

Ch. 7 - Inflation

What is inflation?

- it is an increase in the general price level of goods and services in the economy
 - *NOT an increase in the price of any specific product**

What is deflation?

- it is a decrease in the general price level of goods and services in the economy

CPI - Consumer Price Index

- reported measure of inflation because it measures changes in average prices of consumer goods and services
(AKA. *cost-of-living index*)
 - *it does not include business or government purchased items**
 - *prepared by the BLS - "price collectors" contact retailers on a monthly basis**

How is CPI computed?

- take current year price and compare them to a base year price

$$\frac{\text{current-year price}}{\text{base-year price}} \times 100 = \text{CPI}$$

disinflation - reduction in the rate of inflation

Criticisms of the CPI

1. **CPI does not always reflect the standard of living** - over- or understate the impact of inflation
2. **CPI does not reflect qualities of all items**
3. **use of a single base-year market basket ignores the law of demand**

How We Spend | A Look at the Consumer Price Index

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Each month, the Bureau of Labor Statistics gathers prices on goods and services to form the Consumer Price Index. Each shape below represents how much the average American spends in different categories.

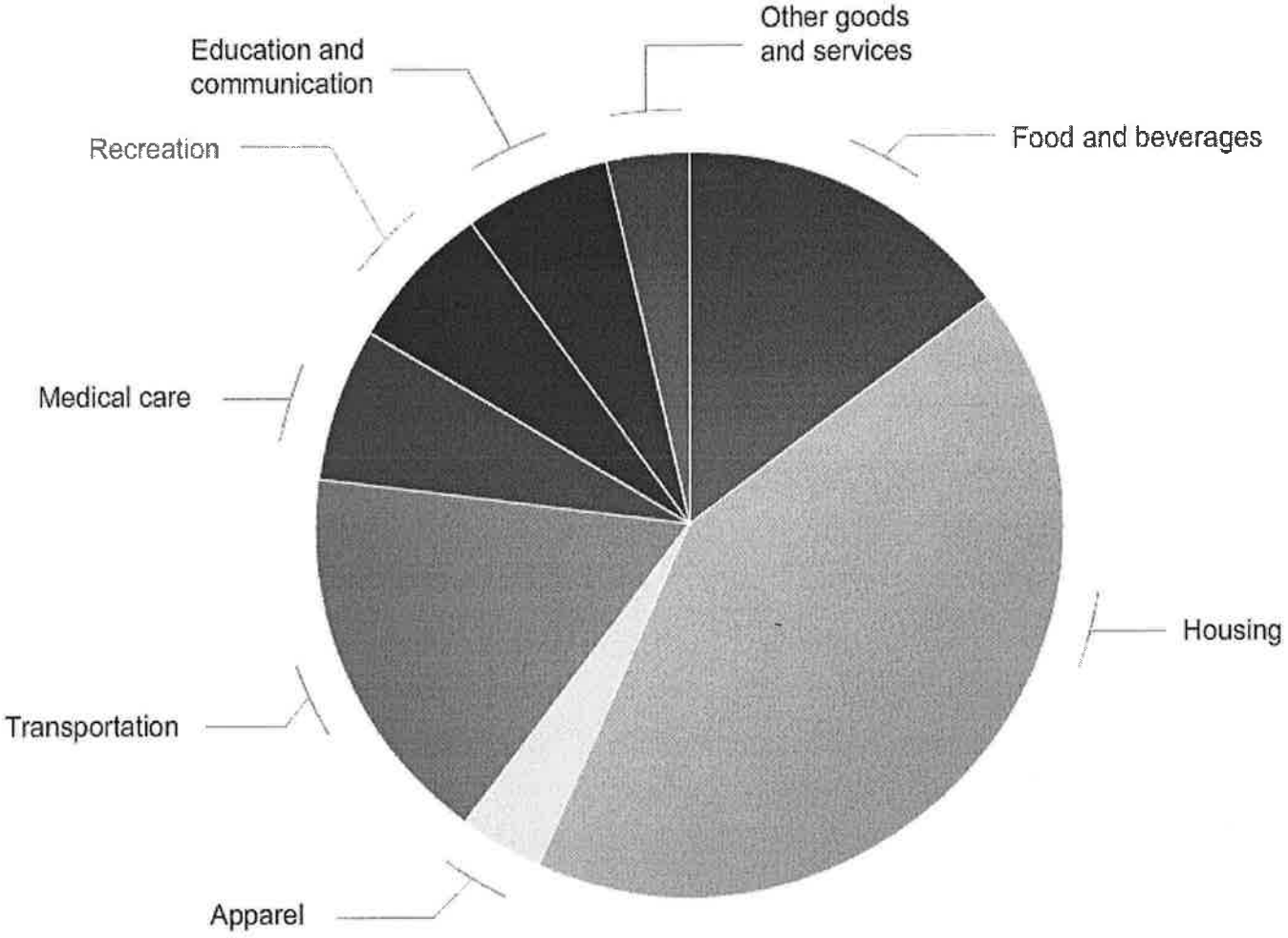


Table 1. Consumer Price Index for All Urban Consumers (CPI-U): U.S. city average, by expenditure category

(1982-84=100, unless otherwise noted)

Expenditure category	CPI-U	Relative importance,	Unadjusted indexes	
		December 2007	Feb. 2008	Mar. 2008
All items	100.000		211.893	213.528
All items (1987=100)	-		834.139	839.836
Food and beverages	14.914		209.462	209.892
Food	13.833		209.166	209.385
Food at home	7.680		209.329	208.203
Cereals and bakery products	1.030		233.389	236.261
Meats, poultry, fish, and eggs	1.807		199.858	199.775
Dairy and related products .....	.887		208.166	208.171
Fruits and vegetables	1.156		272.129	268.448
Nonalcoholic beverages and beverage materials .....	.928		157.805	158.089
Other food at home	1.852		177.863	178.238
Sugar and sweets .....	.277		180.588	182.214
Fats and oils .....	.205		184.878	182.808
Other foods	1.369		182.064	182.597
Other miscellaneous foods ^{1 2} .....	.404		118.182	117.321
Food away from home ¹	6.173		211.878	212.537
Other food away from home ^{1 2} .....	.297		148.386	148.684
Alcoholic beverages	1.080		212.044	212.407
Housing	42.427		213.026	214.389
Shelter	32.598		244.786	245.995
Rent of primary residence ³	5.765		240.325	240.874
Lodging away from home ²	2.584		144.082	149.434
Owners' equivalent rent of primary residence ^{3 4}	23.942		250.451	250.966
Tenants' and household insurance ^{1 2} .....	.325		117.622	117.701
Fuels and utilities	5.128		205.796	209.221
Household energy	4.215		185.994	189.693
Fuel oil and other fuels .....	.351		309.289	332.139
Gas (piped) and electricity ³	3.864		187.376	190.105
Water and sewer and trash collection services ² .....	.913		149.057	149.315
Household furnishings and operations	4.702		126.753	127.423
Household operations ^{1 2} .....	.737		143.500	145.034
Apparel	3.731		117.839	120.881
Men's and boys' apparel .....	.935		112.917	114.994
Women's and girls' apparel	1.600		106.340	110.645
Infants' and toddlers' apparel .....	.185		115.750	118.037
Footwear .....	.679		122.377	124.407
Transportation	17.688		190.520	195.189
Private transportation	16.583		188.571	191.067
New and used motor vehicles ²	7.191		94.581	94.318
New vehicles	4.632		136.279	135.727
Used cars and trucks ¹	1.773		137.248	137.225
Motor fuel	5.482		259.242	278.739
Gasoline (all types)	5.215		257.845	278.497
Motor vehicle parts and equipment ¹ .....	.356		125.225	126.325
Motor vehicle maintenance and repair	1.123		228.731	229.785
Public transportation	1.106		235.724	242.929
Medical care	8.231		362.155	363.000
Medical care commodities	1.601		296.130	297.308
Medical care services	4.630		362.198	362.872
Professional services	2.626		307.928	308.728
Hospital and related services ³	1.467		527.971	528.968

See footnotes at end of table.

Consequences of Inflation

1. Inflation shrinks income - will income keep pace with inflation?

$$\text{real income} = \frac{\text{nominal income}}{\text{CPI (as decimal)}}$$

***COLA - Cost-of-Living Adjustment**

$$\text{Salary of a given year} = \text{salary in a previous year} \times \frac{\text{CPI given (current year)}}{\text{CPI previous}}$$

***need CPI and salary for one year and CPI for another**

2. Inflation and Wealth

Wealth - value of assets owned at some point in time

Inflation can both help and hurt a person's wealth:

HELP - value of assets, such as real estate, over time

HURT - penalizes people without it -> inflation causes unaffordable prices

3. Inflation and the Real Interest Rate

nominal interest rate - actual interest rate without an adjustment for inflation rate

Real interest rate = nominal interest rate - the inflation rate

$$\begin{array}{l} \text{EX.} \\ = \\ = \end{array} \begin{array}{l} \text{(Savings account) 2\% - 5\% inflation rate} \\ \\ -3 \end{array}$$

* any negative number will benefit the borrower (in this case the bank will make out and the individual will be adversely affected by the interest rate)

EX. *adjustable interest rates (ARMs) - adjusted for inflation*
fixed rate mortgage - fixed rates with no change

Types of Inflation

A) Demand-Pull Inflation

- rise in the general price level resulting from an excess of total spending
- *operates at full employment when people are working and earning income**

B) Cost-Push Inflation

- an increase in the general price level resulting from an increase in the cost of production

C) Hyperinflation

- extremely rapid rise in the general price level (100% or higher per year)

Causes of Hyperinflation:

1. *inflation psychosis* - people buy quickly today to avoid paying even more tomorrow (eagerness to spend)
2. *huge unanticipated inflation jeopardizes investments and savings* (mortgages, life insurance policies, etc.)
3. *wage-price spiral* - occurs when increases in nominal wage rates are passed on in higher prices, which, in turn, result in even higher nominal wage rates and prices
4. people may *turn to more speculative investments* that might yield higher financial returns (less investment in factories, machinery, etc.)
5. invariably the result of *a governments ill advised decision to increase a nation's money supply*

EX. Weimar Republic (Germany) in the 1920s and the Great Depression



Date: German Marks needed
to buy one ounce of gold

Jan 1919.....	170.00
Sept 1919.....	499.00
Jan 1920.....	1,340.00
Sept 1920.....	1,201.00
Jan 1921.....	1,349.00
Sept 1921.....	2,175.00
Jan 1922.....	3,976.00
Sept 1922.....	30,381.00
Jan 1923.....	372,477.00
Sept 1923.....	269,439,000.00
Oct 2, 1923.....	6,631,749,000.00
Oct 9, 1923.....	24,868,950,000.00
Oct 16, 1923.....	84,969,072,000.00
Oct 23, 1923.....	1,160,552,882,000.00
Oct 30, 1923.....	1,347,070,000,000.00
Nov 5, 1923.....	8,700,000,000,000.00
Nov 30, 1923.....	87,000,000,000,000.00

The German hyperinflation occurred
over a period of several years

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Updated: March 28, 2012

“Inflation: Prices on the Rise”

Finance & Development - *IMF.org*

Inflation measures how much more expensive a set of goods and services has become over a certain period, usually a year

It may be one of the most familiar words in economics. Inflation has plunged countries into long periods of instability. Central bankers often aspire to be known as “inflation hawks.” Politicians have won elections with promises to combat inflation, only to lose power after failing to do so. Inflation was even declared Public Enemy No. 1 in the United States—by President Gerald Ford in 1974. What, then, is inflation, and why is it so important?

Inflation is the rate of increase in prices over a given period of time. Inflation is typically a broad measure, such as the overall increase in prices or the increase in the cost of living in a country. But it can also be more narrowly calculated—for example, for certain goods, such as food, or for services, such as school tuition. Whatever the context, inflation represents how much more expensive the relevant set of goods and/or services has become over a certain period, most commonly a year.

Measuring inflation

Consumers’ cost of living depends on the prices of the many goods and services they consume and the share of each good or service in the household budget. To measure the average consumer’s cost of living, government agencies conduct household surveys to identify a basket of commonly purchased items and then track the cost of purchasing this basket over time. (Housing expenses, including rent and mortgages, constitute the largest component of the consumer basket in the United States. In other countries, especially poorer ones, food can be biggest part of household budgets.) The cost of this basket at a given time expressed relative to a base year is the consumer price index (CPI), and the percentage change in the CPI over a certain period is consumer price inflation, the most widely used measure of inflation. (For example, if the base year CPI is 100 and the current CPI is 110, inflation is 10 percent over the period.)

There are other important measures of price stability. Core consumer inflation—which excludes prices set by the government and the more volatile prices of products, such as food and energy that are most affected by seasonal factors or temporary supply conditions — focus on the underlying and persistent trends in inflation and is also watched closely by policymakers. The overall inflation rate for not just for consumption goods but all goods produced in an economy can be calculated by using the gross domestic product (GDP) deflator, an index with much broader coverage than the CPI.

The CPI basket is mostly kept constant over time for consistency, but is tweaked occasionally to reflect changing consumption patterns—for example, to include new hi-tech goods and to replace items no longer widely purchased. Conversely, the contents of the GDP deflator vary each year by definition because it tracks the prices of everything produced in an economy. This makes the GDP deflator more “current” than the mostly fixed CPI basket, but at the same time, the deflator includes non-consumer items (such as military spending) and is therefore not a good measure of the cost of living.

The good and the bad

To the extent that households’ nominal income, which they receive in current money, does not increase as much as prices, they are worse off, because they can afford to purchase less. In other words, their purchasing power or real—inflation-adjusted—income falls. Real income is a proxy for the standard of living. When real incomes are rising, so is the standard of living, and vice versa.

In reality, prices change at different paces. Some, such as the prices of traded commodities, change every day; others, such as wages established by contracts, take longer to adjust (or are “sticky,” in economic parlance). In an inflationary environment, unevenly rising prices inevitably reduce the purchasing power of some consumers, and this erosion of real income is the single biggest cost of inflation.

Inflation can also distort purchasing power over time for recipients and payers of fixed interest rates. Take pensioners who receive a fixed 5 percent yearly increase to their pension. If inflation is higher than 5 percent, a pensioner’s purchasing power falls. On the other hand, a borrower who pays a fixed-rate mortgage of 5 percent would benefit from 5 percent inflation, because the real interest rate (the nominal rate minus the inflation rate) would be zero; servicing this debt would be even easier if inflation were higher, as long as the borrower’s income keeps up with inflation. The lender’s real income, of course, suffers. To the extent that inflation is not factored into nominal interest rates, some gain and some lose purchasing power.

Indeed, many countries have grappled with high inflation—and in some cases hyperinflation, 1,000 percent or higher inflation a year. In 2008, Zimbabwe experienced one of the worst cases of hyperinflation ever, with estimated annual inflation at one point of 500 billion percent. Such high levels of inflation have been disastrous, and countries have had to take difficult and painful policy measures to bring inflation back to reasonable levels, sometimes by giving up their national currency, as Zimbabwe has.

If rapidly rising prices are bad for the economy, is the opposite, or falling prices, good? It turns out that deflation is not desirable either. When prices are falling, consumers delay making purchases if they can, anticipating lower prices in the future. For the economy this means less economic activity, less income generated by producers, and lower economic growth. Japan is one country with a long period of nearly no economic growth largely because of deflation. Preventing deflation during the recent global financial crisis is one of the reasons the U.S. Federal Reserve and other central banks around the world kept interest rates low for a prolonged period and have instituted other policy measures to ensure financial systems have plenty of liquidity.

Most economists now believe that low, stable, and—most important—predictable inflation is good for an economy. If inflation is low and predictable, it is easier to capture it in price-adjustment contracts and interest rates, reducing its distortionary impact. Moreover, knowing that prices will be slightly higher in the future gives consumers an incentive to make purchases sooner, which boosts economic activity. Many central bankers have made their primary policy objective maintaining low and stable inflation, a policy called inflation targeting.

What creates inflation?

Long-lasting episodes of high inflation are often the result of lax monetary policy. If the money supply grows too big relative to the size of an economy, the unit value of the currency diminishes; in other words, its purchasing power falls and prices rise. This relationship between the money supply and the size of the economy is called the quantity theory of money, and is one of the oldest hypotheses in economics.

Pressures on the supply or demand side of the economy can also be inflationary. Supply shocks that disrupt production, such as natural disasters, or raise production costs, such as high oil prices, can reduce overall supply and lead to “cost-push” inflation, in which the impetus for price increases comes from a disruption to supply. The food and fuel inflation episodes of 2008 and 2011 were such cases for the global economy—sharply rising food and fuel prices were transmitted from country to country by trade. Poorer countries were generally hit harder than advanced economies. Conversely, demand shocks, such as a stock market rally, or expansionary policies, such as when a central bank lowers interest rates or a government raises spending, can temporarily boost overall demand and economic growth. If, however, this increase in demand exceeds an economy’s production capacity, the resulting strain on resources creates “demand-pull” inflation. Policymakers must find the right balance between boosting growth when needed without overstimulating the economy and causing inflation.

Expectations also play a key role in determining inflation. If people or firms anticipate higher prices, they build these expectations into wage negotiations or contractual price adjustments (such as automatic rent increases). This behavior

