

Finance in Montana

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I have often said that Presidents do not make great economies. Rather, risk takers make great Presidents. The ranking of Presidential economic performance is journalist click-bait. I also stated that former President Obama might thank conservative Texas and North Dakota investors for the success of his own Presidency. Those investors and their workers single-handedly defeated OPEC and Russia by driving the global price of oil from a lofty \$100 to \$30 per barrel. That effort mitigated the Central Banking efforts to create an economy grounded in inflationary expectations.

[In my previous post](#), I point out that price of gasoline was the single most important factor in explaining the relative change in the Consumer Price Index. I also pointed out that that standard deviations of consumer prices is extraordinarily high relative to the base CPI. Central banks might want higher prices but the invisible hand of capitalism conspires to efficiently reduce prices to the consumers' benefit. Declining fuel prices mitigated and flummoxed a deliberate inflationary monetary policy.

The equation below is well known:

$$\text{MoneySupply} * \text{Money Velocity} = \text{Price Index} * \text{Real GDP}$$

We add the caveat, that the Federal Reserve might grow the money supply in a willy-nilly like fashion but the Federal Reserve can not dictate which assets consumers chose to inflate. Nor can the Federal Reserve, control the passions of a Congress who imagine their policies and regulations are immune to error as consumers will never stop looking for substitutes to meet budgetary constraints.

Looking to the Future

Investors are not always right but as a collective investors spread their bets through out the economy. Investors and thus limit the consequences of policy failure. Currently, every professional investors notes with consternation the lofty price earnings of the SandP 500. Every investor remarks at the value of random digits produced by BitCoin miners. Every investor is aware of the rapid increase in demand deposits sitting idle in commercial banks. Yet, our Congress, Treasury Department and Federal Reserve conspire to add more fuel to the fire.

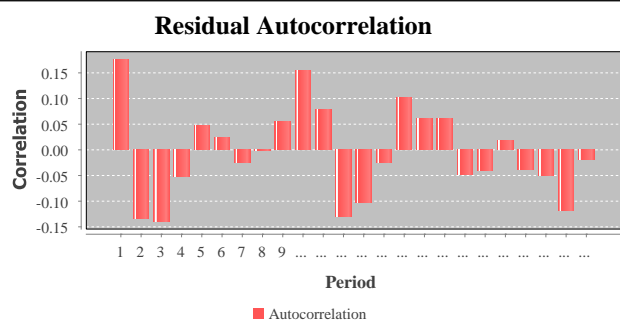
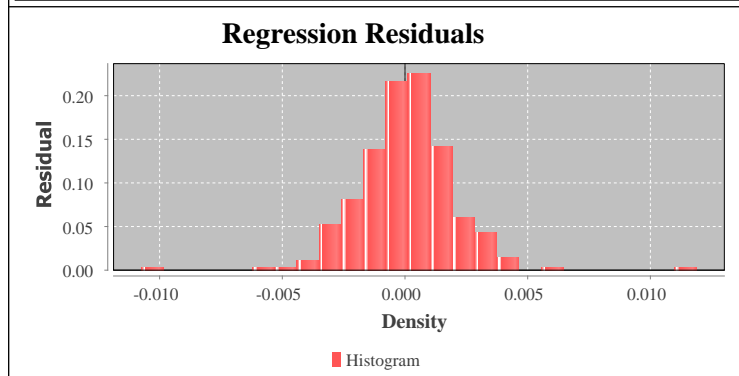
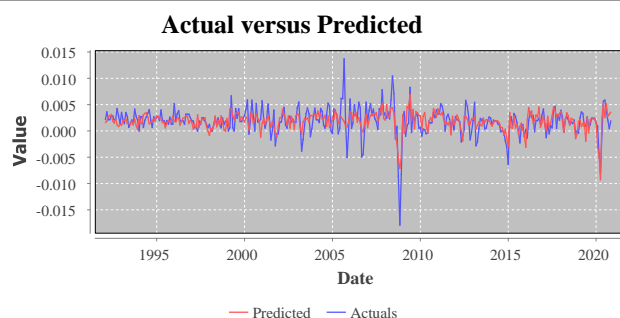
In this blog, I present evidence that we are witnessing a reversal trend in the stability of CPI: the price of energy and shift from the combustion engine to the elective vehicle is disruptive. The St. Louis Federal Reserve provides price series of global commodity prices. I also include as a dependent variable [Consumer Price Index for All Urban Consumers: All Items in U.S. City Average](#) along with three other independent variables [M2 Money Stock](#), [Trade Weighted U.S. Dollar Index: Broad, Goods and Services](#) and [U.S. Imports of Goods by Customs Basis from China](#). In theory increases in M2 should increase the CPI. We also know that as an import nation a weaker Dollar

should increase the CPI. My question: does the Production from China help mitigate the effects on CPI? My results suggest no.

I use the same 'residual reduction' algorithm from the previous post to identify the most relevant variables influencing the CPI. Concurrent data between 1992-01-01 and 2020-11-01 are log-differenced to create a stationary series. That transformation allow us to interpret the coefficients as elasticities.

Regression Results

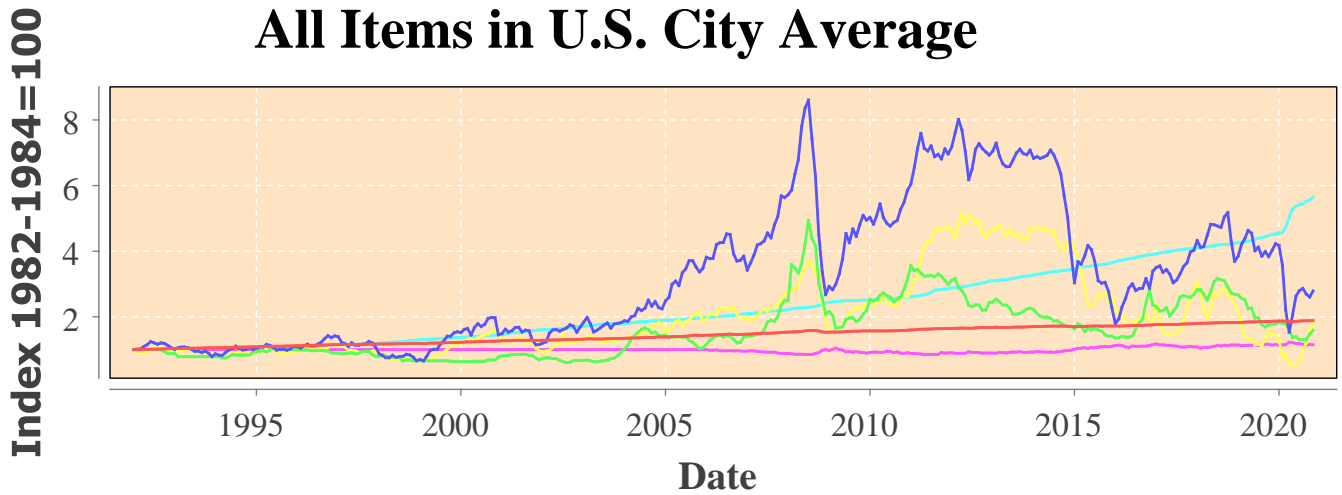
Name	Beta	Std.Error	T-Stat	Delta-R2
Constant	0.002	0.0001	13.441	
POILDUBUSDM_LogDiff	0.012	0.0013	8.877	0.309
PCOALAUUSD_M_LogDiff	0.007	0.0018	3.896	0.05
PNGASJPUSD_M_LogDiff	0.0052	0.0012	4.244	0.03
DTWEXBGS_LogDiff	-0.034	0.009	-3.754	0.016
M2SL_LogDiff	-0.033	0.02	-1.667	-0.0054
RSq	0.431			
AdjRSq	0.421			
DW Stat	1.647			
Observations	346			
CPIAUCSL_LogDiff				



The first and perhaps most important coefficient to note is the monthly constant of 0.002 or annualized to 2.352 percent. The Fed consistently achieved and is well beyond its inflation target of 2.0 percent. It is the standard deviation of underlying commodity and consumer prices which makes it difficult to make sense of monthly data.

The three top variables for our CPI Regression? Oil, Coal and Natural Gas. The elasticity coefficient are also quite high. We power the economy with energy -- period. The fourth variable is the Dollar Index followed by changes in Money Supply. I might suggest that the Dollar Index front runs the money supply as traders are very good front runners. As expected, those two coefficients have negative elasticities. Weakening dollar asset to promote inflation is a rather absurd way to increase national wealth. The variability these data-series are on full display in the graph below.

Consumer Price Index for All Urban Consumers: All Items in U.S. City Average

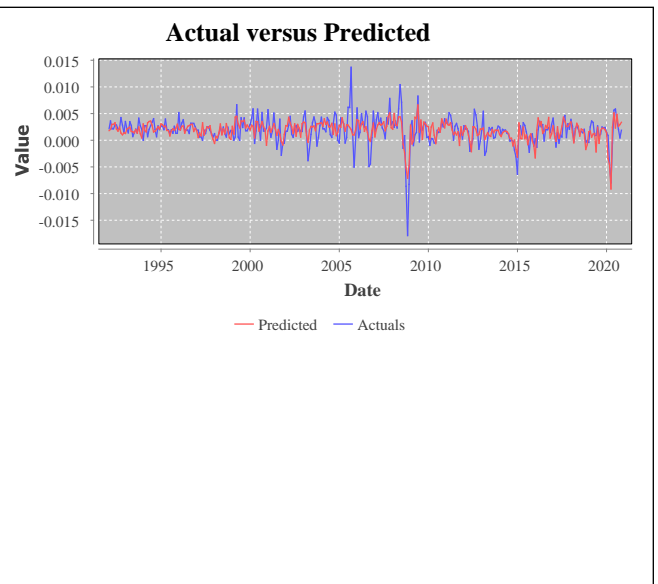


- Consumer Price Index for All Urban Consumers: All Items in U.S. City Average
- Global price of Dubai Crude — Global price of Coal, Australia
- Global price of LNG, Asia
- Trade Weighted U.S. Dollar Index: Broad, Goods and Services — M2 Money Stock

I now add a [split regression](#) to see if that constant trend changes across time. The answer is resoundingly no. In jest, I [posted](#) a linked in article suggesting that the Central Banks are institutional constructs attempting with one variable, money supply, to influence the pricing behavior of 7 billion consumers and the decisions of hundreds of millions of businesses. That attempt is folly. In fact, I point out that business with inherently deflationary prices (AAPL,INTC,AMD et. al.) are forced to become creative by adding true value to the economy; these business finance with equity and not debt. Fixed assets, such as real estate appreciate in value not because of creativity but as hedges against inflation. Deflation is a academic boogeyman. I say boogeyman Central banks desiring inflation need to create scarcity and not excess production.

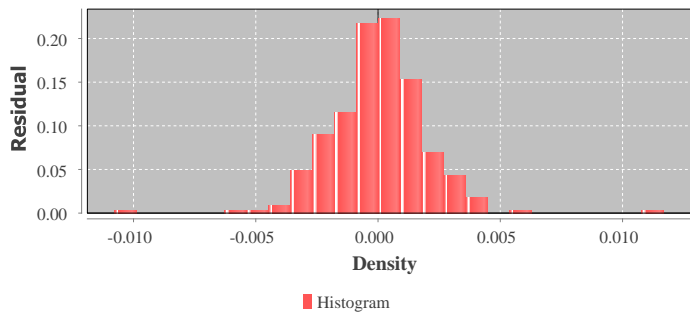
Split Regression with Dummy Variables

Name	Beta	Std.Error	T-Stat	Delta-R2
1992-02-01 to 2006-03-01	0.0021	0.0002	12.411	
2006-03-01 to 2009-01-01	0.0019	0.0004	5.403	0.0002
2009-01-01 to 2020-11-01	0.0017	0.0002	8.268	0.0076
POILDUBUSDM_LogDiff	0.012	0.0013	8.889	0.295
PCOALAUUSDM_LogDiff	0.007	0.0018	3.903	0.046
PNGASJPUSDM_LogDiff	0.0052	0.0012	4.262	0.026
DTWEXBGS_LogDiff	-0.034	0.009	-3.742	0.013

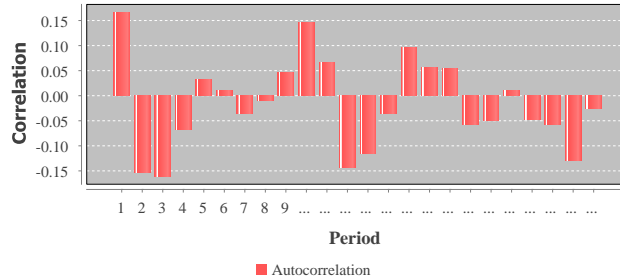


Name	Beta	Std.Error	T-Stat	Delta-R2
M2SL_LogDiff	-0.027	0.02	-1.335	-0.01
RSq	0.438			
AdjRSq	0.425			
DW Stat	1.667			
Observations	346			
CPIAUCSL_LogDiff				

Regression Residuals



Residual Autocorrelation



Series Summary

Code	Count	Mean	Std Dev	Global price of Dubai Crude_LogDiff	Global price of Coal, Australia_LogDiff	Global price of LNG, Asia_LogDiff	Trade Weighted U.S. Dollar Index: Broad, Goods and Services_LogDiff	M2 Money Stock_LogDiff	Consumer Price Index for All Urban Consumers: All
Global price of Dubai Crude_LogDiff	346	0.003	0.089	1	0.247	0.181	-0.372	-0.213	0.556
Global price of Coal, Australia_LogDiff	346	0.0013	0.064	0.247	1	0.188	-0.296	-0.156	0.366
Global price of LNG, Asia_LogDiff	346	0.0017	0.089	0.181	0.188	1	-0.158	-0.162	0.323
Trade Weighted U.S. Dollar Index: Broad, Goods and Services_LogDiff	346	0.0004	0.013	-0.372	-0.296	-0.158	1	0.157	-0.41
M2 Money Stock_LogDiff	346	0.005	0.0055	-0.213	-0.156	-0.162	0.157	1	-0.239
Consumer Price Index for All Urban Consumers: All	346	0.0018	0.0026	0.556	0.366	0.323	-0.41	-0.239	1

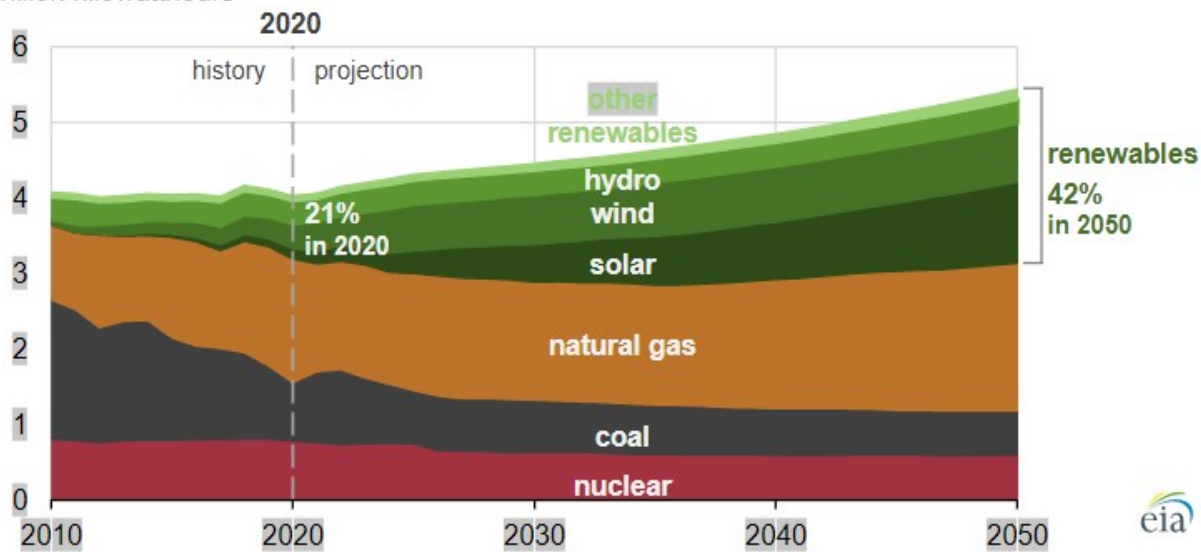
Code	Count	Mean	Std Dev	Global price of Dubai Crude_LogDiff	Global price of Coal, Australia_LogDiff	Global price of LNG, Asia_LogDiff	Trade Weighted U.S. Dollar Index: Broad, Goods and Services_LogDiff	M2 Money Stock_LogDiff	Con
Items in U.S. City Average_LogDiff									

The Future of Energy and Inflation

Given Central Banks are forcing the shots and supplying the market with more than enough liquidity to create inflation, we suggest that mandated energy bottlenecks are the catalyst to push the CPI higher - perhaps dramatically higher. Luckily the Federal Reserve has a convenient side actor to help increase inflation through scarcity. [The EIA projects Renewable share of electrical generation will double by 2050.](#) Is this project growth fast enough to meet the transportation needs? Previously, [I estimated](#) that to replace the current energy content of U.S. gasoline usage 165 nuclear power facilities will need to start construction immediately. Is there to political will to undertake such an effort? I doubt it.

U.S. electricity generation, AEO2021 Reference case (2010–2050)

trillion kilowatthours



In 2010, a [Democratic Senator literally shot cap as trade legislation for carbon reduction.](#) Market place solutions are highly effective. Instead, Congress will dictate resources allocation to tackle an [urgent issue.](#) Despite my negative comment, business will again bailout the folly of 'policymakers. Higher prices from bottlenecks will create opportunities for investors to fill the gap.

Stay healthy and invest wisely.

Elasticity Matrix and Summary Data

Series	Last	Growth Rate	Std Dev	Corr.	Ratio	Elasticity /Inv.Elasticity
Consumer Price Index for All Urban Consumers: All Items in U.S. City Average	260.817	0.012	0.0026	1	1	1/1
Global price of Dubai Crude	42.578	-0.307	0.089	0.556	34.508	19.171/0.016
Global price of Brent Crude	43.224	-0.311	0.093	0.554	35.85	19.876/0.015
Global price of WTI Crude	41.516	-0.273	0.096	0.527	37.209	19.601/0.014
Global price of Coal, Australia	62.946	-0.097	0.064	0.366	24.557	8.982/0.015
Global price of Copper	7,068.91	0.206	0.062	0.342	23.832	8.16/0.014
Global price of Aluminum	1,935.28	0.09	0.047	0.335	17.987	6.023/0.019
Global price of LNG, Asia	6.822	0.25	0.089	0.323	34.416	11.126/0.0094
Global price of Rubber	110.152	0.58	0.077	0.32	29.738	9.522/0.011
Global price of Agr. Raw Material Index	106.422	0.073	0.029	0.297	11.35	3.373/0.026
Global price of Metal index	158.287	0.247	0.047	0.287	18.13	5.205/0.016
Global price of Barley	108.052	-0.045	0.059	0.22	22.799	5.022/0.0097
Global price of Soybeans Oil	812.678	0.191	0.054	0.22	20.742	4.558/0.011
Global price of Nickel	15,808	0.042	0.079	0.214	30.47	6.532/0.007
Global price of Rapeseed Oil	952.79	0.057	0.058	0.209	22.538	4.72/0.0093
Global price of Cotton	77.724	0.038	0.056	0.191	21.505	4.104/0.0089
Global price of Zinc	2,671.6	0.101	0.062	0.163	23.892	3.904/0.0068
Global price of Corn	190.625	0.146	0.059	0.154	22.623	3.475/0.0068
Global price of Palm Oil	841.64	0.373	0.073	0.152	28.153	4.293/0.0054
Global price of Soybeans	419.585	0.26	0.056	0.137	21.751	2.978/0.0063
Global price of Fish	5.26	-0.152	0.07	0.136	27.141	3.68/0.005
Global price of Wheat	210.754	0.338	0.067	0.113	25.909	2.923/0.0044
Global price of Groundnuts	1,981.74	0.114	0.053	0.097	20.57	1.987/0.0047
Global price of Sunflower Oil	1,348.08	0.477	0.074	0.095	28.417	2.687/0.0033
Global price of Shrimp	8.084	0.0015	0.04	0.088	15.275	1.338/0.0057
Global price of Iron Ore	123.524	0.49	0.074	0.081	28.551	2.3/0.0028
Global price of Beef	190.738	-0.262	0.043	0.072	16.474	1.194/0.0044
Global price of Coffee, Other Mild Arabica	154.477	0.038	0.076	0.06	29.512	1.757/0.002
Global price of Rice, Thailand	459.857	0.165	0.061	0.051	23.463	1.207/0.0022
U.S. Imports of Goods by Customs Basis from China	44,856	0.231	0.105	0.033	40.515	1.339/0.0008
Global price of Bananas	1,132.6	0.0061	0.149	0.016	57.508	0.945/0.0003
Global price of Uranium	29.486	0.18	0.06	0.01	23.142	0.241/0.0004
M2 Money Stock	19,086	0.251	0.0055	-0.239	2.136	-0.51/-0.112
Trade Weighted U.S. Dollar Index: Broad, Goods and Services	116.626	0.15	0.013	-0.41	5.037	-2.067/-0.081