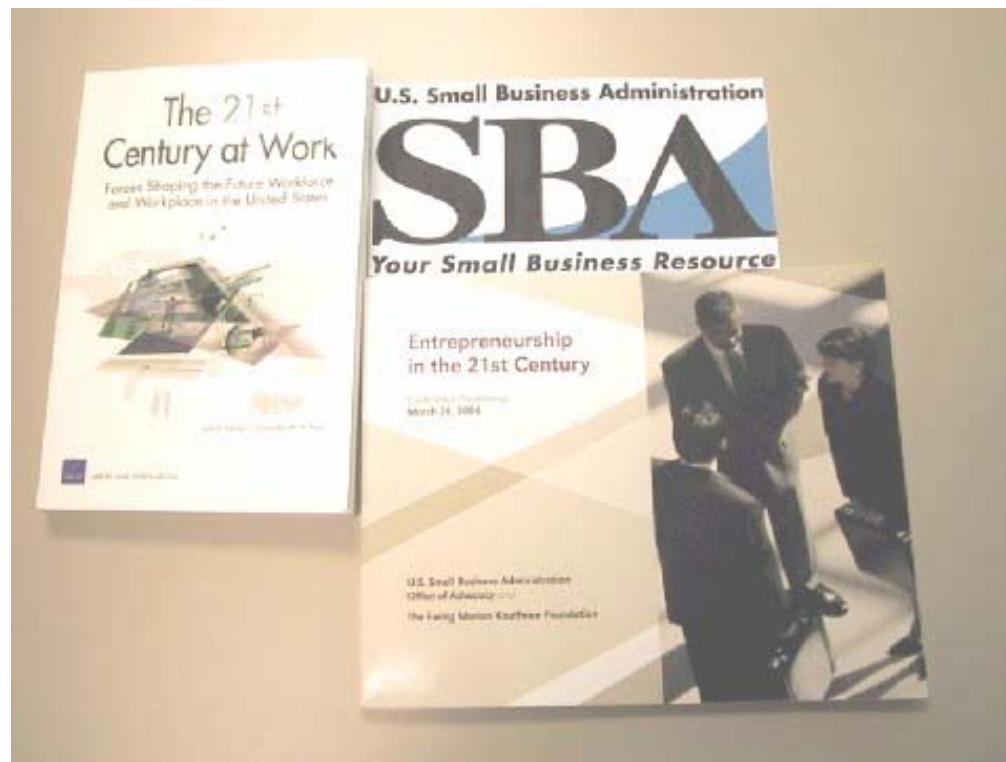


21st Century Jobs



Overview of the 21st Century Workforce & Entrepreneurship

for Region V

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Small Business Impact

- Half of U.S. non-farm income
- Half of U.S. private work force
- 60%-80% of net new jobs
- Small patent firms generate scientifically important innovations at a 13 to 14 times higher rate per employee, than large firms

Methodology of the Overview

- RAND study: “The 21st Century at Work”,
© February 2004 RAND corporation
- SBA conference: “Entrepreneurship in the 21st Century” March 26th 2004, U.S. Small Business Administration Office of Advocacy and the Ewing Marion Kauffman Foundation
- Research institutions:
 - Cleveland Federal Reserve Bank, Kansas City Federal Reserve Bank
 - CASE Western Reserve University, University of Illinois, Loyola University Chicago
 - U.S. Census Bureau, Bureau of Economic Analysis, and others

Region V



Region V Overview

- 51 Million people
- 6 states
- 525 counties
- 328,000 square miles
- 330 rural counties
- GSP of \$ 1.7 trillion
- 12 Senators, 76 members of the House of Representatives

21st century jobs

THE PAST

Region V as viewed by the economic historian

- Confluence of:
 - Industrial Revolution
 - Westward expansion
- Around 1800.

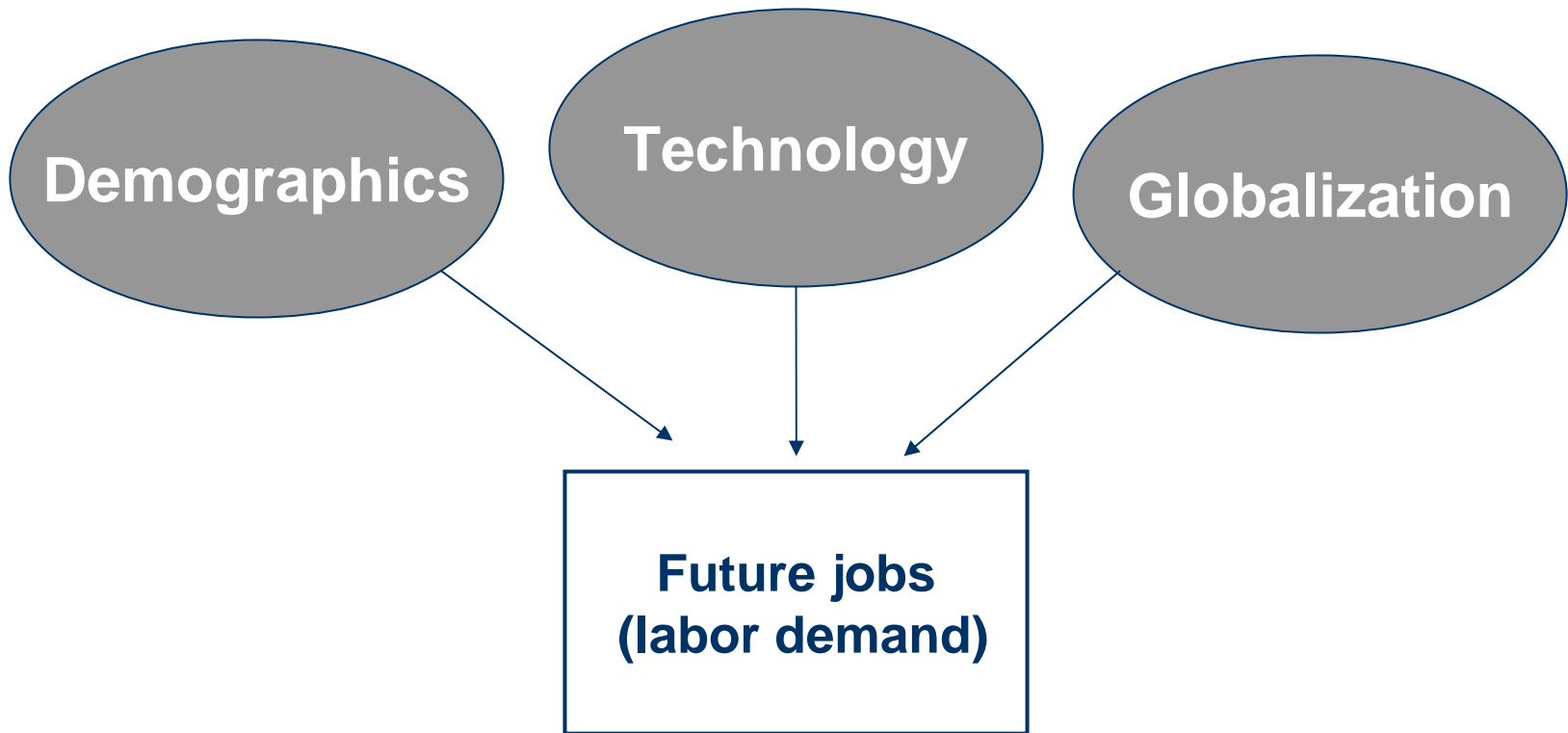
~DeKaser, Chief Economist for National City.

National Factors for Economic Growth

Alan Greenspan,
Chairman U.S. Federal Reserve Bank:

- A nation's knowledge and skill
- Ability to control natural resources ★
- Quality of a nation's legal system ★
- A nation's openness to international trade ★

Forces affecting the 21st century workforce in the U.S.



Demographic Trends

- Slower population growth
- Increasing workforce at a decreasing rate
- Importance of worker skill
- Demographics will shift the demand for Trade & Service

Future Knowledge Based Skills

- Strong non-routine cognitive ability
- Abstract reasoning
- Problem-solving
- Communication
- Collaboration

Role of Immigration

- U.S. projected to be the only developed country that experiences material growth until 2050
- 40% of U.S. population growth through immigration
- Brain-drain: highly skilled workers/researchers attracted by the U.S.

Frankfurter Allgemeine

ZEITUNG FÜR DEUTSCHLAND

Aug 20th 2004

- 1 in 7 doctorates from Germany move to the U.S.
30% stay there
- Foreign academics, top 3 nations: China – Japan – Germany (20,000 researchers)
- 3 of 4 German Nobel Prize winners work in the U.S.
- 50% of all U.S. based research results come from foreign researchers
- 50% of U.S. masters and doctors candidates are foreigners.
- 500k foreign students registered in U.S. universities

World Population Projections

	<u>2004</u>	<u>2050</u>
United States	293.6	419.9
Russia	144.1	119.1
Japan	127.6	100.6
Germany	82.6	75.1
United Kingdom	59.7	65.4
France	60.0	64.0
India	1,086.6	1,628.0
China	1,300.1	1,437.0

Technology Trends

- Rapid Advance in IT
- Other dominant new technologies:
 - Biotechnology
 - Nanotechnology
- Organizational Change driven by technology
 - Vertical disintegration
 - Decentralization – power down
 - Lifelong learning

Corporate Structure Change

- Vertical disintegration
- Outsourcing
- Intellectual capital

21st Century workers

Alvin Toffler, Futurist & Author:

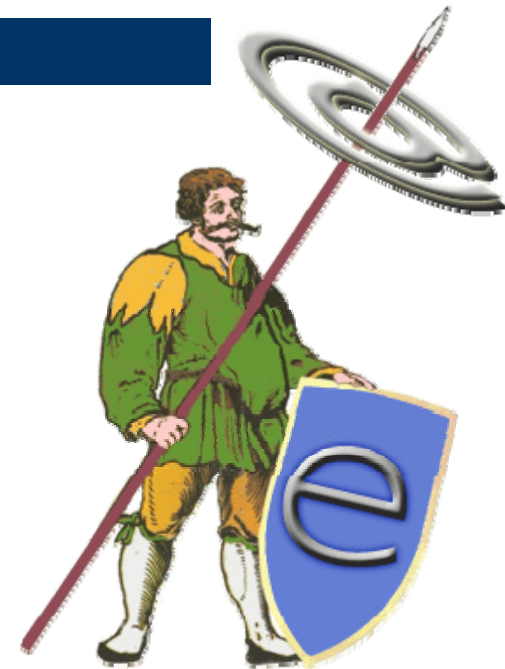
- “The illiterate of the 21st Century will not be those who cannot read or write, but those who cannot learn, unlearn and relearn.”

Globalization Trends

- Increased trade: 10% of GDP in 1960, 25% now
- Forces of Globalization
 - Declining transportation and communication cost
 - IT -> global coordination
 - World wide trade agreements
- The U.S. must find its competitive economic strength:
 - High-tech & Intellectual Property

21st Century Challenges

E-Lance



Prof. Thomas Malone, MIT

Harvard Business Review, May 1998

21st century jobs

21st Century

Consensus Projections Region V

- “Growth will continue but at a slower rate than in the United States, because...”
 - Traditional industries will continue to shrink
 - Workforce is trained for yesterdays jobs
 - High cost for labor & materials
 - Rural economy is tied to extraction Industries
 - Lower than average immigration
 - Aging population
 - Lack of focus in education system

Prescriptions for the 21st century

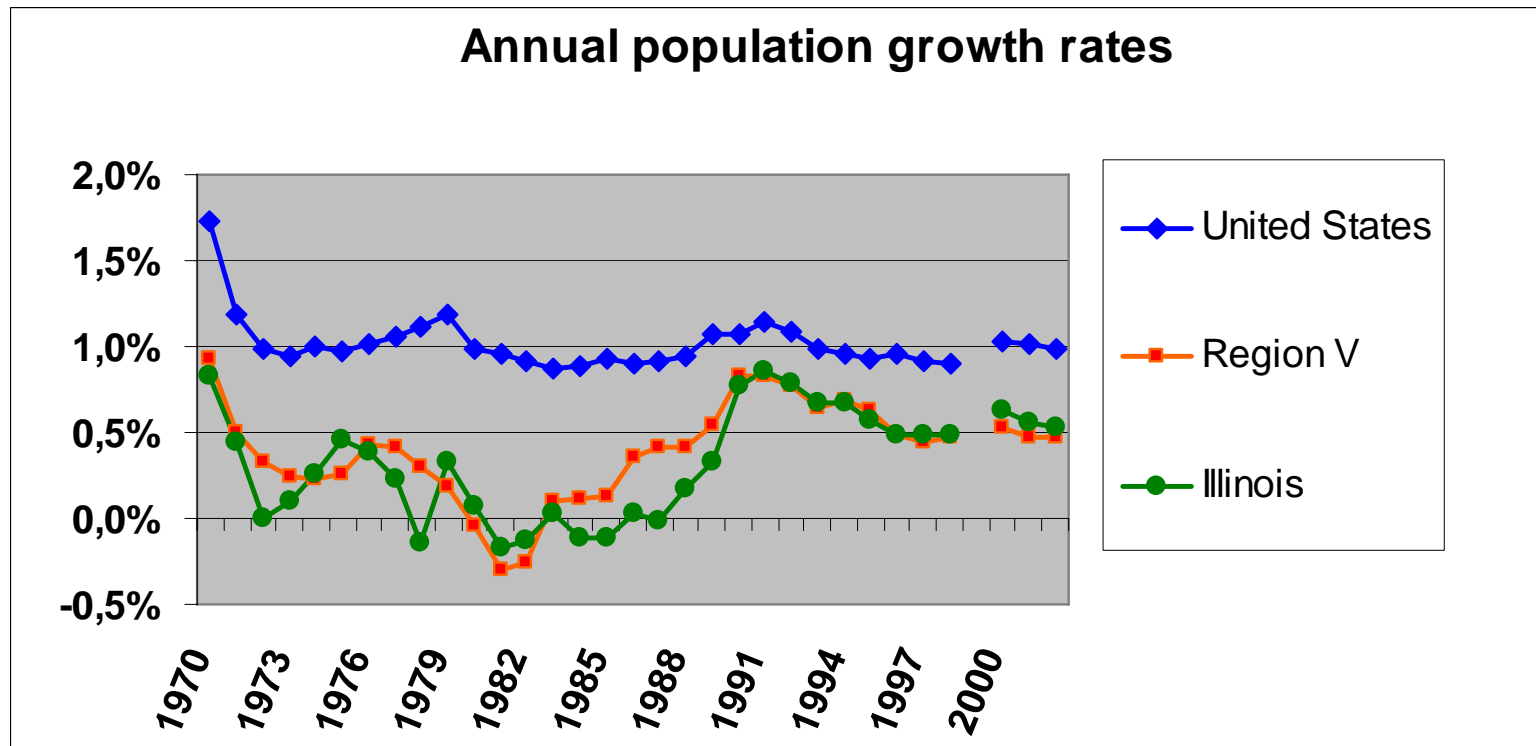
Sandra Pianalto, President & CEO Federal Reserve Bank of Cleveland - March 5, 2004 City Club Cleveland:

- Manufacturing can remain a strong base
- We must invest in our most important asset – our people
- We must accept that economic change is inevitable

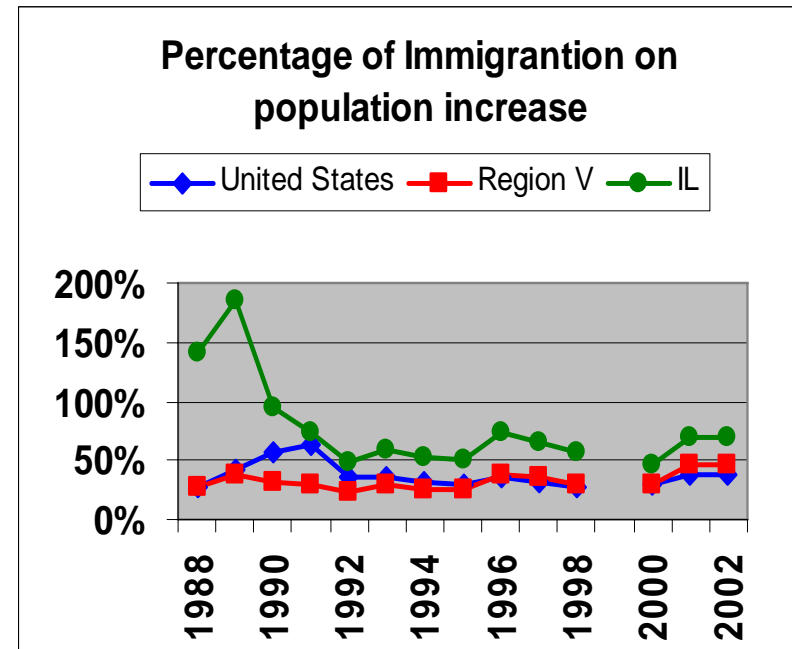
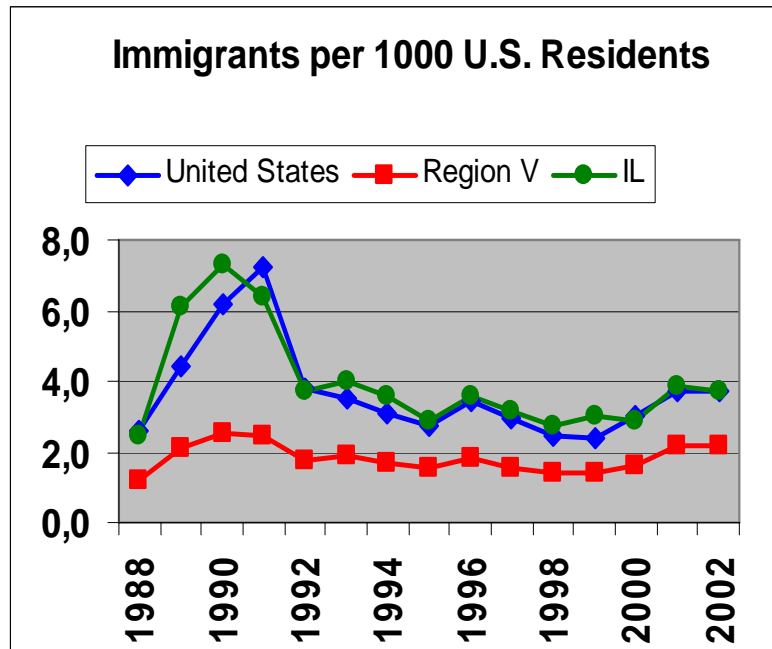
Assumptions for Region V

- Location remains a strength
- Skilled workforce
- Excellent transportation system
- Innovative states, cities and private sector
- Strong/historic industrial sector
- Diverse business portfolio
- Key idea/startup locations

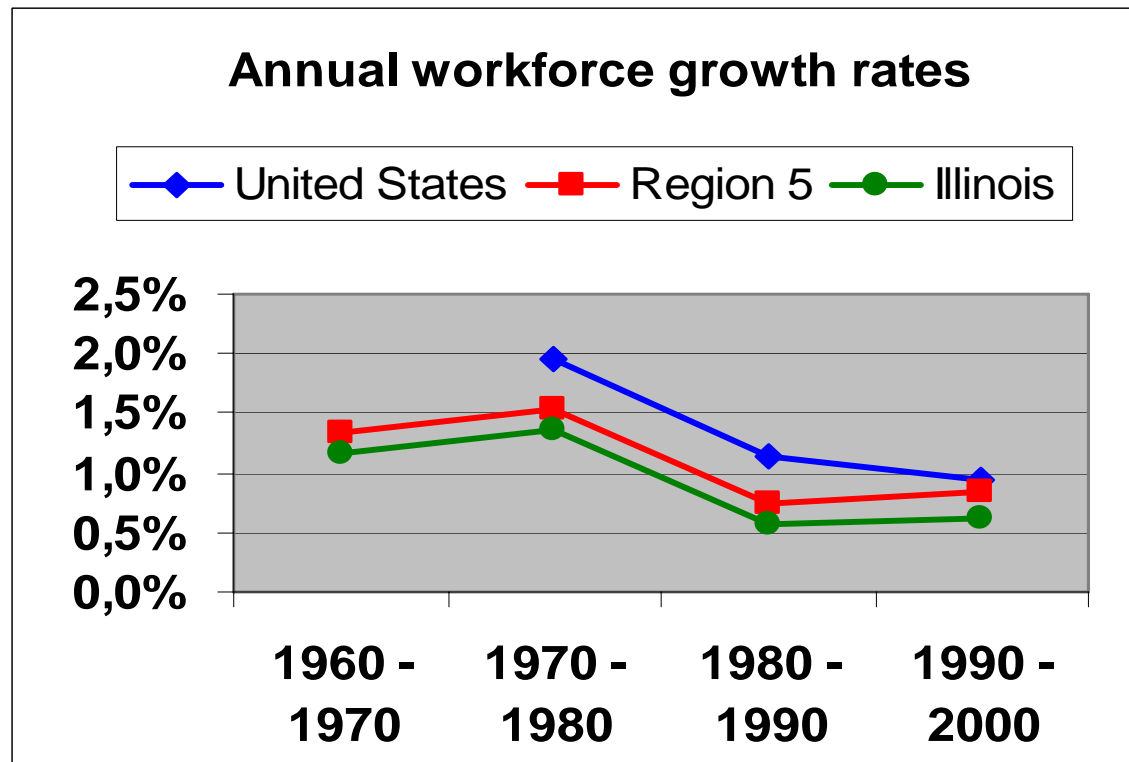
Region V - Demographic Challenges -



Dependency on Immigration



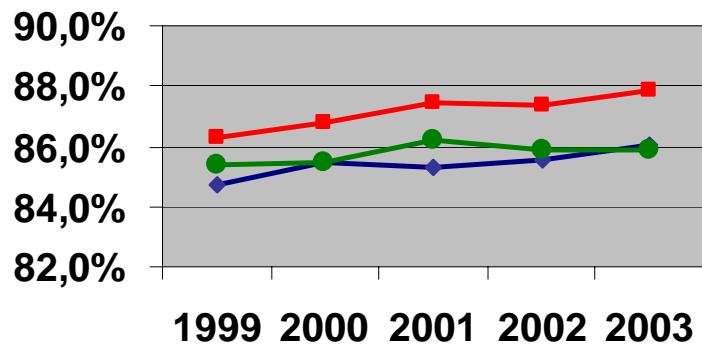
Labor Force



Region V – Educational Challenges -

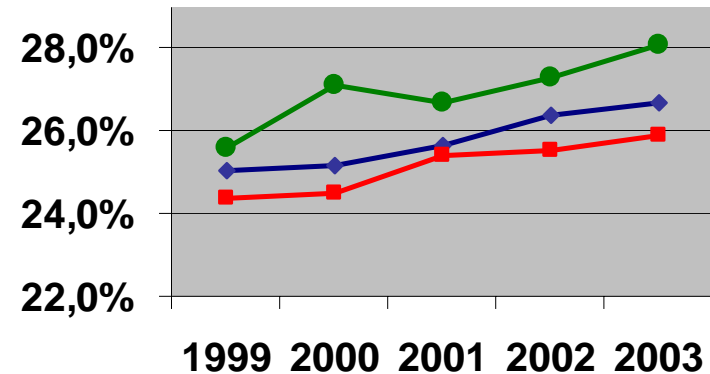
High school graduate or higher

◆ Total US
 ■ Region V
 ● Illinois



Bachelor or higher

◆ Total US
 ■ Region V
 ● Illinois



Region V - cluster formation -

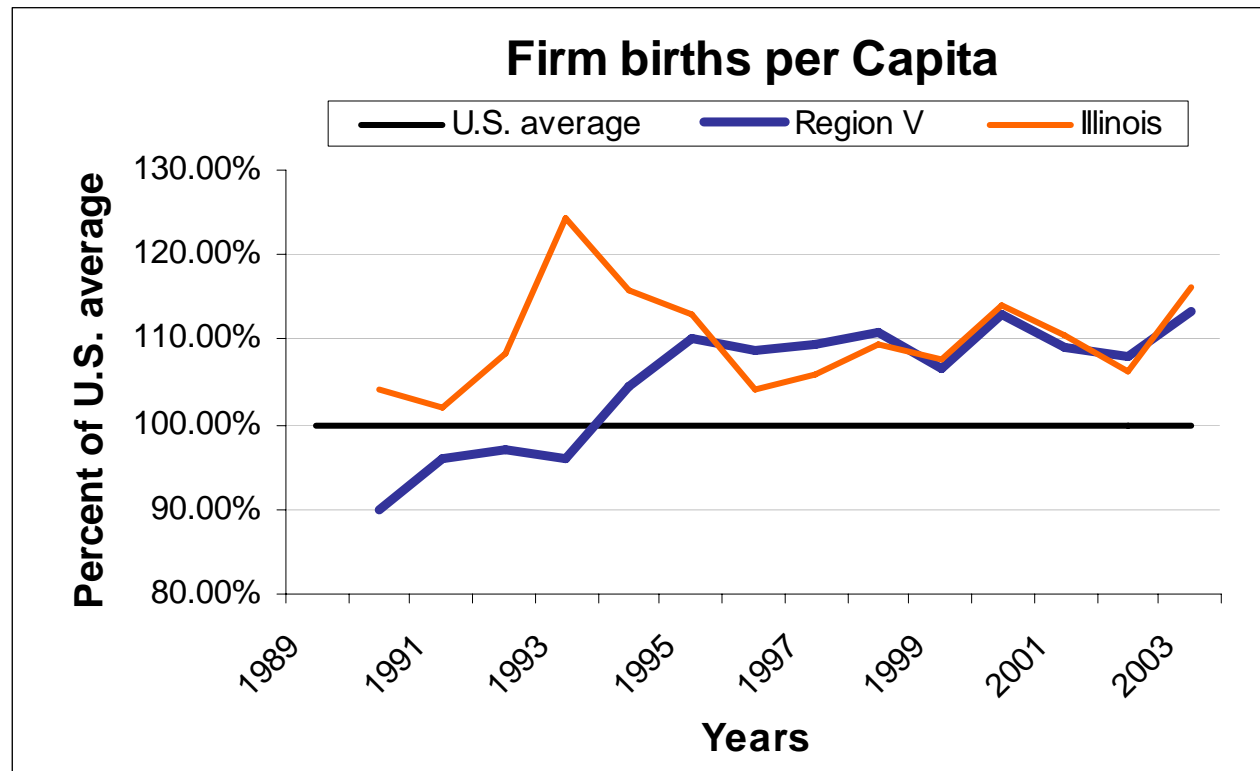
- Two types of cluster formation forces:
 - natural advantages
 - spillovers
 - physical spillovers (e.g. lower transportation costs)
 - intellectual spillovers (e.g. shared consultants, ex-employees)
- These forces can be measured by the Agglomeration Coefficient (Ellison, Glaeser 1997)

Region V - cluster formation -

Name	LQ	Agglomeration Coefficient	Employment change %
Primary metal industries	1.97	medium	-11.97%
Apparel and other textile products	0.41	low	-9.53%
Petroleum and coal products	0.91	high	-7.23%
Transportation equipment	1.86	high	-5.33%
Electrical and electronic equipment	1.10	medium	-4.70%
Industrial machinery and equipment	1.69	low	-3.95%
Printing and publishing	1.22	low	-3.91%
Electric, gas, and sanitary services	0.99	low	-1.90%
Fabricated metal products	1.83	low	-1.43%
Food and kindred products	1.06	medium	-1.41%

Special Region 5 considerations

- Entrepreneurship -



Special Region 5 considerations

- Post-Secondary Educational Institutions -

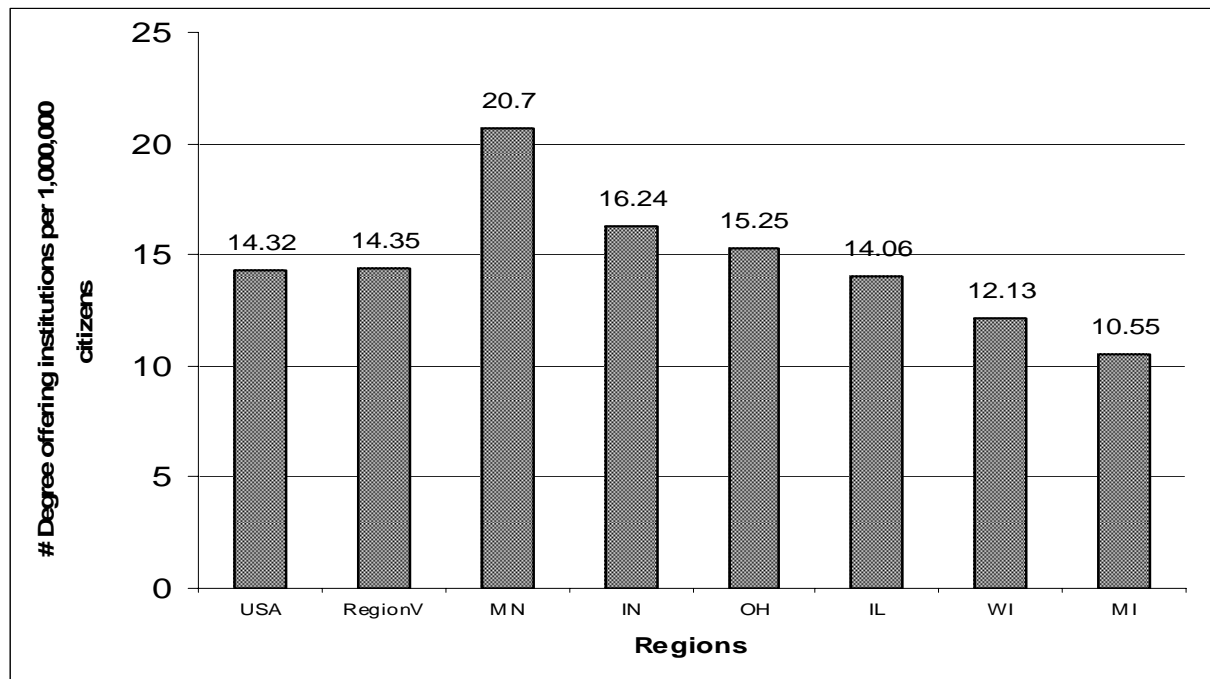
- Number of degree/certificate offering institutions:

	USA	Region V	IL
Associate Degree	2,767	485	92
Bachelor Degree	2,157	376	90
Master Degree	1,616	278	70
Doctors Degree	601	103	36
Degrees total	4,125	727	177
Certificates	2,299	365	86
Degrees/certificates total	6,424	1,092	263

Special Region 5 considerations

- Post-Secondary Educational Institutions -

- degree offering institutions per 1,000,000 citizens:



Special Region 5 considerations

- Research Universities -

- Research Universities have strong regional economic impact
- Drivers for economic impact:
 - Industrial funding
 - High gross license income received
 - High number of licenses generating income
 - High number of exclusive licenses
 - Strong research funding related to licenses
 - Many licenses executed with equity
 - Many startups formed
 - High number of full time employees in Technology Transfer Office
 - Good general university quality

Special Region 5 considerations

- Research Universities -

Top 10 Research Universities ranked by regional economic impact:

State	University	total rank
Illinois	University of Illinois, Chicago, Urbana Champaign	1
Minnesota	University of Minnesota	1
Michigan	University of Michigan	3
Wisconsin	University of Wisconsin, Madison	4
Illinois	Northwestern University	5
Illinois	University of Chicago	6
Ohio	Cleveland Clinic Foundation	6
Ohio	Ohio State University	8
Indiana	Indiana University	9
Michigan	Michigan State University	10

Long-term job projections

- industries with highest number of job gains in Illinois:

Title	2000	2010	change	change %
Business services	484,342	728,992	244,650	50.51%
Health services	500,741	593,867	93,126	18.60%
Educational services	501,980	567,586	65,606	13.07%
Eating and drinking places	353,798	412,869	59,071	16.70%
Engineering and management services	184,220	238,892	54,672	29.68%
Social services	118,397	148,447	30,050	25.38%
Special trade contractors	186,221	211,997	25,776	13.84%
Miscellaneous retail	141,734	161,802	20,068	14.16%
Motor freight transportation and warehousing	118,993	136,706	17,713	14.89%
Automotive repair, services, and parking	60,638	77,702	17,064	28.14%

Projected Economic Development Strengths of Region V

- Historic location
- Strong industrial base
 - Agglomeration Theory
 - Cluster
- Growing networks
- Excellent base of research universities
- Above average new firm-births
- An awakening to the challenge

Questions?

