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Indiana Business Review

Letting It Ride on Indiana's

TECHNOLOGY BELT

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Table of Contents

- 1** Letting It Ride on Indiana's Technology Belt
Jennifer A. Kurtz looks at the I-69 corridor in northeast Indiana and its effort to create clusters of innovative activity.
- 4** Exodus to Suburbia Continues, but a Little Slower
Vincent B. Thompson analyzes the recently released 2003 population estimates, exploring where the state's growth is happening.
- 8** The Mind of the Indiana CEO: Views on Emerging Business Issues
Daniel Rutledge and Derek Bjonback explain the survey results comparing the views of Indiana CEOs on emerging business issues to the opinions expressed by Jeffery Garten in his book, *The Mind of the CEO*.
- 9** I-69 Corridor in Southwest Indiana Receives Federal Approval
With the I-69 project in southwest Indiana entering a new phase, we provide a brief overview of the region involved.

For the Record:

I-69 is in the news and we provide a one-page glimpse of the corridor and the counties it will directly affect. But within these pages, we are also looking at the existing I-69 corridor. Thanks to an insightful and informative piece by Jennifer Kurtz, who headed up Indiana's Interconnect study, we can learn about the innovation cluster that has grown up along this corridor and is now gaining recognition and 21st Century Research and Technology funds.

When will Hoosiers move back to the central cities? Not right now, if the latest county population estimates are any indication. The continuation of movement to the suburbs is something long reported in these pages and our new economic and demographic analyst, Vince Thompson, tackles these new numbers with the analytical gusto befitting a member of the IBRC staff.

Getting inside the mind of Indiana CEOs may seem a daunting task, but one that has been tackled head-on by faculty at Purdue. This is a must-read summary of their results and we also provide a web link to the complete study.

Looking for the latest job numbers or other economic data? Be sure to turn to the many publications and websites of the Indiana Business Research Center at www.ibrc.indiana.edu, the web portal to our research and data.

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Letting It Ride on Indiana's Technology Belt

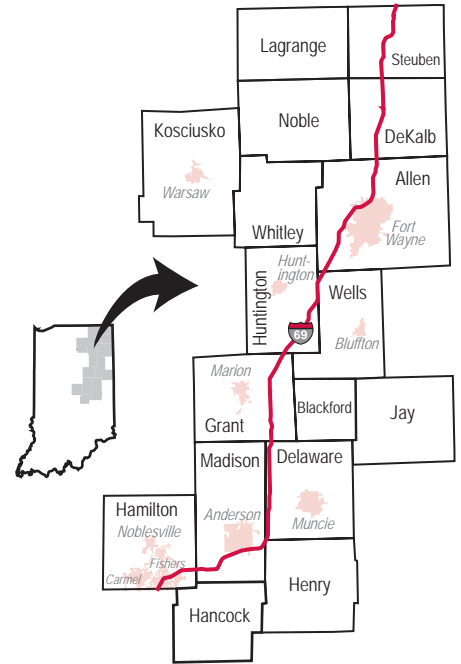
According to Louis Pasteur, "Chance favors the prepared mind." Similarly, economic development success favors prepared communities. In a rapid response economy, choices are determined by paths of least resistance. States or regions that build infrastructure capacity proactively improve their odds of reaping financial rewards, although those rewards cannot be predicted. In Indiana, the high-speed Interstate 69 thoroughfare is morphing into an elongated technology belt, connecting clusters of innovative activity.

Even with all the hype about meetings in cyberspace and working in hermitic isolation, the dissemination of ideas still tends to be a social infection. Studies of technology clusters by the Miliken Institute and others show that innovation thrives in areas where new ideas are pitched like salmon in Seattle's Pike Place Market. People gather to innovate. The I-69 technology belt facilitates intercommunity collaboration. This is beginning to create a counterbalance to the dominant Indianapolis metro area. Indiana and its people will benefit from the decentralization of its economy and the development of multiple innovation clusters. Other clusters are developing around Bloomington/Crane and along I-65, from Lebanon to Greater Lafayette to Gary/Hammond.

Regional Overview

The counties bordering I-69 (with the additions of Kosciusko County, connected via State Road 30, and Jay County) accounted for 21.7 percent of the state's 2002 population and 18.5 percent of its geographic area (see Figure 1). At 13.7 percent, its population growth rate between 1990 and 2000 exceeded Indiana's

Figure 1
The I-69 Technology Belt



(9.7 percent). This growth is expected to slow somewhat, to 11.5 percent by 2010, according to projections from the Indiana Business Research Center. Per capita income in 2001 was 104.2 percent of the state average. The 5.7 percent unemployment rate for the region in January 2004 was 101.8 percent of the state average. Top-paying industries for the region in 2001 are shown in Table 1.

The region contributed 22.6 percent of the state's high school graduates for 2000–2001, with 23.7 percent of those graduates intending to go for a four-year post-secondary degree. The region accounted for only 13.7 percent of state welfare (TANF) families in 2001 and 16.3 percent of food stamp recipients. Fort Wayne, Muncie, and Anderson are the three largest cities or towns with a combined 2002 population of 336,118 (25.2 percent of the region's total). The next three largest cities are part of the Indianapolis metro: Fishers, Carmel, and Noblesville.

Certified Technology Parks

As part of the Energize Indiana initiative, the Indiana Department of Commerce began accepting applications in early 2003 for special tax districts to encourage high-tech business development. Two of the state's seven certified technology parks are located within

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Table 1
Top-Paying Industries in the I-69 Region, 2001

Industry	Employment	Percent Distribution in Region	Average Earnings per Job
Information	13,335	1.8%	\$46,565
Manufacturing	141,299	18.6%	\$45,740
Wholesale Trade	26,950	3.5%	\$45,696
Professional, Scientific, and Technical Services	28,532	3.8%	\$38,470
Government	76,037	10.0%	\$36,721
Construction	44,170	5.8%	\$36,159
Health Care and Social Assistance	65,689	8.6%	\$33,863

Table 2
I-69 Corridor Involvement in the 21st Century Research and Technology Fund

Awards	Principal Investigators	Partners	Proposals Submitted
Round 1	Ball State University Muncie	Fort Wayne Panoramic Corp. Muncie Ontario Systems Performance Dynamics Warsaw Zimmer (2 projects)	Carmel: 1 Fort Wayne: 6 Muncie: 3 Warsaw: 2
Round 2	FluorRx Carmel Logikos Fort Wayne	Elwood Red Gold Fort Wayne Adaptive Microwave Artemis International Central Soya Global Systems IPFW Northeast Indiana Innovation Center Spectrum Radiopharmacy Muncie Ball State University (2 projects) Roanoke Intricut Tool Company Warsaw Zimmer	Carmel: 1 Fishers: 1 Fort Wayne: 8 Muncie: 3
Round 3	Ball State University Muncie Innovative Controls Fort Wayne	Carmel Baker Hill Bitwise Solutions ONEX Fort Wayne BMT Microelectronics Center IPFW Karl Schmidt Unisia Vantage Tool & Engineering	Angola: 1 Carmel: 3 Fishers: 1 Fort Wayne: 9 Muncie: 2
Round 4	Ball State University Muncie DePuy Orthopaedics Warsaw	Anderson Anderson Tool & Engineering Angola Tri-State University Fishers Safety Technologies Fort Wayne Cirrus ABS GT Automation ITT Industries WeToolIT Warsaw DePuy Orthopaedics	Carmel: 5 Fort Wayne: 6 Muncie: 4 Upland: 1 Warsaw: 1 Westfield: 1
Round 5	Dahlgren, LLC Fort Wayne iPower Technologies Anderson	Angola Tri-State University Fort Wayne IPFW Northeast Indiana Innovation Center Proteum Muncie Ball State University Warsaw Zimmer	Carmel: 3 Fort Wayne: 3 Muncie: 2

*Table is based on data in the original project proposals; see www.21fund.org for additional information.

the I-69 belt. In addition, Muncie has received preliminary approval of its application for a certified technology park designation.

Anderson's Flagship Enterprise Center was the second park to be certified under the state program and represents the successful partnership of the city, Anderson University (Falls School of Business), the Purdue School of Technology, and Ivy Tech. The Northeast Indiana Innovation Center in Fort Wayne was the fifth park certified under the state program. It represents the partnership of the city, Indiana University–Purdue University Fort Wayne (IPFW), and Ivy Tech.

The Indiana 21st Century Research and Technology Fund

The Indiana General Assembly created the 21st Century Research and Technology Fund to promote economic diversity through the commercialization of technological innovation. Money is awarded to project teams comprised of one principal investigator (often a university) and multiple partners. The fund encourages, indeed requires, participation by a mix of academic and private sector entities. Groups in the I-69 technology belt are involved as either project principal investigators or partners in all five rounds of awards as seen in **Table 2**.

Innovation Clusters

The I-69 technology belt is home to companies representative of Indiana's four high-tech areas: advanced manufacturing, twenty-first century distribution/logistics, information technology, and life sciences. Many of these companies have been around for decades and have adapted to new market opportunities.

The region is home to the largest software development company in the state (Ontario Systems¹) as well as the largest orthopaedic device company (Zimmer²). The medical device industry, rather than the pharmaceutical industry, is the life sciences subsector that is especially significant to communities in Allen and Kosciusko counties. The big three device companies (Zimmer, Biomet, and DePuy Orthopaedics) employ approximately 25 percent of the full-time workforce in Kosciusko County. Many other residents work for suppliers to biotechnical companies in the region, such as Fort Wayne Metals. The presence of these biotech companies helps traditional companies transfer their precision

manufacturing expertise to production for an expanding marketplace.

I-69 was conceived in the 1950s as part of a national transportation solution and, fittingly, Indiana communities along this technology belt continue to devise innovative transportation solutions. A global supplier of alternators for automotive, marine, and trucking applications, Delco Remy International has redefined its product as mobile power generation. Along the way, it formed a partnership to establish iPower Technologies and "pursue emerging opportunities in distributed generation for full-time, on-site power generation that integrates with existing public power grids or operates

independently if there is a blackout or in emerging areas or countries with inadequate infrastructures."³

Allen County lost the International Harvester truck production facility to Ohio in the early 1980s—but its international truck engineering and design facility remains in Fort Wayne and employs more than 1,200 engineers. Do It Best Hardware, a global cooperative for hardware and lumber dealers, was praised by management guru Tom Peters as early as 1992 for its innovative use of state-of-the-art communications systems, including monthly video training meetings. It continues to use technology to streamline costs for its members.

The engineering focus of companies like Raytheon, General Dynamics, ITT, and Northrup Grumman has encouraged development of communications applications. For example, advances in radio frequency technology led to product development opportunities for companies, ranging from Logikos' interface for police squad cars to Innotech's pet containment systems to Northern Apex's work on RFID-based inspection tags for elevators and amusement park rides. Students and faculty at Taylor University have developed a communications satellite that is intended to provide a low-cost messaging alternative for remote villages in third world countries.⁴

Creation of digital content for communications applications is being explored by groups along the I-69 technology belt. Paws, Inc. is the Fairmount-based home and distribution center for Garfield the Cat products. Movielink, the video-on-demand service, has formed a research development relationship with Ball State to explore how students use video services and, in particular, how their legitimate use can be promoted. Distance learning initiatives are underway in both Fort Wayne and Muncie.

Communications Infrastructure Initiatives

Grassroots initiatives are driving the deployment of the communications infrastructure necessary to accommodate twenty-first century businesses in this region. In the three cases cited, progress is being driven by commitments from local government, economic development organizations, academic institutions, and commercial consumers of telecommunications services.

Fort Wayne released its iConnect proposal request (RFP) in late 2001 and awarded the multi-phase contract to the Indiana Data Center (INDDC) in March 2002. At present, the unlicensed wireless spectrum system offered by the INDDC reaches roughly 80 percent of Fort Wayne businesses, including a number of businesses which could not be served by other fiber- or copper-based providers. Taking advantage of existing water towers and other city-owned structures for locating equipment, the system was 10 percent to 50 percent less expensive than wired broadband. The estimated installation fee of \$500 is about one-third the cost of the typical connection fee for a T-1 line. Motorola did a case study of this

Phase I wireless project, which is posted on the INDDC website (www.inddc.com). Building on the Fort Wayne broadband initiative, the INDDC is now extending coverage into other cities, including Angola, Auburn, and Huntington.

The Muncie/Delaware County Vision 2006 broadband initiative has attracted \$600,000 in funding for the development of an ultra-broadband wireless testbed. Speeds of up to 30 megabits per second (Mbps) have been attained at test locations near the Ball State University campus. The initiative also includes planning for the deployment of more affordable broadband in the 3 Mbps to 4 Mbps range for those with more modest performance requirements. Related activities at Ball State include the proposed establishment of a telecommunications carrier "hotel" in Muncie and the formation of the Rural Broadband Research Center. The latter would benefit from ongoing student/faculty projects conducted under the aegis of the iCommunications Media Design Initiative.⁵

Other initiatives include Jay County's microwave network that connects its ten schools, implemented at a cost of about \$160,000, and the Anderson Power and Light project to send broadband over power lines. On the commercial side, Indiana Fiber Works is completing its fiber rings.⁶ The "end points" will be prepared for the I-Light 2 buildout.

Of course, expanding broadband supply is just one side of these community-based technology initiatives. Stimulating consumer demand is imperative for attracting investment from telecommunications carriers and for ensuring an acceptable payback period for local government investment.

In Fort Wayne, the city government has implemented eGovernment applications that have earned national recognition. The Center for Digital Government rated Fort Wayne number one among midsize U.S. cities. Online services for citizens include utility bill payment, pothole reporting, and GIS mapping to explore desirable neighborhood amenities. Online services also improve productivity for government officials. According to a feature article in the April 2004 issue of *Kiplinger's*, "police officers can pull up to 'hot spots' near fire stations and get wireless downloads." Wireless fingerprint identification at the point of suspect apprehension is coming soon.

The Vision 2006 Technology Committee recently completed a survey of businesses in four neighboring counties (Blackford, Delaware, Grant, and Jay) that indicates a high level of acceptance for broadband and other Internet-related technologies. In fact, 75 percent of the 114 survey respondents connect to the Internet via DSL, cable, or T-1 (and higher) circuits. By contrast, the survey results from the 2003 Indiana Interconnect study indicated only 34 percent of Indiana businesses using the Internet connect over broadband. Greater sophistication in the usage of Internet applications, as also noted in survey responses, quite possibly drives this demand for broadband.

Riding the Technology Belt

The communities that border the I-69 technology belt are preparing conscientiously for taking a chance on the twenty-first century. They are blessed with most of the necessary ingredients to create clusters of innovation: easy access to respected academic institutions, committed companies and civic leaders, and technological expertise. Venture capital funds have been established, in recognition that it is difficult to find "out-of-town" investors. The infrastructure for physical transportation—by air, rail, or road—works well. Cooperative efforts across county lines to deploy cyber infrastructure are attracting interest from telecommunications carriers. Discussion is underway to establish a Rural Broadband Research Center as a resource for communities that are still "digitally challenged." A chain of certified technology parks offers the hope of successful commercialization projects. Perhaps this will be a road well traveled. ◀

Endnotes

1. Software products include medical billing applications.
2. Zimmer is now the largest orthopaedic device manufacturer in the world due to its recent acquisition of a Swiss company.
3. Delco Remy International was formed through the leveraged buy-out of several GM subsidiaries in 1994. More information about its innovative spinoff is available at www.ipowertechnologies.com.
4. Taylor University was the only undergraduate university to win in the 2002 national United States Air Force Office of Space Research competition for university nanosatellite grants. Taylor will be the lead institution with eleven others, including Stanford University. More information is available at www.css.tayloru.edu/~physics/picosat.
5. This initiative was funded by a four-year \$20 million grant from the Lilly Endowment.
6. This network will connect communities including Anderson, Muncie, Marion, Sweetser, and Swayzee.

Exodus to Suburbia Continues, but a Little Slower

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The strong population growth in the counties surrounding Marion County continues. This is corroborated by the Census Bureau's recent county-level population estimates for 2003. If we look at growth from the April 1, 2000 census to the July 1, 2003 estimates, the five fastest-growing counties in Indiana surround Marion County (see Figure 1). As evidence of urban flight, those five counties are also among the top seven in total net in-migration (see Figure 2 and Table 1), while Marion County has the highest total net out-migration at 18,989. Hamilton County leads the pack with a total net in-migration of 26,286 over the three-and-one-quarter year period.

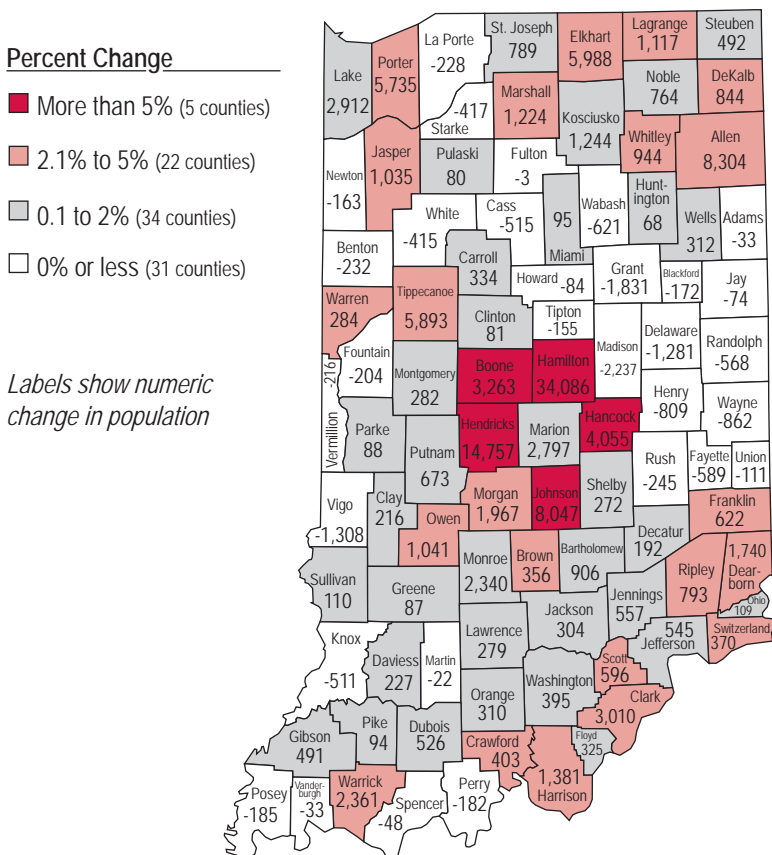
Although Marion County (Indianapolis) takes the greatest loss from out-migration, it achieves a total population increase of 2,797 after taking births and deaths in consideration. It is the only county in Indiana with an estimate greater than 500,000, weighing in at 863,251. Lake County (Gary) is approaching the half-million threshold, and has the second highest

estimate at 487,476. Ranked third is Allen County (Ft. Wayne), coming in at 340,153. Rounding out the top five are St. Joseph County at 266,348, and Hamilton County at 216,826. Contributing to the explosive growth of Hamilton County is the town of Fishers, which conducted a special census that yielded a count of 52,390 as of November 2003. This compares to a count of 37,835 in April 2000.

One notable fact about the ten largest counties (see Table 2) is that their summed population estimates comprise nearly half (about forty-eight percent) of the state's estimated population. This group of counties tips the scale at 2,973,224, while the estimate for the whole state of Indiana is 6,195,643.

Growing 1.9 percent since Census 2000, Indiana's total population is almost 6.2 million.

Figure 1
Population Change, April 2000 to July 2003



A "Hiccup" in Suburban Growth?

Although the suburban growth in areas surrounding Marion County remains strong, it has slowed down recently. Let's take another look at the top five growth counties, but this time focus on year-over-year changes in the estimates (see Figure 3).

All five of these counties have experienced a slight drop-off in percent growth, whereas the state of Indiana as a whole has experienced a slight increase. With the exception of Hamilton County, the greatest growth for these counties occurred during the 2001–02 period. This is interesting in light of the 2001 recession, which did not end until November of that year.

What can we make of the drop-off? Maybe it is a lagged effect from the recession. Thanks in part to Indiana's relatively large reliance on the manufacturing sector for employment, we have had a harder time recovering from the 2001 recession than many other states. The so-called jobless recovery seems to have had an impact on some people's willingness and/or ability to become residents of one of the "doughnut" counties. Perhaps these counties are also reaching some limits as they struggle to create the additional infrastructure necessary for accommodating the ongoing influx. In short, it can be challenging to keep up with the growth.

Figure 2
Total Migration, April 2000 to July 2003

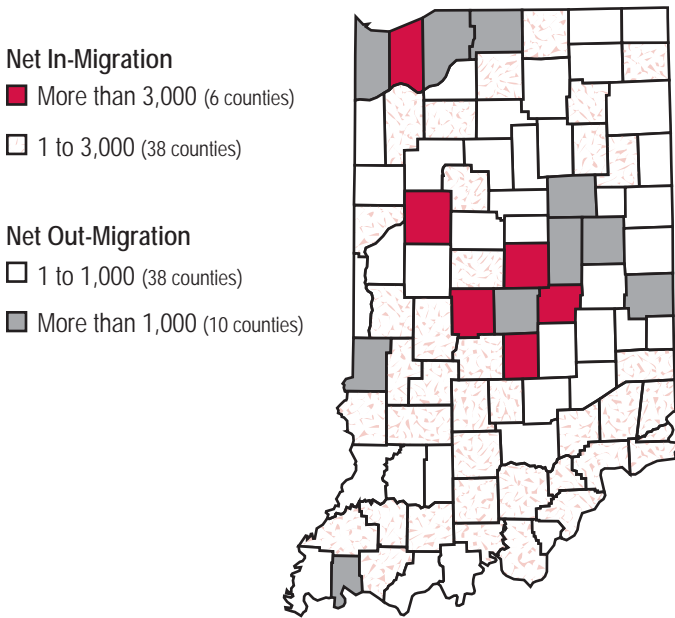


Table 1
Top Ten Counties by Total Migration, April 2000 to July 2003

County	Total Net Migration	Net International Migration	Net Domestic Migration
Indiana	21,305	36,229	-14,924
Hamilton	26,286	1,017	25,269
Hendricks	11,942	227	11,715
Johnson	5,876	296	5,580
Porter	3,612	504	3,108
Tippecanoe	3,227	3,770	-543
Hancock	3,128	10	3,118
Boone	2,654	59	2,595
Clark	2,080	315	1,765
Warrick	1,671	49	1,622
Dearborn	1,049	33	1,016

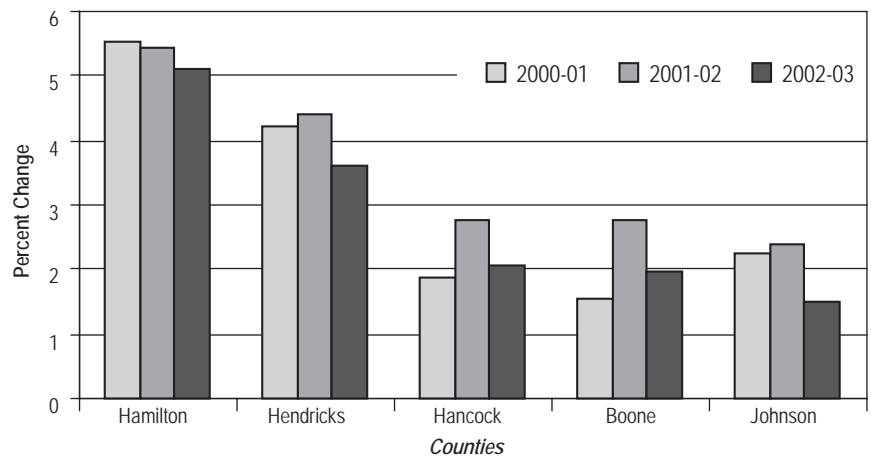
Flight to the Suburbs Elsewhere in Indiana

So as not to ignore the suburban growth taking place in other areas of the state, let's have another look at Table 1. Of the five counties in the list that we haven't already discussed, four are near large urban areas. The exception, Tippecanoe County, makes the list due to its high international migration, courtesy of Purdue University.

Porter County, ranked fourth in migration, is directly to the east of Lake County and not far from Chicago. Lake County's total net out-migration is 3,574, and is only surpassed by Marion County's. Also note that the two counties to the east of Porter County, namely La Porte County and St. Joseph County, have incurred out-migration losses as well. Among Indiana's ninety-two counties, they are ranked eighty-fifth and ninetieth in total migration, respectively.

Clark County, just across the river from Louisville, ranked eighth in migration. Next is Warrick County, a county that seems to attract migrants from neighboring Vanderburgh County (ranked eighty-fourth in total migration), as well as nearby Henderson County, Kentucky. At number ten, we have Dearborn County, which is across the state line from Cincinnati. Just one shy of making the top ten is Morgan County, which is on the southwest corner of the ring of counties surrounding Marion County. Number twelve is Harrison County, also near Louisville.

Figure 3
Five Fastest Growing Counties



The Big Picture

When Indiana's ninety-two counties are compared among all U.S. counties, we make a few showings in the Census Bureau's top one hundred lists. Marion County is ranked number fifty-two in estimated population for July of 2003, which is down from a rank of fifty for April 2000. In terms of percent change since Census 2000, two Indiana counties make the top one hundred. Hamilton County thunders ahead at number twenty-one with 18.7 percent growth, and Hendricks County ranks sixty-second, registering a 14.2 percent increase. Therefore, when it comes to suburbanization, the Hoosier state certainly brings something to the table. ◀

Table 2
Ten Largest Counties, 2003

County	Estimate
Indiana	6,195,643
Marion	863,251
Lake	487,476
Allen	340,153
St. Joseph	266,348
Hamilton	216,826
Elkhart	188,779
Vanderburgh	171,889
Tippecanoe	154,848
Porter	152,533
Madison	131,121

The Mind of the Indiana CEO: Views on Emerging Business Issues

Jeffery Garten, dean of the School of Management at Yale University, has extensive exposure to the domestic and international business scene. The opinions expressed in his book, *The Mind of the CEO*, were shaped by his contacts with executives of forty world-leading firms, people with a sharp eye on the changing world environment and possessing thoughtful insights about emerging trends.

A reading of this book reveals a number of interesting yet controversial statements. Garten believes that CEOs must take a more active role in shaping public policy. CEOs should abandon narrow corporate and industry agendas and assist governments in developing appropriate national economic policies and forming international economic institutions to guide economic development. His proposals for a more proactive business community in economic policy development appear throughout *The Mind of the CEO*.

Do Indiana CEOs agree or disagree with Garten's position on these emerging business issues? To answer this question, we administered a survey of Indiana CEOs to find out (see sidebar).

Views on Emerging Business Issues

But why should Garten's viewpoints on emerging business issues be important to CEOs in Indiana? While Garten is respected

for his background, he holds a distinct East Coast perspective when defining issues and proposing solutions. He favors an *intense and necessary* public-private partnership approach when outlining possible solutions. Thus, if Indiana executives share his views, how far does agreement with Garten also imply accepting his remedies? One inference from an agreeing position is tacit acceptance of Garten's solutions and, thus, accepting whatever economic impact these remedies may have on Indiana's economy. The exact impact on Indiana of a particular issue is difficult to say without knowing the specific nature of the proposed solution. But using previous experience with Washington-based economic policies, perhaps Indiana has reason for guarded concern.

For example, a primary concern is the income transfer out of Indiana. We calculate that about ninety-five cents is returned to Indiana for every dollar of taxes sent to Washington in 2001.¹ At this rate of income transfer, in twenty years the equivalent of the entire state's personal income disappears. And there is the loss of \$1,662 of state taxes per average taxpayer,² plus the local tax revenues forgone on this lost wealth. Such a slant from Washington-imposed policies could be at odds with the state's long-term economic health. Thus, what might seem a suitable policy from an East Coast viewpoint may not be seen in the same favorable light from a Hoosier perspective.

Statewide Results

As seen in **Table 1**, only one statement with a 5.36 value indicates agreement with Garten's position (knowing what value the firm brings to its customers is a key to successful business). Two more statements are within two standard errors below 5 (exceeding a 4.70 cutoff point), also indicating that respondents agree with Garten on these two issues.

Of the total forty statements examined (only the highest and lowest ten are reported here), twenty-six (65 percent) either exceed the critical value of 4 or are within two standard errors below (exceeding a 3.70 cutoff point). In addition to the three agree with statements, respondents tend to somewhat agree with Garten on twenty-three other statements, inferring that Indiana CEOs tend somewhat favorably toward his views.

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Surveying CEOs

Indiana executives were asked their opinions on a series of statements about emerging business issues considered important for this decade. The forty statements are based on an interpretation of statements found in Jeffery Garten's book, *The Mind of the CEO*. Respondents indicated the extent they agreed or disagreed with Garten. Possible answers ranged from 1 (strongly disagree) to 6 (strongly agree). A NR choice was available if the statement did not apply or if the CEO had no opinion. Using the survey scale, a critical value of 5 indicates agreement with Garten, a critical value of 4 signals

somewhat agree, while a critical value of 3 means a somewhat disagree position.

The forty statements were condensed into six summary dimensions to facilitate data analysis and subsequent discussion. Each statement was classified into one of the summary dimensions using a thematic categorization scheme.

Results were reported at both the statewide level and at the group level for the forty statements. Only the six summary dimensions were analyzed at the business segment level. The authors would like to thank the seventy-three CEOs who responded to the survey.

Table 1
Top Ten Survey Statements at Both Ends of the Survey Spectrum

Most Agreement with Garten		Least Agreement with Garten	
Survey Statement	Mean	Survey Statement	Mean
The communications revolution is about customers. These days a company has to ask: "What is the real value that we bring to the customer?"	5.36	In the current environment, a company needs to reassess itself so often that the idea of a strategy threatens to devolve into little more than day-to-day tactics.	2.99
While having a vision is a prerequisite for being a great CEO, it is the failure to execute a strategy well that will get the chief executive into trouble.	4.77	With the range of challenges faced by CEOs, today's executive position is too much for one person to be effective. Forming an "Office of the Chairman" team is a possible option.	3.00
A core thing with people working for a company, if they are proud, if they are respected, and if they are listened to, then the company will thrive.	4.72	In today's New Economy, governments are being pared down as market-oriented policies are gaining ground and the norms for CEOs and their companies are changing.	3.28
Government regulation is one of the biggest potential problems on the horizon, enough so that extensive regulation could undermine economic progress.	4.66	CEOs recognize the need to enrich shareholders while paying increasing attention to customers, employees, and suppliers. Balancing all these objectives simply may not be possible.	3.34
Knowledge is the most critical business asset. Over half of it is in people's heads, so when they walk out the door, that knowledge goes with them.	4.59	Unless CEOs construe their mandate in a broad social context, they risk becoming targets of resentment by those who see the global movement as a negative trend.	3.45
What is required for the future of U.S. corporate success is a simultaneous focus on profit and community, an approach that ought to become the model for big companies.	4.55	Consumers are increasingly swayed in their purchases by the overall image of a company. They see social responsibility as an important part of a company's brand.	3.48
The issue of outsized CEO compensation packages is relevant to today's employees. If the CEO performs well, this is accepted, but if he fails this does not make for much trust.	4.52	Because of the Internet, prices are becoming transparent and subject to comparison. This creates a hyper-competitive environment that makes it almost impossible to raise prices.	3.51
One thing very clear now is that the on-line world is going to change everything. There will be increasing focus on and need for understanding different distribution channels and matching products and services to these channels.	4.45	From the corporate standpoint, there is logic in holding back until public problems are adequately defined and a course of action is clear and supported by the governments involved.	3.60
The Internet could be used to reduce cost of supplies or to reduce inventories. Thus, business fundamentals don't change; only the tools do.	4.36	Commerce on the Internet should not escape taxation since fees are levied on other types of commerce. But aside from the unfairness, too much essential tax revenue would be lost.	3.62
Competitive pressure from abroad is a cyclical thing. It is inevitable that European and Japanese firms once again will challenge the U.S. the way they did a decade or so ago.	4.31	Foreign companies have come to realize that to be truly global players and attract the best talent to their industries, sooner or later they would have to play by U.S. rules.	3.62

* A critical value of 5 indicates agreement with Garten's opinion, a critical value of 4 means somewhat agree, while a critical value of 3 indicates somewhat disagree.

Figure 1 shows the statewide results for the six summary dimensions (see the discussion in sidebar concerning summary dimensions).

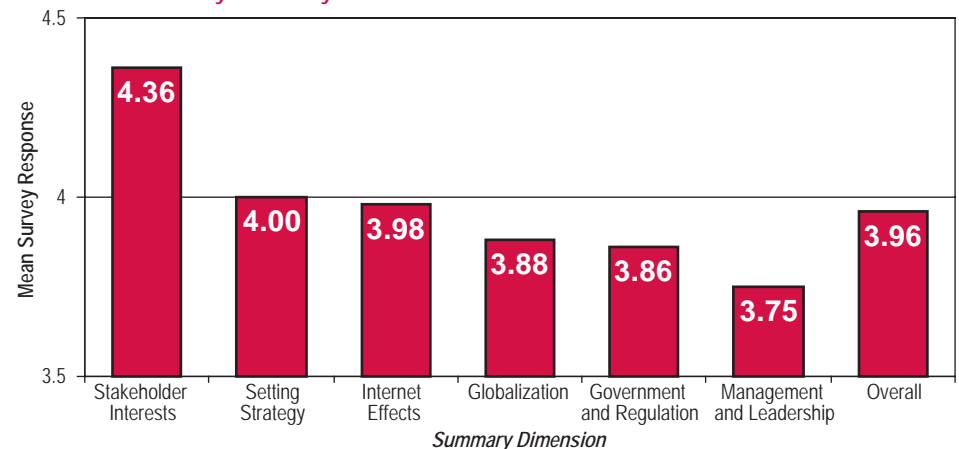
Indiana CEOs somewhat agree with Garten on five of six dimensions (exceeding a 3.82 cutoff point), the highest being stakeholder interests and the lowest being government and regulation.

It is the management and leadership summary dimension where opinions vary most from Garten's position. The varying opinions between business segments account for this divergence.

Business Segment Results

The management and leadership dimension illustrates a pattern of divergent opinions between business segments (see Figure 2). CEOs at

Figure 1
Statewide Results by Summary Dimension



* A critical value of 4 is somewhat agree with Garten's opinion, while 5 indicates agreement. Standard error ranges from 0.061 for the overall summary dimension, to 0.088 for management and leadership.

FOR MORE INFORMATION

The entire study, with detailed tables and a complete analysis, is available online at www.ibrc.indiana.edu/ibr.

variance most with Garten's viewpoints work in manufacturing, at a north location, in a large firm, in a public firm, in older companies, have a favorable experience with NAFTA, have a favorable experience with the Internet, and have export sales exceeding 6 percent of total sales.

This analysis points to the idea that Indiana CEOs appear to express confidence in their own capabilities to solve emerging problems.

Specific to the management and leadership dimension, there is no cross-the-board agreement as positions within the industry segment illustrate. Manufacturing and financial firms somewhat disagree with Garten while service firms somewhat agree with his positions. This pattern is also noticed for other segment comparisons.

Indiana executives prefer to be self-reliant in dealing with problems, even if Garten

believes these issues are beyond the average CEO's ability to handle effectively. We conclude that Indiana executives

- ▶ are confident they can cope with the changing world environments;
- ▶ discount the seriousness of the challenge that Garten believes exists;
- ▶ appear more upbeat about their ability to meet the new global competition.

Summary

Results indicate some differences between Indiana CEOs and Garten with respect to the complexity of the business environment. In particular, CEOs differ most from Garten regarding their ability to effectively manage in the new environment. Garten asserts that this environment is becoming "a turbulent sea" and "too difficult for most CEOs to successfully handle all at once."³ Indiana executives, on

the other hand, surmise that the business environment is already complex and that these emerging trends of greater complexity that Garten speaks of are already "business as usual" for them.

Implications for Indiana

First, Indiana CEOs appear more conservative and self-reliant, believing they are capable of dealing with the complexities of a changing global business environment. As a corollary, this suggests that turning to the public sector for direction for solving problems might be pursued only after careful consideration.

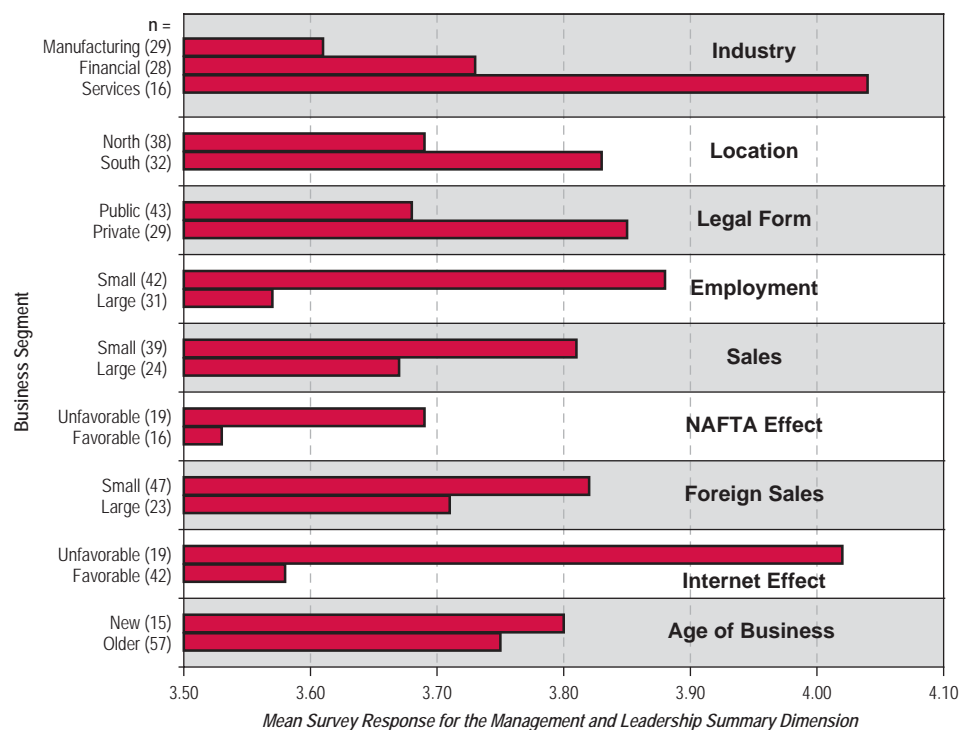
Second, Indiana executives generally hold homogenous views (as seen in Figure 1). This implies that backing efforts through a statewide business community approach might be possible, thus speeding up and focusing effort on solutions. The advantage of "one mind" is that massed support gets more attention and generates more impact than when different approaches are pursued.

Third, a large proportion of executives expressed no opinion about the effect that NAFTA has had on their businesses. Of those that are impacted by NAFTA, just under half reported a favorable experience. Also noteworthy is that one-third of companies indicated export sales exceeding the 6 percent mark. This leads to the idea that foreign market development has potential for Hoosier business expansion.

Fourth, well over half of respondents indicated that the Internet has had a favorable effect on their business. This implies that enhancing development of the Internet within the state should be encouraged.

Will Indiana executives come to a common position for addressing key emerging issues? Will it be along Garten's suggested approach of a business-government combination or some other path? Based on our survey results, we think the direction for Indiana CEOs is towards self-reliance versus the public-private partnerships that Garten favors. ◀

Figure 2
Analysis of the Management and Leadership Summary Dimension by Business Segment



*A critical value of 4 is somewhat agree with Garten's opinion, while 5 indicates agreement. Standard error ranges from 0.09 to 0.21. Not all seventy-three firms responded in each category. (n = number of respondents.)

Endnotes

1. Internal Revenue Service 2001 and 2002; Indiana MapStats 2003; calculations by authors.
2. David Mendall, "Illinois Not as Taxing as Many States," *Chicago Tribune*, 27 July 2001.
3. Jeffery Garten, *The Mind of the CEO* (New York: Free Press, 2001), 277-278.

I-69 Corridor in Southwest Indiana Receives Federal Approval

In March 2004, federal approval of the I-69 corridor connecting Evansville and Indianapolis made the new interstate a soon-to-be reality for the 1.3 million people living in the nine counties the corridor runs through; that is, if one's definition of soon encompasses the next eight to fourteen years.

The approved corridor is to improve access to communities and businesses throughout southwest Indiana by linking Daviess, Gibson, Greene, Johnson, Marion, Monroe, Morgan, Pike, and Warrick counties (see Figure 1). I-69 would also be particularly important to the Crane Naval Surface Warfare Center in neighboring Martin County.

Of the nine counties in the I-69 corridor, three counties have average weekly wages that exceed Indiana's (Gibson, Marion, and Pike), but the overall regional weekly wage of \$586 is just 94.1 percent of the state average (see Table 1). At \$441 a week, those in Daviess County earned the least, receiving just 70.8 percent of the state average.

When looking at median household income from Census 2000, it was Monroe County that came in at the bottom at \$33,311, likely due to the Indiana University (IU) student population. Greene, Daviess, and Pike counties also had median incomes below \$35,000. Six of the nine counties had median household incomes below the state median of \$41,567.

Educational attainment varies from Daviess County, where nearly 30 percent of the population over age twenty-five has not completed high school, to Monroe County, where 39.6 percent have a bachelor's degree or higher (once again, because of the presence of IU).

During the next phase of the I-69 project, final alignment will determine the exact route within the two-thousand foot buffer zone. The 142-mile corridor will be broken into six sections, and local officials and residents along the route will help plan and design the highway that works best for their respective communities.

The Indiana Department of Transportation estimates I-69 will cost \$1.78 billion to build, with 80 percent of that paid with federal funds and 20 percent paid with state gas tax revenues. ◀

Figure 1
I-69 Corridor in Southwest Indiana

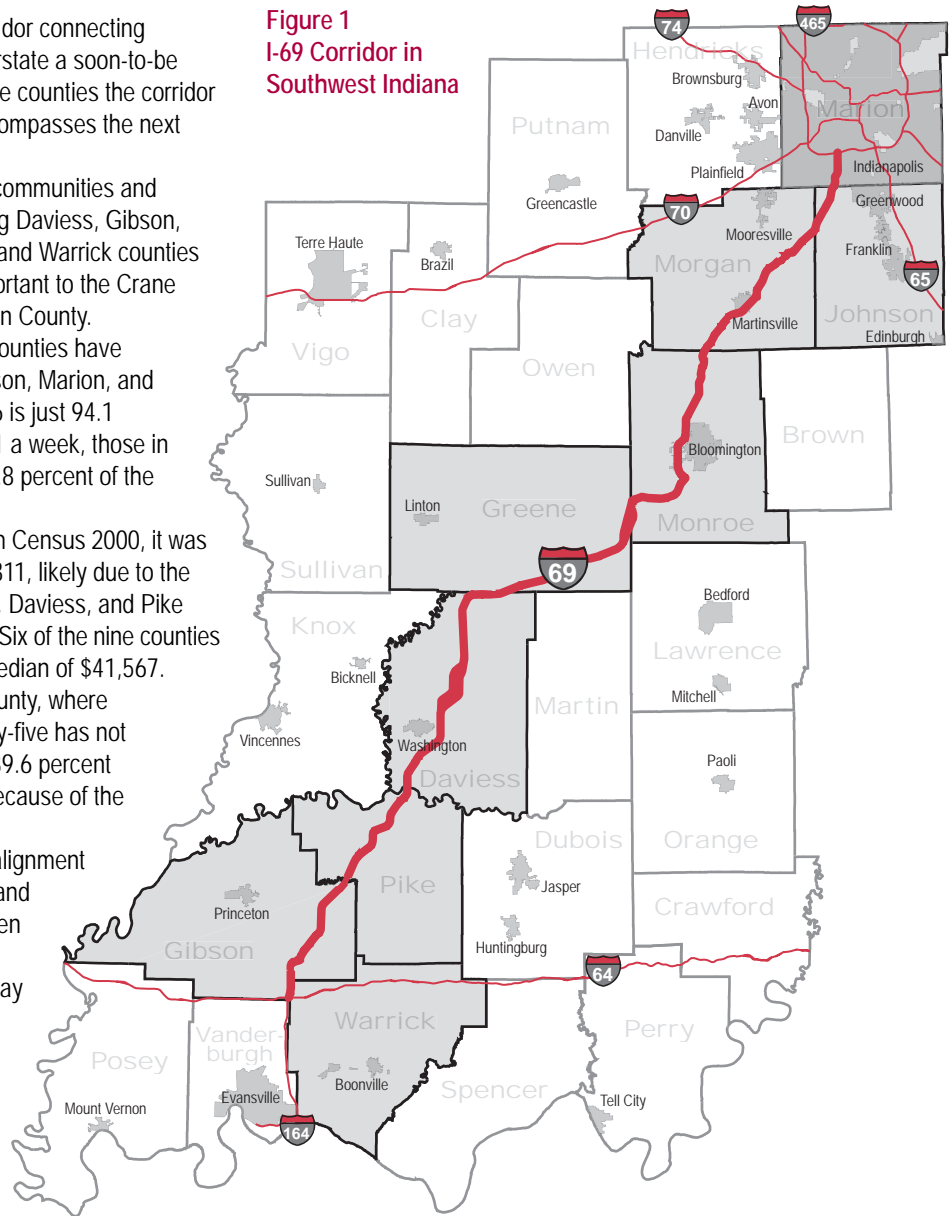


Table 1
Demographic Overview of Counties in I-69 Corridor

County	Population		Weekly Wages and Annual Income			Educational Attainment	
	Population Estimate, 2003	Percent of Indiana	Average Wage Per Job, 2003:2	Percent of Indiana's Average Wage	Median Household Income, 2000	Percent with High School Diploma, 2000	Percent with Bachelor's Degree or Higher, 2000
Indiana	6,195,643	100	\$623	100	\$41,567	82.1	19.4
Daviess	30,047	0.5	\$441	70.8	\$34,064	71.8	9.7
Gibson	32,991	0.5	\$794	127.5	\$37,515	80.9	12.4
Greene	33,244	0.5	\$474	76.1	\$33,998	79.2	10.5
Johnson	123,256	2.0	\$521	83.6	\$52,693	85.7	23.1
Marion	863,251	13.9	\$727	116.7	\$40,421	81.6	25.4
Monroe	122,903	2.0	\$561	90.1	\$33,311	88.5	39.6
Morgan	68,656	1.1	\$502	80.6	\$47,739	80.7	12.6
Pike	12,931	0.2	\$649	104.2	\$34,759	75.6	8.4
Warrick	54,744	0.9	\$609	97.8	\$48,814	86.3	21.8
Region	1,342,023	21.7	\$586	94.1			

SPRING 2004

Inside This Issue...

- **Letting It Ride on Indiana's Technology Belt**
"The I-69 technology belt in northeast Indiana facilitates intercommunity collaboration and is beginning to create a counterbalance to the dominant Indianapolis metro area."
- **Exodus to Suburbia Continues, but a Little Slower**
"The five fastest-growing counties in Indiana surround Indianapolis, but all five have experienced a slight drop-off in percent growth."
- **The Mind of the Indiana CEO: Views on Emerging Business Issues**
"Overall, Indiana executives surmise that the business environment is already complex and the emerging trends of greater complexity are already 'business as usual' for them."

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