



Changes in Spending and Their Impact on Expanding Aggregate Supply the US Economy for Period (2000–2020) As Case Study

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Abstract

Growth in consumption and investment spending drives the expansion of Gross Domestic Product (GDP) and aggregate supply, positively influencing most economic indicators and fostering growth. The research demonstrates that rising consumption spending boosts economic growth rates. Furthermore, investment in the industrial and manufacturing sectors is crucial for achieving growth, given these sectors' capacity to absorb rapid technological advancements; this enhances the value added to their products by reducing unit costs and increasing the competitiveness of US-made goods, the US economy continued to expand consumer spending—across both goods and services—driven by economic growth resulting from investment in digital infrastructure, the impact of the technological revolution, and the leveraging of financial market strength during the first two decades of the new millennium. Econometric analysis reveals a stable relationship and causality among the study variables; specifically, 88% of the variation in GDP growth is attributable to private consumer spending and private investment spending, with a long-term relationship existing that allows for long-term forecasting.

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Introduction

Aggregate demand is a crucial element in determining the trends in demand for goods and services produced or imported in a given economy, and consequently, in determining the direction of economic activity and its ability to withstand various shocks (economic, political, technological, etc.). Macroeconomic policies (fiscal, monetary, exchange rate, and trade) aim to stabilize macroeconomics to provide a suitable environment for growth and forecasting. When aggregate demand rises, it increases the likelihood of higher inflation rates in the absence of appropriate government policies to rationalize spending, direct investment, or adjust exchange rates and interest rates, as companies and various economic sectors will tend to increase investment spending. Taking advantage of the results of higher economic growth and profit rates may push prices up and thus contribute to higher inflation rates, assuming future expectations of higher marginal efficiency for investment. The opposite is true when aggregate demand falls, as businesses may reduce independent or dependent investment spending, thus reducing profits and employment rates, and the result may be a recession in the economic cycle and a decrease in growth. Conversely, a decline in growth may lead to a decrease in aggregate demand due to the lack of incentive for investment or private or public consumer spending. The opposite is true: with higher economic growth rates, employment and profits increase, business activity and spending increase, and thus aggregate demand increases. Note the ability of savings to influence the increase in its deduction from income because it will reduce disposable income and thus decrease consumer demand.

The First Requirement: A Theoretical Review of The Relationship Between the Research Variables

Investment spending represents all spending on capital goods, machinery, equipment, and industrial development to create capital accumulation and build inventory, which is crucial for increasing aggregate supply. It also includes long-term investments in infrastructure and research and development to create new jobs (OECD, 2015, p. 78).

Government purchases and transfer payments are important components of aggregate demand. An increase in these activities boosts aggregate demand, which in turn leads to increased income, economic growth, and an improved standard of living. The

government can also reduce aggregate demand by increasing the budget surplus to curb inflation, and by increasing taxes or reducing government spending. This ultimately leads to a decrease in both consumer and investment spending. Furthermore, the government can influence aggregate demand by influencing the credit market. Increased government demand for credit leads to higher interest rates, and higher real interest rates will decrease investment spending, and consequently, aggregate demand (David N. Hyman, 1996, p. 712).

Excessively expansionary monetary and fiscal policies may lead to an expansion in lending and excessive debt accumulation, resulting in an artificial overvaluation of real assets and consequently higher prices, which paves the way for inflation. This necessitates monetary and fiscal policies taking the necessary measures in contractionary directions to contain inflation and correct asset prices. Growth will decline, debt burdens will emerge, and cases of financial distress will increase (International Monetary Fund, 1996, 89), what supports the existence of these imbalances or in equilibrium is the existence of government guarantees to support the banking system to keep aggregate demand within the limits of aggregate supply and create harmony between the trends of change in both variables (F.S. Mishin, 2004, 259-260).

Fiscal policy is one of the economic correction policies that aim to keep domestic spending or make it consistent with the availability of resources. This requires adopting a set of policies in the areas of public finance to ensure consistency between the level and composition of aggregate demand on the one hand, and the pattern of aggregate supply on the other, maintaining balance at the macroeconomic level requires an appropriate structure of incentives in the sectors of the economy, and in particular the sectors of goods and services of trade exchange and domestic consumption (Guition Manuel, 1987, 87).

Banking crises lead to the misallocation of resources, a decline in real GDP growth opportunities, and may cause the economy to enter a recessionary phase of the business cycle, they can also lead to a depreciation of the currency exchange rate, increased inflation rates, and potentially capital outflows or the replacement of the local currency with a foreign one, these pressures exerted on the local currency during a banking crisis place a burden on the banking system in general and on the level of support provided by foreign reserves, the banking system's ability to withstand these pressures depends primarily on the strength of domestic banking obligations.

The government may later be forced to devalue the currency, which will in turn cause stock prices to fall. This is compounded by the impact of interest rate changes on these prices, which will discourage foreign investment and consequently reduce overall aggregate demand, furthermore, the tight monetary policy adopted by monetary authorities leads to credit restrictions and a decrease in aggregate demand, a rise in interest rates prompts investors to sell their securities and deposit the proceeds in commercial banks to benefit from the favorable interest rate in the money market, leading to imbalances in the financial market, financial market downturn may prompt investors to shift their funds towards other assets, therefore, in many cases, a stock market crash is accompanied by sharp corrections in other asset markets, furthermore, capital flight due to the crisis will place a significant burden on the balance of payments, this will be

exacerbated by deteriorating economic growth rates and increased uncertainty in future prospects, inevitably leading to imbalances in aggregate supply and demand (Alicia Gracia-Herrero, IMF Paper Working, 1997, pp. 40-45), therefore, it is necessary to know the prevailing state of the national economy (deflationary conditions, inflationary conditions, state of full resource utilization) to ensure the effectiveness of macroeconomic policy in controlling economic activity and mitigating the severity of economic fluctuations during the different stages of economic fluctuations.

The Second Requirement: The Practical Aspect of Analyzing and Assessing the Relationship Between the Research Variables

1. The Evolution of Private Consumption Expenditure

Consumption is considered a significant factor in the mindset of the American thinker and consumer, as it is seen as a generator of growth. Therefore, increased consumption expenditure will ultimately lead to increased productivity in various economic units to meet consumer demand and counter rising prices. In the event that the production system is unable to meet the aggregate demand resulting from increased consumption expenditure, the American government aims to direct its public spending towards satisfying basic needs in health and education, building partnerships, and supporting growth.

Economic and social development and the sustainability of investment at the global level (<https://www.appropriations.senate.gov/news/minority/senate-passes-five-funding-bills-strips-out-dhs-bill-to-ensure-negotiations-proceed-to-rein-in-ice->), and we notice this clearly in the European debt crisis that prevailed in the Greek economy 2009-2011, the Europeans' vision for solving the crisis sees a return to classical approaches, controlling aggregate demand and following strict rules in preparing the budget, while we find that the American approaches focus on increasing spending, even with budgets prepared with a deficit, to meet the increasing demand and thus growth.

Following table 1, we find that private consumption expenditure increased from \$6,380.4 billion in 2000 to \$8,285.1 billion in 2004, with an annual change rate of 6%. This increase resulted from the rise in private consumption expenditure on services, both in absolute terms and as a percentage of total consumption expenditure, compared to expenditure on goods, this indicates the US economy's focus on the services sector as important for economic growth, which is consistent with the trend of most world economies in the last decades of the past century and the first and second decades of the new millennium, this was aided by the stimulus programs implemented by the United States of America, which amounted to about 2% of GDP, the largest support compared to the OECD countries, which amounted to about 1% of their total GDP, to mitigate the negative effects left by the global financial crisis (2007-2008), in addition, support programs, unemployment insurance, social welfare, and tax reductions were activated due to the decrease in salaries and wages (Economic Report of the President, 2010, 98) ^[2], which contributed significantly to increasing consumer spending rates, as shown in table 1. Moody's indicates that the top 10% of income earners account for 50% of total spending, this is the highest level ever recorded in data dating back to the late 1980s, and this disparity in favor of the upper class is increasing, the gap appears to be

widening, and this trend isn't limited to the wealthy; we see it even in credit card debt, if you have an average credit card balance of around \$6,500, according to TransUnion, and

make the minimum payments at 20% interest, you will remain in debt for approximately 19 years and pay over \$9,000 in interest (Aisha Rasco, 2025).

Table 1: Evolution of Private Consumption Expenditure in the US Economy 2000-2020 Billion Dollars

year	Total private consumption expenditure	Annual rate of change %	Total private consumption expenditure on goods	Annual rate of change %	Total private consumption expenditure on services	Annual rate of change %
2000	6380.4	---	2459.1	----	4371.2	-----
2001	7148.8	12	2534	3	4614.8	5.5
2002	7439.2	4	2610	2.6	4829.2	4.6
2003	7804	4.1	2727	4.4	5076.6	5.1
2004	8285.1	6.1	2892.3	6	5392.8	6.27
2005	8819	6.4	2037.9	-29.5	5745.1	6.5
2006	9322.7	5.7	3221.7	58	6100.9	6.12
2007	9826.4	5.4	3365	4.4	6461.4	5.9
2008	10129.9	3	3403.2	1.1	6726.8	4.17
2009	10092.6	-0.3	3257.6	-4.2	6835	1.6
2010	10260.3	1.6	3317.8	1.8	6942.4	1.5
2011	10698.9	4.2	3518.1	6	7180.7	3.46
2012	11047.4	3.2	3637.7	3.3	7409.6	3.1
2013	11388.2	3.05	3742.2	2.8	7646.1	3.1
2014	11874.5	4.2	3886.6	3.8	7987.9	4.9
2015	12297.4	3.5	3955.1	1.7	8342.3	4.4
2016	12726.8	3.4	4033	1.9	8693.8	4.2
2017	13290.6	4.4	4412.2	9.4	9078.4	4.41
2018	13934.4	4.8	4414.2	0.04	9520.2	4.8
2019	14417.6	3.4	4529.2	2.6	9888.5	3.8
2020	14206.2	-1.4	4713.1	4	9493.1	-3.9

Economic Report of the president, transmitted to the congress February, 2010 P. 328.

Economic Report of the president, transmitted to the congress February, 2023 P. 412.

- The annual rate of change was calculated by the researcher.

According to NBER data, the United States entered a recession in December 2007, indicators began to rise, partly due to a decline in asset prices, particularly housing prices. This occurred after the preceding period of economic expansion. Following the end of the expansion, significant disruptions occurred in the performance of financial institutions, which was reflected in a substantial deviation in macroeconomic performance (Economic Report of the President, 2010, p. 39) ^[2].

The problems that arose in late 2007 and the resulting trajectory of economic activity up to 2011 were overcome by the US economy, which achieved a significant recovery and sustained growth. Evidence of this is the real GDP at the end of 2011, which showed notable increases compared to the years following the 2007 crisis. This was achieved as the Obama administration continued to address fundamental imbalances and problems that had accumulated over decades, reaching their peak at the end of 2008 (Economic Report of the President, 2013, p. 21) ^[3]. All of this positively impacted the increase in private consumption expenditure, which reached \$12,726.8 billion in 2016, representing an annualized growth rate of 3.4%. Spending on services remained dominant, reaching \$8,693.8 billion, an annualized growth rate of 4.2% for the same year, as shown in the table table 1 confirms the persistence of the "Great Society" philosophy based on high consumption. Consequently, the global economy as a whole improved after 2016 and gained further strength thanks to the growth of advanced economies. The group of advanced countries even surpassed their growth rates of the previous two years, while developing countries attempted to catch up with global growth (<https://www.imf.org> - April 2018), which had a positive

impact on the US economy.

the US economy continued to maximize consumer spending, both on goods and services, in line with the accumulated economic growth resulting from spending on digital infrastructure and the technological revolution of the 1990s, as well as benefiting from the strength of the financial market in the first two decades of the new millennium.

2. The Evolution of Private Investment Spending

It is a common economic principle that investment describes the addition of new capital and changes in physical inventory. It includes the physical construction of productive and capital capacities. Therefore, purchasing a bond is not considered investment because it does not involve an addition to capital; rather, it is a transfer of ownership and financial assets from one individual or entity to another, we use the concept of consumption to distinguish between gross investment and net investment to more accurately express the real addition to productive capacity. following table 2, we find that private investment spending began to decline from from \$1772.0 billion in 2000 to \$1698 billion in 2004, with a negative annual change rate for most of the years of the period 2000-2004, except for the year 2003. The American war on Iraq for the aforementioned year may explain the positive annual change, because usually in the context of wars, public spending increases to support the war machine, which is reflected in part in the increase of private investment spending to operate the factories and equipment necessary to sustain the war effort, with a note of the decline in private investment spending in the construction and housing sectors, with negative annual change rates for most of the years of the period 2000-2004, as in table 2.

Table 2: Evolution of Private Investment Spending in the US Economy 2000-2020 Billion Dollars

year	Total private investment spending	Annual rate of change %	Total expenditure in fixed capital formation			
			Capital expenditure in the construction sector	Annual rate of change %	Capital spending in the housing sector	Annual rate of change %
2000	1772	0	1717.7	----	318.1	-----
2001	1661.9	-6.2	1700.2	-1	329.7	3.6
2002	1647	-0.8	1634.9	-3.8	282.8	-14.2
2003	1729	4.9	1713.3	4.7	281.9	-0.3
2004	1698	-1.7	1903.6	11.1	306.7	8.7
2005	2172.2	27.9	2122.3	11.43	351.8	14.7
2006	2327.2	7.1	2266.2	6.7	433.7	23.2
2007	2288.5	-1.6	2269.1	0.1	535.4	23.4
2008	2136.1	-6.6	2170.8	-4.3	609.5	13.8
2009	1622.9	-24	1741.9	-19.7	480.7	-21.1
2010	2165.5	33.4	2111.6	21.2	390	-18.8
2011	2332.6	7.7	2286.3	8.2	376	-3.5
2012	2621.8	12.3	2550.5	11.5	432	14.81
2013	2838.2	8.2	2732.9	7.1	511	18.2
2014	3074	8.3	2989.2	9.3	564	10.5
2015	3288.5	6.9	3148.4	5.3	640	13.4
2016	3278.3	-0.31	3239.2	2.8	710	10.5
2017	3476.7	6	3435	6.06	773	8.8
2018	3724.8	7.1	3668.4	6.7	811	4.9
2019	3892.4	4.4	3810.2	3.8	827	1.9
2020	3748.4	-3.66	3785.9	-0.6	916	10.7

Economic Report of the president, transmitted to the congress February, 2010, P 328.

Economic Report of the president, transmitted to the congress February, 2023 P. 412.

- Annual change rate calculated by the researcher

Fiscal policies, through government spending, transfer payments, and other variables, attempt to finance the above items by borrowing from the banking system, this increases the public debt-to-GDP ratio, which ultimately distorts the structure of investment spending, raising investment costs due to crowding out from the private sector. consequently, this weakens the private sector's incentive to invest (International Monetary Fund, 1997, p. 65) ^[12]. the US economy experienced strong impacts in 2005 on real GDP, which grew at a rate close to 3%. This was supported by the expansion in the construction sector in mid-2003. The US economy achieved these gains despite some signs or obstacles in the energy sector.

This paved the way for an increase in aggregate supply and a rise in productivity in response to the influx of new business (Economic Report of the President, 2006, 370) ^[1], this was reflected positively in the increase in investment spending to \$2,172.2 billion in 2005, with an annual change rate of 27.9%, with an increase in investment spending in the construction and housing sectors to \$2,122.3 billion and \$351.8 billion for the same year, respectively, with significant positive annual change rates, as shown in table 2, this spending continued significantly despite its decline in the three years following the above year, with an increase in investment spending in the construction and housing sectors in response to the prevailing optimism in the overall output of the US economy, it should be noted that 2009 was the worst year for investment spending for the period 2005-2009 in response to the mortgage crisis during this period.

What distinguishes the period 2010-2014 is the marked increase in investment spending, reaching \$3,074.0 billion in 2014, representing an annual growth rate of 8.3%, up from \$2,165.5 billion in 2010, notably, investment spending in the construction and housing sectors rose to \$2,989.2 billion and \$564.4 billion, respectively, in 2014, with positive annual growth rates, this indicates the US economy's pursuit of

increased overall investment growth as a component of aggregate demand, contributing to an increase in aggregate supply and marginal capital productivity, investment in fixed capital formation may have resulted from lower interest rates and a lower-than-expected actual inflation rate, coupled with increased money flows from both the public and banks, furthermore, investment by non-financial corporations increased by an average of 103% from cash flow, the goal is to redistribute profits in a new way that ensures continued increased investment spending (Economic Report of the President, 2014, p. 61) ^[4].

The public sector is designed to make the necessary investments optimally to ensure the most efficient performance of the national economy, maintain growth and the effectiveness of key economic institutions, guarantee competition and participation in the market economy, empower households, prevent profit-destroying behaviors, and ensure the stability of the financial infrastructure. When the private sector reduces its investments, the public sector intervenes to compensate for the investment shortfall and ease credit restrictions to sustain the economic growth process (Economic Report of the President, 2023, p. 23) ^[6]. The period 2015-2020 was characterized by maintaining investment spending as an average of around \$3,576.6 billion, between a high of \$3,892.4 billion in 2019 and \$3,278.3 billion in 2016, while maintaining positive change rates except for the years 2016 and 2020, with the relative importance of the construction sector increasing at a higher rate than the housing sector. The reason for the desire of the American economy to continue developing and focusing on infrastructure may be due to its great importance in expanding the overall supply and contributing to the establishment of subsequent investment projects.

3. The Evolution of the GDP Structure and Growth Rates
The United States is a major global power due to several

factors, including natural, human, organizational, and technological resources, it possesses a strong and balanced economy capable of responding to various shocks, the US controls 30% of the total business of multinational corporations and captures 50% of their profits, the dollar serves as the international settlement currency for trade transactions and constitutes approximately 80% of global monetary reserves, the US produces around 75% of global knowledge and cultural output and consumes 50% of global knowledge production, furthermore, it boasts the world's leading space research agency (NASA) and its geographical location endows it with vast natural resources, its urban population constitutes a significant portion of the global

population.

87% of the total population, resulting in very high demand, which simultaneously contributes to creating aggregate supply (<https://www.scribd.com/document/824229880>).

Continuing with tables 3 and 4, we find that the GDP reached \$11,876.8 billion with an annual growth rate of 6.5% in 2004, this was influenced by the significant contribution of the private industrial sector, which generated \$10,194.3 billion in the same year, representing 85% of GDP, this contrasted with the low contributions of the mining and agricultural sectors, furthermore, residential consumption expenditure constituted a high percentage of total private consumption expenditure, as shown in table 1, while spending on other sectors declined

Table 3: Gross Domestic Product by Major Sector in the US Economy For the period 2000-2020 Billion Dollars

year	Gross Domestic Product (GDP)	Private Industrial Sector	Agriculture, Forestry and Fishing Sector	Mining Sector 1	Manufacturing Sector
2000	9951.5	8314.3	98	121.3	1426.2
2001	10286.2	8869.7	97.9	118.7	1341.3
2002	10642.3	9131.2	95.4	106.5	1352.6
2003	11142.1	9542.3	114.4	143.3	1359.3
2004	11876.8	10194.3	142.2	171.3	1429.9
2005	12638.4	10853.4	133.3	223.8	1480.6
2006	13398.9	11529.3	121.6	262.4	1577.4
2007	14077.6	12064.6	167.9	275	1616.8
2008	14441.4	12424.6	157.7	325.3	1637.7
2009	14258.7	12433	129.1	275.4	1700.8
2010	15049	13462.7	144.9	306.4	1799.8
2011	15599.7	14094.5	179.2	357.5	1873.6
2012	16254	14630.7	178.7	360.5	1934.7
2013	16880.7	14632.3	214.3	387.8	1997.5
2014	17608.1	15279	198.9	417	2053.5
2015	18295	15270	180.1	261.7	2131
2016	18804.9	15866.6	165.8	218.1	2102.9
2017	19612.1	16310.9	175.9	276.9	2199.3
2018	20656.5	17030.6	175.6	320.1	2334.1
2019	21521.4	17980.9	162.6	295.7	2370.9
2020	21323	18223.1	174.5	182.1	2720

Resources :

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Table 4: Annual Rates of Change in Gross Domestic Product and its Main Components in the US Economy for the Period 2000-2023 Billion Dollars

year	Gross Domestic Product (GDP)	Annual Change %	Industrial Annual Change %	Agricultural Annual Change %	Mining Annual Change %	Annual Change% Manufacturing
2000	9951.5	0				
2001	10286.2	3.37	2.96	-0.1	-2.1	-5.9
2002	10642.3	3.4	2.9	-2.5	-10.2	0.8
2003	11142.1	4.6	4.5	19.9	34.5	0.4
2004	11876.8	6.5	6.8	24.3	19.59	5.1
2005	12638.4	6.4	6.4	-6.2	30.6	3.5
2006	13398.9	6.01	6.2	-8.7	17.2	6.5
2007	14077.6	5	4.6	38	4.8	2.4
2008	14441.4	2.5	2.9	-6.07	18.2	1.2
2009	14258.7	-1.2	0	-18.1	-15.3	3.8
2010	15049	5.5	8.2	12.23	11.23	5.6
2011	15599.7	3.6	4.6	23.6	16.6	4.1
2012	16254	4.1	3.8	-0.27	0.8	3.2
2013	16880.7	3.8	0	19.97	7.5	3.2
2014	17608.1	4.3	4.4	-7.18	7.5	2.8
2015	18295	3.9	-0.05	-9.45	-37.2	3.7
2016	18804.9	2.7	3.9	-7.9	-16.6	-1.38
2017	19612.1	4.2	2.8	6.09	26.9	4.54
2018	20656.5	5.3	4.4	-0.17	15.68	6.1
2019	21521.4	4.1	5.5	-7.4	-7.61	1.5
2020	21323	-0.9	1.3	7.3	-38.414	-88.5

The source was prepared by the researcher using the mathematical formula for the annual rate of change. investment, as shown in table 2, compared to consumer spending, reinforces the hypothesis that high consumption generates growth in the American economy and is in line with the philosophy of the Great Society, however, most national accounts in the United States show that childhood income is higher than working income, at least in recent years, this is because the level of wages and salaries shows a lower level, as a large number of families have working incomes of less than \$10,000 (Jonathan Heathcoat and others, 2023).

The gross domestic product continued to rise after 2004, reaching \$14,441.4 billion in 2008, with an annual change rate of 2.5%, the industrial sector contributed \$12,424.6 billion, with an annual change rate of 2.9%. The mining sector's annual change rate increased by 18.2%, but its contribution did not exceed \$325.3 billion, this was accompanied by an interest in increasing private investment spending, increasing capital formation in the housing sector, and strengthening infrastructure, this confirms the US economy's pursuit of increased productivity and income in the industrial sector due to its high added value and its greater capacity to absorb technological developments, which ultimately lead to increased production and productivity.

By 2014, GDP continued to rise, reaching \$17,608.1 billion at an annual rate of 4%, the industrial sector's relative contribution to GDP increased to approximately 86%, while the agricultural sector's contribution declined, this growth was supported by overall investment, which reached approximately 8% for the year mentioned above (as shown in Table 2), and by increased consumer spending. It's worth noting that consumer spending typically rises at a lower rate than income, and that lower-income households consume different quantities and types of consumer goods than higher-income households and are subject to higher taxes, this

explains the higher savings rates among the wealthy and lower rates among the less affluent (Johannes Fleck *et al.*, 2015, p. 13), which in turn impacts investment the aggregate, and therefore aggregate demand.. This calls for aggregate supply to respond to this dynamic, and this will inevitably be reflected in economic growth.

The latest research shows that the US economy continues to grow and recover better than many other countries, and many macroeconomic indicators, including consumer spending, productivity, and wages, have continued to grow better than expected. In 2019, unemployment rates fell to their lowest level in 50 years, and for the first time, job openings exceeded the number of job seekers, thus increasing employment rates, this had a positive impact on most economic indicators, including GDP growth (Economic Report of the President 2020, p. 36) ^[5].

The period 2015-2020 was characterized by continued positive GDP growth, as reflected in annual change rates, except for the last year of the period, this decline was a response to the repercussions of the COVID-19 pandemic, which led to a decrease in economic activity globally and in all countries. With the continuation of partial lockdowns affecting most public and private sector activities, the annual change rate fell to -0.9%, with negative growth in mining and manufacturing, and positive growth in the industrial sector.

To examine the relationship between the research variables, economic measurement can be used as a method to estimate and analyze this relationship. We denote GDP growth by the symbol (y), and we represent the growth of private consumption expenditure as ($X1G$) and private investment expenditure as ($X2G$).

As follows:

Examination of growth stability using the extended Dickey-Fuller test

Table 5

Null Hypothesis: Y has a unit root				
Exogenous: Constant				
Lag Length: 0 (Automatic - based on SIC, maxlag=4)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-3.263773	0.0309
Test critical values:	1% level		-3.808546	
	5% level		-3.020686	
	10% level		-2.650413	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(Y)				
Method: Least Squares				
Date: 03/26/26 Time: 09:10				
Sample (adjusted): 2001 2020				
Included observations: 20 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Y(-1)	-0.796120	0.243926	-3.263773	0.0043
C	3.063052	1.054945	2.903519	0.0095
R-squared	0.371776	Mean dependent var		-0.045000
Adjusted R-squared	0.336875	S.D. dependent var		2.492932
S.E. of regression	2.030057	Akaike info criterion		4.348644
Sum squared resid	74.18033	Schwarz criterion		4.448217
Log likelihood	-41.48644	Hannan-Quinn criter.		4.368082
F-statistic	10.65222	Durbin-Watson stat		1.598744
Prob(F-statistic)	0.004313			

Thus, we find that the growth variable is stable because the calculated t-value is less than the tabulated value at a significance level of 5%.

- Examining the stability of private consumption expenditure growth

Table 6

Null Hypothesis: X1g has a unit root				
Exogenous: None				
Lag Length: 0 (Automatic - based on SIC, maxlag=4)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-1.785199	0.0710
Test critical values:	1% level		-2.685718	
	5% level		-1.959071	
	10% level		-1.607456	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(X1G)				
Method: Least Squares				
Date: 03/26/26 Time: 09:33				
Sample (adjusted): 2001 2020				
Included observations: 20 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1G(-1)	-0.289391	0.162106	-1.785199	0.0902
R-squared	0.143328	Mean dependent var		-0.070000
Adjusted R-squared	0.143328	S.D. dependent var		3.759948
S.E. of regression	3.480080	Akaike info criterion		5.380694
Sum squared resid	230.1082	Schwarz criterion		5.430481
Log likelihood	-52.80694	Hannan-Quinn criter.		5.390413
Durbin-Watson stat	1.609659			

Source: Prepared by the researcher using the Eviews 9 statistical software.

Thus, we find that the growth of consumer spending is stable because the calculated t-value is greater than its tabulated value at a significance level of 10%.

- Examining the stability of private investment spending growth

Table 7

Null Hypothesis: X2G has a unit root				
Exogenous: None				
Lag Length: 0 (Automatic - based on SIC, maxlag=4)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-4.171104	0.0003
Test critical values:	1% level		-2.685718	
	5% level		-1.959071	
	10% level		-1.607456	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(X2G)				
Method: Least Squares				
Date: 03/26/26 Time: 09:39				
Sample (adjusted): 2001 2020				
Included observations: 20 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
X2G(-1)	-0.958123	0.229705	-4.171104	0.0005
R-squared	0.477937	Mean dependent var		-0.183000
Adjusted R-squared	0.477937	S.D. dependent var		17.79368
S.E. of regression	12.85663	Akaike info criterion		7.994304
Sum squared resid	3140.568	Schwarz criterion		8.044090
Log likelihood	-78.94304	Hannan-Quinn criter.		8.004023
Durbin-Watson stat	1.991076			

Source: Prepared by the researcher using the Eviews 9 statistical software.

Thus, we find that investment growth is stable at the level and at a significance level of 1% because the calculated t-value is greater than its critical value.

- Accordingly, the relationship between the research variables can be estimated using the VAR test.

Table 8

Vector Autoregression Estimates		
Date: 03/26/26 Time: 09:55		
Sample (adjusted): 2002 2020		
Included observations: 19 after adjustments		
Standard errors in () & t-statistics in []		
	X1G	X2G
X1G(-1)	0.217319	-1.553053
	(0.07923)	(0.85010)
	[2.74280]	[-1.82690]
X1G(-2)	0.040158	-1.191480
	(0.07232)	(0.77591)
	[0.55530]	[-1.53558]
X2G(-1)	0.039799	-0.233894
	(0.01561)	(0.16748)
	[2.54959]	[-1.39653]
X2G(-2)	-0.000576	7.32E-05
	(0.01565)	(0.16795)
	[-0.03682]	[0.00044]
C	-0.701779	1.258959
	(0.59454)	(6.37891)
	[-1.18038]	[0.19736]
Y	0.777926	4.264536
	(0.09133)	(0.97985)
	[8.51815]	[4.35222]
R-squared	0.883866	0.643472
Adj. R-squared	0.839199	0.506346
Sum sq. resids	8.137069	936.7075
S.E. equation	0.791156	8.488488
F-statistic	19.78788	4.692562
Log likelihood	-18.90375	-63.99019
Akaike AIC	2.621447	7.367388
Schwarz SC	2.919691	7.665632
Mean dependent	3.618421	5.027895
S.D. dependent	1.972957	12.08145
Determinant resid covariance (dof adj.)		33.57159
Determinant resid covariance		15.71634
Log likelihood		-80.08932
Akaike information criterion		9.693613
Schwarz criterion		10.29010

Source: Prepared by the researcher using the Eviews 9 statistical software.

Thus, we choose the first model to estimate the relationship between the research variables. The model is significant because the Akaike and Schwarz criterion values are minimal. The variables of consumption expenditure and investment expenditure determine 88% of the changes in GDP growth in the US economy, according to the coefficient of determination (R^2). There is a long-term relationship between

the model variables, and it is possible that consumption expenditure and investment expenditure become internal variables while growth becomes an external variable, or vice versa. This confirms the causal nature of the relationship between the variables included in the model.

- Testing the inductivity of the VAR model

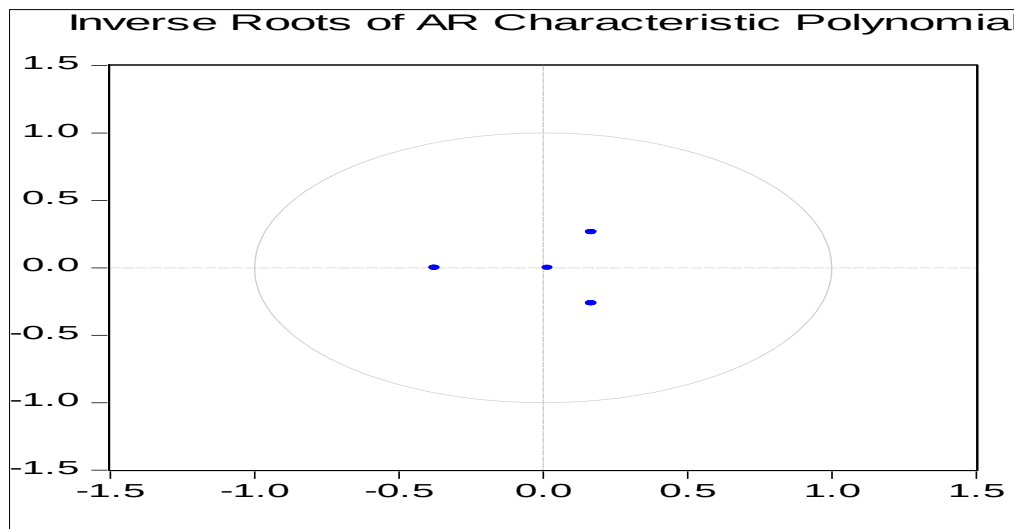
Table 9

Roots of Characteristic Polynomial	
Endogenous variables: X1G X2G	
Exogenous variables: C Y	
Lag specification: 1 2	
Date: 03/26/26 Time: 10:25	
Root	Modulus
-0.373793	0.373793
0.169271 - 0.263247i	0.312972
0.169271 + 0.263247i	0.312972
0.018676	0.018676
No root lies outside the unit circle.	
VAR satisfies the stability condition.	

Granger Causality Test

Thus, we find that the independent variables influence the dependent variable through the Chi-square values, which are significant in the upper and lower sections of the table above.

Therefore, there is a long-term causal relationship and cointegration between the variables. It is possible that changes in the two independent variables could affect long-term economic growth.



Source: Prepared by the researcher using the Eviews 9 statistical software

Fig 1

The model is stable and free of unit roots; all roots are within the unit circle, and there are no roots outside the unit circle, this indicates that the model is efficient and that a long-term

relationship exists, therefore, we can proceed to the Granger Causality test.

Table 10

VAR Granger Causality/Block Exogeneity Wald Tests			
Date: 03/26/26 Time: 10:44			
Sample: 2000 2020			
Included observations: 19			
Dependent variable: X1G			
Excluded	Chi-sq	df	Prob.
X2G	6.590705	2	0.0371
All	6.590705	2	0.0371
Dependent variable: X2G			
Excluded	Chi-sq	df	Prob.
X1G	5.275776	2	0.0715
All	5.275776	2	0.0715

Source: Prepared by the researcher using the Eviews 9 statistical software.

Conclusions

1. Private consumption spending in the US economy continued to increase throughout the research period, with the exception of a few years, reflecting the prevailing belief that consumption drives growth.
2. Private investment spending continued to increase during the period 2000-2020, with a focus on increasing it in the industrial and manufacturing sectors due to their high added value and their ability to absorb rapid technological advancements.
3. GDP growth was linked to growth in both consumption and investment spending during the period 2000-2020.
4. Economic measurement has shown that 88% of changes in GDP are attributable to consumption and investment factors, and that there is a long-term relationship between the research variables.
5. A causal relationship exists between GDP growth and the growth of consumption and investment spending, and

that the relationship between them is stable and mutually reinforcing.

6. Given the stability of the relationship between the research variables, there is an opportunity to predict the nature of this relationship in the long term.

Recommendations

1. Focusing on consumer spending as a driver of growth exposes the US economy to unpredictable fluctuations should consumption decline, change, or shift. Therefore, it is essential to focus on other macroeconomic variables.
2. Attention should be given to investment in the mining and manufacturing sectors due to their capacity to absorb cost-effective and high-value-added technological advancements.
3. High consumption may undermine future savings, leading to reduced growth opportunities. Therefore, specific policies must be implemented to reduce reliance on consumption as a source of growth.

4. Focusing on consumer and investment spending may neglect other variables that govern supply and demand trends. Therefore, it is necessary to diversify sources of growth.

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