

Prices in Grandma's Day

- Ever heard grandparents complain about today's prices?

Examples?

- Were things really cheaper in the “good old days”?
- Let's look at two goods and compare prices over time ...

Movie Tickets and Big Macs®

What was average price of a **movie ticket** in 2012?

2012 = \$7.92.

What was average price of a **movie ticket** in 1967
(35 years ago)?

1967 = \$1.22

What was average price of a **McDonald's Big Mac**®
in 2012?

2012 = \$4.33.

What was average price of a **McDonald's Big Mac**®
in 1967?

1967 = \$0.45

How Much Have Prices Changed?

- Measure percent change in prices from one year to another.
- Percent change formula:

(Price in Year 2 (2012) – Price in Year 1 (1967))

divided by

Price in Year 1 (1967) x 100

Calculate for movie tickets and Big Macs

How Much Have Prices Changed?

Table 17.1-A Historic Prices

Goods	Price in 1967	Price in 2012	Percent Change in Price	1967 Price in 2012 Dollars
Movie Ticket	\$1.22	\$7.92		
McDonald's Big Mac®	\$0.45	\$4.33		

How Much Have Prices Changed?

Table 17.1-B Changes in Overall Price Level

Goods	Price in 1967	Price in 2012	Percent Change in Price	1967 Price in 2012 Dollars
Movie Ticket	\$1.22	\$7.92	549%	
McDonald's Big Mac®	\$0.45	\$4.33	862%	

How many Big Macs could you buy for \$1 in 1967?

2.22

How many Big Macs could you buy for \$1 in 2012?

0.23

YOUR GRANDPARENTS IN 1967

- Were they better off than you are now?
What do you think?

Purchasing Power

- Prices are the amount of currency (in dollars) needed to purchase particular goods and services.
- “Purchasing power” refers to the amount of goods or services that can be purchased with an amount of dollars.
- Could you survive today if you made the same salary as your grandfather did in 1967?
- The purchasing power of dollars is eroded by overall price increases.
 - Because prices tend to rise (due to inflation), you'd need a much larger salary to maintain the same standard of living.
- You would need an increase in salary of 549 percent and 862 percent (for Big Macs[®] and movie tickets) to be as well off as your grandfather was in 1967.
- How many Big Macs[®] could be bought for \$1 in 1967? In 2012?

Inflation

- Inflation is a rise in the general (or average) level of prices of goods and services in an economy over a period of time.
 - A trend, not a one-time event
 - A rise in most, if not all, prices over time
- When the general (or average) price level rises, purchasing power decreases and our currency buys fewer goods and services.
- Price level is typically measured in the United States by the U.S. Bureau of Labor Statistics (BLS) and compiled as the U.S. Consumer Price Index (CPI).

Consumer Price Index

- The index that is used to measure average changes in prices paid by consumers in urban markets for a market basket of commonly purchased goods and services.
- Compares the combined price of all of these goods and services in the market basket from one month to the next.
- The BLS collects information about the prices of goods and services in eight major categories.

Consumer Price Index

- **FOOD AND BEVERAGES**
(breakfast cereal, milk, coffee, chicken, full service meals, snacks)
- **HOUSING**
(rent of primary residence, owners' equivalent rent, fuel oil, bedroom furniture)
- **APPAREL** (men's shirts and sweaters, women's dresses, jewelry)
- **TRANSPORTATION**
(new vehicles, airline fares, gasoline, motor vehicle insurance)
- **MEDICAL CARE** (prescription drugs and medical supplies, physicians' services, eyeglasses and eye care, hospital services)
- **RECREATION**
(televisions, toys, pets and pet products, sports equipment, admissions)
- **EDUCATION AND COMMUNICATION**
(college tuition, postage, telephone services, computer software and accessories)
- **OTHER GOODS AND SERVICES** (tobacco and smoking products, haircuts and other personal services, funeral expenses)

Working with CPI

- Index: a mathematical tool that substitutes an index level for the overall price of a market basket.
- All indices use a base year—for easy reference—set to an index level of 100, and the CPI uses 1982–84 as its reference base.
- The average price of all of the goods and services in the market basket for the years 1982, 1983, and 1984 is set to 100.
- This base level is used to calculate changes in prices of the market basket.
- An index of 105 (for 1985) means there has been a 5 percent increase in the price of the market basket since base year.

Working with CPI

- Changes in the index can be expressed as percent changes, either monthly or annually, called the **inflation rate**.
- The **inflation rate**: the percent change in the CPI over the reference period. Here is a formula for calculating inflation rate (Note: Year 1 is the earliest year):

$$\frac{\text{CPI (Year 2)} - \text{CPI (Year 1)}}{\text{CPI (Year 1)}} \times 100$$

- For example, the inflation rate from 1990 to 1991 was **4.2%**:

$$\begin{aligned} \frac{\text{CPI (1991)} - \text{CPI (1990)}}{\text{CPI (1990)}} \times 100 &= \frac{(136.2 - 130.7)}{130.7} \times 100 = \\ &= (5.5/130.7) \times 100 = 0.420 \times 100 = \mathbf{4.2\%} \end{aligned}$$

Working with CPI

Table 17.2-A Calculating Inflation Rates

	CPI (Year 1)	CPI (Year 2)	Calculations	Inflation Rate
1995	148.2	152.4		
2005	188.9	195.3		
2012	224.9	229.6		

Working with CPI

Table 17.2-A Calculating Inflation Rates

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2005	188.9	195.3	$[(195.3 - 188.9)/188.9] \times 100$	3.4%
2012	224.9	229.6	$[(229.6 - 224.9)/224.9] \times 100$	2.2%

If you earned \$10 an hour in 1994, how much would you have to earn in 1995 for your wage to have the same REAL purchasing power?

\$10.28

Working with CPI

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If you save \$100 in 2004, how much interest would you have to earn in order for the savings to have the same purchasing power in 2005?

3.4 percent

How Much Have Prices Changed?

Table 17.2-B Changes in Overall Price Level

Goods	Price in 1967	Price in 2012	Percent Change in Price	Converting Grandpa's Prices: 1967 Price x (2012 CPI / 1967 CPI)	1967 CPI was 33.4
Movie Ticket	\$1.22	\$7.92	549%		2012 CPI was 229.6
McDonald's Big Mac®	\$0.45	\$4.33	862%		

Reminder: We use the term **REAL PRICES** to indicate that the price has been adjusted for inflation and expressed as a price in a specified year. We use the term **NOMINAL PRICES** to refer to unadjusted prices.

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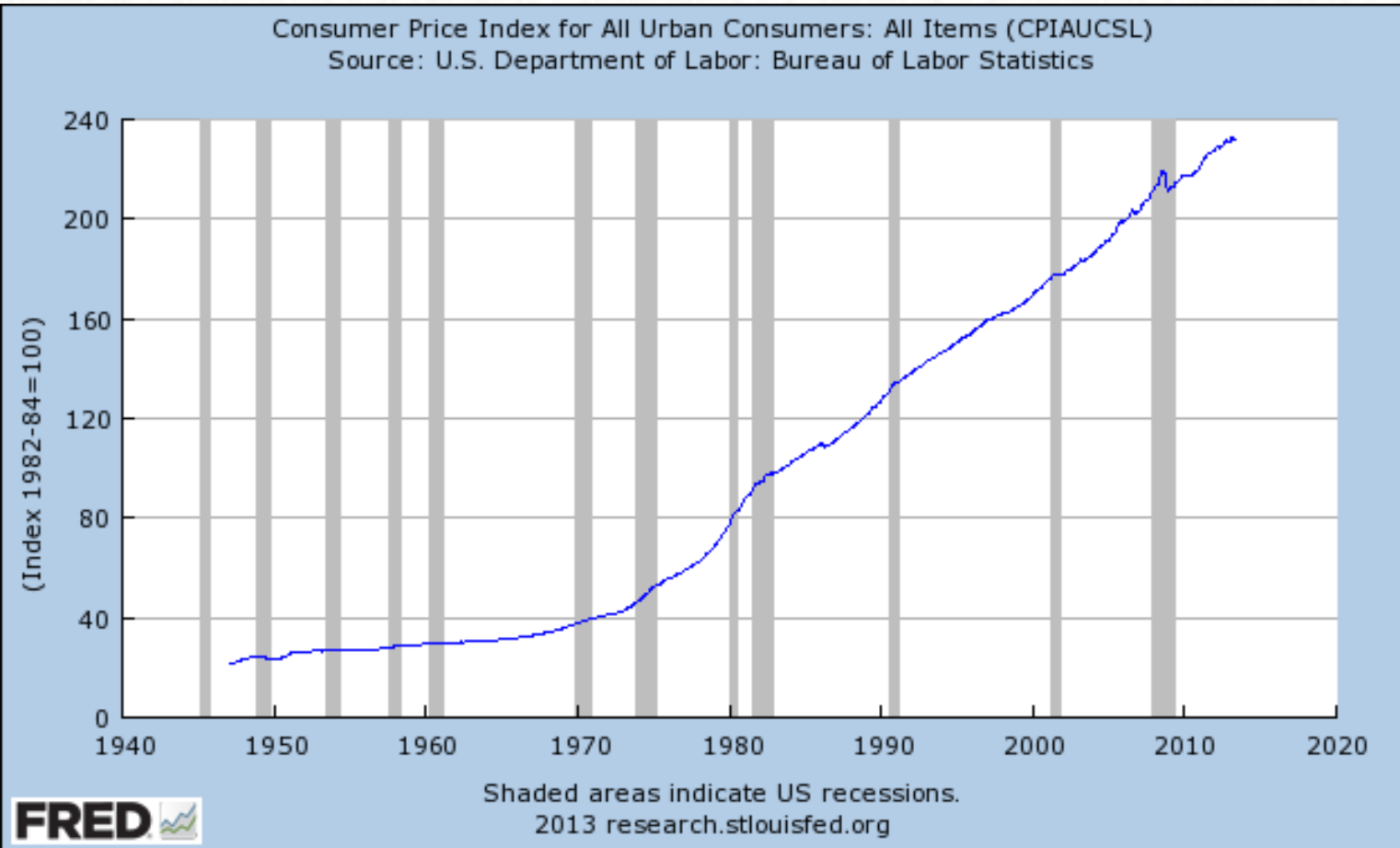
So, did your grandparents have cheaper movies in 1967?

No, adjusted for inflation, movies are cheaper today.

What about Big Macs?

Yes, adjusted for inflation, Big Macs were cheaper in 1967.

Using CPI Data



So
what
has
happened
to the CPI
over
time?

Unanticipated Inflation: “Winners” and “Losers”

- **Inflation:** a long-term rise in average prices for all goods and services.
- When inflation is anticipated, consumers and producers can plan for its effects.
- When inflation is **not anticipated**, there are winners and losers.
- What happened to purchasing power ...?

Determining Winners and Losers

Lenders

Goal: Loan funds at a rate of interest that is higher than inflation. If the interest rate charged is more than the actual inflation rate, the purchasing power of the money paid back to the lender is greater. If not, the purchasing power of the money paid back to the lender decreases.

Borrowers

Goal: Borrow funds at the lowest possible interest rate. If the inflation rate is higher than the interest rate on the loan, the purchasing power of the funds that the borrower pays back decreases, so a borrower may find it easier to pay back the loan (particularly if wages have increased with inflation).

Savers

Goal: Save funds at a rate of interest higher than inflation. If the interest rate earned is higher than the actual inflation rate, the purchasing power of savings increases. If not, the purchasing power of the savings decreases.

Workers

Goal: Earn wages that increase at a rate that is higher than the inflation rate. If wages increase faster than the rate of inflation, the purchasing power of the wages increases. If not, the purchasing power of the wages decreases.