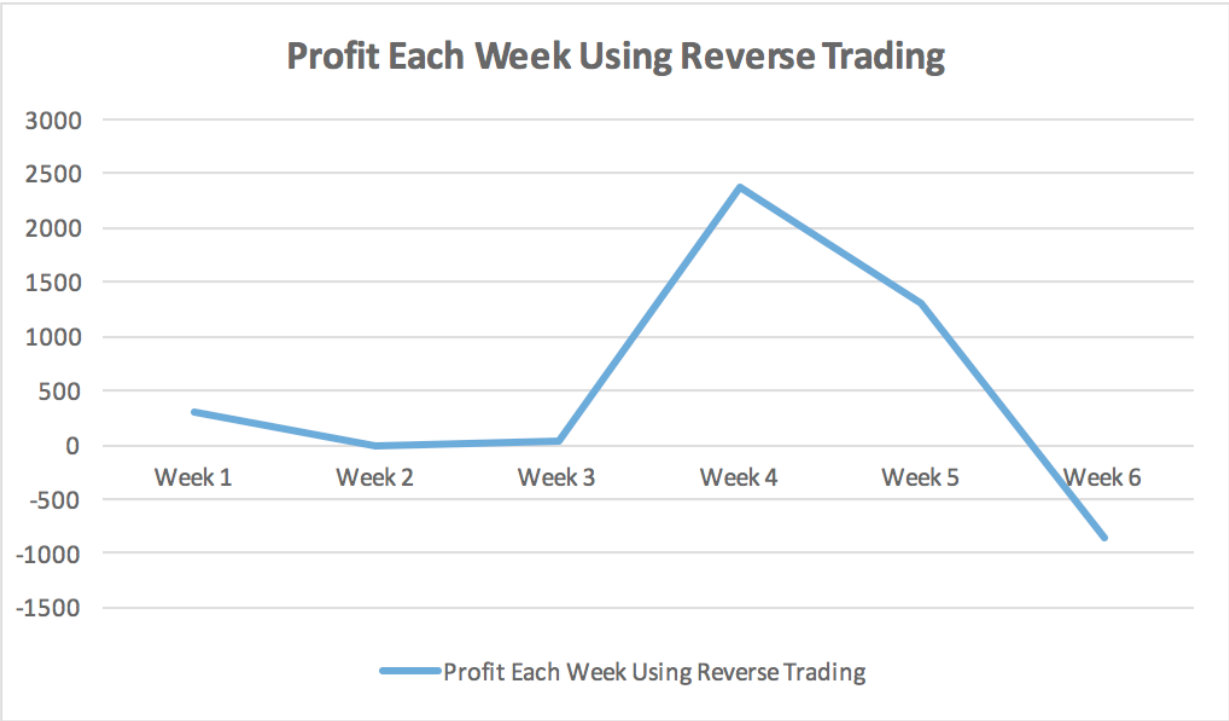


Figure 5.4 Profit each week gained with reverse trading

In conclusion, after the analysis, I'm convinced that this experimental simulation can be described as successful. Although I realized that six weeks' simulation cannot make me an expert in stock marketing, I'm still pretty satisfied to the profit I earned and the horizons broadened, especially with the fact that I decided all purchase and sell options by myself without asking others' advice, and also I believe that the strategies I utilized were fully tested and reliable for future use except maybe some more practice in day trading.

## 6. REFERENCES

1. PushProfile Team, History of The Stock Market  
<<http://pushprofile.com/history/history-of-the-stock-market/>>
2. Kristin Wong, The Many Different Types of Investments, and How They Work, 2015  
<<https://twocents.lifehacker.com>>
3. Jeff Kohler, The Anatomy of Trading Breakouts  
< <http://www.investopedia.com/articles/trading/08/trading-breakouts.asp>>
4. Justin Kuepper, An Introduction to Day Trading, 2014  
< <http://www.investopedia.com/articles/trading/05/011705.asp>>
5. Jason Van Bergen, Introduction to Swing Trading  
< <http://www.investopedia.com/articles/trading/02/101602.asp>>
6. Jason Van Bergen, Introduction to Momentum Trading, 2013  
< <http://www.investopedia.com/articles/trading/02/090302.asp>>
7. Jason Van Bergen, Introduction to Types of Trading: Technical Traders, 2013  
< <http://www.investopedia.com/articles/trading/02/091802.asp>>
8. Jason Van Bergen, Introduction to Types of Trading: Fundamental Traders  
< <http://www.investopedia.com/articles/trading/02/100102.asp>>

9. Ian Harvey, Trend Traders

<<http://www.investopedia.com/university/introduction-stock-trader-types/trend-traders.asp>>

10. Investopedia.com. Definition of Reversal

< <http://www.investopedia.com/terms/r/reversal.asp>>

11. Wikipedia.org. Alibaba Group Inc.

<[https://en.wikipedia.org/wiki/Alibaba\\_Group](https://en.wikipedia.org/wiki/Alibaba_Group)>

12. Wikipedia.org. Lending Club.

<[https://en.wikipedia.org/wiki/Lending\\_Club](https://en.wikipedia.org/wiki/Lending_Club)>

13. Wikipedia.org. Qihoo 360.

<[https://en.wikipedia.org/wiki/Qihoo\\_360](https://en.wikipedia.org/wiki/Qihoo_360)>

14. Wikipedia.org. Facebook.

<<https://en.wikipedia.org/wiki/Facebook>>

15. Wikipedia.org. Tesla Motor.

<[https://en.wikipedia.org/wiki/Tesla\\_Motors](https://en.wikipedia.org/wiki/Tesla_Motors)>

16. Wikipedia.org. JD.com.

<<https://en.wikipedia.org/wiki/JD.com>>

17. Wikipedia.org. Apple.

<[https://en.wikipedia.org/wiki/Apple\\_Inc](https://en.wikipedia.org/wiki/Apple_Inc)>