Finance in Montana
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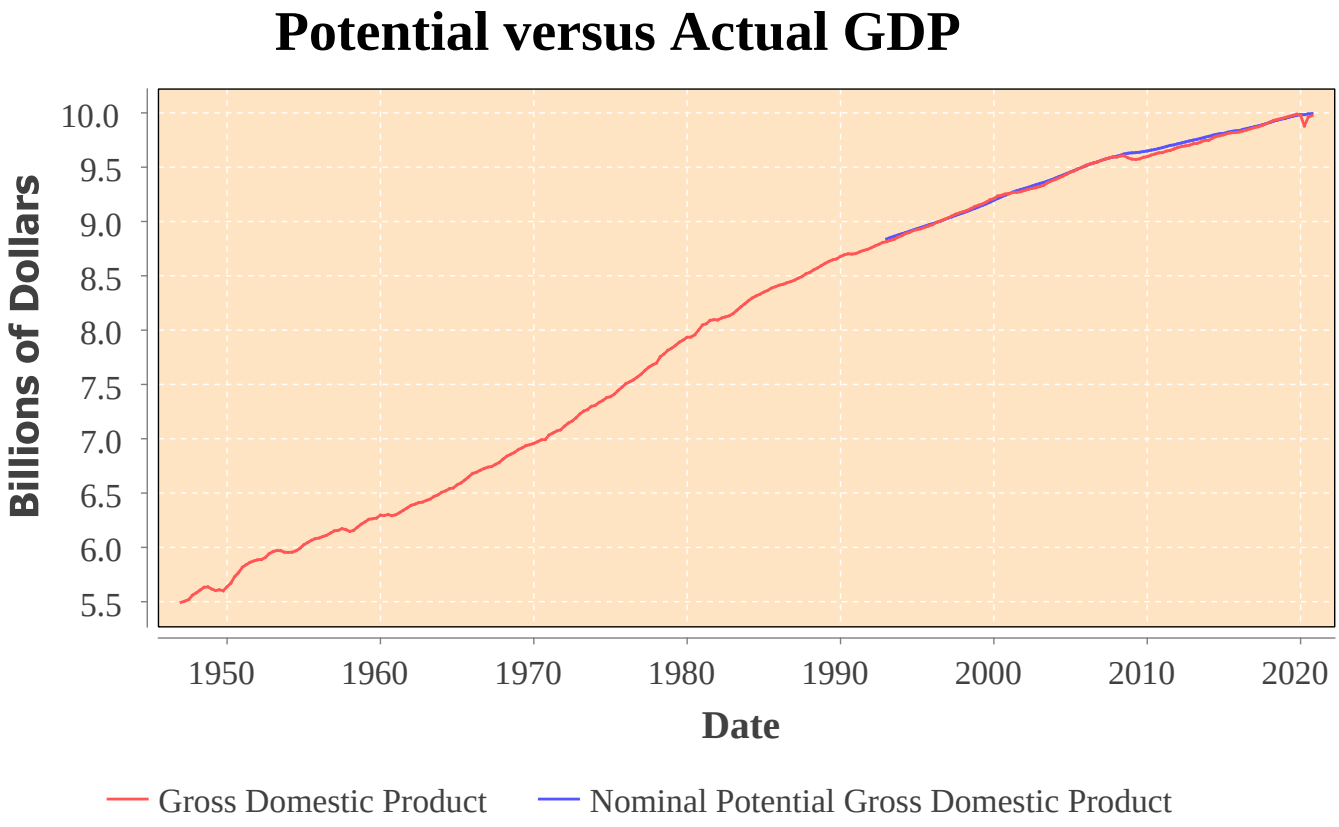
The Stimulus and Potential GDP

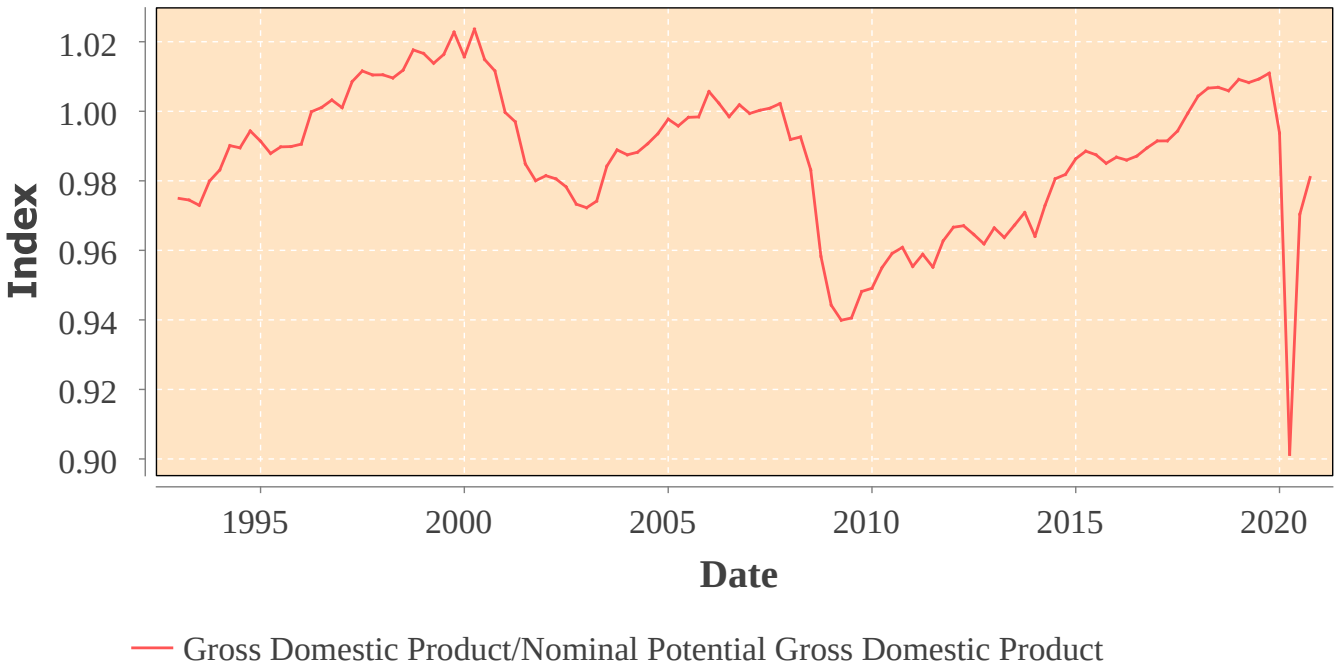
Larry Summers recently penned an opinion piece stating his worries on the size of the stimulus package passed this week.

> Looking at incremental deficits relative to GDP gaps is only one way of assessing the scale of a fiscal program. Another is to look at family income losses and compare them to benefit increases and tax credits. Wage and salary incomes are now running about $30 billion a month below pre-covid-19 forecasts, and this gap will likely decline during 2021. Yet increased benefit payments and tax credits in 2021 with proposed stimulus measures would total about $150 billion — a ratio of 5 to 1. The ratio is likely even greater for low-income individuals and families, given the targeting of stimulus measures.

The recent GDP figure is $21,479.53 billion and the recent Potential GDP figure is $21,896.21 billion. Or a difference of $416.68 billion. The stimulus package is a blowout $1.9 trillion or 4.56 times the Potential GDP to GDP differential.



Or let's look at the ratio of Actual to Potential GDP.



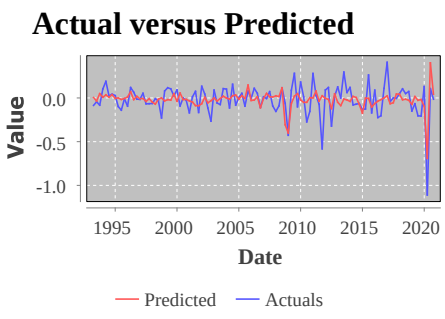
So is the Treasury market responding to rational fears of an over heated economy? Given that the total All Sectors; Debt Securities and Loans; Liability, Level is $81,829.20 billion and rates are at record lows, the market is responding to some serious interest rate exposure. Even if market participants hedged say $15 trillion, that amount is 3 times Assets: Securities Held Outright: U.S. Treasury Securities: All: Wednesday Level or $4,867,279.00. Sure traders could be wrong but discretion is the better part of valor. So-called liquid Treasuries are often used to hedge interest exposure. The number of on the run Treasury securities is not large enough when dealing with the potential size of interest hedges. Mind you the stated figure is U.S. Domestic debt only. Total Dollar denominated debt outside the U.S. is estimated to be in excess of $13 trillion.

The Regressions

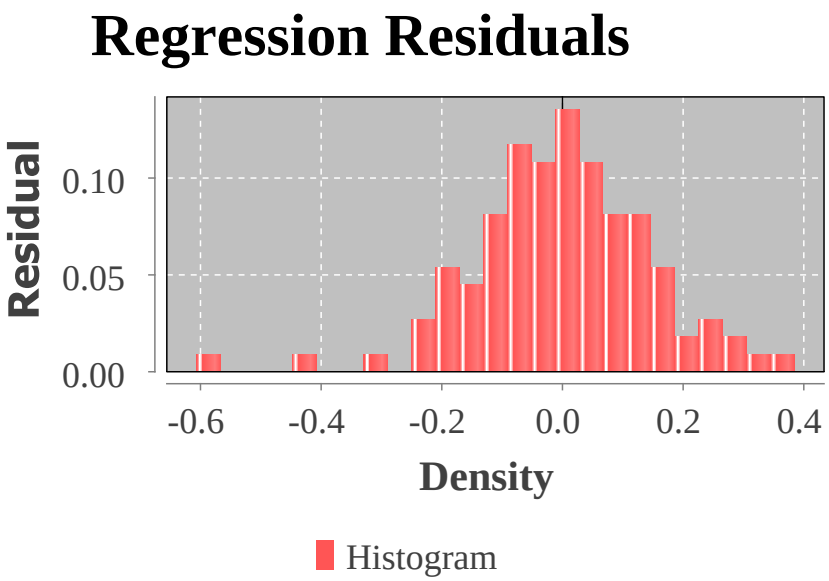
Let's look are the relationship of changes in 10-Year Treasury Constant Maturity Rate against changes in the GDP/Potential GDP ratio and changes in Consumer Price Index for All Urban Consumers: All Items in U.S. City Average. I also include Consumer Price Index: All Items for China. I am curious if U.S. imports from China helps to suppress price and thus yields in the United States. The sign for China is positive but not statistically significant.

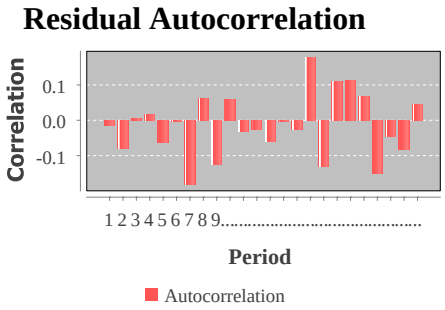
Regression

Name	Beta	Std.Error	T-Stat	Delta-R2
Constant	-0.08	0.021	-3.887	
GDPGDP/NGDPPOT_LogDiff	5.012	1.141	4.391	0.215
CPIAUCSL_LogDiff	10.473	2.667	3.927	0.084



Name	Beta	Std.Error	T-Stat	Delta-R2
CHNCPIALLMINMEI_LogDiff	0.267	0.738	0.362	-0.025
RSq	0.319			
AdjRSq	0.293			
DW Stat	2.026			
Observations	111			
DGS10_LogDiff				



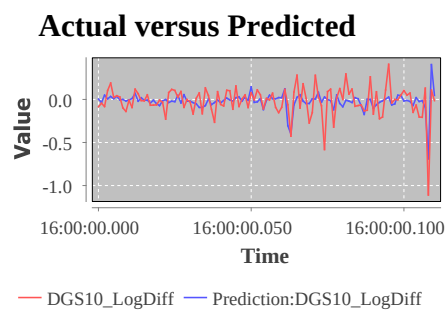


The regression results are strong, statistically significant and positive for both changes the GDP/Potential GDP ratio and changes in CPI. China prices are positive but not statistically significant. The R-Square is 0.319. A one percent rise in the GDP/Potentential is associated with a 5.012 percent rise is 10 year Treasury yields. This stimulus is an increase of 8.846%. The 10 Year Treasury rate of say 30 trading days ago,(0.981 percent), should increase to 1.617. The current rate is 1.54. Is the recent interest rate move an over-shoot? Perhaps, but new inflation figures are not factored into our equation. Time will tell.

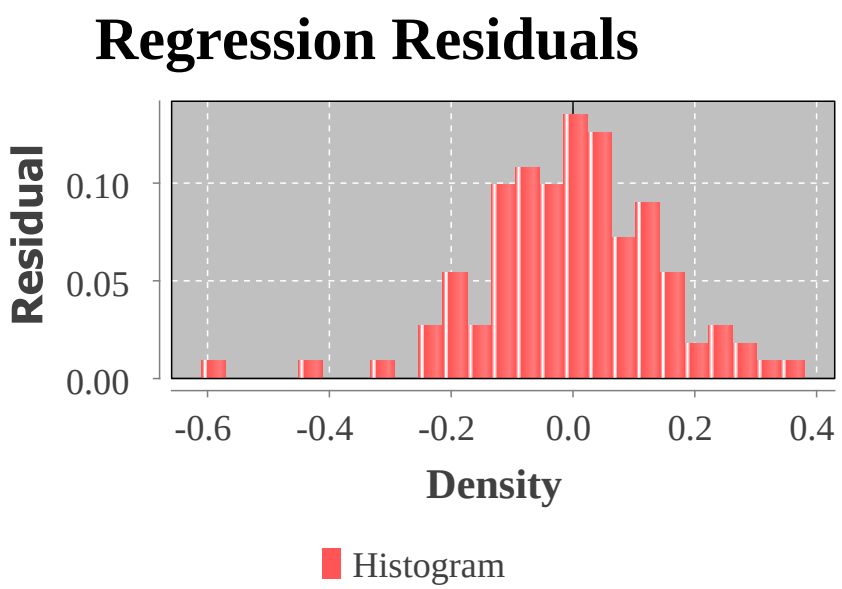
Now let's do a split regression.

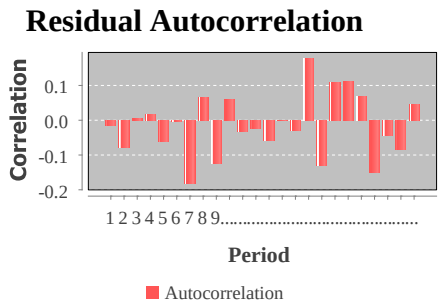
Split Regression

Name	Beta	Std.Error	T-Stat	Delta-R2
1993-04-01-2000-10-01	-0.082	0.034	-2.41	
2000-10-01-2008-04-01	-0.085	0.033	-2.545	0.0005
2008-04-01-2020-10-01	-0.077	0.024	-3.239	-0.023
GDPGDP/NGDPPOT_LogDiff	4.992	1.156	4.317	0.184
CPIAUCSL_LogDiff	10.617	2.767	3.837	0.067



Name	Beta	Std.Error	T-Stat	Delta-R2
CHNCPIALLMINMEI_LogDiff	0.275	0.768	0.358	-0.038
RSq	0.319			
AdjRSq	0.28			
DW Stat	2.024			
Observations	111			
DGS10_LogDiff				





The beta coefficient are little chaged from the first regression. Adding dummy variables in the time space does little to improve upon the R-Square of the first equation.

Stay healthy and safe investing.