

New Results: R&D, IP, and Universities

**Workshop on Entrepreneurship
Indicators: R&D and Technology
Copenhagen, Denmark - October 30, 2008
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“Every individual that we can inspire, that we can guide, that we can help to start a new company, is vital to the future of our economic welfare.”

— Ewing Kauffman

KAUFFMAN
The Foundation of Entrepreneurship



Entrepreneurship Research and Policy at the Kauffman Foundation



Kauffman's Data Strategy for Entrepreneurship and Innovation

- Original data collection and demonstration
- Data augmentation and matching
- Systematic improvement of data infrastructure

Newly Available (or soon to be) Data We Support

- Integrated Longitudinal Business Database (U.S. Census)
- Entrepreneurship Indicators (OECD and World Bank)
- Kauffman Firm Survey
- Kauffman Angel Investor Performance Project
- Panel Study on Entrepreneurial Dynamics II
- Science and Technology Agents of Revolution (NBER)
- Chapter 11 Bankruptcy Database (NBER)
- Stanford Intellectual Property Litigation Clearinghouse
- 2009 Duke/GT/Kauffman/NSF Innovation Survey

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Kauffman Firm Survey (KFS) Motivation

- A surprisingly small portion of people “in the process of starting a business” manage to create a business
- Potentially high performing businesses are not evenly distributed across industries
- Financing and innovation activities are an important part of business formation, but we don’t have much data
- Public-use, longitudinal data on business formation for a sample of business founders representative of an underlying population that has information on individual and business-level variables was lacking

The Approach

- Project began with the decision to use Dun & Bradstreet (D&B) data on new businesses rather than population sampling approach
- Take D&B data on “new businesses” and ensure that those that were listed as new businesses were truly new
- Could be new businesses that did not make D&B list that met screening criteria, but they are not observed

Eligibility Screening

- The business did not have a legal form before 2004
- The business did not establish an EIN number before 2004
- The respondent did not file a Schedule C on their personal income tax before 2004
- The business did not pay state unemployment insurance taxes before 2004
- The business did not pay FICA before 2004
- The business did perform at least one of the above activities for the first time in 2004

Sample Design

- Stratified random sample based on D&B start year (2004)
- Oversampling on technology status based on BLS definitions (Hadlock, Hecker and Gannon [1991])
- Three technology strata: high-tech, medium-tech, and non-tech businesses
- All high-tech businesses in frame selected
 - High tech for the survey was SIC codes 38 (chemicals and allied products), 35 (industrial machinery and equipment), 36 (electrical and electronic equipment), and 38 (instruments and related products). It is possible to create your own strata of high tech using 5 digit NAICS codes.

KFS Milestones

- Survey development began May 2004
- Large scale pilot test conducted in early 2005
- Baseline Survey conducted in 2005-2006
- First Follow-Up Survey conducted in 2006
- Second Follow-Up Survey conducted in 2007
- Third Follow-Up Survey to complete in December 2008

Survey Details

- Baseline (Calendar Year 2004)
 - 4,928 interviews completed mainly by CATI (77%), 23% completed by web
 - 43% response rate (AAPOR response rate 3)
- First Follow up (Calendar Year 2005):
 - 3,998 completed interviews: 59% by web, 41% by CATI
 - 369 identified as out of business between Baseline and First Follow-Up (7.5%)
 - 89% response rate
- Second Follow up (Calendar Year 2006):
 - 3,390 interviews: 63% by web, 37% by CATI
 - 408 identified as out of business (9%)
 - 84% response rate

We have more than 4,100 firms w/data through 2006 or that have been identified as having gone out of business in 2005 or 2006.

Detailed Data: Baseline & Over Time

- Firm characteristics

 - Industry, Legal Form, # of Owners, # of Employees (PT/FT),
Types of Customers, Location

- Detailed financial information

 - Equity & Debt Financing, Income Statement Info (Revenue,
Expenses, Profits), Balance Sheet Info (Assets, Liabilities,
Equity)

- Employees

 - Types of Benefits Offered, Task/Work Structure

- Owner characteristics and work behaviors

 - (Information on up to 10 owners)

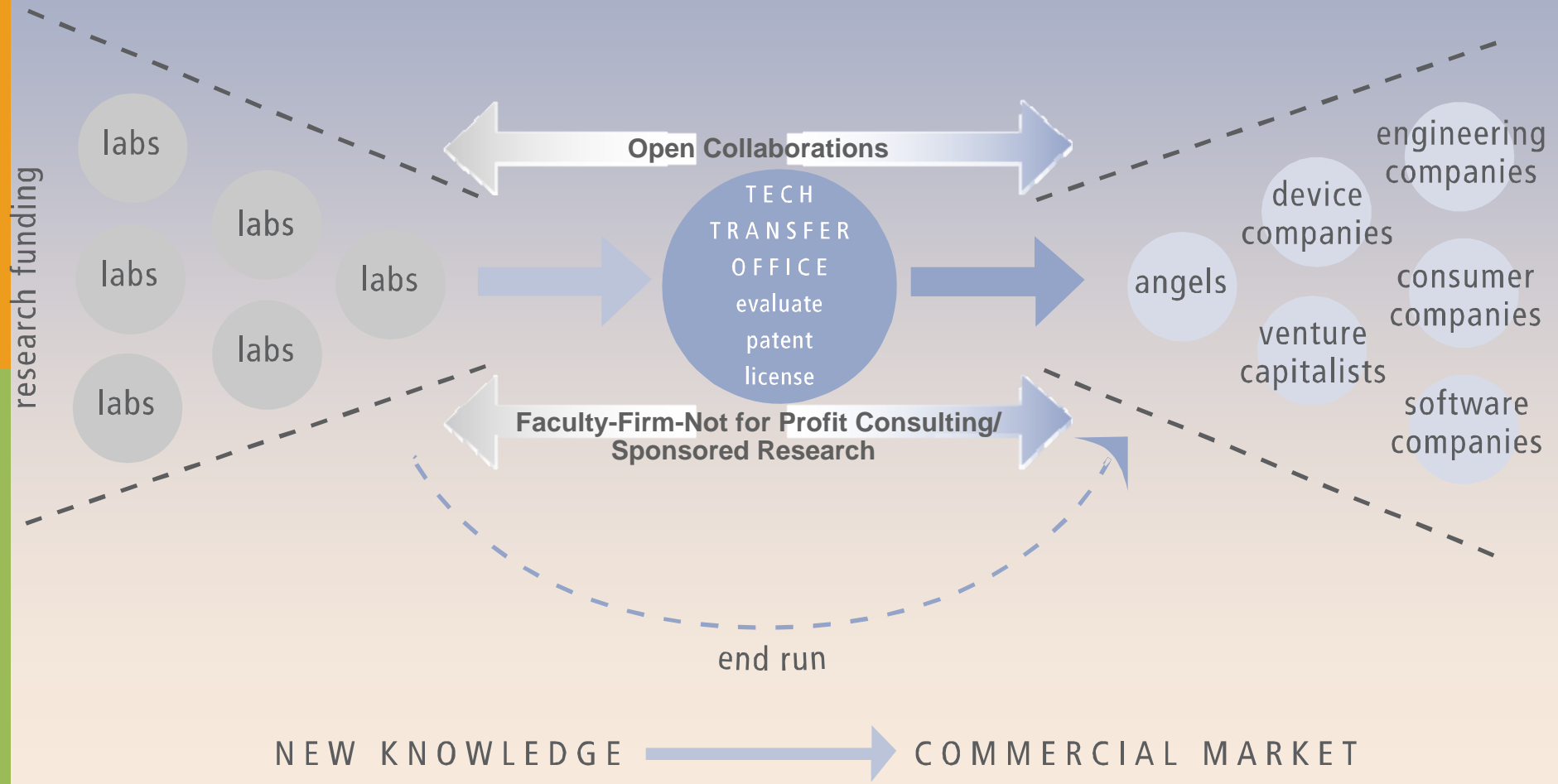
 - Education, Age, Race, Ethnicity, Gender, Citizenship,
Immigrant Status, Hours Worked, Previous Years of Work
Experience, Previous Start-up Experience (same/different
industry as this firm)

Detailed Data: Baseline & Over Time

Firm strategy and innovation

- Intellectual Property
 - Patents
 - Copyrights
 - Trademarks
- Licensing Out (& Licensing In)
- R&D Investment
- Comparative Advantage
- Product/Service Offerings

Innovation Ecosystem



New Questions for 3rd Follow Up (in field now)

- If they answer “yes” to having a comparative advantage:
 - Is the competitive advantage you have related in any way to teaming up with a college or university, a government research center, or another company?
 - Is the competitive advantage that you have related in any way to patents you own, have applied for, or licensed, or to unpatented science and technology that you own?

Would you say that each of the following is a major reason, a minor reason, or not a reason for your competitive advantage in 2007?

	Major reason	Minor reason	Not a reason	Don't know	Refused
Teaming up with a college or university					
Teaming up with a government laboratory or government_research center					
Teaming up with another company					
A patent, such as one awarded to your company, one that you applied for, or one that you licensed					
The science and technology of your products or services					

Add-on to Education Question

- Follow-up to question on highest level of education
- If a graduate degree
 - What was the primary field of study for that degree?
- If college graduate
 - What was the primary field of study for your bachelor's degree?

Kauffman Firm Survey: Firm Innovation
Business Patents, Copyrights, Trademarks, Licensing Out

	2004	2005	2006
Percent with patents	2.2	2.7	2.7
Percent with copyrights	8.8	9.7	9.6
Percent with trademarks	13.4	14.6	14.9
Percent of firms with patents that license out	8.7	10.1	15.8
Percent of firms that license in a patent	2.0	1.8	1.9

Source: Kauffman Firm Survey Microdata

Percent of Businesses with One or More Individuals Responsible for Different Functional Areas

	<u>Weighted Percentage</u>
General Administration	51.6
Financial Administration	50.9
Executive Administration	50.4
Sales or Marketing	48.1
Research and Development	40.6
Human Resources	38.1
Production/Manufacturing	31.8
Others	4.1

Source: Kauffman Firm Survey, Baseline data;

Accessing the KFS Data

- Public-use Microdata
 - Available on the web
 - Identifying features omitted
 - Can be used to get familiarity with data and some research
 - www.kauffman.org/kfs

- Data Enclave
 - Secure server available via remote access
 - More identifying variables available
 - Teams of geographically distributed researchers can access and share code, results and work in collaborative environment
 - <http://dataenclave.norc.org/>

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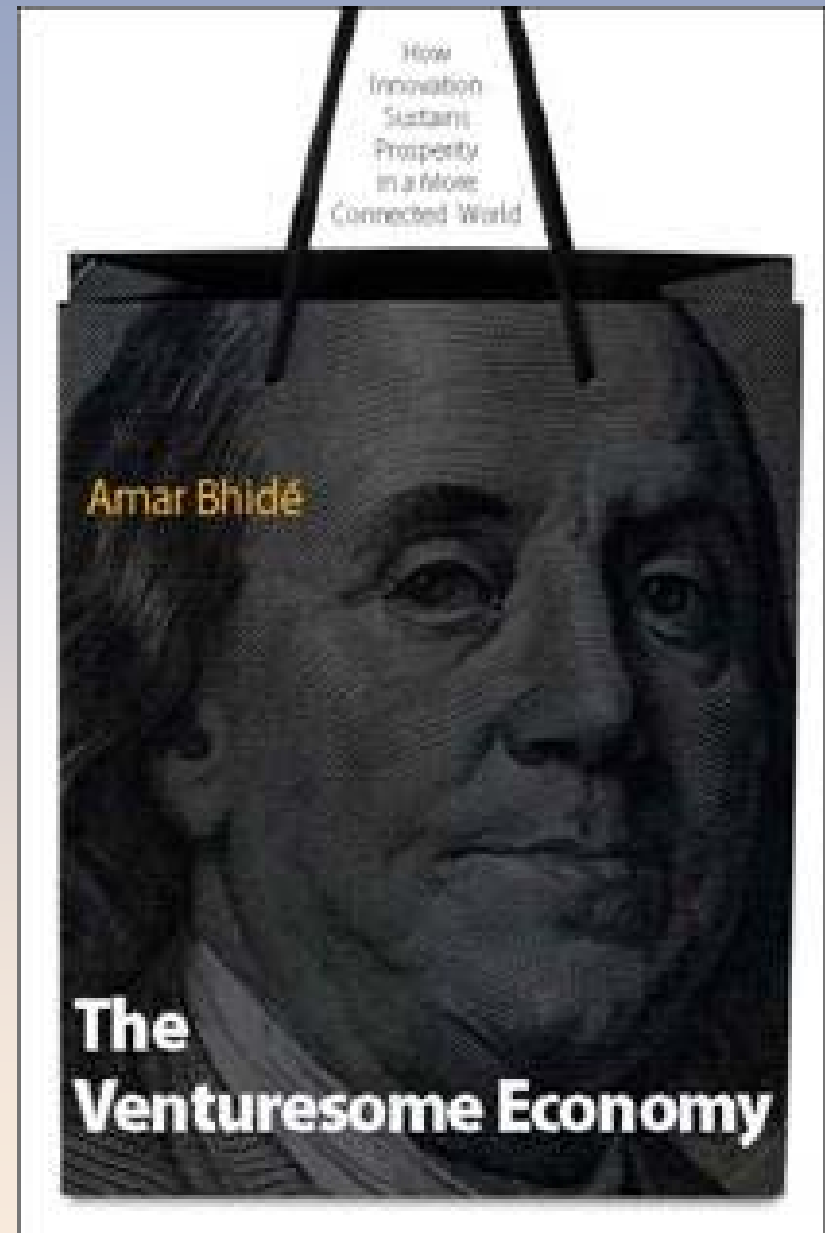
Future Opportunities

OECD Entrepreneurship Indicators Workshop – June 27, 2008

- Focus on building out indicators of Access to Finance
- Additional meetings during the week focused on new research available in entrepreneurship and innovation
- Invitation will be sent to all participants today

New Book of Interest

- The Venturesome Economy: How Innovation Sustains Prosperity in a More Connected World
- Amar Bhide, 2008
- Sign-up at back of room to have a copy mailed to you or buy online



Kauffman Data Symposiums

- *Multi-year series of events designed to important and growing body of data collected on entrepreneurship and innovation.*
- *2007 – data trade show on new/updated U.S. data*
- *2008 – proposals for U.S. data improvement*
- *2009 – lessons learned from data collection (tentative)*
- *2010 – global data trade show*

KAUFFMAN
Symposium on
Entrepreneurship
and **Innovation**
Data

November 2010 Global Data Symposium

■ *Purpose*

- *To highlight an expanding array of data available on entrepreneurship and innovation data around the world. Many led by key international organizations such as the OECD, Eurostat, and the World Bank, but these efforts represent just a small portion of the overall number of data sets used for research in the field of entrepreneurship and innovation.*

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November 2010 Global Data Symposium

■ *Purpose*

- *To decrease the impediments for researchers to learn about new data.*
- *To encourage interaction among data producers on best practices.*
- *The 2010 Data Symposium will likely take place in conjunction with the 2010 Comparative Analysis of Enterprise Data (CAED) conference.*

KAUFFMAN
Symposium on
Entrepreneurship
and **Innovation**
Data

November 2010 Global Data Symposium

■ *Call for Data Sets*

■ *We seek new and newly-updated data sets of interest to entrepreneurship and innovation researchers for inclusion in the 2010 Symposium, which will bring together producers and users of these data in what has been described by past participants as a “data trade show.”*

■ *Details on at www.kauffman.org/datasymposium*

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