

Multiple Regression for Mean USD/CAD rate

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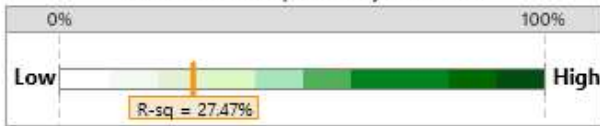
Summary Report

Is there a relationship between Y and the X variables?



The relationship between Y and the X variables in the model is statistically significant ($p < 0.10$).

% of variation explained by the model



27.47% of the variation in Y can be explained by the regression model.

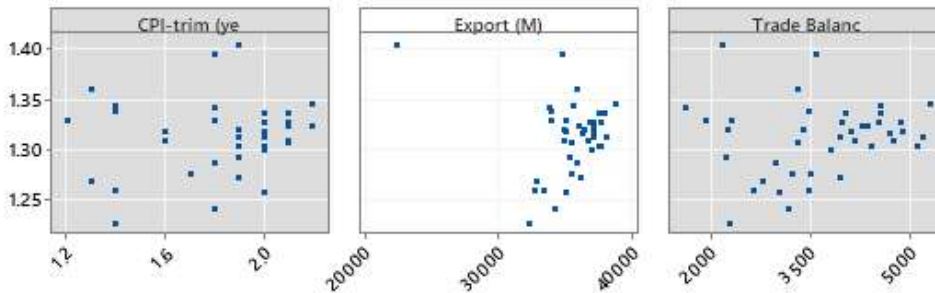
Comments

The following terms are in the fitted equation that models the relationship between Y and the X variables:

X2: Export (M)
 X2^2

If the model fits the data well, this equation can be used to predict Mean USD/CAD for specific values of the X variables, or find the settings for the X variables that correspond to a desired value or range of values for Mean USD/CAD.

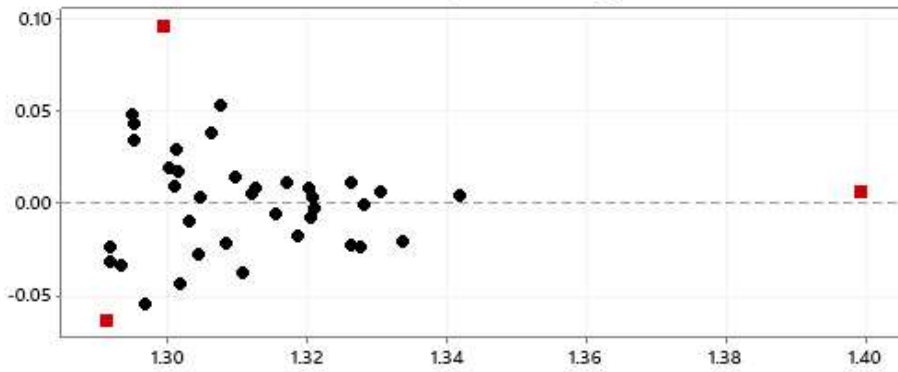
Mean USD/CAD vs X Variables



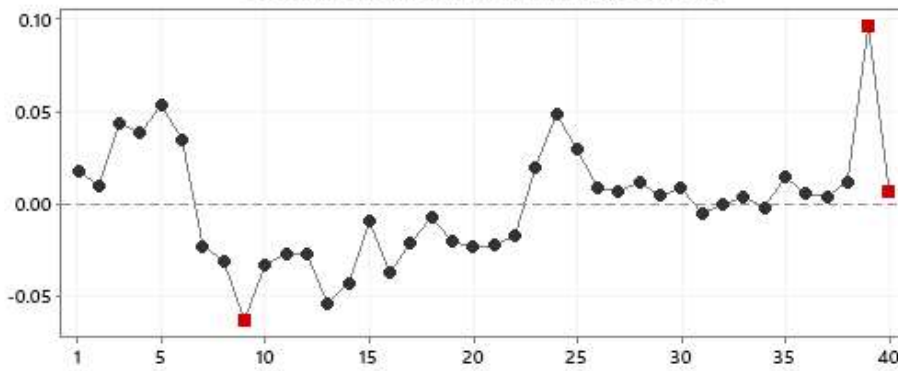
A gray background represents an X variable not in the model.

Multiple Regression for Mean USD/CAD Diagnostic Report

Residuals vs Fitted Values
Look for nonrandom patterns and large residuals.



Residuals vs Observation Order
Look for nonrandom patterns and large residuals.

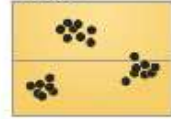


Look for these patterns:

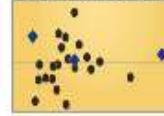
Large Residuals



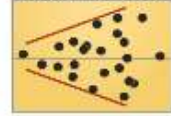
Clusters



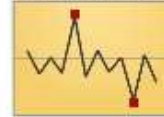
Unusual X Values



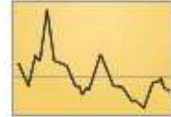
Unequal Variation



Large Residuals



Cyclical



Trend



Shifts



Multiple Regression for Mean USD/CAD Model Building Report

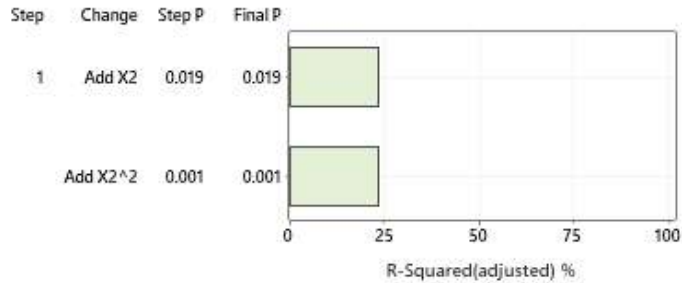
X1: CPI-trim (ye) X2: Export (M) X3: Trade Balanc

Final Model Equation

$$\text{Mean USD/CAD rate} = 2.468 - 0.000073 X_2 + 0.000000 X_2^2$$

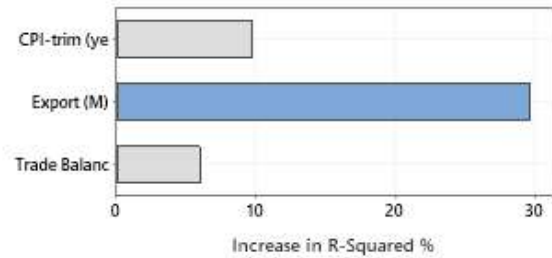
Model Building Sequence

Displays the order in which terms were added or removed.



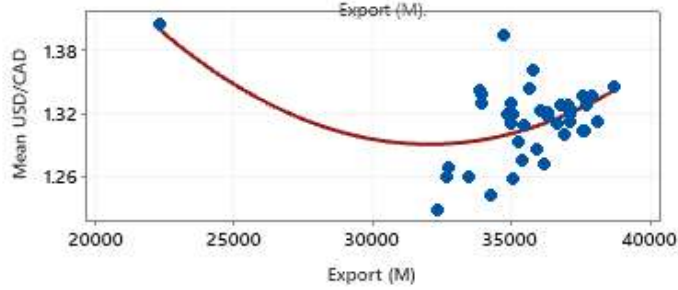
Incremental Impact of X Variables

Long bars represent Xs that contribute the most new information to the model.



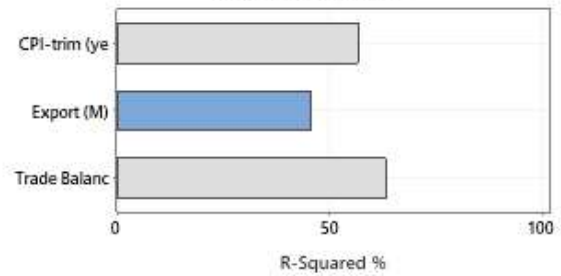
Fitted Line Plot for Export (M)

Shows the relationship between Mean USD/CAD and Export (M).



Each X Regressed on All Other Terms

Gray bars represent Xs that do not help explain additional variation in Y.



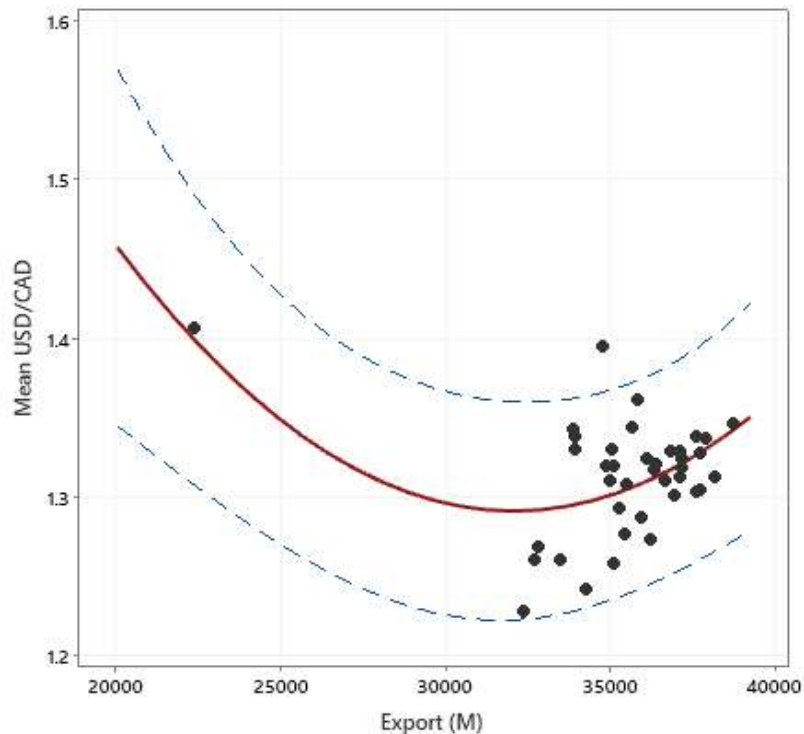
A gray bar represents an X variable not in the model.

Multiple Regression for Mean USD/CAD Prediction and Optimization Report

Y: Mean USD/CAD
X: Export (M)

Prediction Plot




The red fitted line shows the predicted Y for any X value. The blue dashed lines show the 95% prediction interval.



X	Predicted Y	95% PI
20000	1.4571	(1.3450, 1.5692)
20800	1.4358	(1.3318, 1.5397)
21600	1.4159	(1.3190, 1.5128)
22400	1.3975	(1.3066, 1.4884)
23200	1.3806	(1.2946, 1.4666)
24000	1.3651	(1.2831, 1.4471)
24800	1.3511	(1.2723, 1.4300)
25600	1.3386	(1.2622, 1.4150)
26400	1.3275	(1.2529, 1.4021)
27200	1.3179	(1.2447, 1.3912)
28000	1.3098	(1.2377, 1.3820)
28800	1.3032	(1.2318, 1.3745)
29600	1.2980	(1.2274, 1.3686)
30400	1.2943	(1.2243, 1.3642)
31200	1.2920	(1.2228, 1.3613)
32000	1.2912	(1.2227, 1.3597)
32800	1.2919	(1.2242, 1.3597)
33600	1.2941	(1.2270, 1.3611)
34400	1.2977	(1.2313, 1.3640)
35200	1.3028	(1.2369, 1.3687)
36000	1.3093	(1.2436, 1.3750)
36800	1.3174	(1.2514, 1.3834)
37600	1.3269	(1.2599, 1.3938)
38400	1.3378	(1.2691, 1.4065)
39200	1.3502	(1.2788, 1.4217)

To obtain additional predicted values, right-click the graph and use the crosshairs tool.

Multiple Regression for Mean USD/CAD Report Card

Check	Status	Description
Amount of Data		Your sample is large enough ($n = 40$) to obtain a precise estimate of the strength of the relationship.
Unusual Data		<ul style="list-style-type: none">• Large residuals: 3 data points have large residuals and are not well fit by the equation. These points are marked in red on the Diagnostic Report.• Unusual X values: One data point has an unusual X value, which can strongly influence the model equation. This point is marked in red on the Diagnostic Report and is in row 40 of the worksheet. You can hover over a point or use Minitab's brushing feature to identify the worksheet rows. Because unusual data can have a strong influence on the results, try to identify the cause for their unusual nature. Correct any data entry or measurement errors. Consider removing data that are associated with special causes and redoing the analysis.
Normality		Because you have at least 15 data points, normality is not an issue. If the number of data points is small and the residuals are not normally distributed, the p-values used to determine whether there is a significant relationship between the Xs and Y may not be accurate.