

EVALUATION OF MODELS FOR PREDICTING THE
AVERAGE MONTHLY EURO VERSUS NORWEGIAN
KRONE EXCHANGE RATE FROM FINANCIAL AND
COMMODITY INFORMATION

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Chapter 1

Introduction

Trading started from the very beginning of human civilization. People used to trade with goods at the time but with advancement of development people started using gold, silver and finally money. The process is not restricted within a country. Some countries are powerful and some are not so as their currencies. Currency of another country becomes essential to buy things from that country. Here comes the role of exchange rate. Buying powerful currencies requires large sum of weak currencies. All those economic activities that exist between countries create demand and supply of the currencies of those countries which consequently determine the exchange rate. The economic activities between countries is also called the balance of payment. Thus the balance of payment captures all the demand and supply of foreign currency (Fang and Kwong, 1991). When the domestic demand for foreign currency exceeds the foreign demand of domestic currency i.e. a deficit in the balance of payment, the domestic currency depreciate (*Balance of Payments Deficits and Surpluses*).

Any international trade is conducted through more than one currencies. Participants in the international trade require to exchange their currency which is performed by foreign exchange market. “The foreign exchange market (ForEx) is the mechanism that brings together buyers and sellers of different currencies” (Appleyard, 2014).

1.0.1 The Foreign Exchange Market (Forex)

Chapter 2

Data and Material

This thesis attempts to predict the dynamics of Exchange Rate through Economic and Financial indicators. From these two broad categories, those factors are only considered which are believed to be useful to understand the exchange rate dynamics.

2.1 Norwegian Krone (NOK)

After introduction of Krone in April 1975 (*Brief History Of Norges Bank* 2014), Norway was pushed to join the Scandinavian Monetary Union established on 1873 (*Norwegian Kroner* 2014). Although the Union was formally abolished on 1972, Norway decided to keep the names of its currencies. In December 1982, due to heavy speculation, Norges Bank (Central Bank of Norway) decided to fix Norwegian Krone which was floated on 1992 (*Brief History Of Norges Bank* 2014).

Norway has floating exchange rate, i.e. the exchange rate will reflect supply and demand of the currency in the international foreign exchange market. The exchange rate data for NOK/Euro is obtained from Norges Bank; and are middle

rates, i.e. the mid-point between buying and selling rates in the interbank market (*FAQ - Exchange Rates and Foreign Exchange Reserves* 2014).

2.2 The Euro (EUR)

Euro, the official currency of Eurozone, was introduced in 1999 as a virtual currency and later on 2002 as physical.

2.3 Factors influencing Exchange Rate

A floating exchange rate are the reflections of demand and supply of the related currency in money market. The demand and supply depends on various commodity and financial variables.

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Appendix A

Data Description

The variables used in this paper are listed in following table along with the code used for them.

| Code | Description |
|------------------|---|
| Date | Date |
| PerEURO | Exchange Rate of NOK per Euro |
| PerUSD | Exchange Rate of NOK per USD |
| KeyIntRate | Key policy rate (Percent) |
| LoanIntRate | Overnight Lending Rate (Nominal) |
| EuroIntRate | Money market interest rates of Euro area (EA11-2000, EA12-2006, EA13-2007, EA15-2008, EA16-2010, EA17-2013, EA18) |
| CPI | Consumer Price Index (1998=100) |
| OilSpotPrice | Europe Brent Spot Price FOB (NOK per Barrel) |
| ImpOldShip | Imports of elderly ships (NOK million) |
| ImpNewShip | Imports of new ships (NOK million) |
| ImpOilPlat | Imports of oil platforms (NOK million) |
| ImpExShipOilPlat | Imports excl. ships and oil platforms (NOK million) |
| ExpCrudOil | Exports of crude oil (NOK million) |
| ExpNatGas | Exports of natural gas (NOK million) |
| ExpCond | Exports of condensates (NOK million) |
| ExpOldShip | Exports of elderly ships (NOK million) |
| ExpNewShip | Exports of new ships (NOK million) |
| ExpOilPlat | Exports of oil platforms (NOK million) |
| ExpExShipOilPlat | Exports excl. ships and oil platforms (NOK million) |
| TrBal | Trade balance (Total exports - total imports) (NOK million) |

| Code | Description |
|--------------------|--|
| TrBalExShipOilPlat | Trade balance (Exports - imports, both excl. ships and oil platforms) (NOK million) |
| TrBalMland | Trade balance (Mainland exports - imports excl. ships and oil platforms) (NOK million) |
| 1y.var | First Lag Exchange Rate of NOK per Euro |
| 12y.var | Second Lag Exchange Rate of NOK per Euro |
| 1.CPI | First Lag of Consumer Price Index |
| ExcChange | Change status of Exchange Rate (Increase, Decrease and Unchange) |
| Testrain | Test and Train seperation of data |
| season | Seasons |

```
dataDescription<-read.xls(path.expand(
  file.path(dirname(dirname(getwd()))),
    "Datasets", "CompleteDataSet.xlsx")), sheet = 2)
```