

Directional Changes

A new concept for summarizing price movements



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Inventor



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Presenter

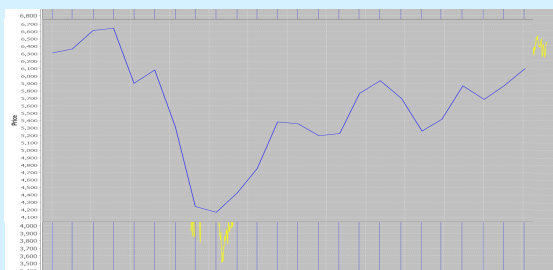


Han Ao
Demonstrator

How History Is Recorded

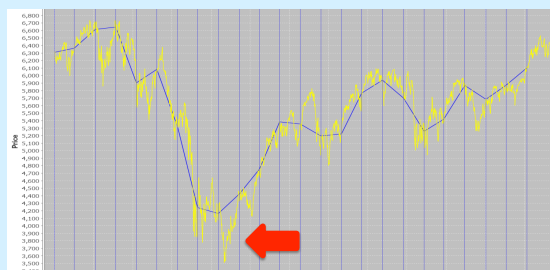
- By key events
 - 1918: £, US\$, Franc, ... unlinked with gold
 - 1926: £ tied to gold, but only exchangeable in bars
 - 1931: Floating exchange rates
 - 1944: Bretton Woods: US\$ as exchange standard
 - 1971.08.15: US\$ unlinked with gold
 - 1971.12.18: Smithsonian Agreement: fixed exchange rate
 - 1973: Fluctuating fiat currencies
- Not by snapshots at end of years

How Price Movements Are Recorded



- Interval-based summary

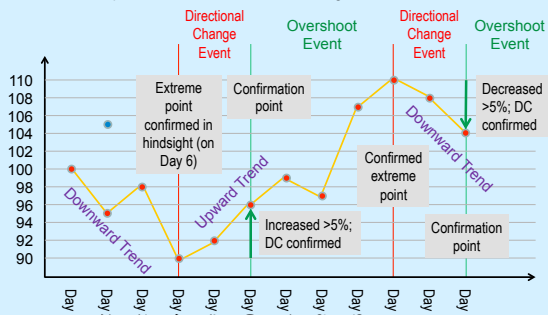
Problem with interval-based Summary



- Important movements not captured

5% Directional Changes (DC)

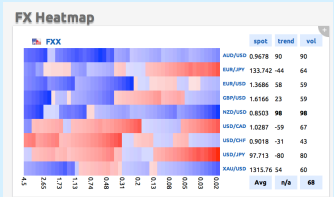
This example shows what Directional Changes are, and how to find them



DC vs Interval Coastline




- Given perfect foresight: (Buy low, sell high)
 - Interval based return: 171%
 - DC-based return: 304%



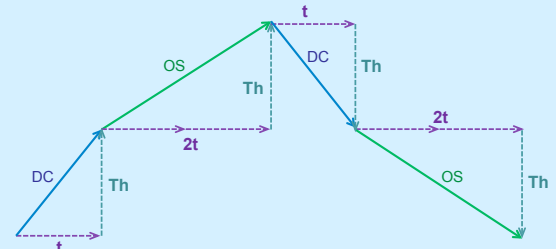
FX Pair	spot	trend	vol
AUDUSD	0.9678	90	90
BANJPY	133.742	-44	64
EURUSD	1.3686	58	59
GBPUSD	1.6166	23	59
INRUSD	0.8503	98	98
USDCHF	1.0287	-59	67
USDJPY	0.9018	-51	43
USDNYP	97.213	-80	80
USDZAR	1315.76	54	60
Avg	n/a		68

DC-based Market Analysis Tools



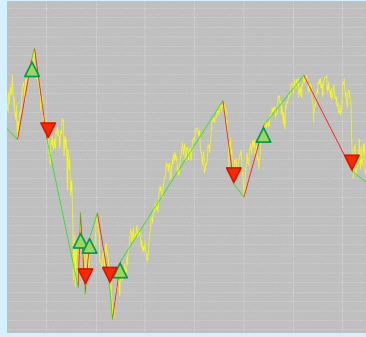
Olseninvest.com

Statistical Properties Observed



- Average overshoot: same as threshold
- Average overshoot time: twice as DC time

DC-based Algorithmic Trading



- Can trading algorithms be derived around DC?

Conclusion

- History recorded by events, not snapshots
 - So should price movements
- Directional Change (DC) events defined
 - It captures 'significant changes'
- Useful for summarising price movements
 - DC give new perspective in price movement
- It enables discovery of regularities not captured by interval-based summaries