How To Finance The Next American Century

Richard Duncan

Washington, D. C.

February 27, 2023

The United States Can And Must Invest

- My objective in writing **The Money Revolution** has been to persuade the American public and US policymakers that the United States can and must make a multi-trillion-dollar investment in new industries and technologies over the next 10 years.

- So, I am thrilled to have this opportunity to share my thoughts with you tonight.

In This Presentation

- During the next few minutes, I will:

1. Describe how the forces driving our economy evolved after Dollars ceased to be backed by Gold five decades ago;
2. Discuss the calamity that will befall our country if we fail to adopt the correct policies; and
3. Talk about the extraordinary benefits that are certain to rain down on us if we do.

The Fed’s Gold Cover Ratio:

Ratio Of Gold Reserves To Note and Deposit Liabilities

1914 to March 1968

Source: St Louis Fed

The Spark That Ignited The Money Revolution

- At that point, Congress changed the law so that the Fed was no longer required to hold any gold to back the money it created.

- That was the spark that ignited the "Money Revolution" that I describe in the first two parts of my book.

Expanding Parameters

- Up until then:

1. The Fed was not free to create as much money as it wished;
2. Trade between nations had to balance, which meant that US economic growth was constrained by the size of the US workforce and by US industrial capacity; and
3. Government spending was held back by the fear that excessive spending would create inflation and drive up interest rates.

Fundamentally Different

- After Dollars ceased to be backed by Gold, the parameters within which our economy works expanded and our economy began to evolve in fundamental ways.
- Now:

1. The Fed is free to create as much money as it pleases;
2. Trade between nations no longer has to balance;
3. Government debt has surged; and
4. Total Credit has skyrocketed.

First, The Fed

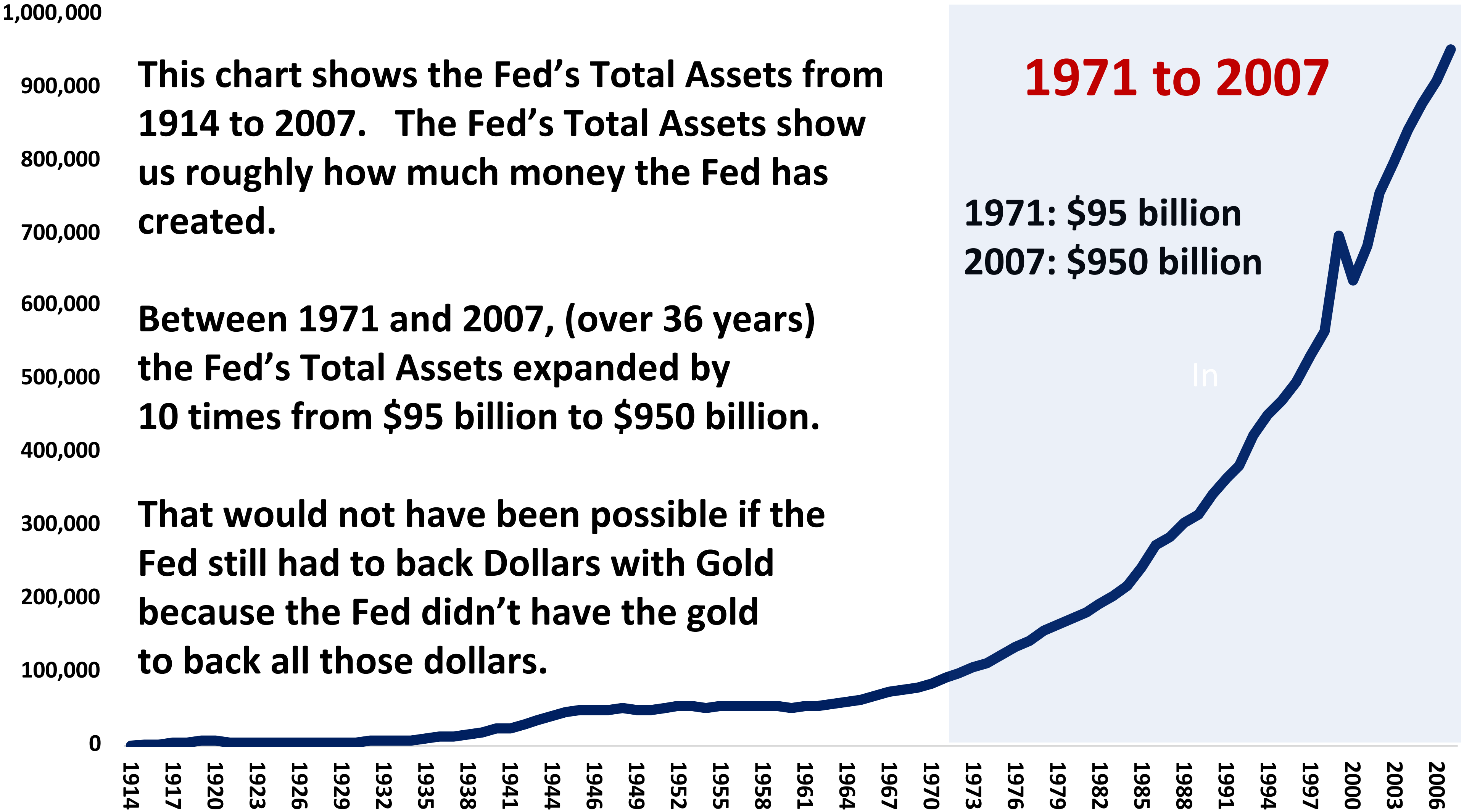
The Fed's Total Assets

1914 to 2007, US$ millions

This chart shows the Fed's Total Assets from 1914 to 2007. The Fed's Total Assets show us roughly how much money the Fed has created.

Between 1971 and 2007, (over 36 years) the Fed's Total Assets expanded by 10 times from $95 billion to $950 billion.

That would not have been possible if the Fed still had to back Dollars with Gold because the Fed didn't have the gold to back all those dollars.



Source: The Fed, The Financial Accounts Of The United States

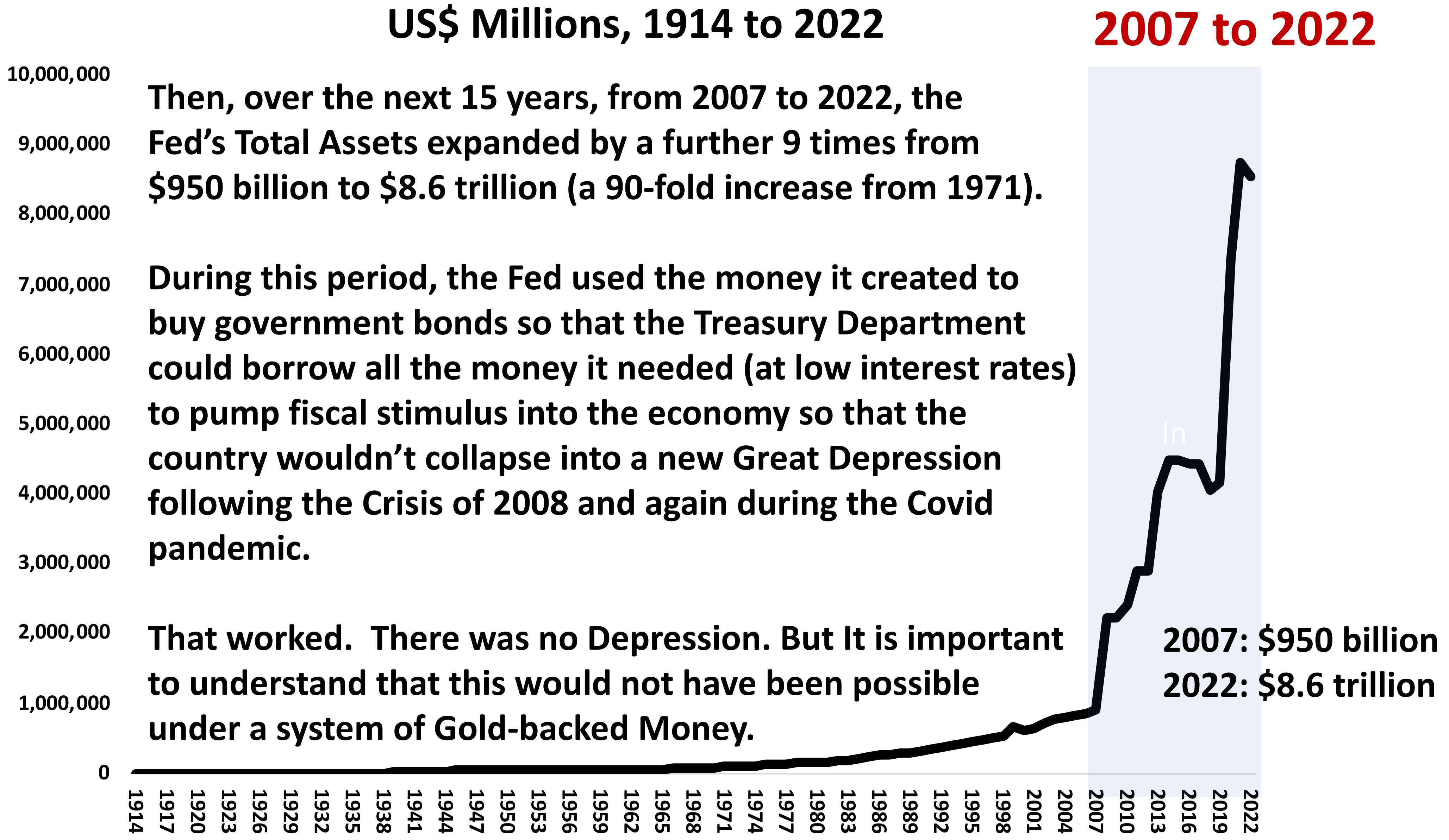
The Fed's Total Assets

US$ Millions, 1914 to 2022

Then, over the next 15 years, from 2007 to 2022, the Fed's Total Assets expanded by a further 9 times from $950 billion to $8.6 trillion (a 90-fold increase from 1971).

During this period, the Fed used the money it created to buy government bonds so that the Treasury Department could borrow all the money it needed (at low interest rates) to pump fiscal stimulus into the economy so that the country wouldn't collapse into a new Great Depression following the Crisis of 2008 and again during the Covid pandemic.

That worked. There was no Depression. But It is important to understand that this would not have been possible under a system of Gold-backed Money.



Source: The Fed, The Financial Accounts Of The United States

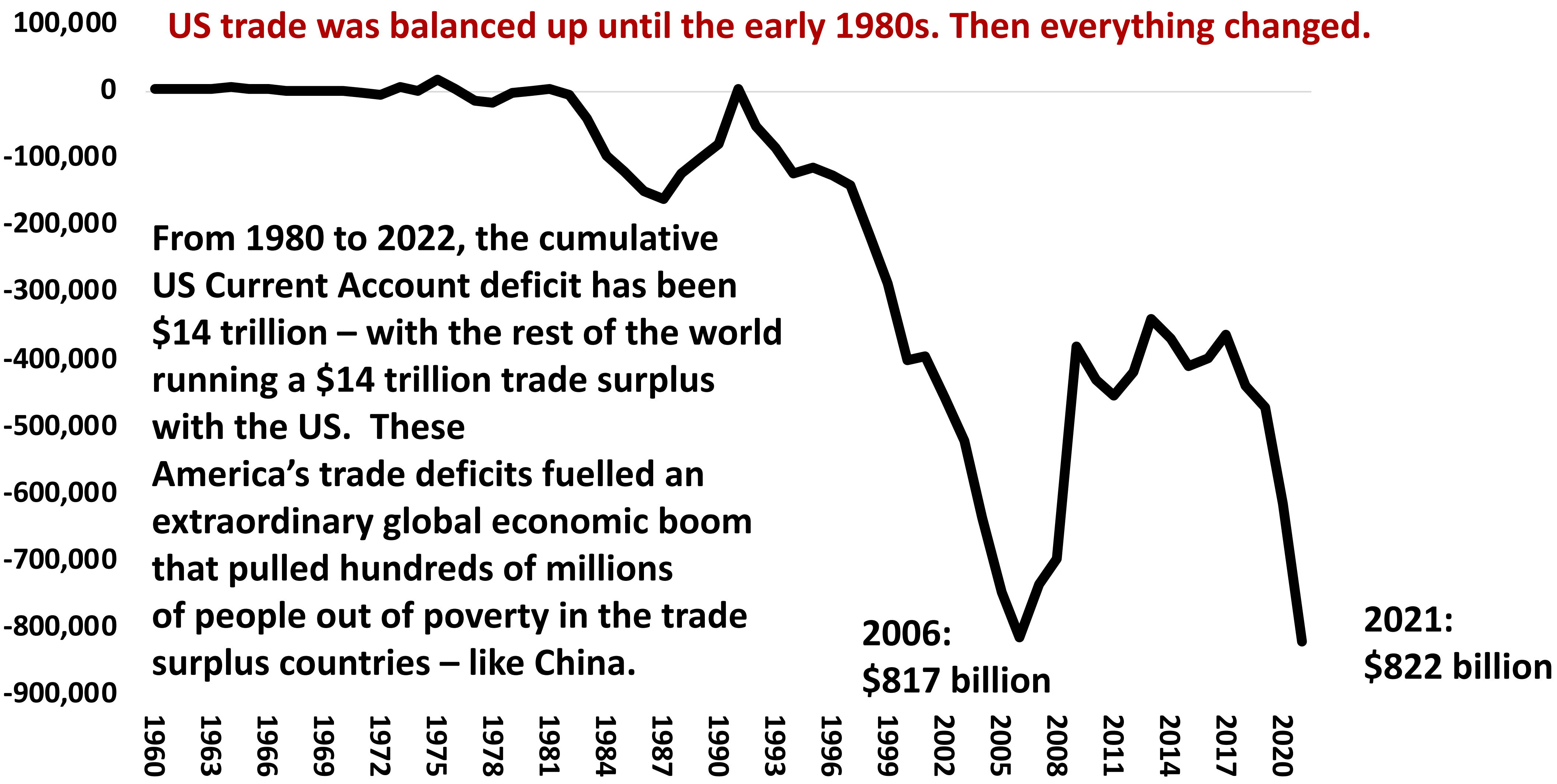
2. Trade Ceased To Balance

- Next, Trade between nations no longer had to balance.
- When Gold was money, no country could run a very large trade deficit for very long because its Gold would have been shipped overseas to pay for its trade deficit.
- Soon that country would have run out of Gold and been forced to stop buying things from abroad and trade would have come back into balance.
- In other words, there was an automatic adjustment mechanism that ensured that trade between nations balanced.
- That ended when Money ceased to be backed by Gold.
- Afterwards, the US was able to pay for its trade deficits with Credit.

US Current Account Balance

US$ Millions, 1960 to 2021

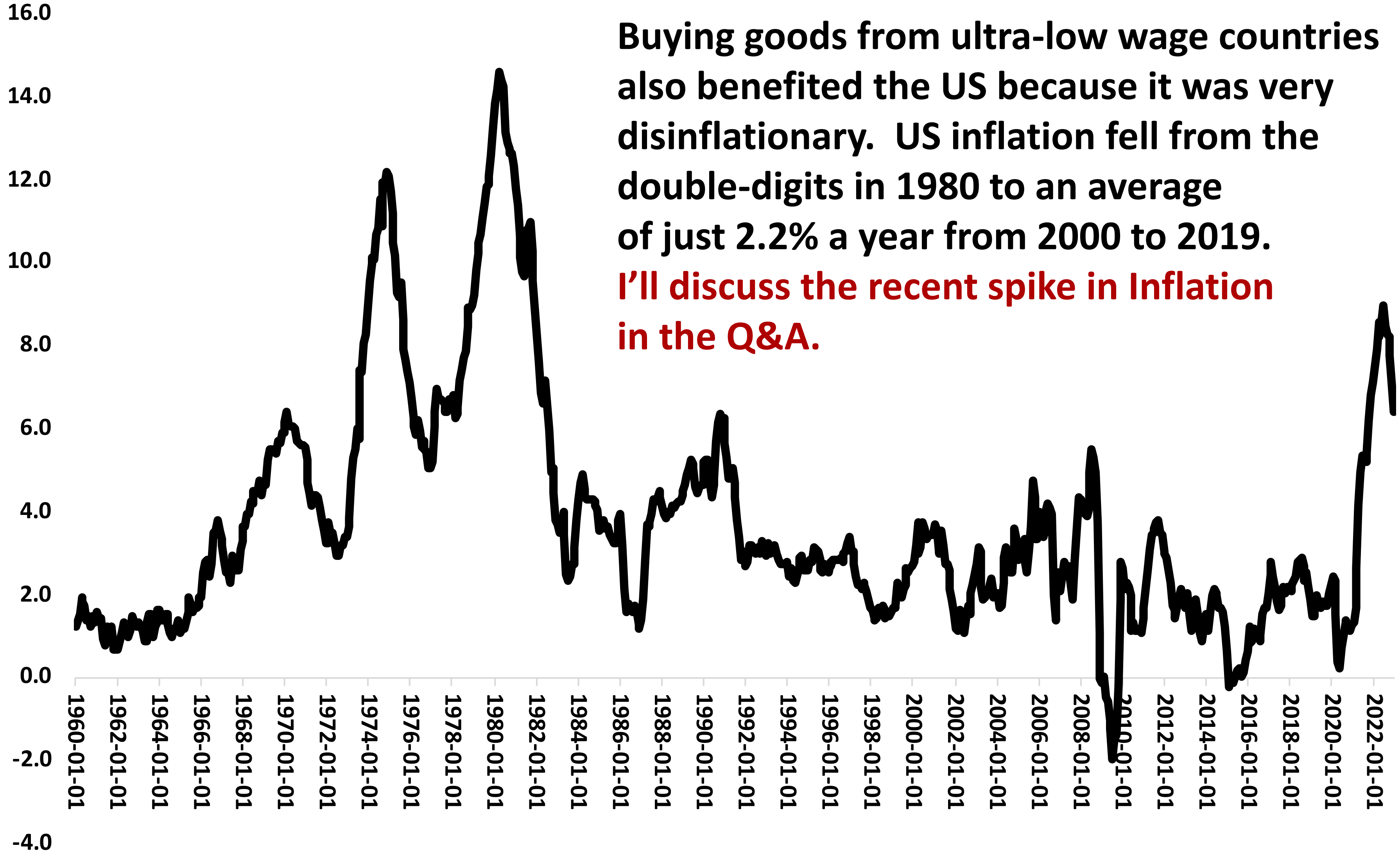
US trade was balanced up until the early 1980s. Then everything changed.



Source: Bureau of Economic Analysis

Consumer Price Index (CPI)

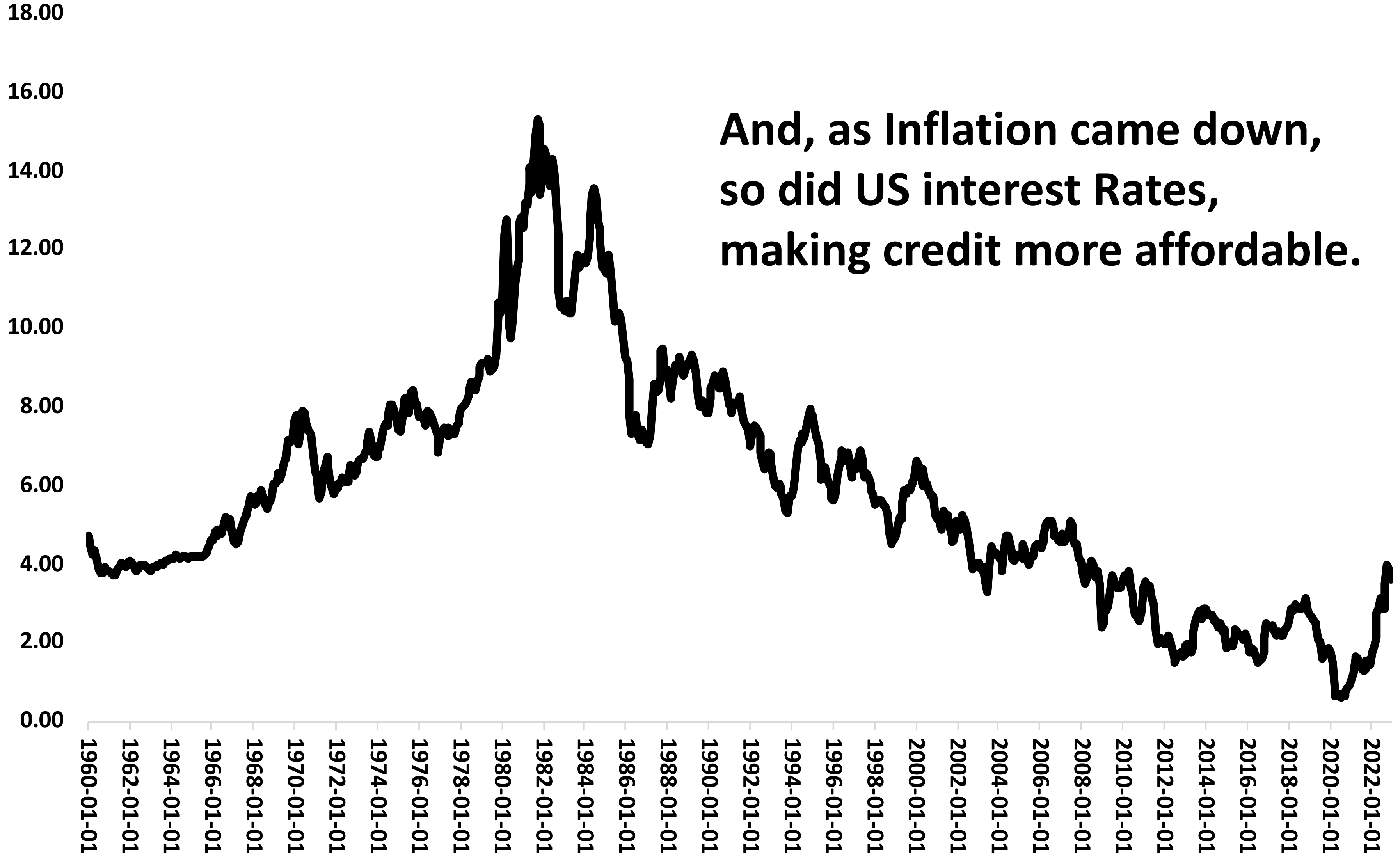
Annual % Change, 1960 to December 2022



Source: St Louis Fed

10-Year US Government Bond Yields

%, 1960 to December 2022



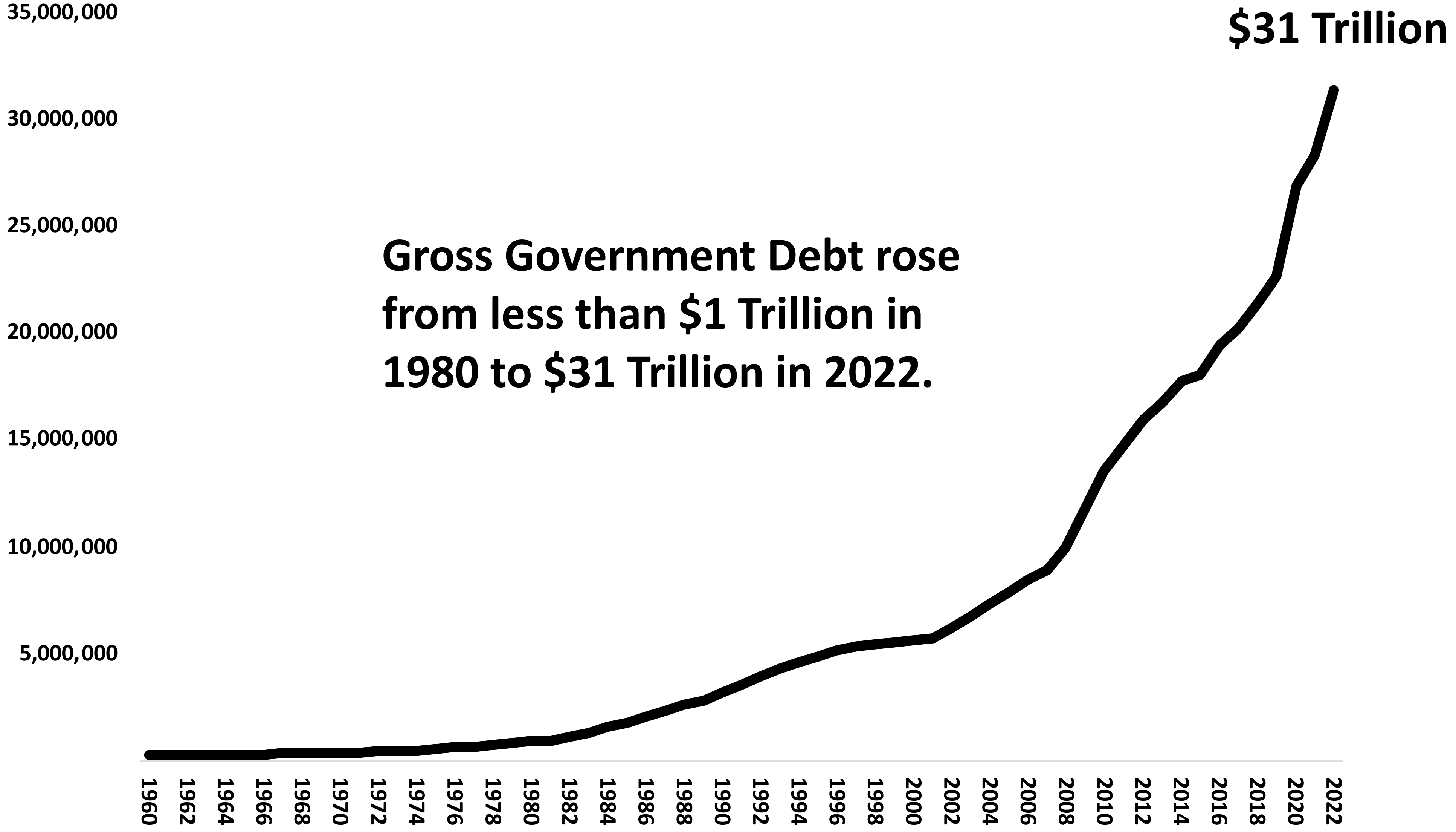
Source: St Louis Fed

3. Government Debt Surged

- Third, the disinflationary pressure resulting from Globalization meant that the government was able to borrow and spend much more to stimulate the economy without causing inflation or driving up interest rates.
- So, Government Debt surged.

Gross Federal Government Debt

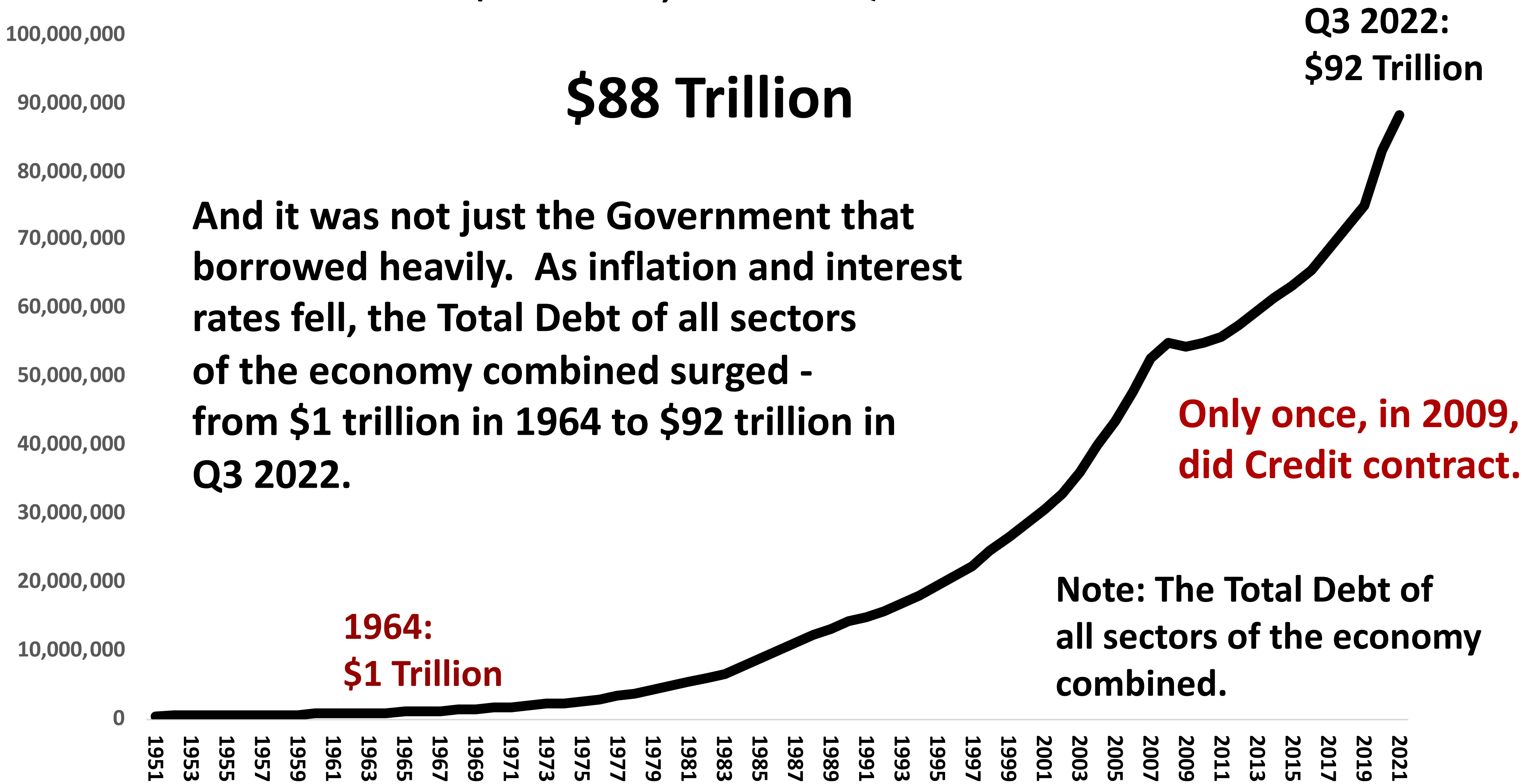
US$ Millions, 1960 to 2022



Source: White House Office Of Management And Budget

Total Debt = Total Credit

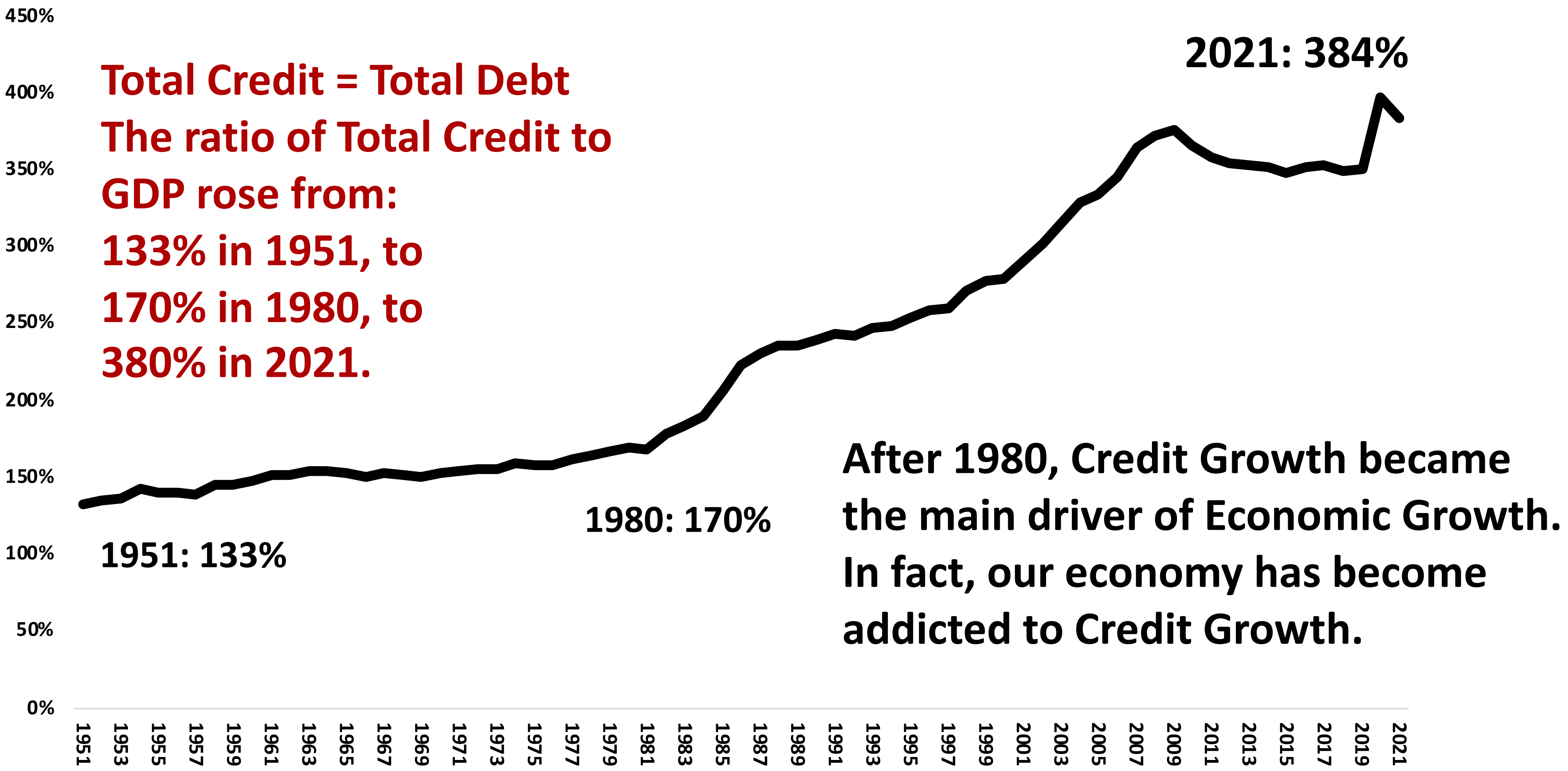
US$ Millions, 1951 to Q3 2022



Source: The Fed, The Financial Accounts Of The United States

Total Credit (Total Debt) to GDP

%, 1951 to 2021



Source: The Fed, The Financial Accounts Of The United States

Creditism

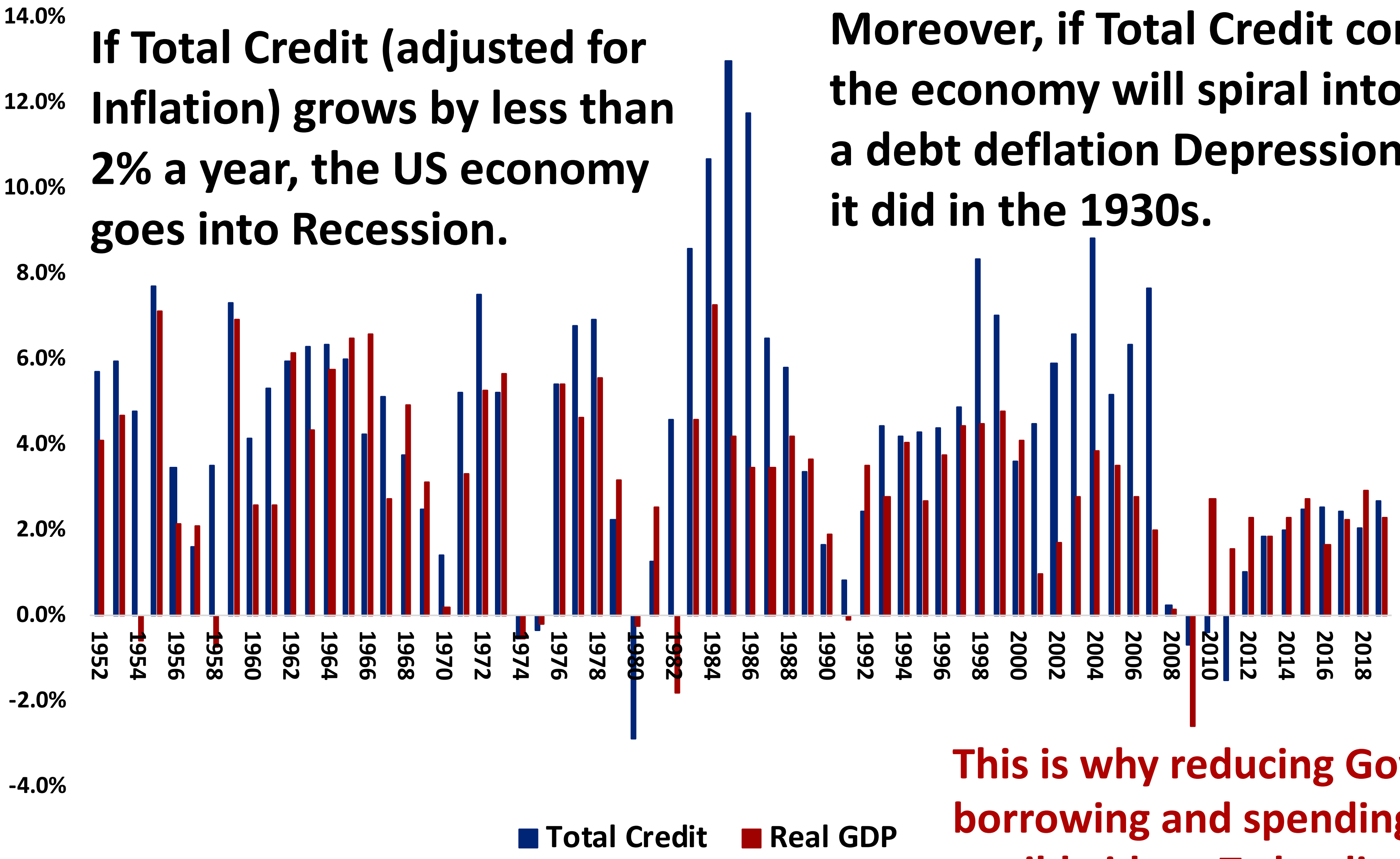
- It’s fair to say that Capitalism has evolved into Creditism.
- Capitalism was an economic system driven by Saving and Investment.
- That’s not the way our economy works any more.
- Our economic system is driven by Credit Creation and Consumption.
- And that has generated very rapid global economic growth.
- The problem with Creditism, however, is that it requires Credit Growth to survive.

Credit Growth vs. GDP Growth

Adjusted For Inflation, Annual % Change, 1952 to 2019

If Total Credit (adjusted for Inflation) grows by less than 2% a year, the US economy goes into Recession.

Moreover, if Total Credit contracts, the economy will spiral into a debt deflation Depression like it did in the 1930s.



This is why reducing Government borrowing and spending is such a terrible idea. To be discussed in Q&A.

Source: The Fed, The Financial Accounts Of The United States

The Lessons From History

- OK. That's the background, the history, how we got here, as described in the first two parts of **The Money Revolution**.
- The final part of the book, draws on the lessons that can be learned from that history to make policy recommendations for the future.

Policy Recommendations

- Specifically, Part Three calls for the US government to make a multi-trillion-dollar Investment in new industries and technologies over the next decade.
- It calls for the Fed to finance that Investment by creating money and buying the bonds the government would sell to fund the investment.
- And it calls for the Investments to be carried out by joint venture companies set up between the government and America’s greatest entrepreneurs and scientists, with the government funding these joint venture companies lavishly in exchange for a 60% equity stake in the companies and with the entrepreneurs and scientists managing these companies in exchange for a 40% equity stake.

Invest In The Future

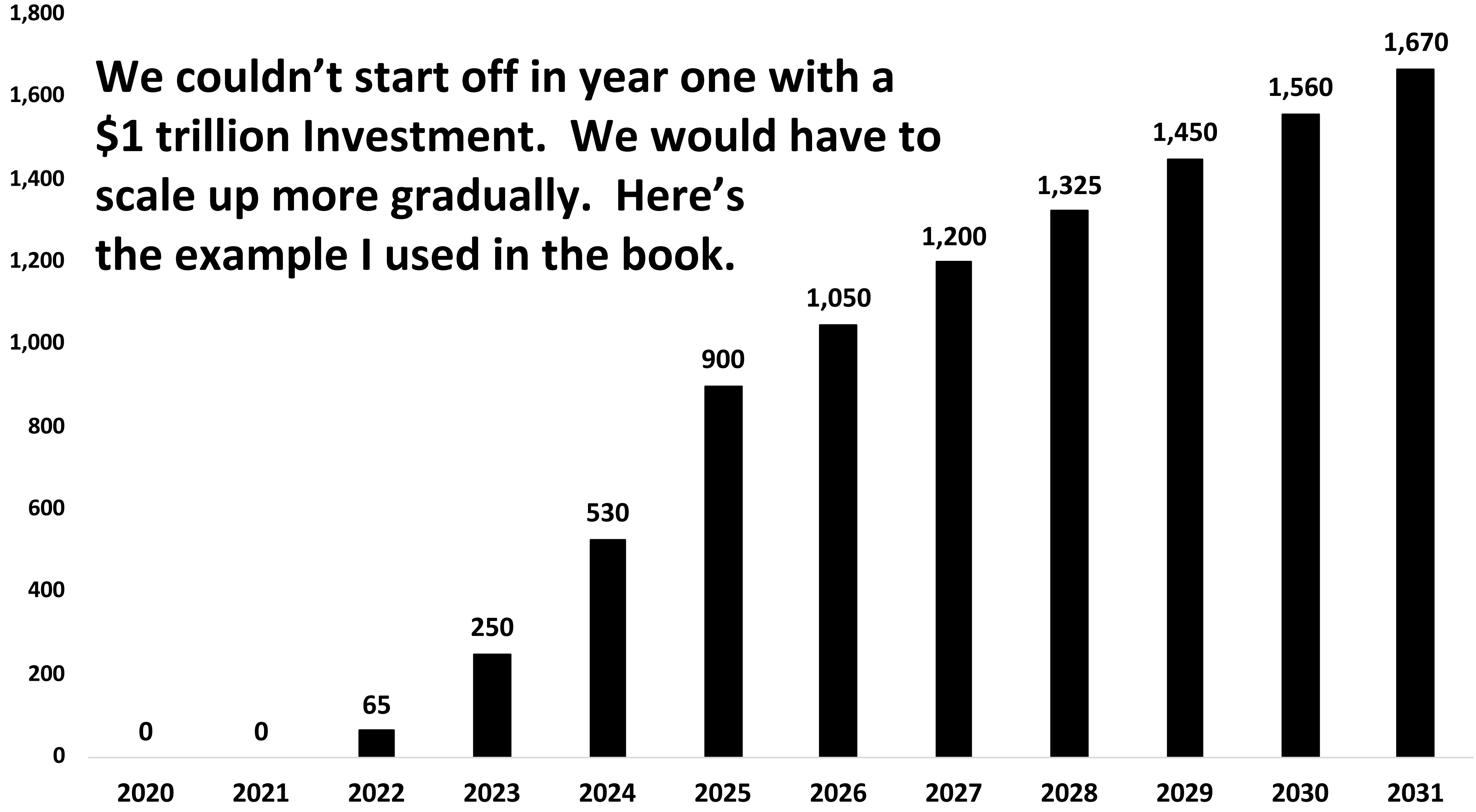
- Part Three begins by explaining why the United States current level of Investment is dangerously inadequate.
- It shows how a multi-trillion-dollar Investment Program could be structured.
- It discusses the industries that should be targeted (including Artificial Intelligence, Quantum Computing, Genetic Engineering, Biotech, Nanotech, Renewable Energy, Neural Sciences and Robotics).
- It demonstrates that the Investment Program could be easily financed.
- And it describes the extraordinary benefits that such a large-scale Investment in the future would be sure to deliver.

Multi-Trillion

- “Multi-trillion” sounds like a lot. So let me show you how such a large Investment would impact the Government’s debt level.
- In the book, I argue that the United States should invest as much as possible, as quickly as possible.
- I don’t recommend a specific dollar amount that we should invest.
- But I use the example of a $10 trillion government-financed Investment over 10 years to show how that would impact the level of government debt.

The $10 Trillion Investment Program

Investment Per Year, US$ Billions, 2020 to 2031

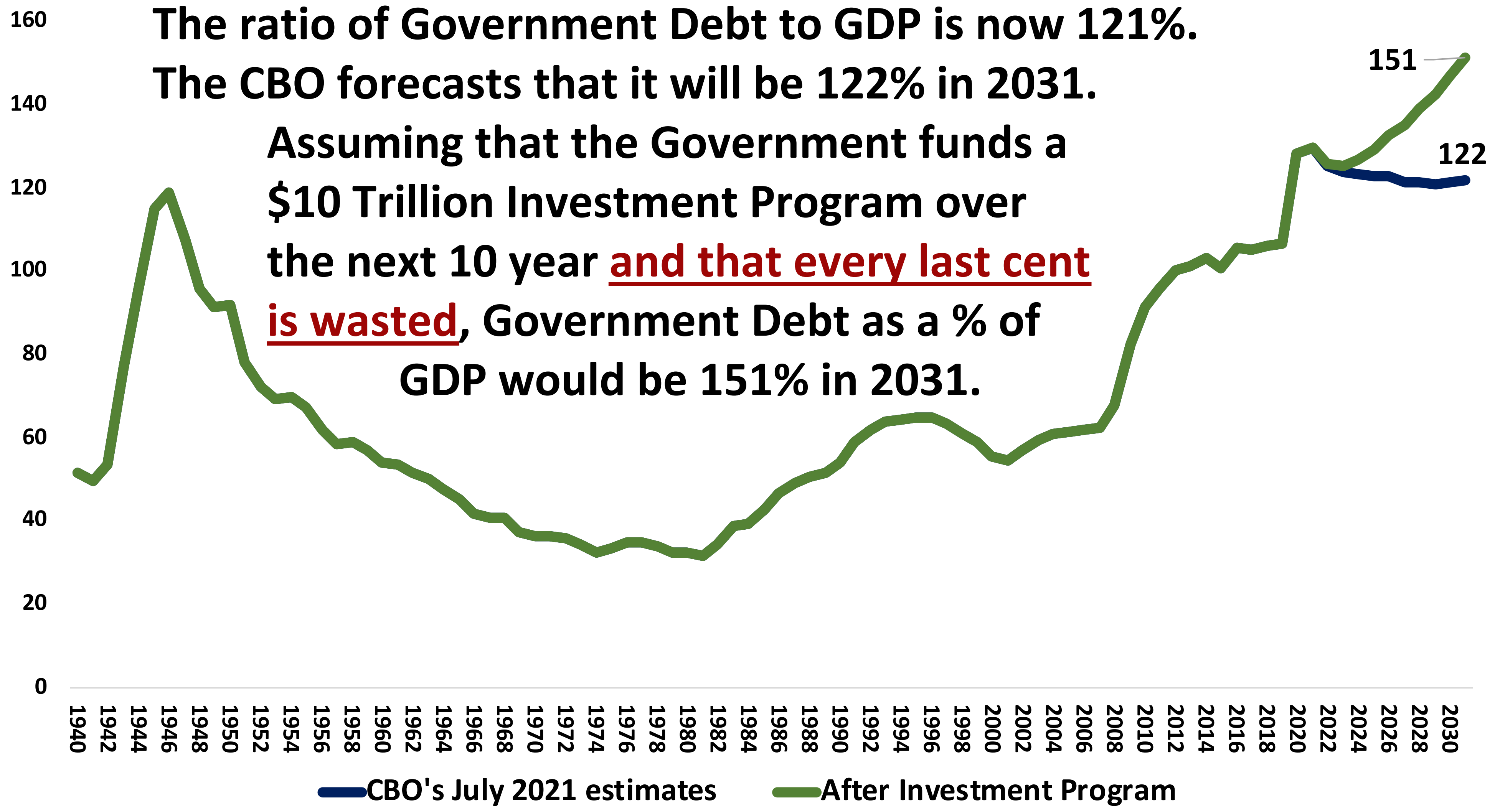


If It's All Wasted

- Now, to be as conservative as possible, in the following projections I assume that every penny of this $10 trillion investment is wasted, that nothing good whatsoever comes from it.
- I assume it doesn't make the economy grow any faster.
- It doesn't boost tax revenues.
- And it doesn't produce any new technological breakthroughs.
- So, under these ridiculously pessimistic assumptions, here's how a $10 trillion Investment would impact the government's debt level:

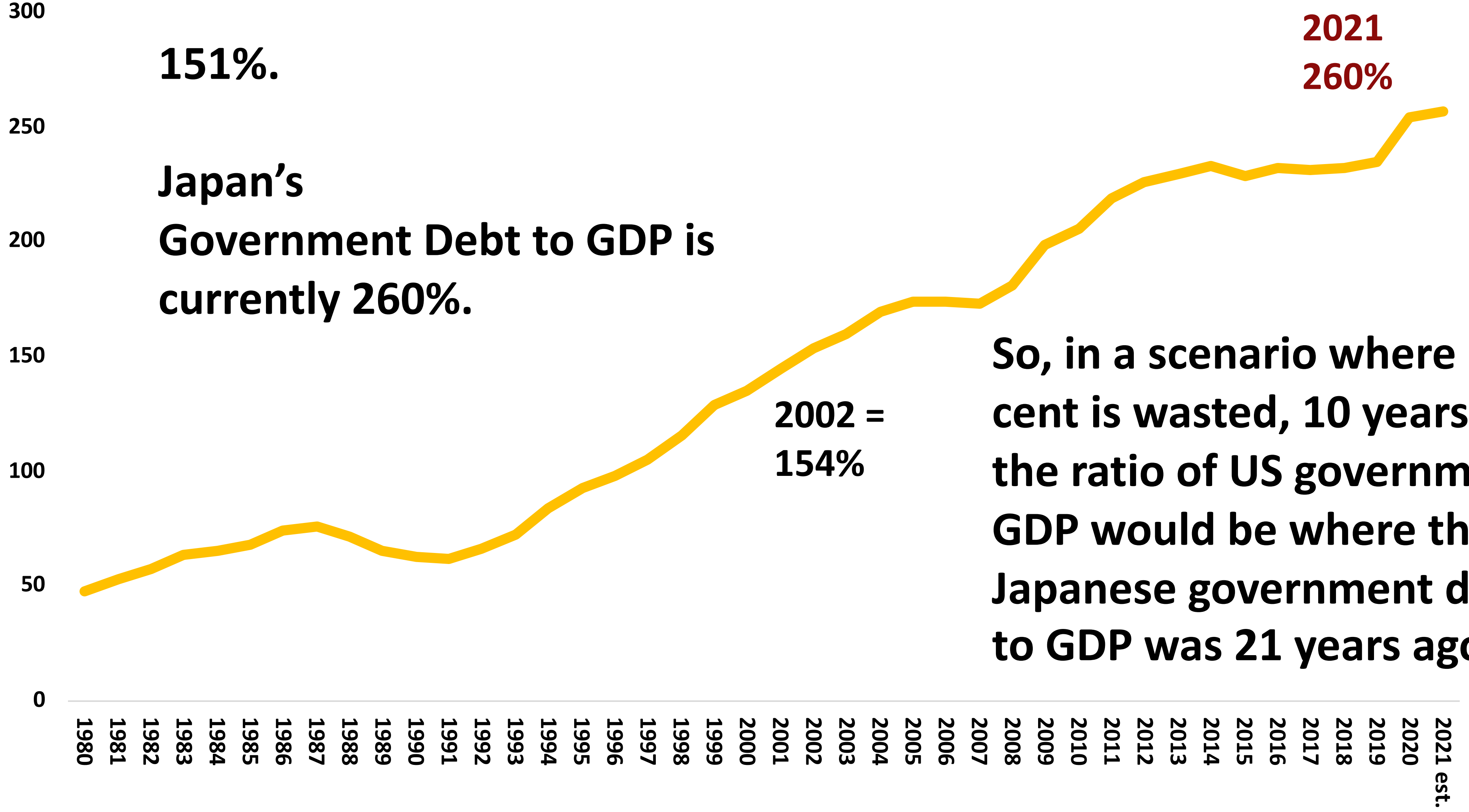
Gross Government Debt as a Percentage of GDP

1940 to 2031 est.



Japan: Gross Government Debt To GDP

%, 1980 to 2021



151%.

Japan's Government Debt to GDP is currently 260%.

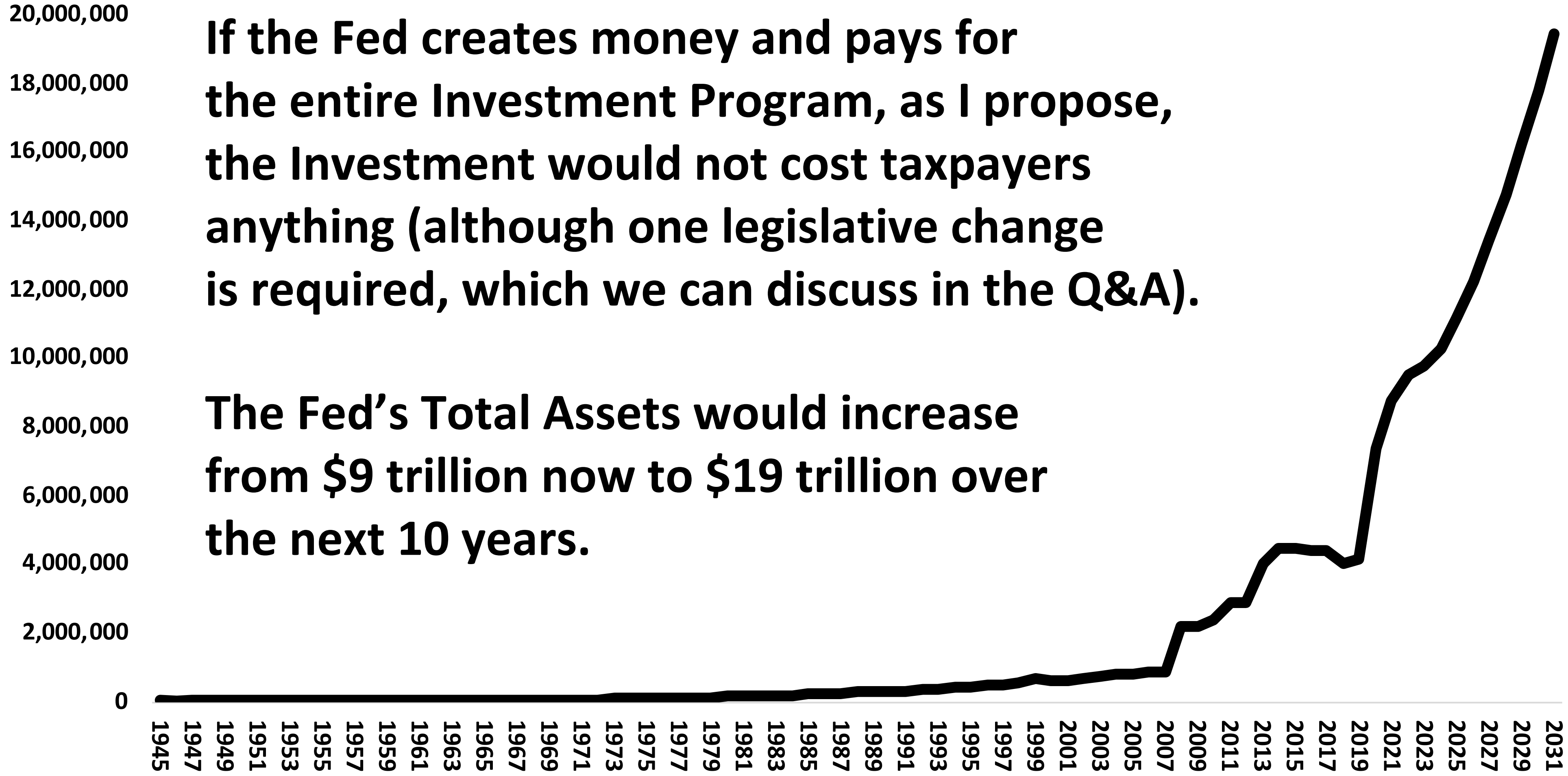
So, in a scenario where every cent is wasted, 10 years from now, the ratio of US government debt to GDP would be where the ratio of Japanese government debt to GDP was 21 years ago in 2002.

Source: IMF data

In Reality…

- Those calculations are based on the ridculously pessimistic assumption that a $10 Trillion Investment Program, managed by America’s greatest entrepreneurs and scientists, would be entirely wasted and that nothing good whatsoever resulted from the largest investment in Research and Development (R&D) in history.
- In reality, an Investment of that size would turbocharge US economic growth, make the size of the economy (GDP) very much larger and, therefore, make the ratio of government debt to GDP much lower than it’s currently expected to be (without the Investment).
- Moreover, many of these companies would also become enormously profitable, with the government (i.e., US taxpayers) keeping 60% of the profits.
- In all probability, this Investment would pay for itself many times over.

The Fed's Total Assets Projected to 2031
US$ Millions, 1945 to 2031 est.
Assuming the Fed Ends QE in December 2022
and Monetizes the $10 trillion Investment Program



If the Fed creates money and pays for the entire Investment Program, as I propose, the Investment would not cost taxpayers anything (although one legislative change is required, which we can discuss in the Q&A).

The Fed's Total Assets would increase from $9 trillion now to $19 trillion over the next 10 years.

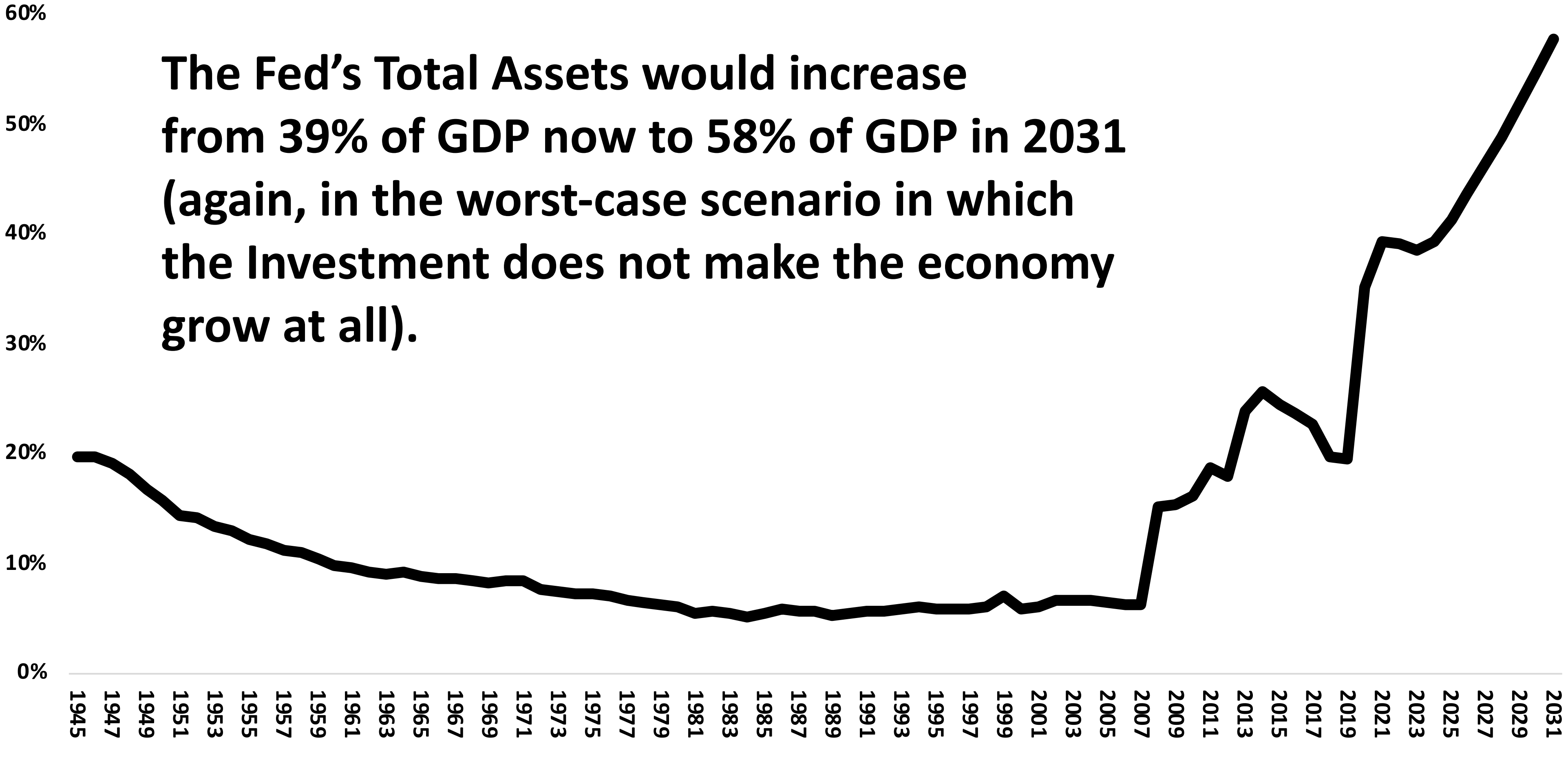
Source of Historical Data: Federal Reserve

Fed's Total Assets as a % of GDP

1945 to 2031 est.

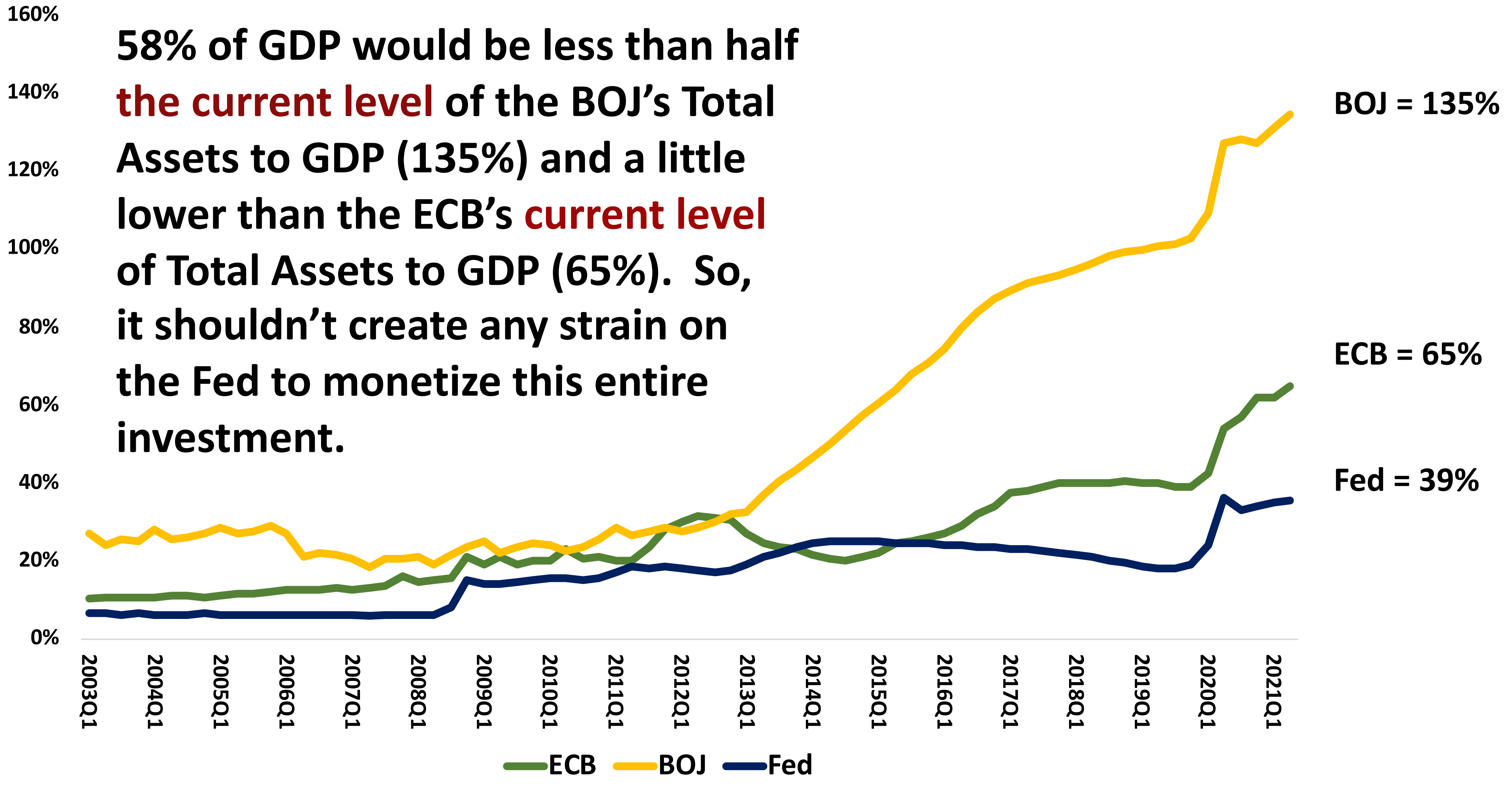
Assuming the Fed Ends QE in December 2022

and Monetizes the $10 trillion Investment Program



Source of Historical Data: Federal Reserve

Central Banks' Assets As A % Of GDP
2003 to Q4 2021



Source: Federal Reserve, CEIC

American Can Afford To Invest

- Consider that the US government borrowed $2.8 trillion in the second quarter of 2020 alone – in just three months!
- And the Fed created a similar amount of money at that time to help finance that government borrowing at low interest rates.
- That was a multi-trillion-dollar expansion of government debt and the Fed’s balance sheet in just 90 days.
- What I’m proposing is a multi-trillion-dollar government Investment in new industries and technologies over 10 years.
- That would be easily achievable.
- So, make no mistake: **America Can Afford To Invest!**

America Must Invest

- And there are three pressing reasons America must invest:
- First, Creditism requires Credit Growth to survive;
- Second, the US must invest to defend US National Security given the rapid rise of China as a military threat; and
- Third, we must invest because of the extraordinary benefits that a large-scale Investment in the Industries and Technologies of the Future would be certain to deliver and because we can so easily afford to Invest.

1. Creditism Requires Credit Growth

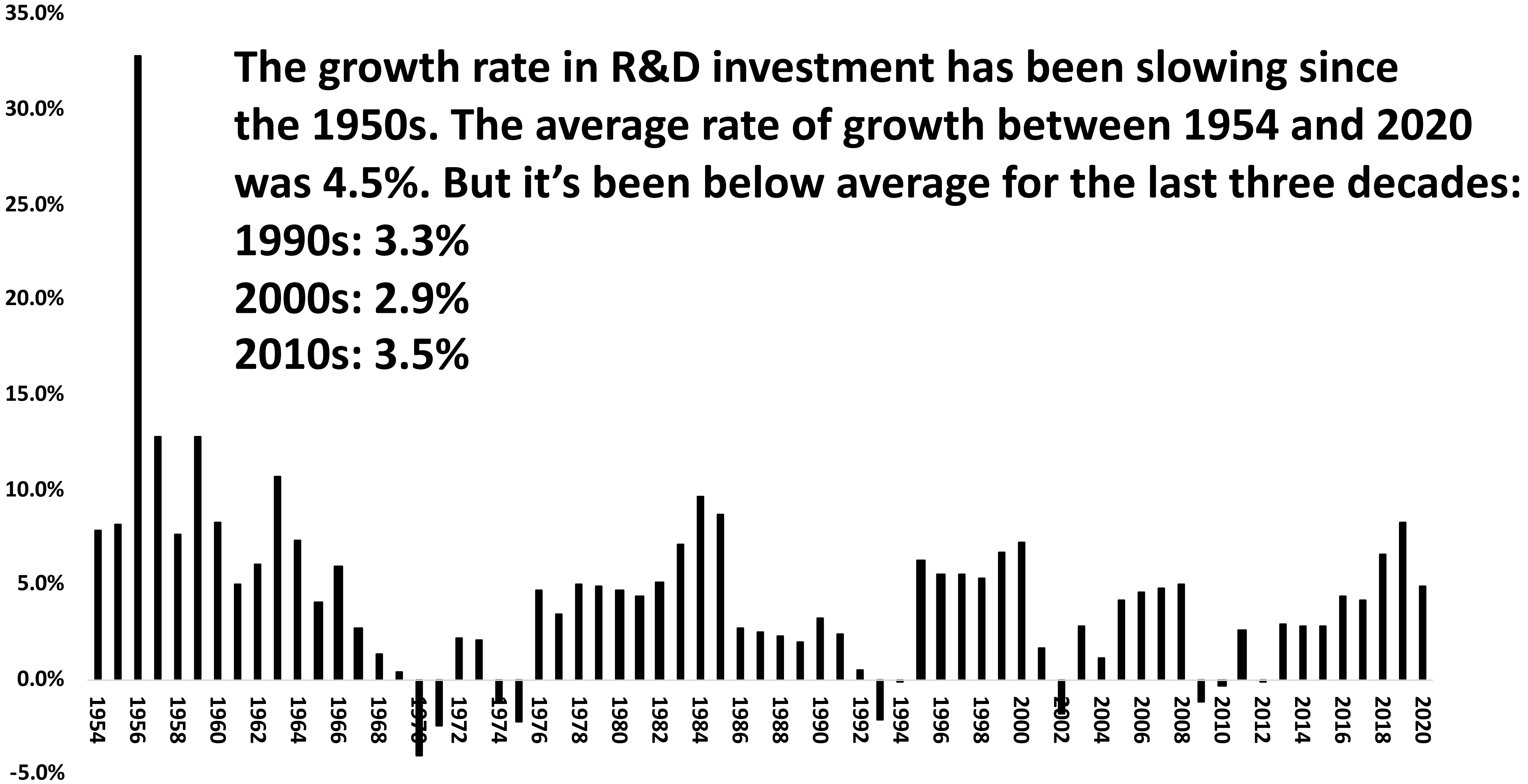
- First, Creditism requires Credit Growth.
- Our economy is addicted to Credit Growth.
- If Credit contracts as it did in 1930 and as it started to in 2009, the economy will spiral into a new Great Depression.
- That’s why Austerity would lead to catastrophe. It would cause Credit to contract.
- Borrowing to fund a large-scale government Investment Program would ensure that Credit continues to expand.

2. Inadequate Investment Has Put National Security At Risk

- Second, National Security.
- Investment in Research and Development (R&D) is the decisive factor in determining which country leads the world economically, technologically, and militarily.
- US Investment in R&D has been dangerously inadequate in recent decades and very insufficient government investment is to blame.

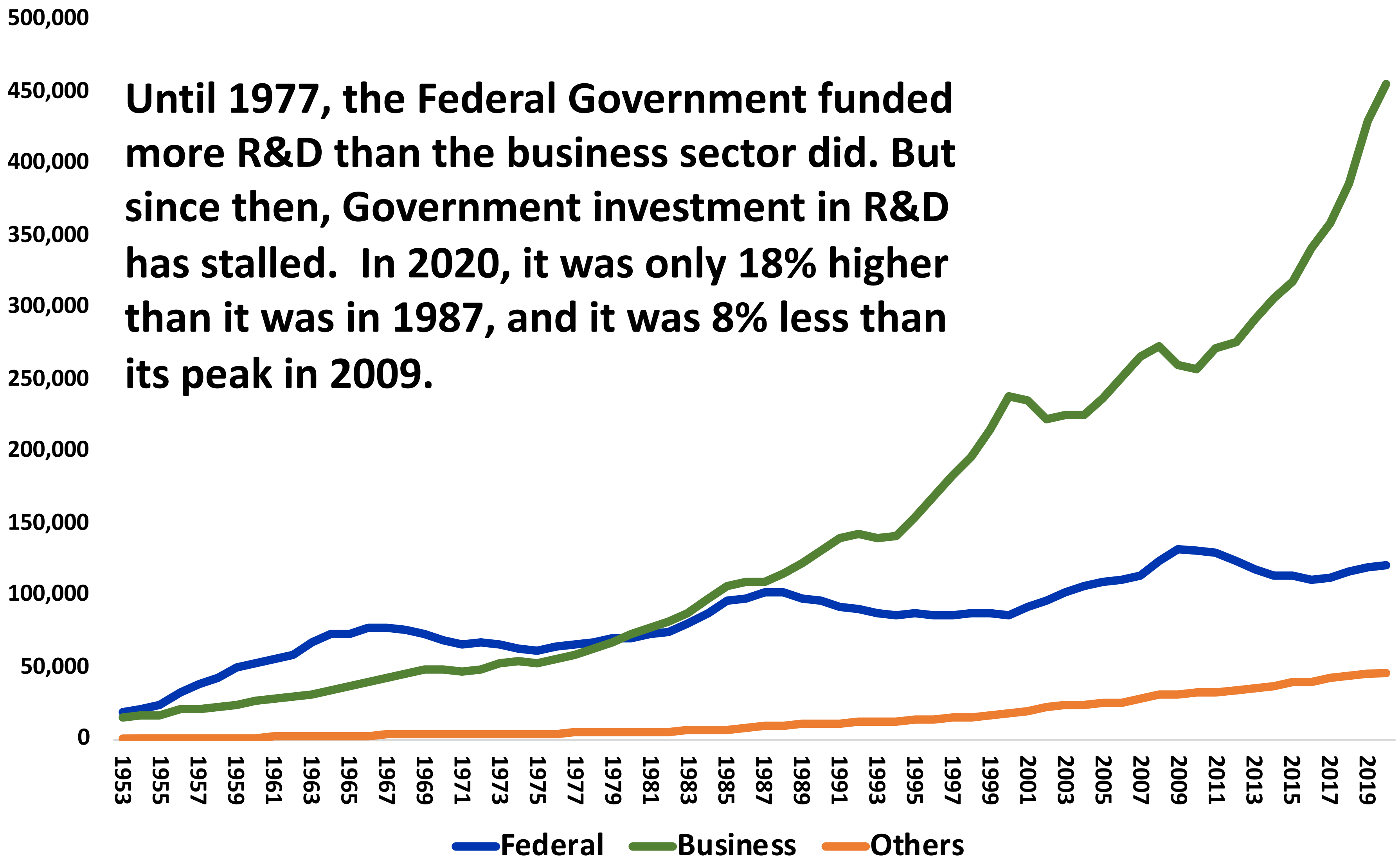
Total R&D Expenditure, Annual % Change

%, (Constant 2012 Dollars), 1954 to 2020



Source: The National Science Foundation

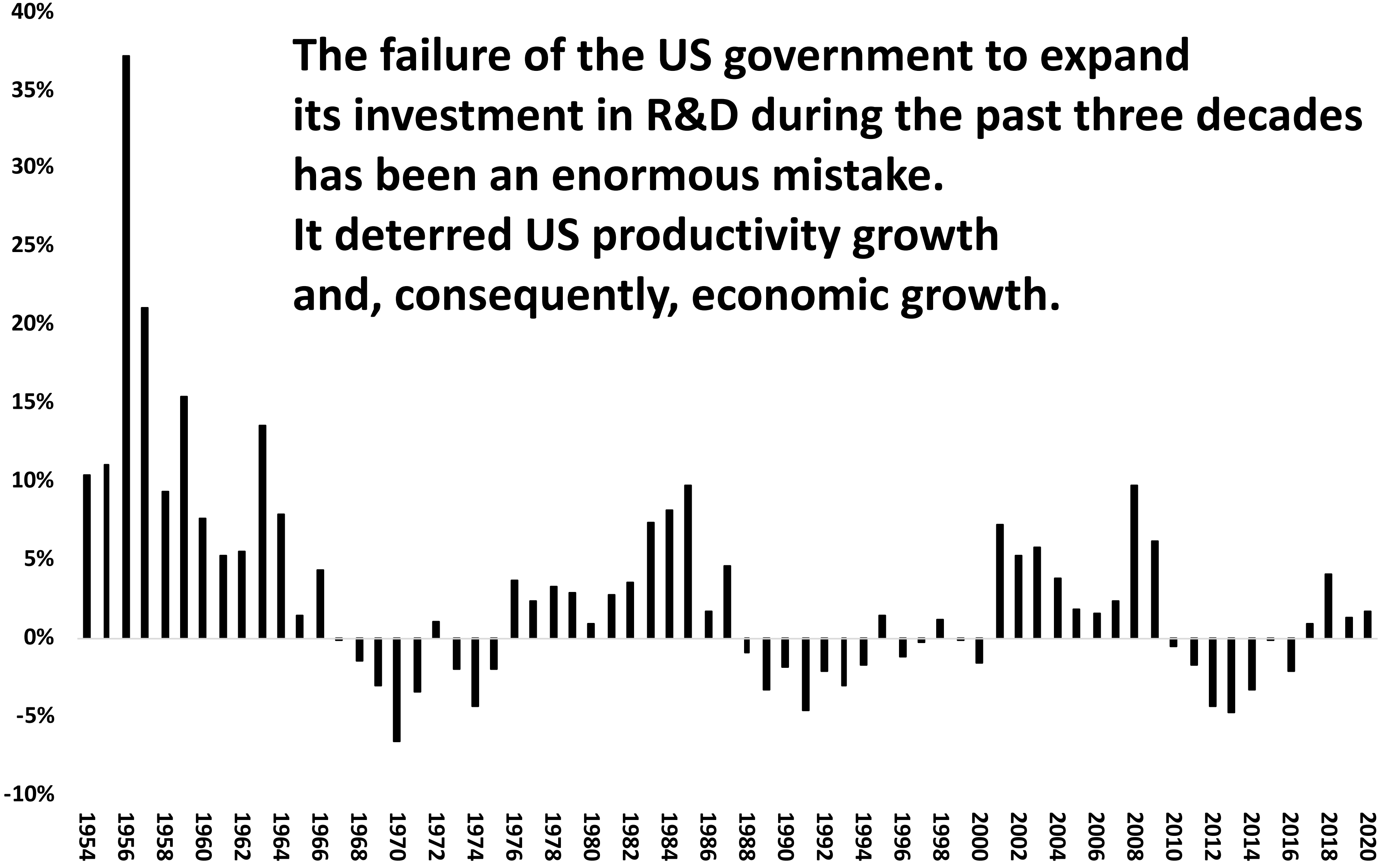
R&D Expenditure By Source Of Funds
US$ Millions, Constant 2012 Dollars, 1953 to 2020



Source: National Science Foundation

Federal Government Funding Of R&D
Annual % Change, Constant 2012 Dollars, 1954 to 2020

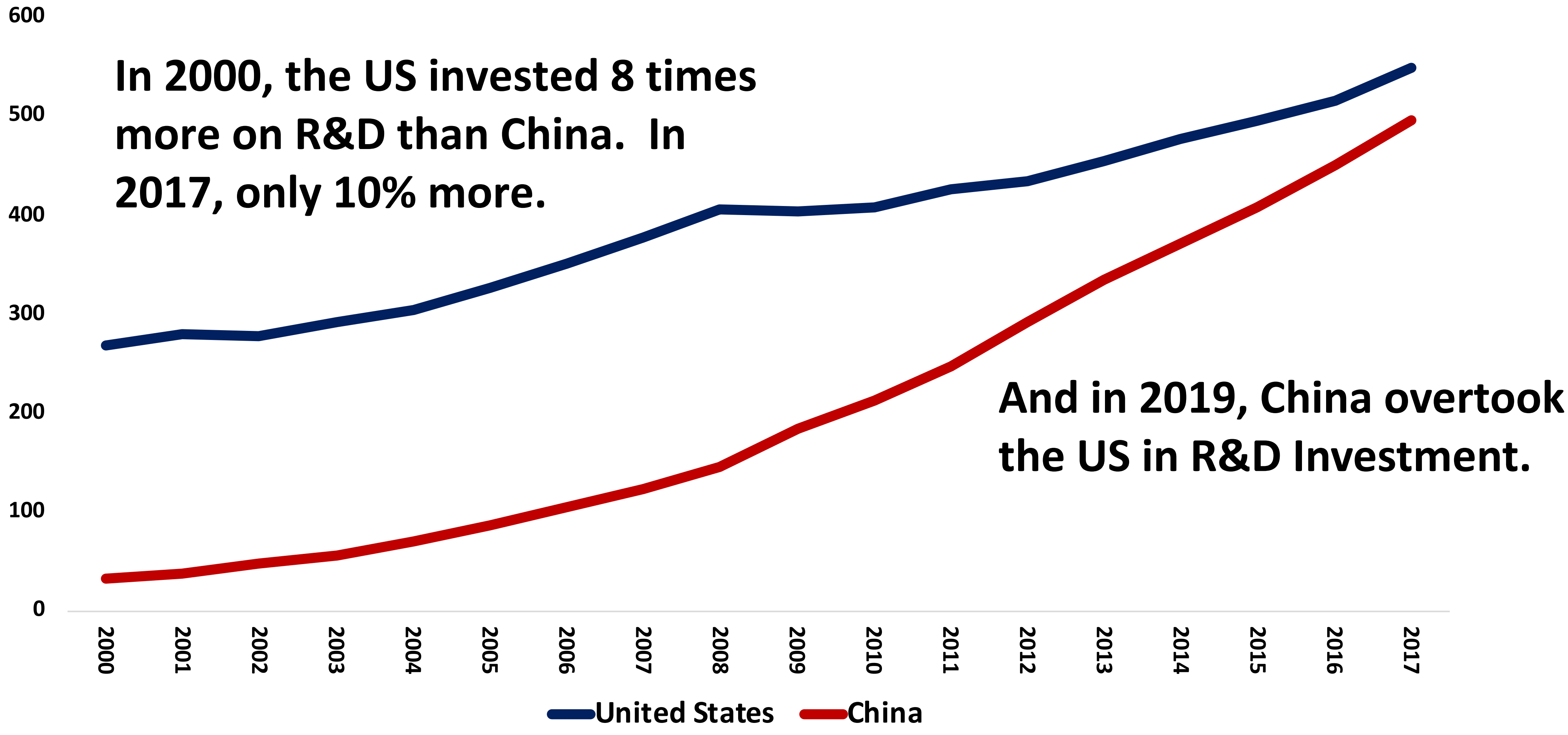
The failure of the US government to expand its investment in R&D during the past three decades has been an enormous mistake.
It deterred US productivity growth and, consequently, economic growth.



Source: The National Science Foundation

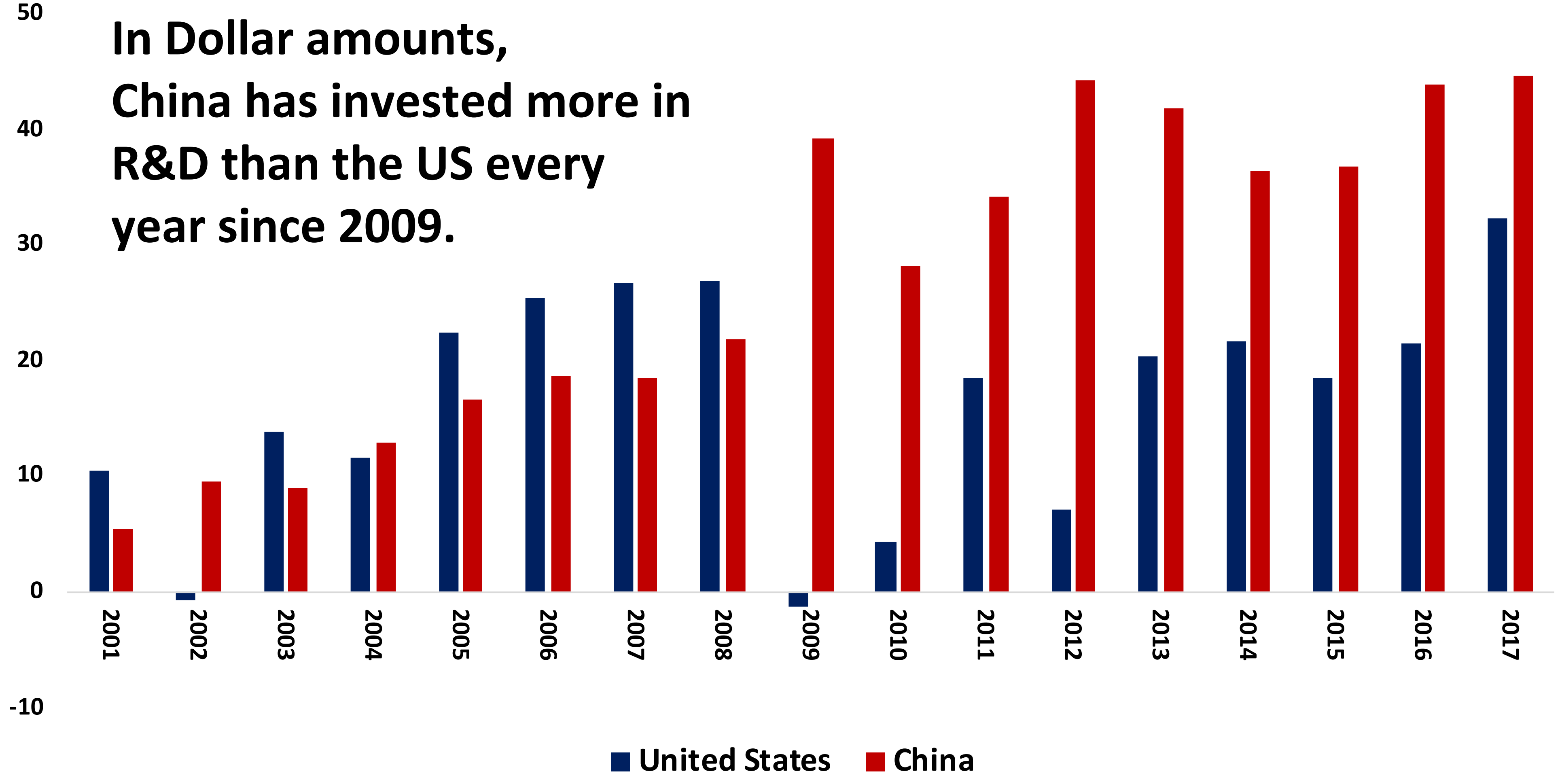
Gross Domestic Expenditure on R&D
The US vs. China

2000 to 2017, US$ Billions purchasing power parity basis



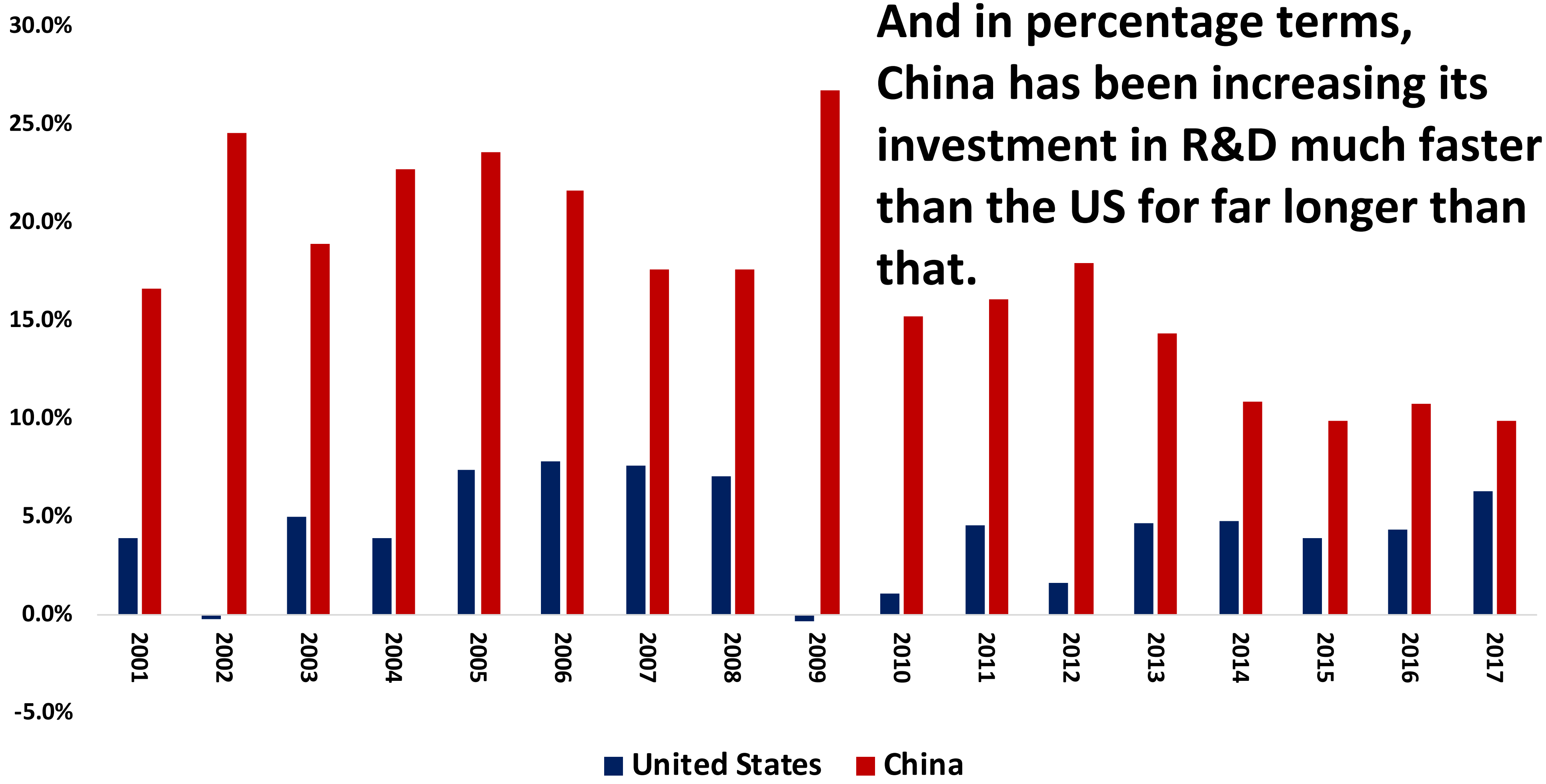
Source: National Science Board, Science and Engineering Indicators: 2020

R&D Investment, Annual $ Change
The US vs. China
2001 to 2017, US$ Billions (ppp)



Source: National Science Board, Science and Engineering Indicators: 2020

R&D Investment, Annual % Change
The US vs. China
2001 to 2017

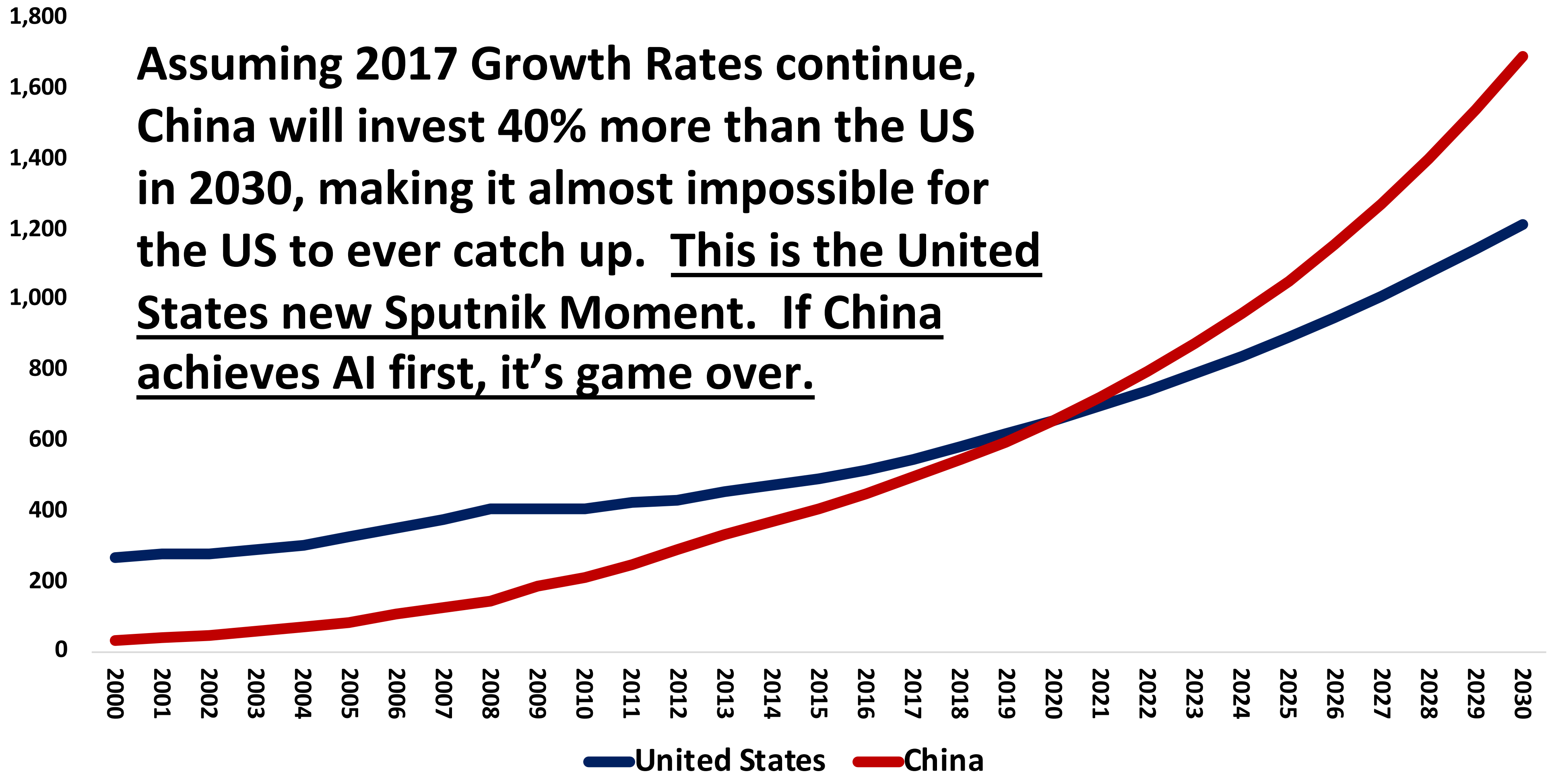


And in percentage terms, China has been increasing its investment in R&D much faster than the US for far longer than that.

Source: National Science Board, Science and Engineering Indicators: 2020

Gross Domestic Expenditure on R&D
The US vs. China

2000 to 2030 est., US$ Billions purchasing power parity basis



Source: National Science Board, Science and Engineering Indicators: 2020
Projections: RD

$280 Billion Is Not Enough

- If China continues to invest more in R&D than the United States does, it will **quickly** surpass the United States and become the world’s leading technological, economic and military superpower.
- We must not allow that to happen!
- History teaches that countries with great technological superiority rarely treat inferior powers kindly.

Trillions, Not Billions

- The $280 billion investment in R&D authorized by the Chips and Science Act was an important first step. It will buy the United States an extra year or two before it's overtaken by China.
- But that's not good enough. Much larger investments during the years immediately ahead will be required to ensure future US national security.
- The United States needs to invest Trillions of Dollars in new industries and technologies, not billions.
- Luckily, we can easily afford to do that.

A Multi-Trillion-Dollar Investment Program

- Between March 2020 and October 2021, the Fed created $120 billion through Quantitative Easing every month.
- At that rate, the Fed could finance all of the $280 billion Chips and Science Act in just 70 days.
- All this demonstrates just how large the government's capacity to borrow and invest actually is.

This table shows how much the Government invests in R&D currently through All Government Agencies and it provides a breakdown of that investment for the top 5 Government Agencies.

Federal R&D Funding by Agency:

US$ Billions

	FY2019
Total	136
Department Of Defense	56
Department Of Health and Human Services	39
Deparment Of Energy	18
NASA	15
National Science Foundation	7

That means with little more than one month of QE at its recent peak of $120 billion per month, the government could double its annual investment in R&D.

Source: The Congressional Research Service

This table shows current Government funding for the National Institutes of Health Funding

FY2019	US$ Billions	Up until very recently the Fed was creating $120 billion every month through QE.
National Cancer Institute	6	5% of 1 month of QE
Allergy/Infectious Diseases	6	
Heart, Lung, and Blood Institute	3	
National Institute on Aging	3	
Neurological Disorders/Stroke	2	
Diabetes/Digestive/Kidney	2	
National Institute of Mental Health	2	
General Medical Sciences	2	
Child Health/Human Development	2	
National Institute on Drug Abuse	1	
Human Genome Research Institute	0.6	
Biomedical Imaging/Bioengineering	0.4	
The Other 18 Institutes/Centers	6	
Total	36	30% of 1 month of QE

We can do much better than this. We can now invest on a scale large enough to cure all the diseases.

Source: The Congressional Research Service

Eight Times

- With a $10 trillion investment, we could expand the budget of all of these Agencies by eight times over the next decade (relative what their budgets will be if the current level of investment remains unchanged), although that is not the way I am proposing that the money be invested.

This table shows that a $10 trillion Investment Program could expand the R&D budgets of these Agencies by 8 times over 10 years.

8 Times

Federal R&D Funding by Agency:

With and Without a $10 Trillion Investment Program

US$ Billions

		10 Year Budget	
	FY2019	Flat	Plus $10 trillion
Total*	136	1,360	11,360
Department Of Defense	56	560	4,700
Department Of Health and Human Services	39	390	3,200
Deparment Of Energy	18	180	1,500
NASA	15	150	1,300
National Science Foundation	7	70	550

* The Total for FY2019 assumes no change from FY2018

The purpose of this table is just to put into perspective the impact that a large-scale investment would have.

Miracles

- An investment on that scale in the Industries and Technologies of the Future would be certain to create miracles.
- It would open up the possibility of:
- Curing all the diseases,
- Radically expanding life expectancy,
- Creating limitless, cheap, clean energy,
- Rehabilitating the environment,
- Exploring the universe, and
- Solving all the remaining mysteries of Science.

3. We Must Invest Because We Can

- That is the third, and I believe, the most important reason America must invest.
- We must invest because of the extraordinary benefits that a large-scale Investment in the Technologies of the Future would be certain to deliver and because we can so easily afford to Invest.

If We Don’t Invest

- And all this would be in addition to turbocharging US economic growth and guaranteeing US National Security for generations to come.
- If we don’t make the economy grow much faster, the wide-spread social discounted that we are now experiencing could tear the Untied States apart.
- And, if we don’t retain our technological lead over China, then China will become the global military superpower within the next 20 years, leaving us at their mercy.

A New Economic Environment

- In conclusion, then, our new, fiat-based Monetary System, operating within a new and highly disinflationary international trading order, greatly expands the resources available to us.
- With money no longer backed by gold, there are no longer any limits on how much credit central banks and commercial banks can create.
- At the same time, because of globalization, the labor and industrial constraints that had caused inflation and held economic growth in check in the past simply no longer exist.
- We are living in a new, much larger economic environment, which presents us with the possibility to accomplish far more than had ever been possible before.

The First American Century Need Not Be The Last

- All this mean that we can easily afford to invest on a multi-trillion-dollar scale.

- If we do, the first American Century won’t be the last. It will be the first of many.