

A Thesis Presented to

The Faculty of Alfred University

Disposition Effect of Investors – Student Managed Investment Fund (SMIF)

by

Helena Okaibea Opare

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Under the Supervision of:

Chair: Dean Mark Lewis

Committee Members:

Professor Robert Irons

Professor Grzegorz Pac

Introduction:

The Disposition Effect was first introduced by Hersh Shefrin and Meir Statman in their 1985 paper known as “The disposition to sell winners too early and ride losers too long: theory and evidence”. It was introduced in behavioral finance and refers to the characteristic of investors to sell their high earning investments while keeping their losers (“Explaining the 'Disposition Effect’”). As investors, we are concerned about gains so by selling our winning investments quickly, we are locking in our gains and our certainty. In today’s “Efficient” market, prices are reflected by the current available information. Tomorrow’s information has no impact on today’s market or prices, and no one really has any idea of the news that might surface tomorrow. We cannot predict the future market so as investors we can only make assumptions and use trends to make our decisions. This causes investors to act on the information they currently have on hand, which enables them to make decisions based on personal benefit. When we observe the market and follow the trends in prices and information, we will realize how price appreciates when there is good information while negative news moves the market in a negative direction. So, falling into the trap of the disposition effect might led us to deciding based on personal feeling and making us very risk averse. As investors we are not supposed to focus on past prices and use that to predict how the market will be affected. There are a lot of factors that contribute to the

movement of a stock price. The appreciation of a specific stock price does not always mean that the price will drop, while the depreciation of a stock price does not necessarily mean that the price of that stock will eventually go up.

Prior to coming up with the main idea, I explored a whole wide range of topics. I thought of combining international Finance with the Fashion industry and work. This was of an interest to me because I love fashion and shopping and I also got the chance to study in France for 2 weeks, I had the idea to base my research on the fashion industry in France. I declined this idea because there is too much information on fashion and it was just too broad to research on, and data collection will be very difficult. Then thought of Finance and the homeless, International Finance and 3 world countries, credit analysis, and credit appraisal. None of those topics worked for me ones again because all of them were broad and it will also be hard to retrieve data. After deciding not to go with any of my topics that I had written down, my advisor Professor Lewis gave me a book on Behavioral finance/Economic titled “Why People Make Big Money Mistakes” by Belsky G. & Gilovich T to read it and found the Disposition Effect and the Prospect Theory, but I never thought of researching on them since I was mostly focused on researching on banks. I came up with a topic on credit risk and wanted to focus on how banks assess the risk of a company before giving out loans. With this topic, I had to focus on one bank, interview that employers of the bank and work with them. This would

be very hard because I will need to be commuting and working with the bank, so I crossed that out as well.

Later, Professor Lewis recommended that I read the Wall Street Journal for ideas and that was when I found the Disposition effects again and that really caught my attention and I became eager to research whether Alfred University's Student Managed Investment Fund (SMIF) club investors display the Disposition effect or not. I was also very curious to know because once in my investment class, I found myself portraying the disposition effect without even realizing so that made me more curious on the other investors of the club. After finalizing my topic, I gathered information's from the SMIF through their reports from 2015-2018 where I kept a log of stocks that were sold and stocks that were held. I then calculate the averages, purchase price per share, and sold prices. I found their percentages and I did my comparison to prove if my hypothesis were supported or not. I used charts and clustered graph to show the differences in the results. From this I learned a lot about the Disposition Effect itself and its relationship with the prospect theory.

Thesis Statement

Disposition effect on the Student Managed Investment club investors. Do they sell when they are high and keep when they are at a loss?

Hypothesis 1: SMIF investors sold their stocks when they were high in comparison to the average 12 months prior selling prices.

Hypothesis 2: SMIF investors sold their stocks when they were high in comparison to the 3 months prior selling prices.

Hypothesis 3: SMIF investors sold their stocks when they were high in comparison to their purchase prices.

Hypothesis 4: SMIF investors held on to their losing stocks in comparing their average 12 months prior prices to their purchase prices.

Hypothesis 5: SMIF investors held on to their losing stocks in comparing their average 3 months prior prices to their purchase prices.

Literature Review

According to Belsky G. & Gilovich T, “Most people are much more willing to lock in the sure gain that comes with selling a winning stock than they are willing to lock in the sure loss of selling a losing investment, even though it generally makes more sense to sell losers and keep winners” (pg. 59). The disposition effect is not a rational behavior for investors because of the characteristics of the stock market. What this means is that, the steadily increase in the price of a stock for that last couple of months will not determine that it will fall for the next couple of months; and also if a stock performs poorly for the last couple of months will also not determine its increase in prices for the next couple of months. The rational

behavior will be for investors to hold on to stocks that have currently risen in value and instead sell the stocks that have recently fallen in value. But all the same, some investors will do the opposite. Some investors fall prey to the disposition effect because they hate losses and they will sell losers to avoid the experience a loss in the short term (Belsky G., & Gilovich T., pg 55). This leads them to exhibit a risk seeking behavior by holding their losses for too long which is that, “they typically prefer a 50:50 bet to lose \$0 or \$200 to a certain loss of \$100” (Barberis, N., and Wei X, pg. 752). In the same way, investors will also lock in their gains leading them to exhibit a risk averse behavior which is that, “they typically prefer a certain \$100 to a 50:50 bet to win \$0 or \$200” (Barberis, N., and Wei X, pg. 752).

Risk seeking and Risk aversion behaviors (Disposition effect) by investors were traced to the Prospect Theory which introduced and identified by Daniel Kahneman and Amos Tversky in 1979. What Kahneman and Tversky stated in their findings was that “we assign values to gains or losses themselves based on their own merit, if we will, as gains or losses. It is the actual gaining or losing-and our feelings about it that matters more to us, rather than how those gains or losses leave us overall” (Belsky G., & Gilovich T., pg 50). This is basically saying that, if given two equal choices with one described as a possible gain and the other as a loss, people/investors will go for the former choice due to our own feelings even though both choices yield the same economic result. The Prospect theory and the

Disposition effects works together one way or the other making the Prospect theory a “useful ingredient in a model of the disposition effect” (Barberis, N., and Wei X, pg. 752). An example of how the prospect theory and the disposition effect works according to Barberis and Wei is that, “if an investor is holding a stock that has risen in value since purchase, he may think of the stock as trading at a gain. If he is a risk-averse over gains, he may then be inclined to sell the stock. Similarly, if he is risk-seeking over losses, he may be inclined to hold on to a stock that has gone down in value” (pg. 752).

Today, we all want to be able to have the knowledge of how to keep adding value to what we have. But when we do get that knowledge and start adding value, we tend to get rid of it as soon as we get what we want. According to Belsky G., & Gilovich T., whether we get rid of something because we got what we wanted by adding value or not is a form of human’s reaction to gains and losses which highlights a “key feature of human judgements” (pg. 50). There are mistake that we (investors) make when it comes to handling money or investing in the market. Falling into the trap of the disposition effect is one of the mistakes that some people/investors do not seem to realize but it is happening. It is important to ask yourself if “you have ever sold a stock not because you thought it has finished rising, but because you wanted to “lock-In profits”. And ask yourself how many times you have held on to a losing investment (or home or piece of art) because

you were sure it would “come back”. If it is a NO, it is a fact that individuals tend to sell winning investments too quickly and keep losing one’s too long” (Belsky G., & Gilovich T., pg 56). Belsky G., & Gilovich T. mention an important aspect of taking a loss and that is “when you sell an investment at a loss, the Internal Revenue Service (IRS) often allows you to reduce your taxable income by at least some amount of the loss” (Belsky G., & Gilovich T., pg 57). Even with this knowledge, some people still refuse to book the loss.

In the investment world there is not any investor who makes a perfect decision without any mistake. Individuals make decisions due to personal fulfilment, satisfaction and getting the most out of it. Some investors solely make decisions based on these. I wonder what an investor’s decision is based in terms of investing and owning a portfolio. Do they make rational or irrational decision concerning the fluctuation of prices of a stock and what factors they consider? The focus of investing is to keep adding value but why do investors quickly tend to sell when there is a gain? Is it because of lack of confidence and what we think might happen later after we gain in our portfolio? This is something I have been curious about and I also wonder if the SMIF club makes the same decision in their portfolio?

History of Students Managed Investment Funds - SMIF

SMIF began before 1992 when the board of Trustees for Alfred University dedicated \$100,000 to be actively managed by a group of finance students interested in investment. It has been successful ever since with a growing portfolio to over \$500,000 in April of 2019. The SMIF club is opened to all student from different major who are interested about investment. The SMIF meets once a week to discuss financial issues, make presentations on prospective company holding and analyzes their weekly performance of their funds. They also attend national conventions and places importance on experimental learning. The SMIF is committed to furthering a unique real-world educational experience.

The SMIF has different officers who are responsible for different things. The different officers and duties are as follows:

President: Responsible for planning and holding SMIF meetings, execution of buying and selling orders based on decisions from the board officers and responsible for the fund's quarterly reports.

Vice President: Responsible for filling in for the President's duties when absent and responsible weekly news and company update.

Treasurer: Responsible for all money transactions to and from the fund. Also places every buy and sell order and gives weekly report on the relative worth of all assets.

Secretary: Responsible for tasks such as sending emails regarding meetings as well as other important information to the other officers and taking notes at the meetings then providing copies for all officers as well as keeping notes on record.

Economist: Responsible for updates on economic data and political concerns relating to equities in the SMIF portfolio as well as general economic information.

Faculty Advisor: Overlooks all meetings and gives advice on all decisions being made within the club.

Every one of the officers mentioned above is responsible to also conduct equity research while updating a watch list of companies. They are also assigned a few companies in their portfolio which they keep track and notify the group of any news that they all need to watch. All officers convene yearly to review their IPS to judge the performance and relevance of the policies to accommodate changing management and marker characteristics.

SMIF relies heavily on companies that have growth potential when researching their companies. SMIF looks for certain criteria in a company before they invest. Some things they focus on are companies with healthy financials (strong income statement and balanced sheet), historic earnings growth and future earnings growth, strong leadership team and if past performance is consistently beating the index. Some qualifications they also take into account when researching companies that seem to be potential value investments are: if company is undervalued, has low Price/Earning (P/E) ratio, has a low Price/Book (P/B) ratio, has a positive cash flow, wide economic moat, strong future outlook, little to no debt, strong management team, and finally if the company can weather a recession.

The SMIF also follows some specific guidelines when investing. The allocations regarding their market capitalizations are: Large cap (\$10 billion or greater), mid cap (\$2-10 billion), and Small cap (\$250 million to \$2 billion) The SMIF's philosophy is to be focused on long term investing to avoid attempting market timing and speculation. Their Investment Policy statement does not include bonds, ETF's, options, futures, derivatives, commodities or shorting stock. The SMIF can invest in long-term equity. Some other general rules in the club is that, they are restricted to NYSE and NASDAQ exchanges and they are not allowed to purchase a stock that is under \$5.00 per share. Their earnings per share must be positive and preferably increasing each quarter, any stock issued in the last 1 year will not be purchased, all of their other holdings needs to be held greater than a year and no stock holding should account for exactly 5% of the portfolio (large cap). (Student Managed Investment Fund Report)

Method

To assemble the data this project, I took Alfred University's Student Managed Investment Fund Club yearly stock investment report. I gathered the report from 2015 to 2018 and focused on the stocks they sold for each month from 2015-2018. Then I considered their holding stocks with focus on holdings from January 2015 and January 2018. After gathering the stocks that were sold and held, I used Yahoo finance to retrieve their daily historical prices.

Sold stocks:

For the sold stocks from Table 1, I focused on the daily closing prices for the year before selling. I then computed the Average prices prior to selling for each company. The averages were calculated from 3 months before selling and from 12 months before selling in order to determine if stocks were indeed sold at a high or vice versa. After gathering all the data and companies with their averages, I then used Microsoft Excel to calculate the price per share of each stock that was bought. Individual purchase prices had to be determined because the report did not provide this information but instead provided their total cost basis which was used to determine their purchase prices. To figure out the price per share, I divided the Total Cost Basis for each stock by its quantity. By calculating the purchase price of each stock, I was able to compare the price before selling to the 3 months average price before selling and 12 months average price before selling. After calculating the purchase, the 3 and 12 months prior to selling price averages, there was a wide range of prices which needed to be put into a readable form. So, I normalized the data by computing their percentages, I compared the percentage for the average 3- and 12-months prior price versus the purchase price, then versus the price which they were sold. With this information it became easier to determine the price difference by percentage and to test for my Hypothesis (if stocks were sold when they are high in reference to the selling price and purchase price versus the price at 3 and 12 months before the stock were sold). With this information's it became possible to find out if SMIF indeed fell under the disposition effect by selling their stock/companies when they were high in order to "Lock-In" their profits.

Prices history (Sold stocks) - Table 1a

Company	Sold year	Purchase Price/share	Avg 12 months price prior to selling	Avg 3 months price prior to selling	Sold price
Philip Morris Intl Inc Com (PMI)	2015	\$82.98	\$82.88	\$84.87	\$89.71
Gilead Sciences Inc (GILD)	2016	\$118.86	\$86.47	\$76.52	\$75.06
The Boston Beer Company, Inc. (SAM)	2016	\$271.42	\$174.67	\$164.61	\$169.23
Toyota Motor Corporation (TM)	2016	\$110.05	\$111.52	\$116.18	\$114.40
Accenture plc (ACN)	2016	\$36.23	\$111.82	\$116.56	\$120.07
Dollar General Corporation (DG)	2017	\$67.86	\$80.03	\$74.44	\$70.30
AdvanSix Inc. (ASIX)	2017	\$13.98	\$19.77	\$21.92	\$25.38
National Oilwell Varco, Inc. (NOV)	2017	\$60.73	\$34.36	\$38.46	\$40.39
V.F. Corporation (VFC)	2017	\$75.05	\$59.21	\$53.19	\$50.55
Anheuser-Busch InBev SA/NV (BUD)	2017	\$105.77	\$112.66	\$119.73	\$125.43
Anheuser-Busch InBev SA/NV (BUD)	2018	\$105.77	\$114.99	\$114.04	\$114.29
The Boeing Company (BA)	2018	\$149.05	\$231.22	\$338.71	\$360.05
Stanley Black & Decker, Inc. (SWK)	2018	\$173.61	\$150.89	\$163.83	\$155.92

Percentage price history (Sold stocks) - Table 1b

Company	Sold year	Percentage of sold price to 12 months prior price	Percentage of sold price to 3 months prior price	Percentage of Sold price to Purchase price
Philip Morris Intl Inc Com (PMI)	2015	108%	106%	108%
Gilead Sciences Inc (GILD)	2016	87%	98%	63%
The Boston Beer Company, Inc. (SAM)	2016	97%	103%	62%
Toyota Motor Corporation (TM)	2016	103%	98%	104%
Accenture plc (ACN)	2016	107%	103%	331%
Dollar General Corporation (DG)	2017	88%	94%	104%
AdvanSix Inc. (ASIX)	2017	128%	116%	182%
National Oilwell Varco, Inc. (NOV)	2017	118%	105%	67%
V.F. Corporation (VFC)	2017	85%	95%	67%
Anheuser-Busch InBev SA/NV (BUD)	2017	111%	105%	119%
Anheuser-Busch InBev SA/NV (BUD)	2018	99%	100%	108%
The Boeing Company (BA)	2018	156%	106%	242%
Stanley Black & Decker, Inc. (SWK)	2018	103%	95%	90%

Holding Stock:

For the stock that were kept in January of 2015 and January of 2018, I did the same calculation from the stock that were sold. But this time I gathered the data from January 1–December 31 of the year of the report and after the year. I then computed for the Average of both 12-month prior prices from the date of report as well as their 3 months after and prior prices. Just like calculating the price per share for the stocks that were sold, I also calculated the price per share for each stock that was held by dividing the Total Cost Basis for each stock by its quantity. This time I am comparing the average prices with their purchase prices for both the 3 and 12 months to determine if they are indeed holding on because they are facing losses. I then calculated their percentages in comparison to their purchase prices versus their 3- and 12-month prior prices. With the percentage differences, I would be able to find out if they indeed held on to their losing stock.

Price History (Holdings of 2015) - Table 2a

Company	Purchase price/share	Avg 12 months prior price	Avg 3 months prior price
Accenture plc (ACN)	\$36.23	\$96.67	\$106.22
Alphabet Inc. (GOOG)	\$513.02	\$595.14	\$745.03
Anheuser-Busch InBev SA/NV (BUD)	\$105.77	\$119.61	\$124.39
Apple Inc. (AAPL)	\$66.31	\$119.43	\$114.90
The Boeing Company (BA)	\$149.05	\$142.30	\$146.00
The Boston Beer Company, Inc. (SAM)	\$271.42	\$249.10	\$210.85
Capital One Financial Corporation (COF)	\$79.49	\$80.05	\$77.03
Celgene Corporation (CELG)	\$26.97	\$118.04	\$114.49

Dollar General Corporation (DG)	\$67.86	\$72.32	\$67.96
Dycom Industries, Inc. (DY)	\$31.90	\$58.28	\$81.23
Exxon Mobil Corporation (XOM)	\$73.87	\$83.54	\$79.90
General Motors Company (GM)	\$36.41	\$34.21	\$35.29
Gilead Sciences, Inc. (GILD)	\$118.86	\$106.04	\$104.75
Honeywell International Inc. (HON)	\$99.44	\$97.25	\$98.34
Jacobs Engineering Group Inc. (JEC)	\$62.97	\$42.25	\$42.37
Lannett Company, Inc. (LCI)	\$39.04	\$52.44	\$39.21
Mastercard Incorporated (MA)	\$90.26	\$92.20	\$98.55
Microsoft Corporation (MSFT)	\$44.33	\$46.78	\$54.63
National Oilwell Varco, Inc. (NOV)	\$60.73	\$47.37	\$36.36
Toyota Motor Corporation (TM)	\$110.05	\$129.71	\$123.99
Triumph Group, Inc. (TGI)	\$63.96	\$55.58	\$39.03
Under Armor, Inc. (UA)	\$65.84	\$93.22	\$87.55
V.F. Corporation (VFC)	\$75.05	\$71.29	\$64.41
Whiting Petroleum Corporation (WLL)	\$57.83	\$106.77	\$57.02
Berkshire Hathaway Inc. (BRK-B)	\$103.38	\$140.95	\$134.35

Percentage price history (Holdings of 2015) - Table 2b

Company	Percentage of prior 12 months holding	Percentage of prior 3 months holding
Accenture plc (ACN)	267%	293%
Alphabet Inc. (GOOG)	116%	145%
Anheuser-Busch InBev SA/NV (BUD)	113%	118%
Apple Inc. (AAPL)	180%	173%

The Boeing Company (BA)	95%	98%
The Boston Beer Company, Inc. (SAM)	92%	78%
Capital One Financial Corporation (COF)	101%	97%
Celgene Corporation (CELG)	438%	424%
Dollar General Corporation (DG)	107%	100%
Dycom Industries, Inc. (DY)	183%	255%
Exxon Mobil Corporation (XOM)	113%	108%
General Motors Company (GM)	94%	97%
Gilead Sciences, Inc. (GILD)	89%	88%
Honeywell International Inc. (HON)	98%	99%
Jacobs Engineering Group Inc. (JEC)	67%	67%
Lannett Company, Inc. (LCI)	134%	100%
Mastercard Incorporated (MA)	102%	109%
Microsoft Corporation (MSFT)	106%	123%
National Oilwell Varco, Inc. (NOV)	78%	60%
Toyota Motor Corporation TM	118%	113%
Triumph Group, Inc. (TGI)	87%	61%
Under Armour, Inc. (UA)	142%	133%
V.F. Corporation (VFC)	95%	86%
Whiting Petroleum Corporation (WLL)	185%	99%

Berkshire Hathaway Inc. (BRK-B)	136%	130%
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Price History (Holdings of 2018) - Table 2c

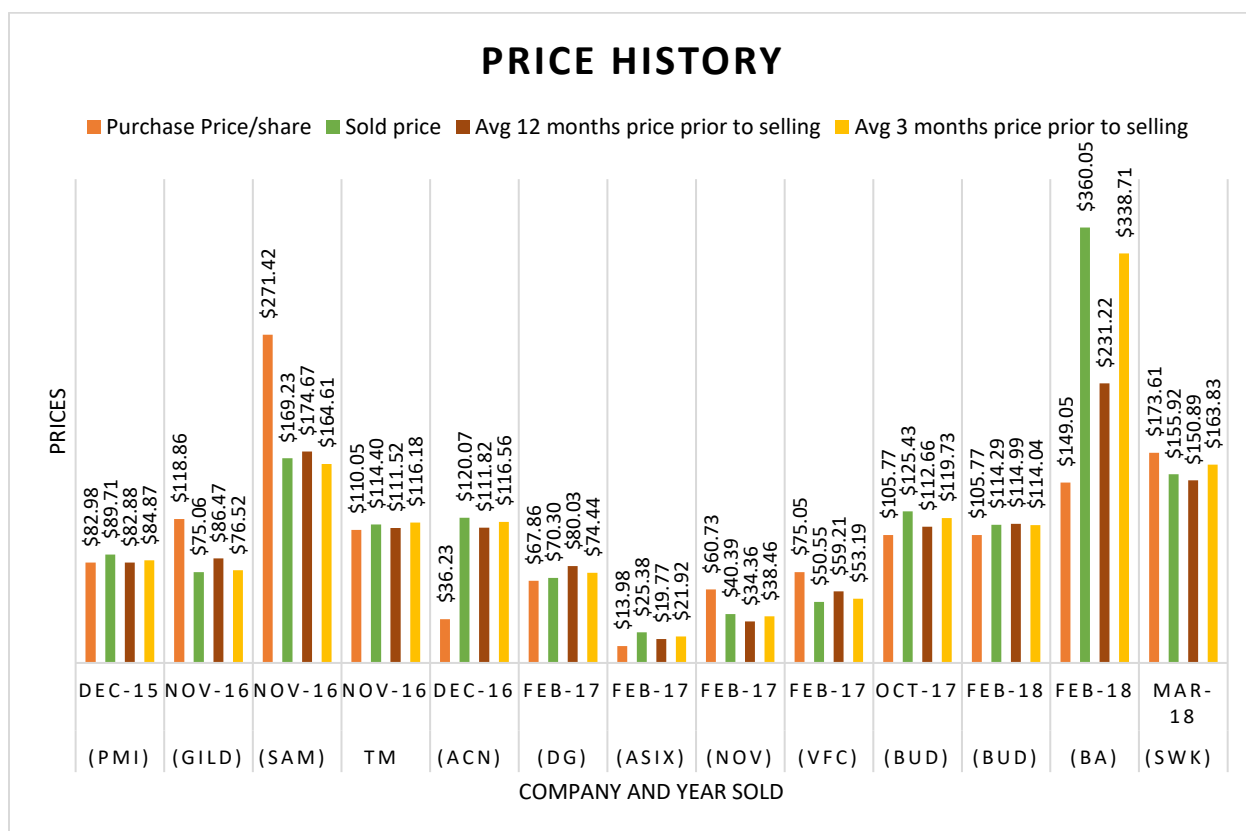
Company	Purchase price/share	Avg 12 months prior price	Avg 3 months prior price
Adobe Inc. (ADBE)	\$195.01	\$144.13	\$172.13
Alphabet Inc. (GOOG)	\$511.61	\$922.35	\$1,018.65
Anheuser-Busch InBev SA/NV (BUD)	\$105.77	\$114.21	\$117.55
Berkshire Hathaway Inc. (BRK-B)	\$103.38	\$175.18	\$189.99
The Boeing Company (BA)	\$149.05	\$215.58	\$271.12
British American Tobacco p.l.c. (BTI)	\$59.68	\$65.29	\$65.22
Costco Wholesale Corporation (COST)	\$169.95	\$167.49	\$172.88
Danaher Corporation (DHR)	\$84.11	\$85.93	\$91.73
Dollar General Corporation (DG)	\$67.86	\$76.62	\$86.10
Honeywell International Inc. (HON)	\$98.88	\$129.19	\$142.39
Lockheed Martin Corporation (LMT)	\$312.71	\$287.79	\$315.31
Mastercard Incorporated (MA)	\$90.26	\$127.48	\$148.75
Microsoft Corporation (MSFT)	\$43.45	\$72.04	\$82.09
Stanley Black & Decker, Inc. (SWK)	\$173.61	\$142.68	\$163.75
Walmart Inc. (WMT)	\$70.19	\$79.04	\$91.90

Percentage price history (Holdings of 2018) - Table 2d

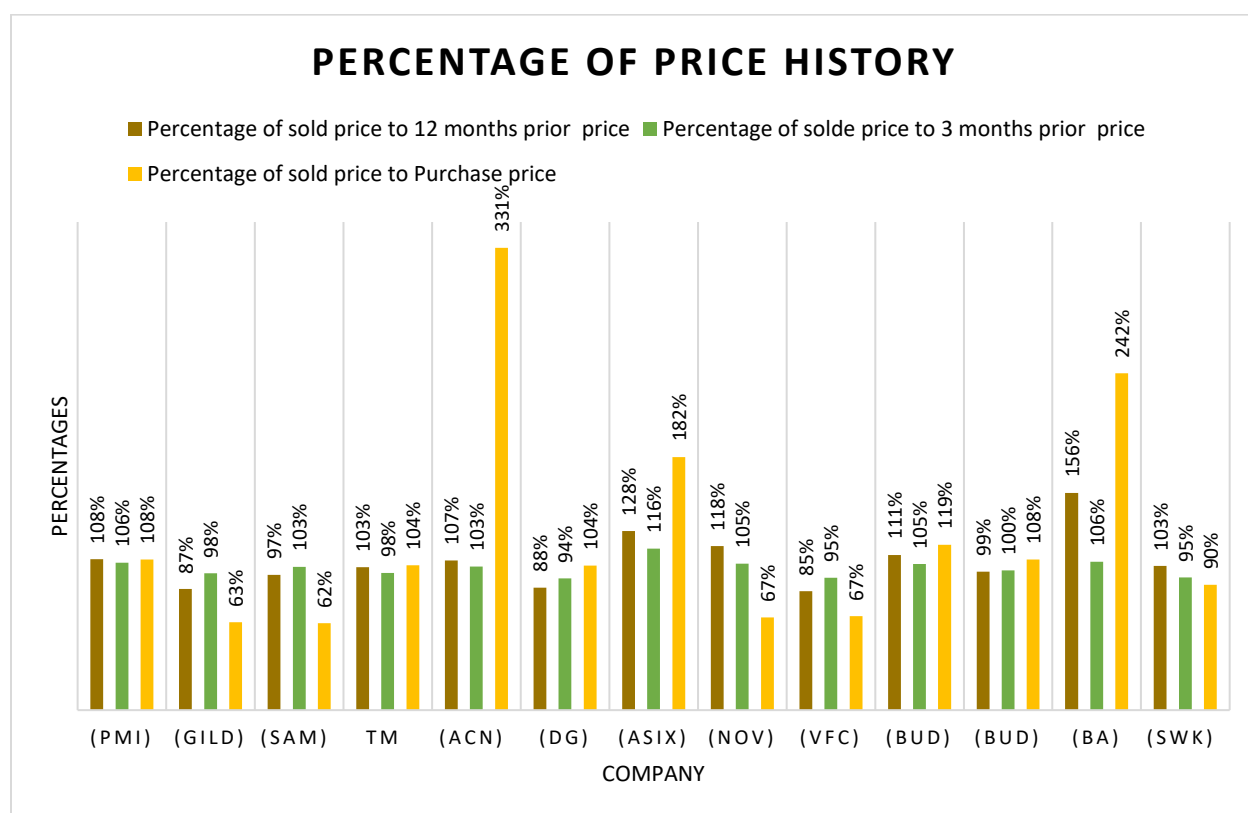
Company	Percentage of 12 months holding 2018	Percentage of 3 months holding 2018
Adobe Inc. (ADBE)	74%	88%
Alphabet Inc. (GOOG)	180%	199%
Anheuser-Busch InBev SA/NV (BUD)	108%	111%
Berkshire Hathaway Inc. (BRK-B)	169%	184%
The Boeing Company (BA)	145%	182%
British American Tobacco p.l.c. (BTI)	109%	109%
Costco Wholesale Corporation (COST)	99%	102%
Danaher Corporation (DHR)	102%	109%
Dollar General Corporation (DG)	113%	127%
Honeywell International Inc. (HON)	131%	144%
Lockheed Martin Corporation (LMT)	92%	101%
MasterCard Incorporated (MA)	141%	165%
Microsoft Corporation (MSFT)	166%	189%
Stanley Black & Decker, Inc. (SWK)	82%	94%
Walmart Inc. (WMT)	113%	131%

Statistic Results:

Price History (sold stock) - Graph 1a



Percentage Price History (sold stock) - Graph 1b



From the above graphs, the results of the prices histories of stocks that were sold from 2015 to 2018 were conclusive. Graph 1a shows the actual prices of each company with their purchase price, averages of both prior 12- and 3-month prices as well as the prices which they were sold. Graph 1b has their normalized results where the results are more condensed into percentage and easier to read. From reference to graph 1b, when we

compare the percentage of the average 3-month prior selling price to the actual sold price, we will notice that not all the stocks are sold at their maximum price.

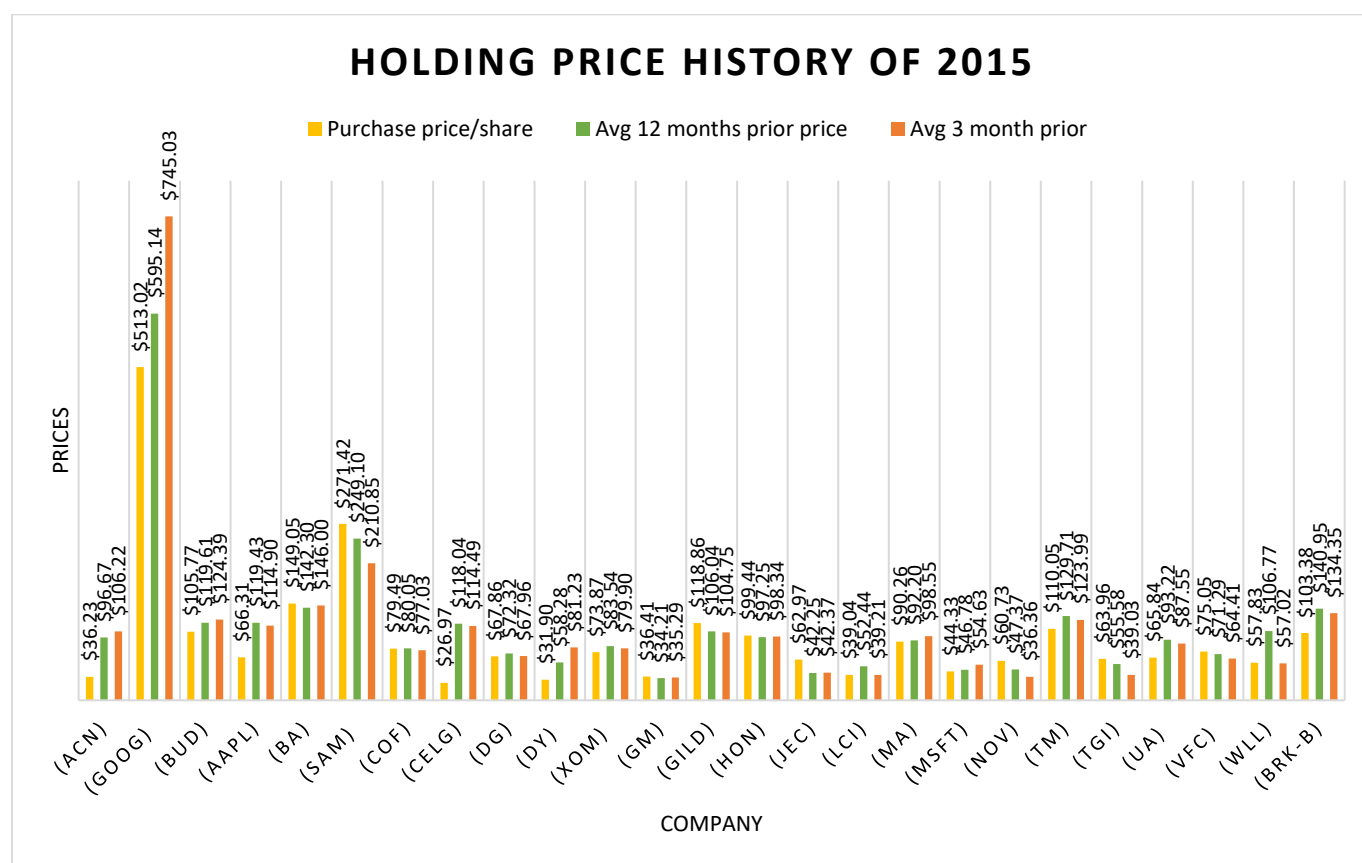
Hypothesis 1: “SMIF investors sold their stocks when they were high in comparison to the average 12 months prior price”. When we compare the sold percentage and the average 12 month prior percentage, we observe that GILD, SAM, DG, VFC, and BUD were actually sold at their low prices which also indicates that the remaining 8 stock which are PMI, TM, CAN, ASIX, NOV, BUD, BA and SWK were sold when they were at their maximum prices in comparison to the prices in which they were sold. Therefore, Hypothesis 1 is supported. SMIF does demonstrate the disposition effect because most of the stocks were sold at a higher price than the prior 12-month average.

Hypothesis 2: “SMIF investors sold their stocks when they were high in comparison to the average 3 months prior price”. In comparing the price at which it was sold at and the average 3 month’s prior price, GILD, TM, DG, VFC, and BUD were sold couple of percentages below the selling price among the total 13 stocks that were sold. Meaning that the remaining 8 which are PMI, SAM, CAN, ASIX, NOV, BUD, and BA were sold at a higher price. Ones again, Hypothesis 2 is supported. SMIF does demonstrate the disposition effect because most of the stocks were sold at a higher price than their 3 months prior average.

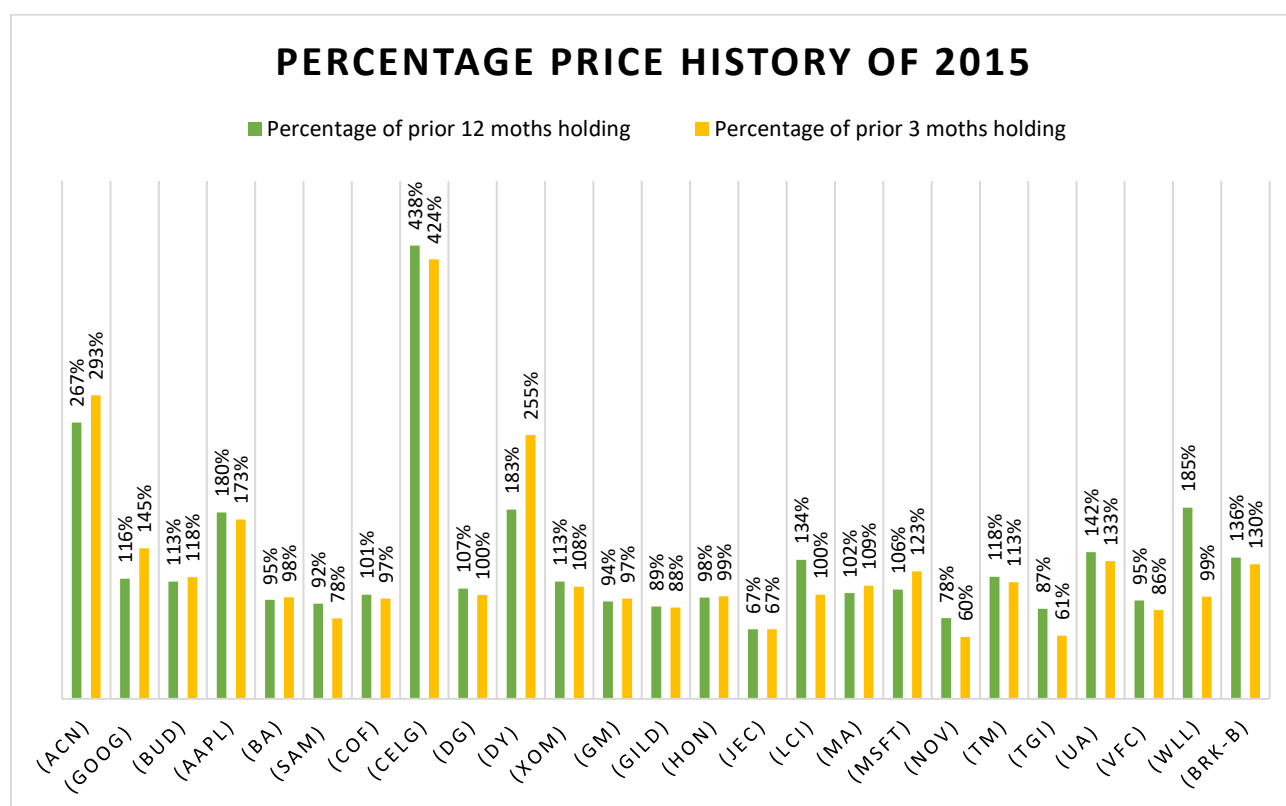
Hypothesis 3: “SMIF investors sold their stocks when they were high in comparison to their purchase prices”. When we compare each individual stock prices that were sold to

their individual purchase price, we conclude that, PMI, TM, ACN, DG, ASIX, BUD, and BA were sold at a gain. While GILD, SAM, NOV, VFC, and SWK were sold at a loss in comparison to their individual purchase price. This proves that hypothesis 3 is supported because those stock were sold at their highest prices in comparison to their purchase prices and the SMIF falls under the disposition effect because the majority stock that were sold high are more than the ones that were sold low.

Price History (Holdings of 2015) - Graph 2a



Percentage Price History (Holdings of 2015) - Graph 2b

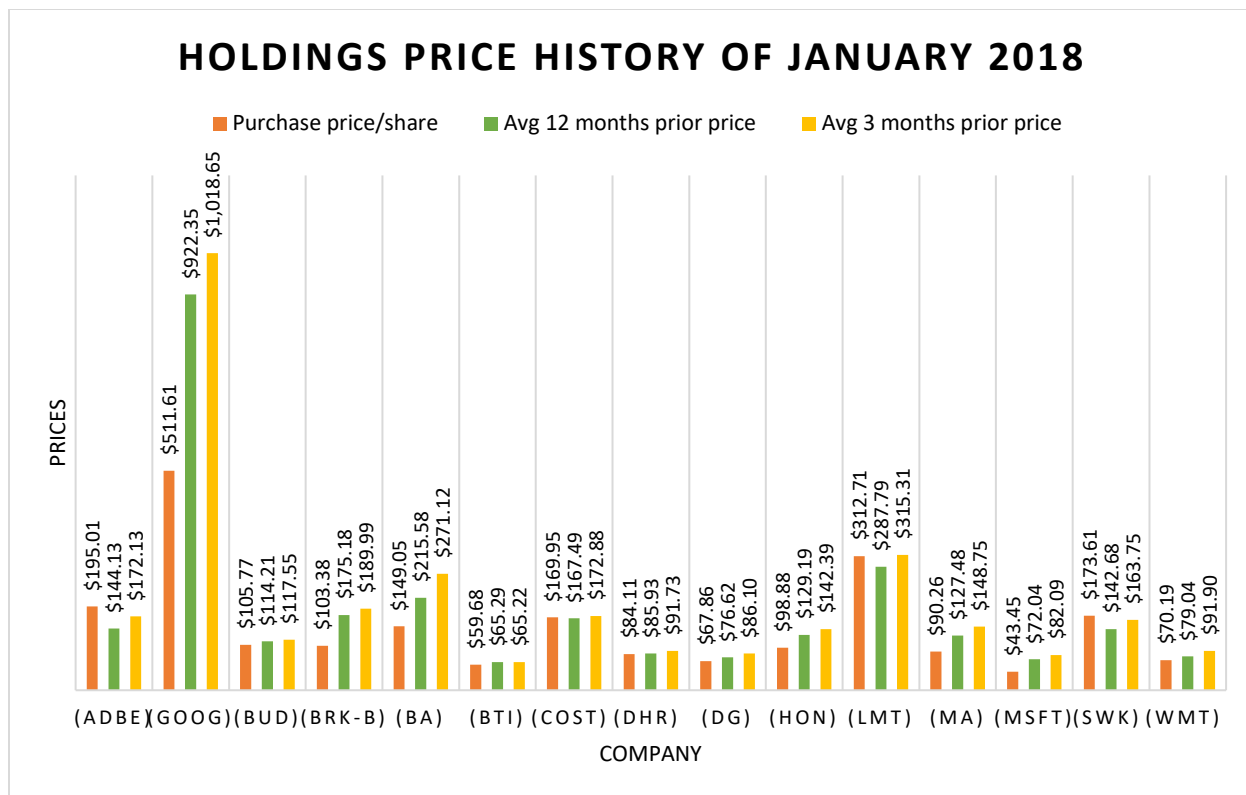


From the above graph 2a and b, there are the list of companies that were held from the year 2015. As shown from the graph 2a there is the actual price from the prior date of the report while 2b has their percentages which make it easier to read. As shown in graph 2b, most of the purchase prices of the stock in comparison to their 12- and 3-months prior averages were high.

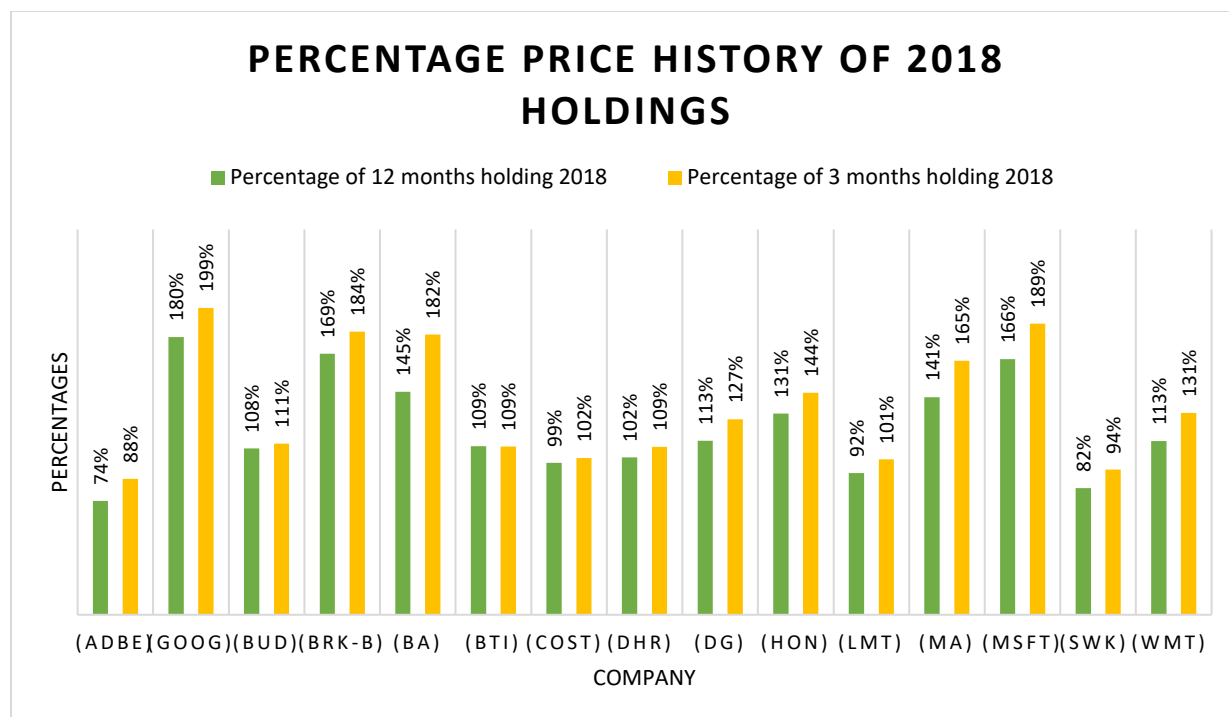
Hypothesis 4: “SMIF investors held on to their losing stocks in comparing their average 12 months prior prices to their purchase price” was supported because as shown from graph 2b, BA, SAM, GM, GILD, HON, JEC, NOV, TGI, VFC, and WLL was held at a loss in comparing their 12 months prior prices to their purchase prices.

Hypothesis 5: “SMIF investors held on their losing stocks in comparing their average 3 months prior prices to their purchase prices.” Among all 25 stocks, the only stocks that were at a loss where BA, SAM, COF, GM, GILD, HON, JEC, NOV, TGI, VFC, and WLL which supported both Hypothesis 5. Those stocks were the only ones that were indeed kept at their lowest percentages in comparing their 3 months prior price to their purchase prices. Both Hypothesis 4 and 5 are supported but the SMIF does not demonstrate the disposition effect because they did not hold onto their stocks because they were losing on them but because they were gaining.

Price History (Holdings of 2018) - Graph 3a



Percentage Price History (Holdings of 2018) - Graph 3b



In the year 2018, most of the stocks that the SMIF held in 2015 were sold. When we observe graph 3b, we will find out that they sold almost all of what they had in 2015 and acquired some new stocks. When we take a careful look at graph 3b, we find out that when we compare the prior prices to their purchase prices most of the stock are not held at their losses but instead, they are held at their gains.

Hypothesis 4: “SMIF investors held on their losing stocks in comparing their average 12 months prior prices to their purchase prices.” Was supported because as shown from graph 3b, ADBE, COST, LMT and SWK was held at a loss in comparing their 12 months prior prices to their purchase prices.

Hypothesis 5: “SMIF investors held on their losing stocks in comparing their average 3 months prior prices to their purchase prices.” The only stocks that were held at their losses

comparing to their purchase price are: ADBE, COST, LMT, and SWK. ADBE and SWK. This supports Hypothesis 5 because they were held at a loss in comparing their average 3 months prior prices to their purchase prices.

As shown from the result most of the stocks that were held in 2018 were held at their highest prices in comparison to their purchase.

Conclusions:

This project analyzed the disposition effect in different ways. The disposition effect was analyzed comparing the sold prices to the 3- and 12-months prior prices to find out if the stocks were sold at their maximum price to lock in their profits. While the holding stock prices were analyzed by comparing each purchase price to their 12 months and 3 months average prices. From both hypotheses, I conclude that the SMIF does not sell their winning stocks while holding onto their losing stocks. Even though some of the results from the graph will determine that either in comparing to the 3 months price or 12 months price some of the stock are indeed sold at a gain and held at a loss. But when all the stock is put together, some stocks were sold at a loss and held when high. From their holdings in January of 2015, we found out that among all 25 stocks, only BA, SAM, COF, GM, GILD, HON, JEC, NOV, TGI, VFC and WLL supported Hypothesis 4 by keeping at their lowest in comparing the average 3 months prices to their purchase price, while BA, SAM, GM, GILD, HON, JEC, NOV, TGI, VFC and WLL (the same stocks except for COF) supported Hypothesis 5. On the other hands when we look at stocks that were sold, only 8 stocks out

of 13 stocks supported Hypothesis 1 and was sold when they were high in comparison to the average 12 months prior selling price, while 7 stock supported Hypothesis 2 and was sold when they were high in comparison to the average 3 months prior selling price. Finally, PMI, TM, ACN, DG, ASIX, BUD, and BA supported Hypothesis 3 and were sold at their high price. Based off the results I calculated, I would conclude that the SMIF investors are not demonstrating the disposition effect. Some stock might have supported the 5 hypotheses, but some of the individual stocks did not support them. From observation, it seems like the SMIF investors know when to sell and when to keep and they consider other factors in their decision making. They understand the concept of investing and they are not loss averse.

Citation

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