



Stock Screener

VBA Final Project

Brian Denison; MBA 614; Section 1; Winter 2012



Executive Summary

Many people want to invest in the stock market. Most don't have a clue what to invest in. Like many others, I have spent a considerable amount of time trying to make a fortune day-trading. I didn't have any real strategy. I watched a small number of stocks, tried to anticipate the market changes, and in the end bought shares and prayed that they would appreciate. This was clearly not the best strategy.

The problem with my investment approach, and that of many others, is that it is not data driven and is very myopic in watching only one or two stocks. This Excel VBA project is intended to monitor, at the click of a button, current market conditions for all Dow Jones Industrial stocks and recommend potential investment opportunities.

Implementation Documentation

To solve the problem listed above, which is the inability to manually track and calculate ratios for more than a few stocks, I developed an excel VBA tool that pulls current pricing data for all Dow Jones Industrial stocks. Based on the current data it pulls, it calculates, filters, and sorts the stocks looking for underpriced stocks and opportunities to outperform the market.

Specifically, this stock screener looks for investment opportunities by searching for stocks with either of the following attributes:

1. Low price relative to its 52-week range
2. Low volume relative to its peers in the Dow Jones Industrial

The first attribute (price relative to the 52-week range) is based on the theory of regression to the mean. The theory is that while stock prices/returns will fluctuate, over time they will tend to regress to the mean. Therefore, if we can find stocks that have suffered recently from declines in stock value, the theory suggests that over time they will appreciate again to return to their mean value/returns.

The second attribute (low volume) is based on an academic study done by Lee & Swaminathan in 2000 that found that the stocks with lowest trading volume tended to outperform high volume stocks.

To utilize this tool, the user needs only to do one thing... open the spreadsheet and click on the "Refresh Recommendations" button found at the top of the sheet.

After the user clicks the button, a web query is launched to pull a current list of all of the Dow Jones Industrial stock tickers. This is done so that the tool is not static, but instead continues to adapt even with companies being added or removed from the Dow Jones.

Once a current list of stock tickers is queried, the spreadsheet makes use of an Excel existing connection titled “MSN MoneyCentral Investor Stock Quotes.” This connection queries all of the relevant stock information and inputs it into a table like the one below. The user will not see this table as it is in a hidden tab.

Exhibit 1 - MSN MoneyCentral Query Results

Stock Quotes Provided by MSN Money																
			Last	Previous Close	High	Low	Volume	Change	% Change	52 Wk High	52 Wk Low	Market Cap	EPS	P/E Ratio	\$ Shs Out	Location
MMM	3M Co.	Chart News	84.58	86.33	86.4	84.44	3,850,823	-1.75	-2.03%	98.19	68.63	58,760,873,648	5.95	14.5	634,737,200	0.5396
AA	Alcoa Inc.	Chart News	9.32	9.5	9.65	9.31	45,569,659	-0.28	-2.92%	18.19	8.45	9,936,232,990	0.53	18	1,068,108,000	0.0893
AXP	American Express Co.	Chart News	56.18	57.16	57.59	56.14	6,739,520	-0.98	-1.71%	59.26	41.3	65,532,678,216	4.12	14	1,166,477,000	0.8285
T	AT&T Inc.	Chart News	30.13	30.64	30.62	29.95	34,767,460	-0.51	-1.66%	31.97	27.29	178,633,262,654	0.66	46.4	5,928,751,000	0.6068
BAC	Bank of America Corp.	Chart News	8.54	8.93	9.09	8.5	375,881,091	-0.39	-4.37%	13.64	4.92	91,654,610,191	-0.03	2015.8	10,732,390,000	0.4151
BA	Boeing Co.	Chart News	70.6	72.43	72.31	70.59	5,338,887	-1.83	-2.53%	80.65	56.01	52,647,887,342	5.33	13.6	745,720,800	0.5921
CAT	Caterpillar Inc.	Chart News	100.43	103.57	103.66	99.9	9,160,748	-3.14	-3.03%	116.95	67.54	65,031,769,517	7.4	14	647,533,300	0.6657
CVX	Chevron Corp.	Chart News	101.45	103.49	103.38	101.4	8,907,506	-2.04	-1.97%	112.28	86.68	200,563,296,117	13.44	7.7	1,976,967,000	0.5777
CSCO	Cisco Systems Inc.	Chart News	18.55	19.96	20.1	19.52	44,896,393	-0.41	-2.05%	21.3	13.3	105,295,083,791	1.28	15.6	5,385,938,000	0.7813
KO	The Coca-Cola Company	Chart News	72.02	72.87	72.62	71.95	8,645,218	-0.85	-1.17%	74.39	63.34	163,094,611,878	3.69	19.8	2,264,574,000	0.7855
DD	E.I. du Pont de Nemours and Co.	Chart News	51.05	51.95	51.97	50.84	7,072,003	-0.9	-1.73%	57.5	37.1	47,733,985,277	3.68	14.1	935,043,800	0.6838
XOM	Exxon Mobil Corp.	Chart News	82.17	83.88	83.75	81.88	19,993,692	-1.71	-2.04%	88.13	67.03	387,285,360,940	8.42	10	4,713,221,000	0.7175
GE	General Electric Co.	Chart News	18.74	19.2	19.13	18.7	54,450,480	-0.46	-2.40%	21	14.02	198,248,021,379	1.23	15.7	10,578,870,000	0.6762
HPQ	Hewlett-Packard Co.	Chart News	23.27	23.14	23.61	23.1	25,845,518	0.13	0.56%	41.74	21.5	46,012,772,515	2.84	8.2	1,977,343,000	0.0875
HD	Home Depot Inc.	Chart News	49.36	50.58	50.86	49.36	13,245,053	-1.22	-2.41%	50.69	28.13	75,268,571,331	2.48	20.4	1,524,890,000	0.941
INTC	Intel Corp.	Chart News	27.45	27.76	27.86	27.41	36,261,206	-0.31	-1.12%	28.45	19.16	137,464,333,421	2.4	11.6	5,007,808,000	0.8924
IBM	International Business Machines Corporation	Chart News	202.33	204.94	205.74	202.17	4,132,847	-2.61	-1.27%	210.69	157.13	234,432,084,582	13.08	15.7	1,158,662,000	0.8439
JNJ	Johnson & Johnson	Chart News	64.2	64.32	64.86	64.16	12,772,616	-0.72	-1.11%	68.05	59.08	176,549,991,608	3.48	18.6	2,750,000,000	0.5708
JPM	JPMorgan Chase & Co.	Chart News	42.96	43.89	44.01	42.66	38,840,757	-0.93	-2.12%	47.37	27.85	164,214,639,460	4.47	9.8	3,822,501,000	0.7741
KFT	Kraft Foods Inc.	Chart News	37.02	37.59	37.57	37	11,252,668	-0.57	-1.52%	39.06	31.69	65,601,736,051	1.99	18.9	1,772,062,000	0.7232
MCD	McDonald's Corp.	Chart News	97.67	98.88	98.78	97.31	7,581,547	-1.21	-1.22%	102.22	75.83	99,482,362,655	5.27	18.8	1,018,556,000	0.8276
MRK	Merck & Co Inc.	Chart News	38.45	38.73	38.89	38.45	13,984,174	-0.28	-0.72%	39.43	29.47	117,042,109,822	2.03	19.1	3,044,008,000	0.9016
MSFT	Microsoft Corp.	Chart News	30.47	31.1	31.19	30.3	54,127,438	-0.63	-2.03%	32.95	23.65	255,666,796,809	2.76	11.3	8,390,771,000	0.7333
PFE	Pfizer Inc.	Chart News	21.99	22.05	22.56	21.95	48,116,287	-0.07	-0.29%	22.8	16.63	165,710,425,135	1.27	20	7,537,431,000	0.8687
PG	Procter & Gamble Co.	Chart News	66.35	66.81	66.9	66.3	9,436,691	-0.46	-0.69%	67.95	57.56	182,754,369,447	3.4	19.7	2,754,399,000	0.846
TRV	Travelers Companies Inc.	Chart News	57.75	58.05	58.26	57.75	3,360,189	-0.3	-0.52%	64.17	45.97	22,699,913,775	3.35	17.3	393,072,100	0.6473
UTX	United Technologies Corp.	Chart News	78.48	80.23	80.07	78.35	5,025,087	-1.75	-2.18%	91.83	66.67	71,423,540,359	5.5	14.6	910,162,300	0.4651
VZ	Verizon Communications Inc.	Chart News	36.8	37.46	37.51	36.8	15,183,092	-0.66	-1.76%	40.48	32.28	104,347,281,037	0.85	44.2	2,835,524,000	0.5512
WMT	Wal-Mart Stores Inc.	Chart News	59.93	60.13	60.39	59.55	9,553,144	-0.2	-0.33%	62.63	48.31	204,034,023,309	4.52	13.2	3,404,539,000	0.8115
DIS	Walt Disney Co.	Chart News	40.89	42.11	42.13	40.88	10,681,866	-1.12	-2.66%	44.5	28.19	73,468,839,408	2.64	15.9	1,792,360,000	0.7848

From the results of the query, for each stock, the tool automatically calculates how the current price relates to the 52-week range. The tool breaks all of the Dow Jones Industrial trading volumes into deciles, and assigns each stock to a decile.

The tool then pulls all stocks currently priced in the bottom third of their respective 52-week range and pulls them to the recommendations tab under the category “Low Priced Relative to 52-week Range.”

The tool also pulls all of the stocks found in the bottom decile (10%) of trading volume and pulls them to the recommendations tab under the category “Low Volume Stocks.”

The end result is a report that looks like Exhibit 2, with a list of stocks that are underpriced and a list of stocks that have low trading volume. This report is in no way a recommendation to buy, but a list of stocks that the user should research further and *consider* buying.

Exhibit 2 - Recommendation Report

You might consider buying the following stocks:														Refresh Recommendations															
														Last	Previous Close	High	Low	Volume	Change	% Change	52 Wk High	52 Wk Low	Market Cap	EPS	P/E Ratio	# Shares Out			
Low Priced Relative to 52-week range														9.32	9.6	9.65	9.31	45,608,405	-0.3	-2.92%	18.19	8.45	9,936,232,990	0.53	18	1,066,108,000			
Alcoa Inc														Chart	News	23.27	23.14	23.61	23.1	25,845,518	0.13	0.56%	41.74	21.5	46,012,772,515	2.84	8.2	1,977,343,000	
Hewlett-Packard Co														Chart	News														
Low Volume Stocks														84.58	86.33	86.4	84.44	3,650,823	-1.8	-2.03%	98.19	68.63	58,760,873,648	5.95	15	694,737,200			
3M Co														Chart	News	202.3	204.9	205.7	202.2	4,132,847	-2.6	-1.27%	210.7	157.1	234,432,084,582	13.1	16	1,158,662,000	
International Business Machines Corp														Chart	News														
Travelers Companies Inc														Chart	News	57.75	58.05	58.26	57.75	3,360,189	-0.3	-0.52%	64.17	45.97	22,699,913,775	3.35	17	393,072,100	

Learning and Difficulties

Building this tool helped cement in my mind how to perform some basic and important tasks. As an MBA, I will likely never build a SQL database interaction, or a form that interacts with and changes a database. But I will likely need to automate the refresh of reports, run calculations, hide irrelevant tabs from users of my reports, and quickly format them. This project forced me to remember and practice things we covered earlier in the class. By doing so, I feel that I will always remember them and be more likely to use them in my career.

A few of the filters that I had originally intended to include in this project dealt with the annual reports of each company. Ideally, the tool would have queried and pulled the relevant accounting and financial performance data for each company. However, I was unable to find a reliable source to easily query that accounting data. Therefore, this tool was limited to stock price performance only.

Another feature that I wanted to include and was unable to, was to pull historical stock price performance for the past 5-10 years and use regression to calculate the average monthly, quarterly, and annual returns of each stock. This would support the theory of regression to the mean, and would give us an indication of the average returns one could expect from any stock. However, the volume of historical data that would have to be queried and the number of regressions that would have to be performed would have slowed the tool to a crawl. The user of this tool does not want to click the button to refresh and wait 30 minutes for the results. I am sure there is another way to perform this task without queries, but I was unable to find it during the period of this semester.

Assistance Received

I did not receive assistance from anyone during the course of this project.