



RECESSION INVESTMENT STRATEGY

As we face the 2022-2023 Recession can we look to the recessions of the past three decades in order to predict best outcome for the coming months?

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QUESTIONS WE HOPE TO ANSWER:

Being that we are currently in a recession is this the perfect time to build our wealth?

If so, which investment sectors performed the best during past recessions?

Does our current market resemble any of the previous recession periods?

Which investment sector is recommended to invest in based on best performance (return and speed) after the recession year end?

Looking forward to 2023, how should we adjust our investment strategy?

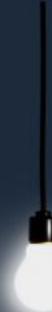
RECESSIONS OF THE LAST THREE DECADES

- 
- \$ Savings and Loan Crisis (July 1990 - March 1991)
 - \$ Dot Com Bust (March 2001 - November 2001)
 - \$ Great Recession (December 2007 - June 2009)
 - \$ Covid-19 (April 2020- June 2020)

INVESTMENT AVENUES:



I^IXIC (Technology)



VENAX(Energy)



SPY(SNP 500 - General)



MSCI(Finance)



IYT (Transportation)



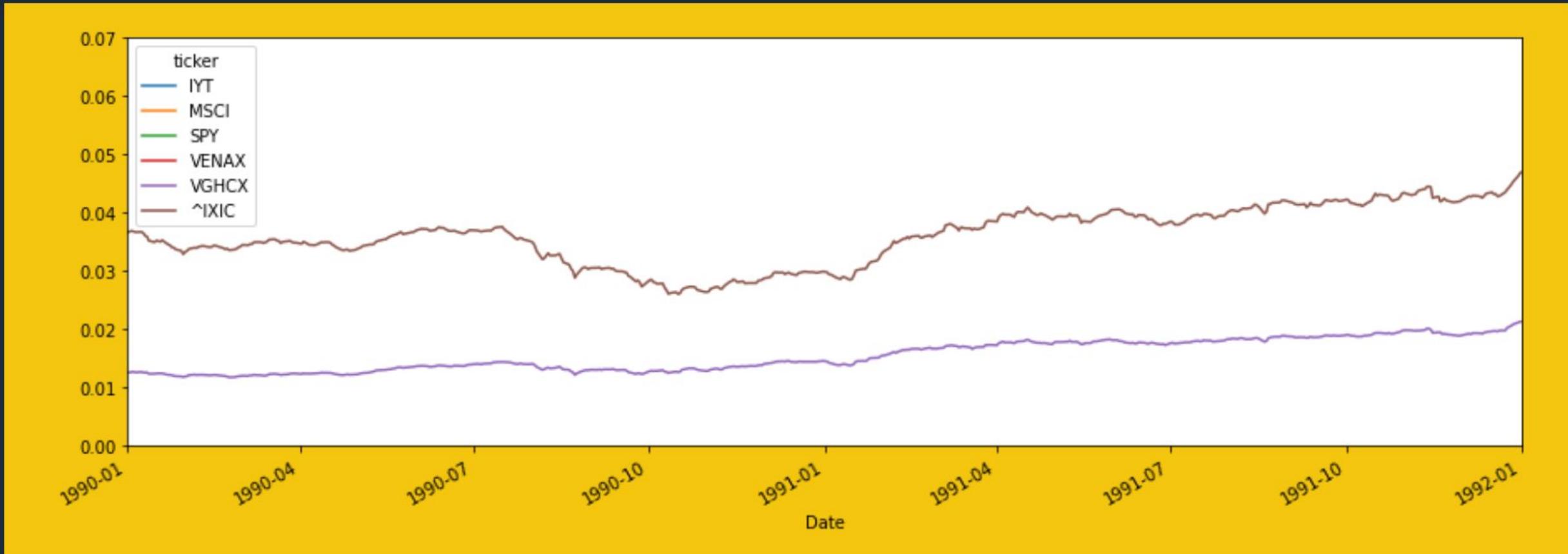
VGHCX (Healthcare)

All data pulled from

yahoo!
finance

We used an API called Yfinance to pull our dataset for the time periods needed.

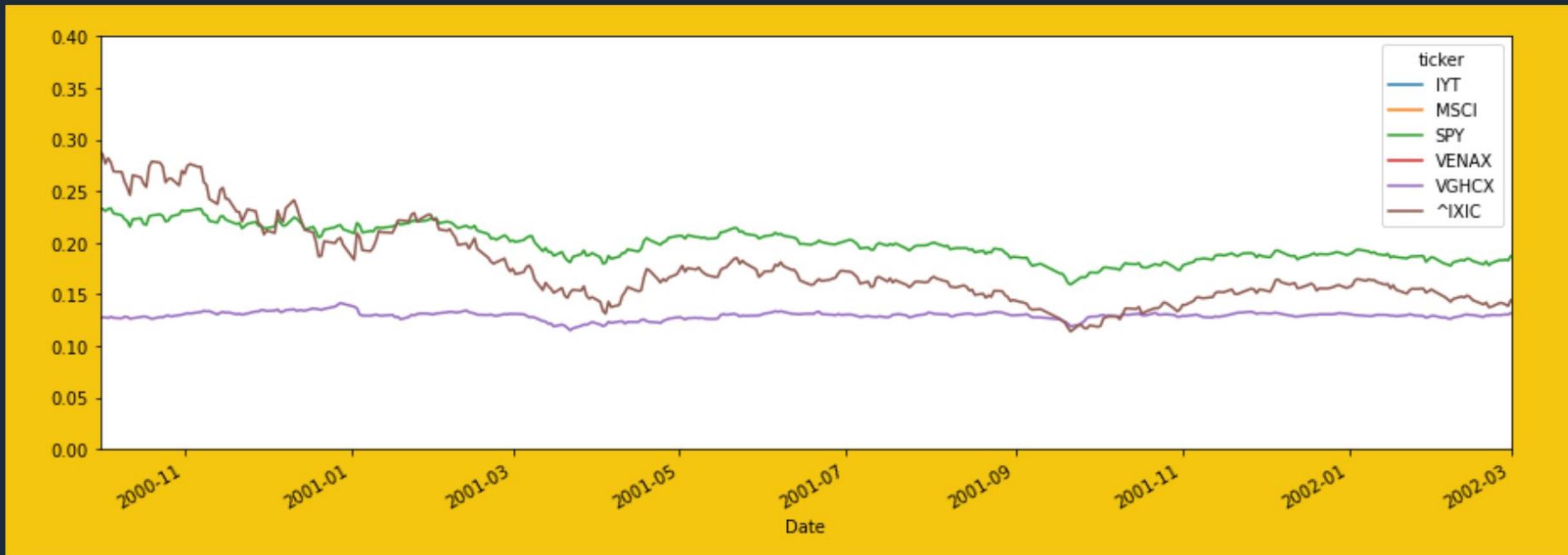
SAVINGS AND LOAN CRISIS:



(July 1990 - March 1991)

Data time frame: January 1990 - January 1992

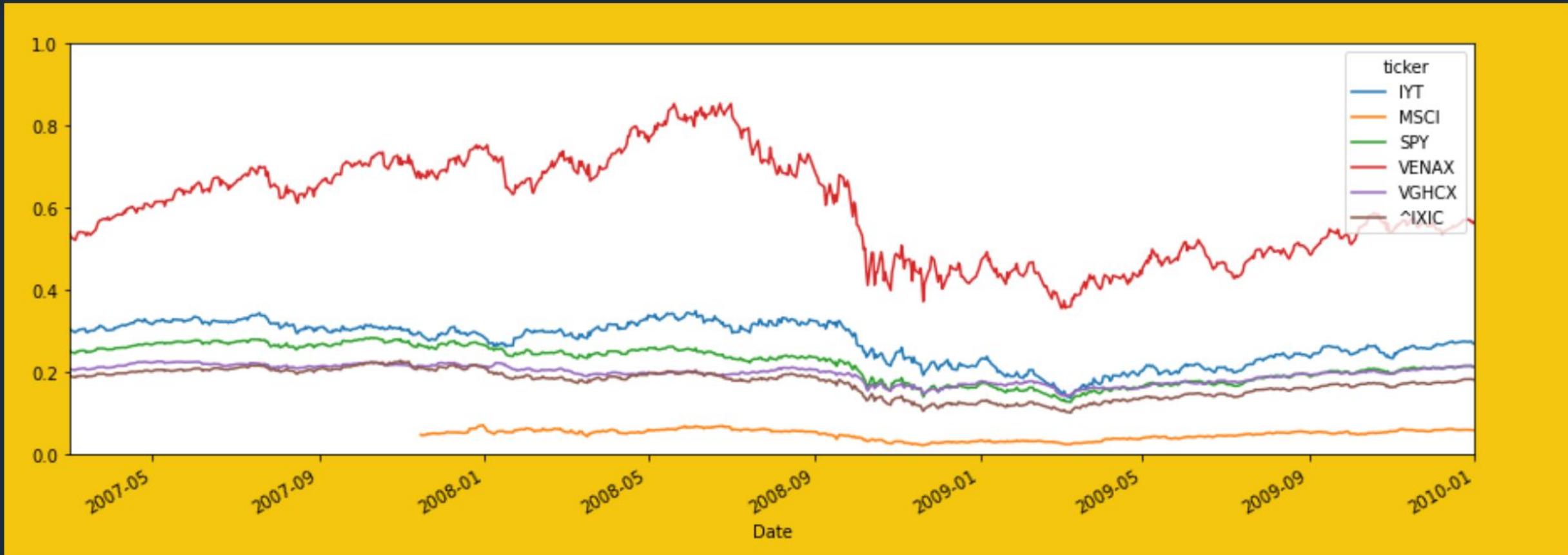
DOT COM BUST:



(March 2001 - November 2001)

Data time frame: November 2000 - March 2002

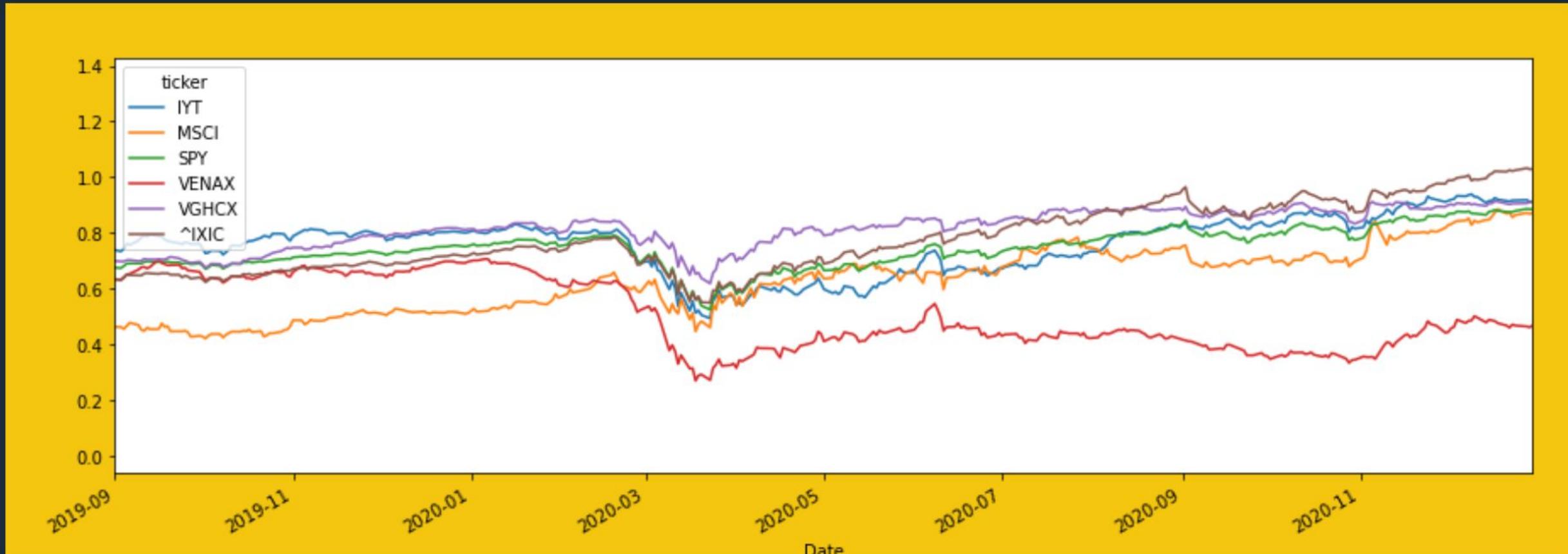
GREAT RECESSION:



(December 2007 - June 2009)

Data time frame : May 2007 - January 2010

COVID - 19 :



(April 2020- June 2020)

Data time frame: September 2019 - January 2021

DATA GATHERING:

Get Data from Yahoo Finance

```
[4]: securities = ['SPY', 'MSCI', 'VENAX', 'IYT', 'VGHCX', '^IXIC']

[5]: long_names=[]
short_names=[]
for each_ticker in securities:
    ticker=yf.Ticker(each_ticker)
    info=ticker.info
    try:
        long_name=info['longName']
    except:
        long_name=''
        print(f"Couldn't find long name for {each_ticker}")
    try:
        short_name=info['shortName']
    except:
        short_name=''
        print(f"Couldn't find short name for {each_ticker}")
    long_names.append(long_name)
    short_names.append(short_name)
```

Set Recession Period

```
[15]: recessions={
    'savings_and_loans_crisis': pd.date_range('1990-07', '1991-03'),
    'dot_com_bust': pd.date_range('2001-03', '2001-11'),
    'great_recession': pd.date_range('2007-12', '2009-06'),
    'covid': pd.date_range('2020-04', '2020-06'),
    # subject to change
    'current': pd.date_range('2022-01', '2022-08-09')
}

[16]: for recession_name, recession_dates in recessions.items():
    price_history_by_ticker.loc[price_history_by_ticker.index.isin(recession_dates), 'event']=recession_name

    price_history_by_ticker['event']=price_history_by_ticker['event'].fillna('normal')
    price_history_by_ticker['event'].value_counts()

[16]: normal      3140
great_recession  376
current         151
covid            42
Name: event, dtype: int64
```

```
[20]:      ticker  IYT  MSCI  SPY  VENAX  VGHCX  ^IXIC
Date
1971-02-05  NaN  NaN  NaN  NaN  NaN  NaN  NaN
1971-02-08  NaN  NaN  NaN  NaN  NaN  NaN  0.008400
1971-02-09  NaN  NaN  NaN  NaN  NaN  NaN  -0.000793
1971-02-10  NaN  NaN  NaN  NaN  NaN  NaN  -0.000695
1971-02-11  NaN  NaN  NaN  NaN  NaN  NaN  0.007548
```

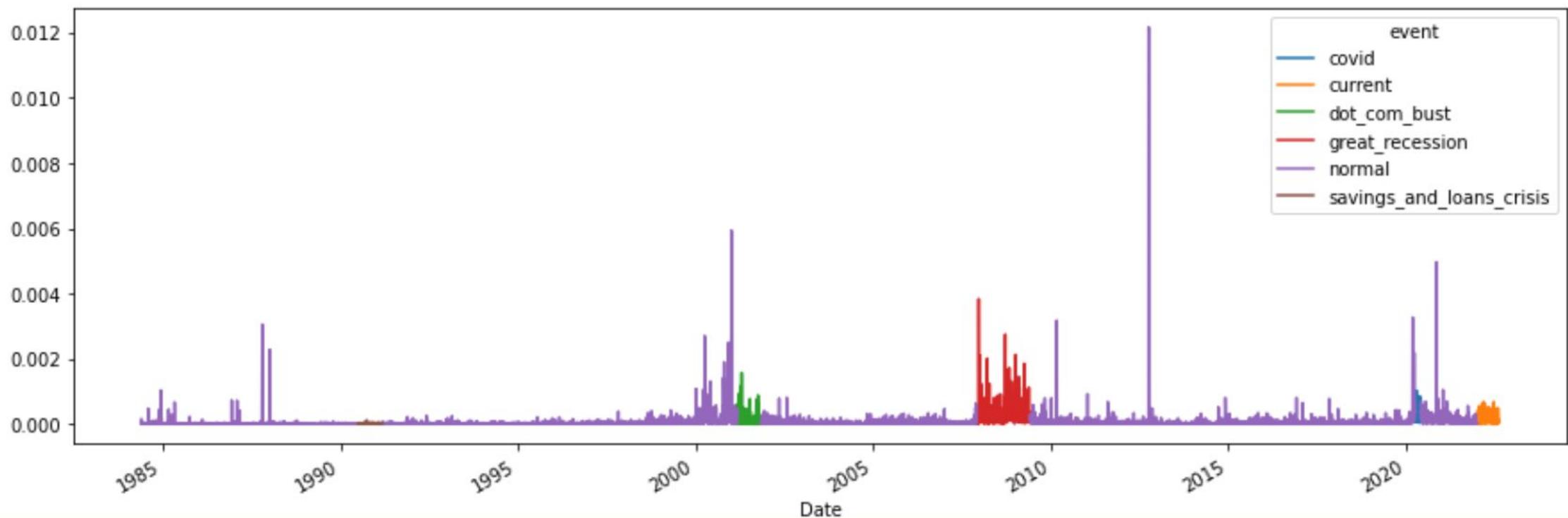
```
[21]: var_df=pd.DataFrame(price_history.var(axis=1), columns=['variance'])

for recession_name, recession_dates in recessions.items():
    var_df.loc[var_df.index.isin(recession_dates), 'event']=recession_name

var_df['event']=var_df['event'].fillna('normal')
var_df
```

```
[21]:          variance   event
Date
1971-02-05      NaN  normal
1971-02-08      NaN  normal
1971-02-09      NaN  normal
1971-02-10      NaN  normal
1971-02-11      NaN  normal
...
...
...
2022-08-04  0.000277  current
2022-08-05  0.000088  current
2022-08-08  0.000019  current
```

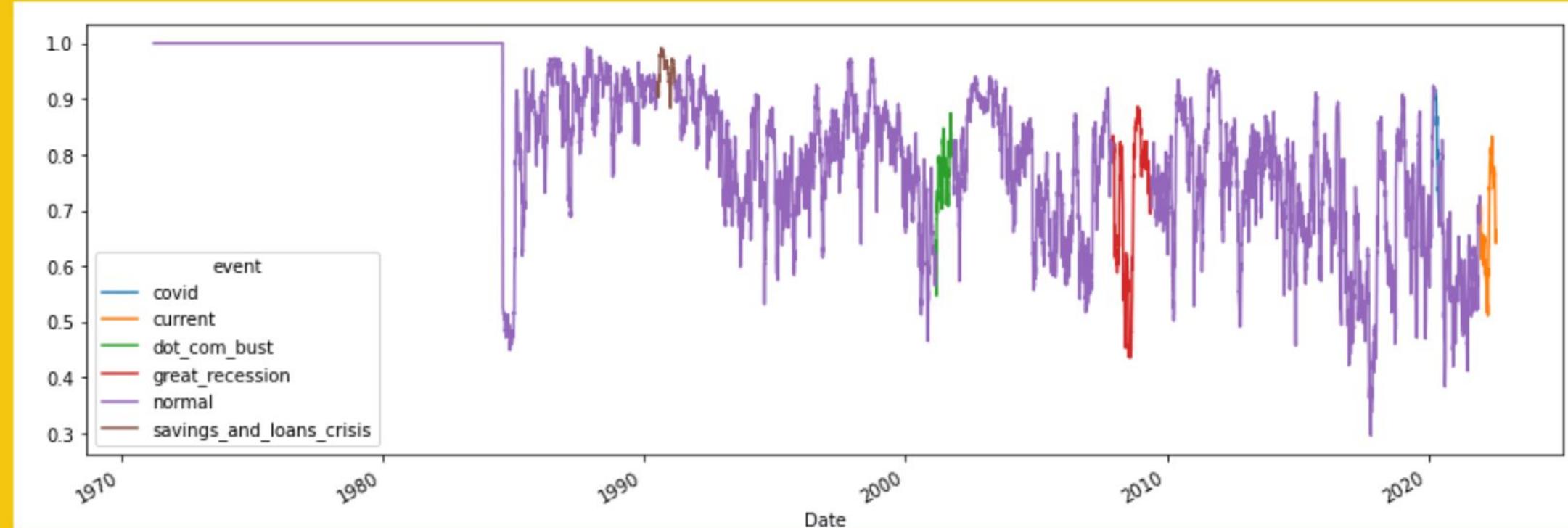
WHERE ARE WE HEADED IN 2022?



Visualization: Variance in the overall market

Currently the 2022 downturn mirrors most closely to the dot com bust of the early 2000s

WHERE ARE WE HEADED IN 2022?



Visualization: Percent change in the overall market

If in fact we are mirroring the trend of the dot com bust
we have only entered the first quarter of our financial downturn

WHAT WILL TURN AROUND THE FASTEST?

```
post_recessions={}
for recession_name, recession_dates in recessions.items():
    post_recessions[recession_name]=pd.date_range(start=recession_dates[-1], periods=252)

recession_return={}
for recession_name, recession_dates in post_recessions.items():
    recession_df=price_history.loc[price_history.index.isin(recession_dates)]
    recession_return[recession_name]=(recession_df+1).cumprod().iloc[-1]

pd.DataFrame(recession_return).T
```

	ticker	IYT	MSCI	SPY	VENAX	VGHCX	^IXIC
savings_and_loans_crisis		NaN	NaN	NaN	NaN	1.187798	1.203443
dot_com_bust		NaN	NaN	0.879264	NaN	0.859968	0.796361
great_recession	1.212385	1.353079	1.171011	1.076732	1.189376	1.206720	
covid	1.423212	1.312468	1.290226	1.190851	1.099552	1.460115	
current	0.990057	0.986283	0.994673	1.000000	1.000000	0.987189	
overall average:	1.20854	1.21727	1.08379	1.08919	1.06733	1.13077	

WHAT DOES THIS MEAN FOR FINANCE?

Currently the 2022 downturn is most closely modeling the dot com bust of the early 2000s.

If we continue to track along the same pattern of the dot com bust we are only in the first quarter of the downturn. We still have an estimated 6+ months of decline.

Lastly we all are curious where we should be investing when things look shaky. If we continue to track along the same pattern of the dot com bust the best investment track will be the SNP500.

However it is also helpful to look at the best overall investment post recession which is going to be the finance sector as portrayed by the MSCI index.

FIND MORE ON GITHUB:

https://github.com/qrolston/Recession_Investment_Strategy

The screenshot shows the GitHub repository page for 'Recession_Investment_Strategy'. At the top, there's a search bar and navigation links for Pull requests, Issues, Marketplace, and Explore. Below that, the repository name 'qrolston / Recession_Investment_Strategy' is shown with a 'Public' badge. The main content area displays a list of files and commits. A prominent commit by 'liizmaria' is highlighted, showing a merge pull request from 'liizmaria/lizpanza'. The list includes various files like 'Images', '.gitignore', 'EDA.ipynb', 'MCForecastTools.py', 'Project 1.ipynb', 'README.md', 'Recession_Investment_Strategy.ipynb', 'Recovery.ipynb', 'Simulation.ipynb', 'preview.pptx', and 'recession_analysis.db'. Below the file list is another 'README.md' section containing the text 'Recession Investment Strategy'.

The screenshot shows the 'README.md' file content. The title 'Recession Investment Strategy' is displayed above a decorative graphic featuring a green upward arrow, blue bar charts, and a yellow background. The text reads: 'RECESSION INVESTMENT STRATEGY As we face the 2022-2023 Recession can we look to the recessions of the past three decades in order to predict best outcome for the coming months?' Below this, a descriptive paragraph explains the purpose of the notebook: 'This is a multi-function jupyter lab notebook (stored as Recession_Investment_Strategy.ipynb) that compares investment returns from the previous four recessions across multiple indexes. As we enter a recession in 2022 it is a pertinent time to look at previous recessions to plan for the future. In this notebook we hope to answer the following questions:' followed by a bulleted list of six questions. At the bottom, there's a section titled 'RECESSIONS OF THE LAST THREE DECADES' with a list of four events: 'Savings and Loan Crisis (July 1990 - March 1991)', 'Dot Com Bust (March 2001 - November 2001)', 'Great Recession (December 2007 - June 2009)', and 'Covid-19 (April 2020- June 2020)'.