The Price of Borrowing

How inflation changes the real cost of a loan

E.C.6.1 "Analyze the relationship between interest rates and inflation rates to both the borrower and the lender."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline each interest rate and circle each inflation rate in the passage. Number one statement about the borrower and one about the lender that show how inflation changes the real cost or return of a loan.

Maya's Food Truck Loan

1. When Maya borrows $10,000 to buy a food truck oven, her bank offers a one-year loan at a fixed 7% interest rate. She must repay $10,700 at year's end, no matter what happens to prices. If both sides expect 2% inflation, prices are expected to rise about 2% during the year. The bank expects its repayment to buy more than the $10,000 it lent, an increase in purchasing power of roughly 5%. Maya expects a real borrowing cost of roughly 5%, since she will repay with dollars worth slightly less than today's dollars.

2. Suppose inflation turns out to be 9% instead. Maya still owes $10,700 because her interest rate is fixed. But prices have risen faster than her loan balance, so the dollars she repays buy less than the bank expected. Her real borrowing cost is roughly negative 2%. The bank receives $700 in interest, yet its full repayment buys slightly less than the original $10,000 could buy a year earlier. Unexpected inflation has helped Maya and hurt the bank in terms of purchasing power. That does not guarantee Maya's food truck succeeds; her ingredient costs may also rise.

3. Now imagine that inflation instead falls to 0% while Maya's loan remains fixed at 7%. Her $700 interest payment has not changed, but the dollars she repays have lost no purchasing power. Her real borrowing cost is about 7%, and the bank's real return is about 7%. Banks may set higher rates on new loans when they expect faster inflation. For example, a new 10% loan with 6% expected inflation offers a lender an expected real return of roughly 4%, less than the roughly 5% expected from Maya's 7% loan when inflation was expected to be 2%.

2 ANSWER WITH EVIDENCE

Use the passage

1. When Maya and the bank expect 2% inflation, what real borrowing cost does Maya expect, and what real return does the bank expect?

2. If inflation reaches 9%, how does the fixed 7% rate affect Maya and the bank differently?

3. If inflation is 0% instead, how do Maya's real borrowing cost and the bank's real return compare with what each expected?

4. Why does the new 10% loan offer a lower expected real return than Maya's 7% loan did, despite its higher interest rate?

3 YOUR TURN

Your own words

Invent a one-year fixed-rate loan with an interest rate other than 7% or 10%, expected inflation other than 2% or 6%, and actual inflation higher than both the expected rate and the interest rate. In four sentences, compare the borrower's and lender's expected real cost or return with the actual outcome, using approximate percentage points.

ANSWER KEY

The Price of Borrowing

PART 1 · READ AND MARK

Underline each interest rate and circle each inflation rate in the passage. Number one statement about the borrower and one about the lender that show how inflation changes the real cost or return of a loan. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	When Maya and the bank expect 2% inflation, what real borrowing cost does Maya expect, and what real return does the bank expect?	**Maya expects a real borrowing cost of roughly 5%, and the bank expects a real return of roughly 5%.**
2	If inflation reaches 9%, how does the fixed 7% rate affect Maya and the bank differently?	**Maya still pays 7% interest, but her real borrowing cost is roughly negative 2% because the repayment dollars buy less. The bank's repayment loses purchasing power despite the interest it receives.**
3	If inflation is 0% instead, how do Maya's real borrowing cost and the bank's real return compare with what each expected?	**Both are about 7%, rather than the roughly 5% each expected. That makes the loan more costly for Maya and more rewarding for the bank in real terms.**
4	Why does the new 10% loan offer a lower expected real return than Maya's 7% loan did, despite its higher interest rate?	**Expected inflation is also higher. The new loan's expected real return is roughly 4% (10% minus 6%), compared with roughly 5% (7% minus 2%) on Maya's loan.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

A one-year fixed-rate loan charges 8% interest, and both sides expect 3% inflation. The borrower expects a real cost of roughly 5%, while the lender expects a real return of roughly 5%. If actual inflation reaches 11%, the borrower's real cost is roughly negative 3%. The lender's real return is also roughly negative 3%, so the unexpected inflation helps the borrower and hurts the lender.

Accept real-rate estimates found by subtracting inflation from the interest rate. Exact calculations may differ slightly from these approximations.