Trading – Basic Oscillators

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Oscillators

- Stochastic (Fast, Slow and Complete)
- ADX (Average Directional Index)

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Stochastic Oscillator

'Stochastic oscillator does not follow prices or volume. Rather, it follows the speed or the momentum of prices.'

George Lane

FAST Stochastic

$$\%K = Price_t - Lowest\ low_{t-lagk:t} / Highest\ high_{t-lagk:t} - Lowest\ low_{t-lagk:t}$$

$$\%D = SMA\ (lagd)\%K$$

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Stochastic Oscillator

'The stochastic oscillator does not follow prices or volume. Rather, it follows the speed or the momentum of prices.'

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SLOW Stochastic

$$\%K(FAST\ Stochastic) = Price_{\downarrow t} - Lowest\ low_{\downarrow t-lagk:t} / Highest\ high_{\downarrow t-lagk:t} - Lowest\ low_{\downarrow t-lagk:t}$$

$$\%K(SLOW\ Stochastic) = SMA\ (lagd)\%K(FAST\ Stochastic)$$

$$\%D = SMA\ (lagd)\%K$$

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Stochastic Oscillator

Non-clean signals

Clean signals

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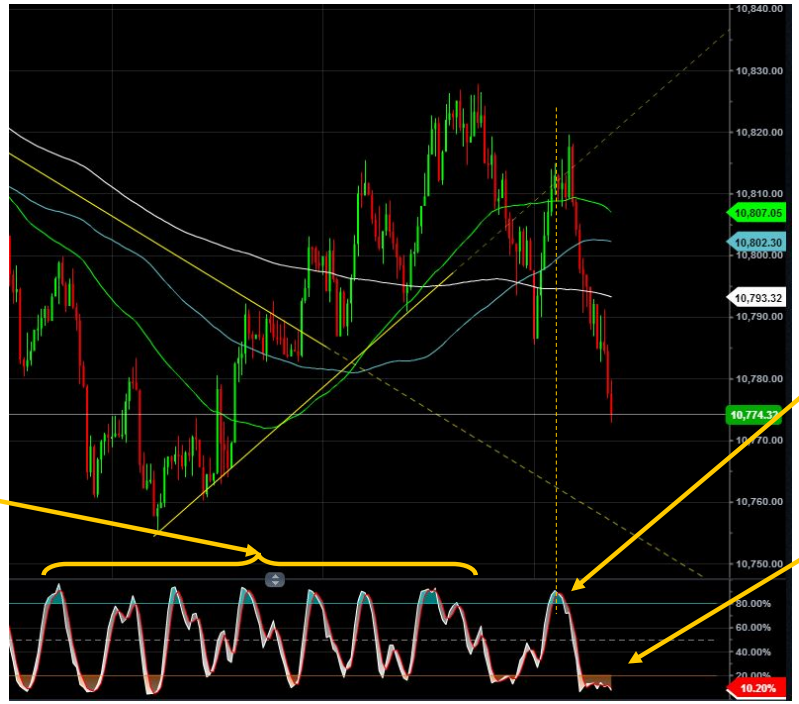
Stochastic Oscillator



Signals during trends

Not-clean signals

Collapse

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ADX (Average Directional Index)

- Developed by J. Welles Wilder, Jr. in 1978.
- Originally designed for commodity and currency securities with a daily frequency approach.
- Used to measure the strength of a trend but It does not provide indications about its direction.
- It is made by three single indicators:
    1. +DI (plus directional indicator)
    2. -DI (minus directional indicator)
    3. Final ADX value

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ADX (Average Directional Index)

A directional movement is positive when:

$$\text{Current high} - \text{Prior high} > \text{Prior low} - \text{Current low}$$

Plus Directional Movement (+DM) = Current high – Prior High (if positive, zero otherwise)

A directional movement is negative when:

$$\text{Prior low} - \text{Corrent low} > \text{Current high} - \text{Prior high}$$

Minus Directional Movement (-DM) = Prior low – Current low (if positive, zero otherwise)

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ADX (Average Directional Index)

- Smooth +DM and –DM with Wilder's smoothing tecnique
- Divide the smoothed +DM and –DM by by the smoothed true range (ATR not disclosed in these slides)
- The directional movement index equal the absolute value of +DI minus –DI divided by the sum of +DI and –DI
- The ADX is the moving averange of the DX and the subsequent value of the ADS are smoothed with Wilder's technique.

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ADX (Average Directional Index)

According to his designer:

- 150 observation are needed in order to have a consistent ADX indicator because of the smoothing procedure.
- A level of the index above 25 indicates the presence of a trend whule a values below 20 indicate that no trend is present.

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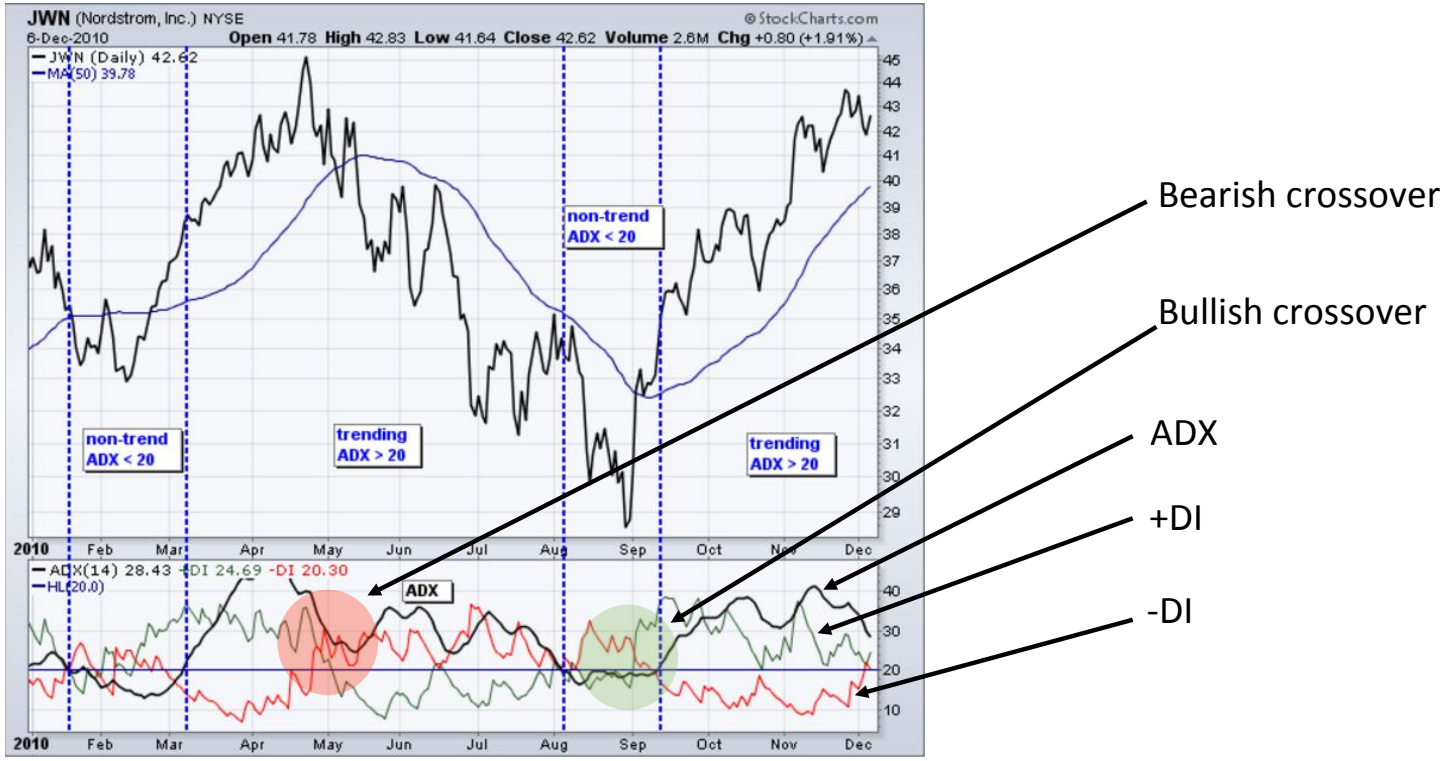
ADX (Average Directional Index)



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ADX (Average Directional Index)

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ADX (Average Directional Index)

Bearish signal

Bullish signal