Morley Gunderson Lecture
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Personnel Economics: Using Economics to Understand People Issues
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LABOR PRODUCTIVITY GROWTH AND REAL COMPENSATION GROWTH:
UNITED STATES
(Percent, 4-Year Moving Average)


Output Per Hour Change
Real Hourly Compensation Change
Labor Productivity and Real Wage Growth: United Kingdom

(% Change From Previous Period, 4-Year Moving Average)
Labor Productivity v. Unit Labor Costs Indexes (2007=100): Canada

(Percent Change, 4-Year Moving Average)

Labor Productivity per Hour  Unit Labor Costs
Labor Productivity v. Real Compensation: Germany

(Percent Change, 4-yr Moving Average)

Real Labor Productivity Per Person

Real Compensation per Employed Person
Labor Productivity v. Real Compensation: France

(Percent Change, 4-yr Moving Average)

- Real Labor Productivity Per Person
- Real Compensation per Employed Person
Labor Productivity v. Real Compensation: Italy

(Percent Change, 4-yr Moving Average)

- Real Labor Productivity Per Person
- Real Compensation per Employed Person
Labor Productivity v. Real Compensation Growth:
2007-2013 Average

*United Kingdom data is hourly earnings v. output per hour, United States data is hourly compensation v. productivity per hour, and Canada data is productivity per hour v. unit labor costs, while the rest are compensation per person and productivity per person.
Personnel economics is about productivity enhancement

Themes: Personnel economics
1. combines theory with empirical analysis
2. is real economics and plays by the rules
   • maximizing behavior
   • equilibrium
   • efficiency
3. is widely applicable and has implications in many areas is practical and can inform business
Theme 1: Combines Theory and Empirics

- Some straight theory (oldest work)
  - Gunderson (2001) on mandatory retirement

- Some empirical based on taking and modifying existing theory
  - Gunderson and Hyatt on compensating differentials for risk
  - Making Do With Less (Lazear, Shaw, Stanton)
    - Labor supply depends on wage at current firm and at alternatives
    - Explains all increase in productivity during recession

- Some combines new theory and empirical in same paper
  - Coviello, Ichino and Persico
    - Organization of tasks – judges

- Some uses empirical results to inform policy
  - Campolieti, Fang, Gunderson on minimum wages
Theme 2: Plays by the rules. Rigorous, testable, refutable.

• No ex post rationalizations
• True to the three tenets of economics (maximizing behavior, equilibrium, efficiency)
Peter Principle: Promoted to level of incompetence

• Two competing theories
  • Industrial politics and capture
  • Simple regression to the mean (Lazear, *Journal of Political Economy*, 2004)
    • Fits without ad hoc explanations
    • Generalizes to unrelated issues

• Set up
  Two Jobs, Two Periods:

  Worker job output: \( \alpha + \beta(A+\epsilon_t) \)

  Boss job output: \( \gamma + \delta(A+\epsilon_t) \)

  where \( \alpha > \gamma \) and \( \delta > \beta \).
Comparative advantage

\[ \alpha + \beta (A + \varepsilon) \]

\[ \gamma + \delta (A + \varepsilon) \]
Regression to the mean: Promote if $A + \epsilon_1 > A^*$

Conditional expectation of $\epsilon_1$ is positive and of $\epsilon_2$ is zero so worse after promotion

$$E(\epsilon_1 | A + \epsilon_1 > A^*) = \int_{-\infty}^{\infty} \int_{A^*-A}^{\infty} \frac{1}{1 - G(A^*-A)} \varepsilon g(\varepsilon) f(A) d\varepsilon dA$$

where the density of $A$, permanent ability is given by $f()$

and that of the transitory component, $\epsilon_1$ is given by $g()$. 
This can be written as

\[ = \int_{-\infty}^{\infty} E(\varepsilon \mid \varepsilon > A^* - A) f(A) dA \]

which is positive.

Now,  
\[ E(\varepsilon_2 \mid A + \varepsilon_1 > A^*) = 0 \]
so
\[ A + E(\varepsilon_1 \mid A + \varepsilon_1 > A^*) > A + E(\varepsilon_2 \mid A + \varepsilon_1 > A^*) . \]

Thus, expected ability falls for promoted individuals from period 1 to period 2.

Those who exceed any standard are on average higher ability and also transitorily lucky.
Extensions

• Movie sequels
• Sports Illustrated
• Restaurants
• Money managers
Theme 3: Widely Applicable – Extends to many fields, for example,

• Education

• Technology

• Entrepreneurship

• Development
Education

• Incentives in education
  • Victor Lavy (2002)
  • Angrist and Lavy (1998)
  • Angrist and Lavy (2009)
  • Muralidharan and Sundararaman (2011)
  • Sojourner, Mykerezi and West (2015)
  • Metcalfe, Burgess and Proud

• Adverse consequences
  • Lazear (2006) on teaching to the test
  • Glewee, Ilias and Kremer (2010)
Technology

• Introduction of technology
  • Shaw, et. al (Valves)

• Structure of firms
  • Grund and Westergaard-Nielsen
Entrepreneurship is Personnel Economics

• Older work: Occupational choice based on how skills are used in new firms
  • Use of skills is an inside-the-firm issue
  • Similar story for leadership selection, also a personnel economics issue

• New work: Acquisition of required skills depends on how tasks are assigned in firms
  • Interaction with age structure
  • Hierarchical considerations on who gets to do what
Entrepreneurs Are Generalists

Formal model:

\[ \lambda \min [x_1, x_2] > \max [x_1, x_2] \]
Most Basic Results

<table>
<thead>
<tr>
<th>Entrepreneurial Job Event Probability by Number of Prior Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roles</td>
</tr>
<tr>
<td>&lt;3</td>
</tr>
<tr>
<td>3 to 16</td>
</tr>
<tr>
<td>more than 16</td>
</tr>
<tr>
<td>.03</td>
</tr>
<tr>
<td>.10</td>
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<tr>
<td>.29</td>
</tr>
</tbody>
</table>
Demographics and Entrepreneurship
(with James Liang and Hui “Jackie” Wang)

• Need creativity and energy to start a business
• Also need some skills, which requires experience
• High level experience more valuable for producing human capital needed for entrepreneurship
• Young countries provide more opportunities for young to acquire skills because they take on more responsibility in firms in which they work
Figure 1. Countries with young and old labor forces

Note:  
1. Younger countries have higher rates of entrepreneurship at every age  
2. Relation of entrepreneurship to age is inverted u  
3. Inverted u most pronounced among young countries
Development

- Absenteeism
  - Banerjee, Duflo, Glennerster (2008)
  - Duflo, Hanna, and Ryan (2012)

- Management
  - Bruhn, Karlan, Schoar (2010)

- Production Technology
  - Beaman, Karlan, Thuysbaert, Udry (2013)

- Gains from or costs of diversity
  - Hjort (2015)
Theme 4: Business relevant

• Unabashedly prescriptive
• Examples
  • Human resources practices
    • Ichniowski, Shaw, Prennoushi (1997)
    • Fabel and Pascalau (2013)
    • Bloom, Liang, Roberts, Ying (2015)
  • Managerial practices
    • Bloom and Van Reenen (2007)
  • Social behavior in firms
    • Kandel and Lazear (1992)
    • Bandiera and Razul (2005) and others
    • Mas and Moretti (2009)
    • Janssen and Backes-Gellner (2015)
Conclusion

Personnel economics has grown to be a subfield of economics because

- it is highly relevant
- it is rigorous, both in theory and empirical methods used
- it has proven to be an accurate description of the world
- it has wide applicability
- it is important for business