

4 Ways to Forecast Currency Exchange Rates

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Whether you are a business or a trader, having an [exchange rate](#) forecast to make informed decisions about the direction of exchange rates can be very important to minimize risks and maximize returns.

There are numerous methods of [forecasting](#) exchange rates, as none have been shown to be superior to any other. This speaks to the difficulty of generating a quality forecast. However, this article will introduce you to four of the most popular methods for forecasting exchange rates.

Forecasting Exchange Rates With Purchasing Power Parity (PPP)

The [purchasing power parity](#) (PPP) is perhaps the most popular method due to its indoctrination in most economic textbooks. The PPP forecasting approach is based off of the theoretical [Law of One Price](#), which states that identical goods in different countries should have identical prices.

For example, this law argues that a pencil in Canada should be the same price as a pencil in the U.S. after taking into account the exchange rate and excluding transaction and shipping costs. In other words, there should be no [arbitrage](#) opportunity for someone to buy inexpensive pencils in one country and sell them in another for a profit.

The PPP approach forecasts that the exchange rate will change to offset [price changes](#) due to [inflation](#) based on this underlying principle. To use the above example, suppose that prices of pencils in the U.S. are expected to increase by 4% over the next year while prices in Canada are expected to rise by only 2%. The inflation differential between the two countries is:

$$4\% - 2\% = 2\%$$

This means that prices of pencils in the U.S. are expected to rise faster relative to prices in Canada. In this situation, the [purchasing power](#) parity approach would forecast that the U.S. dollar would have to depreciate by approximately 2% to keep pencil prices between both countries relatively equal. So, if the current exchange rate was 90 cents U.S. per one Canadian dollar, then the PPP would forecast an exchange rate of:

$$(1 + 0.02) \times (\text{US\$0.90 per CA\$1}) = \text{US\$0.918 per CA\$1}$$

Meaning it would now take 91.8 cents U.S. to buy one Canadian dollar.

One of the most well-known applications of the PPP method is illustrated by the [Big Mac Index](#), compiled and published by *The Economist*. This light-hearted index attempts to measure whether a currency is [undervalued](#) or [overvalued](#) based on the price of Big Macs in various countries. Since Big Macs are nearly universal in all the countries they are sold, a comparison of their prices serves as the basis for the index. (To learn more, check out "[The Big Mac Index: Food for Thought](#).")

Relative Economic Strength Approach for Forecasting Exchange Rates

As the name may suggest, the relative economic strength approach looks at the strength of [economic growth](#) in different countries in order to forecast the direction of exchange rates. The rationale behind this approach is based on the idea that a strong economic environment and potentially high growth is more likely to attract investments from foreign investors. And, in order to purchase investments in the desired country, an investor would have to purchase the country's currency – creating increased demand that should cause the currency to appreciate.

This approach doesn't just look at the relative economic strength between countries. It takes a more general view and looks at all investment flows. For instance, another factor that can draw investors to a certain country is [interest rates](#). High interest rates will attract investors looking for the highest yield on their investments, causing demand for the currency to increase, which again would result in an appreciation of the currency.

Conversely, low interest rates can also sometimes induce investors to avoid investing in a particular country or even borrow that country's currency at low interest rates to fund other

investments. Many investors did this with the Japanese yen when the interest rates in Japan were at extreme lows. This strategy is commonly known as the [carry-trade](#). (Learn more about the carry trade in "[Profiting From Carry Trade Candidates](#).")

The relative economic strength method doesn't forecast what the exchange rate should be, unlike the PPP approach. Rather, this approach gives the investor a general sense of whether a currency is going to appreciate or depreciate and an overall feel for the strength of the movement. This approach is typically used in combination with other forecasting methods to produce a more complete result.

Econometric Models of Forecasting Exchange Rates

Another common method used to forecast exchange rates involves gathering factors that you believe affect currency movements and creating a model that relates these factors to the exchange rate. The factors used in [econometric](#) models are typically based on economic theory, but any variable can be added if it is believed to significantly influence the exchange rate.

As an example, suppose that a forecaster for a Canadian company has been tasked with forecasting the USD/CAD exchange rate over the next year. They believe an econometric model would be a good method to use and has researched factors they think affect the exchange rate. From their research and analysis, they conclude the factors that are most influential are: the [interest rate differential](#) between the U.S. and Canada (INT), the difference in GDP [growth rates](#) (GDP), and income growth rate (IGR) differences between the two countries. The econometric model they come up with is shown as:

$$\text{USD/CAD (1-year)} = z + a(\text{INT}) + b(\text{GDP}) + c(\text{IGR})$$

After the model is made, the variables INT, GDP and IGR can be plugged in to generate a forecast. The coefficients a, b and c will determine how much a certain factor affects the exchange rate and direction of the effect (whether it is positive or negative). This method is

probably the most complex and time-consuming approach, but once the model is built, new data can be easily acquired and plugged in to generate quick forecasts.

Forecasting Exchange Rates with a Time Series Model

The last approach we'll introduce you to is the [time series](#) model. This method is purely technical in nature and is not based on any economic theory. One of the more popular time series approaches is called the [autoregressive moving average](#) (ARMA) process. The rationale for using this method is based on the idea that past behavior and price patterns can be used to predict future price behavior and patterns. All you need to use this approach is a time series of data that can then be entered into a computer program to estimate the parameters and create a model for you.

The Bottom Line

Forecasting exchange rates is a very difficult task, and it is for this reason that many companies and investors simply [hedge](#) their [currency risk](#). However, those who see value in forecasting exchange rates and want to understand the factors that affect their movements can use these four approaches as a good place to begin their research. (Learn more about currencies and [forex trading](#) in "[Top 10 Forex Trading Rules](#).")