

A primer in Entrepreneurship

Chapter 1.5: Entrepreneurship theory



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Chapter 1.5: Entrepreneurship theory

Table of Contents

- I. Lazear's (2005) Jack-of-all-trades theory
- II. Fabel's (2004) O-ring theory



Chapter 1.5: Entrepreneurship theory

I. Lazear's (2005) Jack-of-all-trades theory

Ehrendoktor 2010 der Wirtschaftswissenschaftlichen Fakultät

Prof. Edward P. Lazear

Die Wirtschaftswissenschaftliche Fakultät der Universität Zürich verleiht die Würde eines Doktors ehrenhalber an Herrn Prof. Edward P. Lazear in Anerkennung seiner grossen Verdienste um die Begründung und Weiterentwicklung der Personalökonomik – einem Gebiet, das in idealer Weise die Fruchtbarkeit einer engen Verzahnung von Betriebs- und Volkswirtschaftslehre gezeigt hat und das heute zu den dynamischsten Gebieten der Wirtschaftswissenschaften gehört.



Edward Paul Lazear ist 1948 geboren und amerikanischer Staatsbürger. Er ist verheiratet, hat eine Tochter und lebt mit seiner Familie in Portola Valley, CA. Er erwarb einen Bachelor- und einen Masterabschluss an der University of California at Los Angeles und ein Ph.D. in Economics an der Harvard University. Von 1985 bis 1992 war er Professor für Urban and Labor Economics an der University of Chicago. Seit 1992 unterrichtet Edward Paul Lazear an der Graduate School of Business der Stanford University, wo er die Jack Steele

Parker Professur of Human Resources Management and Economics innehat. Gleichzeitig ist er Morris Arnold Cox Senior Fellow des in Stanford ansässigen Hoover Instituts, und von 2006 bis 2008 war er zudem Chairman des Council of Economic Advisers.

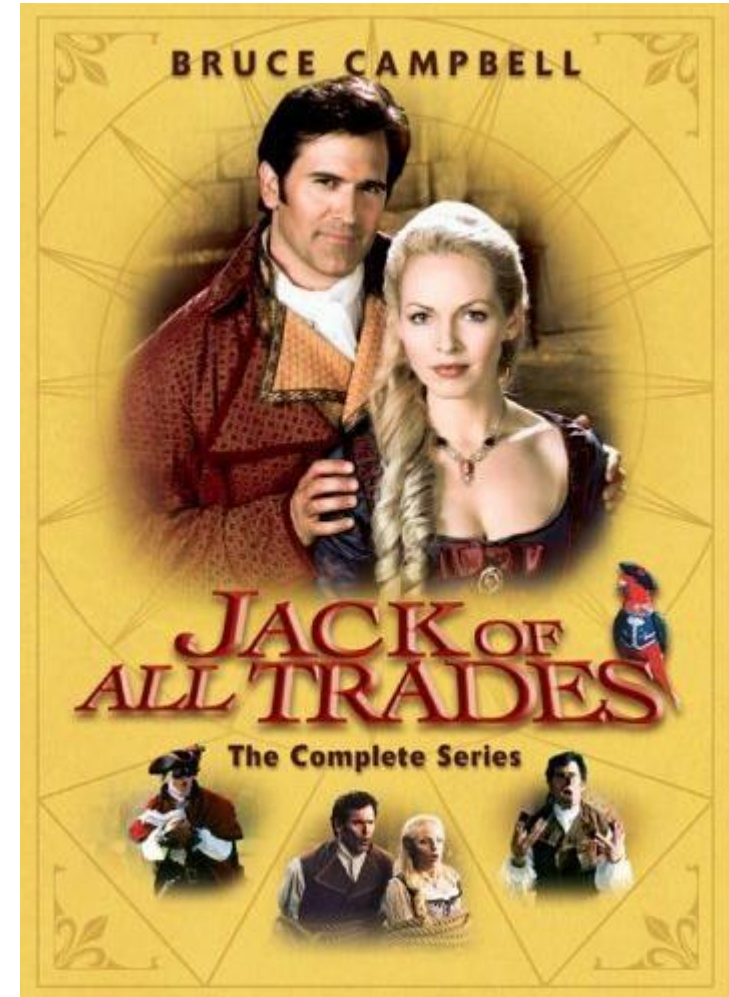


Chapter 1.5: Entrepreneurship theory

I. Lazear's (2005) Jack-of-all-trades theory

Jack of all trades (master of none)

<http://www.youtube.com/watch?v=VNsjjYRgjc>



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Chapter 1.5: Entrepreneurship theory

I. Lazear's (2005) Jack-of-all-trades theory

- Entrepreneurs' main task: manage resources; put people together and combine them with physical capital and ideas to produce product or process innovations
- Entrepreneurs must know about many different areas
- Entrepreneurs need all abilities; the weakest ability determines income
- Entrepreneurs with a balanced skill profile become entrepreneurs



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I. Lazear's (2005) Jack-of-all-trades theory

- Individuals are endowed with a range of skills
- Skill profiles differ between individuals (“generalists”/“specialists”)
- Generalists (“jacks-of-all-trades”) become entrepreneurs; they need to assemble production factors and need knowledge in a large number of areas
- Individuals who become entrepreneurs invest in several skills
- Implicit assumption: all tasks have to be performed by one person

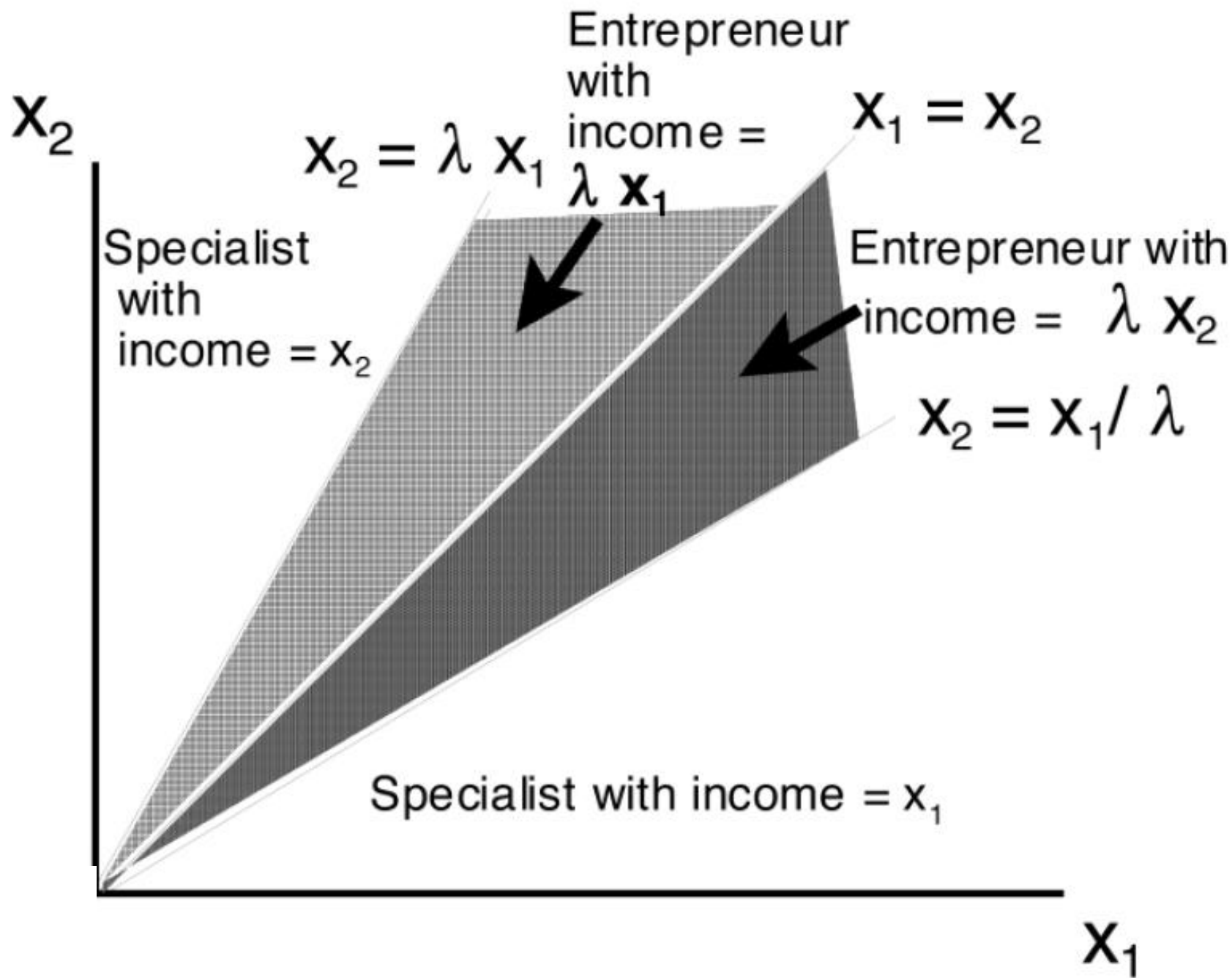


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I. Lazear's (2005) Jack-of-all-trades theory

- Entrepreneur must fulfill many different tasks
- Assumption: constant returns to scale and symmetry
- Skill endowment: x_1, x_2 ; joint density $g(x_1, x_2)$
- Specialist income = $\max[x_1, x_2]$
- Entrepreneur income = $\lambda \min[x_1, x_2]$:
- Entrepreneurial choice: $\lambda \min[x_1, x_2] > \max[x_1, x_2]$.



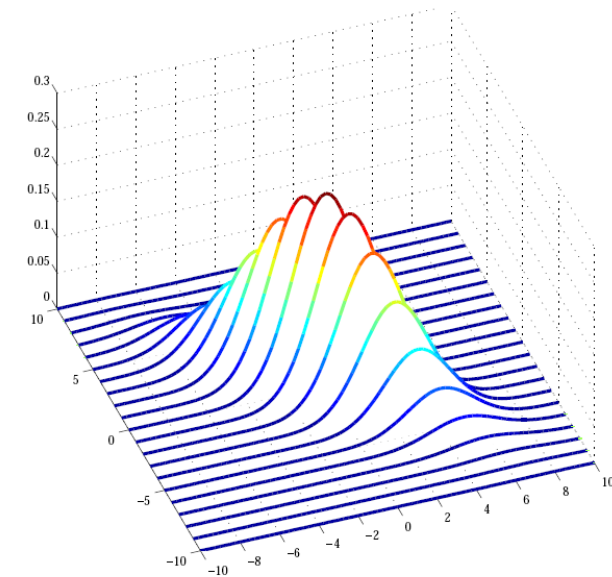


Chapter 1.5: Entrepreneurship theory

I. Lazear's (2005) Jack-of-all-trades theory

Probability of becoming an entrepreneur: $P[Eship] = \int_0^{\infty} \int_{x_1/\lambda}^{\lambda x_1} g(x_1, x_2) dx_2 dx_1$

$$\frac{\partial P[Eship]}{\partial \lambda} > 0; \frac{\partial P[Eship]}{\partial \lambda} = \int_0^{\infty} \left[g(x_1, \lambda x_1) x_1 + g\left(x_1, \frac{x_1}{\lambda}\right) \frac{x_1}{\lambda^2} \right] dx_1$$



Chapter 1.5: Entrepreneurship theory

I. Lazear's (2005) Jack-of-all-trades theory

Results:

1. Individuals with more balanced skill sets are more likely to become entrepreneurs.
2. The supply of entrepreneurs is smaller for production processes that require a higher number of independent skills.
3. Individuals who become entrepreneurs should have a more balanced human capital investment strategy on average than those who become specialists.



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I. Fabel's (2004) O-ring theory



http://en.wikipedia.org/wiki/File:Challenger_explosion.jpg



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A primer in Entrepreneurship

Fall Semester 2011

11

Chapter 1.5: Entrepreneurship theory

I. Fabel's (2004) O-ring theory



http://de.wikipedia.org/w/index.php?title=Datei:O-ring_collection.jpg&filetimestamp=20051221092326



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Chapter 1.5: Entrepreneurship theory

I. Fabel's (2004) O-ring theory

- Different abilities are supplied by different individuals with different abilities
- The quality with which a task is fulfilled is essential.
- If a group member fails to fulfill her task, the entire project fails
- Implications:
 - Teams are homogenous wrt. ability
 - The more able the team, the larger it is
 - The more able the team, the more per capita capital is used



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I. Fabel's (2004) O-ring theory

- Knowledge of different persons (specialists) necessary
- But: each additional person is additional source of risk output has no market value if someone malperforms
- In equilibrium: homogenous teams wrt. ability; reason: impact of replacement with slightly higher skilled the greater the higher average ability of other team members



Chapter 1.5: Entrepreneurship theory

I. Fabel's (2004) O-ring theory

Production function:
$$Y = F(k, n) \left[\prod_{i=1}^n q_i \right] n$$

Property:
$$\frac{d^2 Y}{dq_i d \left(\prod_{j \neq i} q_j \right)} = F(k, n) n > 0$$



Chapter 1.5: Entrepreneurship theory

I. Fabel's (2004) O-ring theory

$$\max_{\{q_i\}, k, n} \frac{pF(k, n) [\prod_{i=1}^n q_i] n - rk}{n} = \max_{q, k, n} \frac{k^\alpha n^{1-\alpha} q^n n - rk}{n}$$

$$\frac{\partial}{\partial k} : \alpha k^{(\alpha-1)} n^{(1-\alpha)} q^n - \frac{r}{n} = 0$$

$$\frac{\partial}{\partial n} : (1 - \alpha) k^\alpha n^{-\alpha} q^n + k^\alpha n^{(1-\alpha)} q^n \log(q) + \frac{rk}{n^2} = 0$$



Chapter 1.5: Entrepreneurship theory

I. Fabel's (2004) O-ring theory

$$\frac{1}{n^*} = -\log(q)$$

$$\frac{k^*}{n^*} = \left(\frac{\alpha q^{n^*}}{r} \right)^{\frac{1}{1-\alpha}} (n^*)^{\frac{1}{1-\alpha}}$$

Implications:

1. All team members with same abilities in equilibrium
2. The more able team, the more capital per head
3. The more able the team the higher capital requirements



Chapter 1.5: Entrepreneurship theory

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