

Notations for Directional Change (DC) research

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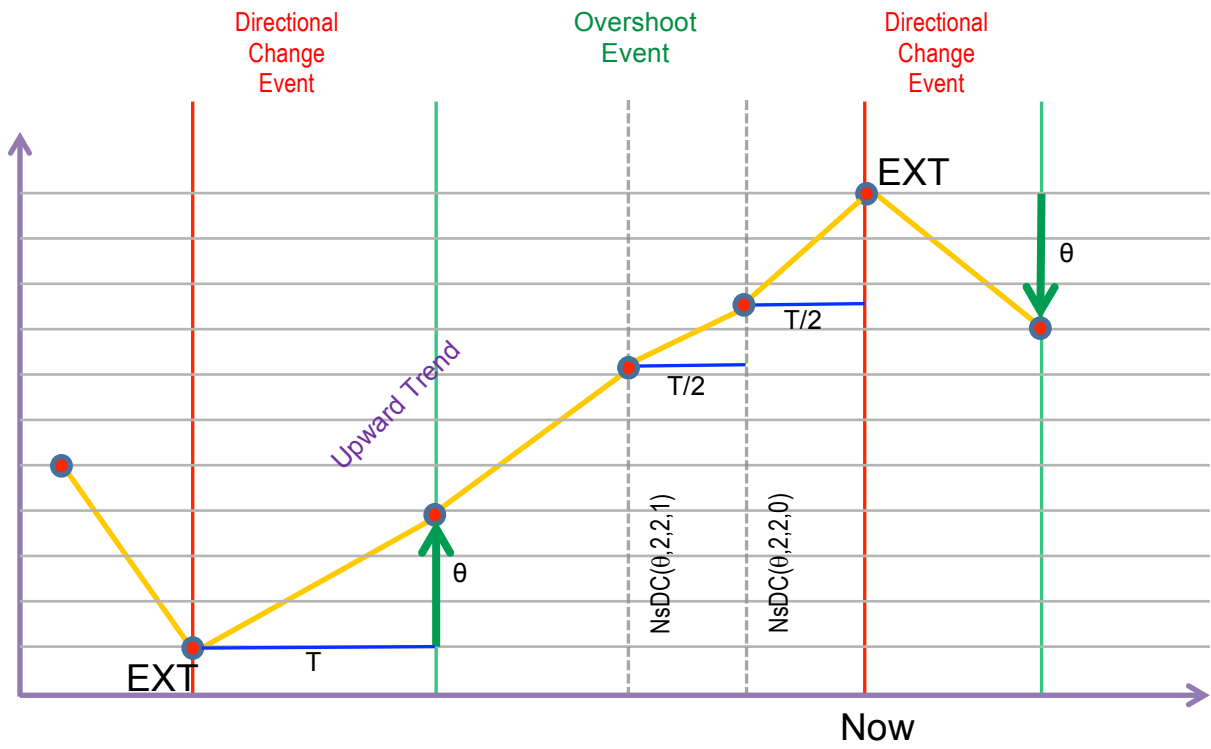
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Background:

Many researchers from multiple sites are working on Directional Changes. I suggest we use the same language and notations. This way we can avoid misunderstanding and improve communication efficiency.

Name / Description	Notation
Threshold	θ
Extreme point	EXT
Directional Change	DC
Upward Directional Change	DC \uparrow
Downward Directional Change	DC \downarrow
Directional Changes of threshold θ	DC(θ), DC \uparrow (θ), DC \downarrow (θ)
Current price	P_c
Price at extreme point	P_{EXT}
Price at upward Directional Change Confirmation point	$P_{DCC\uparrow} \geq P_{EXT} \times (1 + \theta)$
Minimal price at upward Directional Change Confirmation point	$P_{DCC\uparrow}^* = P_{EXT} \times (1 + \theta) \leq P_{DCC\uparrow}$
Highest price in the current trend	P_{Hi}
Lowest price in the current trend	P_{Lo}
Overshoot value At DC confirmation, OSV=0; At $P_c=P_{EXT} \times (1+2\theta)$, OSV = 1; in general: At $P_c=P_{EXT} \times (1+k\theta)$, where $k>0$, OSV = $k-1$ At $P_c=P_{EXT} \times (1-k\theta)$, where $k>0$, OSV = $-k+1$	$OSV = ((P_c - P_{DCC^*}) \div P_{DCC^*}) \div \theta$
Number of DCs of threshold γ over time period τ	NDC(γ , τ)
Given a threshold θ that took time T, the Number of DCs of threshold $\theta \div d$ over a time period from Now – (T $\div k$)*(t+1) to Now – (T $\div k$)*t In other words, when t=0, NsDC(θ , d, 2, 0) counts NDC($\theta \div d$, [Now – (T $\div k$), Now])	NsDC(θ , d, k, t) = NDC($\theta \div d$, [Now – (T $\div k$)*(t+1), Now – (T $\div k$)*t])



$$NsDC(\theta, d, k, t) = NDC(\theta \div d, [Now - (T \div k) * (t + 1), Now - (T \div k) * t])$$

where $NDC(\gamma, \tau) =$ number of DCs of threshold γ over time period τ