Three *Biased* Lectures on Economic Models of Internal Organization: Pricing, Politics, and Path-Dependence

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MIT and NBER

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Inside Organizations: Pricing, Politics, and Path Dependence

Robert Gibbons

Annu. Rev. Econ. 2010. 2:337–65
Lecture 0: Org. Econ.?  

“the economic analysis of managed interactions” (~Intro, HOE 2013)

1. What Is an Organization?  
2. Our Organizational Economy  
3. OE’s Footprint?  
4. The Origins of OE  
5. Progress on Internal Organization  
6. Progress on Firms’ Boundaries  
7. Partial Summary
Lecture 1: Pricing

If markets get the prices wrong, then an economist’s job may be to fix the pricing, such as through an incentive contract.

1.1 Formal Incentive Contracts
   • Feltham & Xie *Acctng. Rev.* 94

1.2 Relational Incentive Contracts
   • Bull *QJE* 87, Levin *AER* 03

1.3 Formal and Relational Incentive Contracts
   • Baker, Gibbons, & Murphy *QJE* 94

1.4 Boundary of the Firm as an Incentive Instrument
   • Baker, Gibbons, & Murphy *QJE* 02
Lecture 2: Politics

Where important actions cannot be priced, the organization can be seen as a decision process—with battles for control, lobbying those in control, and so on.

2.1 Background
   - March *J.Pol.* 62, Cyert-March *BTF* 63

2.2 Fixed Decision Architectures
   - Milgrom-Roberts *AJS* 88, Secs. 2&3 in GMR *HOE* 13

2.3 Endogenous Decision Architectures
   - Aghion-Tirole *JPE* 97, Sec. 5 in GMR *HOE* 13, BD *HOE* 13

2.4 Empowerment as a Promise
   - Baker, Gibbons, & Murphy *JLEO* 99, Foss *Org. Sci.* 03
Lecture 3: Path-Dependence

Having noted the importance of relational contracts (e.g., in incentives in Lec.1 & in empowerment in Lec. 2), we now consider the difficulties in building and changing relational contracts.

3.1 Persistent Performance Differences …
   • Syverson *JEL* 11

3.2 … Are Correlated with Proxies for Mgmt. Practices
   • Bloom-Van Reenen *QJE* 07, …

3.3 Many of These Mgmt. Practices are Relational
   • Sec. 4 in GH *HOE* 13

3.4 Difficulties in Learning to Collaborate
   • Kreps *ICC* 96, Chassang *AER* 10, …, ??
Lecture 4: Summary

Initiative vs. Coordination

4.1 The Goals
4.2 The Tools
4.3 The Manager?
Where important actions cannot be priced, the organization can be seen as a decision process—with battles for control, lobbying those in control, and so on.

2.1 Background
   • March *J.Pol.* 62, Cyert-March *BTF* 63

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2.4 Empowerment as a Promise
   • Baker, Gibbons, & Murphy *JLEO* 99, Foss *Org. Sci.* 03
Aghion & Tirole *JPE* ‘97

- Superior often “rubber-stamps” subordinate’s proposal

  Shareholders $\rightarrow$ Board of directors $\rightarrow$ CEO $\rightarrow$ Division VP $\ldots$

Q: Why (and how) would actor with formal authority cede real authority?

A: Knows that other actor has better info and sufficiently similar preferences
Aghion & Tirole (cont.)

- 3 potential projects ($k = 1, 2, 3$)
- Benefits $B_k$ to $P$, $b_k$ to $A$
- One project has $B_k = b_k = -\infty$
- Other payoffs are
  - $B_k = B$ or $0$ ($B > 0$)
  - $b_k = b$ or $0$ ($b > 0$)
- “Alignment” probability $= \alpha$
  - Prob. $\alpha \rightarrow (B, b)$ and $(0, 0)$
  - Prob. $1-\alpha \rightarrow (B, 0)$ and $(0, b)$
Aghion & Tirole (cont.)

• A pays cost \( c_A(e) \) for soft info
  – Prob. \( e \): A learns all own payoffs
  – Prob. \( 1-e \): A learns nothing

• P pays cost \( c_P(E) \) for soft info
  – Prob. \( E \): P learns all own payoffs
  – Prob. \( 1-E \): P learns nothing

• P-formal authority ✓

• A-formal authority ?


P-formal authority:

• P informed $\rightarrow$ chooses B

• P uninformed but A informed $\rightarrow$ A chooses b $\rightarrow$ P receives $\alpha_B$

• Equilibrium efforts ($E^*, e^*$)

  $$U_P = EB + (1-E)e\alpha_B - c_P(E)$$

  $$U_A = E\alpha b + (1-E)eb - c_A(e)$$

• With probability $(1- E^*)e^*$, A has real authority (rubber-stamping occurs)

• Terrific!
Aghion & Tirole (cont.)

A-formal authority:

• A informed $\rightarrow$ chooses b

• A uninformed but P informed $\rightarrow$ P chooses B $\rightarrow$ A receives $\alpha b$

• Equilibrium efforts ($E^{**}, e^{**})$  $e \uparrow, E \downarrow$

$$V_A = eb + (1-e)E\alpha b - c_A(e)$$

$$V_P = e\alpha B + (1-e)EB - c_P(E)$$

• With probability $e^{**}E^{**}(1-\alpha)$, “P’s organization” is choosing (0, b) over (B, 0) and knows it

• Strange?
Example 2: Decentralization @ J&J
(Aguilar & Bhambri ‘83)

• “Decentralization = Creativity = Productivity”
  – J&J: 140 (220) local operating companies
  – Exec. Com. = 11 (but Tylenol w/ codeine)
  – π-center, autonomy, retained earnings

• Hospital Services Group “3 years late”
  – Revising promises w/ LOCs?
  – New promises @ HSG?
    • Service group? Cost center? Staffing?
Real Empowerment

• Very important ($\neq$ hair styles & dress codes)

• Management $\neq$ external institutions
  – Involuntary servitude, non-competes
  – Lawyer-client decision rights

• Management $\neq$ formal contracts within firms
  – Union as contracting party
  – Courts recognize contracts between “legal persons”

• Delegation / empowerment = relational contract
  – Static model as reduced form?
Formal authority resides at the top, but middle managers have some authority.

Below the top, decision rights can be loaned, not owned.

Empowerment is a promise.

- Johnson & Johnson
- Oticon
- Xerox Technology Ventures
- ...
BGM 99  (cont.)

• Project’s payoffs = x to A, y to P
  – $x_L < 0 < x_H$
  – $y_L < 0 < y_H$

• *Informed boss*: A’s proposal reveals y to P
  – P’s SR incentive: reject $y_L < 0$?

• *Uninformed boss*: A’s proposal reveals nothing to P
  – A’s SR incentive: propose $x_H > 0$?
Agent incurs cost $c(a)$ to search for project
  - $\text{Prob} \ (x = x_H) = a$
  - $\text{Prob} \ (y = y_H \mid x = x_H) = p$

Myopic centralization (ratify only $y_H$)
  - $V_C \equiv a^C p(x_H + y_H) - c(a^C)$

Informal delegation (ratify all $y$)
  - $V_D \equiv a^D (x_H + E[y \mid x_H]) - c(a^D)$

Welfare comparison
  - Incentive effect ($a^D > a^C$)
  - Implementation effect ($x_H + y_L < 0$)
Informed boss:
- When $V^D > V^C$, informal delegation as equilibrium of repeated game?
- $y_L + (1/r)V^D > 0 + (1/r)V^C$

Uninformed boss:
- When $V^C > V^D$, informal authority as equilibrium of repeated game?
- $0 + (1/r)V^C > x_H + (1/r)V^D$
• Results:

1. Authority $\rightarrow$ empowerment (as in contractual delegation)

2. Expected *and* extreme values matter

3. Different information structures $\rightarrow$ different reneging temptations (for different parties)

4. Static model (with contractual delegation) not necessarily correct reduced form (eg, Levin 03)

5. Spinoffs
Empowerment @ Oticon

(Foss Org. Sci. ‘03)

- **Oticon**: hearing aids in Denmark
  - World leader in 70s, dying in 80s (same exec team 30 yrs)
  - 4/18/90 “Thinking the Unthinkable” (6pp.)

- “Spaghetti organization” (flexible but coherent?)
  - Tuborg, trolleys, tube, (not) titles
  - Self-defined and –managed teams + PPC (Kolind + 3)

- Worked! (for a time)
  - Found in-ear from ’70s; prod devp time cut 50%
  - 1/2 of 93 sales from 91-93 products
  - PPC reasserts control: mistake, opportunism, confusion?

Was there a mistake?
Lecture 3: Path-Dependence

Having noted the importance of relational contracts (e.g., in incentives in Lec.1 and empowerment in Lec. 2), we now consider the difficulties in building and changing relational contracts.

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3.2 … Are Correlated with Proxies for Mgmt. Practices
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What Do Managers Do?
Exploring Persistent Performance Differences among Seemingly Similar Enterprises

Robert Gibbons and Rebecca Henderson
Outline of Chapter

1. There exist *persistent performance difference* (PPDs) among seemingly similar enterprises.  
   Syverson *JEL 11 + Sec. 2*

2. Understanding PPDs matters for business strategy, government policy, and economic research.

3. Proxies for *management practices* are correlated with these performance differences.  
   BVR *QJE 07 + Sec. 3*

4. Many of these management practices rely on *relational contracts*.  
   Gibbons-Henderson *Org Sci 12 + Sec. 4*

5. Economic models of *building and changing* relational contracts have arrived.  
   *Sec. 5*

6. Building and changing relational contracts remains *more difficult* than most theory has described.  
   *Sec. 6*
1. Evidence of Persistent Performance Differences

A. Large-sample profitability studies
   (control for industry)
B. Large-sample productivity studies
   (some control for inputs, prices)
C. Focused-sample productivity studies
   (detailed dependent variable and controls)

“In Seemingly Similar Enterprises”

“The magnitudes are striking: (a) plant at the 90th percentile of 
the productivity distribution makes almost twice as much 
output with the same measured inputs as the 10th percentile plant.”
Syverson (JEL, 2011)
Competition & Dispersion


- Why concrete?
  - High transportation costs → multiple markets
  - Homogeneous good with physical output measure
  - Available instrument for concrete market density = construction industry

**Results**

1. Higher productivity and less dispersion in high density (more competitive) markets
2. But almost as much dispersion in less competitive markets

*Syverson JPE 2004*
Intra-Firm Productivity Differences

- Commercial food division of a large multi-business firm with **40 operating units** that prepare, deliver, and set-up food

- All 40 sites are very similar along multiple dimensions: located in the US, employ low-skilled labor, utilize same technology, serve similar customers, produce similar products

- Multifactor productivity index computed as standardized output (meals & set-ups) divided by standardized inputs (labor & capital costs)

- Use regression analysis to adjust for local labor markets, size of local market, unionization, age of equipment, product quality, and local monopoly

**Figure 5-1  Multifactor Productivity Index**

Before Controls: Most productive plant is 3 times as productive as least productive plant

After Controls: Most productive plant is 2 times as productive as least productive plant

Chew, Bresnahan, & Clark 1990
2. Who Cares (About PPDs)?

A. Strategy
   - Explain?
   - Manage?
   - Fix?

B. Policy
   - Antitrust, Trade, Research, Climate, …
   - Cyert & March ‘63

C. Economics
   - Industry dynamics
   - International trade

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Lucas *JME* 1988: 5
“I do not see how one can look at figures like these without seeing them as representing *possibilities*.”
“This is what we need a theory … *for* to provide some kind of framework for organizing facts like these, for judging which represent opportunities and which necessities.”

Ericson-Pakes *RES* 1995: 53
“We provide a model of industry behavior which, because it incorporates … *firm-specific sources of uncertainty*, can generate the variability in the fortunes of firms observed in these data.”

Melitz *Ecta.* 2003: 1695
“This paper develops a dynamic industry model with *heterogeneous firms* to analyze the role of international trade as a catalyst for these inter-firm reallocations within an industry.”
3. Productivity & Management Practices: 

*Human Resources*

- Incentive systems
- Promotion incentives
- Training
- Recruitment
- Hiring & Firing
- Performance assessment
- Job design

- Adler & Clark 1991 MS
- Arthur 1994 AMJ
- Bartel 1994 IR
- Huselid, 1995 AMJ
- MacDuffie, Sethuraman, Fisher, 1996 MS
- Dunlop & Weil, 1996 IR
- Huselid & Becker, 1996 IR
- Ichniowski, Shaw, Prennushi 1997 AER
- Lazear, 2000
- Bresnahan, Brynholfsson & Hitt 2002 QJE
- Black & Lynch, 2001 REStat
- Hamilton, Nickerson, Owan 2003 JPE
- Bloom & van Reenen, 2007 QJE
- Bartel, Ichniowski, Shaw 2007 QJE
- Bandiera, Barankay, Rasul 2009 ECTA

- Cross-functional teams
- Autonomous workgroup meetings
- Flexible job assignments
- Joint Labor-Mgmt Committees
- Shop-floor Committees
- Performance monitoring
- Benchmarking
- Production planning & scheduling
- Inventory management & monitoring

- Kelley 1994 MS, 1996 IR
- Henderson & Cockburn 1994 SMJ
- Batt 1999 ILRR, 2001 BJIR
- Appleyard & Brown 2001 IR
- MacDuffie, Sethuraman, Fisher, 1996 MS
- Ichniowski, Shaw, Prennushi 1997 AER
- Bresnahan, Brynholfsson & Hitt 2002 QJE
- Black & Lynch, 2001 REStat
- Kato & Morishima, 2002 IR
- Hamilton, Nickerson, Owan 2003 JPE
- Macher & Mowrey, 2003 JPIM
- Bloom & van Reenen, 2007 QJE
3. Productivity & Management Practices:  
Decision Making

- Target setting
- Budget processes
- Span of control
- Number of managerial levels
- Self-managed teams
- Profit centers
- Production line decision authority
- Spending limits

- Arthur 1994 AMJ
- Henderson & Cockburn 1994 SMJ
- Batt 2001 BJIR
- Appleyard & Brown 2001 IR
- MacDuffie, Sethuraman, Fisher, 1996 MS
- Bresnahan, Brynholfsson & Hitt 2002 QJE
- Black & Lynch, 2001 REStat
- Bertschek & Kaiser, 2004 MS
- Bloom & van Reenen, 2007 QJE
- Bloom, Sadun, van Reenen 2009
Large-Sample Evidence (w/in US)

- 732 medium-size manufacturing firms in 4 countries
- Data on MPs in 4 areas (18 questions) collected through detailed telephone interviews
- Performance on MP scored 1 to 5, converted to z-scores, collapsed to simple average
- Significant cross-country differences, substantial within-country heterogeneity
- Correlated with profitability, survival, Tobin’s Q

Groups of Management Practices
- Shop floor operations (3)
- Monitoring prod’ n & perf (5)
- Targets (5)
- Incentives (5)

Bloom & Van Reenen QJE 2007
Focused Sample: Steel

- Longitudinal data on HR MPs collected through records and interviews at finishing lines of 36 steel minimills.
- HR MPs are highly correlated in sample; correlation patterns used to group MPs into 4 systems.
- Production lines that begin and end in HRM system 1 are on average 4% points more productive than production lines that begin and end in HRM system 4.

### Table 2—Proportion of Production Lines with Specific HRM Practices Within Four HRM System Categories

<table>
<thead>
<tr>
<th>Practices in seven HRM policy areas</th>
<th>HRM System 1</th>
<th>HRM System 2</th>
<th>HRM System 3</th>
<th>HRM System 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Incentive pay</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Line incentives</td>
<td>1.00</td>
<td>0.31</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>2. Recruiting and selection</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. High screening</td>
<td>1.00</td>
<td>0.15</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>3. Teamwork</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. High participation</td>
<td>1.00</td>
<td>0.85</td>
<td>0.10</td>
<td>0.00</td>
</tr>
<tr>
<td>b. Multiple teams</td>
<td>1.00</td>
<td>0.62</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>c. Formal team practice</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>0.00</td>
</tr>
<tr>
<td>4. Employment security</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Employment security</td>
<td>1.00</td>
<td>0.23</td>
<td>0.48</td>
<td>0.00</td>
</tr>
<tr>
<td>5. Flexible job assignment</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>a. Job rotation</td>
<td>1.00</td>
<td>0.15</td>
<td>0.03</td>
<td>0.00</td>
</tr>
<tr>
<td>6. Skills training</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. High train</td>
<td>1.00</td>
<td>0.69</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>b. Low train</td>
<td>1.00</td>
<td>0.92</td>
<td>0.07</td>
<td>0.00</td>
</tr>
<tr>
<td>7. Communication</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Information sharing</td>
<td>1.00</td>
<td>0.54</td>
<td>0.62</td>
<td>0.00</td>
</tr>
<tr>
<td>b. Meet workers</td>
<td>1.00</td>
<td>0.77</td>
<td>0.72</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Ichniowski, Shaw, Prennushi *AER* 1997
4. Management Practices & Relational Contracts


- Equilibria of repeated games (with transfers)
- Shared understandings of the parties’ roles in and rewards from collaboration …
- Part of the culture of a relationship?
- Part of the norms of a relationship?
Example 1: Bonus @ Lincoln Electric
(Fast & Berg 75)

• Arc welders and supplies in Cleveland (Fortune 200)

• Pay = piece rate + \textit{bonus}
  – supervisor assesses ideas, cooperation, dependability
  – bonus \textit{about} half of typical worker’s pay
  – bonus pool \textit{about} half of pre-tax, pre-bonus earnings

• Complementary relational contracts
  – Change piece rate; employment security

• (Re)defining relational contract, even after decades
Example 2: Decentralization @ J&J
(Aguilar & Bhambri ‘83)

• “Decentralization = Creativity = Productivity”
  – **J&J**: 140 (220) local operating companies
  – Exec. Com. = 11 (but Tylenol w/ codeine)
  – π-center, autonomy, retained earnings

• Hospital Services Group “3 years late”
  – Revising promises w/ LOCs?
  – New promises @ HSG?
    • Service group? Cost center? Staffing?
Example 3: “ProPub” @ Merck
(Henderson & Cockburn SMJ 94)

• bio-tech revolution ⇒ science-based discovery
  – hire PhDs, build labs, attend confs, do research, *publish papers!*
  – “ProPub” → patents (e.g., @ Merck)

• Imagine recruiting first rookie @ Merck:
  – better lab, less teaching, better pay
  – *almost* like asst. prof.
  – but clearly not identical
    • e.g., Nobel in 3rd year with no drugs
• Many important management practices seem relational

• Many important relational contracts seem hard to explain ex ante and hard to change ex post

• Explanation for slow diffusion?
Existing Views of Slow Diffusion
(~ J. Rivkin)

• Perception:
  – We don’t know we’re behind.

• Inspiration:
  – We know we’re behind, but we don’t know what to do.

• Motivation:
  – We know what to do, but we don’t want to do it.

• Implementation:
  – We’re trying but can’t get the organization to do it.
### IO & OE Theories of the 4 ‘tions

<table>
<thead>
<tr>
<th></th>
<th>IO ((N = 1))</th>
<th>OE ((N &gt; 1))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perception</td>
<td>Differing Priors?</td>
<td>Group Think?</td>
</tr>
<tr>
<td>Inspiration</td>
<td>Bandit?</td>
<td>Silos?</td>
</tr>
<tr>
<td>Motivation</td>
<td>NPV?</td>
<td>Human Capital?</td>
</tr>
<tr>
<td>Implementation</td>
<td>*</td>
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</tr>
</tbody>
</table>

Our Central Case: Practice does not fully diffuse even though clearly helpful, widely understood, and trying hard to implement.
Perception, Motivation?

- Management practice *could* be light switch:
  - Easy to describe
  - Straightforward to implement
Management practices *could* be light switches:

– Each one easy to describe & simple to implement

– But complicated interactions  (bumpy landscape)
An Intervention to Decrease Catheter-Related Bloodstream Infections in the ICU

Peter Pronovost, M.D., Ph.D., Dale Needham, M.D., Ph.D., Sean Berenholtz, M.D., David Sinopoli, M.P.H., M.B.A., Haitao Chu, M.D., Ph.D., Sara Cosgrove, M.D., Bryan Sexton, Ph.D., Robert Hyzy, M.D., Robert Welsh, M.D., Gary Roth, M.D., Joseph Bander, M.D., John Kepros, M.D., and Christine Goeschel, R.N., M.P.A.

• Observation: checklist extremely simple

The study intervention targeted clinicians' use of five evidence-based procedures recommended by the CDC and identified as having the greatest effect on the rate of catheter-related bloodstream infection and the lowest barriers to implementation. The recommended procedures are hand washing, using full-barrier precautions during the insertion of central venous catheters, cleaning the skin with chlorhexidine, avoiding the femoral site if possible, and removing unnecessary catheters.

• Fact: two-fold intervention (checklist + culture)

• Possibility: need both (but culture not a light switch)
You can count on me to take 5 steps...

to help WIPE out hospital infections.

Wash/clean hands
Identify and isolate early
Precaution taking (use gowns, masks and gloves)
Environment kept clean
Share the commitment, raise your hand.
You can count on me to take 5 steps...

to help **WIPE** out hospital infections.

**W**ash/clean hands

**I**dentify and isolate early

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E nvironment kept clean
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Elizabeth Martinez
Attending Physician

GERMS Their future is in your hands...
“Safety Attitudes” and Bloodstream Infections (in ICUs in Michigan)
“Culture” in Multinationals?

Table III – Decentralization and Trust: Robustness

<table>
<thead>
<tr>
<th>Additional controls:</th>
<th>(1) - Baseline</th>
<th>(2) - Management Quality</th>
<th>(3) - Individual Pay incentives</th>
<th>(4) - Family ownership</th>
<th>(5) - Hierarchical Religion</th>
<th>(6) - Competition</th>
<th>(7) - All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust</td>
<td>0.596***</td>
<td>0.565**</td>
<td>0.606***</td>
<td>0.580***</td>
<td>0.694***</td>
<td>0.585***</td>
<td>0.618***</td>
</tr>
<tr>
<td></td>
<td>(0.219)</td>
<td>(0.223)</td>
<td>(0.217)</td>
<td>(0.217)</td>
<td>(0.182)</td>
<td>(0.217)</td>
<td>(0.175)</td>
</tr>
<tr>
<td>Trust in CHQ region/country of location</td>
<td>0.179***</td>
<td>0.377**</td>
<td>-0.091</td>
<td>-0.004***</td>
<td>0.150***</td>
<td>0.068**</td>
<td>0.139***</td>
</tr>
<tr>
<td></td>
<td>(0.041)</td>
<td>(0.171)</td>
<td></td>
<td>(0.063)</td>
<td>(0.002)</td>
<td>(0.043)</td>
<td>(0.027)</td>
</tr>
</tbody>
</table>

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%. Dependent variable is the decentralization z-score index, measured by plant manager’s autonomy over hiring, investment, products, and marketing. Estimation by OLS with robust standard errors in parentheses. Standard errors clustered by the firm’s headquarter region of location (country of origin if the plant belongs to a foreign multinational). MANAGEMENT measures the percentage of individuals who agreed with the statement “most people can be trusted” in the firm’s headquarter region of location (country of origin if the plant belongs to a foreign multinational). MANAGEMENT is the firm-level Bloom and Van Reenen (2007) management score. BONUS is the percentage of managerial compensation tied to individual, team, and firm performance. FAMILY MANAGEMENT is a dummy equal to one.
Inspiration vs. Implementation?

**Bumpy Landscape**

- Milgrom-Roberts 90, 95
- Kaufman 93
- Levinthal 97, Rivkin 00

**Ridge Line**

- $\pi = y - w$
- $U = w - c(a)$

$w = E(y)$

$w = c(a)$

Bump - c(a)

Hill-climb?
5. Are Relational Contracts Part of the Implementation Problem?

A. Unobserved Heterogeneity

B. Consummate Collaboration Hard to Build & Sustain

C. (Re-)Building an Equilibrium??
What can an economist do to help a fixed set of people be more productive together?

Liebenstein: “Wonder if they’ve discovered how to play cooperate-cooperate, while the others are stuck in defect-defect?”
5A. Unobserved heterogeneity (ie, only seemingly similar)

- Discounting
  - Board *AER* 12

- Competition
  - Board & Meyer-ter-Vehn WP 11
  - Powell WP 12

- Network
  - Fainmesser *AEJμ* 12
  - Jackson, Rodriguez-Barraquer, Tan *AER* 12

- Types
  - MacLeod-Malcomson *JPE* 88
  - Watson *JET* 99, *GEB* 02
  - Halac *AER* 12

Fabulous, but:
Bad performance from bad parameters;
Not fixed people (and nothing to be done?)
5B. Consummate Cooperation Can Be Hard to Build & Sustain

- PPDs among Ex Ante Identical Enterprises
  - Chassang AER 10

- Long-run Distortions from Short-run Shocks
  - Li & Matouschek forth. AER

- Cooperation Hard to Sustain, Even Once Built
  - Public state: McAdams AEJμ 11
  - Global games: Chassang Ecta 10, Chassang & Padro i Miquel QJE 10
  - Private monitoring: Levin AER 03, MacLeod AER 03, Fuchs AER 07, Maestri AEJμ 12

Fabulous, but: Bad performance from bad luck; Nothing to be done?
• Chassang *AER* 10
  — “equilibrium theory of equilibrium selection”

• Andrews-Barron *WP* 13
  — “side payments through policy commitments”

• Venables *WP* 13
  — “devote time and energy to managing internal coalition”
Chassang AER 10
“equilibrium theory of equilibrium selection”

• Attempting to extract private info $\rightarrow$ imperfect monitoring $\rightarrow$ punishments on path
• Safer (but ultimately less rewarding) to stick with what’s known
• Optimal to stop trying to learn if already know fairly productive things

• Game-theoretic version of bandit model (w/ surplus needed to provide incentives to explore)
1. Principal invests or not: $(-k, b)$ or $(0, 0)$
2. If $P$ invests then each action feasible with prob. $p$
3. Unproductive and productive actions:
   - $a_U \in A_U$ costless for Agent and useless for Principal ($A_U$ large)
   - $a_P \in A_P$ cost Agent $c$ & produce $y(a_P)$ or 0 for Principal (w/ prob. $q$ and $1-q$, resp.)
4. Common knowledge:
   - Number of productive actions & potential payoffs $y(a_p)$
   - Feasible actions each period & Agent’s choice
5. Private information:
   - Only Agent knows which actions are productive
Example: $A_P = \{a_0, a_1\}$ and $y(a_1) > y(a_0)$

- **Period 1:**
  - $a_0$ feasible? $a_1$ feasible?
  - Efficient eqbm: Agent chooses best feasible action
  - $y(a_p)$ realized $\rightarrow$ $a_p$ “confirmed”
  - 0 realized $\rightarrow$ punishment (T periods w/out investing)

- **Suppose $a_0$ confirmed but $a_1$ not**
  - $p$ large: $a_0$ likely to be feasible
  - $q$ small: $a_1$ likely to fail ($\rightarrow$ punishment)
  - Routine = choose $a_0$ if feasible, otherwise rest
  - Learning expensive: fixed parameters, different routines
Outline of Chapter

1. There exist *persistent performance difference* (PPDs) among seemingly similar enterprises.  
   Syverson *JEL* 11 + Sec. 2

2. Understanding PPDs matters for business strategy, government policy, and economic research.

3. Proxies for *management practices* are correlated with these performance differences.  
   BVR *QJE* 07 + Sec. 3

4. Many of these management practices rely on *relational contracts*.  
   Gibbons-Henderson *Org Sci* 12 + Sec. 4

5. Economic models of *building and changing* relational contracts have arrived.  
   Sec. 5

6. Building and changing relational contracts remains *more difficult* than most theory has described.  
   Sec. 6
Inspiration vs. Implementation?

Bumpy Landscape

- Milgrom-Roberts 90, 95
- Kaufman 93
- Levinthal 97, Rivkin 00

Ridge Line

\[ \pi = y - w \]
\[ U = w - c(a) \]
Lecture 4: Summary

Initiative vs. Coordination

4.1 The Goals
4.2 The Tools
4.3 The Manager?
1) The Goals: Initiative, Coordination

"markets motivate, hierarchies control …"

- incentives, initiative
- spot market
- network
- non-integrated
- integrated
- "bringing the market inside the firm"
- decentralized
- command firm
- coordination, control
Alternative Internal Structures?

- incentives, initiative
  - spot market
  - non-integrated
  - integrated

- coordination, control
  - “global” = scale via standardization
  - “multi-domestic” = loose federation
  - “transnational” = networked

Alternative Internal Structures?
Alternative External Structures?

- incentives, initiative
- spot market
- alliance
- hand-in-glove supply
- JV
- command firm
- non-integrated
- integrated
- coordination, control
2) The Tools

Strategic Design
Organizations are **machines**
An organization is a mechanical system crafted to achieve a defined goal. Parts must fit well together and match the demands of the environment.
**Action comes through planning.**

Political
Organizations are **contests**
An organization is a social system encompassing diverse, and sometimes contradictory, interests and goals. Competition for resources is expected.
**Action comes through power.**

Cultural
Organizations are **institutions**
An organization is a symbolic system of meanings, artifacts, values, and routines.
Informal norms and traditions exert a strong influence on behavior.
**Action comes through habit.**
Formal Is (Usually) Flawed
Relational (Discretion) is Required
Increasing Initiative/Empowerment?

- Coordination, Control
- Incentives, Initiative
- Spot Market
- Non-integrated
- Integrated

Oticon, BMGI, …?
Increasing Coordination?

Incentives, initiative

Spot market

J&J, HP, Suchard, …?

Non-integrated

Integrated

Coordination, control
3) The Manager?

Effectiveness

Transaction difficulty

100%

ideal

necessary

(prospect of) self-interested exercise of discretion

Which problems to fix, which to tolerate?

observed markets

observed firms

managerial?

integrated

Non-Integrated