Morley Gunderson Lecture

University of Toronto
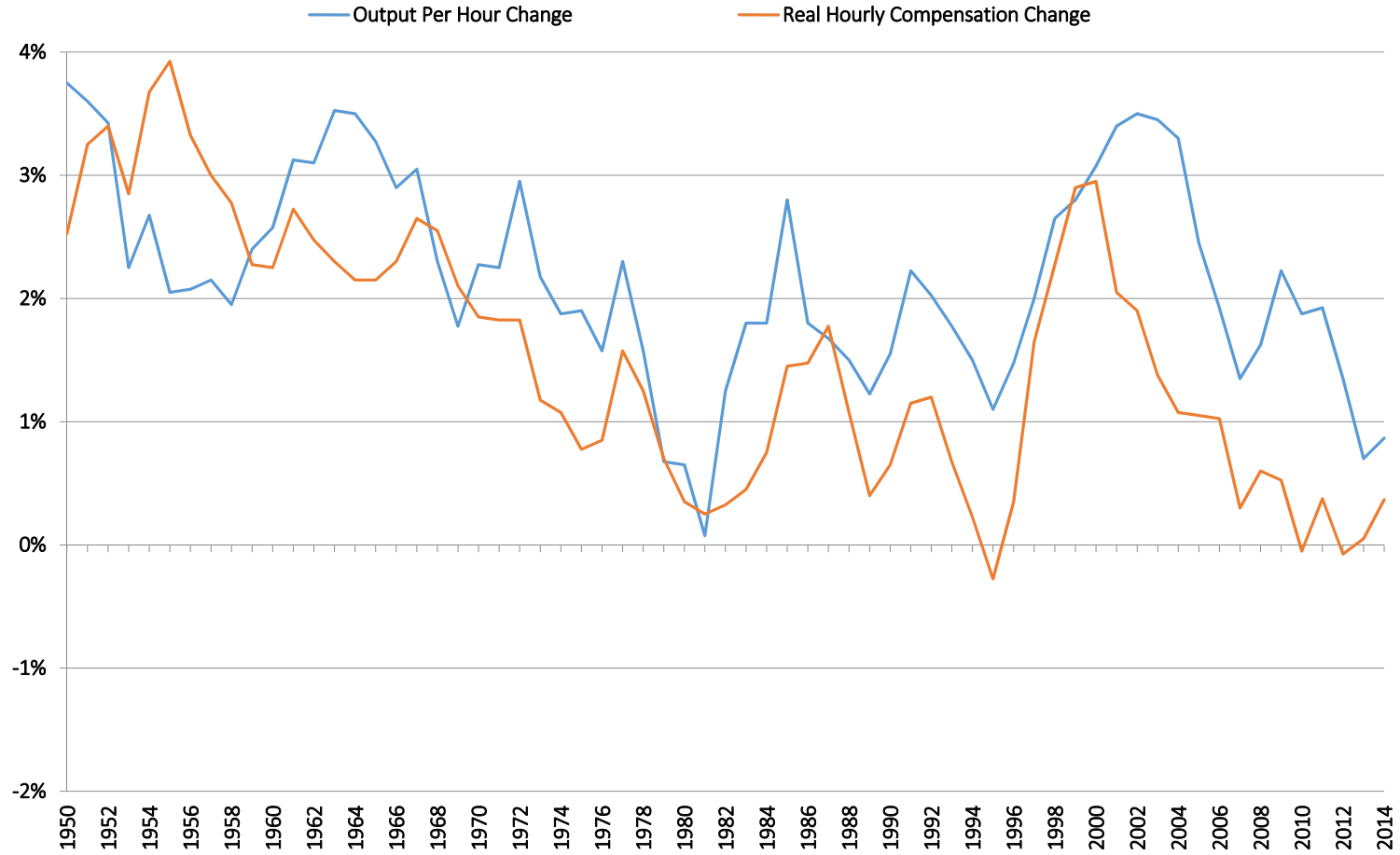November 6, 2015

Personnel Economics: Using Economics to Understand People Issues

Edward P. Lazear

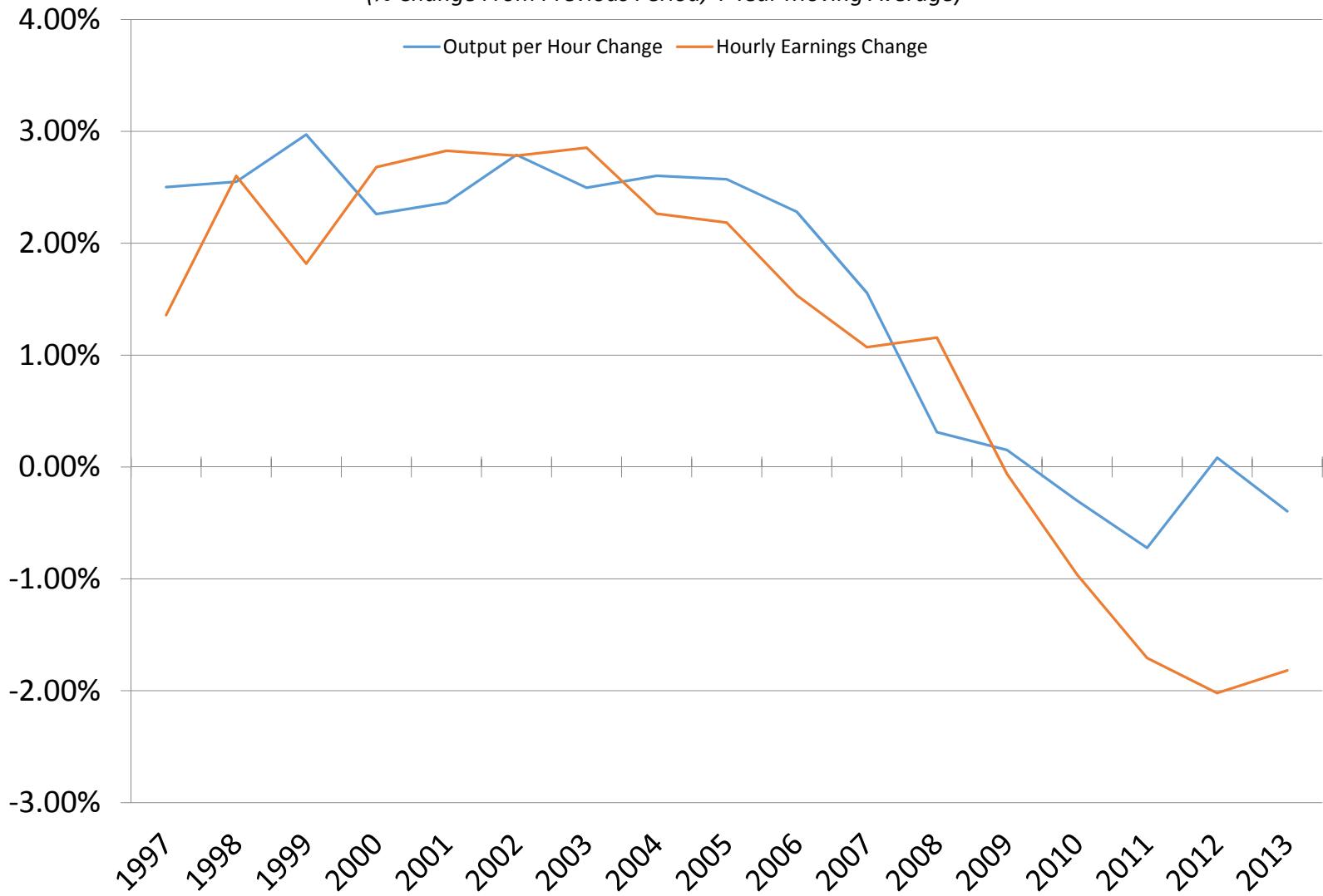# LABOR PRODUCTIVITY GROWTH AND REAL COMPENSATION GROWTH: UNITED STATES

(Percent, 4-Year Moving Average)

—— Output Per Hour Change   —— Real Hourly Compensation Change

Source: Bureau of Labor Statistics, (March 2015).

Labor Productivity and Real Wage Growth: United Kingdom

(% Change From Previous Period, 4-Year Moving Average)

— Output per Hour Change — Hourly Earnings Change

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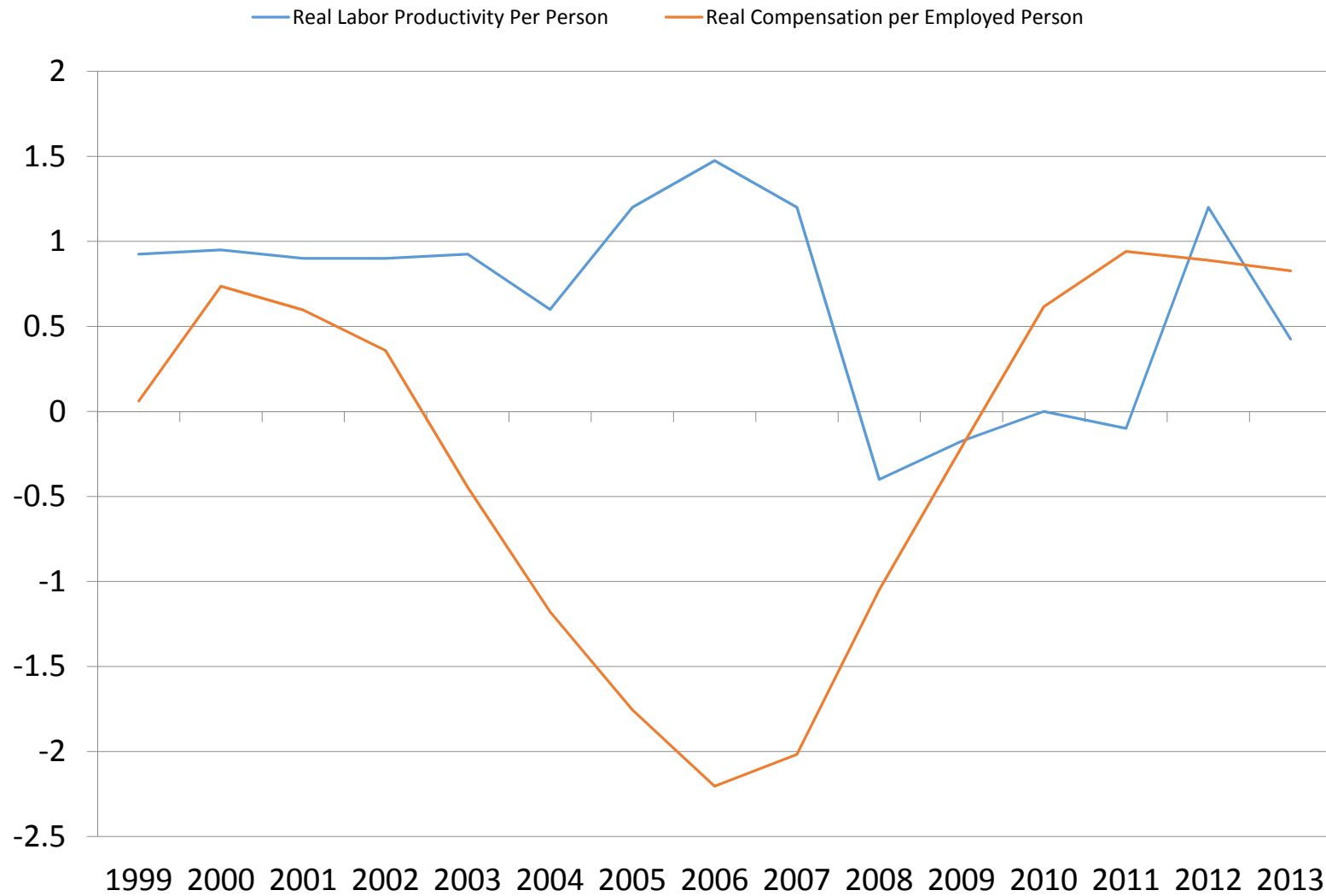
(Percent Change, 4-Year Moving Average)

—— Labor Productivity per Hour   —— Unit Labor Costs

4
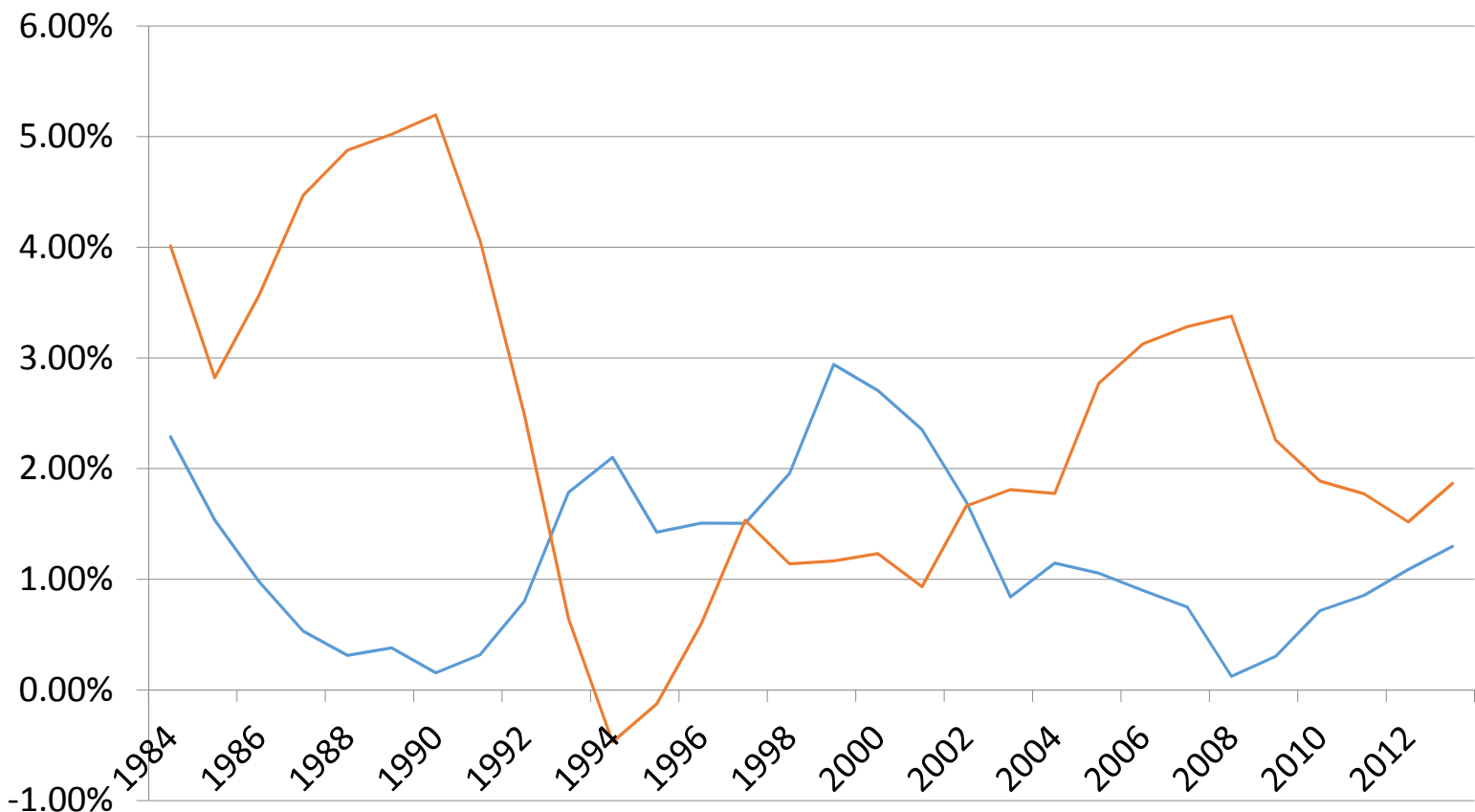
Labor Productivity v. Real Compensation: Germany
(Percent Change, 4-yr Moving Average)

— Real Labor Productivity Per Person   — Real Compensation per Employed Person
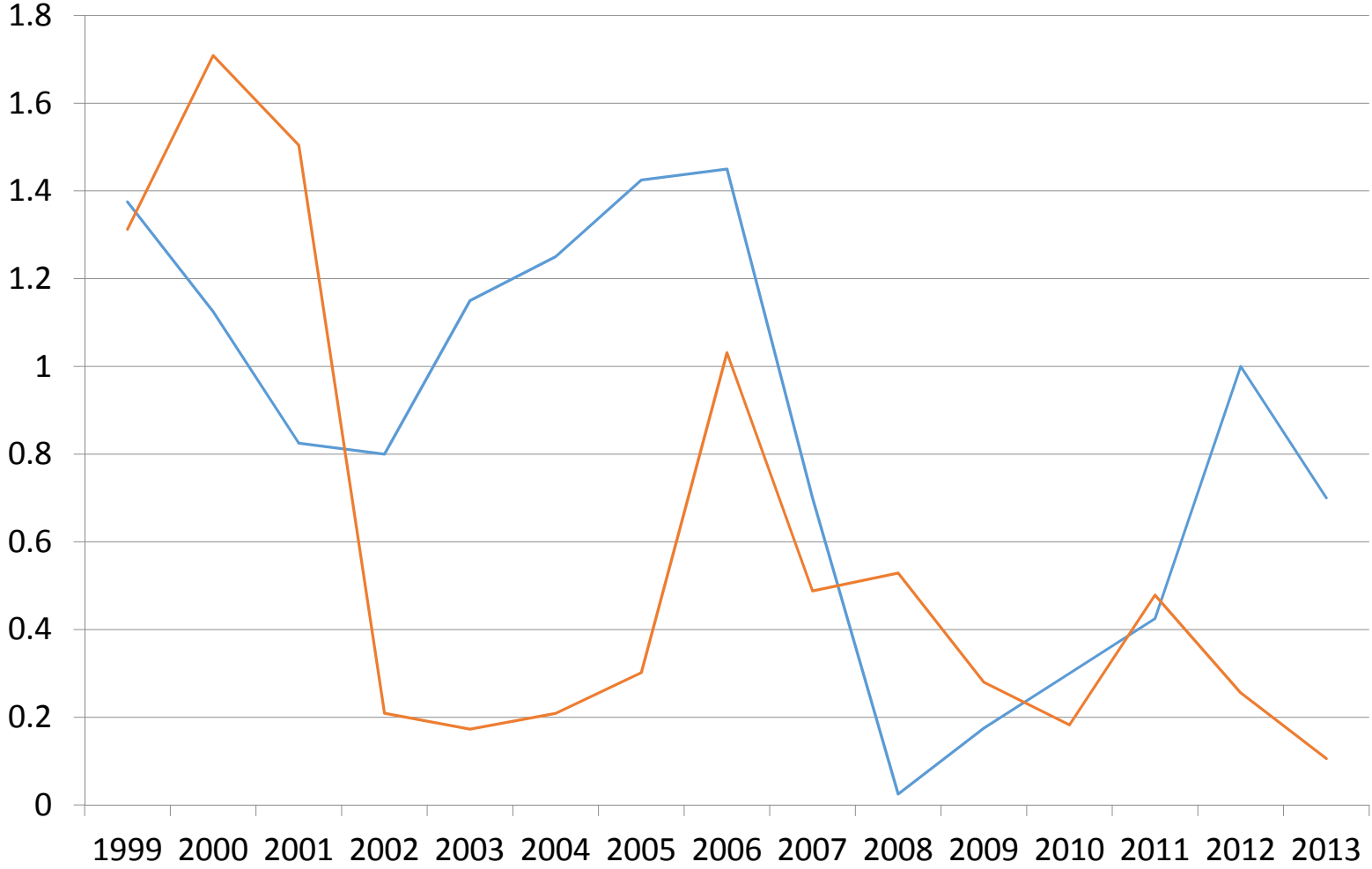
Labor Productivity v. Real Compensation: France
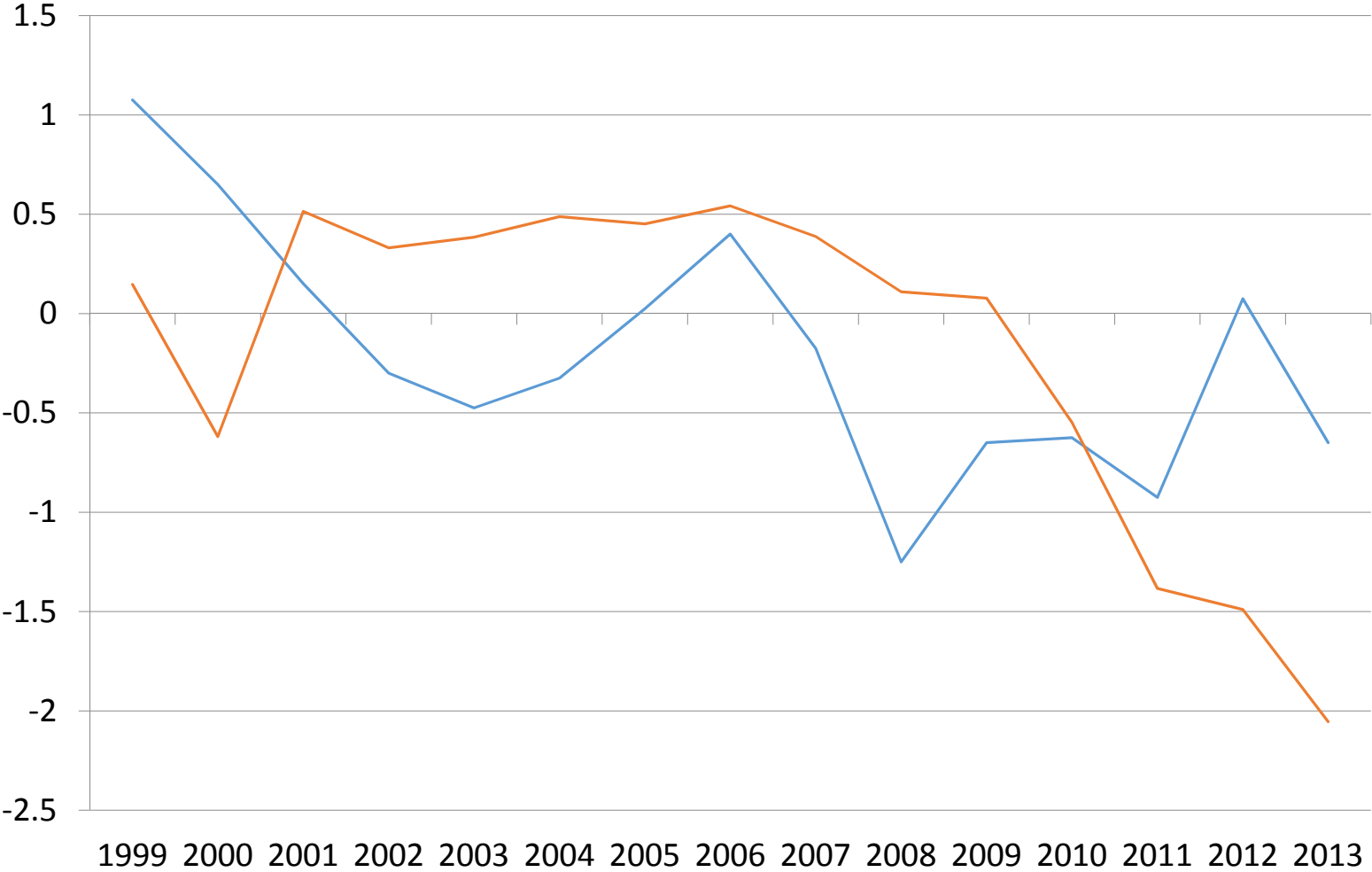*(Percent Change, 4-yr Moving Average)*

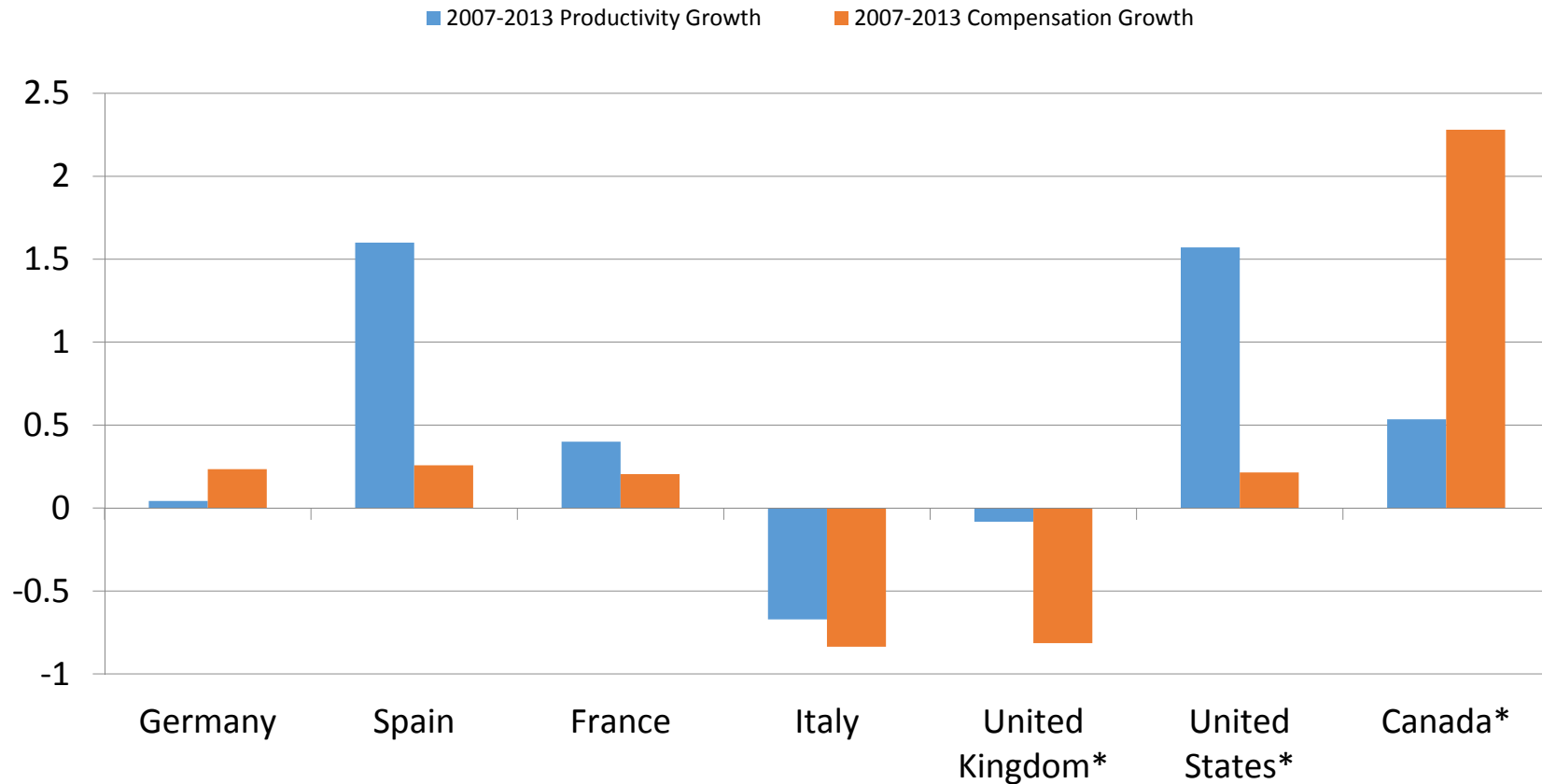—— Real Labor Productivity Per Person   —— Real Compensation per Employed Person

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

■ 2007-2013 Productivity Growth   ■ 2007-2013 Compensation Growth

*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.

8

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
4. Gunderson (2001) Economics of Personnel and Human Resources Manangement for overview of the field and its evolution

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
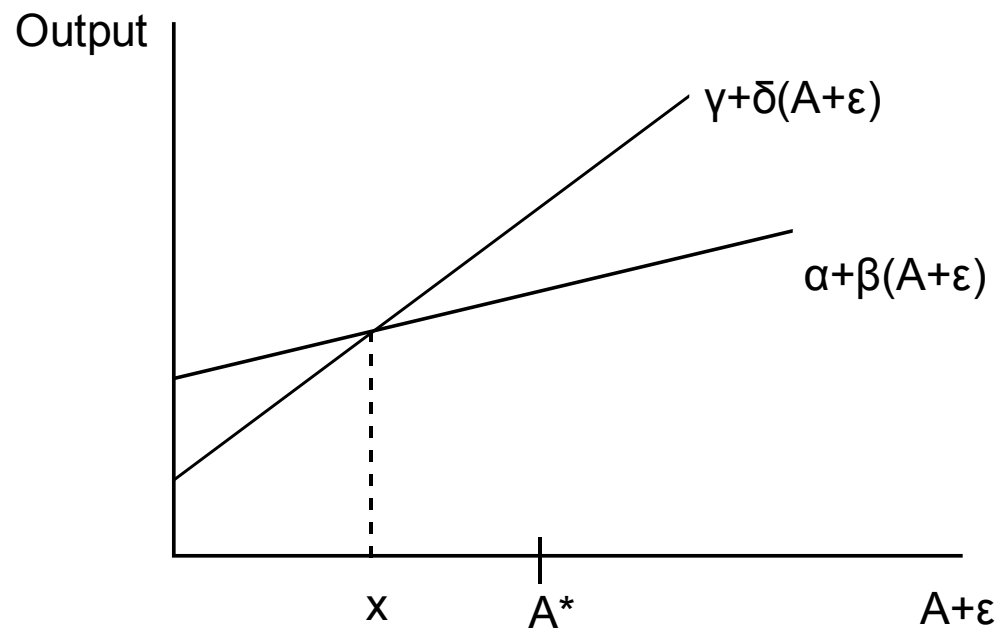   - Generalizes to unrelated issues
- Set up

  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

Regression to the mean: Promote if $A + \epsilon_1 > A^*$

Conditional expectation of ϵ_1 is positive and of ϵ_2 is zero so worse after promotion

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

where the density of A, permanent ability is given by f()
and that of the transitory component, ϵ_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,
$$E(\epsilon_2 \mid A + \epsilon_1 > A*) = 0$$
so
$$A + E(\epsilon_1 \mid A + \epsilon_1 > A*) > A + E(\epsilon_2 \mid A + \epsilon_1 > A*).$$

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:

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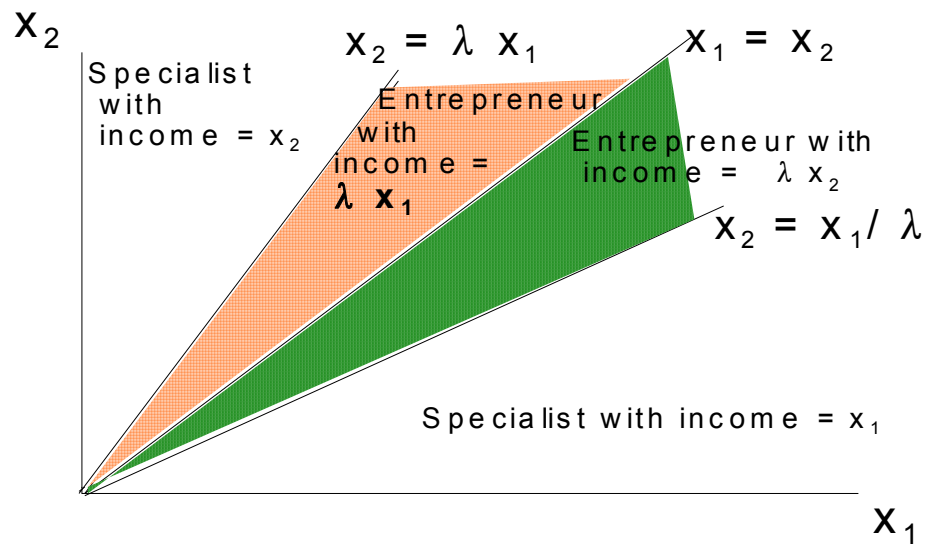
Most Basic Results

Entrepreneurial Job Event Probability by Number of Prior Roles

	Roles				
	$\leq$3	3 to 16	more than 16		
	.03	.10	.29		

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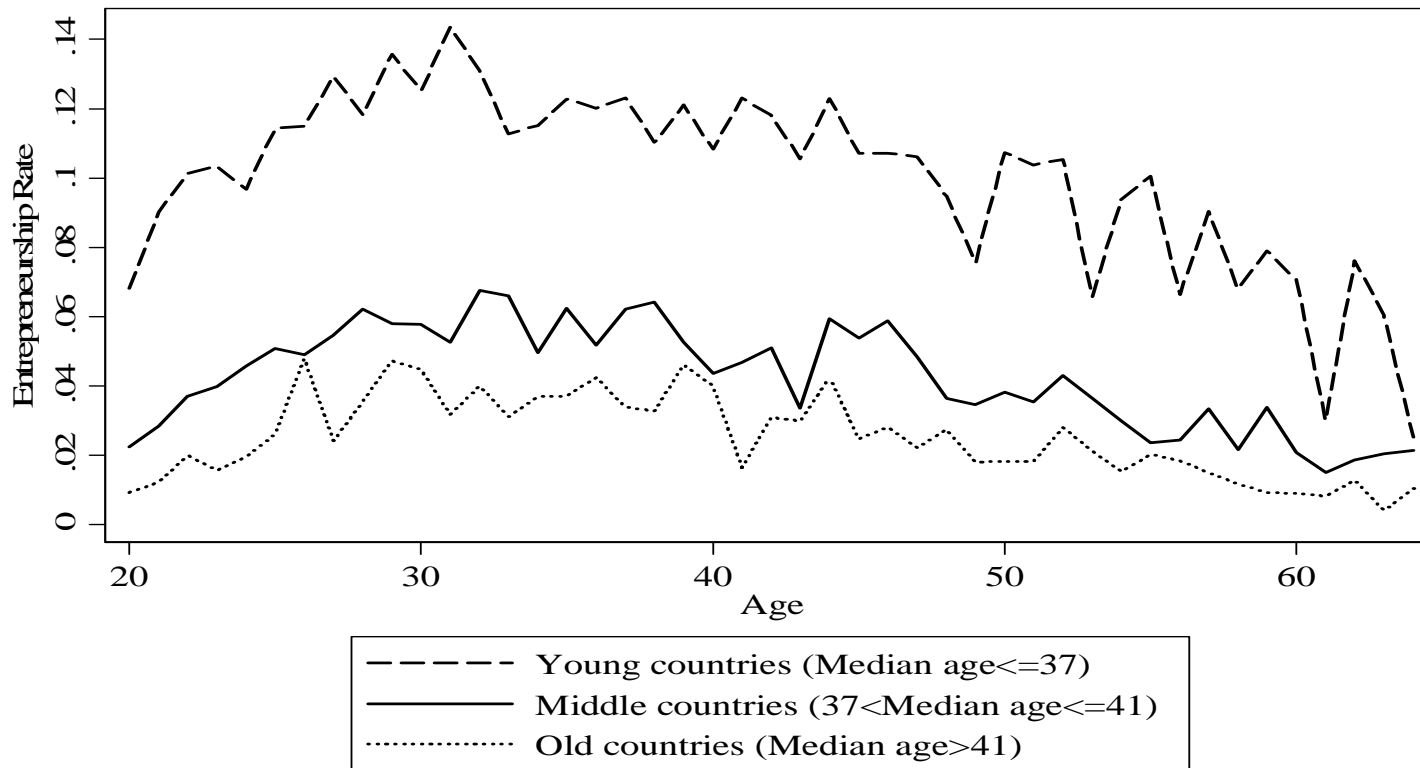
Note: 1. Younger countries have higher rates of entrepreneurship at every age
2. Relation of entrepreneurship to age is inverted u
3. Inverted u most pronounced among young countries

Development

- Absenteeism
  - Banerjee, Duflo, Glennerster (2008)
  - Chaudry, Hammer, Kramer, Muralidharan, and Rogers (2006)
  - 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