

UNIVERSITY OF THE PEOPLE

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Learning Journal Unit 8

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****How a fixed-interest loan can cause a lender to lose money in the event of unexpected inflation ****

Over time, inflation reduces the actual worth of money. When inflation is higher than expected, lenders who have issued fixed-interest rate loans can face significant losses. This occurs because the real interest rate on the loan ends up lower than intended.

With a fixed-interest rate loan, the nominal interest rate is set at the beginning for the entire term of the loan and does not change. This nominal rate aims to compensate the lender for the opportunity cost of lending money and account for expected inflation. However, when actual inflation exceeds the expected level, the real value of future repayments declines.

For example, consider a 5-year fixed rate loan for \$100,000 with an annual interest rate of 5%. This was determined based on an inflation expectation of 2%. However, if inflation rises to 5% instead, the lender faces an unexpected loss in real terms.

In year 1, the borrower repays \$105,000, but with 5% inflation, the real value of this repayment is only \$100,000 in year 0 dollars. The lender has essentially lost \$5,000 in real terms just in the first year since the repayment no longer offsets the reduced purchasing power of the original \$100,000 due to higher-than-expected inflation.

This effect compounds over the life of the multi-year loan. By keeping the interest rate fixed, the lender misses out on increased revenue that could offset the declining real value of repayments. The lender earns less in real terms despite bearing the same real opportunity cost of capital.

This poses risks to lenders during periods of volatile or uncertain inflation. To mitigate potential inflation-related losses on fixed rate loans, lenders must carefully forecast inflation and

factor sizable risk premiums into nominal interest rates. However, this diminishes affordability for borrowers.

In summary, unanticipated inflation erodes the real value of repayments on fixed rate loans. Lenders face declining real returns, as the interest rate fails to keep pace with rising prices. Careful inflation forecasting and higher rates are needed to offset this risk.

****How a variable-interest-rate loan can eliminate these losses****

In contrast to fixed rate loans, variable or adjustable-rate loans allow the interest rate to change over the term of the loan. This mechanism enables the interest rate to adjust in line with inflation, protecting lenders against unexpected inflation losses.

Variable rate loans tie the interest rate to a benchmark index, usually a short-term interbank lending rate. This allows the nominal interest rate to be reset periodically, such as every 3, 6, or 12 months. As inflation rises, short-term rates also increase as monetary policy tightens. This pushes up the variable loan's interest rate in tandem.

Revisiting the previous example, if the 5-year loan had a variable rate starting at 5% tied to a short-term index, the rate would also rise to 7% along with inflation and benchmark rates. In this case, the lender continues to earn a real return of 2% as intended.

By indexing variable rate loans to a benchmark designed to track monetary conditions, lenders can eliminate inflation-related losses. The interest rate adjusts automatically to maintain a real return in line with the original pricing of the loan.

This also reduces the need for lenders to manually reset rates across their portfolio or impose large risk premiums. Variable rate loans offer advantages to both lenders and borrowers

when inflation is volatile. Lenders earn steady real returns without regular intervention, while borrowers avoid potentially unaffordable fixed rates carrying high inflation risk premiums.

However, borrowers also face some uncertainty with variable rates, as rising interest costs could impact affordability. Overall, though, variable rate loans provide an effective mechanism for lenders to transfer inflation risk over to borrowers, who are more able to accommodate gradual payment changes than sudden real declines in fixed repayments. This allows lenders to lend with greater confidence across economic cycles.

In conclusion, variable interest rates tied to inflation benchmarks allow lenders to avoid unexpected inflation losses on loans. By automatically tracking monetary conditions, variable rate loans eliminate inflation-related risks and enable stable real lending returns.

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Reference:

Greenlaw, S., & Shapiro, D. (2017). *Principals of macroeconomics 2e*. Openstax. Licensed under CC-BY 4.0. <https://openstax.org/details/books/principles-macroeconomics-2e>

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