

5th session

7th April 2016

Technical Analysis



Neely, C., Weller, P. 2011, Technical analysis in the Foreign Exchange Market, *Federal Reserve Bank of St Louis* WP 2011-001B

- In foreign exchange markets, it is basically used in intradaily transactions.
- Surveys of dealers – almost all use to some extent.

“The trend is your friend.”

- Fundamental Analysis (examination **of the product**) vs Technical Analysis (observation of behaviours)
- Trends – changing attitudes of investors
- Trends - predictability

- It is based on the assumption that the market is inefficient and so it is possible to forecast the behaviour of the foreign exchange rate: the past is used to forecast the future.
Extrapolation.

“History repeats itself.”

- Identification of patterns.

- Signals to sell or to buy based on trends or on more complex rules.
- Extrapolative methods. Charting, mechanical rules.
 - Charting (very subjective – judgement and skill)
 - Peaks and Throughs; Trendline – uptrends, downtrends
 - Mechanical rules
 - Filter rules: produce a buy (sell) signal whenever the exchange rate rises (falls) by more than a given percentage from its most recent low (high).
 - Moving averages
 - Other, more complex mathematical functions.

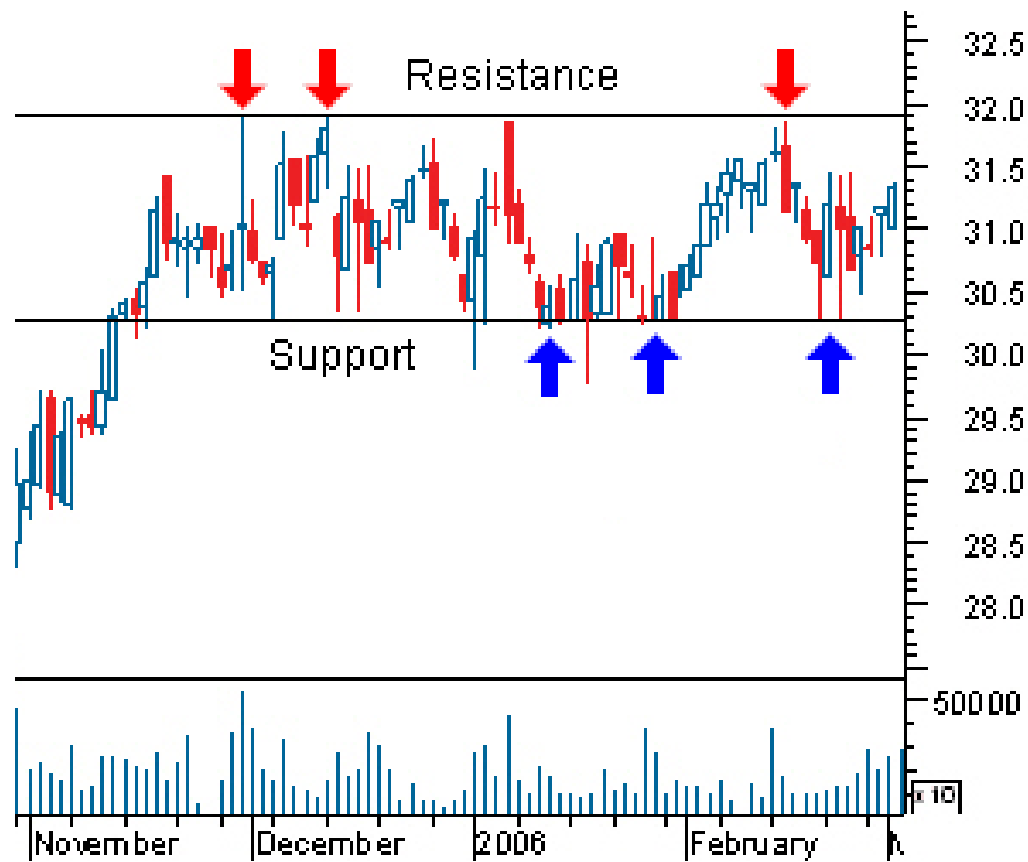


Chart by MetaStock

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- It is considered that the price seldom passes the resistance level or comes under the support level.
- Inversion, once the levels are broken.

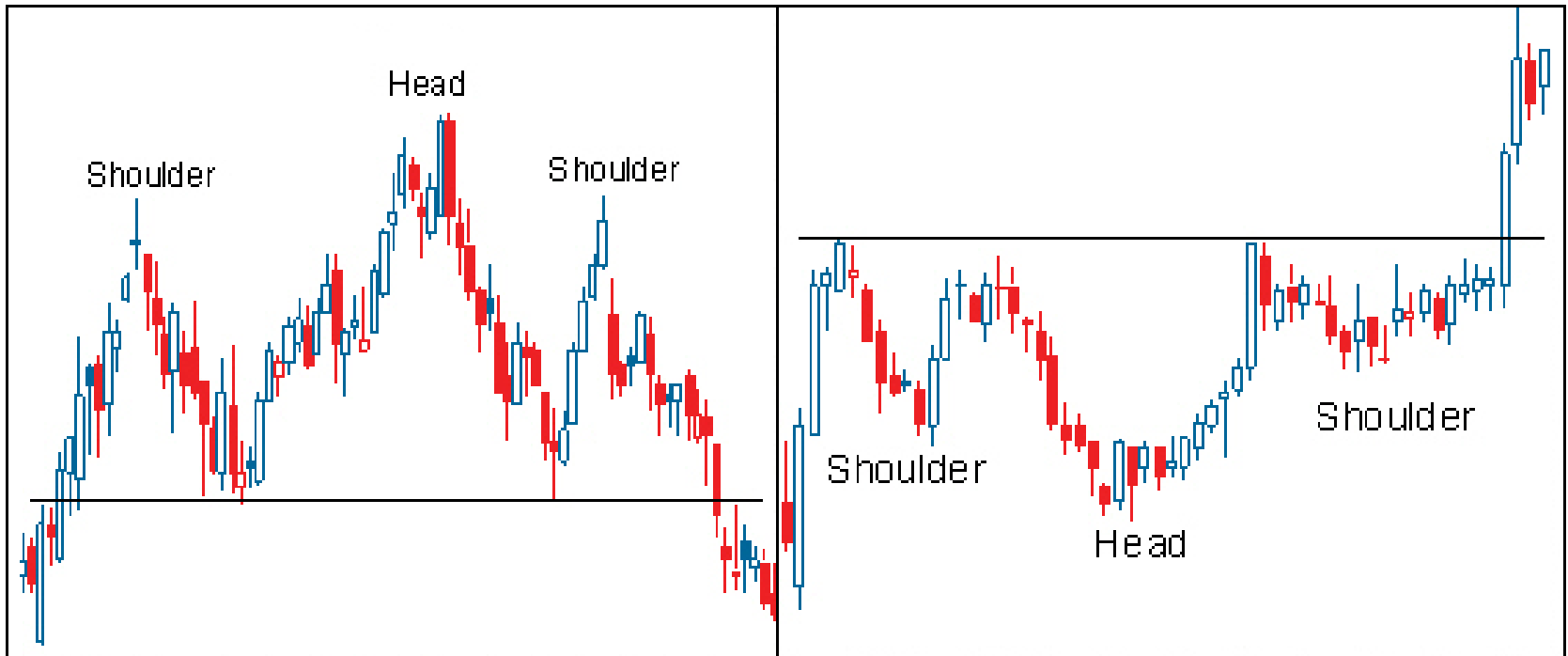


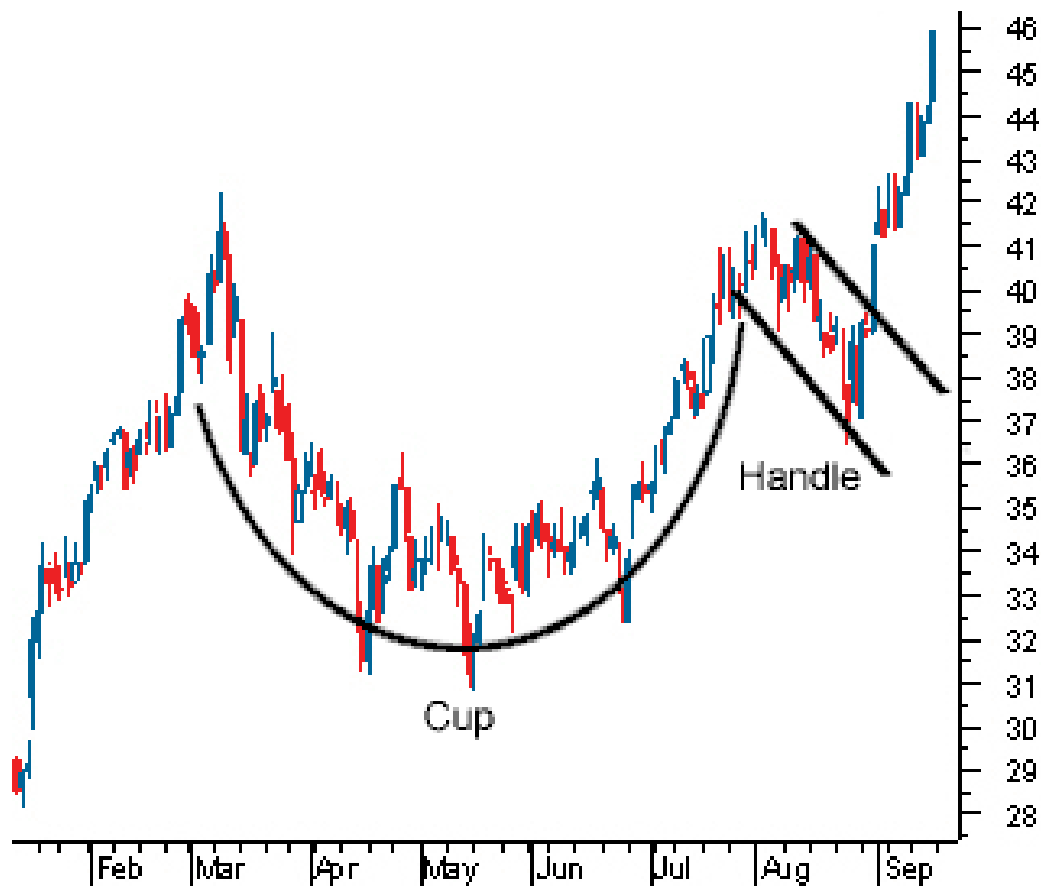
Chart by MetaStock

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- To identify a trend inversion .

Triple top – trend reversal





Source: Chart by MetaStock

- **Continuation pattern**, when crossing the resistance level of the handle. The cup must always precede the handle.

Notice how the short-term average crossing above the long-term average signals the beginning of an uptrend.

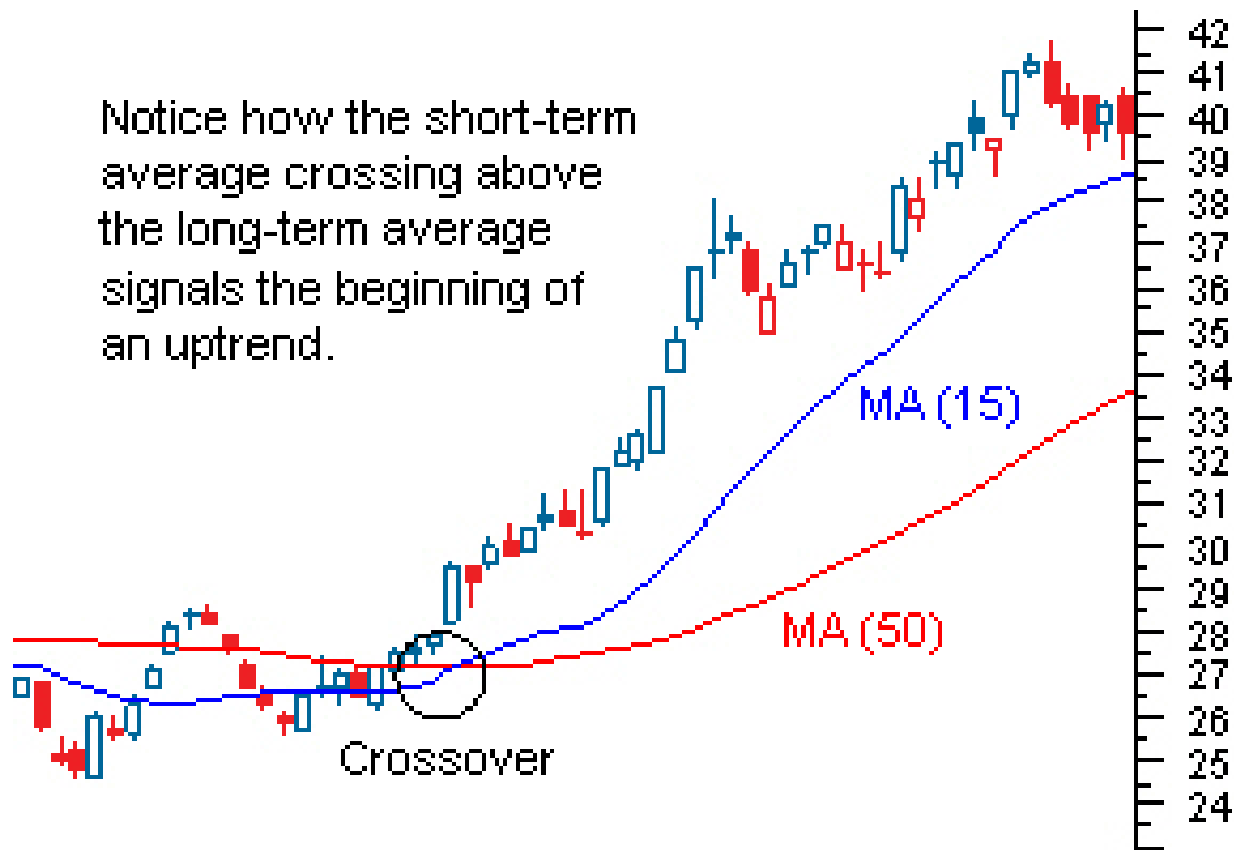


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Bollinger band: considers the volatility in the determination of the resistance and support levels . The bands are 2 standard deviations above and below the Moving Average (of approx. 20 days).

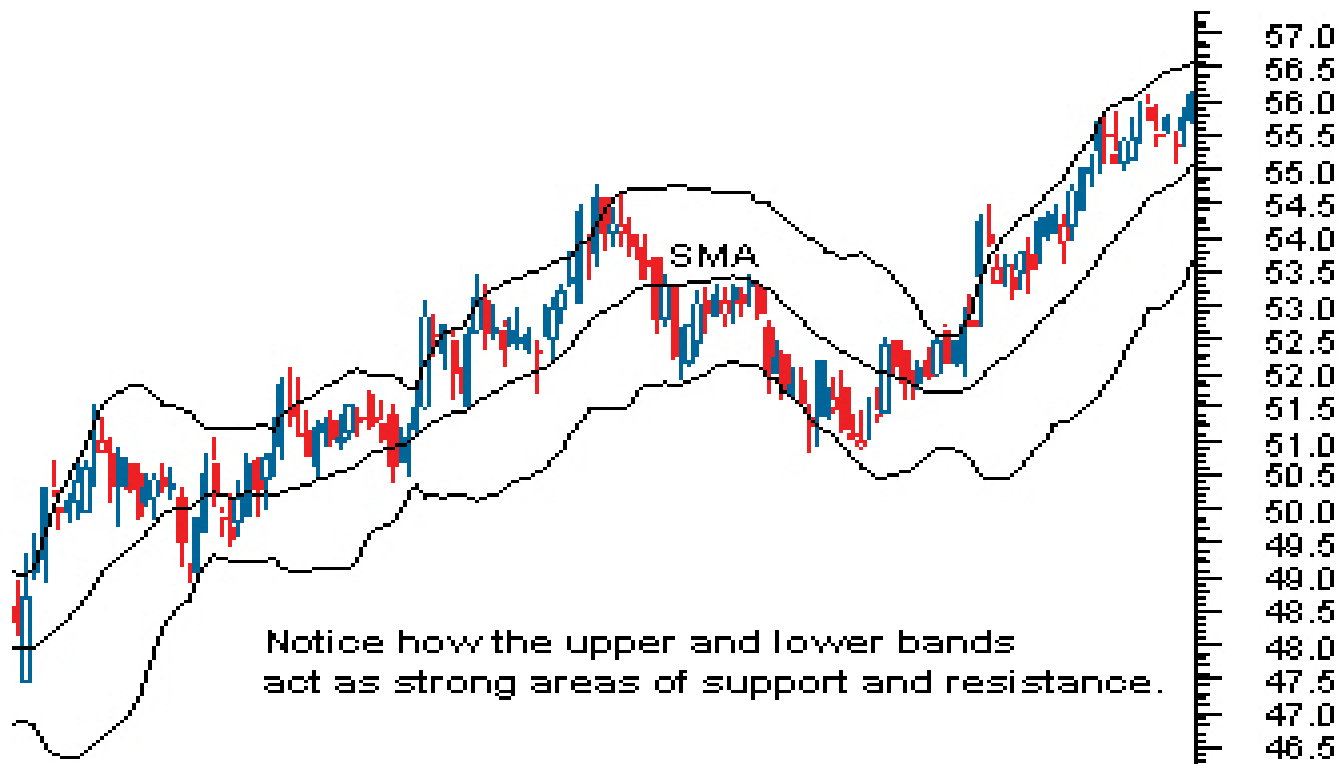


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$$\text{momentum} = \text{close}_{\text{today}} - \text{close}_{N \text{ days ago}}$$

Gives an idea of the intensity of the trend.

Another measure that gives the idea of the intensity of the trend is VOLUME.

technical analysis video

<https://www.youtube.com/watch?v=3Y5DEXr8S-o>

Efficient Markets and Technical Analysis

- Technical Analysts believe they can **beat the market**.
- **Efficient Markets Hypothesis:** Prices reflect all relevant information. They are the market's best guess of the fundamental value.
 - Only news causes prices to move. Markets adjust very rapidly.
 - Trends occur by chance. They cannot be exploited to make money.

- Evaluation of technical trading strategies
 - Mixed results
 - Difficulties:
 - Results may show profitable trading rules on certain datasets, not on others. Negative results ignored but positive results published.
 - Apparently successful trading strategies may indicate that risk is not measured properly, and not necessarily inefficiency

EXCHANGE RATE



Pugel, chap.20, 23, 25

REGIMES

International Monetary System

Establishes the rules by which countries value and exchange their currencies.

- 1870-1913: Gold Standard working well
- 1914-44: Collapse of the Gold Standard
- 1945-70s: Bretton Woods (dollar standard)
- 1970s-present: post-Bretton Woods

- Current exchange rate arrangements

<http://www.imf.org/external/pubs/nft/2014/areaers/ar2014.pdf>

Gold Standard (1870-1913)

- No precise date of origin. Great Britain adopted the gold standard in 1821, Australia in 1852, Canada in 1853, France in 1878, Germany in 1871, the US in 1879.
- The treasury or central bank of each country was required by law to buy and sell gold without limit at the stated price but there were no formal agreements with other nations. No treaty was signed.

Gold Standard (1870-1913)

- A commodity money standard = the value of money is fixed relative to a commodity. The currency can be redeemed any time for the equivalent specie. A gold standard is an example.
- For example, suppose
 - 1 unit of currency A = 0.10 ounce of gold
 - 1 unit of currency B = 0.20 ounce of gold

Then

$S(B/A) = 0.20 \div 0.10 = 2 =$ price of currency B in terms of currency A

Collapse of the Gold Standard (1914-44)

- WWI: the gold standard was abandoned by many countries. Expectation that floating exchange rates regime was temporary, and that countries would soon return to the gold standard.
- 1919: US returned to the gold standard
1925: Britain returned to the gold standard at the parity prevailing before the war, followed by France and Switzerland.

1930's - Great depression

- A period of competitive devaluations: In trying to stimulate domestic economies by increasing exports, country after country devalued.
- FX controls

Bretton Woods

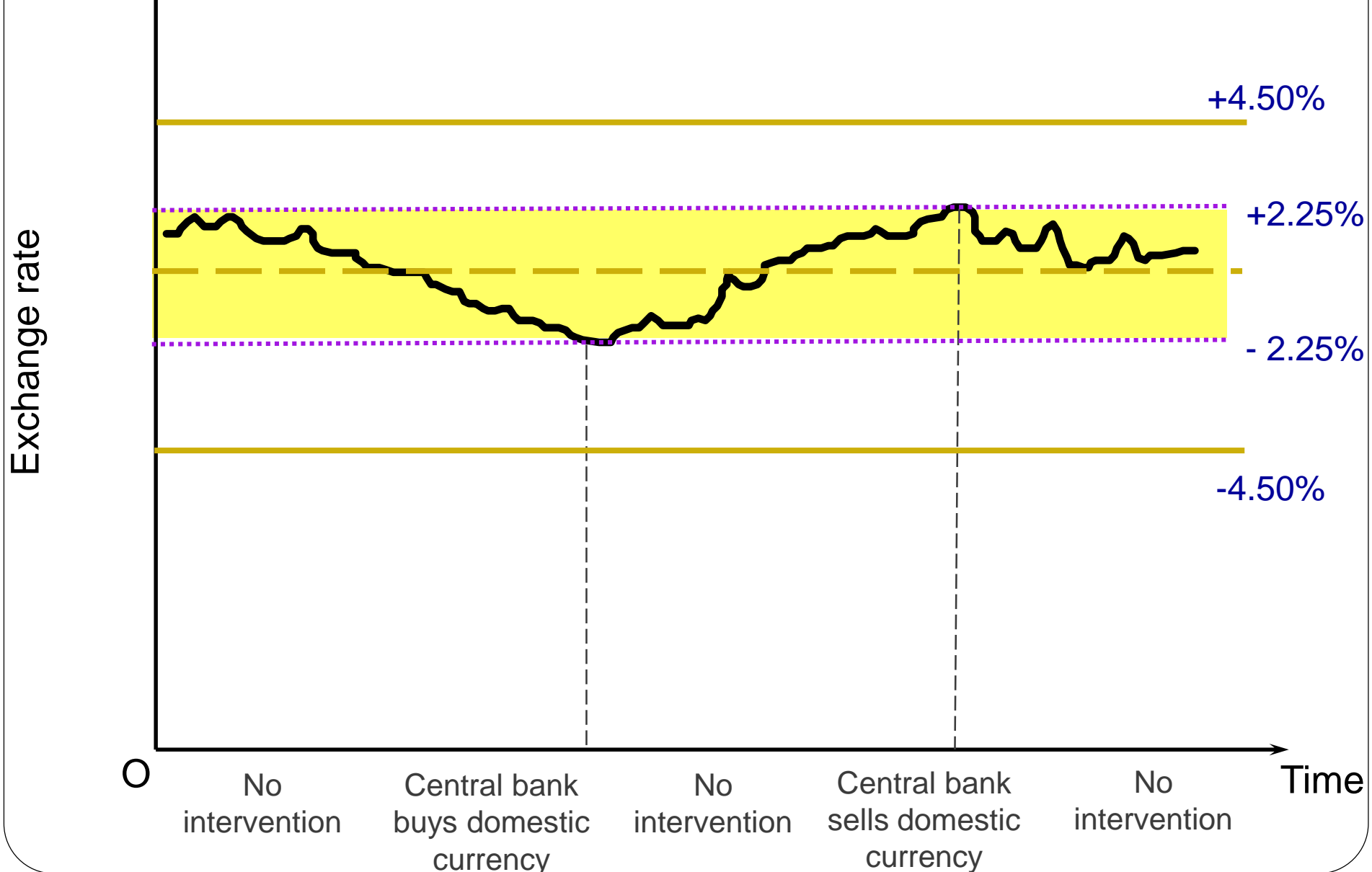
- After WWII countries wanted to rebuild their economies. Problems: inflation, unemployment, political instability.
- 44 countries in Bretton Woods, New Hampshire in 1944.
- Agreement to renew the gold standard on a modified basis: a **dollar-based gold standard**
 - Only the US committed to redeem its currency for gold at the request of a foreign central bank (\$35 an ounce of gold).
 - Other countries pegged the values of currencies to the US dollar. Countries agreed to “support” their exchange rates within + or – 1% of the par values.

- In the 1960's: Dollar seen by the market as “overvalued.” Foreigners become concerned about holding overvalued U.S. dollars at a rate of \$35 an ounce.
- 1971: dollar convertibility into gold was suspended.
December 1971: **Smithsonian Agreements**
 - The dollar was devalued against foreign currencies.
 - The dollar price of gold increased from \$35 to \$38 an ounce.
 - Currencies could fluctuate + or – 2.25% around their new par values.
- New problems. 1973: generalized floating.

Post - Bretton Woods

- Generalized floating for most industrialized countries.
- 1979 - European Monetary System (EMS)
 - Fixed but adjustable Exchange Rates: currency bands
 - ECU: weighted average of participating currencies
- 1989 – Delors Report: 3 stages until European Monetary Union (EMU) and Single Currency.
 - 1st stage started in July 1990.
 - Last stage: 1 January 1999 - Exchange rates between European currencies irrevocably fixed. Euro remained a book currency only.
 - 1 January 2002 – Euro notes and coins started to circulate alongside national notes and coins. These were gradually withdrawn

Snake in the tunnel: European rates within narrow band



- Textbooks classify exchange rate regimes in one of two categories: fixed *vs* floating. There are more variations.
- *De facto* regimes may be different from *De jure* regimes.
- Current exchange rate arrangements
<http://www.imf.org/external/pubs/nft/2014/areaers/ar2014.pdf>
- There is no “perfect foreign exchange regime”. It depends on the characteristics of each economy. - Arguments from the theory identifying the recommended regime (fixed or floating) according to certain criteria.

Extreme
Fixed with
no separate
legal tender

- Monetary Union
- Dollarization/
Euroization

Extreme
Fixed

- Currency Board

Tradi-
tional
Peg

Crawl
ing
Peg

Currency
Bands

Floating
exchange
rates

- Dirty
(managed)
- Clean

Fixed Exchange Rates

- How is parity defended?
 - The authorities buy or sell foreign currency in exchange for domestic currency.
 - The authorities impose exchange controls to influence the exchange rate by constricting the demand or supply in the foreign exchange market.
 - The authorities alter domestic interest rates to influence short-term capital flows, and therefore, the foreign exchange rate .

Buying or selling foreign currency

- Defending against depreciation
 - Buy domestic currency/sell foreign currency.
 - Corresponds to the financing of a country's deficit.
 - The sale of foreign currency decreases the stock of official reserves. If it runs out of reserves, it is possible to borrow from abroad.
 - The purchase of domestic currency reduces money in circulation: reduces Money Supply.
- Defending against appreciation: similar, in the opposite direction.

Central bank Balance Sheet (simplified)

Assets

Domestic Assets

Debt securities

Loans to Banks

International Reserve Assets

Foreign-Currency Assets

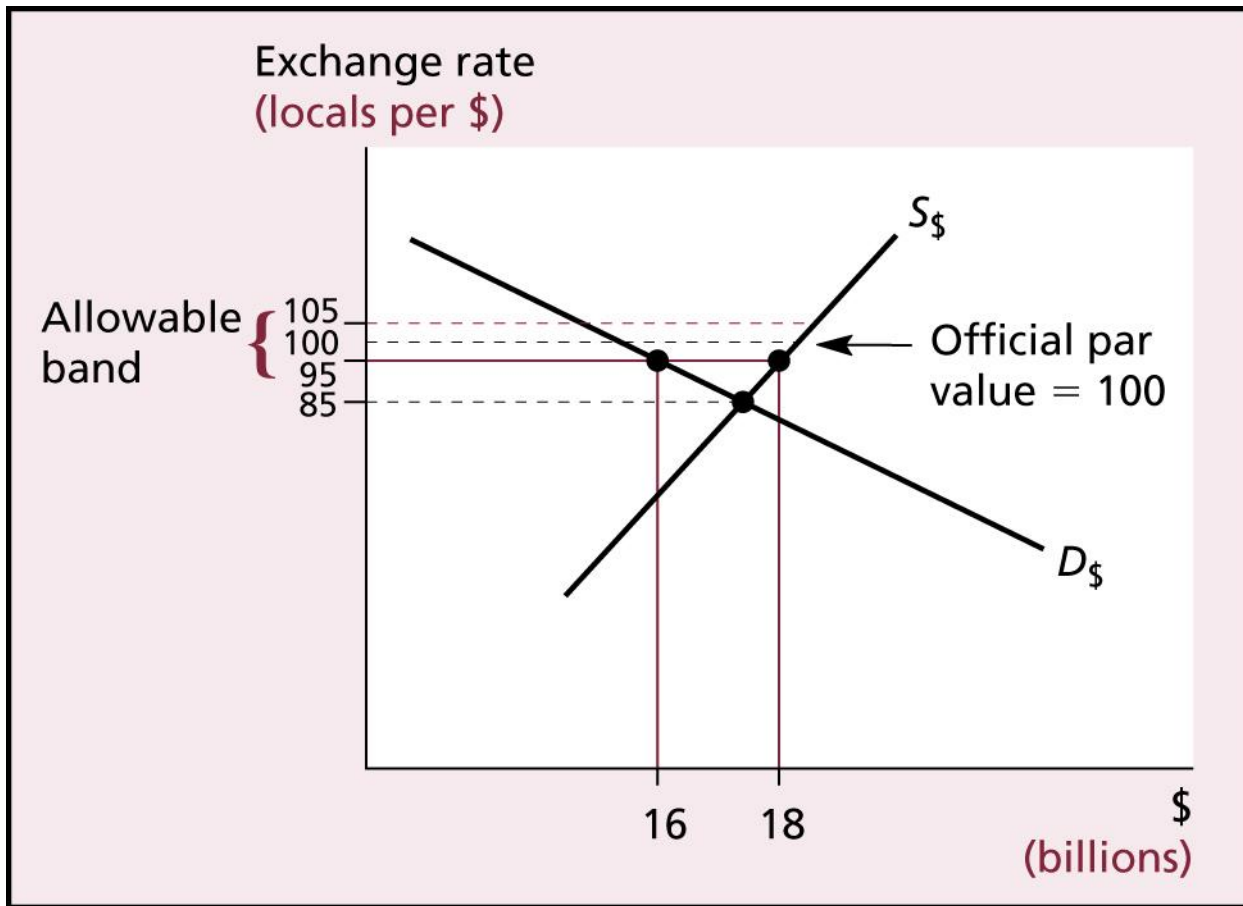
Liabilities

Monetary Base

Currency in circulation

Deposits from banks

Money Supply = Currency + Deposits from the public in regular banks




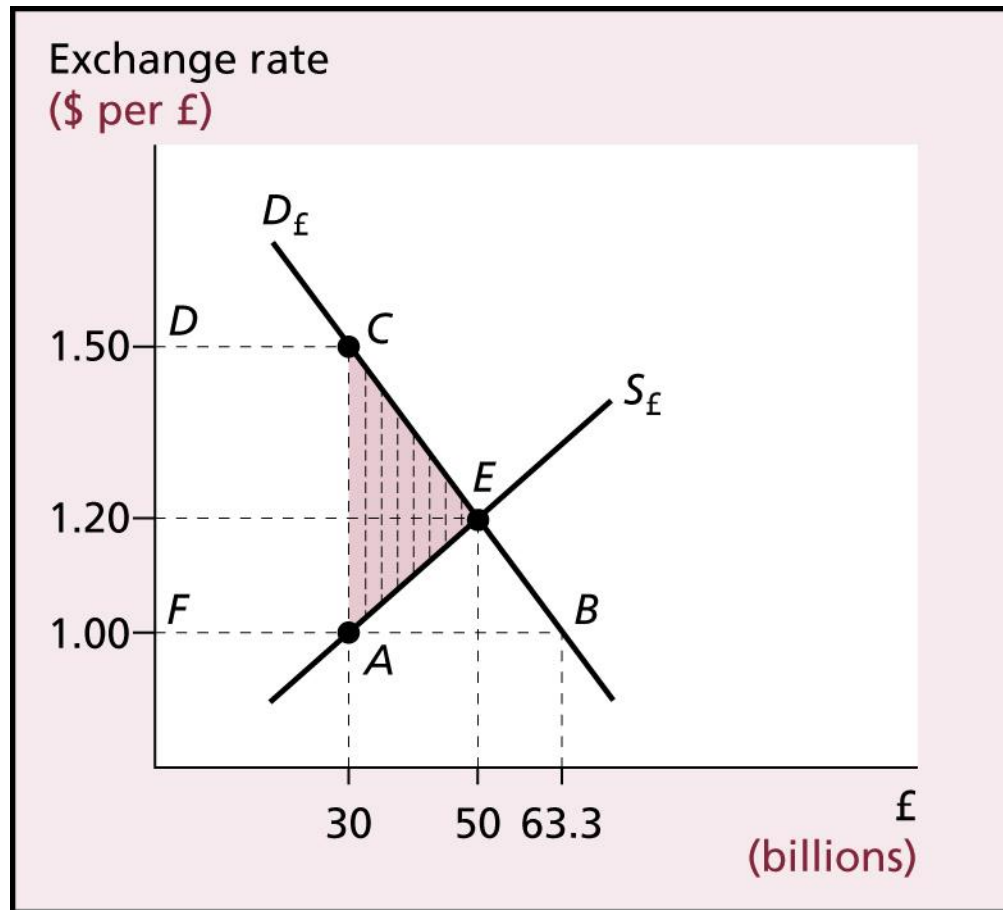
Source: Chap. 20 from Pugel.

- A temporary external unbalance can be overcome in this way. It is not sustainable to defend a permanent disequilibrium.

Costs

Using capital controls

- Capital controls are quantity restrictions 
 - Create inefficiencies,
 - High administrative costs,
 - Create incentives to black markets.
 - Instead of foreign exchange risk concerning the price, there is risk as to the possibility of trading.



Source: Chap. 20 from Pugel.

Changing interest rates

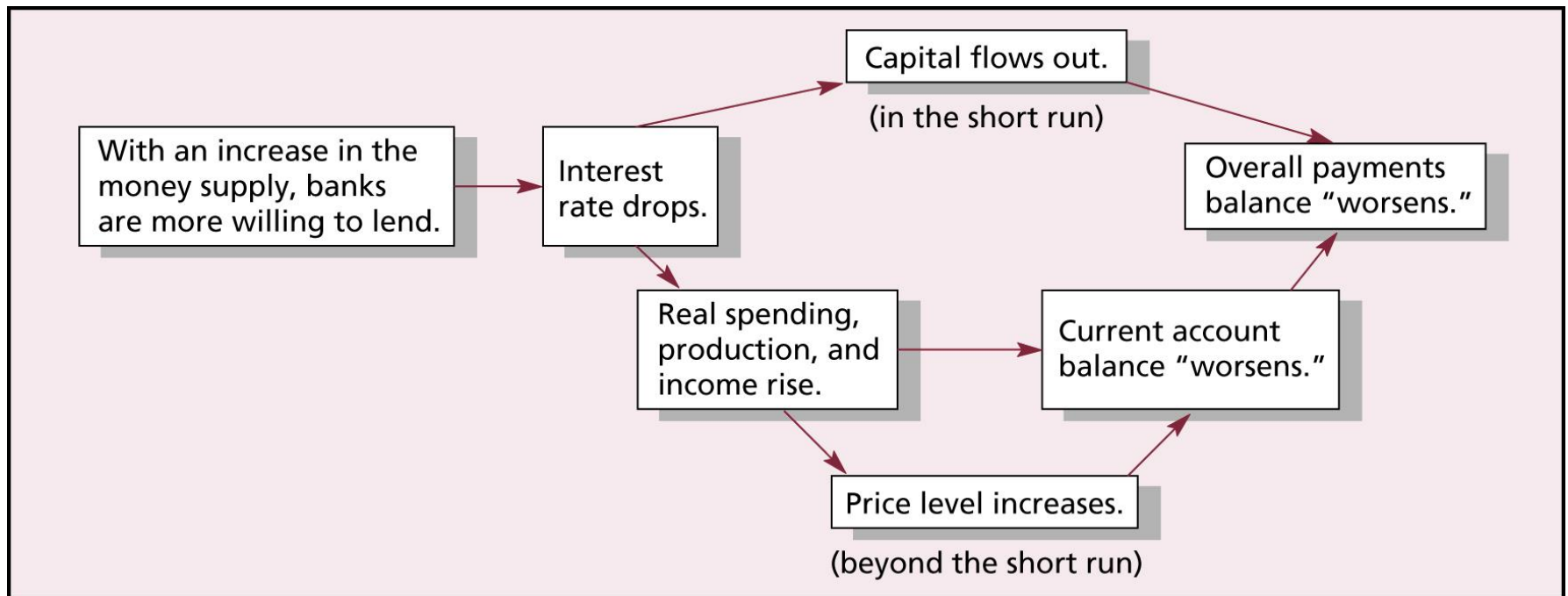
The foreign currency demand and foreign currency supply move.

- Trilemma – (Impossible trinity)

One cannot have simultaneously:

- Fixed exchange rates
- Independent monetary policy
- Free capital movements (no capital controls)

- Effects of the intervention in the FOREX
 - Official intervention alters the central bank's assets and liabilities: the country's official international reserves and also the Money Supply → impossible to have an independent monetary policy.
 - Surplus → appreciation pressure on the national currency → intervention: purchase of the foreign currency/sale of the domestic currency → increase in the Money Supply →



Source: Chap. 23 from Pugel.

- Intervention defending the parity helps the country move back towards external balance.
- ...Problem: the effect of the change in the Money Supply on Prices may not be consistent with the internal balance.
- Solution: STERILIZATION.
 - Surplus → appreciation pressure on the domestic currency → intervention: purchase of the foreign currency / sale of the national currency together with open market operations: purchase of national currency / sale of government bonds.
 - Money Supply does not change. The only change is the composition of the Central Bank's assets: more official reserve assets and less domestic assets.

- Deficit: similar rationale, in the opposite direction.
- Limitations:
 - Deficit: difficulties in obtaining foreign currency.
 - Surplus: complaints by other countries about the country's ongoing surplus, unwillingness of the Central Bank to keep on increasing its holdings of official reserve assets.
 - Ongoing surplus: If interest rates and prices do not change, there is no reason to have capital movements and changes in competitiveness.

- Presentation of the papers
- *Beker (2006) Exchange rate regime choice*,
Panoeconomics, vol.3, pp.313-334
- MARIA POKRAJAC and IVONA VUKOVIC
-
- *Mundell (1961) A theory of Optimum Currency Areas*,
The American Economic Review, vol. 51, no.4, pp. 657-665
+ *McKinnon(1963) Optimum Currency Areas* The
American Economic Review, vol. 53, no.4, pp. 717-725
- DAVID, CHRISTOPHER and DAMI
-