

“Are You Better off Now Than You Were Four Years Ago?”

An Analysis using
[What If Financial Pro 2025 from App Store](#)
by Cassiopeia Technology

Presidential Election

- A very long, very messy, very antsy, very expensive, but very critical job application process for the most powerful job there is
- So many factors can affect the outcome, which is usually close
- Pundits love to analyze these factors to death and a popular one is economy!



“Are you better off now than you were four years ago?”

- Asked by then candidate Ronald Reagan back in the 1980 election.
- A common question raised by challengers ever since.
- “It’s the economy, stupid!”
- But how can we quantitatively answer the question using economic data?

Economic Growth?

- Usually measured by GDP growth, especially the real GDP (real: inflation adjusted)
- Data published by the *US Bureau of Economic Analysis (BEA)*
- Growth leads to more jobs and higher wages
- Recession leads to layoffs and suffering

Inflation?

- Measured by CPI, PPI, PCE numbers
- Data published by the *US Bureau of Labor Statistics (BLS)* and *Bureau of Economic Analysis (BEA)*
- Leads to diminishing purchasing power
- Acutely felt at grocery stores and gas pumps

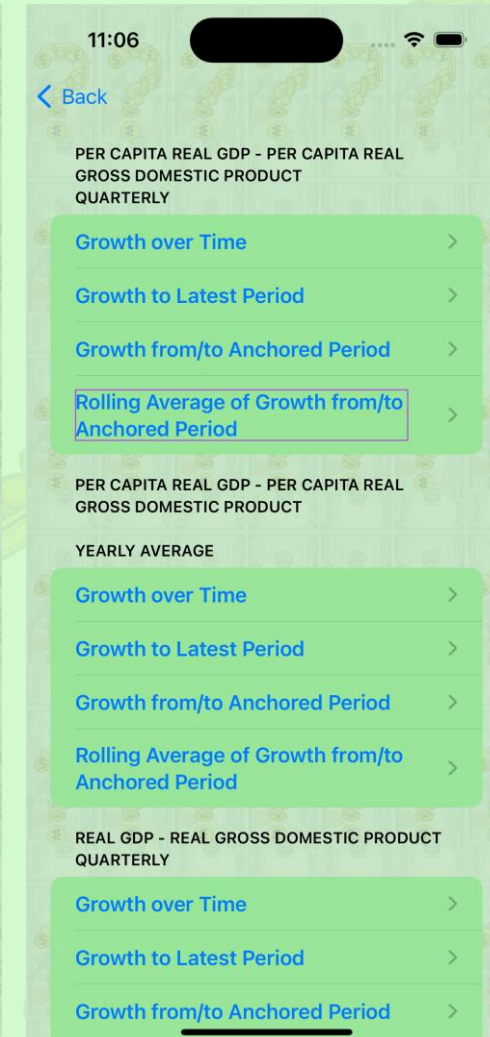
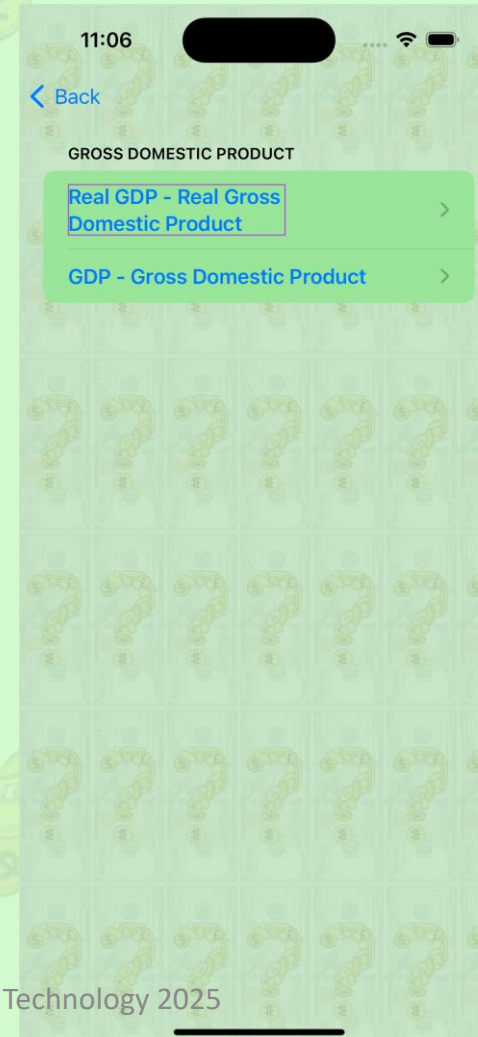
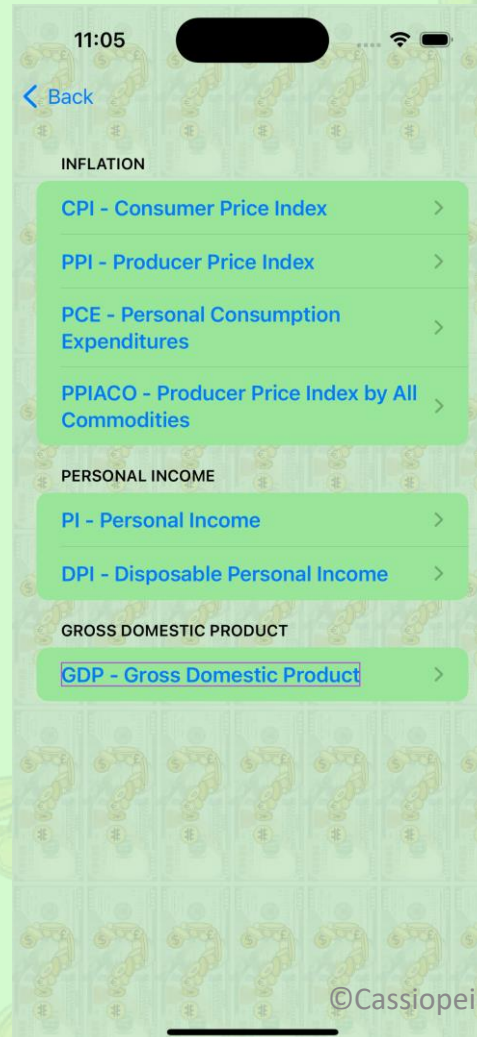
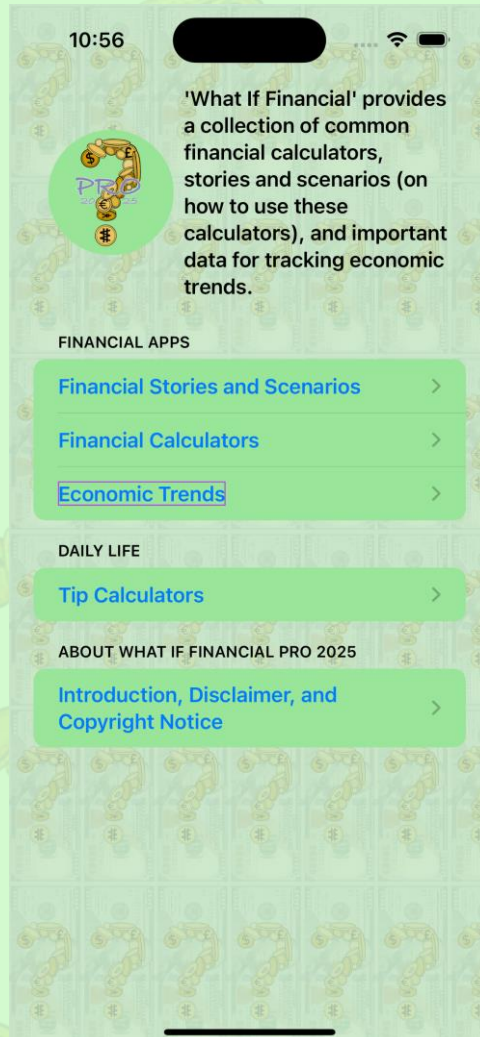
Neither alone can answer the “better-off” question

- Heated economy can lead to higher inflation
- Price falls during recessions
- Governments may bail out or give hand-outs during recessions
- Inflation + unemployment rate = misery index

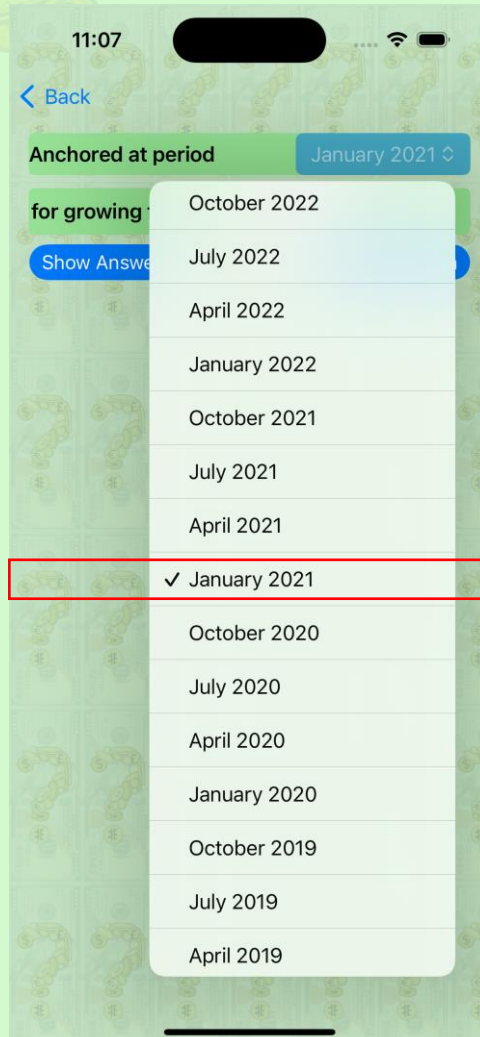
‘What If Financial’ App

- Collects a variety of economic trend datasets published by government agencies
- [What If Financial Pro 2025 on the App Store](#)
- Able to anchor at one period, compute rolling average over a range of periods, ***such as a 4-year presidential term***, and calculate the increase percentage against that of ***inauguration month***

'What If Financial' App to Calculate Biden's GDP Growth



'What If Financial' App to Calculate Biden's GDP Growth



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Anchored at period January 2021

for growing from 1000 dollars

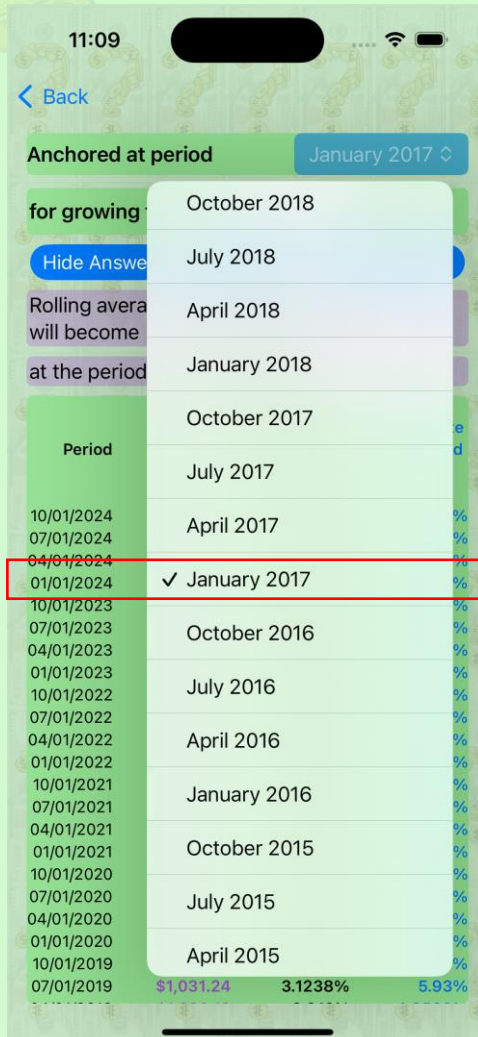
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Rolling average will become 1053.0102 dollars

at the period of 10/01/2024

Period	Rolling Average Growth Amount	Rolling Average of Growth Rate to Anchored Period	Growth Rate to Anchored Period
10/01/2024	\$1,053.01	5.301%	8.7578%
07/01/2024	\$1,050.54	5.0541%	8.3226%
04/01/2024	\$1,048.03	4.8027%	7.7297%
01/01/2024	\$1,045.59	4.5588%	7.1951%
10/01/2023	\$1,043.19	4.3191%	7.0012%
07/01/2023	\$1,040.51	4.0509%	6.4351%
04/01/2023	\$1,037.86	3.786%	5.5615%
01/01/2023	\$1,035.64	3.5641%	5.1326%
10/01/2022	\$1,033.40	3.34%	4.6091%
07/01/2022	\$1,031.28	3.1284%	3.9752%
04/01/2022	\$1,029.59	2.9591%	3.4895%
01/01/2022	\$1,028.26	2.8265%	3.5731%
10/01/2021	\$1,025.78	2.5776%	3.9531%
07/01/2021	\$1,018.90	1.8898%	2.258%
04/01/2021	\$1,015.22	1.5217%	1.5217%
01/01/2021	\$1,000.00	0%	0%
10/01/2020	\$986.22	1.3974%	1.3974%
07/01/2020	\$981.19	1.9199%	2.4424%
04/01/2020	\$956.04	4.7491%	10.4074%
01/01/2020	\$963.07	3.9635%	1.607%
10/01/2019	\$970.28	3.1891%	0.0915%
07/01/2019	\$974.19	2.7623%	0.6284%

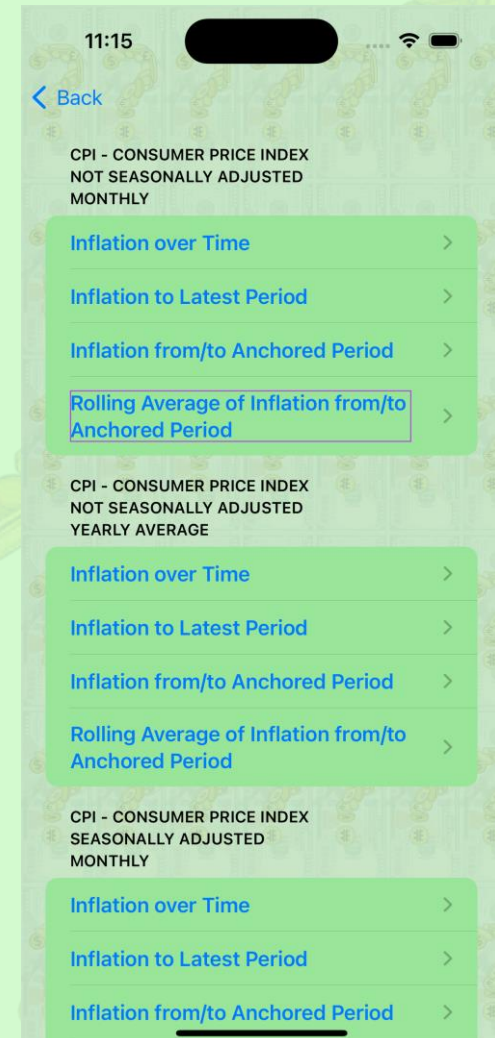
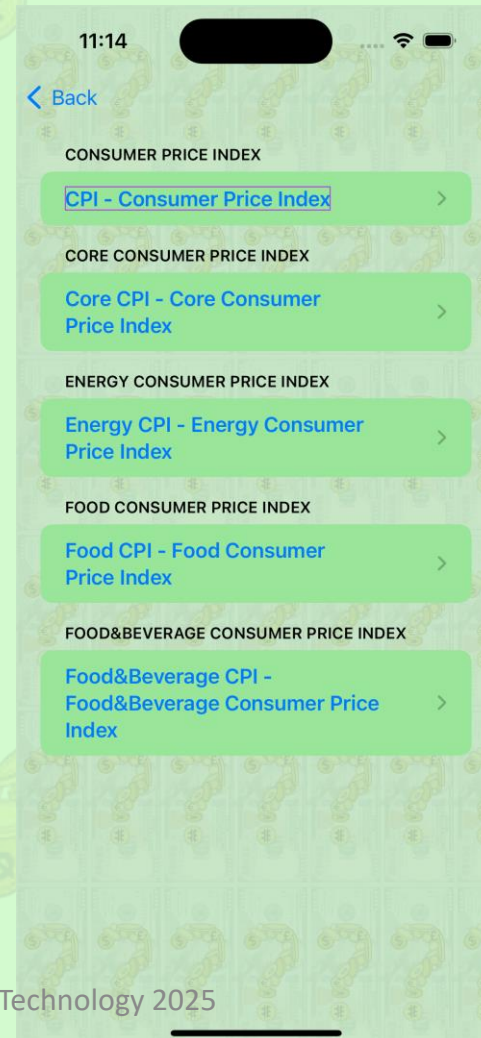
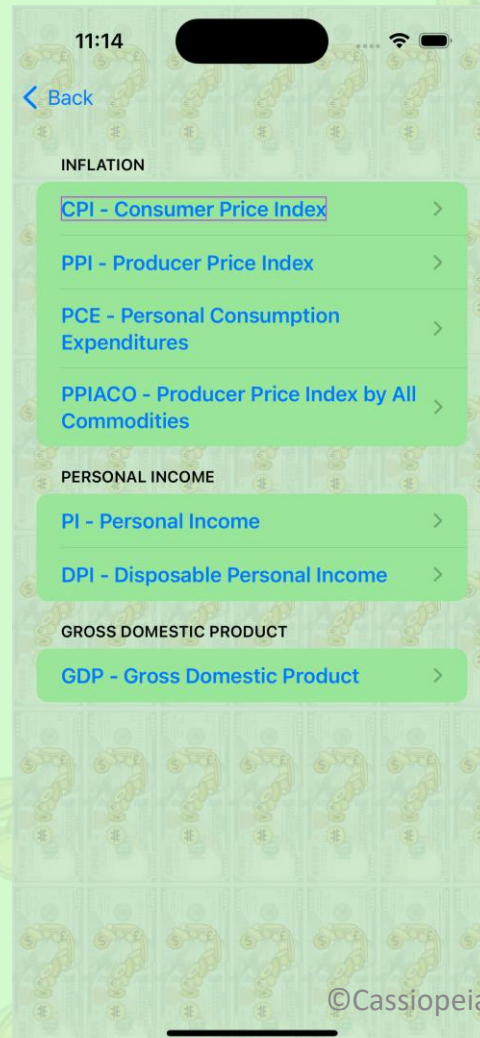
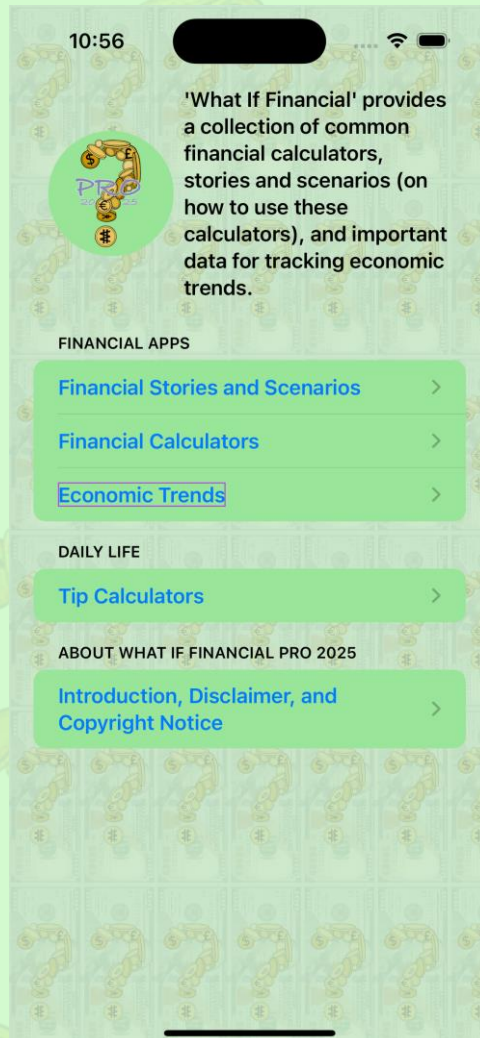
'What If Financial' App to Calculate Trump's GDP Growth



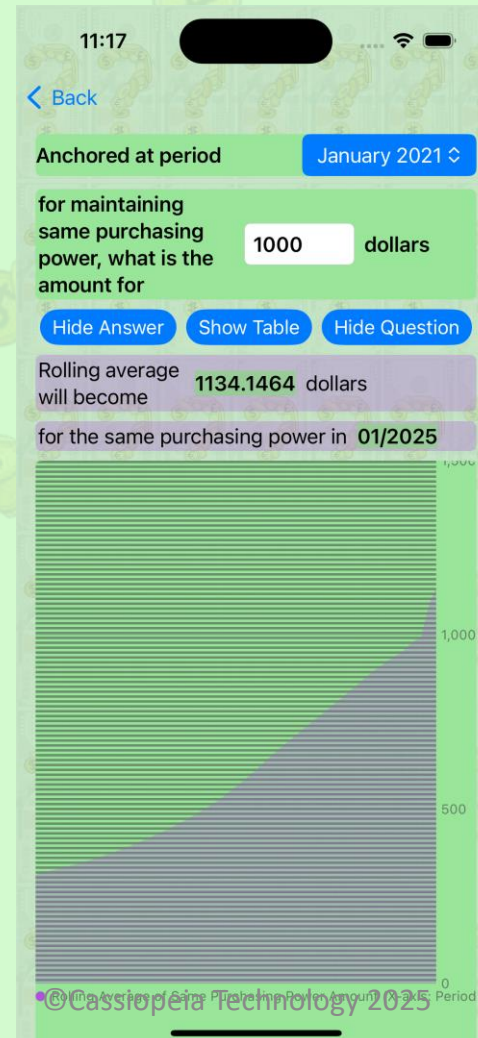
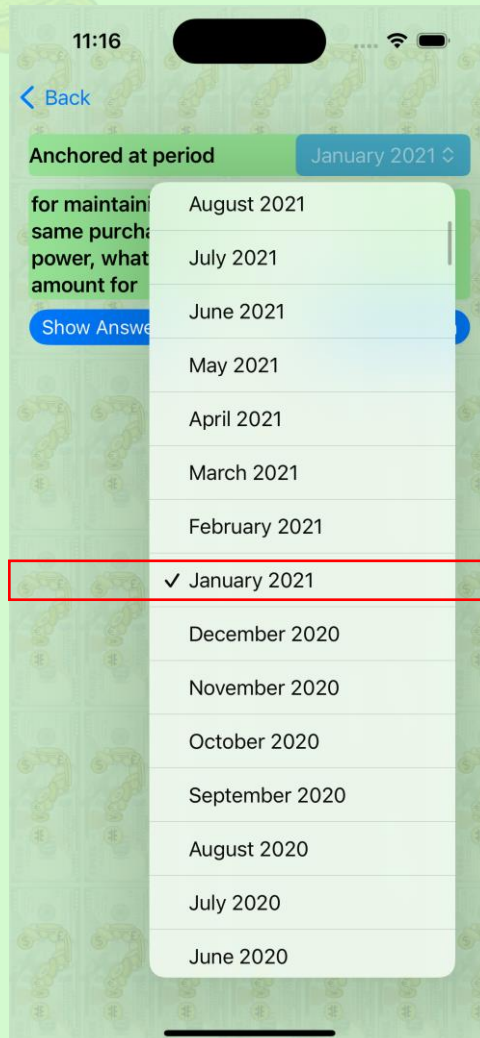
Whose term had better GDP growth?

- Using latest BEA data released in Jan. 2025
- Joe Biden's term average real-GDP grew by **5.3%** between Feb. 2021 and Dec. 2024 compared to Jan. 2021
- Donald Trump's average real-GDP growth for his first presidential term was **3.44%**

'What If Financial' App to Calculate Biden's CPI Inflation



'What If Financial' App to Calculate Biden's CPI Inflation



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Anchored at period January 2021

for maintaining same purchasing power, what is the amount for 1000 dollars

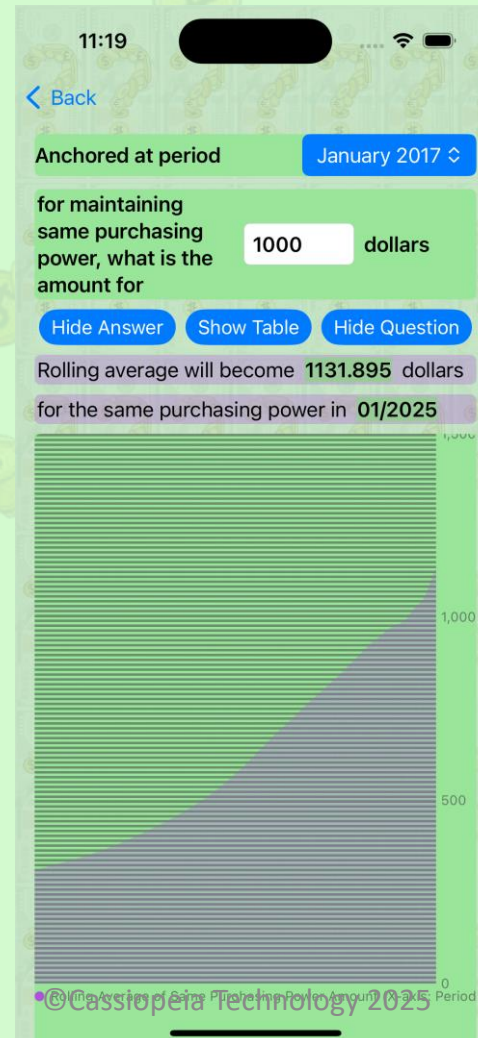
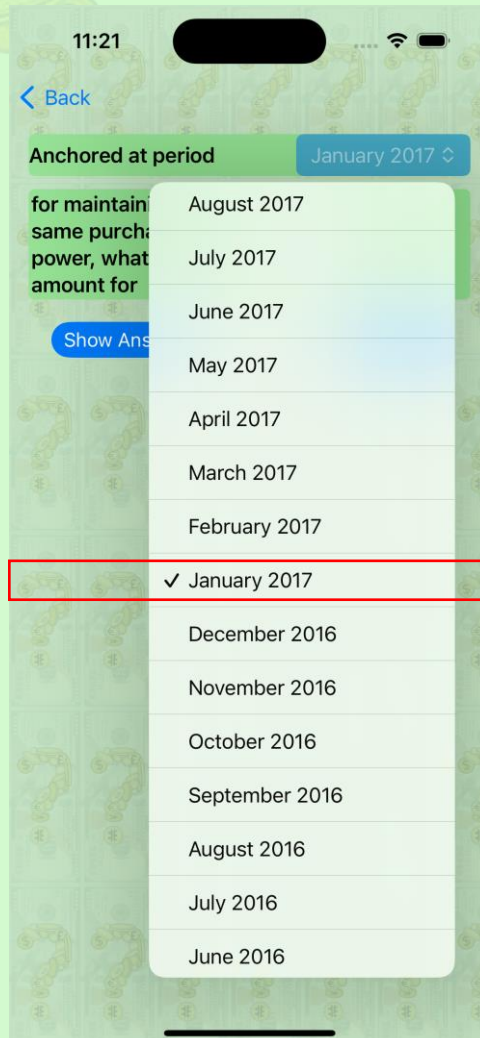
Hide Answer Show Chart Hide Question

Rolling average will become 1134.1464 dollars

for the same purchasing power in 01/2025

Period	Rolling Average of Same Purchasing Power Amount	Rolling Average of Inflation Rate to Anchored Period	Inflation Rate to Anchored Period
01/2025	\$1,134.15	13.4146%	21.4422%
12/2024	\$1,132.44	13.2438%	20.6524%
11/2024	\$1,130.83	13.0828%	20.6096%
10/2024	\$1,129.16	12.9155%	20.675%
09/2024	\$1,127.39	12.7392%	20.5362%
08/2024	\$1,125.58	12.5578%	20.3431%
07/2024	\$1,123.72	12.3725%	20.2453%
06/2024	\$1,121.80	12.1805%	20.1057%
05/2024	\$1,119.82	11.9823%	20.0652%
04/2024	\$1,117.75	11.7751%	19.866%
03/2024	\$1,115.62	11.5622%	19.4012%
02/2024	\$1,113.50	11.3503%	18.6343%
01/2024	\$1,111.48	11.148%	17.9045%
12/2023	\$1,109.55	10.9549%	17.2657%
11/2023	\$1,107.69	10.7693%	17.3823%
10/2023	\$1,105.69	10.5689%	17.6193%
09/2023	\$1,103.49	10.3486%	17.6644%
08/2023	\$1,101.13	10.1126%	17.3728%
07/2023	\$1,098.71	9.8706%	16.8624%

'What If Financial' App to Calculate Trump's CPI Inflation



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Anchored at period January 2017

for maintaining same purchasing power, what is the amount for 1000 dollars

Hide Answer Show Chart Hide Question

Rolling average will become 1131.895 dollars

for the same purchasing power in 01/2025

01/2022	\$1,058.20	5.8197%	15.7755%
12/2021	\$1,056.51	5.6509%	14.8094%
11/2021	\$1,054.93	5.493%	14.4577%
10/2021	\$1,053.36	5.3357%	13.8981%
09/2021	\$1,051.83	5.1829%	12.9596%
08/2021	\$1,050.41	5.0415%	12.6537%
07/2021	\$1,049.00	4.9005%	12.4214%
06/2021	\$1,047.59	4.7586%	11.8832%
05/2021	\$1,046.22	4.6216%	10.8533%
04/2021	\$1,044.99	4.4994%	9.9716%
03/2021	\$1,043.90	4.3899%	9.0751%
02/2021	\$1,042.94	4.2943%	8.308%
01/2021	\$1,042.11	4.2107%	7.7183%
12/2020	\$1,041.36	4.1361%	7.262%
11/2020	\$1,040.68	4.0681%	7.1611%
10/2020	\$1,039.99	3.9994%	7.2266%
09/2020	\$1,039.26	3.926%	7.1821%
08/2020	\$1,038.50	3.8503%	7.0331%
07/2020	\$1,037.75	3.7745%	6.6966%
06/2020	\$1,037.03	3.7033%	6.1596%
05/2020	\$1,036.42	3.6419%	5.5819%
04/2020	\$1,035.92	3.5921%	5.5798%
03/2020	\$1,035.40	3.5398%	6.2906%
02/2020	\$1,034.65	3.4655%	6.5224%
01/2020	\$1,033.81	3.3805%	6.2313%

Whose term had worse inflation?

- Using latest BLS data released in Jan. 2025
- Joe Biden's term average CPI grew by **13.24%** between Feb. 2021 and Dec. 2024 compared to Jan. 2021
- Donald Trump's average CPI inflation for his first presidential term was **4.21%**

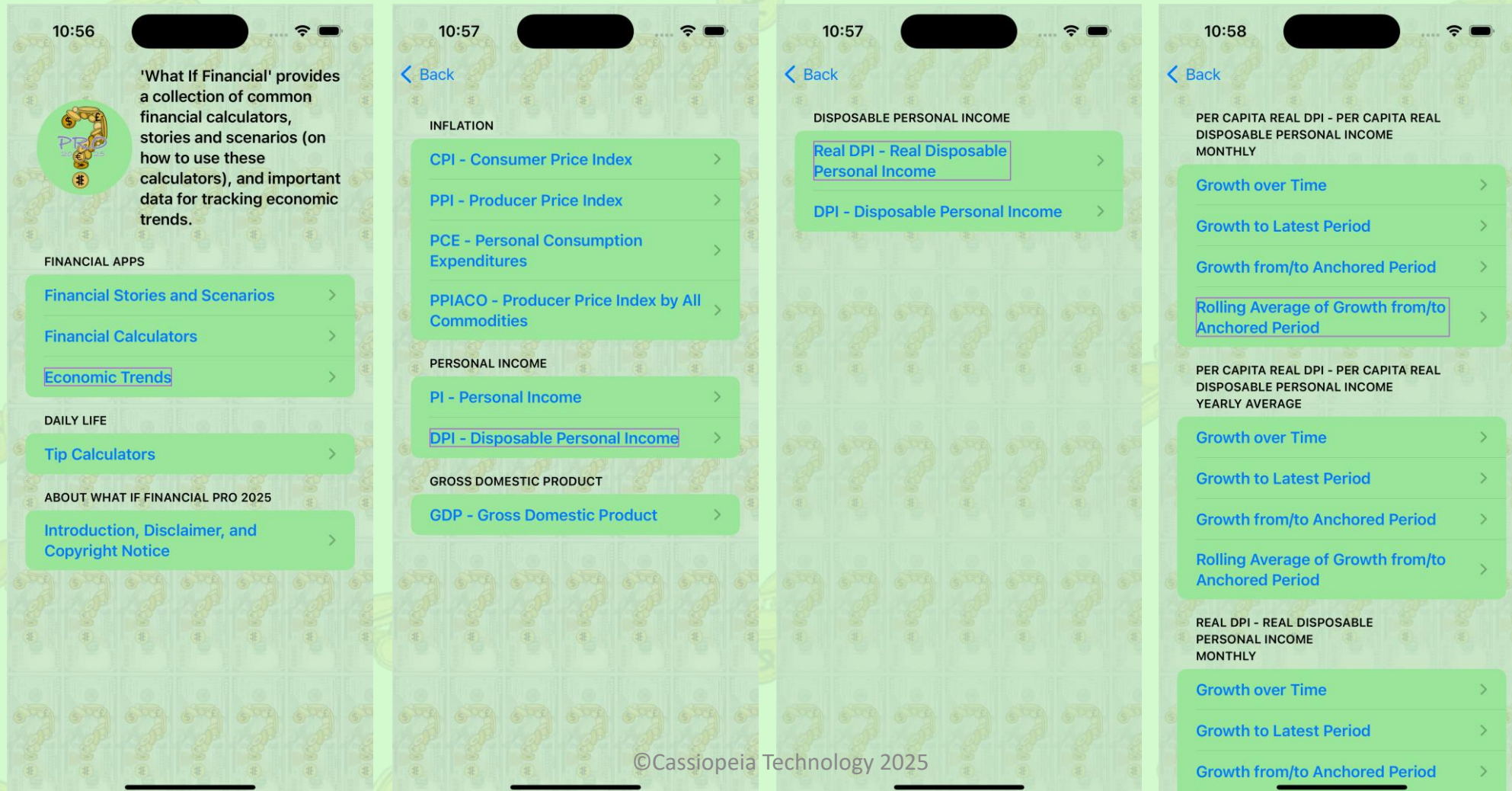
Whose term was “better-off” ????

- Biden’s term was better on GDP growth
- Trump’s first term was better on CPI inflation

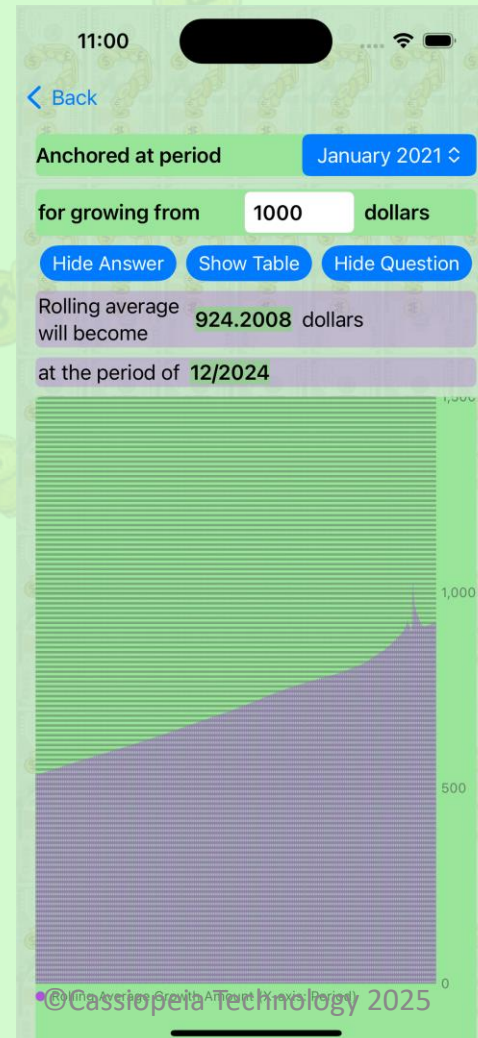
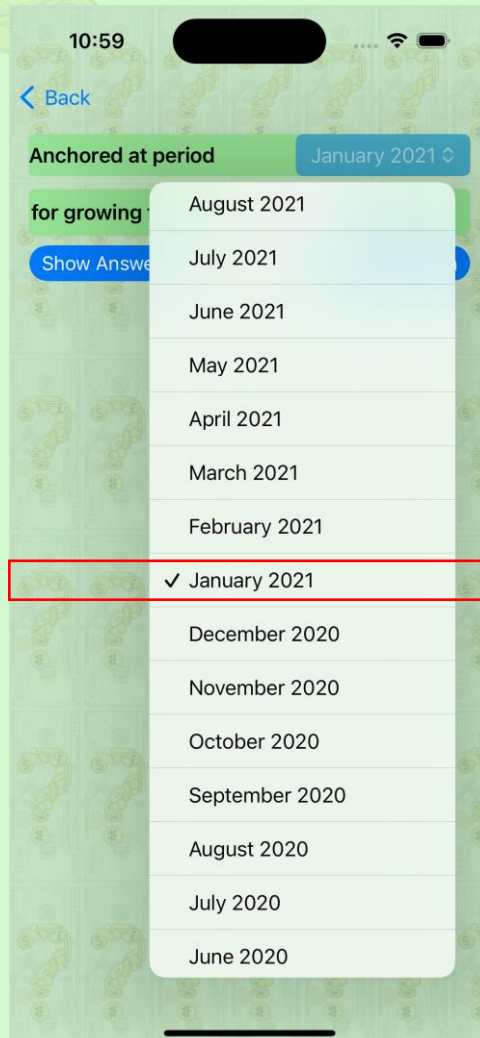
How about comparing real personal income?

- BEA publishes several personal income measures monthly, including
- **Per-capita real disposable personal income (DPI)**
 - **Per-capita** – average by population
 - **Real** – adjusted by inflation
 - **Disposable** – after tax
- “The amount that U.S. residents have left to spend or save after paying taxes”

'What If Financial' App to Calculate Biden's Per-Capita Real DPI Growth



‘What If Financial’ App to Calculate Biden’s Per-Capita Real DPI Growth



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Anchored at period January 2021

for growing from 1000 dollars

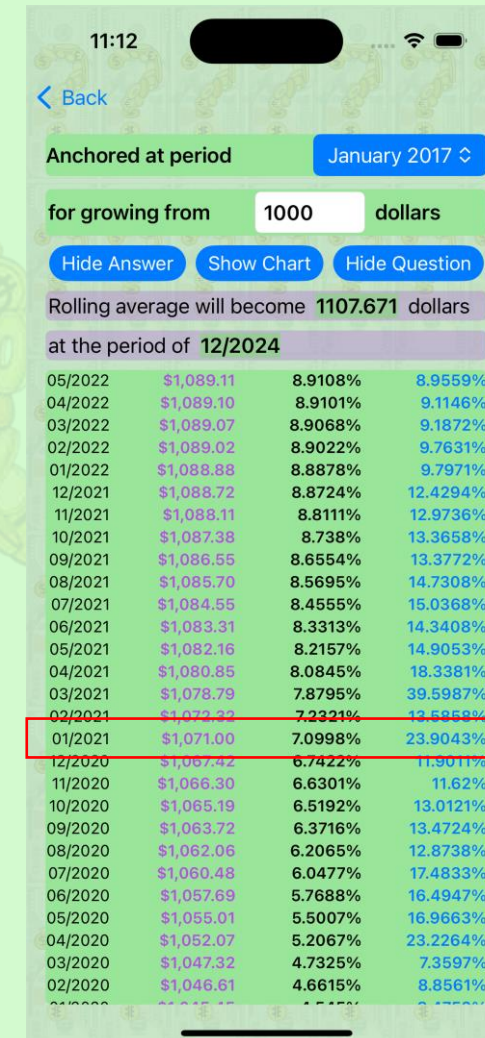
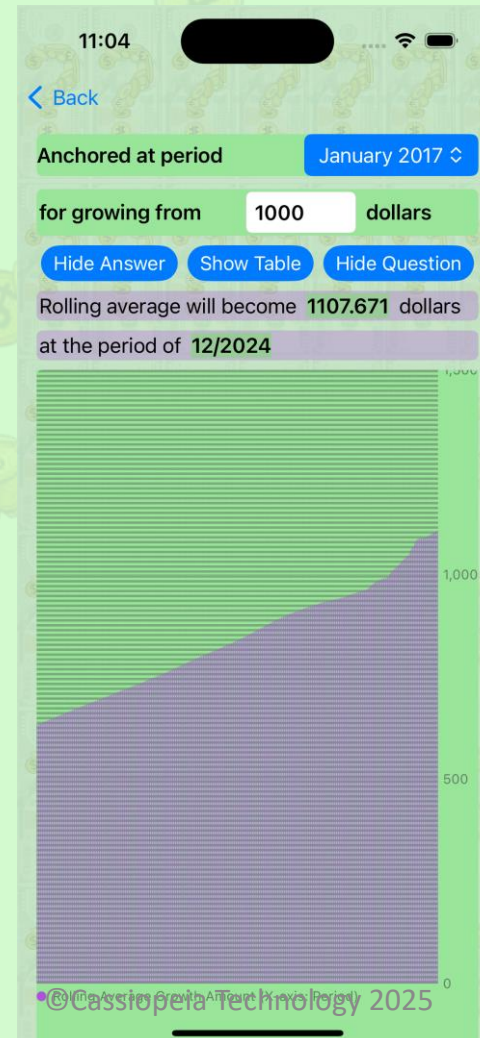
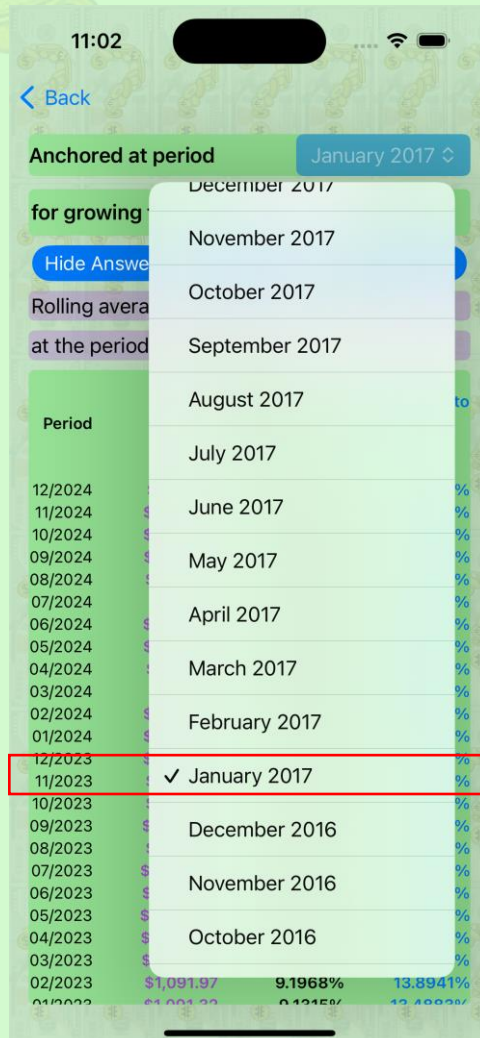
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Rolling average will become 924.2008 dollars

at the period of 12/2024

Period	Rolling Average Growth Amount	Rolling Average of Growth Rate to Anchored Period	Growth Rate to Anchored Period
12/2024	\$924.20	-7.5799%	-5.1713%
11/2024	\$923.68	-7.6323%	-5.2317%
10/2024	\$923.14	-7.6856%	-5.3067%
09/2024	\$922.60	-7.7397%	-5.6672%
08/2024	\$922.12	-7.7879%	-5.7971%
07/2024	\$921.65	-7.8353%	-5.7825%
06/2024	\$921.15	-7.8854%	-5.7898%
05/2024	\$920.62	-7.9378%	-5.7349%
04/2024	\$920.06	-7.9942%	-5.9051%
03/2024	\$919.51	-8.0492%	-5.7129%
02/2024	\$918.88	-8.1124%	-5.8794%
01/2024	\$918.26	-8.1744%	-5.8977%
12/2023	\$917.61	-8.2394%	-6.6901%
11/2023	\$917.15	-8.285%	-6.8218%
10/2023	\$916.71	-8.3293%	-7.1604%
09/2023	\$916.34	-8.3659%	-7.3617%
08/2023	\$916.02	-8.3983%	-7.3635%
07/2023	\$915.67	-8.4328%	-7.4111%
06/2023	\$915.32	-8.468%	-7.3964%
05/2023	\$914.94	-8.5063%	-7.3745%
04/2023	\$914.52	-8.5482%	-7.6307%
03/2023	\$914.17	-8.5835%	-7.6544%

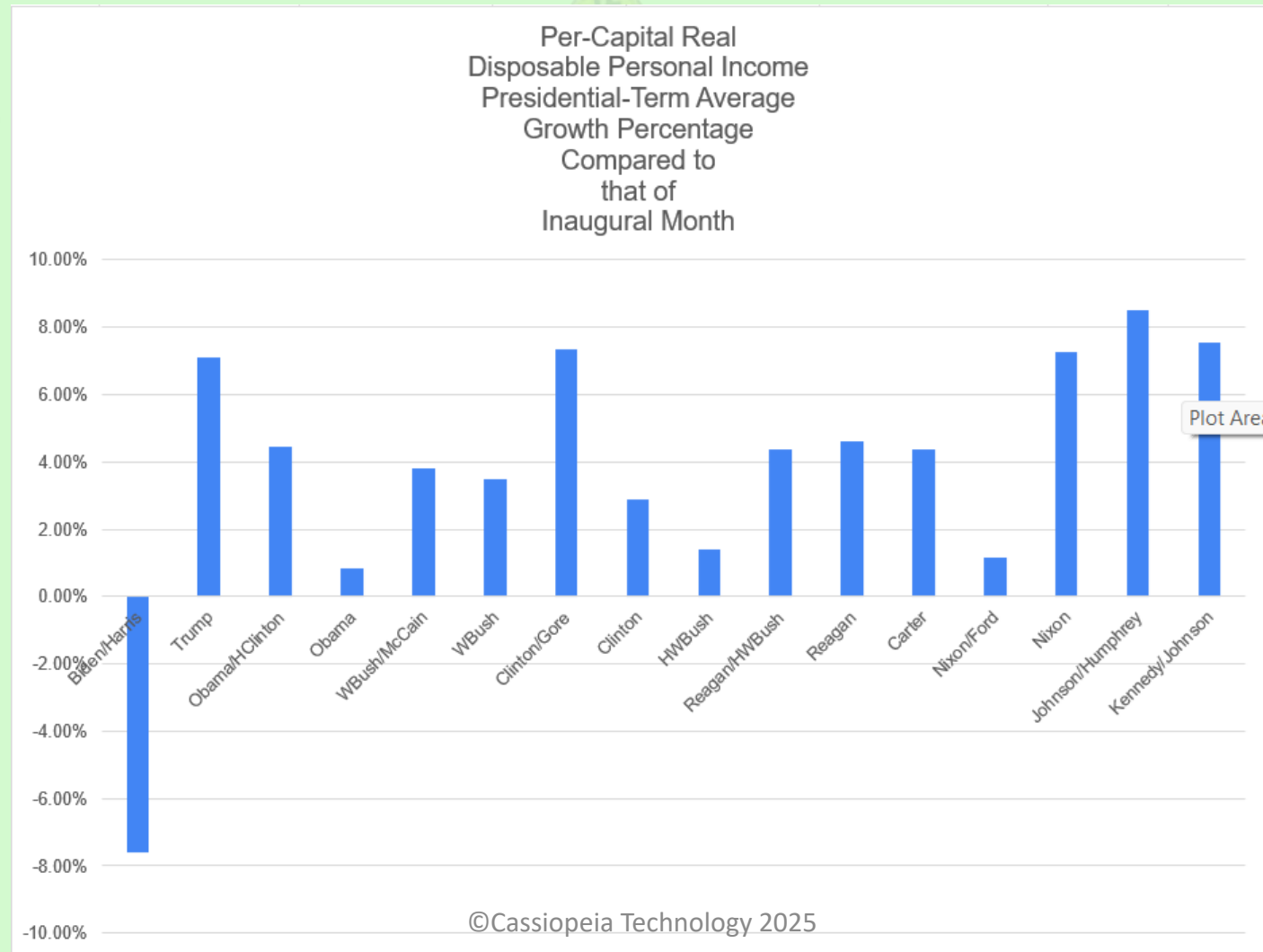
'What If Financial' App to Calculate Trump's Per-Capita Real DPI Growth



Whose term had better real DPI growth?

- Using latest BEA data released in Jan. 2025
- Biden's term average per-capita real DPI shrank by **-7.58%** between Feb. 2021 and Dec. 2024 compared to Jan. 2021
- Trump's average per-capita real DPI growth for his first president term was **7.10%**
- ***In fact, Biden's term saw the only negative growth since BEA began publishing real DPI numbers back in 1959!***

Per-Capita Real Disposable Personal Income per Presidential Term



Economic Accomplishment, and Ensuing Election Votes per Presidential Term

- Compare economic numbers vs. vote gotten from ensuing election

Presidential Term	President/Successor	Per-Capital Real Disposable Personal Income Presidential-Term Average Growth Percentage Compared to that of Inaugural Month	Same Party Reelected at the End of Presidential term?	Per-Capita Real Gross Domestic Product Presidential-Term Average Growth Percentage Compared to that of Inaugural Month	Consumer Price Index Not Seasonally Adjusted Presidential-Term Average Growth Percentage Compared to that of Inaugural Month	End-of-term Election Winner Popular Vote	End-of-Term Election Winner Popular Vote Margin	End-of-Term Election Winner Popular Vote Ratio	End-of-Term Election Incumbent Popular Vote Ratio
2021-2024	Biden/Harris	-7.58%	No	5.30%	13.24%	77,303,573	2,284,316	50.75%	49.25%
2017-2021	Trump	7.10%	No	3.44%	4.21%	81,283,501	7,059,526	52.27%	47.73%
2013-2017	Obama/HClinton	4.44%	No	3.63%	2.89%	62,984,828	-2,868,686	48.89%	51.11%
2009-2013	Obama	0.85%	Yes	2.44%	5.23%	65,915,795	4,982,291	51.96%	51.96%
2005-2009	WBush/McCain	3.82%	No	2.17%	7.66%	69,498,516	9,550,193	53.69%	46.31%
2001-2005	WBush	3.51%	Yes	2.67%	4.38%	62,040,610	3,012,166	51.24%	51.24%
1997-2001	Clinton/Gore	7.35%	No	7.56%	4.28%	50,456,002	-543,895	49.73%	50.27%
1993-1997	Clinton	2.90%	Yes	4.64%	5.77%	47,401,185	8,203,716	54.74%	54.74%
1989-1993	HWBush	1.38%	No	1.18%	10.02%	44,909,889	5,805,339	53.45%	46.55%
1985-1989	Reagan/HWBush	4.37%	Yes	6.12%	6.72%	48,886,597	7,077,121	53.90%	53.90%
1981-1985	Reagan	4.61%	Yes	1.23%	12.77%	54,455,472	16,878,120	59.17%	59.17%
1977-1981	Carter	4.37%	No	6.65%	21.03%	43,903,230	8,422,115	55.30%	44.70%
1973-1977	Nixon/Ford	1.17%	No	0.06%	20.75%	40,831,881	1,683,247	51.05%	48.95%
1969-1973	Nixon	7.28%	Yes	1.96%	11.24%	47,168,710	17,995,488	61.79%	61.79%
1965-1969	Johnson/Humphrey	8.49%	No	9.26%	6.15%	31,783,783	511,944	50.41%	49.59%
1961-1965	Kennedy/Johnson	7.56%	Yes	9.42%	2.27%	43,129,040	15,953,286	61.35%	61.35%



Which economic metric is most correlated with popular vote?

How correlated is GDP numbers with popular vote?

- Correlation coefficient with GDP growth is only **0.0762**

Presidential Term	President/Successor	Per-Capital Real Disposable Personal Income Presidential-Term Average Growth Percentage Compared to that of Inaugural Month	Same Party Reelected at the End of Presidential term?	Per-Capita Real Gross Domestic Product Presidential-Term Average Growth Percentage Compared to that of Inaugural Month	Consumer Price Index Not Seasonally Adjusted Presidential-Term Average Growth Percentage Compared to that of Inaugural Month	End-of-term Election Winner Popular Vote	End-of-Term Election Winner Popular Vote Margin	End-of-Term Election Winner Popular Vote Ratio	End-of-Term Election Incumbent Popular Vote Ratio
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2013-2017	Obama/HClinton	4.44%	No	3.63%	2.89%	62,984,828	-2,868,686	48.89%	51.11%
2009-2013	Obama	0.85%	Yes	2.44%	5.23%	65,915,795	4,982,291	51.96%	51.96%
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How correlated is CPI numbers with popular vote?

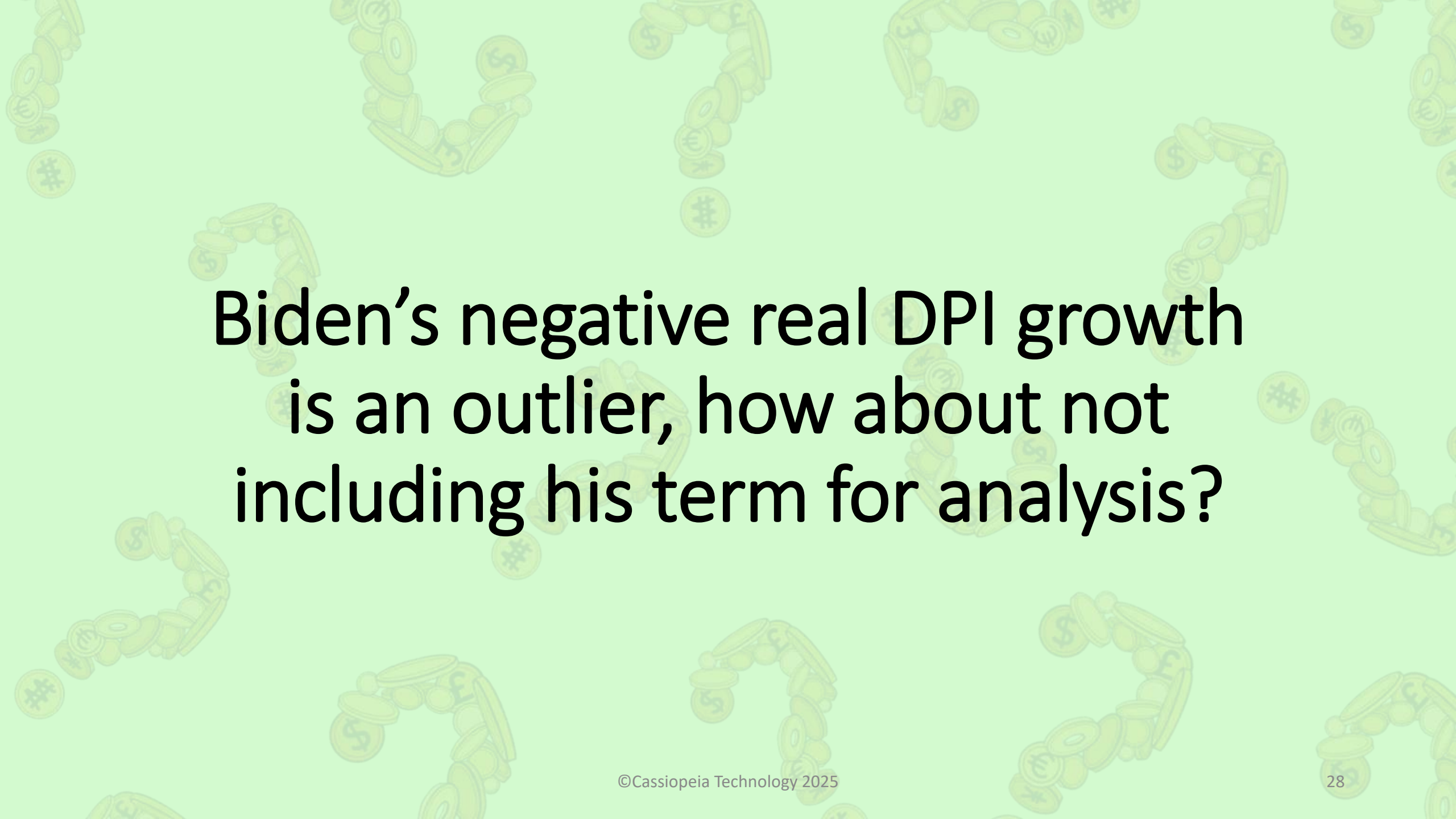
- Correlation coefficient with Inflation is better: **-0.2580**

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1961-1965	Kennedy/Johnson	7.56%	Yes	9.42%	2.27%	43,129,040	15,953,286	61.35%	61.35%

How correlated is real DPI numbers with popular vote?

- Correlation coefficient with real-DPI is even better: **0.2986**

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Biden's negative real DPI growth
is an outlier, how about not
including his term for analysis?

How correlated is GDP numbers with popular vote without considering Biden's?

- Correlation coefficient with GDP growth is still low, **0.0902**

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How correlated is CPI numbers with popular vote without considering Biden's?

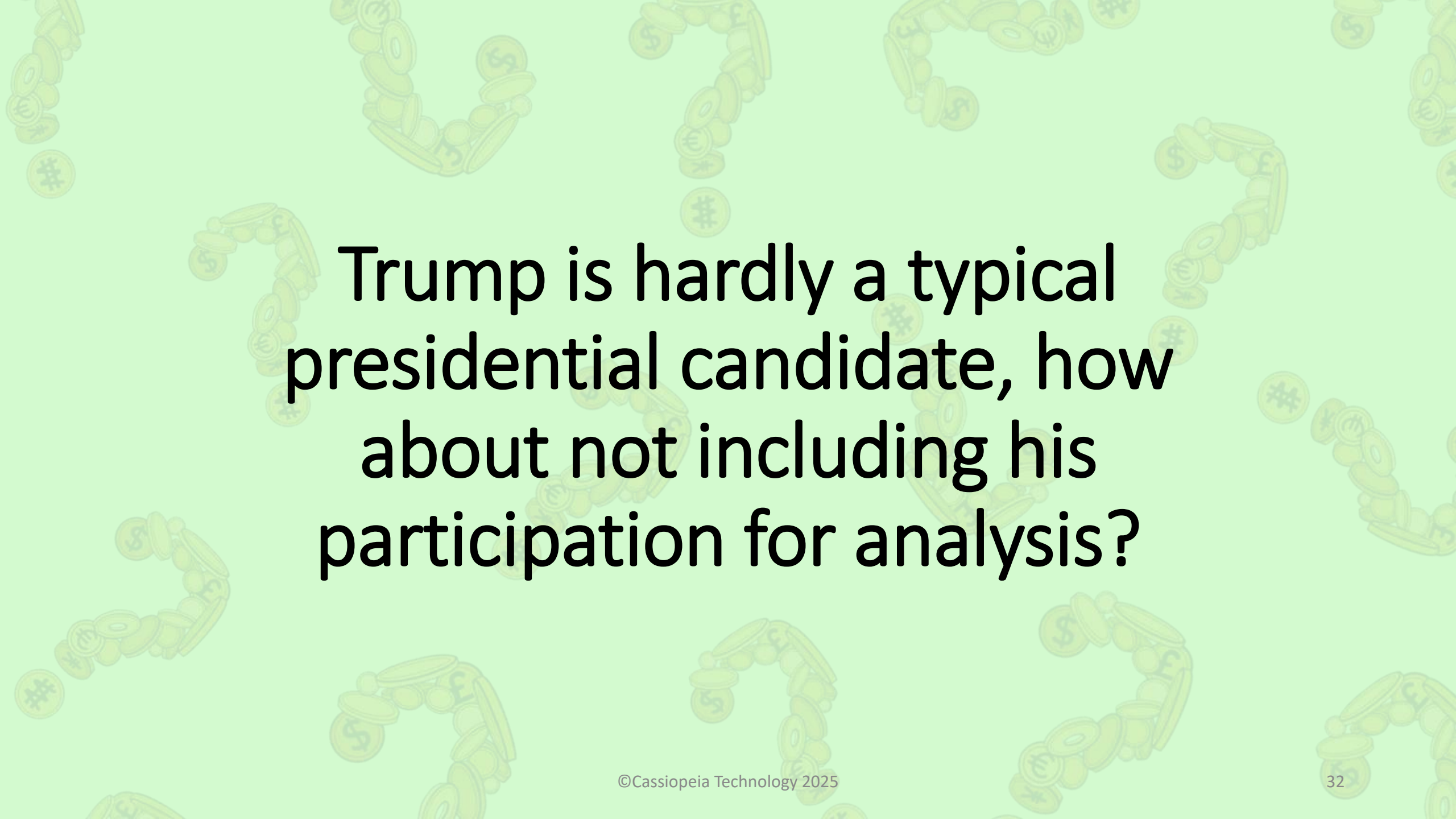
- Correlation coefficient with Inflation is: **-0.2379**

Presidential Term	President/Successor	Per-Capital Real Disposable Personal Income Presidential-Term Average Growth Percentage Compared to that of Inaugural Month	Same Party Reelected at the End of Presidential term?	Per-Capita Real Gross Domestic Product Presidential-Term Average Growth Percentage Compared to that of Inaugural Month	Consumer Price Index Not Seasonally Adjusted Presidential-Term Average Growth Percentage Compared to that of Inaugural Month	End-of-term Election Winner Popular Vote	End-of-Term Election Winner Popular Vote Margin	End-of-Term Election Winner Popular Vote Ratio	End-of-Term Election Incumbent Popular Vote Ratio
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How correlated is real DPI numbers with popular vote without considering Biden's?

- Correlation coefficient with real-DPI is even higher: **0.3205**

Presidential Term	President/Successor	Per-Capital Real Disposable Personal Income Presidential-Term Average Growth Percentage Compared to that of Inaugural Month	Same Party Reelected at the End of Presidential term?	Per-Capita Real Gross Domestic Product Presidential-Term Average Growth Percentage Compared to that of Inaugural Month	Consumer Price Index Not Seasonally Adjusted Presidential-Term Average Growth Percentage Compared to that of Inaugural Month	End-of-term Election Winner Popular Vote	End-of-Term Election Winner Popular Vote Margin	End-of-Term Election Winner Popular Vote Ratio	End-of-Term Election Incumbent Popular Vote Ratio
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Trump is hardly a typical
presidential candidate, how
about not including his
participation for analysis?

How correlated is GDP numbers with popular vote without considering Trump's participation?

- Correlation coefficient with GDP growth is still low, **0.0744**

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How correlated is CPI numbers with popular vote without considering Trump's participation?

- Correlation coefficient with Inflation is: **-0.3233**

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How correlated is real DPI numbers with popular vote without considering Trump's participation?

- Correlation coefficient with real-DPI is the highest: **0.4076**

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Observations

- Economy is only one factor affecting presidential election outcome, but an important one
 - Correlated, but not much – 0.41
- Economic growth (GDP) has almost no correlation with popular vote.
- Inflation is what people talked about, but real DPI is what people felt whether they were “better off.”
- Sample size is not big – only 16 terms and elections.

Observations – Counter Examples

- Obama was reelected with the second lowest real-DPI growth, 0.85%
 - In economic slump lingered from the 2008 Great Recession
- Johnson/Humphrey enjoyed very high real-DPI growth, but war, '60 unrests were overwhelming
- Clinton/Gore also enjoyed very high real-DPI growth. Gore lost the election, but did win popular vote, barely
 - while Clinton's scandal was a huge detractor
 - not against Clinton's own approval rating, though

Conclusions

- “Better-off” can be seen from political, societal, and most importantly, economic perspectives
- Economy is perhaps the most important factor for winning reelections, but not a deciding one
- Most relevant data point is real DPI, followed by inflation
- Economic growth (GDP) is not a good indicator

The End

- [What If Financial Pro 2025 from App Store](#)
- A financial and economic tool for professionals and common folks!