The Economic Goal of Price Stability

Lesson Authors

Sarah Gunn, Federal Reserve Bank of Richmond

Kevin Woodcox, Federal Reserve Bank of Richmond

Standards and Benchmarks (see page 14)

Lesson Description

Price stability is an important economic goal. In this lesson, students participate in a mock-quiz exercise to experience effects similar to those that consumers experience when dealing with unstable prices. They analyze the impact that unexpected inflation and changes in purchasing power have on savers, borrowers, lenders, and those living on fixed incomes. Students evaluate how price stability can ease decisionmaking and help the economy grow.

Grade Level

9-12

Concepts

Inflation

Interest rates

Price instability

Price stability

Purchasing power

Unexpected inflation

Objectives

Students will be able to

- define inflation, interest rates, price instability, price stability, purchasing power, and unexpected inflation;
- explain how inflation impacts purchasing power;

- predict how inflation affects people differently based on their individual circumstances; and
- evaluate the importance of price stability as an economic goal.

Essential Question

Why is price stability an important economic goal?

Time Required

60 minutes

Materials

- *Handout 1: Pop Quiz Sheet*, copied and cut into sections, one section for each student
- *Handout 2: Inflation-Flip Score Sheet*, one copy for each student
- *Handout 3: Assessment*, one copy for each student
- PowerPoint slides 1-8
- A coin for each group
- Optional: Small prize for the winning student(s) from each group

Procedure

1. To begin the lesson, tell the students that they are going to have a multiple-choice pop quiz on what they learned yesterday. Instruct them to take out a pen or pencil, and distribute a copy of one cut-out section from *Handout 1: Pop Quiz Sheet* to each student.

2. Explain that the students will have two minutes to complete the quiz and should work independently. When students ask what the questions are, explain that they have everything they need to complete the quiz. Optional: Display timer or countdown clock.

3. When two minutes have elapsed, instruct the students to pass their quiz sheets to a peer to grade, or have them grade their own. As you read out the following "answers" to the questions, have students put an "X" next to any incorrect answers:
   - *Question 1 – D*
   - *Question 2 – A*
   - *Question 3 – C*
   - *Question 4 – B*
   - *Question 5 – D*

4. Instruct the students to add up the number of correct answers and write it at the top of the quiz sheet and, if being graded by a peer, return it to the correct student.

5. Discuss the following:
    - How did the quiz make you feel? (*Answers will vary but may include stressed, anxious, or angry.*)
    - Why did it make you feel that way? (*Answers will vary but may include because they didn't know what they were answering or they didn't have all of the information they needed.*)

6. Explain to the students that the quiz does not count for a grade but is to help them experience what it's like to make decisions with uncertainty, like they'd have to do in an economy that was experiencing price instability. **Price instability** is a situation in which prices change unexpectedly, which makes it difficult to plan for the future.

7. Ask the students what they think price stability means. (*Answers will vary but may include no change in prices or zero inflation.*) Explain to the students that **price stability** is a low and stable rate of inflation over an extended period of time. Explain that **inflation** is a rise in the average level of prices.

8. Explain the following:
    - Price stability is the opposite of price instability. During their lifetime, the United States has had pretty stable prices. This makes it hard to imagine how our economic choices would change if prices weren't stable.
    - Price instability happens when there is unexpected inflation. **Unexpected inflation** is when the inflation rate, the rate at which prices are increasing, is higher than people expected.
    - Over the course of the lesson they'll explore who might be helped and who might be hurt by price instability.

9. Instruct the students to refer back to their quiz, and then work through the following:
    - Ask students who correctly answered four or five questions to raise their hands. (NOTE: There may not be any students who got a perfect score.) Explain that these students represent those who were helped by an unexpected change in prices.
    - Ask students who correctly answered three questions to raise their hands. Explain that these students represent those who weren't positively or negatively impacted by an unexpected change in prices.
    - Ask students who correctly answered zero to two questions to raise their hands. Explain that these students represent those who were hurt by an unexpected change in prices.

- Explain that whether someone was helped or hurt by inflation in this case was because of luck and not because of good decisionmaking.

10. To continue the lesson, share one of your personal goals with the students. Then, ask the students to raise their hand if they have any goals. Invite a couple of students to share their goals with the class. Discuss the following:
    - Why is it important to have goals? (*Answers will vary but may include that it helps to have something to strive for or something you want to achieve.*)
    - How do you achieve your goals? (*Answers will vary but may include practice, hard work, or planning.*)

11. Explain the following:
    - Just like it's important for them to have goals, it's also important for an economy to have goals. One economic goal is price stability. By the end of the lesson they should be able to defend why price stability is an important economic goal.
    - Making decisions in an economy that does not have stable prices is similar to taking a quiz without knowing the questions. Just like they didn't know what question they were answering, or even what the answers meant, when prices are changing, people don't know whether to spend today, save for the future, or borrow money to make a large purchase.
    - When people don't know how the economy or prices will change, they can't plan for the future or make good economic choices. And this doesn't just affect one person—it affects everyone, including businesses and the government. This can reduce overall economic progress and the growth of living standards.

12. Discuss the following and explain as noted:
    - What is purchasing power? (***Purchasing power** is the amount of goods and services that a unit of currency can buy.*)
    - What happens to purchasing power when inflation increases? (*Purchasing power decreases.*) What happens to the value of the dollar when there is inflation? (*The value of the dollar decreases.*) What does that mean for the purchasing power of the dollar? (*Purchasing power of the dollar decreases.*)
    - What is something you are currently saving for? (*Answers will vary but may include college, a car, a new cell phone, or another item.*)
    - When there is inflation, what happens to the value of the money you are saving over time? Will it buy more or less in the future? (*The value will decrease and it will buy less.*) Explain that this would mean they'd have to buy less schooling, a less-fancy car, a less-expensive cell phone, or another less-expensive item.
    - Does inflation make you more or less likely to save? (*Less likely*)

- What is an interest rate? (*An* ***interest rate*** *is the percentage of the amount of a loan that is charged for a loan. It's also the percentage paid on a savings account.*) Explain that while higher inflation decreases the purchasing power of their money, the interest they earn can help offset the change.

13. Tell the students that they are going to participate in an activity that demonstrates how people are affected by unexpected inflation in different ways, depending on their economic circumstances. Divide the class into groups of three to four students and distribute a coin to each group and a copy of *Handout 2: Inflation-Flip Score Sheet* to each student. Explain the following directions:

    - You will be presented with a goal and will each need to make a decision about how to achieve that goal.
    - Once you've each made your decision, one person in your group will flip a coin. If the coin lands on heads, prices changed (rose) unexpectedly. If the coin lands on tails, prices remained stable.
    - You'll then discuss with your group how you were impacted depending on your choice and whether or not prices changed. We will then discuss as a class.
    - For each decision, if the inflation flip helped you, give yourself a point; if it hurt you, take a point away; and if it kept things neutral, keep your number of points the same. You'll start with zero points.

14. Display *Slide 2: Economic Decision 1* and review the content with the class. Instruct the students to make their first decision by circling their choice on Handout 2. Once everyone has made their decisions, instruct the groups to flip their coin to see if prices changed or remained stable. Students should circle the outcome of the inflation flip on their score sheet. Instruct the students to evaluate how they were impacted by the outcome: Were they helped, hurt, or unaffected?

15. Display *Slide 3: Results of Economic Decision 1* and review the content with the class. Discuss the following:

    - Why would you be hurt (–1 point) if there were unexpected inflation and you'd decided to save up the $100? (*The value of your savings would decrease because of the rise in prices.*)
    - Why would you be helped (+1 point) if there were unexpected inflation and you'd decided to borrow the $100? (*The money you borrowed is worth more than the money you will need to pay back.*)
    - Why would stable prices keep things neutral if you'd decided to either save up or borrow the money? (*The outcome of your decision would be exactly what you'd planned for if prices remained stable.*)

16. Display *Slide 4: Economic Decision 2* and review the content with the class. Explain how fixed-rate and variable-rate loans are different because you'd pay the same interest rate the entire length of a fixed-rate loan; but you'd pay different, or adjusted, interest rates throughout the length of a variable-rate loan if there were a change in inflation. Have the students repeat the procedure they followed for Economic Decision 1.

17. Display *Slide 5: Results of Economic Decision 2* and review the content with the class. Discuss the following:
    - Why would you be helped (+1 point) if there were unexpected inflation and you'd decided to take a fixed-rate loan? (*The money you borrowed is worth more than the money you will need to pay back. In other words, the purchasing power of the dollars you borrowed is greater than the purchasing power of the dollars you will repay.*)
    - Why would you be unaffected (0 points) if there were unexpected inflation and you'd decided to take a variable-rate loan? (*The interest rate would likely adjust to account for a change in the inflation rate.*)
    - Why would stable prices keep things neutral if you'd decided to take either a fixed-rate or a variable-rate loan? (*The outcome of your decision would be exactly what you'd planned for if prices remained stable. It's unlikely the interest rate would change.*)

18. Display *Slide 6: Economic Decision 3* and review the content with the class. Have the students repeat the procedure they followed for Economic Decisions 1 and 2.

19. Display *Slide 7: Results of Economic Decision 3* and review the content with the class. Discuss the following:
    - Why would you be hurt (–1 point) if there were unexpected inflation and you'd decided to take a guaranteed $10 weekly allowance? (*Your weekly allowance would have a lower purchasing power after inflation.*)
    - Why would you be unaffected (0 points) if there were unexpected inflation and you'd decided to take a variable allowance? (*You could potentially do more chores to increase your weekly allowance to make up for inflation.*)
    - Why would stable prices keep things neutral if you'd decided to take either a $10 weekly or a variable allowance? (*The outcome of your decision would be exactly what you'd planned for if prices remained stable.*)

20. Display *Slide 8: Economic Decision 4* and review the content with the class. Have the students repeat the procedure they followed for Economic Decisions 1, 2, and 3.

21. Display *Slide 9: Results of Economic Decision 4* and review the content with the class. Discuss the following:

- Why would you be hurt (–1 point) if there were unexpected inflation and you'd decided to loan your friend $100? (*You would be repaid with money that was worth less than the money you lent.*)
- Why would you be helped (+1 point) if there were unexpected inflation and you'd decided to spend the $100 on yourself? (*The cost of the good or service purchased was likely lower when you purchased it than after the unexpected inflation. After the unexpected inflation, the good or service has a higher value than the dollar.*)
- Why would stable prices keep things neutral if you'd decided to either loan your friend $100 or spend the $100 on yourself? (*The outcome of your decision would be exactly what you'd planned for if prices remained stable.*)

22. Instruct the students to add up their total points for the four economic decisions and see who had the highest score in each group. Discuss the following point outcome:
    - A score of 3 is perfect, and you've achieved all of your goals.
    - A score of 0-2 is good, and you've mastered most of your goals.
    - A score below 0 indicates that unexpected inflation has hampered your goals.

23. Explain to the students that when prices change, people might make rational decisions that are different than what you might expect when prices are stable because the incentives have changed. This might have long-term consequences for the economy. Discuss the following:
    - Using examples from the activity, who would be hurt by price instability? (*Savers and those on fixed incomes are hurt. Economic Decision 1: The saver is hurt; Economic Decision 2: Neither borrower is hurt; Economic Decision 3: The person with the guaranteed allowance is hurt; Economic Decision 4: The person who loaned the money is hurt.*)
    - Using examples from the activity, who would be helped by price instability? (*Borrowers with fixed-rate loans are helped. Economic Decision 1: The borrower is helped; Economic Decision 2: The fixed-rate borrower is helped; Economic Decision 3: Neither person with an allowance is helped; Economic Decision 4: The person who spent the money is helped.*)
    - Is it usually a good idea to save for the future? (*Yes.*) Why? (*To pay for large purchases, unexpected expenses, education, or retirement*) How did the incentives change when there was price instability? (*In periods of price instability, people might not save because the value of their savings might decrease.*)
    - How might businesses change their behavior when there are unstable prices? (*They might invest less money and hire fewer workers.*)
    - If businesses do change their behavior, how might price instability affect the overall economy and economic progress? (*It might reduce growth and prevent individuals and businesses from being economically successful.*)

Closure

24. Review the lesson with the students by discussing the following:
    - What is price stability? (*A low and stable rate of inflation over an extended period of time*)
    - What is inflation? (*A rise in the average level of prices*)
    - What is unexpected inflation? (*When the inflation rate, the rate at which prices are increasing, is higher than people expected*)
    - What is purchasing power? (*The amount of goods and services that a unit of currency can buy*)
    - How does inflation impact purchasing power? (*It lowers it.*)
    - How does inflation impact savers? Borrowers? Lenders? People living on fixed incomes? (*Savers are hurt. Borrowers with fixed-rate loans are helped. Lenders are hurt. People living on fixed incomes are hurt.*)
    - Why is price stability an important economic goal for governments and central banks like the Federal Reserve System? (*People are able to plan for the future and make better economic decisions when there is price stability.*)

Assessment

25. Distribute a copy of *Handout 3: Assessment* to each student. Allow time for the students to work and review the answers as follows:

Write the letter of the definition next to the term that it best matches.

1. _*d*_ Unexpected inflation	a. A rise in the average level of prices.
2. _*c*_ Price stability	b. The amount of goods and services that a unit of currency can buy.
3. _*a*_ Inflation	c. A low and stable rate of inflation over an extended period of time.
4. _*b*_ Purchasing power	d. When the inflation rate is higher than people expected.

Read the following scenarios and answer the questions that follow in complete sentences.

Scenario: Today, the economy is experiencing low and stable inflation, averaging 2 percent a year. Saver Sanjay deposits $1,000 in a savings account at Banker Brooke's Community Bank, earning 1 percent interest a year. Borrower Barb takes out a mortgage from the bank to buy a house. Her mortgage has a fixed interest rate of 8 percent to be paid over 30 years. Researcher Rosa deposits her last paycheck and officially becomes Retiree Rosa.

5. Given the scenario above, how would the value of Sanjay's savings change if he were earning 1 percent interest a year? Choose your answer and explain why.
   a. *The value would decrease.*
   b. The value would remain the same.
   c. The value would increase.
   d. There is not enough information.

   The value of Sanjay's savings would decrease because of the rise in prices.

Scenario: Fast forward 10 years. There has been an economic shock that has increased the inflation rate from 2 percent to 7 percent a year.

6. How does the change in inflation affect Barb's mortgage from Brooke's Bank? Who benefits? Who is hurt? And why?

   Barb would benefit and Brooke would be hurt. This is because the money Barb uses to repay her mortgage will be worth less than the money she borrowed from Brooke's Bank. In other words, the money Barb borrowed is worth more than the money she will pay back to Brooke's Bank.

7. Since Rosa's retirement, she's had to live on a fixed income. How has the change in inflation affected her?

   Rosa's retirement income has remained flat while the prices of goods and services have increased. The purchasing power of Rosa's income has been reduced, and she'd need more income to maintain her lifestyle.

8. One of the Federal Reserve's monetary policy goals is price stability. What are some of the benefits of price stability for individuals and businesses?

   When prices are stable, individuals and businesses are able to plan for the future and make better economic decisions. Individuals can choose to borrow or save, and businesses can decide to hire more workers or expand into new markets.

Handout 1: Pop Quiz Sheet

Pop Quiz Sheet

Name: ______________________________

Score: __________/5

1. (A) (B) (C) (D)
2. (A) (B) (C) (D)
3. (A) (B) (C) (D)
4. (A) (B) (C) (D)
5. (A) (B) (C) (D)

Pop Quiz Sheet

Name: ______________________________

Score: __________/5

1. (A) (B) (C) (D)
2. (A) (B) (C) (D)
3. (A) (B) (C) (D)
4. (A) (B) (C) (D)
5. (A) (B) (C) (D)

Pop Quiz Sheet

Name: ______________________________

Score: __________/5

1. (A) (B) (C) (D)
2. (A) (B) (C) (D)
3. (A) (B) (C) (D)
4. (A) (B) (C) (D)
5. (A) (B) (C) (D)

Pop Quiz Sheet

Name: ______________________________

Score: __________/5

1. (A) (B) (C) (D)
2. (A) (B) (C) (D)
3. (A) (B) (C) (D)
4. (A) (B) (C) (D)
5. (A) (B) (C) (D)

Handout 2: Inflation-Flip Score Sheet

When instructed, make your economic decision by circling your choice.

Economic Decision 1			
Choice (Circle one)	Save up the last $100 and buy the gaming system in six months.		Borrow the last $100, buy the gaming system now, and pay back the loan over the next six months, with interest.
Inflation flip (Circle one)	Heads: Prices change unexpectedly.		Tails: Prices remain stable.
Evaluate	Were you helped or hurt by the inflation flip? How?		
Points (Circle one)	Helped: +1	Neutral: 0	Hurt: –1
Economic Decision 2			
Choice (Circle one)	Take out a student loan with fixed-rate interest.		Take out a student loan with variable-rate interest.
Inflation flip (Circle one)	Heads: Prices change unexpectedly.		Tails: Prices remain stable.
Evaluate	Were you helped or hurt by the inflation flip? How?		
Points (Circle one)	Helped: +1	Neutral: 0	Hurt: –1
Economic Decision 3			
Choice (Circle one)	A guaranteed $10 weekly allowance		A variable allowance, depending on chores completed
Inflation flip (Circle one)	Heads: Prices change unexpectedly.		Tails: Prices remain stable.
Evaluate	Were you helped or hurt by the inflation flip? How?		
Points (Circle one)	Helped: +1	Neutral: 0	Hurt: –1
Economic Decision 4			
Choice (Circle one)	Loan your friend $100 to buy a new tire (get repaid plus interest) and get free rides to school.		Spend the $100 on yourself and ride the school bus.
Inflation flip (Circle one)	Heads: Prices change unexpectedly.		Tails: Prices remain stable.
Evaluate	Were you helped or hurt by the inflation flip? How?		
Points (Circle one)	Helped: +1	Neutral: 0	Hurt: –1

Total points: ________________

Handout 3: Assessment (page 1 of 2) Name:_______________________________

Write the letter of the definition next to the term that it best matches.

1. ____ Unexpected inflation
2. ____ Price stability
3. ____ Inflation
4. ____ Purchasing power

a. A rise in the average level of prices.

b. The amount of goods and services that a unit of currency can buy.

c. A low and stable rate of inflation over an extended period of time.

d. When the inflation rate is higher than people expected.

Read the following scenarios and answer the questions that follow in complete sentences.

Scenario: Today, the economy is experiencing low and stable inflation, averaging 2 percent a year. Saver Sanjay deposits $1,000 in a savings account at Banker Brooke's Community Bank, earning 1 percent interest a year. Borrower Barb takes out a mortgage from the bank to buy a house. Her mortgage has a fixed interest rate of 8 percent to be paid over 30 years. Receptionist Rosa deposits her last paycheck and officially becomes Retiree Rosa.

5. Given the scenario above, how would the value of Sanjay's savings change if he were earning 1 percent interest a year? Choose your answer and explain why.
   a. The value would decrease.
   b. The value would remain the same.
   c. The value would increase.
   d. There is not enough information.

Handout 3: Assessment (page 2 of 2)

Scenario: Fast forward 10 years. There has been an economic shock that has increased the inflation rate from 2 percent to 7 percent a year.

6. How does the change in inflation affect Barb's mortgage from Brooke's Bank? Who benefits? Who is hurt? And why?

7. Since Rosa's retirement, she's had to live on a fixed income. How has the change in inflation affected her?

8. One of the Federal Reserve's monetary policy goals is price stability. What are some of the benefits of price stability for individuals and businesses?

Standards and Benchmarks

Voluntary National Content Standards in Economics

Standard 19: Unemployment and Inflation. Unemployment imposes costs on individuals and the overall economy. Inflation, both expected and unexpected, also imposes costs on individuals and the overall economy. Unemployment increases during recessions and decreases during recoveries.

- **Benchmark 6, Grade 12:** Unexpected inflation imposes costs on many people and benefits others because it arbitrarily redistributes purchasing power among different groups of people. Unexpected inflation hurts savers and people on fixed incomes; it helps people who have borrowed money at a fixed rate of interest.
- **Benchmark 7, Grade 12:** Inflation can reduce the rate of growth of national living standards because individuals and organizations use resources to protect themselves against the uncertainty of future prices.