

# **Analysis of Post Pandemic Inflation**

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# Purpose

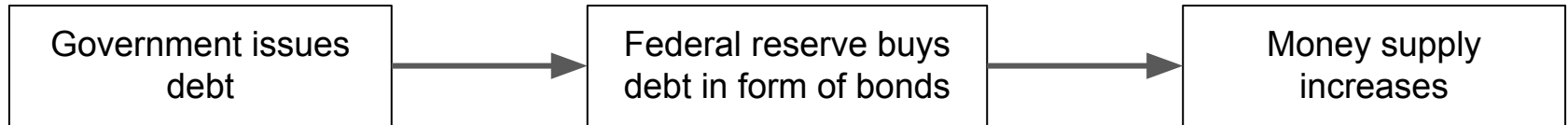
- Inflation affects purchasing power as prices for investments, commodities and consumer goods increase on different time horizons
- **Explore lagging effects of inflation on different categories in order to better understand of how to preserve purchasing power during high inflationary periods.**

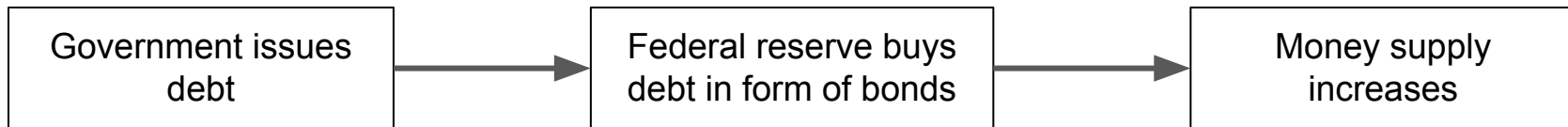
# Tools and Methods

- All data sets collected from “Economic Research (Federal Reserve Bank of St. Louis”
  - <https://fred.stlouisfed.org/>
- Downloaded 16 CSV files to Pandas dataframe
  - Cleaning time series data function: reindexing, reformatting date, NaN values, sizing, merge
- Saved dataframe and uploaded to analysis/plotting Python script
- Utilized plotly graphing library
- Version control with GitHub
  - [https://github.com/wyganthro/NYCDSA\\_Project\\_1.git](https://github.com/wyganthro/NYCDSA_Project_1.git)

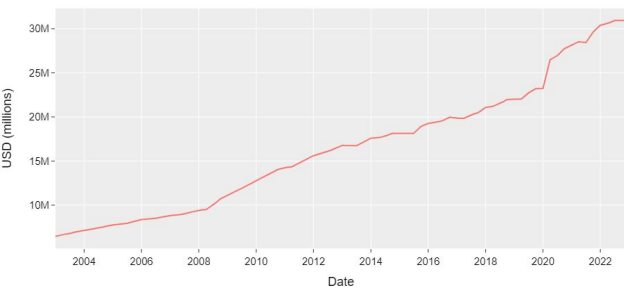
# Cause of Post Pandemic Inflation

- COVID hits March, 2020
  - GDP immediately drops
  - Government expands money supply
- Increased money supply combined with low economic output, created a situation where a lot of money flowed to assets and consumer products

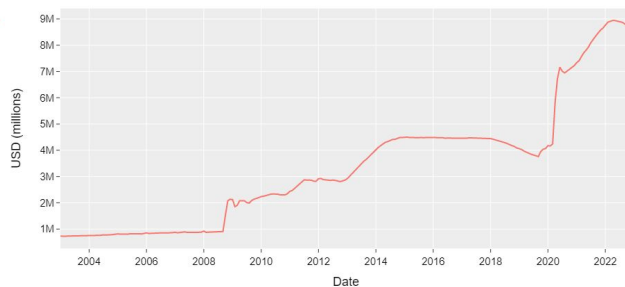




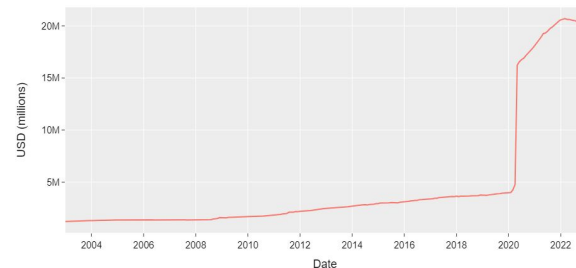
US government debt

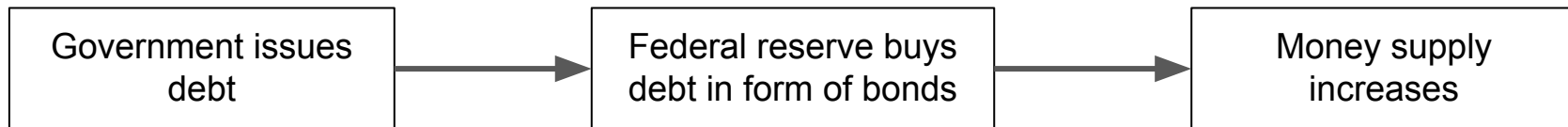


Federal reserve assets

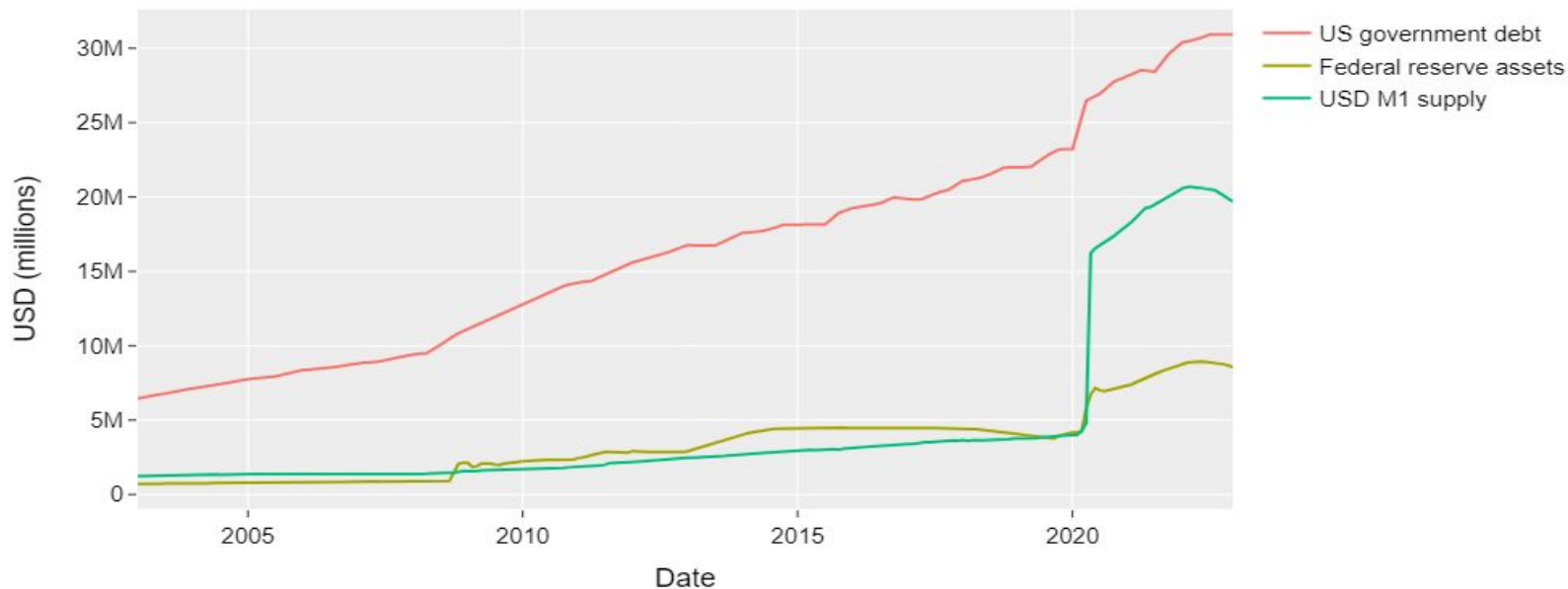


USD M1 supply





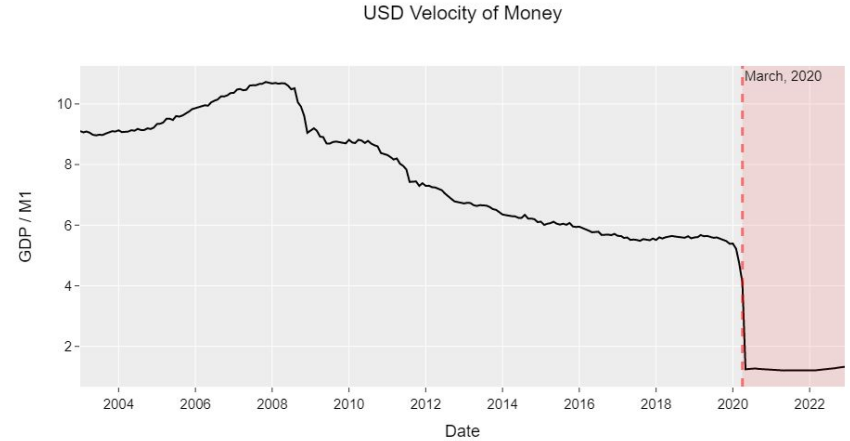
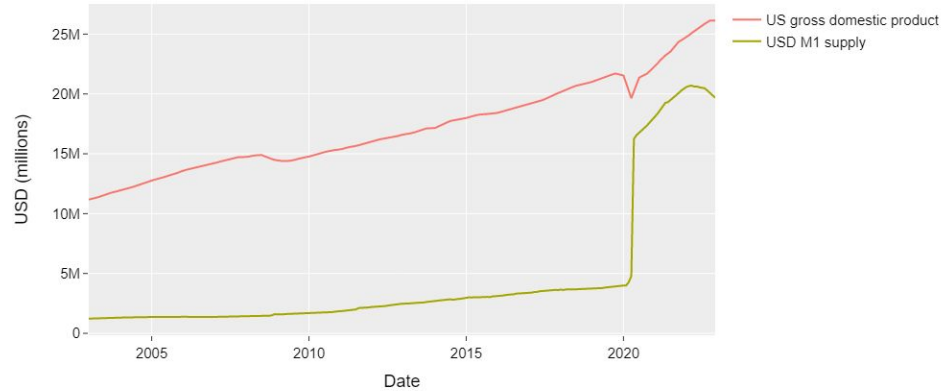
Consolidated plot



COVID Shutdown  
(March, 2020)



Economic shutdown  
(decrease in GDP)



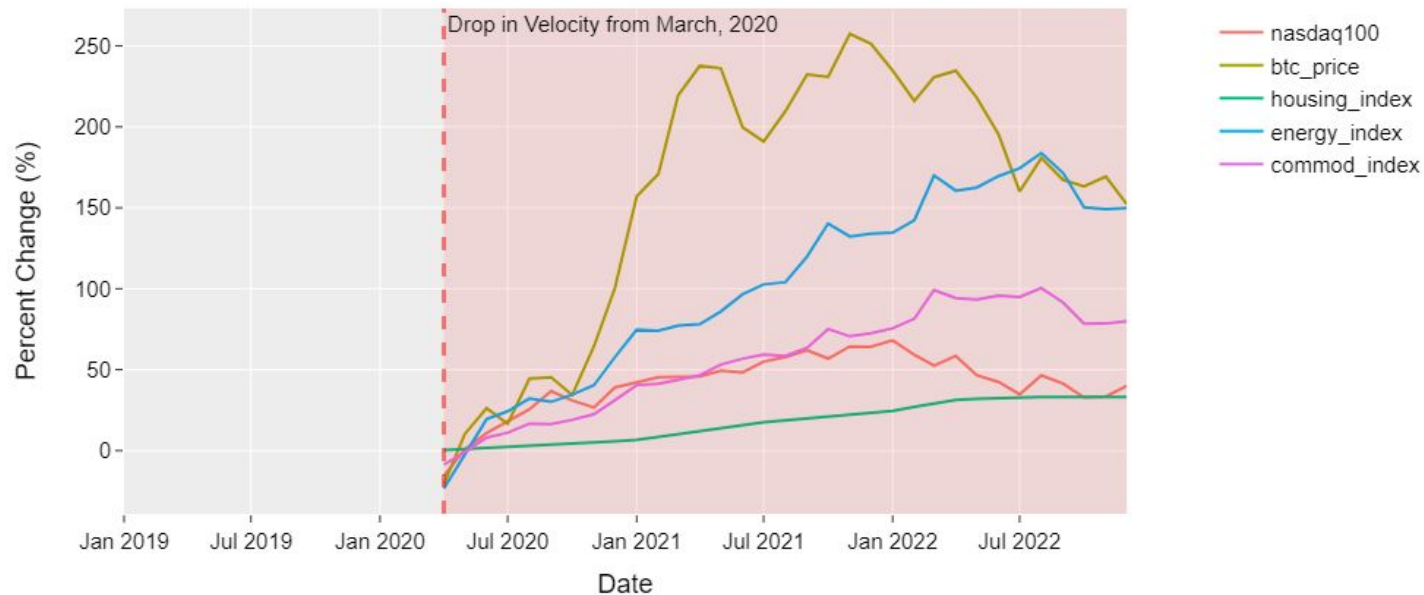
**velocity of money =  $\text{GDP} \div (\text{M1 money supply})$**

Economic slowdown  
+  
Increase in money supply



Asset Inflation

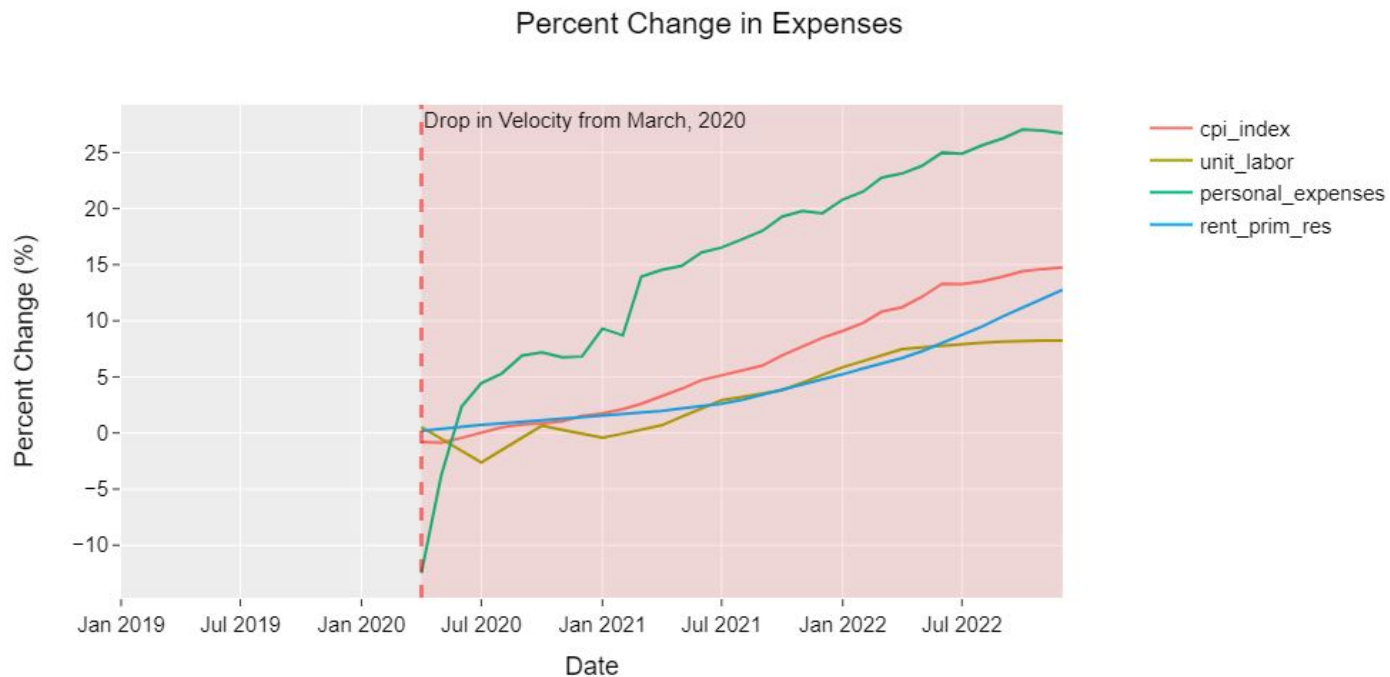
Percent Change in Asset Prices





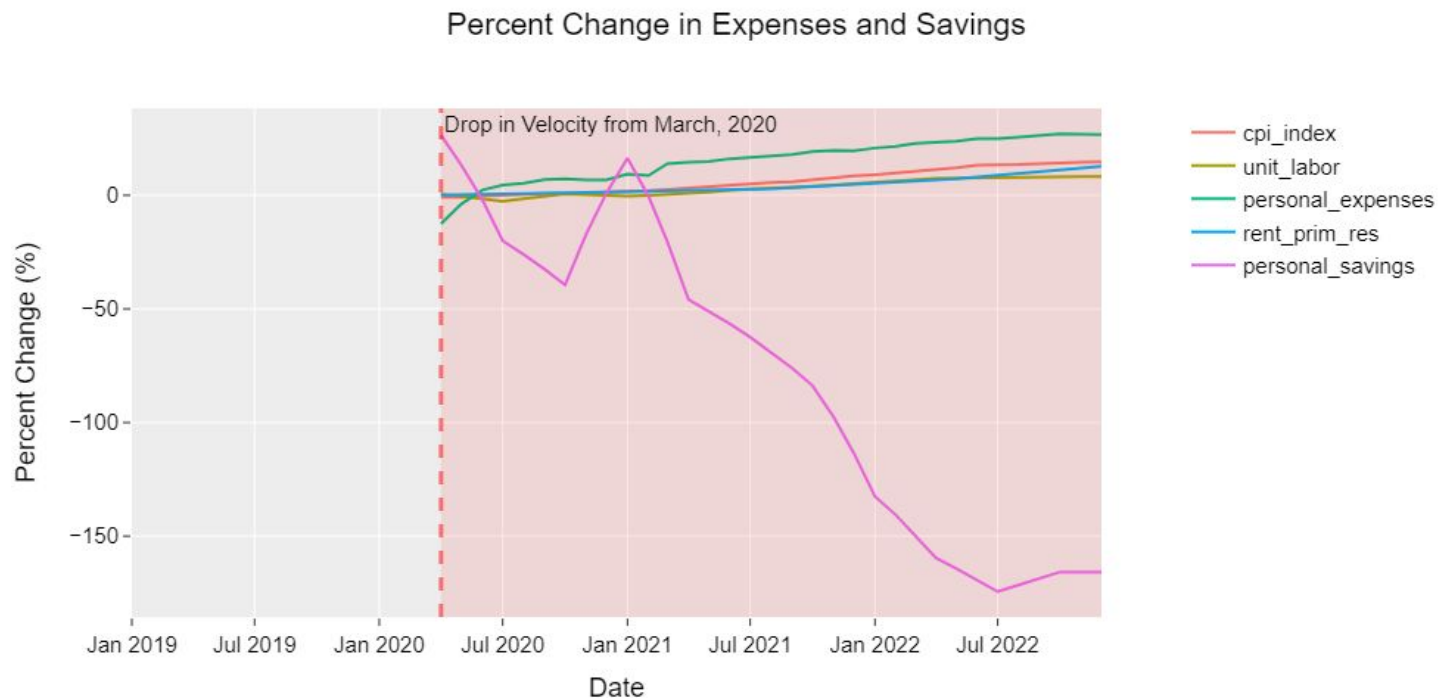
Economic slowdown  
+  
Increase in money supply

Price Inflation

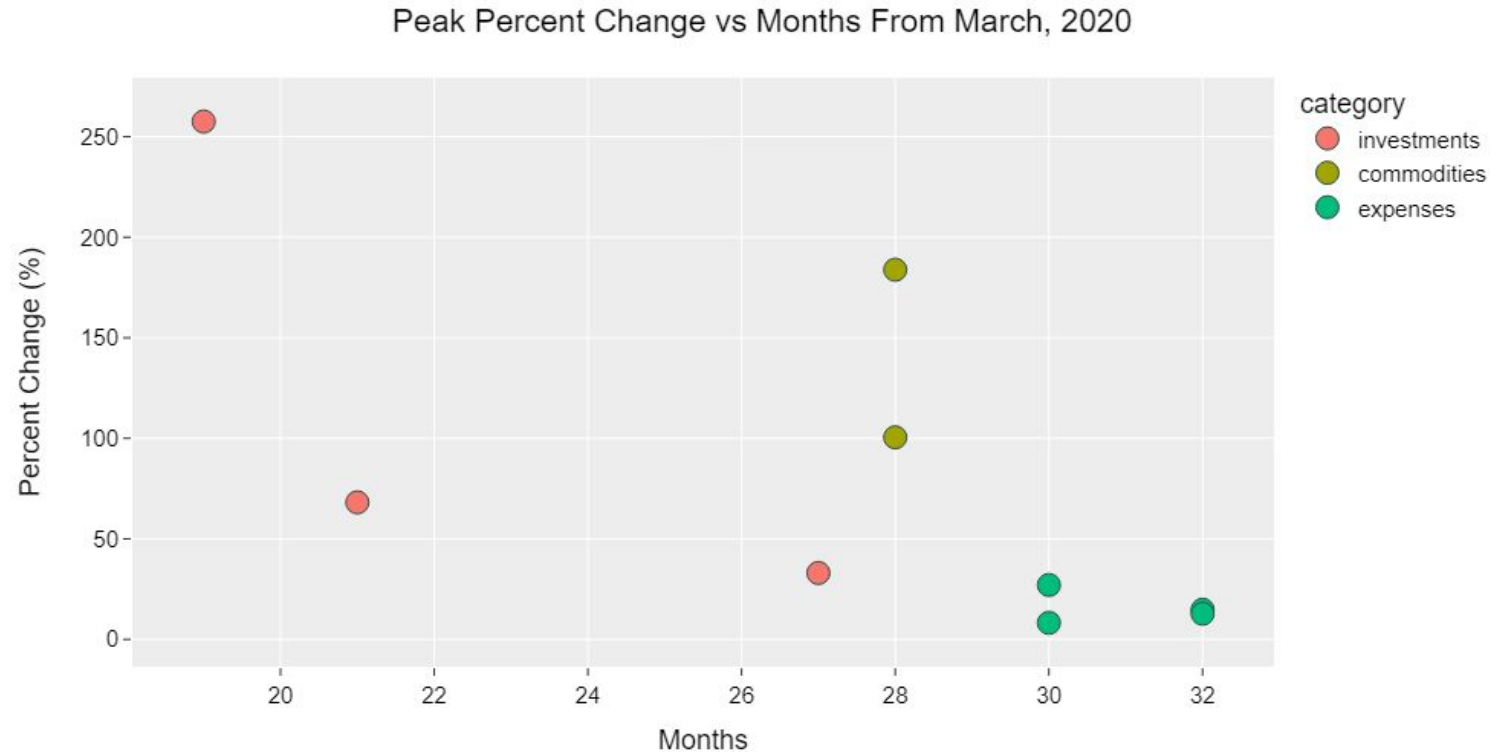


Economic slowdown  
+  
Increase in money supply

Decrease in Personal  
Savings



# Inflationary response over time



# Peak percent change in asset prices

Name	Percent Change	Months	Date	Category
nasdaq100	68.13	21	2022-01	investments
btc_price	257.53	19	2021-11	investments
housing_index	33.02	27	2022-07	investments
commod_index	100.48	28	2022-08	commodities
energy_index	183.83	28	2022-08	commodities
cpi_index	14.75	32	2022-12	expenses
unit_labor	8.23	30	2022-10	expenses
personal_expenses	27.05	30	2022-10	expenses
rent_prim_res	12.77	32	2022-12	expenses

# Outcome and Future Analysis

- Increase in money supply and decrease in economic output, causes a flow of inflation into investments, then commodities and finally consumer prices
- Potential hedge against loss of purchasing power by initially holding investments and commodities
- Future Analysis:
  - Model response and response time of different investment categories based on change in velocity of money
    - Market cap
    - Liquidity
    - Elasticity (scarcity)