

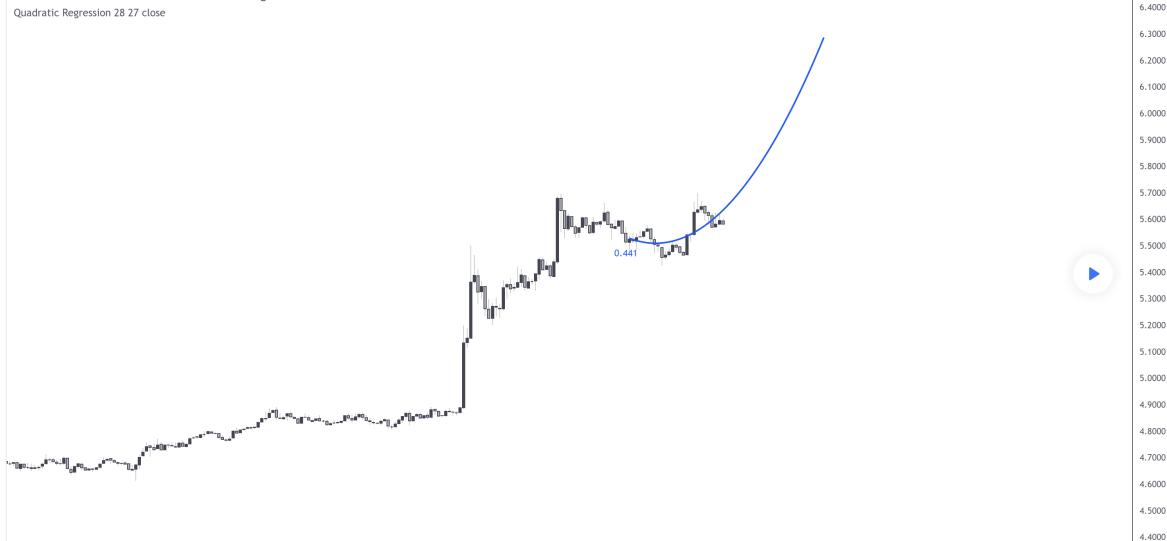


## Quadratic Regression ❤

alexgrover WIZARD

Jul 7, 2020

ChainLink / TetherUS - 15 - BINANCE - TradingView 05.5944 H5.6036 L5.5800 C5.5817  
 Quadratic Regression 28 27 close



Fit a quadratic polynomial (parabola) to the last length data points by minimizing the sum of squares between the data and the fitted results. The script can extrapolate the results in the future and can also display the R-squared of the model. Note that this script is subject to some limitations (more in the "Notes" section).

## Settings

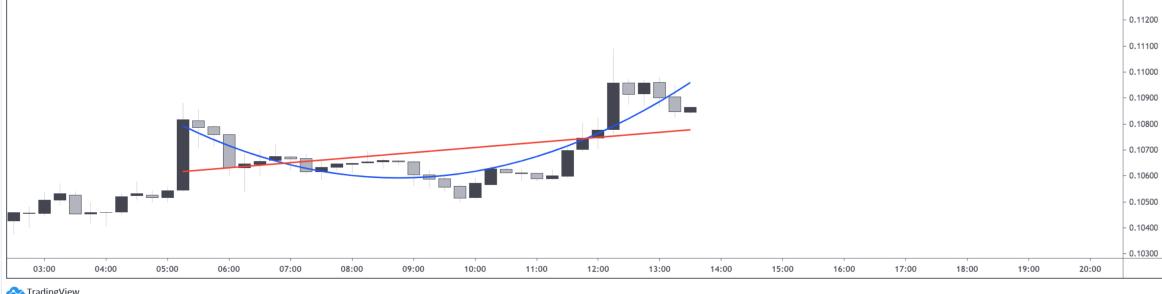
- Length : Number of data points to use as input.
- Offset : Determine the number of past fitted values to be displayed, if 0 only the extrapolated values are displayed, if 55 only the past fitted values are displayed.
- Src : Input data of the indicator
- Show R2 : Determine if the value of the R-squared must be displayed, by default true.

## Usage

When the underlying trend in the price is not linear, we might use more advanced models to estimate it, this is where using a higher-degree regression model might be required, as such a quadratic model (second-degree) is appropriate when the underlying trend is parabolic.

[alexgrover](#) published on TradingView.com, July 07, 2020 08:31:53 EST  
 BINANCE:ADAUSDT, 15 0.10865 ▲ +0.00353 (+3.36%) O:0.10846 H:0.10865 L:0.10841 C:0.10865

Cardano / TetherUS, 15, BINANCE  
 Quadratic Regression ([33, 55, close])



Here we can see that the quadratic regression (in blue) offer a better fit than a linear one.

Another advantage of the quadratic regression is that a linear one will always have the same direction, that's not the case with the quadratic regression and as such, it is possible to forecast reversals.

[alexgrover](#) published on TradingView.com, July 07, 2020 08:37:05 EST  
 BINANCE:LINKUSDT, 15 5.6002 ▲ +0.2385 (+4.45%) O:5.5703 H:5.6260 L:5.5682 C:5.6002



Above a linear regression (in red) and two quadratic regression (in blue) with both length = 54. Note that for the sake of clarity, the above image uses a quadratic regression to show all the past fitted values and another one to show all the forecasted values.

The R-Squared is also extremely useful when it comes to measuring the accuracy of the model, with values closer to 1 indicating that the model is appropriate, and thus suggesting that the underlying trend in the price is parabolic.  
The R-squared can also measure the strength of the trend



THE REQUIRED LOGIC AND MEASURE THE STRENGTH OF THE TREND.

## Notes

The script uses the function `line.new`, as such only a maximum of 54 observations are displayed, getting more observations can be done by using an additional quadratic regression like we did in the previous section. Another thing is that `line.new` use `xloc.bar_time`, as such it is possible to observe some errors with the displayed results of the indicator, such as:

## Circular

[alexgrovver](#) published on TradingView.com, July 07, 2020 08:48:30 EST

BATS:AMD, 15 54.00 ▲ +0.60 (+1.12%) ⚡ \$3.94 H:54.16 L:53.85 C:54.00

Advanced Micro Devices Inc, 15, Cboe BZX  
Quadratic Regression (54, 27, close)



TradingView

I love everyone

This will happen when applying the indicator to symbols with session breaks, I apologize for this inconvenience and I'll try to find solutions. Note however that the indicator will work perfectly on cryptos.

## Summary

That's an indicator I really wanted to make, even if it is important to note that such models are rarely useful in stock markets, however it is more than possible to create a quadratic regression (with severe limitations) with pinescript.

Today I turn 21, while I should be celebrating I still wanted to share something with the community, it's also some kind of present to myself that tells me that I am a bit better at using pinescript than last year, and I am glad I could progress (instead of regress, regression, got it?). Thx a lot for reading!

IDEAS STR

Patreon: <https://www.patreon.com/alexgrovver>

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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](#)

Circular

## 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.

## Disclaimer

The information and publications are not meant to be, and do not constitute, financial, investment, trading, or other types of advice or recommendations supplied or endorsed by TradingView. Read more in the [Terms of Use](#).

## Want to use this script on a chart?

[★ Add to favorite indicators](#)

```
1 // This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License https://creativecommons.org/licenses/by-sa/4.0/
2 // © alexgrovver
3
4 // @version=4
5 study("Quadratic Regression",overlay=true)
6 length = input(54,maxval=54)
7 offset = input(27,maxval=55)
8 src   = input(close)
9 show  = input(true,"Show R2")
10 //-----
11 n = bar_index
12 Var(x) => variance(x,length)
13 Cov(x,y) => sma(x*y,length) - sma(x,length)*sma(y,length)
14 //-----
15 sse = sma(src,length)
16 varn = (pow(length,2)-1)/12
17 norm = Var(n)*varn-pow(Cov(n,n),2)
18 a = (Cov(n,n)*varn - Cov(n,src)*Cov(n,n))/norm
19 b = (Cov(n,src)*Var(n)-Cov(n,n)*Cov(n,n))/norm
20 c = sma - a*sma(n,n,length) - b*sma(n,n,length)
21 Q(x)=> a*pow(nx,2) + b*(nx) + c
22 //-----
23 sse = 0,sse = 0,
24 for i = 0 to length-1
25   sse := sse + pow(src[i] - Q(-i),2)
26   sst := sst + pow(src[i] - sma,2)
27 r2 = 1 - sse/sst
28 //-----
29 line l = na
30 dt = round(time - time[1])
31 for i = 1-offset to 54-offset
32   css = abs(i) > length ? na : #2157f3
33   l := line.new(time+dt*i,Q(i),time+dt*(i-1),Q(i+1),
34   | xloc=xloc_bar_time,color=css,width=2)
35 line.delete(l[1])
36 //-----
37 label la = na
38 min = min(offset,length+1)
39 transp = color.new(color.white, 100)
40 if show
41   la := label.new(n[min],Q(-min),tostring(r2,"##"))
42   | ,color=transp,style=label.style_label_up, textcolor=#2157f3)
43 label.delete(la[1])
```

I love everyone

IDEAS STR

PUBLISHED CO

abcdpattern

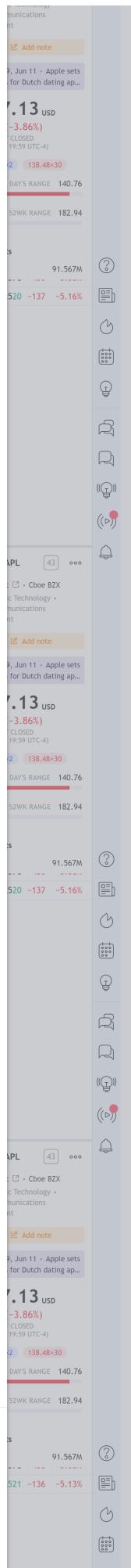
Circular

## Comments

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

[Comment with cheer](#)

[Post Comment](#)





**y5000** · Jun 11, 2020 · 140.76  
brilliant work Alex.  
+2 ▲ Reply

**grimweasel** PRO · Jul 9, 2020 · 182.94  
Happy Birthday Alex! Any chance of a Demark D-Wave Indy? It's basically an EW with Demark rules applied.  
+2 ▲ Reply

**joan241** · Jul 8, 2020 · 91.567M  
Well done Alex! Any recommendations regarding timeframes?  
+2 ▲ Reply

**alexgrover** WIZARD · Jul 12, 2020 · 520 -136 -5.15%  
@joan241, For crypto's I don't have any recommendations, for stocks and forex you might use timeframes that keep the "time" object constant, so daily for stocks, and weekly for forex.  
+1 ▲ Reply

**eli9875** PRO · Jul 8, 2020 · 182.94  
Hi Alex, thank you for this! Is there anyway for you to update it so we can change the color of the line and thickness? Great work!!  
+2 ▲ Reply

**alexgrover** WIZARD · Jul 8, 2020 · 182.94  
@eli9875, I'll try to add these options in a future update.  
+1 ▲ Reply

**LonesomeTheBlue** WIZARD · Jul 8, 2020 · 140.76  
Very interesting and nice one, Congrats Alex !  
+2 ▲ Reply

**alexgrover** WIZARD · Jul 12, 2020 · 140.76  
@LonesomeTheBlue, Thanks for your support :)  
▲ Reply

**ISTJT** PREMIUM · Feb 7, 2021 · 182.94  
Hi Alex  
It's very interesting script! Thank you very much for the opportunity to use it.  
I have a question: Is it possible to add an alert when the parabola turning from down to up and vice versa?  
Thanks  
+1 ▲ Reply

**UnknownUnicorn2352460** · Nov 21, 2020 · 140.76  
This is great! I love this particular job of yours. Can I clarify? Will you be able to solve the problem of session interruptions and price jumps on the chart? Thank You!  
+1 ▲ Reply

**alexgrover** WIZARD · Nov 21, 2020 · 140.76  
@VASILYNIK, I don't think I will be able to solve it, it would take an update to do that, with the possibility to set points in the future using bar\_index, if this happens I will update this script.  
+1 ▲ Reply

**UnknownUnicorn2352460** · Nov 21, 2020 · 140.76  
@alexgrover, You are very talented! Such a talent is very rare. Waiting for new projects. Thanks!  
▲ Reply

**labtab** PRO · Nov 7, 2020 · 182.94  
May I request you to give option to users to print the Standard Error of the Regression (S), instead of R squared value please.  
I like all your brilliant works here. Thank you for your time and generosity.  
+1 ▲ Reply

**alexgrover** WIZARD · Nov 21, 2020 · 140.76  
@labtab, I could, but the R-squared is easier to interpret when it comes to seeing the performance of a model.  
▲ Reply

**ChasinAlts** PREMIUM · Oct 2, 2020 · 140.76  
YOU, my genius friend, make me SICK!! About as sick as this friggin script. I HATE you for making me feel so....unaccomplished...and old (just at 33). Just remember, if people aint hatin', then your not doin something right.  
+1 ▲ Reply

**alexgrover** WIZARD · Nov 21, 2020 · 140.76  
@ChasinAlts, Do not feel sick, I am not that good :) All it takes is a bit of passion.  
▲ Reply

**NanoCorn** · Sep 10, 2020 · 182.94  
quite interesting script~  
+1 ▲ Reply

**allanster** PREMIUM · Aug 3, 2020 · 140.76  
Thank you for sharing your amazing work with us Alex!  
+1 ▲ Reply

**alexgrover** WIZARD · Aug 4, 2020 · 140.76  
@allanster, Thx mate  
+1 ▲ Reply

**jerah310a** · Jul 8, 2020 · happy 21st Birthday, @alexgrover  
+1 ▲ Reply

**StarTrek54 PRO+** · Jul 8, 2020 · Mind Man... Happy Bithday... ;-)  
your volcanic mind always works well!  
thanks !!!  
+1 ▲ Reply

**RambadamDingDong PREMIUM** · Jul 8, 2020 · Happy birthday Alex :)-)  
+1 ▲ Reply

**rajanverma PRO+** · Jul 8, 2020 · Happy birthday Alex!  
+1 ▲ Reply

**hashpanda888 PRO+** · Jul 7, 2020 · Happy Birthday .  
+1 ▲ Reply

**ICEKI PREMIUM** · Jul 7, 2020 · HAPPY BIRTHDAY Alexgrover! ONE YEAR OLDER, ONE YEAR WISER =D  
After I read your summary conclusion, I was so shocked you are just turn 21 years old. I am so happy and proud of your generosity! Especially your reputation growth in our TV community. Your talents with your young age. Our Beautiful World need the person like you to make it more safer, peaceful and growth. KEEP IT UP GENIUS <3  
+1 ▲ Reply

**syrinxflunki PREMIUM** · Jul 7, 2020 · HAPPY BIRTHDAY  
You absolute superstar ! :)  
+1 ▲ Reply

**heroinwonderland PREMIUM** · Jul 7, 2020 · congratulations!:D  
+1 ▲ Reply

**420snoop** · Jul 7, 2020 · happy birthday!  
+1 ▲ Reply

**ja88a PRO** · Jul 7, 2020 · happy birthday genius! and thanks again for keeping on sharing your great ideas & implementations  
+1 ▲ Reply

**walter74** · Jul 7, 2020 · Happy Birthday  
+1 ▲ Reply

**xcromo PRO** · Jul 7, 2020 · I wish you a happy birthday and thanks for all the useful indicators since last year.🎈  
+1 ▲ Reply

**Pratik\_4Clover** · Jul 7, 2020 · Happy birthday, alex ^^  
+1 ▲ Reply

**jaggedsoft PREMIUM** · Jul 7, 2020 · Happy Birthday  
+1 ▲ Reply

**nobodyxxx PRO+** · Jul 7, 2020 · happy Birthday... wish you the best...  
+1 ▲ Reply

**genkir** · Jul 7, 2020 · Happy birthday Alex!  
+1 ▲ Reply

**wroclai PRO+** · Jul 7, 2020 · Happy birthday my man! Excellent study!  
+1 ▲ Reply

**yasser\_jeelani** · Jul 7, 2020 · Happy Birthday Buddy. :)  
+1 ▲ Reply

**wugamlo PRO+** · Jul 7, 2020 · Happy Birthday, Alex! Thank you for your hard work and dedication.  
+1 ▲ Reply

Happy Birthday! And thanks for all the great contributions!

+1 ▲ Reply

StillAlive · Jul 7, 2020

happy bday buddy :)

+1 ▲ Reply

ernie76 · Jul 7, 2020

Happy Birthday Alex more Power to You and Stay Safe 🎉

+1 ▲ Reply

Naserpooriani · Mar 11 · TradingView for Android

Hi

It's nice work.

I think mtf in on panel is make better result.

If any one can reascript ,pls share with me.

▲ Reply

Naserpooriani · Mar 6 · TradingView for Android

Hello Alex

Great job

I wanted to see if it was possible to have this ,in multi timeframe in one panel.

I tried a lot but I am not a programmer, I could not get it.

▲ Reply

OutsourceE · Oct 21, 2021

@alexgrover, hifcan you please update this script?

▲ Reply

tagievhlas · Nov 23, 2020

Could you fix the display errors on FX?

▲ Reply

tagievhlas · Nov 23, 2020

Could you fix the script so that it can be used in FX?

Thank you in advance!

▲ Reply

mesterweb · Nov 5, 2020

Thank you. I think it is very helpful.

What is the use of R2 and what does it represent?

▲ Reply

capissimo · Sep 19, 2020

Congrats.)

▲ Reply

kenchi79 · Sep 14, 2020

This is really interesting. I'm gonna try it for a while, then I tell you how it goes. Sorry for my bad english. See u soon.

▲ Reply

soroush68 · Sep 13, 2020

hi. how can we see a backtest?

▲ Reply

blackcat1402 PREMIUM · Sep 12, 2020

the more important topic may be how to judge when the underlying trend in the price is not linear :)

▲ Reply

alexgrover WIZARD · Sep 12, 2020

@blackcat1402, Using a measurement? Then you can use the R-squared of a linear regression, if it is low, then the trend is not linear.

+1 ▲ Reply

blackcat1402 PREMIUM · Sep 12, 2020

@alexgrover, thanks for reply

▲ Reply

ChronicMasturTrader · Sep 3, 2020

It would be great if there were a menu input for changing color and transparency. This is a nice piece of code!

▲ Reply

alexgrover WIZARD · Sep 3, 2020

@ChronicMasturTrader, I could add that in the future.

▲ Reply

ChronicMasturTrader · Sep 3, 2020

@alexgrover, If I beat you to it, I'll ship it over so you can post the update

▲ Reply

alexgrover WIZARD · Sep 3, 2020

@ChronicMasturTrader, It's alright, don't bother

▲ Don't

