



Daily Dairy Report Macro

Excel VBA Final
Project

Adam L McDonald

The Old Fashioned Milkman is now Your Farmers Market On Wheels!

SIGN UP NOW

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QUALITY
GUARANTEED }**



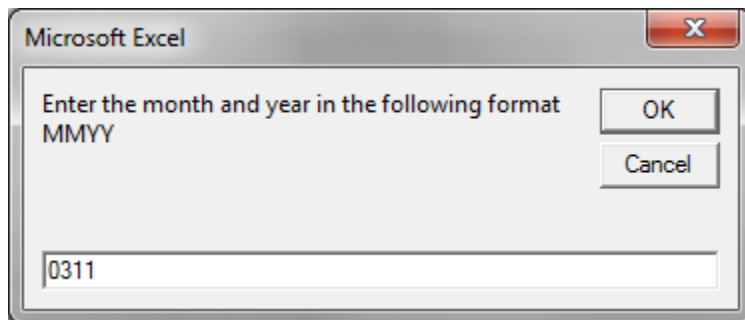
Executive Summary

Winder Farms, which began as a home delivery milk service 125 years ago, is no longer just a milkman. They now consider themselves to be a farmer's market on wheels. They deliver over 150 farm fresh products to people's doorsteps all over Utah and in Las Vegas. They are a family business, with the fifth and sixth generation of Winders still involved in the ownership and operation of the business. Winder Farms used to be known as Winder Dairy, but a few years ago they changed their name and sold the dairy. They were losing money on the dairy and decided to purchase their milk from a local co-op of farmers instead.

They purchase milk using futures contracts and continually look at updated prices in order to budget out their future expenses for milk. CME Group publishes a Daily Dairy Report (see next page) that lists the futures and options prices of class III milk, dry whey, nonfat dry milk, and butter for the next 12 months. Each month the controller would manually create a spreadsheet with a table listing the prices for each future and option by day. This was tedious and took a lot of time, but the Daily Dairy Report is published in PDF format and it was easier to manually enter the data in than to try to get the data to copy and paste into excel nicely. The goal of my project was to use vba to automate the process. Excel will take the data from each day and make a spreadsheet for each type of future and then cycles through the month's Daily Dairy Reports and enter the prices from each day into the sheets. Then from each table of data it computes a daily average of the next twelve months and makes a chart showing a graph of the price movement.

Implementation

When the user opens the workbook they see a blank sheet with a button that says run reports. When they push the button the user is prompted to enter the month and year for which they want to pull the Daily Dairy Reports using the format shown in the screenshot.



The macro then writes the dates of the month out to a worksheet that will be used to pull the reports from the internet. There are no Daily Dairy Reports on Saturday or Sunday so the dates that fall on those days of the week are deleted so no error occurs when looping through the reports.

Excel then opens Internet Explorer and opens the first PDF file. It selects all data and then copies it to the spreadsheet. This is done by sending a Ctrl a command to Internet Explorer and then switching back to Excel and copying the data.

Daily Dairy Report

Vol. 15, No. 44 / March 8, 2011

Blocks fall 0.75¢

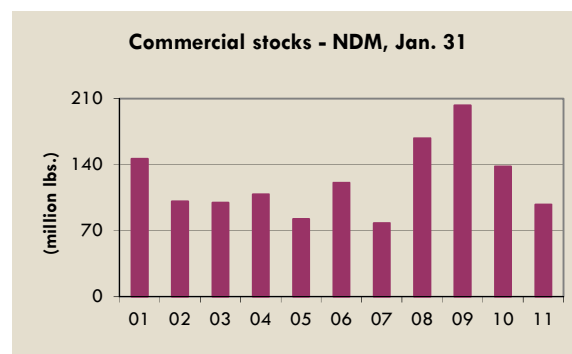
A load of blocks was offered three-quarters of a cent lower today before a buyer stepped in, leaving blocks in the red for just the second time this year. Class III futures plunged after the spot trading; APR and MAY fell 44¢ and 42¢, respectively.

NDM futures continue to drift lower, despite firm international prices and lower stocks. More buyer resistance is evident.

In January, NDM/SMP production was 156.7 million lbs., up 5.1% from a year earlier, according to USDA's latest "Dairy Products" report. Dryers shifted to produce SMP, primarily for export. NDM production was off 9.2% but SMP production was up 94.3%, USDA says. Meanwhile, NDM inventories fell in January to their lowest level in more than a year. Jan. 31 stocks were just 97.6 million lbs. (*see chart*), down 46.9 million lbs. from Dec. 31.

In 2010, U.S. exports of NDM/SMP were 846.8 million lbs., equivalent to 47% of last year's production, the highest percentage ever.

USDA's *Dairy Market News* reports international SMP prices at \$1.67-\$1.95/lb. **cme group**



FUTURES & OPTIONS VOLUME AND OPEN INTEREST →

Futures Volume and Open Interest

	Volume	Open Interest
Class III [18 Pit, 1474 Electronic]	1,492	36,506
Class IV	20	2,770
NDM (cash settle)	7	1,529
Dry whey	14	1,757
Butter (cash settle)	45	2,405
Cheese	13	1,767

Options Volume and Open Interest

	Volume	Open Interest
Class III	1,061	64,138
Class III midi	3	839
Class IV	0	330
Butter (cash settle)	0	940
NDM (cash settle)	0	81
Cheese	0	12

Futures and options volume and open interest from previous trading day.

SPOT PRICES (with change from previous day): Block cheese \$2.0125 (-0.75¢) • Barrel cheese \$1.9800 (NC) • AA Butter \$2.1200 (+0.25¢) • NDM Extra Grade \$1.8000 (NC) • NDM Grade A \$1.8150 (NC) **MILK PRICES** (with change from previous month): February Class III milk (USDA) \$17.00 (+\$3.52) • February Class IV milk (USDA) \$18.40 (+\$1.98)

March 8 Trading Activity

Class III Futures				Class III Options Calls		Class III Options Puts		Dry Whey Futures		NDM Futures		Butter Futures – Cash settle	
	Settle (\$)	chg. (¢)	volume & open interest from previous day	Settle (\$)	chg. (¢)	Settle (\$)	chg. (¢)	Settle (¢)	chg. (¢)	Settle (¢)	chg. (¢)	Settle (¢)	chg. (¢)
MAR 11	19.54	-7	273 6673	19.75 @ 0.04	-4	19.50 @ 0.10	+1	48.000	-1.000	149.000	-1.000	210.000	-1.000
APR	17.96	-44	448 6043	18.00 @ 0.56	-26	17.75 @ 0.48	+16	51.000	-1.500	159.500	-0.500	212.000	+1.000
MAY	17.08	-42	218 4753	17.25 @ 0.69	-22	17.00 @ 0.72	+17	51.000	-2.250	159.500	-2.500	209.500	+1.500
JUN	16.75	-19	256 3777	16.75 @ 0.95	-11	16.75 @ 0.95	+8	50.750	-2.250	159.250	-2.500	210.030	+1.775
JUL	16.88	-7	39 2691	17.00 @ 0.99	-5	16.75 @ 0.99	+3	50.270	-1.725	159.000	NC	206.500	+0.500
AUG	17.00	-10	7 2541	17.00 @ 1.18	-6	17.00 @ 1.18	+4	48.750	-1.000	154.750	-0.250	203.250	+1.180
SEP	17.15	-5	46 2537	17.25 @ 1.23	-3	17.00 @ 1.20	+2	47.050	-0.700	146.000	NC	202.000	NC
OCT	17.00	-7	56 2355	17.00 @ 1.34	-4	17.00 @ 1.34	+3	45.020	-0.475	146.280	+0.025	200.000	NC
NOV	16.71	-8	62 2213	16.75 @ 1.34	-5	16.50 @ 1.25	+3	45.000	+0.750	138.250	-0.750	194.000	NC
DEC	16.60	-8	63 2162	16.75 @ 1.29	-5	16.50 @ 1.31	+3	46.500	+0.500	138.000	+1.000	186.250	NC
JAN 12	16.19	NC	12 216	16.25 @ 1.36	+3	15.50 @ 1.05	+3	45.020	NC	121.000	+1.000	175.050	NC
FEB	15.95	NC	2 131	16.75 @ 1.09	+4	15.50 @ 1.20	+3	43.500	NC	118.000	+1.000	159.000	NC

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The screenshot shows a web browser window displaying the CME Group Daily Dairy Report for March 1, 2011. The report includes a section titled "Firmness on world markets" and a line graph showing the "Futures WMP auction" from March 1 to March 11, 2011. The graph shows a peak on March 1 and a subsequent decline. Below the graph, there are two tables: "Futures Volume and Open Interest" and "Options Volume and Open Interest".

The Microsoft Excel spreadsheet in the background shows a table with the following data:

Vol. 15, No. 39 / March 1, 2011
1. The Daily Dairy Report is published by Alan Levitt. Please forward to others that may benefit from this information. To subscribe visit www.dailydairyreport.com .
2. Disclaimer: The Daily Dairy Report is intended solely for information purposes and is not to be construed, under any circumstances, by implication or otherwise, as an offer to sell or a solicitation to buy commodities or securities whatsoever. Information is obtained from sources believed to be reliable, but is in no way guaranteed. No guarantee of any kind is implied or possible where projections of future attempted. Future trading is not suitable for all investors, and involves the risk of loss. Past results are no indication of future performance.
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5. Firmness on world markets
6. Blocks traded closer to \$2.00, trading at \$1.9950 and settling there when a bid to buy another load at that price went unfilled. Barrels were unchanged. Milk futures settled in the black across the board.
7. Spot butter rose for the third time in four days, sending butter futures higher in the MAR-AUG contracts.
8. Moving prices increased again in today's Global Dairy Trade (Frontier) auction. The weighted average price for WMP was \$4.63/ton (\$2.30/lb.), up 9.6% from the Feb. 15 event, and the highest in the auction's 18-month history (see chart). The SMP price was \$4.97/ton (\$1.60/lb.), up 2.3%. The AMF price was \$5.42/ton (\$2.50/lb.), up 1.1%.
9. The strength in auction prices didn't translate to NDM and whey futures, which were mostly steady.
10. The Australian Bureau of Agriculture (ABARES) projects world dairy prices to remain firm through 2011-12. "The forecast strong market is expected to reflect sustained import demand, particularly from China, the Russian Federation, the Middle East and developing Asia, and limited milk production increases in key exporting countries," ABARES said in its annual outlook report. "The demand for dairy products is expected to continue to grow over the medium term in line with further expected increases in consumer incomes in developing countries." Supply expansion is expected to eventually overshoot demand growth, but commodity prices in the 2011-16 period are projected to be 30-40% higher than the 2002-07 averages, ABARES said.
11. CME group

Next, the macro needs to find the data in the Daily Dairy Report that is needed and take it from the sheet and make a new sheet for each type of future and option. In the following screenshot you can see the parsed out data and the beginning of the table for the butter futures.

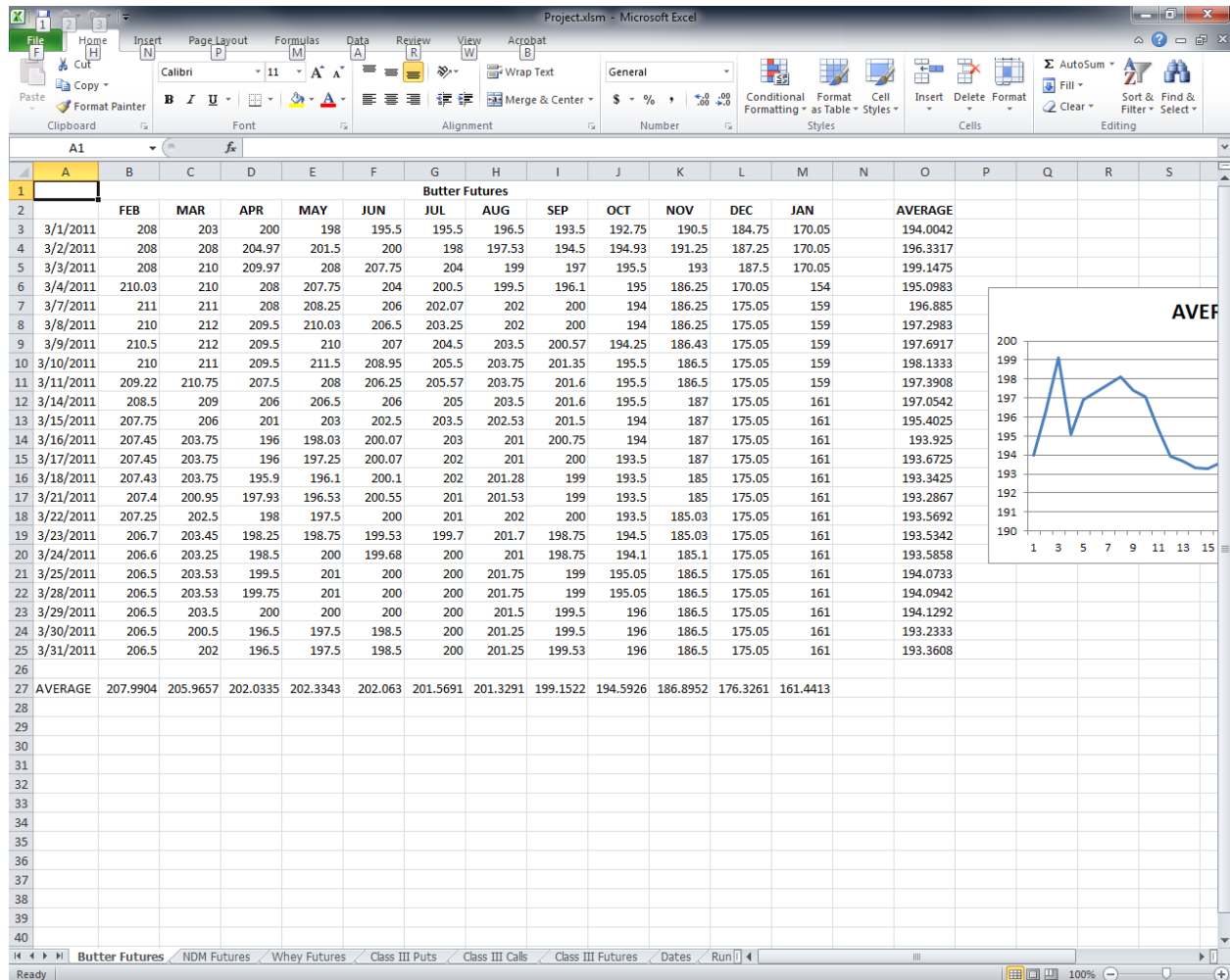
Project.xlsx - Microsoft Excel

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1		Butter Futures																	
2		FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	AVERAGE					
3		208	203	200	198	195.5	195.5	196.5	193.5	192.75	190.5	184.75	170.05	194.0042					
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Butter Futures NDM Futures Whey Futures Class III Puts Class III Calls Class III Futures Data Dates

Count: 13 100%

The macro then repeats this process on a loop through each day of the month that is not a Saturday or Sunday. It then computes the averages and adds a chart showing the movement of the prices. The next screenshot shows the table created for butter futures and the chart of the average price over the month.



Ultimately the macro populates 2,028 fields of data automatically that were previously being entered in manually, which will save a lot of time and reduce errors.

Difficulties

This ended up being much more difficult than I expected it to be. However, I learned a lot through the process and the debugger became my good friend. One thing I learned was how to break difficulties down into manageable pieces and solve them one at a time. In doing so, I was able to come up with solutions. I learned a lot about

The first problem that I ran into was using the dates to loop through the PDF files. I originally had the macro loop through using each day of the month. This resulted in errors when it came to a Saturday or

a Sunday that messed up the tables. I wasn't sure what to do to skip these days. My solution eventually was to copy a list of the dates to a worksheet and then loop through the dates looking to see if they were Saturday or Sunday and deleting them if they were. This worked, but when I deleted a row it skipped the next one in the loop, so I ended up having it loop through the rows backwards in order to get them all. The macro then only tries to pull the reports of Mondays through Fridays.

The next problem that I had was that the web pages are stored as PDF files so I couldn't use the get data from web tool in excel because it can't import web pages stored as PDFs. I had to copy and paste the data from the web page and into excel. This was difficult because I had the macro open Internet Explorer and send keys to it to do so. There are sometimes glitches with this and I couldn't get it to work right every time. I created a loop to check and see if the send keys arguments worked correctly and the data was pasted into the worksheet, it would try again if it didn't work. I was able to get it to successfully copy and paste each time.

After the data was copied and pasted into excel it took some effort to find the data I wanted and to parse it and format it into a usable table. The data I needed showed up in 12 consecutive rows, but they were all strings in the first cell, rather than formatted like the table in the PDF file. I originally used text to columns, but this for some reason was creating errors when it looped to the second PDF file. I wrote my own subprocedure to do the same thing that text to columns does, but without causing the error the second time through.

The final thing that I learned was the importance of simplifying things and writing efficient code. Previous projects didn't get too big because they were simple things and didn't involve much programming, so there wasn't much need to be efficient. As I was writing this, things became complicated and I realized that I hadn't been writing efficiently and it made it more difficult later. I learned that it is good to keep code simple and write each step separately. This helps later when writing and also helps a lot during debugging. If things are efficient it is much easier to see and fix problems in the code.