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Copper Model

Drivers of Price

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Bloomsbury Minerals Economics has identified four major drivers that influence the Copper Price:

Production Costs.

Liquid Stock to Consumption Ratio.

Futures Balance.

Dollar Index.

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Production Costs

The higher the Production Costs, the higher the copper price is expected to be

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Liquid Stock / Consumption Ratio

The lower the Liquid Stock/Consumption Ratio, the higher the copper price is expected to be.

This ratio is made to two components:

liquid Stocks (non ETF Exchange Stocks, Misc Bonded Stocks and Abnormal Country Stocks)

and copper consumption

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Futures Market Balance

Defined here as commodity index fund longs in the nearby futures market, +/- hedge fund longs/shorts in the nearby futures market, minus any hedge shorts of exchange stock owners (the latter only existing in contango markets).

(For a detailed explanation of the futures Market Balance methodology please see the Presentations section of the website)

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Dollar Index

The lower the Dollar Index (the weaker the US dollar), the higher the US$ Copper Price is expected to be.

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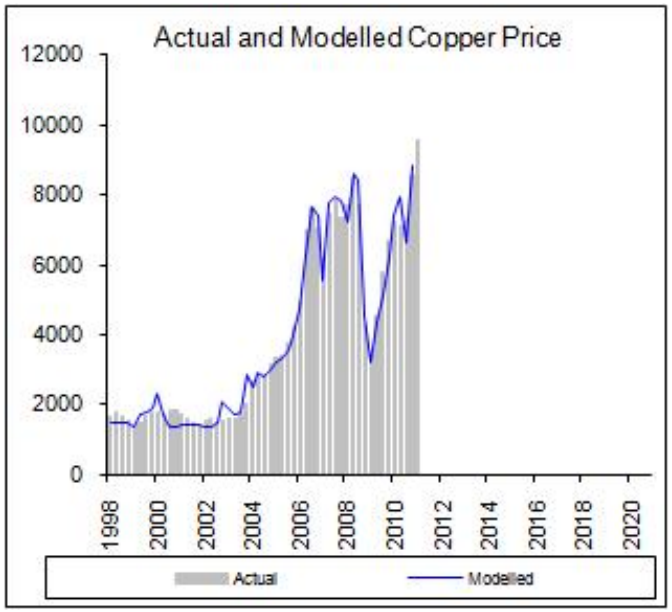

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Constructing the Model

Bloomsbury Minerals Economics looked at the historical relationship between these Drivers and the Copper Price from 1998 to 2010 and constructed a model from these relationships.

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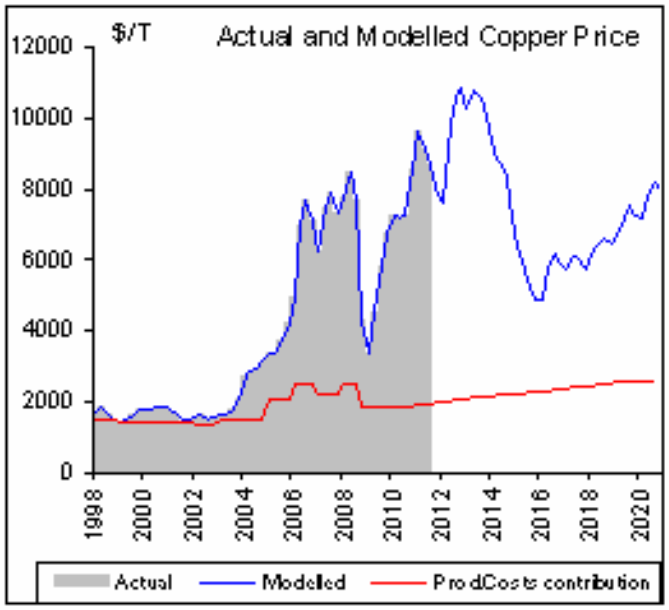

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<u>Using the Model to forecast the future</u>.

Bloomsbury Minerals Economics forecasts the <u>components of the Drivers</u> from the current date to 2020.

These forecasts are then used to model the Copper Price.

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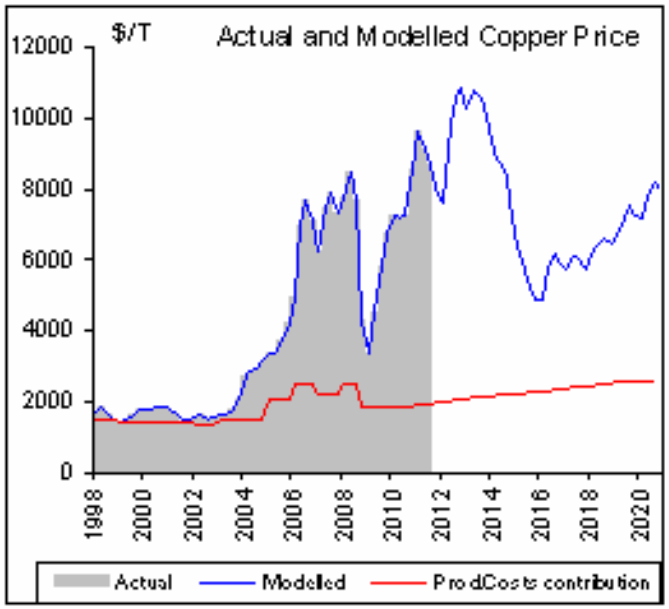

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As the model is <u>interactive</u>, the user can enter his own values for the components of the drivers to come up with his own copper forecast scenario

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Copper Model

Overview

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Overview of the Interactive Copper Model.

The Model Consists of seven worksheets.

Main

Inflation

Production Costs

Liquid Stock/Consumption

Futures Balance

Dollar Index

Monte Carlo

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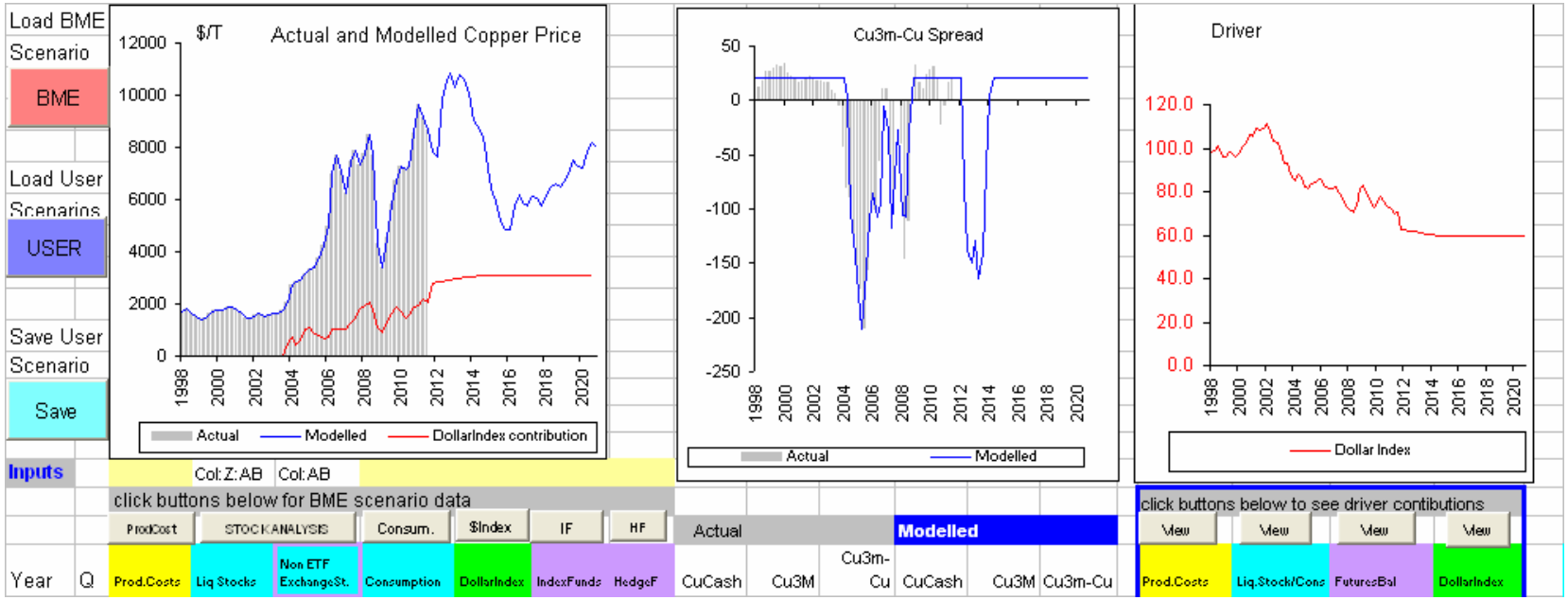

Main. The Main page is where all the work in modelling the Copper price is done.

This page is interactive and allows users to input their own scenarios for each of the drivers.

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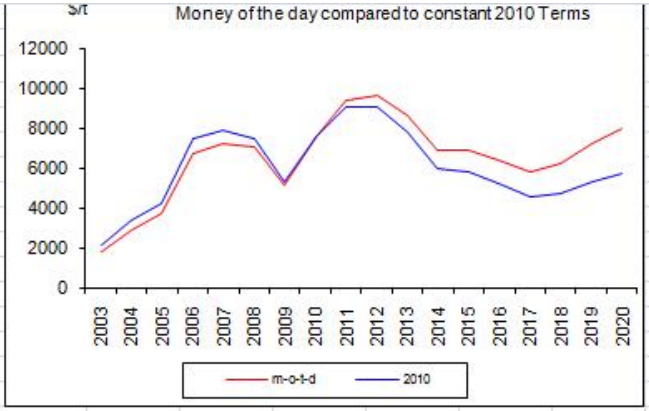
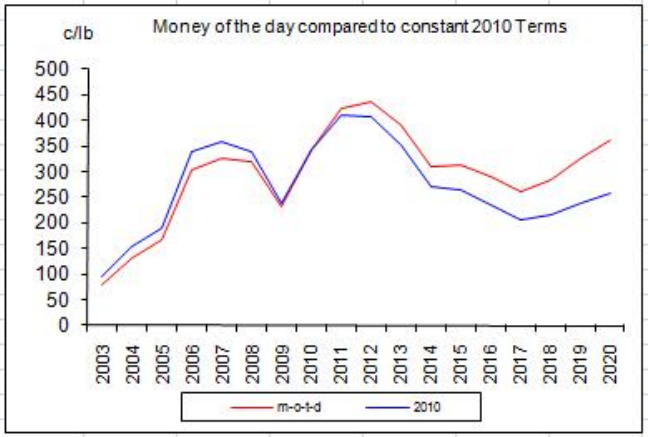
Year	Inflation 2005=100	Inflation 2010=100	CuCash ($/t) m-o-t-d	CuCash ($/t) 2010	CuCash (c/lb) m-o-t-d	CuCash (c/lb) 2010
2003	96.7	84.5	1768	2094	80.2	94.97
2004	98.0	85.6	2907	3397	131.9	154.07
2005	**100.0**	87.3	3682	4216	167.0	191.25
2006	102.3	89.3	6676	7472	302.8	338.94
2007	104.7	91.4	7229	7905	327.9	358.58
2008	108.5	94.8	7060	7451	320.3	337.96
2009	110.8	96.8	5120	5291	232.2	239.98
2010	114.5	**100.0**	7562	7562	343.0	343.01
2011	118.5	103.5	9336	9020	423.5	409.15
2012	122.7	107.1	9657	9015	438.1	408.93
2013	126.9	110.9	8648	7800	392.3	353.80
2014	131.4	114.8	6858	5976	311.1	271.09
2015	136.0	118.8	6900	5810	313.0	263.53
2016	140.7	122.9	6412	5216	290.9	236.61
2017	145.7	127.2	5770	4535	261.7	205.70
2018	150.8	131.7	6248	4745	283.4	215.21
2019	156.1	136.3	7211	5291	327.1	240.00
2020	161.5	141.1	7995	5668	362.7	257.10

Values in black show the historical data, values in blue show modelled or forecast values

m-o-t-d	money of the day (Nominal: the effects of inflation have not been accounted for)
Real	inflation has been factored in





Inflation. This page shows the yearly average actual and modelled copper price, as money of the day, compared to constant 2010 terms.

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The following pages give more detail as to how each driver contributes to price.

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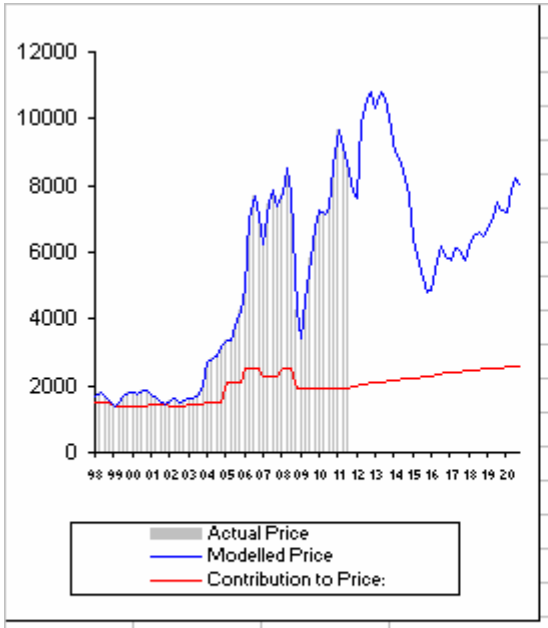

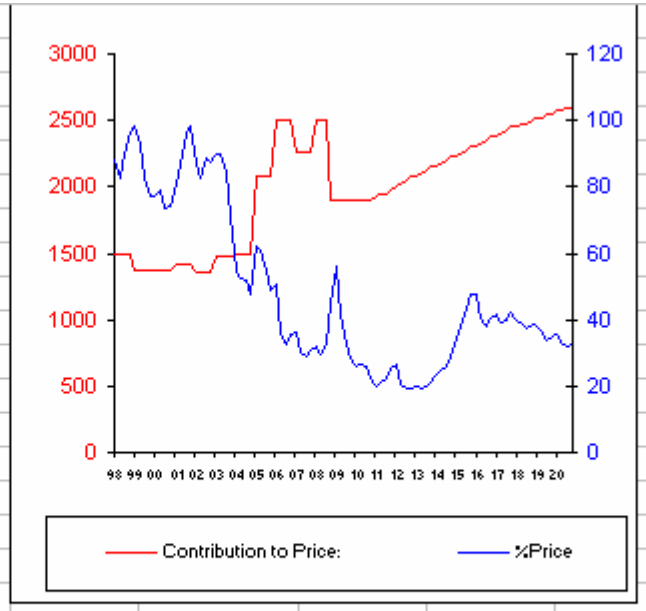

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					old	new			
Year	Q		Production Costs	Contribution to Price:	%Price	%Price		Actual Price	Modelled Price

Production Costs

This page explains in detail how the production cost influences the copper price.

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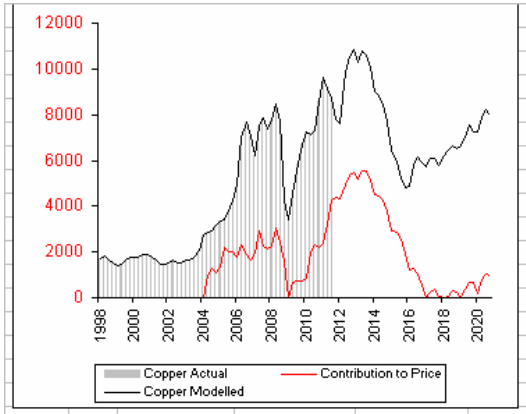

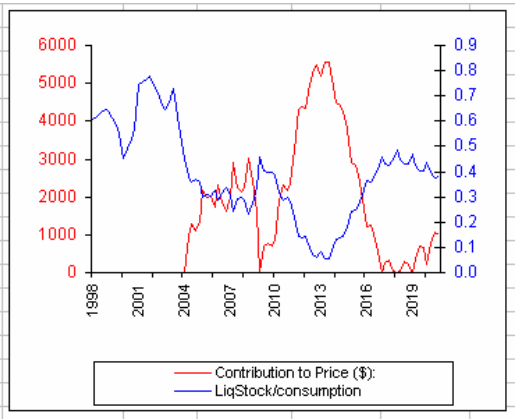

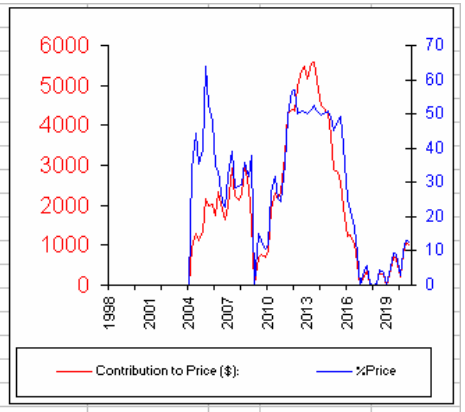

		Total					Price	
Year	Q	Liq.Stocks(kT)	Consumption (kT)	LiqStock/consumption	Contribution to Price ($):	%Price	Actual	Modelled

Liquid Stock /Consumption

This page explains in detail how the components of the Liquid Stock /Consumption driver influence the copper price.

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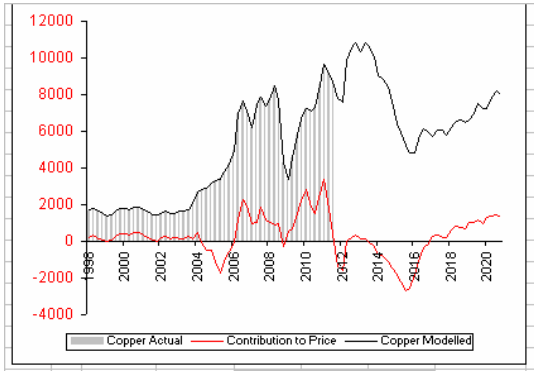

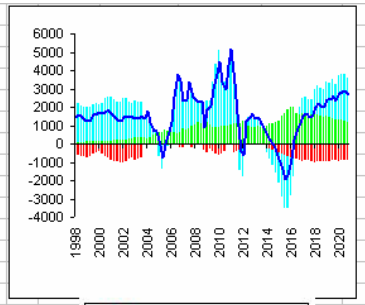

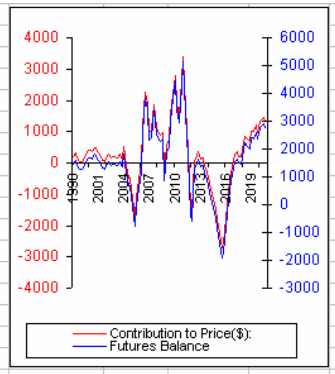

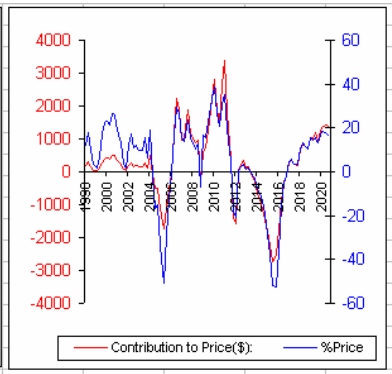

			Index Funds(10^9$)						Futures Balance									
		Total			%Invested	Invested		Spread	Hedged	Index Funds	Hedge Funds				Price			
Year	Q	Stocks(kT)	Exchange Stocks(kT)	In Commod.	In Copper	In Copper	Hedge Funds(10^9$)	Cu3m-Cu	"Shorts"	"Longs"		Futures Balance	Contribution to Price($):	%Price		Actual($)	Modelled($)	

Futures Balance

This page explains in detail how the components of the Futures Balance influence the copper price.

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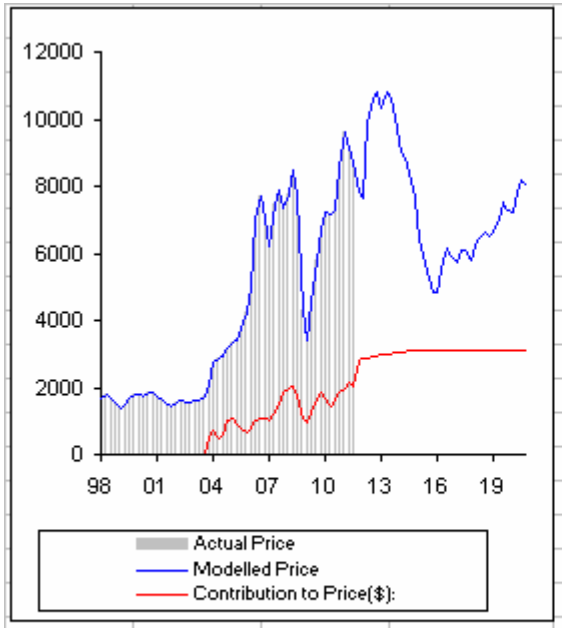

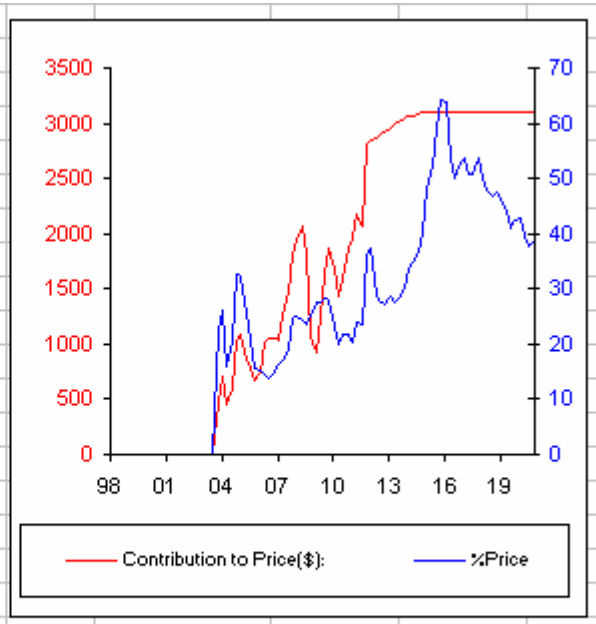

Year	Q		DollarIndex		Contribution to Price($):	%Price		Actual Price	Modelled Price

Dollar Index

This page explains in detail how the dollar index driver influences the copper price.

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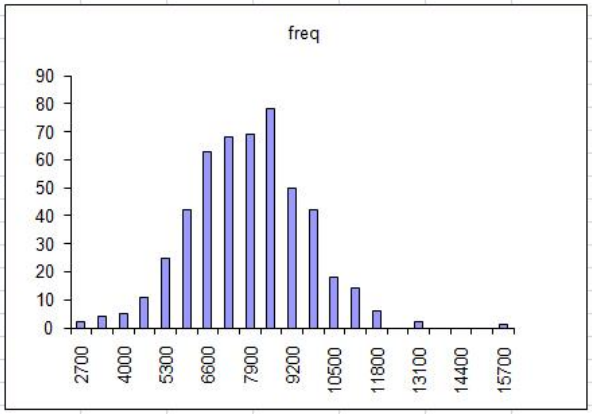
Run

Price	Frequency	%	z
2700	2	0.4	-2.8
3350	4	0.8	-2.4
4000	5	1.0	-2.0
4650	11	2.2	-1.7
5300	25	5.0	-1.3
5950	42	8.4	-0.9
6600	63	12.6	-0.5
7250	68	13.6	-0.2
7900	69	13.8	0.2
8550	78	15.6	0.6
9200	50	10.0	1.0
9850	42	8.4	1.3
10500	18	3.6	1.7
11150	14	2.8	2.1
11800	6	1.2	2.4
12450	0	0.0	2.8
13100	2	0.4	3.2
13750	0	0.0	3.6
14400	0	0.0	3.9
15050	0	0.0	4.3
15700	1	0.2	4.7
	500		



Results Summary

Mean	7534
Number of Trials	500
Standard error	78
Minimum	2074
Maximum	15400
Median	7579
Range	13326
Standard Deviation	1745
Variance	3044961
Skewness	0.14
Kurtosis	0.75

Driver Forecasts

	Prod.Costs	Total Stocks	Non ETF Exc	Consumption	DollarIndex	IndexFunds	HedgeF
Ave	2141	3598	356	4990	70.15	179	6
Stdev	211	474	197	545	9.92	54	8

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There is also a **Monte Carlo** page. This page runs a Monte Carlo simulation of the Copper Price, based on the forecast driver inputs. It gives an estimate of the likely Copper price within the forecast period and the estimated high and low price within this period.

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Copper Model

Input 1

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The Main Input Page

All data for the components of the drivers are entered in the Main page.

This page is interactive and changing a driver component will change the modelled copper price.

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The Main Input Page

Input columns are in a blue font.
Other columns are in a black font and cannot be overwritten.

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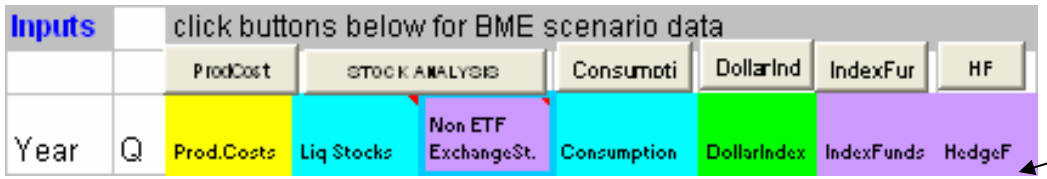
Inputting Data in the Main Page

Production Costs are entered in column C
.

Consumption data are entered in column F

Index Fund Data are entered in column H.



Hedge Fund data are entered in column I.

Dollar Index data are entered in column G.

Stock data are added in columns Z to AQ.

(click the STOCK ANALYSIS button to move to those columns)

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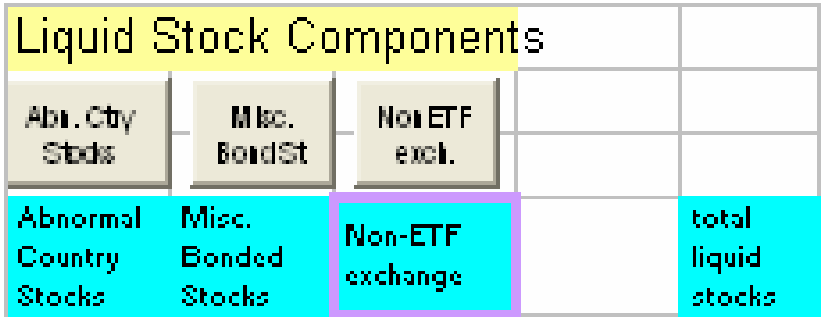
Inputting Liquid Stock

The sum of these three columns is shown in column AD as total liquid stocks.



Abnormal Country Stocks are added in column Z

Bonded Stocks are added in column AA

Non-ETF exchange stocks are added in column AB

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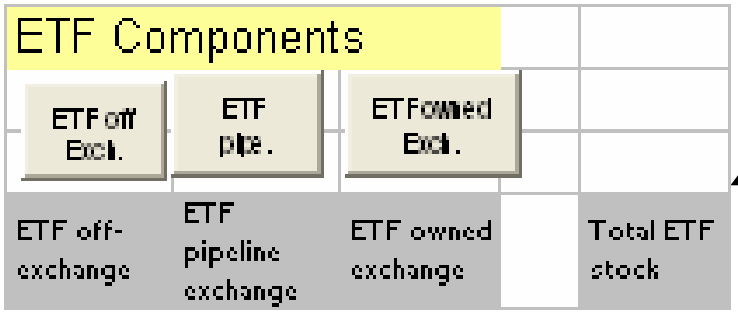
Entering ETF stock data



The sum of these three columns is shown in column AJ as Total ETF stock

ETF off-exchange stock data are added in column AF.

ETF pipeline exchange stock data are added in column AG.

ETF owned exchange stock data are added in column AH.

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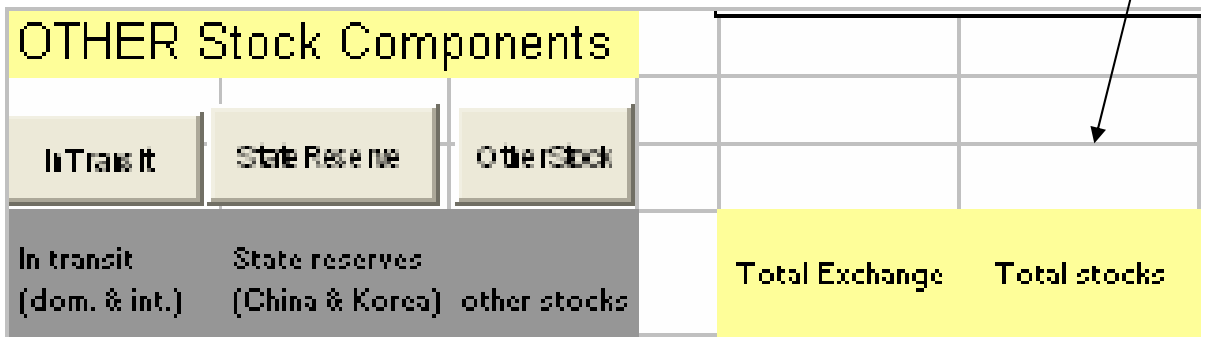
The sum of all the exchange contributions are shown in column AP as Total Exchange Stocks.

The sum of all the stocks is shown in column AQ as Total Stocks.



In transit Domestic and international Stock Data are added in column AL.

State reserves .China and Korea. Stock data are added in column AM.

Other Stocks are entered in column AN.

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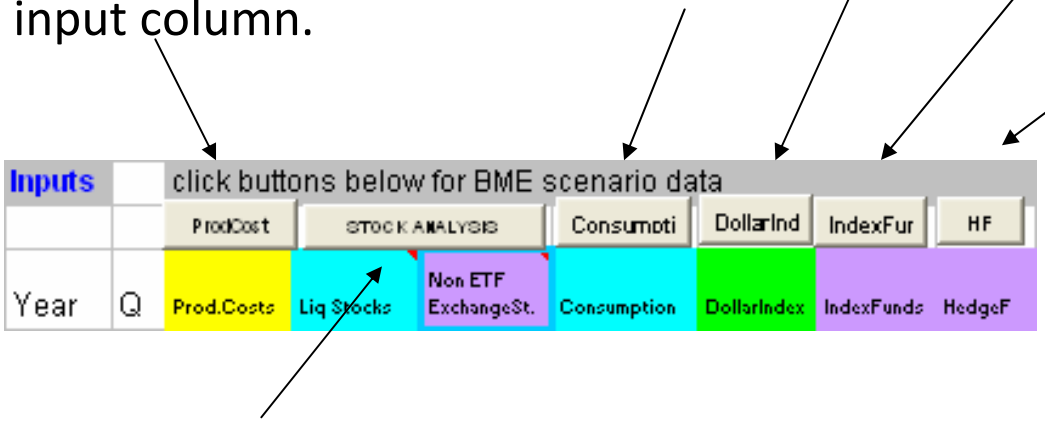
The Default settings of the Driver Components.

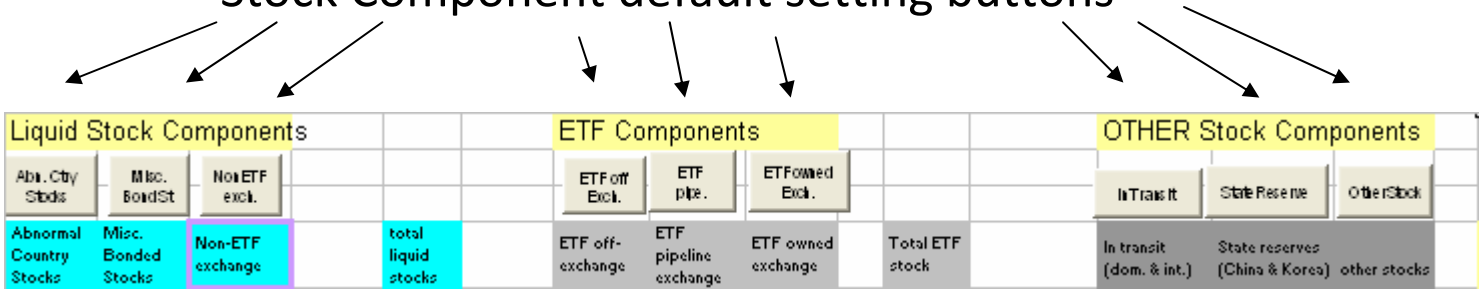
The default settings are the historical values or Bloomsbury Minerals Economics estimates and forecasts. Each component's default setting can be reset by clicking the grey button at the top of each input column.



There is one grey button that is not a default reset button.

This is the STOCK ANALYSIS button. Clicking this brings the stock component default setting buttons to focus.

Stock Component default setting buttons



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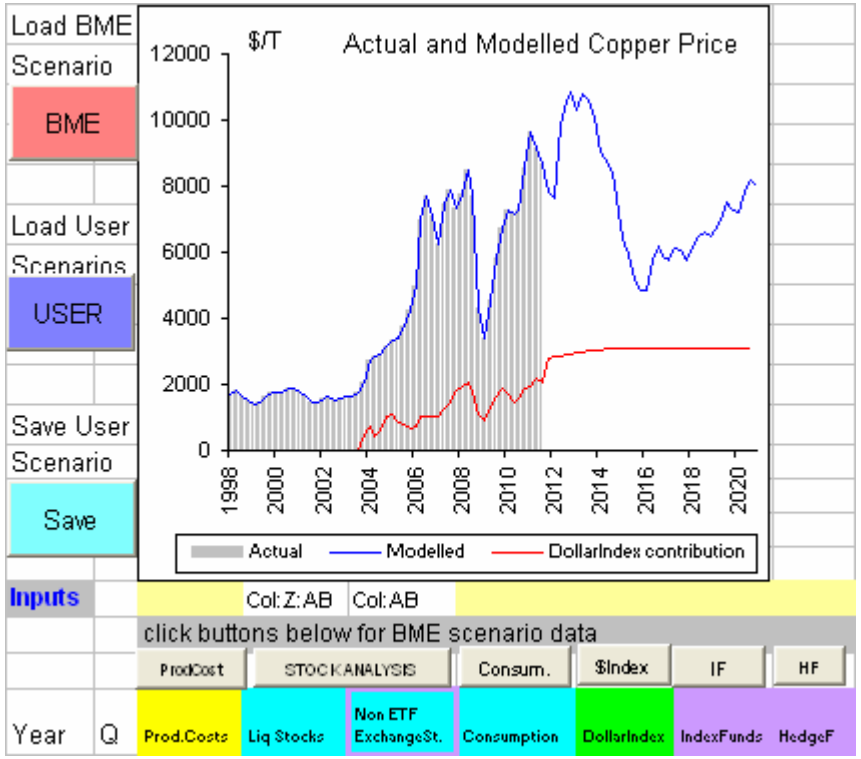
To reset all the default settings

Click the Load BME Scenario button at the top left hand side of the worksheet.



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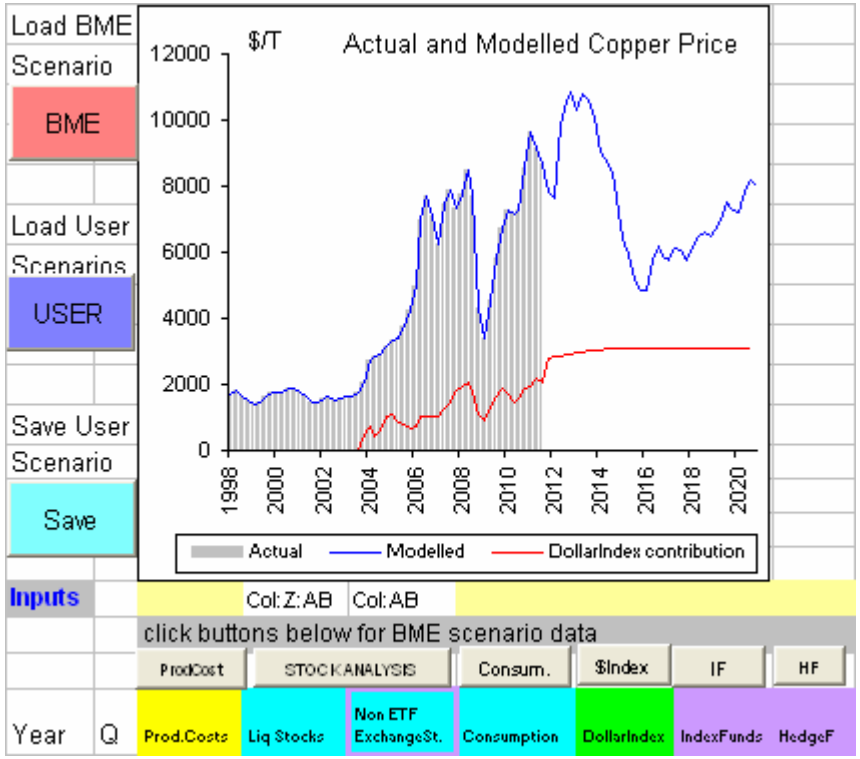
Saving a User Scenario

A user can input his own estimates for each driver component and come up with his own Copper Price forecast. This scenario can then be saved by clicking the save button on the Main screen.



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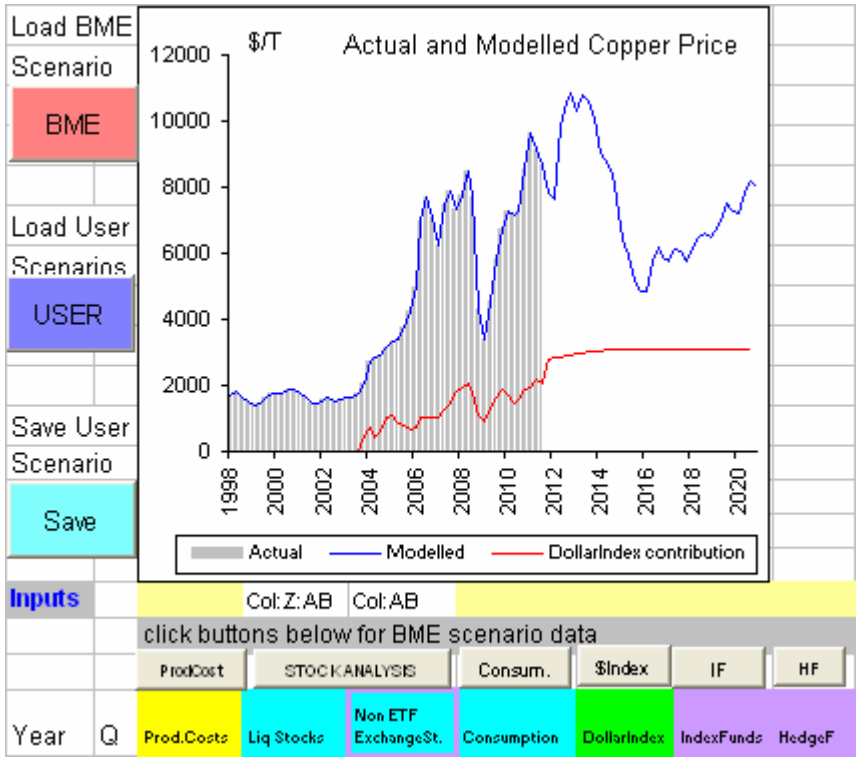
This scenario will then be loaded if the Load User Scenario button is pressed.



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Copper Model Input 2

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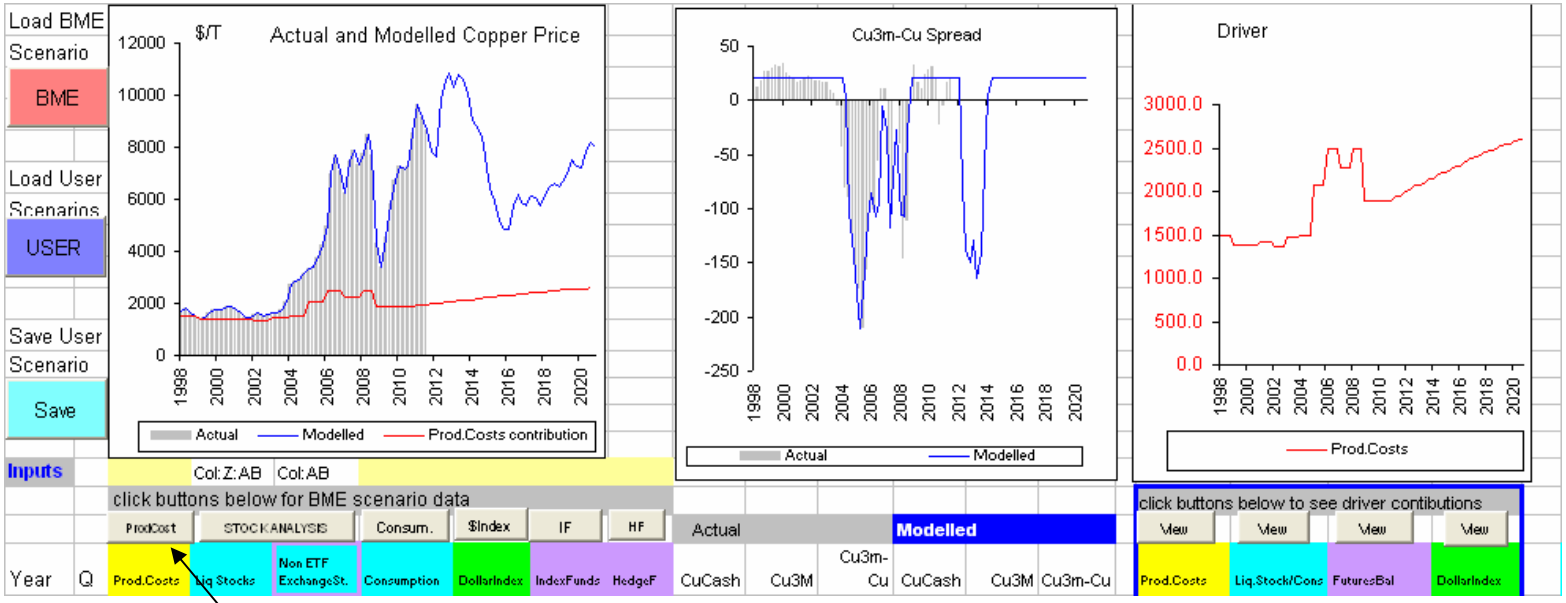
3. Shows the modelled Production Cost contribution in the Actual and Modelled Copper Price chart.

2. Shows the Production Cost value in the Driver Chart.



The ProdCost Button

Clicking the ProdCost button:

1. Sets the Production Cost column to the BME settings which is made up of historic and BME forecast data.

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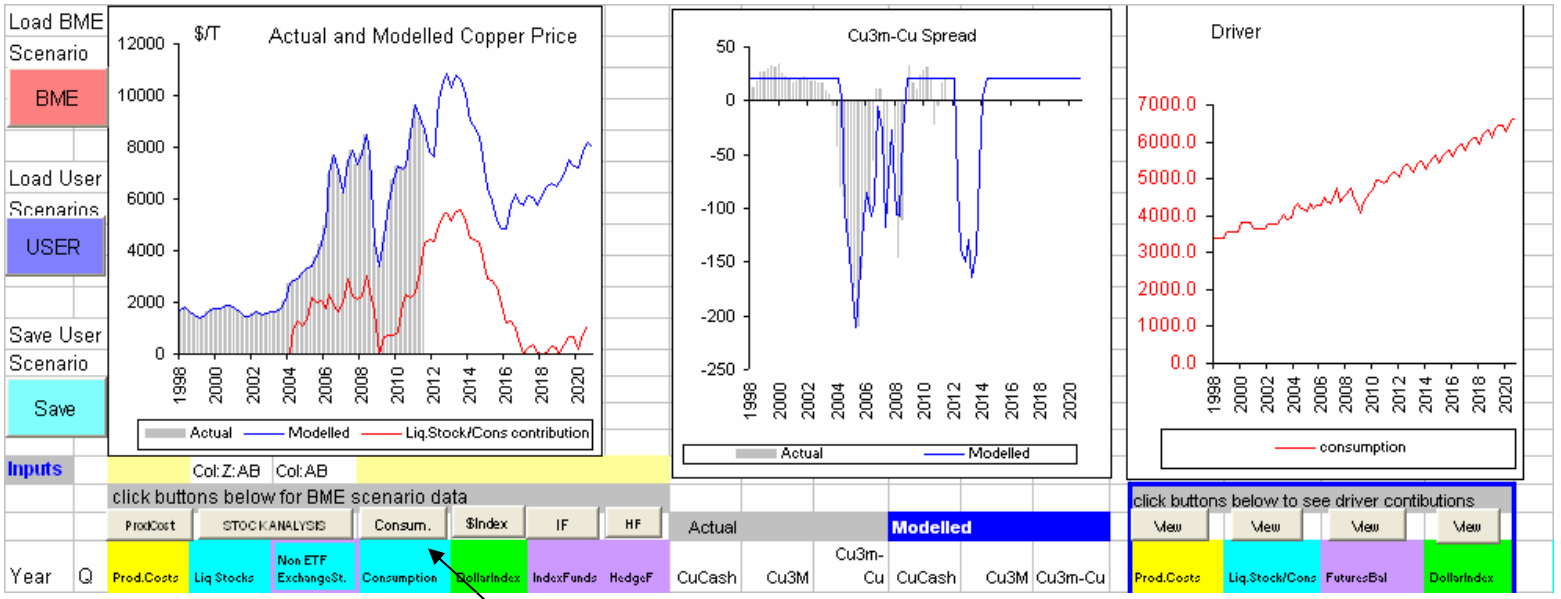
3. Shows the modelled Stock Consumption ratio contribution in the Actual and Modelled Copper Price chart.

2. Shows the Copper Consumption value in the Driver Chart



The Consumption Button

Clicking the Consumption button:

1. Sets the Consumption column to the BME settings which is made up of historical and BME forecast data.

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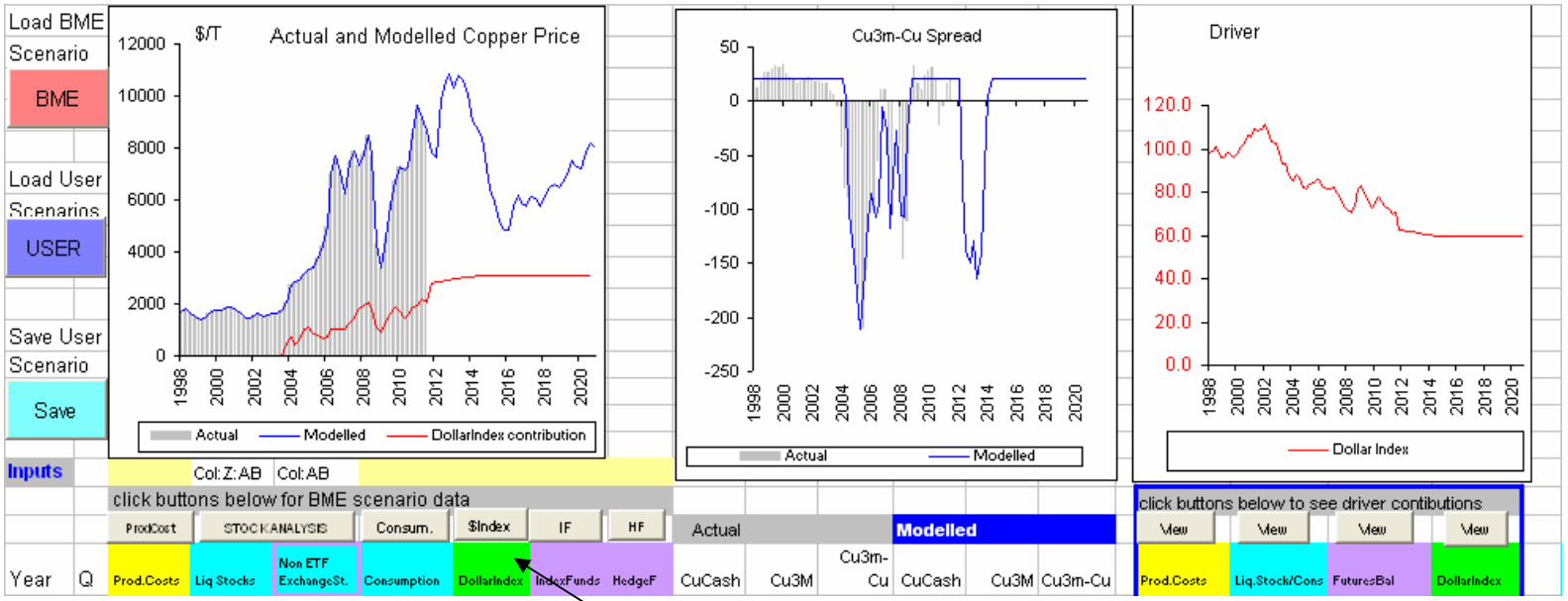
3. Shows the modelled Dollar Index contribution in the Actual and Modelled Copper Price chart.

2. Shows the Dollar Index value in the Driver Chart.



The Dollar Index Button

Clicking the Dollar Index button:

1. Sets the Dollar Index column to the BME settings which is made up of historical and BME forecast data.

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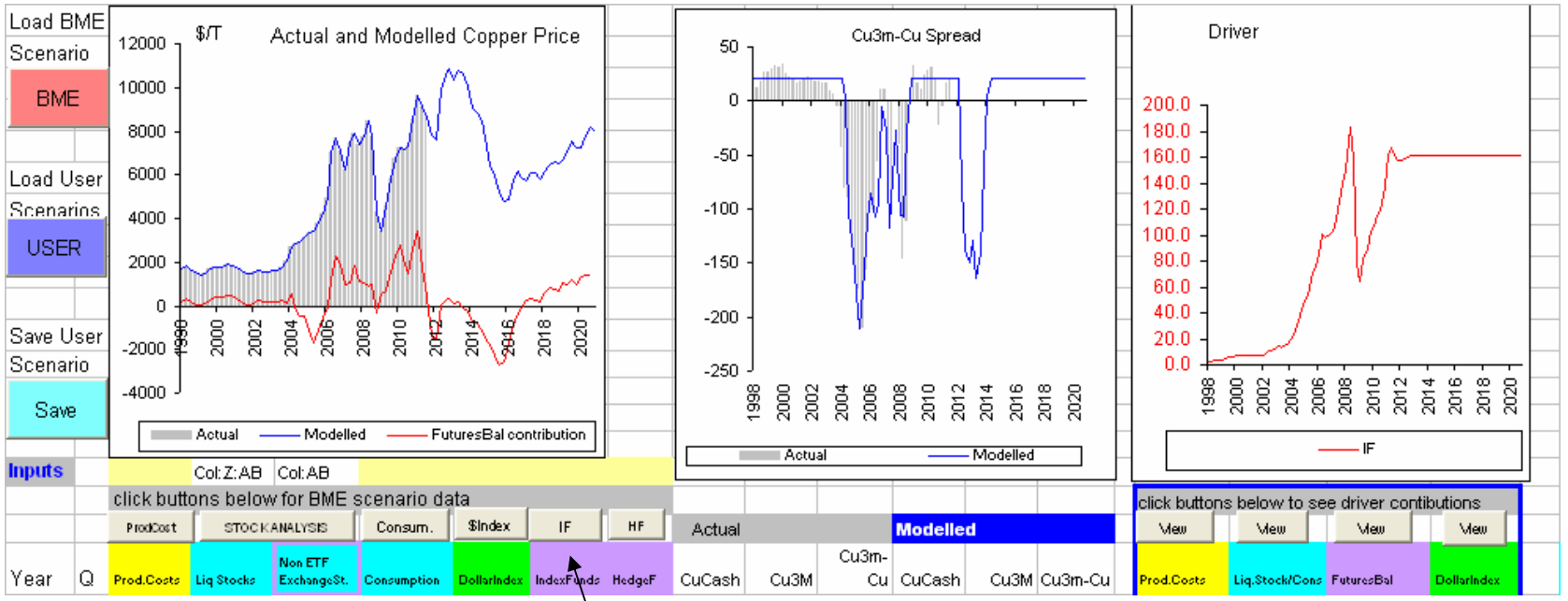
3. Shows the modelled Futures Balance contribution in the Actual and Modelled Copper Price chart.

2. Shows the Index Funds value in the Driver Chart.



The Index Funds Button

Clicking the Index Funds button:

1. Sets the Index Funds column to the BME settings which is made up of historical and BME forecast data.

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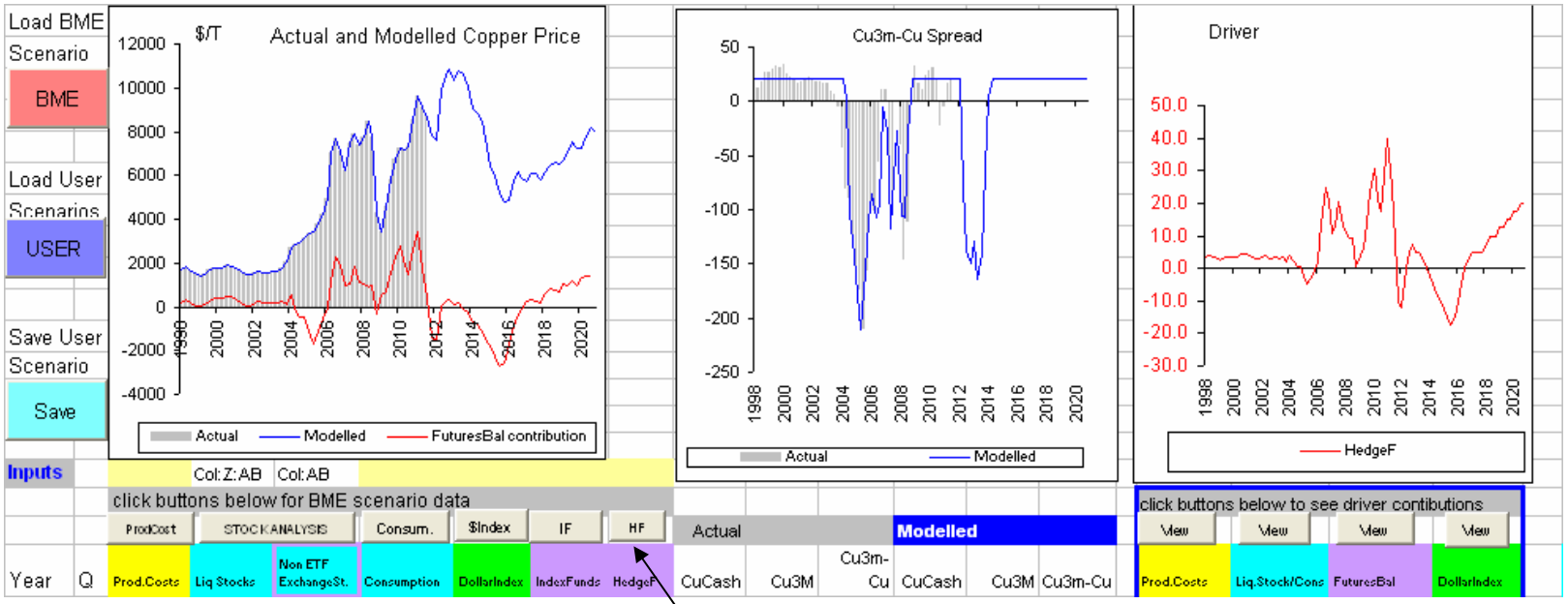
3. Shows the modelled Futures Balance contribution in the Actual and Modelled Copper Price chart.

2. Shows the Hedge Funds value in the Driver Chart.



The Hedge Funds Button

Clicking the Hedge Funds button:

1. Sets the Hedge Funds column to the BME settings which is made up of historical and BME forecast data.

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The Composite Drivers

There are two composite drivers in the copper model:

The Stock Consumption ratio and the Futures Balance.

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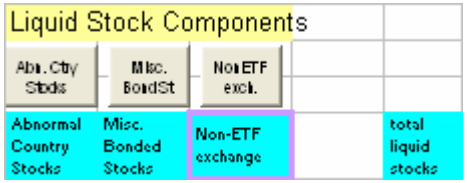
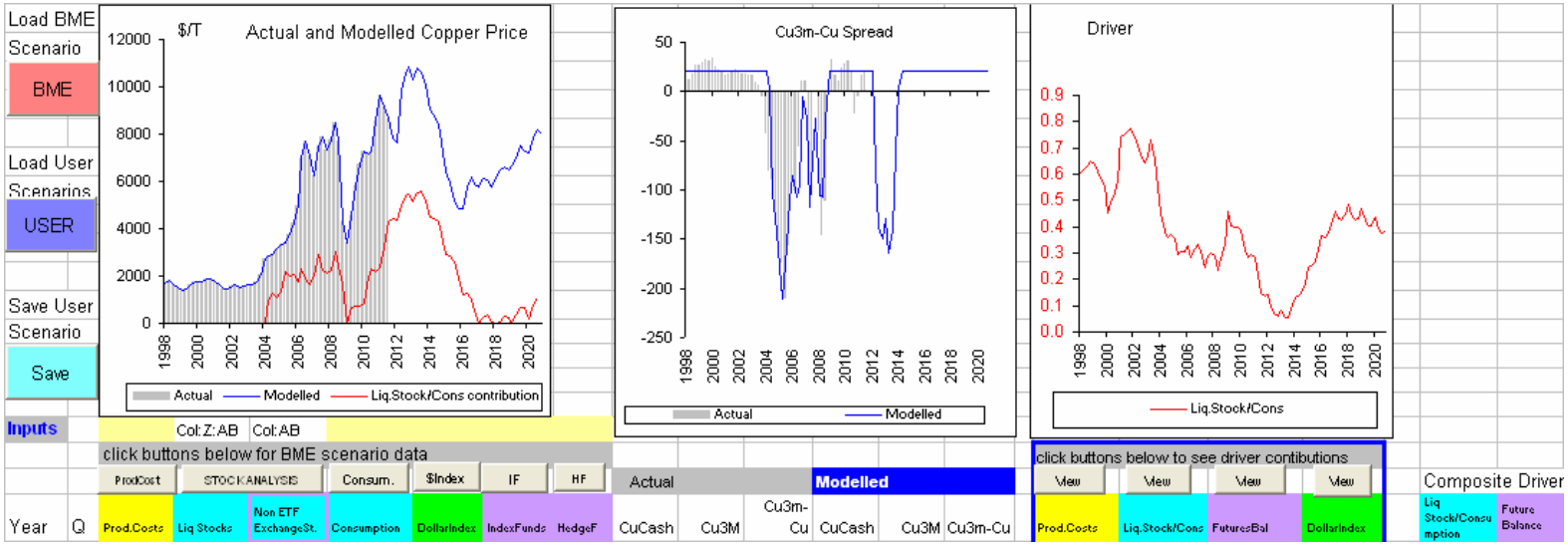
The Liquid Stock /Consumption Ratio Driver.

1. Liquid Stock Contributions are entered in column Z to AB.



2. The Sum of the Liquid Stock Contributions is shown in column AD.

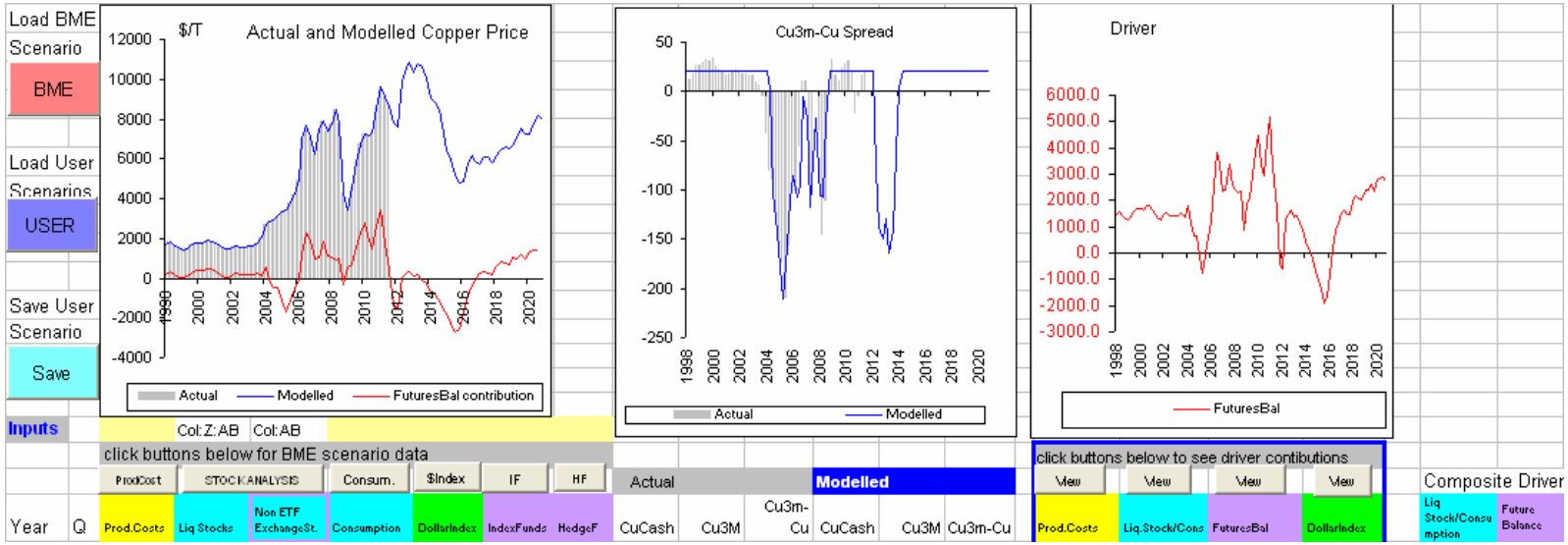


3.Consumption data is entered in column F.

5. The modelled Stock Consumption Ratio contribution is shown in column R.

4. The calculated ratio is shown in column V.

B
M
E

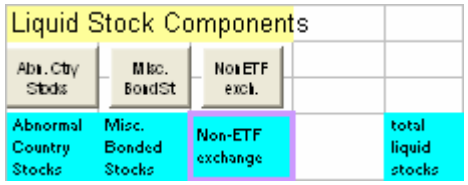


The Futures Balance

1. Index Fund values are entered in column H. Hedge Fund data is entered in column I. Non ETF exchange stocks are entered in column AC.

3. The modelled Futures Balance contribution is shown in column S.

2. The calculated Futures Balance is shown in column W .



B
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The Grey Driver Contribution View buttons

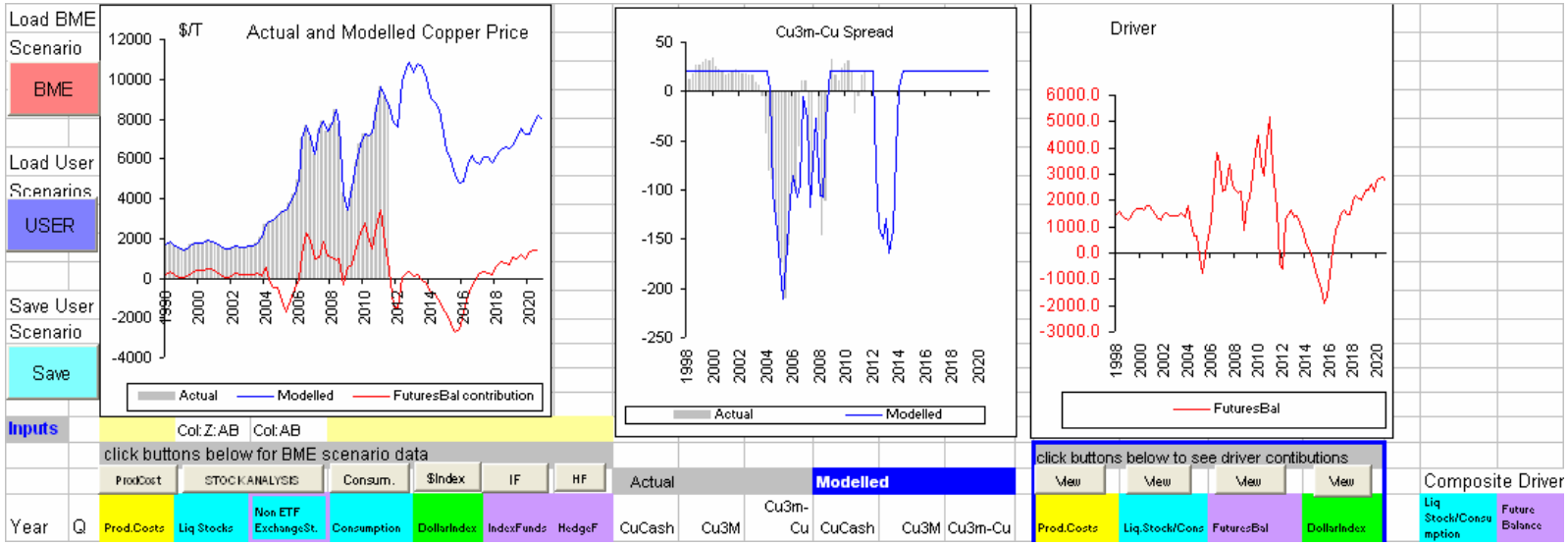
The Production Costs View button.

The Liquid Stock/Consumption Ratio View button.

The Futures Balance View button.

The Dollar Index View button.

B
M
E



The Driver Contributions

The Driver contributions to the model are shown in columns Q to T. The Production Cost contribution to the modelled copper price is shown in column Q. The Liquid Stock/Consumption Ratio contribution to the modelled copper price is shown in column R. The Futures Balance contribution to the modelled copper price is shown in column S. The Dollar Index contribution to the modelled copper price is shown in column T.

B
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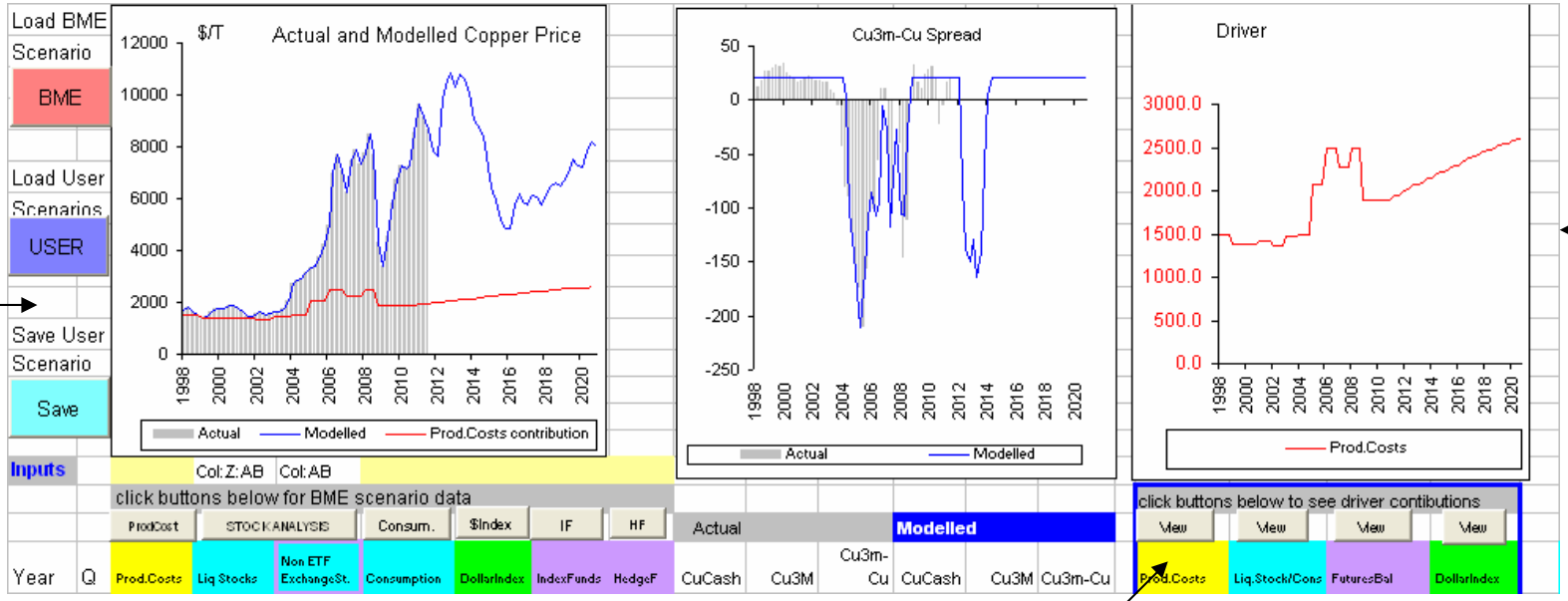
E



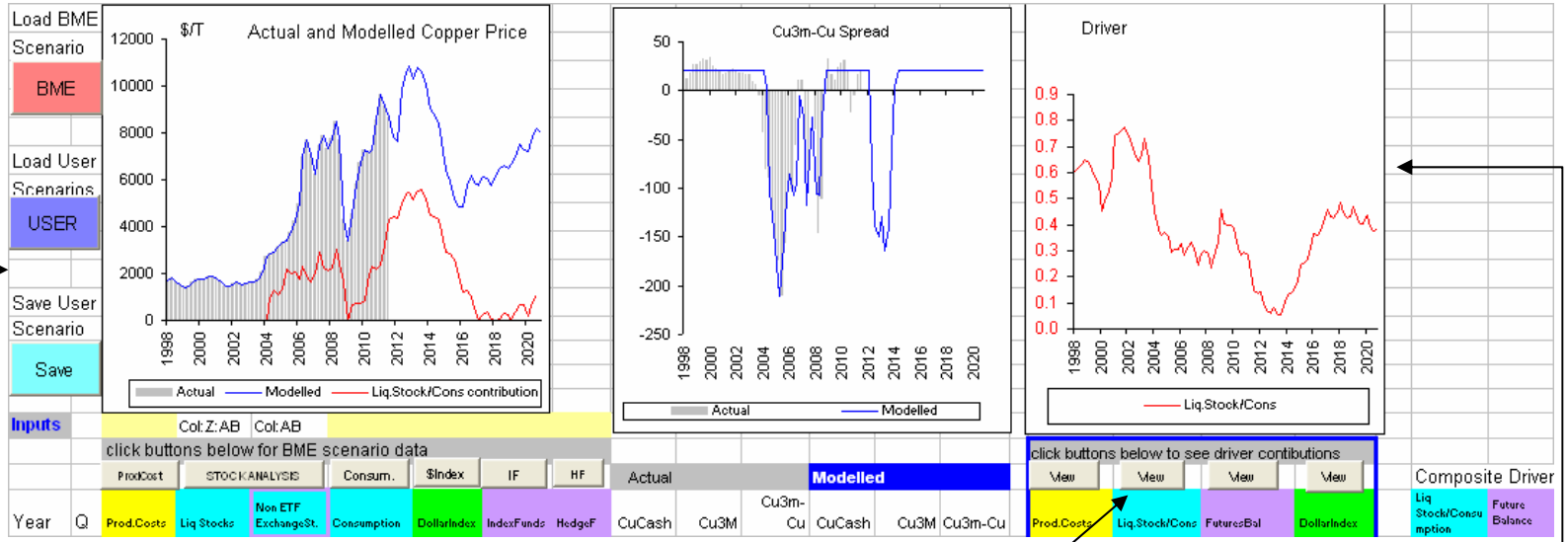
<u>The Production Costs View button</u>.

Clicking the View button above the Production Costs column:

1. Shows the Production Costs value in the Driver chart.

2.Shows the Production Costs contribution in the Actual and Modelled Copper Price chart.

B
M
E

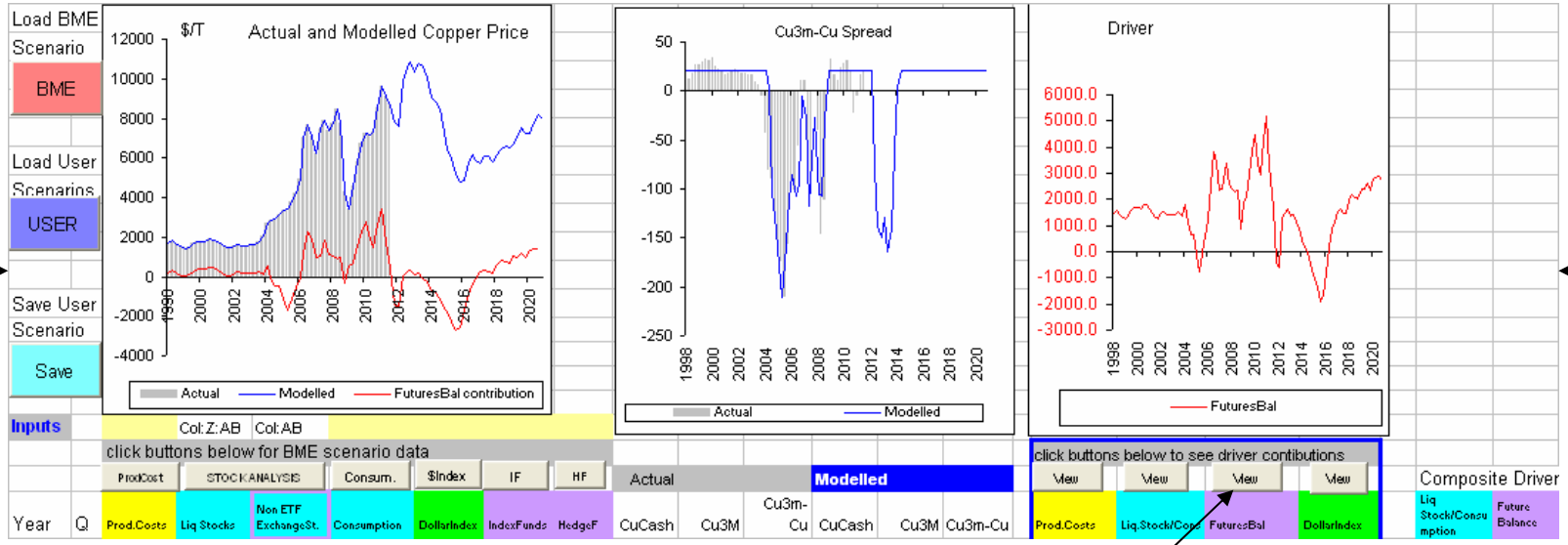


<u>The Liquid Stock/Consumption Ratio View button</u>.

Clicking the View button above the Stock/Consumption column :

1. Shows the Liquid Stock /Consumption ratio values in the Driver chart.
2. Shows the Stock Consumption ratio contribution in the Actual and Modelled Copper Price chart.

B
M
E



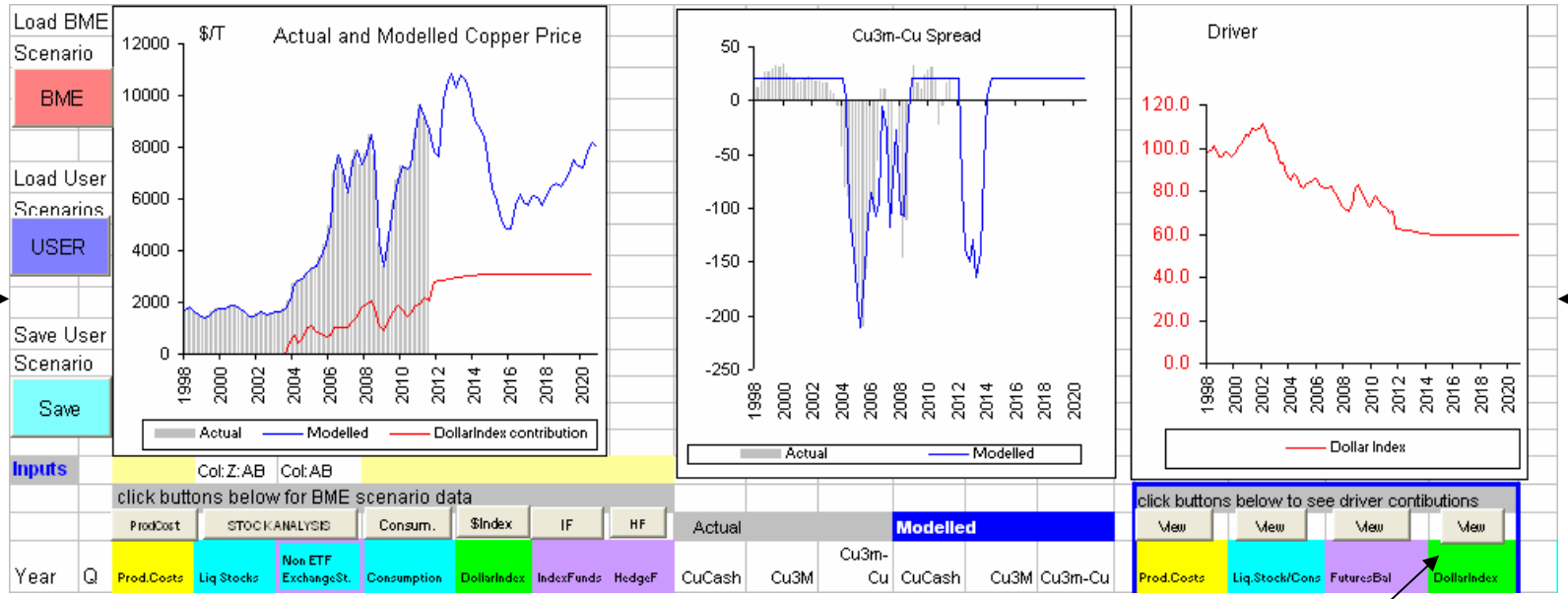
<u>The Futures Balance View button</u>.

Clicking the View button above the Futures Balance column:

1.Shows the Futures Balance value in the Driver chart

2.Shows the Futures Balance contribution in the Actual and Modelled Copper Price chart.

B
M
E



<u>The Dollar Index View button</u>.

Clicking the View button above the Dollar Index column:

1. Shows the Dollar Index value in the Driver chart
2. Shows the Dollar Index contribution in the Actual and Modelled Copper Price chart.

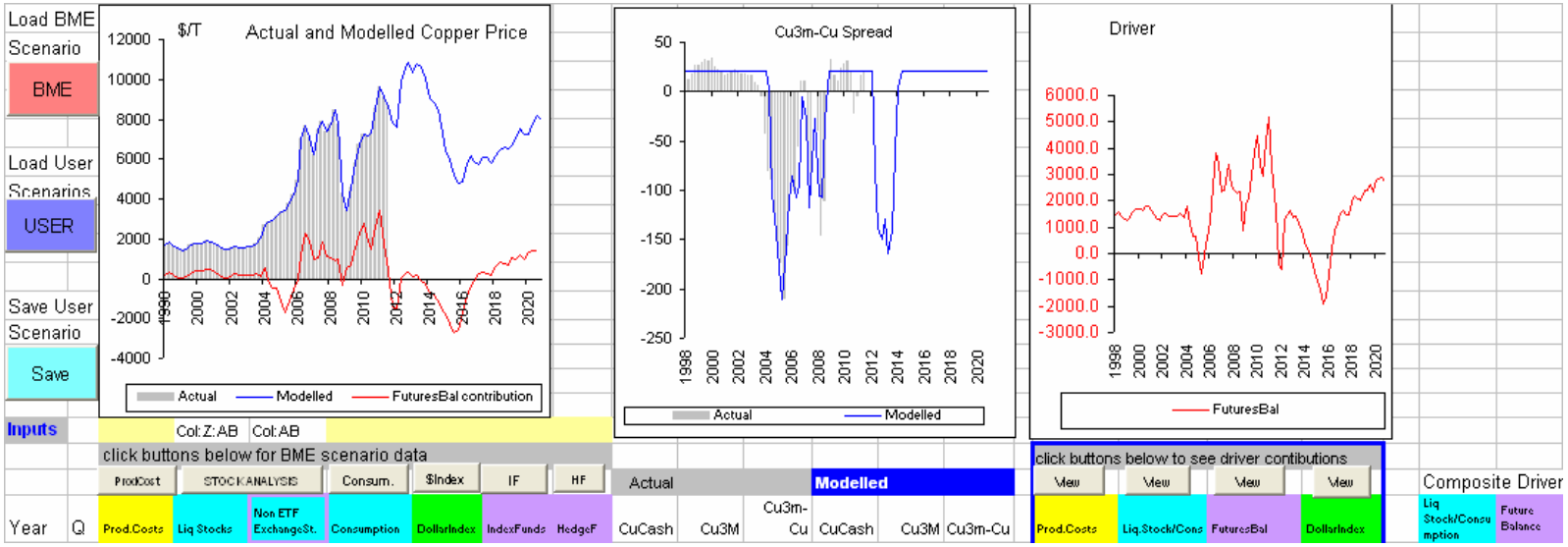
B
M
E

<u>The Modelled Copper Cash and Copper Three Month prices</u>.

The Modelled Copper Cash Price is the sum of all the driver contributions.

The Copper Three Month price and cash to three month spread are also modelled.

The chart above the actual and modelled columns shows the historical and modelled cash to three month spread.



B
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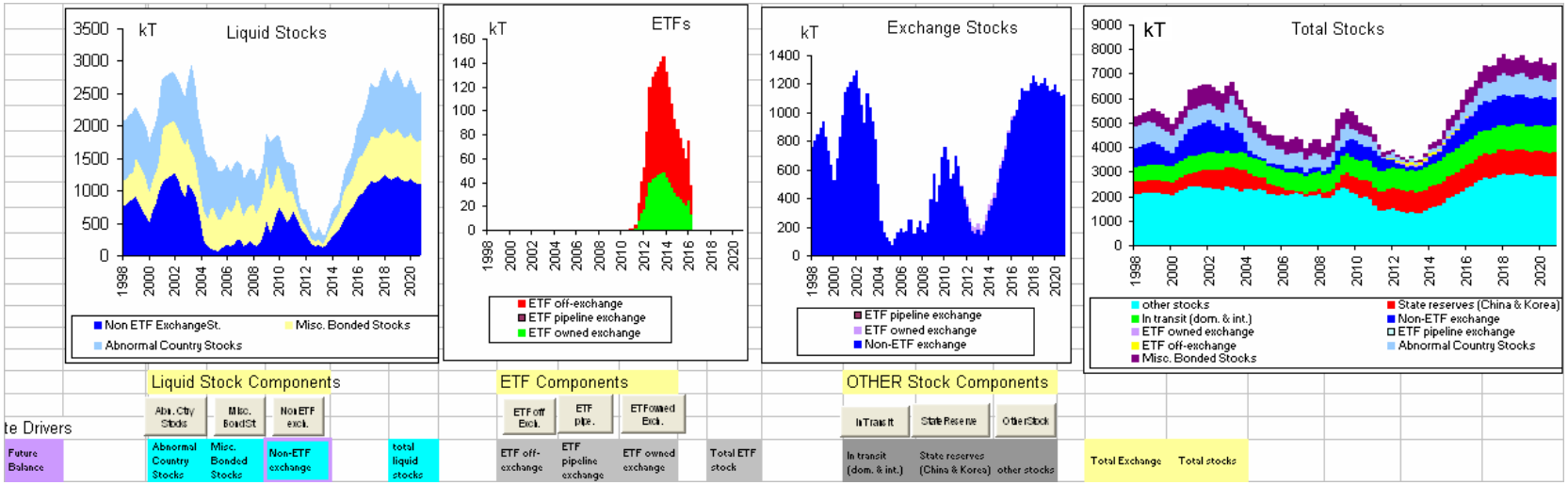
E

Stock Charts

Above the Stock data columns (X to AU) are the corresponding stock charts showing the components of Liquid Stocks, ETF's, Exchange Stocks and Total Stocks.



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The Copper Model Output Pages

B
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E

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The Driver Contributions Output Pages

Contributions to the modelled copper price are shown in detail in the worksheets:

Production Cost

Liquid Stock/Consumption Ratio

Futures Balance

Dollar Index

B
M
E

Production Cost Output Page.

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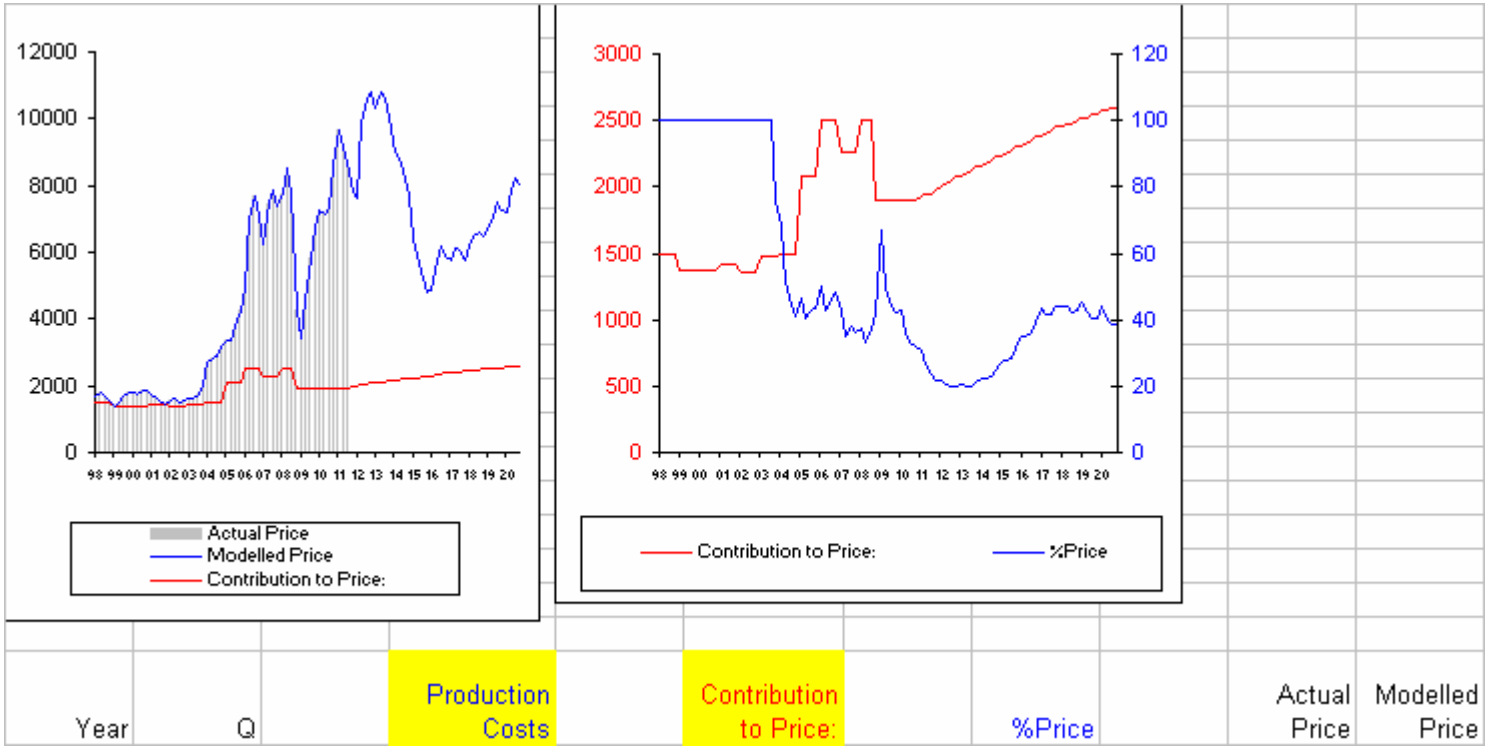
This page contains the output related to Production costs that has been generated in the Main page.



The Production cost data is shown in column D and its modelled contribution to price in column F.

B
M
E

Production Cost Output Page.

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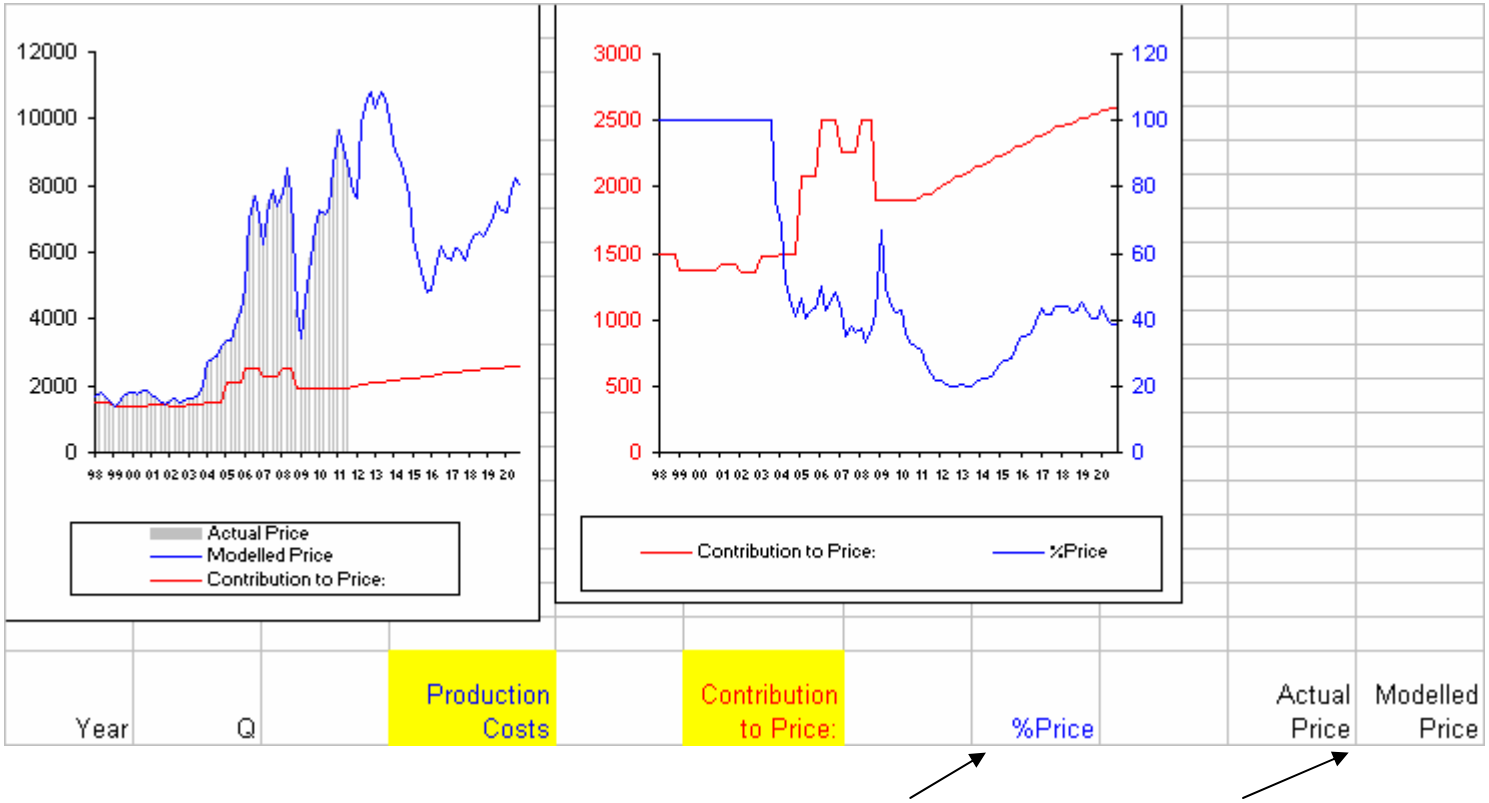

The %contribution to the modelled Copper price is shown in column H.
The actual copper price is shown in column J.
The modelled copper price is shown in column K.

B
M
E

Production Cost Output Page.

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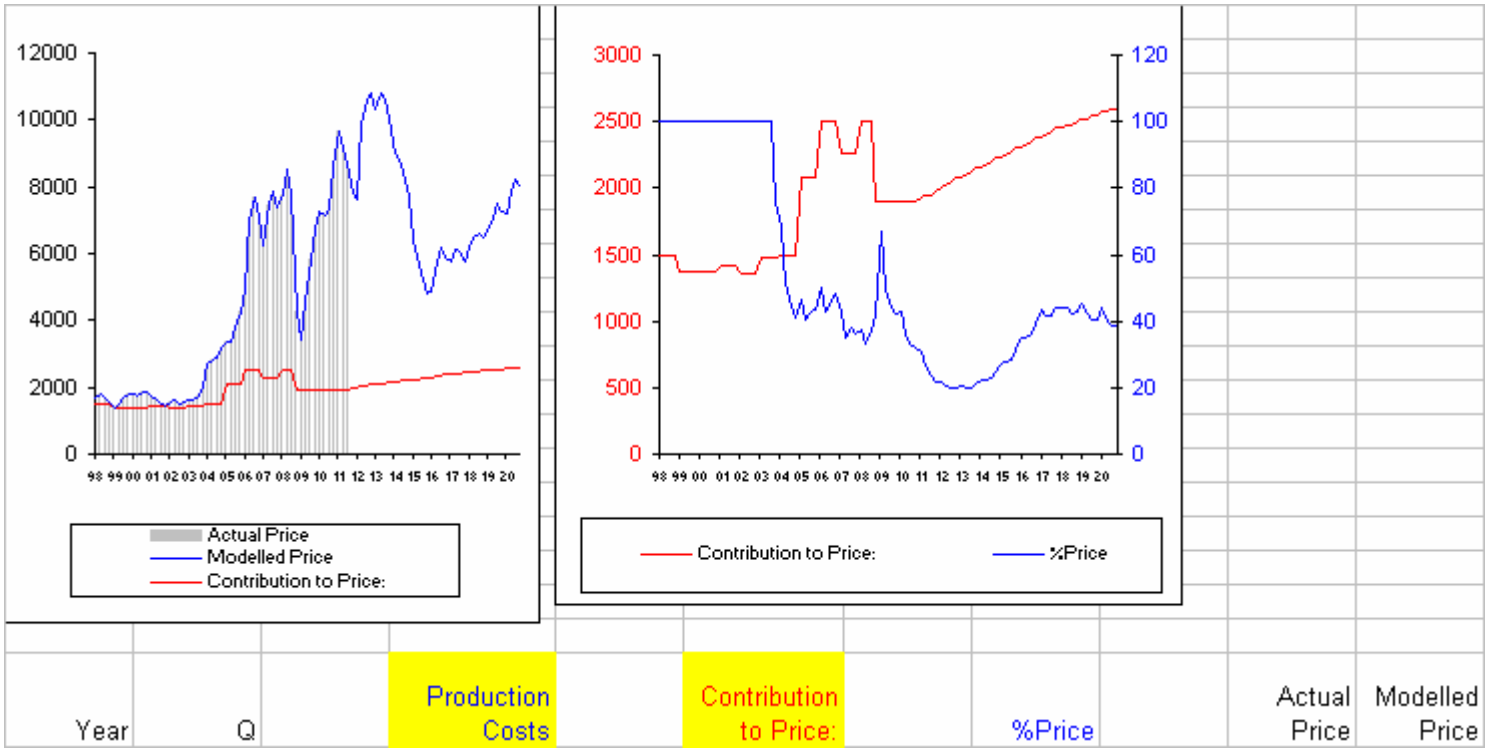
The first chart shows the actual copper price in grey.
The modelled copper price in black and
the Production Cost contribution to the modelled copper price in red.



Year	Q		Production Costs		Contribution to Price:		%Price		Actual Price	Modelled Price

B
M
E

Production Cost Output Page.

The second chart shows the Production Cost contribution to the modelled copper price in red on the left hand y axis and its percentage contribution to the modelled copper price in blue on the right hand y axis.

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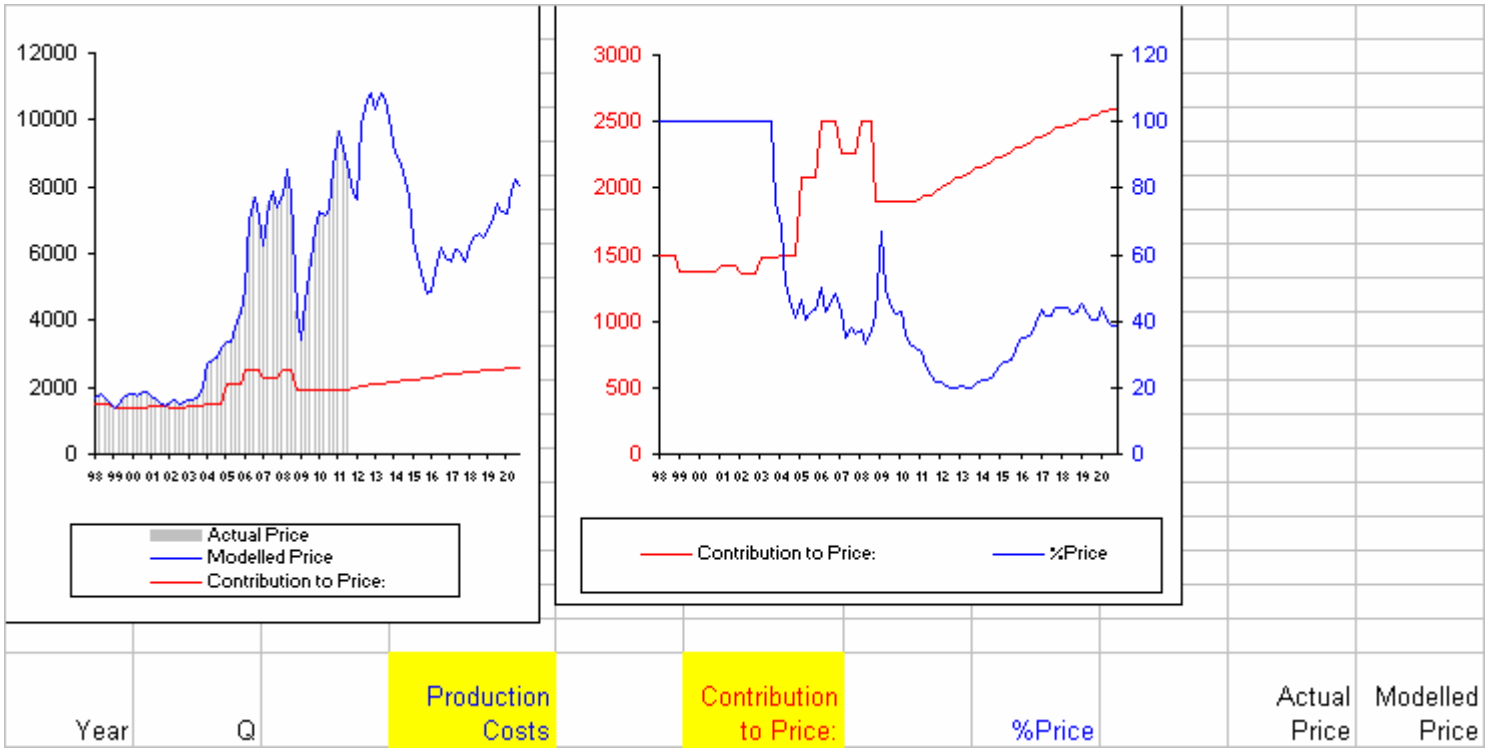

Year	Q		Production Costs		Contribution to Price:		%Price		Actual Price	Modelled Price

B
M
E

The Liquid Stock/ Consumption Ratio Output Page

This page contains the output related to the Liquid Stock Consumption ratio that has been generated in the Main page.

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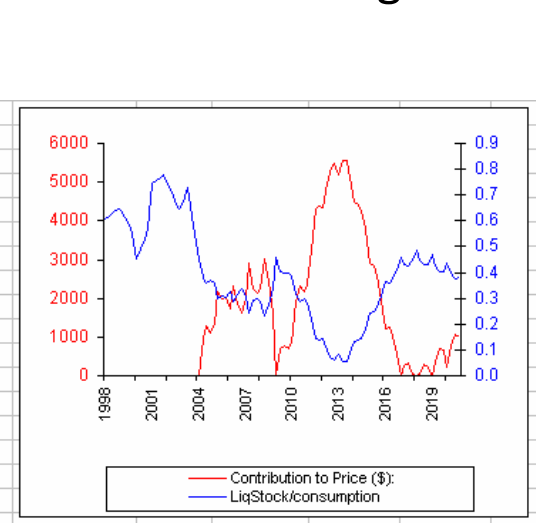
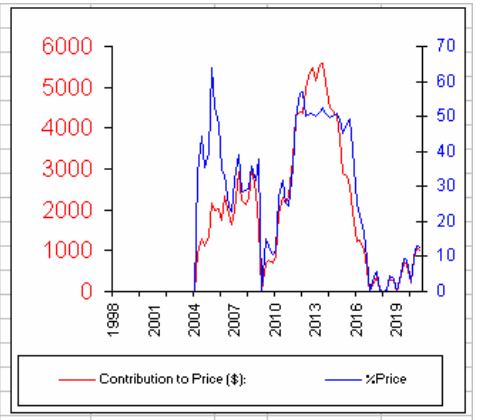




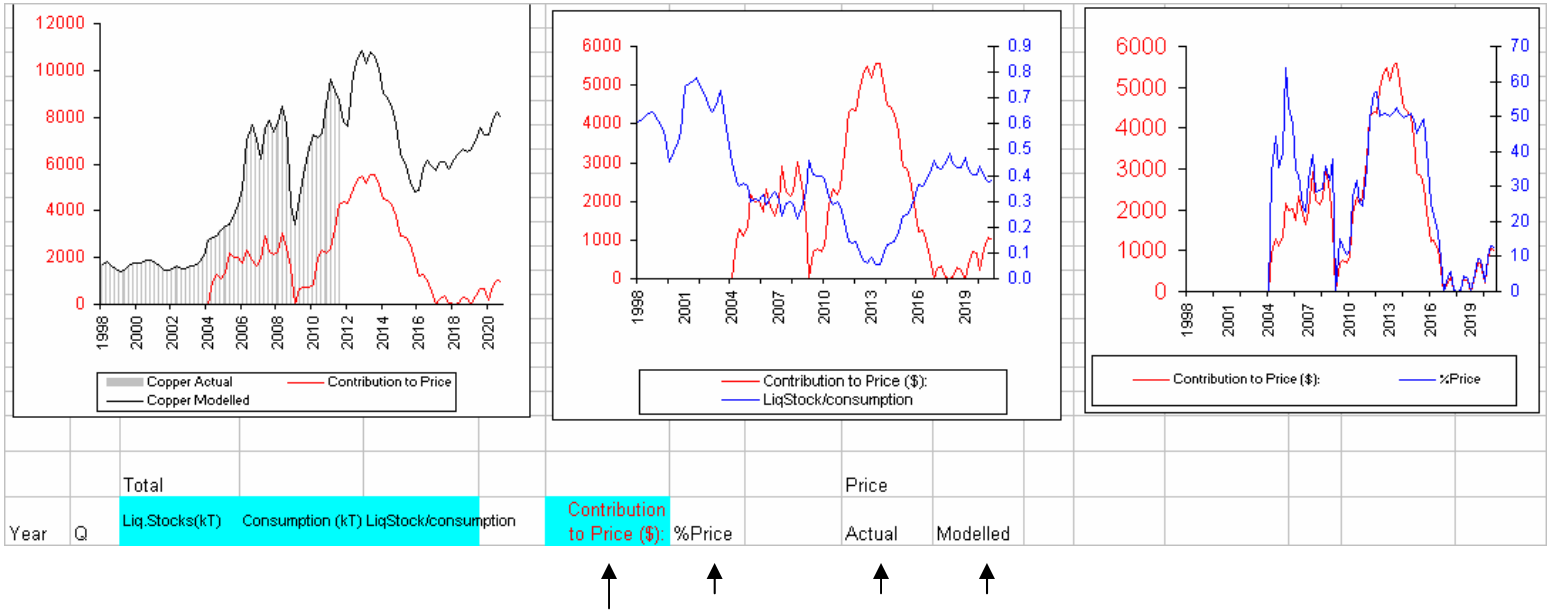
		Total					Price	
Year	Q	Liq.Stocks(kT)	Consumption (kT)	LiqStock/consumption	Contribution to Price ($):	%Price	Actual	Modelled

1.The Liquid Stock data is shown in column C.

2.The Consumption data is shown in column D and

3. Liquid Stock /Consumption ratio is shown in column E.

B
M
E



The Liquid Stock/ Consumption Ratio Output Page

4.The Liquid Stock /Consumption ratio modelled contribution to price is shown in column.G.

5. The percentage contribution to the modelled Copper price is shown in column H.

6. The actual copper price is shown in column J.

7. The modelled copper price is shown in column K.

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B
M
E

The Liquid Stock Consumption Ratio Output Page

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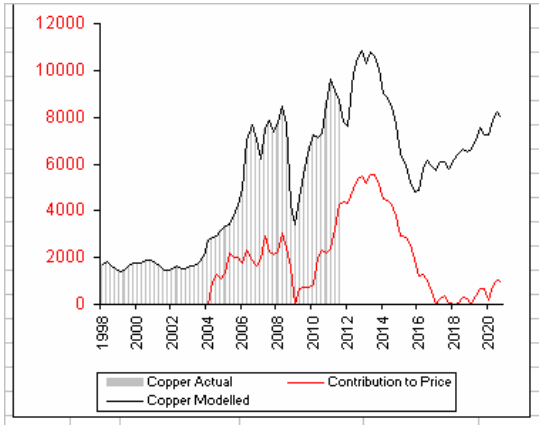
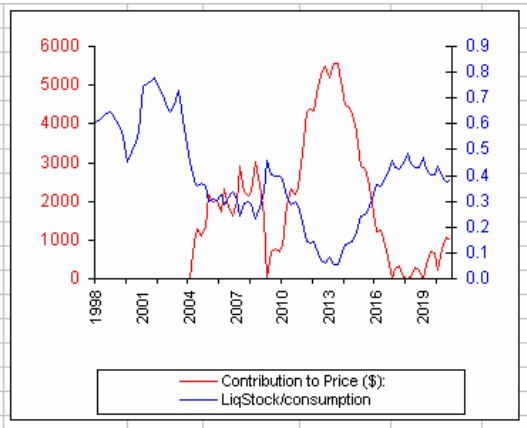
There are three charts on the page:

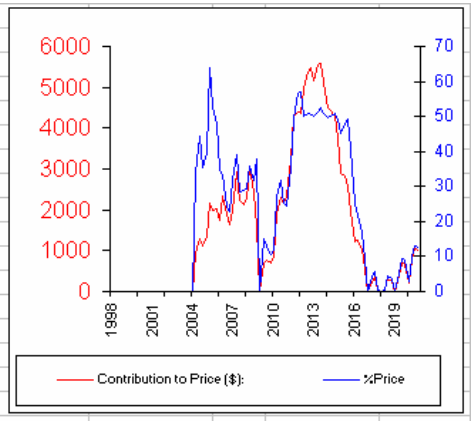
1. The first chart shows the actual copper price in grey.

The modelled copper price in black and

the Liquid Stock Consumption ratio contribution to the modelled copper price in red.







		Total					Price	
Year	Q	Liq.Stocks(kT)	Consumption (kT)	LiqStock/consumption	Contribution to Price ($):	%Price	Actual	Modelled

B
M
E

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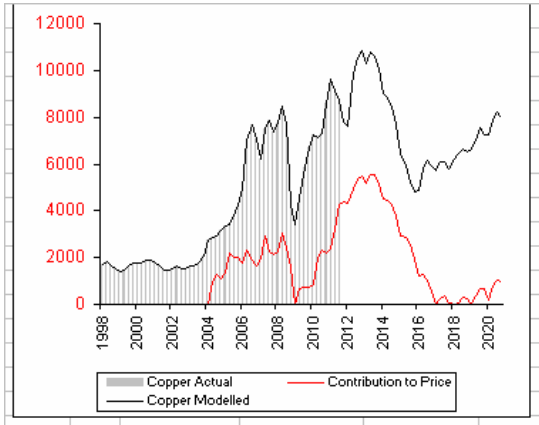
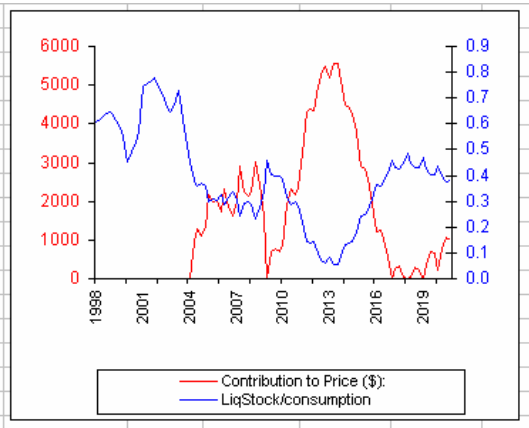
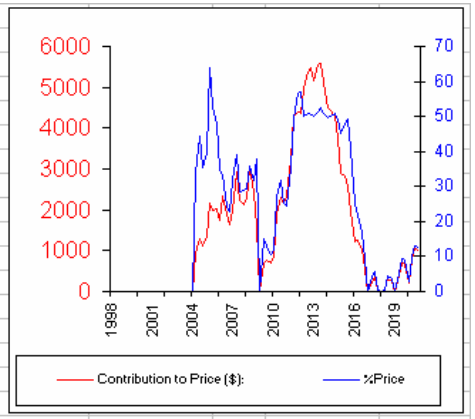
The Liquid Stock / Consumption Ratio Output Page

2. The second chart shows the Liquid Stock /Consumption ratio contribution to the modelled copper price in red on the left hand y axis and the liquid stock /consumption ratio in blue on the right hand y axis.







		Total					Price	
Year	Q	Liq.Stocks(kT)	Consumption (kT)	LiqStock/consumption	Contribution to Price ($):	%Price	Actual	Modelled

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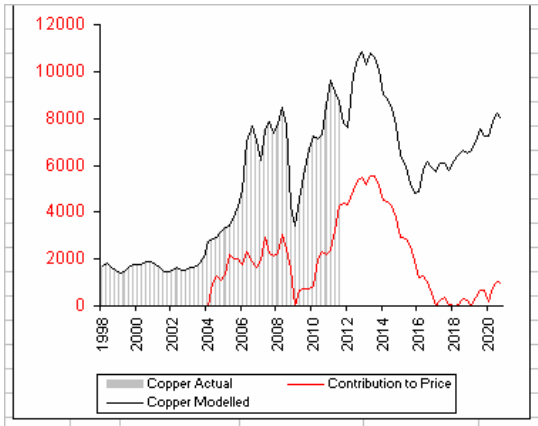
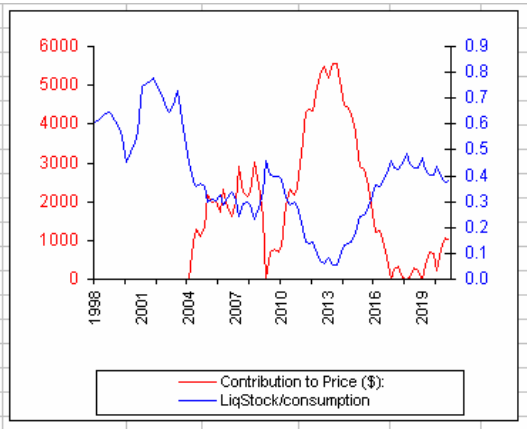
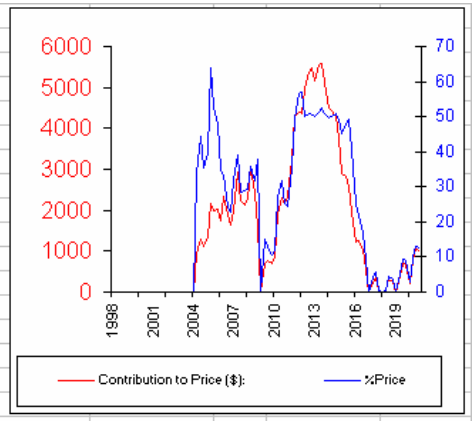
The Liquid Stock/ Consumption Ratio Output Page

3. The third chart shows the Liquid Stock /Consumption ratio contribution to the modelled copper price in red on the left hand y axis and its percentage contribution to the modelled copper price in blue on the right hand y axis.





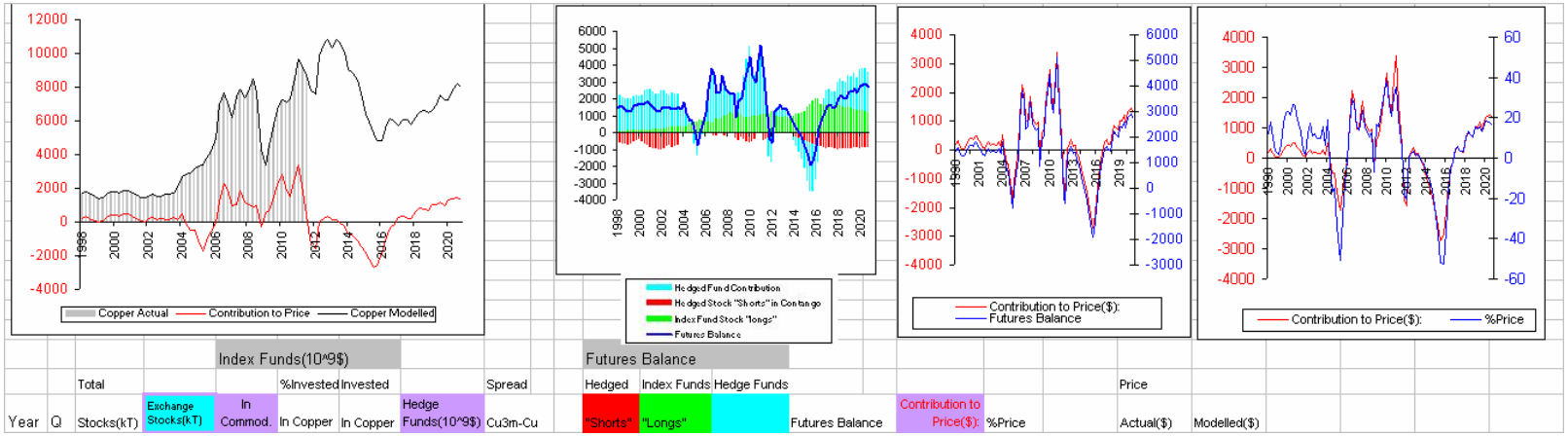


		Total					Price	
Year	Q	Liq.Stocks(kT)	Consumption (kT)	LiqStock/consumption	Contribution to Price ($):	%Price	Actual	Modelled

B
M
E

The Futures Balance output page

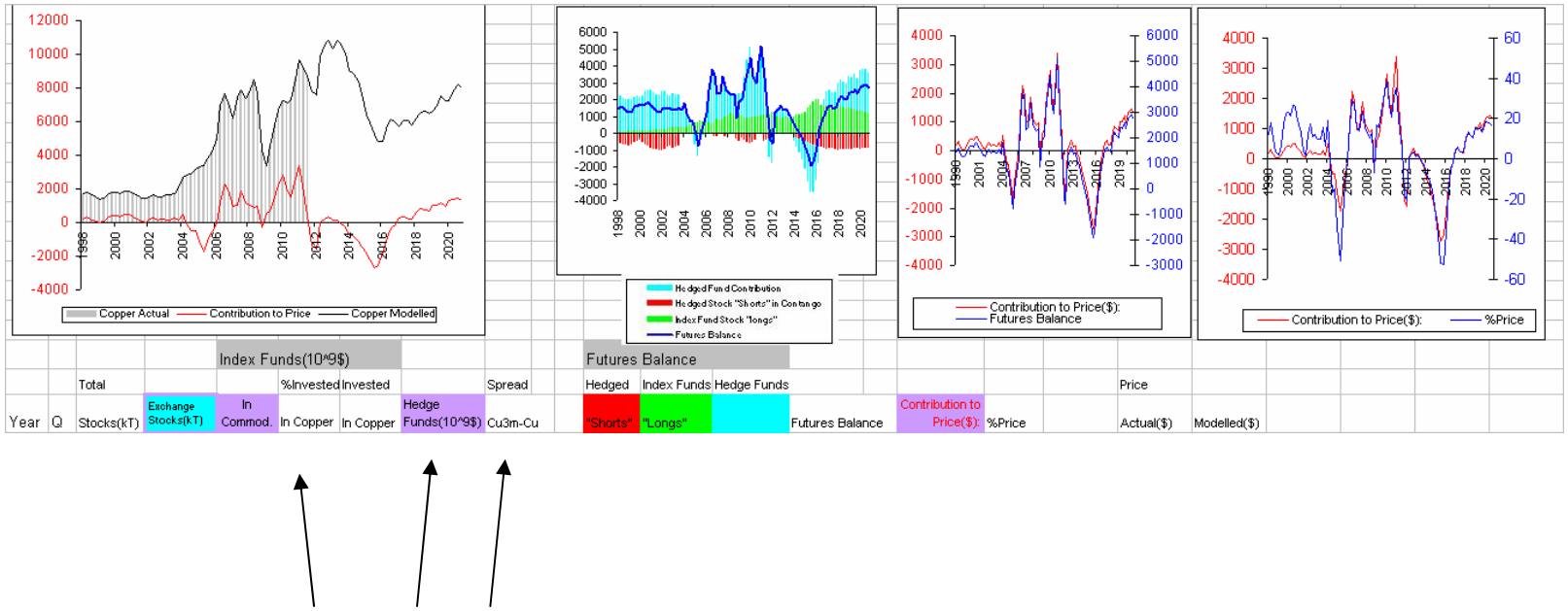
This page contains the output related to Futures Balance that has been generated in the Main page.



Total Stock data is shown in column C.

Non ETF exchange stock data is shown in column D .

B
M
E



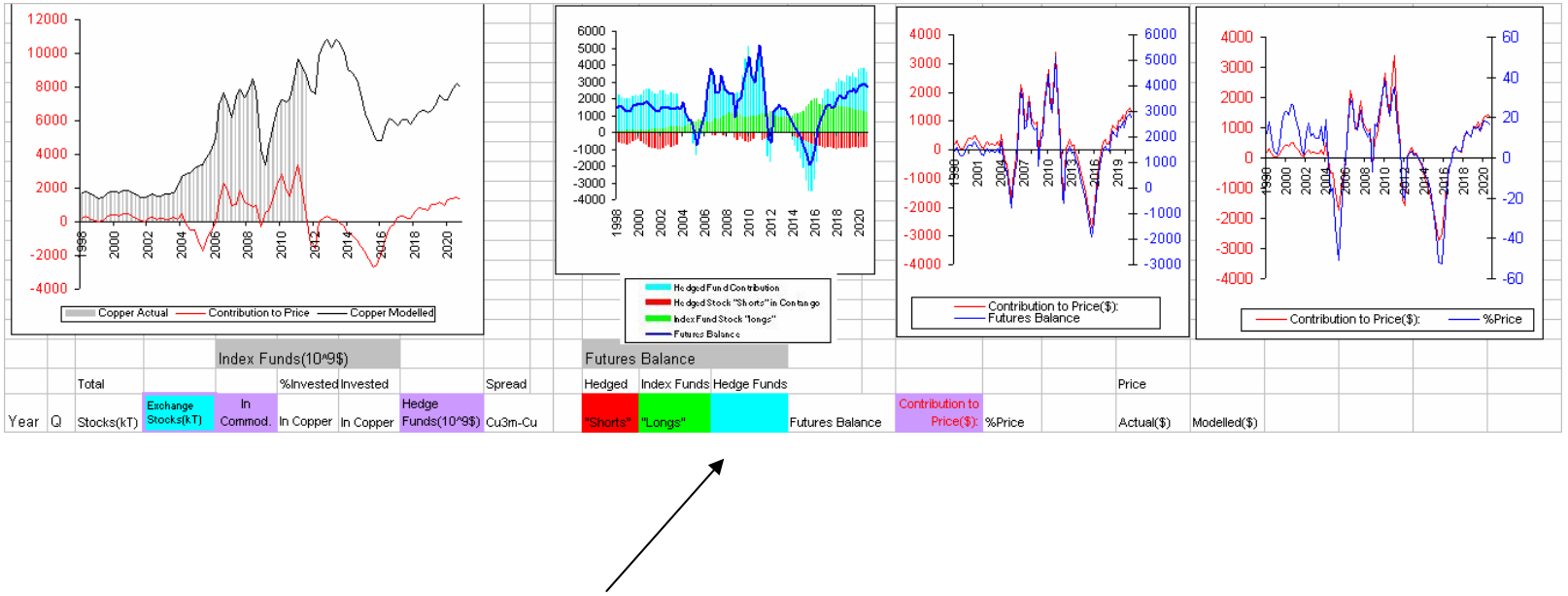
The Futures Balance output page

The calculations to estimate the amount of money invested in Copper by Index Funds is shown in columns E to G.

The amount of money estimated to be invested by Hedge Funds is shown in column H.

The Copper Cash to 3 month spread, telling us if the market is in contango or in backwardation is shown in column I.

B
M
E

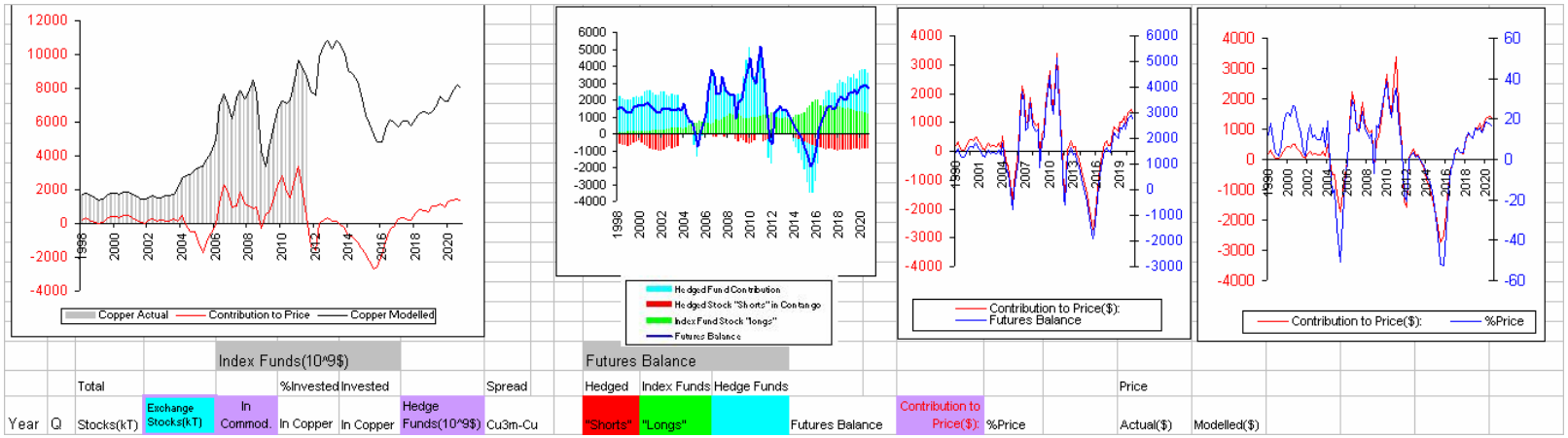


The Futures Balance output page

In columns L to N the amount of money invested in the Futures Copper Market is converted into the amount of stock that this is equivalent to.

The sum of these gives the Futures stock balance in column O.

B
M
E



		Index Funds(10^9$)						Futures Balance							
		Total			%Invested	Invested		Hedged	Index Funds	Hedge Funds			Price		
Year	Q	Stocks(kT)	Exchange Stocks(kT)	In Commod.	In Copper	In Copper	Hedge Funds(10^9$)	Spread	"Shorts"	"Longs"		Futures Balance	Contribution to Price($):	%Price	Actual($)	Modelled($)

The Futures Balance output page

The Futures Balance modelled contribution to price is shown in column Q.
The %contribution to the modelled Copper price is shown in column R.

The actual copper price is shown in column T.

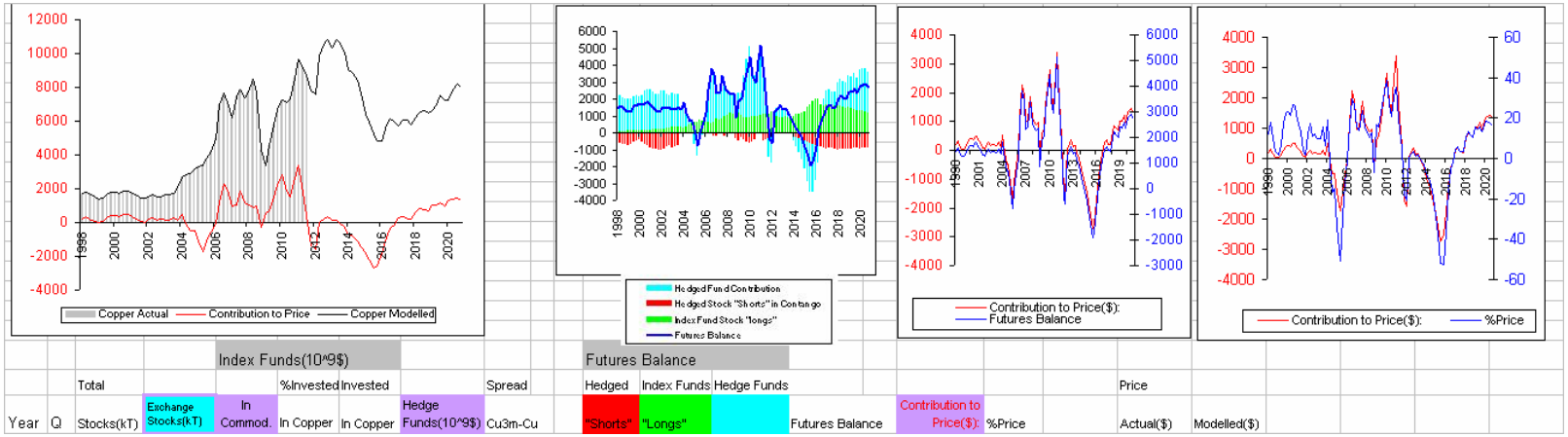
The modelled copper price is shown in column U.

The Futures Balance output page

There are four charts on the page.

The first chart shows the actual copper price in grey.

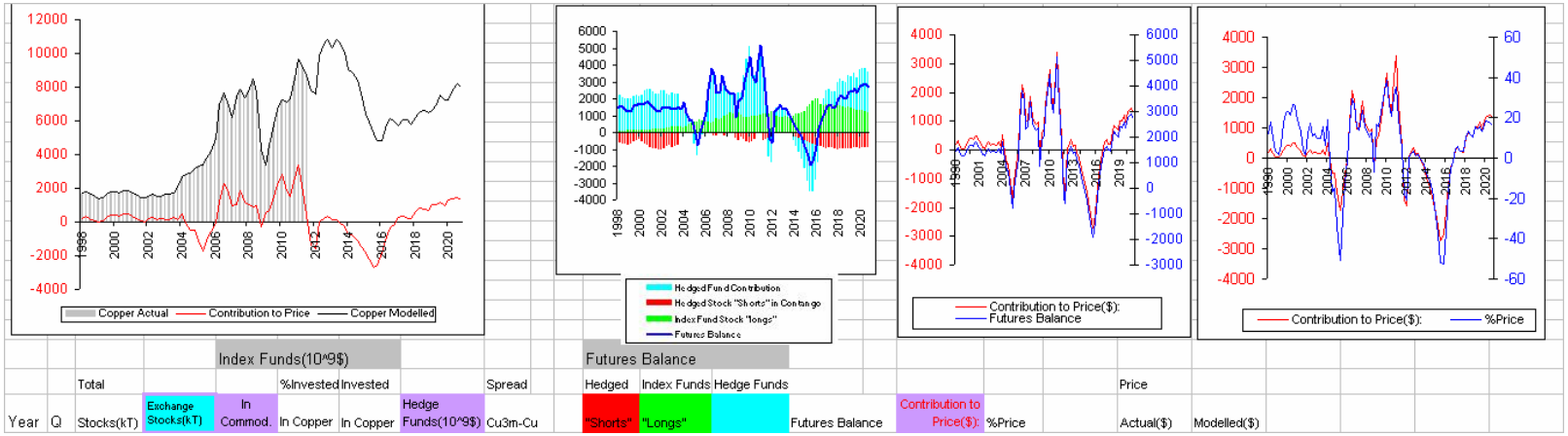
The modelled copper price in black and the Futures Balance contribution to the modelled copper price in red.



B
M
E

The Futures Balance output page

The second chart shows the composition of the Futures Balance. This is made up of: Index Fund Stock "longs" in green, the balance of Hedge Fund stocks longs and shorts in light blue and the hedged stock shorts that occur in a contango market in red.

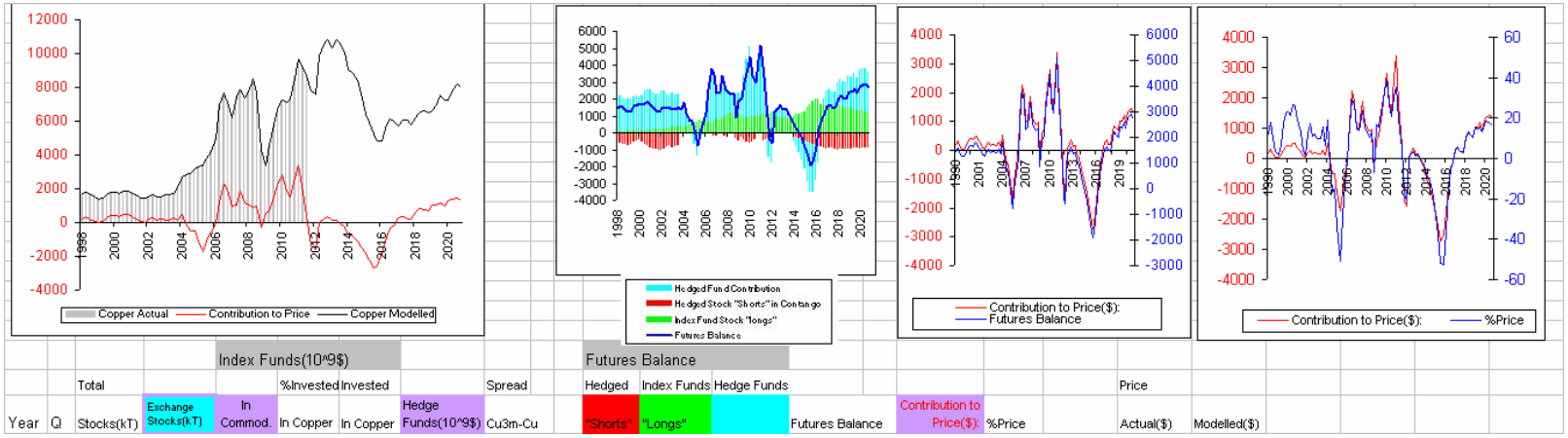


		Index Funds(10^9$)							Futures Balance						
		Total			%Invested	Invested		Spread	Hedged	Index Funds	Hedge Funds			Price	
Year	Q	Stocks(kT)	Exchange Stocks(kT)	In Commod.	In Copper	In Copper	Hedge Funds(10^9$)	Cu3m-Cu	"Shorts"	"Longs"		Futures Balance	Contribution to Price($):	%Price	Actual($)	Modelled($)

B
M
E

The Futures Balance output page.

The third chart shows the Futures Balance contribution to the modelled copper price in red on the left hand y axis and the Futures Balance in blue on the right hand y axis.

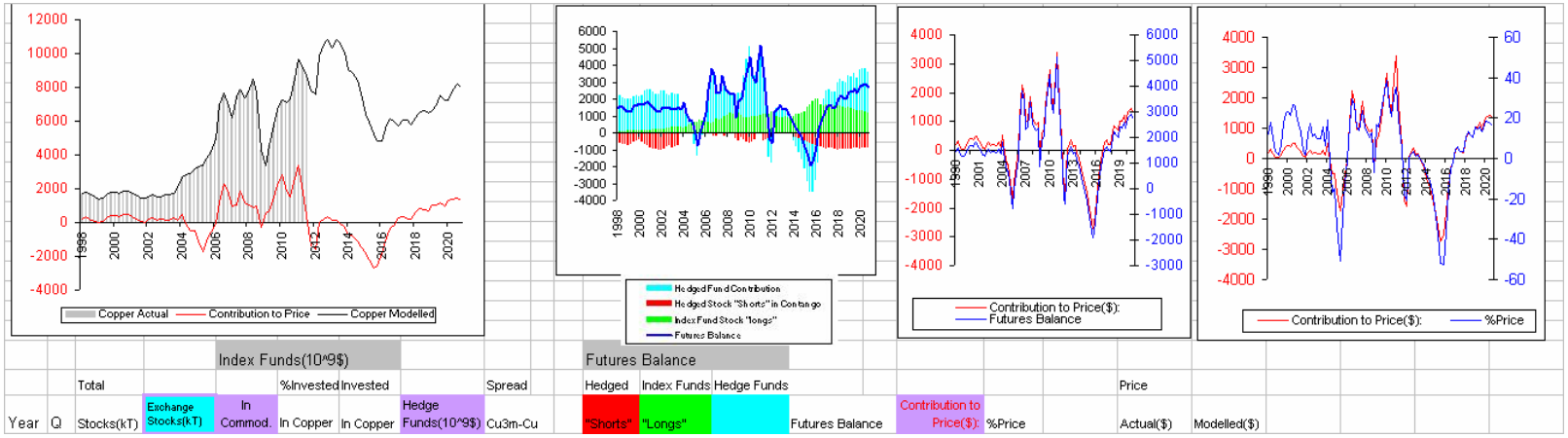


		Index Funds(10^9$)							Futures Balance						
		Total			%Invested	Invested		Spread	Hedged	Index Funds	Hedge Funds				
Year	Q	Stocks(kT)	Exchange Stocks(kT)	In Commod.	In Copper	In Copper	Hedge Funds(10^9$)	Cu3m-Cu	"Shorts"	"Longs"		Futures Balance	Contribution to Price($):	%Price	Price Actual($)	Modelled($)

B
M
E

The Futures Balance output page

The fourth chart shows the Futures Balance contribution to the modelled copper price in red on the left hand y axis and its percentage contribution to the modelled copper price in blue on the right hand y axis.



		Index Funds(10^9$)							Futures Balance							
		Total			%Invested	Invested		Spread	Hedged	Index Funds	Hedge Funds			Price		
Year	Q	Stocks(kT)	Exchange Stocks(kT)	In Commod.	In Copper	In Copper	Hedge Funds(10^9$)	Cu3m-Cu	"Shorts"	"Longs"		Futures Balance	Contribution to Price($):	%Price	Actual($)	Modelled($)

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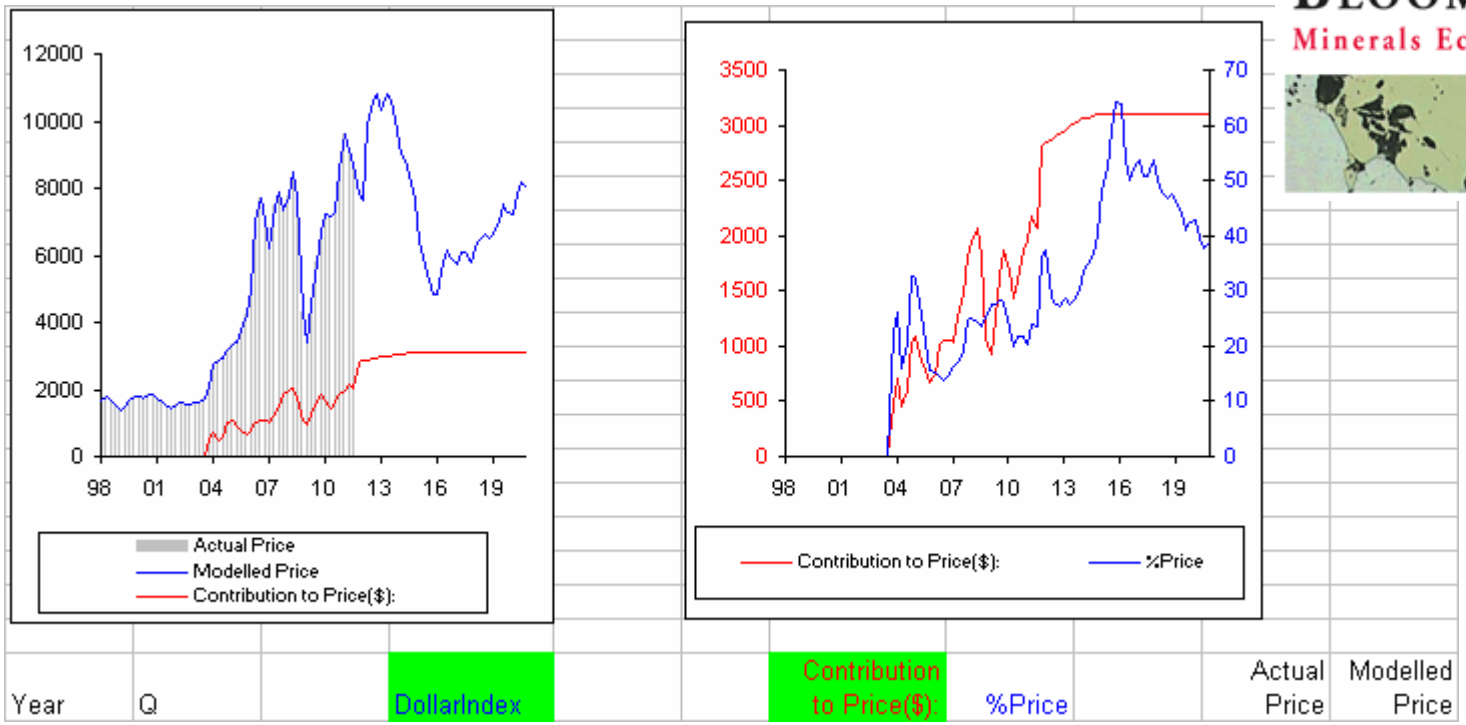

The Dollar Index output page

This page contains the output related to the Dollar Index that has been generated in the Main page.

The Dollar Index data is shown in column D and its modelled contribution to price in column G.

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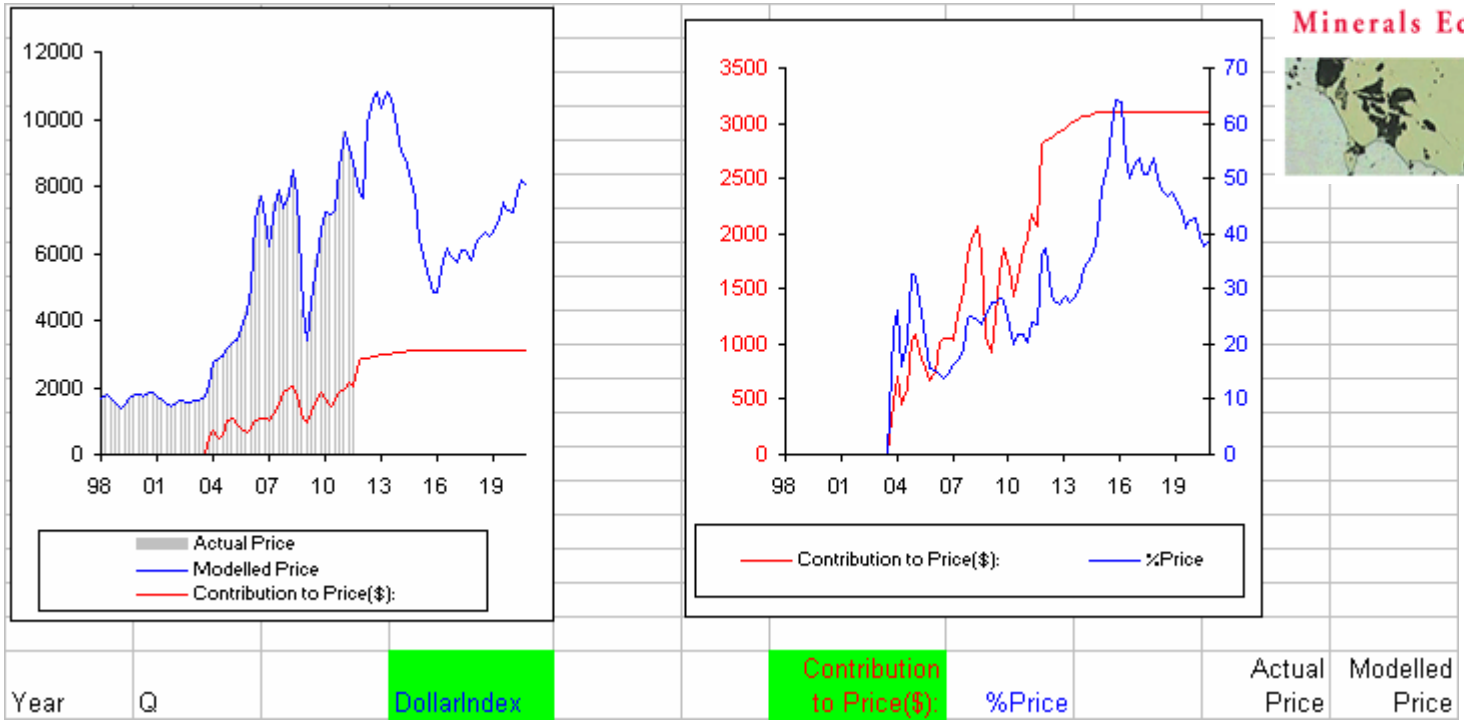
E



The Dollar Index output page

The % contribution to the modelled Copper price is shown in column H.

The actual copper price is shown in column J

and the modelled copper price is shown in column K.

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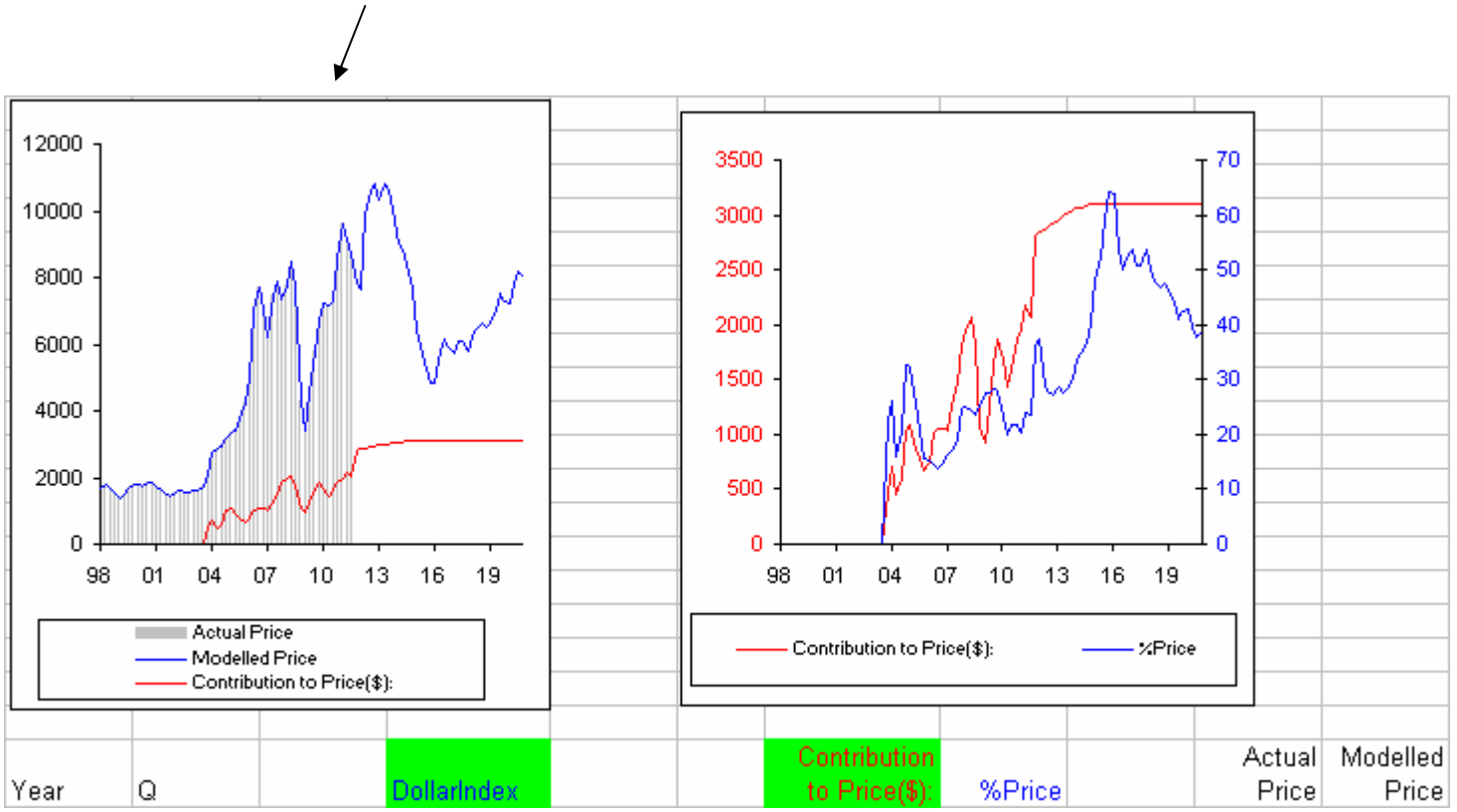
B
M
E

The Dollar Index output page

There are two charts on the page.

The first chart shows the actual copper price in grey.

The modelled copper price in blue and the dollar index contribution to the modelled copper price in red.



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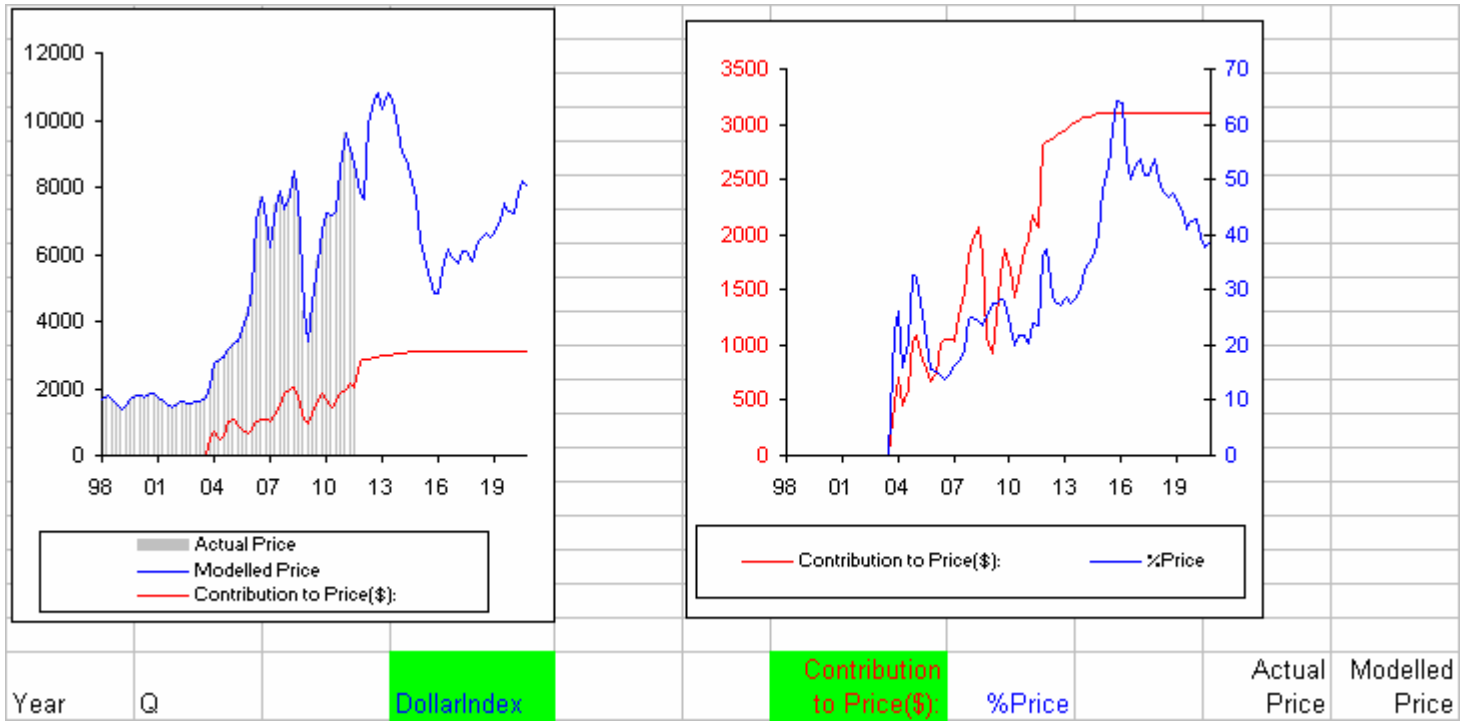
B
M
E

The Dollar Index output page

The second chart shows the dollar index contribution to the modelled copper price in red on the left hand y axis

and its percentage contribution to the modelled copper price in blue on the right hand y axis.



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Copper Model Output 2

B
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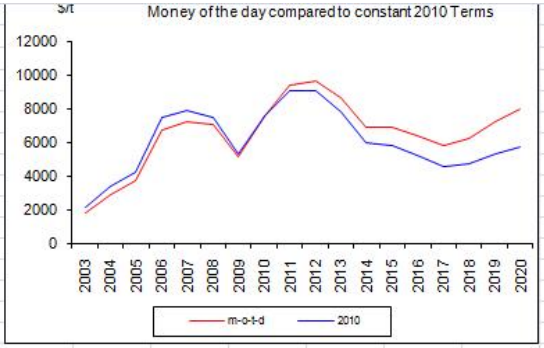
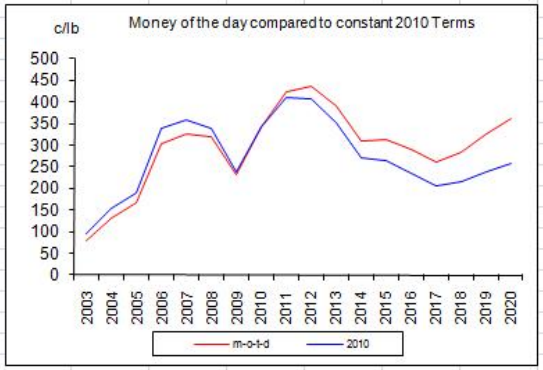
Year	Inflation 2005=100	Inflation 2010=100	CuCash ($/t) m-o-t-d	CuCash ($/t) 2010	CuCash (c/lb) m-o-t-d	CuCash (c/lb) 2010
2003	96.7	84.5	1768	2094	80.2	94.97
2004	98.0	85.6	2907	3397	131.9	154.07
2005	**100.0**	87.3	3682	4216	167.0	191.25
2006	102.3	89.3	6676	7472	302.8	338.94
2007	104.7	91.4	7229	7905	327.9	358.58
2008	108.5	94.8	7060	7451	320.3	337.96
2009	110.8	96.8	5120	5291	232.2	239.98
2010	114.5	**100.0**	7562	7562	343.0	343.01
2011	118.5	103.5	9336	9020	423.5	409.15
2012	122.7	107.1	9657	9015	438.1	408.93
2013	126.9	110.9	8648	7800	392.3	353.80
2014	131.4	114.8	6858	5976	311.1	271.09
2015	136.0	118.8	6900	5810	313.0	263.53
2016	140.7	122.9	6412	5216	290.9	236.61
2017	145.7	127.2	5770	4535	261.7	205.70
2018	150.8	131.7	6248	4745	283.4	215.21
2019	156.1	136.3	7211	5291	327.1	240.00
2020	161.5	141.1	7995	5668	362.7	257.10

Values in black show the historical data, values in blue show modelled or forecast values

m-o-t-d	money of the day (Nominal: the effects of inflation have not been accounted for)
Real	inflation has been factored in





[The Inflation Page]

The Consumer Price Index (CPI) is a measure of inflation.

This index is shown in column G.

The Index is created with the year 2005 set at 100.

The Index is then recalibrated in the next column so that the year 2010 is set to 100.

B
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Year	Inflation 2005=100	Inflation 2010=100	CuCash ($/t) m-o-t-d	CuCash ($/t) 2010	CuCash (c/lb) m-o-t-d	CuCash (c/lb) 2010
2003	96.7	84.5	1768	2094	80.2	94.97
2004	98.0	85.6	2907	3397	131.9	154.07
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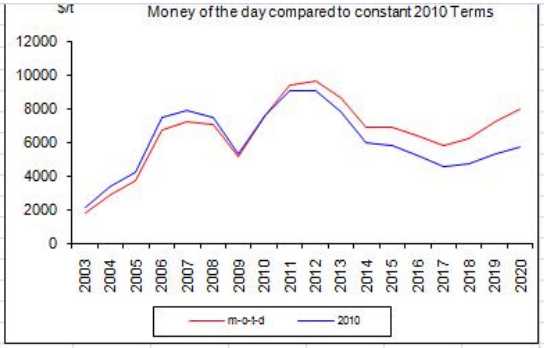
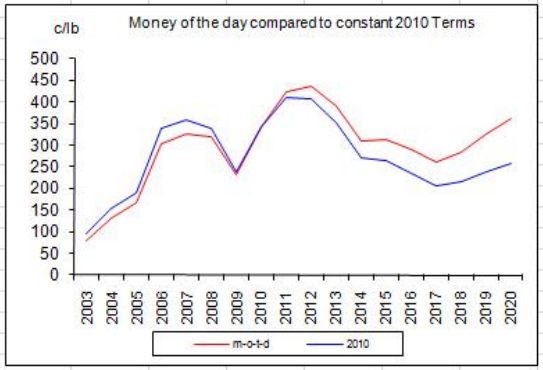
2020	161.5	141.1	7995	5668	362.7	257.10

Values in black show the historical data, values in blue show modelled or forecast values

m-o-t-d	money of the day (Nominal: the effects of inflation have not been accounted for)
Real	inflation has been factored in





The Inflation Page

The next two columns show the Copper Cash Price($/t) as money of the day in column J

and in inflation adjusted 2010 terms in column K.

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Year	Inflation 2005=100	Inflation 2010=100	CuCash ($/t) m-o-t-d	CuCash ($/t) 2010	CuCash (c/lb) m-o-t-d	CuCash (c/lb) 2010
2003	96.7	84.5	1768	2094	80.2	94.97
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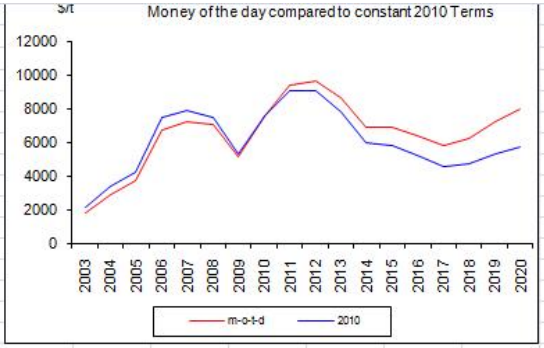
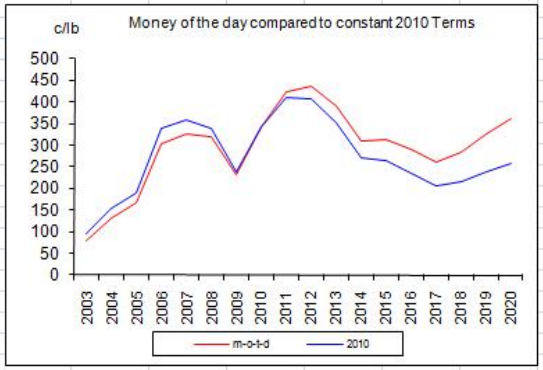
Values in black show the historical data, values in blue show modelled or forecast values

m-o-t-d	money of the day (Nominal: the effects of inflation have not been accounted for)
Real	inflation has been factored in





The Inflation Page

The money of the day and inflation adjusted Copper Cash Price is then shown in cents/lb in columns N and O.

Values in black show the historical data.

Values in blue show the forecast and modelled values.

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Year	Inflation 2005=100	Inflation 2010=100	CuCash ($/t) m-o-t-d	CuCash ($/t) 2010	CuCash (c/lb) m-o-t-d	CuCash (c/lb) 2010
2003	96.7	84.5	1768	2094	80.2	94.97
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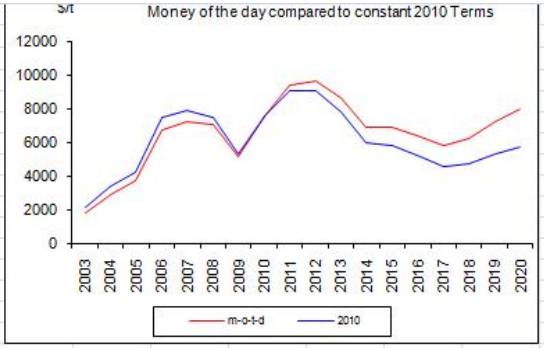

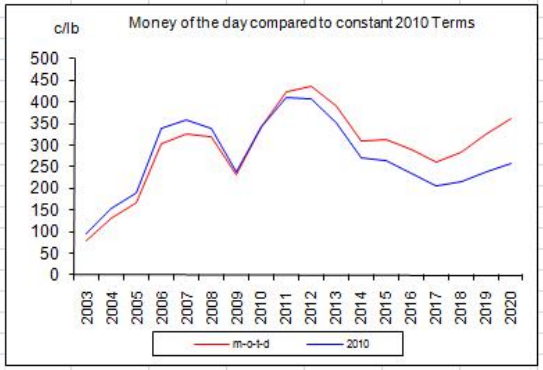

[The Inflation Page]

The two charts show the modelled price in money of the day terms in red and in inflation adjusted constant 2010 terms in blue.

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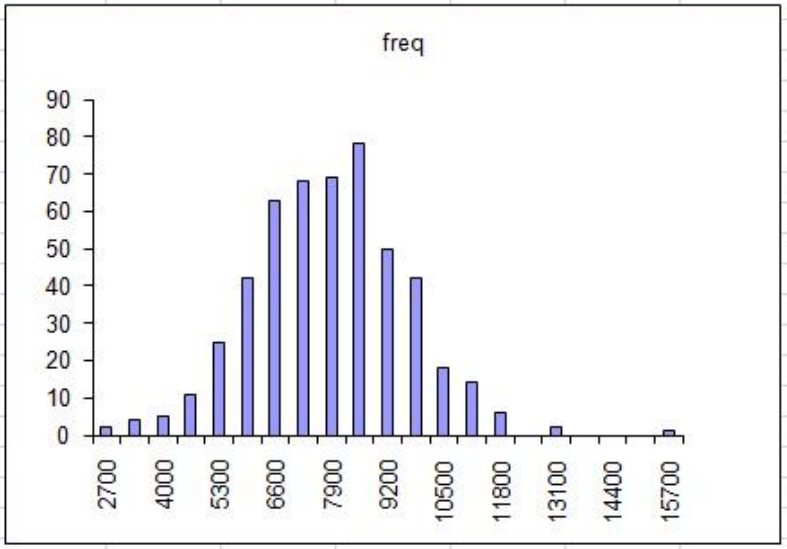
Run

Price	Frequency	%	z
2700	2	0.4	-2.8
3350	4	0.8	-2.4
4000	5	1.0	-2.0
4650	11	2.2	-1.7
5300	25	5.0	-1.3
5950	42	8.4	-0.9
6600	63	12.6	-0.5
7250	68	13.6	-0.2
7900	69	13.8	0.2
8550	78	15.6	0.6
9200	50	10.0	1.0
9850	42	8.4	1.3
10500	18	3.6	1.7
11150	14	2.8	2.1
11800	6	1.2	2.4
12450	0	0.0	2.8
13100	2	0.4	3.2
13750	0	0.0	3.6
14400	0	0.0	3.9
15050	0	0.0	4.3
15700	1	0.2	4.7
	500		



Results Summary

Mean	7534
Number of Trials	500
Standard error	78
Minimum	2074
Maximum	15400
Median	7579
Range	13326
Standard Deviation	1745
Variance	3044961
Skewness	0.14
Kurtosis	0.75

Driver Forecasts

	Prod.Costs	Total Stocks	Non ETF Exc	Consumption	DollarIndex	IndexFunds	HedgeF
Ave	2141	3598	356	4990	70.15	179	6
Stdev	211	474	197	545	9.92	54	8

The Monte Carlo page

Once values for the components of the drivers have been input in the Main page, a Monte Carlo simulation can be run by pressing the Run button at the top of the page.

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Run

Price	Frequency	%	z
2700	2	0.4	-2.8
3350	4	0.8	-2.4
4000	5	1.0	-2.0
4650	11	2.2	-1.7
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5950	42	8.4	-0.9
6600	63	12.6	-0.5
7250	68	13.6	-0.2
7900	69	13.8	0.2
8550	78	15.6	0.6
9200	50	10.0	1.0
9850	42	8.4	1.3
10500	18	3.6	1.7
11150	14	2.8	2.1
11800	6	1.2	2.4
12450	0	0.0	2.8
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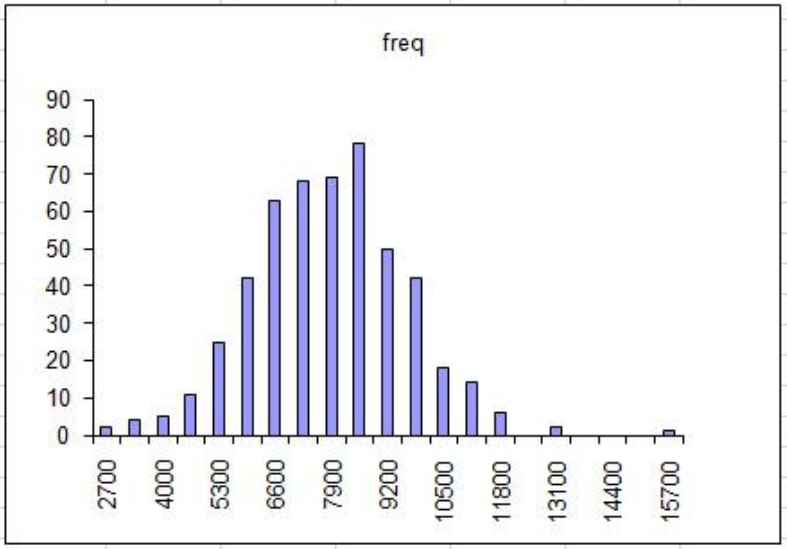
15050	0	0.0	4.3
15700	1	0.2	4.7
	500		



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Driver Forecasts

	Prod.Costs	Total Stocks	Non ETF Exc	Consumption	DollarIndex	IndexFunds	HedgeF
Ave	2141	3598	356	4990	70.15	179	6
Stdev	211	474	197	545	9.92	54	8

The Monte Carlo page

This page runs a Monte Carlo simulation of the Copper Price based on the forecast driver inputs.

It gives an estimate of the likely Copper price within the forecast period and the estimated high and low price within this period.

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Driver Forecasts							
	Prod.Costs	Total Stocks	Non ETF Exc	Consumption	DollarIndex	IndexFunds	HedgeF
Ave	2141	3598	356	4990	70.15	179	6
Stdev	211	474	197	545	9.92	54	8

The inputs for the Monte Carlo model are the averages of the Component Driver forecasts and their standard deviations.

BME

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Run

Price	Frequency	%	z
2700	2	0.4	-2.8
3350	4	0.8	-2.4
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4650	11	2.2	-1.7
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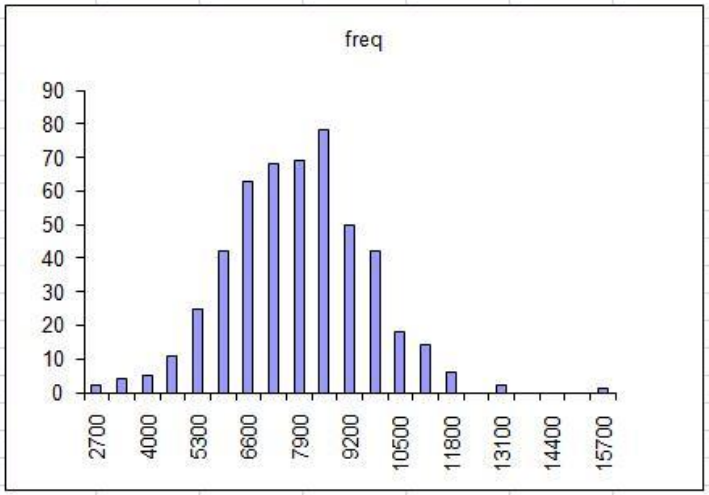
8550	78	15.6	0.6
9200	50	10.0	1.0
9850	42	8.4	1.3
10500	18	3.6	1.7
11150	14	2.8	2.1
11800	6	1.2	2.4
12450	0	0.0	2.8
13100	2	0.4	3.2
13750	0	0.0	3.6
14400	0	0.0	3.9
15050	0	0.0	4.3
15700	1	0.2	4.7



Charts showing the modelled Monte Carlo Copper Price distribution over the forecast period.

Table showing the modelled Monte Carlo Copper Price distribution over the forecast period.

The Output Chart and table show the modelled Copper Price distribution over the forecast period.

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Results Summary	
Mean	7534
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A statistical summary for the Monte Carlo simulation model.

A statistical summary for the Monte Carlo simulation is also provided.