TF Segmented Linear Regression

alexgrover WIZARD Jun 23, 2020

Trend Analysis | linear | Parallel Channel | timeframe | segmented | LINE

28 2529

Fit a line at successive intervals, where the interval period is determined by a user-selected time frame, this allows the user to have an estimate of the intrinsic trend within various intervals.

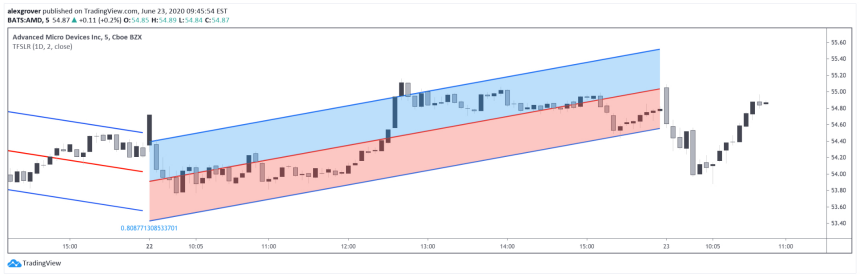
Settings

- Timeframe : Determine the period of the interval, if the timeframe is weekly then a new line will be fit at the start each weeks, by default 'Daily'
- Mult : Multiplication factor for the RMSE, determine the distance between the upper and lower extremities
- Src : Input data for the indicator
- Plot Extremities : Logical value, if true then the extremities of the channel are plotted, if false only the midline is plotted, true by default.

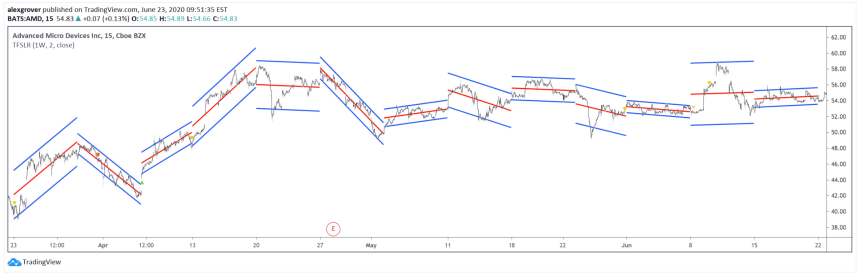
Usage

The timeframe setting should be higher than the current chart timeframe, note however that too large values of timeframe might return an error. Since the maximum number of lines that can be plotted is 54, using the extremities will only return 18 channels.

The indicator can be compared to the "regression trend" drawing tool



Main tf = 5 min with the indicator using a daily timeframe , the filled area is produced by the regression trend drawing tool using the same interval as the indicator, and coincide with it.



Main tf = 15 min with the indicator using a weekly timeframe , wider channel indicate that the values tend to be farther away from the fitted line.

A line with a significant slope indicates a strong trend, in that case, the width of the channel is determined by the amplitude of the retracements in the trend, with a narrower channel indicating a cleaner trend.

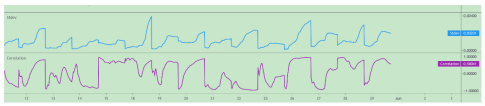
When the fitted line has a low slope value and the channel is wide, it means that there were two or more variations of opposite directions with large amplitudes within the interval, this also indicates that a linear model is not appropriate.

A slope approximately equal to 0 with a low channel width indicates a trendless market with cyclical variations of low amplitude in it.

Refrences

Determining the starting and ending points of the fitted line was done using a linear combination between the wma and sma

The wma and sma functions both use a series as period by making use of the Wma and Sum functions in the following script



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You can also check out some of the indicators I made for luxalgo : https://www.tradingview.com/u/LuxAlgo/#published-scripts

Twitter Website

Open-source script

In true TradingView spirit, the author of this script has published it open-source, so traders can understand and verify it. Cheers to the author! You may use it for free, but reuse of this code in a publication is governed by House Rules. You can favorite it to use it on a chart.

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```
// This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License https://creativecommons.org/licenses/by-sa/4.0/
// © alexgrover

//@version=4
study("TF Segmented Linear Regression","TFSLR",true)
timeframe = input("D",type=input.resolution)
mult      = input(2)
src       = input(close)
ext       = input(true,"Plot Extremities")
//-----------------------------------------------------------------------------------
n = bar_index
t = time(timeframe)
p = (barssince(change(t)) + 1)[1]
//-----------------------------------------------------------------------------------
Sum(src,p) => a = cum(src), a - a[max(p,0)]
Wma(src,p) =>
    mp = max(p,0)
    denom = mp*(mp+1)/2
    a = cum(src), (mp*a - Sum(a[1],p))/denom
a = Wma(src[1],p),b = Sum(src[1],p)/p
//-----------------------------------------------------------------------------------
A = 4*b-3*a,B = 3*a-2*b
m = (A - B)/(p-1)
d=0., for i = 0 to max(p-1,1)
    l = B + m*i
    d := d + pow(src[i+1]-l,2)
rmse = sqrt(d/(p-1))*mult
//-----------------------------------------------------------------------------------
l(k,css)=>
    line lr = na
    if change(t)
        lr := line.new(n-p,A+k,n-1,B+k,
         | color=css,width=2)
        line.delete(lr[1])
//-----------------------------------------------------------------------------------
if ext
    l(rmse,#2157f3),l(-rmse,#2157f3)
l(0,#ff1100)
```

Comments

Leave a comment that is helpful or encouraging. Let's master the markets together

Comment with cheer Post Comment

PineCoders MOD · Jan 3, 2021

500 coins

Reply

PineCoders MOD · Jul 2, 2020

This publication will be featured in our "Best Scripts of The Month" selection. Thank you for your valuable contribution to the TradingView community, and congrats!

+5 Reply

ICEKI PREMIUM · Jun 24, 2020

Very brilliant works Alexgrover!

Now it can descriptive trend analysis way more convenience; Thank You so much for sharing this for us.

+2 Reply

alexgrover WIZARD · Jun 24, 2020

@ICEKI, I really like the "analytical" aspect of such script, I am glad you like it :D Thx for your support as always

Reply

ICEKI PREMIUM · Jun 24, 2020

@alexgrover, You're very welcome; I also the fans of analytical and forecast/prediction aspect too. Therefore I love all your work as others coders too =D

Keep it up Alexgrover! Appreciated your great works as always <3

+1 Reply

UnknownUnicorn1537978 · May 16, 2021

is it possible to have it on the maximum and minimum points?

+1 Reply

blackcat1402 PREMIUM · Sep 12, 2020

this is a zig zag version that indicating sub zig zags :D. very nice and thanks for sharing

+1 Reply

MadScalper · Sep 9, 2020

Is there a possibility of Trend Segmented Multi timeframe Linear Regression channel??

+1 Reply

alexgrover WIZARD · May 16, 2021

@MadScalper, Certainly :)

Reply

flush6789 · Jul 6, 2020

I suggest that you tell the novice how to write the code according to the example. I will be the first one willing to pay for it. Your meticulous and patient explanation ability is absolutely competent.

+1 Reply

alexgrover WIZARD · Jul 6, 2020

@flush6789, I'll try to add more details on the code of future indicators, but it takes quite a lot of time.

Reply

SwissPips PREMIUM · Jul 3, 2020

Very nice, keep up the good work!

+1 Reply

alexgrover WIZARD · Jul 3, 2020

@SwissPips, I'll certainly try ^^ Thx a lot for your comment

Reply

DannyBaker PRO · Jun 23, 2020

Hey Alex, this is amazing! very elegant code! would the way you are using the timeframe be usable for any multi-timeframe indicator?

+1 Reply

UnknownUnicorn2955934 · Jun 23, 2020

Wow. Thanks again Alex!

+1 Reply

alexgrover WIZARD · Jun 24, 2020

@stluvin, You are welcome :D

Reply

MrMama PREMIUM · Jun 23, 2020

Definitely amazing...

+1 Reply

dhman2012 PRO · Jun 23, 2020

Thank you for sharing this with the community Alex. Just wondering how would someone use this study? Is this a predictive study or a trend study or something else?

+1 Reply

alexgrover WIZARD · Jun 23, 2020

@dhman2012, It's pretty much suited for descriptive trend analysis, but you can always infer from past observations, for example, if a weekly linear regression has been rising, then you could infer that next week trend will also be rising.

+1 Reply

dhman2012 PRO · Jun 23, 2020

@alexgrover, Got it. Thanks Alex!

+1 Reply

MohamedAlfar PREMIUM · Jun 23, 2020

Amazing Alex. It is so strange that I was studying this concept recently, and then all of the sudden, you release something beautiful like this to support my study. Thank you so much.

+1 Reply

alexgrover WIZARD · Jun 23, 2020

@MohamedAlfar, Really glad to hear it ^^ I wanted to post the indicator sooner but it contained bugs so I had to wait a bit.

Reply

MohamedAlfar PREMIUM · Jun 24, 2020

@alexgrover, And that speaks of the quality of you as a person, not just the quality of your work, and that is something to admire dearly.

+1 Reply

dxmufasa PRO+ · Mar 18

Thanks so much for this :-)))

Reply

dxmufasa PRO+ · Mar 18

@alexgrover - forgot to ask: above it was mentioned : "Main tf = 5 min with the indicator using a daily timeframe" and "Main tf = 15 min with the indicator using a weekly timeframe" - can this be used for scalping as well?

Reply

BillionaireLau · Dec 12, 2020

Hello Alex, I am also coding a script that is similar to this (drawing lines from the start of the day).
How to change your code so that it would also plot a new line (The line with a constant slope, not by regression) on a new trading day? Your condition : change(t) can't enable printing for the last day.

Your code can print a series of regression line, that is cool.
But I cannot find how can you manage keeping n days regression but also don't print today regression.

Reply

BillionaireLau · Dec 12, 2020

In other words, how did you cancel printing the last regression line? How to change it if we want to print it?
How did you keep n days of regression lines?

Thank you very much!

Reply

flush6789 · Jul 6, 2020

Preferably in a written form

Reply