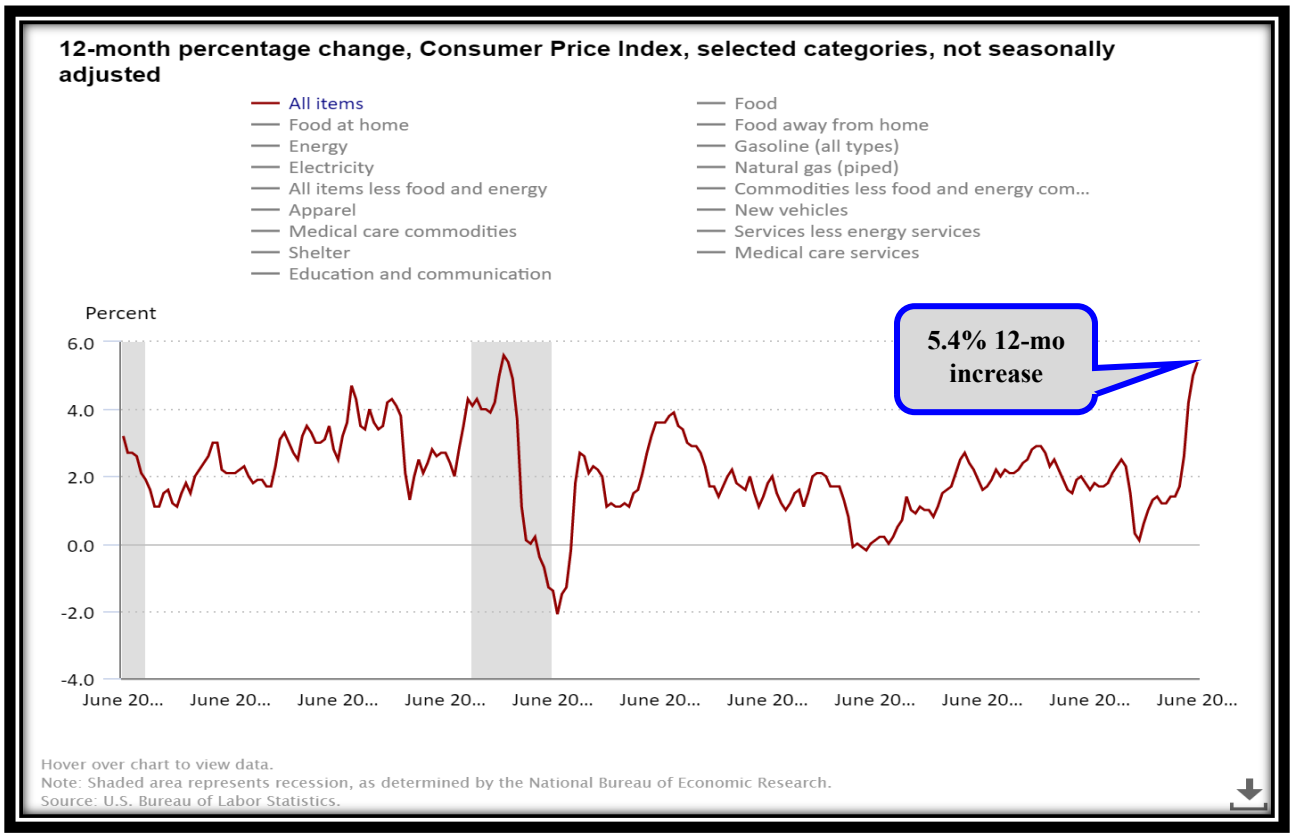
The Inflationary Tale

Inflation is always and everywhere a monetary phenonmenon in the sense this it is and can be produced only by a more rapid increase in the quantity of money than in output."

-Milton Friedman, 1963

Figure 1



Note: Graph shows oscillations in the annual inflation reported by the Consumer Price Index from June to June. (U.S. Bureau of Labor Statistics, 2021)

Primer On Supply & Demand:

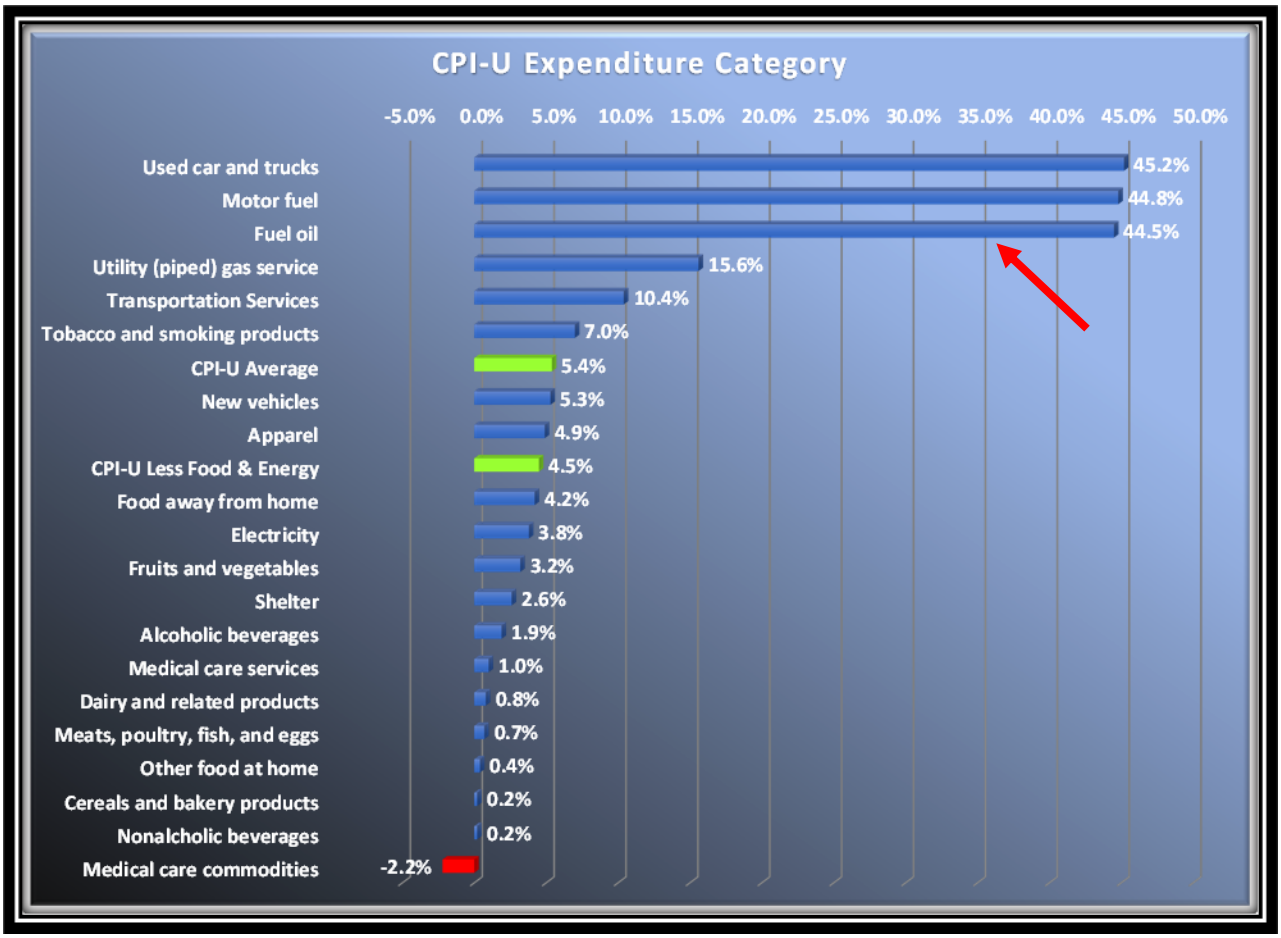
Investors and speculator's alike bear an insatiable curiosity to always divine what lies to the right-hand side of the chart. Consistent success in this endeavor would endow untold fortunes upon the market participant who can foresee such mysteries. However, human behavior is predictable in its predilection to simply extrapolate the recent past into the future. A quick glance of the 20-year inflation oscillations should arrest any notion that recent performance can elicit a viable strategy. The void residing to the right-hand side of the last data point (5.4%) offers nothing more than an echo chamber to amplify our own biases and fears for the future. The Latin axiom of "caveat lector" is all that remains to provide solace to the battle tested investor.

A distant glance at the chart above paints an ominous harbinger of prices spiraling out of control. But, before we start envisioning an inflationary cataclysm, we should also consider the sage German proverb of "Baume wachsen nicht in den Himmel" or "Trees don't grow to the sky."

There are natural limits to growth! Competitive markets seek equilibrium where all goods and services will clear at a specified price. Private individuals freely exercising their right to engage in cooperative exchanges set the market price in capitalistic regimes; however, those prices are not boundless. Rising prices will either bring more supply to competitive markets (profit seeking) impeding future price increases or the benefits to the purchasing party will cease to be economical, resulting in the exercise of their opt-out right (i.e., not buying = falling demand). Markets are not always rationale or self-correcting without activist government policy, but they have been the best option to allocate scarce resources and bring prosperity to billions of people.

Inflation Drivers: A Look Under the Hood:

Figure 2



Source: (U.S. Bureau of Labor Statistics, 2021)

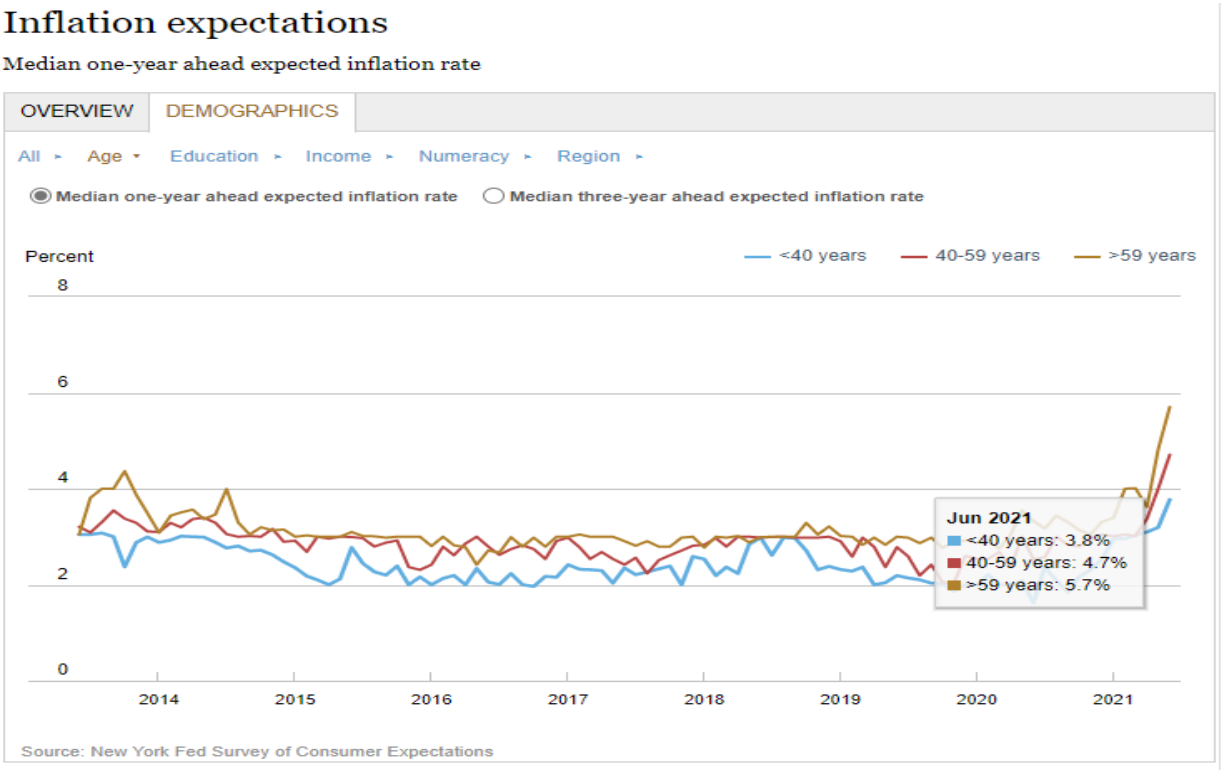
While the headline inflation number in June (5.4%, 4.5% less food and energy) looks scary, it is important to understand that inflation is not evenly distributed throughout the economy. **Used car and truck prices account for 1/3rd of the increase in all items**. COVID has created tremendous distortions in certain sectors, while leaving other virtually untouched. Disaggregating the headline inflation number into its constituent components reveals that only a

handful of categories are driving the recent surge in reported inflation. For context, in June 2020, the 12-mo. CPI-U change was a paltry **0.6%**. Remember when oil futures were *negative* (producers paying consumers to buy oil)? Policymakers were fearing *deflation*, the opposite of inflation just 12 months ago. Point being conditions can change *fast*.

Two Faces of Inflationary Pressures:

Any person identifying as Generation X (born prior to 1981) or earlier either lived through the traumatic inflationary period of the 1970s or were regaled by nightmarish tales from their parents applying for a loan at grotesque rates. Skyrocketing gas prices and interest rates are the cautionary lore ingrained within those who lived through such times. Despite the past 50 years of progress, these experiences are a potent force in shaping the historical perspective of inflation in the United States. For those tasked with the awesome responsibility of allocating capital, one must posit whether the past is truly prologue or does nearly **2/3rd** of the U.S. population suffer an extreme *sampling bias* based on narrow experience? If so, does this predisposition toward a 1970s style inflation narrative obscure how the present set of circumstances could be different?

Figure 3



Source: (Federal Reserve Bank of New York, 2021)

Based on the Survey of Consumer Expectations, those born after 1981 (peak inflation) tend to exhibit *lower* expectations for future inflation vs. older generations.

Drivers of Inflation:

Fortunately, classical economics provides us with two distinct models to delineate the drivers behind a rise in the general price level. Cost-Push Inflation and Demand-Pull Inflation are the preeminent models to diagnose both the causes and policy prescriptions for inflationary ills.

- **Cost Push (1970s style inflation)**
  - Supply of goods and services shrinks due to increases in raw materials and/or factors of production (e.g., labor, land).
  - External events or natural disaster limits producer's ability to supply current demand.
  - If demand remains constant, but supply falls prices must rise to increase profit margins so more supply can be brought to online.

- **Demand Pull (COVID era)**
  - Increasing aggregate demand outstrips economy's output capacity.
  - Expanding economy, rising employment, government stimulus all competing for a fixed quantity of supply in the short run.
  - As so known as "too many dollars chasing too few goods."
    ***Now would be a good time to refer back to Milton Friedman's salient quote from the beginning of the podcast to solidify this point.*

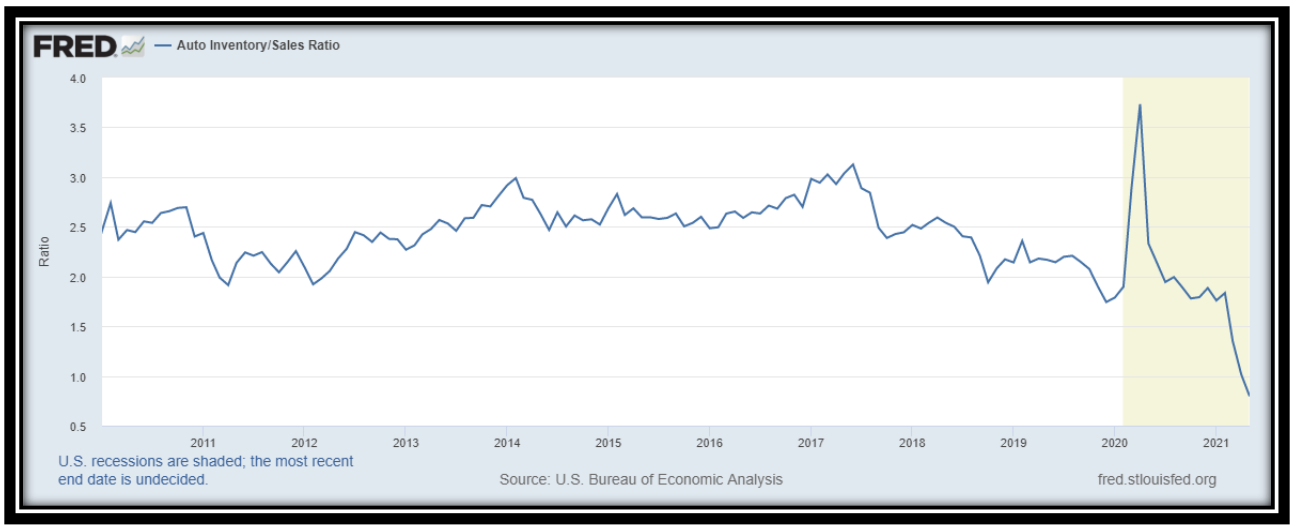
- **Why is COVID creating demand-pull inflation and not a repeat of the 1970s?**
  1. Business needed cash to survive lock downs, so inventories were liquidated, resulting in scare supply when the rebound eventually takes hold. Low inventories combined with lead times in the production of goods results in supply chain breakdowns lengthening the lag to satiate demand = **burst in prices**.
  2. Consumers horded cash due to lockdowns and distancing requirements = **pent up demand.**
  3. Central banks and governments around the world acted in concert to flood their economies with stimulus. Their initial goal was to arrest cratering demand and plummeting asset prices to ward off massive defaults in a highly leveraged financial system, *but* stimulus continues = **transfer payments to private sector to boosting demand for scarce resources**.
  4. Interest rates fall to all-time lows to encourage spending and capital formation (i.e., investment) = **encourage spending and borrowing. One person's spending is another person's income.**

<u>Inventory to Sales (I/S) Ratio:</u>

The I/S ratio ($\frac{Avg.\ Inventory}{Sales}$) compares the amount of capital invested in inventory relative to sales, which is an accounting measure of efficiency. High I/S ratios imply too much capital tied up in inventory, thus lower returns, while low I/S ratios imply greater capital efficiency and higher returns. However, lower is not always better. Low ratios drastically increase the risk of

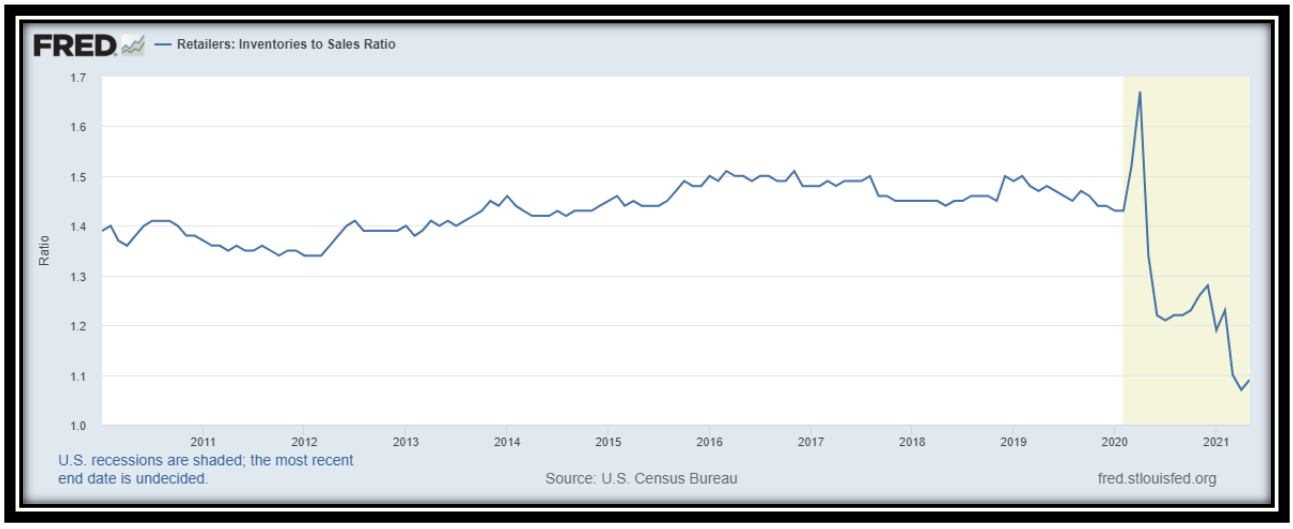
running out of stock, and if there is no stock there can be no sales meaning $0 revenues. When analyzing I/S ratios since the mass distribution of the COVID vaccine one observes that I/S ratios have cratered. This is not a sign that business have become magically efficient overnight. It is a clear sign that inventories are exceedingly low, and many businesses cannot fill customer orders due to surging demand. **Demand > Supply = Demand Pull Inflation**.

Figure 4



Source: (U.S. Bureau of Economic Analysis, 2021)

Figure 5



Source: (U.S. Census Bureau, 2021)

Global Demand Picture: Baltic Dry Index:

Yes, inventories are low, but what does the genesis of the global supply chain look like? After all, there is a lag between acquiring raw materials, manufacturing, transportation, and selling a finished good to a customer where revenue is recorded. The Baltic Dry Index is a practical leading indicator measuring the costs to ship raw materials (iron ore, steel, cement, coal, grains) all over the world. It covers 22 global shipping routes and 4 classes of ocean vessels (too big to go through Panama Canal 100,000+ dead weight tons to smaller ships of 15,000 dead weight tons). The Baltic Dry Index provides a clear view into the global demand picture which is free of speculative contagion because manufactures of intermediate to finished goods do not place orders for raw materials unless they have customer orders to fill. As a result, a rising index is an encouraging sign of burgeoning global demand and economic growth. The dramatic rise in the index since early 2021 squares with the thesis of bursting demand vs. a contraction in future supply. A 5-fold increase in container rates suggests a conspicuous demand story is unfolding.

Fast Facts:

- Since June of 2020, the Baltic Dry Index has risen by **495%** on strong demand for raw materials.
- This means manufacturers are facing dramatic increases in their cost of production.
- Producers can either absorb these price increases or pass them on to consumers.

Figure 6

Source: (Baltic Dry Index, 2021)

Would a Return to the Gold Standard Solve It?

Distrust of government-controlled money dates back to the founding of our country. For centuries prior to the Declaration of Independence, wealth was primary acquired by monarchs through means of expropriation, gratuitous transfers, extraction, and devaluation. Citizens of our fledgling republic held an understandable preference for hard money and a general distrust for government issued fiat. In theory, an adherence to the gold standard can avoid inflation because the quantity of money cannot outpace the quantity of gold.

Unfortunately, a resolute ardor in applying these rules can result in dramatic economic instability and lower economic output as a result. New discoveries of gold are infrequent constraining supply. Alternatively, technological innovations and productivity gains producing economic growth can outstrip a relatively fixed supply of gold. When production outstrips the quantity of money the price level falls (i.e., deflation). This mismatch produces substantial swings in the business cycle which requires stability to maximize consumption and investment. Consider these examples…

Monetary Regime Part I: Gold Standard Era 1871 - 1914

- Imaging you are Rip Van Winkle and fell asleep in 1871 and did not wake up until 1914. After 43 years of slumber, you would observe that the general price level of goods and services was **unchanged** during the gold standard. Success? Unfortunately, while you slept, there were bouts of inflation, deflation, and ultimately frequent recessions (shaded areas) which stymied economic prosperity.

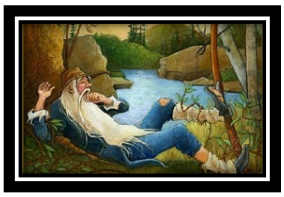
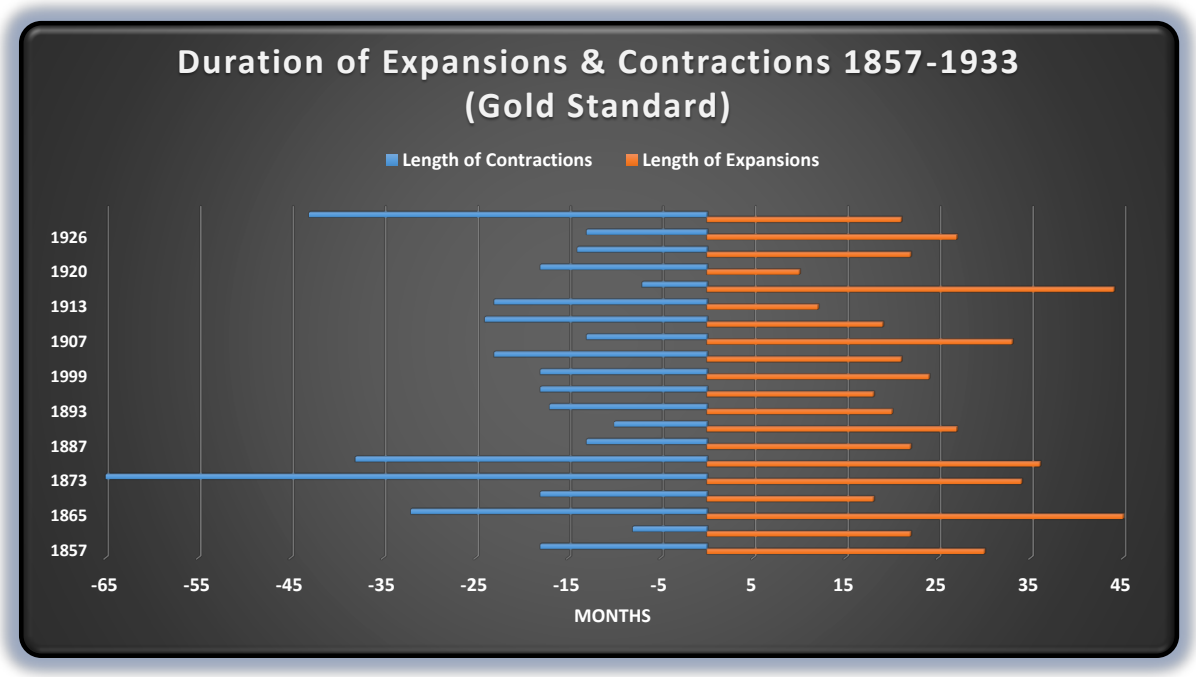


Figure 7

Note: Chart shows U.S. Price Level data from 1871 to 1914 with recessions shaded. (National Bureau of Economic Research, 2021)

Figure 8



Source: (National Bureau of Economic Research, 2021)

Monetary Regime Part II: Fiat Money Era Post WWII

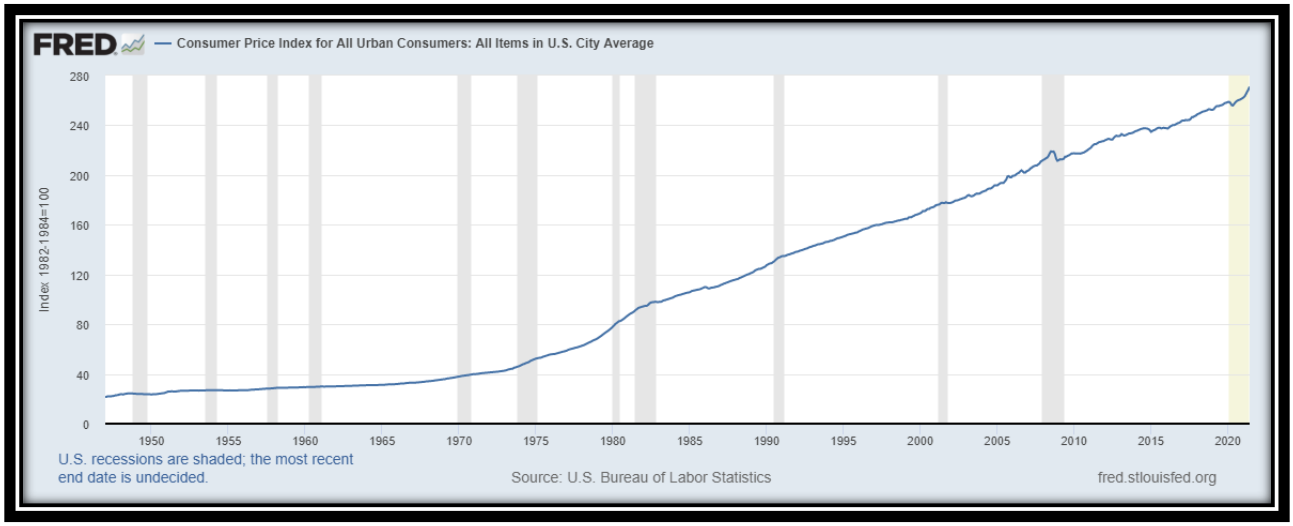
- Convertibility to gold was suspended in 1933 with the Emergency Banking Act, and the implicit backing of gold to the U.S. dollar ended in 1971. The tradeoff from a metallic regime to a fiat regime has been persistent and sometime unpredictable inflation; however, deflation has been largely non-existent. Fiat systems provide the flexibility to temporarily adjust the money supply as a shock absorber against economic distress. The outcome has been fewer recessions, shorter recessions, longer expansions, and much great economic prosperity! Not perfect, but it has been better than all the other systems tried so far. Here is the record:

Figure 9

	Average Length of Contractions in Months	Average Length of Expansions in Months
1854-1933 (Gold Standard)	(22)	25
1934-2020 (Fiat Money)	(10)	64
% Change	**-52%**	**154%**

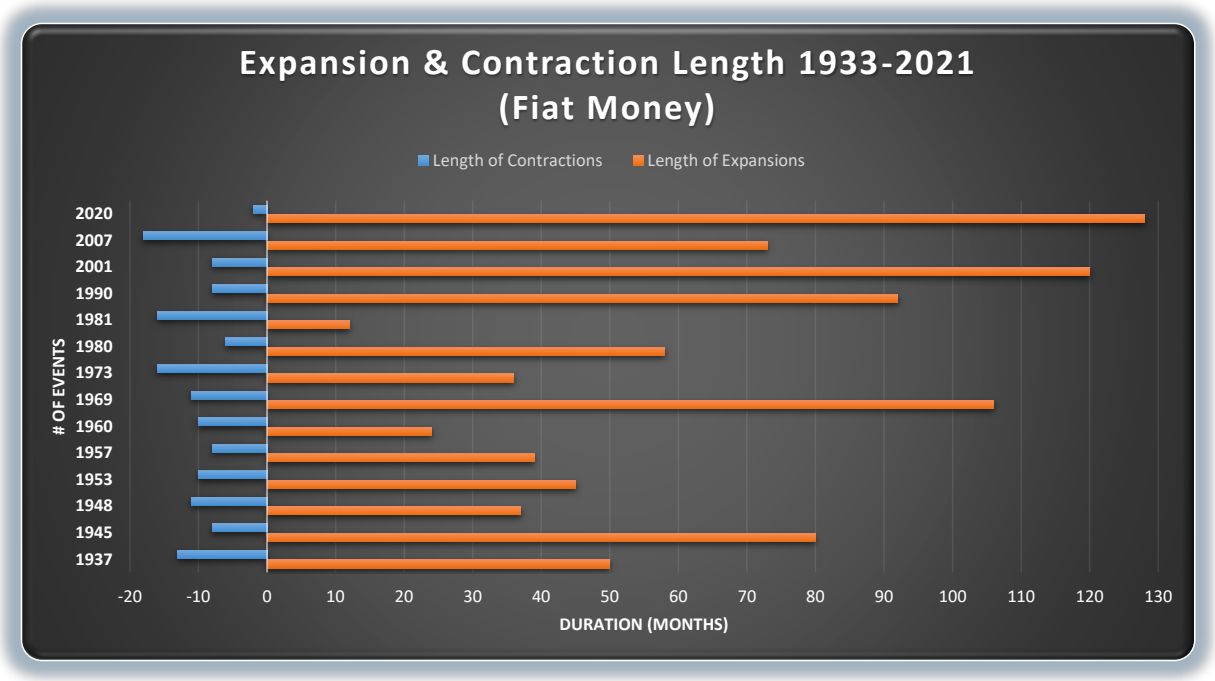
Note: Compares economic performance under a metallic vs. fiat based monetary regime by comparing average duration of expansions and contractions. (National Bureau of Economic Research, 2021)

Figure 10



Note: Change to a fiat based monetary regime has led to a gradual, but *persistent* rise in the general price level since post WWII. (U.S. Bureau of Labor Statistics, 2021).

Figure 10



Source: (National Bureau of Economic Research, 2021)

Global Inflation over Two Centuries:

For centuries, our ancestors experience little advancement in their overall welfare and levels of prosperity. Hundreds of years past with little change in the level of subsistence poverty and living standings for generation after generation. However, the arch of prosperity experienced a noticeable shift in the 19th century, which greatly accelerated through the 20th century. More technological progress and prosperity have occurred in the past 100 years than in all the millennia which came before it. However, the 20th century also marked the greatest explosion in inflation across the globe. The citizens of some countries prospered greatly, while other experience ruinous inflation and painful economic collapse.

From 1900 to 2000, the U.S. has experienced a 23-fold increase in the price level (Taylor, 2020). While this is a dramatic cumulative increase, the U.S. has been very successful in managing inflation relative to our global partners. Detailed inflation records from foreign countries are hard to come by; however, historical exchange rates can paint a picture of how the U.S. has managed its inflation relative to our peers. Purchasing Power Parity teaches us that differentials in inflation rates between nations will eventually be transmitted via exchange rates (e.g., USD / JPY). Countries with higher (lower) inflation rates relative to the United States should see their currencies depreciate (appreciate) meaning a U.S. investor can acquire more (less) foreign currency per dollar. Since 1900, only **4** countries have seen their currency appreciate relative to the U.S. dollar.

Figure 11

Table 5-US Dollar Exchange Rates 1900-2000

	Netherlands	Netherlands Antilles	Singapore	Switzerland
1900	2.48	2.48	1.93	5.19
1920	3.23	3.23	2.47	6.49
1940	1.87	1.87	2.12	4.31
1960	3.77	1.87	3.12	4.31
1980	2.15	1.79	2.09	1.79
2000	2.34	1.78	1.73	1.61

Note: In the past 100 years only 4 nations have seen their currencies appreciate relative to the U.S. dollar. According to Purchasing Power Parity, a country with higher inflation relative to another should see their currency depreciate. USD in 2000 only purchased $1.61 Swiss Franc vs. $5.19 back in 1900 (Taylor, 2020)

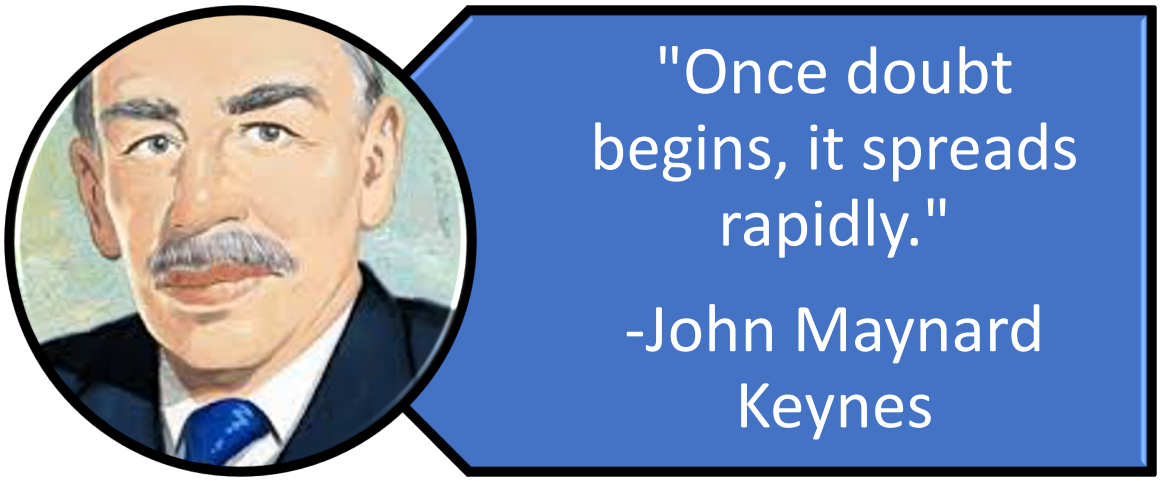
What Policy Tools Are At Our Disposal to Combat Prolonged Inflation?

- **Fiscal Policy Responses:**
  - Government greatest tool to combat inflation is raising taxes as it will drain spendable funds from the real economy (yuck!!!).
  - Governments can reduce deficits which will stop the competition with the household sector for scarce good and services (i.e., lower demand).

- **Monetary Policy Responses:**
  - Communication about inflation targeting. 2% promotes best conditions for investment and consumption. Affords buffer in case deflation takes root, but is low enough to promote sustainable expansion, while maximizing asset returns.
  - Raise interest rates (i.e., increase the cost of money and drains liquidity)
  - Pay interest on banks' excess reserves held with Fed in the inter-bank market to curb lending (i.e., reduce money creation).
  - Increase reserve requirements so banks have less capacity to lend money.

Final Word:

Runaway inflation is not inevitable if governments are willing to address long term economic challenges and imbalances with corrective policies. Resorting to inflationary tactics can provide short-term relief, but do not address the structural issues. Independence of central banks is critical to avoid political influence and ensure that monetary authorities will take corrective actions that may be painful in the short run.



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