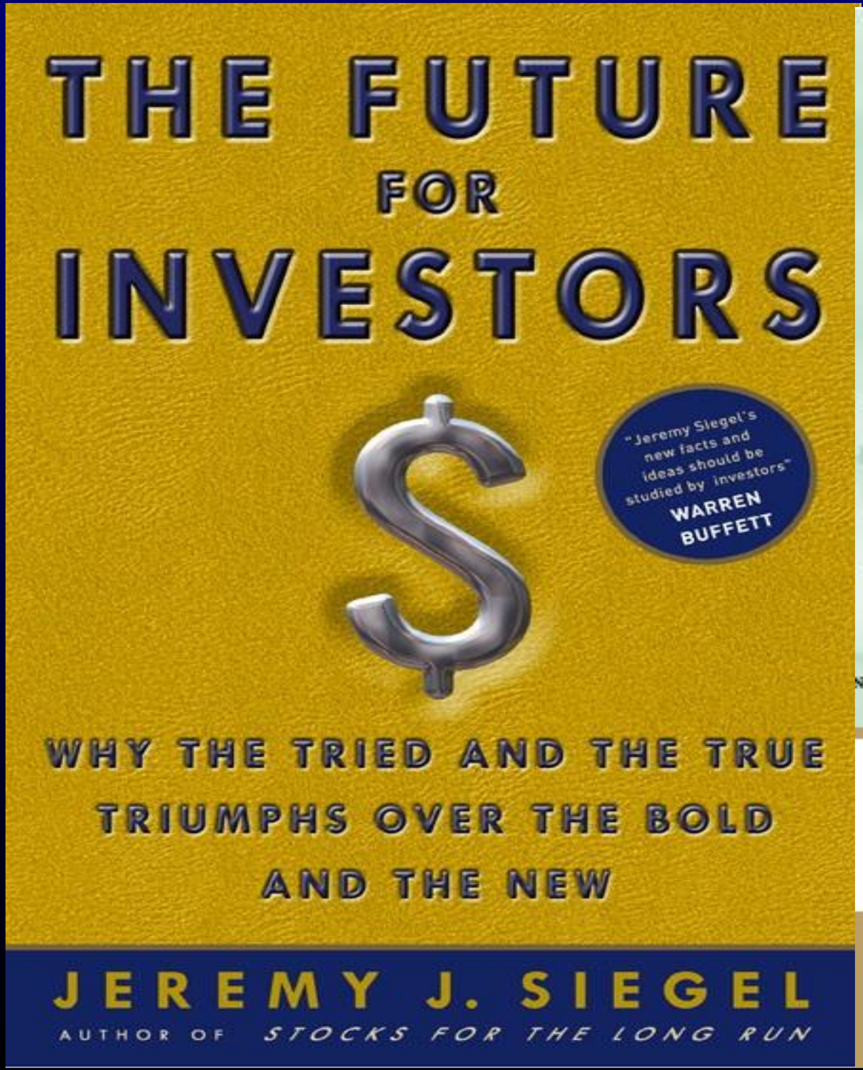
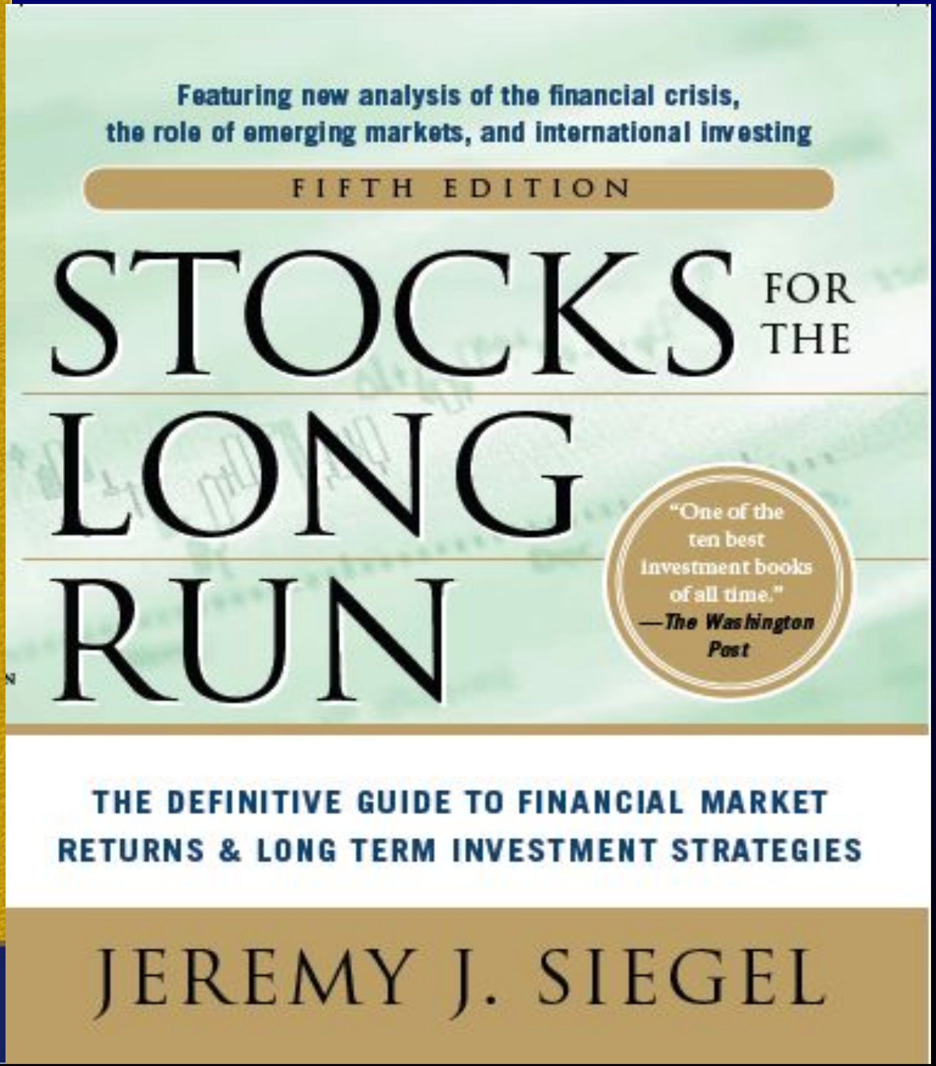
The Economy and Markets after COVID-19

Prof. Jeremy J. Siegel ~ The Wharton School

FORBES/SHOOK ~ October 2021





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Definition of Major Asset Classes / Indexes

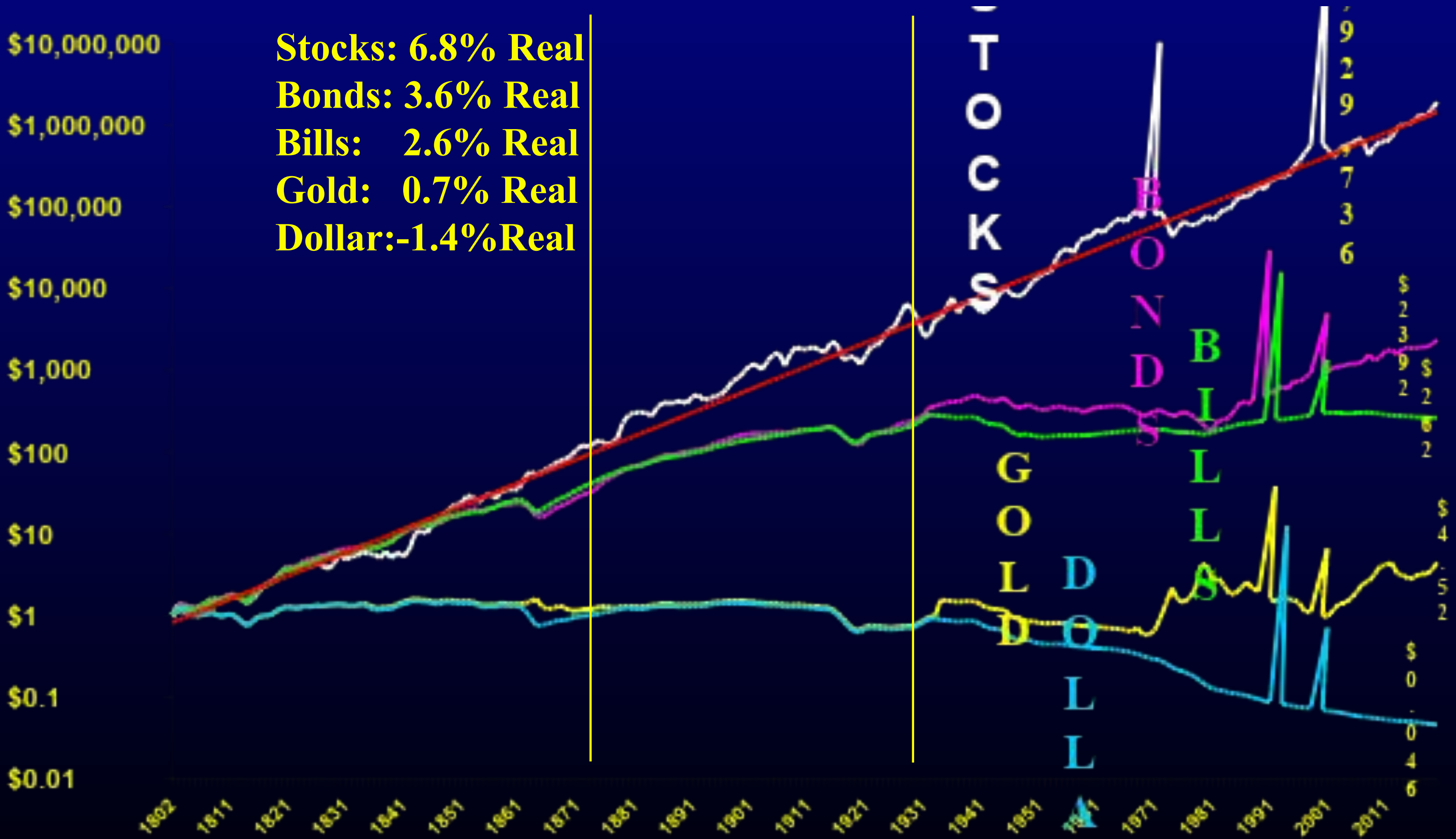
- **The source data on the return series for the major asset classes can be found in Professor Siegel's book *Stocks for the Long Run, 4th edition.* Professor Siegel compiled his own proprietary indexes on each asset class and updates each data series from the book to reflect most recent periods.**
- **Stocks: The total returns after inflation on the broadest index of stocks available at the time. (Stocks-real-total return index: 1802-2021)**
- **Bonds: The total returns on an index on U.S. government bonds after inflation. (Bonds-real-total return index: 1802-2021)**
- **Bills: Total returns on U.S. Treasury Bills after inflation. (Bills-real-accumulative index: 1802-2021).**
- **Gold: The value of 1 dollar of gold bullion after inflation. (Gold-real-price index: 1802-2021)**
- **Dollar : The purchasing power of one US dollar. (Money: 1802-2021)**
- **Index performance assumes reinvestment of dividends, but does not reflect any management fees, transaction costs or other expenses that would be incurred by a portfolio or fund, or brokerage commissions on transactions in Fund shares.**

Risks

Note: Stocks are typically subject to increased risks compared to U.S. Treasury Bills while bonds are subject to adverse consequences associated with rising interest rates that cause a decline in a bond's price. A U.S. treasury bill has less risk than bonds because of its very short-term nature and the U.S. government is considered a good creditor. Gold is often invested in as a hedge for inflation, but there is market risk that gold prices fluctuate widely. The value of the U.S. dollar depreciates over time with inflation, so the primary risk is inflation risk.

Total Real Return Indexes

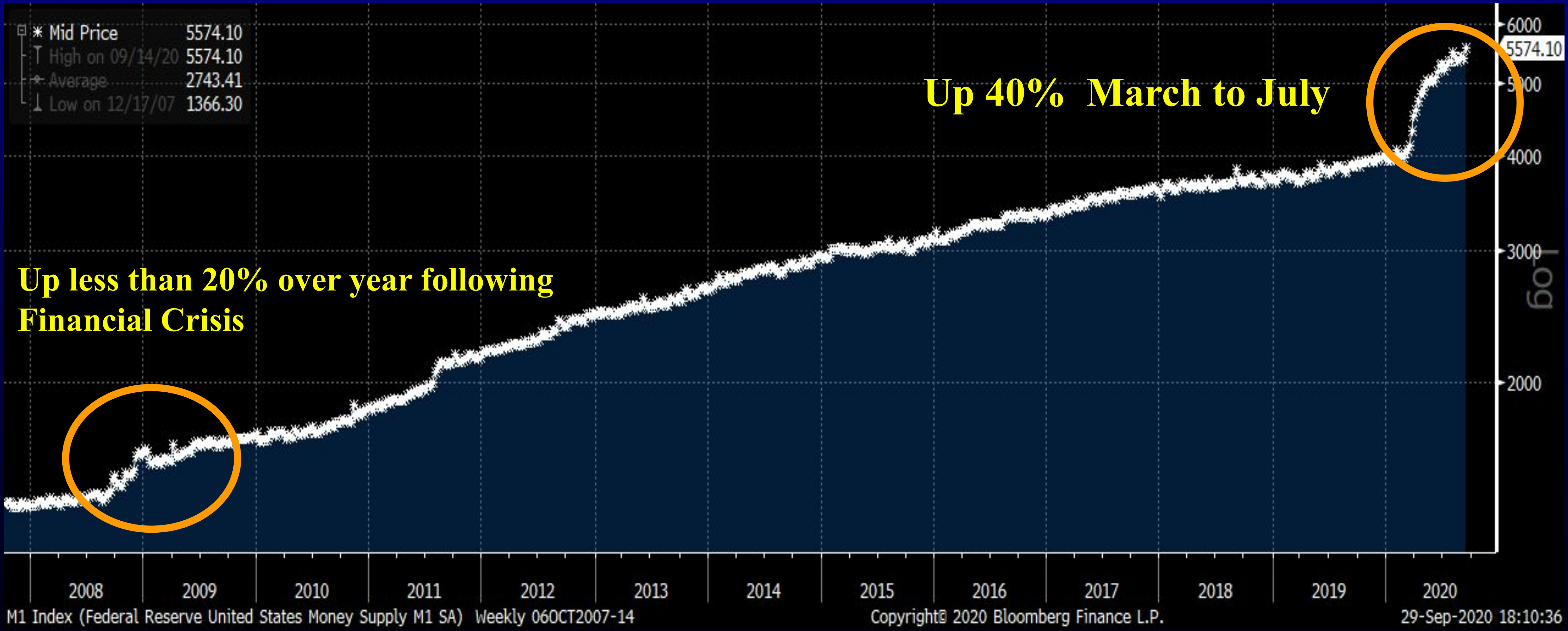
January 1802 – December 2020



Source: Siegel, Jeremy, *Stocks for the Long Run (2014), With Updates to 2020*

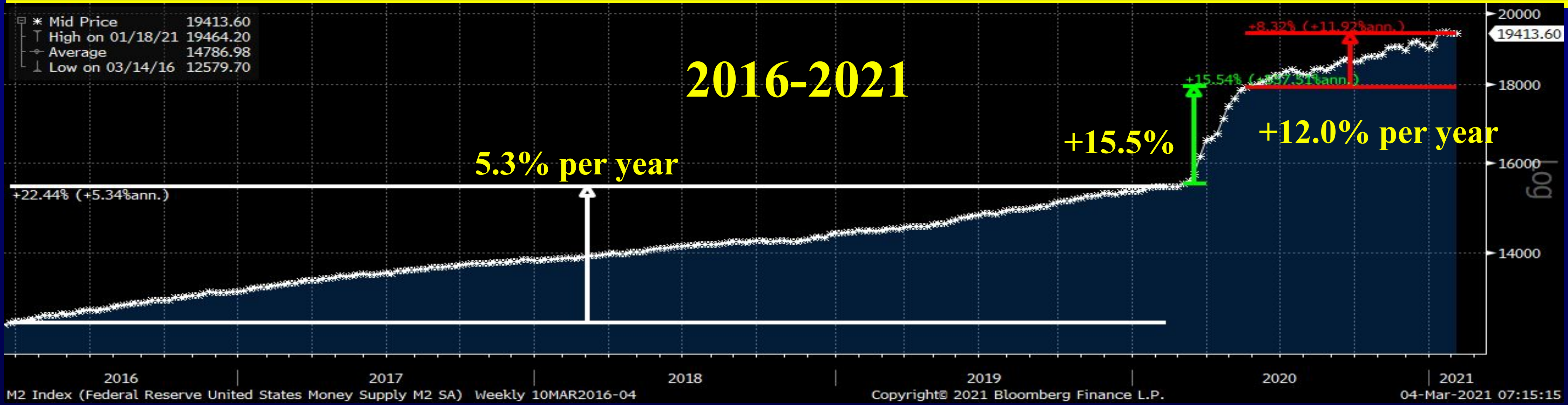
Past performance is not indicative of future results.
You cannot invest directly in an index.

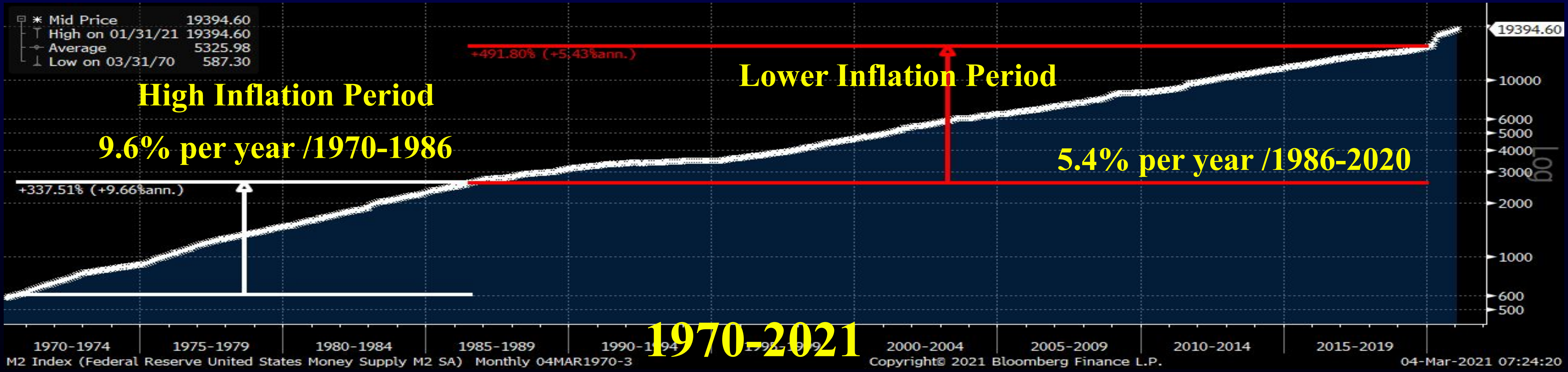
M1 Money Supply Surge Started Last Summer



Source: Bloomberg as of 9/29/2020

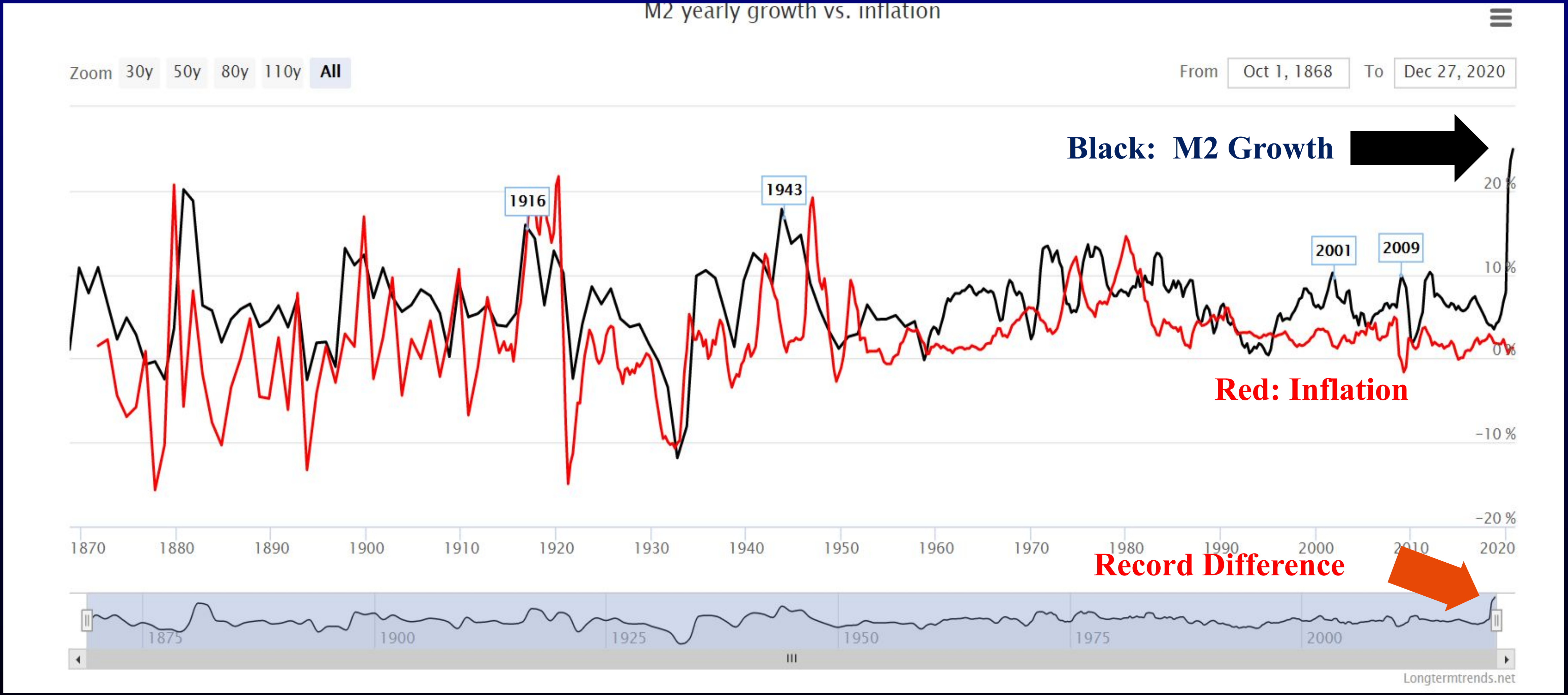
M2 Money Growth





Source: Bloomberg as of 03/04/2021

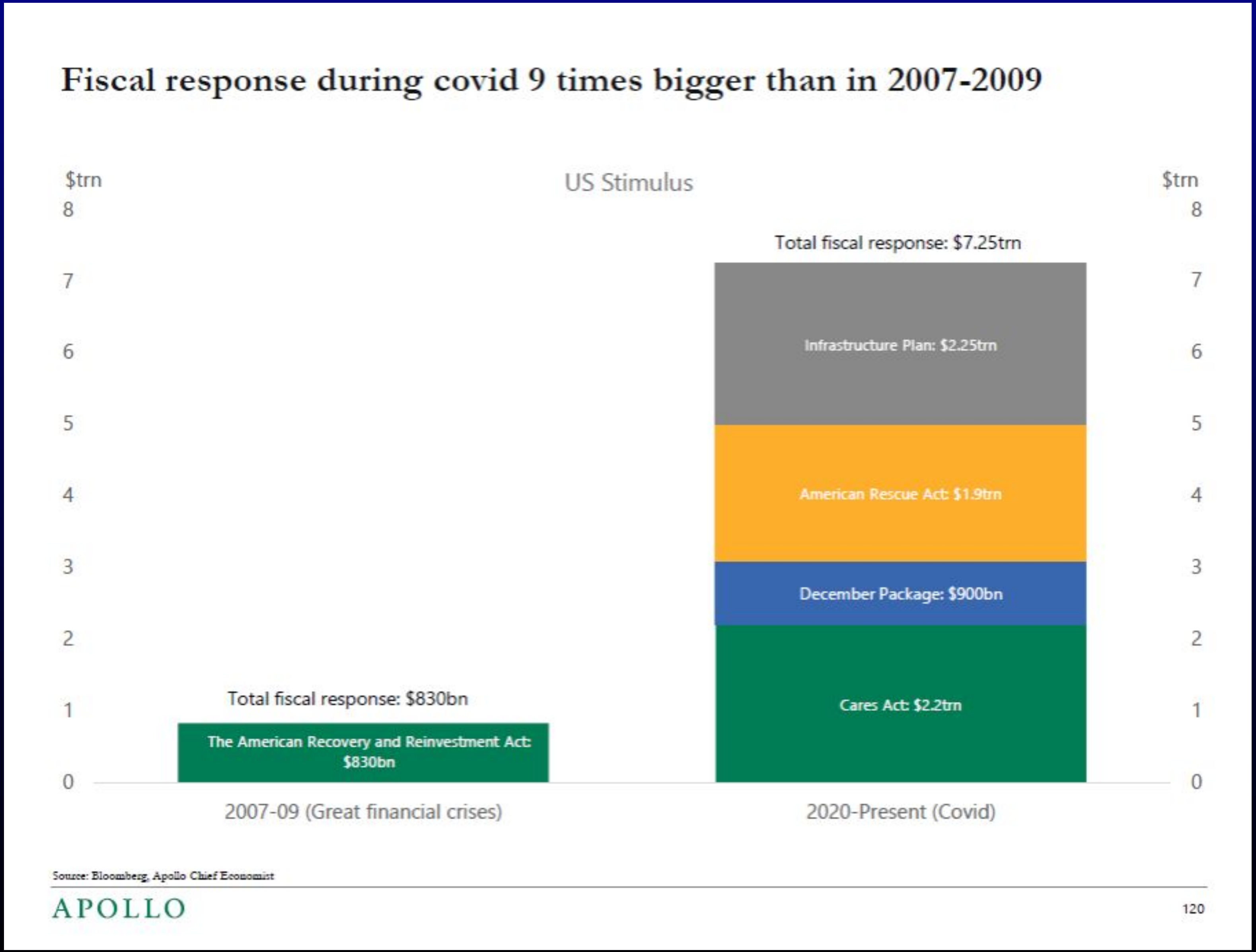
150-year Record Broken with 2020 M2 Increase



Source:Longtermtrends.net 12/27/2020

Lines: Black = growth in M2 Money Supply, Red = yearly change in the Consumer Price Index (Inflation).

Fiscal Response in Covid 9x Financial Crisis



Source: Bloomberg, Apollo Chief Economist

Government Programs Created Excess Liquidity

- In the last financial crisis, most of the money created by the Federal Reserve ("Fed") ended up as excess reserves at financial institutions and was not lent to businesses and consumers.
- Today's money has gone directly into the bank deposits of firms and individuals (M1 and M2 money supply), which is a far more potent force.
- Cumulative increase in prices over next 3-4 years about 20-25%.
- The Fed will likely be forced to accelerate its taper in the face to worrisome inflation data this quarter.
- Stocks tend do well in this inflationary environment, especially since most can pass on increased costs and have locked in low rates.
- But believe investors are not yet prepared for faster taper. So Taper Tremors in our future.

M1: a measurement of the most liquid portions of a country's money supply, including physical currency, checkable deposits, and other accounts that can be quickly converted into cash and used as a medium of exchange.

M2: a measure of a country's money supply that includes all the components aggregated under the M1 definition, plus other assets that are less liquid and should not be considered an immediate medium of exchange. M2 includes savings deposits, money market securities, mutual funds, and other time deposits.

Housing Inflation Not in Data Yet

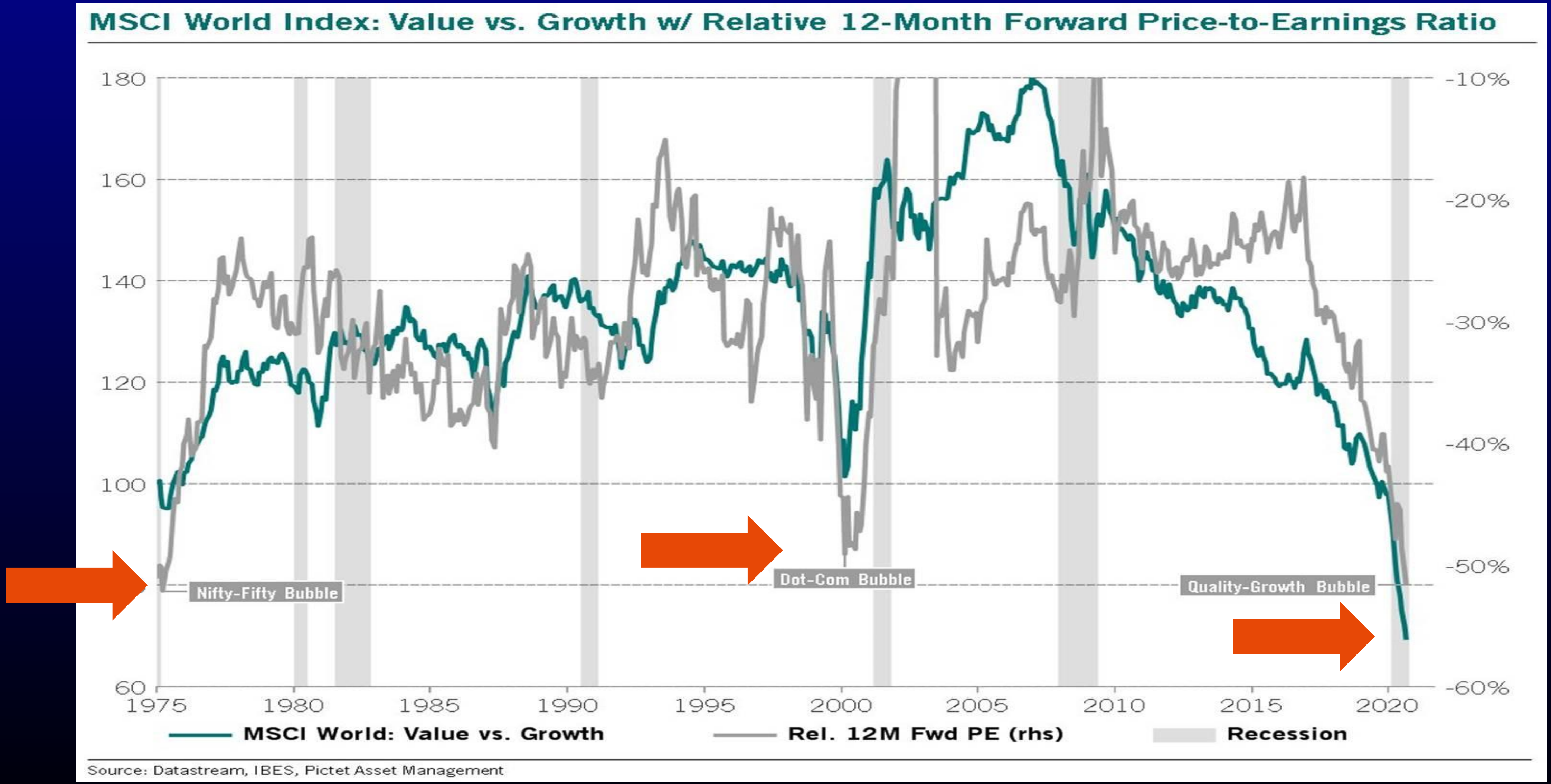
Consumer prices

	% m/m, sa					% oya, nsa				
	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21
CPI, All items	0.77	0.64	0.90	0.47	0.27	4.2	5.0	5.4	5.4	5.3
Core (80)	0.92	0.74	0.88	0.33	0.10	3.0	3.8	4.5	4.3	4.0
Food (14)	0.4	0.4	0.8	0.7	0.4	2.4	2.2	2.4	3.4	3.7
Energy (6)	-0.1	0.0	1.5	1.6	2.0	25.1	28.5	24.5	23.8	25.0
Housing (42)	0.5	0.4	0.4	0.4	0.4	2.6	2.9	3.1	3.4	3.5
Owners' eq. rent (23)	0.21	0.31	0.32	0.29	0.25	2.0	2.1	2.3	2.4	2.6
Lodging away from home (1)	7.6	0.4	7.0	6.0	-2.9	7.4	9.0	15.1	21.5	17.4
Rent (8)	0.20	0.24	0.23	0.16	0.31	1.8	1.8	1.9	1.9	2.1
Apparel (3)	0.3	1.2	0.7	0.0	0.4	1.9	5.6	4.9	4.2	4.2
New vehicles (4)	0.5	1.6	2.0	1.7	1.2	2.0	3.3	5.3	6.4	7.6
Used vehicles (3)	10.0	7.3	10.5	0.2	-1.5	21.0	29.7	45.2	41.7	31.9
Public transportation (1)	5.8	4.0	2.4	0.4	-5.5	7.0	15.9	17.3	14.0	8.4
Medical care (9)	0.1	-0.1	-0.1	0.3	0.2	1.5	0.9	0.4	0.3	0.4
Education (3)	0.2	0.4	0.2	0.2	0.0	0.8	1.0	1.2	1.2	1.4
Communication (4)	0.4	0.2	0.0	0.2	0.3	2.4	2.6	2.8	1.1	1.0
Core commodities (20)	2.0	1.8	2.2	0.5	0.3	4.4	6.5	8.7	8.5	7.7
Core services (60)	0.54	0.37	0.44	0.27	-0.01	2.5	2.9	3.1	2.9	2.7
CPI, All items (NSA index level)	267.054	269.195	271.696	273.003	273.567					

Source: BLS. Weights in parentheses.

Source: BLS

Growth versus Value – 3rd Extreme



Source: Datastream, IBES, Pictet Asset Management as of 8/31/2020

You cannot invest directly in an index

Past performance is not indicative of future results.

Death of 60% Stocks/40% Bonds Asset Allocation?

Common goals pre-retirees and retirees share include…

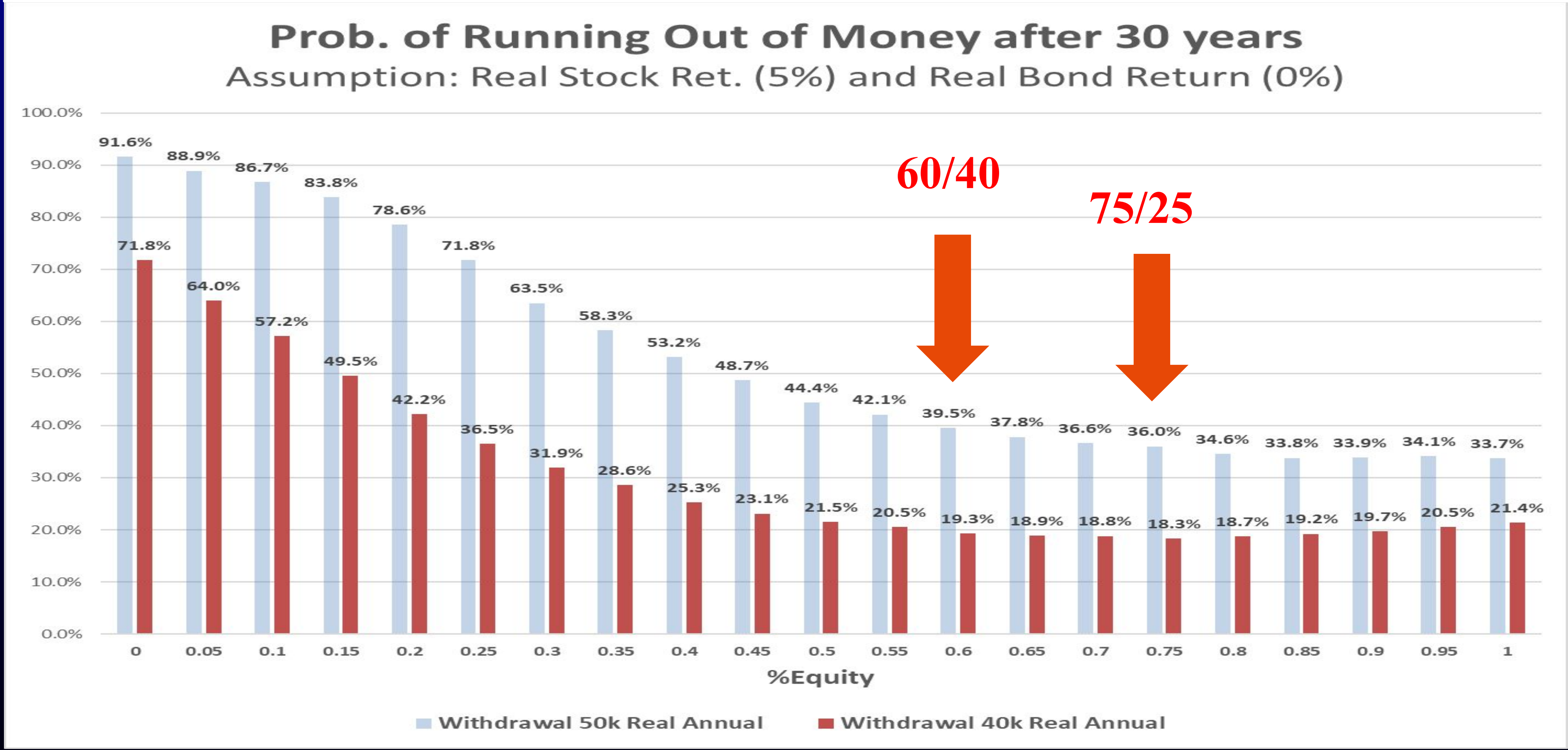
- Maintaining (or improving) their lifestyle
- Not running out of money
- Leave legacy
- Minimizing taxes

Since interest rates may remain low for quite some time, the traditional "60/40" portfolio may not get it done from the investor's perspective!

» Not enough income from bond allocation to maintain lifestyle

» Not enough growth to manage terminal value shortfall risk (i.e., running out of money before you die)

Probability of Running Out of Money vs Stock/Bond Allocation



Disclosure: Starting with $1million,Annual $50,000(inflation adjusted) withdrawal for 30 years. Monte Carlo Simulation Bootstrap each year without replacement, 1000 simulations for each equity/bond combinations. US Stock, long bond and inflation returns from 1926-2019, with median adjusted with forward looking capital market assumptions. Forward looking real stock return assumption is 5%, and real long bond return assumption is 0%.
No taxes, fees or expenses were taken into account for the illustration which would change the outcome.

Implications for Investment Strategies

- **I believe bond yields will still rise towards 2% by year-end. The 40-year bull market in bonds ended last year. Treasuries supported by huge "hedge demand."**
- **Value stocks likely outperform growth in remainder of 2021: (1) re-opening of the economy, (2) rising yields, and (3) search for yield.**
- **There will be higher taxes (personal and corporate). Likely further pressure on dollar. Maintain international stock allocation on valuation basis.**
- **TINA – There Is No Alternative still rules. Real assets answer is inflationary environment.**

Total Real Return Indexes

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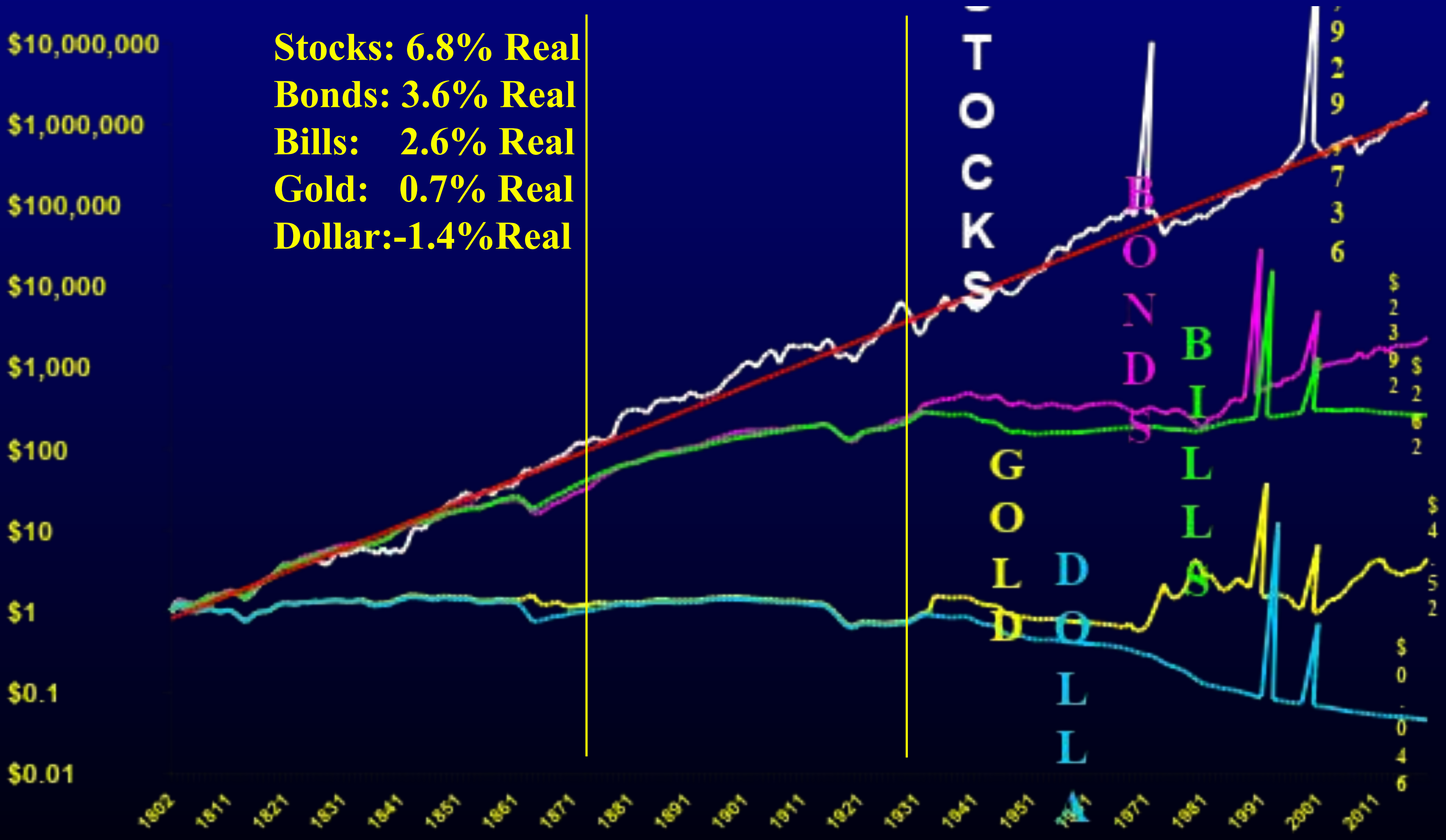

Source: Siegel, Jeremy, *Stocks for the Long Run (2014), With Updates to 2020*

The indexes recently experienced significant negative short-term performance due to market volatility associated with the COVID-19 pandemic.

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Appendix: Definitions

- **Earnings per share (EPS):** Total earnings divided by the number of shares outstanding. Measured as a percentage change as of the annual Index screening date compared to the prior 12 months. Higher values indicate greater growth orientation.
- **Gross domestic product (GDP):** The sum total of all goods and services produced across an economy.
- **Price-to-earnings (P/E) ratio**: Share price divided by earnings per share. Lower numbers indicate an ability to access greater amounts of earnings per dollar invested.
- Earnings yield : The earnings per share for the most recent 12-month period divided by the current market price per share. The earnings yield (which is the inverse of the P/E ratio) shows the percentage of each dollar invested in the stock that was earned by the company.
- **S&P 500: The S&P 500 or Standard & Poor's 500 Index is a market-capitalization-weighted index of the 500 largest U.S. publicly traded companies. The index is widely regarded as the best gauge of large-cap U.S. equities. Investors cannot invest directly in an index.**
- Monte Carlo Simulation: The Monte Carlo method is a stochastic (random sampling of inputs) method to solve a statistical problem, and a simulation is a virtual representation of a problem. The Monte Carlo simulation combines the two to give us a powerful tool that allows us to obtain a distribution (array) of results for any statistical problem with numerous inputs sampled over and over again.
- MSCI EAFE Index : is a market cap-weighted index composed of companies representative of the developed market structure of developed countries in Europe, Australasia and Japan.
- MSCI Emerging Markets Index : a broad market cap-weighted Index showing performance of equities across 23 emerging market countries defined as “emerging markets” by MSCI.
- MSCI World Value Index: The MSCI World Value Index captures large and mid cap securities exhibiting overall value style characteristics across 23 Developed Markets (DM) countries. The value investment style characteristics for index construction are defined using three variables: book value to price, 12-month forward earnings to price, and dividend yield.
- MSCI World Growth Index: The MSCI World Growth Index captures large and mid cap securities exhibiting overall growth style characteristics across 23 Developed Markets (DM) countries. The growth investment style characteristics for index construction are defined using five variables: long-term forward EPS growth rate, short-term forward EPS growth rate, current internal growth rate, long-term historical EPS growth trend, and long-term historical sales per share growth trend.
- Real Return: The rate of return an investor would hypothetically receive, reduced for inflation. This is in contrast to a nominal rate of return which does not factor in inflation.

Important Information

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