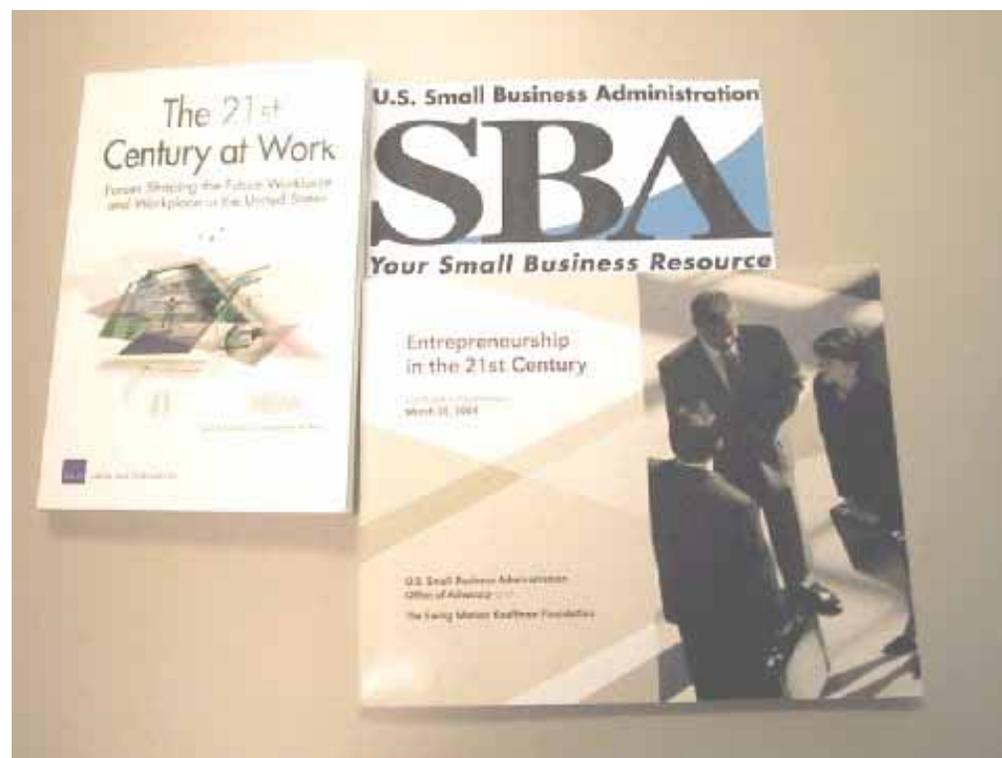


21st Century Jobs





Overview of the 21st Century Workforce & Entrepreneurship

for Region V



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

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The Past

Region V as viewed by the economic historian

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

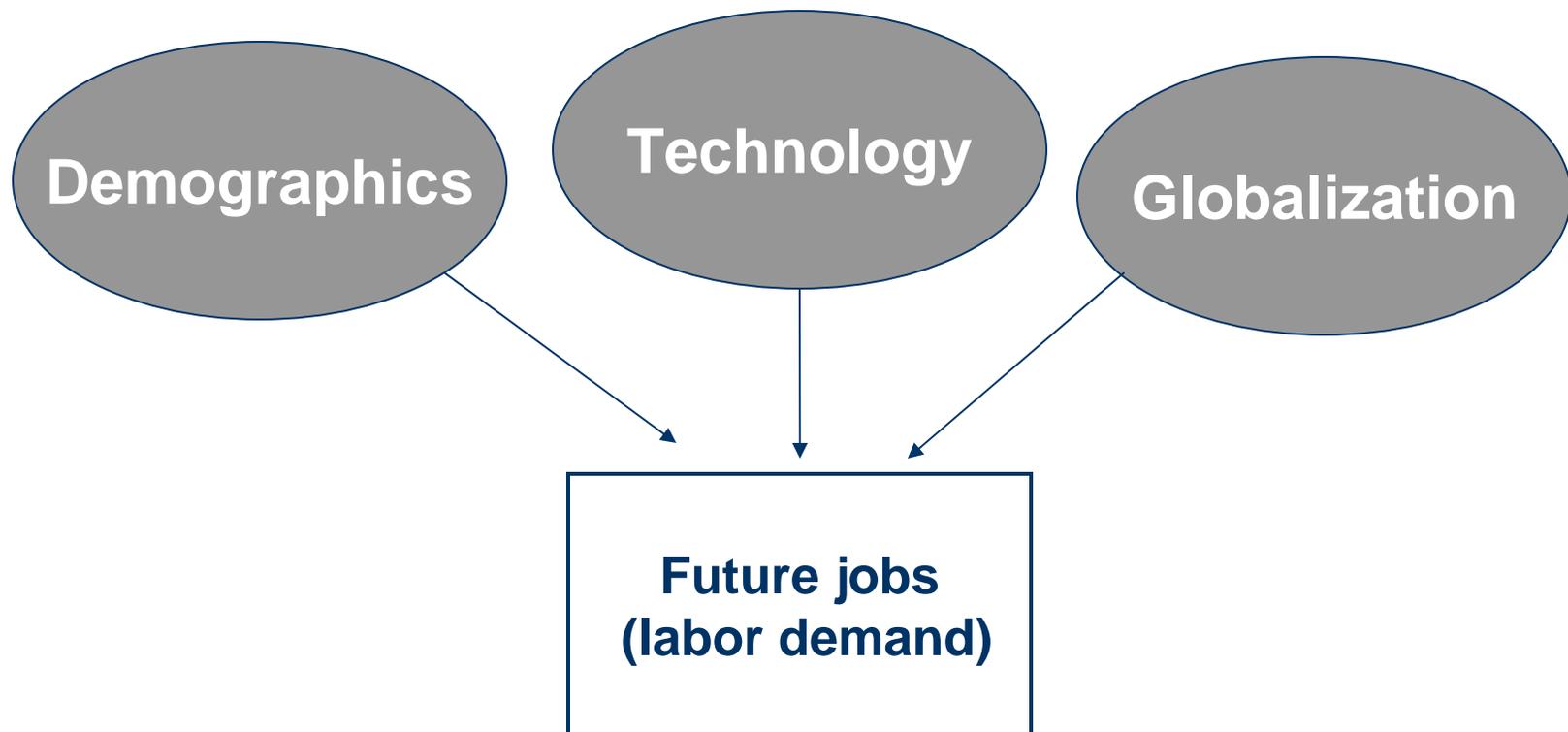
~DeKaser, Chief Economist for National City.

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 labor force supply

- Slower workforce growth ahead
- Imbalance in education system:
 - Too many low skilled workers, too few high skilled workers (Prof. Ed Morrison, CASE Western Reserve University)

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 Price 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

21st Century Business



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

E-Lancers



- Google lists 528,000 entries for “e-lance”
- e-lance.com, e-lancer.com, guru.com
- Marketplaces similar to eBay, Companies post projects and professionals bid for them
- Marketplace providers charge percentage of volume as service-fee

E-Lancer Marketplaces

guru.com
 Home | Employers - find professionals | Professionals - find work | Search | My Admin

Guru.com: The marketplace for freelance talent.

EMPLOYERS: Connect with top professionals to complete your projects.
 • Free access to our
 • Save money and time
 • Take advantage of
 • Two easy ways to

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Graphic Design / Presentations / Multimedia
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 3D Modeling | Book/Video/Album/CD Covers | Industrial Design | Self-styled/Poster Designs | PowerPoint Presentations | Flash Presentations/GC-BCMs | Video Presentations | Multimedia Animation (Flash/Video)

Illustration / Cartooning / Painting / Sculpting
 Animal Illustrations | Architectural Illustrations | Botanical Illustrations | Child Book Illustrations | Food Illustrations
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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

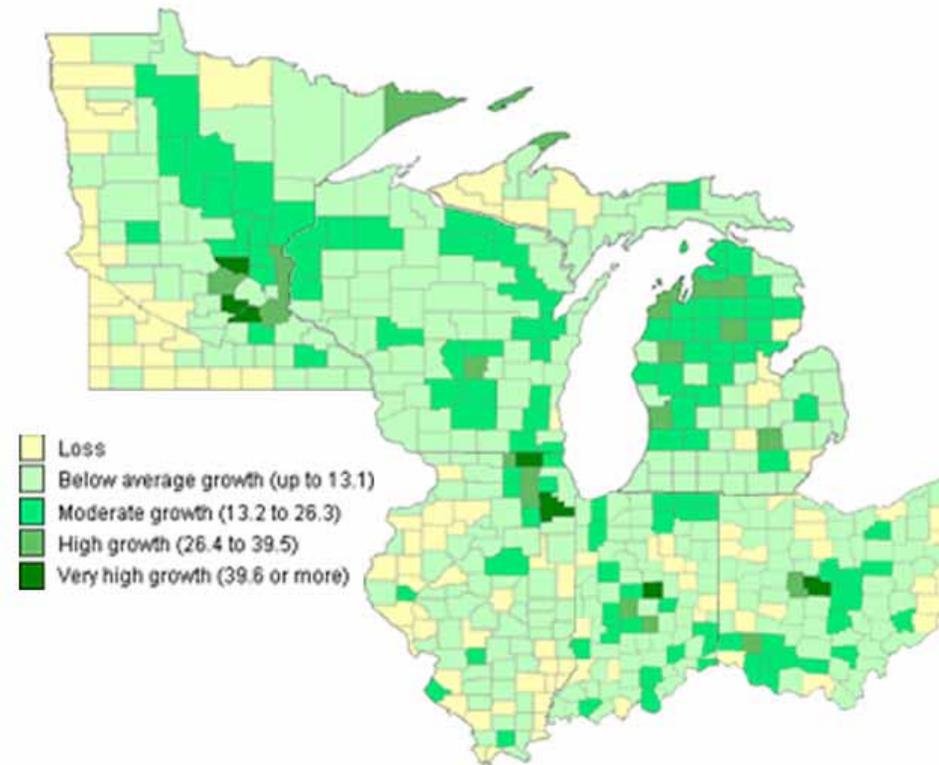
Sandra Pianalto, President & CEO Federal Reserve Bank of Cleveland - March 5, 2004 City Club Cleveland:

- 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

Special Region 5 considerations - Rural Region V -



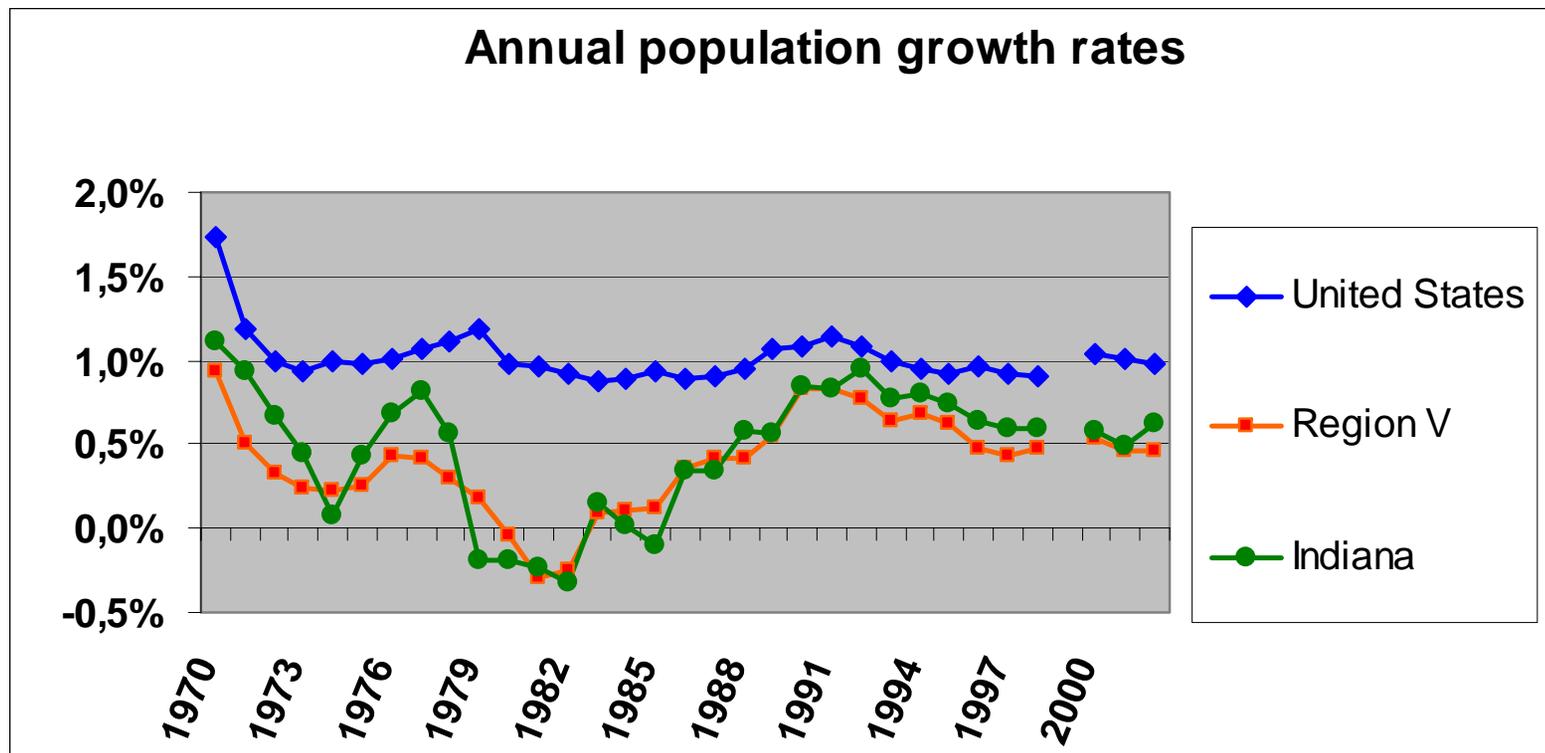
Special Region 5 considerations - Rural Region V -

- Population trends
- Growth counties:
 - Recreation counties
 - Lakes - river - corridor counties
 - Counties near metropolitan areas
 - Micro-metro counties

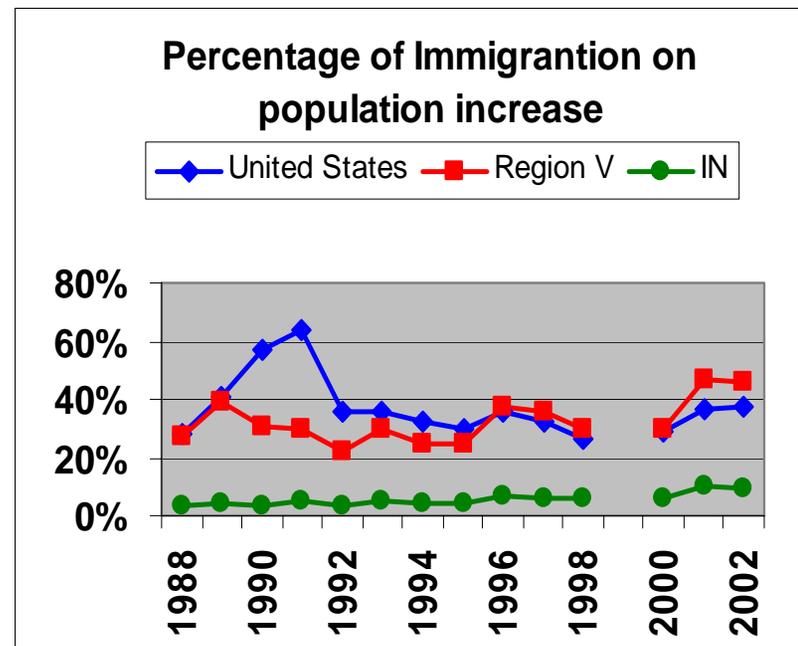
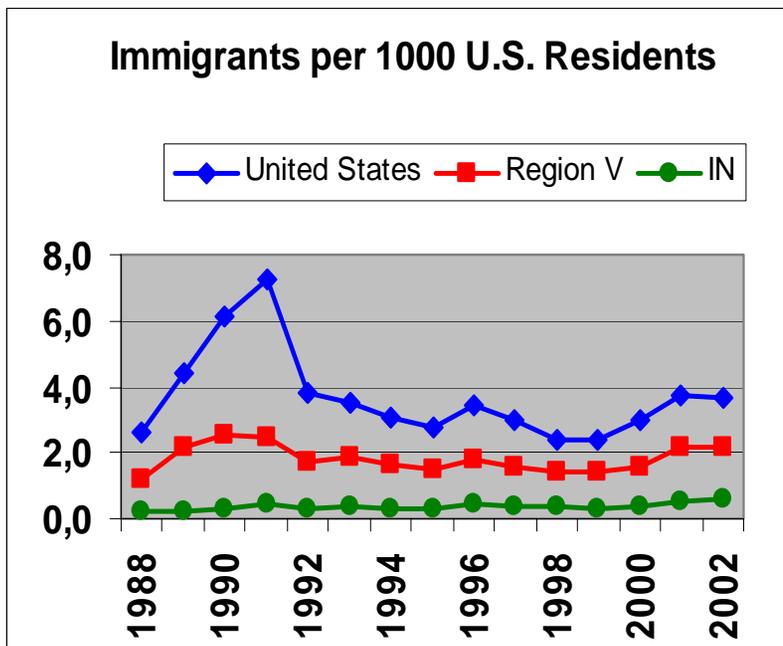
Requirements for rural economic development

- Feeder roads
- Modern water system
- Stable power source
- Modern IT Systems
 - Extension of fiber optics
- Modern educational system

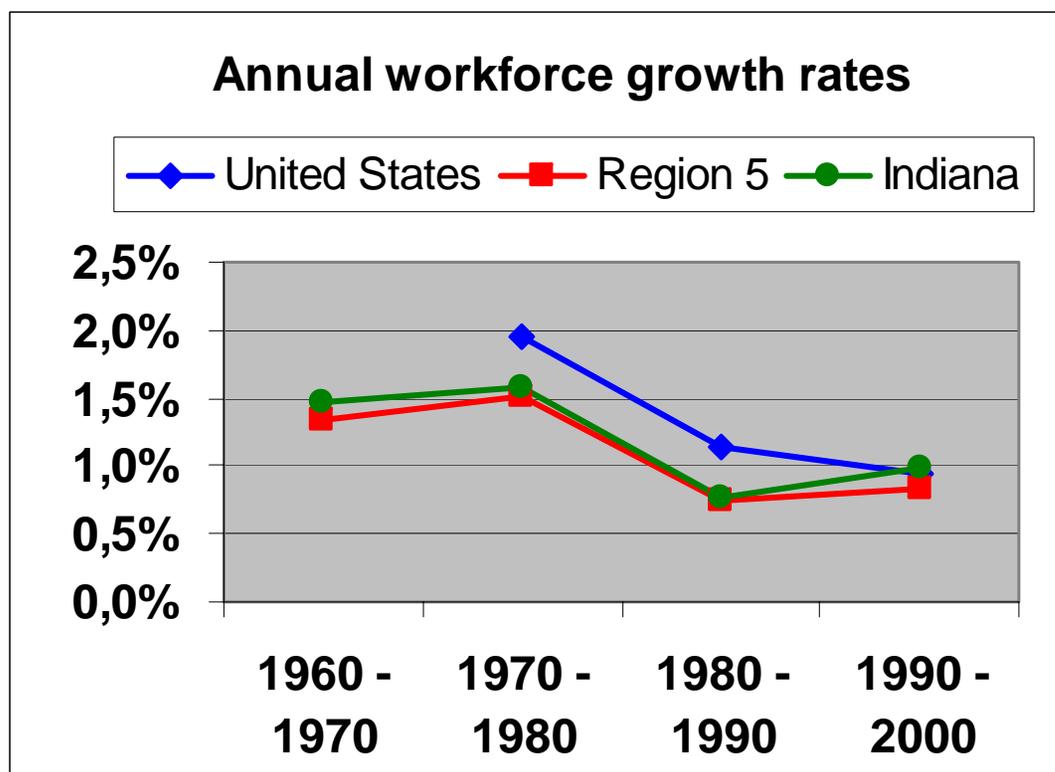
Region V - Demographic Challenges -



Dependency on Immigration



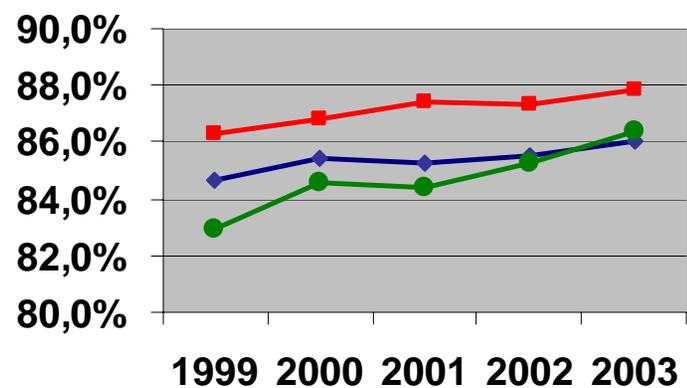
Labor Force



Region V – Educational Challenges -

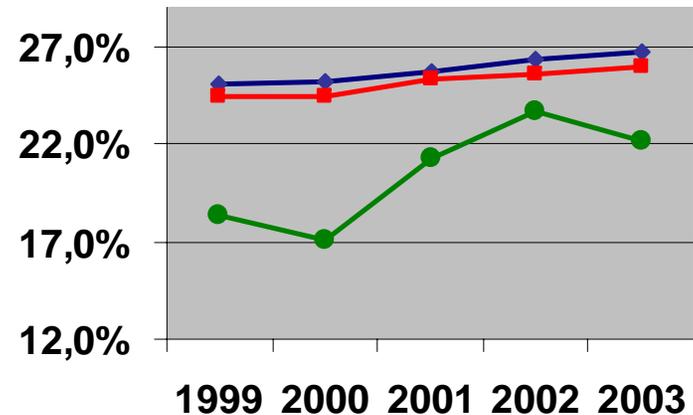
High school graduate or higher

◆ Total US
 ■ Region V
 ● Indiana



Bachelor or higher

◆ Total US
 ■ Region V
 ● Indiana



Region V - cluster formation -

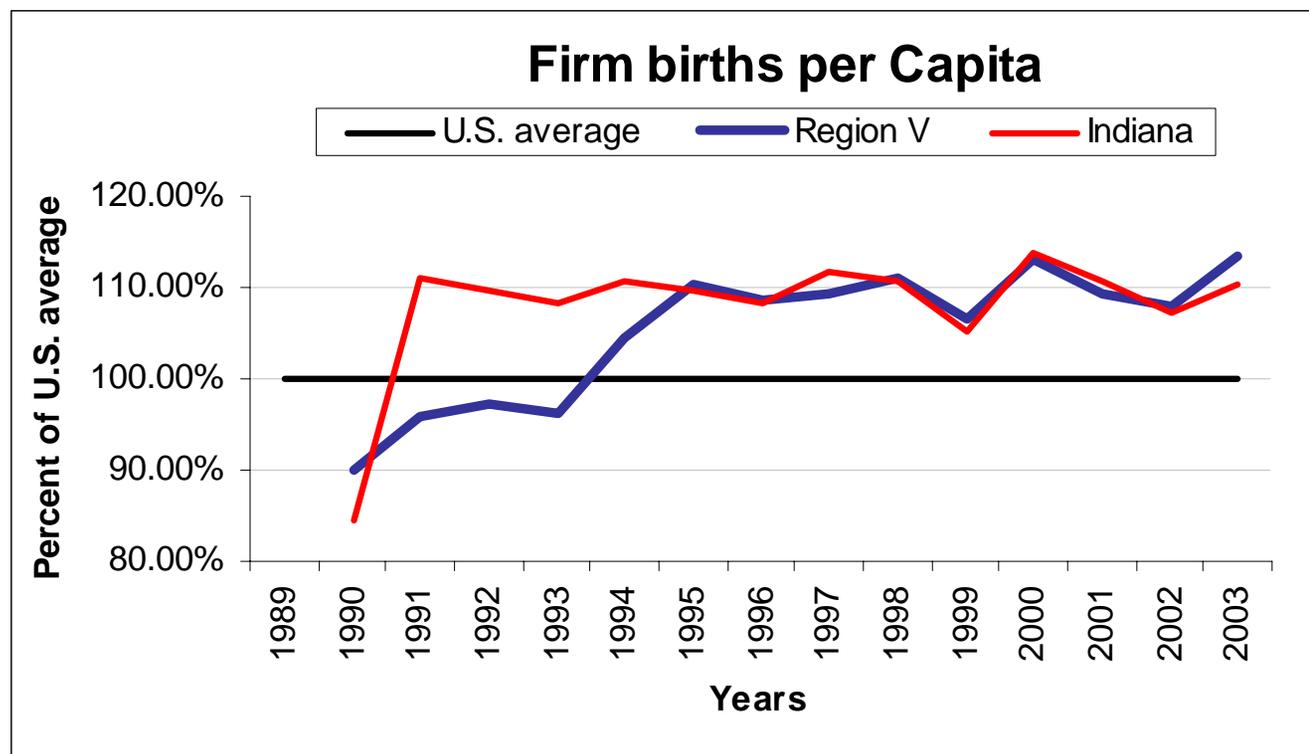
- Two types of cluster formation forces:
 - natural advantages
 - spillovers
 - physical spillovers (e.g. lower transportation costs)
 - intellectual spillovers (e.g. shared consultants, ex-employees)
- These forces can be measured by the Agglomeration Coefficient (Ellison, Glaeser 1997)

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 -

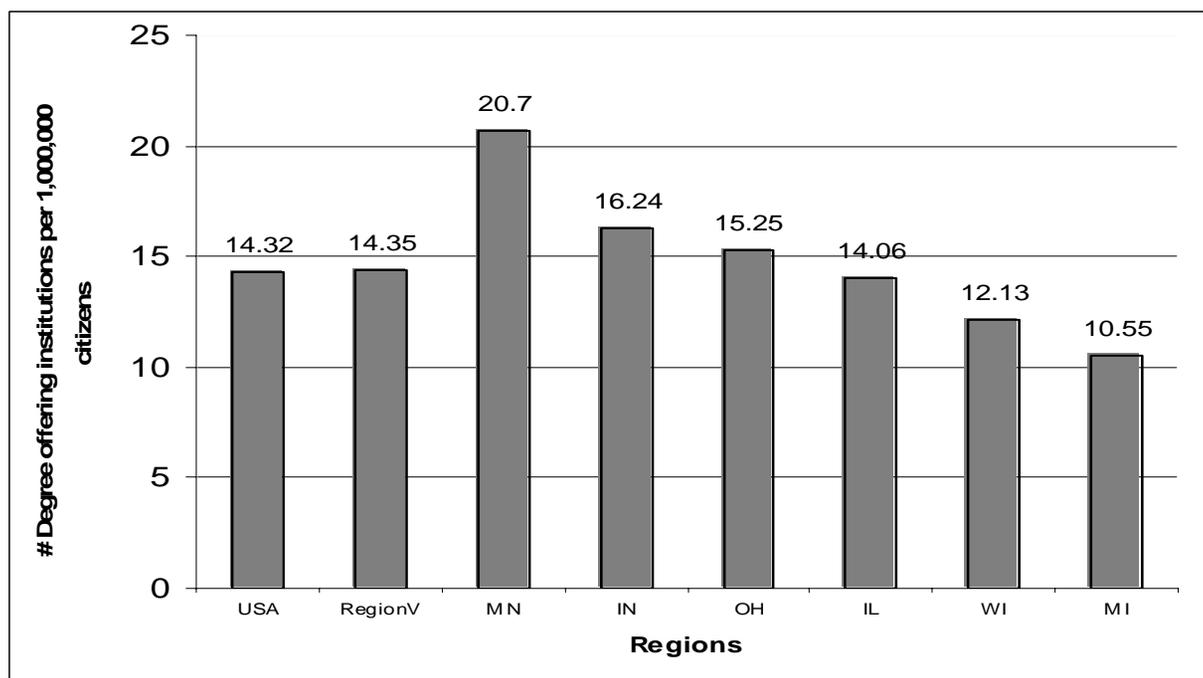
- Number of degree/certificate offering institutions:

	USA	Region V	IN
Associate Degree	2,767	485	81
Bachelor Degree	2,157	376	55
Master Degree	1,616	278	39
Doctors Degree	601	103	11
Degrees total	4,125	727	100
Certificates	2,299	365	29
Degrees/certificates total	6,424	1,092	129

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 Region V:

Name	2000	2010	change	change %
Business services	1,669,920	2,335,173	665,253	39.84%
Health services	2,115,084	2,522,375	407,291	19.26%
Eating and drinking places	1,556,747	1,790,954	234,207	15.04%
Educational services	1,870,516	2,086,513	215,997	11.55%
Social services	519,489	674,663	155,174	29.87%
Engineering and management services	561,075	713,850	152,775	27.23%
Miscellaneous retail	630,911	742,154	111,243	17.63%
Special trade contractors	745,858	850,048	104,190	13.97%
Amusement and recreational services	323,458	406,880	83,422	25.79%
Wholesale trade--durable goods	847,558	913,855	66,297	7.82%

Long-term job projections

- industries with highest number of job gains in Indiana:

Title	2000	2010	change	change %
Health services	256,996	320,236	63,240	24.61%
Business services	155,415	208,351	52,936	34.06%
Eating and drinking places	199,589	237,475	37,886	18.98%
Educational services	221,977	259,207	37,230	16.77%
Social services	52,051	73,409	21,358	41.03%
Motor freight transportation and warehousing	63,380	76,672	13,292	20.97%
Amusement and recreational services	42,146	54,749	12,603	29.90%
Engineering and management services	40,743	53,288	12,545	30.79%
Miscellaneous retail	73,095	84,487	11,392	15.59%
Finance, taxation, and monetary policy	85,917	95,883	9,966	11.60%

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?

