Overview of Consumer Price Index

Appropriations and Revenue Committee

July 7, 2021

What is the Theory of Inflation?

Inflation: A sustained increase of the general price level in an economy over a period of time that effects the overall cost of living.

The main factors determining the price level (P) are the:

- Amount of Dollars in Economy (M)
- Speed of Spending (V)
- GDP/Amount of Goods Available (G)

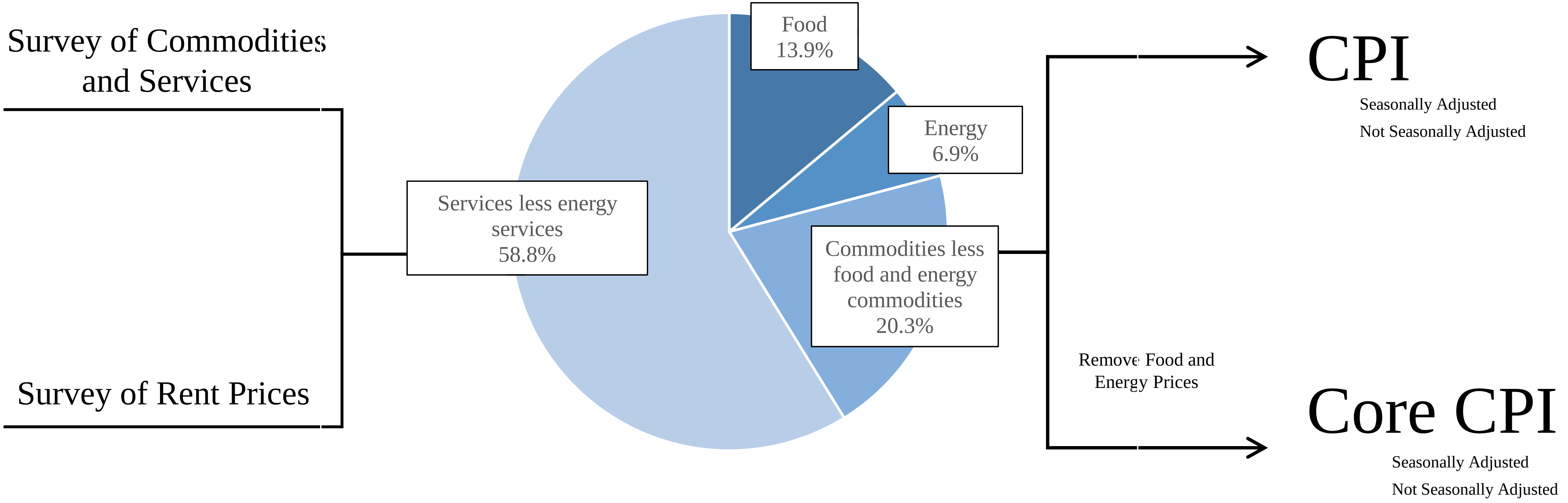
One way of understanding inflation:

$$MV = PG$$

For example: Consumer Confidence in the economy increases.

$$M\uparrow V = PG$$

The Consumer Price Index (CPI)



The Dual Mandate of the Federal Reserve

The Federal Reserve is statutorily mandated to promote “maximum employment, stable prices, and moderate long-term interest rates”.

12 USC 225a. As added by act of November 16, 1977 (91 Stat. 1387) and amended by acts of October 27, 1978 (92 Stat. 1897); Aug. 23, 1988 (102 Stat. 1375); and Dec. 27, 2000 (114 Stat. 3028)

How Does the Fed Control Inflation?

The Federal Reserve traditionally has three tools to change the amount of money in the economy and attempt to address inflationary/deflationary pressures:

- Changing the Federal Funds Rate
  - The interest rate on the money banks lend to each other overnight.
- Changing the Reserve Ratio
  - The amount of money the banks actually need to have in their vaults.
- Conducting Open Market Operations
  - Buying and selling government securities.

Increase the Federal Funds Rate

$$\downarrow MV = PG$$

Increase the Reserve Ratio

$$\downarrow MV = PG$$

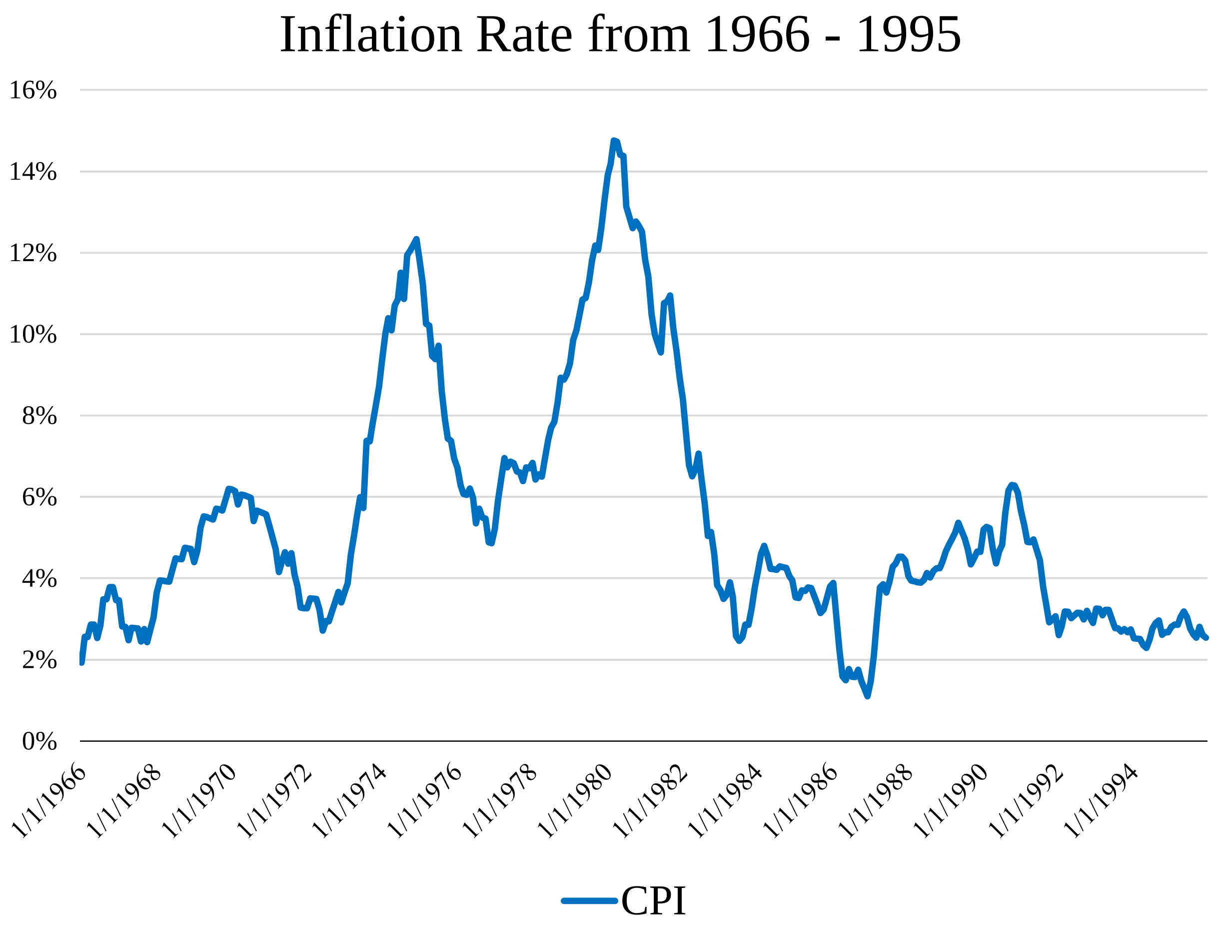
Sell Treasury Bonds, Bills, Notes etc.

$$\downarrow MV = PG$$

Stagflation: 1969-1983

- "Easy money" policies in pursuit of lower unemployment.
- Referred to as "Stagflation" because of high levels of inflation and little economic growth.
- Major Drivers of Inflation:
  - Energy Prices
  - Food Prices
- Inflation expectations begin driving inflation.
  - Escalation clauses/cost of living increases
  - Wage and price controls
- Oil embargo increased inflationary pressures.

$$\uparrow M V = \uparrow P G$$



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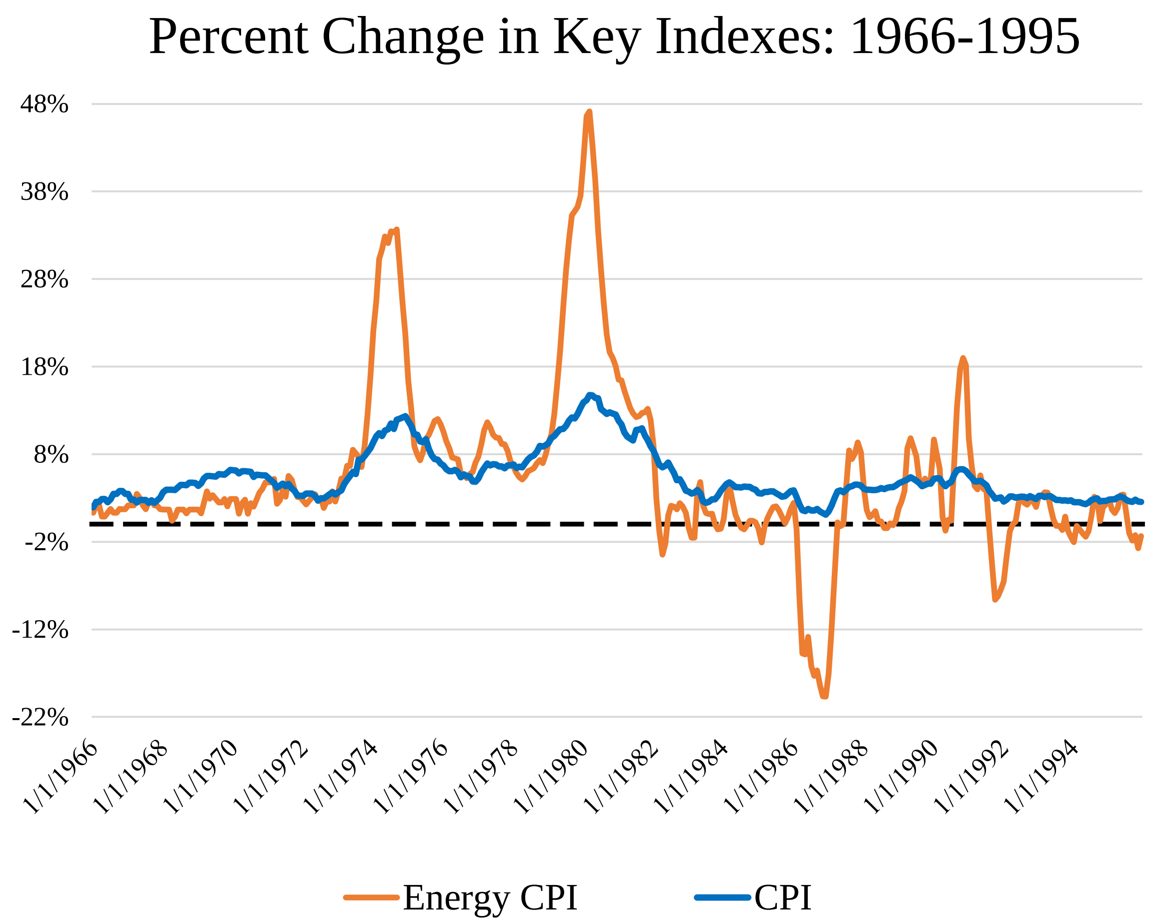
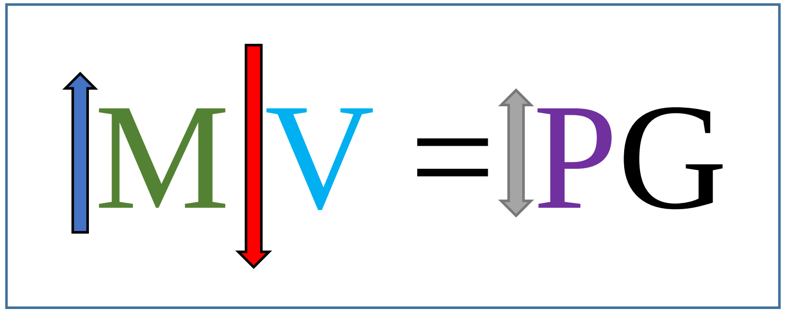
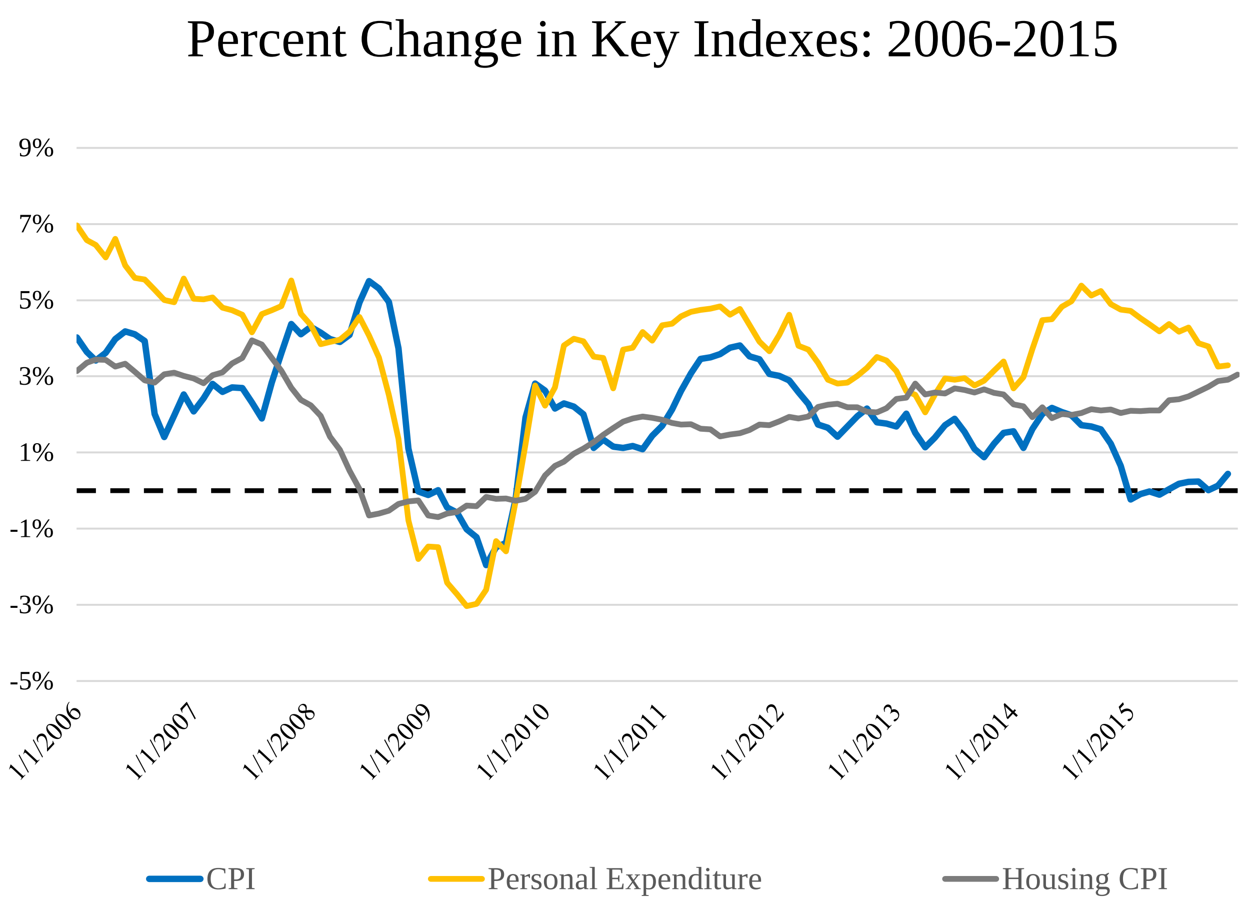


Financial Crisis: 2008-2009

- Sharp drop in consumer confidence and expenditures.
  - Velocity of money dropped 18%
- Severe and rapid tightening of credit market.
  - Historically low interest rates and high reserves.
- Begins era of historically low interest rates and low inflation.





The Great Lockdown: 2020 -

MV = PG

A Few Possible Influences on Current CPI

<u>M: Money Supply</u>

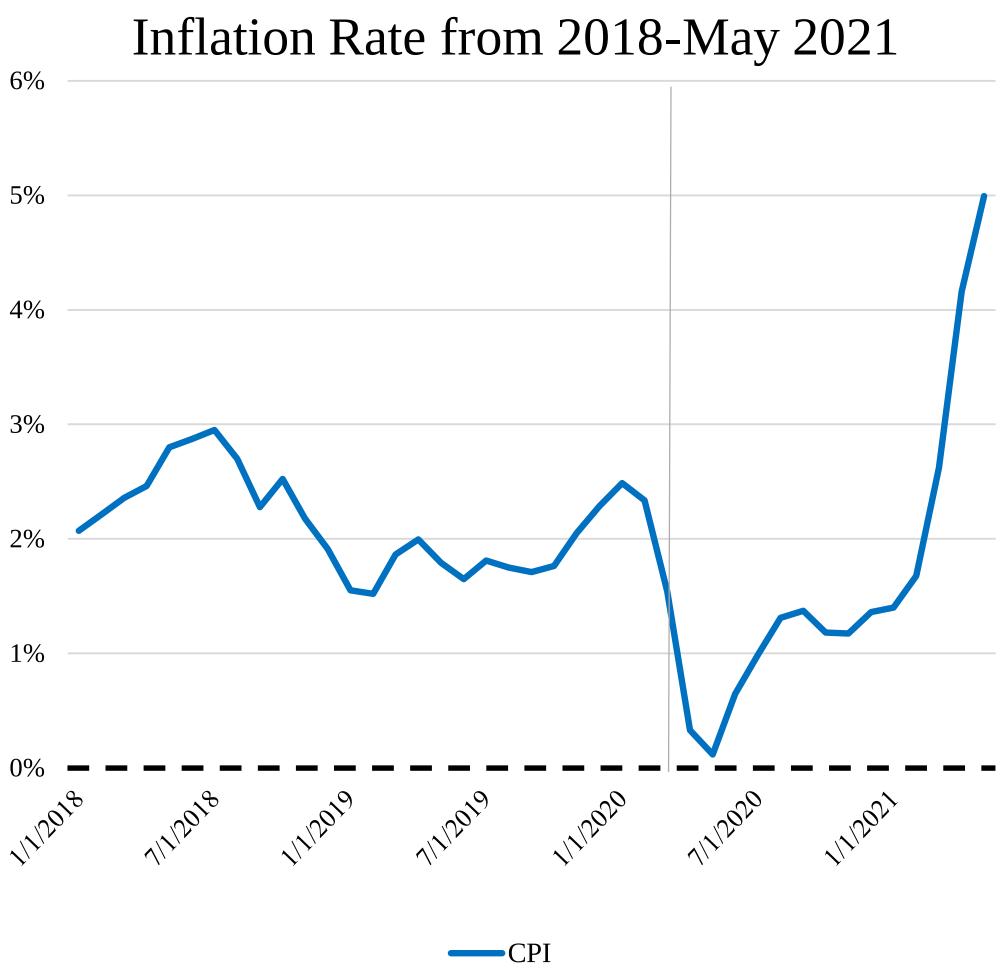
- Sharp increase in the amount of money in the economy.
  - Money Supply increased 74% compared to pre-pandemic.

<u>V: Speed of Spending</u>

- Sharp drop in consumer confidence and expenditures.
  - Velocity of money has dropped 77% compared to pre-pandemic.

<u>G: Changes in Output</u>

- U.S. GDP dropped 10% at height of pandemic compared to 2019.
  - Currently GDP is up 1% from 2019.
- Chip shortage and shipping issues causing supply chain disruptions.



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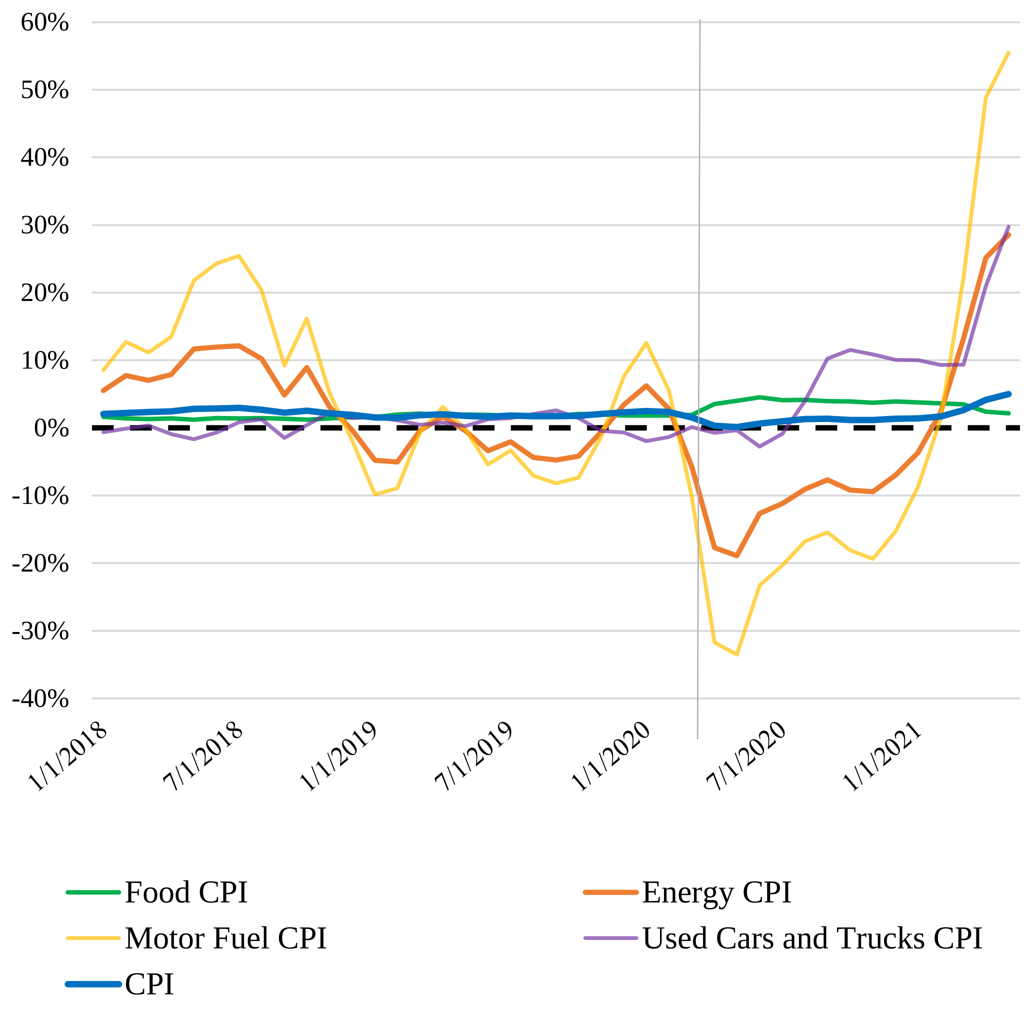
Percent Change in Key Indexes: 2018–May 2021



Theories for the Cause of Inflation

Supply Shock

$$MV = \uparrow P \downarrow G$$

Example: Chip Shortage and rapid increase in Used Car CPI.

Misleading Comparisons

$$MV = \updownarrow PG$$

Example: In 2020 global crude oil prices were down 127% compared to 2019. Current oil prices are up 12% compared to 2019 prices.

Monetary Policy

$$\uparrow MV = \uparrow PG$$

Example: Money Supply up $14,359 billion from April 2020.

Percent Change in CPI: May Sectoral Report

	January	Feburary	March	April	***May***
All Items	1.4	*1.7*	2.6	4.2	***5%***
Food	*3.8*	3.6	*3.5*	*2.4*	***2.2***
Food at home	3.7	3.5	3.3	1.2	**0.7**
Food away from home	3.9	***3.7***	3.7	3.8	**4**
Energy	***-3.6***	2.4	*13.2*	***25.1***	***28.5***
Energy commodities	-8.7	1.6	22	47.9	**54.5**
Gasoline	-8.6	1.5	22.5	49.6	**56.2**
Fuel oil	-16.5	-0.5	20.2	37.3	**50.8**
Energy services	2.1	3.2	4.1	5.4	***6.2***
Electricity	1.5	2.3	2.5	3.6	**4.2**
Utility gas service	4.3	*6.7*	9.8	12.1	**13.5**
All items less food and energy	*1.4*	1.3	*1.6*	*3*	***3.8***
Commodities less food and energy commodities	1.7	1.3	1.7	4.4	***6.5***
New vehicles	1.4	1.2	1.5	2	**3.3**
Used cars and trucks	10	9.3	9.4	21	**29.7**
Apparel	-2.5	-3.6	-2.5	1.9	**5.6**
Medical care commodities	-2.3	-2.5	-2.4	-1.7	**-1.9**
Services less energy services	1.3	1.3	1.6	2.5	***2.9***
Shelter	1.6	1.5	1.7	2.1	**2.2**
Transportation services	-4.1	-4.4	-1.6	5.6	**11.2**
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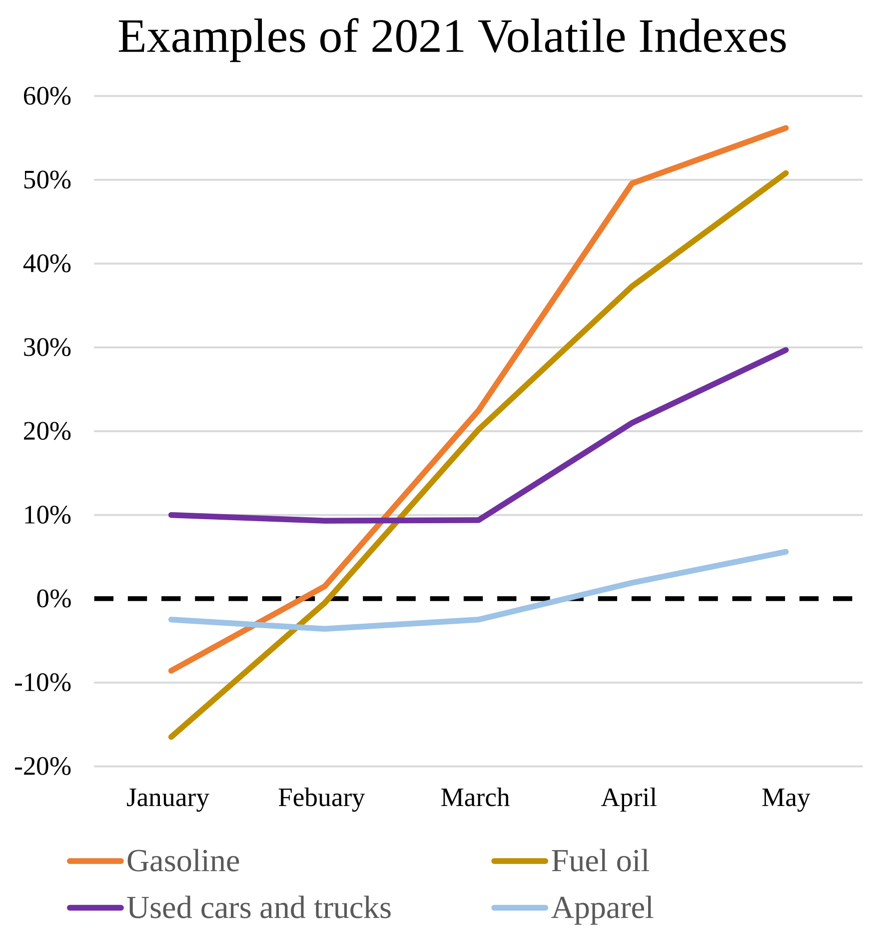

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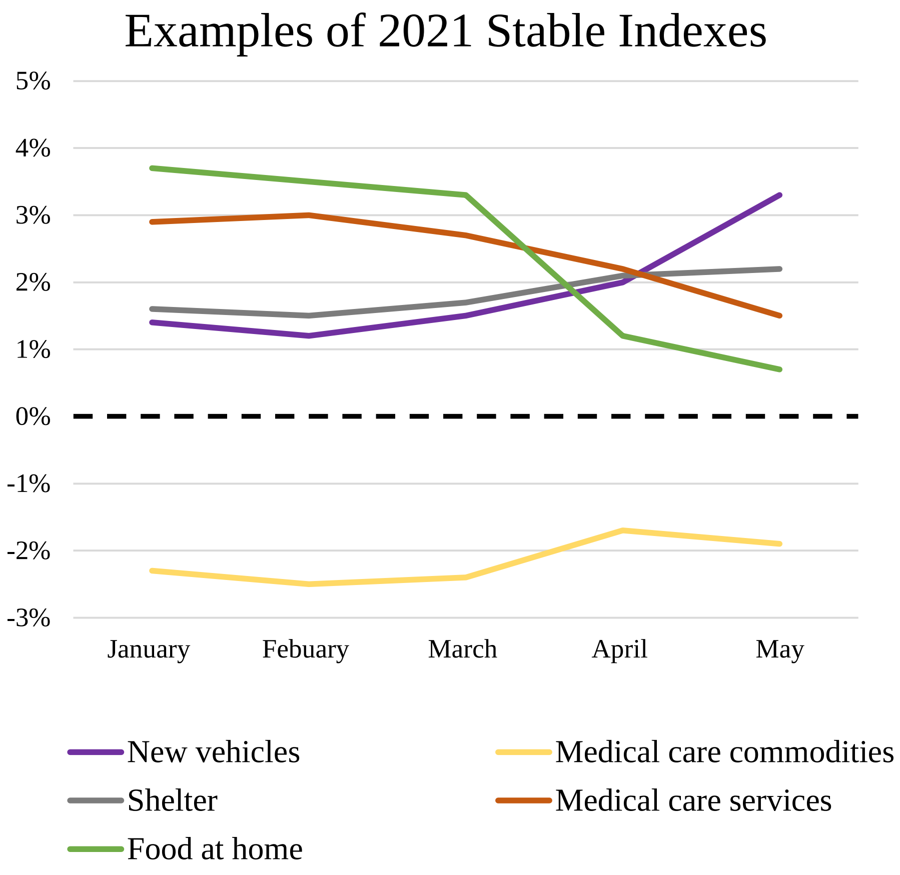

Most Recent Federal Reserve Meetings

- Policy shift to “2 percent inflation over the longer run”.
- Keep federal funds interest rate at 0-.25% until maximum employment is achieved.
  - What is maximum employment post-pandemic?
- Increasing uncertainty and perceived risk in economic projections.
- Latest Inflation Projection:
  - 2021 Projection: 3.4% (3%-3.9%)
  - 2022 Projection: 2.1% (1.6%-2.5%)
- Governors voted unanimously to keep the current monetary policies in place as of June 16, 2021.