Recap: Investors are all borrowers. Firms must continually invest to maintain its capital stock. The cost of borrowing (and hence investment) is the interest rate \( r \).

Savers are all lenders. They earn more when young than when old, so they lend when young and earn interest on their loans, which they consume when old.

Notice that when interest rate rises here, savings doesn't change at all! Here, income effects exactly offset substitution effects, so that \( C_{\text{young}} \) does not change, and \( C_{\text{old}} \) rises due to higher interest rates. But...
Different savers can respond to changes in interest rates differently, depending on the importance of consumption-smoothing. Consider a rise in \( r \) on two types of savers: super-smoothers (have curvy indifference curves) and moderate-smoothers (have flatter indifference curves).

**Super-Smoothers**

"Super-smoothers" will raise consumption for both periods with a raise in interest rates, and so will lower savings. Moderate-smoothers will sacrifice current consumption for even more future consumption, so will raise savings.
Problem Example: Say savers are "moderate smoothers." We start at point A. The shock—fiscal stimulus makes current income rise (Y_{young} \uparrow to Y'_{young}). This shifts the lifetime budget line out in a parallel way. Both C_{young} and C_{old} rise, so Savings Fall. This is shown in moving from A to B in graphs 1 and 3. But, in 3, we see that I must rise! This means lifetime budget line gets steeper for savers, and capital and production shrink for investors. The final equilibrium for all three diagrams is C.

1. Savers

2. Investors

3. Market for Loanable Funds

\[ \begin{align*}
\text{S}_{1} & \quad \text{S}_{2} \\
\text{I} & \quad \text{S} \\
\text{Savings,} & \quad \text{Investment}
\end{align*} \]
Social Security goes bankrupt. YouM drops to zero.

Now You Try

Analyze and explain (somewhere on page) the change in all three diagrams. Mark final equilibrium C. Do this for all 3 problems.

Diagram 1:
- Axes: C, Y
- Point A on the line
- Y intersects with C at Y

Diagram 2:
- Axes: Q, K
- Point A on the curve

Diagram 3:
- Axes: r, T
- Point A where S and I intersect
2) Input costs (like oil) skyrocket. Marginal productivity of \( k \) falls for all levels of \( k \).
3) In the year 2017 we discover that President Trump is clinically insane. As many believe we will destroy the planet, preferences shift towards consuming now, raising $C_{young}$. Now You Try.