

# Innovation, Entrepreneurship and Economic Development

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ICMIT2010

Where business is taught with humanity in mind.



# Agenda

The institutional context of entrepreneurial action  
Innovation and entrepreneurship  
Research directions

# The Societal Problem

## Opportunity exploitation can be:

- entrepreneurial (positive sum to society),
- rent seeking (zero sum), or
- larceny (negative sum)\*

## There are increasing returns to scale on the best human capital

- Ablest people will choose positive sum entrepreneurship only if the net present value returns on risk taking exceeds all other options

## Entrepreneurial human capital = Ability x alertness

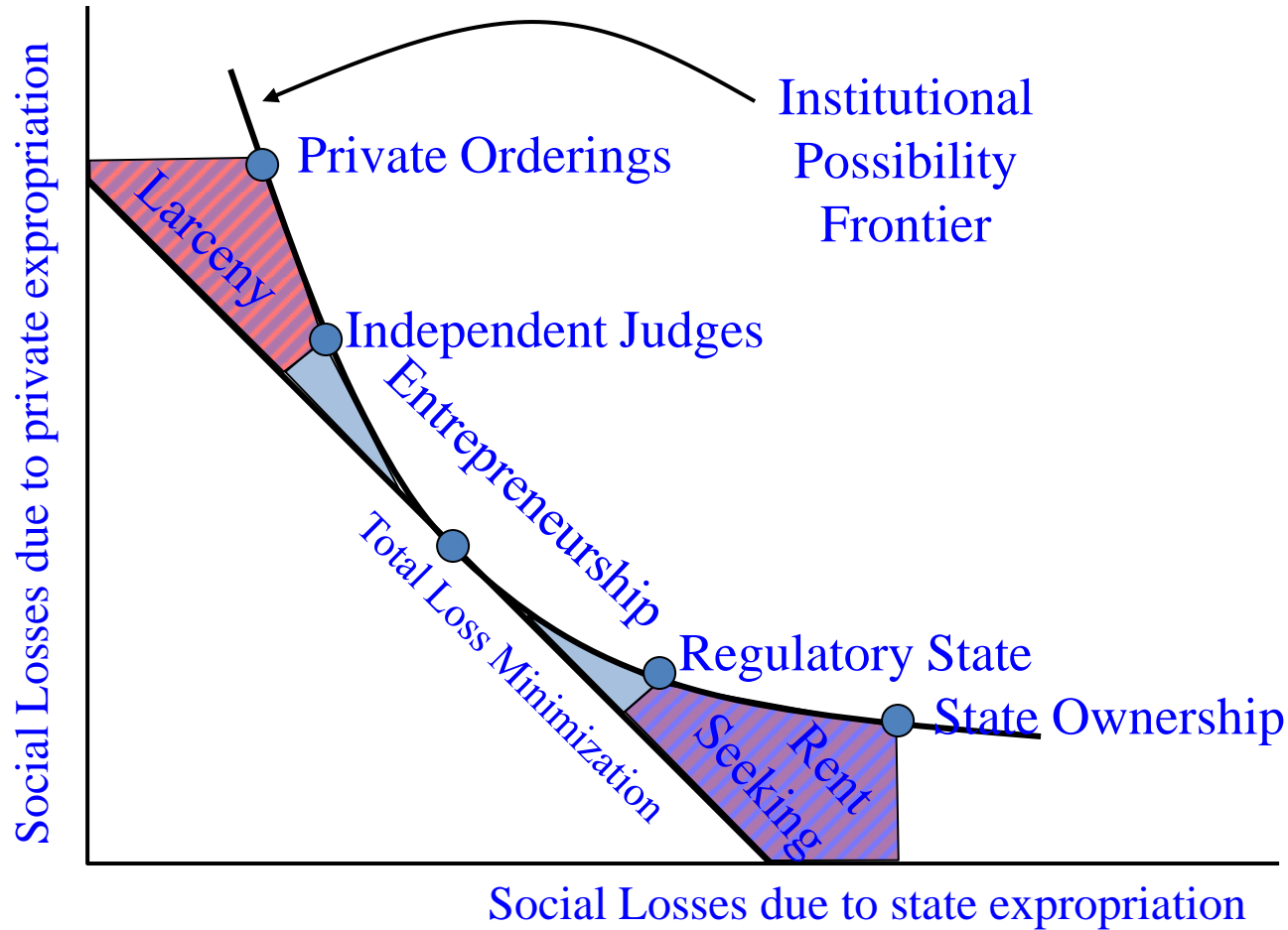
- Given a normal distribution of ability and alertness, not everyone will be a positive sum entrepreneur

Problem #1 is to ensure that institutional conditions favor positive sum entrepreneurship

Problem #2 is to identify potential entrepreneurs and increase the odds they will choose positive sum entrepreneurship

\* Baumol. 1990. [Journal of Political Economy](#), 9:5, pp.893-921

# Relationship between Institutions, and Opportunity Exploitation\*



\*Adapted from, Djankov, Glaeser, La Porta, Lopez-de-Silanes, Schleifer, 2003. *The Journal of Comparative Economics*

# The Role of Technological Innovation in Fostering Positive Sum Entrepreneurship

Global Entrepreneurship Monitor studies show that entrepreneurship is active in high and low GDP countries.

Need based entrepreneurship is associated with low GDP regions

Opportunity based entrepreneurship is associated with high GDP regions

High impact entrepreneurship is opportunity driven, not need driven

Technological innovation is the necessary condition to opportunity-based entrepreneurship

# The Role of Technological Innovation in Fostering Positive Sum Entrepreneurship

## Schumpeterian perspective on entrepreneurship

- Role of technological revolutions
- Technology as exogenous to industries

## Chamberlainian perspective on entrepreneurship

- Role of entrepreneurial human capital
- Technology as endogenous to entrepreneurial human capital

## Industrial organization perspective on entrepreneurship

- Role of industry structure
- Technology as endogenous to industry but exogenous to human capital

# MLE Time Series Regression on New Firm Formation in the U.S\*

Contextual Variables	(1) Control Model	(2) Opportunity Model	(3) Supply Model	(4) Demand Model	(5) Full Model
Constant	<b>2.41</b> ***	<b>1.94</b> **	<b>6.94</b> ***	<b>2.00</b> ***	3.28
<b>Controls</b>					
Entrepreneurship (t-1)	0.35	<b>-0.47</b> *	<b>0.84</b> ***	0.40	<b>-0.66</b> **
Entrepreneurship <sup>2</sup> (t-1)	<b>0.09</b> ***	<b>0.07</b> ***	0.01	<b>0.07</b> ***	<b>0.04</b> **
Failure Rate	0.00	<b>0.00</b> **	0.00	0.00	-0.01
Interest Rate	0.01	0.00	0.00	0.02	0.01
<b>Opportunity Factors</b>					
R&D Stock		<b>0.44</b> +			<b>1.34</b> *
Patent Application		-0.68			<b>-2.52</b> **
Economic Concentration		<b>-1.88</b> *			<b>-3.45</b> **
Pro-Competition		<b>0.01</b> ***			<b>0.01</b> ***
<b>Supply Factors</b>					
Unemployment Rate			-0.04		<b>0.13</b> +
Labor Unionism			<b>-0.12</b> **		-0.03
<b>Demand Factors</b>					
VC Availability				0.01	0.00
Government Support				<b>0.01</b> **	0.01
Log Likelihood	0.77	16.73	4.04	7.05	24.73
Likelihood Ratio Test Statistics		31.91	6.53	12.56	47.92
Improvement of Goodness of Fit (1-tailed test)		p < .001	p < .05	p < .01	p < .001

\*\*\* p<.001; \*\* p<.01; \* p<.05; + p<.10; n = 26 (1968~1993).

\*Choi Y.R., and Phan, P. 2010, A generalized supply/demand approach to national entrepreneurship: Examples from the United States and South Korea, *Johns Hopkins Carey Business School Working Paper*, Baltimore, MD

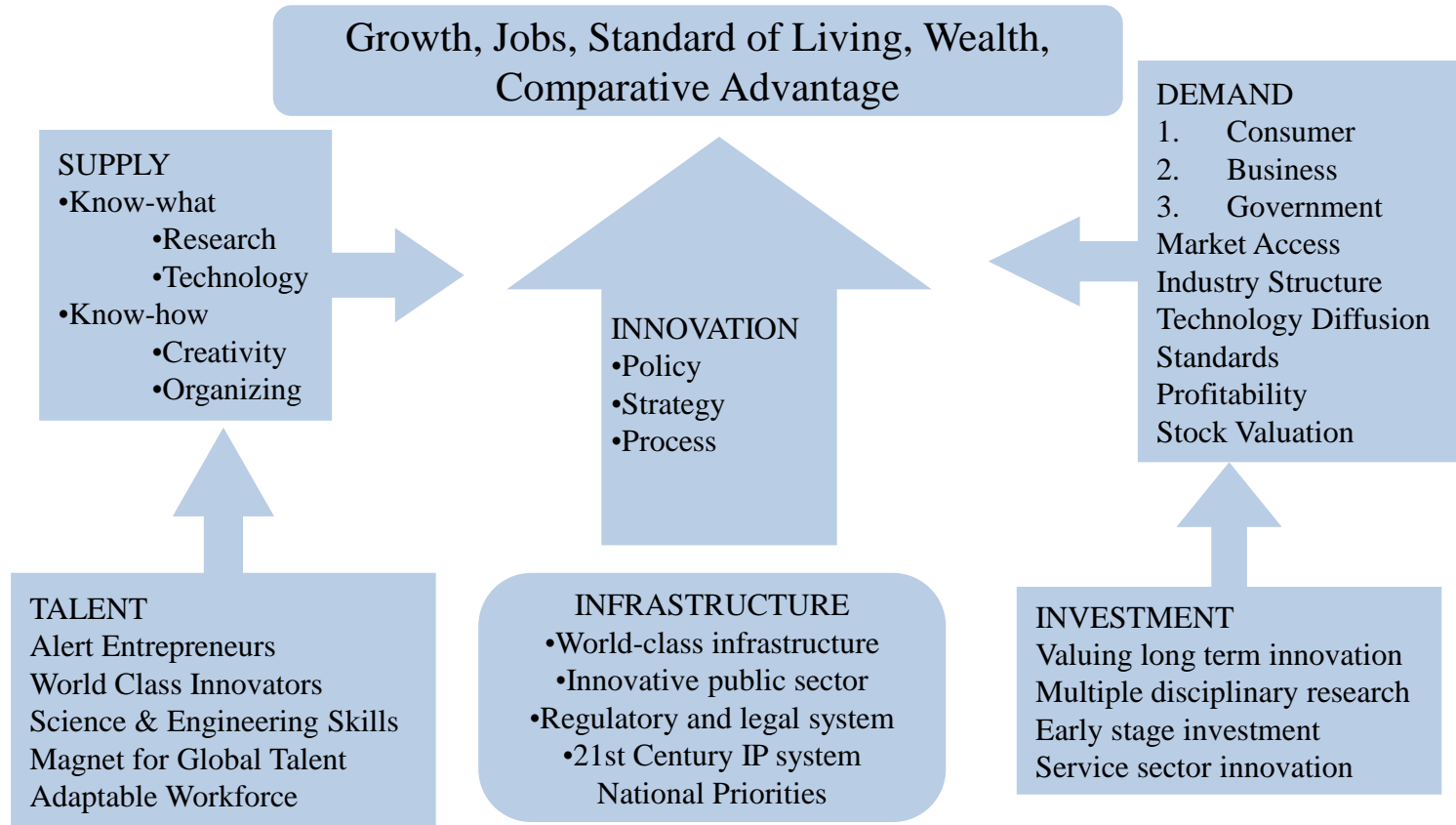
# MLE Time Series Regression on New Firm Formation in Korea\*

Contextual Variables	(1) Control Model	(2) Opportunity Model	(3) Supply Model	(4) Demand Model	(5) Full Model
Constant	<b>0.80</b> ***	<b>1.85</b> ***	<b>1.74</b> ***	-0.09	0.90
Controls					
Entrepreneurship (t-1)	0.33	<b>0.84</b> ***	<b>0.83</b> ***	<b>0.76</b> ***	-0.30
Entrepreneurship <sup>2</sup> (t-1)	<b>0.34</b> ***	-0.00	0.10	<b>0.10</b> *	<b>0.36</b> ***
Failure Rate	-0.14	-0.24	0.02	-0.40	0.08
Interest Rate	-0.01	0.00	-0.01	0.01	0.00
Opportunity Factors					
R&D Stock		0.00			<b>-0.03</b> ***
Patent Application		<b>0.03</b> *			<b>0.02</b> +
Economic Concentration		<b>-1.38</b> *			<b>-1.38</b> **
Pro-Competition		0.11			<b>0.65</b> **
Supply Factors					
Unemployment Rate			<b>-0.05</b> *		<b>-0.04</b> *
Labor Unionism			-0.02		0.01
Demand Factors					
VC Availability				<b>0.01</b> **	<b>0.02</b> ***
Government Support				<b>0.03</b> **	<b>0.03</b> **
Log Likelihood	21.76	35.02	25.41	32.99	44.27
Likelihood Ratio Test Statistics		26.52	7.30	22.47	45.02
Improvement of Goodness of Fit (1-tailed test)		p <.001	p <.05	p <.001	p <.001

\*\*\* p<.001; \*\* p<.01; \* p<.05; + p<.10; n = 26 (1968~1993).

\*Choi Y.R., and Phan, P. 2010, A generalized supply/demand approach to national entrepreneurship: Examples from the United States and South Korea, *Johns Hopkins Carey Business School Working Paper*, Baltimore, MD

# Innovation, Entrepreneurship, and Economic Development



Council on Competitiveness, 2007. [National Innovation Initiative](#)

# Foci of Entrepreneurship Research

Why, when and how opportunities for the creation of goods and services come into existence

Why, when, and how some people and not others discover and exploit these opportunities

Why, when and how different modes of actions are used to exploit opportunities

# Elements of An Entrepreneurial Opportunity

An opportunity is the confluence of

Idea for a new way to create economic value

People to give substance to the idea

Context to ground the idea in time and space

# Opportunity Discovery

Where do ideas come from?

## They are discovered

- Hayek (information exist and are simply discovered, and structural imperfections in the marketplace prevent discovery)
- Kirzner (entrepreneurial discovery is the gradual and systematic pushing back of the boundaries of sheer ignorance)

## They are created

- Cognition (information do not always exist, and cognitive biases prevent us from creating new ideas, 'alertness')
- Schumpeter (creative destruction on the process by which a new economic order replaces an older one through the new application of technology to problems)

Viable ideas have a life span and are not necessarily competitively determined

# Theoretical Implications

Multidimensional and Multilevel phenomenon

Dynamic

Multiple dependent variables (not all are economic)

Appropriate theoretical approaches

- Economics of information (network effects, increasing returns, spillovers, appropriability)
- Theory of knowledge (interactions between individual and group cognition, group and organization, individual and organization)
- Technology change and diffusion of innovations
- Sources of industry differences

# Empirical Implications

Left censorship

Right censorship

Recursive process models require dynamic modeling with updating

Panel data (or at least longitudinal data)

Multi-trait and multi-method (MTMM) approaches to construct validation

# Opportunity Exploitation

The entrepreneurial team (people)

## Why do they choose to (not) exploit the idea?

- Individual differences (Kahneman, Baron)
  - Social and cultural
  - Neurobiological/Genetic
  - Historical
- Human experience (demographics) (Laffont, Caroll)

# Opportunity Exploitation

The organizational context

*Where* do they choose to (not) exploit the idea?

- Existing organized enterprise
- Newly formed enterprise
- Virtual enterprise

*How* do they choose to (not) exploit

- At what point is the idea exploitable?

Can there be exploitation without organization?

# Theoretical implications

Group decision making processes

Emergence of ordered systems from constituent components  
(complexity theory)

Moderated structural models (contingency theory)

New conceptualizations of value creation (e.g., monetization  
of virtual worlds)

# Empirical implications

Measuring and counting nascent organizations (also in corporate settings)

Identifying and counting failures (projects and organizations)

Use of dynamic agent-based decision modeling

Brain and genetic studies on human decision making

# Opportunity Exploitation

New firm formation

Most common expression of the entrepreneurial process

Where/when does the process start?

- Idea?
- Individual (serial entrepreneurs)?
- Formal organization?

Where/when does it end?

- Idea?
- Individual (life span)?
- Dissolution of formal organization?

Technology continually evolves. Implication?

# Theoretical implications

## Contingency models

- Effectuation (person, idea, context)

## The importance of non-economic actors

- Family
- Community
- Advocacy associations
- Pressure groups

## Appropriate dependent variables

- Differentiating between value creation and value appropriation (create economic value but appropriate it in non-economic ways)

Most entrepreneurship research focuses on theorizing about process and not outcomes

- Outcomes are not easily examined through cross-sectional research
- Post-hoc biases

The confounds from implementation effects

Divergent theoretical perspectives need to be brought together (“blind man describing the elephant” problem)

Thank you

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