Ag Commodity Prices

User manual

Version 3

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Background

The Ag Commodity Price guide was developed by Cam Nicholson and David Cornish initially through the Grain and Graze program, with enhancements through the National Landcare Smart Farming Program.

The objective of the Ag Commodity Price guide is to enable farmers and advisors to examine weekly historic prices of common agricultural commodities over time, including current prices to historic prices, the volatility of different commodities over time and the correlation between commodities. The recent enhancements have made data collection in real time.

The prices displayed in the Ag Commodity Price guide have been made available free through the generosity of several organisations. Some of these organisations supply and analyse data for users on a fee for service basis. To protect their business model, data from the Ag Price Guide cannot be downloaded. If a user wished to obtain specific historic data click on the links on the Ag Commodity Price guide to contact the relevant provider.

 Understanding historic prices, price volatility and correlation are important to appreciate risk. Risk is defined as the *likelihood* of an event occurring and the *consequences* when it does occur. In this guide *likelihood* can be thought of as *how often* and *prices* can be thought of as the *consequence*. In this context, risk is presented as the odds of certain prices occurring.

The price guide illustrates both the variability and volatility in prices. Variability refers to the range in prices and can be useful to appreciate historic best and worst case results. Volatility also represents ranges in historic prices, but includes a frequency component to represent how often different prices occurred for the time period chosen.

Historic information can provide a useful guide to help 'frame the odds' as it provides a link to what has already happened. How well this predicts the future depends on how closely you believe the future will behave like the past. The guide is not a prediction of future prices.

Historic prices can be grouped and presented in a variety of ways. Both graphs and statistical tables can be created.

In this guide the following statistical information can be generated:

- **Mean**, representing the average of all the numbers in the dataset.
- **Max,** listing the largest value in the dataset.
- **Min,** listing the smallest value in the dataset.
- **Deciles** (or tenths) clusters the values into 10% groups, so decile 1 is the lowest 10% of values, decile 9 is the lowest 90% of values.
- **Quartiles** (or quarters) clusters the values into 25% groups, so quartile 1 is the lowest 25% of values, Quartile 3 the lowest 75% of values.

- **Correlation** (between commodities), shows if two prices follow or diverge from each other over time.

Disclaimer

The price, statistics and event commentary provided in this historic price guide booklet is intended as a source of information only. The developers, data providers and the platform developers (Centre for eResearch and Digital Innovation at Federation University Australia) do not guarantee that the guide is without flaw of any kind or is wholly appropriate for your purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information generated.

How to use the guide

STEP 1: Choose a graph type

Four types of graphs can be represented. Each graph is intended to provide different information about the variability and volatility in prices. Note: An explanation of what each graph type represents can be shown at the top of the graph by scrolling down and click the *show help?* box.

Line graphs

Line graphs are used to show the range in commodity price over a selected time period.

More than one line graph can be represented at any time. However only the price range of the first commodity selected and the statistics (if ticked on) will be shown on the Y (vertical) axis.

The statistics table is not available if more than one commodity is chosen. To show the line graph with the statistics table chose one commodity only.

Bar graphs (deciles)

Bar graphs show the difference of a price decline compared to the median (decile 5 value). They can be useful to show how extreme a price may be from the mid-price. Only one commodity can be represented on the graph at a time.

If the bar graph is chosen, the 10 decile values are also calculated and presented in a table.

Scatterplot graphs (correlations)

Scatterplot graphs are used to compare the prices of two commodities to see if they follow or diverge from each other over time. Two commodities must be chosen to create a scatterplot graph. If more than two commodities are chosen the scatterplot will only graph the first two chosen.

A calculation is automatically generated to determine the strength of this relationship (called an 'r' value[1] (or correlation co-efficient). The numeric scale used for correlations is 0 to ±1. For more information tick on the *show help?* box.

Box & whisker graphs

Box and whisker graphs present information about the variability, average and volatility in prices. Multiple commodities can be selected however only the price range of the first commodity selected will be shown on the Y (vertical) axis. No statistics table is generated.

Frequency histogram graphs

Frequency histograms present information on how often a price range occurs. Prices ranges are set (in this case 15 divisions). Only one commodity can be selected. No statistics table is generated except for the mean (average) which is displayed on the graph.

STEP 2: Select a commodity to graph

- Click on the arrow to open the drop down menu.
- Choose the Add commodity you wish to graph
- Click on the arrow on the next box to open the drop down menu.
- Choose the location you wish for the commodity. If there is only one dataset for the location, the word *none* will automatically appear. If there are multiple datasets for a location then the words *all locations* will automatically appear. To select a specific location click on the arrow on the next box to open the drop down menu and chose a location.
- Choose if you want the prices to be adjusted for inflation (called CPI adjusted?). If chosen, this will adjust historic prices based on the consumer price index (CPI) to the latest prices used in the calculator for that commodity and location. This is updated quarterly. If the CPI adjusted box is not chosen, the actual prices at that time will be represented.
- Click of the ADD button to select the commodity. This will display the commodity, location and if the prices are CPI adjusted or not (described as raw prices).
- This step can be repeated to add additional commodities.
- To remove a commodity, just click on the X button
- NB: If all locations are chosen, the graph generated will be the highest and lowest values from those locations and the statistics will be the average of those values. This may make the line on the graph appear thick.

STEP 3: Select the time period to graph

- Click on the start date box and a calendar will appear.
- Use the double arrow symbol to select the appropriate date. The calendar will only move by month. To speed up the process click on the month and the 12 months will appear. Click on the year and a year calendar will appear.
- Select the appropriate year (only the years in black font have data).
- Select the appropriate month.

- Select the appropriate day.
- Repeat the process for the end date.
- To change a date just click on the date box. Alternatively click on the X symbol to delete the date and start again.
- If no dates are chosen, the all the price data will be used.

To exclude one or more time periods from the data do the following

- Click on the **+** button to the right of exclude date range. Two windows will appear (start date and end date).
- Enter dates as described above.
- Click on generate graph to exclude those dates from the graph and statistics.
- If additional exclusion periods are required repeat the process.
- To remove an exclusion period click on the **–** button.

STEP 4: Generate a graph

- Click the GENERATE GRAPH button. The data will be graphed based on the graph type, commodity, location and timeframe chosen in steps 1 to 3.
- If a commodity has not been chosen then the words **You need to add a commodity** will appear.
- Click on select a commodity.

STEP 5: Select the statistics required

Statistics are available only when line graphs are chosen.

Line graphs

- The statistics table will be generated with the maximum, mean and minimum values and these lines will be imposed on the graph.
- To add or remove any statistics click the tick on or off
- Click the GENERATE GRAPH button to refresh the graph
- If more than one commodity is chosen to graph, the statistics table disappears. To generate statistics for individual commodities, chose one at a time.

Bar graphs (deciles)

- If the bar (deciles) graph is chosen the statistics choices are removed but the 10 deciles are automatically generated in a table below the graph. These cannot be changed.

Scatterplot graphs (correlations)

- The only statistics generated in a scatterplot graph is the 'r' correlation value. This can be turned on and off by clicking the show statistics box.

Box & whisker graphs

- No statistics are generated for box and whisker graphs except for the mean value (which appear on the graph). Relevant statistics for the box and whisker graph eg decile 1, 5, 9, and quartiles 1 and 3 can be generated using the statistics table in the line graph.

Frequency histogram

- The only statistic generated in a frequency histogram is the mean (average) value. The most frequent price range (the mode) can be inferred from the price range associated with the highest bar on the graph.

STEP 6: Printing and copying

Only summarised statistics and graphs can be copied and printed.

- To copy, right click on your mouse and select copy image.
- To print, press the print button located on the top right hand side of the screen. The graph and statistics table (if chosen) will be printed.

STEP 7: Other features

Show commentary? can be displayed which identifies a few major events that may help to understand why changes in price may occur. It can only be displayed on line and histogram graphs.

Provide commodity details? can be displayed which provides details about the data (origin, frequency, classification). It can be displayed on all graphs.