Published: California Political Review, February 16, 2022

The CBO Should Have Known Better
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I must say that the Congressional Budget Office, CBO's "approval" of the Federal budget per Build Back Better Act is unforgivable. The CBO and the Progressive Congress are putting us in economic harm's way. Here is why.

I reconstructed the CBO's July 2021 budget forecast, the latest available. I used CBO's Budget Outlays, and historical GDP growth rate for Federal Tax Receipts, so that the comparison between CBO's and historical-based Receipts is fair. CBO uses an average GDP growth rate of 4.40% for Receipts while the historical is 1.98%. They had pretty sophisticated discussions explaining much of the individual pieces of their forecast to justify why what they did was correct.

I, on the other hand, have formal graduate training in both statistics and finance, and have spent a decade in stress testing. I looked at the CBO numbers and asked what was the single most important factor for CBO arriving at their forecast? It was GDP growth. Almost every item in the budget forecast was based on a percentage of GDP.

Pulling data from Missouri Fed's Federal Reserve Economic Data (FRED) I found out that the average historical GDP growth rate over the last 10, 20 & 30 years was 1.11%, 1.80% & 1.98%, respectively. Wow! How could CBO justify the use of an average GDP growth rate of 4.40% in their July 2021 budget forecast, when the historical average was at most 1.98%?

One answer can be found from the late beloved Prof. Morris Kline. In his book, Mathematics: The Loss of Certainty, he says, and I paraphrase, that mathematics has become so sophisticated that it can be used to prove anything. This I believe was an allusion the modern theoretical physics. Now, the CBO has proved that this is true for economics and budgets. The CBO's pages of explanations are irrelevant if the primary factor, GDP growth, is wrong.

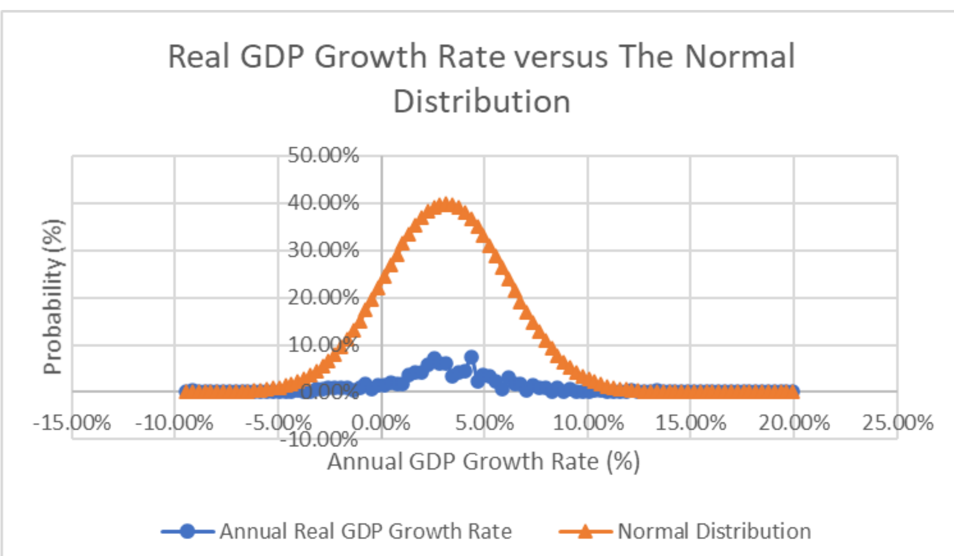

Fig.1: Distribution of Real GDP Growth Compared to the Normal Distribution

This is also a caution to our economist. I would propose the "Real GDP Growth Test" (see Figure 1). A Real-GDP-growth model should produce a probability distribution of growth rates that are not a Normal-distribution.

Regarding econometric models. These have been built in an economic environment where public debt had generally been less than 60% of GDP. So, are these econometric models still valid when public debt is greater than 100% of GDP? But I digress.

I found that Federal Receipts is 82% funded by taxpayer W2s, and the effective interest the government paid between 1971 and 2020, on public debt ranged from 1.64% to 9.20%. In the last 3 years (2019-2021) *Net Interest on Public Debt* (not even debt service) as a proportion of Federal Receipts, ranged between 5.91% (2020) and 9.51% (2019).

Why did I look at interest on public debt? A government can print as much funny money (Quantitative Easing, or whatever else you may want to call it) as it wants, but Treasury bond holders are real investors, and the Fed/Government has a contractual agreement to pay them, just like mortgage borrowers do with banks. With the social spending of the Build Back Better Act, can the government pay these bond-holder-investors their interest? The answer is, no! Pension fund managers be alerted.

Correcting for GDP growth, using the 30-year average of 1.98% (labeled as Historical-Based). Table 1 reports public debt interest payments as a proportion of Federal Receipts. The Federal budget is no longer feasible even with small increase in interest rates (see 3.00% row). You wonder why CBO's forecast interest rate is 2.63% at most.

Given that inflation has hit 7%, interest rates must go up. At 3.00% the *Net Interest on Public Debt* will exceed 26% of Federal Receipts and therefore, limits how much a government can borrow. The Federal Government would be forced to substantially cut back on budgeted programs or even worse substantially layoff government employees. You could say that the government could borrow more to pay that additional interest, but that would be like borrowing from a loan shark to pay the bank!

The irony here is that when interest payment defaults, the Progressive's push for big government at any cost, will force the substantial contraction of government to meet *Net Interest on Public Debt*. The Progressives have an alternative, that is to massively increase our taxes. With the proposed social spending programs, my estimate is that taxes will increase by 2.6x for everyone across the board. Unless, of course, they intend to chase out the wealthy who proved that the American dream is possible.

To avoid such problems for us and our children (defining W2 Tax as the sum of Individual Income Tax + Payroll Tax) I propose 5 budget rules for responsible government that does not limit the government size,

1. Funding Rule: Federal Deficit < 33% of W2 Tax Receipts in any budget
2. Disposal Income Rule: W2 Tax < 80% of Total Tax Receipts in any budget
3. Leverage Rule: Public Debt < 40% of GDP in any year
4. Interest Payment Rule: Net Interest on Public Debt < 10% of Total Tax Receipts in any year
5. CBO's Real GDP growth forecast cannot be different from the 30-year historical average

These five rules are independent of which party controls Congress. They ensure that it is the government's responsibility to *facilitate* the growth of the economy if it wants to increase tax receipts without burdening the taxpayer, now or in the future.

If we continue on Congress' current trajectory, Congress will be mandating our social programs at the expense of our children's taxes. That is not governing. It is irresponsible government.

Brief Bio:
Benjamin Thomas Solomon, has a Master's degree in Operations Research (algorithms & statistics) and another in Banking & Finance. With 40+ years industry experience in finance, credit risk, management consulting, Solomon wrote the US Quarterly Economic Report for the regional bank, UMB Bank, Colorado Board of Advisors, for 2 years straight. He is the author of 2 monographs,

1. A Critique of Dodd-Frank: Forecasting Securitized Mortgage Credit & Default Risk
2. Real World Data Modeling: Applications in Statistics, Physics & Medicine

Solomon is running for the 2022 CA US House of Representatives, Congressional District 16 (previously 18), and his campaign website is https://www.Solomon4Congress.us/. All contributions are welcome.

Table 1: Historical-Based Interest Payments as a Percentage of Federal Receipts (Based on CBO July 2021 forecast)														
Fiscal Year	Actual 2020	Forecast 2021	Forecast 2022	Forecast 2023	Forecast 2024	Forecast 2025	Forecast 2026	Forecast 2027	Forecast 2028	Forecast 2029	Forecast 2030	Forecast 2031	2022-2026	2022-2031
Interest Rate														
2.00%	13.91%	13.32%	13.42%	13.95%	14.39%	14.93%	15.00%	15.13%	15.60%	16.22%	16.70%	17.37%	14.35%	15.33%
3.00%	20.87%	19.99%	20.13%	20.92%	21.58%	22.39%	22.49%	22.70%	23.39%	24.33%	25.05%	26.05%	21.52%	22.99%
4.00%	27.83%	26.65%	26.85%	27.89%	28.78%	29.85%	29.99%	30.26%	31.19%	32.44%	33.40%	34.73%	28.69%	30.66%
5.00%	34.78%	33.31%	33.56%	34.87%	35.97%	37.32%	37.49%	37.83%	38.99%	40.56%	41.75%	43.41%	35.86%	38.32%
6.00%	41.74%	39.97%	40.27%	41.84%	43.16%	44.78%	44.99%	45.40%	46.79%	48.67%	50.10%	52.10%	43.04%	45.98%
7.00%	48.70%	46.63%	46.98%	48.81%	50.36%	52.24%	52.49%	52.96%	54.58%	56.78%	58.45%	60.78%	50.21%	53.65%
8.00%	55.65%	53.30%	53.69%	55.79%	57.55%	59.71%	59.98%	60.53%	62.38%	64.89%	66.80%	69.46%	57.38%	61.31%
9.00%	62.61%	59.96%	60.40%	62.76%	64.74%	67.17%	67.48%	68.09%	70.18%	73.00%	75.16%	78.14%	64.56%	68.98%
10.00%	69.57%	66.62%	67.11%	69.73%	71.94%	74.64%	74.98%	75.66%	77.98%	81.11%	83.51%	86.83%	71.73%	76.64%
11.00%	76.53%	73.28%	73.83%	76.71%	79.13%	82.10%	82.48%	83.23%	85.78%	89.22%	91.86%	95.51%	78.90%	84.30%