Bargaining over Prices

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Seller & buyer bargain price in any trade i.

Assume surplus-sharing solution to bargaining problem b/w buyer & seller.

- Buyer gets fraction β of surplus
- Seller gets fraction $1-\beta$ of surplus
- $\beta \in (0,1)$: bargaining power of buyer
- Diamond (1982)
- If buyer & seller are risk neutral

($\varepsilon \to \infty$) $\to$ equivalent to Nash bargaining

Surplus going to seller if price is p_i

price in transaction i

$$S_i = \frac{p_i}{p} \cdot \frac{1}{1+x} \cdot \frac{\varepsilon - 1}{\varepsilon} \cdot \left(\frac{\mu}{p}\right)^{-1/\varepsilon}$$

aggregate price

$$B_i = \frac{1}{1+x} \cdot \frac{\varepsilon - 1}{\varepsilon} \cdot \left(x c^{-1/\varepsilon} - \frac{p_i}{p} \left(\frac{\mu}{p}\right)^{-1/\varepsilon} \right)$$

$$T_i = B_i + S_i = \frac{1}{1+x} \cdot \frac{\varepsilon - 1}{\varepsilon} \cdot x c^{-1/\varepsilon}$$

Household's FOC in maximization problem:

$$X c^{-1/\varepsilon} = [1 + \tau(x)] \left(\frac{\mu}{p}\right)^{-1/\varepsilon}$$

Then: $B_i = \frac{1}{1+x} \cdot \frac{\varepsilon - 1}{\varepsilon} \cdot \left(\frac{\mu}{p}\right)^{-1/\varepsilon} \left(1 + \tau(x) - \frac{p_i'}{p}\right)$

$$T_i' = \frac{1}{1+x} \frac{\varepsilon - 1}{\varepsilon} [1 + \tau(x)] \left(\frac{\mu}{p}\right)^{-1/\varepsilon}$$

$$S_i = \frac{1}{1+x} \frac{\varepsilon - 1}{\varepsilon} \left(\frac{\mu}{p}\right)^{-1/\varepsilon} \cdot \frac{p_i'}{p}$$

Surplus sharing: $\begin{cases} B_i = \beta_x T_i \\ S_i = (1-\beta) T_i \end{cases}$.

$$\frac{S_i}{T_i'} = 1 - \beta \Rightarrow \frac{p_i/p}{1 + \tau(x)} = 1 - \beta$$

$$\boxed{p_i = (1-\beta)(1 + \tau(x))\, p}$$

p_i is surplus-sharing price in trade i

If $\beta = 0$: $p_i = [1 + \tau(x)] \cdot p$

$\beta = 1$: $p_i' = 0$