

Appendix D PowerPoint Presentations

Business Dynamics, Entrepreneurship, and the Macroeconomy in the 21st Century

- 1 *Zoltan Acs* What Does the Future Look Like?
- 2 *John Haltiwanger* What Do We Know (and Not Know) about the Contribution of Young Businesses to Economic Growth?
- 3 *Frederic Scherer* Size Distribution of Profit Returns from High-technology Venture Investments

Small Business and Demographic Trends in the 21st Century

- 4 *Paul D. Reynolds* U.S. Entrepreneurship: Temporal and Spatial Comparisons
- 5 *Robert W. Fairlie* Race, Ethnicity and Business Ownership
- 6 *Patricia Greene* The Diana Project: A Multi-university Research Program to Determine and Influence the Factors that Lead to High Growth Women-led Ventures
- 7 *Marta Tienda* Demography of Ethnic and Immigrant Entrepreneurship and Business Development

Small Business, Technology, and Innovation in the 21st Century

- 8 *David Audretsch* Entrepreneurship, Innovation & Growth
- 9 *Paul Almeida* Small Firms and Innovation
- 10 *Maryann P. Feldman* Locational Dynamics of the Small Firms
- 11 *Melissa A. Schilling* Interfirm Collaboration Networks: Network Structure, Firm Size, and Rates of Innovation

Small Business Finance in the 21st Century

- 12 *Alan N. Berger and Gregory F. Udell* Small Business Debt Finance in the 21st Century
- 13 *Josh Lerner* Small Business Equity Finance in the 21st Century

1

What Does the Future Look Like?

Zoltan Acs

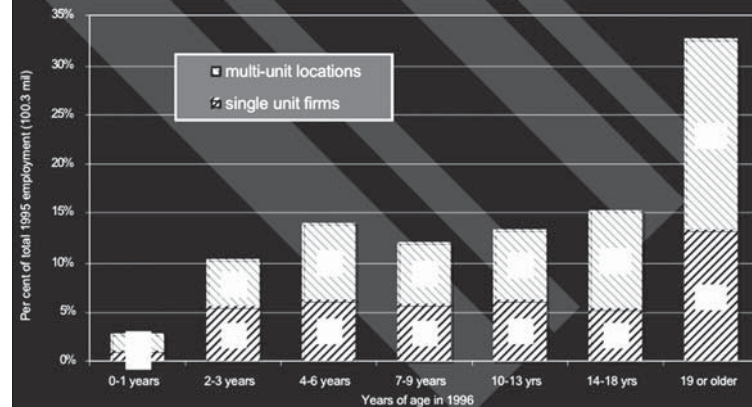
Business Dynamics, Entrepreneurship and the Macroeconomy in the 21st Century

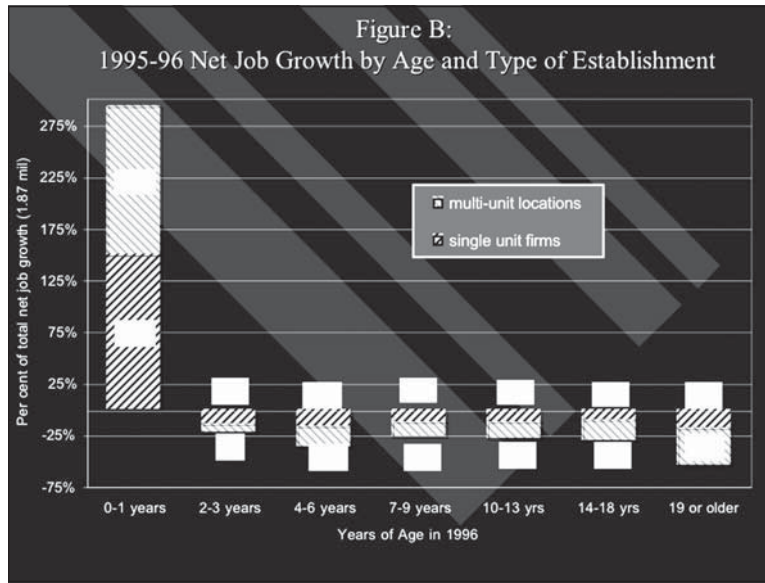
What does the Future Look Like?
Zoltan J. Acs Ph.D

Growth Theory

- Solow Model (1956)
 - Economies of scale
 - » Growth comes from new (bigger) plants
- Romer Model (1990)
 - Externalities (knowledge spillovers)
 - » Growth Comes from new (growing) firms

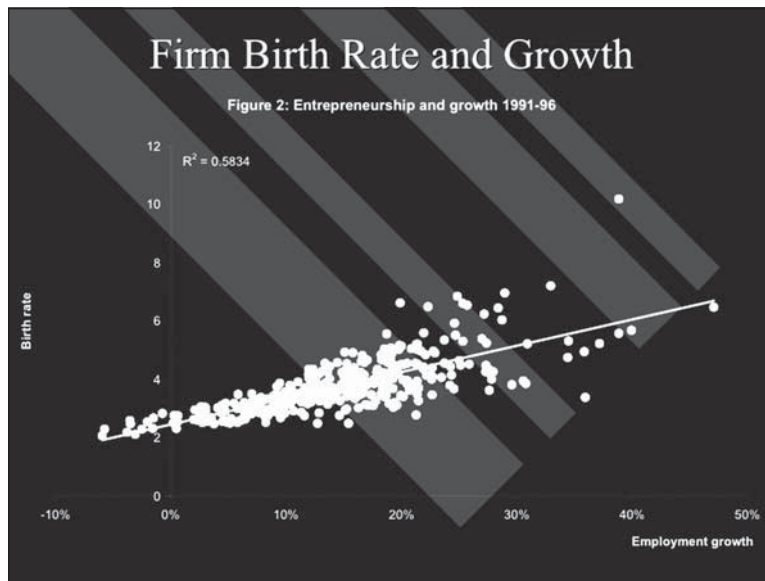
Figure A:
Distributions of 1995 Employment by Age and Type of Establishment





Regional Growth

- 394 Labor Market Areas
 - Whole U. S.
- Highest Growth Employment
 - St. George, Utah - - 23%
 - Austin, Texas - - 20.3%
- Lowest Growth Employment
 - Syracuse, New York - - 0.5%
 - Poughkeepsie, New York -7.4%



Regional Employment Growth

- Entrepreneurial Activity (+)
 - New firms (+)
 - Small firms (+)
- Agglomeration Effects (+)
 - Density (+)
 - Specialization (+)
- Human Capital (+)
 - High school (+)
 - College (+)

Explaining Regional Employment Growth

1990-1993; 1993-1996; 1996-1999

- Entrepreneurial Activity (+)
 - New firms (+ + +)
 - Small firms (+ 0 0)
- Agglomeration Effects (+)
 - Density (- - 0)
 - Specialization (- - -)
- Human Capital (+)
 - High school (+ + +)
 - College (0 0 +)

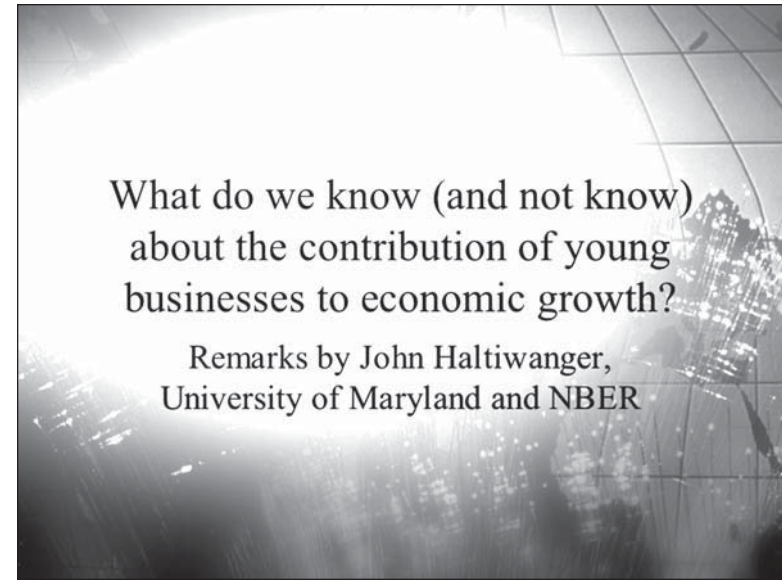
The 21st Century

- In the Solow (1956) world public policy for growth was build a bigger plant to take advantage of scale economies.
 - Lower interest rates; Anti-Trust
- In the Romer (1990) world public policy for growth is to have more young firms to take advantage of knowledge spillovers.
 - Enabling policies for new firms

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What Do We Know (and Not Know) about the Contribution of Young Businesses to Economic Growth?

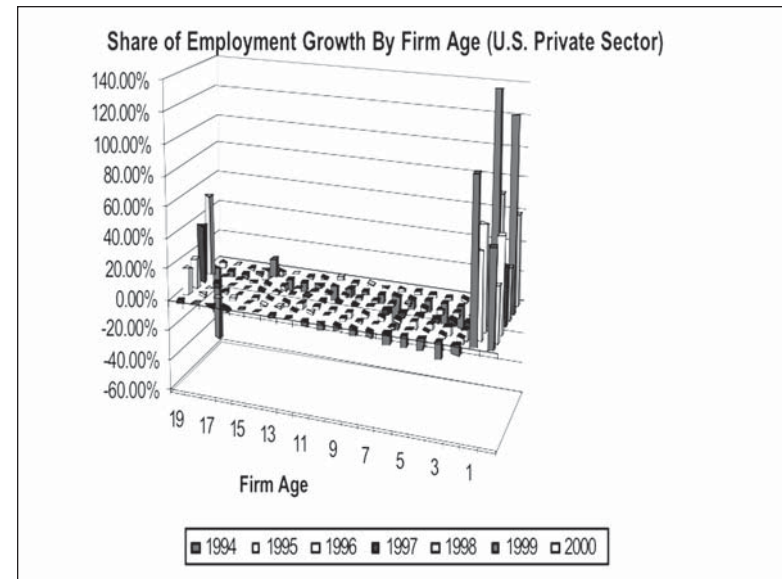
John Haltiwanger

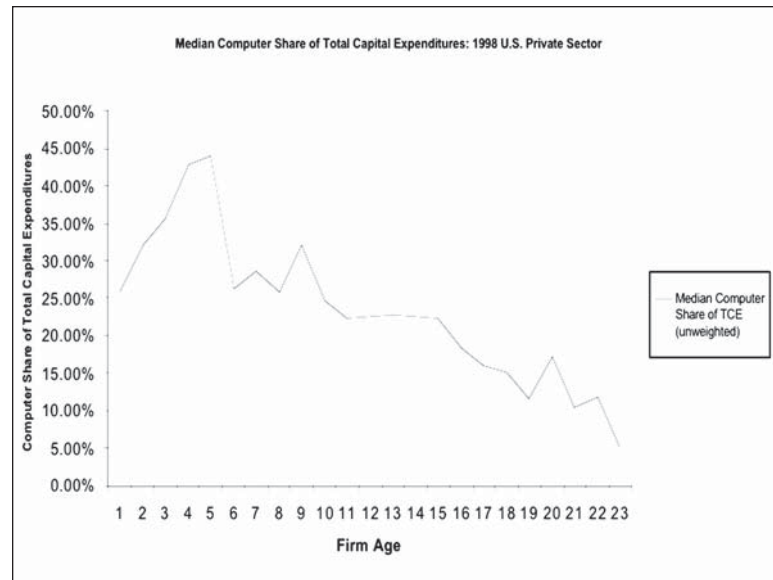
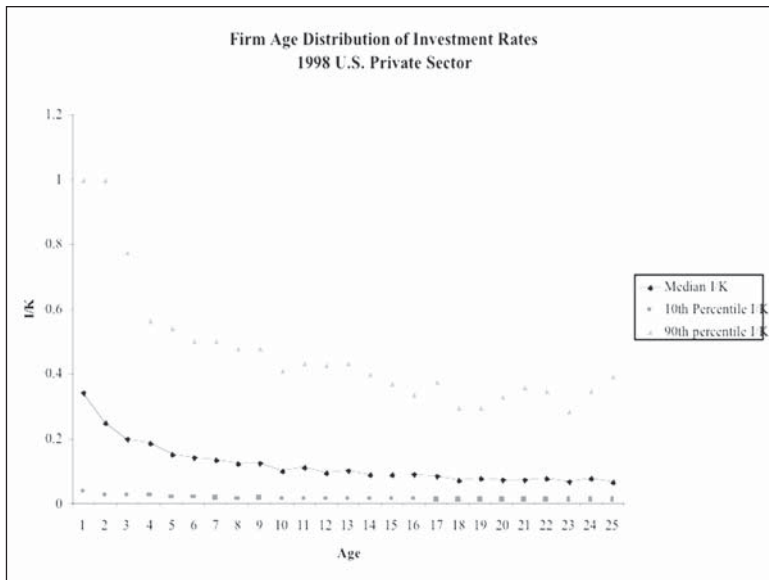
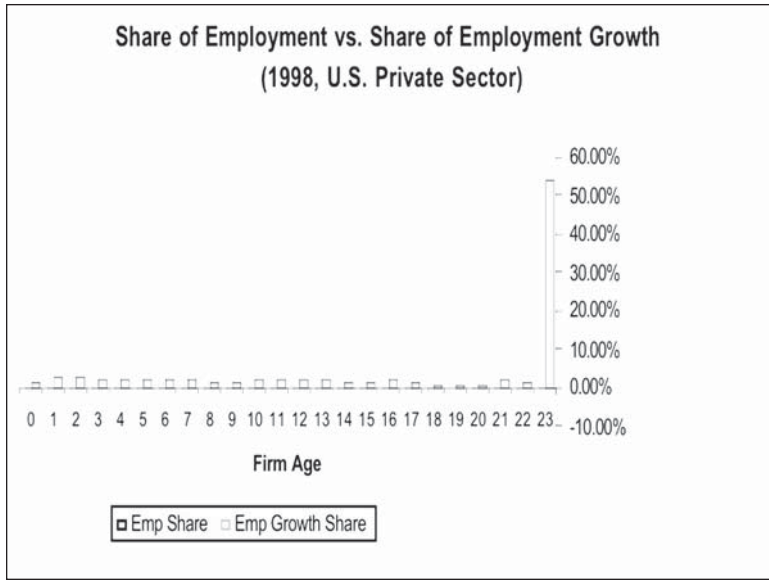


What do we know?

- U.S. economy is dynamic and young (small) businesses are critical part of this dynamism:
 - Young (small) businesses contribute disproportionately to job growth but are very volatile
 - High pace of continuous restructuring and reallocation of outputs and inputs
 - Job creation and destruction rates in excess of 10 percent annually (rates vary by sector and employer characteristic):
 - Higher for young (small) businesses
 - Higher for retail, construction, services
 - Entry/exit play a large role (especially in sectors dominated by young/small businesses)
 - Ongoing churning of jobs and businesses largely within detailed industries

2





Churning of outputs and inputs is productivity enhancing

- In 1990s, ALL of increase in labor productivity in retail trade accounted for by net entry of establishments
 - Entering establishments substantially more productive than exiting establishments
 - Entry and exit are closely linked:
 - » An important component of the exit is accounted for by recent entrants who “learn” they have low productivity and in turn exit
 - » Another important component reflects the successful entry of new establishments of existing multi-unit firms and the exit of low productivity single-unit firms
- In other sectors, contribution of net entry is also significant
 - In manufacturing, roughly 30 percent of productivity growth accounted for by net entry

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Contribution of Net Entry to Productivity Growth (10-year horizon)



What Do We Not Know?

- Statistical agencies mostly collect data on large, mature businesses as these businesses account for most of the *level* of activity
- Young (small) businesses are disproportionately important in accounting for growth but statistical agencies don't collect much information on these businesses
- Net entry fundamentally important in accounting for restructuring and productivity growth but longitudinally based statistics have until recently been neglected.

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What Should Be Done?

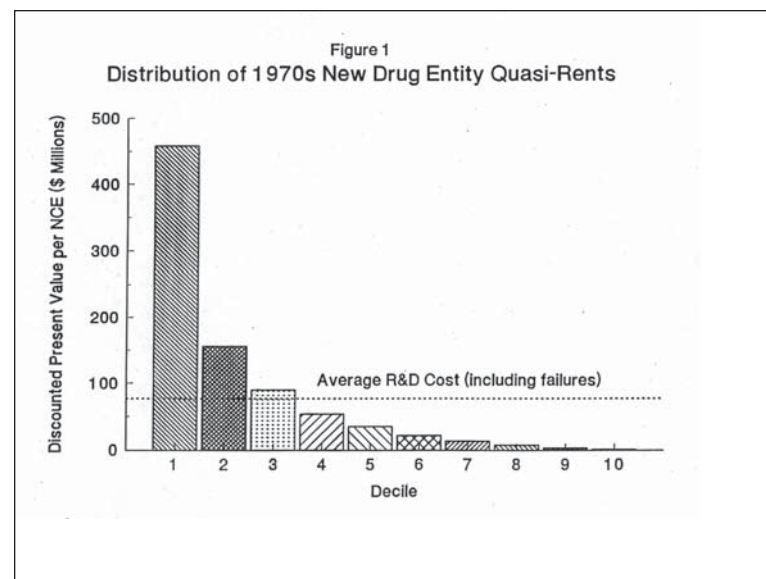
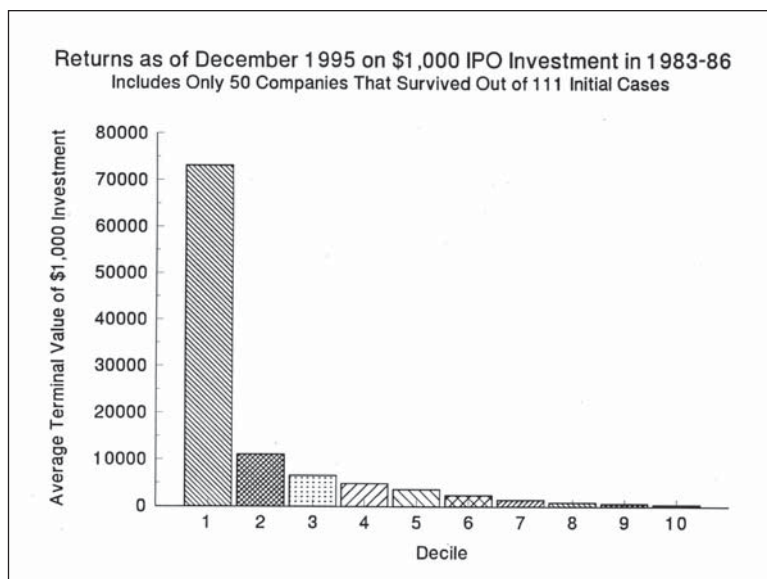
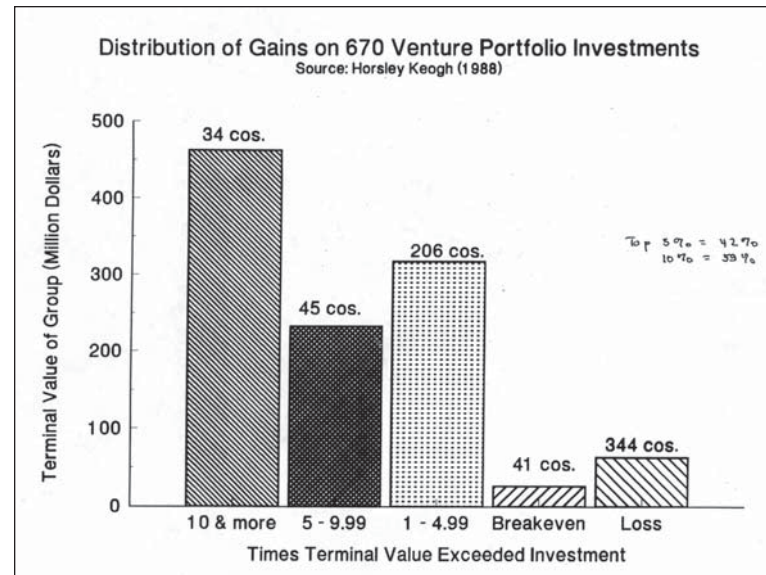
- Increase emphasis on data collection on young (small) businesses and on entry and exit of businesses
 - Aside: Recent concerns about establishment payroll and employment patterns may be related to this neglect of young (businesses) and entry/exit
- Decompose aggregate movements into contribution of young (small) businesses and contribution of entering and exiting businesses
 - Requires micro/macro data integration and longitudinal micro data

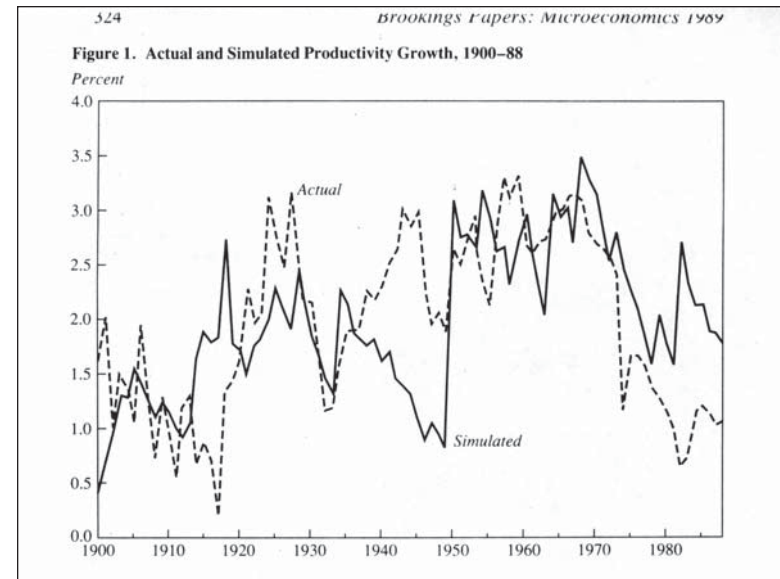
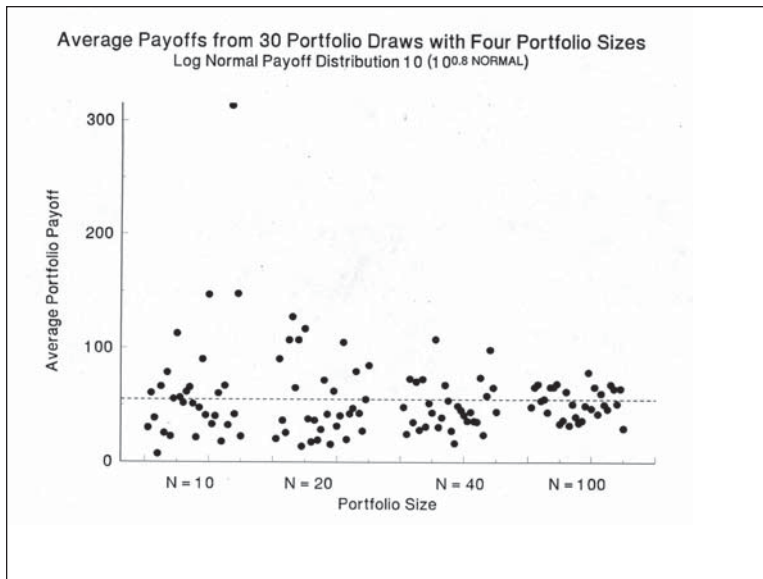
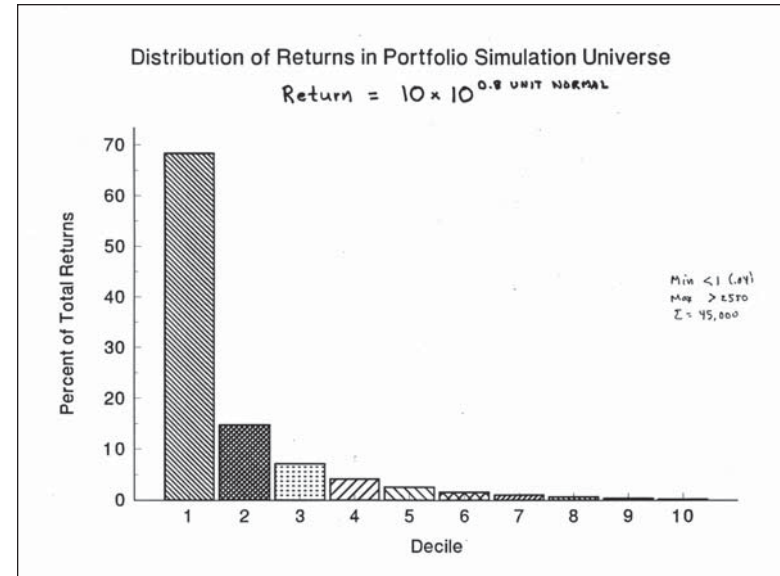
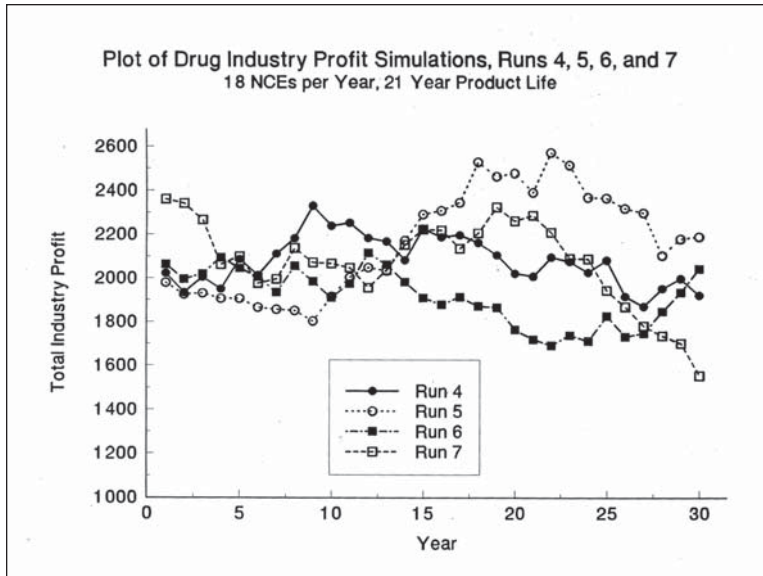
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Size Distribution of Profit Returns from High-technology Venture Investments

Frederic Scherer





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U.S. Entrepreneurship: Temporal and Spatial Comparisons

Paul D. Reynolds

US Entrepreneurship: Temporal and Spatial Comparisons

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Presented at a conference on

Entrepreneurship in the 21st Century

Sponsored by the
SBA Department of Advocacy
and the
Ewing Marion Kauffman Foundation

26 March 2004
United States Chamber of Commerce
1615 H Street- Washington, DC

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1

- Entrepreneurship = business start-ups
 - Nascent entrepreneurs (gestation phase)
 - New businesses (up to 42 months old; 35% conversion rate)
- Measures based on population surveys
- Temporal Patterns in the US: 1993-2003
 - Prevalence rate tripled 1993-2001, slight drop 2002-2003
 - Uniform across age, gender, ethnic categories
- US versus the world
 - TEA rate (nascent entrepreneurs and start-ups)
 - Opportunity versus necessity
 - Market innovation
- Implications
 - Amount of activity
 - Job creation
 - Economic Growth

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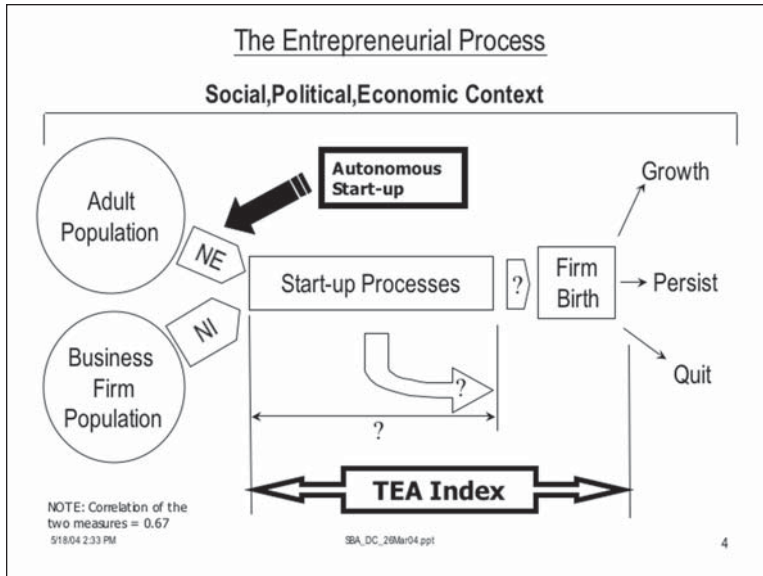
Sources of Data

- Panel Study of Entrepreneurial Dynamics
 - '<http://projects.isr.umich.edu/PSED>'
 - Longitudinal study of US business start-ups (conception to birth)
 - Initial work began in 1993 in Wisconsin, several pretests
 - Screened 64,000 representative adults in 1998-1999
- Global Entrepreneurship Monitor
 - '<http://www.gemconsortium.org>'
 - Five year study of national level of entrepreneurial activity
 - 41 countries involved through 2003
 - Primary measures based on techniques developed for PSED
- Ewing Marion Kauffman Foundation
 - Largest single sponsor of both projects
 - Funding for PSED II [4 year project] was just approved

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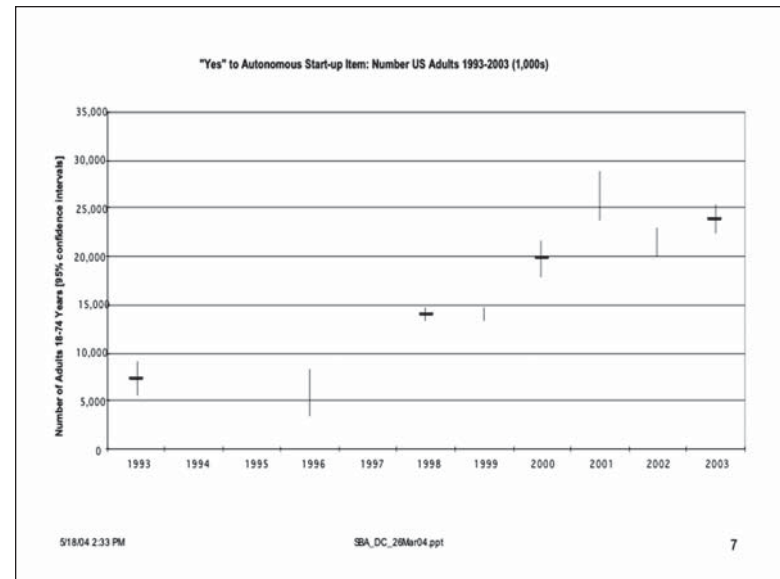
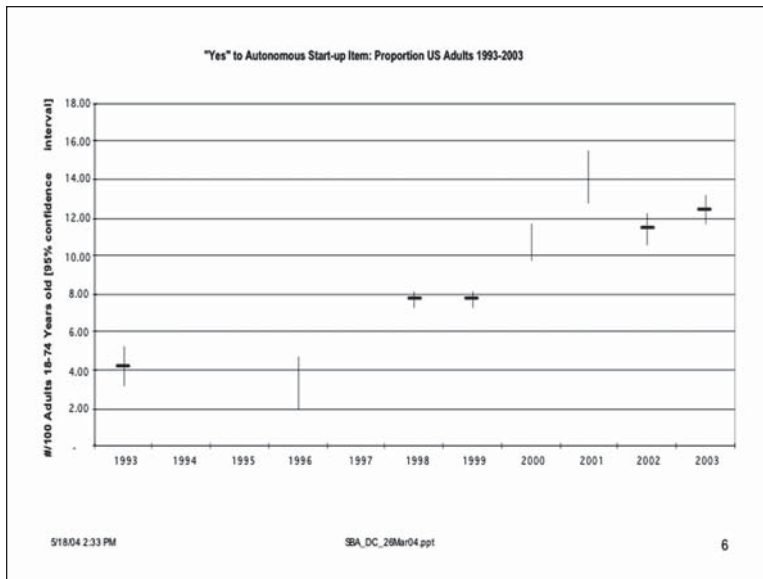


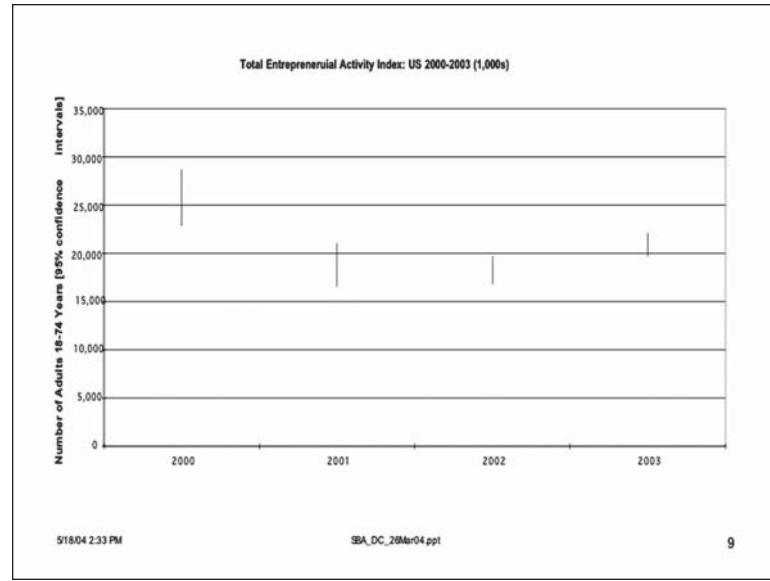
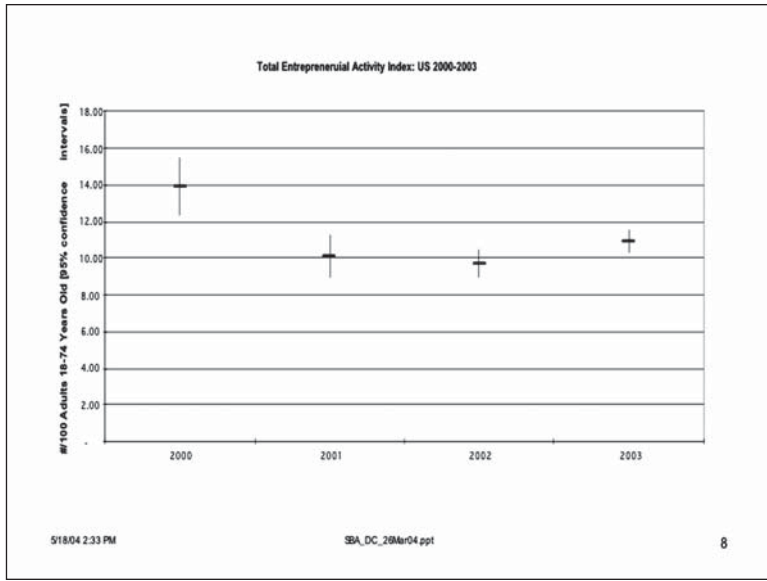
US Patterns: 1993 -2003

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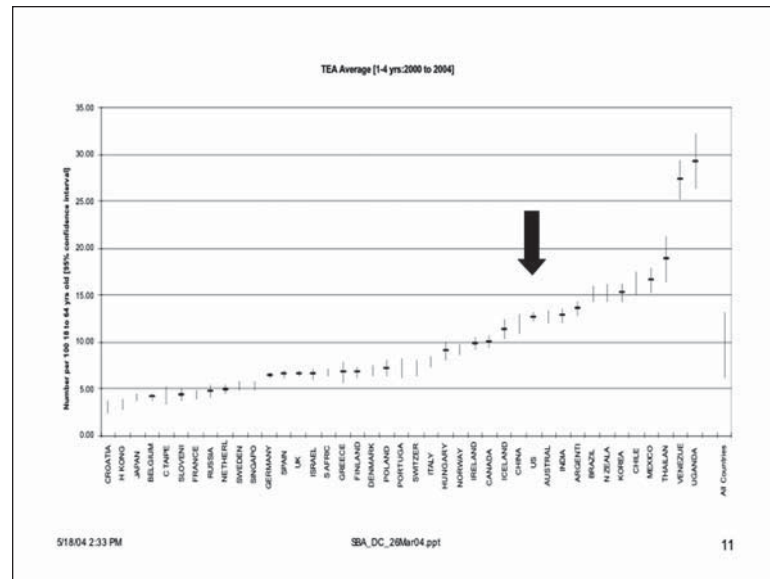
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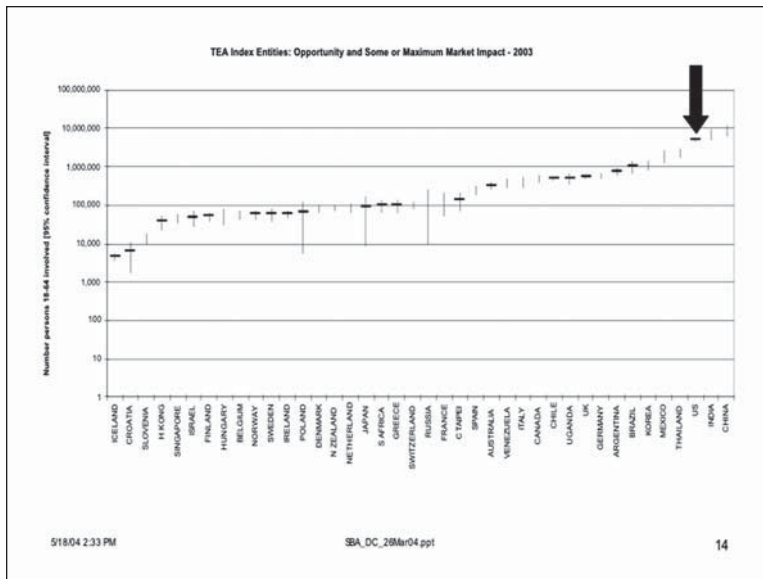
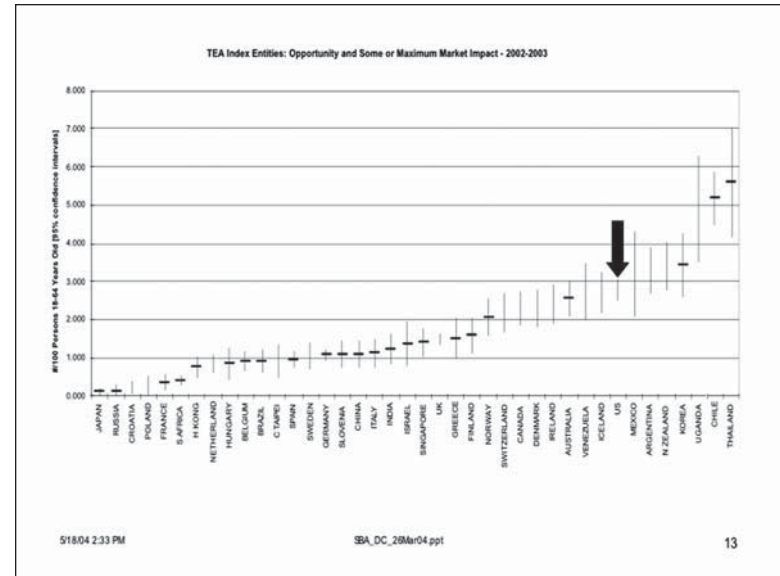
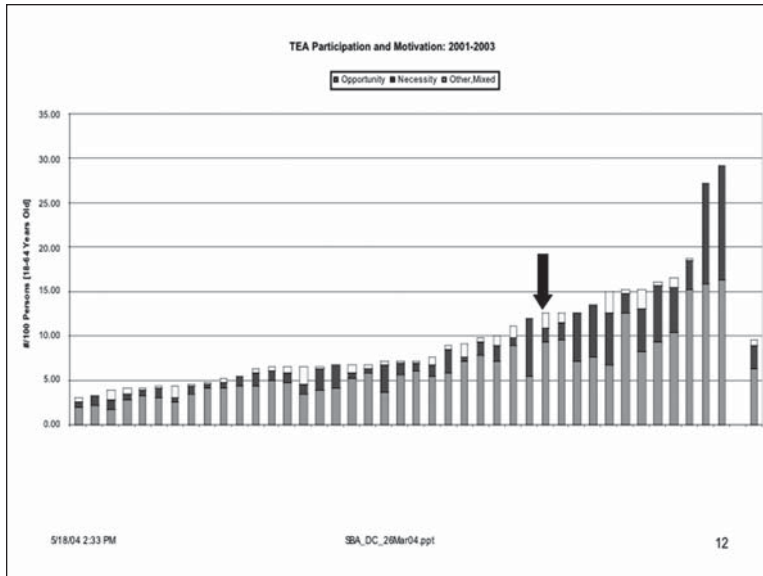




US versus the World: 2003

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National Consequences

- Scope of Activity
- Contributions to the Job Pool
- Entrepreneurship and National Economic Growth

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Scope of Activity

[Estimates for 40 GEM countries – 2003]

Total population: 40 GEM Countries	3,970,000,000
Total working ages: 18-64 years	2,443,000,000
Nascent Entrepreneurs, New Firm Principals	297,000,000
Total nascent, new firms	192,000,000

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Scope of Activity

[Estimates for United States – 2003]

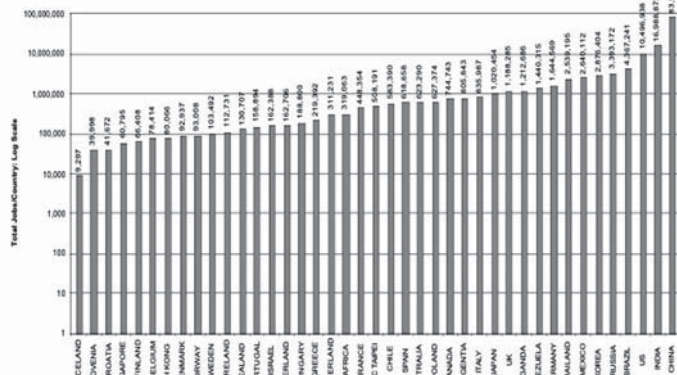
Total population: 40 GEM Countries	290,342,000
Total working ages: 18-64 years	181,340,000
Nascent Entrepreneurs, New Firm Principals	20,503,000
Total nascent, start-up firms	11,067,000

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Total Annual Jobs from New Firms: 2003

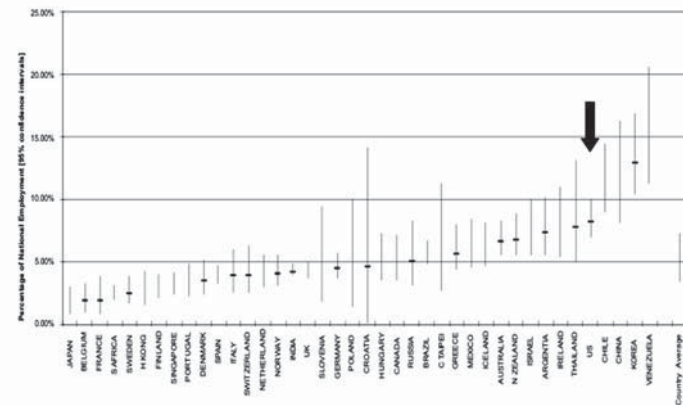


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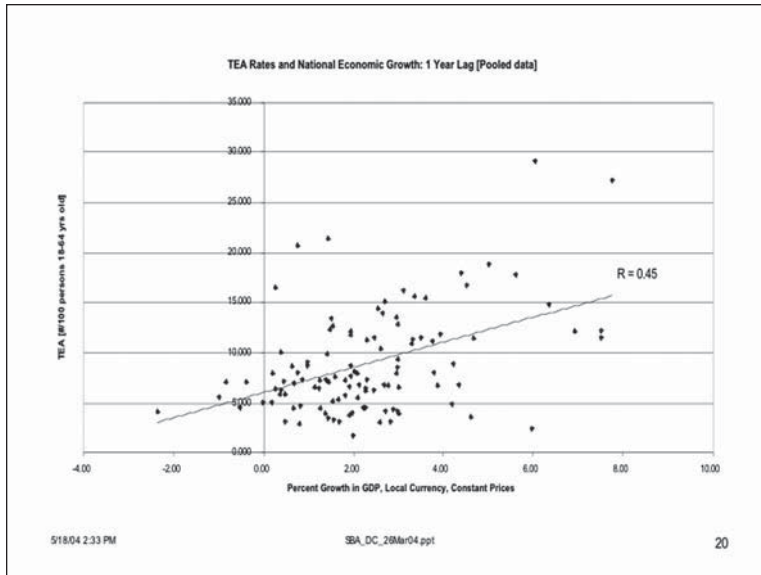
Annual Contribution of New Firms to Current Job Pool: 2002



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- ## Expectations for US
- Entrepreneurship and new firms well established as career options for young adults
 - Expect basic patterns to continue
 - Market replication start-ups will dominate
 - Market innovation will be an interesting, important minority
 - Men will continue to be two thirds of the action
 - More minorities in start-ups, less finish with firm birth
 - As become assimilated, less start-ups but more successful
 - Continue to be an urban phenomena
 - Action is in complex, diverse, turbulent centers of new ideas and innovation with increasing demand for goods and services
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- ## Expectations for US
- Much higher rates than other OECD non-Anglo countries
 - Twice the level of Western or Central Europe
 - Twice the level of “Developed Asian”
 - Lower than developing countries on fast track
 - Equivalent in terms of opportunity
 - Much lower in terms of necessity
 - India, China, et al a major competitive threat
 - US dominance in post-high school education, science, and research infrastructure
 - Basic source of the US competitive advantage
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5

Race, Ethnicity and Business Ownership

Robert W. Fairlie

Race, Ethnicity and Business Ownership

Robert W. Fairlie
University of California, Santa Cruz

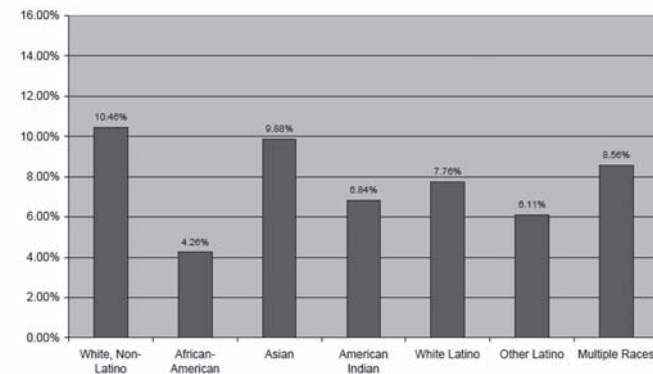
March 26, 2004

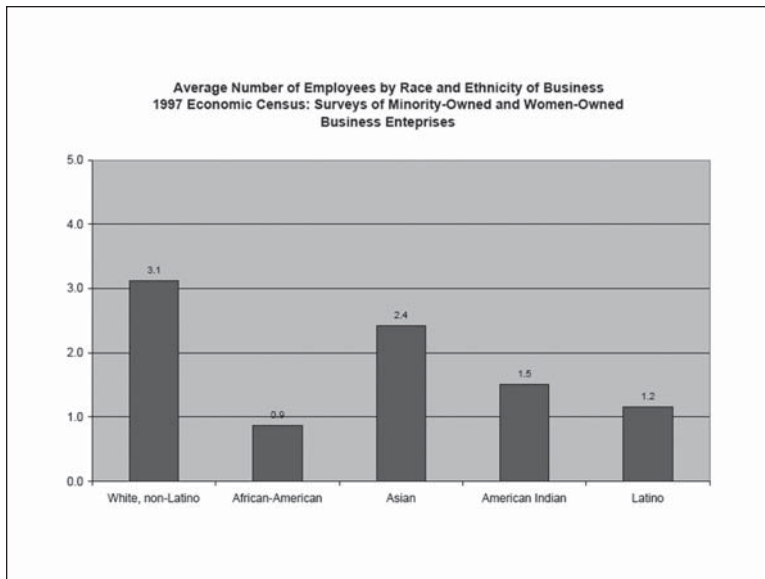
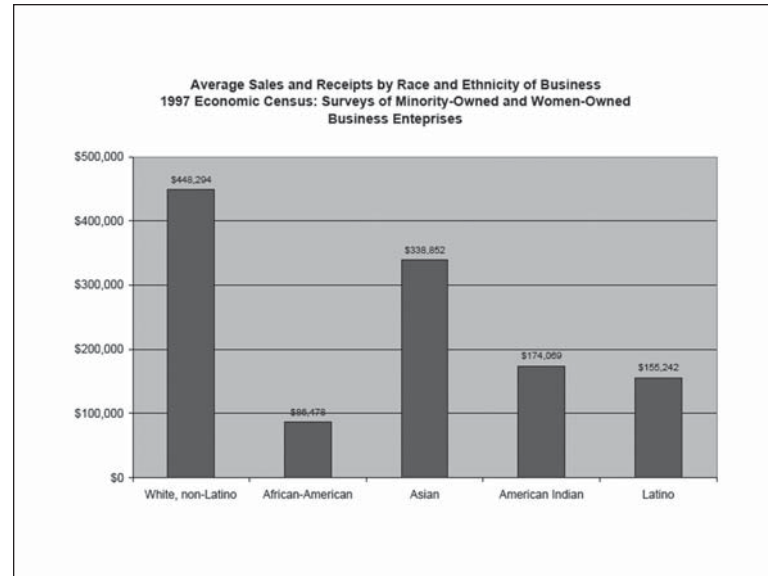
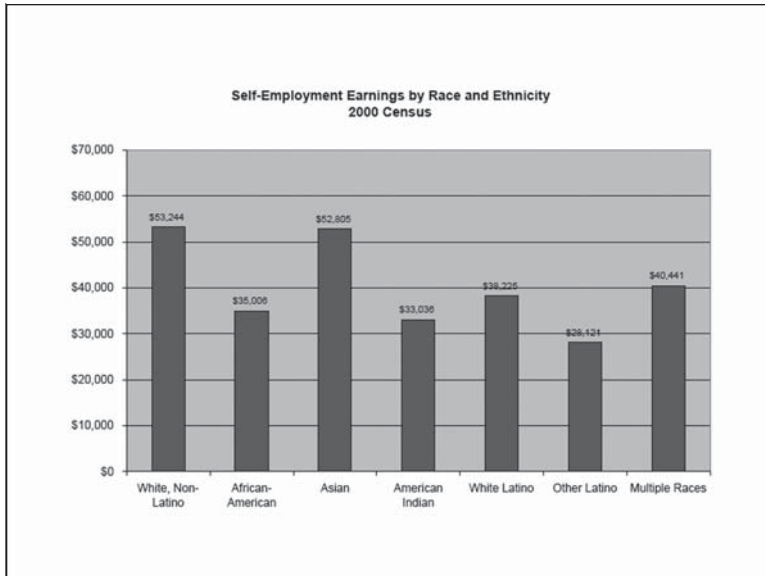
For "Entrepreneurship in the 21st Century," by the Office of Advocacy,
U.S. Small Business Administration and the Kauffman Foundation

Race, Ethnicity and Business Ownership

1. Where are we now?
2. Where might we be headed?
3. What can we do?

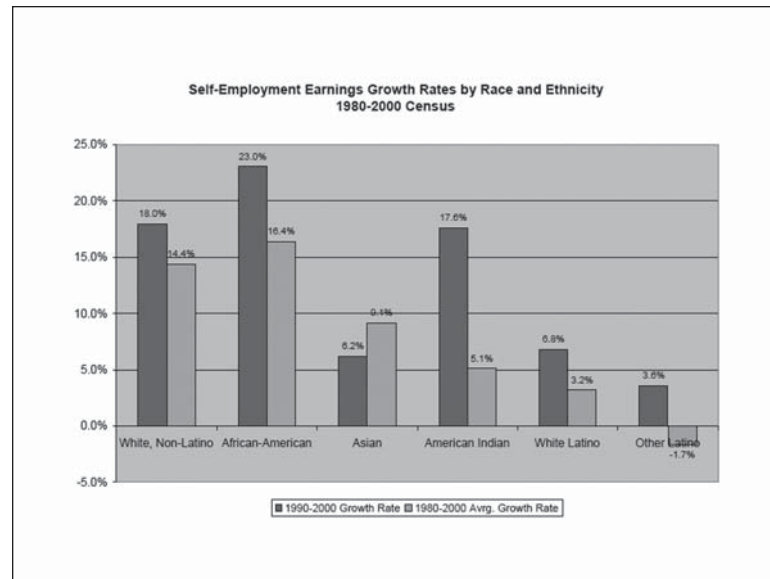
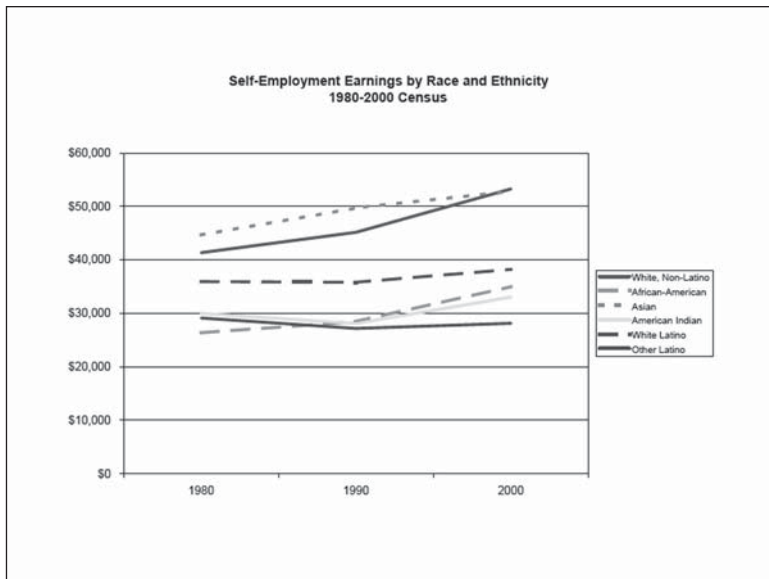
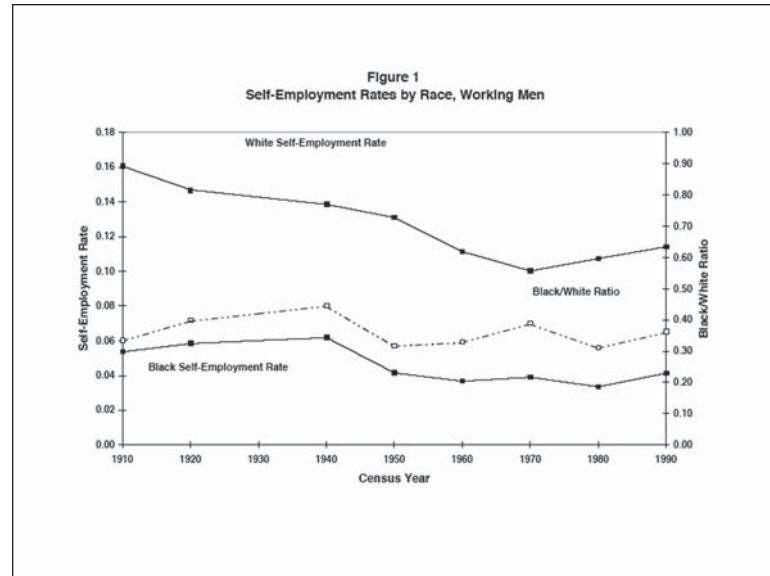
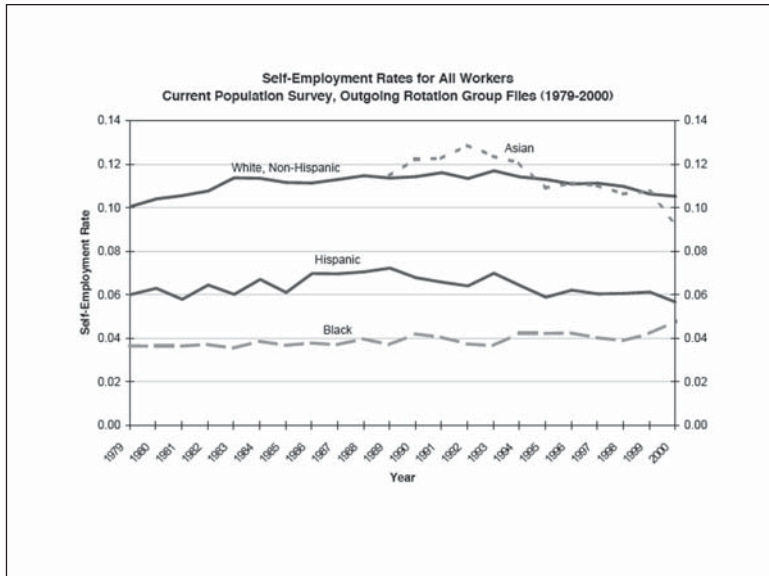
Self-Employed Business Ownership Rates by Race and Ethnicity
2000 Census





Race, Ethnicity and Business Ownership

1. Where are we now?
2. Where might we be headed?
3. What can we do?



Race, Ethnicity and Business Ownership

3. What Can We Do?

- Financial Capital
- Human Capital
- Business Human Capital

6

The Diana Project: A Multi-university Research Program to Determine and Influence the Factors that Lead to High Growth Women-led Ventures

Patricia Greene



*A multi-university longitudinal
research program to determine
and influence the factors that
lead to high growth women-led
ventures*

Dr. Candida Brush, *Boston University*
Dr. Nancy Carter, *University of St. Thomas*
Dr. Elizabeth Gatewood, *Indiana University*
Dr. Patricia Greene, *Babson College*
Dr. Myra Hart, *Harvard Business School*

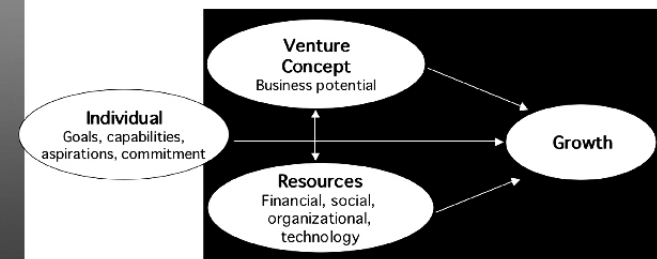


FUNDERS & STRATEGIC PARTNERS

- U.S. SMALL BUSINESS ADMINISTRATION
- EWING MARION KAUFFMAN FOUNDATION
- ESBRI
 - (Entrepreneurship and Small Business Research Institute, Stockholm).
- SPRINGBOARD ENTERPRISES
- WOMEN'S BUSINESS RESEARCH CENTER
- NATIONAL WOMEN'S BUSINESS COUNCIL



FACTORS INFLUENCING VENTURE GROWTH



Sector Potential



US Women Entrepreneurs Represent:

- 6.2 million privately held, majority-owned, women-owned firms
- 28% of all privately held firms (46% when 50% ownership is counted)
- \$1.15 trillion in sales
- 9.2 million employees



DISPELLING PERCEPTIONS

- **Align personal & company goals**
- **Clearly & consistently articulate company's growth vision**
- **Enhance human capital through school, training, work experience, advisors, affiliation with associations**
- **Build personal reserves; ask for resources**
- **Bootstrap business and understand capital types**
- **Understand industry & investor motives**
- **Strategically position firm for growth**
- **Build diverse networks that include mentor**

Source: *Clearing the Hurdles: Women Building High-Growth Businesses*. Prentice-Hall: Financial Times. June, 2004.
(The Diana Project)



It's a Global Issue

Diana International



- | | | |
|-------------|---------------|------------|
| - Australia | - Finland | - Norway |
| - Bulgaria | - Germany | - Scotland |
| - Canada | - Ireland | - Slovenia |
| - China | - New Zealand | - Spain |
| - Denmark | - Northern | - Sweden |
| - England | - Ireland | - USA |



7

Demography of Ethnic and Immigrant Entrepreneurship and Business Development

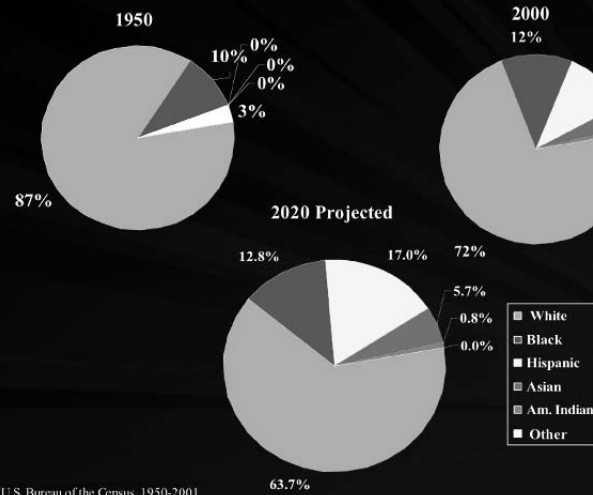
Marta Tienda

Demography of Ethnic and Immigrant Entrepreneurship and Business Development

Marta Tienda
Princeton University
March 26, 2004

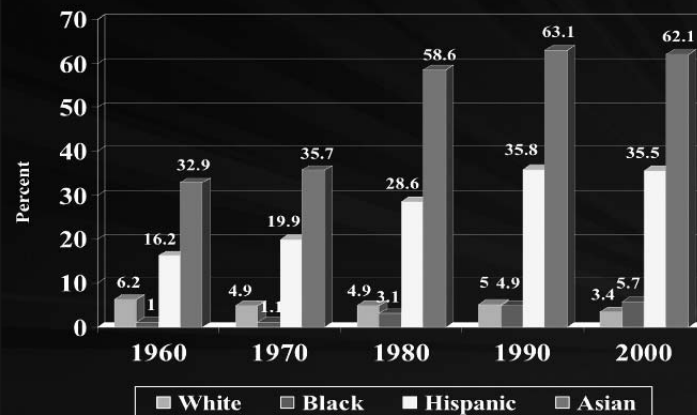
Conference on Entrepreneurship in the 21st Century

Race/Ethnic Composition of U.S. Population

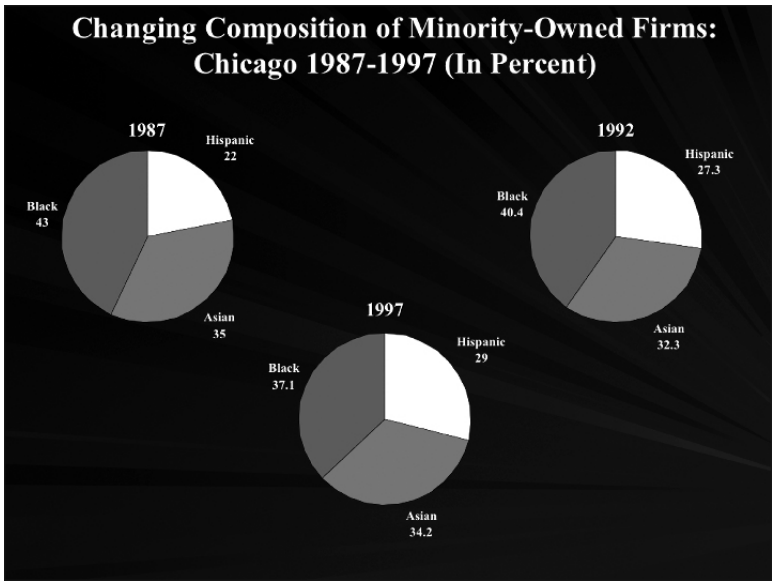
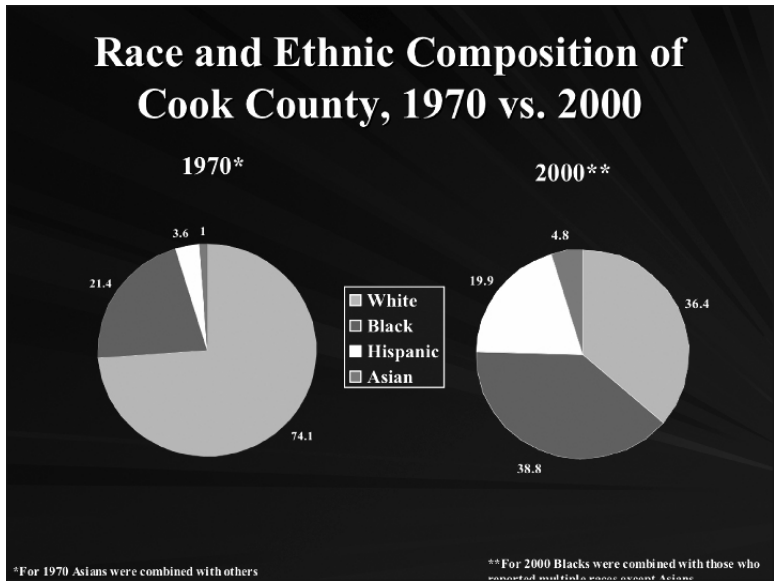
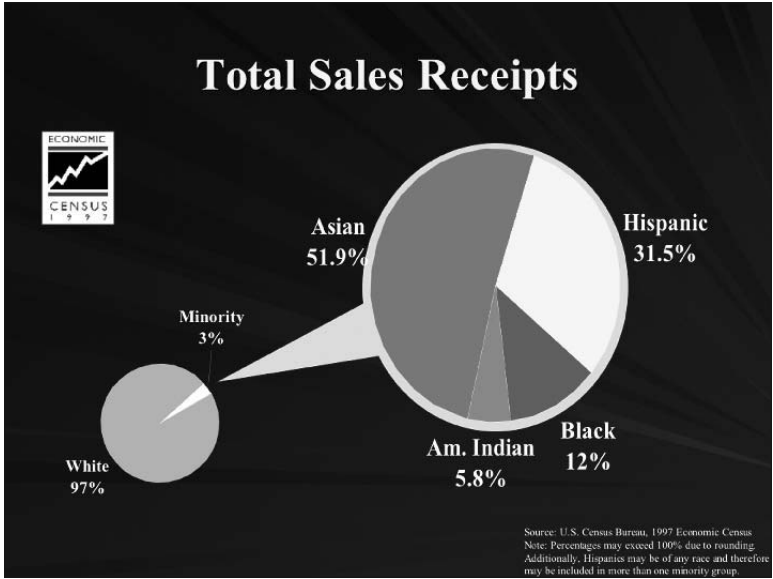
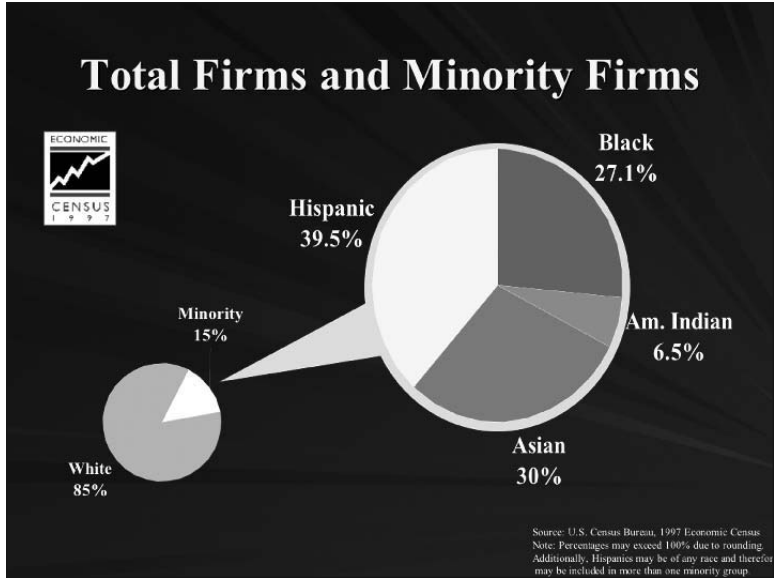


Source: U.S. Bureau of the Census, 1950-2001

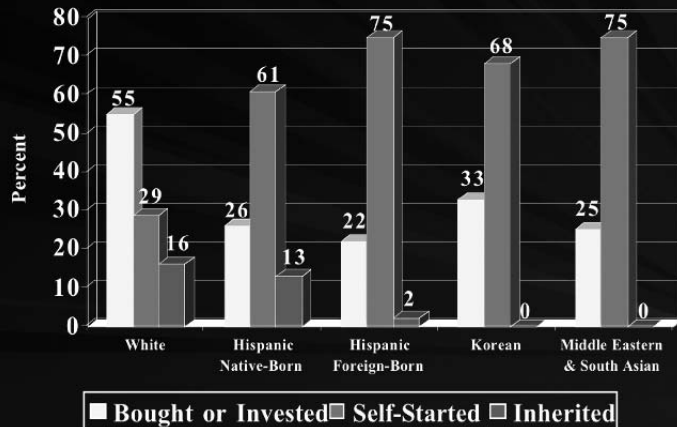
Foreign-Born Share of Hispanics and Asians Rose



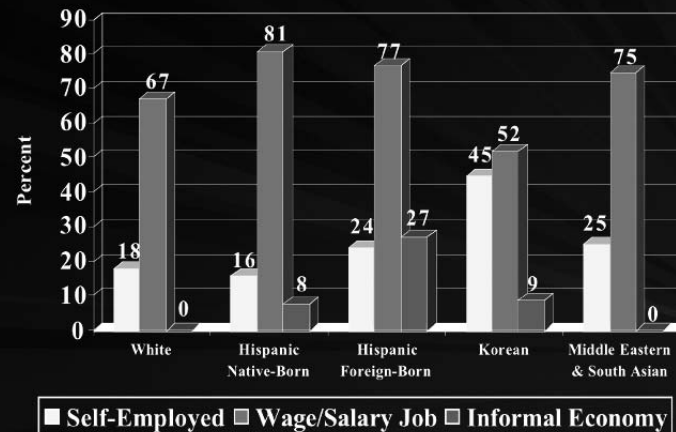
Source: U.S. Census Bureau, 2000



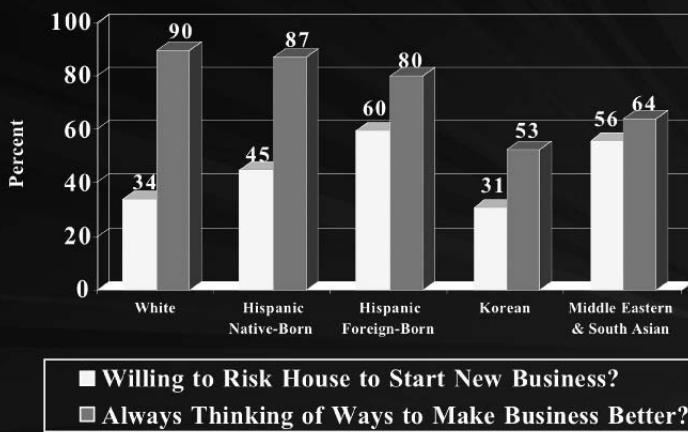
Little Village Business Owners: Mode of Entry



Little Village Business Owners: Prior Activities



Little Village Business Owners: Entrepreneurial Dispositions



Policy Implications of Little Village

- Build on informal networks to help prospective entrepreneurs establish a business, obtain financing, and arrange for legal transactions
- Provide economic supports that enhance the longevity of ethnic business operations
- Design interventions to develop the minority small business sector by providing timely information about opportunities and strategies to establish formal businesses

8

Entrepreneurship, Innovation & Growth

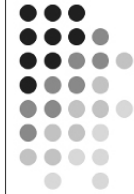
David Audretsch

Entrepreneurship, Innovation & Growth

David Audretsch
Indiana University & Max Planck Institute

Max Keilbach
Max Planck Institute

*The Entrepreneur is the single most important player
in a modern economy*
Edward Lazear (2002, p.1)



1

The Traditional Economy (Solow Model)



$$Q = \alpha K^{\beta} L^{\varphi}$$

2

The New Economy (Romer Model)



$$Q = \alpha K^{\beta} L^{\varphi} R^{\eta}$$

3

Limitations of Romer Model



- Empirical Paradox – Why have countries rich in knowledge (high R&D& Patents) yield such low growth rates?
- Theoretical – Assumption that Knowledge equals Commercial Knowledge
- Violates Arrow (1962) knowledge condition

4

Extension of Model – Entrepreneurship Capital



- New firms are important mechanism transmitting knowledge spillovers
- Each firm represents new & unique innovation
- Spillovers are local and spatially bounded

5

Stylized Facts of Entrepreneurship Dynamics




- New Firm Survival positively related to age and size
- New Firm Growth negatively related to age and size
- Survival and Growth effects more pronounced in knowledge industries

Caves, Richard E., 1998, "Industrial Organization and New Findings on the Turnover and Mobility of Firms," *Journal of Economic Literature*

Sutton, John, 1997, "Gibrat's Legacy," *Journal of Economic Literature*

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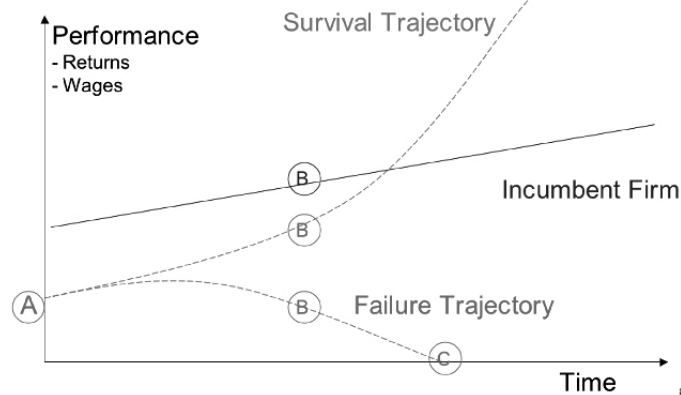
Theory of Noisy Learning & Selection



- Jovanovic, Boyan, 1982, "Selection and Evolution of Industry," *Econometrica*
- Richard Ericson and Ariel Pakes, 1995, "Markov-Perfect Industry Dynamics: A Framework for Empirical Work," *Review of Economic Studies*,
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7

Entrepreneurship & Growth



8

The Role of Entrepreneurship Capital

$$Q_i = \alpha K_i^\beta L_i^\varphi R_i^\eta E_i^\varepsilon$$



9

Estimation Issues

- Measurement Issues
- **Output** is measured as Gross Value Added corrected for purchases of goods and services, VAT and shipping costs. Statistics are published every two years for *Kreise* by the Working Group of the Statistical Offices of the German Länder, under "Volkswirtschaftliche Gesamtrechnungen der Länder".



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Measurement Issues--2

- **Physical Capital:** The stock of capital used in the manufacturing sector of the *Kreise* has been estimated using a perpetual inventory method which computes the stock of capital as a weighted sum of past investments. In the estimates we used a *b*-distribution with $p=9$ and a mean age of $q=14$. Type of survival function as well as these parameters have been provided by the German Federal Statistical Office in Wiesbaden. This way, we attempted to obtain maximum coherence with the estimates of the capital stock of the German producing sector as a whole as published by the Federal Statistical Office. Data on investment at the level of German *Kreise* is published annually by the Federal Statistical Office in the series "E I 6"



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Measurement Issues-- 3

- **Labor:** Data on labor is published by the Federal Labor Office, Nürnberg which reports number of employees liable to social insurance by *Kreise*

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Measurement Issues -- 4

- **Knowledge Capital** is expressed as *number of employees engaged in R&D* in the public (1992) and in the private sector (1991), consistent with Griliches (1979), Jaffe (1989)

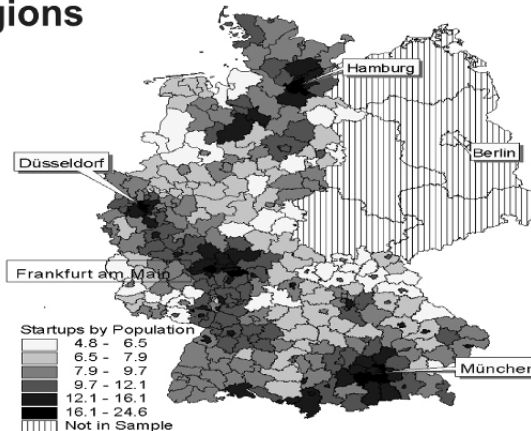
13

Measurement Issues -- 5

- **Entrepreneurship Capital** is computed as the *number of startups in the respective region relative to its population*, which reflects the propensity of inhabitants of a region to start a new firm. The data on startups is taken from the ZEW foundation panels that is based on data provided biannually by *Creditreform*, the largest German credit-rating agency. This data contains virtually all entries – hence startups – in the German Trade Register.

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Entrepreneurship in German Regions



15

Estimation of Production Function Model for German Regions

Table 3: Results of Estimation of the Production Function Model for German Regions

	(1)	(2)	(3)	(4)	(5)
<i>Constant</i>	-2.755***	-2.305***	-1.822***	-1.810***	-1.474***
	(-10.749)	(-7.807)	(-4.866)	(-4.363)	(-3.804)
<i>Capital</i>	0.270***	0.279***	0.276***	0.294***	0.287***
	(5.312)	(5.366)	(5.333)	(5.587)	(5.603)
<i>Labor</i>	0.805***	0.736***	0.748***	0.715***	0.734***
	(13.241)	(11.410)	(11.606)	(10.897)	(11.554)
<i>Knowledge</i>		0.030**	0.022	0.027**	0.014
		(2.199)	(1.540)	(1.987)	(0.954)
<i>Entrepreneurship</i>			0.112**		
			(2.078)		
<i>High-Tech Entrepreneurship</i>				0.043*	
				(1.694)	
<i>ICT Entrepreneurship</i>					0.104***
					(3.244) ¹⁶
<i>R2</i>	0.911	0.908	0.910	0.909	0.911

Estimation of Regional Labor Productivity

Table 4: Results of Estimation of the Model of Labor Productivity in German Regions

	(1)	(2)	(3)	(4)	(5)
<i>Constant</i>	1.888***	-2.175***	-1.645***	-1.730***	-1.299***
	(-19.235)	(-16.683)	(-5.566)	(-6.060)	(-6.060)
<i>Capital Intensity</i>	0.332***	0.283***	0.283***	0.296***	0.293***
	(6.814)	(5.535)	(5.551)	(5.747)	(5.807)
<i>Knowledge</i>		0.035***	0.030***	0.030***	0.021**
		(3.673)	(3.028)	(3.005)	(2.032)
<i>Entrepreneurship</i>			0.107**		
			(1.993)		
<i>High-Tech Entrepreneurship</i>				0.044*	
				(1.747)	
<i>ICT Entrepreneurship</i>					0.102***
					(3.203)
<i>R2</i>	0.125	0.169	0.179	0.177	0.195

Conclusions

- Entrepreneurship matters for innovation & growth
- Interpretation of new enabling entrepreneurship policies

New Entrepreneurship Policy

SMEs AGENDA		
Problem	Programme	Country
1. Access to Loan Finance	Loan Guarantee Scheme	UK; USA; Canada; France; Netherlands
2. Access to Equity Capital	Enterprise Investment Scheme	UK
3. Access to Markets	Europartenariat	EU
4. Administrative Burdens	Units established within government to seek to minimise administrative burdens on smaller firms	Netherlands Portugal, UK
5. Science Parks	Property based developments adjacent to Universities	UK, France, Italy and Sweden
6. Managed Workspace	Property provision to assist new and very small firms	World-wide
7. Stimulating Innovation and R&D in small firms	Small Business Innovation Research Program	USA
8. Stimulating Training in small firms	Japan Small Business Corporation (JSBC)	Japan

Source: Storey, 2003

New Entrepreneurship Policy



GOVERNMENTS AGENDA		
1. Entrepreneurial Skills	Small Business Development Corporations (SBDCs)	USA
2. Entrepreneurial Awareness	Entrepreneurship Education	Australia, Netherlands, but leading area was Atlantic Canada
3. Special Groups	Law 44	Southern Italy

Source: Storey, 2003

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9

Small Firms and Innovation

Paul Almeida



THE CRITICAL ROLE OF SMALL FIRMS IN INNOVATIVE ACTIVITY

Beyond the magnitude of innovation.....

- Innovating in new technological space
- Enhancing knowledge networks in high-technology regions
- Building bridges across geographic regions

THE RESEARCH

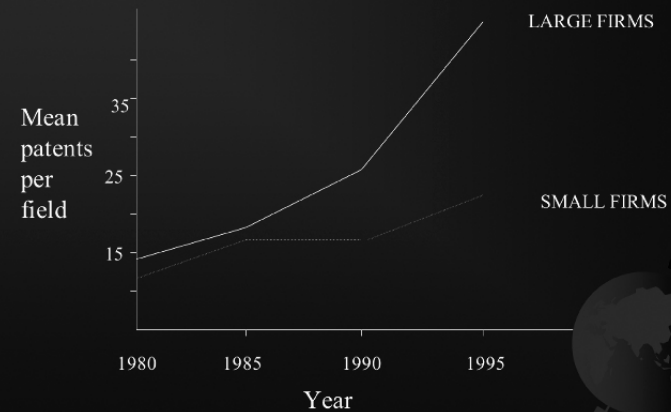
Observations based on:

- Studies in high-technology industries – semiconductor, biotechnology, and software
- Empirical research from 1994 – 2004
- Primary and secondary data: Patents and patent citations, strategic alliances, mobility of engineers, surveys and interviews

WHERE DO SMALL FIRMS INNOVATIVE?

- Emphasis on technological space
- Study of semiconductor start-ups
- Start-up innovative activity concentrated on relatively new and emerging technologies
- Play a role in the exploration of technological diversity
- Risk takers or just crowded out of established fields?

PATENTING IN SEMICONDUCTOR TECHNOLOGY SUBFIELDS



THE LOCALIZATION OF KNOWLEDGE

Findings from earlier work:

- Knowledge is localized
- Knowledge is localized for some technologies (design of semiconductors) and only in some regions (Silicon Valley).
- The sociology of a region plays an important role in the creation of local knowledge networks.

SMALL FIRMS AND REGIONAL KNOWLEDGE NETWORKS

Small firms help create a geographically localized 'atmosphere' of knowledge in several ways – some findings:

- Small firms are more likely to look outside the firm for new knowledge helping create a circulation of knowledge
- Small firms both access and share knowledge locally (more so than large firms)

SMALL FIRMS AND REGIONAL KNOWLEDGE NETWORKS contd.

- Mobility of founders of high technology start-ups and hiring of engineers suggest strong regional emphasis of small firms
- Small firms are better able to learn from 'informal mechanisms' associated with geographic proximity than larger firms.

BUILDING BRIDGES ACROSS REGIONS

- Small firms have strong regional emphasis
- However, geographic regions may not provide all the innovative inputs needed for successful technological innovation
- Small firms use strategic alliances and hiring of experts to reach out across geography and fill knowledge gaps

INNOVATION AND SMALL FIRMS

“It may well be that there is no optimum size of firm but merely an optimum pattern for any industry, such a distribution of firms by size, character and outlook as to guarantee the most effective gathering together and commercially perfecting the flow of new ideas.” Jewkes, Sawers and Stillerman, 1959.

Firm size is related to the innovative character and outlook. So small firms are a critical part of this optimum pattern.....

10

Locational Dynamics of the Small Firms

Maryann P. Feldman

Locational Dynamics of the Small Firms

Maryann Feldman

(feldman@rotman.utoronto.ca)

Small Business, Technology, and Innovation

March 26, 2004

Motivation

- Understand how emerging industries become anchored in a regional economy
 - New focus for research universities
 - But, universities appear to be a necessary but not sufficient condition
- Dasgupta and David (1994) distinction between science and technology
 - Need to reflect industry stages of development
 - What local factors affects the application of science

The Regional Context

- Why are some regions able to garner the rewards of
 - investments in science and,
 - incentives to start companies?
- History-friendly appreciative theorizing
 - Too much emphasis on universities and science?
 - Actions of entrepreneurs
 - Embedded in local context

The Anchor-Tenant Hypothesis

- Logic of the Shopping Mall
 - Attraction is the large anchor
 - Increase traffic that benefits smaller stores
 - Market failure
- Regional Anchors
 - Contribute to well-known agglomeration benefits
 - Skilled labor
 - Specialized inputs
 - Knowledge externalities
 - Source of potential entrepreneurs
 - Potential customers for start-up firms

Nuanced Understanding of Agglomeration Economies

- Specialization, Localized Competition and Diversity
- Industrial Structure, and Corporate Organization
 - Small firms make better neighbors
- Anchors affect
 - rate of start-ups
 - survival
 - technological specialization (within biotech)
- Location confers a growth premium
 - When other firms are specialized in same technology
 - When other firm's engage in external alliances

11

Interfirm Collaboration Networks: Network Structure, Firm Size, and Rates of Innovation

Melissa A. Schilling

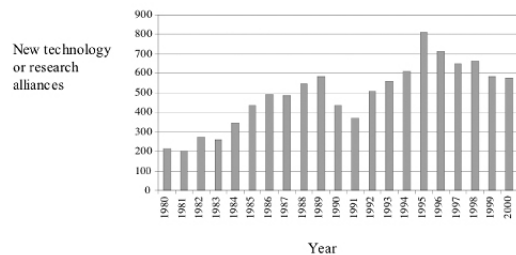
Interfirm Collaboration Networks:

Network structure, firm size, and rates of innovation

Melissa A. Schilling
New York University

Rise in Interfirm Collaboration

- Worldwide, use of technology or research alliances has more than doubled since 1980.



In 2000 alone, at least 574 new alliances formed in six sectors:

- Information tech.
- Biotechnology
- Advanced materials
- Aerospace
- Automotive
- Chemicals

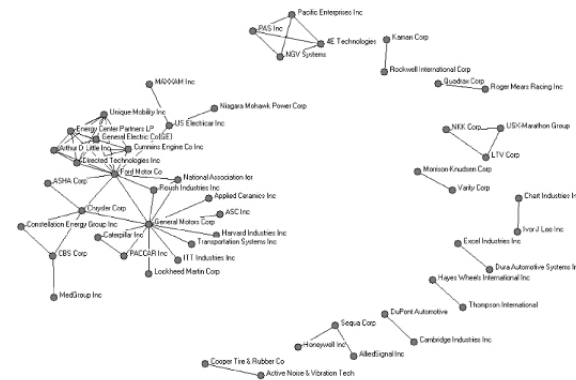
Interfirm Collaboration and Innovation

- Interfirm relationships are important engines of innovation (Ahuja & Lampert, 2001; Hargadon & Sutton, 1997)
- Interfirm relationships enable firms to pool, exchange, and create new information and other resources
- Benefits:
 - Exploit complementarities of resources or knowledge
 - Pursue projects of greater scale or risk than possible for individual firms
 - Build momentum around a technology standard → dominant design
- Costs and Risks:
 - Potential for loss of proprietary knowledge
 - Monitoring partners and resolving conflicts can be costly
 - Potential for “free riders”

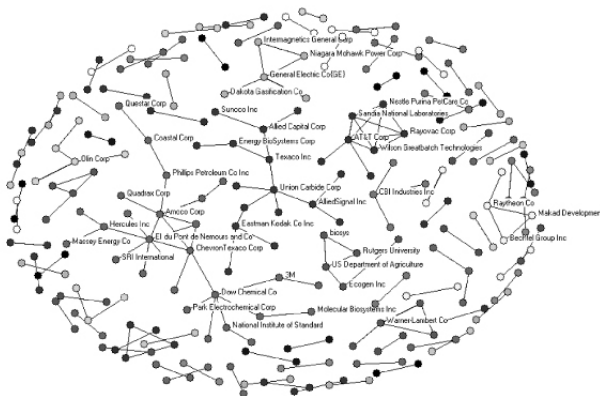
Interfirm Collaboration

- Prior research has focused on firm characteristics, governance structure of the relationship, and number and strength of relationship.
- Only recently has research turned to the impact of the structure of the overall network
- **Research Questions:**
 - Can particular network structures enhance innovation in the interfirm network?
 - What is the role of small and large firms in the interfirm network?

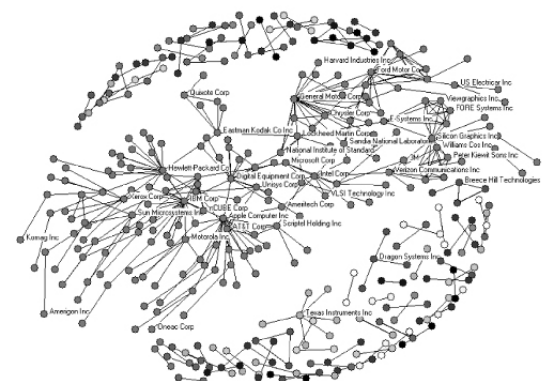
Structure of the Network



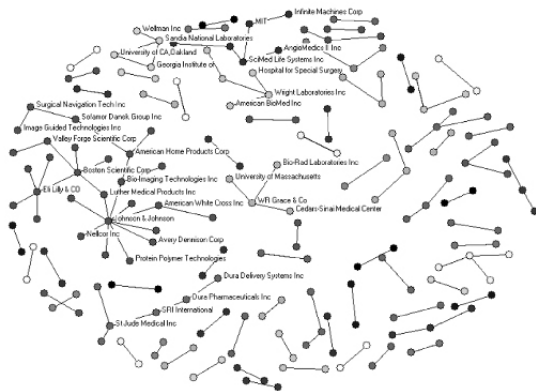
Structure of the Network



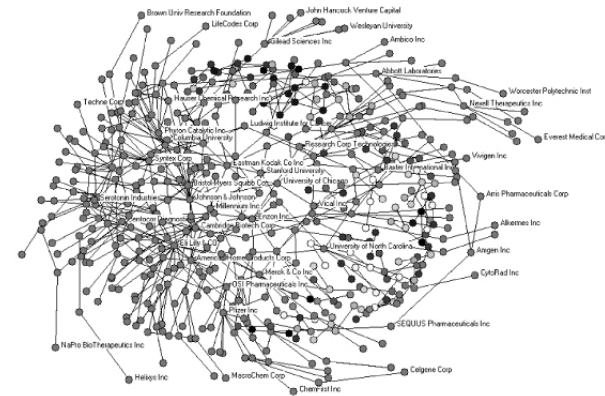
Structure of the Network



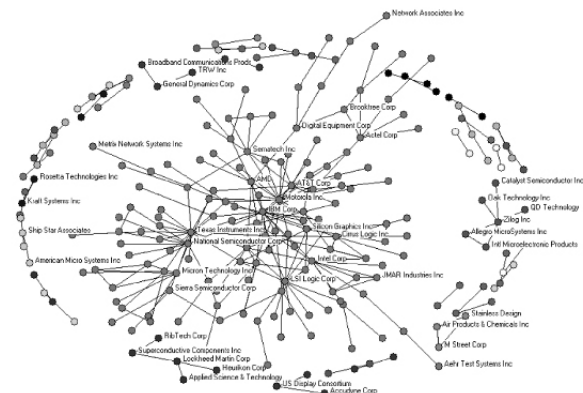
Structure of the Network



Structure of the Network



Structure of the Network



The Structure of the Network

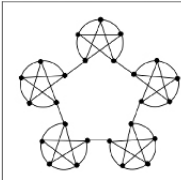
- Redundant paths (clustering) create *bandwidth* in the network.
- Efficiency of network (maximum number of unique firms reachable by short path) creates *reach* in the network.
- Apparent tradeoff between *bandwidth* and *reach*: Should firms forge alliances that form clusters or reach nonredundant firms?

“Small-World” Network Connectivity

Milgram (1967) and Watts & Strogatz (1998) showed that “small-world” properties might obviate this tradeoff: Even large, sparse, highly clustered, and decentralized networks can exhibit remarkably short path lengths.

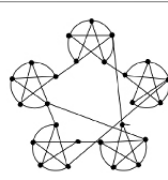
a) Connected Caveman

25 nodes, degree of 4
Average path length: 5
Clustering coefficient: .75



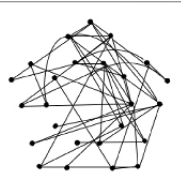
b) Connected caveman with three randomly rewired links

25 nodes, avg degree of 4
Average path length: 3.28
Clustering coefficient: .66

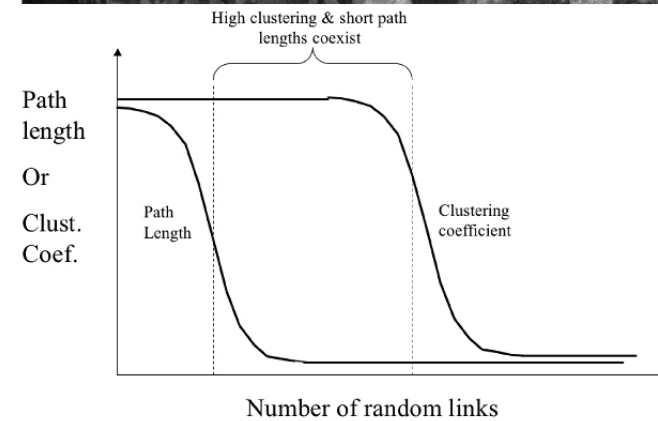


c) Random growth network

25 nodes, avg degree of 4
Average path length: 2.51
Clustering coefficient: .21



Path Length versus Clustering

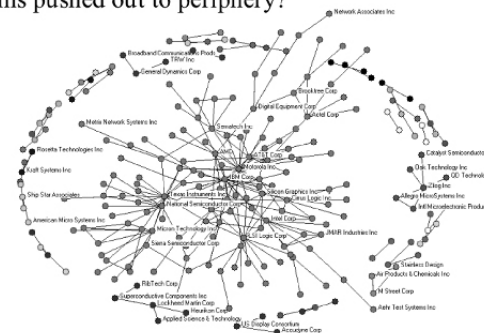


Impact of “Small-World” Properties

- First Study: Panel study of alliance networks in 11 high technology industries
 - aerospace equipment, automotive bodies and parts, chemicals, computer and office equipment, household audiovisual equipment, measuring equipment, medical equipment, petroleum refining and products, pharmaceuticals, semiconductors, telecommunication equipment
- Found:
 - Networks were very sparse and highly clustered
 - Small world properties (high clustering but short average path lengths) were significantly and positively associated with patenting output.

What about size?

Casual inspection suggests that central hubs are large firms; are small firms pushed out to periphery?

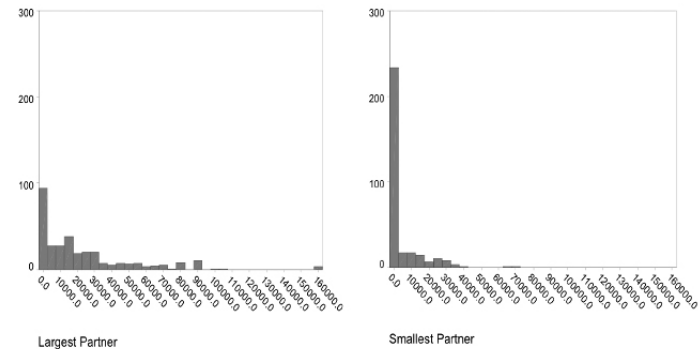


Collaboration Networks and Firm Size

- Second Study: Examined size of firms participating in R&D alliances (joint R&D, licensing, & cross-technology transfer) from 1998-2000
 - Just over a thousand unique diadic pairs; was able to obtain financial information for both partners for 312 of those pairs; size in millions SUS
- Found:

	Largest Partner	Smallest Partner	Actual Ratios	Aggregate Ratios
Mean	22,472	4,504	1223	5
Median	13536	116	18	117
Range	3 – 158,514	.03 – 68,304	1.03 – 81,020	

Distribution of Firm Sizes



Implications

- Results of the two studies suggest a) structure of the network impacts innovation, and b) there is a rich mix of large and small firms both creating and benefiting from this structure.
- Networks could be deliberately structured to improve overall rates of innovation and distribution of benefits.
 - Government agencies (e.g., EUREKA, MITI)
 - Influential firms (e.g., hubs such as IBM, GE, Dow)

Future Extensions

- Who benefits more?
 - Using a hierarchical linear model to look at the differential impact of network structure on individual firms.
- Who plays key roles?
 - Large firms appear to be hubs, but other types of organizations may play important brokerage roles (e.g., small firms, universities, standard-setting bodies, etc.).

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Small Business Debt Finance in the 21st Century *Allen N. Berger and Gregory F. Udell*

Small Business Debt Finance in the 21st Century

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*Presented at the
Conference on
Entrepreneurship in the 21st Century
Washington, DC
March 26, 2004*

The views expressed do not necessarily reflect those of the Federal Reserve Board or its staff

OUR PRESENTATION

- Overview of small business debt
- Taxonomy of lending technologies
- Major trends that may affect small business debt
- Some conclusions on the future

A BREAKDOWN OF U.S. SMALL BUSINESS FINANCE

- Debt vs. equity
- Internal vs. external
- Private vs. public
- By lender

EQUITY VS. DEBT INTERNAL VS. EXTERNAL

	<u>% of Total</u>
Equity	45.7
Principal Owner	27.5
Other Equity	<u>18.2</u>
Debt	54.3
External	48.1
Internal	<u>6.2</u>
	100.0

Source: 1998 SSBF

PRIVATE VS. PUBLIC MARKETS

- External funds for small businesses generally come from private markets, rather than the public markets that large businesses use.
- The two most important distinguishing characteristics of private markets are:
 - The role of intermediaries that invest in acquiring private information about the small business
 - The use of highly structured and complex contracts to deal with problems of asymmetric information

SMALL BUSINESS DEBT BY LENDER

	<u>% of Debt</u>
Commercial Banks	38.8
Finance Companies	8.1
Other Financial Institutions	6.3
Trade Credit	33.3
Gov/Other Loans	.7
Credit Card	.1
Business Firms	1.2
Owner Loans	8.7
Family & Friends	<u>2.8</u>
Total	100.0

Source: 1998 SSBF

A TAXONOMY OF LENDING TECHNOLOGIES

- Financial contracting must address the informational wedge
- Lenders use different technologies to address this problem
 - These technologies are comprised of a combination of screening mechanisms, contract structures, and monitoring strategies
- Some correspondence between type of lender and technology – but not perfect
- Efficiency of these technologies in addressing asymmetric information will determine the extent of a funding gap (i.e., systematic credit rationing)

LENDING TECHNOLOGIES

- Financial statement lending
- Relationship lending
- Small business credit scoring
- Asset-based lending
- Factoring
- Trade credit
- Credit insurance

LENDING TECHNOLOGIES (cont.)

- Relationship lending
 - Key characteristics
 - Borrowing terms based on relationship strength (e.g., Berger and Udell 1995, Harhoff and Korting 1998)
 - Information culled from entrepreneur, SME, and local community
 - May be best delivered by smaller banks (e.g., Stein 2002, Cole, Goldberg and White 2004, Scott 2004)
 - Local market concentration may result in either more or less relationship lending.
 - The empirical evidence is mixed (e.g., Petersen and Rajan 1995, Cetorelli and Gambera 2001, Beck, Demircuc-Kunt and Maksimovic 2004)
 - Key strengths
 - Funding access to firms without strong financials
 - Power in solving information problem
 - Soft information about borrower helps identify quality
 - Key weaknesses
 - May be vulnerable to regulatory and organizational regime shifts (e.g., credit crunches and bank M&As)

LENDING TECHNOLOGIES (cont.)

- Financial statement lending
 - Key characteristics
 - Requires audited financial statements
 - Based on strong financial ratios
 - Likely delivered by larger banks (e.g., Berger and Udell 1996, Berger, Miller, Petersen, Rajan, and Stein 2002)
 - Key strengths
 - Inexpensive technology
 - Power in solving information problem
 - Adverse selection and moral hazard problems mitigated by SME quality
 - Key weaknesses
 - Requires strong accounting standards & infrastructure
 - Requires audited financial statements
 - Limited to only high quality borrowers

LENDING TECHNOLOGIES (cont.)

- Small business credit scoring
 - Key characteristics
 - Multivariate statistical models
 - Heavily weighted toward entrepreneur's personal rating
 - Adopted by large banks over last 10 years (e.g., Akhavein, Frame and White 2005)
 - Key strengths
 - Very inexpensive and quick
 - Power in solving information problem
 - Predictive power of models for very small firms
 - Key weaknesses
 - Requires strong information infrastructure (credit registry or credit bureau)
 - Limited to micro business loans (up to \$250,000, many banks us it for only up to \$100,000)

LENDING TECHNOLOGIES (cont.)

- **Asset-based lending**
 - **Key characteristics**
 - Collateralized by A/R, inventory and sometimes equipment
 - Advances continuously tied to collateral liquidation value
 - Liquidation value dynamically updated on daily basis
 - Delivered by commercial finance companies and larger banks
 - **Key strengths**
 - Financing high-risk SMEs (Carey, Post and Sharpe 1998)
 - Power in solving information problem
 - Intensive monitoring may insure optimal borrower closure (Udell 2004)
 - **Key weaknesses**
 - Borrower must have tangible assets
 - Requires strong commercial law with well-defined security interests (e.g., US UCC-9, UNCITRAL)
 - Efficient bankruptcy system that preserves absolute priority
 - Limited to U.S., Canada and U.K.

LENDING TECHNOLOGIES (cont.)

- **Factoring**
 - **Key characteristics**
 - Purchase of receivables
 - **Key strengths (Bakker, Klapper and Udell 2004)**
 - Financing for high risk, informationally opaque SMEs
 - Outsources credit and collection functions
 - Solves problem of weak bankruptcy/commercial law environments
 - Takes collateral out of borrower's bankruptcy estate
 - Successful in developing economies (e.g., Thailand, Poland)
 - Power in solving information problem
 - Underwriting not dependent on "borrower" quality
 - **Key weaknesses**
 - No funding for inventory and equipment
 - Requires information infrastructure to evaluate A/R
 - Proprietary database and/or Information exchange

LENDING TECHNOLOGIES (cont.)

- **Trade credit**
 - **Key characteristics**
 - Extended by suppliers
 - **Key strength**
 - Ubiquitous
 - Power in solving information problem (and other problems)
 - May have information advantage from observing supply flow, liquidating inventory or other virtues (e.g. Emery 1984, Biais and Gollier 1997, Mian and Smith 1992, Petersen and Rajan 1997)
 - **Key weaknesses**
 - Not sufficient by itself
 - Very expensive if discount not taken
 - Existence of factoring and credit insurance may show limits to trade credit

LENDING TECHNOLOGIES (cont.)

- **Credit insurance**
 - **Key characteristics**
 - Indemnifies A/R
 - Purchased by other lenders and factors
 - Often provided by institutions that also provide factoring
 - Not really a "lending technology" per se
 - **Key strengths**
 - Data bases on payment history
 - Facilitates cross-border financing
 - Power in solving information problem
 - Similar to factoring – based on "borrower" quality
 - **Key weaknesses**
 - Requires extensive information data base (either proprietary or information exchange)

MAJOR TRENDS THAT MAY AFFECT THE FUTURE

- **Three key trends**
 - Technological progress
 - Regulatory change
 - Consolidation of the financial services industry
 - Consolidation derives primarily from technological progress and regulatory change
- **Potential impacts on credit availability or funding gaps.**

TRENDS - TECHNOLOGY

- **Innovations in information processing, telecommunications, and related technologies – known collectively as “Information Technology” or “IT”**
 - Financial Institutions is the most IT-intensive U.S. industry as measured by the ratio of computer equipment and software to value added (Triplett and Bosworth 2002)
- **Financial technologies that employ economic and statistical models to create and value new securities, estimate return distributions, and make portfolio decisions based on financial data.**
 - These often depend heavily on the use of IT to collect, process, and disseminate the data, as well as on the models to evaluate the data.

TRENDS – TECHNOLOGY (cont.)

- **Impact of technological progress on small business lending**
 - Possible shift in continuum of which borrowers with different degrees of information problems use public versus private debt markets
 - As information problems become easier to overcome, technology allows more borrowers to use public markets either directly or indirectly through securitization.
 - Borrowers that were previously “unbankable” because of information problems become “bankable” and can receive credit in private markets from intermediaries.
 - Shifts of borrowers from softer-information lending technologies (e.g., relationship lending) to harder-information lending technologies (e.g., small business credit scoring).

TRENDS – TECHNOLOGY (cont.)

- Evidence of these shifts.
- The data support the movement of debt from private to public markets.
 - Over 1984-2001, U.S. bank assets grew by 3.0% annually, but all major public markets grew at double-digit rates (e.g., corporate debt 11.3%, asset-backed securities 13.7%) (Berger 2003).
- The data also support shifts within private debt markets.
 - Lending distances for small business loans has also been increasing over time, with more lending by out-of-market banks, consistent with shifts from softer-information based to harder-information based technologies
 - However, the data are mixed as to how much distance has increased (e.g., Degryse and Ongena 2002, Petersen and Rajan 2002, Hannan 2003).

TRENDS – TECHNOLOGY (cont.)

- Impact on selected individual lending technologies
 - *Sine non qua* for small business credit scoring
 - Virtually did not exist a decade ago, and now used by most, if not all, large banking organizations
 - Appears to increase the supply of small business credit by the institutions that use the technology (Frame, Srinivasan, and Woolsey 2001)
 - The loans issued by scoring banks have higher interest rates and worse credit ratings than loans issued by non-scoring banks, suggesting a net increase in lending to previously “unbankable” borrowers (Berger, Frame, and Miller, forthcoming)

TRENDS – TECHNOLOGY (cont.)

- Some impact on the other hard-information based technologies
 - Financial statement lending and other technologies have their data processed more quickly and cheaply
 - Internet exchange of data is also faster and cheaper
 - credit insurance, factoring and asset-based lending with daily exchange of data on collateral positions
- Probably little impact on relationship lending
 - Loan officers’ personal judgment about entrepreneurs (i.e., soft information) not affected much by IT or financial technologies
 - However, there may be less relationship lending over time as harder-information technologies become more efficient and substitute for relationship lending.

TRENDS – TECHNOLOGY (cont.)

- Possible future consequence of technological progress
- Small business credit scoring may aid in the development of secondary markets for pools of small business debt
 - Similar to the way in which consumer credit scoring helped in the development of secondary markets for consumer debt
- Securitization of small business loans in the U.S. has been predicted for years, but has not really occurred in the market.
 - Lack of private-sector development perhaps because of asymmetric information problems between buyers and sellers of loans
 - An SBA-sponsored study cites 1) abundant liquidity for banks in the 1990s, and 2) lack of standardized underwriting practices (Temkin and Kormendi 2003)
 - The lack of standardization is being reduced due to small business credit scoring and consolidation of the industry
 - Small business credit scoring is improving and has now been actively used through almost a complete business cycle, and so maybe...

TRENDS – REGULATION

- Regulatory changes can have important effects on the availability of credit to small businesses.
 - For example, the “credit crunch” for small businesses in the early 1990s was linked by many to tougher bank capital standards and supervision
- We discuss here two potential regulatory changes that may have important effects in the future.
 - Basel II Capital Accord
 - Government intervention in the SME market

TRENDS – REGULATION (cont.)

- Basel II, as currently proposed, would give lower capital requirements for SME loans to the very largest U.S. banking organizations (perhaps the top 10 to 20 organizations).
 - This could lower the marginal costs for small business lending and encourage these large banks to compete harder for these credits.
 - It is not possible to accurately estimate the marginal cost effects, but one study obtains a rough estimate of an upper bound for the average large bank of about 16 basis points (Berger 2004).
 - The reduction in cost would generally be greater for safer credits, and lesser (or even reversed) for riskier credits.

TRENDS – REGULATION (cont.)

- Basel II: Three potential future consequences
 1. An increase in SME lending
 - Seems unlikely to be substantial, unless a secondary market develops in which these banks could buy up lots of credits
 2. Competitive effects on other banks
 - Unlikely to be much for community banks that specialize in relationship lending, but could be significant for other large banks that make similar types of credits (Berger 2004)
 3. May help encourage securitization of credit scored loans
 - This could be a substantial incentive to create this market because the capital benefits are concentrated in a few banks that could buy the credits from others

TRENDS – REGULATION (cont.)

- Government agencies may play a more direct role in the intermediation process
 - In most countries, the government owns banks and makes loans to the “underserved” although the evidence suggests that they generally do it poorly (e.g., La Porta, Lopez-de-Silanes, and Shleifer 2002)
 - In the U.S., government agencies participate in various ways, including the SBA 7(a) loan guarantees

TRENDS – REGULATION (cont.)

- In the future, government participation may help in the development of secondary markets for small business credits
 - The SBA already plays a role
 - About half of the guaranteed portion of SBA 7(a) loans are currently securitized (Temkin and Kormendi 2003)
 - In 2003, a provision in a Senate bill would give the SBA permission to create a pilot program in which it would guarantee a portion of the return on securitized pools of non-SBA-guaranteed small business loans (Reosti 2003)
 - If such a provision were to pass, it might help jump-start a secondary market for small business credits
 - It might also have significant adverse social consequences if it results in large amounts of negative net present value lending
 - Government direct involvement in secondary markets does occur in other nations.
 - The Bank of Japan has a program to purchase SME-related asset-backed securities to circumvent a perceived funding gap, and their secondary market is growing rapidly (Hirata and Shimizu 2004).

TRENDS – CONSOLIDATION

- Continuing consolidation of the banking industry is reducing the number of community banks (assets \leq \$1 billion).
 - 1980: 14,434 banks, with 33.4% of assets in community banks
 - 2001: 7,631 banks, with 16.0% of assets in community banks
 - 2020: ???
- Raises questions about availability of small business credit, since large banks allocate less of their portfolios to small business loans, and appear to have difficulty making relationship loans (DeYoung, Hunter and Udell 2004)
 - International evidence suggests that a healthy community banking sector (high market share, efficient) may be critical to GDP growth (Berger, Hasan and Klapper 2004).

CONSOLIDATION (cont.)

- Recent research literature suggests that there may be less to worry about than the numbers may suggest
 1. While large banks involved in mergers may reduce small business lending, reaction of other banks to pick up their small business lending appears to offset this (e.g., Berger, Saunders, Scalise and Udell 1998)
 2. In response to mergers, there is also entry of new banks that tend to specialize in small business lending (Berger, Bonime, Goldberg, and White 2004).
 3. A significant segment of the current community banking sector is quite profitable (e.g., Carter, McNulty and Verbrugge 2004)
- Overall, the research on community banks and relationship lending suggest that neither are going away in the future

CONSOLIDATION (cont.)

- Caveats regarding potential future consolidation-related problems for the supply of small business credit
- As noted earlier, higher local market concentration may result in either more or less relationship lending
 - Thus far, the bank consolidation has had very little effect on local concentration, but this could change in the future.
- If there is a future “credit crunch” as in the early 1990s, the consolidation of commercial finance companies and other non-bank sources of small business credit into the bank holding companies may leave fewer independent “lenders of last resort”

CONCLUSIONS

- In the future, technological progress, regulatory change, and financial services consolidation may have significant effects on
 - How small businesses are financed, and
 - Small business credit availability or funding gaps
- The evidence suggests that both have already started to happen
 - Shifts from private to public markets
 - Credit becoming available for previously “unbankable”
 - Shifts from softer- to harder-information-based lending technologies
 - Credit issued from greater distances

CONCLUSIONS (cont.)

- **Technological progress, regulatory change, and financial services consolidation may also affect small business funding in new ways**
- **For example, a significant secondary market for small business debt may be created by:**
 - Improvements in small business credit scoring and consolidation may help with standardization
 - Basel II may help encourage securitization of relatively safe small business credits by concentrating the benefits of holding them
 - Government direct involvement in secondary markets

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13

Small Business Equity Finance in the 21st Century

Josh Lerner

Small Business Equity Finance in the 21st Century



Josh Lerner
Harvard Business School



1. How we got to where we are today

- ◆ Key points:
 - ♣ Private equity is a young industry.
 - ♣ It's inception wasn't an accident!.
 - ♣ Instability and flux has been the rule, not the exception!



Private equity food chain, 1945





Pioneering funds, 1946-77

- ◆ Worries about dangers of post-War stagnation in U.S.
- ◆ Limitations of “angels.”
- ◆ Difficulty in raising capital:
 - ♣ Institutional concerns.
 - ♣ Publicly traded structure.
 - ♣ Government efforts.
- ◆ Almost entirely U.S.-based.



General Doriot’s insight

- ◆ Young high-tech firms pose many challenges:
 - ♣ Uncertainty.
 - ♣ Asymmetric information.
 - ♣ The nature of the firm’s assets.
 - ♣ Market conditions.
- ◆ Traditions, regulations made difficult for traditional financiers to address.



General Doriot’s insight (2)

- ◆ A new organization could address with three key mechanisms:
 - ♣ Sorting: picking the right entrepreneurs.
 - ♣ Controlling: limiting “agency” problems, through a mixture of incentives and monitoring.
 - ♣ Certifying: developing a tradition of quality and fair dealings.



The second father: William Draper

- ◆ Early public funds encountered tremendous difficulties:
 - ♣ Variability in share price.
 - ♣ Inability to raise follow-on capital.
 - ♣ Difficulty in offering incentive compensation.
- ◆ Draper, Gaither & Anderson developed first private equity limited partnership in 1958.

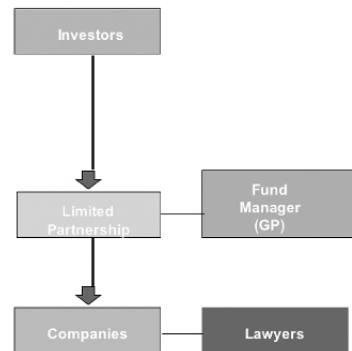


General Draper's insight

- ◆ Three critical features of private equity partnerships:
 - ♣ Partnership structure: funds are committed for 10-year period, with only limited extensions.
 - ♣ Profit-sharing: clearly defined rules regarding compensation.
 - ♣ Cultivating reputation.

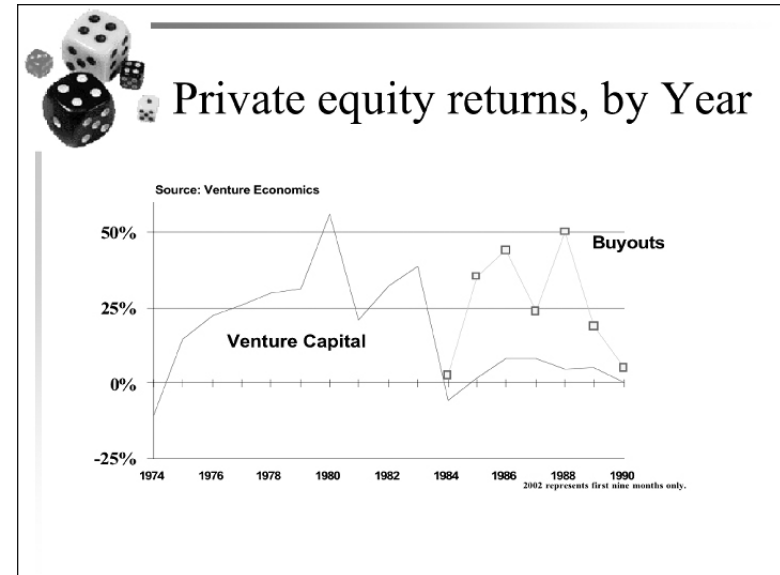
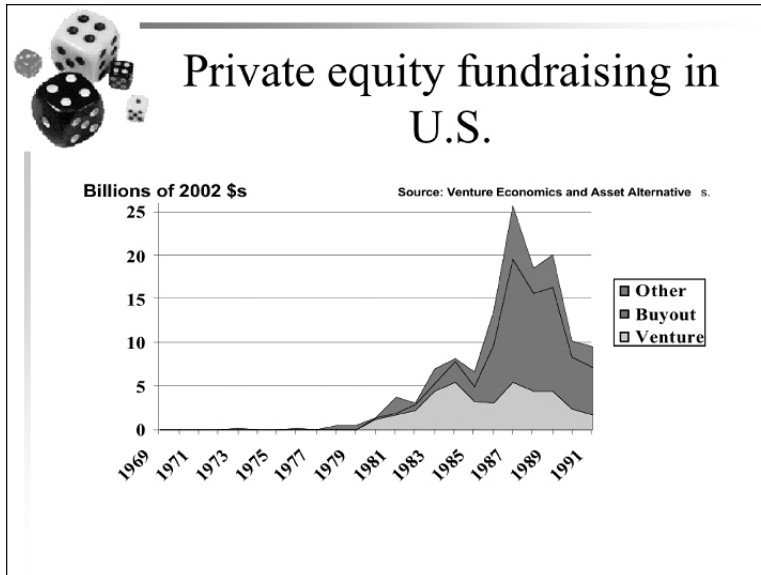


Private equity food chain, 1975

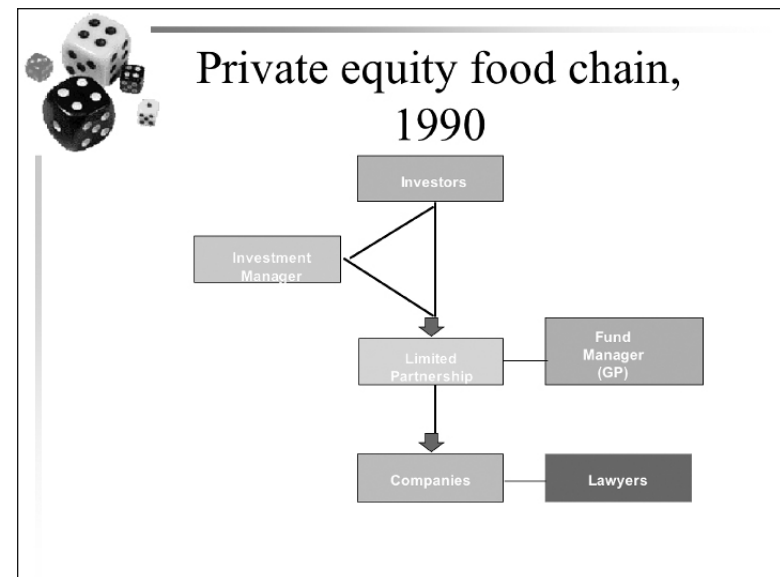


Hyper-growth, 1978-1987

- ◆ Labor Department shift on “prudent man” rule.
- ◆ Big influx of pension funds.
- ◆ Decrease in capital gains tax.
- ◆ Consequences:
 - ♣ 3-fold increase in number of funds.
 - ♣ Many new participants.
 - ♣ Rapid growth in existing funds.
 - ♣ First growth in Asian, European funds.



- ## Retrenchment and revitalization, 1988-1996
- ◆ Decline in fundraising in response to low returns.
 - ◆ Exit by many less successful groups.
 - ◆ Then higher returns and increasing interest.
 - ◆ Growing sophistication:
 - ♣ E.g., role of investment advisors.





The private equity explosion, 1997-2000

- ◆ Tremendous growth in venture capital.
- ◆ Tremendous diversification:
 - ♣ New regions.
 - ♣ New industries.
- ◆ Lots of frothiness:
 - ♣ As in earlier booms, only more so.

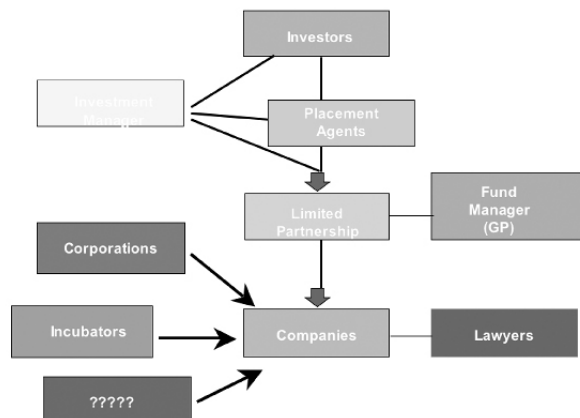


The private equity explosion (2)

- ◆ Lots of entry and competition for deals.
- ◆ Buy-outs:
 - ♣ Increased competition by large corporations for merger candidates.
 - ♥ Efforts to reinvent themselves.
- ◆ Venture capital:
 - ♣ Entry of public venture capital alternatives.
 - ♣ Entry of incubators.

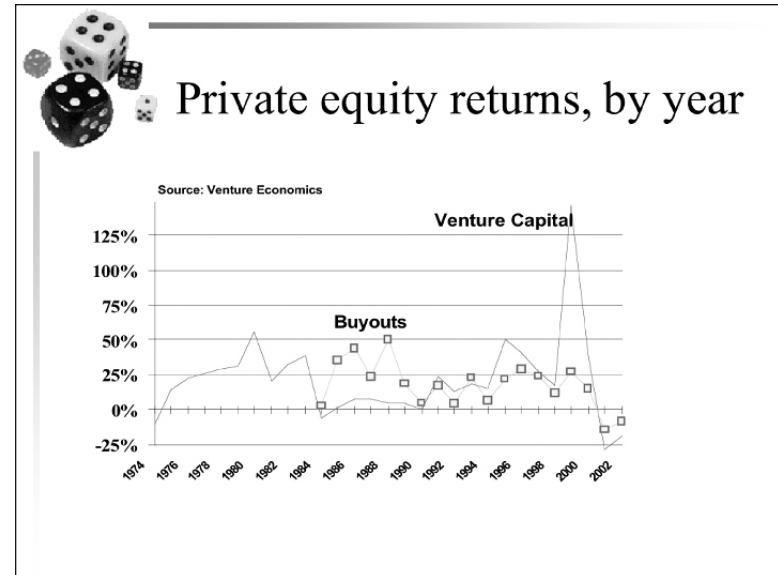
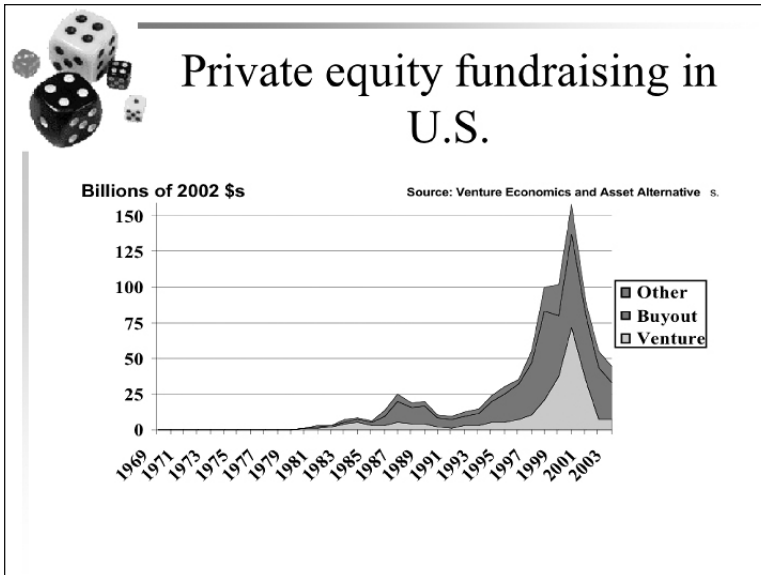


Private equity food chain, 2000



2001- on: A new retrenchment

- ◆ Numerous restructurings of portfolio firms.
- ◆ Slowdown in investment rate.
- ◆ Skittishness, resentment on part of limited partners.
 - ♣ Efforts to return capital, make concessions have only partially addressed.
- ◆ In many respects, problems more severe in Europe than U.S.!



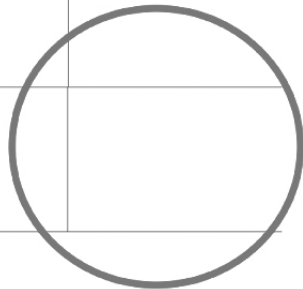
- ## 2. Private equity in the 21st century
- ◆ Enormous fluctuations in private equity pool size.
 - ◆ Boom and bust cycle world-wide.
 - ♣ Increased fundraising.
 - ♣ High valuations.
 - ♣ “Lowering of the bar” of standards for:
 - ♥ Taking companies public.
 - ♥ Financing and refinancing firms.
 - ♣ Sudden change in investment climate.

- ## Many reasons to see cyclicity as fundamental
- ◆ Fundamental features:
 - ♣ Difficulty of assessing these markets.
 - ♣ Long information lags.
 - ♣ Long-term nature of funding commitments.
 - ♣ Lack of efficient secondary market in funds.
 - ◆ While innovations may reduce these problems in the future, unlikely to solve them.



A conceptual framework

Short-Run	Long-Run	Supply	Asset allocations



Positive developments

- ◆ Demand is driven by many things:
 - ♣ Rate of technological innovation.
 - ♣ Need for corporate restructuring.
 - ♣ Willingness to work in these environments.
 - ♣ Competition from corporate buyers.
- ◆ In many cases, positive changes.



Theme 2: A changing structure

- ◆ Traditionally private equity was informal “craft” business.
- ◆ Many changes today are pushing in this direction
 - ♣ Shifting mixture of investors.
 - ♣ Growth of intermediation.
 - ♣ Need for international business models.



A precursor?

- ◆ Investment banking underwent a profound shift in the 1960s and 1970s.
- ◆ Triggered by tremendous growth in industry.
- ◆ Led to disruption of established order.
- ◆ Led to increasing differentiation of bulge bracket firms.



One possible end-game

- ◆ Emergence of truly global private equity players.
- ◆ Robust “fringe” of niche players with well-defined strategies.
- ◆ Suggests greatest problems in middle-tier groups without clear specialization.



Likely market scenario



Implications

- ◆ Established expectations are likely to be challenged.
- ◆ Emergence of global organizations are likely to exacerbate problems of funding very smallest firms.
- ◆ Understanding who you are taking money from has never been more critical!



Further Readings

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