

**The Effect of the Legal System and Empathy in
Venture Capital Contracting: Theory and
Evidence.**

- Dr. Yiyuan Mai, Visiting Scholar, Huazhong University of Science and Technology, Wuhan, Hubei, China.
- Dr. Richard Fairchild, Lecturer in Corporate Finance, School of Management, University of Bath.

2 Main Research Questions

- Does venture capital sector require strong legal system in order to flourish? Or can it survive based on implicit relationships, such as empathy/trust?
- Effect of legal system and culture on Optimality of strong or weak contracts?
- Theory/ empirical with international applications.

Legal system and corporate finance.

- Existing research: La Porta et al
- => Positive relationship between effective legal systems and capital market development (IPOs, economic growth, market valuations etc).
- But:-

Legal System and Venture Capital.

- Botazzi et al (2005): Tougher legal system => more governance by VC => VC and E's efforts higher => increased performance.
- Allen and Song (2002): negative relationship between rule of law and VC financing => implicit relationships.
- Shepherd and Zacharakis (2001): contractual control and trust in VC/E relationships.

Features of VC/E contracting.

- VC more than just a Passive Investor.
- Provides ‘value-adding services.’
- \Rightarrow Not just a pure principal-agent problem.
- Double-sided Moral Hazard Models – both E and VC exert effort.
- Existing Models: narrow self-interest.

Our Model.

- Psychological Sympathy/Empathy Game
- Double-sided Moral hazard.
- Relationship between Legal system, E's and VC's efforts, and performance.
- Tougher legal system \Rightarrow Tougher Contracting \Rightarrow destroys cooperation \Rightarrow Higher or Lower Performance?

Timeline:

- Date 0: VC chooses soft or tough contract:
 \Rightarrow penalty $f \in \{0, F > 0\}$.
- Date 1: Sympathy Sub-Game: E selects sympathy level ${}_m\lambda_{vc} \in \{0,1\}$.
- Date 2: VC selects sympathy level ${}_m\lambda_{vc} \in \{0,1\}$.
- Date 3: Effort levels $\Rightarrow P = \gamma_m e_m + \gamma_{vc} e_{vc} \Rightarrow R > 0$

$$1 - P \Rightarrow 0$$

Payoffs:

$$\Pi_m = \frac{PR}{2} - (1-P)qF - \beta e_m^2 + {}_m\Lambda_{vc} \theta\left(\frac{F-f}{F}\right) x_{vc}$$

$$\Pi_{vc} = \frac{PR}{2} - \beta e_{vc}^2 + {}_{vc}\Lambda_m \theta\left(\frac{F-f}{F}\right) x_m$$

Following Sally, effective sympathy is:

$${}_i\Lambda_j = {}_i\lambda_j + {}_i\lambda_j [{}_j\lambda_i - {}_i\lambda_j]$$

Backward Induction.

- Solve for equilibrium effort levels, given VC's choice of soft or tough contract, and E's and VC's sympathy choices.
- Solve for VC's sympathy choices given....
- Solve for E's sympathy choice given ...
- Finally, solve for VC's choice of contract.

Equilibrium

- VC chooses soft contract if

$$q < q'' = \frac{[(2\theta + \theta^2)\gamma_{vc}^2 + (3\theta - \theta^3)\gamma_m^2]R}{4\gamma_m^2 F}$$

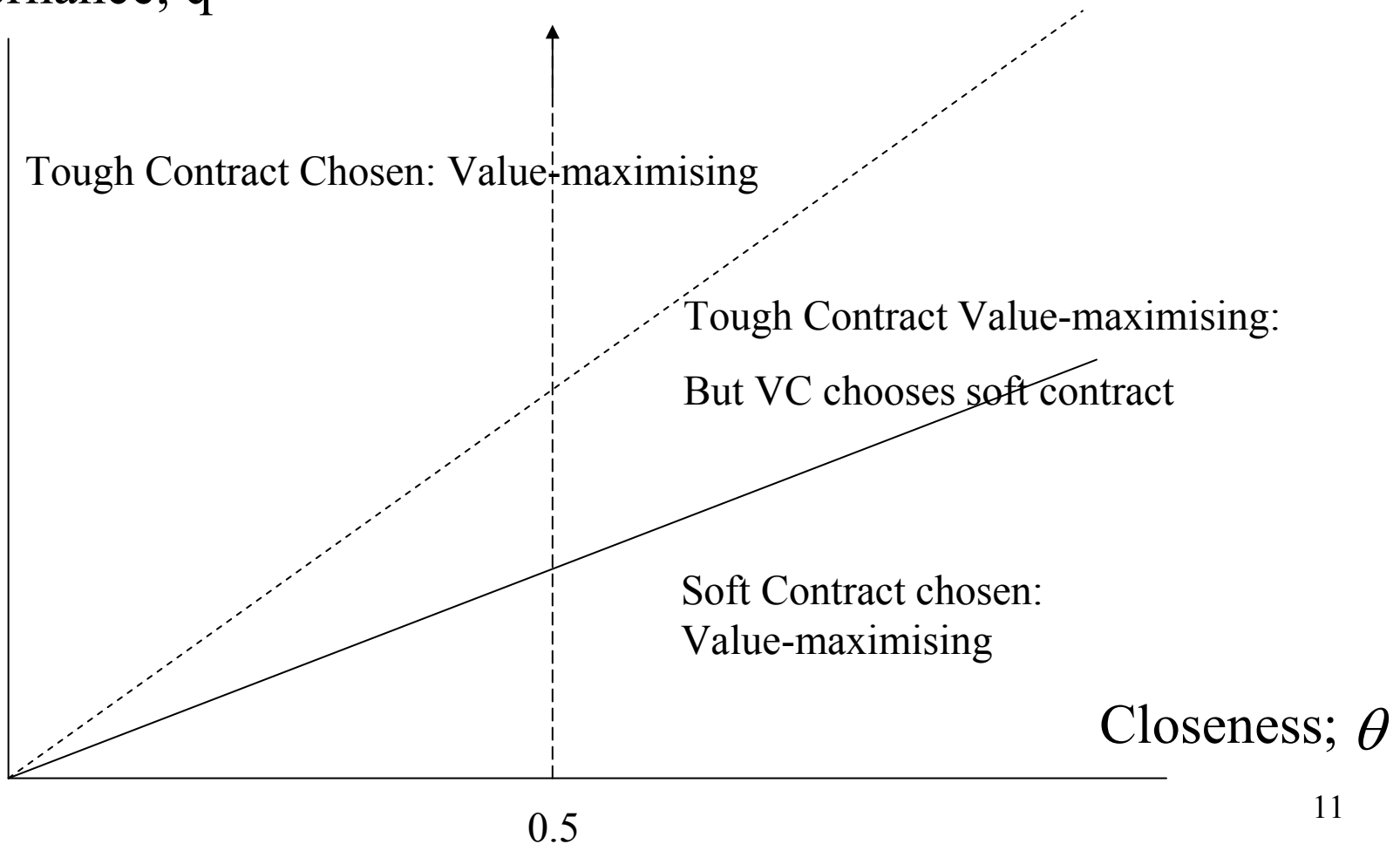
- Firm Value Higher under soft contract if

$$q < q' = \frac{\theta[\gamma_m^2 + \gamma_{vc}^2]R}{2\gamma_m^2 F}$$

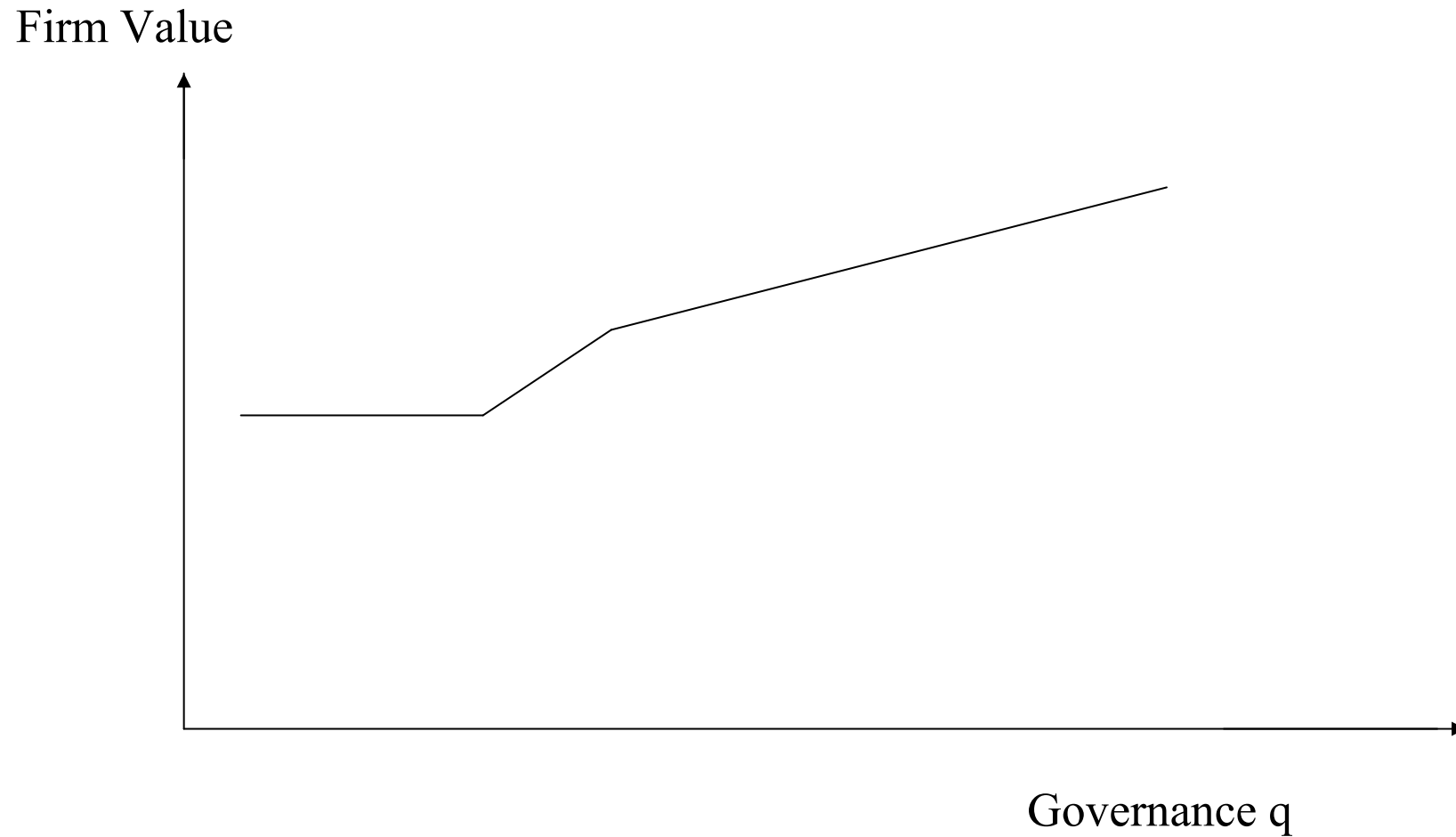
$$q'' > q' \quad \forall \theta \in [0,1]$$

Graphical Representation

Governance; q



Firm Value as a function of Governance



$$\theta = 0.5$$

Policy Implications.

- Model can be used to classify societies' optimal contracts, given legal system and closeness?
- Recommendations to regulators on optimal toughness of VC/E contracts given the legal system?
- Eg China? Weak Legal system, Cultural Closeness? => soft VC contracts optimal?

Chinese Evidence

- Trust and Empathy play a large role.
- Legal system is weak.
- Our model suggests soft contracts.
- But evidence suggests tough contracts- not optimal?

Small Survey of Chinese VCs.

- Our small pilot survey suggests;
- A) VCs believe that there is reciprocal trust.
- B) VCs believe legal system is effective.
- C) VCs prefer tougher contracts.
- D) VCs exert effort in screening the E.
- E) VCs split on effect of trust on equity stake offered.