

Chapter 3: The Loanable Funds Market

Assumptions:

- The economy is closed: no international trade ($X = M = 0$).
- $K = \bar{K}$, $L = \bar{L}$: the economy has a fixed amount of capital and labor.
- Both capital and labor are fully utilized (full employment; no output gap).

Consumption, C:

- **Disposable income:** $Y_D = \text{total income} - \text{net taxes} = Y - T$.
- **Consumption function:** $C = f(Y - T)$.
- **Marginal propensity to consume (MPC):** the change in consumption when disposable income increases by one dollar. Definition: $MPC = \frac{dC}{d(Y - T)}$.

Investment, I:

- **Nominal interest rate:** the interest rate reported on loan contracts.
- **Real interest rate:** the nominal interest rate minus the rate of inflation.
- Interest rate r measures cost of funds used to finance investment (cost of borrowing).
- **Fisher Equation:** $r = i - \pi$
- **The investment function** is $I = I(r)$; investment is a decreasing function of the real interest rate: $r \uparrow \Rightarrow I \downarrow$.

Government purchases, G:

- Government spending on goods and services.
- Excludes transfer payments (*e.g.*, social security benefits, unemployment insurance).
- Assume government spending and total taxes are exogenous: $G = \bar{G}$, $T = \bar{T}$.

Savings, S:

- **Private savings** $= S_{\text{priv.}} = (Y - T) - C$
- **Public savings** $= S_{\text{pub.}} = T - G$
- **Total savings:** $S = (Y - T) - C + (T - G) = Y - C - G$

The loanable funds market: a simple supply-demand model of the financial markets

- Demand for funds: investment. Firms borrow to finance spending on plant and equipment, new office buildings, etc. Consumers borrow to buy new houses. Borrowers.
- Supply of funds: savings. Lenders.
- “Price” of funds: real interest rate r .
- Real interest rate adjusts to equate investment and saving in closed-economy equilibrium.

Effects of fiscal policy

- Government expenditure: $G \uparrow \Rightarrow S \downarrow, r \uparrow$
- Taxes: $T \downarrow \Rightarrow S \downarrow, r \uparrow$

Exercise: the effect of technological change on the loanable funds market

Assume that the economy's aggregate production function is $Y = F(A, K, L) = AK^{0.4}L^{0.6}$, where A is the level of technology, K is the level of capital, and L is the level of labor. The consumption function is equal to $C = 250 + 0.7(Y - T)$. Investment is given by the following schedule: $I = 1650 - 16000r$, where r is the real interest rate in decimal form. The government's fiscal policy results in a budget deficit of 100, with $T = 500$. The supply of capital and the supply of labor are fixed at 100 units each, and $A = 45$.

- What is the level of national savings in this economy?
- What is the equilibrium real interest rate and level of investment spending in this economy?
- Suppose that there is a production process change, leaving the level of technology the same, but such that the investment function is now $I = 2050 - 20000r$. What are the new equilibrium levels of output, consumption, savings, investment and the real interest rate in the economy?
- Does technological change affect the level of output in the economy?

Past essay questions

- Spring 2007: 1st midterm
- Spring 2008: 1st midterm

Questions and answer keys are posted on the TA website:

<https://mywebspace.wisc.edu/sswisher/web/302.html>