₹ 200 ISSN - 2249-555X

Volume : 1 Issue : 6 March 2012



Journal for All Subjects

www.ijar.in

Listed in International ISSN Directory, Paris.

ISSN - 2249-555X



Indian Journal of Applied Research

Journal for All Subjects

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Volume : 1 | Issue : 6 | March 2012 ISSN - 2249-555X

Research Paper International Trade



Exchange Rate Forecasting

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ABSTRACT

The forecasting of US$ vs. CANADIAN$ is done with the help of Technical and Fundamental Analysis. Under Technical Analysis the study of past trends are done and based on which the upcoming trends are forecasted. The momentum study is also done for Canadian dollar. Under fundamental analysis the support for technical is provided with the help of understated variables. The variables taken were the basic variables that affect the exchange rate solely. The variables which will have an effect on the exchange rate are decided as GDP, exports, imports, inflation, foreign exchange reserves, current account balance and trade balance. These variables are used to forecast the exchange rate. The data is collected from 2001 to 2009 for the above variables to forecast the exchange rate for 2010. Since multi-colinearity was found between the variable it was decided to do factor analysis before running regression.

The results obtained were totally in line with the forecast of Bank of Canada making the study done a success.

The final equation obtained which is used for forecasting after the regression analysis is:

Y = 0.804 + factor1 (0.32) - factor2 (0.110)

Where,

Factor 1: Inflation, Current Account Balance, Exports.

Factor 2: Imports, Forex Reserves, GDP, Trade Balance.

KEYWORDS : Parity Conditions, Moving Averages,Factor Analysis

1.INTRODUCTION

The research paper captures the movements of the Canadian Dollar with respect to the fluctuations in the American Dollar. The researchers study the historical data pertaining to the movements of these two currencies and attempt to predict the future exchange rates.

The Canadian dollar (sign: $; code: CAD) is the currency of Canada. It is normally abbreviated with the Dollar/Peso sign $, or C$ to distinguish it from other dollar-denominated currencies. It is divided into 100 cents. As of 2007, the Canadian dollar was the 7th most traded currency in the world, behind the US dollar, the euro, the yen, the pound sterling, the Swiss franc and the Australian dollar.

The United States dollar (sign: $; code: USD) is the official currency of the United States of America. The U.S. dollar is normally abbreviated as the dollar sign, $, or as USD or US$ to distinguish it from other dollar-denominated currencies and from others that use the $ symbol. It is divided into 100 cents.

The U.S. dollar is the currency most used in international transactions and is one of the world's reserve currencies. Several countries use it as their official currency, in many others it is the de facto currency, and it is also used as the sole currency in some British Overseas Territories.

Since the dollar is so powerful and important, it becomes imperative to study the correlation between it and other countries' currencies. Also, since exchange tend to fluctuate frequently and significantly, some model for predicting future exchange rates between the home currency and the American Dollar is needed.

There are many models in use that fulfill our purpose of predicting the exchange rate between Canadian Dollar and the American Dollar. We begin by collecting previous years' data for the exchange rates between the two currencies, apply statistical techniques and project the trends thus found into the future to predict future exchange rates.

1.1 METHODOLOGY

The major determinants of foreign exchange rate forecasting and determination are:

1) Parity Conditions: PPP is the oldest and the most widely followed for exchange rate determination. It takes into consideration the relative inflation rates and interest rates.
2) Balance of Payment Approach: It takes into account the current account balance, FDI and exchange rate regimes.
3) Asset Market Approach: It argues that exchange rates are determined by supply and demand of wide variety of assets. Shifts in demand and supply alter exchange rates.

The good of all these techniques can be achieved using Technical and Fundamental Approaches.

The forecasting of US$ vs. CANADIAN$ is done with the help of Technical and Fundamental Analysis. Under Technical Analysis the study of past trends are done and based on which the upcoming trends are forecasted. The momentum study is also done for Canadian dollar. Under fundamental analysis the support for technical is provided with the help of understated variables. The variables taken were the basic variables that affect the exchange rate solely. The variables which will have an effect on the exchange rate are decided as GDP, exports, imports, inflation, foreign exchange reserves, current account balance and trade balance. These variables are used to forecast the exchange rate. We have collected the data from 2001 to 2009 for the above variables to forecast the exchange rate for 2010. Since we found multi-collinearity between the variable we decided to do factor analysis before running regression. After making major factors from a number of variables regression analysis was done. Regression analysis gave an equation that can be further used to forecast Canadian dollar rate wrt US dollar.

2.TECHNICAL ANALYSIS

2.1MOVING AVERAGE METHOD

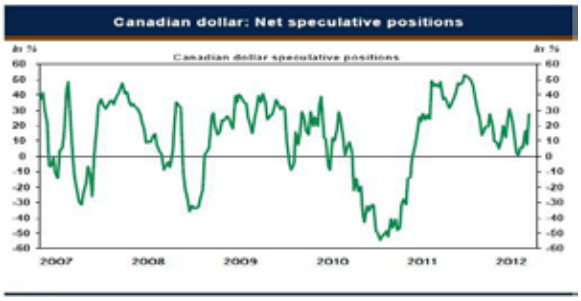
A moving average is a method of calculating the average value of a security's price, or indicator, over a period of time. The term "moving" implies, and rightly so, that the average changes or moves. When calculating a moving average, a mathematical analysis of the security's average value over a predetermined time period is made. As the securities price changes over time, its average price moves up or down.



The point where 5 day moving average cuts 20 day moving average from below is a sign of buying Canadian dollar i.e.







2.2ANALYSIS OF TECHNICAL APPROACH:

The Canadian dollar is still facing headwinds. The U.S. slowdown's impact on Canadian exports continues to have adverse affects on the currency. However, record oil prices have kept the Canadian dollar safe from depreciation. The currency has been able to stay close to parity over the last few weeks.

1) On a market basis, the Canadian dollar should dip slightly in the next few weeks. The correction that has been taking place since November 2007 has not brought the currency down low enough under its 200-day trend for the Canadian dollar to begin to rise.

2) Its momentum is nearly flat and speculative positions show that the market does not have much enthusiasm for the currency right now.

3) With the U.S. Federal Reserve slightly and subtly opening the door to a future pause in the monetary easing cycle, the Canadian dollar's softness is in part a reflection of the market's expectations for Canadian interest rates. On May 1, the Bank of Canada (BoC) reiterated before the Senate Standing Committee on Banking, Trade and Commerce that the deterioration of the economic and financial situation in the United States would have direct outcomes on the Canadian economy. Exports should pull back and slow growth considerably in 2008. The turbulence in global financial markets will continue to have repercussions on the cost and availability of credit. Business and consumer confidence in Canada should pull back slightly. Under these conditions, the BoC will probably lower interest rates once again to hit the medium-term inflation target.

4) High oil prices continue to provide the currency with good support, but at nearly US$125 a barrel, the effects are mixed. This probably reflects an expected downturn in raw material prices from levels that are clearly higher than values dictated by fundamentals. It is our opinion that the greenback's downward trend, speculation on the markets, and geopolitical risks has pushed the price of oil close to $35 over equilibrium.

2.3 FORECAST BASED ON TECHNICAL ANALYSIS

In the short term, the Canadian dollar's evolution will continue to depend on the impact of the U.S. slowdown on the Canadian economy and interest rate expectations. In our opinion, the currency should dip slightly in the first months of the summer. In the longer term, we remain optimistic. The low of US$0.97 would seem like a good point of entry for a return to an upward trend for the currency.

3FUNDAMENTAL ANALYSIS

3.1FACTOR ANALYSIS

The data collected for the 7 variables, which determine the exchange rate are subjected to factor analysis to group them into factors. Factor analysis is a general class of procedures primarily used for data reduction and summarization. In market research there may be large number of variables, most of which are correlated and which must be reduced to a manageable level. The detail description of factor analysis is given below.

Table 1:KMO and Bartlett's Test:

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.487
Bartlett's Test of Sphericity	Approx. Chi-Square	84.727
	df	28
	Sig.	.000

Table 1

KMO TEST

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy is a statistic which indicates the proportion of variance in your variables which is common variance, i.e. which might be caused by underlying factors. KMO value less than 0.5 indicate that the results of the factor analysis will not be useful. The value 0.487 is significant for accepting results of factor analysis.

BARTLETT'S TEST

Bartlett's test of sphericity indicates whether your correlation matrix is an identity matrix, which would indicate that your

variables are unrelated

Nullhypothesis: The null hypothesis in the Bartlett's test is that a variable is correlated only to itself (r=1) and uncorrelated to others (r=0) i.e. the correlation matrix is an Identity matrix

Alternate hypothesis: The variables are correlated to each other

Calculated value: 84.721
Analysis: The null hypothesis is rejected. The test is significant with its significance value being less than 0.05

COMMUNALITIES
Communalities indicate the amount of variance in each variable that is accounted for. Initial communalities are estimates of the variance in each variable accounted for by all components or factors. Extraction communalities are estimates of the variance in each variable accounted for by the factors (or components) in the factor solution. Small values in extraction communalities indicate variables that do not fit well with the factor solution, and should possibly be dropped from the analysis.

	Initial	Extraction
imports	1.000	.806
inflation	1.000	.903
forex reserves	1.000	.620
current BL	1.000	.817
GDP	1.000	.905
Exports	1.000	.929
trade Balance	1.000	.705

Table 2

Principle Component Analysis works on the assumption that all the variance is common therefore before extraction all communalities are 1.After extraction table shows shared variance of each variable in all the factors.

TOTAL VARIANCE EXPLAINED

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.202	45.742	45.742	3.202	45.742	45.742	3.202	45.741	45.741
2	2.483	35.477	81.219	2.483	35.477	81.219	2.483	35.477	81.219
3	.660	9.427	90.646						
4	.315	4.503	95.149						
5	.281	4.011	99.160						
6	.039	.555	99.714						
7	.020	.286	100.000						

Table 3

FACTOR COMPONENT
The initial number of factors is the same as the number of variables used in the factor analysis. However, not all 7 factors will be retained. In this project, only the first two factors will be retained.

INITIAL EIGEN VALUES
Eigen values are the variances of the factors. Because we conducted our factor analysis on the correlation matrix, the variables are standardized, which means that the each variable has a variance of 1, and the total variance is equal to the number of variables used in the analysis, in this case, 7.

TOTAL
This column contains the 7 values. The first factor will always account for the most variance (and hence have the highest Eigen value), and the next factor will account for as much of the left over variance as it can, and so on. Hence, each successive factor will account for less and less variance.

% OF VARIANCE
This column contains the percent of total variance accounted for by each factor.

DETERMINING THE NUMBER OF FACTORS
In this approach, only factors with Eigen values more than 1 are retained. Factors with variance less than 1 are no better than a single variable, because, due to standardization, each variable has a variance of 1. If numbers of variables are less than 20 this approach will result in a conservative number of factors. Here the numbers of variables are 7 so to select the number of factors, Eigen value method is the best method.

Rotated Component Matrix

	Component	
	1	2
imports	.583	-.683
inflation	-.896	-.317
forex reserves	.453	.644
current BL	.889	-.165
GDP	-.274	.911
Exports	.964	.016
trade Balance	.247	.803

Table 4

The rotated component matrix shown above gives the distribution of the 7 variables in to different 2 factors.

The distribution the 7 variables into factors are given in below table.

Factor No:	Variables in the factor
1	1. Inflation 2. Current Account Balance 3. Exports
2	1. Imports 2. Forex Reserves 3. GDP 4. Trade Balance

Table 5

So these are the four factors which are responsible for financial exclusion of the sample.

Regression:
After grouping the variables into two factors regression analysis has been done taking the factor scores of the two factors as independent variables and exchange rate between (USD/CAD) the two countries as dependent variable. The factor scores are given below:

Factor 1	Factor 2
-0.16437	1.19191
-0.2994	1.06712
-0.48702	0.73116
-0.31808	0.64757
-0.63596	-0.18737
-0.6677	-0.89383
-0.067	-1.4782
0.05355	-1.20481
2.58599	0.12645

Table 6

The model summary table below shows that the R square value is 0.948 which shows that the independent variables are significantly correlated to dependent variables.

Model Summary

Model	R	R Square	Adjusted	Std. Error of	Change Statistics				
					R Square	F Change	df1	df2	Sig. F Change
1	.974	.948	.931	.0309078	.948	54.738	2	6	.000

Table 7

The coefficients tables below shows that both the factors are significant since the significance values are less than <0.05. Hence both the factors can be used for forecasting the future exchange rate.

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant) REGR factor score	.804	.010		78.005	.000
1 for analysis 1 REGR factor score	.032	.011	.273	2.930	.026
2 for analysis 1	-.110	.011	-.935	-10.045	.000

Table 8

The final equation which is used for forecasting after the regression analysis is given below:

Y = 0.804 + factor1 (0.32) - factor2 (0.110)

4.FINDINGS
After standardizing 9 year data ratios were calculated. These ratios were the input to factor analysis.

Factor analysis gave two major factors clustering all variables into said two factors:

Factor No:	Variables in the factor
1	4. Inflation 5. Current Account Balance 6. Exports
2	5. Imports 6. Forex Reserves 7. GDP 8. Trade Balance

The distribution of variables is done by factor analysis on the basis of component matrix.

After grouping the variables into two factors regression analysis has been done taking the factor scores of the two factors as independent variables and exchange rate between (USD/CAD) the two countries as dependent variable. The factor scores are given below:

Factor 1	Factor 2
-0.16437	1.19191
-0.2994	1.06712
-0.48702	0.73116
-0.31808	0.64757
-0.63596	-0.18737
-0.6677	-0.89383
-0.067	-1.4782
0.05355	-1.20481
2.58599	0.12645

The model summary table below shows that the R square value is 0.948 which shows that the independent variables are significantly correlated to dependent variables.

Model Summary

Model	R	R Square	Adjusted	Std. Error of	Change Statistics				
					R Square	F Change	df1	df2	Sig. F Change
1	.974[a]	.948	.931	.0309078	.948	54.738	2	6	.000

The coefficients tables below shows that both the factors are significant since the significance values are less than <0.05. Hence both the factors can be used for forecasting the future exchange rate.

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant) REGR factor score	.804	.010		78.005	.000
1 for analysis 1 REGR factor score	.032	.011	.273	2.930	.026
2 for analysis 1	-.110	.011	-.935	-10.045	.000

a. Dependent Variable: USD/ CAD

The final equation which is used for forecasting after the regression analysis is given below:

Y = 0.804 + factor1 (0.32) - factor2 (0.110)

- Forecasts by Equation
  - 2010- 0.8992
  - 2011- 0.9012
  - 2012- 0.9024
- Forecast by Bank of Canada
  - 2010- 0.8920
  - 2011- 0.8977
  - 2012- 0.8991

5.CONCLUSIONS

The two factors comprising seven variables were able to capture the movements of Canadian Dollar vs US Dollar. The error component was only 0.807% (assuming the forecast by Bank of Canada exact and accurate).

REFERENCES

1) http://www.exchangerateforecast.com/ | 2) http://www.economywatch.com/exchange-rate/current-exchange-forecast.html | 3) Exchange rates forecasting techniques by Jeffery A Frankal. | 4) Forecasting the Chinese Yuan-US Dollar Exchange Rate under the New Chinese Exchange Rate Regime by Imad A. Moosa (Department of Accounting and Finance, Monash University, Australia) | 5) http://www.dailyfx.com/forex/fundamental/forecast/monthly/eur-usd/2010-04-07-0842-EUR___US_Dollar_Exchange.html?dfxedition=fxcm | 6) http://books.google.co.in/books?id=Aj5u0-wQ54sC&printsec=frontcover&dq=exchange+rate+forecasting&source=bl&ots=fthlyD8xJc&sig=t4uU8GvDO8NqM2iW4QdaVQfkbYs&hl=en&ei=gVByTLTnG87IcaHapJgN&sa=X&oi=book_result&ct=result&resnum=6&ved=0CDsQ6AEwBQ#v=onepage&q&f=false

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Printed at Unique Offset, Novatsing Rupam Estate, Opp. Abhay Estate, Tavdipura, Shahibaug, Ahmedabad