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ECONOMICS MATERIALS FOR
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Worksheet – Inflation, Money

Related news article: [Deflation is anti-inflation. Here's where prices fell in September 2023 in one chart](#) (CNBC, October 13, 2023)

Summary: This worksheet could be used for in-class or homework practice. Students will be asked to read the excerpts from an article about the gradually decreasing inflation in the U.S. in 2023. The article explains that a strengthening of the U.S. dollar and lower costs of production have contributed to a “deflationary dynamic” in the goods sectors in the country. Students will be asked to explain the difference between deflation and disinflation, and analyze the reasons why some prices might be deflating. They will also have to evaluate the challenges associated with measuring the changes in the prices of some goods and services. Finally, students will need to discuss the relevance of declining prices to borrowers and lenders. **Answers are provided at the end of this document.**

Learning objectives:

At the end of this worksheet, students will be able to:

- o Distinguish between deflation and disinflation;
- o Analyze how a strengthening of a country's domestic currency against foreign currencies influences domestic consumers' purchasing power and the prices of imported goods;
- o Discuss possible reasons why the prices of certain goods might be decreasing;
- o Analyze the reasons why CPI data might indicate a decrease in the price of consumer electronics, but consumers might not see a price decline in the store;

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- o Calculate the current price of eggs given the year-to-year percentage change in the price and the price of eggs in the previous year;
- o Analyze why it is challenging to measure changes in health insurance prices accurately;
- o Evaluate whether a borrower would be better-off or worse-off given the actual inflation rate and the interest rate of the loan he has taken.

Economics concepts: Inflation, Deflation, Disinflation, Consumer price index (CPI), Goods, Services, Exports, Imports, Purchasing power, Interest rate

Suggested excerpts:

“Consumers saw some prices deflate in September 2023, according to the consumer price index...”

“Deflation is the opposite of inflation. It measures how quickly prices are falling. Largely, deflation has happened among consumer goods, not services, economists said.”

“Consumers have been hearing a lot about inflation in the U.S. economy since early 2021, and rightfully so. At their pandemic-era peak, consumer prices were rising faster than at any point in 40 years. But the dynamic seems to have shifted. Inflation has been declining gradually, which means prices are still rising but at a slower pace, also known as disinflation. Some prices have actually deflated over the past year, according to the consumer price index. Deflation is the opposite of inflation: It means consumers are seeing prices decline in certain categories.”

“Largely, this deflationary dynamic is occurring on the “goods” side of the U.S. economy, or the tangible objects that Americans buy, economists said. Goods encompass roughly a quarter of the consumer price index. There are several reasons for this. For one, a stronger U.S. dollar makes imported goods cheaper. Some of those savings — on items such as apparel and furniture — get passed on to consumers...”



“Over the long term, consumers also generally see savings as manufacturers shift goods production to lower-cost areas...”

“Some of the declines are due partly to measurement quirks. For example, the U.S. Bureau of Labor Statistics, which compiles the CPI report, controls for quality improvements over time. Electronics such as televisions, cell phones and computers continually get better. Consumers get more for roughly the same amount of money, which shows up as a price decline in the CPI data.”

“These sorts of quality adjustments mean consumers don’t necessarily see prices drop at the store — only on paper.”



Questions

1. The article refers to both deflation and disinflation. What is the difference between the two terms?

2. According to the article and data from the Bureau of Labor Statistics (BLS) from September 2023, based on the consumer price index (CPI), which of the following statements about prices in the U.S. is correct?

- a. Prices of most services deflated in September 2023.
- b. Between 2021 and 2023, prices were falling faster than any time in 40 years.
- c. In 2023, the inflation rate started to gradually decrease.
- d. Prices of imported goods significantly increased in 2023.

3. The article suggests that the U.S. dollar strengthened against foreign currencies in 2023. A “stronger U.S. dollar” implies that:

- a. Goods imported from abroad to the U.S. became cheaper for American consumers.
- b. Goods imported from the U.S. to foreign countries became cheaper abroad.
- c. The purchasing power of American consumers decreased.
- d. Americans became able to obtain less of a foreign currency with one U.S. dollar.

4. The article explains that a “deflationary dynamic is occurring on the “goods” side of the U.S. economy.” What reason does the article provide for this dynamic?

5. According to the article, “energy costs have declined,” and “manufacturers shift [have shifted] goods production to lower-cost areas.” What is the effect of these changes on the market for furniture?

- a. Demand shifts to the right.
- b. Demand shifts to the left.
- c. Supply shifts to the right.
- d. Supply shifts to the left.



6. Consider consumer electronics, such as cell phones or computers. Why is it possible that a consumer might see “a price decline in the CPI data,” but not “necessarily see prices [of consumer electronics] drop at the store”?

7. In 2022, egg prices increased due to “a historically deadly bout of avian flu among egg-laying hens.” Then, the price decreased in 2023. Specifically, according to the article, egg prices fell by 14.5% year-to-year. If the price of a dozen eggs was \$2.50 in 2022, what is the price of eggs in 2023?

8. Data from September 2023 show that health insurance prices have decreased. The article also explains that the BLS bases this price change on insurers’ profits rather than on consumer premiums. In your opinion, why does the BLS measure health insurance price changes “indirectly by measuring insurers’ profits”? Why are changes in the health insurance prices hard to measure accurately?

9. The inflation rate in 2022 was 6.5% ([Current US inflation rates: 2000 – 2023](#)). Suppose that your best friend expected that prices would continue to increase at the same rate in 2023. He also chose to borrow \$10,000 at an annual interest rate of 5%. What should the inflation rate in 2023 be for your friend’s decision to borrow to have been better than lending money at 5% interest rate?

- a. Higher than 5%.
- b. Lower than 5%.
- c. Lower than 6.5%.
- d. Exactly 3.7%.

10. Consider the scenario described in Question 9. If the actual year-to-year inflation rate at the end of 2023 is 3.7%, how much better-off or worse-off would your friend be at the end of 2023?



Answer Key

1. The article refers to both deflation and disinflation. What is the difference between the two terms?

Answer: Deflation means decreasing prices. Disinflation means that “prices are still rising but at a slower pace.”

2. According to the article and data from the Bureau of Labor Statistics (BLS) from September 2023, based on the consumer price index (CPI), which of the following statements about prices in the U.S. is correct?

- a. Prices of most services deflated in September 2023.
- b. Between 2021 and 2023, prices were falling faster than any time in 40 years.
- c. In 2023, the inflation rate started to gradually decrease.
- d. Prices of imported goods significantly increased in 2023.

Answer: C. The article explains that “largely, deflation has happened among consumer goods, not services.” Between 2021 and 2023, prices were “rising faster than at any point in 40 years.” The article also suggests that “a stronger U.S. dollar makes [made] imported goods cheaper” in 2023.

3. The article suggests that the U.S. dollar strengthened against foreign currencies in 2023. A “stronger U.S. dollar” implies that:

- a. Goods imported from abroad to the U.S. became cheaper for American consumers.
- b. Goods imported from the U.S. to foreign countries became cheaper abroad.
- c. The purchasing power of American consumers decreased.
- d. Americans became able to obtain less of a foreign currency with one U.S. dollar.

Answer: A. If the U.S. dollar has become stronger against foreign currencies, this means that Americans have become able to obtain more of a foreign currency with one U.S. dollar. The purchasing power of the



U.S. dollar has increased. The goods imported from foreign countries become cheaper for American consumers.

4. The article explains that a “deflationary dynamic is occurring on the “goods” side of the U.S. economy.” What reason does the article provide for this dynamic?

Answer: The article explains that “a stronger U.S. dollar makes imported goods cheaper,” and “some of those savings — on items such as apparel and furniture — get passed on to consumers.” The article also mentions that “over the long term, consumers also generally see savings as manufacturers shift goods production to lower-cost areas.”

5. According to the article, “energy costs have declined,” and “manufacturers shift [have shifted] goods production to lower-cost areas.” What is the effect of these changes on the market for furniture?

- a. Demand shifts to the right.
- b. Demand shifts to the left.
- c. Supply shifts to the right.
- d. Supply shifts to the left.

Answer: C. The changes described decrease the costs of production for furniture manufacturers. Lower production costs increase the supply of furniture. An increase in supply is associated with a shift of the supply curve for furniture to the right.

6. Consider consumer electronics, such as cell phones or computers. Why is it possible that a consumer might see “a price decline in the CPI data,” but not “necessarily see prices [of consumer electronics] drop at the store”?

Answer: The price in the store might not have changed, but the quality of electronics might have improved. The article explains that “the U.S. Bureau of Labor Statistics, which compiles the CPI report, controls for quality improvements over time. Electronics such as televisions, cell phones and computers continually get better. Consumers get more for roughly the same amount of money, which shows up as a price decline in the CPI data.”



7. In 2022, egg prices increased due to “a historically deadly bout of avian flu among egg-laying hens.” Then, the price decreased in 2023. Specifically, according to the article, egg prices fell by 14.5% year-to-year. If the price of a dozen eggs was \$2.50 in 2022, what is the price of eggs in 2023?

Answer: % change = [(new value – initial value)/ initial value] * 100% = [(price in 2023 – 2.50)/2.50] * 100% = -14.5%. The price in 2023 could be found by solving this equation. It is \$2.8625, or approximately \$2.86 per dozen.

8. Data from September 2023 show that health insurance prices have decreased. The article also explains that the BLS bases this price change on insurers’ profits rather than on consumer premiums. In your opinion, why does the BLS measure health insurance price changes “indirectly by measuring insurers’ profits”? Why are changes in the health insurance prices hard to measure accurately?

Answer: The quality of health insurance varies between people. As the article explains, “one person’s premiums may buy high-value insurance benefits, while another’s buys meager coverage.” Such quality differences make it hard to measure changes in health insurance prices accurately.

9. The inflation rate in 2022 was 6.5% ([Current US inflation rates: 2000 – 2023](#)). Suppose that your best friend expected that prices would continue to increase at the same rate in 2023. He also chose to borrow \$10,000 at an annual interest rate of 5%. What should the inflation rate in 2023 be for your friend’s decision to borrow to have been better than lending money at 5% interest rate?

- a. Higher than 5%.
- b. Lower than 5%.
- c. Lower than 6.5%.
- d. Exactly 3.7%.

Answer: Your friend has to pay $10,000 + 0.05 \cdot 10,000 = \$10,500$ back to the bank. If the 2023 inflation rate is (higher than) 5%, after adjusting for inflation, the borrowed \$10,000 would be equivalent to (more than) $\$1.05 \cdot 10,000 = \$10,500$ in 2023 dollars. Because your friend has to pay back



\$10,500, he would be better off if the inflation rate is higher than 5% in 2023. If the actual inflation rate is lower than 5%, he would be worse-off.

When the inflation rate is lower than expected, wealth is transferred from borrowers to lenders. When the inflation rate is higher than expected, wealth is transferred from lenders to borrowers.

10. Consider the scenario described in Question 9. If the actual year-to-year inflation rate at the end of 2023 is 3.7%, how much better-off or worse-off would your friend be at the end of 2023?

Answer: After adjusting for inflation, the borrowed \$10,000 would be equivalent to $\$1.037 \times 10,000 = \$10,370$ in 2023 dollars. Because your friend has to pay back \$10,500, he would be \$130 worse-off. The lender would be \$130 better off.