OWNERSHIP STRUCTURE, REPUTATION CRISES AND RECOVERY: THEORY AND EXPERIMENT

Thomas Noe
SBS and Balliol College, Oxford

Michael Rebello
U. of Texas, Dallas

Thomas Rietz
U. of Iowa

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STYLIZED FACTS ABOUT CORPORATE REPUTATION

- Firms frequently suffer reputation crises from managers' actions.
  - For example, Boeing, Volkswagen and Wells Fargo.
- To limit damage and recover reputations firm often resort to reform.
  - Reform focuses on improving firm governance.
    - Improving accounting/information systems
    - Restructuring boards
    - Changing internal organizational/reporting structures
  - Reform often succeeds.

WHAT QUESTIONS DO WE ADDRESS?

1. How does the option to reform ex post affect the incentive to act reputably and form reputation ex ante?
2. Does governance structure—owner-managed versus professionally managed—affect reputation formation in the shadow of reform?

WHAT DO WE DO?

- Develop a rational-choice reputation model that incorporates
  1. Firm governance: Owner management or professional management
  2. The option to reform after a reputation crisis
- Derive hypotheses about reputation, governance structure, and reform
  1. The option to reform makes reputation formation more difficult
     - ★ Lowers the ex post cost of disreputable behavior
  2. This undesirable ex ante effect is weaker with professional management
     - ★ Owners gain more from reform when they also manage firms
- Test the hypotheses using a laboratory experiment
  1. The option to reform does indeed lower ex ante reputation formation
  2. The decrease is indeed greater with owner management

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MODEL

TIME, PREFERENCES AND FIRMS

- Two periods (three dates)
- All agents are risk-neutral and patient
- Firms choose a production technology in each period
  - Reliable technology always produces a high, h, quality good
  - Vulnerable technology lowers quality to l with non-zero probability but produces a private gain for the operator
- A good's quality is publicly known only after it is consumed and quality is not contractible

FIRM TYPES, MONITORING AND REPUTATION

- A firm can be one of two types
  - Firm type is synonymous with its monitoring system
    - A Secure system blocks employing vulnerable technology
    - An Insecure system permits the operator to choose either the secure or vulnerable technology
- The operator knows the firm's type; others are (information) outsiders
- Goods' prices measure firm reputation
  - They are set via consumer competition and reflect outsider beliefs about goods' quality
    - Beliefs about the firm's type: secure or insecure
    - Beliefs about the producer's action contingent the monitoring system being insecure

Outsider learning and revelation

- Firm reputation evolves based on the history of goods it produces
  - Outsiders learn about a firm's type by observing the quality of its goods
- A firm's type is revealed (to outsiders) if it produces a low quality good
  - Only the insecure type can produce a low quality good
    - ★ Quality can only be low only when the vulnerable technology is employed
    - ★ Employing the vulnerable technology is feasible only when the control system is insecure
- A firm remains unrevealed if it produces only high quality goods

Reform and reputation recovery

- If a firm is revealed by its period 1 good, owners can reform at the start of period 2 if the reform option is available
- Reform is publicly observable and costs the firm R
- Reform succeeds with probability $r \in (0,1)$
  - If reform succeeds, the monitoring system becomes secure
  - If reform fails, the control system remains insecure
  - Success or failure is only observed by the operator

REPUTATION EQUILIBRIA

- We focus on reputation equilibria in which firms act reputably in period 1
- As in all finite-date reputation models, there is no incentive to maintain reputation in the terminal period, period 2.
- Questions:
  - When are reputation equilibria sustainable in the absence of the reform option under professional and owner management?
  - How does the option to reform affect sustainability under owner and professional management?

Governance and reputation sustainability

- An owner-managed firm
  - The operator is the owner
    - ★ Only agency problem is between owner and consumers
- A professionally-managed firm
  - The operator is a professional
    - ★ An owner-manager agency problem as well
  - An outsider board faithfully represents owners' interests. The board
    - ★ Does not operate the firm and thus is an informational outsider
    - ★ Maximizes owners' value
    - ★ Sets the manager's incentive compensation
    - ★ Can replace the manager after the first period

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RESULTS: REPUTATION AND PROFESSIONAL MANAGEMENT

- When the firm is professionally managed, owners are information outsiders
- Benefits and costs of maintaining reputation:
  - *Cost:* paying managers reputation-assuring compensation, which is redundant if the control system is secure
  - *Benefit:* Avoiding revelation in the initial period caused by opportunistic managerial behaviour,

    revelation prevents the firm from operating profitably in the terminal period
  - When owners (like outsiders) have sufficiently high confidence in the monitoring system, they believe that opportunism is unlikely even in the absence of reputation-assuring compensation
  - So, owners will not adopt reputation-assuring compensation policies
  - Thus managers will sometimes act opportunistically and thus destroy firm reputations

RESULTS: REPUTATION AND OWNER MANAGEMENT

- Benefits and costs of maintaining reputation:
  - *Cost:* The lost profits that would be generated by adopting opportunistic production polices in the initial period
  - *Benefit:* Avoiding revelation in the initial period
- When the owner knows that the monitoring system is insecure but consumers' confidence in the monitoring system is high, the gains from opportunism in the terminal period are large provided the firm remains unrevealed.
- In order to avoid revelation, owners, even when the control system is insecure, will act reputably in the initial period in order to protect profits from opportunism in the terminal period.

EFFECT OF INTRODUCING THE REFORM OPTION: SIMILARITIES

Under both owner and professional management

- The reform option lowers the cost of revelation and thus the incentive of firms to avoid revelation ex ante
- Reform increases the probability that opportunism will be blocked by monitoring enough to make production post-reform viable
- Both owner-managed and professionally managed firms will attempt reform after revelation

EFFECT OF INTRODUCING THE REFORM OPTION: THE DIFFERENCE

- Under owner management: If reform is attempted but fails, the owner-manager captures the gains from post-reform opportunism
- Under professional management: If reform is attempted but fails, opportunism gains are captured by professional managers
- Therefore, the expected gains from attempted reform are larger for owner-managed firms
- Larger gains attenuate the incentive to avoid revelation and thus increase the likelihood of opportunistic behaviour in the initial period.

EXPERIMENT

EXPERIMENTAL DESIGN

- Our model is difficult to test with real firms
  - Measuring reputation and governance is challenging
- Testing it experimentally is also complex
  - We reduce decision costs faced by subjects by focusing on technology choice
    - Fix board/owner (reform/retention) polices at equilibrium levels
    - Fix compensation levels for professional managers
    - Fix second period (dominant) strategies for operators
  - Subject assume the role of operators or consumers:
    - Operators decide on the period 1 technology when the firm is insecure
    - Consumers price period 1 and period 2 goods

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TWO MODEL PARAMETERIZATIONS

Parameter Set I:

	OM	PM
w.Reform	No Rep. Eq.	Rep Eq.
w.o.Reform	Rep. Eq.	Rep Eq.

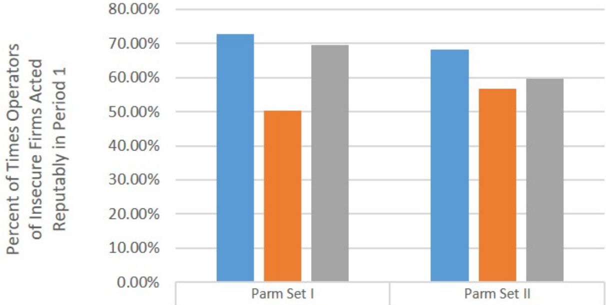
Parameter Set II:

	OM	PM
w.Reform	Rep. Eq.	Rep Eq.
w.o.Reform	Rep. Eq.	Rep Eq.

EXPERIMENTAL DESIGN: TREATMENTS

- Professional managers face the same decision with and without the option for reform
  - Three scenarios
    1. OMR: owner manager with reform
    2. OM: owner manager without reform
    3. PM: professional management
  - 6 Treatments $= 3$ Scenarios $\times$ 2 Parameter Sets

FREQUENCY OF REPUTABLE BEHAVIOR



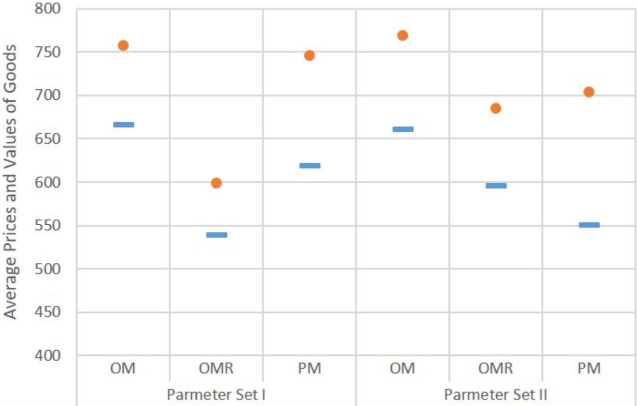
	Parm Set I	Parm Set II
Owner Manager w/o Reform	72.61%	68.18%
Owner Manager w/ Reform	50.22%	56.78%
Professional Manager	69.65%	59.62%

COMPARISONS

TABLE: Probability of reputable behavior in period 1

Control Structure		Parameter Set Parm. I	Parm. II	Parameter Set I vs II Difference	t-Stat.	p-Value
OM		75.42%	68.37%	7.06%	1.15	0.25
OMR		48.67%	58.43%	-9.75%	-1.38	0.17
PM		71.43%	66.04%	5.39%	0.83	0.41
OM	Difference	26.75%	9.94%			
vs	t-Stat.	4.35	1.41			
OMR	p-Value	0.00	0.16			
OM	Difference	4.00%	2.33%			
vs	t-Stat.	0.66	0.35			
PM	p-Value	0.51	0.73			
OMR	Difference	-22.76%	-7.61%			
vs	t-Stat.	-3.43	-1.09			
PM	p-Value	0.00	0.28			

CONSUMER PRICING IN PERIOD 1



	OM	OMR	PM	OM	OMR	PM
Prices	666	539	619	661	596	551
Values	758	598	746	769	686	705

MODEL PREDICTIONS VS EXPERIMENT OUTCOMES

- Overall outcomes are generally consistent with the hypotheses
  - The differential effect of reform is evident
- However, specific model predictions are not consistent with subject behavior
  - Reputable behavior tends to be lower than the model predicts
    - Though subject strategies in most treatments evolve in the direction of equilibrium predictions
  - Goods' prices are low relative to quality and are formed adaptively rather than by rational expectations

SUMMARY

- We examine how the option to reform after reputation damage affects reputation incentives ex ante, and whether this effect varies with governance structure
- Our model and laboratory experiment show that the option to reform makes commitment to reputable behavior more difficult, even more so when a firm is owner managed

Thanks