Social Discount Rate

- See Boardman et al. Chapter 10
- Consumers (Savers): Marginal Rate of Time Preference (MRTP)
- Producers (Investors): Marginal Rate of Return on Investment (MRRI)
- Under appropriate assumptions:
 - Social Discount Rate (SDR) = MRTP = MRRI
 - Equals "market" interest rate

Consumers-Savers







Social Discount Rate

But in reality not a single interest rate for all savers and investors

- Many factors affect interest rates.
- What factors?
 - Transactions costs
 - Differences in risks
 - Different time horizons
 - Expectations of future inflation
 - Policies controls on interest rates
 - Direct interventions in credit markets Federal Reserve Bank (Open market operations)

Transactions Costs



Blended Rate

- Capital for project is combination of additional savings and reduced investment in private sector (crowding out)
- $\Delta K = \Delta S \Delta I$
- SDR = $(\Delta S / \Delta K)^* r_s + (\Delta I / \Delta K)^* r_i$
 - Harberger: Empirical studies show savings rates insensitive to interest rates ($\delta S / \delta r \cong 0$), so $\Delta S \cong 0$

 $-SDR \cong r_i = MRRI$



"Small" Investments

- In the previous examples, we have examined the effects of "large" investments
- The amount of capital needed for the new investment is enough to affect market interest rates
- But many investments are not so big, will not affect interest rates
 - For these scale of investments, the supply of savings may be considered to be perfectly elastic



"Small" Investments

- $\Delta K = \Delta S \Delta I$
- SDR = $(\Delta S / \Delta K)^* r_s + (\Delta I / \Delta K)^* r_i$
- But now $\Delta I = 0$
- SDR = r_s
- So, for "Small" investments, the social opportunity cost of capital should be consumers marginal rate of time preference (MRTP), which is < MRRI