

Chapter 9 Structural Empirical Analysis of Vertical Contracting

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March 2025

Outline - Theory

Introduction

Basics

Non-cooperative bargaining models

- The offer game

- The bidding game

Nash-in-Nash bargaining

Introduction



Basics

- Setting
 - A upstream seller U and a downstream buyer D agree on a contract \mathcal{C} from some feasible set.
 - The contract $\mathcal{C} = \{y, t\}$, y includes other provisions and t is a lump-sum transfer.
 - Firms' payoffs: $\Pi_U(\mathcal{C}) \equiv \pi_U(y) + t$; $\Pi_D(\mathcal{C}) \equiv \pi_D(y) - t$
- Pareto efficient contract
 - $y^* \in \operatorname{argmax}_{(y,t) \in \mathcal{Y} \times \mathcal{R}} \pi_U(y) + \pi_D(y)$
 - Bilateral contracting principle: complete information and lump-sum transfers.

Basics - example: successive monopoly setting

- A monopolist manufacturer sells a product to a monopolist retailer.
 - Vertically integrated: $p^m(c) \equiv \operatorname{argmax}(p - c)D(p)$, $p^m(c_M + c_R)$ maximizes the bilateral surplus.
 - Price unilaterally: $p^m(w + c_R)$ maximizes the retailer's profit.
 - $p^m(w + c_R) > p^m(c_M + c_R)$: double marginalization problem.

Basics - example: negotiation by Nash bargaining

- The parties will agree to a contract that solves

$$\max_{C \in \mathcal{C}^+} [\Pi_D(C) - \bar{\Pi}_D]^b \cdot [\Pi_U(C) - \bar{\Pi}_U]^{1-b} \quad (1)$$

The offer game

The bidding game

Nash-in-Nash bargaining

Conclusion