

Higher wages and low inflation keep cost of living from rising

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Americans' cost of living fell relative to their earnings on average in 2016. Even though inflation ticked slightly upward, average wages grew faster. The Consumer Price Index, which measures price changes in goods and services, rose 1.7 percent. That was still low in historical terms but the second highest annual increase in the past five years. But the 2.9 percent increase in average wages was the largest wage gain over that five-year period.

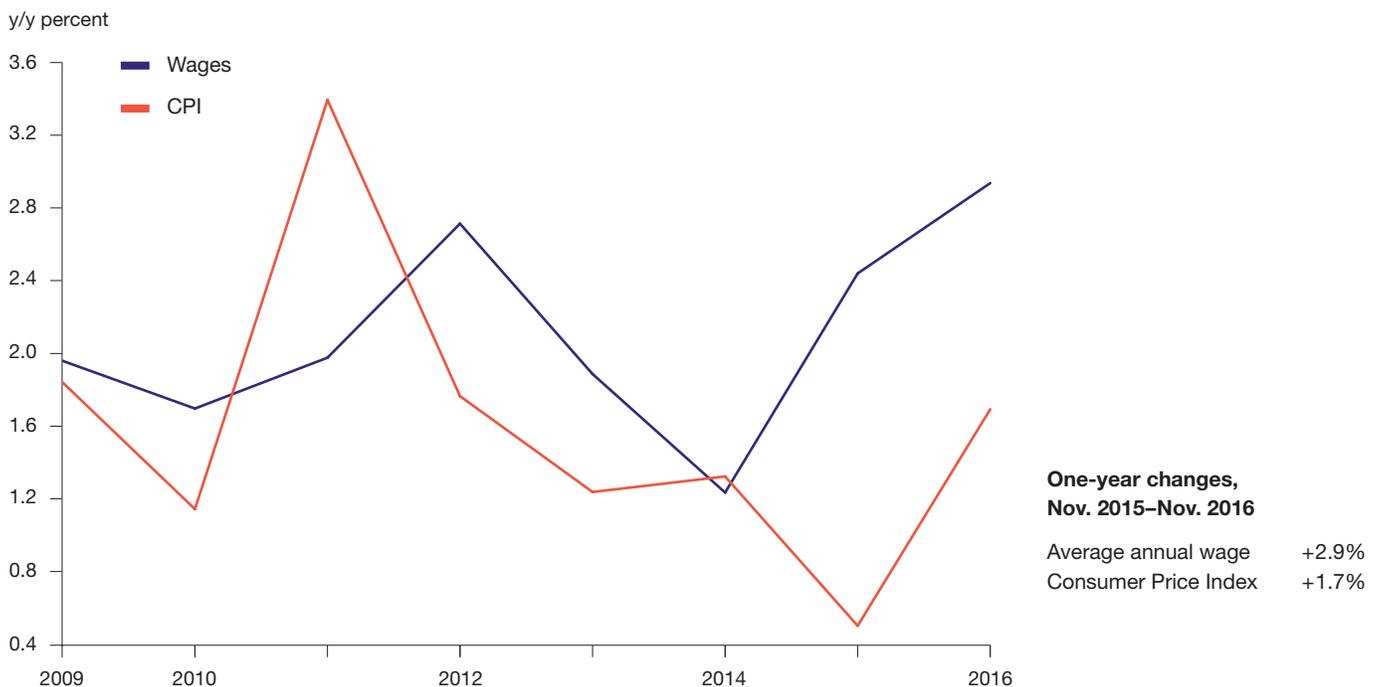
This research brief examines current trends in American households' cost of living. We begin by looking at trends in inflation compared with wages. Next, we look

at changes in the costs of products and services that households use. Finally, we provide data that allow you to calculate the purchasing power of a dollar over several decades.

Recent trends

After reaching a low of 0.5 percent last year, inflation as measured by the increase in the CPI rose to 1.7 percent for the 12 months ending Nov. 30, 2016. Nearly all of this happened in the first half of the year; since June, the CPI has remained virtually flat. Viewed from a wider

Chart 1. Wages grew faster than inflation in 2016 for the second consecutive year.



Note: Wages are measured by the BLS, Average Hourly Earnings of All Employees: Total Private.
Source: Bureau of Labor Statistics.

Table 1. Changes in cost of living for “typical” American households

Inflation Profile	Description	Total Inflation ¹	
		Nov. 2015 – Nov. 2016	Jan. 2000 – Nov. 2016
Price Indexes			
Consumer Price Index (CPI)	Common inflation measure calculated by Bureau of Labor Statistics	1.7%	43.0%
Everyday Price Index (EPI) ²	AIER’s measure of inflation for everyday spending	0.6%	51.8%
Typical household examples			
Urban Renter	Starts with the EPI and removes gas, fuel oil, and propane. Adds shelter (rent) and airfare. Overweights food at a restaurant, alcohol, and public transportation.	1.9%	51.0%
Retired Couple	Starts with the EPI and removes fuel oil and propane. Adds medical-care services. Overweights prescription drugs and medical services. Underweights food at a restaurant and gas.	1.9%	61.6%
Young Family	Starts with the EPI and removes propane, fuel oil, and tobacco. Adds educational supplies, college tuition, child care, and miscellaneous professional fees. Overweights educational supplies, college tuition, child care, and gas service.	1.4%	78.3%

¹ Inflation calculation uses constant category weights as of November 2015. For this reason, total inflation figures will differ from published numbers that update category weights over time.

² EPI includes non-prescription drugs, for which data exist only back to 2010. For data prior to 2010, prescription drug price changes are used.

Sources: Bureau of Labor Statistics (BLS), authors’ calculations.

historical lens, 2016 inflation is still quite low. In the 40 years leading up to the 2008 financial crisis, inflation dipped below 2 percent only three times. The historical trend of the declining purchasing power of the dollar can be seen in Table 3.

Gas prices over the past two years go a long way toward explaining why 2016 inflation was historically low but higher than last year. After falling by 24 percent in 2015, gas prices were nearly flat in 2016, increasing by only 0.9 percent. More downward pressure was put on inflation by prices for food purchased for home use, which fell 2.2 percent in 2016 after remaining flat in 2015.

Older Americans who depend on Social Security checks have not seen their incomes keep pace with the baseline CPI. The Social Security cost-of-living adjustment was

zero at the beginning of 2016 and 0.3 percent at the beginning of 2017. However, these adjustments are tied to the CPI-W, a version of the Consumer Price Index that places more weight on food, apparel, and transportation. If the Social Security Administration is correct that this index more accurately reflects the spending of older Americans, these smaller increases still kept pace with inflation. If not, older Americans have seen their purchasing power decline.

Chart 1 compares changes in the CPI with wages since 2009. The two variables moved in tandem for most of this period, until wage increases outpaced inflation in the past two years.

Table 1 compares the CPI, the broad price index issued by the Bureau of Labor Statistics, with AIER’s Everyday

Price Index, a narrower gauge of the most common everyday expenses. It provides examples of the cost of living for three types of typical American households, which we are calling Urban Renter, Retired Couple, and Young Family. These examples show how different mixes of goods and services interact to yield changes in the cost of living over time.

How the EPI and CPI compare

The EPI excludes big-ticket items such as housing, cars, appliances, and electronics as well as simpler, infrequent purchases such as clothing and professional services (e.g., legal and financial).

Since the EPI weights gas more heavily than the CPI, it shows higher inflation since 2000 but lower inflation for the past year. Even after dropping in 2015 and barely rising in 2016, the price of gas has increased over 70 percent since January 2000, a higher rate than the increase in the overall CPI. Utilities, gas, prescription drugs, cable, and tobacco prices all buoy everyday prices as measured by the EPI. By excluding items with lower-than-average inflation (apparel, electronics, and appliances) and overweighting items with higher-than-average inflation, the EPI's inflation measure has outpaced the CPI since 2000. The EPI also weights food-at-home higher than the CPI, contributing to the EPI's lower value for the year.

Urban Renter

For the current year, the Urban Renter experienced 1.9 percent inflation, slightly higher than the CPI and higher than the EPI. For this category we started with the EPI profile but excluded gasoline and certain utilities. The Urban Renter profile adds shelter (rent) and airfare. It over-weights food purchased at restaurants, alcohol, and public transportation.

Since 2000, the Urban Renter has faced about 51 percent inflation, driven largely by rent (up 55 percent since January 2000). Urban Renter inflation is pushed higher by spending more on food in restaurants, a category that has increased 59 percent since January 2000, and on intracity public transportation, which has increased in price 79 percent since January 2000.

Retired Couple

The Retired Couple also experienced 1.9 percent inflation in 2016. This profile assigns less weight to expenses for gas and food at a restaurant and greater weight to prescription drugs and medical-care services. As we assumed high medical expenses over and above Medicare, we can consider this couple to be at least 10 to 15 years past the age of retirement of 66.

The heavier-than-normal weight on medical services is the largest driver of the 62 percent inflation rate for the Retired Couple since 2000. Prescription drug prices have increased 83 percent since January 2000. Prices of medical-care services have increased 94 percent. These increases have become burdensome for families that spend an outsize portion of their budgets on health care.

Young Family

The Young Family experienced 1.4 percent inflation in 2016. This profile starts with the EPI but in addition to the changes above excludes certain utilities and tobacco. We assigned a greater weight to purchases of educational supplies, college tuition, child care, and fuel oil. This profile is meant to represent a family with young or teenage children—one that has been saving for college.

The Young Family has experienced 78 percent inflation since 2000, much higher than shown in the CPI and EPI over the past 15 years, despite slightly lower inflation in 2016 due to overweighting of gas and food prices. The profile for the Young Family continues to show the price pressures that many middle-class Americans have felt.

There are several extraordinary price increases that have caused the Young Family to experience high aggregate inflation since 2000. The prices of educational books and supplies have increased 174 percent, and college tuition and fees have increased 151 percent since January 2000. Child care and nursery school prices have increased 89 percent over this time.

Imagine parents who started saving for college and paying for child care in 2000 when their child was young. Even if they are not yet paying for college, they must consider the extraordinary price increases for education in their budget. Inflation has severely affected families that need to assign a disproportionate amount of their income to child care and college tuition or college savings.

Table 2. Price Changes of Individual Products and Services

Expenditure Category	Nov. 2015– Nov. 2016	Jan. 2000– Nov. 2016	Expenditure Category	Nov. 2015– Nov. 2016	Jan. 2000– Nov. 2016
Shelter costs	3.6%	54.8%	Medical care		
Food and drink			Prescriptions, medical supplies	6.0%	82.7%
Food-at-home	-2.2%	43.2%	Medical-care services	3.9%	93.7%
Food at a restaurant	2.3%	58.7%	Non-prescription drugs, vitamins	-1.3%	n/a
Alcoholic beverages	1.2%	41.7%	Recreation		
Utilities			TVs	-24.8%	-95.5%
Home-heating fuel oil	-2.0%	112.7%	Cable, satellite TV, and radio	4.5%	72.5%
Propane, kerosene, firewood	0.2%	121.6%	Other video equipment	-3.6%	-86.2%
Electricity	0.2%	64.1%	Video, including rentals	-0.4%	-21.1%
Gas service	6.2%	43.0%	Audio equipment	-8.0%	-57.9%
Water and sewer	4.0%	133.0%	Audio discs, tapes, media	-4.9%	-17.8%
Trash collection	1.6%	66.4%	Pets, products and services	0.9%	37.4%
Household furnishings, operations			Sporting goods	-1.6%	-5.2%
Window and floor coverings	-1.8%	-40.4%	Photography	2.0%	-22.8%
Furniture and bedding	-2.7%	-17.0%	Other recreation	-8.3%	-45.4%
Appliances	-4.0%	-24.4%	Club memberships	3.4%	25.5%
Tools, hardware, outdoor equip.	-1.0%	0.6%	Admissions to movies, etc.	1.9%	62.3%
Housekeeping supplies	-0.7%	24.2%	Fees for lessons	0.5%	56.8%
Other household furnishings	-6.7%	-30.7%	Reading materials	-0.5%	29.2%
Household operations	2.7%	63.2%	Education and communication		
Apparel			Books and supplies	6.0%	173.6%
Men	-1.3%	-9.3%	College tuition, fees	2.1%	150.8%
Boys	-1.6%	-11.0%	K–12 tuition, fees	3.4%	133.1%
Women	0.8%	-4.4%	Child care and nursery school	2.5%	89.0%
Girls	1.6%	-17.6%	Technical school tuition, fees	1.8%	110.5%
Footwear	0.8%	12.2%	Postage and delivery services	0.3%	69.7%
Infants and toddlers	-6.7%	-12.3%	Telephone services	-2.9%	-3.3%
Jewelry and watches	8.8%	26.7%	Personal computers, equipment	-6.7%	-91.7%
Transportation			Computer software, accessories	-10.9%	-63.0%
New and used cars	-1.2%	-2.5%	Internet	0.8%	-19.3%
Motor fuel (gas)	0.9%	72.4%	Consumer information items	-2.6%	-72.6%
Car parts and equipment	-1.5%	40.7%	Other goods and services		
Car maintenance and repair	1.9%	59.6%	Tobacco and smoking products	3.4%	164.2%
Car insurance	6.7%	96.8%	Personal-care products	-0.5%	6.4%
Motor-vehicle fees	2.0%	76.1%	Personal-care services	1.7%	46.3%
Airfare	-6.6%	22.2%	Misc. personal services	3.5%	85.3%
Other intercity transportation	3.4%	0.6%	Misc. personal goods	-1.3%	-18.7%
Intracity public transportation	0.9%	78.6%			

Table 3. Purchasing Power Conversion Factors

To convert past dollars into 2016 dollars use Multiplier A.
 To convert 2016 dollars to past dollars use Multiplier B.

	Multiplier A	Multiplier B		Multiplier A	Multiplier B		Multiplier A	Multiplier B
1925	13.6748	0.0731	1956	8.8245	0.1133	1987	2.1111	0.4737
1926	13.5524	0.0738	1957	8.5391	0.1171	1988	2.0284	0.4930
1927	13.8192	0.0724	1958	8.3123	0.1203	1989	1.9350	0.5168
1928	13.9803	0.0715	1959	8.2291	0.1215	1990	1.8359	0.5447
1929	13.9803	0.0715	1960	8.1108	0.1233	1991	1.7613	0.5678
1930	14.3640	0.0696	1961	8.0249	0.1246	1992	1.7095	0.5850
1931	15.7728	0.0634	1962	7.9299	0.1261	1993	1.6605	0.6022
1932	17.5842	0.0569	1963	7.8328	0.1277	1994	1.6183	0.6179
1933	18.5473	0.0539	1964	7.7338	0.1293	1995	1.5742	0.6353
1934	17.9236	0.0558	1965	7.6132	0.1314	1996	1.5293	0.6539
1935	17.4774	0.0572	1966	7.3903	0.1353	1997	1.4944	0.6692
1936	17.2989	0.0578	1967	7.1909	0.1391	1998	1.4716	0.6795
1937	16.6775	0.0600	1968	6.8963	0.1450	1999	1.4401	0.6944
1938	17.0227	0.0587	1969	6.5392	0.1529	2000	1.3930	0.7179
1939	17.2471	0.0580	1970	6.1784	0.1619	2001	1.3547	0.7382
1940	17.1240	0.0584	1971	5.9241	0.1688	2002	1.3336	0.7499
1941	16.2905	0.0614	1972	5.7364	0.1743	2003	1.3040	0.7669
1942	14.6864	0.0681	1973	5.4027	0.1851	2004	1.2700	0.7874
1943	13.8591	0.0722	1974	4.8649	0.2056	2005	1.2283	0.8141
1944	13.6359	0.0733	1975	4.4573	0.2244	2006	1.1899	0.8404
1945	13.3327	0.0750	1976	4.2152	0.2372	2007	1.1569	0.8644
1946	12.2909	0.0814	1977	3.9578	0.2527	2008	1.1141	0.8976
1947	12.2909	0.0814	1978	3.6772	0.2719	2009	1.1181	0.8944
1948	9.9776	0.1002	1979	3.3052	0.3025	2010	1.1001	0.9090
1949	10.0754	0.0993	1980	2.9108	0.3435	2011	1.0664	0.9377
1950	9.9672	0.1003	1981	2.6382	0.3790	2012	1.0448	0.9571
1951	9.2409	0.1082	1982	2.4858	0.4023	2013	1.0297	0.9711
1952	9.0350	0.1107	1983	2.4084	0.4152	2014	1.0133	0.9869
1953	8.9618	0.1116	1984	2.3091	0.4331	2015	1.0121	0.9881
1954	8.9340	0.1119	1985	2.2300	0.4484	2016	1.0000	1.0000
1955	8.9590	0.1116	1986	2.1885	0.4569			

Products and services

As Table 2 shows, the prices of products related to petroleum either fell in 2016 or had increases lower than overall inflation, while electronics prices continued to drop. Products and services related to education and health care generally increased by more than the overall CPI.

Since 2000, the prices for home heating, tobacco, and education-related products and services have more than doubled. Among other items logging the largest price increases in the past decade-and-a-half are water and sewer utilities, gasoline, and car insurance.

Conversion Factors

Table 3 provides a simple way to convert values from the past into their equivalent value today (or vice versa). To convert a value from a particular year to its 2016 equivalent, multiply the original price by the conversion factor, Multiplier A, shown in the table for the appropriate year. For instance, if you want to know whether the value of your house has kept pace with inflation, multiply the price of the house by the Multiplier A factor shown for the year you purchased it.

Example: A house was purchased in 1965 for \$25,000. Adjusting for price inflation, this price in 2015 dollars is

$\$25,000 \times 7.6132 = \$190,330$. This is approximately how much the house would have to sell for today just to keep up with price inflation.

To convert 2016 dollars into past dollars, multiply today's dollar amount by the conversion factor, Multiplier B, shown in the table for the appropriate year.

Example: If the price of a movie ticket is about \$10 today, what was the constant-dollar equivalent in 1974? Today's \$10 price in 1974 dollars is $\$10 \times 0.2056 = \2.06 .

Looking Ahead

Economists are forecasting modestly higher inflation for 2017 and beyond. The average forecast from the Wall Street Journal's monthly survey of economists taken after the November election was 2.2 percent inflation for 2017 and 2.4 percent in 2018 (www.wsj.com/articles/gdp-inflation-and-interest-rates-forecast-to-rise-under-trump-presidency-1479054608), just above the Federal Reserve's target rate of 2 percent. One reason for the uptick is the fiscal stimulus expected from the Trump administration, combining tax cuts with new spending on infrastructure. While such spending would add to

the deficit and could cause problems down the road, most economists predict short-term economic growth, and with it an increase in inflation. If average forecasts for 2017 and 2018 prove correct, it would be the first multi-year period of inflation above 2 percent since the Great Recession.

Gasoline prices, which have driven low inflation in recent years, are expected to rise in 2017. The U.S. Energy Information Administration forecasts a 2017 average price of \$2.38 a gallon, up from \$2.15 a gallon in 2016 (www.eia.gov/outlooks/steo/report/prices.cfm). This would amount to a 10.7 percent increase in gas prices, substantially outpacing overall forecasted inflation of 2.2 percent.

After decreasing 2.2 percent and putting downward pressure on inflation in 2016, food-at-home prices are projected to rebound slightly in 2017. The U.S. Department of Agriculture projects an increase of 0.5 to 1.5 percent for the year (www.ers.usda.gov/data-products/food-price-outlook/summary-findings.aspx). That would still lag overall projected inflation for the year. ☼

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