The National Debt will explode because of deficit spending

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1 How to budget

Once my wife complained that we were spending too much money, and would run out in our old age. So I wrote a budget computer program.

Income each year included Social Security, pensions, interest and dividends.

Expenditures included food, taxes, maintenance, car expenses etc. I certainly budgeted for vacations and entertainment for mental health. We wisely had paid off our mortgage and all debts. I adjusted for inflation.

Each month we had a surplus, which we invested.

The program calculated that our net worth would continually increase until at least our age 120!

Later in this article I wrote such a budget program for the Federal Government; it predicted a death spiral for the National Debt.

2 It's bad when interest exceeds growth

The French economist Thomas Piketty in his book *Capital in the Twenty-first Century* (see the accompanying article) [1] argues that when

$$i > g \tag{1}$$

the debt is a money-losing proposition, and the debtor gets poorer. Here i is the prevailing long-term interest rate, and g is the growth rate.

Suppose that a company decides to expand production by borrowing money (e.g., by issuing 40-year bonds) at 6% interest, but their profits (growth) only increase by 3% per year. Then that debt is a bad idea. Furthermore, the company still owes on the 40-year bonds if its business sours.

Suppose that a person buys a big house with a 30-year mortgage at 6.5% (the rate now), but the property only appreciates by 5% per year (typical for my first 3 houses), then the mortgage is losing money. Furthermore, he is under the bank's control for 30 years if his income sours.

Purchasing a home used to be a good idea with appreciation at 5% and mortgages at 2.5-3.5% (and the owner could live in his house)–if he always paid his mortgage for 30 years.

[1] The American credit cycle is at a dangerous point, The Economist, 5/24/2023

Figure 1 shows i-g for the U.S. economy. The interest rate i is that of 10 year U.S. treasuries, which is ultra low because the U.S. (still) has an AAA credit rating (but most countries do not). The growth g of GDP (not adjusted for inflation) has always been good.

The i-g points scatter above and below zero, and are very bad during recessions (red arrows).

This fact argues against the mistaken belief that growth generally exceeds the cost of borrowing, and that the Government doesn't have to worry about debt.

3 The deficit

Figure 2 shows the U.S. deficit as a percentage of revenue. The deficit was typically 35% when recessions (red arrows) are taken into account. Only in the 1960s and around 2000 was the budget in balance.

Republicans campaign on cutting taxes to win votes, but they seldom reduce expenditures accordingly. In 2017 the Republican-controlled Congress passed a massive tax cut for corporations and high earners. The hypothesis was that this tax savings would be invested into new businesses, which would increase GDP, which would "trickle down" to ordinary people. In practice, corporations issued much of the money as larger dividends and stock buybacks to boost stock prices. The National Debt increased, GDP did not grow much, the rich got richer, and income disparity increased.

Democrats increase social and environmental programs such as green energy, some of which contribute little to increasing GDP. If one feeds people today, tomorrow they are hungry again. Opening a national park might help vacationers, but deprives the country of needed natural resources.

Everyone votes for increased defense spending, which produces little except insurance against attack, and deadly new weapons.

Every government program should be evaluated according to its benefit/cost ratio.

4 Increasing National Debt

Figure 3 shows how the debt/GDP ratio has nearly always been increasing, especially during the 2008 and 2020 recessions. The ratio now stands at 1.2. Economists generally worry when a country's debt/GDP ratio exceeds 0.7, but America has a strong economy and an AAA credit rating.

5 My U.S. budget prediction program

The C++ program defines the following values for the economy in 2022:

```
double r = 4.90e12;      //receipts in dollars = $4.90T
double GDP = 2.65e13;    //GDP = $26.5T
double D = 3.14e13;      //national debt = $31.4T
double i = 0.025;        //assumed interest rate on 10-yr treasuries
```

```
double g = 0.0488;      //av growth in GDP, 2010 --> 2022
```

The program then computed the changes each year:

```
for(t=2022; t<=2100; t++)
    {fout << "t=" << t << "\tD=" << D << "\tD/GDP=" << D/GDP
         <<"\ti*D/r=" << i*D/r << "\n";
    e = 1.35*r;              //annual expenditures (deficit spending of 35%)
    D = D + e - r + i*D;     //debt next year
    GDP = (1+g)*GDP;         //GDP next year
    r = (1+g)*r;}            //revenues next year assumed to grow with GDP
```

Here is the program's printout in 10-year increments:

```
t=2022  GDP=2.65e13  D=3.14e13  D/GDP=1.18   i*D/r=0.160
t=2030  GDP=3.88e13  D=5.59e13  D/GDP=1.44   i*D/r=0.195
t=2040  GDP=6.25e13  D=1.06e14  D/GDP=1.70   i*D/r=0.230
t=2050  GDP=1.01e14  D=1.92e14  D/GDP=1.91   i*D/r=0.258
t=2060  GDP=1.62e14  D=3.36e14  D/GDP=2.07   i*D/r=0.280
t=2070  GDP=2.61e14  D=5.76e14  D/GDP=2.20   i*D/r=0.298
t=2080  GDP=4.20e14  D=9.72e14  D/GDP=2.31   i*D/r=0.312
t=2090  GDP=6.77e14  D=1.62e15  D/GDP=2.39   i*D/r=0.324
t=2100  GDP=1.09e15  D=2.68e15  D/GDP=2.46   i*D/r=0.333
```

The National Debt, now at $3.14e13, increases nearly one hundred times to $2.68e15. But the GDP has grown too.

The debt/GDP ratio increases from 1.18 to 2.46, an alarming increase!

The interest on the debt is i*D. The ratio of this to annual revenues is i*D/r. Presently 16% of revenues go to pay interest on the Debt. By 2100 my program predicts that 33% of revenues will go to pay interest, leaving little money for other government programs *unless the Government borrows even more*!

No doubt America's credit rating will fall, and it will have to pay higher interest rates, even junk bond rates! America will no longer be a great nation!

6 Getting the deficit under control

Debt counseling: Decrease expenditures and increase revenue.

6.1 Decreasing expenditures

House Republicans enacted the "Limit, Save, Grow Act" on 4/26/2023 as their plan to raise the debt ceiling while demanding extreme expenditure cuts, with many irrelevant favorite Republican programs attached. The bill pushed back future spending to 2022 levels except for the military and veterans, canceled Biden's student loan forgiveness program, put a work requirement on welfare recipients, and approved a controversial gas pipeline. This bill gutted the Democratically-approved climate change and social programs previously passed.

Of course this ridiculous bill had no chance of passage in the Democratically-controlled Senate, but it *threatened default on the National Debt* unless Biden granted substantial compromises, which he did.

The military is a huge money sinkhole, producing only insurance against attacks, terrible new weapons, and occasionally technical advances such as nuclear energy, aircraft, and radar. China's growing military threat and NATO's proxy Ukrainian war with Russia will require increased U.S. spending.

America does not have the resources to be the "policeman of the world." We must ask our allies to do much more.

In the future every Federal program must be scrutinized and limited for its effectiveness/cost ratio because America has finite resources.

6.2 Increasing revenue

America must have a more progressive tax rate to reduce income disparity. Corporations during 2022-2023 have been making record-breaking profits, especially those in the energy sector; they should be taxed more.

Many American corporations have their legal headquarters in places such as the Cayman Islands. Apple Computer is incorporated in Ireland, but designs its products in America; the U.S. Treasury gets virtually no revenue from Apple! Many corporations plow their profits back into research and development, or escape taxes through loopholes.

Donald Trump's company is a sole proprietorship, just as Remmel Labs was. Trump, purportedly worth billions, paid no or little taxes for many years. I pay about $25,000 in federal and state taxes, more than that billionaire!

We need to overhaul our tax code.

6.3 Essential progressive programs

The purpose of Federal programs is to improve the welfare of the people, not just of the rich, and thus to improve people's wealth, health, and pursuit of happiness.

I am proudly a "liberal" Democrat, but fully realize that America has **limited means**, and can't lavishly fund every socialist program.

I believe in Medicare For All. Being a senior, I would be deeply in debt if I had to pay for my medical care out of pocket.

Here's a tragic example: My fiance's son Steve's wife developed cancer. Before that Steve and his wife had a prosperous business building luxury log cabins. When his wife got sick, Steve closed his business to take care of his dying wife, and ran up tens of thousands of medical bills above his inadequate insurance. Steve's credit rating was decimated, and even now he probably can't qualify for a mortgage, but lives with his mother.

Medicare For All can be paid for if we increase the Medicare tax, especially on the wealthy, and reign in the excessive profits of the insurance and pharmaceutical companies.

Healthier Americans will be more productive, live longer, and be happier.

Investing in the education of all Americans from pre-K through post-graduate is ESSENTIAL to meet 21st century challenges, especially from China. America must greatly increase spending for research and development.

The challenge of global warming and climate change are now being felt as the cost of more-frequent billion-dollar hurricanes, storms, droughts and forest fires impact America. We must think wisely to survive the Brave New World inevitably coming.

The world's major refugee crises must be addressed, including at our southern border. America must supply increased foreign aide to mitigate world problems.

I only hope that in the future Republicans and Democrats can rise above the level of stupidity shown during the recent debt ceiling debate.

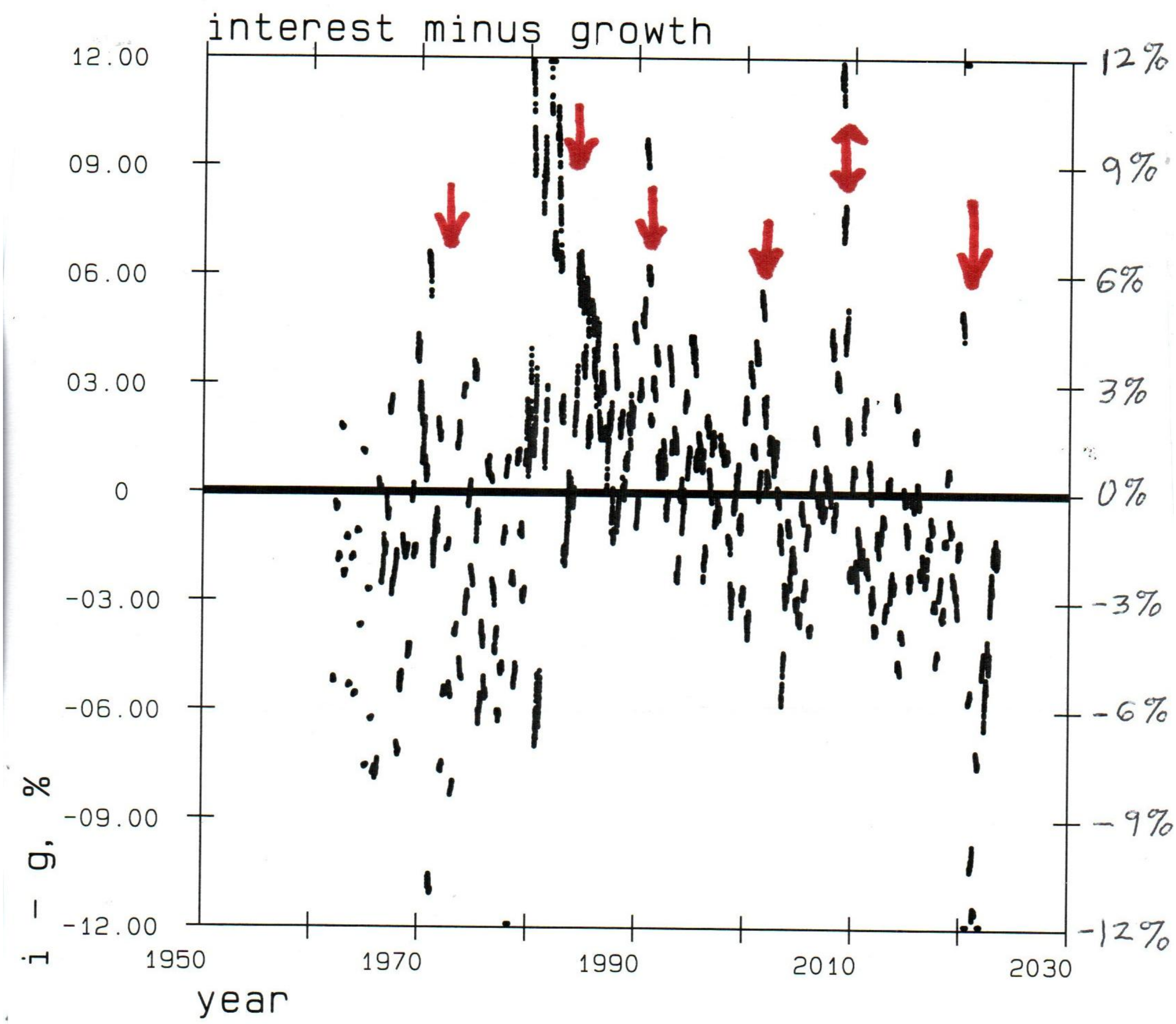

Figure 1: U.S. i-g: When interest rates (long-term 10-year treasuries) exceed growth g in GDP, then borrowing is a losing deal. After 2010 the U.S. paid low interest rates while achieving good growth, so conditions for continued borrowing were okay. However, during recessions (red arrows) GDP decreased while stimulus spending increased. I don't think that g is great enough for America wisely to continue borrowing.

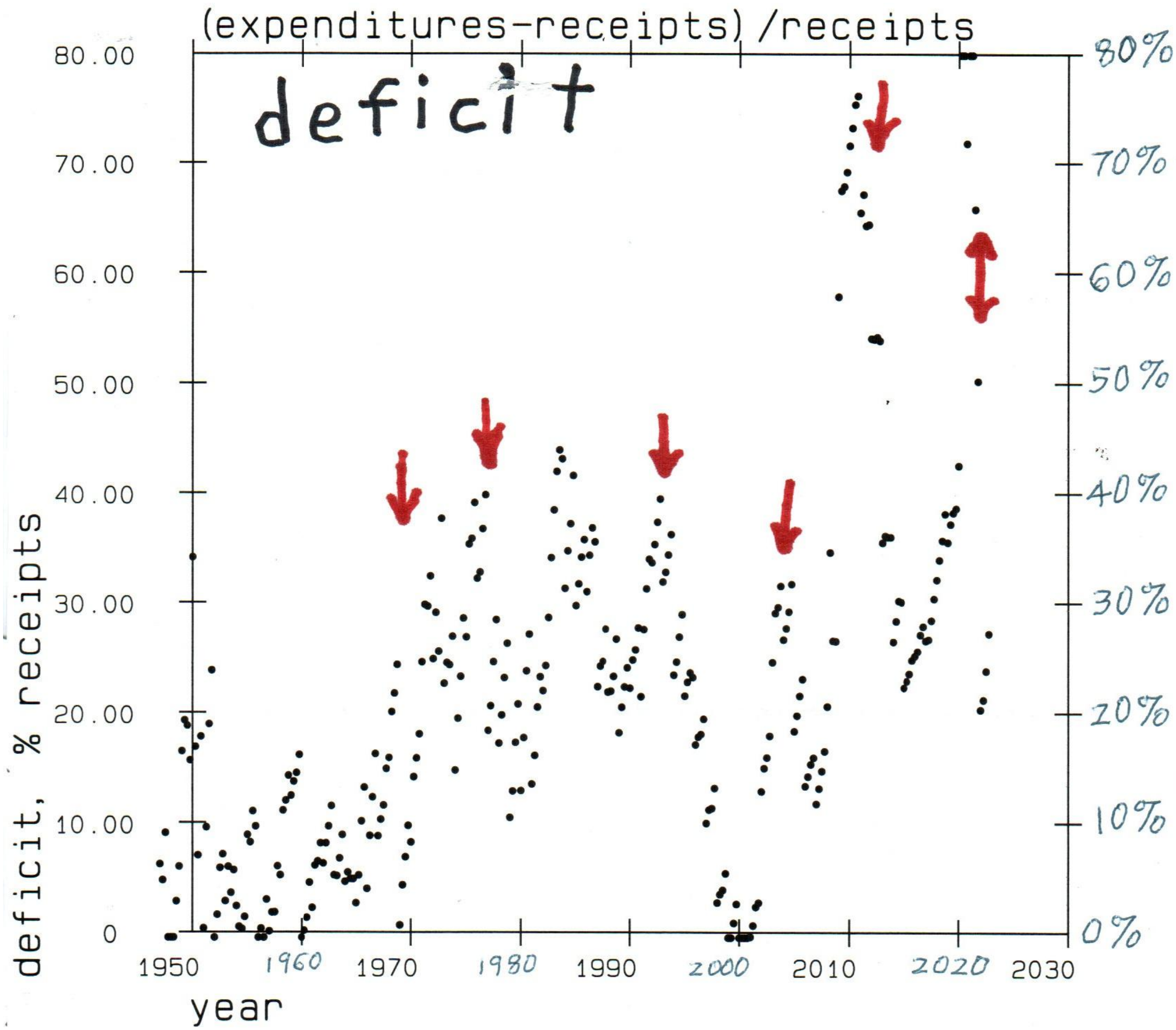

Figure 2: The deficit percentage is defined: 100*(expenditures-receipts)/receipts. America has always run a deficit except in the 1960s and around 2000. In 2000-2023 the deficit averaged 35%. It has gotten much worse during recessions (red arrows).

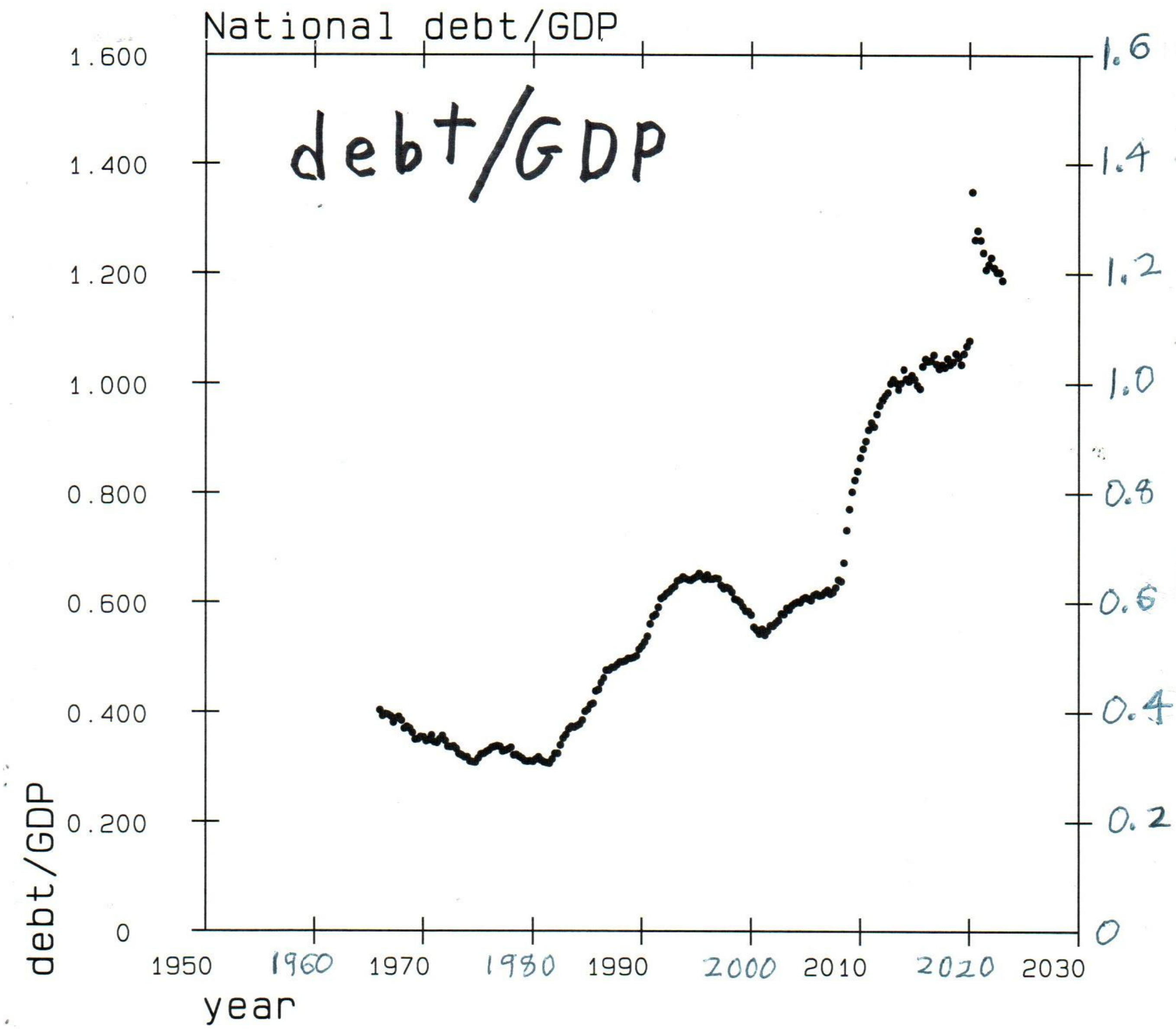

Figure 3: U.S. debt/GDP. The debt increased greatly during the Great Recession of 2008, and during the 2020 recession. Now debt/GPD = 1.20. Economists worry when a country's ratio exceeds 0.7, but America has a strong economy and an AAA credit rating, so *for now* the U.S. is stable.