Legal Protection in Retail Financial Markets

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Overview

- Agency.
  - Finance/economics: mainly about the firm's production function. [Ross (1973), Jensen & Meckling (1976)]
    - The efficiency of production is negatively affected by conflicts of interest between firm and agents.
    - Contracts restore (some) efficiency by aligning incentives.
  - Law: mainly about assigning blame. [Sykes (1984, 1988)]
    - When a customer is wronged, who should be punished, the firm and/or the agent?
- This paper's objective: combine finance and law, and study how they affect each other.
  - Role of law when contracts are incomplete or imperfect.
  - Optimal contracts when the law helps realign incentives.
- Remark: Product does not have to be a financial product.
  - Alternative title: "Agency Law and the Theory of the Firm."

About Financial Products

- Consumers have limited sophistication. [Choi et al. (2004, 2005)]
  - Consumers depend on quality of products *and* advice.
  - Good products and reliable advice $\longrightarrow \uparrow$ participation, investment.
- Two stylized facts about regulation in financial markets.
  - Producers outsource their advice services $\longrightarrow$ Who is culpable?
  - Assigning blame is an imperfect process.
    - Consumer may buy the wrong product despite advisor's goodwill.
    - The law often cannot disentangle which party is culpable.
- Financial products.
  - Cannot offer warranties and refunds. [Spence (1977), Grossman (1981)]
    - Adverse selection ex post.
    - Eliminates the useful characteristics (e.g., risk) of products.
  - Cannot rely on reputation. [Klein & Leffler (1981), Shapiro (1982, 1983)]
    - Low frequency of transactions (e.g., mortgage).

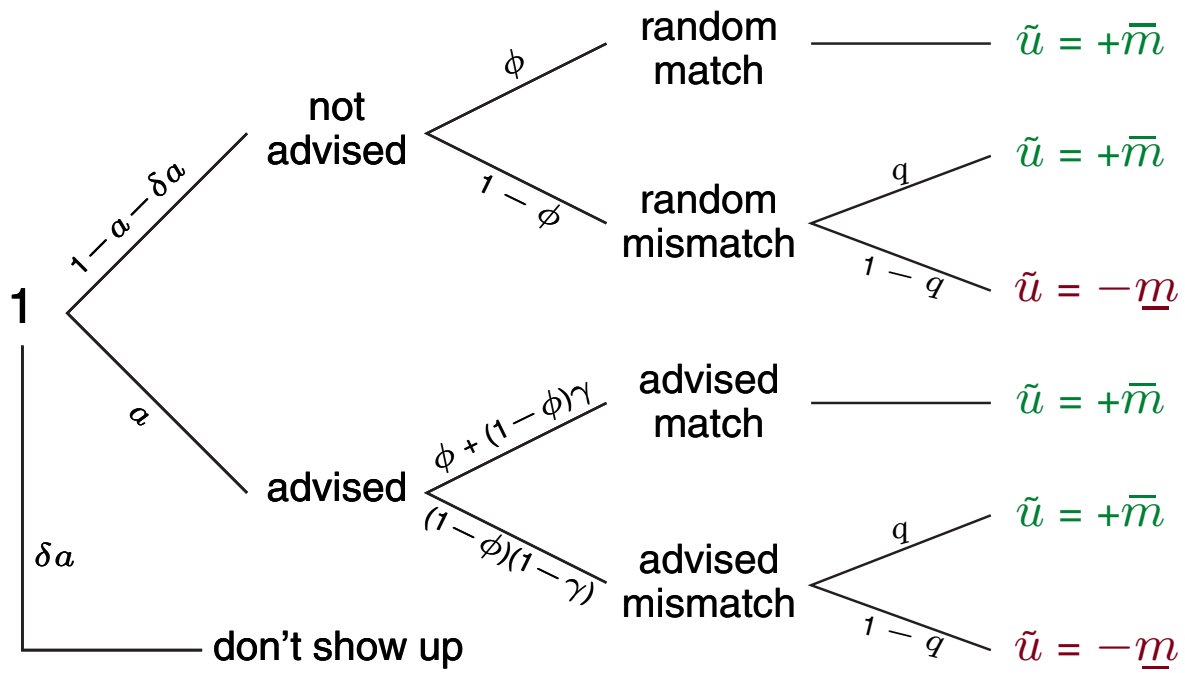
Model: Products and Consumers

- Firm offers a continuum of products.
  - Fund family offers many different funds.
  - Lender offers adjustable-rate and fixed-rate mortgages.
- Consumers.
  - Mass of 1.
  - If buy, utility $\tilde{u} = \begin{cases} +\overline{m}, & \text{prob. } \phi \quad (\text{“product match”}) \\ -\underline{m}, & \text{prob. } 1-\phi \quad (\text{“mismatch”}). \end{cases}$
  - low ϕ = specialized products; high ϕ = widespread use.
  - Assume $\phi\overline{m} - (1-\phi)\underline{m} = 0$: willing to pay 0 ex ante.

Model: Production

- Broker/Agent.
  - Advises a fraction a (unobservable) of consumers: improves probability of a match from ϕ to $\Pr\{\text{match} \mid \text{advice}\} = \phi + (1 - \phi)\gamma$.
    - Imperfect signal: posteriors $>$ priors, but posteriors < 1.
    - γ: ease of matching consumers with product, or agent skill.
  - Effort cost: $\frac{k_A}{2}a^2$.
  - Less attention on attracting consumers: lose δa customers.
- Firm/Principal.
  - Pays $w > 0$ to the agent for his services (must meet participation constraint).
  - Can improve quality of products to $q > 0$ (unobservable).
    - Turn mismatch into match with probability q.
    - Good monitoring, low/no hidden fees, find good traders, etc.
  - Cost: $\frac{k_F}{2}q^2$.

Sales and Lawsuits



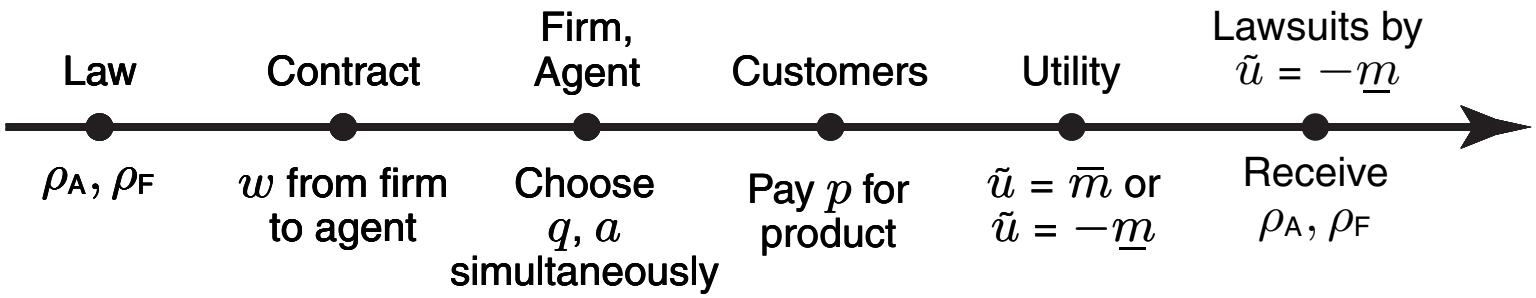
- Number of sales: $n_S = 1 - \delta a$.
- Number of lawsuits:

$$n_L = (1 - a - \delta a)(1 - \phi)(1 - q) + a(1 - \phi)(1 - \gamma)(1 - q)$$
$$= (1 - q)(1 - \phi)\left[1 - a(\gamma + \delta)\right].$$

- Number of happy customers: $n_H = n_S - n_L$.

Model: Legal System

- Law/Government.
  - Legal recourse for mismatched customers.
  - Goal: maximize total welfare.
  - Legal system: customers who buy and experience $-\underline{m} < 0$ receive
    - ρ_A from the agent, and
    - ρ_F from the firm.
- Sequence of events.



Solving the Model

- Agent: Takes q as given, and

$$\max_{a} \; w - n_{\mathsf{L}}\rho_{\mathsf{A}} - \frac{k_{\mathsf{A}}}{2}a^2 \;\longrightarrow\; a = \frac{(1-q)(1-\phi)(\gamma+\delta)\rho_{\mathsf{A}}}{k_{\mathsf{A}}} \;\downarrow q$$

- Firm: Takes a as given, and

$$\max_{q} \; -w + n_{\mathsf{S}}p - n_{\mathsf{L}}\rho_{\mathsf{F}} - \frac{k_{\mathsf{F}}}{2}q^2 \;\longrightarrow\; q = \frac{\big[1-a(\gamma+\delta)\big](1-\phi)\rho_{\mathsf{F}}}{k_{\mathsf{F}}} \;\downarrow a$$

- Remarks.
  - Free-rider problem:
    - more quality $\longrightarrow$ less advice.
    - more advice $\longrightarrow$ less quality.
  - $\rho_{\mathsf{A}} = \rho_{\mathsf{F}} = 0 \longrightarrow$ no commitment to advice/quality (lemons problem)
    $\longrightarrow a = q = p = W = 0.$
  - Legal system's challenge:
    - $\rho_{\mathsf{A}} \uparrow \longrightarrow a \uparrow \xrightarrow{\text{F-R}} q \downarrow.$
    - $\rho_{\mathsf{F}} \uparrow \longrightarrow q \uparrow \xrightarrow{\text{F-R}} a \downarrow.$

Equilibrium

- Solve for a and q.

$$a = \frac{(1-\phi)(\gamma+\delta)\left[k_F - (1-\phi)\rho_F\right]\rho_A}{k_A k_F - (1-\phi)^2(\gamma+\delta)^2\rho_A\rho_F} \qquad \uparrow \rho_A, \downarrow \rho_F \qquad (IC_A)$$

$$q = \frac{(1-\phi)\left[k_A - (1-\phi)(\gamma+\delta)^2\rho_A\right]\rho_F}{k_A k_F - (1-\phi)^2(\gamma+\delta)^2\rho_A\rho_F} \qquad \downarrow \rho_A, \uparrow \rho_F \qquad (IC_F)$$

- For first-best: Need ρ_A^*, ρ_F^* such that $(IC_A) = a_{FB}$ and $(IC_F) = q_{FB}$.
  - $\rho_A^* < \rho_F^*$: The firm takes a larger fraction of the blame.
  - $\rho_F^* + \rho_A^* > \overline{m} + \underline{m} \longrightarrow$ punitive damages are optimal.
  - ρ_A^* increasing in γ: predictions for various financial products.

Heeding Advice and the Law

- Problem with first-best law.
  - $\rho_F^* + \rho_A^* > \overline{m} + \underline{m} \rightarrow \mathrm{E}[\tilde{u} \mid \text{mismatch}] > \mathrm{E}[\tilde{u} \mid \text{match}]$.
  - Incentive to ignore advice.
  - Why? Solving the free-rider problem requires big penalty incentives.
- Constrained problem for the government:

$$\max_{\rho_A, \rho_F} \; W = n_H \overline{m} - n_L \underline{m} - \frac{k_A}{2} a^2 - \frac{k_F}{2} q^2$$

subject to (IC_A), (IC_F), and $\rho_F + \rho_A \leq \overline{m} + \underline{m}$ (heed advice)

  - Without last constraint: first-best.
  - With last constraint: second-best.
- Results.
  - ρ_A increasing in γ, ρ_F decreasing in γ.
  - Small legal system for small and large γ.
  - The firm is penalized more when the stakes ($\overline{m}$, $\underline{m}$) are high.

Future Directions

- General equilibrium: legal system financed through taxes.
  - Efficiency of legal system $\rightleftarrows$ Profitability of the economic system.
  - What is the cost $c(n_{\mathsf{L}}, \rho_{\mathsf{A}}, \rho_{\mathsf{F}})$ of the legal system?
- Theory of the firm.
  - Agent within the firm or outside the firm?
  - Legal basis for vertical integration?
- Class-action lawsuits.
  - Legal system more efficient if the law can penalize firm and agent more when n_{L} is large.
  - Can recover first-best.

Summary

- Retail financial markets model.
  - Firms choose quality, brokers advise.
  - Free-rider problem $\longrightarrow$ little/no economic surplus without law.
- Legal system.
  - Creates incentives for quality and advice.
  - First-best if consumers follow advice.
    - ρ_{A} increasing in γ.
    - Free-riding $\longrightarrow$ penalties are large (punitive damage).
- Large penalties $\longrightarrow$ incentive to ignore advice $\longrightarrow$ second-best.
  - ρ_{A} increasing in γ, ρ_{F} decreasing in γ.
  - Small legal system for small and large γ.
  - Legal system penalizes the firm more when the stakes ($\overline{m}$, $\underline{m}$) are high.