US Chartbook

v0.0, February 16, 2020

Notes

Very early stage draft – Contents not considered reliable.

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Contents

Overview

The US Chartbook aims to be comprehensive, but not arbitrary, in presenting charts, tables, and analysis. The results are fairly detailed, but hopefully well-curated and well-organized.

This first section discusses high-level indicators of the health of the US economy. Subsequent sections offer more detail on types of activity, sectors, and markets. Finally, some international comparisons are presented.

Overall Economic Activity

This analysis of the United States economy begins with the most popular measure of economic activity, Gross Domestic Product (GDP). According to the Bureau of Economic Analysis, GDP–the seasonally-adjusted annualized value of goods and services produced in the US–was $21,734 billion in the fourth quarter of 2019, compared to an inflation-adjusted equivalent of $9,866 billion in the first quarter of 1989.

The US population is growing by about sixth-tenths of a percent per year. GDP per capita (see —), adjusted for inflation to 2019 Q4 dollars, has increased to $66,024 in 2019 Q4 from $40,401 in 1989 Q1.

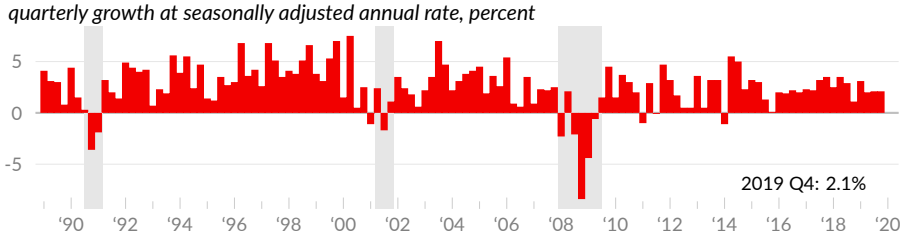
GDP per capita
in 2019 Q4 dollars

Source: Bureau of Economic Analysis

Economic Growth

GDP (see ■) increased at an annual rate of 2.1 percent during the fourth quarter of 2019, compared to an increase of 2.1 percent in the third quarter of 2019. Quarterly growth has averaged 2.5 percent over the past three years, 2.3 percent over the past 10 years, and 2.5 percent over the past 30 years.

Real Gross Domestic Product Growth
quarterly growth at seasonally adjusted annual rate, percent

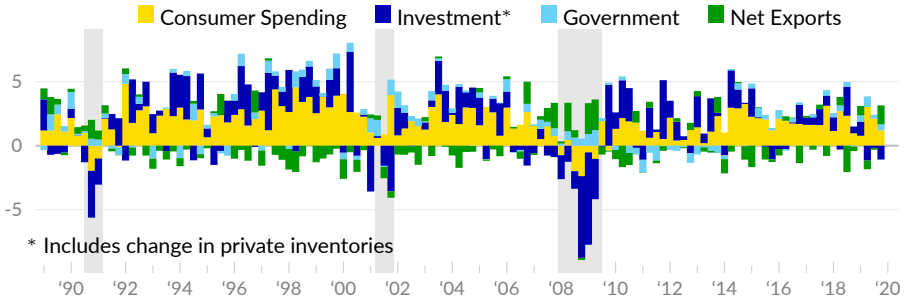


Source: Bureau of Economic Analysis

Components of Growth

The **expenditure approach** compiles GDP from the sum of spending on domestic goods and services. Major spending categories are consumer spending (see ■), private investment (gross spending on capital goods) and changes in private inventories (see ■), government spending and investment (see ■), and net exports (see ■) which is measured as foreign spending on US goods and services less US spending on goods and services produced by the rest of the world.

Real GDP Growth by Expenditure Type
percentage point contribution to GDP growth

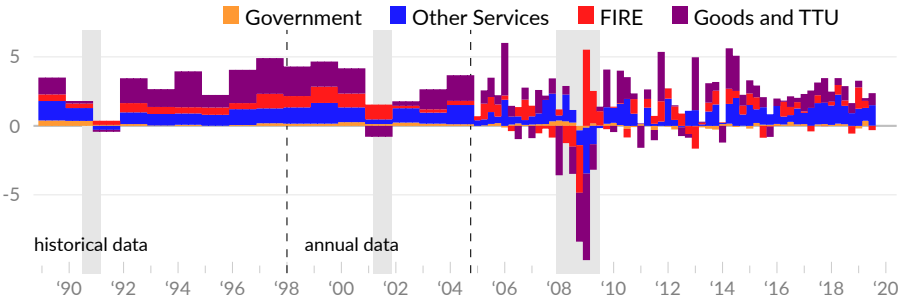


Source: Bureau of Economic Analysis

The **production approach** calculates GDP as the sum of gross value added–output minus inputs–in each sector. This identifies contributions from: goods-producing sectors combined with trade, transportation, and utilities (see), finance, insurance, and real estate (see), other service-providing sectors (see), and government (see).

Real GDP Growth by Industry Group

percentage point contribution to GDP growth

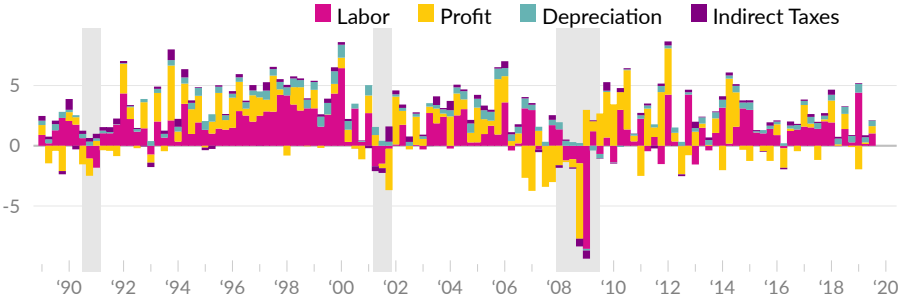


Source: Bureau of Economic Analysis

The **income approach** calculates GDP as the sum of market income to persons (in exchange for labor (see) or from returns on capital (see)), indirect taxes such as sales taxes or tariffs (see), and depreciation (see).

Real Gross Domestic Income Growth

percentage point contribution to GDI growth

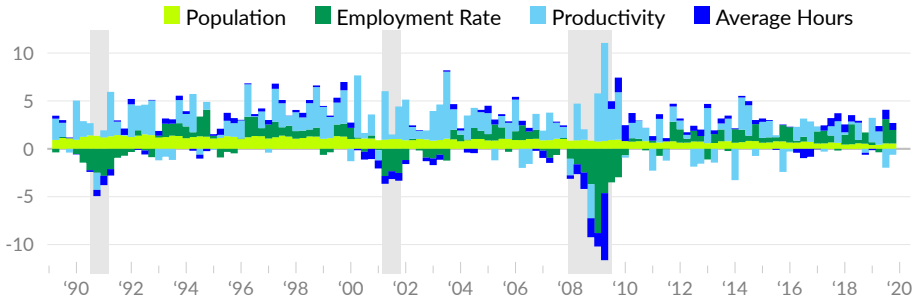


Source: Bureau of Economic Analysis

Changes to GDP can be assigned to changes in **household inputs**: population (see), employment rates (see), average hours worked (see), and total economy productivity (see).

Real GDP Growth by Inputs

percentage point contribution to GDP growth



Source: Author's Calculations

Components of Economic Growth

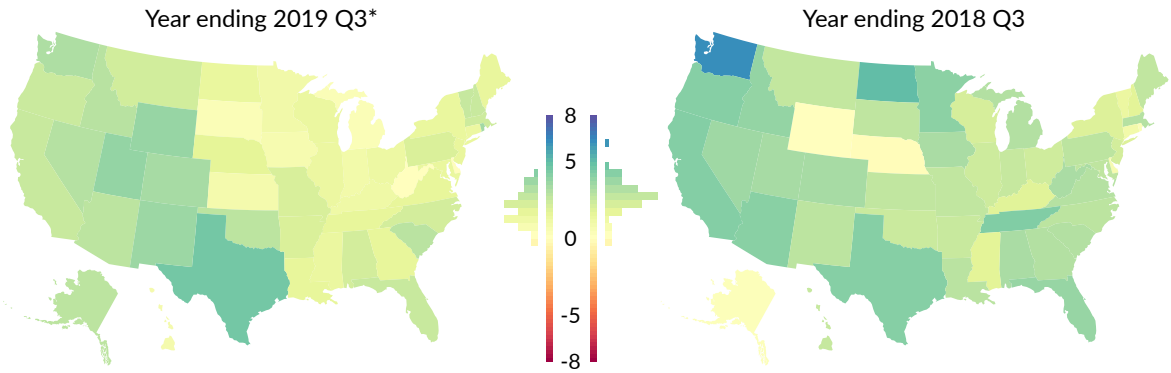
percentage point contribution to real GDP/GDI growth — *moving averages*

	2019 Q4	'19 Q3	'19 Q2	'19 Q1	'18 Q4	3-year	10-year	30-year
Gross Domestic Product	2.1	2.1	2.0	3.1	1.1	2.5	2.3	2.5
Consumer Spending	1.20	2.12	3.03	0.78	0.97	1.84	1.64	1.81
Durable Goods	0.15	0.56	0.87	0.02	0.09	0.40	0.41	0.42
Non-durable Goods	0.11	0.53	0.87	0.30	0.24	0.41	0.32	0.33
Services	0.94	1.02	1.29	0.46	0.65	1.04	0.90	1.06
Gross Investment	-1.08	-0.17	-1.16	1.09	0.53	0.54	0.91	0.59
Non-residential	-0.20	-0.31	-0.14	0.60	0.64	0.46	0.61	0.52
Residential	0.21	0.17	-0.11	-0.04	-0.18	0.03	0.12	0.03
Change in inventories	-1.09	-0.03	-0.91	0.53	0.07	0.05	0.18	0.04
Government	0.47	0.30	0.82	0.50	-0.07	0.30	-0.01	0.23
Federal	0.23	0.22	0.53	0.14	0.07	0.18	-0.01	0.07
State and Local	0.23	0.08	0.29	0.36	-0.14	0.13	-0.00	0.16
Net Exports	1.48	-0.14	-0.68	0.73	-0.35	-0.18	-0.21	-0.15
Exports	0.17	0.11	-0.69	0.49	0.18	0.20	0.44	0.49
Imports	1.32	-0.26	0.01	0.23	-0.53	-0.38	-0.65	-0.65
Goods and TTU	–	0.87	0.20	0.48	0.73	0.84	0.79	0.90
Manufacturing	–	0.47	0.05	-0.40	0.25	0.27	0.22	0.33
Construction	–	-0.09	-0.01	0.16	-0.14	0.06	0.05	-0.01
Retail Trade	–	0.43	0.01	0.46	-0.14	0.20	0.14	0.19
FIRE	–	-0.31	0.51	1.55	-0.54	0.30	0.35	0.48
Other Services	–	1.49	0.93	1.24	0.92	1.25	1.04	0.89
Education & Healthcare	–	0.28	0.06	0.37	0.24	0.20	0.18	0.19
Professional & Business	–	0.68	0.78	0.85	0.31	0.61	0.47	0.35
Information	–	0.29	0.22	0.08	0.25	0.32	0.27	0.25
Government	–	0.01	0.37	-0.19	-0.02	0.10	0.02	0.10
Population	0.56	0.57	0.43	0.40	0.54	0.55	0.68	0.96
Employment Rate	1.41	2.53	-0.36	0.29	1.17	0.90	0.60	0.06
Average Hours	0.73	0.98	0.56	-0.14	-0.21	0.38	0.35	0.03
Productivity	-0.62	-1.97	1.39	2.55	-0.41	0.68	0.71	1.43
Gross Domestic Income	–	2.1	0.9	3.2	0.8	2.2	2.4	2.5
Labor	–	1.03	0.15	4.41	0.28	1.41	1.15	1.29
Profit	–	0.60	0.14	-1.95	-0.11	0.21	0.78	0.65
Depreciation	–	0.47	0.43	0.73	0.53	0.46	0.34	0.42
Indirect Taxes	–	0.03	0.16	0.06	0.07	0.16	0.15	0.17

Source: Bureau of Economic Analysis and Author's Calculations

Real GDP Growth by State

percentage point change in real GDP



Source: Bureau of Economic Analysis

*For the year ending 2019 Q3, no states had real GDP growth of more than five percent, 22 states had real GDP growth between two and five percent, 27 states had less than two percent GDP growth, and two states had negative GDP growth.

Real GDP Growth by State

quarterly growth at seasonally adjusted annualized rate — *total growth, 2019 Q3*

	2019 Q3	'19 Q2	'19 Q1	'18 Q4	'18 Q3	1-year*	3-year	10-year
United States	2.9	1.1	3.1	2.0	2.1	2.1	8.4	26.3
Pacific	2.6	2.7	3.0	2.1	2.2	2.5	12.9	37.5
Washington	6.0	1.2	5.0	3.2	3.1	3.1	17.0	43.4
California	1.8	3.0	2.8	1.9	2.1	2.4	12.6	38.4
Oregon	4.3	2.7	2.9	2.0	1.8	2.4	11.2	34.1
Hawaii	0.8	1.8	0.2	0.5	0.4	0.7	6.0	20.7
Alaska	3.6	2.5	1.8	4.1	2.4	2.7	3.7	-3.3
West South Central	3.3	3.5	4.3	4.1	3.6	3.9	10.9	34.3
Texas	4.0	3.9	5.3	4.7	4.0	4.5	12.8	42.5
Oklahoma	1.1	3.8	2.6	2.7	1.9	2.7	6.0	27.2
Arkansas	0.9	1.3	1.6	1.8	2.9	1.9	4.4	18.8
Louisiana	1.7	1.2	-0.0	1.7	2.9	1.4	5.7	2.0
Mountain	3.7	2.9	4.0	3.0	2.5	3.1	11.4	27.0
Utah	2.8	1.7	7.0	3.0	3.2	3.7	13.3	37.1
Colorado	3.0	2.2	5.5	2.9	2.6	3.3	12.8	36.2
Idaho	2.9	4.4	2.1	2.4	2.5	2.8	11.2	28.4
Arizona	5.4	2.3	3.2	2.9	2.4	2.7	11.8	26.8
Nevada	3.7	5.8	1.0	2.6	2.3	2.9	12.2	21.6
Montana	2.3	4.2	-0.5	2.5	2.3	2.1	7.9	21.1
New Mexico	4.2	3.3	4.1	4.1	2.6	3.5	6.6	11.7

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	2019 Q3	'19 Q2	'19 Q1	'18 Q4	'18 Q3	1-year*	3-year	10-year
continued from previous page . . .								
Wyoming	1.8	3.5	5.6	4.2	1.3	3.6	3.7	-5.4
South Atlantic	3.6	1.0	2.8	1.7	1.9	1.8	8.1	21.7
South Carolina	3.6	3.8	3.5	1.8	2.0	2.8	9.8	29.0
Georgia	5.0	1.2	1.5	1.1	2.3	1.5	9.0	26.9
Florida	4.6	0.6	4.7	2.0	2.4	2.4	10.5	26.2
North Carolina	1.2	1.7	3.3	1.6	2.0	2.1	7.8	20.3
Maryland	0.7	0.9	1.8	1.5	1.0	1.3	5.1	19.6
District of Columbia	4.6	-0.0	1.1	2.1	1.4	1.2	5.5	18.3
Virginia	3.7	0.5	2.0	1.9	1.6	1.5	7.0	14.7
West Virginia	6.0	-0.1	-2.2	1.7	0.5	-0.0	4.9	6.9
Delaware	5.5	-2.6	0.5	1.8	-0.0	-0.1	-0.0	3.9
West North Central	2.0	-0.1	0.9	1.9	2.0	1.2	5.6	20.0
North Dakota	6.0	0.2	2.2	1.8	1.1	1.3	6.8	56.6
Minnesota	4.1	0.2	-0.4	2.0	2.0	0.9	7.3	24.0
Nebraska	-3.1	2.2	-0.5	2.4	2.3	1.6	4.5	24.0
Iowa	1.0	-2.0	2.0	1.1	1.3	0.6	3.6	20.9
South Dakota	3.8	-0.4	-1.6	1.7	1.8	0.4	3.4	18.3
Kansas	1.6	-0.3	-1.1	2.2	2.2	0.7	4.5	18.0
Missouri	1.3	0.1	3.3	2.0	2.4	2.0	6.0	10.5
East North Central	3.1	-0.2	1.4	1.1	1.6	1.0	5.2	20.0
Michigan	2.0	-1.1	0.1	1.1	1.3	0.4	4.7	25.4
Ohio	3.9	-0.5	2.3	1.3	1.7	1.2	5.6	21.8
Indiana	2.2	0.2	-0.2	1.0	2.3	0.8	5.5	21.6
Wisconsin	2.2	1.4	1.1	1.1	1.5	1.3	5.5	19.8
Illinois	3.9	-0.0	2.2	1.1	1.4	1.2	4.8	15.2
Middle Atlantic	2.2	-1.2	4.5	1.5	1.3	1.5	5.2	18.2
Pennsylvania	3.2	0.4	3.3	1.7	2.1	1.9	6.0	21.6
New York	1.7	-2.6	6.0	1.7	0.5	1.4	4.9	19.4
New Jersey	2.2	0.5	2.1	0.7	2.3	1.4	5.0	11.5
East South Central	3.0	0.5	2.0	1.5	2.0	1.5	6.2	18.0
Tennessee	5.0	-1.2	3.3	1.3	2.4	1.4	8.2	26.5
Kentucky	1.3	1.5	0.1	1.0	1.5	1.0	4.0	16.2
Alabama	2.9	2.7	2.2	1.8	1.7	2.1	6.4	14.4
Mississippi	0.2	0.0	1.0	2.3	1.9	1.3	3.8	4.8
New England	2.4	0.1	4.8	1.3	2.1	2.1	6.4	17.2
Massachusetts	2.0	1.2	4.4	1.5	2.2	2.3	8.8	28.1
New Hampshire	2.3	-2.2	8.6	1.4	2.2	2.4	7.1	22.8
Vermont	0.3	1.1	5.7	1.3	1.8	2.5	4.2	14.3
Maine	2.8	-1.8	4.8	0.6	2.1	1.4	6.4	11.0
Rhode Island	-3.0	5.9	4.8	1.5	1.6	3.4	3.8	10.3
Connecticut	4.6	-2.4	4.3	1.0	2.1	1.2	2.5	0.9

Source: Bureau of Economic Analysis

Financial Accounts

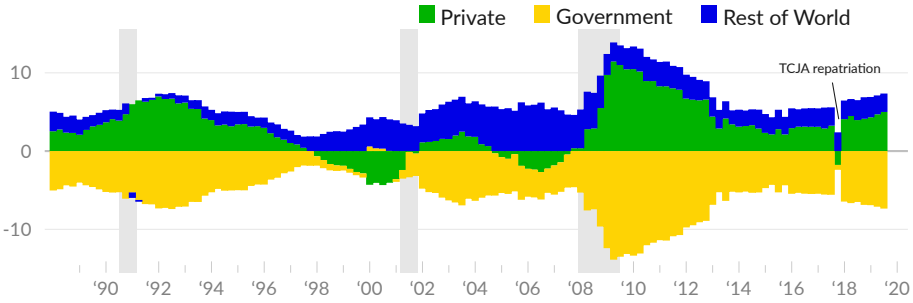
The Federal Reserve reports the balances and transactions in the US **financial accounts**. This includes the flow of funds between sectors in the economy and the various components of balance sheets by sector, such as for households, businesses, and government. The sector-specific data are covered in the section of the chartbook that corresponds to the sector, however, the overall financial activities of the US are discussed in this section.

Sectoral Balances

A high-level overview of US financial activities can be provided by dividing the world economy into three sectors: the US private sector (see), the US government (see), and the rest of the world (see), then examining the net lending and borrowing between the groups, which must sum to zero at an aggregate level. That is, if one sector is running a deficit, another sector must be running a surplus.

Sectoral Financial Balance

net lending (+) or borrowing (-), NIPA basis, by sector, as share of GDP



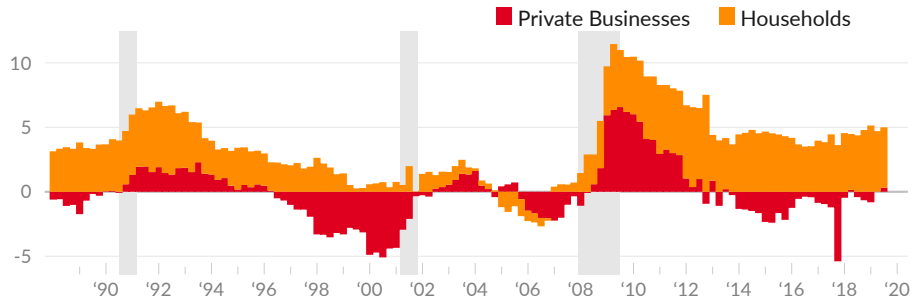
Source: Bureau of Economic Analysis

In 2019 Q3, the US private sector was a net lender (running a surplus) of the equivalent of 5.0 percent of GDP, compared to 2.3 percent in 2015 Q1. The rest of the world was a net lender to the US, to the equivalent of 2.4 percent of GDP in 2019 Q3 compared to 2.4 percent in 2015 Q1. Balancing these transactions, the government (federal, state, and local combined) was a net borrower (running a deficit) of the equivalent of 7.4 percent of GDP, compared to 4.7 percent in 2015.

Within the private sector, households were net lenders of the equivalent of 4.7 percent of GDP in 2019 Q3, while the net financial balance of private businesses–corporate and noncorporate–was 0.3 percent of GDP.

Domestic Private Sector Financial Balance

net lending (+) or borrowing (-), NIPA basis, by sector, as share of GDP



Source: Bureau of Economic Analysis

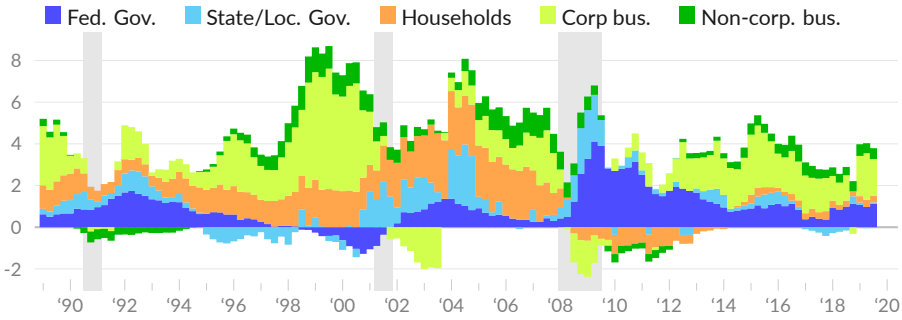
Liabilities

The contribution of different sectors to the **total change in borrowing** can identify potential risks in the domestic economy. For example, the tech bubble of the late 1990s and early 2000s shows up as a large increase in corporate borrowing. The housing bubble from the 1990s to 2007 shows up as an increase in household borrowing. Government borrowing increased following the collapse of the housing bubble, in an effort to compensate for the massive fall in wage income. Keep in mind, however, that the vast majority of liabilities in the domestic economy are to other domestic parties.

Domestic liabilities increased by 3.8 percent over the year ending 2019 Q3, after adjusting for inflation. Over the past three years, total domestic liabilities increased at an average annual rate of 3.0 percent. The federal government contributed 0.8 percentage points per year on average (see ■), while the state and local government subtracted 0.1 percentage points per year on average (see ■). Households and nonprofits contributed 0.3 percentage points per year on average over this three year period (see ■), corporate businesses contributed 1.5 percentage points per year on average (see ■) and non-corporate businesses contributed 0.5 percentage points per year on average (see ■).

Real Debt Growth

contribution to one-year percent change in liabilities, adjusted by PCE price deflator



Source: Federal Reserve, Bureau of Economic Analysis

Real Debt Growth

contribution to one-year real growth

	2019 Q3	'19 Q2	'19 Q1	'18 Q4	'18 Q3	*moving averages* 3-year	10-year	30-year
Total	3.79	3.99	3.98	1.90	2.73	3.10	3.10	3.90
■ Corporate Business	1.75	2.24	1.93	-0.32	1.21	1.50	1.40	1.32
Debt Securities	0.26	0.19	0.11	0.00	0.02	0.20	0.33	0.32
Loans	0.23	0.25	0.64	0.53	0.61	0.32	-0.03	0.08
■ Non-corporate Business	0.52	0.48	0.56	0.49	0.40	0.53	0.24	0.39
Commercial Mortgages	0.09	0.06	0.08	0.06	0.05	0.08	0.05	0.06
■ Household & Nonprofit	0.33	0.34	0.31	0.24	0.29	0.32	-0.13	0.88
Home Mortgages	0.14	0.15	0.16	0.10	0.08	0.12	-0.31	0.60
Consumer Credit	0.17	0.18	0.18	0.14	0.13	0.16	0.14	0.20
■ State & Local Government	0.07	-0.05	0.11	0.35	-0.16	-0.06	0.17	0.41
■ Federal Government	1.12	0.97	1.07	1.13	0.99	0.82	1.43	0.90

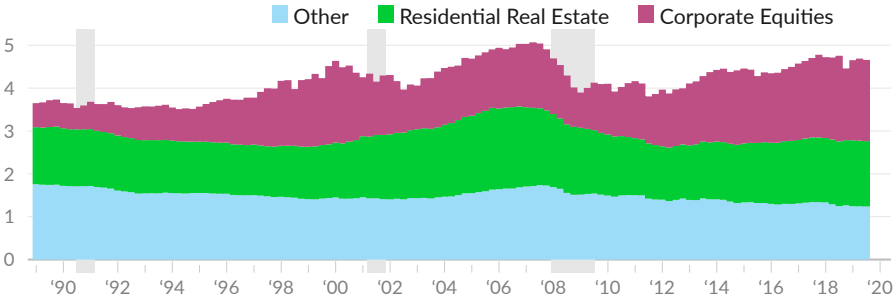
Source: Federal Reserve, Bureau of Economic Analysis

Wealth

Total US wealth is the tangible assets of all non-corporate sectors of the US, plus the market value of domestic corporate equities, less US financial obligations to the rest of the world. The ratio of US total wealth, excluding public lands, to GDP increased to 4.66 in 2019 Q3 from 3.65 in 1989 Q1. The market value of corporate equities (see ■) increased to a 1.89 multiple of GDP in 2019 Q3 from 0.56 in 1989 Q1. The market value of residential real estate (see ■) increased to 1.53 times GDP from 1.33 in 1989. The other category (see ■), which includes tangible assets other than residential real estate less US financial obligations to the rest of the world, decreased to 1.24 from 1.76 in 1989.

Total US Wealth to GDP Ratio

total US wealth divided by GDP



Source: Federal Reserve

Additional text here. Also need more explanation above for other category because it is so large. Could also consider showing obligations to ROW as a category, but that only makes "other" larger, which means even more need for explanation. A table or bar chart that provides more detail could also do the trick.

Within categories of wealth, the ratio of corporate equities to other categories of wealth has increased considerably...

[BAR CHART - WEALTH / GDP BY TYPE]

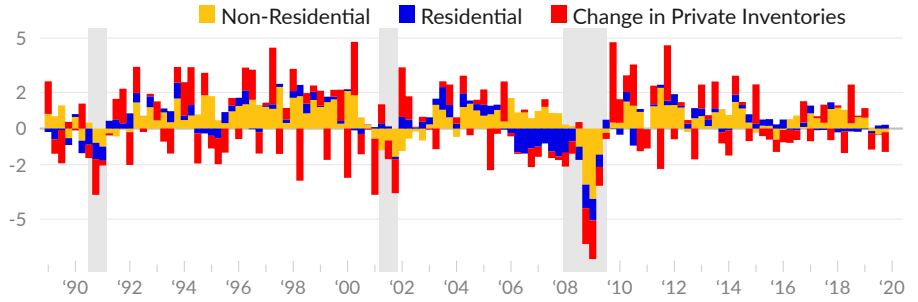
Investment

Private fixed investment, as measured in the national accounts, includes construction and improvement of houses, apartment buildings, and other residential property (see ■), but not automobiles, appliances, or furniture. Non-residential private fixed investment includes the construction and improvement of offices, warehouses, factories, and other commercial and industrial property (see ■), as well as purchases of equipment and intellectual property products. The change in private inventories (see ■) at the end of the accounting period, whether intentional or unintentional, affects GDP growth in the period. Inventory investment is grouped in the national accounts with gross private investment, but is not fixed investment.

In the fourth quarter of 2019, private fixed investment, which does not include inventory investment, totals $3.7 trillion, equivalent to 16.9 percent of GDP. Non-residential (business) fixed investment totals $2.9 trillion, or 13.2 percent of GDP, while residential fixed investment totals $817.1 billion (3.8 percent of GDP). During the quarter, private fixed investment contributed 0.01 percentage points to real GDP growth. Non-residential fixed investment subtracted 0.20 percentage points, while residential fixed investment contributed 0.21 percentage points. The change in private inventories subtracted 1.09 percentage points.

Private Fixed Investment

percentage point contribution to GDP growth



Source: Bureau of Economic Analysis

[TABLE HERE WITH SECTOR INVESTMENT OVERVIEW]

Households

This section covers the household sector of the economy loosely defined, and touches on demographics, personal income and outlays, residential fixed investment, household balance sheets, home ownership, housing prices, and housing construction and permitting.

[Table or chart on population]

Section overview with two charts: One on demographics and the other on income and outlays. So comparing 1989 and latest in population, number of households, median age, basic educational attainment, etc. Then compare the same years in real per capita income, spending, etc.

Demographics and Household Formation

This section should capture 1) population, 2) population growth, 3) aging, 4) increased education.

The **total US population** is 329 million. The Census divides the population into those living in households (about 97 percent of the total) and those living in **group quarters**, such as prisons (1.5 million people), jails (750,000 people, of which 480,000 are pre-trial), nursing homes (1.3 million people), barracks (around 300,000), dormitories (around 2.6 million), group homes (300,000), and shelters (200,000). The numbers for group quarters populations are likely low estimates, as they are derived from older sources than the population estimate. The 2020 Census will provide detailed information on the exact share of each population in each category of living arrangement.

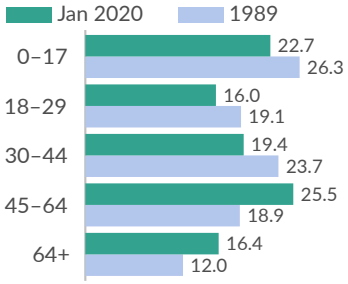
Among those living in **households**, roughly 74 million are children under the age of 18, 198 million are age 18 to 64, and 53 million are age 65 or older. These numbers and the group quarters populations do not sum to the total population because of differences in sources as well as some overlap between the two categories, particularly for those in school dormitories.

Age

In discussions on demographics, **aging** is often described as a serious headwind to economic growth in major advanced economies. The increased share of many countries' population that is of retirement age means a smaller share are working and borrowing and a larger share are receiving pension benefits and lending to the financial system. These trends can be overcome by a workforce that is more efficiently able to provide goods and services. In part due to a shorter life-expectancy in the US, this problem is more pronounced in Japan and western Europe, but is still a important issue for the US.

Age

share of population, percent



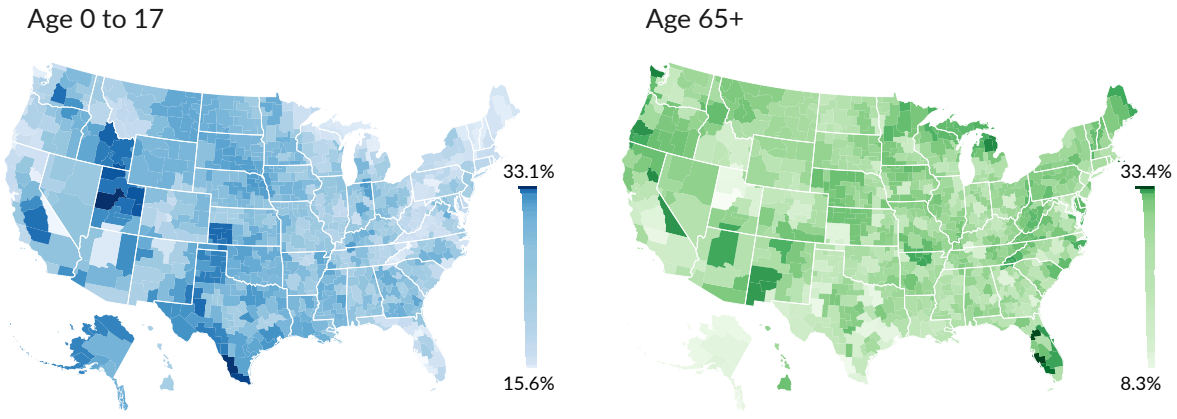
Source: Author's calculations from CPS

The CPS civilian non-institutionalized population is 324 million in the year ending January 2020, with growth of 0.3 percent over the past year, though other Census population growth estimates are around 0.6 percent. By age, 22.7 percent are under the age of 18 and 16.4 percent are age 65 or older. In 1989, the US population was 244 million, with 26.3 percent under 18 and 12.0 percent 65 or older. The pre-retirement age (45–64) share of the population has increased to 25.5 percent in the year ending January 2020 from 18.9 percent in 1989.

Mapping American Community Survey data to commuter zones gives insight on the age of the population in local labor markets. In 2018, among commuter zones with a population of at least 100,000, the commuter zone (listed by largest city) with the highest share of its population under 18 is Provo, UT (33.1 percent), followed by Laredo, TX (32.6 percent), and Brownsville, TX (31.6 percent). The commuter zones with lowest share of the local population under 18 were Sarasota, FL (15.6 percent), Ocala, FL (16.7 percent), and State College, PA (17.1 percent).

The age 65 or older population is disproportionately concentrated in Florida. The commuter zone with the highest share of its population over 64 is Sarasota, FL (33.4 percent), followed by Ocala, FL (32.8 percent), and Cape Coral, FL (29.9 percent). The commuter zones with lowest local over 64 population share were Provo, UT (8.3 percent), Laredo, TX (9.7 percent), and Odessa, TX (10.4 percent).

Age Group Share of Commuter Zone Population, 2018



Source: American Community Survey, Dorn

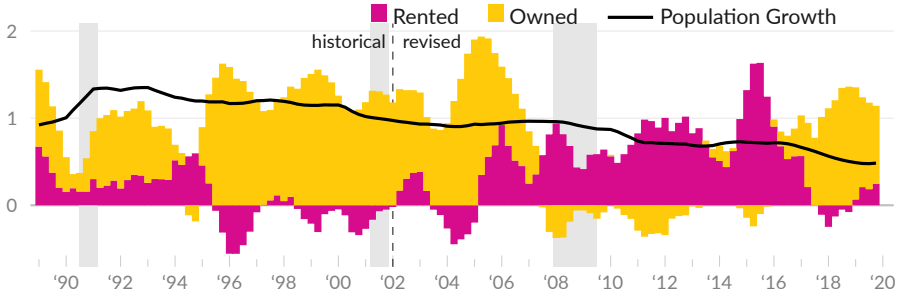
Household Formation

Household formation, measured here as the one-year change in total occupied housing units, can result from a net increase in renters or a net increase in homeowners. Household formation should keep pace with population growth, all else equal. During the housing bubble, the home-ownership rate increased and household formation exceeded population growth. Following the collapse of the housing bubble, housing formation was often below population growth. Additionally, home ownership decreased as foreclosures converted homeowners into renters.

As of 2019 Q4, there are 124.0 million total occupied housing units in the US, of which 43.3 million (34.9 percent) are rented, and 80.7 million (65.1 percent) are owner-occupied. There was an average annual net total increase of 1.4 million housing units over the year ending 2019 Q4, the result of 298 thousand net new renter households and 1.1 million net new owner-occupied households. Over the year ending 2019 Q4, the total number of occupied housing units increased by 1.1 percent, compared to an increase of 1.2 percent in 2019 Q3. Owner-occupied units contributed 0.9 percent to total household formation on average over the year (see ■), compared to a a contribution of 0.2 percent from rented units (see ■).

Household Formation by Type

one-year moving average of annual growth rates, percent



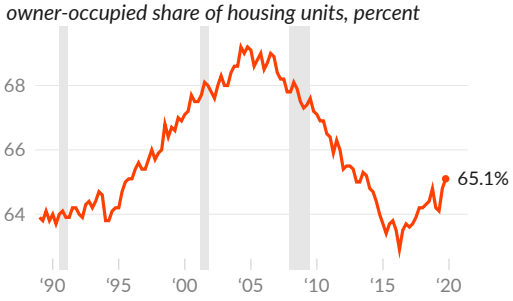
Source: Census Bureau, Housing Vacancies and Homeownership

Homeownership

The **homeownership rate** measures the percent of housing units that are owner-occupied, as opposed to rented. In 2004, near to the peak of the housing bubble, the overall homeownership rate reached 69.2 percent. As of 2019 Q4, the Census Bureau reports a rate of home-ownership of 65.1 percent (see —). Over the past three years, the overall US homeownership rate increased by a total of 1.4 percentage points.

Homeownership Rate

owner-occupied share of housing units, percent

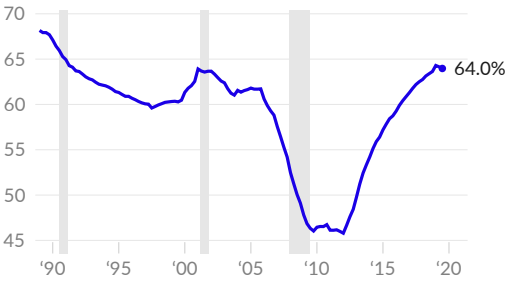


Source: Census Bureau

As seen during the collapse of the housing bubble, it is possible for a "homeowner" to have little or no equity in their home, for example if the market price of the home falls below the principal remaining on the mortgage. Trends in **owner's equity as a share of the market value of real estate** show substantial improvement since the lows following the collapse of the housing bubble.As of 2019 Q3, the Federal Reserve reports an owner equity share of real estate (see —) of 64.0 percent. Over the past three years, the share increased by a total of 3.6 percentage points.

Owner's Equity Share of Real Estate

owner's equity as percent of real estate, percent



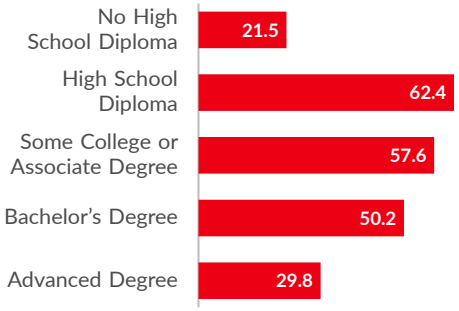
Source: Federal Reserve

Education

Education is central in many discussions of the future of the US economy. Though very expensive in forgone years of earnings and often also expensive in tuition and textbooks costs, education typically results in higher earnings. In response to changing job opportunities from globalization and other policy decisions, household spending on education has increased considerably, resulting in a much **more educated population**.

Over the year ending January 2020, 80.1 million people over the age of 25, or 36.1 percent of the total, have at least a bachelor's degree, with 29.8 million of those, or 13.5 percent of the total, holding an advanced degree such as a master's degree, medical or law degree, or PhD. An additional 57.6 million people have some college coursework but no degree or have an associate degree. A total of 62.4 million have a high school diploma but no college, while 21.5 million have no high school diploma.

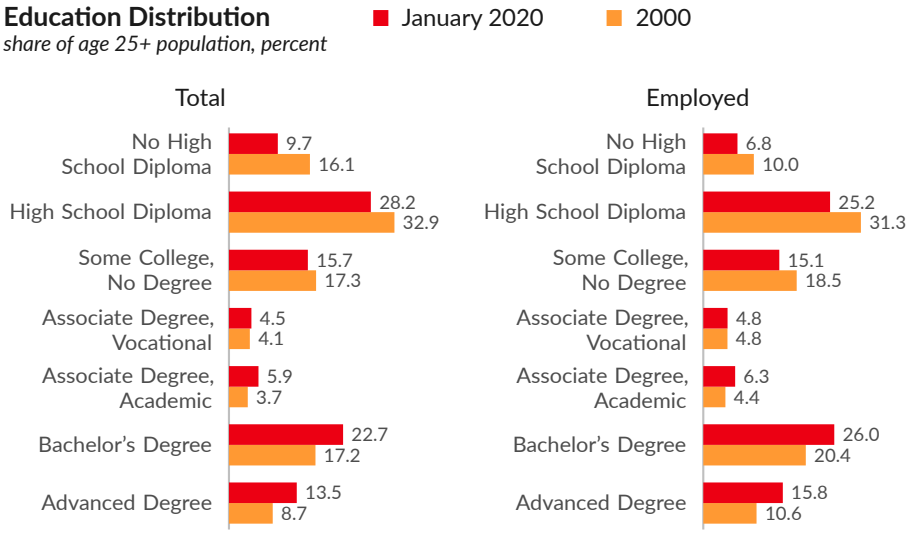
Highest Level of Education
age 25+ population, in millions, January 2020



Source: Author's Calculations from CPS

The share of the population with a bachelor's degree or advanced degree increased by 10.3 percentage points since 2000. The increase is even more pronounced among those who are employed; 41.8 percent have a college degree or advanced degree in January 2020, an increase of 10.9 percentage points since 2000. One argument is that households were compensating for a weak labor market and lack of bargaining power by borrowing large sums of money for education. However, given the extent of the increase in education, and the typical wage premium of education, labor income should have increased much more than it actually did.

Education Distribution
share of age 25+ population, percent



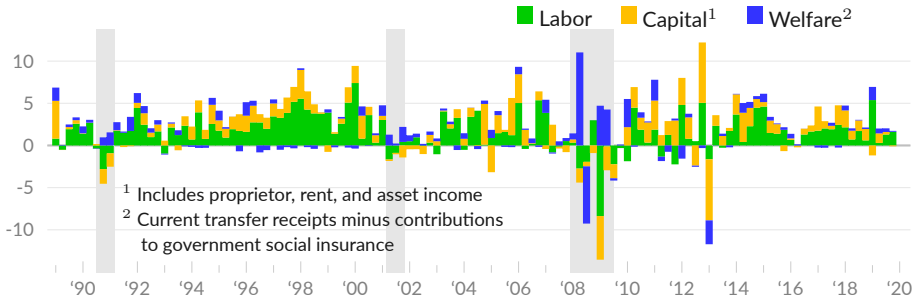
Source: Author's Calculations from CPS

Income to Persons

This section looks at **income received by people**, by type of income, adjusted for inflation using the PCE implicit price deflator. Income is divided into labor income (see ■), which is measured as compensation of employees, capital income (see ■), measured as the sum of proprietor income, rental income, and dividend and interest income, and welfare income (see ■), which is measured as transfers to persons less contributions to social insurance.

Personal Income

percentage point contribution to real personal income growth



Source: Bureau of Economic Analysis

Aggregate real personal income increased at an annualized rate of 1.64 percent in 2019 Q4. Labor income contributed 1.62 percentage points to overall growth, capital income subtracted 0.10 percentage points, and welfare income contributed 0.11 percentage points.

Personal Income by Source

percentage point contribution to real personal income growth

	2019 Q4	'19 Q3	'19 Q2	'19 Q1	'18 Q4	*moving averages* 3-year	10-year	30-year
Personal income	1.64	2.03	2.01	5.75	2.13	3.07	2.95	2.76
■ Labor	1.62	1.30	0.30	5.38	0.60	1.81	1.54	1.58
Wages and salaries	1.35	0.99	0.17	4.80	0.41	1.52	1.30	1.27
Supplements	0.27	0.30	0.13	0.58	0.19	0.29	0.23	0.31
■ Capital	-0.10	0.30	1.13	-1.18	1.35	1.00	1.19	0.79
Proprietors' income	-0.05	0.96	0.05	-0.11	0.65	0.31	0.38	0.29
Rental income	0.12	-0.01	0.12	0.05	-0.08	0.11	0.25	0.20
Personal interest income	-0.17	-0.87	0.90	-0.67	0.05	0.31	0.11	0.04
Personal dividend income	0.01	0.22	0.06	-0.46	0.72	0.27	0.45	0.26
■ Welfare	0.11	0.43	0.58	1.56	0.18	0.26	0.23	0.39
Social security	0.13	0.07	0.03	0.83	0.13	0.17	0.16	0.16
Medicare	0.23	0.29	0.31	0.44	0.35	0.21	0.14	0.16
Medicaid	-0.09	0.22	0.38	0.27	-0.16	0.07	0.12	0.14
Unemployment insurance	0.00	-0.00	-0.03	0.02	-0.01	-0.01	-0.09	0.00
Veterans' benefits	0.04	0.03	0.03	0.10	0.03	0.04	0.04	0.02
Less welfare contributions	-0.17	-0.12	-0.01	-0.85	-0.04	-0.22	-0.18	-0.19

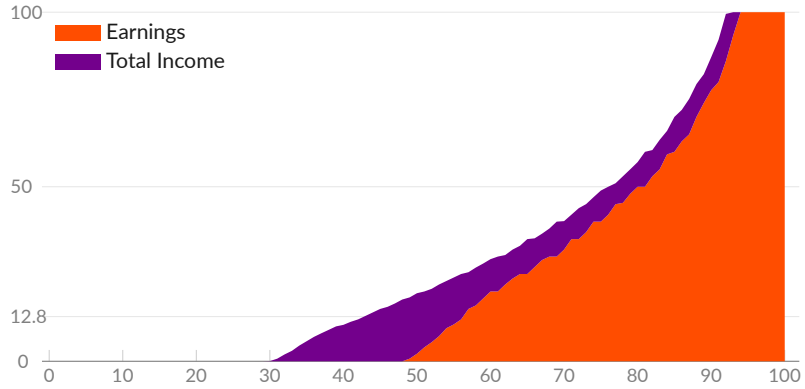
Source: Bureau of Economic Analysis

Earnings, which include wages and salaries as well as self-employment income, comprise the majority of personal income. Yet only 52 percent of people have any earnings in 2018 (see ■). Only 43 percent of people have earnings above the single-person poverty threshold.

Total income, including taxes, welfare, and capital income, reaches 71 percent of people (see ■). The remainder live with people with income or receive private transfers. Values of high-earners are not show because of space constraints. The top one percent income threshold is around $420,000, which would overflow the page at the current scale.

Distribution of Personal Income, 2018

thousands of US Dollars, by percentile

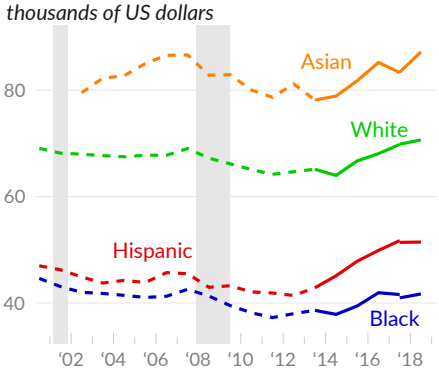


Source: CPS ASEC

Household Income

Real Median Household Income

thousands of US dollars



Source: Economic Policy Institute, Census

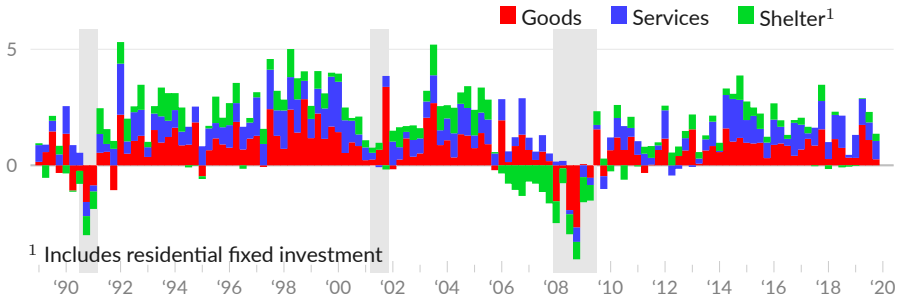
Black median household income in 2018 was $41,692, compared to an inflation adjusted equivalent of $40,963 in 2017. White, non-Hispanic median household income was $70,462 compared to $69,851 in 2017. Hispanic median household income in 2018 was $51,450 compared to $51,390 in 2017. Asian median household income was $87,194 in 2018 and $83,376 in 2017. Data for 2000–2013, shown with dashed lines, are calculated by EPI, to be more-comparable over time despite changes to the survey design in 2013 and to the processing of survey data in 2017.

Household Expenditures

This section covers household spending on goods (see ■), services excluding housing and utilities (see ■), and shelter (see ■ , calculated as housing services and utilities combined with residential fixed investment). These categories contributed 1.14 percentage points to GDP growth in 2019 Q4 compared to an average contribution of 1.83 percentage points over the past three years.

Consumer Spending and Residential Investment

percentage point contribution to GDP growth



Source: Bureau of Economic Analysis

In the fourth quarter of 2019, household spending on goods contributed 0.26 percentage points to GDP growth, household spending on services other than housing and utilities contributed 0.78 percentage points, and shelter spending and investment contributed 0.31 percentage points. Spending on health care services contributed 0.33 percentage points to GDP growth in 2019 Q4 and has contributed 0.33 percentage points, on average, over the past three years.

Consumer Spending and Residential Investment

percentage point contribution to real GDP growth

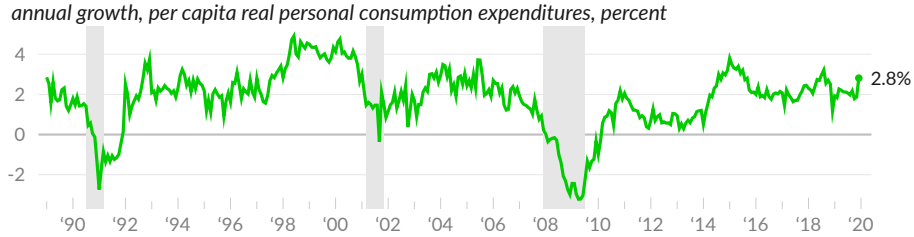
	2019 Q4	'19 Q3	'19 Q2	'19 Q1	'18 Q4	*moving averages* 3-year	10-year	30-year
Total	1.14	2.14	3.00	1.32	0.56	1.83	1.59	1.72
■ Goods	0.26	1.09	1.74	0.32	0.33	0.81	0.73	0.75
Motor Vehicles and Parts	0.02	0.06	0.37	-0.27	0.07	0.08	0.09	0.07
Furniture and HH Equipment	0.05	0.10	0.14	0.03	-0.09	0.09	0.10	0.08
Recreational Durable Goods	0.06	0.31	0.32	0.23	0.04	0.18	0.17	0.21
Groceries	-0.05	0.26	0.25	-0.08	0.07	0.13	0.09	0.08
Clothes and Shoes	0.11	-0.04	0.25	-0.07	0.00	0.05	0.05	0.07
■ Services (ex. Shelter)	0.78	0.76	1.12	0.99	0.12	0.90	0.70	0.74
Health Care Services	0.33	0.07	0.38	0.72	-0.22	0.33	0.29	0.27
Transportation	0.05	0.10	0.17	0.01	-0.02	0.06	0.07	0.06
Recreational	0.08	0.00	0.17	-0.03	0.09	0.05	0.06	0.07
Food and Accommodations	0.06	0.16	0.22	-0.06	-0.12	0.13	0.12	0.09
Financial and Insurance	0.10	0.12	0.05	0.15	0.10	0.09	0.04	0.13
■ Shelter	0.31	0.45	0.03	-0.03	-0.06	0.15	0.27	0.26
Housing Services and Utilities	0.10	0.28	0.14	0.01	0.12	0.12	0.15	0.23
Residential Fixed Investment	0.21	0.17	-0.11	-0.04	-0.18	0.03	0.12	0.03

Source: Bureau of Economic Analysis

Consumer spending is also reported on a monthly basis. Inflation- and population-adjusted consumer spending increased by 2.8 percent over the year ending December 2019 (see —), compared to an equivalent increase of 1.2 percent for the year ending December 2018.

Consumer Spending Growth

annual growth, per capita real personal consumption expenditures, percent



Source: Bureau of Economic Analysis

[Top quintile consumer spending share of gross pre-tax income and bottom 80 percent share]

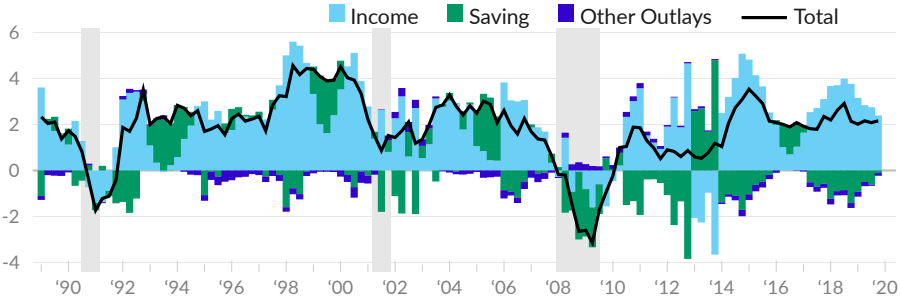
Income and Expenses by Age and Number of Children

Changes to consumer spending (see —) are largely the result of changes to income (see ■) and changes to the rate at which income is saved (see ■). Changes to other outlays (see ■) reflect changes in interest payments, fines and fees, and charitable giving.

Real per capita consumer spending increased at an average rate of 2.2 percent over the four quarters ending 2019 Q4. Changes to disposable income added 2.4 percentage points, changes to saving subtracted 0.1 percentage points, and changes to other outlays subtracted 0.1 percentage points. Over the past three years, real per capita consumer spending growth has averaged 2.2 percent, with income growth contribuing an average of 3.1 percentage points and saving subtracting an average of 0.7 percentage points.

Contributions to Consumer Spending

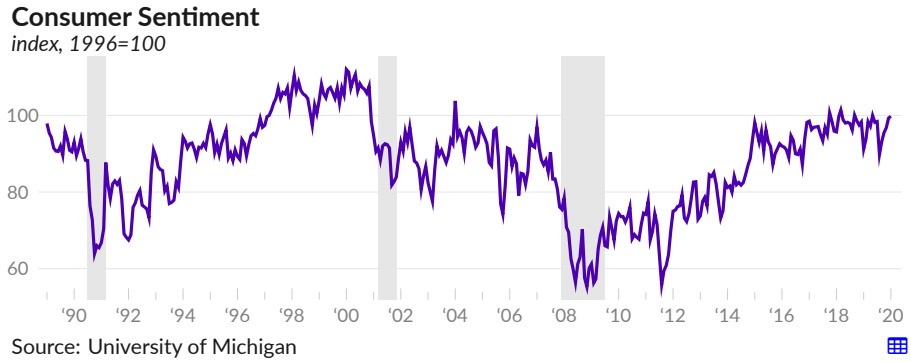
percentage point contribution to real per capita PCE growth, one-year moving average



Source: Bureau of Economic Analysis

Consumer Sentiment

The University of Michigan conducts a regular monthly survey used to gauge individuals' **consumer sentiment**. The measure is based on questions related to personal finances, business conditions, and buying conditions. An increase in consumer sentiment means individuals feel more confident about economic conditions and are more willing to make large purchases or take on debt. As of January 2020, the latest value of the consumer sentiment index is 99.8, compared to 99.3 in December 2019 and 91.2 in January 2019.



Source: University of Michigan

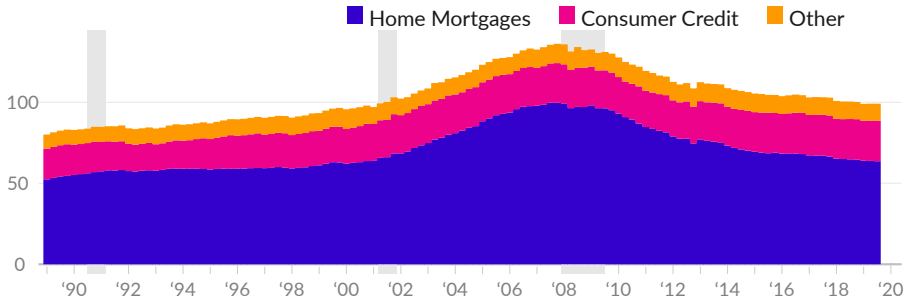
Household Balance Sheets

Liabilities

The Federal Reserve reports total liabilities of households and nonprofits of $16.39 trillion in 2019 Q3. The vast majority–$10.52 trillion or 64.2 percent of the total–are home mortgages (see ■). Consumer credit liabilities (see ■) which include auto loans, credit card debt, student loans, and other personal loans, total $4.13 trillion (25.2% of the total). The remaining liabilities (see ■) are primarily attributable to nonprofits.

The ratio of household and nonprofit debt to disposable personal income has fallen to 99.1 percent in 2019 Q3 from its housing-bubble peak of 136.1 percent in 2007 Q4. Over the past three years, nominal household and nonprofit debt has increased 10.2 percent while nominal disposable personal income has increased 16.1 percent. As a result, the ratio of household and nonprofit debt to disposable personal income has fallen by 5.6 percentage points.

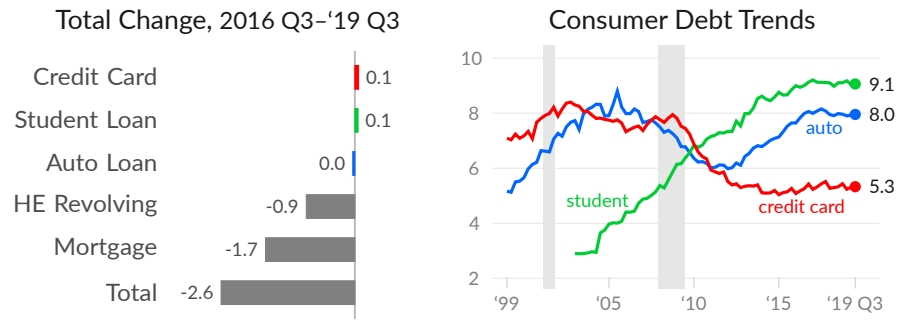
Household and Nonprofit Debt
by type, as share of disposable personal income



Source: Federal Reserve and Bureau of Economic Analysis

Federal Reserve Bank of New York (FRBNY) analysis of Equifax data shows $13.952 trillion in total consumer debt in 2019 Q3, which is equivalent to 84.4 percent of disposable personal income. Over the past three years, total consumer debt has increased by $1.60 trillion compared to an increase of $2.31 trillion in disposable personal income. As a result, the ratio of total consumer debt to disposable personal income has fallen by 2.6 percentage points over this period.

Mortgages and Consumer Credit
share of disposable personal income, percent



Source: Federal Reserve Bank of New York and Bureau of Economic Analysis

Trends in **household debt** over the past three years, measured in both the US Financial Accounts and the New York Fed Consumer Credit Panel, show consumer credit growing in line with income while mortgage debt falls relative to income. The two series below, Mortgage Debt Total and Consumer Credit, are comparable between both data sources. Discrepancies arise because the Financial Accounts include debt of nonprofit institutions and the Consumer Credit Panel does not include persons without a social security number.

According to the same FRBNY data, mortgage debt, including home equity lines of credit, totalled $9,833 billion in 2019 Q3, equivalent to 59.5 percent of disposable personal income (DPI). Student loans totalled $1,498 billion, or 9.1 percent of DPI; auto loans totalled $1,315 billion (8.0 percent of DPI); and credit card debt totalled $881 billion (5.3 percent of DPI).

Over the past three years, the ratio of total mortgage debt to disposable personal income fell by 2.6 percentage points, compared to an increase of 0.1 percentage points for student loans, virtually no change for auto loans, and an increase of 0.1 percentage points for credit card debt

Household Debt Outstanding

trillions of US Dollars — *share of disposable personal income*

	2019 Q3	2019 Q2	'19 Q3	'19 Q2	'16 Q3	'13 Q1	'03 Q1
Financial Accounts Total*	$16.39T	$16.21T	99.1	99.1	104.7	112.4	108.5
Mortgage Debt Total	$10.52T	$10.43T	63.6	63.8	68.4	77.1	74.8
Consumer Credit	$4.13T	$4.05T	25.0	24.8	25.2	23.6	24.0
Other	$1.74T	$1.73T	10.5	10.6	11.2	11.7	9.7
Consumer Credit Panel Total	$13.95T	$13.86T	84.4	84.7	86.9	90.9	87.2
Mortgage Debt Total	$9.83T	$9.80T	59.5	59.9	62.1	68.7	62.5
Mortgage	$9.44T	$9.41T	57.1	57.5	58.8	64.2	59.6
Home Equity Revolving	$0.40T	$0.40T	2.4	2.4	3.3	4.5	2.9
Consumer Credit	$4.12T	$4.06T	24.9	24.8	24.8	22.2	24.7
Auto Loan	$1.31T	$1.30T	8.0	7.9	8.0	6.4	7.7
Credit Card	$0.88T	$0.87T	5.3	5.3	5.3	5.3	8.3
Student Loan	$1.50T	$1.48T	9.1	9.0	9.0	8.0	2.9
Other	$0.42T	$0.41T	2.6	2.5	2.6	2.5	5.8

Source: Federal Reserve, Federal Reserve Bank of New York, Bureau of Economic Analysis

Assets

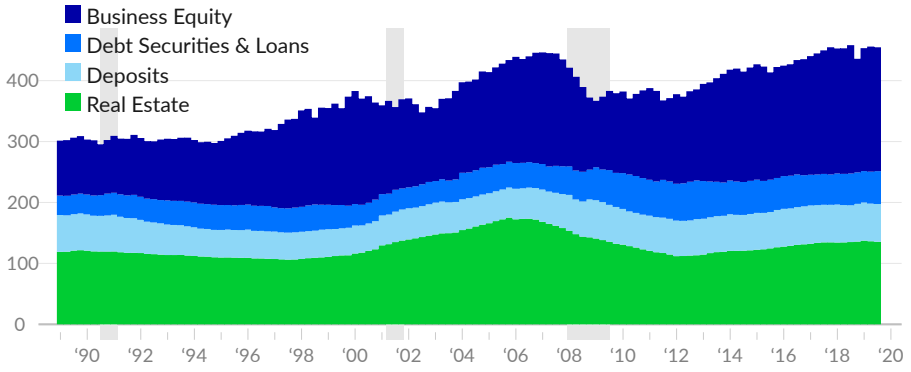
Assets of households and nonprofits were valued at $130.2 trillion in 2019 Q3, equivalent to 604 percent–or 6.04 years–of GDP. Of this, $39.2 trillion, or 30.1 percent of the total, are tangible assets and $91.0 trillion, or 69.9 percent, are financial assets.

Tangible, or non-financial, assets include peoples' homes as well as consumer durable goods, such as cars, furniture, and appliances. The market value of owner-occupied real estate is $29.2 trillion in 2019 Q3, equivalent to 1.35 years of GDP (see ■). Consumer durable goods have a replacement value of $5.7 trillion, or 0.27 years of GDP. Tangible assets are reported for the combined household and nonprofit sector and include real estate and equipment belonging to nonprofits, which totals $4.3 trillion in 2019 Q3.

Financial assets include equity in businesses–corporate and non-coporate–with a market value of $43.8 trillion, or 2.03 years of GDP (see ■), in 2019 Q3. Debt securities and loan assets total $11.6 trillion, or 0.54 years of GDP (see ■). Cash and deposits, including money market accounts, total $13.4 trillion, or 0.62 years of GDP (see ■). All other financial assets total $22.2 trillion.

Selected Household and Nonprofit Assets

share of GDP

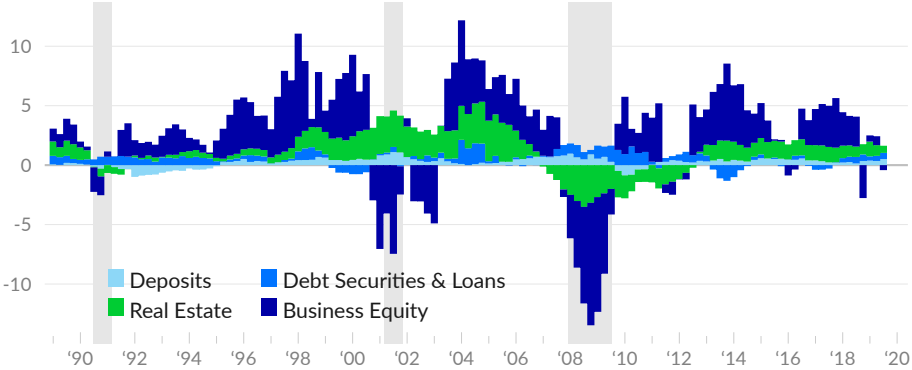


Source: Federal Reserve, Bureau of Economic Analysis

Household and nonprofit assets grew by 1.9 percent over the year ending 2019 Q3. Owner-occupied real estate contributed 0.6 percentage points to total growth, and business equity subtracted 0.4 percentage points.

Contributions to Real Growth in Household and Nonprofit Assets

contribution to one-year percent change in assets, adjusted by PCE price deflator



Source: Federal Reserve, Bureau of Economic Analysis

Household and Nonprofit Assets

various measures: *trillions of USD* *share of GDP* *real growth rate*

	2019 Q3	2019 Q3	2018 Q3	One-year	Three-year	20-year
Total Assets	$130.2	604.5	607.3	1.9	3.8	3.3
Non-financial assets	39.2	182.2	180.4	3.4	3.9	3.0
Owner-occupied real estate	29.2	135.5	135.1	2.7	4.1	3.1
Consumer durable goods	5.7	26.5	26.3	3.2	1.9	1.5
Nonprofit assets	4.3	20.1	18.9	8.8	5.2	4.3
Financial assets	91.0	422.3	426.9	1.3	3.7	3.5
Deposits, incl. money market	13.4	62.0	60.4	5.1	2.9	3.9
Debt securities and loans	11.6	54.0	52.1	6.0	3.0	4.0
Business equity	43.8	203.3	210.6	-1.2	5.6	3.5
Corporate equities	30.3	140.5	150.0	-4.1	6.0	3.4
Noncorporate business equity	13.5	62.8	60.7	5.9	4.6	3.8

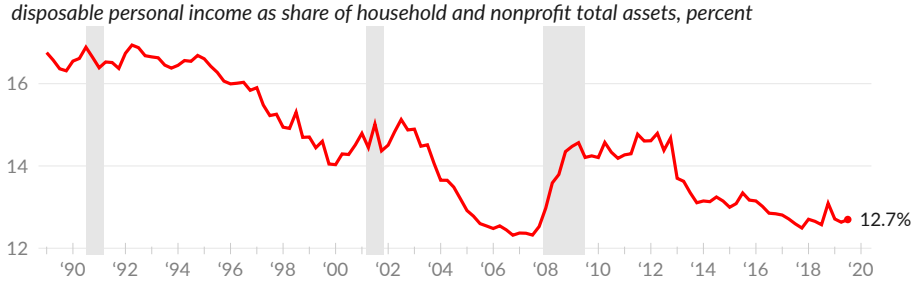
Source: Bureau of Economic Analysis

Return on Assets

The increase in assets as a share of GDP also means that the return on total household assets has fallen, as measured by disposable income as a share of household assets. As of 2019 Q3, disposable income was equivalent to 12.7 percent of total assets (see —), compared to an average rate of 16.0 percent during the 1990s.

Return on Household Assets

disposable personal income as share of household and nonprofit total assets, percent



Source: Federal Reserve, Bureau of Economic Analysis

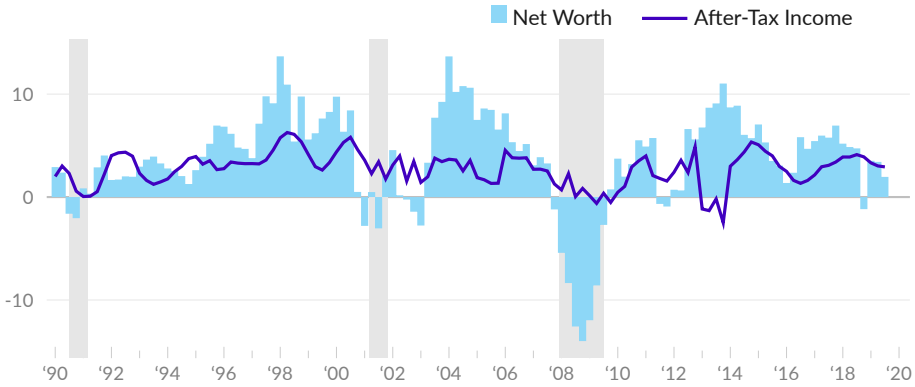
Net Worth

The market value of assets of households has risen much faster than their total liabilities, causing a **substantial increase in net worth**. Net worth is an aggregate measure of the financial position of households, measured as total assets minus total liabilities. In 2019 Q3, household and nonprofit institution net worth was $113.8 trillion, equivalent to 6.9 years of disposable personal income; the result of total assets of $130.2 trillion and total liabilities of $16.4 trillion.

In 2019 Q3, inflation-adjusted net worth increased by 2.0 percent (see), while inflation adjusted after-tax income increased by 2.9 percent (see —). Over the past three years, real net worth grew at an average rate of 4.4 percent, while real after-tax income grew at an average rate of 3.0 percent

Net Worth and After-Tax Income Growth

one-year percent change in net worth and after-tax income, adjusted by PCE price deflator



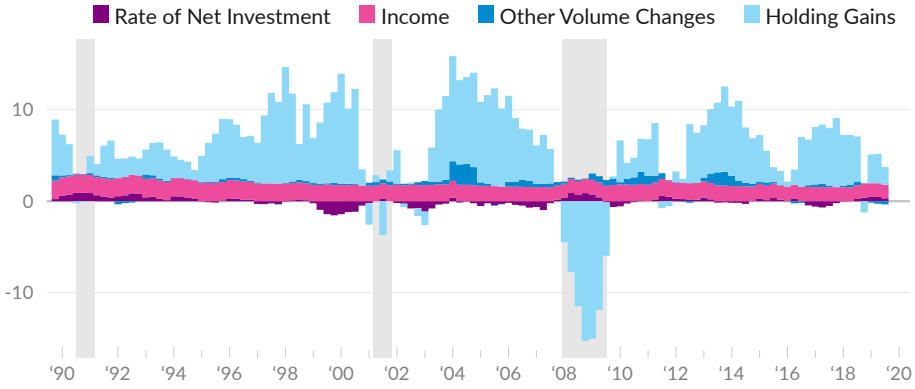
Source: Federal Reserve, Bureau of Economic Analysis

Net worth changes come from the revaluation of assets and from net investment of income. Changes to the value of assets, for example capital gains from an increase in the market value of corporate equities, explain most of the changes in net worth (see ■). Each period households also receive income and decide investment, saving, and borrowing. Net investment equals capital expenditures less depreciation plus net lending/borrowing; positive net investment results in an increase in net worth. Since 1989, household net investment has averaged 10 percent of disposable personal income. Income that goes to net investment at this historical-average rate (see ■) can be separated from periods where the rate of net investment is above or below this historical average (see ■). This distinction can identify how changes in disposable personal income, and changes in decisions about how to use that income, combine to affect net worth. Changes in data sources or from natural disasters are also identified as other volume changes (see ■).

Data are used in the following chart are not adjusted for changes in prices because it's not clear how to attribute changes in prices to holding gains, which *are* changes in prices.

Net Worth Growth

contribution to one-year percent change in net worth, nominal

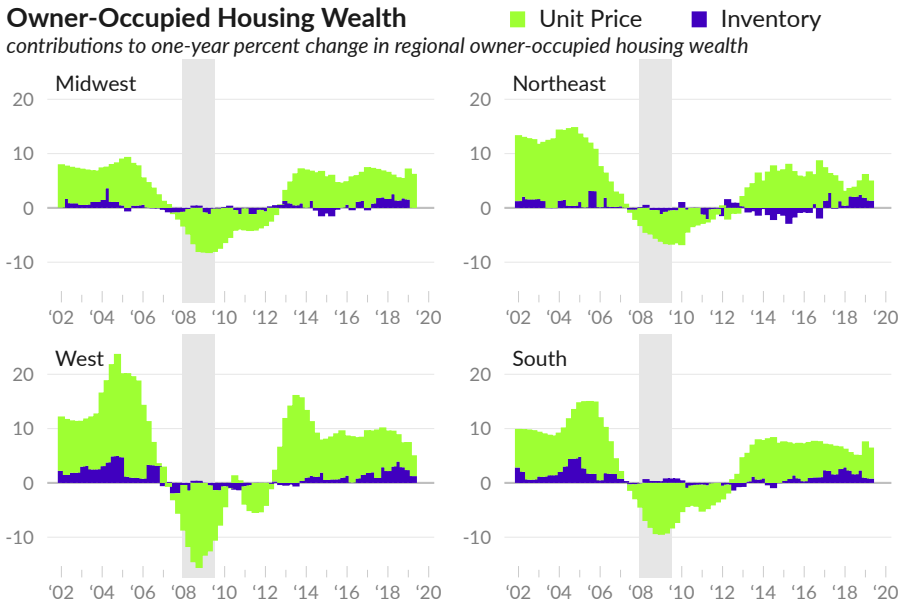


Source: Federal Reserve, Bureau of Economic Analysis

In the third quarter of 2019, holding gains contributed 1.9 percentage points to overall nominal net worth growth. Income net invested at the 1989-onward average 10.0 percent rate contributed 1.5 percentage points; and an additional 0.3 percentage points were added as household net investment was 12.2 percent of disposable person income in 2019 Q3. Other volume changes subtracted 0.3 percentage points. Over the past three years, holding gains have contributed 4.6 percentage points on average; net investment (combined) has contributed 1.8 percentage points; and other volume changes did not contribute significantly.

Housing

Some data here on the US total and regional change in the value of residential homes during and since the housing bubble.



Source: Federal Reserve and Census Bureau

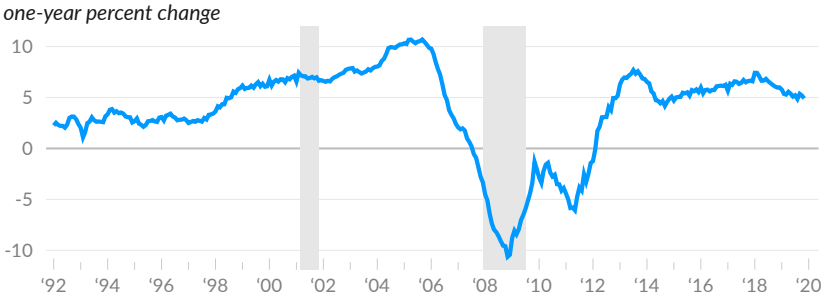
The Census Bureau tracks the issuance of new residential building permits, which offer insight into **planned residential construction**. In December 2019, 1,420,000 new residential building permits were issued. Permits issued decreased by 54,000 (-3.7 percent over the previous month, increased by 81,000 (6.0 percent) over last December, and increased by 346,000 (32.2 percent) total over the past five years.

Source: Census Bureau

Geographic location of housing permits

The Federal Housing Finance Agency (FHFA) **housing price** index data look useful primarily because they offer geographic specificity. Look into ways to use these. Ideally, I want to know about the ratio of housing prices to rental equivalent. For now, the chart below is more or less a placeholder, though I may keep it or some variation.

House Price Index
one-year percent change



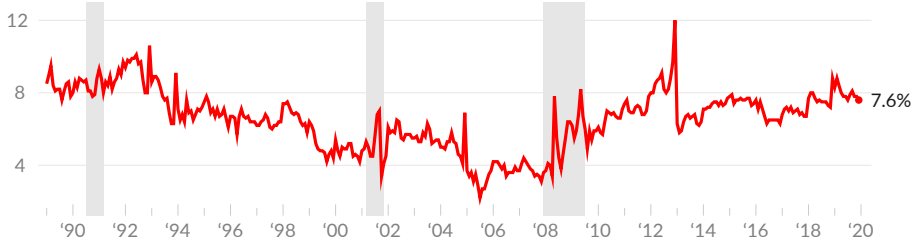
Source: Federal Housing Finance Agency

Saving

The portion of after-tax income that is not spent by households is considered **personal saving**, from an economic accounting perspective. Personal saving as a share of disposable personal income is referred to as the *personal saving rate*. Households use savings to handle unexpected expenses or cover expenses when income falls. However, economists also point out that aggregate personal saving is a direct reduction in corporate profits, as it represents income to persons that was at some point a business expense, but that does not get returned to businesses as revenue through consumer spending.

As of December 2019, the Bureau of Economic Analysis reports a rate of personal saving of 7.6 percent. Over the past three years, the personal saving rate increased by a total of 1.3 percentage points.

Personal Saving Rate
personal saving as a share of disposable personal income

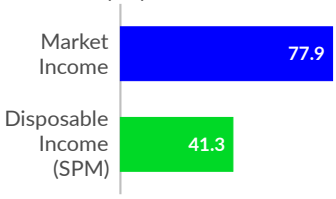


Source: Bureau of Economic Analysis

Poverty

In 2018, income from labor and capital ownership, called *market income*, was below the Census Bureau threshold for poverty for 77.9 million people in the US. After-tax income, or disposable income, includes income from various government programs and tax credits, such as social security and the child tax credit, and subtracts taxes paid. By disposable income, **41.3 million people are in poverty**. In other words, government programs and tax credits moved the income of 36.6 million people above the poverty threshold.

In Poverty, 2018
millions of people

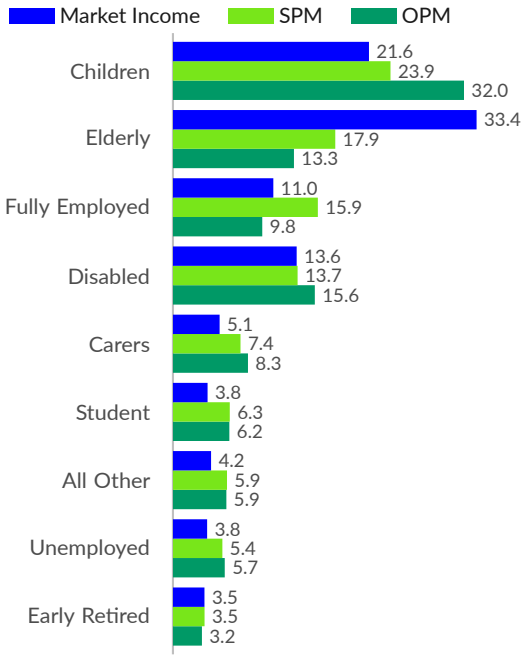


Source: CPS ASEC

The Census Bureau reports 41.2 million people in poverty in the US in 2018, equivalent to more than the total population of Canada. For purposes of program eligibility and economic data, poverty is defined by having income below a certain threshold. The processes for calculating poverty vary, with the official measure being based on three times a price-adjusted 1963 minimal food budget, and the supplemental measure based on food, shelter, clothing, and utilities costs and additionally capturing program benefits and taxes, along with other adjustments.

While some fully-employed people are in poverty, **the vast majority of poor people are children, elderly, disabled, caregivers, and students**. That is, there is often a good reason why poor people are not working. Put another way, if the missing labor income required to keep a person out of poverty is not supplied in the form of capital income or welfare income, the person will be poor.

In Poverty Population by Category
share of total, 2018

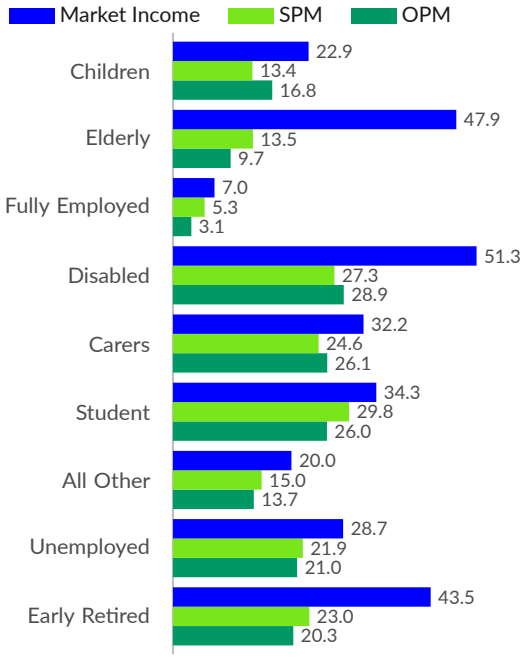


Source: CPS ASEC

The share of a group whose combined labor, capital, and welfare income is below the poverty line is the poverty rate for the group. In 2018, students, caregivers, and the disabled had the highest rates of poverty. Those fully-employed have a very low rate of poverty. The elderly also have a much lower poverty rate as the result of Social Security.

Poverty Rate by Category

share of group below poverty line, 2018

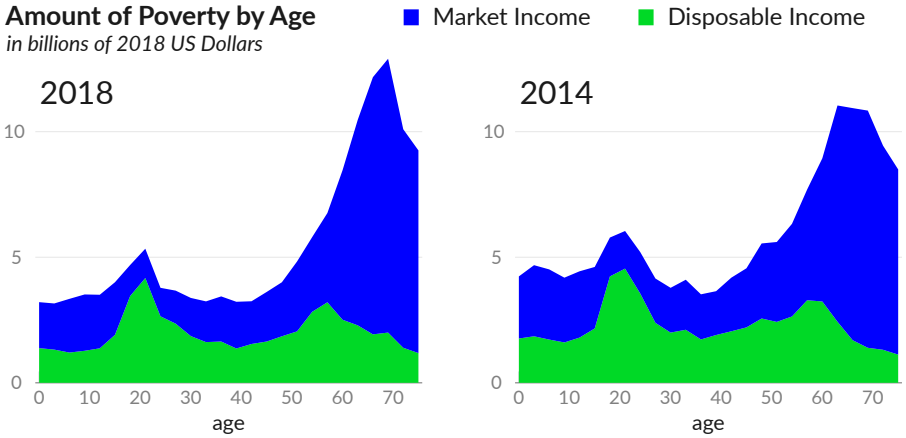


Source: CPS ASEC

By age, market income (see ■) leaves the elderly particularly vulnerable to poverty, as they are not as likely to have labor income. After social benefits and taxes (disposable income [see ■]), the elderly have much lower rates of poverty than other age cohorts. Higher survivorship for the wealthy also has the effect of reducing poverty in very old ages. Disposable income still leaves young adults and those just below social security and medicare age (late 50s and early 60s) vulnerable to poverty, relative to other ages.

Amount of Poverty by Age

in billions of 2018 US Dollars

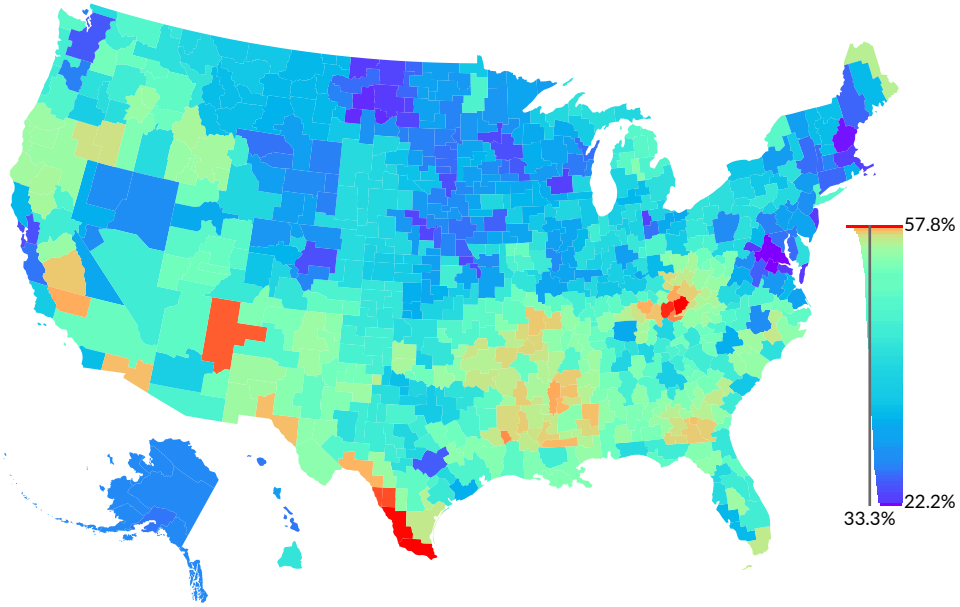


Source: CPS ASEC, 2014 adjusted for inflation with CPI-U-RS

More text here. Geographic specificity and reasoning for making the calculations related to houses.

Share of local population in bottom third of housing-adjusted income, 2018

Share of commuting zone householders with after-housing-expense annual income below $13,573



Source: American Community Survey

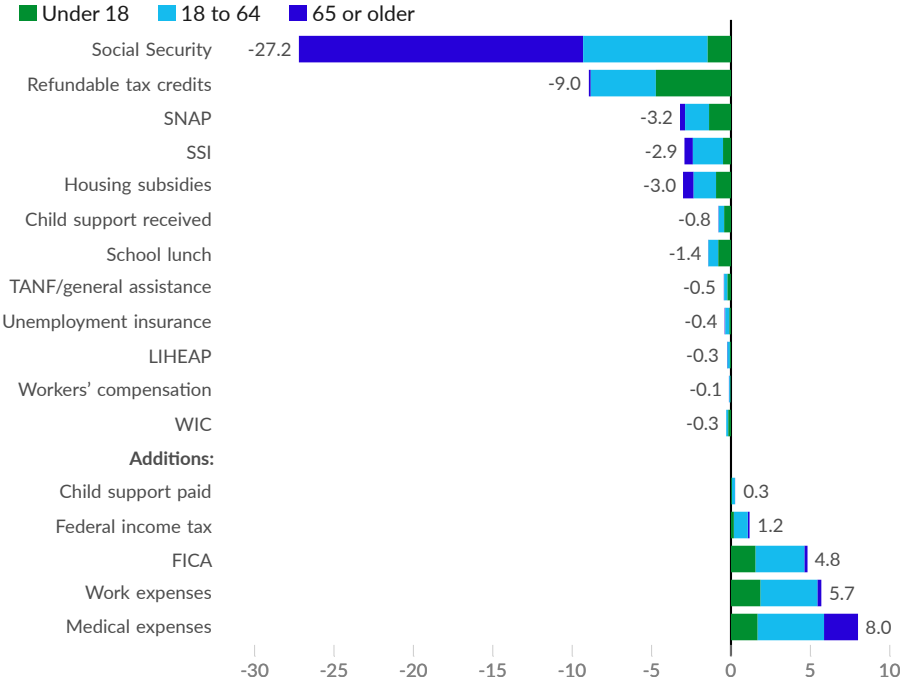
[TABLE HERE]

The Census Bureau reports the number of people taken out of poverty by various government programs, along with how many people are put in poverty by various expenses. In 2018, Social Security lifted income above the poverty line for 27.2 million people, by far the most effective program for reducing poverty. Refundable tax credits, such as the earned income tax credit and child tax credit, lifted nine million people out of poverty. These tax credits are phased-in (not fully-refundable), meaning they do not reach the poorest of poor people. As a result, phased-in tax credits have more impact on the poverty headcount than on poverty, relative to programs designed to help the poorest of the poor.

In terms of elements that add to the number of people in poverty, medical expenses are the most significant, and cause the disposable income of eight million people to fall below the poverty line. Work expenses additionally put 5.7 million people in poverty.

Effect of Individual Elements on Poverty Headcount

individual element effect on number of people in poverty, millions, 2018



Source: Census Bureau Supplemental Poverty Measure

Businesses

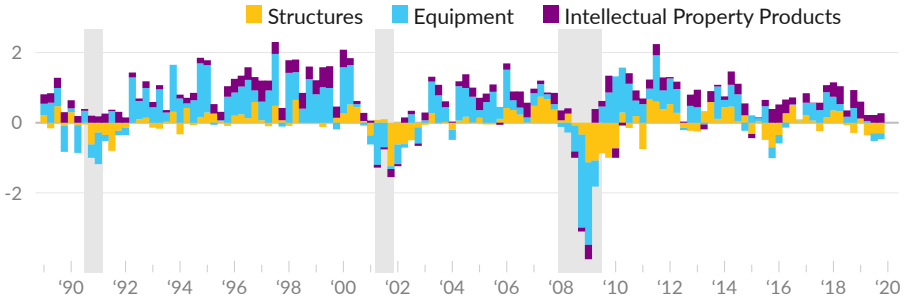
The factories, offices, and equipment that workers use to produce goods and services are all important to the economy. This section looks at the loosely defined business sector, with data covering business investment, retail sales, industrial production, corporate profits, and the financial activities of businesses.

Fixed Investment

When businesses purchase items with a useful life of more than one year it is considered an investment in fixed assets, which is an exchange of assets rather than an expense. **Investments in fixed assets make workers more productive**, as they allow businesses to produce goods and services per hour of work. Business investments in fixed assets are grouped broadly as structures (see), equipment (see), and intellectual property products (see).

Business Fixed Investment

percentage point contribution to GDP growth



Source: Bureau of Economic Analysis

Business investment subtracted 0.20 percentage points from GDP growth in the fourth quarter of 2019 compared to an average contribution of 0.46 percentage points over the past three years. In 2019 Q4, investment in structures subtracted 0.30 percentage points from GDP growth, investment in equipment subtracted 0.17 percentage points, and investment in intellectual property products contributed 0.27 percentage points.

Business Investment

percentage point contribution to real GDP growth

	2019 Q4	'19 Q3	'19 Q2	'19 Q1	'18 Q4	*moving averages* 3-year	10-year	30-year
Total	-0.20	-0.31	-0.14	0.60	0.64	0.46	0.61	0.52
Structures	-0.30	-0.30	-0.36	0.12	-0.29	-0.02	0.01	-0.00
Equipment	-0.17	-0.22	0.05	0.00	0.42	0.22	0.37	0.31
Information processing	-0.04	-0.13	0.13	0.17	-0.04	0.12	0.14	0.21
Computers and peripherals	0.14	-0.19	0.17	0.05	-0.04	0.04	0.03	0.11
Industrial equipment	-0.16	0.08	0.02	-0.04	0.08	0.04	0.05	0.02
Transportation equipment	0.12	-0.17	-0.14	-0.06	0.29	0.01	0.13	0.05
Intellectual property products	0.27	0.22	0.17	0.48	0.51	0.26	0.23	0.21
Software	0.22	0.18	0.11	0.26	0.19	0.17	0.14	0.12
Research and development	0.04	0.01	0.06	0.21	0.29	0.08	0.08	0.07

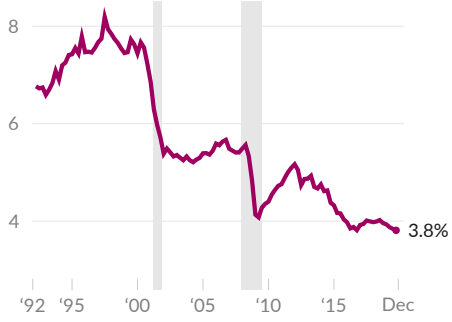
Source: Bureau of Economic Analysis

Productive business investments also show up as **new orders for core capital goods**. The category excludes the more-volatile aircraft orders as well as defense-related orders, and is derived from a Census Bureau survey of shipments, inventories, and orders.

New orders for manufactured core capital goods excluding aircraft totalled $69 billion in December 2019, equivalent to 3.8 percent of GDP (see —). New orders increased by 1.0 percent over the past year.

New Orders for Core Capital Goods

nondefense capital goods ex-aircraft, share of GDP

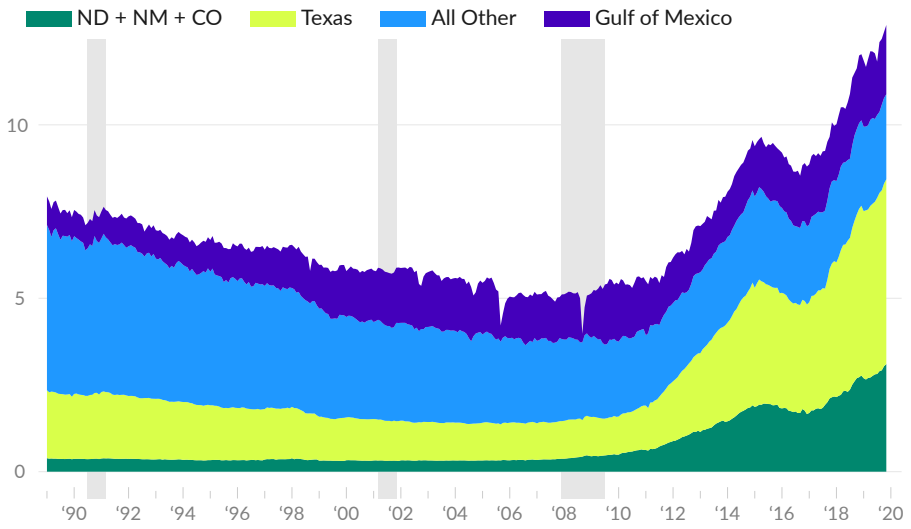


Source: Census Bureau

The Energy Information Administration reports that US has seen a massive increase in **crude oil production** over the past six years. The infrastructure for much of this production was put in place when oil prices were higher, and the profitability of the sector depends on oil maintaining a certain price. A large portion of the increase in oil production comes from New Mexico, South Dakota, and Colorado.

Crude Oil Production

millions of barrels per day



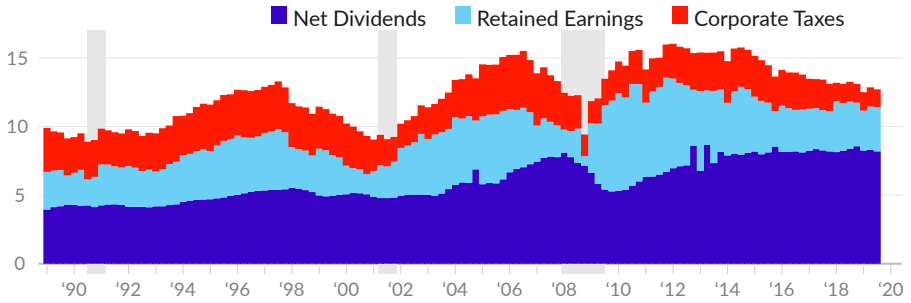
Source: Energy Information Administration

Corporate Profits

The national accounts include detailed information on **aggregate corporate profits**, which are an important determinant in the business cycle. In the fourth quarter of 2019, aggregate corporate profits were $1.35 trillion, or nan percent of net national income. Of this, $1.35 trillion, equivalent to nan percent of net national product, were paid out as dividends (see), $nan billion were retained (see), and $nan billion went to corporate income tax (see).

Destination of Corporate Profits

share of net national income

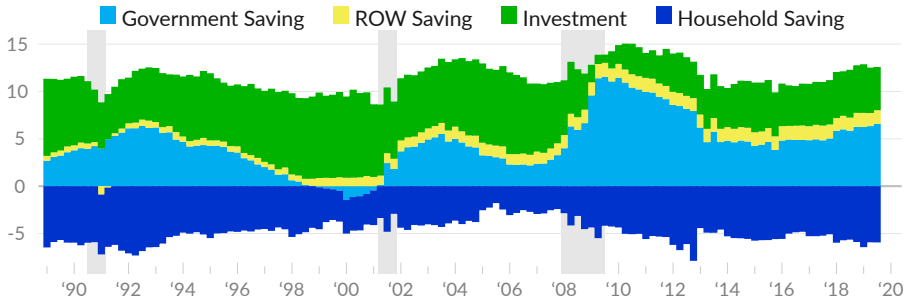


Source: Bureau of Economic Analysis

Aggregate corporate savings (corporate profits less dividends and corporate profit tax) are the result of net investment and non-business saving. Investment (see) is a source of aggregate profit because it is revenue for one party but not an expense for the other. Non-business saving, which includes household (see), government (see), and rest of world saving (see), necessarily reduces aggregate corporate profits because it is money that did not return to businesses as revenue.

Sources of Corporate Saving

contribution to corporate saving, as share of gross national income



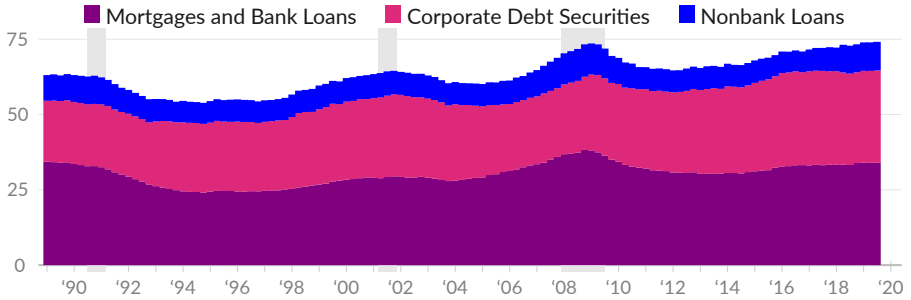
Source: Bureau of Economic Analysis

Business Debt

As of 2019 Q3, nonfinancial business debt–the debt security and loan liabilities of nonfinancial businesses–both corporate and non-corporate–totals $15,970 billion, with $10,105 billion (63.3%) held by corporate businesses. Over the past three years, nonfinancial business debt has increased faster than overall economic activity. As a share of GDP, nonfinancial business debt increased by 2.8 percentage points to 74.1 percent in 2019 Q3 from 71.3 percent in 2016 Q3. The vast majority of the increase, 2.6 percentage points, comes from nonbank loans (see ■).

Nonfinancial Business Debt

by type, as share of GDP



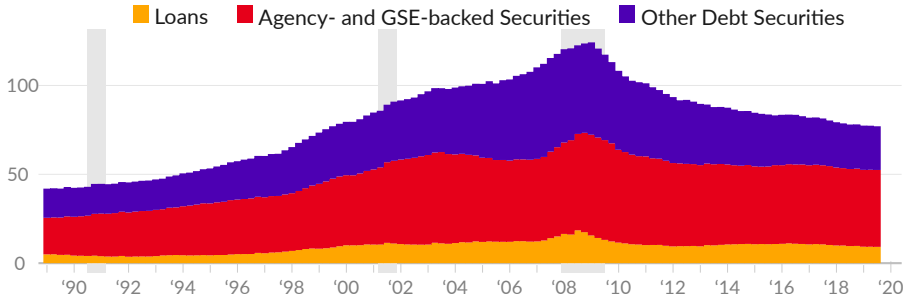
Source: Federal Reserve and Bureau of Economic Analysis

The debt of the domestic financial sector includes agency and government-sponsored enterprise (GSE) backed securities (see ■), corporate and foreign bonds, loans (see ■), and open market paper. The long-term increase in financial sector debt reflects the emergence and growth of various asset-backed securities. In addition to home mortgage-backed securities, the domestic financial sector issues debt securities based on commercial mortgages, auto loans, credit card, student debt, and even restaurant revenue.

Domestic financial sector debt has fallen as a share of GDP to 77.0 percent in 2019 Q3 from a housing-bubble peak of 124.3 percent in 2009 Q1.

Financial Sector Debt

by type, as share of GDP

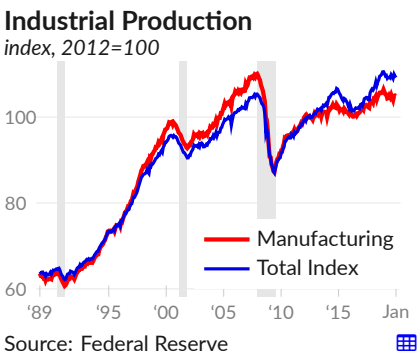


Source: Federal Reserve and Bureau of Economic Analysis

Industrial Production

Manufacturing production increased at an annual rate of 0.9 percent over the past three years, as of January 2020, but remains 4.7 percent below its December 2007 rate. Total industrial production increased at an annual rate of 2.0 percent over the same period. Mining production increased at an annual rate of 9.1 percent, while production of electric and gas utilities decreased at an annual rate of 0.3 percent.

By market group, production of consumer goods increased at an annual rate of 0.4 percent over the past three years, as of January 2020. Production of business equipment increased at an annual rate of 1.7 percent, production of nonindustrial supplies increased at an annual rate of 1.0 percent, and production of materials increased at an annual rate of 3.3 percent.



Source: Federal Reserve

Industrial Production Growth

percentage point contribution to one-year growth of total index — *moving averages*

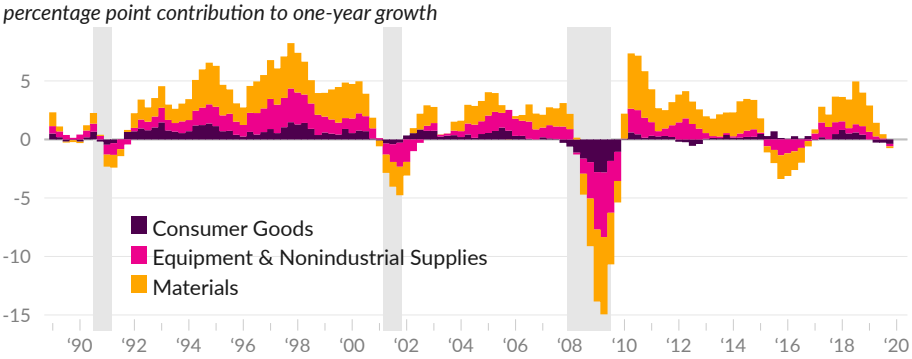
	Jan 2020	Dec 2019	Nov 2019	1-year	3-year	10-year	30-year
Total index	-0.83	-0.91	-0.48	0.49	2.35	2.08	1.91
Manufacturing	-0.63	-0.98	-0.60	-0.33	0.99	1.17	1.54
Durable manufacturing	-0.32	-0.53	-0.09	0.13	0.77	1.11	1.49
Motor vehicles & parts	0.04	-0.47	0.01	-0.11	0.04	0.37	0.23
Nondurable manufacturing	-0.21	-0.36	-0.37	-0.32	0.35	0.20	0.17
Mining	0.45	0.22	0.31	0.89	1.36	0.95	0.30
Utilities	-0.60	-0.16	-0.24	-0.11	0.09	0.06	0.13
Consumer goods	-0.22	-0.44	-0.16	-0.24	0.16	0.16	0.25
Consumer durables	0.11	-0.24	0.01	-0.08	0.05	0.19	0.16
Automotive products	0.18	-0.19	0.08	-0.04	0.03	0.17	0.12
Consumer nondurables	-0.33	-0.19	-0.17	-0.16	0.12	-0.02	0.11
Foods and tobacco	0.13	0.17	0.15	-0.02	0.10	0.07	0.06
Chemical products	-0.11	-0.13	-0.10	-0.02	0.03	-0.06	0.05
Consumer energy products	-0.30	-0.18	-0.12	-0.05	0.06	0.05	0.06
Equipment & nonindustrial supplies	-0.49	-0.25	-0.11	0.08	0.58	0.47	0.52
Equipment	-0.41	-0.15	-0.03	0.13	0.39	0.27	0.36
Industrial equipment	-0.12	-0.09	-0.14	-0.03	0.11	0.09	0.04
Nonindustrial supplies	-0.07	-0.10	-0.08	-0.04	0.19	0.20	0.18
Construction supplies	0.05	0.01	0.03	0.06	0.13	0.12	0.04
Business supplies	-0.12	-0.11	-0.10	-0.10	0.06	0.09	0.14
Materials	-0.12	-0.22	-0.21	0.66	1.63	1.50	1.16
Consumer parts	-0.13	-0.26	-0.18	-0.15	-0.02	0.14	0.10
Equipment parts	0.01	0.03	0.03	0.10	0.15	0.25	0.66
Chemical materials	-0.03	-0.13	-0.15	-0.01	0.17	0.08	0.05
Energy materials	0.20	0.40	0.38	0.84	1.24	0.89	0.33

Source: Federal Reserve

Market group data show the lack of growth in the production of consumer goods, equipment, and nonindustrial supplies over the past decade.

Industrial Production Growth, Market Group

percentage point contribution to one-year growth

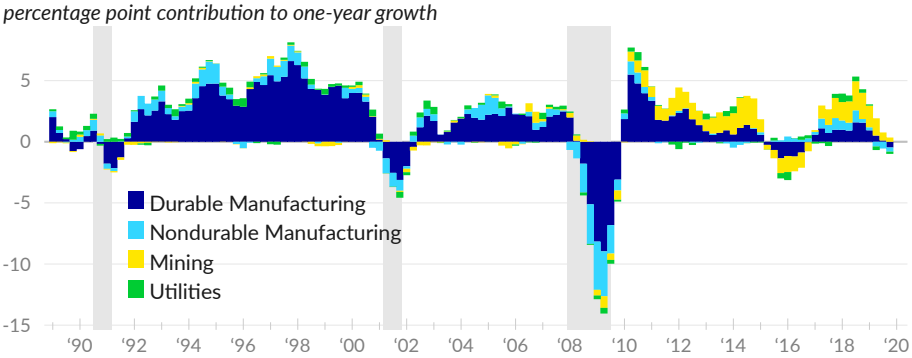


Source: Federal Reserve

Industry group data show a change in the composition of new industrial activity, towards mining and away from manufacturing.

Industrial Production Growth, Industry Group

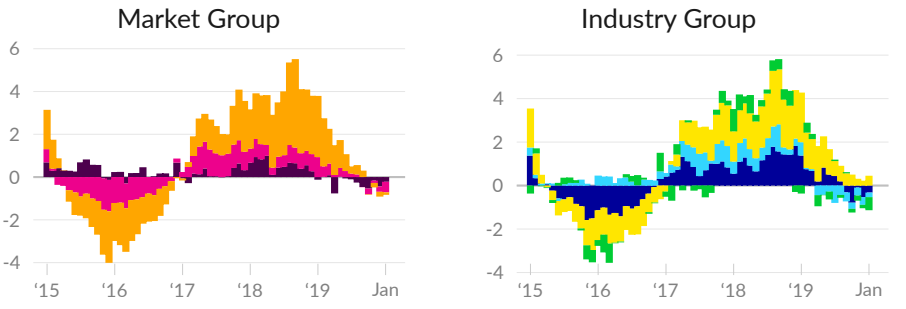
percentage point contribution to one-year growth



Source: Federal Reserve

The most recent slowdown has been broad-based. The monthly data are shown in detail below.

Recent data in detail



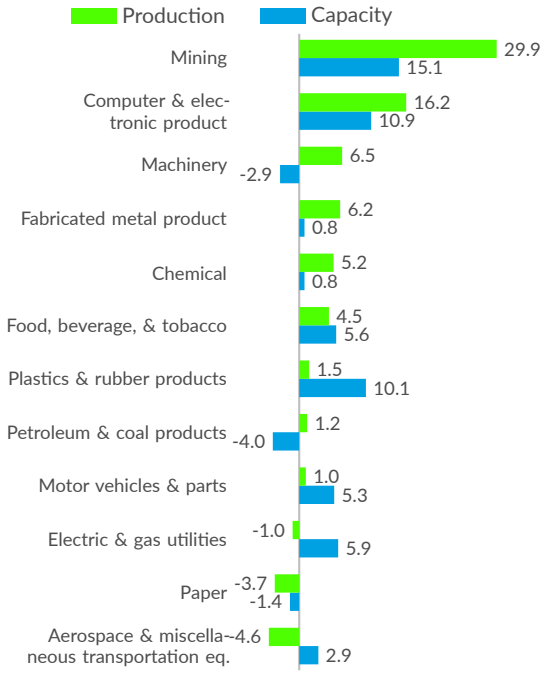
Source: Federal Reserve

Of a subset of 12 industries that contribute the majority of industrial production, nine increased **production** over the past three years, three decreased production, and none were unchanged (see ■). Mining production increased by 29.9 percent in total over the three years ending January 2020. Computer & electronic product production increased by 16.2 percent, and machinery production increased by 6.5 percent. In contrast, aerospace & miscellaneous transportation eq. production decreased by 4.6 percent over the same period.

Over the three years ending January 2020, nine of the 12 industries increased **capacity**, three decreased capacity, and none were unchanged (see ■). The most significant change over the period was an increase of 15.1 percent in mining capacity, follwed by an increase of 10.9 percent in computer & electronic product capacity.

Industrial Production and Capacity

total three-year growth, percent, January 2020

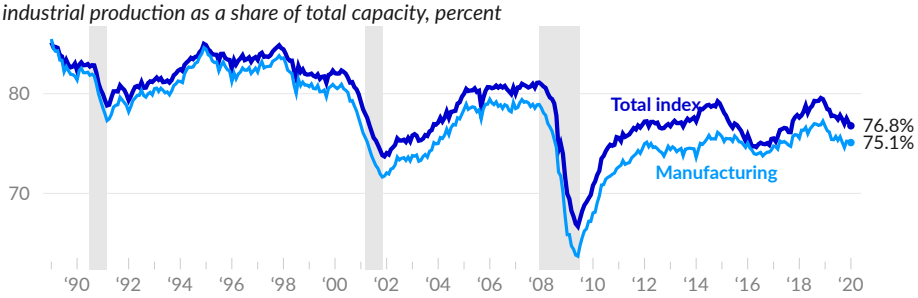


Source: Federal Reserve

The Federal Reserve's monthly industrial production report also measures the economy's total industrial capacity. The extent to which the economy is using its industrial capacity is called **capacity utilization**, and calculated as industrial production as a share of total industrial capacity. Long-term, capacity utilization has fallen as many US factories and industrial production facilities closed. In January 2020, the industrial capacity utilization rate was 76.8 percent (see —), and the manufacturing capacity utilization rate was 75.1 percent (see —). Total capacity utilization has fallen by 8.4 percentage points since January 1989.

Capacity Utilization

industrial production as a share of total capacity, percent



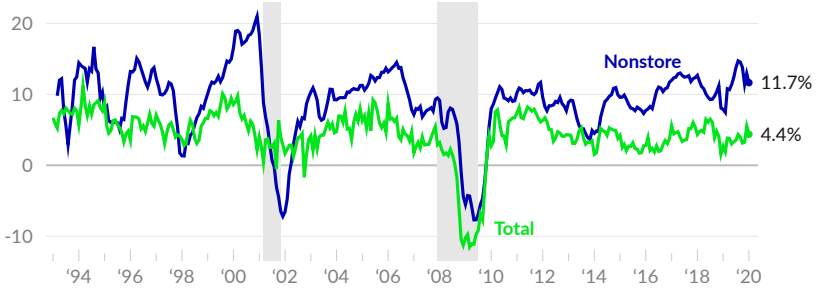
Source: Census Bureau

Retail Sales

According to the Census Bureau, retail and food service sales totalled $529.8 billion in January 2020, equivalent to roughly 29.2 percent of GDP on an annualized basis. Over the past year, retail and food service sales increased by 4.4 percent, without adjusting for prices (see —). Nonstore sales, which include online retailers, have increased by 8.4 percent over the same period (see —), and total $66.5 billion, or roughly 3.7 percent of GDP.

Retail Sales and Food Services

annual growth, percent; nonstore is 3-month moving average

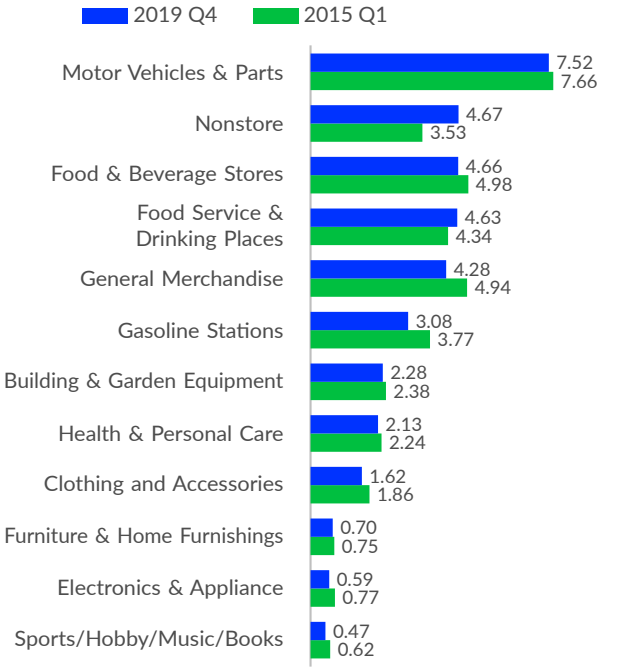


Source: Census Bureau

More text here that mentions the most significant changes in retail sales. Part of the story is the overall decline, which continues in recent data. Part of the "shift to services" is just paying more of health care and education and having a larger financial system relative to other activities.

Retail sales

share of disposable personal income



Source: Census Bureau, Bureau of Economic Analysis

Government

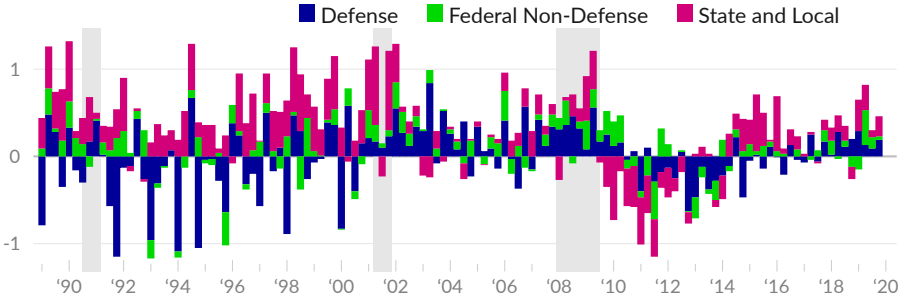
Public institutions are collectively referred to as the *public-sector* or the *government*. In the United States, the government has the authority to spend, tax, and create money, as well as to regulate private sector activities. The government also enforces policies that determine the ownership of property. These activities are all extremely important in determining production and distribution in the economy.

Government Spending and Investment

Government consumption expeditures and gross investment, which provide services and infrastructure, contributed 0.47 percentage points to real GDP growth in 2019 Q4, compared to an average contribution of 0.52 percentage points over the past year and an average of 0.24 percentage points since 1989. In 2019 Q4, federal defense (see ■) contributed 0.19 percentage points, federal nondefense (see ■) contributed 0.04 percentage points, and state and local government (see ■) contributed 0.23 percentage points.

Government Consumption and Investment

percentage point contribution to GDP growth



Source: Bureau of Economic Analysis

Government Consumption and Investment

percentage point contribution to GDP growth

	2019 Q4	'19 Q3	'19 Q2	'19 Q1	'18 Q4	*moving averages* 3-year	10-year	30-year
Total	0.47	0.30	0.82	0.50	-0.07	0.30	-0.01	0.23
Federal total	0.23	0.22	0.53	0.14	0.07	0.18	-0.01	0.07
■ National defense	0.19	0.09	0.13	0.29	0.20	0.12	-0.04	0.01
Consumption expenditures	0.07	0.01	0.13	0.25	0.07	0.07	-0.03	0.01
Gross investment	0.12	0.08	-0.01	0.04	0.12	0.05	-0.01	-0.00
■ Nondefense	0.04	0.13	0.40	-0.15	-0.12	0.06	0.03	0.06
Consumption expenditures	0.04	0.10	0.36	-0.16	-0.14	0.04	0.02	0.04
Gross investment	0.01	0.03	0.04	0.01	0.02	0.01	0.01	0.02
■ State & local	0.23	0.08	0.29	0.36	-0.14	0.13	-0.00	0.16
Consumption expenditures	0.11	0.15	0.07	0.10	0.06	0.08	0.01	0.13
Gross investment	0.13	-0.08	0.23	0.26	-0.20	0.05	-0.01	0.04

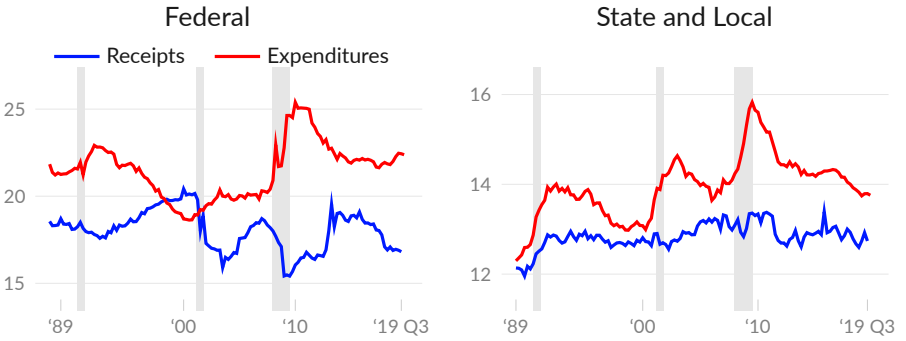
Source: Bureau of Economic Analysis

Government current expenditures include consumption and investment as well as transfers such as government social benefits to persons. Government spending provides services and income to people. Government current receipts, mostly tax receipts, remove demand from the economy. When government expenditures exceed receipts, it is referred to as a *government deficit*, and corresponds to a private sector surplus. The size of the government deficit relative to GDP gives insight into the extent to which the government is stimulating the economy by increasing household income and corporate profits.

In 2019 Q3, federal government expenditures total $4.8 trillion, equivalent to 22.4 percent of GDP, and receipts total $3.6 trillion, or 16.8 percent of GDP. The federal deficit was therefore $1.2 trillion or 5.6 percent of GDP. Over the past three years, the ratio of expenditures to GDP increased by a total of 0.3 percentage points, and the ratio of receipts to GDP has decreased by a total of 1.7 percentage points, causing the deficit to widen by 2.0 percent of GDP.

Consolidated state and local government expenditures total $3.0 trillion, or 13.8 percent of GDP, in 2019 Q3, and receipts total $2.7 trillion, equivalent to 12.7 percent of GDP. The combined state and local government deficit was $227 billion or 1.06 percent of GDP. Over the past three years, the expenditures to GDP ratio decreased by a total of 0.54 percentage points at the consolidated state and local level, and the ratio of receipts to GDP has decreased by a total of 0.30 percentage points, causing the deficit to shrink by 0.24 percent of GDP.

Receipts and Expenditures as Share of GDP

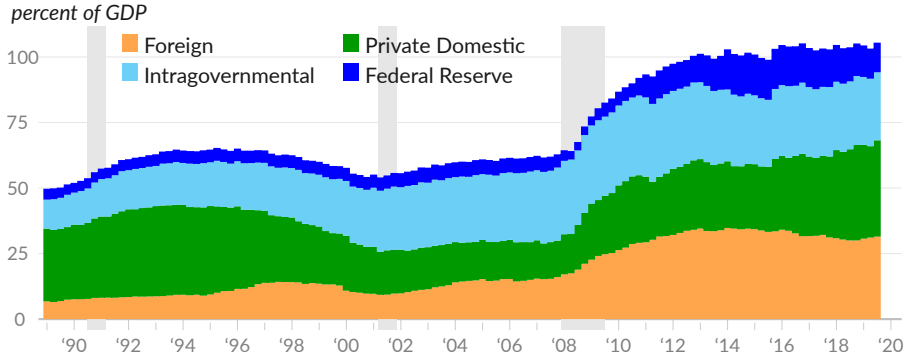


Source: Bureau of Economic Analysis

In the third quarter of 2019, total public debt was $22.7 trllion, equivalent to 105.5 percent of GDP. Of this, $7.9 trillion, or 34.9 percent of the total, is held by private domestic investors (see ■). An additional $6.8 trillion, or 29.8 percent of the total, is held by foreign investors (see ■). The remainder is held by the Federal Reserve (see ■) and various government agencies and trusts (see ■), such as the Social Security Trust Fund.

Total Public Debt By Holder

percent of GDP



Source: Treasury

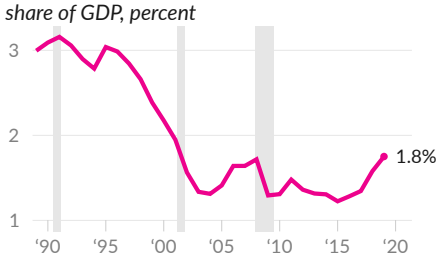
The ratio of public debt to GDP is fairly stable, and the interest income from holding public debt is lower than in the past because of lower interest rates. Treasuries and other government debt securities provide a safe asset for the balance sheets domestic households and businesses, and for foreign investors.

Interest Expense

The Office of Management and Budget reports federal interest outlays of $375.2 billion in fiscal year 2019, compared to $325.0 billion in fiscal year 2018. Put into the context of the size of the economy, federal interest outlays in 2019 were equivalent to 1.8 percent of GDP, 1.6 percent of GDP in 2018, and an average of 2.9 percent in the 1990s, when interest rates were substantially higher.

Federal Interest Outlays

share of GDP, percent



Source: FRED; OMB

While debt levels are much lower for the consolidated state and local government sectors, interest rates on municipal bonds are higher, and interest paid to investors is a larger share of government expenses at the state and local level.

International Transactions

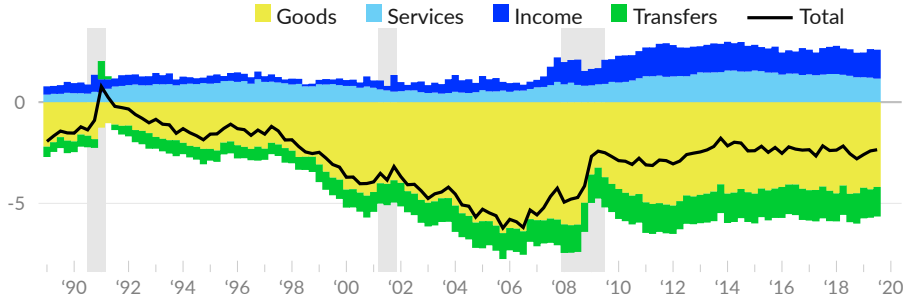
Transactions between the US and the rest of the world are recorded in the balance of payments as either current account transactions (which measure income) or capital and financial account transactions (which measure change in ownership of assets). This section details imbalances in international transactions, changes in trade by goods and by partner, international investment positions, and exchange rates.

Balance of Payments

The **current account balance** can be decomposed into the balance on trade in goods (see), the balance on trade in services (see), the balance on primary income (such as wages or income from assets, referred to here as income [see]), and secondary income (such as remittances and taxes, referred to here as transfers [see]). As of 2019 Q3, the US runs a current account deficit of 2.4 percent of GDP, primarily as the result of a trade deficit on goods of 4.2 percent of GDP.

Current Account Balance

balance on individual current account component, as percent of GDP



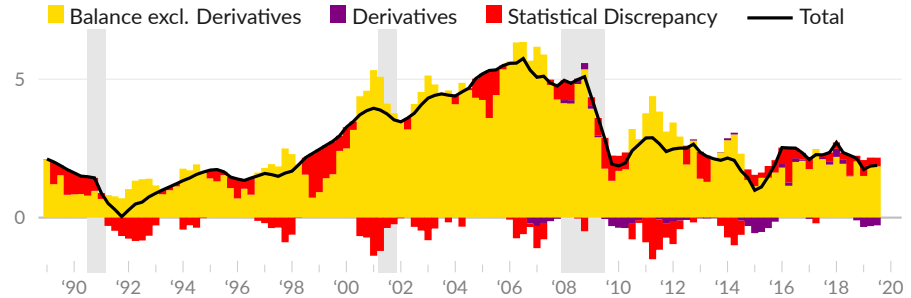
Source: Bureau of Economic Analysis

Financial account transactions include the net domestic acquisition of foreign assets and the net domestic incurrence of foreign liabilities. The US **financial account balance** (see) is the net lending or borrowing of the combined domestic sectors with the rest of the world. The timing of payments lead to a statistical discrepancy (see), but the financial and capital account balance and current account balance otherwise sum to zero.

Over the year ending 2019 Q3, net domestic acquisitions of foreign assets were equivalent to 2.4 percent of GDP, while net domestic incurrence of foreign liabilities total 4.3 percent of GDP. Domestic net borrowing totals 1.9 percent of GDP.

Financial Account Balance

percent of GDP



Source: Bureau of Economic Analysis

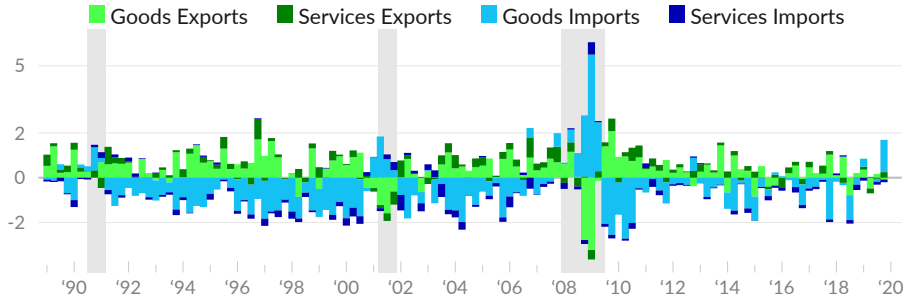
Trade

The **trade balance** (exports of goods and services minus imports of goods and services) acts as an adjustment to consumption and investment in GDP calculations. As the US runs a persistent trade deficit, trade will generally subtract from GDP growth. In the income approach, the expanded trade deficit reduced nominal compensation of employees (extensive margin through outsourcing, intensive margin through lower wages from labor market slack) and reduced prices.

Goods exports subtracted 0.08 percentage points from GDP growth in the fourth quarter of 2019 while services exports contributed 0.25 percentage points. Good imports contributed 1.44 percentage points to GDP growth and services imports subtracted 0.12 percentage points.

International Trade

percentage point contribution to GDP growth

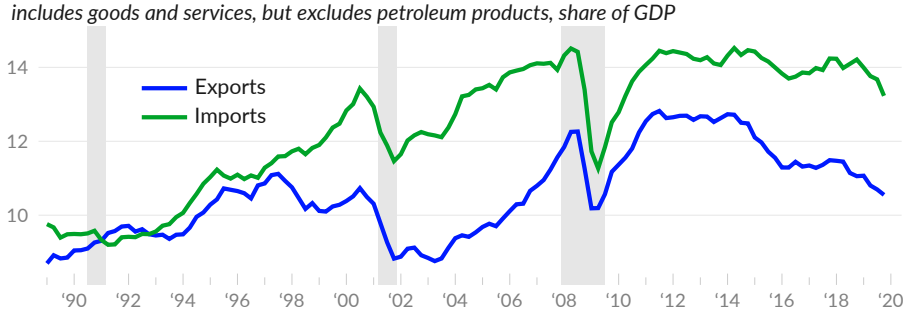


Source: Bureau of Economic Analysis

Nonpetroleum goods and services imports (see —) were equivalent to 13.2 percent of GDP in the fourth quarter of 2019, while exports of nonpetroleum goods and services (see —) were equivalent to 10.5 percent of GDP.

Imports and Exports, Nonpetroleum

includes goods and services, but excludes petroleum products, share of GDP



Source: Bureau of Economic Analysis

Changes to the trade balance come from a myriad of potential sources, such as changes in demand or relative supply of other countries, changes in exchange rates, changes in preferences for categories of goods, changes in trade policy, and changes in domestic demand. The following table captures the nominal value of major categories of goods and services as a share of nominal gross domestic product at various points over the past 30 years.

Exports and Imports by Type

percentage point share of GDP

	period averages							
	2019 Q4	'19 Q3	'18 Q4	2016	2012 –13	2005 –06	1998 –99	1989 –93
Exports of goods and services	11.48	11.58	12.01	11.86	13.54	10.33	10.41	9.42
Exports of goods	7.50	7.60	7.94	7.72	9.34	7.32	7.52	6.84
Foods, feeds, and beverages	0.59	0.65	0.57	0.70	0.82	0.46	0.50	0.60
Industrial supplies & materials	2.45	2.41	2.60	2.07	2.96	1.92	1.55	1.65
Petroleum and products	0.93	0.89	0.96	0.53	0.90	0.28	0.11	0.12
Capital goods, except automotive	2.50	2.51	2.72	2.78	3.22	2.84	3.27	2.61
Automotive vehicles, & parts	0.71	0.77	0.72	0.80	0.91	0.77	0.79	0.67
Consumer goods, ex. food & auto	0.92	0.96	0.99	1.03	1.12	0.91	0.86	0.74
Durable goods	0.48	0.49	0.54	0.56	0.61	0.50	0.44	0.39
Nondurable goods	0.44	0.48	0.46	0.48	0.51	0.41	0.42	0.35
Exports of services	3.99	3.98	4.07	4.15	4.19	3.02	2.90	2.58
Transport	0.41	0.42	0.44	0.45	0.52	0.41	0.48	0.59
Travel	0.99	0.99	1.02	1.10	1.03	0.77	0.95	0.90
Intellectual property charges	0.57	0.57	0.60	0.66	0.77	0.59	0.44	0.29
Other business services	1.81	1.79	1.80	1.73	1.67	1.04	0.85	0.60
Imports of goods and services	14.14	14.61	15.29	14.64	16.76	15.89	12.63	10.38
Imports of goods	11.31	11.79	12.45	11.87	13.95	13.44	10.59	8.45
Foods, feeds, and beverages	0.68	0.71	0.72	0.70	0.69	0.54	0.46	0.43
Industrial supplies & materials	2.34	2.39	2.73	2.34	4.26	4.24	2.22	2.16
Petroleum and products	0.91	0.94	1.08	0.85	2.50	2.15	0.65	0.87
Capital goods, except automotive	3.10	3.15	3.35	3.17	3.37	3.00	3.03	2.04
Automotive vehicles, & parts	1.64	1.78	1.84	1.87	1.84	1.84	1.74	1.46
Consumer goods, ex. food & auto	2.88	3.12	3.19	3.13	3.19	3.20	2.47	1.83
Durable goods	1.42	1.56	1.65	1.63	1.71	1.75	1.29	0.97
Nondurable goods	1.45	1.56	1.54	1.49	1.48	1.46	1.18	0.86
Imports of services	2.83	2.82	2.84	2.77	2.81	2.45	2.04	1.93
Transport	0.50	0.50	0.54	0.52	0.53	0.57	0.54	0.55
Travel	0.71	0.71	0.72	0.66	0.60	0.61	0.63	0.61
Intellectual property charges	0.28	0.27	0.28	0.25	0.24	0.19	0.13	0.06
Other business services	1.18	1.17	1.15	1.19	1.24	0.83	0.54	0.38

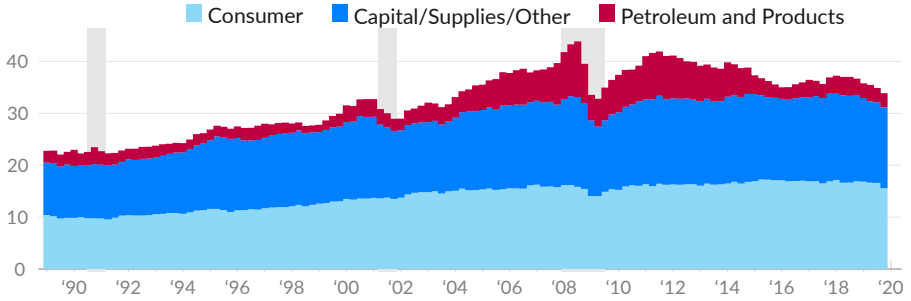
Source: Bureau of Economic Analysis

Goods can be produced domestically or imported or some combination of the two. The import share of the total US demand for goods, measured as US produced goods and imported goods less exported goods, is also referred to as *import penetration*. This measure has risen considerably over the past thirty years. The majority of the long-term increase has been concentrated in consumer goods, while the decrease since 2011 has come primarily from petroleum and products.

From 1989 to 2011, imports of consumer goods increased by the equivalent of 5.7 percent of domestic consumption of goods (see); petroleum and products imports increased by the equilavent of 6.3 percent (see); and all other goods, primarily capital good, industrial supplies, and materials, increased by the equivalent of 6.4 percent (see). Since 2011, imports of consumer goods decreased by the equivalent of 0.8 percent of domestic goods demand; imports of petroleum and products decreased by the equivalent of 5.6 percent; and other imports decreased by the equivalent of 0.7 percent.

Import Share of Goods

import share of domestic-produced and imported goods less exports, by category



Source: Bureau of Economic Analysis

Trade in Goods

Trade in Services

Trade balance

[One page table to capture lots of external sector items as contribution to GDP growth (where possible) or otherwise as a share of GDP]

Direct and Portfolio Investment – related here and to IIP below: the total value of domestic holdings of foreign assets is much smaller than the total value of foreign holdings of domestic assets, but, the return on foreign assets is so much higher than the return on domestic assets that the the US has positive net income from abroad.

International Investment Position

Foreign purchases of US bonds (TIC) data, trailing 12m sums: Treasuries, Agencies, Corporate

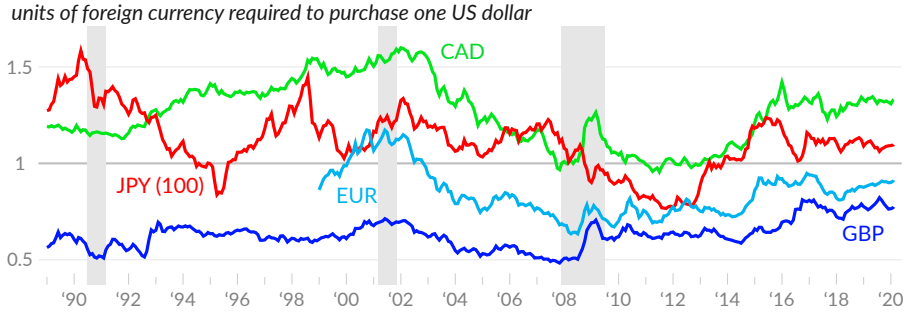
Exchange Rates

The strength or weakness of the dollar in an important determinant of trade and financial flows. When more Japanese Yen (JPY), British Pounds (GBP), Euros (EUR), or Canadian Dollars (CAD) are required to buy one US Dollar (USD), the dollar is said to be *strong*.

As of February 7, 2020, one US dollar buys approximately: 1.33 Canadian dollars (see —), 110 Japanese Yen (see —), 0.91 Euros (see —), and 0.77 British Pounds (see —). Over the past three years, the nominal exchange rate between the US dollar and the Canadian dollar increased by 0.8 percent, the USD-JPY rate was virtually unchanged, the USD-EUR rate increased by 3.9 percent, and the USD-GBP rate increased by 0.4 percent.

Selected Exchange Rates

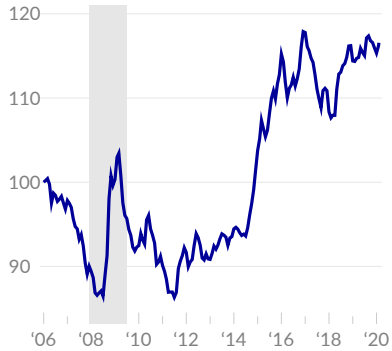
units of foreign currency required to purchase one US dollar



Source: Federal Reserve

Broad Dollar Index

trade-weighted foreign exchange rate index
January 2006=100



Source: Federal Reserve

Fed trade-weighted dollar indices show weighted-average foreign exchange rates with US trading partners, which simplify thinking about the overall role of foreign exchange rates on the US external sector. The Broad Dollar Index (see —), which starts in 2006, summarizes foreign exchange rates between the US and trading partners, weighting rates by the amount of trade in both goods and services.

The latest index value, as of February 7, 2020, is 116.6, thus an increase of 16.6 percent since inception in 2006. Over the past three years, the index value has averaged 113.6, compared to an average of 106.3 over the previous three year period.

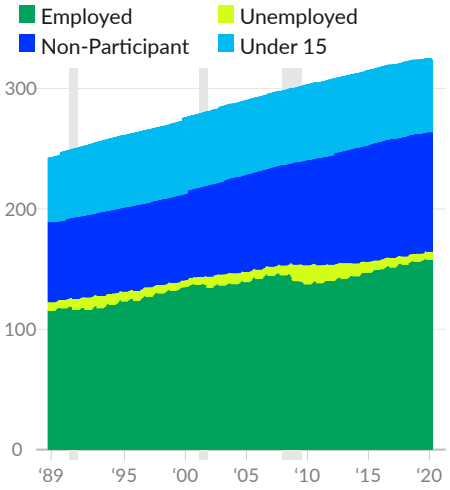
Labor Markets

Labor is the primary source of income for US households and is essential to the production of goods and services. The portion of labor that is provided by a household member to others outside of the household or to other households is considered *employment*. As of January 2020, 157.6 million people are employed (including self-employment).

Labor provided within a household is not captured by GDP compilation methods (expenditures, output, or income), though household surveys offer some insight into this important category of labor. The number of people who are considered employed divided by the total population is the employment rate or employment-to-population ratio, which is 48.6 percent as of January 2020.

Labor Force Status of Population

millions of people



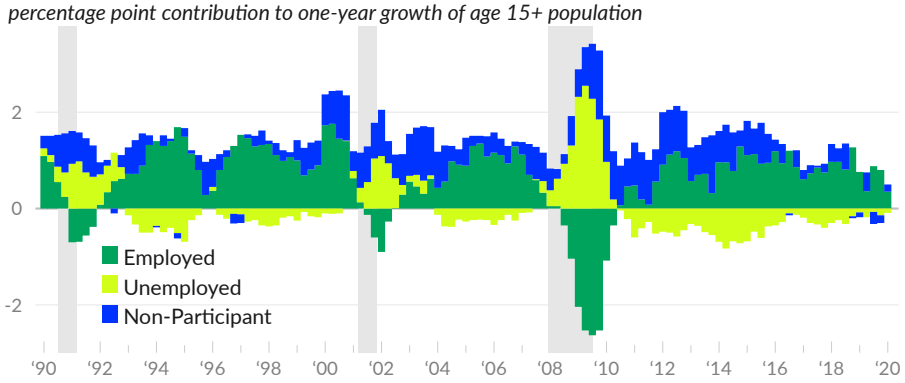
Source: Author's Calculations from CPS

When a member of a household is not employed but looked for a job during the past four weeks and is available to work, they are considered **unemployed**. As of January 2020, there are 6.7 million unemployed people. The combined group of employed and unemployed people is the labor force. The number of unemployed people divided by the number of people in the labor force is the unemployment rate, currently 4.1 percent. The number of people in the labor force divided by the total population is the labor force participation rate, currently 50.7 percent.

People who are not employed and not unemployed are considered to be outside of the labor force. This category is about half of the population, on average, and totals 159.8 million in January 2020. The category is comprised of children (60.4 million), students (19.0 million), unpaid caregivers (12.0 million), those unable to work due to disability or illness (14.6 million), those who want a job but have given up looking (4.3 million), and retirees and the elderly (47.3 million).

Labor Force Status Changes

percentage point contribution to one-year growth of age 15+ population



Source: Author's Calculations from CPS

The labor force status of the US population varies by age, sex, and over time. Because very few people have capital income, the share of the population with labor income is particularly important to overall levels of economic activity.

Labor Force Status

January 2020 , thousands of people, not seasonally adjusted

	Total, 15+	Men, 15–29	Men, 30–59	Men, 60+	Women, 15–29	Women, 30–59	Women, 60+
Population	263,647	32,351	61,202	34,085	32,044	63,479	40,486
Employed	157,598	18,730	52,129	12,018	18,130	46,211	10,379
Multiple jobs	8,117	759	2,627	566	1,018	2,665	481
Full-time	118,344	12,882	45,387	8,478	10,744	34,742	6,112
Part-time	39,254	5,849	6,742	3,540	7,387	11,469	4,267
Economic reasons	4,750	817	1,287	245	868	1,293	240
Unemployed	6,656	1,623	1,727	375	1,260	1,399	272
Not in Labor Force	99,393	11,997	7,346	21,692	12,654	15,869	29,835
Discouraged	4,822	1,032	852	543	849	990	557
Disabled/Ill	14,396	952	3,624	2,431	591	4,085	2,713
Family/Care	11,952	312	570	64	2,153	7,867	987
School	18,651	9,073	418	18	8,537	546	57
Retirement	47,458	94	1,401	18,521	111	1,971	25,360

Source: Author's Calculations from CPS

Additionally, changes over time in labor force status are particularly important to understanding both secular and cyclical trends in the economy. For example, the US population is growing but it is also aging. Over the past year, there was a substantial shift towards full-time work.

Labor Force Changes

Change from January 2019 to January 2020 , thousands of people

	Total, 15+	Men, 15–29	Men, 30–59	Men, 60+	Women, 15–29	Women, 30–59	Women, 60+
Population	1,221	-264	-181	1,065	-269	-218	1,088
Employed	1,740	-147	93	645	405	495	249
Multiple jobs	348	46	-27	73	2	163	91
Full-time	1,472	-328	235	577	180	649	160
Part-time	269	181	-142	69	225	-154	89
Economic reasons	-917	-250	-289	-82	-51	-179	-65
Unemployed	-658	-133	-235	-42	-35	-136	-77
Not in Labor Force	139	16	-39	462	-639	-577	916
Discouraged	-292	-24	36	-41	-161	-102	-1
Disabled/Ill	113	-12	-104	305	-38	-145	106
Family/Care	-505	-4	-106	-10	-178	-260	52
School	-303	-2	49	1	-279	-95	23
Retirement	1,068	-0	93	215	-4	42	723

Source: Author's Calculations from CPS

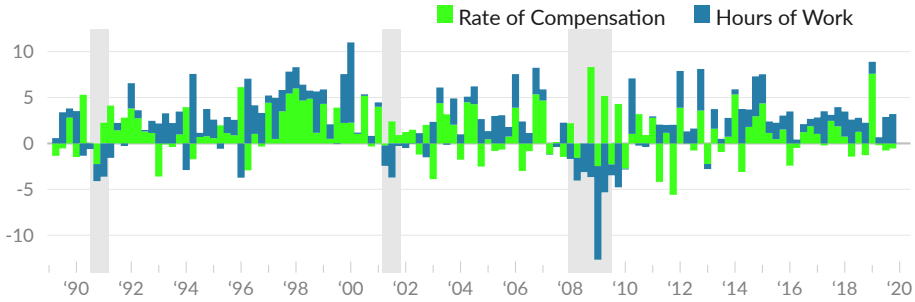
Gross Labor Income

In labor markets, unlike other markets, wages (the price of labor) tend not to be cut in response to a decrease in demand; businesses instead employ fewer workers and/or cut hours. As a result, wage data give only a partial picture of the labor income received by households.

Gross labor income (compensation of employees in the national accounts), which captures both the amount of employment (see ■) and the rate of compensation (see ■), increased at an annualized and inflation-adjusted rate of 2.65 percent in 2019 Q4. Changes in wages subtracted 0.55 percentage points, and changes in total hours worked contributed 3.20 percentage points.

Gross Labor Income Growth

percentage point contribution to gross labor income growth



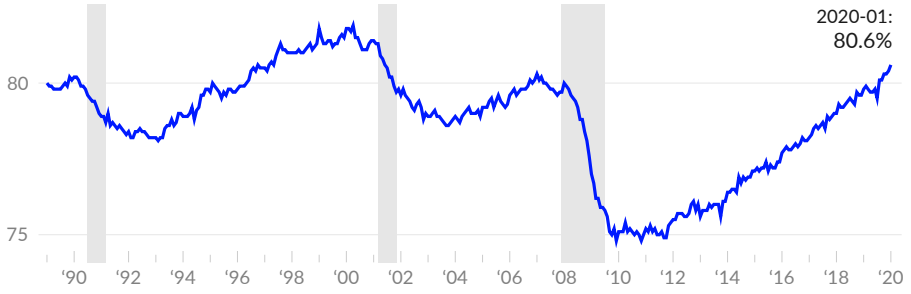
Source: Author's Calculations

Employment

In January 2020, 80.6% of 25-54 years olds were employed, the highest level since June 2001. Over the past year, the age 25-54 employment rate has increased by 0.8 percentage points. The current age 25-54 employment rate is 0.7 percentage points (equivalent to 840.0 thousand workers) below the average during 1998–99, a period with a particularly tight labor market.

Employment Rate

employed share of age 25-54 population



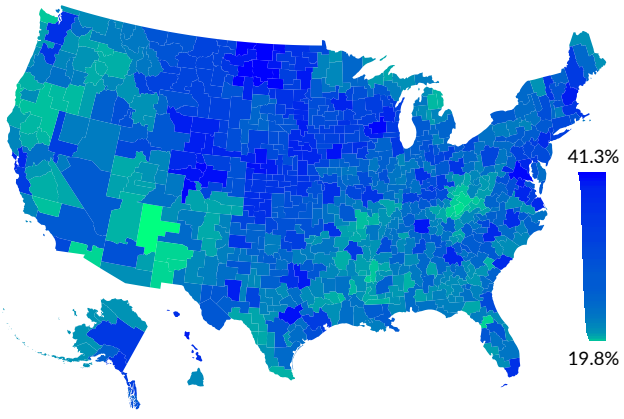
Source: Bureau of Labor Statistics

The employment rate shown above is based on a monthly survey that asks about employment during a specific week of the previous month. However, additional data is available on what share of a population works year-round rather than just during a specific week. This can be combined with data on hours worked to identify the *fully-employed*, or *full-time, full-year workers*, who are defined below as the those who usually work 35 hours per week or more for 50 weeks per year or more. The Census Bureau reports 118 million fully-employed people in 2018, equivalent to 36 percent of the population.

In 2018, fewer than half (43.0 percent) of commuter zones have at least a third of their population working full-time and full-year. A total of 18 commuter zones (out of 741), covering 2.6 million people, have a quarter of the population or less fully employed. Of commuter zones with 100,000 people or more, the top and bottom ten by fully-employed share of population are listed below.

Commuter Zone Fully-Employed Rate

full-time, full-year worker share of population, 2018



Top 10:

41.2%	Bismarck, ND
40.9%	Madison, WI
40.8%	Arlington, VA
40.1%	Denver, CO
39.9%	Austin, TX
39.8%	Glenwood Springs, CO
39.7%	Des Moines, IA
39.4%	Nashville-Davidson, TN
39.3%	Fargo, ND
39.1%	Fredericksburg, VA

Bottom 10:

19.8%	Gallup, NM
22.4%	Hazard, KY
23.3%	Yuma, AZ
23.4%	Pikeville, KY
23.5%	Ocala, FL
23.6%	Corbin, KY
24.5%	Port Angeles, WA
24.6%	Greenville, MS
25.0%	Huntington, WV
25.0%	Altamont, OR

Source: American Community Survey

Among major US labor market areas, ...

Employment Rates of Largest Commuter Zones, 2018

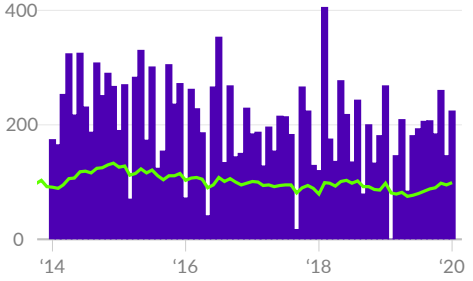
	all ages		*age 25–54*	
	full-time & full-year	employed	full-time & full-year	employed
Los Angeles, CA	33.7	57.4	58.4	87.2
New York, NY	36.0	58.4	62.3	87.8
Chicago, IL	36.7	60.5	64.4	90.3
Houston, TX	36.2	57.4	63.2	88.0
Newark, NJ	37.7	59.9	65.1	89.7
Philadelphia, PA	35.1	60.6	62.0	89.8
Washington, DC	40.8	64.5	68.9	93.4
Boston, MA	36.7	64.4	63.6	91.9
San Francisco, CA	37.9	62.8	64.3	91.3
Atlanta, GA	38.0	60.0	66.6	90.9
Detroit, MI	32.9	58.0	59.6	88.1
Dallas, TX	39.1	60.3	67.1	89.8
Phoenix, AZ	34.4	58.0	62.2	89.0
Seattle, WA	37.3	63.0	62.6	91.5
Miami, FL	37.2	58.0	64.0	88.4

Source: American Community Survey

The establishment survey from the monthly jobs report identifies how many jobs have been added to the economy in a given month. The US economy added 225,000 jobs in January 2020, compared to 147,000 in December 2019, and an average of 211,000 over the past three months. Over the same three months, the US needed to add an average of 97,000 jobs per month to maintain the prior month employment rate.

Nonfarm Payroll Growth

one-month change in total employment, in thousands
line = required for constant employment rate



Source: Bureau of Labor Statistics

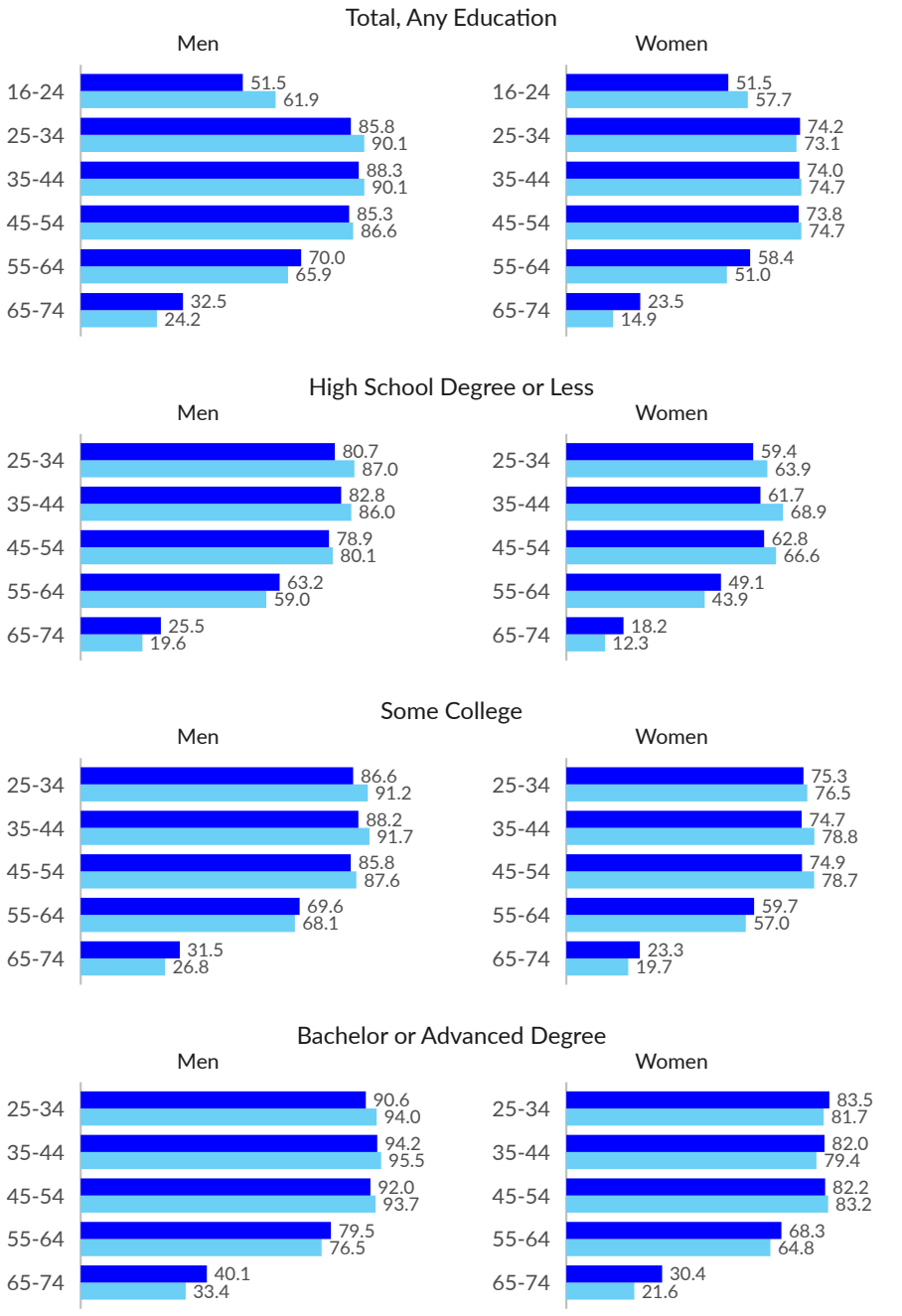
More text here...

[Quarterly employment growth with dot for latest monthly value]

Employment rates vary over time, but also by age, gender, and education. Over the 12 months ending January 2020 , the employment rate for most education groups is lower than it was on average in the year 2000. Only older workers and women with advanced education have higher rates of employment than in 2000. Fix text...

Employment Rates ■ January 2020 ■ 2000

employed share of age group population, percent

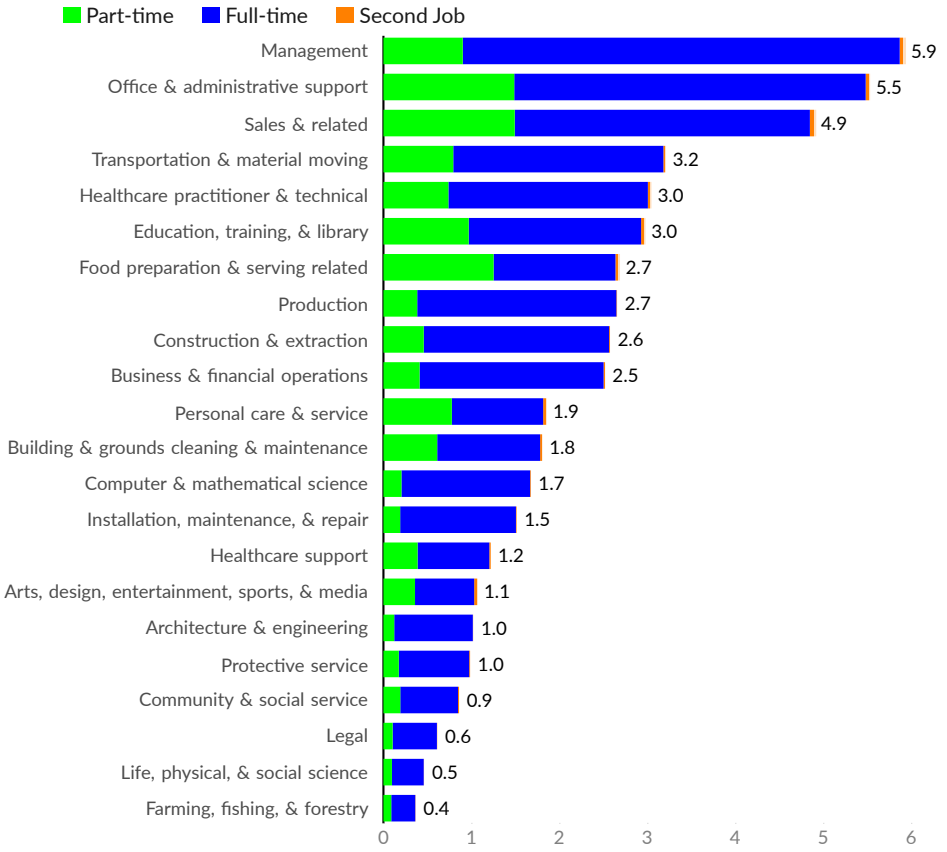


Source: Author's Calculations from CPS

Text here on occupational employment. Try to add in some data on actual number of employees, along with the share of population data from the chart. Also try to cover some groupings of categories, like total healthcare.

Occupational Employment, January 2020

share of population employed, 12-month average, percent



Source: Author's Calculation from CPS

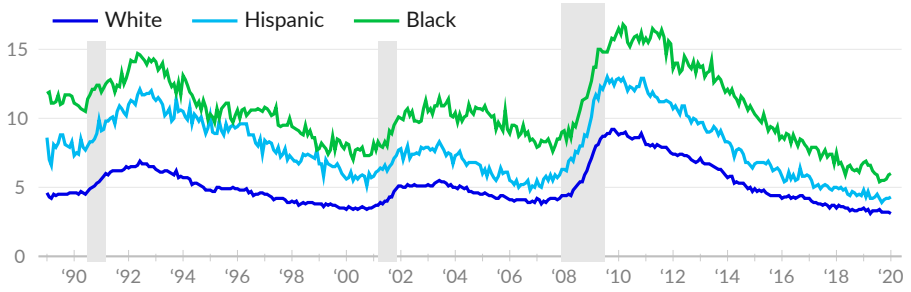
Unemployment

The conventional *unemployment rate* is measured as the number of people who do not have a job and looked for one during a reference week, divided by the labor force, which includes the unemployed and those with jobs.

Unemployment is currently very low. BLS reports 5.9 million unemployed persons in January 2020, and an unemployment rate of 3.6 percent. However, unemployment is much higher for disadvantaged groups, with the black or African American unemployment rate typically double the white unemployment rate. A very tight labor market may have the effect of reducing racial discrimination in hiring. Over the past year, the black or African American unemployment rate has fallen by 0.8 percentage points to 6.0 percent.

Unemployment Rate

unemployed share of labor force



Source: Bureau of Labor Statistics

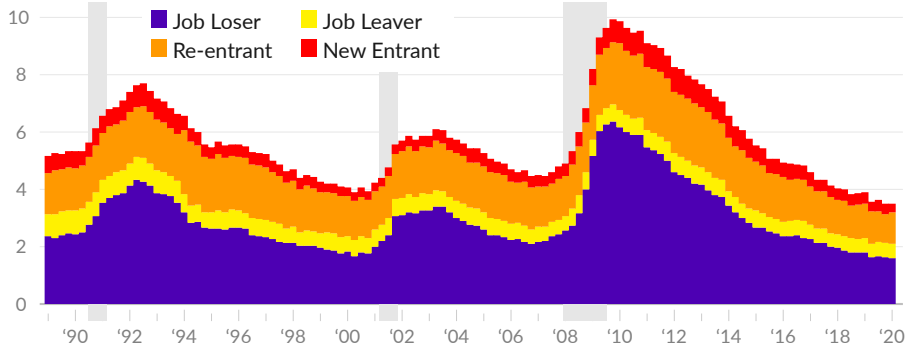
Reasons for unemployment

There are multiple reasons for unemployment. During the trough of a business cycle, most unemployed are those who lost a job, for example from layoffs, or had a temporary job end (see ■). In general, many of the unemployed are re-entrants to the labor market, meaning they were out of the labor force prior but are looking for a job again (see ■). Some are new-entrants who are looking for their first job (see ■). A small portion are also those who left a job voluntarily and are looking for a new one (see ■).

In January 2020, 1.6 percent of the labor force were unemployed because of losing a job or having a job end, 0.5 percent were re-entrants, 1.1 percent new entrants, and 0.3 percent job leavers.

Unemployment by Reason

unemployed share of labor force, by reason for unemployment

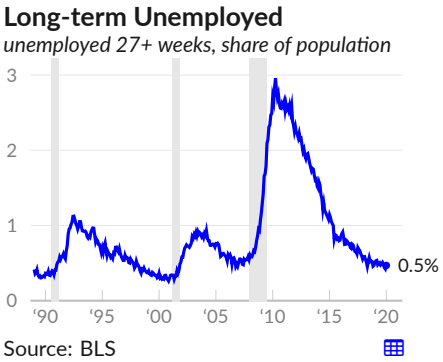


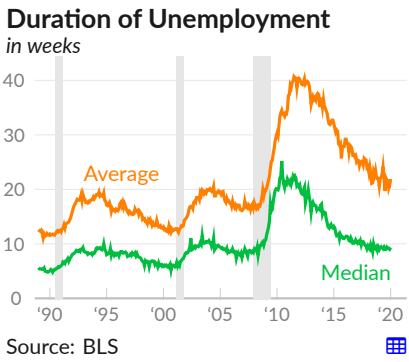
Source: Bureau of Labor Statistics

Duration of unemployment

When someone is unemployed for an extended period of time they risk running out of unemployment benefits, thereby having a sharp reduction in income. Additionally, people may have more trouble re-entering the labor market after a long period of unemployment.

As of January 2020, BLS reports that 0.47 percent of the age 16+ population have been unemployed for 27 weeks or longer, compared to 0.51 percent in January 2019. Long-term unemployment peaked at 2.96 percent of the population in April 2010. More concerning, however, is that among those who are unemployed the average (mean) duration of unemployment is 21.9 weeks, and the typical (median) duration of unemployment is 9.3 weeks, as of January 2020. Both measures of unemployment duration are elevated from the levels typically seen several years into an expansion.

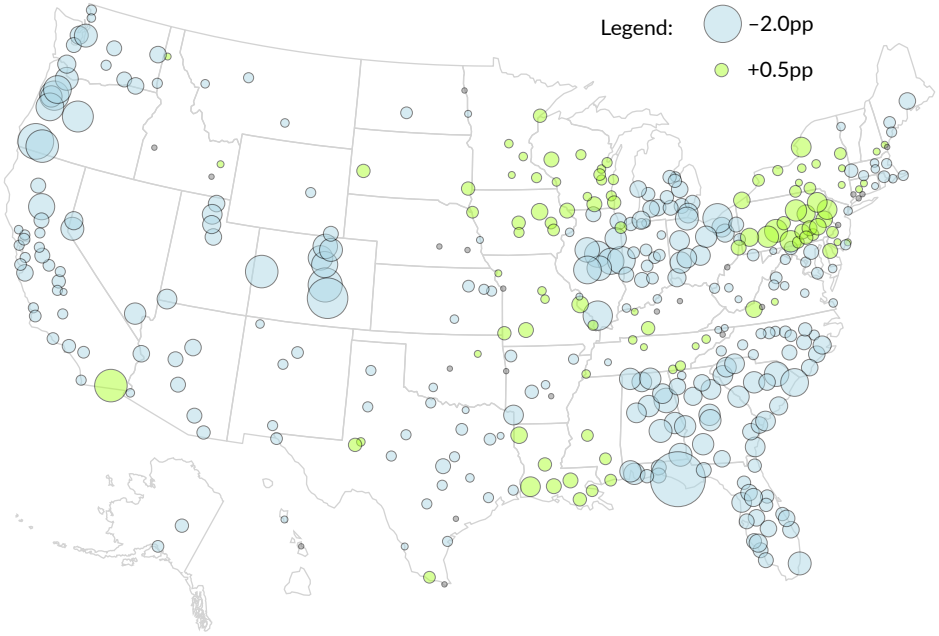




Unemployment by metro area

The Bureau of Labor Statistics combines data from the surveys that go into the jobs report with additional local data to produce local area estimates of unemployment, including the **unemployment rate for metro areas**. Will need to think about tables that show highlights, because there are too many MSAs to list all data. Perhaps I can list how many metro areas had the unemployment rate fall over the past year, and then talk about how many unemployed people that actually means–so that population is taken into consideration in some meaningful way.

Change in Unemployment Rate by Metro Area
one-year change, in percentage points, December 2019



Source: Bureau of Labor Statistics

Reasons for non-participation

The Current Population Survey asks people who are not employed or looking for work about their major activities and reasons for not participating in the labor market. The answers show a tendency to vary by age, in intuitive ways, but also a strong relationship to the business cycle. By age, those age 16–24 who are not in the labor force disproportionately cite school as the reason for non-participation, while those 55+ disproportionately cite retirement.

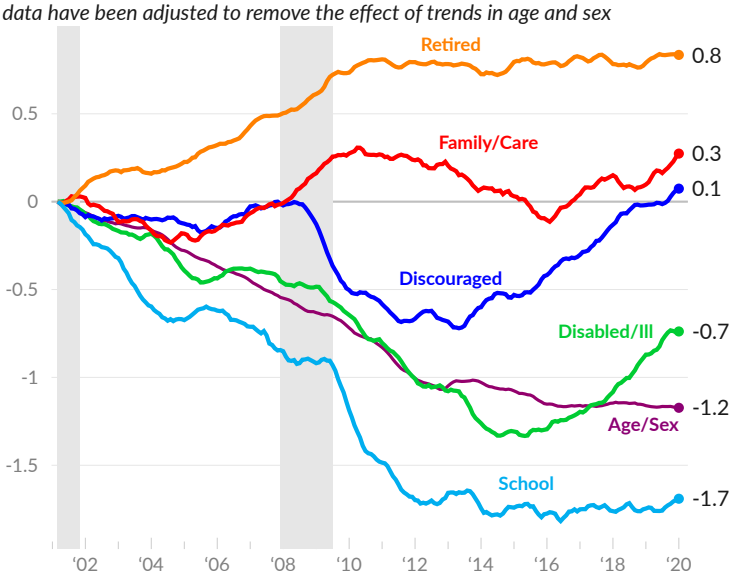
[CHART HERE – bar chart]

While the recession of 2001 appears mild in measures of expenditure, it was followed by a substantial reduction in the share of the population earning labor income. The economy was still losing jobs at an alarming rate long after the 2001 recession had officially ended, with some overall weakness masked by a major housing bubble. The burst of the housing bubble caused the great recession seven years after, pushing many more people out of the labor force.

From March 2001 to the latest available month, January 2020, an additional 2.5 percent of the age 18–64 population left the labor force. The larger-than-normal population cohort born after World War II is reaching retirement age in this period. Such demographic effects explain 1.2 percentage points of the cumulative decrease. Additionally, young people are staying in school longer, on average, reducing the age 18–64 labor force by 1.2 percent. Disability or illness reduce the labor force by another 0.7 percent. Less retirement among those age 18–64 increases the labor force by 0.8 percent.

Contributions to Labor Force Participation Since March 2001

cumulative percentage point contribution to age 18-64 labor force participation, data have been adjusted to remove the effect of trends in age and sex



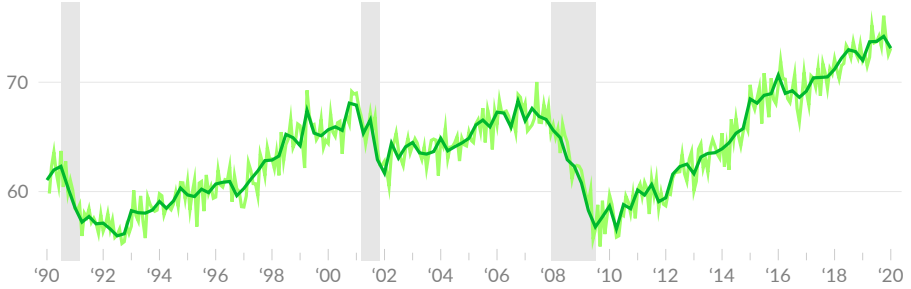
Source: Author's Calculations from Current Population Survey

Labor Force Flows

Among newly employed workers, the vast majority were considered to be out of the labor force the prior month, as opposed unemployed. In January 2020, 6.6 million people were newly employed (on a gross basis). Of these, 73.1 percent were not looking for work in the prior month. With low unemployment, new employees are being pulled from outside of the labor force and bypassing unemployment. Three years ago, in January 2017, 69.1 percent of the newly employed were not looking for work month prior.

Newly Employed, Not Previously Looking For Work

share of newly employed that were not looking for work in the prior month

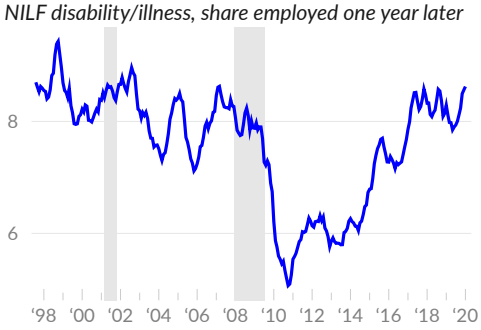


Source: Bureau of Labor Statistics

The great recession worsened job-finding prospects for those not in the labor force (NILF) due to disability or illness. Only over the past few years have these prospects recovered. Over the year ending January 2020, 8.6 percent of persons age 25–54 who were NILF due to disability in the prior year are now employed. This one-year rate of job-finding has increased substantially from its 2010–2013 average of 6.0 percent

Flow, Disability to Work

NILF disability/illness, share employed one year later



Source: Author's Calculations

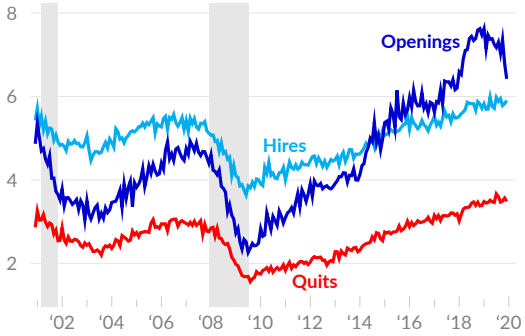
Job Openings and Labor Turnover Survey

Some types of **turnover** in the labor market are healthy and mean people are better able find a new job if they do not like the one they have. The Bureau of Labor Statistics reports the number of job openings, hires, and separations in several industry groups on a monthly basis. Within separations, these data distinguish voluntarily leaving a job as *quits*.

In December 2019, there were 6.4 million total job openings and 5.9 million hires completed. In the same month there were 5.7 million total separations, of which 3.5 million were voluntary. In comparison, there are 5.8 million unemployed persons in December 2019. The ratio of job openings to unemployed persons was 1.1 in the latest month, compared to 1.2 in the same month one year prior, and 0.8 in December 2016.

Job Turnover

job openings, hires, and quits, in millions

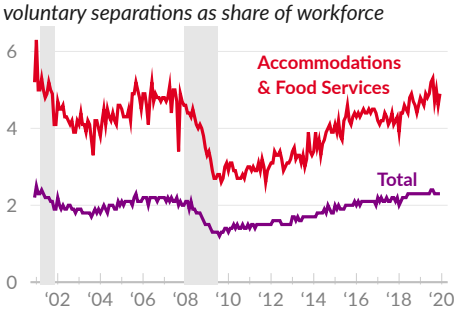


Source: Bureau of Labor Statistics

The number of people who voluntarily separate (quit) a job in a given month, divided by the total number employed is the *quits rate*. The rate typically increases when workers are confident enough to leave one job for another one, and a high quits rate, particularly in low-paying industries, can be a sign of a tight labor market.

Quits Rates

voluntary separations as share of workforce



Source: Bureau of Labor Statistics

The quits rate within the accommodations and food services industries (which includes restaurants), is highly cyclical, and tends to rise when a tight labor market pulls people out of restaurant jobs and into higher paying jobs in other industries. In December 2019, the total quits rate in all industries was 2.3 percent. The accommodations and food services quits rate was 4.9 percent; the series high for the industry group was 6.3 percent in January 2001.

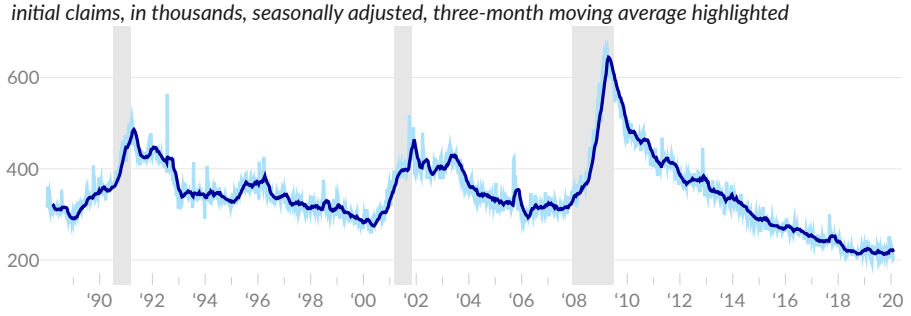
Openings by industry

Initial Jobless Claims

The Department of Labor reported 205,000 initial claims for unemployment insurance during the week ending February 8, 2020. Over the past three months, initial claims averaged 218,083 per week. During the same three month period three years ago, initial claims averaged 249,583 per week.

New Unemployment Insurance Claims

initial claims, in thousands, seasonally adjusted, three-month moving average highlighted



Source: Department of Labor

State- and sub-state-level analysis

Part-time and full-time and hours worked

Job growth

Wage growth:

[AHE and UWE both in various forms]

[Either FRB Atlanta Wage Tracker or replication]

[Summary measure with AHE, MWE, ECI, WS, etc]

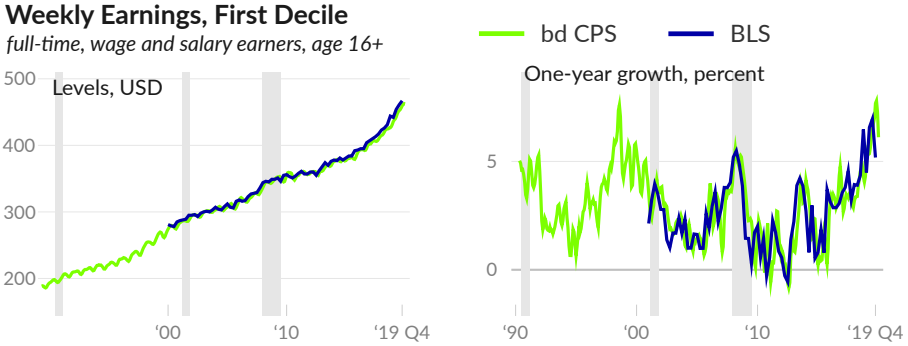
Wage Growth

The **usual wages of full-time workers** can be measured at various points in the income distribution using the Current Population Survey. BLS reports these data by decile and quartile, with the most commonly used measure being the median usual weekly earnings. The **first decile** usual weekly earnings of full-time workers have increased rapidly over the past year, suggesting fewer people are working full-time for less than $10 per hour.

BLS calculations (see —) for 2019 Q4 show nominal first decile usual weekly earnings of $467.00, compared to $444.00 in 2018 Q4, resulting in one-year growth of 5.2 percent. In the previous quarter, 2019 Q3, first decile usual weekly earnings grew by 7.0 percent over the year. Author's calculations from the CPS (see —) show three-month moving average first decile usual weekly earnings of $461.00 in January 2020, $463.00 in December 2019, and $439.00 in January 2019. One-year growth was 6.0 percent for the three months ending January 2020, 7.0 percent for the three months ending December 2019, and 8.0 percent for the three months ending November 2019.

Weekly Earnings, First Decile

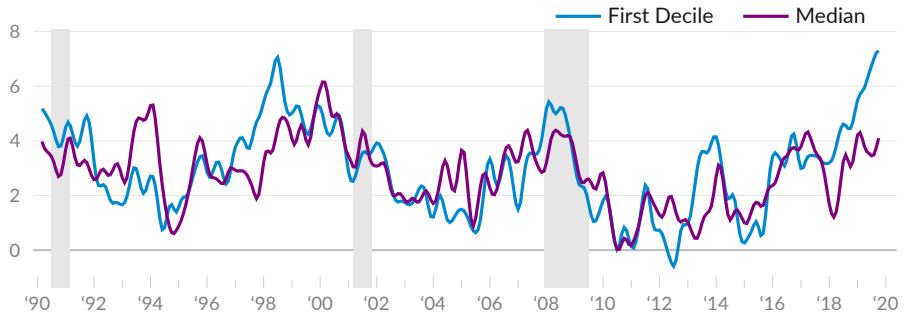
full-time, wage and salary earners, age 16+



Source: Bureau of Labor Statistics and Author's Calculations

Weekly Earnings Growth, First Decile and Median

full-time, wage and salary earners, age 16+, one-year growth, percent

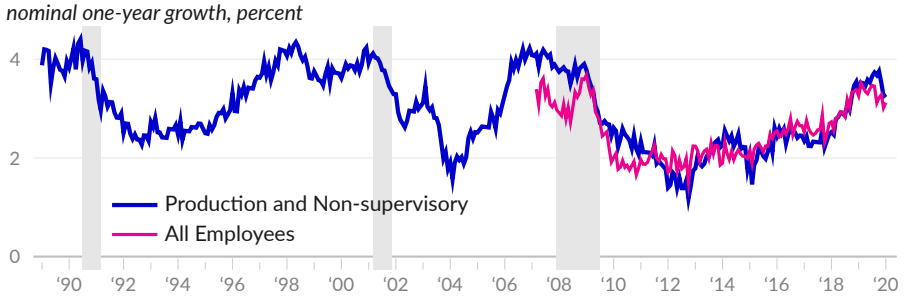


Source: Author's Calculations

Nominal Hourly Wages

Over the year ending January 2020, nominal wages increased by 3.1 percent for all employees and increased by 3.3 percent for production and non-supervisory workers. Comparing the latest three months to the previous three months, nominal wages increased at an annual rate of 2.8 percent for all employees and increased at an annual rate of 2.4 percent for production and non-supervisory employees.

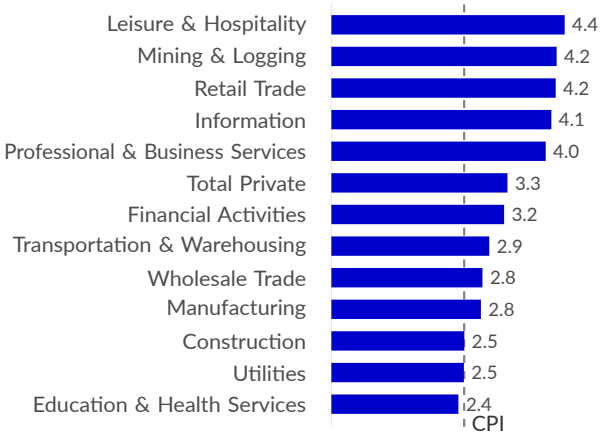
Average Hourly Earnings
nominal one-year growth, percent



Source: Bureau of Labor Statistics

By industry, 10 of 12 groups experienced real wage growth (wage growth above the increase in prices indicated by the consumer price index). The leisure & hospitality industry had the fastest nominal growth rate, at 4.4 percent, followed by 4.2 percent in mining & logging and 4.2 percent in retail trade.

Average Hourly Earnings Growth by Industry
one-year growth, production and non-supervisory, January 2020



Source: Bureau of Labor Statistics

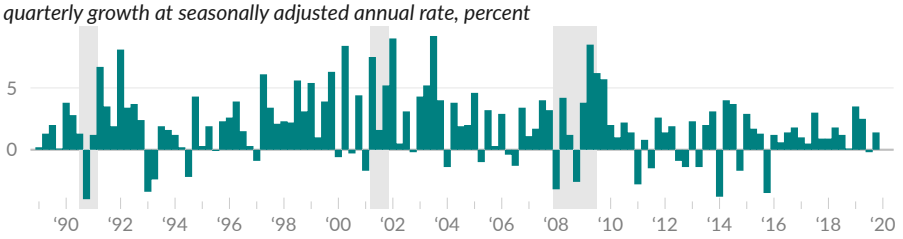
Labor Productivity

Labor productivity is reported by the Bureau of Labor Statistics and measured as real output per hour of work in the nonfarm business sector. Economic theory suggests that labor productivity is particularly important for long-term real economic growth. The measure captures the rate at which people, with all of the resources and equipment and infrastructure available to them, are able to produce goods and services with their work. An increase in labor productivity means real wages can increase without putting upward pressure on inflation. Alternatively, an increase in productivity means a society can meet its material needs with less work.

In 2019 Q4, labor productivity increased at an annual rate of 1.4 percent (see ■), as the result of an increase of 2.5 percent in real ouput and an increase of 1.1 percent in hours worked. In the prior quarter, 2019 Q3, labor productivity decreased at an annual rate of 1.4 percent, as real output increased at an annual rate of 2.3 percent and hours of work increased at an annual rate of 2.5 percent. Over the past five years, labor productivity growth has averaged 1.2 percent, compared to a 1989-onward average of 2.0 percent.

Labor Productivity Growth

quarterly growth at seasonally adjusted annual rate, percent



Source: Bureau of Labor Statistics

There are two areas to investigate in understanding trends in productivity growth rates. The first is the theory that the level of business net investment in equipment and other capital goods, particularly relative to the size of the workforce, determines productivity growth. Such investment allows more goods and services to be produced by the same number amount of work. The second theory, sometimes called the *Kaldor-Verdoorn Law*, is that overall economic growth and capacity utilization determine productivity growth. In this scenario, an economy facing real resource constraints is more likely to find ways to produce goods and services more efficiently.

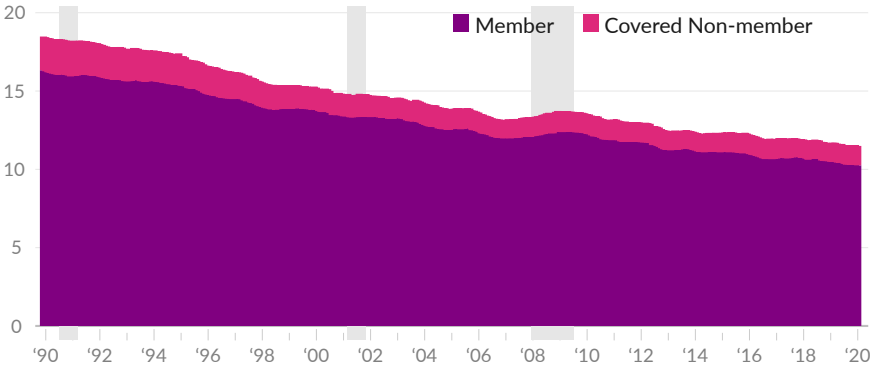
Union Membership

Membership in **unions and employee associations** has diminished in the United States over the past fifty years. Unionized jobs typically offer higher wages and better benefits and union membership tends to increase wages and benefits even in nonunion jobs. Therefore, some research argues, less union membership increases income inequality.

Over the 12 months ending January 2020, the share of jobs held by union and employee association members averaged 10.3 percent. In levels, there were 14.6 million union jobs, and 127.4 million nonunion jobs, on average over the period. This union membership rate averaged 10.5 percent during the 12 months ending January 2019, and 10.7 percent during the 12 months ending January 2018. Union jobs decreased by 178,000 from January 2019 to January 2020, while nonunion jobs increased by 1,767,000.

Union Membership and Coverage

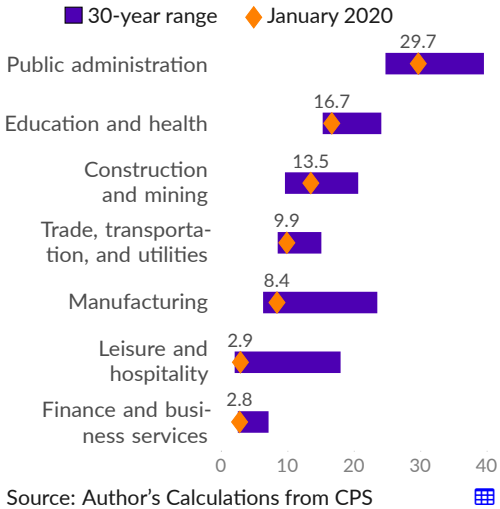
union or employee association share of jobs, percent



Source: Author's Calculations from Current Population Survey

Union Membership Rate by Industry

union or employee association member, percent



Source: Author's Calculations from CPS

Union membership rates vary substantially by industry. Public administration has the highest union membership rate, at 29.7 percent as of January 2020, followed by education and health with 16.7 percent, and construction and mining with 13.5 percent. The manufacturing industry experienced the largest overall percentage point decrease in union membership rates over the past 30 years, and is currently 15.1 percentage points below its February 1989 rate of 23.5 percent. The lowest union membership rate is in the finance and business services (2.8 percent). The union membership rate of the industry was 7.2 percent at its 30-year peak in March 1992.

Financial Markets

The US equity markets and capital markets provide businesses and governments with funding for activities and fixed investments.

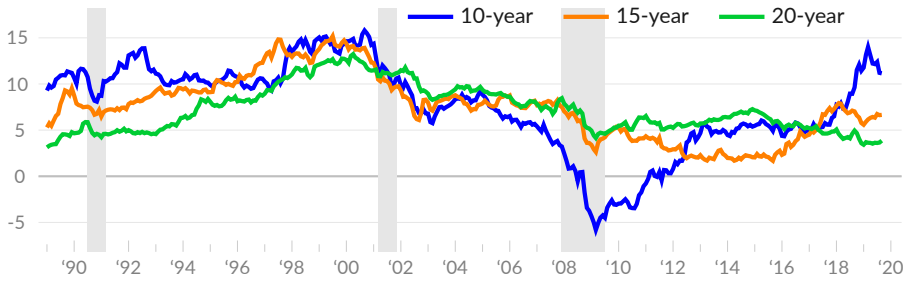
Equity Markets

[SP500]

According to historical stock market return data from Robert Shiller, the inflation-adjusted trailing twenty year annual rate of return of the S&P 500 was 3.9 percent as of September 2019. Real returns are currently low relative to the average trailing twenty year real annual return of 10.1 percent during 1995–2005.

S&P 500 Real Return

trailing period annualized real return

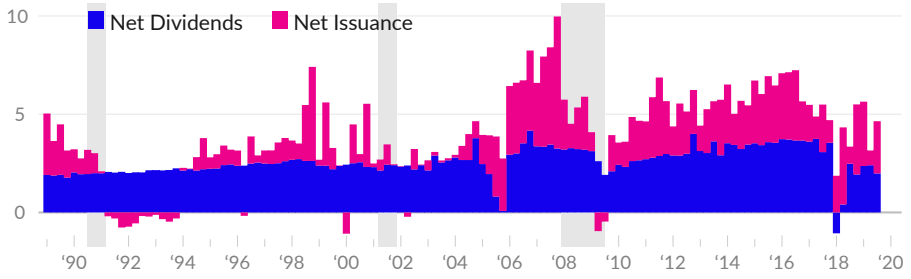


Source: Shiller, Author's Calculations

Text here on payout of nonfinancial corporate equities, both through dividends and through buybacks. Recent numbers as well as some discussion of size of market capitalization relative to GDP. Mention also the two periods were net dividends appear to be zero or negative due to repatriation from abroad.

Corporate Equity Payout

nonfinancial corporation net dividends paid and net issuance of equities, percent of GDP

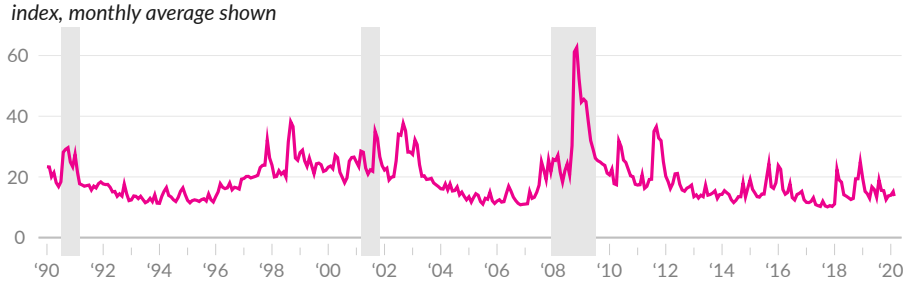


Source: Federal Reserve, Bureau of Economic Analysis

The Chicago Board Options Exchange uses S&P 500 options data to identify expectations of future volatility. This volatility measure, VIX, was 13.7 on February 14, 2020, compared to an average of 14.5 over the past three years.

S&P 500 Volatility Index

index, monthly average shown



Source: Chicago Board Options Exchange

Valuations

[PE Ratio]

[Tobin's Q]

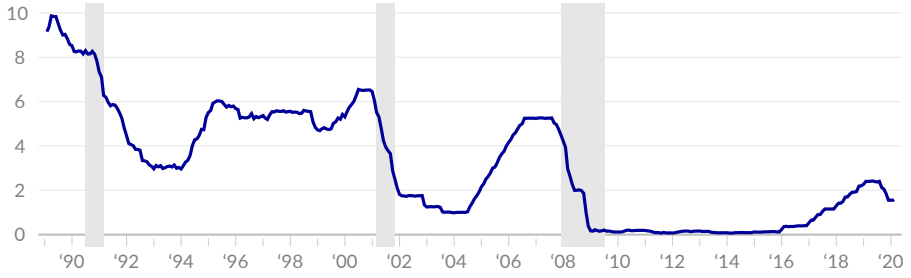
Interest Rates

The US Federal Reserve System (Fed) has a congressional mandate to promote price stability and maximum employment. In practice, a Fed committee (FOMC) determines the federal funds rate, which aims to influence interest rates in the broader economy. Fed monetary policy can be neutral or be used to stimulate or slow the economy.

The effective fed funds (see —) rate is 1.58 percent, as of February 13, 2020. The FOMC cut interest rates three times in 2019, for a total reduction of 75 basis points.

Effective Fed Funds Rate

percent, monthly average except for latest value



Source: Federal Reserve

As of February 13, 2020, the constant maturity yield for a ten-year Treasury bond (see —) is 1.61 percent, compared to 2.68 percent one-year prior. The yield for a two-year Treasury (see —) is 1.44 percent, compared to 2.50 percent a year prior.

Treasury Constant Maturity Yields

percent, monthly average except for latest value

Source: Federal Reserve

[Fed balance sheet (assets and liabilities separately)]

[AAA and high-yield]

The **Treasury yield curve** shows the yield on different maturities of Treasury bonds and bills, usually from short-term, such as three-month, to long-term such as 30-year. This measure is at times described as *inverted*, which means the short-term-debt end of the curve is higher than the long-term-debt end. For example, if the yield on two-year treasuries is higher than the yield on ten-year treasuries.

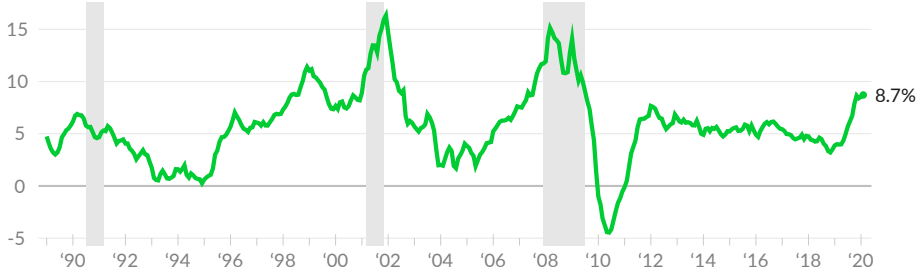
Money and Monetary Policy

The Federal Reserve reports the weekly average **money stock**, broadly, as M2, which includes cash and deposits such as savings accounts and checking accounts. In the week of February 03, 2020, the M2 measure of money averaged $15.4 trillion, equivalent to 71.0 percent of GDP. Institution money market accounts, which are not included in M2, can be combined with M2 to create a slightly-broader-than-M2 measure of the money stock. These funds averaged $2.3 trillion in the same week, equivalent to 10.5 percent of GDP.

A large increase in the amount of money held by individuals and institutions can be the result of a higher rate of saving, a larger government sector financial deficit, an increase in the money supply, a change in preferences for liquidity, or something else. In the first week of February 2020, the M2 plus institutional money funds measure increased over the equivalent previous year value by 8.7 percent, the fastest growth rate since July 2009.

M2 and Institutional Money Funds

one-year percent change, monthly average



Source: Federal Reserve

The breakdown of money stocks suggests...

[BAR CHART HERE]

Prices

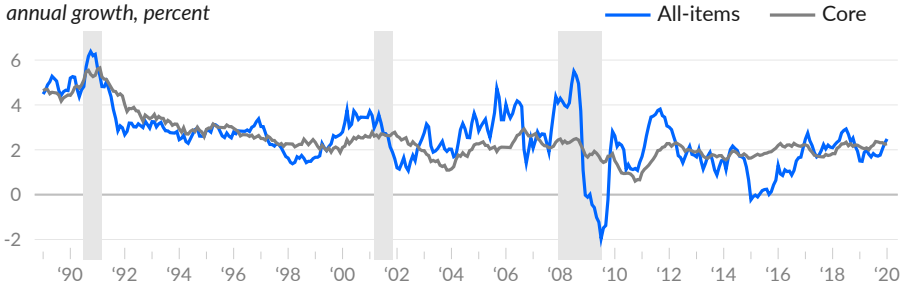
Changes in prices affect the amount of goods and services that can purchased by a fixed amount of income. When researchers try to measure changes in prices, they often look at both the quantity that can be purchased by a unit of currency, and also changes in quality of the item. To understand the overall change in prices faced by a certain group, such as consumers, researchers create a representative "basket" of the goods and services purchased by the group, and track the changes in the basket, and the price of the basket, over time.

Consumer Price Index

Consumer prices increased by 2.5 percent over the year ending January 2020, according to the CPI for all urban consumers. Core inflation, which does not include the more volatile food and energy prices, was 2.3 percent.

Consumer Price Index

annual growth, percent



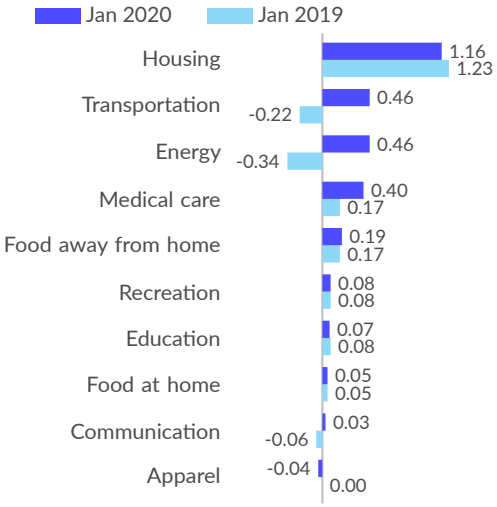
Source: Bureau of Labor Statistics

In January 2020, Housing contributed 1.16 percentage points to overall CPI inflation, compared to a contribution of 1.23 percentage points in January 2019. Transportation contributed 0.46 percentage points to overall inflation in January 2020, compared to a reduction of 0.22 percentage points in January 2019.

Apparel subtracted 0.04 percentage points from overall CPI inflation in January 2020, compared to virtually no effect on inflation in January 2019. did not contribute significantly to overall inflation, compared to a reduction of 0.06 percentage points the previous year.

Consumer Price Index

contribution to annual growth, percentage points



Source: Bureau of Labor Statistics

Discussion of CPI-U-RS

The consumer price index (CPI-U) is used in contracts that include cost adjustments. As a result, historical CPI-U data are not revised if there is a change to the way the CPI is calculated. For research purposes, however, it is ideal to have the most accurate measure of overall changes in prices faced by consumers. BLS also publishes a research series, the CPI-U-RS, which adjusts the historical data of the CPI-U to be consistent with the current methods of producing it.

Discussion of Chained CPI

PPI

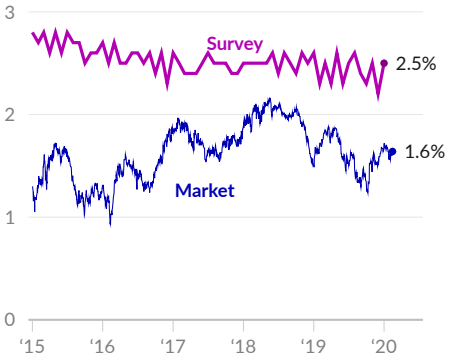
XMPI

PCE

Inflation Expectations

Researchers gain insight on what inflation is expected in the future both through regular **surveys of consumers** and through **market data**. One market-based measure is known as the *inflation breakeven* and is calculated as the difference between the yield on a nominal treasury bond and the yield on a treasury inflation-protected bond of the same maturity. This difference represents the amount of inflation markets have priced-in, on average, for the maturity of the bond.

5-year Expected Average Inflation
expected average annual rate, percent



Source: FRED; U. of Michigan

As of January 2020, consumers expect an average inflation rate of 2.5 percent over the next five years, (see —), compared to an expected rate of 2.6 percent on January 2019. Consumers had expected inflation to average 2.8 percent over the past five years, while actual inflation over the period was 1.6 percent.

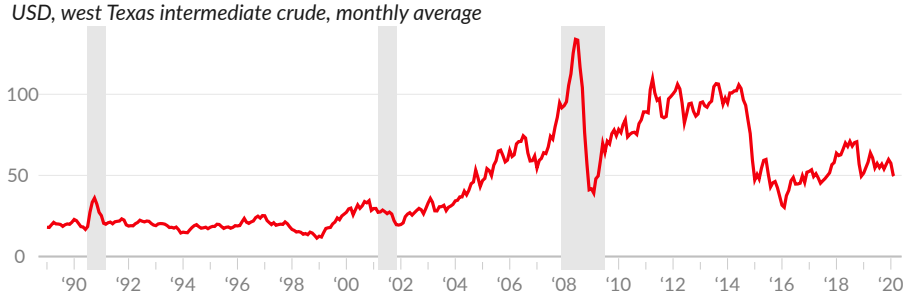
As of February 14, 2020, markets expect an average inflation rate of 2.5 percent over the next five years (see —), compared to an expected rate of 1.74 percent on February 14, 2019. Markets had expected inflation to average 1.36 over the past five years, five years ago.

Commodity Prices

As of February 10, 2020, a barrel of west Texas intermediate (WTI) extbfcrude oil sells for $49.59. Over the past year, this measure of oil prices has decreased by 9.8 percent. Over the past three years, the price decreased by 7.3 percent. Currently, the WTI price is $84.29 per barrel below its June 2008 average.

Oil Price

USD, west Texas intermediate crude, monthly average



Source: FRED

International Comparisons

Demographics

Economic Activity

Labor Markets

Poverty

References

List of tables and sources along with some notes...

One option for this section is to have some json data that captures what original data goes into each series and also what types of calculations are done on the original data.

Acknowledgments

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