Rates, Bonds + Inflation

Answer key for the SSEMA1 and SSEMA2 Level 2 worksheets: Build Your Own Price Index and The Rate Seesaw.

FOR TEACHER USE: WHY THIS IS HERE
The core SSEMA1 and SSEMA2 worksheets name the CPI and predict the direction of a rate hike. These two Level 2 sheets show the machinery underneath: how an index is actually calculated, and why the bond market is the channel that carries Fed decisions to consumer loan rates.

Build Your Own Price Index (SSEMA1 L2)

ANSWER KEY

Section 1 costs, Year 1 / Year 2: milk $14.00 / $15.40; bread $10.00 / $11.00; gas $120.00 / $132.00; movies $24.00 / $25.20; phone $50.00 / $48.00; haircut $32.00 / $33.40. Basket totals: $250.00 and $265.00.

a) ($265 ÷ $250) × 100 = 106. b) 6%.

c) Gas. Each rose 10%, but the household buys far more gas by dollar amount, so gas added $12.00 vs. $1.40 for milk and $1.00 for bread. This is why the real CPI weights items by how much households spend on them.

d) No. Inflation is a rise in the overall price level. Individual prices can fall (often technology) while the basket as a whole rises.

Section 2: a) $100 ÷ 1.06 = about $94.34. b) 2%: 35 years; 3%: about 23 years; 7%: 10 years.

Section 3: Retiree, hurt (same income buys less). Fixed-rate homeowner, helped (payments stay the same while wages and prices rise, so the debt gets repaid in cheaper dollars). Checking-account saver, hurt (0.1% is far below inflation). CPI-linked worker, about even (raises keep pace). Bank with fixed-rate loans, hurt (it is repaid in dollars worth less than it lent).

Discuss: A fixed basket tends to overstate the cost of living, because it ignores people switching to cheaper substitutes. This is called substitution bias, and it matters because Social Security benefits and tax brackets are adjusted using CPI measures.

Rates, Bonds + Inflation

Answer key for the SSEMA1 and SSEMA2 Level 2 worksheets: Build Your Own Price Index and The Rate Seesaw.

The Rate Seesaw (SSEMA2 L2)

ANSWER KEY

Section 1: $40 per year; $400 over 10 years; $1,000 back at maturity.

Section 2 table: 2% = $1,019.61 (above); 4% = $1,000.00 (at); 6% = $981.13 (below); 8% = $962.96 (below).

a) Down. Buyers can get the new, higher rate elsewhere, so they only buy the old bond at a discount.

b) $50 ÷ $800 = 6.25%. The buyer paid less than face value but still gets the full $50 coupon, so the return on the money actually spent is higher.

c) A 30-year bond locks in the old, lower coupon for many more years, so the gap between it and new bonds adds up over a much longer time. More years of below-market payments means a bigger discount.

Section 3: a) A is normal, B is inverted. b) Tying money up longer carries more risk, including inflation risk and the chance rates rise, so lenders want extra pay. c) Investors expect rates to fall in the future, often because they expect the economy to slow or enter a recession.

Section 4: correct sequence is Fed raises its target, banks pay more overnight, Treasury yields rise, loan rates rise, spending slows. Numbers as they appear on the sheet, top to bottom: 4, 1, 5, 2, 3.

Discuss note: An inverted curve preceded the 2001, 2008, and 2020 recessions, but the long inversion that began in 2022 was not followed by a recession within the next two years. It is a signal, not a guarantee.