

Members

Rep. Eric Turner, Chairperson
Rep. Robert Cherry
Rep. Cherrish Pryor
Sen. Brandt Hershman
Sen. Timothy Skinner



COMMISSION ON STATE TAX AND FINANCING POLICY

Legislative Services Agency
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Heath Holloway, Fiscal Analyst for the Commission
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Authority: IC 2-5-3-2

MEETING MINUTES¹

Meeting Date: September 24, 2012
Meeting Time: 9:00 A.M.
Meeting Place: State House, 200 W. Washington St., Room 404
Meeting City: Indianapolis, Indiana
Meeting Number: 3

Members Present: Rep. Eric Turner, Chairperson; Rep. Robert Cherry; Rep. Cherrish Pryor; Sen. Brandt Hershman; Sen. Timothy Skinner.

Members Absent: None.

Representative Eric Turner called the meeting to order at 9:05 A.M. Representative Turner noted that the Commission is conducting a two-year study of Indiana tax credits. Diane Powers, Director of the Legislative Services Agency's (LSA) Office of Fiscal and Management Analysis, explained that copies of LSA's tax credit review had been provided to Commission members and staff and had been put on LSA's web site. (See Exhibit A.)

Mr. Jim Landers of LSA commented that state agencies (including the Department of Revenue, Department of Workforce Development, and the Indiana Economic Development Corporation) as well as local government officials had been helpful in providing assistance and data necessary for LSA to carry out the review.

Mr. Landers also noted that LSA is hoping to get additional information for some of the credits, and that LSA fiscal analysts have additional ideas on how to analyze the credits.

¹ These minutes, exhibits, and other materials referenced in the minutes can be viewed electronically at <http://www.in.gov/legislative>. Hard copies can be obtained in the Legislative Information Center in Room 230 of the State House in Indianapolis, Indiana. Requests for hard copies may be mailed to the Legislative Information Center, Legislative Services Agency, West Washington Street, Indianapolis, IN 46204-2789. A fee of \$0.15 per page and mailing costs will be charged for hard copies.

1. Economic Development for a Growing Economy (EDGE) Credit

Heath Holloway of LSA presented LSA's information on the Economic Development for a Growing Economy (EDGE) credit. Senator Brandt Hershman questioned Mr. Landers regarding whether the EDGE credit model would be helpful to start-up companies without much taxable income.

Mr. Chad Pittman and Mr. Garth Brazleton of the Indiana Economic Development Corporation (IEDC) testified regarding the EDGE credit. Mr. Pittman testified that:

- (1) the EDGE credit is the most important tax credit, and the IEDC conducts a cost-benefit analysis before awarding the credit (evaluating the cost per job against the direct and indirect benefits);
- (2) the refundable nature of the credit makes it attractive to taxpayers;
- (3) other states have comparable credits;
- (4) two other important tools for the IEDC are the Hoosier Business Investment (HBI) Credit and training grants; and
- (5) every economic deal has a local incentive, and some economic development deals also have a state incentive.

In response to a question from Representative Turner, Mr Pittman stated that any necessary "tweaks" to the credit can probably be done administratively. Mr. Brazleton noted that the EDGE credit statute is written broadly and that it gives the IEDC discretion. In response to a question from Representative Cherrish Pryor, Mr. Brazleton explained that the HBI Credit, for example, cannot be claimed if certain other credits are claimed. (See Exhibit B, information submitted to the Commission by the IEDC.)

2. Hoosier Business Investment Credit

Mr. Holloway presented LSA's information on the Hoosier Business Investment (HBI) Credit. Mr. Pittman testified regarding the HBI Credit, noting that companies are often more interested in the EDGE Credit. Mr. Ross Hooten of LSA testified regarding the ability of shareholders and members of pass-through entities to claim the credit.

3. Venture Capital Investment Credit

Mr. Landers presented LSA's information on the Venture Capital Investment (VCI) Credit. Mr. Pittman testified that it is a useful credit and that it does reduce the cost of capital. He noted that one issue that has been discussed is whether the credit should be transferable or refundable.

4. Research Expense Credit

Mr. Landers presented LSA's information on the Research Expense Credit. Representative Turner requested additional information on the federal research expense credit and how it affects research and development in Indiana. Mr. Pittman testified that this credit flows through the Department of Revenue, not the IEDC, and that it rarely comes up during IEDC discussions with prospective employers.

Mr. Bill Waltz of the Indiana State Chamber of Commerce testified that: (1) the research expense credit is paying off, because we do not want to give companies an incentive to conduct their research outside of Indiana; and (2) research jobs are high-paying jobs.

Mr. Jason Regger, Cook Medical, Inc., testified that research and development is the "life

blood" of his firm, which has 500 research and development employees in Indiana who are prototyping ideas, testing prototypes, and conducting animal and clinical studies. He noted that such employment helps to reduce "brain drain" from Indiana, and that companies such as Cook Medical are keenly aware of the tax climate and tax credits. Mr. Regger also testified concerning the federal research expense credit.

Mr. Michael O'Connor of Eli Lilly and Company provided the Commission with a study concerning developments in the bioscience industry. He testified that:

- (1) from 2000 - 2012, Indiana and New Jersey had the largest growth in life sciences jobs;
- (2) one factor making the Indiana credit successful is that it is permanent;
- (3) Eli Lilly and Company reinvests 40% of gross income back into research; and
- (4) other states have some form of a research credit.

(See Exhibits C and D.)

5. Alternative Fuel Vehicle Manufacturer Investment Credit

Mr. Holloway presented LSA's information on the Alternative Fuel Vehicle Manufacturer Investment Credit. He noted that no credits have been approved by the IEDC since the credit was enacted.

6. Headquarters Relocation Credit

Mr. Landers presented LSA's information on the Headquarters Relocation Credit. Mr. Pittman of the IEDC noted that the credit does come up in negotiations with companies, but that those businesses usually prefer the EDGE credit because of its refundability, and he testified that the eligibility requirement of \$100 million in annual worldwide revenues for the Headquarters Relocation Credit is a limiting factor. Representative Turner asked Mr. Pittman to consider what the eligibility threshold should be. In answer to a question from Senator Tim Skinner, Mr. Pittman testified that not having the credit available has not been a deal-breaker in negotiations.

7. Capital Investment Credit

Mr. Holloway presented LSA's information on the Capital Investment Credit. He explained that only one taxpayer has been approved for the credit since it was instituted.

8. Coal Combustion Product Credit

Mr. Holloway presented LSA's information on the Coal Combustion Product Credit. He noted that the credit has only been claimed once, even though the qualifying coal combustion product is used in a number of ways.

9. Media Production Expenditures Credit

Mr. Holloway presented LSA's information on the Media Production Expenditures Credit. Mr. Landers explained that the credit has expired. Senator Hershman noted that many states have "dialed back" on their versions of the credit.

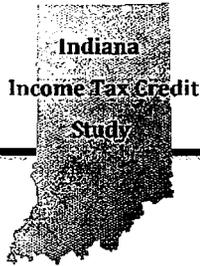
Mr. Bart Giesler, representing the Entertainment Software Association, testified in favor of the credit, commenting that the credit attracts companies to Indiana and helps to keep young people in Indiana. (See Exhibit E.)

10. New Employer Credit

Mr. Landers presented LSA's information on the New Employer Credit. He noted that no credits have been approved by the IEDC. Mr. Pittman of the IEDC testified that companies do ask about the credit, but they prefer the EDGE credit. He noted that the credit rate is 10%, and not *up to* 10%, which would give the IEDC flexibility.

The meeting was adjourned at approximately 11:45 A.M.

Exhibit A
CSTFP #3
9/24/12



Airport Development Zones

IC 8-22-3.5

Legislative Services Agency

September 2012

Overview.

Airport development zones (ADZ) are special taxing districts that provide benefits to taxpayers for economic development projects. ADZs are similar to enterprise zones (IC 5-28-15).

Current statute defines areas eligible for ADZs using population parameters. Below is a table listing the parameters in statute and the corresponding geographic regions.

Definitions of Airport Development Zones from IC 8-22-3.5-1.

Population Parameters	Geographic Area
County having a consolidated city	Marion County
City having a population between 80,000 and 80,400	City of Gary
County having a population between 105,000 and 110,000	Vigo County
County having a population between 300,000 and 400,000	Allen County
County having a population between 175,000 and 185,000	Vanderburgh County
County having a population between 115,000 and 125,000	Delaware County
City having a population between 55,000 and 60,000	City of Anderson

The statute specifies that the commission must prove the areas are necessary and meet the conditions outlined in IC 8-22-3.5-5. The commission is defined as the Metropolitan Development Commission for Marion County, the board of aviation commissioners for the ADZ in the city of Anderson, or the airport authority for the other ADZs listed above. The exact boundaries designated as an ADZ must be designated in the resolution proposed and adopted by the commission and in Allen, Delaware, and Vanderburgh Counties the resolution must be adopted by the executives of the county, municipality, or both depending on the location of the zone. The adopted resolution must be submitted to each taxing district that has authority to levy property taxes in the zone.

The ADZ created by the commission is a special taxing district and receives property taxes.

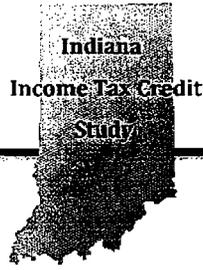
The ADZ may use its allocated funds for qualified airport development projects. A qualifying project must cost more than \$500,000,000 in Marion County or greater than \$250,000 in any other ADZ.

Tax Benefits.

A business located in an ADZ is eligible for the following tax credits:

- Employment Expense Credit (IC 6-3-3-10)
- Investment Cost Credit (IC 6-3.1-10)
- Loan Interest Credit (IC 6-3.1-7)
- Neighborhood Assistance Credit (IC 6-3.1-9)

In addition to available business tax credits, an employee who works and lives in an ADZ is entitled to a deduction for income earned in the zone (IC 6-3-2-8). Taxpayers who are qualified employees in an ADZ may deduct half of the adjusted gross income (AGI) earned as a qualified employee during the year, up to a maximum deduction of \$7,500.



Airport Development Zone Employment Expense Credit

IC 8-22-3.5-14; 6-3-3-10

Legislative Services Agency
September 2012

Purpose.

The Employment Expense Credit was established to encourage businesses to hire qualified employees in airport development zones (ADZs). ADZs are special taxing districts created to provide benefits to taxpayers for economic development projects.

Tax Credit Use Profile.

Tax Year	Filers Claiming Credits			Credits Claimed		
	Individual	Corporation	Total	Individual	Corporation	Total
2005	N/R	0	N/R	\$2,605	\$0	\$2,605
2006	N/R	0	N/R	4,246	0	4,243
2007	N/R	N/R	N/R	8,406	24,824	33,230
2008	58	0	58	24,895	0	24,895
2009	9	0	9	5,191	0	5,191
2010	9	N/R	9	8,029	100	8,129
2011	N/R	0	N/R	3,766	0	3,766
Mean	25	N/R	25	\$8,163	\$3,561	\$11,723

*The 2011 filer counts and credit amounts are not full-year totals because of filing extensions and suspension of returns for audit.
N/A = Not applicable
N/R = Five or fewer filers, filer count not reported

Description.

The credit is equal to the lesser of the following: (1) 10% of the qualified increase in wages paid to employees of an ADZ business; or (2) \$1,500 per qualified employee. An individual must live in the ADZ and work at least 50% of the time in the ADZ to be considered a qualifying employee.

Analysis.

- Credit usage is extremely low.
- Credit usage and creditable wage increases are insignificant relative to economic activity in relevant industry sectors.
- Credit has no significant impact on employment levels in ADZs.

The ADZ Employment Expense Credit is one of three credits enacted to stimulate economic development within ADZs. Each credit was tailored to provide an incentive for specific economic activity like investing, lending, or hiring. The other two credits are the ADZ Investment Cost Credit and ADZ Loan Interest Credit.

On average, credits claimed each year from 2005 to 2011 totaled only \$11,723. In the two highest years, 2007 and 2008, credits claimed totaled \$33,230 and \$24,895, respectively. Assuming that taxpayers

ADZ Employment Expense Tax Credit

Enactment: The credit was effective beginning in tax year 1983 for use in enterprise zones. In tax year 1993, the credit was extended to ADZs.

Expiration: This credit has no expiration date.

Credit Limits: This credit has no annual limit.

Award Process: Taxpayers claim the credit when they file their tax returns. Taxpayers must pay a fee into the Airport Development Zone debt service fund to be eligible to claim the credit.

Eligible Taxes: Individual Adjusted Gross Income (AGI), Corporate AGI, Financial Institutions, and Insurance Premiums Taxes.

Refund Provisions: The credit is nonrefundable. The credit may be carried forward for 10 years after the year the credit accrues. The credit may be carried back for 3 years preceding the year the credit accrues.

Claim Filing Requirements: Businesses must enclose a completed Schedule EZ along with their tax return.

claimed a 10% credit, these credit totals would have subsidized \$332,300 in wages increases in 2007 and \$248,950 in wage increases in 2008. These are extremely small amounts relative to the gross domestic product (GDP) and personal income attributable to the air transportation industry sector in Indiana. What's more, if the wage increases for the qualified employees averaged 3%, then the credit decreased the total wage cost for the qualified employees by only 0.3%. This reduction in wages would generate no discernible increase in employment based on conventional estimates of the response of employment levels to a reduction in wage rates.

On the other hand, if taxpayers in 2007 and 2008 claimed the maximum credit, \$1,500 per employee, then the credit would have subsidized wage increases for approximately 22 employees in 2007 and 17 employees in 2008. In this scenario the credit would have reduced the wage cost for these employees by about 4% based on the mean annual wage in 2007 and 2008. Nevertheless, the overall employment impact of reducing the wage cost of 17 employees or 22 employees throughout the EZs would be extremely small based on conventional estimates of the response of employment levels to a reduction in wage rates.

Economic Statistics for the Indiana Air Transportation Industry

Measure	2005	2006	2007	2008	2009	2010
GDP (in millions)	\$493.0	\$499.0	\$501.0	\$493.0	\$488.0	\$506.0
Personal Income (in millions)	\$371.6	\$367.2	\$374.6	\$352.3	\$341.8	\$357.9
Full-Time & Part-Time Employment	6,504	6,106	6,680	6,654	6,190	6,341
Average Wages	\$57,134	\$60,140	\$56,073	\$52,947	\$55,214	\$56,449

Source: U.S. Bureau of Economic Analysis.

Measures of air carrier activity (number of flights and passengers, freight, and mail transported) at Indiana airports also highlight the extremely low credit usage compared to actual industry activity of airports with ADZs. The air carrier activity measures reported below show downward trends for all airports in Indiana. However, the downward trend for three of the four activity measures is more severe for airports not having ADZs. Consequently, the low level of credit usage coupled with the trends in air carrier activity suggest the differences between airports with ADZs and airports without ADZs are better explained by other factors. These factors could potentially be multimodal connectivity, air-rail interfaces¹, proximity to population centers, and demand for air services².

U.S. Air Carrier Activity Where the Destination or Origin was an Indiana Airport

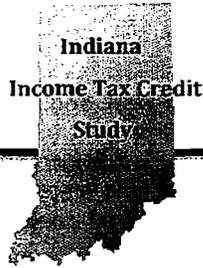
Measure (in thousands)	ADZ	Year						CAGR*
		2005	2006	2007	2008	2009	2010	
Flights	No	23	21	21	20	16	15	-8.0%
	Yes	216	205	200	193	170	161	-5.8%
	Total	239	226	221	213	186	176	
Passengers	No	693	760	789	717	640	636	-1.7%
	Yes	9,731	9,196	9,393	9,200	8,372	8,382	-2.9%
	Total	10,424	9,957	10,182	9,916	9,012	9,018	
Freight (lbs)	No	32,237	22,007	20,022	14,756	6,007	6,595	-27.2%
	Yes	2,555,642	2,593,096	2,504,918	2,266,421	1,998,716	2,102,059	-3.8%
	Total	2,587,879	2,615,103	2,524,941	2,281,177	2,004,723	2,108,653	
Mail (lbs)	No	3	14	4	1	0	0	-57.3%
	Yes	14,854	15,809	6,796	10,781	6,456	2,784	-28.5%
	Total	14,857	15,823	6,800	10,782	6,457	2,784	

Source: U.S. Bureau of Transportation Statistics.

*Compound Average Growth Rate.

¹ Goldberg, Douglas, "Attributes of Successful Airport City Development Programs." (Landrum & Brown, 2012) accessed September 9, 2012, <http://www.landrum-brown.com/>.

² Gardner, John, "An International Study of the Airport Choice Factors for Non-Integrated Cargo Airlines." (Loughborough University, 2006).



Airport Development Zone Investment Cost Credit

IC 8-22-3.5-14; 6-3.1-10

Legislative Services Agency
September 2012

Purpose.

The Investment Cost Credit was established to encourage individuals to purchase of ownership interests in businesses located in airport development zones (ADZs). ADZs are special taxing districts created to provide benefits to taxpayers for economic development projects.

Tax Credit Use Profile.

Tax Year	Filers Claiming Credits			Credits Claimed		
	Individual	Corporation	Total	Individual	Corporation	Total
2005	0	0	0	\$0	\$0	\$0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	N/R	0	N/R	5	0	5
2009	N/R	0	N/R	812	0	812
2010	N/R	0	N/R	1,709	0	1,709
2011*	N/R	0	N/R	1,501	0	1,501
Mean	N/R	0	N/R	\$1,006	\$0	\$1,006

*The 2011 filer counts and credit amounts are not full-year totals because of filing extensions and suspension of returns for audit.

N/A = Not applicable

N/R = Five or fewer filers, filer count not reported

Description.

The credit is equal to a maximum of 30% of the equity investment, depending on the investment and the jobs created as a result of the investment.

The credit percentage that an individual taxpayer can claim is based on the sum of the following, subject to the maximum limit:

- 10% - if the business needs equity financing as demonstrated by the inability of the business to obtain debt financing.
- 2% - if the business's primary NAICS designation is retail, professional, or warehouse/distribution.
- 5% - if the business's primary NAICS designation is manufacturing.
- 5% - if the business is engaged in high-technology operations.
- A percentage based on the number of jobs created within the first year of purchasing ownership according to the following schedule.

Jobs Created	Percentage
Less than 11	1%
11 to 25	2%
26 to 40	3%
41 to 75	4%
More than 75	5%

ADZ Investment Cost Tax Credit

Enactment: The credit was effective beginning in tax year 1986 for use in enterprise zones. In tax year 1993, the credit was extended to ADZs.

Expiration: This credit has no expiration date.

Credit Limits: This credit has no annual limit.

Award Process: The IEDC determines whether investment is qualified and the credit percentage. Taxpayers claim the credit when they file their tax returns. Taxpayers must pay a fee into the Airport Development Zone debt service fund to be eligible to claim the credit.

Eligible Taxes: Individual Adjusted Gross Income (AGI).

Refund Provisions: The credit is nonrefundable. The credit may be carried forward to subsequent years. The credit may not be carried back.

Claim Filing Requirements: Businesses must enclose the certification of the credit percentage from the IEDC.

- 5% - if 50% of the new jobs are reserved for residents of the zone.
- A percentage based on investments made in real or depreciable personal property. The credit amount is determined according to the following schedule.

Amount of Investment	Percentage
Less than \$25,001	1%
\$25,001 to \$50,000	2%
\$50,001 to \$100,000	3%
\$100,001 to \$200,000	4%
More than \$200,000	5%

The total credit percentage may not exceed 30%.

Analysis.

- Credit usage is extremely low.
- Credit usage and creditable investment are insignificant relative to economic activity in relevant industry sectors.
- Credit has no significant impact on investment levels in ADZs.

The ADZ Investment Cost Credit is one of three credits enacted to stimulate economic development within ADZs. Each credit was tailored to provide an incentive for specific economic activity like investing, lending, or hiring. The other two credits are the ADZ Employment Expense Credit and ADZ Loan Interest Credit.

The total credits claimed between 2008 and 2011 suggest investments totaling between \$13,400 and \$80,500. Even the maximum possible investment for which credit was claimed is insignificant compared to the gross domestic product (GDP) and personal income attributable to the air transportation industry sector in Indiana. While the investment connected to the credit may have been a significant factor for an individual project, the relatively small amounts that have been claimed suggest that the credit is not having a significant impact on investment in the ADZs or overall activity in the air transportation sector.

Economic Statistics for the Indiana Air Transportation Industry

Measure	2005	2006	2007	2008	2009	2010
GDP (in millions)	\$493.0	\$499.0	\$501.0	\$493.0	\$488.0	\$506.0
Personal Income (in millions)	\$371.6	\$367.2	\$374.6	\$352.3	\$341.8	\$357.9
Full-Time & Part-Time Employment	6,504	6,106	6,680	6,654	6,190	6,341
Average Wages	\$57,134	\$60,140	\$56,073	\$52,947	\$55,214	\$56,449

Source: U.S. Bureau of Economic Analysis.

Measures of air carrier activity (number of flights and passengers, freight, and mail transported) at Indiana airports also highlight the extremely low credit usage compared to actual industry activity of airports with ADZs. The air carrier activity reported below shows downward trends for all airports in Indiana. However, the downward trend for three of the four activity measures is more severe for airports not having ADZs. Consequently, the low level of credit usage coupled with the trends in air carrier activity suggest the differences between airports with ADZs and airports without ADZs can be better explained by other factors. These factors could potentially be proximity to population centers, 24-hour service, multimodal connectivity, and a freight forwarder presence¹.

¹ Gardner, John, "An International Study of the Airport Choice Factors for Non-Integrated Cargo Airlines." (Loughborough University, 2006).

U.S. Air Carrier Activity Where the Destination or Origin was an Indiana Airport

Measure (in thousands)	ADZ	Year						CAGR*
		2005	2006	2007	2008	2009	2010	
Flights	No	23	21	21	20	16	15	-8.0%
	Yes	216	205	200	193	170	161	-5.8%
	Total	239	226	221	213	186	176	
Passengers	No	693	760	789	717	640	636	-1.7%
	Yes	9,731	9,196	9,393	9,200	8,372	8,382	-2.9%
	Total	10,424	9,957	10,182	9,916	9,012	9,018	
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	Yes	2,555,642	2,593,096	2,504,918	2,266,421	1,998,716	2,102,059	-3.8%
	Total	2,587,879	2,615,103	2,524,941	2,281,177	2,004,723	2,108,653	
Mail (lbs.)	No	3	14	4	1	0	0	-57.3%
	Yes	14,854	15,809	6,796	10,781	6,456	2,784	-28.5%
	Total	14,857	15,823	6,800	10,782	6,457	2,784	

*Compound Average Growth Rate

Source: U.S. Bureau of Transportation Statistics..

Purpose.

The Loan Interest Credit was established to encourage loans to businesses located within airport development zones (ADZs). ADZs are special taxing districts created to provide benefits to taxpayers for economic development projects. They are similar to enterprise zones (IC 5-28-15).

Tax Credit Use Profile.

Tax Year	Filers Claiming Credits			Credits Claimed		
	Individual	Corporation	Total	Individual	Corporation	Total
2005	0	0	0	\$0	\$0	\$0
2006	N/R	0	N/R	566	0	566
2007	N/R	0	N/R	1,224	0	1,224
2008	N/R	0	N/R	635	0	635
2009	N/R	0	N/R	265	0	265
2010	0	0	0	0	0	0
2011*	N/R	0	N/R	33	0	33
Mean	N/R	0	N/R	\$545	\$0	\$545

*The 2011 filer counts and credit amounts are not full-year totals because of filing extensions and suspension of returns for audit.
N/A = Not Applicable
N/R = Five or fewer filers, filer count not reported

Description.

The credit is equal to 5% of the interest received by the taxpayer from all qualifying loans made in a taxable year to businesses in an ADZ. The business receiving the loan must use the loan proceeds for purposes directly related to the business in the ADZ or for an improvement that increases the assessed value of the real property located in the ADZ. A qualifying loan can also be made to an individual for the rehabilitation, repair, or improvement of a residence in the ADZ.

Analysis.

- Credit usage is extremely low.
- Credit usage and creditable loans are insignificant relative to economic activity in relevant industry sectors.
- Credit has no significant impact on lending to businesses in ADZs.

The ADZ Loan Interest Credit is one of three credits enacted to stimulate economic development within ADZs. Each credit was tailored to provide an incentive for specific economic activity like investing, lending, or hiring. The other two credits are the ADZ Employment Expense Credit and ADZ Investment Cost Credit.

ADZ Loan Interest Tax Credit

Enactment: The credit was effective beginning in tax year 1984 for use in enterprise zones. In tax year 1993, the credit was extended to ADZs.

Expiration: The credit has no expiration date.

Credit Limits: This credit has no annual limit.

Award Process: Taxpayers claim the credit when they file their tax returns. Taxpayers must pay a fee into the Airport Development Zone debt service fund and meet any requirements established by the IEDC to be eligible to claim the credit.

Eligible Taxes: Individual Adjusted Gross Income (AGI), Corporate AGI, Financial Institutions, and Insurance Premiums Taxes.

Refund Provisions: The credit is nonrefundable. The credit may be carried forward for 10 years after the date the loan is made. The credit may not be carried back.

Claim Filing Requirements: Businesses must enclose a completed Schedule EZ LIC along with their tax return.

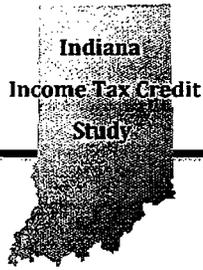
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Full-Time & Part-Time Employment	6,504	6,106	6,680	6,654	6,190	6,341
Average Wages	\$57,134	\$60,140	\$56,073	\$52,947	\$55,214	\$56,449

Source: U.S Bureau of Economic Analysis

The sum of the credits claimed from 2006 to 2011 suggests that a total of \$54,500 in interest was paid to the qualified lenders. However, the data provided is insufficient to determine the actual amount of the loans. Depending on the terms of the loans, the interest could have represented loans of \$150,000 to \$500,000. The expenditures arising in the ADZs from these loan amounts are insignificant relative to the gross domestic product (GDP) and personal income attributable to Indiana's air transportation industry sector. While the loan activity connected to the credit may have been a significant factor for an individual project, the relatively small amounts that have been claimed suggest that the credit is not having a significant impact on lending to businesses in the ADZs or overall economic activity in the air transportation sector.

Also, none of the credits were claimed by corporate taxpayers or financial institutions. This could mean that large lenders are not making loans to ADZ businesses at all or lenders are making loans in ADZs but are not qualifying for the credit.



Capital Investment Credit

IC 6-3.1-13.5

Legislative Services Agency

September 2012

Purpose.

The Capital Investment Credit was created to encourage capital investments in projects costing over \$75 M in Shelby County.

Tax Credit Use Profile.

Tax Year	Filers Claiming Credits			Credits Claimed		
	Individual	Corporation	Total	Individual	Corporation	Total
2005	18	N/A	18	\$120,658	N/A	\$120,658
2006	30	N/R	30	33,021	\$1,995,431	2,028,452
2007	33	N/R	33	64,561	1,385,569	1,450,130
2008	35	N/R	35	58,578	2,467	61,045
2009	19	0	19	22,208	0	22,208
2010	91	N/R	91	124,305	5,000	129,305
2011*	21	0	21	34,080	0	34,080
Mean	35	N/R	35	\$65,344	\$564,745	\$549,411

*The 2011 filer counts and credit amounts are not full-year totals because of filing extensions and suspension of returns for audit.

N/A = Not applicable

N/R = Five or fewer filers, filer count not reported

Description.

The credit is equal to 14% of the qualified investment. The qualified investment must be made in a project with a total cost greater than \$75 M in Shelby County, and the average wages paid by the business must be greater than average wages for the rest of Shelby County. The value of the credit must be claimed in equal amounts over seven years. This tax credit is not refundable, but may be carried forward for up to three years.

The taxpayer may not be granted more than one of the following credits for the same project: alternative fuel vehicle manufacturer investment credit, capital investment credit, community revitalization enhancement district credit, enterprise zone investment cost credit, Hoosier business investment credit, industrial recovery credit, military base investment cost credit, military base recovery credit, or venture capital investment credit.

Analysis.

- Nonrefundability of the tax credit reduces the state tax expenditure.
- Positive impact on property tax base and tax rates.
- Positive impact on income earnings of the construction industry.

According to the IEDC, the credit has been approved

Capital Investment Tax Credit

Enactment: The credit was effective beginning in tax year 2001.

Expiration: No new credits may be granted after December 31, 2016. The credit expires on January 1, 2020.

Credit Limits: This credit has no annual limit.

Award Process: The taxpayer must apply to the Indiana Economic Development Corporation (IEDC). The IEDC determines whether the expenditure is a qualified investment.

Eligible Taxes: Individual Adjusted Gross Income (AGI), Corporate AGI, Financial Institutions, and Insurance Premiums Taxes.

Refund Provisions: The credit is nonrefundable, but unused credits may be carried forward for up to 3 years. Unused credits may not be carried back.

Claim Filing Requirements: The taxpayer must submit the certification letter provided by the IEDC along with their return to claim the credit.

for \$123 M in qualified investment. All claims on the individual income tax returns for 2005 through 2011 reported in the table above are erroneous and subject to audit by the Department of State Revenue.

Economic Statistics for Shelby County

Measure	2004	2005	2006	2007	2008	2009	2010
Population (Persons)	43,488	43,482	43,812	44,086	44,345	44,551	44,366
Personal Income (Millions)	\$1,329.3	\$1,362.4	\$1,402.7	\$1,460.7	\$1,548.3	\$1,490.0	\$1,495.7
Construction Earnings (Millions)	\$56.5	\$61.3	\$60.9	\$63.3	\$57.1	\$49.7	\$48.0
Nonmetallic Mineral Product Manufacturing Earnings (Millions)	\$79.8	\$77.4	\$81.3	\$78.9	\$80.9	\$70.8	\$74.7

Source: U. S. Bureau of Economic Analysis

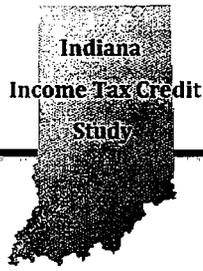
The presence of the investment appears to be discernible in the county-level construction earnings data. Construction sector earnings were significantly higher in 2005 to 2007 compared to 2004 before the project commenced. Construction sector earnings in 2005, 2006, and 2007 exceeded the 2004 base by 8.5%, 7.8%, and 12%, respectively.

It is more difficult to discern the impact of the investment on the nonmetallic mineral product manufacturing sector because the taxpayer is one of 12 businesses under the same general industrial classification. Also, capital investments do not always translate into increased wage earnings. Capital investments can be substitutes for labor if it is used to enhance production equipment.

Evaluating property tax return data for investment growth, one taxpayer was found to potentially meet the above qualifications for the credit. The taxpayer's combined gross assessed value (AV) for both real and personal property increased from \$44 M to \$188 M. The gross AV of the taxpayer's personal and real property increased an average of 33.4% per year since the investment. The gross AV for all of Shelby County grew at rate of 4.0%. If one excludes the taxpayer, the total county gross AV would have only grown by 3.1% a year. The investment resulted in a greater gross AV for Shelby County.

The taxpayer's net AV (after abatements) grew from \$36 M to \$64 M at an average annual rate of 12.1%. If one excludes the taxpayer, net AV declined by an average of 1.0% annually. With the taxpayer, net AV declined only 0.08% per year. The taxpayer's net AV resulted in lower property tax rates for all taxpayers compared to what rates would have been without the investment.

This project did have a positive impact on the community. The investment broadened the property tax base for Shelby County, and it provided additional income to the construction sector. However, it is unknown whether the investment would have occurred without the tax credit.



Coal Combustion Product Credit

IC 6-3.1-25.2

Legislative Services Agency

September 2012

Purpose.

The Coal Combustion Product Credit was established to encourage the recycling of coal ash, also known as coal combustion products (CCP), from Indiana coal-fired power plants.

Tax Credit Use Profile.

Tax Year	Filers Claiming Credits [^]	Credits Claimed
2005	0	\$0
2006	0	0
2007	0	0
2008	0	0
2009	0	0
2010	N/R	977
2011*	0	0

*The 2011 filer counts and credit amounts are not full-year totals because of filing extensions and suspension of returns for audit.

[^]No credits were claimed on Indiana Corporate AGI returns.

N/R = Five or fewer filers, filer count not reported

Description.

The tax credit is equal to \$2 per ton of the increased acquisitions of coal ash obtained and used by the manufacturer during the taxable year. Eligible businesses must manufacture products comprised of at least 15% by weight of coal ash.

An existing business that has been manufacturing recycled components must compute the increase in coal ash used with the following calculation: (1) determine the maximum annual tons used from the previous three years; (2) determine the maximum annual tonnage in these three years and multiply by 1/10 of that amount to arrive at the prior base; (3) compute the difference between the tons consumed in the current taxable year and the computed prior base. If the difference is positive, multiply that amount by \$2 to determine the available credit. If the difference is negative, the business is not eligible to claim the credit.

The credit for a new business or an existing business that is new to manufacturing recycled components in its initial taxable year is \$2 per ton of coal ash consumed in the taxable year.

The tax credit may not be claimed by a taxpayer who takes a property tax deduction for depreciable personal property used to manufacture recycled components.

Coal Combustion Product Tax Credit

Enactment: The credit was effective beginning in tax year 2004.

Expiration: The credit has no expiration date.

Credit Limits: The total of all credits claimed may not exceed \$2 M for the fiscal year. The taxpayer may only claim the credit for ten consecutive years.

Award Process: Taxpayers claim the credit when they file their tax returns.

Eligible Taxes: Individual Adjusted Gross Income (AGI) and Corporate AGI Taxes.

Refund Provisions: The credit is nonrefundable, and unused credits may not be carried forward or carried back.

Claim Filing Requirements: Taxpayers must fill out an additional form provided by the Department of State Revenue. The additional form must be submitted with the appropriate tax return.

Analysis.

- Credit usage is extremely low.
- Credit usage is insignificant relative to the economic activity of the targeted industrial sector.
- Credit has no significant impact on reuse of coal combustion products generated in Indiana.

CCPs can either be impounded in landfills or reused in other products. CCPs are used in the production of cement and concrete. It can replace other natural materials in the production of blocks, bricks, and pavers. CCPs are also used as paint fillers, wallboard, and roofing granules for shingles.

The United States produced approximately 154 million tons of coal ash in 2012¹. Almost 44 million tons were used in the production of other goods². In 1999, Indiana produced 8.2 million tons of coal ash and reused 3.5 million tons³. Current estimates show Indiana producing 9.5 million tons of coal ash per year. Assuming the current recycling rate, an estimated 4.0 million tons annually may be reused.

The total credit amount claimed between 2005 and 2011 was \$977. The credit amount claimed would have subsidized the reuse of only 488 tons of coal ash at \$2 per ton, which amounts to only about 0.01% of the total amount of Indiana coal ash reused annually.

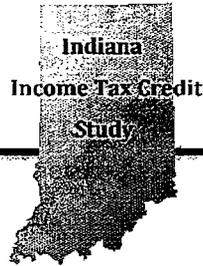
The future of CCP recycling projects is uncertain. The U. S. Environmental Protection Agency (EPA) currently considers coal ash an exempt waste under an amendment to the Resource Conservation and Recovery Act. However, the EPA is proposing to regulate coal ash after an accident at the Tennessee Valley Authority's plant in Kingston, Tennessee. Coal ash could be declared a special/hazardous waste⁴. Experts disagree on the impact the proposed rule will have on industries that reuse CCP.

¹ Groppo, Jack. "Coal Ash Reuse Options: A Strategy for Moving Forward." (Center for Applied Energy Research, 2012) , accessed August 7, 2012, <https://www.purdue.edu/discoverypark/energy/CCTR/presentations.php>

² Groppo, Jack. "Coal Ash Reuse Options: A Strategy for Moving Forward."

³ Bowen, Brian H. and Irwin, Marty W. "Coal Utilization By-products CCTR Basic Facts File #6" (Center for Coal Technology Research, 2006), accessed August 7, 2012, <https://www.purdue.edu/discoverypark/energy/CCTR/outreach.php>

⁴ "Coal Combustion Residuals – Proposed Rule," last modified June 13, 2012, <http://www.epa.gov/osw/nonhaz/industrial/special/fossil/ccr-rule/index.htm>



Community Revitalization Enhancement Districts

IC 36-7-13

Legislative Services Agency
September 2012

Overview.

Community Revitalization Enhancement Districts (CREDS) are special zones within which local units may acquire property or make improvements for industrial development purposes. P.L.125-1998 [IC 36-7-13] authorized the first CRED to be designated in Bloomington. The statute has since been amended to allow additional CREDS to be designated for specified sites in specified local units. In addition, P.L. 224-2003 [IC 36-7-13-10.1] expanded the CRED program to allow any 1st or 2nd class city to designate one new CRED.

Approved CREDS and Statutory Authority

CRED	Authority	Operation
Bloomington (Thomson)	IC 36-7-13-12(b)	Active
Delaware County (ABB)	IC 36-7-13-12(c)	Active
Delaware County (MAGNA)	IC 36-7-13-12(c)	Active
Fort Wayne (Southtown)	IC 36-7-13-12(e)	Active
Marion (Phase I & II)	IC 36-7-13-10.5	Active
South Bend	IC 36-7-13-12(d)	Active
Anderson (Jefferson/GM)	IC 36-7-13-10.1	Not Active
Bloomington (Downtown)	IC 36-7-13-10.1	Active
Fort Wayne (Downtown)	IC 36-7-13-10.1	Active
Indianapolis (Lafayette Square)	IC 36-7-13-10.1	Active

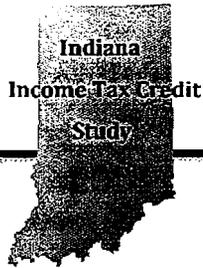
Source: Indiana State Budget Agency; contacts with local units.

option income taxes. CREDS established under the older site-specific statutes (IC 36-7-13-12; IC 36-7-13-10.5) are subject to a \$1 M annual limit on capture of Sales Tax and state Income Tax revenue. CREDS, established under IC 36-7-13-10.1 for 1st or 2nd class cities, are subject to a \$750,000 annual limit on capture of Sales Tax and state Income Tax revenue.

Under IC 6-3.1-19, a taxpayer who makes a qualified investment for the redevelopment or rehabilitation of property located within a CRED is entitled to a tax credit equal to 25% of the qualified investment. The investment must be approved by the Indiana Economic Development Corporation. However, a taxpayer is not entitled to the credit if the taxpayer substantially reduces operations or ceases to operate in another area of the state in order to relocate within the CRED. The credit is nonrefundable, but unused credits may be carried forward to subsequent years. Unused credits may not be carried back. The credit may be used to reduce the taxpayer's tax liability under the individual or corporate Adjusted Gross Income Tax, local option income taxes, the Financial Institutions Tax, or the Insurance Premiums Tax.

A CRED is either designated by an advisory commission on industrial development or designated by the legislative body of a county or municipality. The local resolution or ordinance designating a CRED must be reviewed by the State Budget Committee and approved by the State Budget Agency. A CRED terminates not later than 15 years after it receives its first allocation of captured incremental tax revenue.

There are currently 10 CREDS in Indiana, of which 9 are active. The predominant funding source for CREDS is incremental revenue generated within the CRED from Sales Tax, state Income Tax, and local



Community Revitalization Enhancement District Credit

IC 36-7-13; 6-3.1-19

Legislative Services Agency
September 2012

Purpose.

The Community Revitalization Enhancement District Credit was established to encourage qualified investments for the redevelopment or rehabilitation of property within a community revitalization enhancement district (CRED). CREDs are special zones within which local units may acquire property and make improvements for industrial development purposes.

Tax Credit Use Profile.

Tax Year	Filers Claiming Credits			Credits Claimed			Estimated Qualifying Investment
	Individual	Corporation	Total	Individual	Corporation	Total	
2005	94	N/A	94	\$291,249	N/A	\$291,249	\$1,164,996
2006	84	N/R	84	54,228	\$3,224,231	3,278,519	13,113,836
2007	55	N/R	55	416,447	2,663,171	3,079,618	12,318,472
2008	78	N/R	78	153,596	816,204	969,800	3,879,200
2009	40	N/R	122	83,316	4,251,218	4,334,534	17,338,136
2010	26	0	104	71,064	0	71,064	284,256
2011*	17	0	99	8,528	0	8,528	34,112
Mean	56	N/R		\$154,061	\$1,825,804	\$1,719,036	\$6,876,144

*The 2011 filer counts and credit amounts are not full-year totals because of filing extensions and suspension of returns for audit.

N/A = Not applicable

N/R = Five or fewer filers, filer count not reported

Description.

The credit amount equals 25% of the qualified investment made by the taxpayer during the taxable year. The qualified investment must be approved by the Indiana Economic Development Corporation (IEDC).

The credit can be disallowed if the business ceases existing operations, substantially reduces its operations within the CRED, or reduces other Indiana operations to relocate them into the CRED.

The taxpayer may not be granted more than one of the following credits for the same project: alternative fuel vehicle manufacturer investment credit, capital investment credit, community revitalization enhancement district credit, enterprise zone investment cost credit, Hoosier business investment credit, industrial recovery credit, military base investment cost credit, military base recovery credit, and venture capital investment credit.

The entity can assign the credit to a lessee who remains subject to the same requirements. The assignment must be in writing, and any consideration may not exceed the value of the part of the credit assigned. Both parties must report the assignment on their state tax returns.

CRED Tax Credit

Enactment: The credit was effective beginning in tax year 1999.

Expiration: The credit has no expiration date.

Credit Limits: This credit has no annual limit.

Award Process: The qualified investment must be made under a plan approved by a local advisory commission on industrial development. The qualified investment must be approved by the IEDC. Taxpayers claim the credit when they file their tax returns. A taxpayer may be disqualified from claiming the credit if the taxpayer relocates operations in Indiana to the CRED.

Eligible Taxes: Individual Adjusted Gross Income (AGI), Corporate AGI, Financial Institutions, Insurance Premiums, and Local Option Income Taxes.

Refund Provisions: The credit is nonrefundable, but unused credits may be carried forward to subsequent years. Unused credits may not be carried back.

Claim Filing Requirements: The taxpayer is required to submit all necessary information for calculation of the credit and determination of qualified investment.

Analysis.

On average, credits claimed each year from 2005 to 2011 totaled \$1,719,036, with the highest year being 2009 when the amount of credits claimed totaled \$4,334,534. The table above reports the credits claimed each year and the qualified investment subsidized by the 25% credit. From 2005 to 2011, a total of \$12,033,252 in credits was claimed for \$48,133,008 in qualified investment.

CRED Activity

CRED	Approved*	Projects	Private Investment (in millions)	Tax Revenue Capture (in millions)
Bloomington (Downtown)	2004	N/A	N/A	\$5.30
Bloomington (Thomson)	1999	N/A	N/A	4.5
Delaware County (ABB)	2004	2	115.0 [^]	0
Delaware County (MAGNA)	2004	1		1.4
Fort Wayne (Downtown)	2004	6	103.6	0.75
Fort Wayne (Southtown)	2004	2	28	5
Indianapolis (Lafayette Square)	2004	48	61.8	3
Marion (Phase I & II)	2001, 2004	19	37.5	6.7
South Bend	2002	6	38.7	6.3
Total		84	384.6	32.95

*Year approved by the State Budget Agency.

[^]Combined investment in both Delaware County CREDs. Separate totals not available at the time of publication.

N/A = Bloomington project and investment data not available at the time of publication.

The table above reports information about private investment in the CREDs since they commenced operating.¹ A total of 84 projects have been undertaken in the CREDs, with the projects resulting in \$384.6 M in private investment.² These totals do not include projects and investment that have occurred in the Bloomington CREDs. Thus, the qualified investment subsidized by the CRED credit (totaling \$48,133,008) represents 12.5% of the reported private investment in CREDs.

Besides the CRED credit, CREDs are also authorized to capture incremental Sales Tax, state Income Tax, and local option income tax revenue generated at businesses within the CREDs. The revenue capture through FY 2011 is reported for each CRED in the table above. Local development officials report that the CREDs use the captured tax revenue for various purposes. These purposes include the following: (1) demolition, site cleanup and environmental remediation, and site preparation; (2) infrastructure improvements; and (3) financial incentives to CRED businesses. All of the CREDs identified in the above table were approved prior to 2005 and, with the exception of the Fort Wayne (Downtown) and Delaware County (ABB) CREDs, have been capturing incremental tax revenue since at least FY 2008. Fort Wayne (Downtown) captured revenue for the first time in FY 2011 and Delaware County (ABB) is expected to capture revenue in FY 2012. Through FY 2011, the CREDs captured a total of \$32,974,181. So, governmental support for investment in the CREDs totals at least \$45,007,433 if the CRED credit total is combined with the revenue capture amount.

While the reported private investment in the CREDs (excluding the Bloomington CREDs) is sizable on its own, the total is still relatively small as a share of business investment in the counties containing those CREDs. It is estimated that the investment subsidized by the CRED credit (totaling \$48,133,008) represents only about 0.6% of the annual private fixed investment by business in Allen, Delaware, Grant, Marion, and St. Joseph Counties, combined. Moreover, the total private investment in the CREDs (excluding the Bloomington CREDs) represents only about 4.7% of the annual private fixed investment by business in those counties. Consequently, while the CRED credit and other programs operated by the CREDs may steer investment to those areas, this investment is still relatively small.

¹ A CRED is either designated by an advisory commission on industrial development or designated by the legislative body of a county or municipality. The local resolution or ordinance designating a CRED must be reviewed by the State Budget Committee and approved by the State Budget Agency.

² Project and investment information was reported to LSA via telephone and email contacts with community and economic development officials in Bloomington, Fort Wayne, Indianapolis, Marion, Muncie, and South Bend. A CRED in Anderson was approved in 2004, but has been inactive until recently. Anderson development officials report that they are actively pursuing projects and investments for the CRED.

compared to the regional economies within which the CREDs operate. Arguably, some of this investment, in particular retail investment, may have occurred in those cities where the CREDs are located without the CRED credit or the CREDs.



Earned Income Tax Credit

IC 6-3.1-21

Legislative Services Agency
September 2012

Purpose.

The Indiana Earned Income Tax Credit (EITC) was created to provide an additional refundable credit to certain low-income working families and individuals who claimed a federal earned income tax credit.

Tax Credit Use Profile.

Tax Year	Number of Claims	Amount of Claims	Average Credit Amount	No. of Households Claiming Max. Credit	% of All Returns Filed
2005	427,859	\$47,435,257	\$111	57,811	14.0%
2006	440,508	50,380,306	114	64,079	14.3%
2007	467,383	54,942,564	118	67,850	14.7%
2008	480,544	58,894,663	123	72,982	15.3%
2009	533,472	103,427,037	194	80,487	17.4%
2010	531,569	103,834,798	195	N/A	16.7%
2011*	483,865	93,773,883	194	N/A	15.7%

*Returns filed as of July 18, 2012
N/A = Not Applicable.

Description.

The credit amount is determined by the taxpayer's modified adjusted gross income (MAGI) and the number of qualifying children. The maximum credit for 2011 was \$460.

The credit amount is based on a fixed percentage from the first dollar of earnings until the credit reaches a maximum. The percentage and maximum credit vary, depending on the number of qualifying children. The credit stays flat as earnings continue to increase. Once the earnings reach a certain amount, the credit is gradually reduced with each additional dollar of income until the credit reaches zero. The maximum credits, award percentages, and income thresholds for 2011 are in the table.

Number of Qualifying Children	0	1	2 or More
Phase-in Rate	7.65%	34.00%	40.00%
Phase-in Income Threshold	\$6,050	\$9,100	\$12,800
Maximum Credit Awards	\$42	\$279	\$460
Phaseout Income Begins	\$7,570	\$16,700	\$16,700
Phaseout Rate	7.65%	16.00%	21.00%
Phaseout Threshold	\$13,550	\$36,050	\$40,950

The maximum award and income thresholds are adjusted for inflation every year. The 2012 MAGI phaseout thresholds are \$13,950 for taxpayers with no children, \$36,900 for taxpayers with one child, and \$41,950 for taxpayers with two or more children. The maximum awards for 2012 are \$43, \$285, and \$473. The Indiana EITC credit award schedule for year 2011 is shown in the chart below.

Earned Income Tax Credit

Enactment: The credit was effective beginning in tax year 1999; Modifications were made for tax years beginning in tax years 2003, 2009, and 2011.

Expiration: This credit has no expiration date.

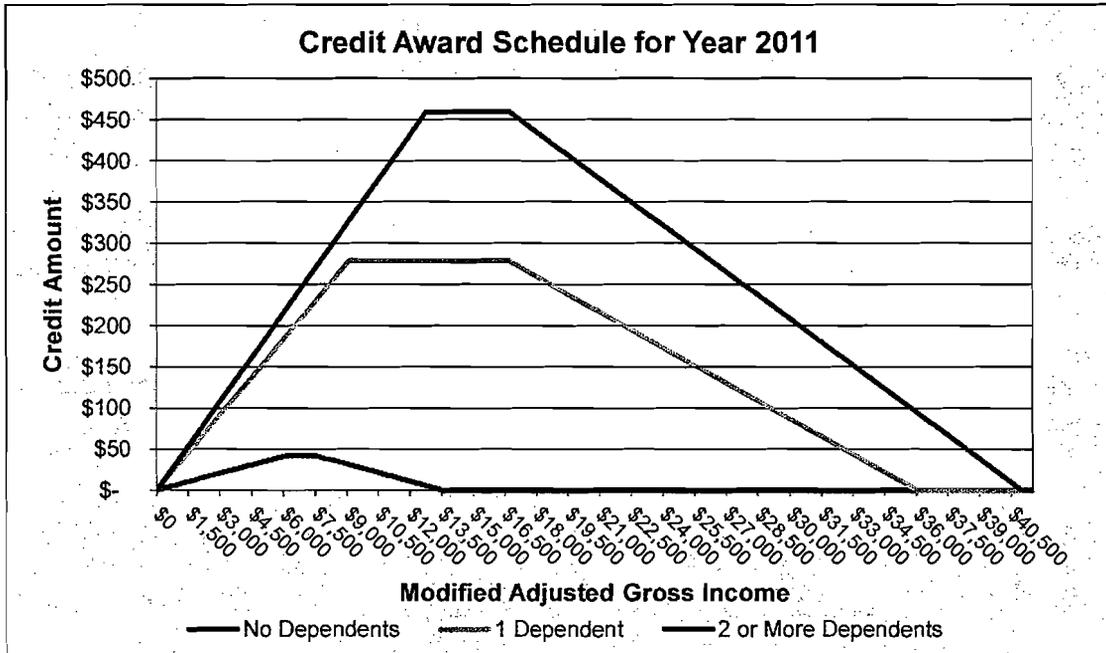
Credit Limits: This credit has no annual limit.

Award Process: None, the taxpayer claims the credit when filing their return.

Eligible Taxes: Individual AGI Tax.

Refund Provisions: The credit is fully refundable.

Claim Filing Requirements: Taxpayers must submit form IN-EIC along with their return.



History.

The Indiana EITC was enacted in 1999. The initial credit was computed by taking 3.4% of \$12,000 minus the taxpayer's total Indiana income. To be eligible for the credit, families had to have at least one qualifying child and a total state income under \$12,000. The initial EITC provided the highest credit amount to those with the lowest earned income. This is in contrast to the current EITC, under which the credit amount increases with earned income until it phases out. In 2003, the Indiana EITC was linked to the federal EITC. The Indiana EITC used the same eligibility criteria and award structure as the federal EITC, except the Indiana EITC was equal to 6% of the federal EITC. The Indiana EITC was increased to 9% of the federal EITC beginning in tax year 2009.

Indiana modified the credit in 2011 by decoupling from federal legislation the current federal EITC and establishing a distinct program based on the federal EITC as it existed prior to 2010. The key differences between the current federal EITC and Indiana EITC are:

- Modified adjusted gross income (MAGI) instead of adjusted gross income (AGI) is used to determine the award thresholds.
- The income thresholds, phase-in and phaseout rates, and maximum awards are the same for both single and married families.
- The separate award tier for three or more qualifying children was eliminated.
- The advance payment option for the EITC was eliminated.

Analysis.

- Credit provides additional refunds to a substantial number of Indiana households.
- Credit provides refunds to a substantial number of households that would otherwise have to pay tax.
- Credit moves a small number of Indiana households above the poverty line.
- A substantial number of eligible households fail to claim the Indiana EITC.

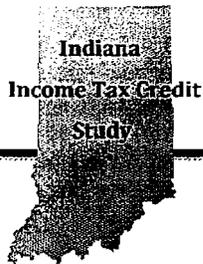
In 2009, Hoosier taxpayers claimed over \$103 M in EITC. Those taxpayers received \$184 M in refunds, and \$9.4 M of those refunds depended on receiving the EITC credit. There were 533,472 Hoosier households that claimed the EITC, with 478,313 receiving refunds and 58,989 households that would not have received a refund without the EITC. Single and head-of-household filers were 71% of the total households claiming EITC. They also account for 70% of the total credits. Of the households claiming EITC, 70% had at least one qualifying dependent. Households earning less than \$20,000 AGI comprise 61% of all the EITC claims.

Indiana's EITC was enacted to work with the federal EITC to give certain Hoosier working families an additional refundable credit to raise their household income above the federal poverty line. Over half of the households that

claimed the Indiana EITC were under the federal poverty line. The combined federal and Indiana EITCs raised the incomes of 21% of those households above the poverty line. An estimated 95,000 children resided in those households. Without the federal EITC, it's estimated that only 1.7% of those households would have been moved above the poverty line. An estimated 7,200 children lived in those households. The table below shows the estimated number of people both EITC programs have shifted above the federal poverty line.

Not all eligible households claim the EITC. An estimated 3 of 5 people eligible for EITC claimed it in tax year 2009. It would have cost an estimated additional \$35.1 M if all the potentially eligible households claimed the Indiana EITC in tax year 2009. The IRS reported similar findings. For 2011, the IRS states 4 of 5 people eligible claimed the credit. Their research found lower levels of participation with workers who live in rural areas, are self-employed, do not have a qualifying child, or experience recent changes to marital, parental, or financial status.

EITC Combination	Tax Year	Number Shifted Above Federal Poverty Level (Thousands)					
		Households			Children		
		Single Filers	Married Filers	Total	Single Filers	Married Filers	Total
Federal EITC	2007	36.2	9.3	45.5	51.3	18.9	70.1
	2008	38.2	10.7	48.9	54.6	22.0	76.6
	2009	39.3	13.2	52.5	57.5	28.7	86.2
Indiana EITC	2007	2.1	0.5	2.6	2.8	1.1	3.9
	2008	2.1	0.6	2.7	2.7	1.3	4.0
	2009	3.4	1.2	4.6	4.7	2.6	7.3
Indiana + Federal	2007	38.6	9.8	48.4	54.9	20.0	74.9
	2008	40.7	11.4	52.1	58.6	23.3	81.9
	2009	43.3	14.3	57.6	63.9	31.1	95



Economic Development for a Growing Economy (EDGE) Credit

IC 6-3.1-13

Legislative Services Agency
September 2012

Purpose.

The Economic Development for a Growing Economy (EDGE) Credit was created to provide an incentive for businesses to either create new jobs in Indiana or undertake projects to retain existing jobs in Indiana.

Tax Year	Filers Claiming Credits			Credits Claimed		
	Individual	Corporation	Total	Individual	Corporation	Total
2005	N/A	225	225	N/A	\$28,646,102	\$28,646,102
2006	83	307	390	\$866,507	35,558,546	36,425,053
2007	588	362	950	1,332,171	42,748,845	44,081,016
2008	493	305	798	1,188,167	48,020,503	49,208,670
2009	696	325	1,021	1,275,882	39,084,587	40,360,469
2010	692	386	1,078	2,000,062	33,854,894	35,854,956
2011*	599	17	616	812,364	240,192	1,052,556
Mean	525	275	725	\$1,245,859	\$32,593,381	\$33,661,260

*The 2011 filer counts and credit amounts are not full-year totals because of filing extensions and suspension of returns for audit.
N/A = Not Applicable - the EDGE Credit was not reported on the individual tax return before tax year 2006.

Description.

The credit is determined by the Indiana Economic Development Corporation (IEDC) for projects that do the following: (1) create new jobs that were not jobs previously performed in Indiana by employees of the taxpayer or (2) retain existing jobs performed in Indiana by the employees of the taxpayer. The credit for job creation projects was effective beginning in tax year 1994, and the credit for job retention projects was effective beginning in tax year 2003.

The IEDC determines the amount and duration of the credit. The credit may be set as a percentage of the incremental income tax withholdings attributable to the jobs created or retained by the taxpayer's project. The credit may include a fixed dollar limitation, and credits awarded for job creation projects may not exceed 100% of the incremental income tax withholdings. The duration of the credit may not exceed 10 years. The credit may exceed a taxpayer's tax liability, in which case the excess may, at the discretion of the IEDC, be refunded to the taxpayer.

EDGE Tax Credit

Enactment: The credit was effective beginning in tax year 1994.

Expiration: This credit has no expiration date.

Credit Limits: The total amount of credits awarded by the IEDC for job retention projects may not exceed \$10 M in a fiscal year. There is no limit on new credits awarded for job creation projects.

Award Process: Eligibility for the credit, the total credit amount, and the duration of the credit up to 10 years is determined by the IEDC. Taxpayers claim the credit when they file their tax returns. A taxpayer may be disqualified from claiming the credit if the taxpayer relocates jobs from one Indiana site to another as determined by the IEDC.

Eligible Taxes: Individual Adjusted Gross Income (AGI), Corporate AGI, Financial Institutions, and Insurance Premiums Taxes.

Refund Provisions: The credit is refundable at the discretion of the IEDC.

Claim Filing Requirements: The taxpayer must submit all information necessary for calculating the credit.

The 2002 legislation establishing the EDGE credit for job retention projects limited the aggregate amount of credits that the IEDC could award to \$5 M annually in FY 2004 and FY 2005, with no limit thereafter. The \$5 M limit was extended to FY 2006 and FY 2007 by legislation enacted in 2005. Legislation enacted in 2006 increased the annual limit to \$10 M and made it effective for all years beginning with FY 2006.

Analysis.

- Credit is working as designed by providing credits to businesses that hire additional employees.
- It is unclear whether the credit is prompting taxpayers to hire employees beyond their initial business proposal.

In an effort to measure the potential impact of the EDGE credit on business employment and wage outcomes, a sample data set was created containing businesses operating between 2000 and 2011. The sample included businesses that were first offered EDGE credits after 1999 (“EDGE businesses”) as well as businesses that have not been recipients of EDGE credits (“non-EDGE businesses”). The sample data includes information on each business’s location, industry sector classification, employment, and wage payments.

Distribution of Sample EDGE Recipients by Industry Type, 2000 to 2011

Industrial Classification	EDGE \$ Offered (in millions)	% EDGE Offered	EDGE Projects	% EDGE Projects
Manufacturing	\$162.0	69%	187	53%
Wholesale Trade	13.6	6%	34	10%
Transportation & Warehousing	24.2	10%	36	10%
Finance & Insurance	2.2	1%	11	3%
Professional, Scientific, & Technical Services	6.6	3%	31	9%
Management of Companies & Enterprises	4.9	2%	12	3%
Administrative/Support & Waste Management	2.8	1%	9	3%
All Other Industrial Sectors	18.5	8%	32	9%

The EDGE recipients in the sample are from 65 different counties, with 40% of the EDGE recipients having operations in the following five counties: Allen, Elkhart, Hamilton, Hendricks, and Marion. Over half the EDGE projects were located in counties that have an airport development zone, a community revitalization enhancement district, or an enterprise zone. The county distribution of offered EDGE credits was different than the distribution of EDGE projects. Approximately 64% of the EDGE credits in our sample were offered to businesses located in the following counties: Marion, Porter, Hamilton, St. Joseph, and Kosciusko. Overall, the credits and projects were predominantly offered to businesses located in the more populous counties of the state.

The annual growth rates of employment and wages were examined to measure the impact of EDGE. The preliminary results were skewed due to several extreme observations. To control for outliers, firms with less than three years were dropped from the sample, and the median growth rates became the basis of the analysis. The comparisons were made between businesses within the same broad industry sector classification. The assumption is that the general economic climate will have a similar impact on similar types of businesses.

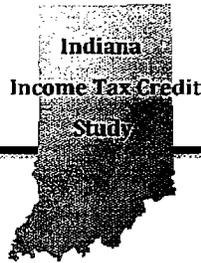
Economic Growth Rates of Sample EDGE and Non-EDGE Businesses by Industrial Sector, 2000 to 2011

Industrial Classification	Non-EDGE Businesses			EDGE Businesses		
	Firms	Wage Median Growth Rate	Employment Median Growth Rate	Firms	Wage Median Growth Rate	Employment Median Growth Rate
Administrative/Support & Waste Management	7,860	1.5%	0.0%	7	16%	13%
Finance & Insurance	8,023	2.8%	0.0%	9	22%	18%
Management of Companies & Enterprises	914	2.1%	0.0%	12	6%	3%
Manufacturing	10,191	-0.2%	-2.1%	162	9%	6%
Professional, Scientific, & Technical Services	16,668	2.3%	0.0%	27	28%	19%
Transportation & Warehousing	5,915	1.5%	0.0%	28	10%	9%
Wholesale Trade	11,084	1.4%	0.0%	23	13%	13%

Comparing the median annual growth rates of wages and employment by industry sector reveals differing trends between the non-EDGE businesses and EDGE businesses. The non-EDGE median annual employment growth rate is approximately 0.0% for most industry sectors. This can be attributed to both the prosperity and the economic downturn that occurred in the last decade. However, the EDGE businesses experienced positive annual growth rates in employment ranging from 3% to 19%. The median growth rates for wages are also distinct. The non-EDGE businesses experienced a modest increase in wages while the EDGE businesses had a higher median growth rate for wages than the non-EDGE businesses. An initial review of the results suggests two conclusions. Either the EDGE credit influences hiring, or it merely rewards a business for hiring that was already planned.

The credit was designed to only provide benefits once a business hires additional personnel. A business seeking EDGE credits must present a business plan to the IEDC, and the credit offered is based on the business plan. The IEDC only approves credits if the business fulfills its hiring obligation that was agreed to in order to receive the credits. Therefore, we would expect the employment rates for the non-EDGE businesses and EDGE businesses to be different. The comparative statistics suggest that the credit is working as intended. It rewards businesses that agree to hire additional employees. However, it is not clear whether the credit is encouraging employment by EDGE businesses beyond what is proposed in the initial business plans. Also, it is not possible at this point to ascertain whether the credit motivated the hiring decisions by EDGE businesses.

There is sufficient information available to conduct a more detailed analysis. A broader study could investigate whether EDGE businesses share similar characteristics. It could also compare EDGE businesses to other similarly situated non-EDGE businesses to estimate whether the EDGE business projects and employment were induced by the credit. Further study also could determine if an EDGE project provides indirect benefits to communities through increased property values, increases in overall personal income, and increased hiring in complementary businesses.



Enterprise Zones

IC 5-28-15

Legislative Services Agency
September 2012

Overview.

Indiana's Enterprise Zone (EZ) program was established by P.L. 23-1983 [IC 5-28-15] and allows EZs to be located in municipalities or on former military installations. The first EZs established were located in Evansville, Fort Wayne, Michigan City, Richmond, and South Bend in 1984. Currently, there are 24 EZs operating in the state.

The Indiana Economic Development Corporation (IEDC) administers the EZ Program and oversees the operation of the EZs in the state. Until 2005, the state Enterprise Zone Board with the assistance of the Indiana Department of Commerce approved, reviewed, and monitored the EZ program. The IEDC Board has the power to review and approve applications for proposed EZs, renew existing EZs, and monitor EZ operations and incentive use. EZs are designated based on demographic, socioeconomic, and geographic-size criteria.

The initial designation period for an EZ is 10 years, with EZs being eligible for two 5-year renewals based on performance reviews by the IEDC Board. The IEDC Board is authorized to designate two new municipal EZs each year until December 31, 2015. Existing EZs also can be continued by one of two methods. EZs which have operated for a full 20-year period may be redesignated by the IEDC Board for a new term with an initial 10-year designation period. Alternatively, an EZ scheduled to expire between December 1, 2008, and December 31, 2014, may be renewed for a 5-year period if the fiscal body of the municipality where the EZ is located adopts a resolution renewing the EZ. The 5-year renewal is applicable to EZs after the initial 10-year designation period or either of the ensuing 5-year designation periods.

Currently, there are 21 municipal EZs and 3 EZs located on former military installations. The following table lists the active Indiana EZs, the year of initial designation, and expiration date. The table also indicates whether the EZ has been redesignated after a 20-year operational period or renewed by resolution of the municipal fiscal body where the EZ is located. EZs that operated in Gary, Indianapolis, Kokomo, and Terre Haute expired and were not redesignated or renewed. Several EZs are due to expire over the next four years. EZs in Bloomington and Marion will expire in 2012; EZs in Bedford, East Chicago, Evansville, Fort Wayne, Lafayette, Michigan City, Richmond, and South Bend will expire in 2013; EZs in Connersville and Hammond will expire in 2014; and the Grissom Aeroplex EZ expires in 2015.

Current Indiana Enterprise Zone Locations

EZ by Type	Year EZ Established	Year EZ Initially Expired	Year EZ Redesignated/ Renewed	Year Redesignated/ Renewed EZ Expires
<i>Municipal</i>				
Bedford	1993	2013	-	-
Bloomington	1992	2012	-	-
Connersville	1995	2014	-	-
East Chicago*	1989	2008	2009	2013
Elkhart	1999	2018	-	-
Evansville^	1984	2003	2004	2013
Fort Wayne^	1984	2003	2004	2013
Frankfort	2003	2022	-	-
Hammond^	1985	2004	2005	2014
Jeffersonville	2000	2019	-	-
LaPorte	2002	2021	-	-

EZ by Type	Year EZ Established	Year EZ Initially Expired	Year EZ Redesignated/ Renewed	Year Redesignated/ Renewed EZ Expires
<i>Municipal con't</i>				
Lafayette	1993	2013	-	-
Marion	1992	2012	-	-
Michigan City [^]	1984	2003	2004	2013
Mitchell	2001	2020	-	-
New Albany	2000	2019	-	-
Portage	2001	2020	-	-
Richmond [^]	1984	2003	2004	2013
Salem	2003	2022	-	-
South Bend [^]	1984	2003	2004	2013
Vincennes	2002	2021	-	-
<i>Military</i>				
Fort Harrison	1997	2017	-	-
Grissom Aeroplex	1996	2015	-	-
River Ridge Dev. Authority [*]	1998	2017	-	-

^{*}Renewed for 5 years by resolution of the East Chicago Common Council.

[^]Redesignated for 10 years by the Indiana Enterprise Zone Board.

[#]Located on the site of the former Indiana Army Ammunition Plant at Jeffersonville.

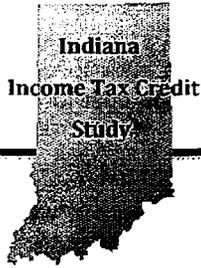
Source: Indiana Economic Development Corporation, June 2012.

A business located in an EZ is eligible for the following tax credits:

- Employment Expense Credit (IC 6-3-3-10)
- Investment Cost Credit (IC 6-3.1-10)
- Loan Interest Credit (IC 6-3.1-7)

In addition to available business tax credits, an employee who works and lives in an EZ is entitled to a deduction for income earned in the zone (IC 6-3-2-8). Taxpayers who are qualified employees in an EZ may deduct half of the adjusted gross income (AGI) earned as a qualified employee during the year up to a maximum deduction of \$7,500.

An EZ business is also eligible for a property tax investment deduction for the increased value of an EZ business property due to real and personal property investment by the business (IC 6-1.1-45). The added valuation may be deducted for up to 10 years. Qualified investment at an EZ location includes the following: (1) purchase of a building, new manufacturing or production equipment; (2) costs associated with the repair, rehabilitation, or modernization of an existing building and related improvements; (3) onsite infrastructure improvements; (4) construction of a new building; and (5) costs associated with retooling existing machinery.



Enterprise Zone Employment Expense Credit

IC 5-28-15; 6-3-3-10

Legislative Services Agency
September 2012

Purpose.

The Employment Expense Credit was established to encourage businesses to hire qualified employees in enterprise zones (EZs). EZs are special districts created to provide benefits to taxpayers for economic development projects.

Tax Credit Use Profile.

Tax Year	Filers Claiming Credits			Credits Claimed		
	Individual	Corporation	Total	Individual	Corporation	Total
2005	161	52	213	\$419,088	\$918,399	\$1,337,487
2006	136	50	186	248,860	802,567	1,051,427
2007	235	40	275	605,188	871,830	1,477,018
2008	226	42	268	512,566	720,461	1,233,027
2009	246	29	275	459,912	703,221	1,163,133
2010	246	39	285	598,857	775,363	1,375,220
2011*	168	10	178	491,030	33,042	524,072
Mean	203	37	240	\$476,500	\$689,269	\$1,165,912

*The 2011 filer counts and credit amounts are not full-year totals because of filing extensions and suspension of returns for audit

Description.

The credit equals the lesser of the following: (1) 10% of the qualified increase in wages paid to employees of an EZ business or (2) \$1,500 per qualified employee. An individual must live in an EZ and work at least 50% of the time in an EZ to be considered a qualifying employee.

Analysis.

- Credit usage and creditable wage increases are insignificant relative to the employment and wage base in EZs.
- Credit has no significant impact on employment levels in EZs.

The EZ Employment Expense Credit is one of three credits enacted to stimulate economic development within EZs. Each credit was tailored to provide an incentive for specific economic activity like investing, lending, or hiring. The other two credits are the EZ Investment Cost Credit and EZ Loan Interest Credit.

On average, credits claimed each year from 2005 to 2011 totaled \$1,165,912. In the highest year, 2007, credits claimed totaled \$1,477,018. Assuming that all taxpayers claimed a 10% credit, the 2007 credit total would have subsidized approximately \$14,770,180 in wage increases. If these wage increases averaged 3%, then the credit would have



EZ Employment Expense Tax Credit

Enactment: The credit was effective beginning in tax year 1983.

Expiration: The credit has no expiration date.

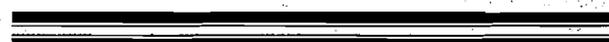
Credit Limits: This credit has no annual limit.

Award Process: Taxpayers claim the credit when they file their tax returns. Taxpayers must pay a fee to the IEDC and the EZ's urban enterprise association to be eligible to claim the credit.

Eligible Taxes: Individual Adjusted Gross Income (AGI), Corporate AGI, Financial Institutions, and Insurance Premiums Taxes.

Refund Provisions: The credit is nonrefundable. The credit may be carried forward for 10 years after the year the credit accrues. The credit may be carried back for 3 years preceding the year the credit accrues.

Claim Filing Requirements: Businesses must enclose a completed Schedule EZ along with their tax return.



decreased the total wage cost for the qualified employees by only 0.3%. This reduction in wage cost to employers would generate no discernible increase in employment based on conventional estimates of the response of employment levels to a reduction in wage rates.

On the other hand, if all taxpayers claimed the maximum credit, \$1,500 per employee, then the credit would have subsidized wage increases totaling \$1,477,018 for approximately 985 EZ employees. In this scenario the credit would have reduced the wage cost for these employees by about 4% based on the mean annual wage in 2007. Nevertheless, the overall employment impact of reducing the wage cost of just 985 employees throughout the EZs would be very small based on conventional estimates of the response of employment levels to a reduction in wage rates.

It is also noteworthy that the wage increases and employment totals outlined in the scenarios above are extremely small relative to the overall wage base and employment base in the EZs. A 2002 census of Indiana's EZs¹ conducted by LSA indicated that employment in the EZs totaled almost 135,000, with wages totaling \$4,731.0 M.

A longitudinal study of the EZ Employment Expense Credit by LSA confirms the above analysis. The longitudinal dataset used for the study consists of annual economic and tax credit data for 25 micropolitan statistical areas from 2005 to 2010. Micropolitan statistical areas are regions defined by the U.S. Office of Management and Budget as urban areas around an urban cluster of at least 10,000 but less than 50,000 people. Examples of micropolitan regions in the dataset are Angola, Richmond, Vincennes, Madison, and New Castle. Studying only micropolitan regions is beneficial because they share similar levels of urban population. Also, EZs are small regions within cities. By focusing on micropolitan regions, there is a better chance of determining the impact of the EZ tax credit, which could be harder to identify if the study focused on large metropolitan areas. The dataset and econometric methods employed isolate the impact of the Employment Expense Credit from other EZ credits and other targeted economic development initiatives that could confound the analysis.

The econometric model estimates the relationship between the Employment Expense Credit and the number of wage and salary jobs in the micropolitan regions². The model suggests that the credit does not affect job growth in the micropolitan regions containing EZs. Rather, the model suggests that other factors such as personal income and population provide a better explanation for the changes in wage and salary jobs in the micropolitan regions containing EZs. Thus, while the wage subsidy provided by the Employment Expense Credit may have had an impact on employment for some individual businesses, the impact is likely small and not statistically discernible.

The statistical analysis described above is not necessarily inconsistent with econometric research by Papke³ relating to the investment and employment effects of Indiana's EZs. Papke estimated the impact of EZs on the value of inventories in a sample of local taxing districts in Indiana from 1981 to 1989 and on unemployment claims in a sample of local taxing districts in Indiana from 1980 to 1988. The taxing districts either contained or did not contain an EZ during the period examined. Papke's statistical estimates suggest that during the period examined, the value of inventories held in taxing districts with EZs increased significantly and unemployment claims in taxing districts containing EZs declined significantly. With respect to unemployment claims, Papke estimates that the presence of an EZ resulted in an average decrease of 1,500 unemployment claims per year in a taxing district. Papke tempers this result by indicating that because the Employment Expense Credit is relatively modest in value, the impact on unemployment claims may reflect a demonstration effect in the early years of the EZ program that was described by EZ administrators. It also may reflect the influence of employment relating to inventory operations that were drawn to EZs during that period because of the EZ Inventory Tax Credit that was offered as an incentive in the EZs. The credit became ineffective in 2007 when the 100% inventory deduction went into effect and was ultimately repealed in 2008. Consequently, the EZs may no longer have the impact on employment estimated by Papke given that they are well beyond their initial operating stages and, more importantly, because the EZs no longer have a significant tax advantage relative to inventory operations.

¹Legislative Services Agency. (2005). *Indiana's enterprise zones*. Fiscal Issue Brief, June 15, 2005. Indianapolis, IN: Landers, J. and Faulk, D.

²The econometric model is: $\Delta \log(\text{Jobs}) = -0.015 + 0.268 * \Delta \log(\text{PersonalIncome}) + 0.681 * \Delta \log(\text{Population}) - 0.050 * \Delta \log(\text{Unemployment}) + 0.0006 * \Delta \log(\text{EZEmployCredit}) + 0.001 * dEZ$. The variable *EZEmployCredit* is the Employment Expense Credit claimed by EZ businesses and the variable *dEZ* is a dummy variable indicating that a micropolitan region in the sample contains an EZ. The coefficients on *EZEmployCredit* and *dEZ* are not statistically significant.

³Papke, L. (1994). Tax policy and urban development: Evidence from the Indiana enterprise zone program. *Journal of Public Economics*, 54(1994), 37-49.

Enterprise Zone Investment Cost Credit

IC 5-28-15; 6-3.1-10

Legislative Services Agency

September 2012

Purpose.

The Investment Cost Credit was established to encourage individuals to purchase ownership interests in businesses located in enterprise zones (EZs). EZs are special districts created to provide benefits to taxpayers for economic development projects.

Tax Credit Use Profile.

Tax Year	Filers Claiming Credits			Credits Claimed		
	Individual	Corporation	Total	Individual	Corporation	Total
2005	11	0	11	\$151,875	\$0	\$151,875
2006	7	0	7	22,071	0	22,071
2007	40	N/R	40	171,502	1,358	172,860
2008	23	0	24	140,294	0	140,294
2009	29	0	29	84,829	0	84,829
2010	12	N/R	12	107,699	5,136	112,835
2011*	18	0	18	107,266	0	107,266
Mean	20	N/R	20	\$112,219	\$928	\$113,147

*The 2011 filer counts and credit amounts are not full-year totals because of filing extensions and suspension of returns for audit.
N/R = Five or fewer filers, filer count not reported

Description.

The credit equals a maximum of 30% of the equity investment depending on the investment and jobs created as a result of the investment.

The credit percentage that an individual taxpayer can claim is based on the sum of the following, subject to the maximum limit:

- 10% - if the business needs equity financing as demonstrated by the inability of the business to obtain debt financing.
- 2% - if the business's primary NAICS designation is retail, professional, or warehouse/distribution.
- 5% - if the business's primary NAICS designation is manufacturing.
- 5% - if the business is engaged in high-technology operations.
- A percentage based on the number of jobs created within the first year of purchasing ownership according to the following schedule.

Jobs Created	Percentage
Less than 11	1%
11 to 25	2%
26 to 40	3%
41 to 75	4%
More than 75	5%

EZ Investment Cost Tax Credit

Enactment: The credit was effective beginning in tax year 1986.

Expiration: The credit has no expiration date.

Credit Limits: This credit has no annual limit.

Award Process: The IEDC determines whether investment is qualified and the credit percentage. Taxpayers claim the credit when they file their tax returns. Taxpayers must pay a fee to the IEDC and the EZ's urban enterprise association to be eligible to claim the credit.

Eligible Taxes: Individual Adjusted Gross Income (AGI).

Refund Provisions: The credit is nonrefundable. The credit may be carried forward to subsequent years. The credit may not be carried back.

Claim Filing Requirements: The taxpayer must enclose the certification of the credit percentage from the IEDC.

- 5% - if 50% of the new jobs are reserved for residents of the zone.
- A percentage based on investments made in real or depreciable personal property. The credit amount is determined according to the following table.

Amount of Investment	Percentage
Less than \$25,001	1%
\$25,001 to \$50,000	2%
\$50,001 to \$100,000	3%
\$100,001 to \$200,000	4%
More than \$200,000	5%

The total credit percentage may not exceed 30%.

The credit is only available to individual taxpayers who make qualified investments in EZ businesses. However, a pass-through entity that invests in an EZ business located in Vigo County is also eligible to claim the credit. The credit is not available to corporate taxpayers or to other pass-through entities.

The taxpayer may not be granted more than one of the following credits for the same project: alternative fuel vehicle manufacturer investment credit, capital investment credit, community revitalization enhancement district credit, enterprise zone investment cost credit, Hoosier business investment credit, industrial recovery credit, military base investment cost credit, military base recovery credit, or venture capital investment credit.

Analysis.

- Credit cannot be claimed by corporate taxpayers or pass-through entities unless the pass-through entity invests in an EZ business in Vigo County.
- Credit usage and creditable investment are insignificant relative to the gross domestic product (GDP) and other economic activity attributable to the EZs.
- Credit has no significant impact on investment in the EZs.

The EZ Investment Cost Credit is one of three credits enacted to stimulate economic development within EZs. Each credit was tailored to provide an incentive for specific economic activity like investing, lending, or hiring. The other two credits are the EZ Employment Expense Credit and EZ Loan Interest Credit.

On average, credits claimed each year from 2005 to 2011 totaled only \$113,147, with the highest year being 2007 when credits claimed totaled \$172,860. A corporate taxpayer is not allowed to claim this credit. The corporate credit claims on the tax return data reported in the table above for years 2007 and 2010 could be erroneous and subject to audit by the Department of State Revenue, or could have been claimed by a pass-through entity filing as a corporate taxpayer. Assuming all taxpayers claimed a 30% credit, the 2007 credit total would have supported only about \$576,000 in investment in EZ businesses. This amount is insignificant compared to the GDP attributable to the EZs in the state. A 2002 census of Indiana's EZs conducted by LSA indicated that employment in the EZs totaled almost 135,000, with wages totaling \$4,731.0 M.¹ For Indiana, wages typically represent about 45%-50% of GDP. Not allowing corporations or pass-through entities to claim the EZ Investment Cost Credit is the likely reason for its very limited use.

A longitudinal study of the EZ Investment Cost Credit by LSA suggests that the credit had no impact on personal income in areas containing EZs. The longitudinal dataset used for the study consists of annual economic and tax credit data for 25 micropolitan statistical areas from 2005 to 2010. Micropolitan statistical areas are regions defined by the U.S. Office of Management and Budget as urban areas around an urban cluster of at least 10,000 but less than 50,000 people. Examples of micropolitan regions in the dataset are Angola, Richmond, Vincennes, Madison, and New Castle. Studying only micropolitan regions is beneficial because they share similar levels of urban population. Also, EZs are small regions within cities. By focusing on micropolitan regions, there is a better chance of determining the impact of the EZ tax credit which could be harder to identify if the study focused on large metropolitan areas. The dataset and econometric methods employed isolate the impact of the Investment Cost Credit from other EZ credits and other targeted economic development initiatives that could confound the analysis.

¹ Legislative Services Agency. (2005). *Indiana's enterprise zones*. Fiscal Issue Brief, June 15, 2005. Indianapolis, IN: Landers, J. and Faulk, D.

The econometric model estimates the relationship between the Investment Cost Credit and personal income in the micropolitan regions.² The model suggests that the credit does not impact growth in personal income in the micropolitan regions containing EZs. Rather, the model suggests that other factors such as the number of jobs and population provide a better explanation for the changes in personal income. Thus, the credit is being used on such a limited basis, its impact overall is not statistically discernible.

The statistical analysis described above is consistent with econometric research by Papke^{3,4} relating to the investment effects of Indiana's EZs. In two studies, Papke estimated the impact of the EZs on investment in inventories and investment in machinery and equipment. Both studies used samples of local taxing districts in Indiana some of which contained EZs. The time frame for one study was 1981 to 1989, and the other ran from 1981 to 1992. Papke's statistical estimates suggest that during the periods examined, the EZs had no impact on investment in machinery and equipment in the taxing districts containing EZs. However, Papke estimates that the value of inventories held in taxing districts with EZs increased significantly during the time examined. The inventory impact from the EZs is undoubtedly related to the EZ Inventory Tax Credit that was offered as an incentive in the EZs. However, the credit became ineffective in 2007 when the 100% inventory deduction went into effect and was ultimately repealed in 2008.

² The econometric model is: $\Delta \log(\text{PersonalIncome}) = 0.031 - 0.574 * \Delta \log(\text{Population/WageJobs}) - 0.00003 * \Delta \log(\text{EZInvestCredit}) + 0.002 * dEZ$. The variable *EZInvestCredit* is the Investment Cost Credit claimed by EZ businesses and the variable *dEZ* is a dummy variable indicating that a micropolitan region in the sample contains an EZ. The coefficients on *EZInvestCredit* and *dEZ* are not statistically significant.

³ Papke, L. (1994). Tax policy and urban development: Evidence from the Indiana enterprise zone program. *Journal of Public Economics*, 54(1994), 37-49.

⁴ Papke, L. (2000). The Indiana enterprise zone revisited: Effects on capital investment and land values. *National Tax Association Proceedings: 93rd Annual Conference on Taxation*. November 9-11, 2000. Santa Fe, NM. 83-87.

Enterprise Zone Loan Interest Credit

IC 5-28-15; 6-3.1-7

Legislative Services Agency

September 2012

Purpose.

The Loan Interest Credit was established to encourage loans to businesses located within enterprise zones (EZs). EZs are special taxing districts created to provide benefits to taxpayers for economic development projects.

Tax Credit Use Profile.

Tax Year	Filers Claiming Credit			Credits Claimed		
	Individual	Corporation	Total	Individual	Corporation	Total
2005	28	28	56	\$71,096	\$2,291,921	\$2,363,017
2006	21	28	49	12,944	2,441,498	2,454,442
2007	72	20	92	76,630	2,490,933	2,567,563
2008	65	20	85	22,394	2,252,269	2,274,663
2009	86	21	107	54,753	1,793,485	1,848,238
2010	74	24	98	61,205	1,205,813	1,267,018
2011*	65	N/R	65	40,781	136,611	177,392
Mean	59	24	79	\$48,543	\$1,801,790	\$1,850,333

*The 2011 filer counts and credit amounts are not full-year totals because of filing extensions and suspension of returns for audit.
N/R = Five or fewer filers, filer count not reported

Description.

The credit equals 5% of the interest received from all qualifying loans made in a taxable year to businesses in an EZ. The business receiving the loan must use the loan proceeds for purposes directly related to the business in the EZ or for an improvement that increases the assessed value of the real property located in the EZ. A qualifying loan can also be made to an individual for the rehabilitation, repair, or improvement of a residence in the EZ.

Analysis.

- Credit-qualified interest payments are substantial in dollar terms.
- Credit-qualified interest payments represent less than 10% of interest on business debt in Indiana.

The EZ Loan Interest Credit is one of three credits enacted to stimulate economic development within EZs. Each credit was tailored to provide an incentive for specific economic activity like investing, lending, or hiring. The other two credits are the EZ Employment Expense Credit and EZ Investment Cost Credit.

On average, \$1,850,333 in credits was claimed each year from 2005 to 2011. In the highest year, 2007, credits claimed totaled \$2,567,563. Consequently, it is estimated that an average of at

EZ Loan Interest Tax Credit

Enactment: The credit was effective beginning in tax year 1984.

Expiration: The credit has no expiration date.

Credit Limits: This credit has no annual limit.

Award Process: Taxpayers claim the credit when they file their tax returns. Taxpayers must pay a fee to the IEDC and the EZ's urban enterprise association and meet any requirements established by the IEDC to be eligible to claim the credit.

Eligible Taxes: Individual Adjusted Gross Income (AGI), Corporate AGI, Financial Institutions, and Insurance Premiums Taxes.

Refund Provisions: The credit is nonrefundable. The credit may be carried forward for 10 years after the date the loan is made. The credit may not be carried back.

Claim Filing Requirements: Businesses must enclose a completed Schedule EZ LIC along with their tax return.

least \$37.0 M in interest was paid by EZ businesses to qualified lenders claiming the credit, with the highpoint in 2007 equal to \$51.4 M in interest payments. However, the data provided is insufficient to determine the actual amount of the loans. Based on Federal Reserve business debt estimates^{1,2}, Indiana businesses averaged about \$508.0 M in interest on outstanding debt, with the 2007 total potentially equal to \$580.0 M.³ These estimates indicate that a significant share of interest on business debt in Indiana is being paid by EZ businesses to lenders who are claiming the EZ Loan Interest Credit. The shares ranged from 7.3% based on the average annual interest payments versus 8.9% based on the 2007 interest payments. This suggests that a significant amount of business loan activity may be occurring in the state's EZs.

¹ Federal Reserve Board of Governors. (2012). *G20 Data Release, Finance Companies 1*. June 2012. Washington, D.C.

² Federal Reserve Board of Governors. (2010). *G20 Data Release, Finance Companies 1*. June 2010. Washington, D.C.

³ The estimated total is based on Federal Reserve estimates of outstanding business debt nationally. The 2007 U.S. total is estimated at \$598.0 B, and the average annual total from 2005 to 2011 is estimated at approximately \$523.8 B. The Indiana total is estimated at 1.94% of the U.S. total based on the long-run ratio of Indiana GDP to U.S. GDP. The interest estimate assumes a 5% interest payment on the outstanding debt.

Purpose.

The Headquarters Relocation Credit was created as an incentive for businesses to relocate their corporate headquarters to Indiana.

Tax Credit Use Profile.

Tax Year	Filers Claiming Credits			Credits Claimed		
	Individual	Corporation	Total	Individual	Corporation	Total
2006	0	0	0	\$0	\$0	\$0
2007	0	0	0	0	0	0
2008	N/R	0	N/R	7,248	0	7,248
2009	N/R	0	N/R	1,422	0	1,422
2010	N/R	0	N/R	2,018	0	2,018
2011*	N/R	0	N/R	1	0	1
Mean	N/R	0	N/R	\$1,782	\$0	\$1,782

*The 2011 filer counts and credit amounts are not full-year totals because of filing extensions and suspension of returns for audit.

N/A = Not applicable

N/R = Five or fewer filers, filer count not reported

Description.

A business is eligible for this credit upon meeting the following requirements: (1) it is engaged in either interstate or intrastate commerce; (2) it has annual worldwide revenue of at least \$100 M in the taxable year prior to applying for the credit; (3) its corporate headquarters is located outside of Indiana; and (4) it has never been headquartered in Indiana.

The project must involve relocating the principal offices of the company's principal executive officers, and the company must employ at least 75 people in Indiana. Moving costs, purchases of new equipment, capital investments, and property development costs may be classified as qualifying relocation costs.

The credit equals 50% of the amount of relocation costs incurred in the taxable year by an eligible taxpayer. However, the amount claimed may not result in a lower tax liability than the taxpayer had in the taxable year immediately preceding the taxable year in which the taxpayer first incurred relocation costs.

Analysis.

- Credit effective in 2006, but no credits have been approved by the IEDC to date.
- Lack of credit usage contrasts with the potential number of headquarters moving into Indiana.

Headquarters Relocation Tax Credit

Enactment: The credit was effective beginning in tax year 2006.

Expiration: No expiration date is established.

Credit Limits: This credit has no annual limit.

Award Process: The taxpayer must also contractually commit to relocating its corporate headquarters to Indiana.

Eligible Taxes: Individual Adjusted Gross Income (AGI), Corporate AGI, Financial Institutions, and Insurance Premiums Taxes.

Refund Provisions: The credit is nonrefundable, but unused credits may be carried forward for up to nine consecutive years. Unused credits may not be carried back.

Claim Filing Requirements: Taxpayers claim the credit when they file their tax returns. When filing, taxpayers must provide proof of the relocation costs and proof of employing at least 75 people in Indiana.

The IEDC did not approve or authorize any Headquarters Relocation Tax Credits. All the credit claims from the tax return data reported in the table above are erroneous and subject to audit by the Department of State Revenue.

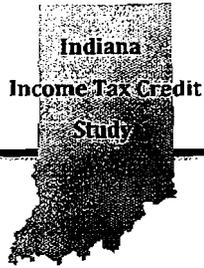
In recent years, a few empirical studies have been conducted of headquarters location and migration activity. Recently, Strauss-Kahn and Vives¹ estimated that headquarters tend to locate in metropolitan areas with good airport facilities, low corporate taxes, low average wages, high levels of business services, and other company headquarters in the same industry sector. Earlier research by Klier² and Diacon and Klier³ confirm the movement of company headquarters to metropolitan areas or large population centers. Klier and Diacon and Klier also report migration data for company headquarters from 1990 to 2000. These data indicate that the number of company headquarters moving into an area during the 10-year period represented about 8% to 10% of the headquarters total in the area. Dun & Bradstreet⁴ currently reports that there are 264 headquarters of public and private companies with annual sales of at least \$100 M located in Indiana. Assuming Indiana had 250 company headquarters in 2000, potentially 20 to 25 headquarters of companies that meet the annual sales requirement for the Headquarters Relocation Tax Credit could have located to Indiana based on this metric.

¹ Strauss-Kahn, V. and Vives, X. (2009). Why and where do headquarters move? *Regional Science and Urban Economics*, 39 (2009), 168-186.

² Klier, T. H. (2002). *Location of headquarter growth during the 90s*. Working Paper - WP 2002-19. Chicago, IL: Federal Reserve Bank of Chicago.

³ Diacon, T. and Klier, T. H. (2003). *Where the headquarters are – Evidence from large public companies, 1990-2000*. Working Paper – WP 2003-35. Chicago, IL: Federal Reserve Bank of Chicago.

⁴ Dun & Bradstreet. (2012). *Million Dollar Directory*. New York, N.Y.: Dun & Bradstreet, Inc.



Hoosier Alternative Fuel Vehicle Manufacturer Investment Credit

IC 6-3.1-31.9

Legislative Services Agency
September 2012

Purpose.

The Hoosier Alternative Fuel Vehicle Manufacturer Investment Credit was enacted to foster job creation and higher wages, reduce dependence on imported energy sources, and reduce air pollution as the result of the manufacture or assembly of alternative fuel vehicles (AFV).

Tax Credit Use Profile.

Tax Year	Filers Claiming Credits			Credits Claimed		
	Individual	Corporation	Total	Individual	Corporation	Total
2007	14	0	14	\$5,569	\$0	\$5,569
2008	N/R	N/R	N/R	2,015	513	2,528
2009	7	0	7	6,285	0	6,285
2010	N/R	0	N/R	721	0	721
2011*	N/R	0	N/R	240	0	240
Mean	7.6	N/R	7.6	\$570	\$513	\$549

*The 2011 filer counts and credit amounts are not full-year totals because of filing extensions and suspension of returns for audit.

N/A = Not applicable

N/R = Five or fewer filers, filer count not reported

Description.

The credit amount equals up to 15% of the qualified investment. The credit percentage is determined by the Indiana Economic Development Corporation (IEDC).

Qualified investments for the manufacture of AFVs are the expenditures in Indiana that are reasonable and necessary for the manufacture or assembly of AFVs. The statute defines alternative fuel vehicles as passenger cars or light trucks with a gross weight of 8,500 lbs. or less that are designed to operate on at least one alternative fuel. The alternative fuels listed in statute are:

- Methanol, denatured ethanol, and other alcohols
- Mixtures containing 85% or more by volume of methanol, denatured ethanol, and other alcohols with
 - Gasoline or other fuel
 - Natural gas
 - Liquefied petroleum gas
 - Hydrogen
 - Coal-derived liquid fuels
 - Nonalcohol fuels derived from biological material
 - P-Series fuels
 - Electricity
 - Biodiesel or ultra-low sulfur diesel fuel

AFV Manufacturer Investment Tax Credit

Enactment: The credit was effective beginning in tax year 2007.

Expiration: No new credits may be granted after December 31, 2016.

Credit Limits: This credit has no annual limit.

Award Process: Credits are requested by submitting applications to the IEDC before the qualifying investment is made.

Eligible Taxes: Individual Adjusted Gross Income (AGI), Corporate AGI, Financial Institutions, and Insurance Premiums Taxes.

Refund Provisions: The credit is nonrefundable, but unused credits may be carried forward for up to 9 consecutive years. Unused credits may not be carried back.

Claim Filing Requirements: Taxpayers must submit a certificate of verification from the IEDC along with their tax return when claiming the credit.

Also, the taxpayer must agree to maintain operations for at least 10 years and pay its employees at least 150% of the state's minimum wage.

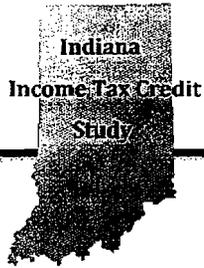
The taxpayer may not be granted more than one of the following credits for the same project: alternative fuel vehicle manufacturer investment credit, capital investment credit, community revitalization enhancement district credit, enterprise zone investment cost credit, Hoosier business investment credit, industrial recovery credit, military base investment cost credit, military base recovery credit, or venture capital investment credit.

Analysis.

- Credit effective in 2007, but no credits have been approved by the IEDC to date.
- Businesses may be seeking other, more lucrative tax credits instead of this credit due to the statutory limit on credits that may be claimed for the same project.

The IEDC has not approved or authorized any AFV credits to date. Consequently, all Alternative Fuel Vehicle Credit claims from the tax return data reported in the table above are erroneous and subject to audit by the Department of State Revenue.

While no credits have been approved by the IEDC, there are AFV component producers and AFV manufacturers in Indiana. Cummins, Remy, and Delphi produce hybrid, electric, and natural gas engines for heavy- or light-duty vehicles. The Honda Civic Natural Gas is the only natural gas-fuel sedan manufactured in the U.S., and it is manufactured in Indiana. Potentially, AFV manufacturers will seek or have sought other more lucrative credits like EDGE or the Hoosier Business Investment Credit or grants from the Skills Enhancement Fund.



Hoosier Business Investment Credit

IC 6-3.1-26

Legislative Services Agency

September 2012

Purpose.

The Hoosier Business Investment (HBI) Credit was established to provide businesses with an incentive to create jobs, make capital investments, and provide higher wages to Indiana residents.

Tax Credit Use Profile.

Tax Year	Filers Claiming Credits			Credits Claimed		
	Individual	Corporation	Total	Individual	Corporation	Total
2005	79	N/R	79	\$1,447,501	N/R	\$1,447,501
2006	114	38	152	1,294,139	\$20,312,842	21,606,981
2007	647	35	682	2,013,800	6,708,294	8,722,904
2008	315	27	342	1,250,830	10,457,201	11,707,857
2009	96	29	125	1,467,409	5,451,620	6,919,029
2010	85	30	115	371,124	12,080,706	12,451,830
2011*	82	2	84	331,061	170,606	501,667
Mean	203	27	226	1,167,981	9,196,878	9,051,110

*The 2011 filer counts and credit amounts are not full-year totals because of filing extensions and suspension of returns for audit.
N/R = Five or fewer filers, filer count not reportable.

Description.

The credit equals up to 10% of the qualified investment directly related to expanding the workforce in Indiana.

Qualified investment includes the purchase of equipment or the modernization or construction of facilities for the following:

- New telecommunications
- Production
- Manufacturing
- Fabrications
- Processing
- Refining
- Finishing
- Distribution
- Transportation
- Logistical distribution

Other eligible investment expenditures include:

- New computers and related equipment.
- Onsite infrastructure improvements.
- Retooling of existing machinery and equipment.
- Special-purpose buildings and foundations for use in the computer, software, biological sciences or telecommunication industry.

Hoosier Business Investment Tax Credit

Enactment: The credit was effective beginning in tax year 2004.

Expiration: No new credits may be granted after December 31, 2016.

Credit Limits: This credit has no annual limit.

Award Process: The qualified investment and the credit percentage are determined by the IEDC. Taxpayers claim the credit when they file their tax returns. A taxpayer may be disqualified from claiming the credit if the taxpayer relocates jobs from one Indiana site to another as determined by the IEDC.

Eligible Taxes: Individual Adjusted Gross Income (AGI), Corporate AGI, Financial Institutions, and Insurance Premiums Taxes.

Refund Provisions: The credit is nonrefundable, but unused credits may be carried forward for up to 9 consecutive years as determined by the IEDC. Unused credits may not be carried back.

Claim Filing Requirements: The taxpayer is required to submit a copy of the certificate from the IEDC verifying the amount of eligible credit for the taxable year.

- Machinery, equipment, or special-purpose buildings used to make motion pictures or audio productions.

It does not include property that can be readily moved out of Indiana.

The taxpayer may not be granted more than one of the following credits for the same project: alternative fuel vehicle manufacturer investment credit, capital investment credit, community revitalization enhancement district credit, enterprise zone investment cost credit, Hoosier business investment credit, industrial recovery credit, military base investment cost credit, military base recovery credit, or venture capital investment credit.

The credit was effective beginning in tax year 2004. The original credit was equal to the lesser of the following: (1) 30% of the qualified investment or (2) the taxpayer's state tax liability growth. The state tax liability growth was defined as the difference between the taxpayer's state tax liability in the taxable year minus the greater of the following: (1) the taxpayer's state tax liability in the most recent prior taxable year in which part of a credit was claimed or (2) the taxpayer's tax liability in the taxable year immediately preceding the taxable year in which the investment was made.

In 2005, the credit award formula was modified. The credit percentage was reduced to a maximum of 10% of the qualified investment, and the "state tax liability growth" limit was eliminated for all credits approved by the Indiana Economic Development Corporation (IEDC) after May 14, 2005. The credit was set to expire on December 31, 2013, but in 2012 it was extended to allow approval of credits for qualified investments made before December 31, 2016.

Analysis.

- Half of the investment projects occurred in a county with some type of location-based economic development program like community revitalization enhancement districts or enterprise zones.
- Credit usage and creditable investment are small relative to fixed investments in nonresidential buildings and industrial equipment in Indiana.

Since 2004, approximately \$352 M in Hoosier Business Investment (HBI) credits were offered by the IEDC to businesses based on their investment proposals. IEDC then certified the credit upon the completion of the project so that taxpayers could claim the credits against tax liability. According to the Department of State Revenue (DOR), \$299 M in HBI credits have been certified.

HBI is nonrefundable, but the taxpayer may carry forward the credit to offset future tax liabilities. Currently, the maximum potential amount of unclaimed HBI credits is estimated at about \$166 M. The exact balance of this potential carryover amount could be lower to the extent that the estimate does not include the following: (1) credits claimed in tax year 2004 by individual and corporate taxpayers and (2) credits claimed in tax year 2005 by corporate taxpayers. HBI credits claimed in those years are not discernible in the tax return data. Since unused HBI credits can only be carried forward for a maximum of 9 years, some of the credit balance will begin to expire in 2013.

HBI credits were awarded to projects in 69 Indiana counties. Half of the projects were located in a county that contained an airport development zone, a community revitalization enhancement district, or an enterprise zone. Moreover, 47.9% of the total HBI credits went to projects in Bartholomew, Kosciusko, Lake, Porter, and Tippecanoe Counties.

HBI Projects by Industrial Classification from 2004 to 2012

Industrial Classification	HBI Credit (in millions)	% of Total Projects
Manufacturing	\$299.2	68.6%
Wholesale Trade	7.6	5.4
Retail Trade	16.7	3.1
Transportation & Warehousing	82.6	7.0
Professional, Scientific, & Technical Services	51.3	5.4
All Other Industrial Sectors	28.1	10.5

Businesses in the manufacturing sector represent 68% of all HBI recipients and also receive 61% of the total credits. This is not surprising given the capital intensive nature of the manufacturing industry. Businesses classified under the umbrella of transportation and warehousing were the second most common taxpayers to receive an HBI credit. This industry also requires large amounts of capital for structures, equipment, and vehicles.

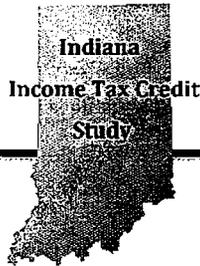
Based on information provided by DOR, the total HBI qualified investment is estimated at \$3,701 M. The annual average HBI qualified investment represents 3% of the estimated annual Indiana private investment in nonresidential structures and industrial equipment. Focusing only on the manufacturing and warehouse sectors, the estimated HBI qualified investment represents 4% of the private investment in manufacturing and warehouse structures and industrial equipment.

Estimated Indiana Private Fixed Investments between 2004 and 2011

Investment (in millions)	Total	Annual Average
All Nonresidential Structures	\$65,700	\$5,869
Manufacturing	13,821	1,728
Warehouses	2,120	265
Industrial Equipment	55,781	6,973

Source: Derived from U.S. Bureau of Economic Analysis

While the amount of qualified investment is substantial in dollar terms, relative to the private nonresidential investment statewide the qualified investment is small. Also, it is unclear whether the credit influenced the investment decisions by those businesses that were awarded and claimed credit. The study discerned that the qualified investment supported by the HBI credit has had only a small impact on overall business investment in Indiana. However, individual projects supported by HBI credits may have been beneficial to local communities. The qualified investment may have influenced changes in local employment, wages, and property values. There are a sufficient number of projects distributed across the state to make further analysis possible. Additional time and information would be needed to conduct such a study.



Industrial Recovery Credit

IC 6-3.1-11

Legislative Services Agency
September 2012

Purpose.

The Industrial Recovery Credit was established to encourage investment towards the rehabilitation or remodeling of vacant industrial facilities in a designated industrial recovery site.

Tax Credit Use Profile.

Tax Year	Filers Claiming Credits ^A	Credits Claimed	Average Credit Amount [#]	Estimated Qualifying Investment	% of All Returns Filed
2005	N/R	\$4,580	N/R	\$22,900	<0.01%
2006	N/R	308,341	N/R	1,541,705	<0.01%
2007	N/R	22,390	N/R	111,950	<0.01%
2008	6	40,877	\$6,813	204,385	<0.01%
2009	6	17,069	2,845	85,345	<0.01%
2010	6	29,630	4,938	148,150	<0.01%
2011*	6	82,082	13,680	410,410	<0.01%

*The 2011 filer counts and credit amounts are not full-year totals because of filing extensions and suspension of returns for audit.

^ANo credits were claimed on Indiana Corporate AGI returns.

N/R=Five or fewer filers, filer count not reported.

[#]Average credit amount cannot be computed because there are 5 or fewer filers.

Description.

The credit equals the amount of qualifying investment multiplied by a certain percentage. The percentage is determined by the age of the building being rehabilitated.

- 15% - if the building was placed in service at least 15 years ago but less than 30 years ago.
- 20% - if the building was placed in service at least 30 years ago but less than 40 years ago.
- 25% - if the building was placed in service at least 40 years ago.

An industrial recovery site is a building placed in service at least 15 years ago and meets minimum square footage requirements where 75% of the space has been vacant for at least one year. The minimum square footage requirement for tax years 2011 through 2014 is 50,000 square feet. The requirements before and after these tax years are 100,000 square feet.

The taxpayer may not be granted more than one of the following credits for the same project: alternative fuel vehicle manufacturer investment credit, capital investment credit, community revitalization enhancement district credit, enterprise zone investment cost credit, Hoosier business investment

Industrial Recovery Tax Credit

Enactment: The credit was effective beginning in tax year 1988. In 2011, the minimum age for a qualifying facility was reduced from 20 years to 15 years. The square footage requirements also changed.

Expiration: The credit has no expiration date.

Credit Limits: The credit has no annual limit.

Award Process: The qualified investment must be made under a plan for an Industrial Recovery Site that is approved by the IEDC. Taxpayers claim the credit when they file their tax returns. A taxpayer may be disqualified from claiming the credit if the taxpayer relocates operations in Indiana to an Industrial Recovery Site.

Eligible Taxes: Individual Adjusted Gross Income (AGI), Corporate AGI, Financial Institutions, and Insurance Premiums Taxes.

Refund Provisions: The credit is nonrefundable, but unused credits may be carried forward. Unused credits may not be carried back.

Claim Filing Requirements: Taxpayers must claim the credit on their annual state tax return and submit the letter of certification provided by the IEDC.

credit, industrial recovery credit, military base investment cost credit, military base recovery credit, or venture capital investment credit.

Analysis.

- Credit usage is extremely low.
- Credit usage and creditable investment are insignificant relative to fixed investment in nonresidential buildings in Indiana, including manufacturing buildings.
- Credit has no significant impact on investment levels in Indiana.

Since 1988, an estimated \$24 M in tax credits has been approved. The credit percentage for projects over this span has averaged 20%. The approved tax credits went for rehabilitation projects at 33 facilities, with the investment in these rehabilitation projects totaling \$108.8 M. Approximately 1/3 of the 33 facilities are located in Indianapolis and Muncie. The remaining projects are located across the state in other urban areas. IEDC estimates there are currently 237 sites throughout the state where rehabilitation projects could potentially qualify for the credit.

The credits have been granted to a small number of businesses across Indiana in a variety of industrial sectors. The total industrial recovery site investment from 1988 to 2011 is insignificant relative to the private fixed investment in structures overall as well as in manufacturing or warehouse structures during that 24-year period. From 1988 to 2011, the total industrial recovery investment represented only 0.07% of the estimated total Indiana private fixed investment in structures. Moreover, the total industrial recovery site investment during that period represented only 0.3% of just the investment in manufacturing structures. Annually, this would amount to a very small share of the underlying growth in fixed investment in manufacturing structures. The small number of credit claims and the relative size of the total project investments suggest the credit is not attracting significant capital to Indiana.

Estimated Indiana Private Fixed Investments in Structures between 1988 and 2011

Investment (in millions)	Total	Annual Average
All Nonresidential Structures	\$140,850	\$5,869
Manufacturing	\$34,414	\$1,434
Warehouses	\$5,547	\$228

Source: Derived from U.S. Bureau of Economic Analysis

The renovation of older, vacant buildings most likely has an impact on the local property values. However, when trying to isolate the statistical impact that the recovery income tax credit has on property tax values in the county, other methodological issues arise. Most industrial recovery projects occur in areas where several other state economic development initiatives are being implemented. Consequently, the existence of other explanatory factors can confound any statistical attempts to attribute an impact on property values to the Industrial Recovery Credits. In addition, few credit recipients are located in some communities where our research could reveal the identity of the taxpayer. This limits the ability to analyze and report on the effectiveness of this credit.

Media Production Expenditure Credit

IC 6-3.1-32 (Repealed)

Legislative Services Agency

September 2012

Purpose.

The Media Production Expenditure Credit was established to encourage additional spending by the media production industry in Indiana by providing individuals and businesses with a refundable tax credit.

Tax Credit Use Profile.

Tax Year	Filers Claiming Credits [^]	Credits Claimed	Average Credit Amount	Estimated Qualifying Expenditures	% of All Returns Filed
2008	415	\$90,106	\$217	\$600,707	<0.01%
2009	92	19,644	214	130,960	<0.01%
2010	194	7,531	39	50,207	<0.01%
2011*	42	52,409	1,248	349,393	<0.01%

*The 2011 filer counts and credit amounts are not full-year totals because of filing extensions and suspension of returns for audit.

[^]No credits were claimed on Indiana Corporate AGI returns.

Description.

A taxpayer was eligible for this credit if they had qualified media production expenditures.

Qualified expenditures were any of the following expenses incurred in Indiana or expenditures in Indiana made in the direct production of a qualified media production in Indiana:

- The payment of wages, salaries, and benefits to Indiana residents, except for directors, producers, screenwriters, or actors (excluding extras) unless the person was an Indiana resident.
- Acquisition costs for a story or scenario used in the qualified media production.
- Acquisition costs for locations, sets, wardrobes, and accessories.
- Expenditures for materials used to make sets, wardrobes, and accessories.
- Expenditures for photography, sound synchronization, lighting, and related services.
- Expenditures for editing and related services.
- Facility and equipment rentals.
- Food and lodging.
- Legal services if purchased from an attorney licensed to practice law in Indiana.
- Any other production expenditure for which taxes are assessed or imposed by the state.

Media Production Expenditure Tax Credit

Enactment: The credit was effective beginning in tax year 2007.

Expiration: The credit cannot be awarded for a taxable year ending after December 31, 2011.

Credit Limits: The total tax credits could not exceed \$5 M in a fiscal year.

Award Process: Credits were granted through applications with the Indiana Economic Development Corporation (IEDC).

Eligible Taxes: Individual Adjusted Gross Income (AGI), Corporate AGI, Financial Institutions, and Insurance Premiums Taxes.

Refund Provisions: The credit was refundable.

Claim Filing Requirements: Taxpayers were required to submit the approved credit letter with the credit computation from the IEDC along with the tax return in order to claim the credit.

The minimum required production expenditure to qualify for the credit was \$100,000 for the following: (1) a feature-length film, including a short feature; (2) an independent or studio production; (3) a documentary; or (4) a television series, program, or feature. The minimum required expenditure to qualify for the credit was \$50,000 for any of the

following: (1) a digital media production; (2) an audio recording; (3) a music video; (4) an advertising message for radio or television; or (5) a media production concerning training or external marketing or communication.

The credit was limited to a percentage of qualified expenditures:

- 15%- if the total qualified expenditure was less than \$6 M.
- Up to 15% - as determined by the IEDC, if the total expenditure was at least \$6 M.

Analysis.

- Credit usage and creditable expenditures are minor in comparison to activity in pertinent industry sectors.
- Trends in pertinent industry sectors during the credit period are worse than for the economy generally.
- Research on the efficacy of film production credits is ambiguous and fails to clearly indicate that such credits generate significant new activity.

Assuming the credit was 15% for all taxpayers that claimed it, the resulting media production expenditures totaled approximately \$1.1 M from 2008 to 2011, with the highest year being 2008 when the estimated expenditure total was \$600,707. These expenditure levels are insignificant relative to the economic output from Indiana’s motion picture and sound recording industry sector. The gross domestic product (GDP) from this sector in 2008 totaled \$264 M, so the creditable expenditures represented only 0.2% of this total. The expenditure totals for the remaining years would come in significantly lower than in 2008.

The extent that Indiana’s credit generated new media production activity is difficult to discern from the available data, in particular, because initially the credit coincided with the recession during 2008 and 2009.

Prior to the tax credit, the motion picture and sound recording industry sector in Indiana was growing annually, with growth rates that were outstripping the growth rate of Indiana’s overall economy. GDP attributable to the motion picture and sound recording industry sector grew by an average annual percentage change of 4.4% from 2000 to 2006 when the sector hit its high point. In comparison, the average annual percentage change in Indiana’s total GDP was 3.8% during the same period. During this period, the sector also increased its share of Indiana’s overall GDP from 0.117% to 0.121%.

Undoubtedly, the recession impacted the performance of the motion picture and sound recording industry sector and potentially the efficacy of the credit. But, while the tax credit was in effect, the sector exhibited a more severe decline than the overall economy. GDP attributable to the sector declined by 3.4% from 2008 to 2010 while overall GDP in Indiana increased by 2.4%. Moreover, the sector’s share of overall GDP declined to 0.095% in 2010, well below the shares exhibited during the first half of the decade.

Indiana GDP from the Motion Picture and Sound Recording Industry Sector

Year	Motion Picture / Sound Recording GDP (in millions)	Annual Change	Contribution to Indiana Total GDP
2000	\$232		0.117%
2001	243	4.7%	0.122%
2002	263	8.2%	0.126%
2003	263	0.0%	0.119%
2004	295	12.2%	0.127%
2005	287	-2.7%	0.120%
2006	300	4.5%	0.121%
2007	284	-5.3%	0.108%
2008	264	-7.0%	0.101%
2009	260	-1.5%	0.104%
2010	255	-1.9%	0.095%

Various empirical studies have attempted to analyze the economic impact of state film production tax credits. Several of these studies are highlighted below. There is no consensus from this research on the overall effect of these tax credits.

- The California Legislative Analyst's Office (LAO) reviewed a UCLA study on the effectiveness of the California film production tax credit. LAO disagreed with the UCLA report and concluded that the tax credit program appeared to result in a net decline in state revenue.¹
- The Louisiana Economic Development Office estimated that Louisiana receives \$5.71 in additional indirect economic benefits for each tax credit dollar.²
- A study prepared for the South Carolina Coordinating Council for Economic Development estimated that the state's film tax incentives returned \$0.19 for every \$1.00 in credits.³
- The Connecticut Department of Economic and Community Development estimated that the Connecticut film tax credit generated \$1.07 in additional gross state product for every \$1.00 of credits taken.⁴
- The Tax Foundation concluded that film tax credits do the following: (1) reduce state revenues and require higher levels of local spending; (2) shift media production from one state to another without producing a net increase in economic activity or employment; and (3) are unlikely to produce a self-sustaining state film industry.⁵
- Ernst & Young, LLP estimated that film production incentives pay for themselves, provided long-term indirect effects of increased tourism, infrastructure improvements, and investment in the production industry are considered.⁶

¹ California Legislative Analyst's Office. (2012). *Evaluation of UCLA study on California's film and television production tax credit*. Sacramento, CA: Taylor, M.

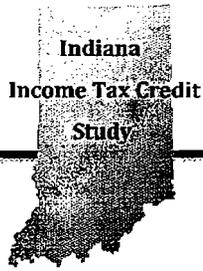
² Bax Starr Consulting Group, LLC. (2012). *Fiscal and economic impact analysis of Louisiana's entertainment incentives*. Chicago, IL: Baxter, C. L.

³ South Carolina Coordinating Council for Economic Development. (2008). *Impact analysis for film production in South Carolina*. Columbia, SC: Hefner, F.

⁴ Connecticut Department of Economic and Community Development. (2008). *The economic and fiscal impacts of Connecticut's film tax credit*. Hartford, CT: McMillen, S., Parr, K., and Helming, T.

⁵ Tax Foundation. (2010). *Movie production incentives: Blockbuster support for lackluster policy*. Washington, DC: Luther, W.

⁶ Ernst and Young, LLP. (2012). *Evaluating the effectiveness of state film tax credit programs*. Washington, DC: Andrew, P., Cline, R., and Fox, W.



Military Base Investment Cost Credit

IC 6-3.1-11.6

Legislative Services Agency

September 2012

Purpose.

The Military Base Investment Cost Credit was created to encourage individuals to purchase ownership interests in businesses located in a military base, military base reuse area, an economic development area, a military base recovery site, or a military base enhancement area.

Tax Credit Use Profile.

Tax Year	Filers Claiming Credits ^A	Credits Claimed	Average Credit Amount	Estimated Qualifying Investment	% of All Returns Filed
2005	6	\$2,702	\$450	\$9,007	<0.01%
2006	6	3,123	625	10,410	<0.01%
2007	N/R	3,369	N/R	11,230	<0.01%
2008	N/R	902	N/R	3,010	<0.01%
2009	N/R	1,986	N/R	6,620	<0.01%
2010	N/R	1,134	N/R	3,780	<0.01%
2011*	N/R	950	N/R	3,167	<0.01%

*The 2011 filer counts and credit amounts are not full-year totals because of filing extensions and suspension of returns for audit.

^ANo credits were claimed on Indiana Corporate AGI returns

N/R = Five or fewer filers, filer count not reported.

Description.

The credit equals a maximum of 30% of the qualified equity investment in a business located in a qualified military area.

The credit percentage that an individual taxpayer can claim is based on the sum of the following, subject to the maximum limit:

- 10% - if the business needs equity financing as demonstrated by the inability of the business to obtain debt financing.
- 2% - if the business's primary NAICS designation is retail, professional, or warehouse/distribution.
- 5% - if the business's primary NAICS designation is manufacturing.
- 5% - if the business is engaged in high-technology operations.
- Percentage based on the number of jobs created within the first year of purchasing ownership, according to the following schedule.

Jobs Created	Percentage
Less than 11	1%
11 to 25	2%
26 to 40	3%
41 to 75	4%
More than 75	5%

Military Base Investment Cost Tax Credit

Enactment: The credit was effective beginning in tax year 2005.

Expiration: The credit has no expiration date.

Credit Limits: This credit has no annual limit.

Award Process: The IEDC determines whether investment is qualified and the credit percentage. Taxpayers claim the credit when they file their tax returns.

Eligible Taxes: Individual Adjusted Gross Income (AGI) Tax.

Refund Provisions: The credit is nonrefundable, but unused credits may be carried forward. Unused credits may not be carried back.

Claim Filing Requirements: The taxpayer must claim the credit on their annual state tax return and submit the letter of certification provided by the IEDC.

- 5% - if 50% of the new jobs are reserved for residents of the qualified military area.
- Percentage based on investments made in real or depreciable personal property as determined by the following schedule.

Amount of Investment	Percentage
Less than \$25,001	1%
\$25,001 to \$50,000	2%
\$50,001 to \$100,000	3%
\$100,001 to \$200,000	4%
More than \$200,000	5%

The total credit percentage may not exceed 30%.

The taxpayer may not be granted more than one of the following credits for the same project: alternative fuel vehicle manufacturer investment credit, capital investment credit, community revitalization enhancement district credit, enterprise zone investment cost credit, Hoosier business investment credit, industrial recovery credit, military base investment cost credit, military base recovery credit, and venture capital investment credit.

Analysis.

- Credit usage is extremely low.
- Credit usage and creditable investment are insignificant relative to fixed investment in nonresidential buildings in Indiana, including manufacturing buildings.
- Credit has no significant impact on investment levels in Indiana.

The Military Investment Cost Credit is similar to two other Indiana tax credits: Airport Development Zone Investment Cost Credit and Enterprise Zone Investment Cost Credit. All the credits were created to provide incentives for private investment in businesses. All the credits share the same award schedule and credit thresholds. All the credits are overseen by the IEDC.

However, there are two features that distinguish the Military Investment Cost Credit from these other two credits. First, the qualifying business must be located on the following: (1) a military base; (2) a military base reuse area; (3) an economic development area that is or formerly was a military base; (4) a military recovery site; or (5) a qualified military base enhancement zone. Second, the Investment Cost Credit for Enterprise Zones and Airport Development Zones can't be claimed by a pass-through entity unless the investment is in an EZ in Vigo County. This restriction does not apply to the Military Investment Cost Credit.

Estimated Indiana Private Fixed Investments between 2005 and 2011

Investment (in millions)	Total	Annual Average
All Nonresidential Structures	\$59,476	\$8,496
Manufacturing	12,778	1,825
Warehouses	1,851	264
Computers and Peripheral Equipment	11,318	1,616

Source: Derived from U.S. Bureau of Economic Analysis

Since the credit went into effect, the total creditable investment attributed to the taxpayer claims has been less than \$300,000. The estimated average annual private fixed investments in nonresidential structures in Indiana for the same time period was \$8,496 M. The qualifying investment for the Military Base Investment Cost Credit is insignificant compared to the normal levels of investment occurring in Indiana.

The credit may have motivated a few investors into investing in a business in a qualifying location. However, the low number of claims and the small amount of qualifying investment suggest the credit is not attracting a significant amount of investment to military bases.

Purpose.

The Military Base Recovery Credit was created to encourage the rehabilitation of real property located in a military base recovery site. A military base recovery site is a vacant military base facility that was placed into service at least 20 years ago.

Tax Credit Use Profile.

Tax Year	Filers Claiming Credits*	Credits Claimed	Average Credit Amount	Estimated Qualifying Investment	% of All Returns Filed
2005	7	\$3,797	\$542	\$15,188 - \$25,313	<0.01%
2006	11	5,093	463	20,372 - 33,953	<0.01%
2007	17	9,995	588	39,980 - 66,633	<0.01%
2008	27	20,290	751	81,160 -135,267	<0.01%
2009	12	7,799	650	31,196 - 51,993	<0.01%
2010	34	24,334	716	97,336 -162,227	<0.01%
2011*	21	10,164	484	40,656 - 67,760	<0.01%

*The 2011 filer counts and credit amounts are not full-year totals because of filing extensions and suspension of returns for audit.
*No credits were claimed on Indiana Corporate AGI returns.

Description.

The credit equals the amount of qualifying investment in the Military Base Recovery Site multiplied by the applicable percentage determined by the age of the building being rehabilitated. The applicable percentages are as follows:

- 15% - if the building was placed in service at least 20 years ago but less than 30 years ago.
- 20% - if the building was placed in service at least 30 years ago but less than 40 years ago.
- 25% - if the building was placed in service at least 40 years ago.

The facility must have been vacant for at least two years prior to the investment.

The taxpayer may not be granted more than one of the following credits for the same project: alternative fuel vehicle manufacturer investment credit, capital investment credit, community revitalization enhancement district credit, enterprise zone investment cost credit, Hoosier business investment credit, industrial recovery credit, military base investment cost credit, military base recovery credit, and venture capital investment credit.

**Military Base Recovery
Tax Credit**

Enactment: The credit was effective beginning in tax year 1998.

Expiration: The credit has no expiration date.

Credit Limits: This credit has no annual limit.

Award Process: The qualified investment must be made under a plan for a Military Base Recovery Site that is approved by the IEDC. Taxpayers claim the credit when they file their tax returns. A taxpayer may be disqualified from claiming the credit if the taxpayer relocates operations from other locations in Indiana to a Military Base Recovery Site.

Eligible Taxes: Individual Adjusted Gross Income (AGI), Corporate AGI, Financial Institutions, and Insurance Premiums Taxes.

Refund Provisions: The credit is nonrefundable, but unused credits may be carried forward. Unused credits may not be carried back.

Claim Filing Requirements: Business must claim the credit on their annual state tax return and submit the letter of certification provided by the IEDC.

Analysis.

- Credit usage is extremely low.
- Credit usage and creditable investment are insignificant relative to fixed investment in nonresidential buildings in Indiana, including manufacturing buildings.
- Credit has no significant impact on investment levels in Indiana.

The Military Base Recovery Tax Credit is similar to the Industrial Recovery Tax Credit. Both credits are intended to provide incentives for private investment in older, unused buildings. The location of the project is the key distinction. Military Base Recovery Credits can only be used for projects on the following sites: (1) a military base; (2) a military base reuse area; (3) an economic development area that is or formerly was a military base; (4) a military recovery site; or (5) a qualified military base enhancement zone. The additional program differences are in the table below.

Comparison of the Military Base Recovery Tax and Industrial Recovery Credit

Criteria	Military Base Recovery Credit	Industrial Recovery Credit
Age of the Building	≥ 20 years	≥ 15 years
Duration of Initial Vacancy	≥ 2 years	≥ 1 year
Floor Size	≥ 20,000 sq. ft.*	≥ 50,000 sq. ft.

*20,000 sq. ft. is the minimum if the building is located in an economic development region. Otherwise, the building must be over 100,000 sq. ft. to qualify.

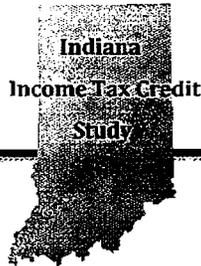
The estimated Indiana annual private investment in nonresidential structures was \$7,400 M between 1999 and 2011. While the data is insufficient to ascertain the actual qualifying investments in military recovery sites, the credits claimed indicate the total investment ranges between \$0.3 M and \$0.5 M. The qualifying investments are minor compared to the total investment occurring in Indiana. The credit may have been a factor for individual projects. However, the amount of credit claimed suggests it is not attracting significant capital.

Estimated Indiana Private Fixed Investments in Structures between 1999 and 2011

Investment (in millions)	Total	Annual Average
All Nonresidential Structures	\$96,183	\$7,399
Manufacturing	\$20,197	\$1,554
Warehouses	\$3,640	\$280

Source: Derived from U.S. Bureau of Economic Analysis

The rehabilitation of older vacant buildings will likely have an impact on local property values. However, the location of these projects makes such analysis problematic. A qualifying project could be occurring in an already established economic development region like an enterprise zone. It would be difficult to isolate the effect of the Military Base Recovery Credit from the other initiatives offered by an enterprise zone. Also, the economic activity around military bases may be driven by nonconventional factors such as federal funding, availability of defense contracts, and levels of global conflict. These additional factors further complicate efforts to measure the effect of the credit.



New Employer Credit

IC 6-3.1-33

Legislative Services Agency

September 2012

Purpose.

The New Employer Credit was established to encourage businesses with at least 10 qualified employees to relocate, start new operations, or expand existing operations in Indiana.

Tax Credit Use Profile.

Tax Year	Filers Claiming Credit ^A	Credits Claimed
2010	97	\$105,243
2011*	102	162,435

*The 2011 filer counts and credit amounts are not full-year totals because of filing extensions and suspension of returns for audit.

^AAll credits were claimed on Indiana Individual AGI Returns

Description.

The credit equals 10% of the wages paid by the taxpayer to qualified employees during the calendar months included in the taxable year.

The credit is available to a business that locates or relocates, incorporates, or expands its operations in Indiana after December 31, 2009, and employs at least 10 new full-time employees who are Indiana residents. A qualified employee may not be more than a 5% shareholder, partner, member, or owner of the business.

A qualifying business can claim the credit for a period of 24 consecutive calendar months as long as it maintains at least 10 qualifying employees.

Analysis.

- Credit effective in 2010, but no credits have been approved by the IEDC to date.
- Businesses may be pursuing more lucrative tax credits or incentives.
- Businesses may be pursuing job incentives with fewer qualification requirements.
- A significant number of new or expanding businesses may not meet minimum job creation requirement.

The IEDC did not approve or authorize any New Employer Credits from July 1, 2009, through June 30, 2012. All the credit claims on the tax return data reported in the table above for years 2010 and 2011 are erroneous and subject to audit by the Department of State Revenue.

The gross job gains from new and expanding Indiana businesses averaged about 140,000 jobs per quarter during 2010 and 2011. The number of new and expanding businesses creating jobs during this period averaged about 35,000 per quarter. Consequently, these businesses created an average of about four jobs due to opening or expansion. The quarterly job creation and new and expanding business totals suggest that there may be a significant number of employers that meet the minimum job creation requirement of the credit. Conversely, the average number

New Employer Tax Credit

Enactment: The credit was effective beginning in tax year 2010.

Expiration: No new credits may be granted after December 31, 2016.

Credit Limits: The credit has no annual limit.

Award Process: Taxpayers must submit an application to the Indiana Economic Development Corporation (IEDC). The IEDC determines whether the business is reasonably able to employ at least 10 qualifying people in the following year.

Eligible Taxes: Individual Adjusted Gross Income (AGI), Corporate AGI, Financial Institutions, and Insurance Premiums Taxes.

Refund Provisions: The credit is nonrefundable, but unused credits may be carried forward up to 9 consecutive years. Unused credits may not be carried back.

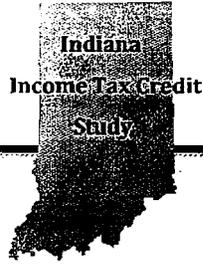
Claim Filing Requirements: A certificate of approval is issued by the IEDC and provided to the Department of State Revenue (DOR).

of jobs created suggests that a large number of businesses that are creating jobs on a quarterly basis cannot qualify for the credit due to the minimum job creation requirement of 10 new jobs.

Gross Private Job Gains in Indiana by Calendar Quarter

Year	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter
Gross Job Gains from New and Expanding Businesses				
2010	110,565	188,046	127,506	139,100
2011	114,363	174,887	136,787	134,672
New and Expanding Businesses				
2010	30,462	41,923	32,528	36,099
2011	32,708	41,066	33,342	35,052

Source: U.S. Bureau of Labor Statistics, Business Employment Dynamics Program.



Research Expense Credit

IC 6-3.1-4

Legislative Services Agency

September 2012

Purpose.

The Research Expense Credit provides an incentive for businesses to increase their research activities conducted in Indiana.

Tax Credit Use Profile.

Tax Year	Filers Claiming Credits			Credits Claimed		
	Individual	Corporation	Total	Individual	Corporation	Total
2005	849	109	958	\$5,167,760	\$16,284,783	\$21,452,543
2006	524	132	656	996,339	33,153,959	34,150,298
2007	940	126	1,066	5,490,413	25,842,895	31,333,308
2008	1,094	105	1,199	8,539,636	15,310,369	23,850,005
2009	901	95	996	6,354,302	16,168,398	22,522,700
2010	1,270	151	1,421	9,574,576	34,730,835	44,305,411
2011*	1,057	28	1,085	7,823,325	1,090,546	8,913,871
Mean	948	107	1,054	\$6,278,050	\$20,368,826	\$26,646,877

*The 2011 filer counts and credit amounts are not full-year totals because of filing extensions and suspension of returns for audit.

Description.

The credit was effective beginning in 1982. An alternative credit computation method that was subject to the approval of the Indiana Economic Development Corporation (IEDC) was created in 2005. In 2009, the current methods of award computation were established, and it allowed the taxpayer to choose between the two calculation methods.

The credit equals the increased research expenses incurred during the taxable year. There are two methods to compute the credit.

Method 1: Compute the difference between the research expenses incurred within the taxable year and base-year research expenses. If the difference is less than \$1 M, the credit equals 15% of the difference. If the difference is greater than \$1 M, multiply the amount exceeding \$1 M by 10% then add \$150,000. Method 1 is only available for expenses incurred after December 31, 2007.

Method 2: The credit equals 10% of the difference between the taxpayer's current research expenses and 50% of taxpayer's average qualified Indiana research expenses from the prior three years. If the business did not have qualifying research expenses in any one of the past three years, the credit equals 5% of the expenses from the current

Research Expense Tax Credit

Enactment: The credit was effective beginning in tax year 1982.

Expiration: The credit has no expiration date.

Credit Limits: This credit has no annual limit.

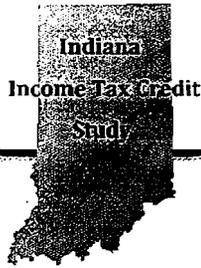
Award Process: The taxpayer claims the credit on their tax return.

Eligible Taxes: Individual Adjusted Gross Income (AGI) and Corporate AGI Taxes.

Refund Provisions: The credit is nonrefundable, but unused credits may be carried forward for up to 10 consecutive years. Unused credits may not be carried back.

Claim Filing Requirements: The taxpayer must complete an IT-20REC form and enclose it along with their return.

year. Method 2 is only available for expenses incurred after December 31, 2009. Method 2 is also available under a separate provision for research expenses incurred by a business in the aerospace industry, except the credit percentage is determined by the IEDC up to a maximum of 10%.



Venture Capital Investment Credit

IC 6-3.1-24

Legislative Services Agency

September 2012

Purpose.

The Venture Capital Investment Credit was created to encourage investment in early-stage firms.

Tax Credit Use Profile.

Tax Year	Filers Claiming Credits			Credits Claimed			Estimated Qualifying Investment
	Individual	Corporation	Total	Individual	Corporation	Total	
2005	302	N/A	302	\$2,670,183	N/A	\$2,670,183	\$13,350,915
2006	166	N/R	166	623,155	\$149,402	772,557	3,862,785
2007	430	0	430	3,783,510	0	3,783,510	18,917,550
2008	496	N/R	496	3,337,197	57,157	3,394,354	16,971,770
2009	403	N/R	403	2,488,636	78,257	2,566,893	12,834,465
2010	434	6	440	3,286,772	94,211	3,380,983	16,904,915
2011*	285	0	285	1,820,451	0	1,820,451	9,102,255
Mean	359	2	360	\$2,572,843	\$63,171	\$2,626,990	\$13,134,951

*The 2011 filer counts and credit amounts are not full-year totals because of filing extensions and suspension of returns for audit.

N/A = Not applicable

N/R = Five or fewer filers, filer count not reported

Description.

The credit was effective beginning in 2004. The total amount of credits that could be approved by the Indiana Economic Development Corporation (IEDC) was limited to \$10 M annually, with an annual limit per taxpayer equal to \$500,000. The annual maximum for total credits approved by the IEDC was increased to \$12.5 M in 2005. The annual maximum per taxpayer was increased to \$1.0 M in 2011. Also, in 2012, the authority to grant additional credits was extended to December 31, 2016.

The credit is to equal 20% of the annual venture capital investment in a qualified Indiana business up to the \$1.0 M per taxpayer maximum. A business must meet the criteria in IC 6-3.1-24-7(a) to be certified by the IEDC to receive venture capital investment that is eligible for the tax credit. In addition, the business must agree to maintain its headquarters in Indiana and have at least 50% of its employees residing in Indiana or 75% of its assets located in Indiana.

In order to obtain credit for investment in a qualified Indiana business, a taxpayer must have an investment plan certified by the IEDC and then provide the investment capital to the qualified Indiana business within two years.

The taxpayer may not be granted more than one of the following credits for the same project: alternative fuel vehicle manufacturer investment credit, capital investment credit, community revitalization

Venture Capital Investment Tax Credit

Enactment: The credit was effective beginning in tax year 2004.

Expiration: No new credits may be granted after December 31, 2016.

Credit Limits: The total certified credits may not exceed \$12.5 M a calendar year.

Award Process: The IEDC administers the program. The IEDC authorizes the investment plan for the business and determines which investments are eligible for the credit. In order for the taxpayer to receive the credit, the IEDC must authorize the investment before it is made.

Eligible Taxes: Individual Adjusted Gross Income (AGI), Corporate AGI, Financial Institutions, Insurance Premiums, and Gross Retail Sales & Use Taxes.

Refund Provisions: The credit is nonrefundable, but unused credits may be carried forward for up to five consecutive years. Unused credits may not be carried back.

Claim Filing Requirements: The taxpayer is required to submit a copy of the certificate from the IEDC verifying the amount of eligible credit for the taxable year along with their tax return.

enhancement district credit, enterprise zone investment cost credit, Hoosier business investment credit, industrial recovery credit, military base investment cost credit, military base recovery credit, or venture capital investment credit.

Analysis.

The average annual amount of credits claimed from 2005 to 2011 was \$2,626,990, with the total claimed during that 7-year period equal to \$18,388,931. The 7-year total translates to at least \$91,944,655 in qualified venture capital investment. The table below reports annual IEDC-approved credit totals and the qualified investment connected with those approved credits. The annual approved credit totals do not match the totals claimed each year (reported above). The difference results because a taxpayer has a 2-year period to make the investment for which credits have been approved, and the credits a taxpayer may claim depend on the taxpayer's liability since the credit is nonrefundable.

A total of \$42,174,673 in credits has been approved by the IEDC since 2003, which translates into \$210,873,365 in potential investment. Due to data limitations, the amount of tax credits claimed against 2004 taxes for all taxpayers and against 2005 taxes for corporate taxpayers is unknown. Assuming the amount claimed was minimal, there could potentially be \$23,785,742 in credit liability remaining. This total could be lower to the extent that the full amount of the qualified investment was not made by the taxpayer or credits approved prior to 2008 have not been claimed because the 5-year carry-over period has expired.

Venture Capital Credits Approved by IEDC and Credit-Qualified Investment

Year	Credits Approved by IEDC	Credit-Qualified Venture Capital Investment	Total Venture Capital Investment in Indiana*	% Share of Total
1998	N/A	N/A	\$39,000,000	N/A
1999	N/A	N/A	47,000,000	N/A
2000	N/A	N/A	269,000,000	N/A
2001	N/A	N/A	54,000,000	N/A
2002	N/A	N/A	40,000,000	N/A
2003	\$795,000	\$3,975,000	25,000,000	15.9%
2004	6,574,005	32,870,026	66,000,000	49.8%
2005	3,442,726	17,213,630	104,000,000	16.6%
2006	1,870,475	9,352,374	69,000,000	13.6%
2007	6,869,734	34,348,670	83,000,000	41.4%
2008	7,720,496	38,602,480	124,000,000	31.1%
2009	4,456,100	22,280,500	157,000,000	14.2%
2010	6,090,868	30,454,341	69,000,000	44.1%
2011	2,206,769	11,033,845	N/R	N/R
2012	2,148,500	10,742,500	N/R	N/R

N/A = Not Applicable, the Venture Capital Investment Credit did not exist in these years.

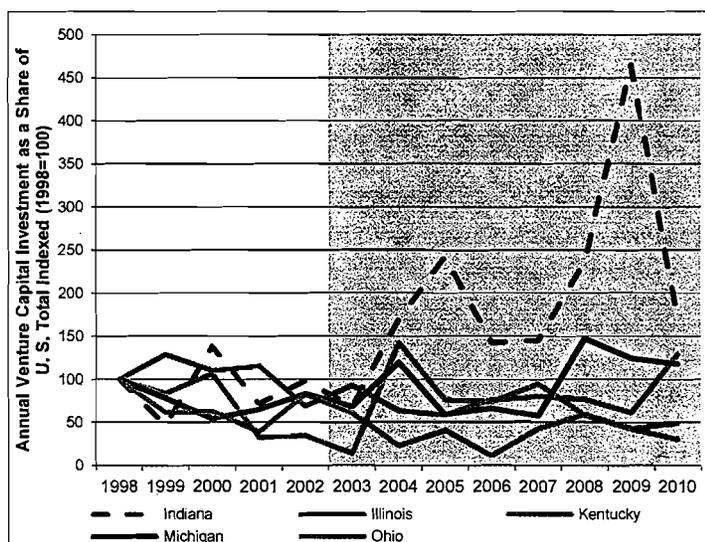
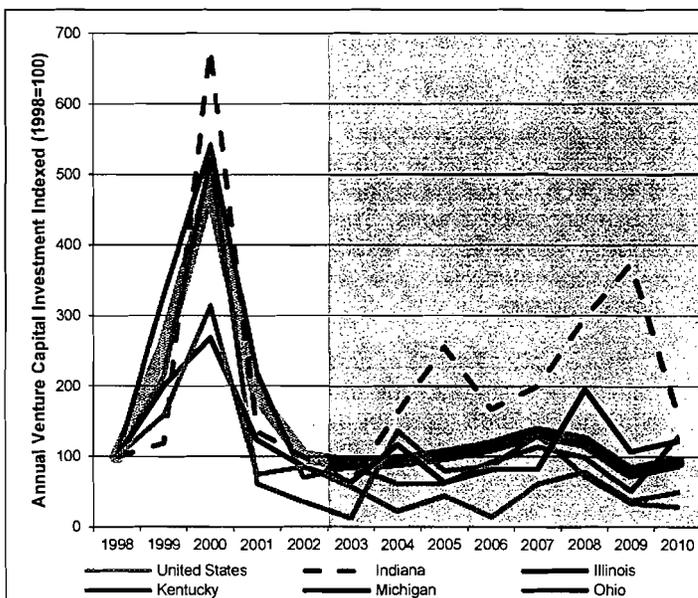
N/R = No report

*Data from PricewaterhouseCoopers and National Venture Capital Association, special tabulations (2011) of MoneyTree™ Survey, as reported by the National Science Foundation.

The credit-qualified investment levels reported in the table above represent an average of about 28% of the total venture capital investment occurring annually in Indiana. On a year-to-year basis, however, that average share can be misleading as it ranged from 13.6% in 2006 to 49.8% in 2004. Year to year, the credit series and the investment series show some volatility and don't exhibit an obvious long-run trend. Consequently, assessing the impact of the credit solely from observing these series would be very difficult.

To assess the impact of state tax credits for venture capital investment, LSA estimated econometric models using a state panel dataset comprised of annual state-level venture capital investment measures, measures of state venture capital tax credits, and annual state and national economic measures. The panel dataset included these measures for all 50 states from 1998 to 2010.

The econometric models estimate the relationship between state venture capital tax credits and two venture capital measures: (1) state per capita venture capital investment¹ and (2) state venture capital investment as a percent of U.S. venture capital investment.² The econometric models suggest that venture capital investment credits do not have an impact on either the level of venture capital investment in a state; or the share of the total U.S. venture capital investment that a state may capture. Rather, the statistical results suggest that state venture capital investment levels are a function



of general economic trends and the types of industries that cluster within particular states. So, states having large concentrations of high-technology industries like computer manufacturing, computer design, pharmaceutical manufacturing, or medical device manufacturing have higher than average levels of venture capital investment independent of venture capital investment credits.

While the econometric analysis failed to statistically detect an investment impact of state venture capital investment credits, the investment data specifically for Indiana indicates a comparatively sharp rise generally in venture capital investment since 2003 when the Venture Capital Investment Credit went into effect. The line graph above compares Indiana's annual venture capital investment levels to its neighbors and to the U.S. total. The line graph to the left compares Indiana's annual share of the U.S. total venture capital investment to its

neighbors. The darkened area in each graph shows the period since 2004 when the Venture Capital Investment

¹ The econometric model is:

$PerCapitaVentureCapital = -1540.17 + 2.15 * (EconomicIndex) + 7.03 * (CreditDummy) + 13.79 * (YearsEffective) - 3.84 * (StatesWithCredit) - 7.44 * (CreditDummy) * (YearsEffective) + 0.21 * (CreditDummy) * (StatesWithCredit) + 1330.64 * (ComputerManufShare) + 3118.21 * (DrugManufShare) + 4766.05 * (ComputerDesignShare)$. The model predicts the per capita venture capital investment in a state. The variable $(CreditDummy)$ is dummy variables indicating that a state has a venture capital investment credit. The variables $(YearsEffective)$ and $(StatesWithCredit)$ indicate the years a state's venture capital investment credit has been in effect and the number of other states with venture capital investment credits, respectively. The variables $(CreditDummy) * (StatesWithCredit)$ and $(CreditDummy) * (YearsEffective)$ measure the interaction effects of the three credit measures. The coefficient on $(CreditDummy)$ is not statistically significant, and the coefficients on the interaction variables are not intuitive. The coefficient on $(EconomicIndex)$ is statistically significant and intuitive. The three industry cluster variables, $(ComputerManufShare)$, $(DrugManufShare)$, and $(ComputerDesignShare)$, are all statistically significant and intuitive. The model also includes state and time fixed-effects variables.

² The econometric model is:

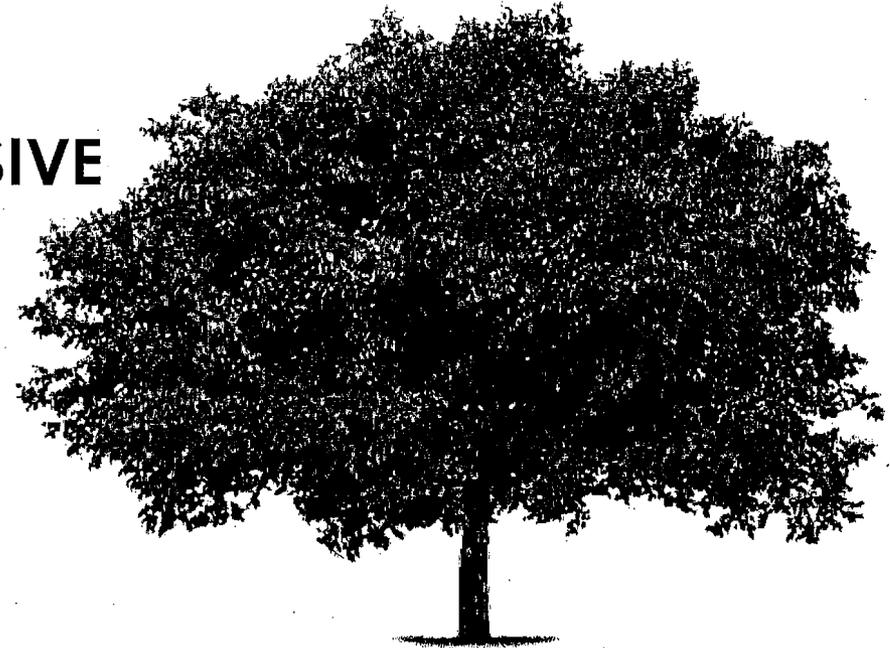
$StateVentureCapitalShare = 0.44 + 4.01e - 09 * (StatePopulation) + 02.05e - 04 * (EconomicIndex) - 0.001 * (CreditDummy) + 0.0006 * (YearsEffective) - 0.0001 * (StatesWithCredit) - 0.0006 * (CreditDummy) * (YearsEffective) + 8.84e - 05 * (CreditDummy) * (StatesWithCredit) - 0.20 * (ComputerManufShare) + 0.02 * (DrugManufShare) - 0.48 * (ComputerDesignShare)$. The model predicts a state's share of U.S. venture capital investment. The explanatory variables in the model are the same as described in Footnote 1. The coefficient on $(CreditDummy)$ is not statistically significant, and the coefficients on the interaction variables are not intuitive. The coefficients on other economic and industry cluster variables are, for the most part, not statistically significant and are not intuitive.

Credit has been in effect. Of the neighboring states, only Illinois did not have a credit during this period. However, Kentucky, Michigan, and Ohio had credits during this period with a higher credit percentage. The graphs suggest either of the following: (1) the credit has had a positive impact on venture capital investment in Indiana or (2) some other activities or efforts independent of the credit but coinciding with it are resulting in higher levels of venture capital investment in Indiana.

Exhibit B
CSTEP #3
9/24/12



**IN A HEALTHY INDIANA,
ENTREPRENEURSHIP IS PERVASIVE**
In companies of all sizes...



**STIMULATE
VENTURE CAPITAL**

elevate
ventures

Independent 501(c)3 partner

**SUPPORT SMALL
BUSINESS**



Partnership b/w state and SBA

**CORPORATE
RETENTION AND ATTRACTION**



with REDO/LEDO engagement

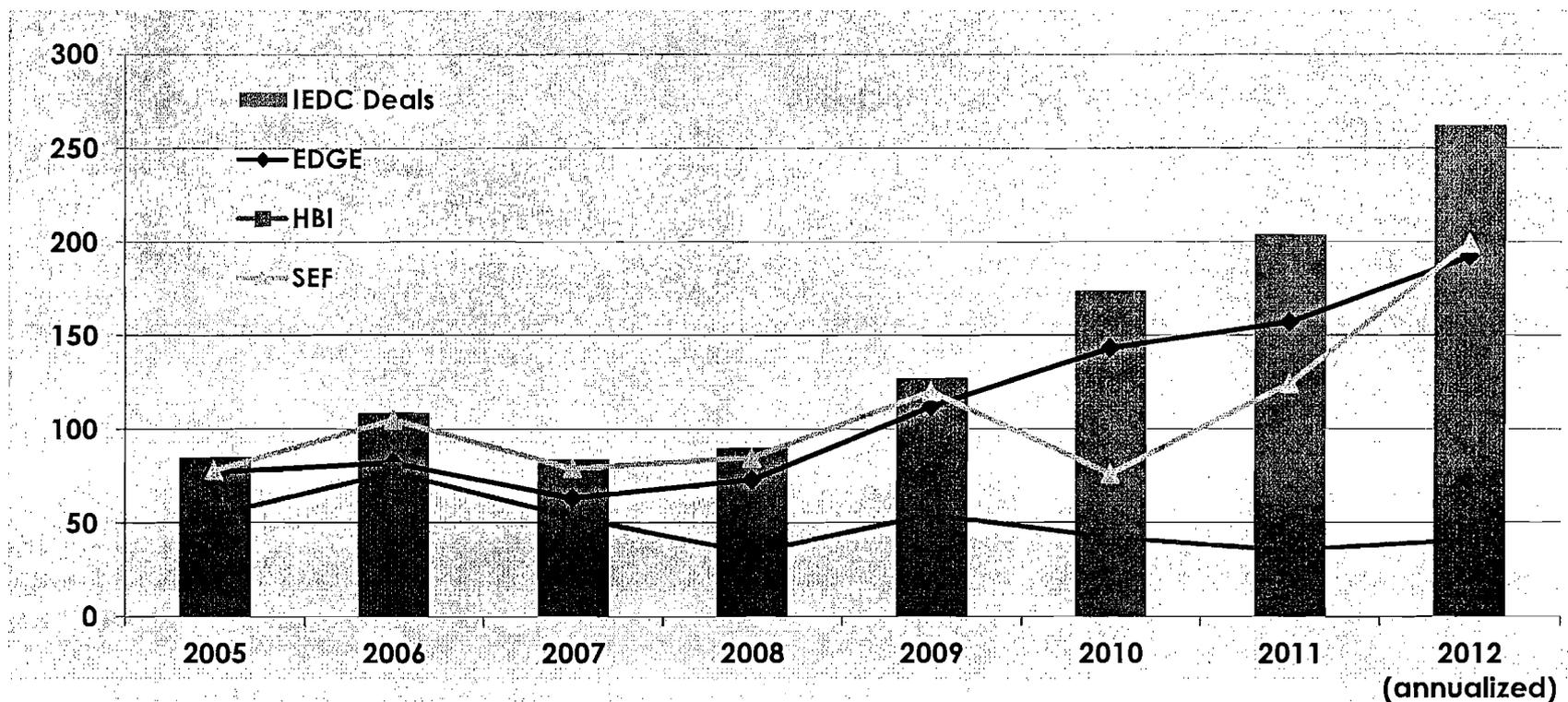
ECONOMIC DEVELOPMENT EVALUATION

IEDC TOOLS

Jobs & Investment	Jobs	Capital Investment	Financing (Debt or Equity)
Headquarters Relocation Credit	Airport Development Zone Employment Expense Credit	Alternative Fuel Vehicle Manufacturing Investment Credit	Airport Development Zone Investment Cost Credit
Hoosier Business Investment (HBI) Credit	Enterprise Zone Employment Expense Credit	Capital Investment Credit	Airport Development Zone Loan Interest Credit
	Economic Development for a Growing Economy (EDGE) Credit	Community Revitalization Enhancement District Investment Credit (CRED)	Enterprise Zone Investment Cost Credit
	New Employer Credit	Industrial Recovery "Dinosaur" Credit	Enterprise Zone Loan Interest Credit
		Military Base Recovery Credit	Military Base Investment Cost Credit
			Venture Capital Investment Credit

ECONOMIC DEVELOPMENT EVALUATION

TRENDS IN USE OF PRIMARY INCENTIVE TOOLS



CURRENT CHALLENGES

Available Sites

- ▶ Communities without readily-available sites that are Shovel Ready or pad-ready lack not only the assets necessary to attract projects but also the visibility associated with marketing those sites.

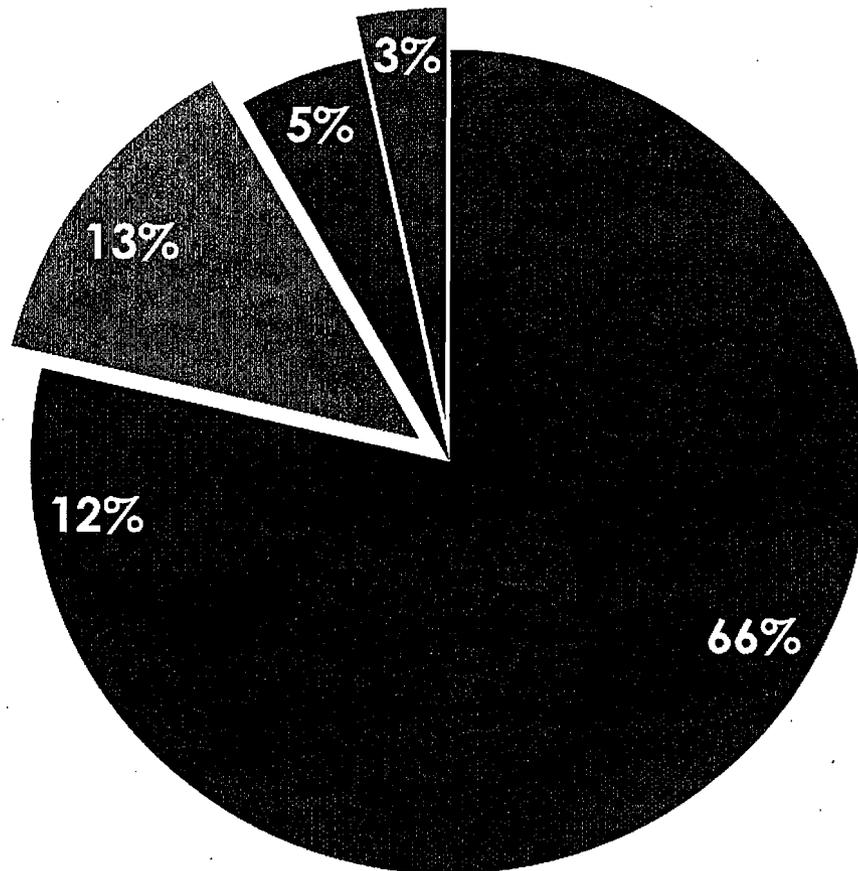
Workforce/Training

- ▶ Employers continue to emphasize their need for workers with advanced skills (i.e. mathematics, sciences, engineering).

Sales Tax Challenges

- ▶ Some projects such as data centers involve significant capital investment with fewer employees, making existing IEDC incentives less useful.

PROJECT LOSS ANALYSIS (2009-Present)



- Did Not Happen Anywhere:
- Incentives (Lack of, Better Offer, Etc.)
- Site (incl. Availability, Infrastructure, Cost, Etc.)
- Proximity to Suppliers/Customers
- Labor Availability, Cost, Etc.

Data updated 8.14.2012

AVAILABLE SITES

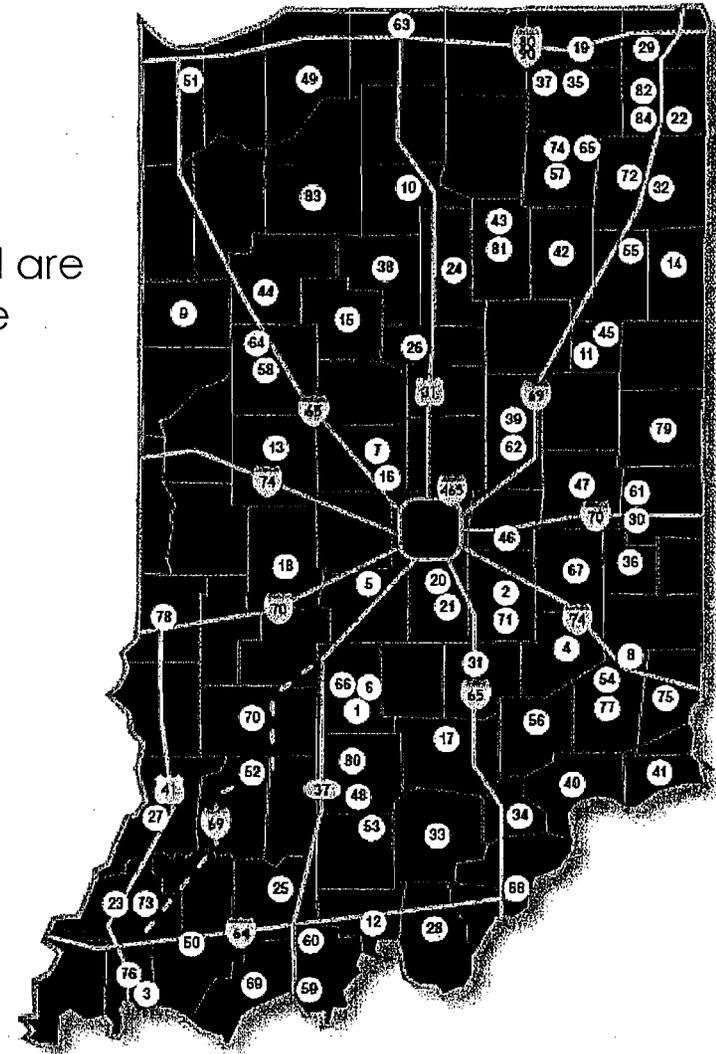
Shovel Ready Sites

- ▶ Nearly 100 shovel ready sites in the state and are found on the IEDC's Site & Building Database (<http://statein.zoomprospector.com>).

Empty Facilities (Vacant & Shell)

- ▶ Indiana lacks an inventory of buildings, particularly for manufacturers.
- ▶ We use the Industrial Recovery program to incentivize speculative renovation of old buildings but no tool to encourage pure speculation.

Indiana Shovel Ready Sites



WORKFORCE/TRAINING

INDIANA'S SWEET SPOT: MANUFACTURING



August 8, 2012

Northeast Indiana: Hundreds of factory jobs go unfilled

- ▶ Many applicants for jobs at Damon Manifolds, Fort Wayne Metals and others, but few have the skills and attitude required for the work.
- ▶ The IEDC is hearing this story around the state and is exploring a partnership with IVY Tech to provide employers with customized programs to fill the skills gap



COURTESY: FORT WAYNE METALS

WORKFORCE/TRAINING

LOOKING FORWARD: EMBRACING A KNOWLEDGE-BASED ECONOMY

- ▶ Higher education in Indiana does a marvelous job educating students in a variety of high-skill fields.
- ▶ However, the fact remains that Indiana is a net exporter of these college graduates.
- ▶ Keeping them here requires both a job and a desirable lifestyle.



SALES TAX CHALLENGES

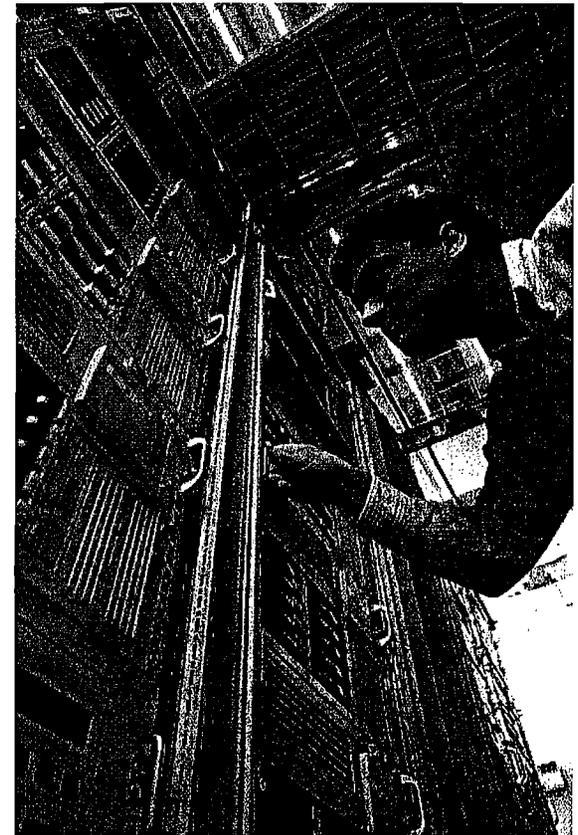
IT EQUIPMENT

OPPORTUNITIES

- ▶ Nearly 6 million servers come online each year, causing increased data center energy demands of 10%.
- ▶ Significant capital investment, high-paying jobs associated with data centers.

CHALLENGES

- ▶ IT equipment is replaced every 2 to 4 years, so Indiana's 7% sales tax rate is a significant hurdle despite other advantage.
- ▶ Many states are offering sales tax exemptions in order to capture the long-term tax revenue generated by data centers.



ECONOMIC DEVELOPMENT EVALUATION

POTENTIAL CONSIDERATIONS

Frequent company requests:

- ▶ Modify the EDGE/HBI to give companies the opportunity to donate their incentive to the local community for a specific initiative.
- ▶ Examine impact of making credits like VCI and HBI transferable, refundable or both.

Additional IEDC-recommended considerations:

- ▶ Examine ways in which to encourage site and building development through possible changes to or creation of the following programs:
 - Industrial Recovery Tax Credit, New Market Tax Credit, Hoosier Business Investment Tax Credit, Shovel Ready Program.
- ▶ Examine possible advantages of converting the Skills Enhancement Fund from a grant structure to a refundable tax credit.
- ▶ Examine impact of a sales tax exemption for data center equipment.

Exhibit C
CSTEP #3
9/24/12

BATTELLE/BIO
STATE BIOSCIENCE
INDUSTRY DEVELOPMENT
2012



Battelle
The Business of Innovation

Bio Biotechnology
Industry
Organization

June 2012

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The Project Team

Battelle is the world's largest nonprofit independent research and development organization, providing innovative solutions to the world's most pressing needs through its four global businesses: Laboratory Management, National Security, Energy Technology, and Health and Life Sciences. In 1991, Battelle created the Technology Partnership Practice (TPP). We focus Battelle's broad experience to better serve economic development organizations, universities, and nonprofit technology organizations across the U.S. For further information, please contact Mitch Horowitz at horowitzm@battelle.org.

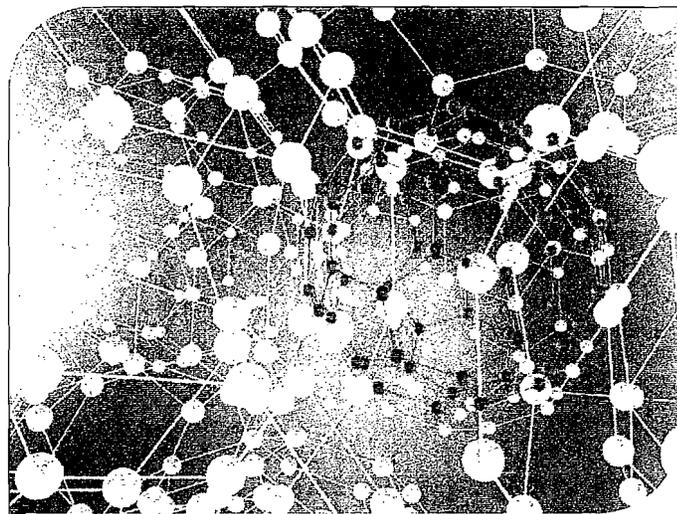
BIO—Biotechnology Industry Organization—represents more than 1,100 biotechnology companies, academic institutions, state biotechnology centers and related organizations across the United States and in more than 30 other nations. BIO members are involved in the research and development of innovative healthcare, agricultural, industrial and environmental biotechnology products. BIO also produces the BIO International Convention, the world's largest gathering of the biotechnology industry, along with industry-leading investor and partnering meetings held around the world. BIO produces BIOTechNOW, a multiblog platform and monthly newsletter that aims to create an online biotech community where the the industry can connect to discuss the latest news.

PMP Public Affairs Consulting, Inc. is an independent consulting firm serving the public and constituent relations needs of bioscience-related companies and associations.



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Executive Summary

At a time when the global economy struggles to recover from a severe recession and uncertainty remains regarding future economic growth, bioscience industry development is generating significant attention both globally and at home. A number of recent studies have detailed the mounting global competition for bioscience industry development as both developed and developing nations seek to grow and advance in this high-wage, high-growth industry.¹ This April, the U.S. government released the *National Bioeconomy Blueprint* noting that bioscience industries are “a large and rapidly growing segment of the world economy that provides substantial public benefit.”²

Indeed, the bioscience industry stands out in job growth. While not immune from the global recession, the bioscience industry has demonstrated that it is a generally strong and steady job generator, growing jobs over the past decade at a pace well above the national average. It also has fared much better than the overall economy through the recent U.S. recession and into the first year of the recovery. When compared with other major knowledge economy industries, which are critical for advancing high quality jobs, the bioscience industry has led in job creation during the 2001 to 2010 period (see key findings below).

A primary reason for the resiliency of the bioscience industry is the diverse set of markets it serves. These markets span: biomedical drugs; diagnostics and devices; agricultural products from animal health to seeds and crop protection; and bio-based industrial products such as enzymes for industry chemical processes and bio-remediation, bio-fuels, and bio-plastics. In addition, the bioscience industry involves not only high value, export-oriented manufacturing activities, but encompasses specialty commercial research, development and testing industries to advance bioscience product development as well as specialty distribution to bring bioscience products to market.

Another factor spurring the attractiveness of bioscience industry development is how closely its growth is shaped by the fast pace of advances in biological sciences, making it truly one of the most innovative industries today. The close connections between basic research discoveries, often advanced in academic and federal laboratory settings, and industry product development within the biosciences are well-documented—setting bioscience industry development apart from many other leading technology areas.³

Significant levels of research and development in bioscience industries continuously drive innovation and new product development. A recent report by the U.S. Department of Commerce, published jointly through its Patent and Trademark Office and Economics and Statistics Administration, found that

¹ See ITIF and United for Medical Research, *Leadership in Decline: Assessing U.S. International Competitiveness in Biomedical Research*, May 2012 and Battelle, *The Biopharmaceutical Research and Development Enterprise: Growth Platform for Economies Around the World*, May 2012.

² Obama Administration, *National Bioeconomy Blueprint*, April 2012, page 1.

³ An extensive study in the late 1990s found that 31 percent of new drugs and medical products would not have been developed (or would have been substantially delayed) in the absence of academic research, more than twice the rate found for all technology industries (see Edwin Mansfield, “Academic Research and Industrial Innovation,” *Research Policy*, 1998, 26:773-776; A 2003 National Academy of Engineering report entitled *The Impact of Academic Research on Industrial Performance* found that “one of the defining characteristics of the medical devices and equipment sector is a strong dependency between universities and industry...Academic research has had a substantial impact on the industry’s performance...including a high degree of involvement in product development, product evaluation and introduction, and product modification.” Advances in basic biosciences research are having similar transformative impacts on agriculture in improving and protecting plants as well as in industrial biotechnology applications that are leading to bio-based fuels, chemicals and products.

bioscience industries are among those with the highest levels of patent intensity. The report also cites the results from an earlier study by Carnegie-Mellon that found the bioscience industry to be among the leading industries in which patent protection led to capturing competitive advantages in the market place.⁴

The message is clear—a strong bioscience industry base offers the United States of America, as well as each of the 50 states, Puerto Rico and the District of Columbia, a high value economic driver. It stands out in its creation of high quality jobs, the breadth of markets it serves, and its research and development intensity. An excellent example of how this all comes together is what has been accomplished with the human genome project in the U.S. This \$10.4 billion investment in basic sciences during the 1993 to 2010 period drove \$796 billion in economic impact, and created 3.8 million job-years of employment over this period.⁵ Just as important, it launched the genomic revolution whose technologies, tools and basic biological knowledge have found applications across a wide range of economic activities beyond human healthcare, including agriculture and veterinary medicine as well as environmental remediation to biofuels and other industrial applications (see text box below for more details).

Human Genome Project: A Case Study of How Basic Research and Industry Development Come Together in the Biosciences

One tangible example of the close linkages between basic research discoveries and bioscience industry development is the results from the Human Genome Project. The U.S. government invested \$3.8 billion in human genome sequencing programs during the 1988 to 2003 period, and has continued to invest in further genomics research with an additional \$6.6 billion from 2004 to 2010. The decoding of the human genome was both a technological as well as scientific achievement. An industry has grown up to supply the scientific research community with the tools needed to conduct genomics research and development and associated product development, such as gene sequencers, sample preparation technologies, sample amplification technology, and a range of other analytical tools and technologies. Moreover, a majority of bioscience companies are now using genomics-based tools to advance new product development.

In a recent study, a database of individual companies engaged in genomics-related activities was developed ranging from new instruments and equipment, R&D, and testing services to bioinformatics and new product development. Altogether, this industry employed more than 44,000 in 2010 and over the 1993 to 2010 period generated 591,138 job years from those it employed.

Considering the full economic multipliers from the direct scientific research and industry-generated growth from the U.S. government's funding of the Human Genome Project, during the 1993 to 2010 period, finds that it has generated a total of 3.8 million job-years of employment or an additional 4.38 job years for every one direct job year. The overall economic activity was so substantial that the U.S. government reaped total tax revenues of \$48.9 billion compared to the just slightly more than \$10 billion it invested in human genome research from 1993 to 2010.

Economic Impact of the Human Genome Project, Prepared by Battelle Technology Partnership Practice with Support from the Life Technologies Foundation, May 2011

⁴ U.S. Department of Commerce, Intellectual Property and the U.S. Economy: Industries in Focus, March 2012

⁵ A job year is the concept where, for example, 10 job years reflects one job created that lasts for 10 years or conversely where 10 jobs are created each lasting for one year.

Measuring Bioscience Industry Development: Keeping Pace with an Evolving Industry

Given the importance of the biosciences as an economic driver, BIO has worked with the Battelle Technology Partnership Practice in tracking the development of the U.S. bioscience industry on a state by state basis every two years since 2004. Examining both the national and unfolding state-by-state footprint of the bioscience industry offers an important perspective, particularly given that the national economy is built from the bottom up and that economic development is a shared national, state, and local responsibility.

Measuring the bioscience industry is not straight-forward. Instead of falling neatly into a single high level industry classification, the biosciences are best understood as a grouping of diverse industries with a common link—the application of biological scientific knowledge. Defining biosciences industries requires analyzing standard industrial classifications at the most detailed level to identify those involved in bioscience-related activities. These bioscience industries fall into a broad array of higher level industries, such as chemical and food manufacturing, professional, scientific and technical services, and increasingly distribution services.

The changing nature of biological research and its applications further complicates this task as the bioscience industry continues to evolve in the types of companies engaged and how they are represented within the standard industry classifications. It is important then to periodically re-examine how bioscience companies classify themselves within detailed industries and to consider how the evolving demands of new bioscience products and innovations are changing the range of companies involved in these activities.

For the first four reports tracking bioscience industry development, Battelle and BIO identified 27 detailed industries within the North American Industry Classification System (NAICS) at the most detailed six-digit level that aggregated into four major subsectors of the bioscience industry:

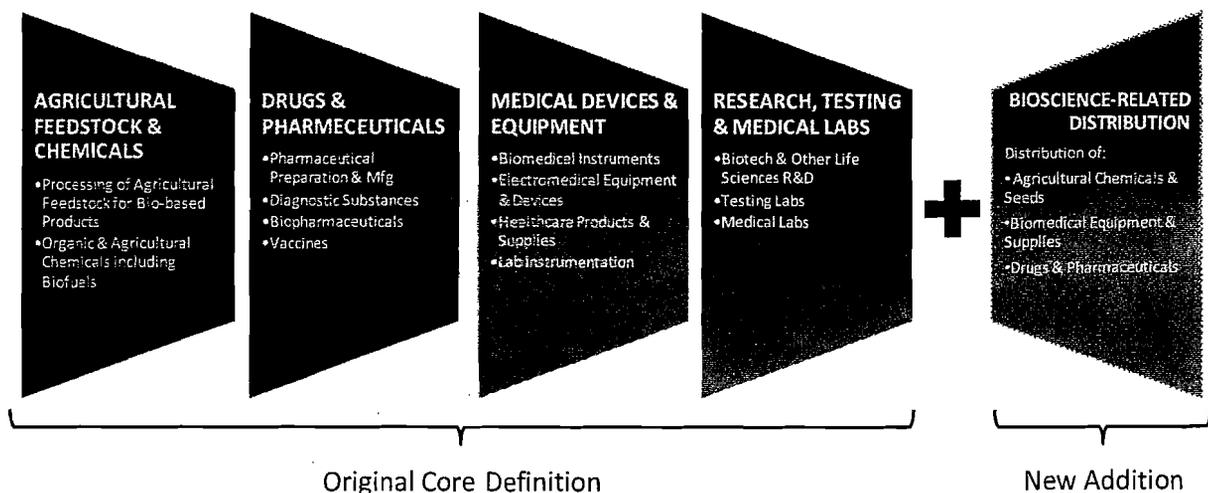
- **Agricultural Feedstock and Chemicals**, involving industries, for example, that utilize advances in biochemistry and biotechnology for producing products involved in crop protection, advanced seed, agricultural processing, bio-fuels, biodegradable materials from plant-based feedstock, sustainable industrial oils, lubricants and enzymes and bio-based catalysts for industrial processes.
- **Drugs and Pharmaceuticals**, involving industries that produce vaccines, biopharmaceuticals, and tissue and cell culture media.
- **Medical Devices and Equipment**, involving industries that produce a variety of biomedical products such as surgical instruments, orthopedic implants, bioimaging equipment, dental instruments, and patient care products (such as walkers, wheelchairs and beds).
- **Research, Testing, and Medical Laboratories**, involving emerging companies working to develop and commercialize new drug discovery/delivery systems and gene and cell therapies as well as more service-oriented firms involved in pre-clinical drug development, clinical trials, and research/laboratory support services. While primarily focused on human health, these companies also include those that are focused on research and testing for agriculture and veterinary uses.

For this fifth biennial report, Battelle and BIO have worked together to re-examine which detailed industries are best understood to comprise the bioscience industry. This examination has led to two important refinements from previous reports:

- The first refinement is to drop a number of detailed industries that have become more closely connected with the delivery of clinical services to patients than the development of new bioscience products. This includes three specific industries: ophthalmic goods manufacturing, which is involved in filling prescriptions for eyeglasses and contact lenses; dental laboratories, which fill orders for customized dentures, crowns, implants and orthodontic appliances; and diagnostic imaging centers that offer access to high end MRI, CAT scan, PET and ultrasound imaging services. Upon examination of the range of companies, these three industries are found to be less involved in creating products and services using biological knowledge and more engaged in direct patient services that use existing bioscience products and technologies.
- The second refinement involves the inclusion of a new fifth subsector for the bioscience industry in light of the changing nature of bioscience technology and applications. This new subsector is categorized as bioscience-related distribution. Increasingly bioscience-related distribution involves specialized approaches such as cold storage and highly regulated product monitoring, and new technologies for distribution such as automated pharmaceutical distribution systems. These include three detailed distribution industries: one associated with medical equipment and device distribution; another with drug distribution; and a third with agricultural-related chemicals and seed distribution. Each of these bioscience-related industries are becoming integral in the primary production of bioscience goods in an age of advanced logistics and the increasing specialized nature of biosciences product development.

This revised definition of the bioscience industry is depicted in Figure 1.

Figure 1. Revised Definition of the Bioscience Industry



The data and methodology appendix sets out a comparison table of the detailed industries under each bioscience industry subsector noting the changes made.

Going from industry classifications to measuring actual job performance requires having a comprehensive and longitudinal data source. Battelle and BIO continue to utilize the Quarterly Census of Employment and Wages (QCEW) managed by the U.S. Bureau of Labor Statistics. The QCEW is based on actual payroll data

required of employers that pay into the unemployment insurance system. This offers a built-in mechanism for accuracy and nearly comprehensive coverage, even at the county and state levels.

The QCEW tracks each place of business associated with a company, which it refers to as a business establishment. This means separately located branch plants and field offices of a company are typically measured as their own business unit. This has significant advantages in ensuring that employment is measured where workers actually work rather than where a company's headquarters is located. Another advantage of measuring at the business establishment level is that many companies span multiple industries, particularly at a detailed industry level. The different industry activities can be noted by having each business establishment separately coded based on their primary industry activity and not just the main activity of the overall company. Therefore, the establishment numbers in this report are not interchangeable with the number of companies in each state. In most instances, the number of establishments greatly exceeds the actual number of corporate entities as many companies have numerous establishments within a given state.

Key Findings

This fifth biennial report on the bioscience industry tracks employment trends through 2010, the most recent year available. This updated look at bioscience industry trends accounts for the full impact of the recent deep recession and the first year of the economic recovery.

In light of the refinements made in measuring the evolving composition of the bioscience industry, Battelle and BIO provide an analysis with the refined industry definitions going back to 2001. This offers an updated view of the resiliency of the bioscience industry over different phases of the recent business cycle, as well as allowing for a long term view of bioscience industry growth, even after a recession.

NATIONAL BIOSCIENCE INDUSTRY TRENDS

During the 2001 to 2010 period, the U.S. bioscience industry gained jobs, despite job losses in overall U.S. total private sector industry employment and among other leading knowledge-based industries.

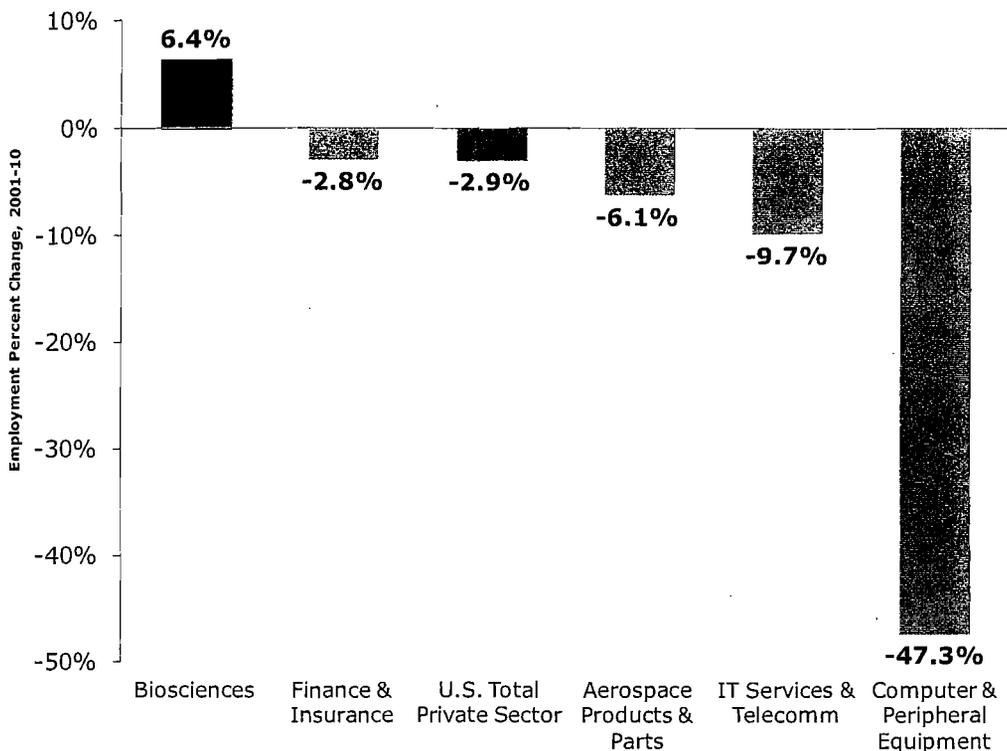
The period from 2001 to 2010 represents a time of significant economic growth from 2001 through 2007, a severe economic recession from the end of 2007 through 2009, and the first full year of a recovery from 2009 to 2010. It offers a unique perspective on the resiliency of an industry over a long-term period with the inevitable ups and downs of a business cycle.

The bioscience industry has demonstrated its growth and staying power during the longer term period, encompassing two business cycles. During the 2001 to 2010 period, the bioscience industry grew by 6.4 percent, adding more than 96,000 jobs. By comparison, total employment for all private sector industries in the U.S. fell by 2.9 percent, losing more than 3 million jobs (see Figure 2).

By comparison, other leading knowledge-based industries, including information technology services, aerospace, computer equipment and finance and insurance, all recorded net job losses over this same period.

Figure 2 depicts the difference in employment change during the 2001 to 2010 period for the bioscience industry, total private sector industries, and other leading knowledge-based industries.

Figure 2. Employment Trends in the Biosciences and Other Leading Knowledge-based Industries, 2001–10

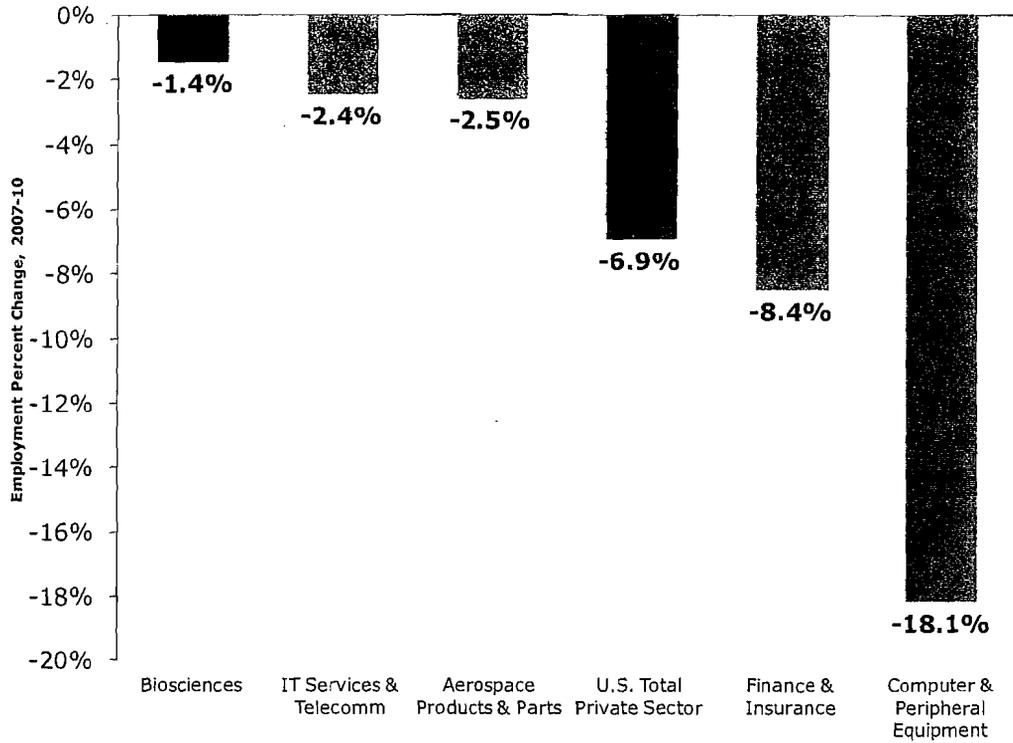


Source: Battelle analysis of Bureau of Labor Statistics, QCEW; enhanced file from IMPLAN.

Still, the bioscience industry was not immune from the recession and was still finding its footing in the first year of the recovery.

From 2007 to 2010, which represents the peak year before the onset of the recession through the first year of the recovery, bioscience industry employment fell by 1.4 percent or nearly 23,000 jobs. This decline, while disappointing, was quite muted. Total private sector employment, by comparison, fell 6.9 percent from 2007 to 2010, and other leading knowledge-based industries declined further than the biosciences as well (see Figure 3).

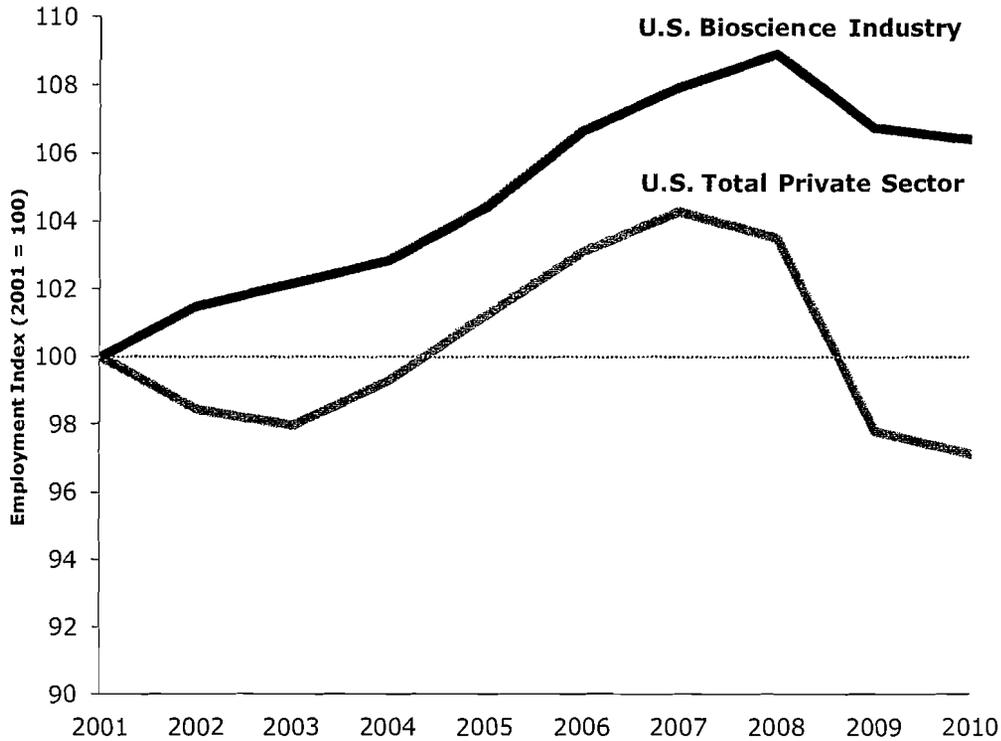
Figure 3. Employment Trends in the Biosciences and Other Leading Knowledge-based Industries, 2007-10



Source: Battelle analysis of Bureau of Labor Statistics, QCEW; enhanced file from IMPLAN.

What are particularly illuminating are the recent annual trends for the bioscience industry. As reported in the 2010 Battelle/BIO state-by-state study, the bioscience industry completed seven consecutive years of employment growth through the first year of the recession in 2008, though jobs increased by a mere 0.9 percent in 2008. In the second year of the recession in 2009, bioscience industry employment fell by 2 percent, well below the 5.5 percent decline recorded in national total private sector employment for 2009. In the first year of the recovery in 2010, the bioscience industry held generally steady, with a mere 0.3 percent job decline. This reflects the sluggish labor market conditions and reluctance to hire during the first year of the nascent recovery (see Figure 4).

Figure 4. U.S. Bioscience and Total Private Sector Employment, 2001-10, Indexed (2001=100)



Jobs in the bioscience industry remain among our nation’s highest paying, with growth in average wages exceeding the national private industry sector.

Robust demand for today’s high skilled bioscience workforce yields a significant wage premium and one that continues to widen with strong wage growth in recent years. Average wages paid to bioscience industry workers reached \$82,697 in 2010, more than \$36,000 or 79 percent greater than the average paid in the overall national private sector. Bioscience wage growth well outpaces that for the private sector, increasing by 13.1 percent in real (inflation-adjusted) terms since 2001 compared with just 4.4 percent pay raise among all industries.

CLOSER LOOK AT BIOSCIENCE INDUSTRY SUBSECTOR TRENDS

Within the bioscience industry, the research, testing, and medical laboratories subsector has grown consistently and significantly over the decade.

The job gains for the research, testing, and medical laboratories subsector through the 2001 to 2010 period reached a hefty 23.8 percent, adding nearly 87,000 jobs. More impressively, this subsector grew in employment every year from 2001 to 2010, even through the recession years of 2008 and 2009. The gains in this subsector demonstrate the importance of commercial research and development for the biosciences. It also reflects the outsourcing of many research and testing services previously done in-house by major biopharmaceutical companies, as well as the rise of molecular diagnostic testing as a key component of the industry.

The bioscience-related distribution subsector also fared well overall during the 2001 to 2010 period, but has faced job losses in recent years with the onset of the recession.

Bioscience-related distribution firms increased employment by a solid 6 percent over the decade, which translated into nearly 25,000 net new jobs. These gains were generated in the 2001 to 2007 expansion, when the subsector added more than 44,000 jobs, and have slowly eroded through the recession and first year of the recovery. Altogether, the bioscience-related distribution subsector has declined by 4.2 percent from 2007 to 2010, a loss of over 19,000 jobs, though still more moderate losses than those experienced by the private sector (-6.9 percent). This suggests that bioscience-related distribution may be very cyclical and highly responsive to the growth in other manufacturing related sectors of the bioscience industry.

The medical devices and equipment subsector has held its own overall, but with distinct ups and downs during the 2001 to 2010 period.

The medical devices and equipment subsector was generally flat during the 2001 to 2010 period. Employment declined a mere 0.3 percent overall, representing a loss of fewer than 1,000 jobs over the decade. This generally flat performance can be considered an achievement since there is a strong push towards increasing productivity in medical device and equipment manufacturing, akin to other advanced manufacturing industries. Still, the overall period masks a more interesting pattern of ups and downs that do not correspond exactly to the timing of the business cycles during the 2001 to 2010 period. Interestingly, medical devices and equipment lost employment steadily from 2001 to 2004, then picked up from 2005 to 2008 before declining again in 2009 and 2010.

Competitive challenges have marked the drop in employment in the drugs and pharmaceuticals subsector.

The drugs and pharmaceuticals subsector recorded a decline in employment from 2001 to 2010, falling 3.1 percent, a loss of nearly 9,400 jobs. However, this subsector had a more consistent pattern of growth with the business cycle. It grew at a slow but steady pace during the 2001 to 2007 growth period, increasing employment by 4.2 percent with a gain of nearly 13,000 jobs. From 2007 to 2010, declines in the drug and pharmaceutical subsector more than offset its earlier gains, falling 7 percent from 2007 to 2010, a loss of more than 22,000 jobs. This decline is on par with that of total private sector industry employment losses during the 2007 to 2010 period (-6.9 percent). The subsector appears to be facing considerable competitive challenges posed by the rise of generics, the slow pace of regulatory approval for new drugs and biopharmaceuticals, and the continued fast pace of mergers and acquisitions as firms in the subsector seek long-term profitability. In 2010, the subsector again paid the highest annual wages in the biosciences with the average industry worker earning more than \$99,000—20 percent more than the average worker in the biosciences and twice the national average for the private sector. Despite the recent job losses, the high wages paid to pharmaceutical employees reflect the high value-adding activities in the subsector that demand a high-skilled workforce.

Agricultural feedstock and chemicals has had a rocky time during the 2001 to 2010 period but for different underlying reasons.

The sharpest decline among the bioscience industry subsectors was in agricultural feedstock and chemicals, where employment fell by 5.9 percent or 4,570 jobs overall from 2001 to 2010. The subsector had added jobs in five of the last six years though the steep job losses in the depths of the recession in 2008 have not been offset by the recent gains and is down overall by 5.5 percent since 2007. Ethanol production has remained the subsector's strength, steadily adding jobs throughout the decade and even over the recession.

STATE-BY-STATE BIOSCIENCE INDUSTRY TRENDS

The bioscience industry remains well distributed across the United States, with many states continuing to have strong niches in certain specializations.

Thirty four states and Puerto Rico have an employment specialization⁶ in at least one of the five bioscience subsectors in 2010 (see Table 1). These include:

- 16 states specialized in Agricultural Feedstock & Chemicals
- 11 states and Puerto Rico specialized in Bioscience-related Distribution
- 12 states and Puerto Rico specialized in Drugs & Pharmaceuticals
- 14 states and Puerto Rico specialized in Medical Devices & Equipment
- 12 states and Puerto Rico specialized in Research, Testing, and Medical Labs.

Remarkably, 18 states and Puerto Rico are specialized in at least two of the five bioscience subsectors, suggesting that there are clear spillover impacts into multiple areas of industry focus from this knowledge-based industry cluster.

Indiana, New Jersey, and Puerto Rico stand out in having a specialization in four of the five bioscience subsectors.

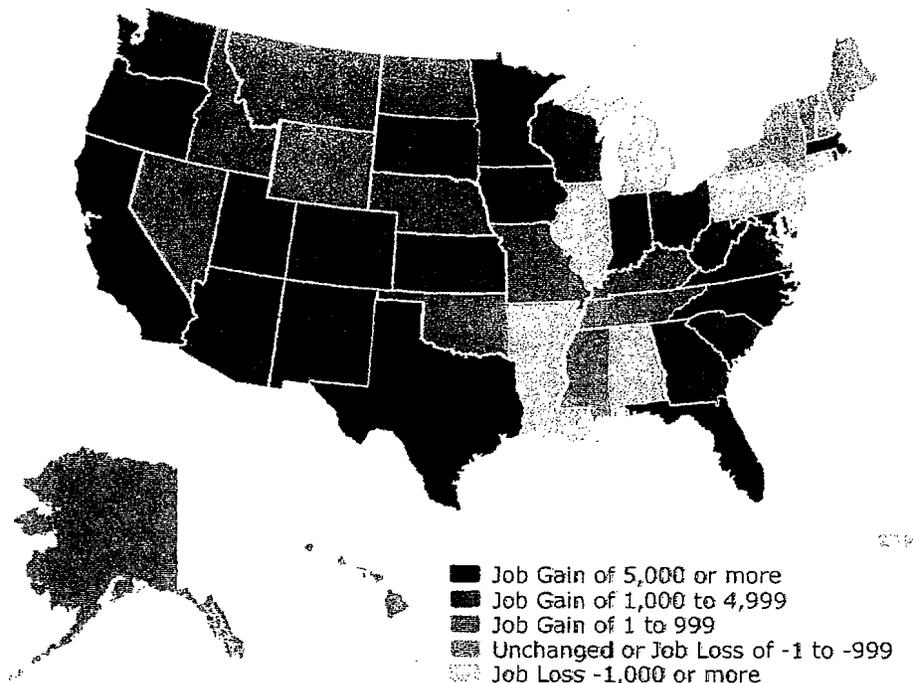
The longer term growth of the bioscience industry during the 2001 to 2010 period is widely distributed across the nation, with 34 states sharing in job gains.

The 34 states that gained bioscience industry jobs over the 2001 to 2010 period (see Figure 5) represented every region of the nation, indicating a broad impact as a result of the continued development of the bioscience industry:

- **Northeast** (Vermont, Maine, Massachusetts, and Rhode Island)
- **South** (Georgia, Florida, Kentucky, Maryland, North Carolina, South Carolina, Virginia, Texas, West Virginia)
- **Midwest** (Indiana, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin)
- **West** (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, New Mexico, Oregon, Utah and Washington)

⁶ Employment concentration is a useful way in which to gauge a region's subsectors relative to the national average. State and regional location quotients (LQs) measure the degree of job concentration within the region relative to the nation. States or regions with an LQ greater than 1.0 are said to have a concentration in the subsector. When the LQ is significantly above average, 1.20 or greater, the state is said to have a "specialization" in the subsector.

Figure 5. Bioscience Employment Change by State, 2001–10



There also was a healthy mix of states realizing growth in total bioscience industry employment during the 2001–2010 period, including many states with well established, highly concentrated levels of bioscience industry as well as those emerging in bioscience industry development. Emerging states that grew by more than 30 percent during the 2001 to 2010 period included Vermont, South Carolina, Rhode Island, New Mexico, North Dakota, South Dakota, Oregon, and Arizona. The higher percentage growth levels reflected the smaller base of employment within these emerging states. Other fast growing states (20 to 30 percent growth) with well-established bioscience industry development included Utah, North Carolina and Minnesota.

Nearly half of the states added bioscience jobs from 2007–2010, covering the recession years and first year of the economic recovery—and all states grew in at least one subsector of the biosciences.

Even though national bioscience industry employment fell 1.4 percent from 2007 to 2010, 22 states gained jobs in the 3-year period and another 4 states declined by less than 1 percent. Among the leading states in total bioscience industry growth with 5 percent or greater job gains were North Dakota, Vermont, Utah, Arizona, Oregon, West Virginia, Nebraska and Wisconsin. States that grew employment but at a rate of less than 5 percent include Kentucky, Colorado, Texas, Massachusetts, Idaho, Virginia, South Dakota, Alaska, Washington, California, Louisiana, North Carolina, Wyoming, and Ohio.

What also stands out, as shown in Table 1, is that all states had at least one bioscience subsector in which they added jobs in recent years. This demonstrates that the breadth of bioscience industry development affords opportunities for all.

State's life sciences industry growing

■ Panel discussion highlights positive impact of jobs, investment

By **ARIKA HERRON**
aherron@greenfieldreporter.com

GREENFIELD — State officials and industry leaders touted the benefits of Indiana's growing life sciences industry this week — and also the challenges it presents for communities — during a roundtable at Elanco, one of the industry's shining stars.

The panel, which included state Sen. Beverly Gard and Rep. Bob Cherry, both R-Greenfield, convened Tuesday to discuss how and why legislators should continue fostering a positive environment for life sciences giants like Eli Lilly and Co. and the cohorts their presence attracts.

Bart Peterson, Lilly senior vice president of corporate affairs and communications, made the case for life sciences jobs and the positive effect they have on both the state and the individual communities in which they are located. "Jobs and investment are what we're after," said Peterson, former Indianapolis mayor. "You realize very quickly that not all jobs are created equally."

That has certainly been true in Greenfield, where Elanco offers hundreds of the county's highest-paying jobs.

"We lost our Lilly tie, which we were all so proud of," Greenfield Mayor Dick Pasco said of Lilly's 2008 departure after the sale of its Greenfield Laboratories to Covance. "When (Elanco) was built, it healed those wounds."

The "Life Sciences Roundtable on Strengthening Indiana's Economy" was one of several Eli Lilly will sponsor throughout the state. It allowed the company to highlight the importance of not only its own companies but the industry as a whole.

Through an initiative now known as BioCrossroads, the

▶ SEE **GROWING**, PAGE A6

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LOCAL/NATION

► Growing

Continued From Page 1

state — particularly central Indiana — has marketed itself as a life sciences destination.

"We have a real opportunity to get closer to an industry cluster than on an upward trajectory, really forever," said Peterson, who as Indianapolis mayor helped lay the groundwork for the project that became BioCrossroads.

Industry experts were also able to engage state legislators on the ways in which the state has been supportive of the industry and the areas where more work is still needed.

Peterson said permanent tax credits for research and development, and the 21st Century Fund, which provides funding for life sciences startups, are two initia-



Photo provided

Touting an economic upside: Offering perspectives about central Indiana's life sciences initiative were (from left) Sen. Beverly Gard, Bart Peterson of Eli Lilly and Co., Rep. Bob Cherry and Rep. Ed DeLaney.

tives that continue to paint Indiana as a "pro-innovation" state.

"It's an environment that supports innovation," he said. "If you look at what we've been able to build, really, everyone else in

the world wants this."

While Indiana overall does a great job in attracting life science industries, said Matt Greller, executive director of the Indiana Association of Cities and Towns, there remains a

struggle to provide enough resources for cash-strapped communities to keep up with high quality of life standards for the businesses and their employees.

"Without a quality of life, you're not going to attract the Elancos to your community," Greller said.

Keeping up Indiana's image as a life sciences leader will be important as the state moves forward, so finding ways to continue supporting the industry will likely be a topic of discussion when legislators head into the next session at the statehouse.

"We need to make sure to fund the 21st (Century Fund) and grow it," said Cherry. "And our education system needs to be first class so we can keep Hoosiers here and attract students from other states and countries.

"We want those quality jobs," he continued, "not just jobs."

Exhibit D
ESTFP #3
9/24/12



Exhibit E
CSTFP #3
9/24/12

September 24, 2012

The Honorable Eric Turner, Chairman
Indiana Commission on State Tax and Financing Policy
200 W Washington Street
Indianapolis, IN 46204

Dear Chairman Turner:

On behalf of the Entertainment Software Association (ESA)¹, I am writing in support of reauthorizing the state of Indiana's media production tax incentive, which expired at the end of 2011. The ESA is the U.S. trade association representing publishers of computer and video games for video game consoles, personal computers, the Internet, and mobile devices. Domestically, our industry generated \$25 billion in revenue in 2011. Due to this strong economic impact and jobs that on average pay \$90,000 annually, many states are offering competitive incentive programs to lure these projects.

Currently, 22 states and Puerto Rico offer an incentive for computer and video game production, as do a number of Canadian provinces including British Columbia, Ontario, and Quebec. Incentives play a significant role in determining where new productions will be located. The cost of creating the current generation of computer and video games has increased substantially, due to progressively more demanding consumers who want the latest technology in three-dimensional imagery, artificial intelligence, and enhanced voice and sound effects.

A number of states with incentives for video game production – including Florida, Georgia, Louisiana, Michigan, Ohio, and Texas – have recently enacted legislation or rules to improve them. These states have seen the significant economic impact of this high tech industry, and worked to create more investment. For example:

- According to the *Economic Impact of Florida's Interactive Digital Entertainment Sector* July 2010 report, for every state dollar invested in interactive digital entertainment companies, state and local governments generate an additional \$3 in tax revenue from tax receipts from direct, indirect and induced economic activity. In March 2012, Governor Rick Scott (R) signed legislation improving Florida's existing digital media tax incentive by providing a definition of, and priority for, high-impact digital media projects and allocating \$42 million per fiscal year through 2016.

¹ ESA members: 345 Games; 505 Games; Capcom USA, Inc.; Deep Silver; Disney Interactive Studios, Inc.; Electronic Arts; Epic Games, Inc.; GREE International, Inc.; Konami Digital Entertainment; LEVEL-5 Inc.; Little Orbit; Mad Catz Interactive, Inc.; Microsoft Corporation; Namco Bandai Games America Inc.; Natsume Inc.; NetDragon Websoft Inc.; Nexon America, Inc.; Nintendo of America Inc.; NVIDIA; Perfect World Entertainment; Rubicon Organization; SEGA of America, Inc.; Slang; Sony Computer Entertainment America; Sony Online Entertainment, Inc.; Square Enix, Inc.; Take-Two Interactive Software, Inc.; Tecmo Koei America Corporation; THQ, Inc.; Trion Worlds, Inc.; Ubisoft Entertainment, Inc.; Warner Bros. Interactive Entertainment Inc.; and XSEED Games.

- A December 2010 report from the Texas Comptroller of Public Accounts found that between April 23, 2009 and August 31, 2010, computer and video game productions seeking incentives invested \$170.7 million in the state and generated nearly 1,700 full-time jobs. Due to this sizeable economic impact, the Texas Film Commission approved amendments to the rules governing the Texas Moving Image Industry Incentive Program in August 2011 to allow interactive digital media productions to apply for greater incentives. Texas is now the second largest game producing state in the country.
- An April 2011 BaxStarr Consulting Group study found that in Louisiana, the incentives for digital media production generated an economic benefit of \$6.90 for every dollar expended in tax credits. In 2010, the digital media industry is estimated to have collectively spent \$7.6 million in state with a total economic output estimated at \$12.8 million.

Additionally, the explosion of the market of games for mobile phones has allowed many newer and smaller companies to enter the production marketplace, creating additional opportunities for skilled entrepreneurs. Tax credits play a significant role in these projects getting off the ground.

Institutions of higher learning have answered the call in providing training for those interested in computer and video game design. In 2009, there were roughly 250 colleges, universities, and trade schools offering computer and video game design courses and/or degrees. Now, there are nearly 400 schools offering these programs including Indiana University, Purdue University – Calumet, Indiana University Kokomo, Ball State University, Indiana University Southeast, Indiana University South Bend, Taylor University, and Purdue University. These schools are training the next generation of game developers, equipping them with 21st century skills. Tax credits would afford these students additional opportunities in the state of Indiana, keeping them from having to look to other states for job prospects.

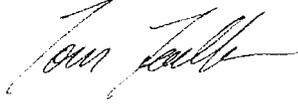
Outside of entertainment, video game technology is utilized within other industries to provide simulations and training. Some examples here in Indiana include:

- In 2012, Ball State University’s Department of History worked to create a digital game simulation of the Underground Railroad entitled *Journey to Freedom*. They developed this and other media products to enrich elementary social studies curriculums, which are distributed free of charge to schools and public libraries.
- HKS, designers of Lucas Oil Field, utilized video game technology when creating the 3D architectural visualizations of the stadium. They licensed the Unreal Engine, a platform developed originally to make video games, which allowed them to create a more realistic rendering of their concepts, far beyond what any 2D model could provide.
- At Indiana State University, education professor Dr. Yadi Ziaeehezarjeribi holds classes without even having students in the classroom. His students hear lectures, look through libraries, and even do homework – all from a virtual world. He views education and video games in a similar way – both require you to “level up,” not allowing you to pass a level or concept until you achieve mastery level².

² See *Video games could be future of edu.* WTHI TV, 18 September 2012.

The ripple effect that increased innovation in the computer and video game industry can have is substantial, as the technology continues to develop at a fast pace, and continues to be utilized in more and more sectors of the economy. Reenacting the tax credit for digital media production in Indiana could help provide more opportunities to drive this innovation.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Foulkes". The signature is fluid and cursive, with a long horizontal stroke at the end.

Tom Foulkes
Vice President, State Government Affairs



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Top News Home / News / Futuristic Gaming

Taylor Stories

Futuristic Gaming
By Jim Garringer
Jan 03, 2012

News Archives

Calendar for September 2012 showing days of the week and dates.



Zach Bethel

Physics, algorithms and CPUs aside, it is too early to tell if an innovation that will impact future generations of computer games has been developed at Taylor University. But Zach Bethel believes the project he has worked on for the past year, or something like it, could lead to an industry standard for future generations of computer games.

Bethel, a graphics major, transferred to Taylor at the start of his junior year. "I knew about the Taylor computer science program," he says. "I looked at a lot of different private schools and found Taylor to have the best in terms of the number of faculty and programs that really fit what I wanted to do. I originally wanted to do video game development, and that is still an interest, but I've refined that interest to writing rendering algorithms for game engines. Or it could be for movie production."

Creating a New Standard For Rendering

Rendering algorithms? Yes. Bethel says rendering is how drawings and shapes become the animations you see on your screen. He says step one is to understand the differences between computer games and computer generated films. Both have similar geneses in that they start with a story and art that are assembled and sent to the rendering process.

But that is where the similarities end. Popular computer games such as Shogun 2, Bastion and Dirt3, while highly interactive with splashy graphics, are designed to load and run quickly on computers and gaming systems in real-time. Pixar films, Toy Story, Up, Ratatouille and Monsters Inc., instead rely on offline rendering - a much more detail-oriented process that is not designed to be interactive. And a side-by-side comparison of the image quality between Shogun and Toy Story reveals what kind of detail is sacrificed on the gaming side to gain interactivity.

Bethel spent the past year on an individual research project during which he searched for a way to run an animation from a computer's central processing unit (CPU) instead of the graphic card, which is the current industry practice. He hopes that it could lead to a blurring of the lines between what people see on a game screen and what they see on a television screen

As part of his programming curriculum, Bethel studied the rendering process and wrote a series of equations - algorithms - that allowed him to create an animation of a statue. He said while his system was slower and not better, that wasn't really the point.

"It was meant to be a stepping stone," Bethel says. "Graphics processing units are somewhat inflexible, so they kind of bind you to these tools you have to use to draw things on the screen and there are limitations to those tools, but the consequence is that it runs really fast.

Professor Bill Toll, department chair of Taylor's Computer Science and Engineering department, commented on Bethel's work

"Zach did an excellent job on his research project. His goal was to write a rendering system in software to render images as is now done in hardware on video cards. This concept is important because it seems likely that rendering will once again be done in software in the future as processors become more parallel. Zach's system uses multi-core processing in the CPU and hardware level instructions that allow arithmetic on multiple numbers at once on each core. He did a good job determining optimal combinations of these technologies to provide fast software rendering in a context that will adapt well as future processors develop."

Setting the Stage for Change

"I am able to do things with my solution that you can't do with a lot of graphic solutions," he added. "The flip side is that it is a lot slower. So it's really not something that companies are going to be knocking at my door to get because it's not going to compete for the speed aspect that gamers want. But it is more future oriented. Ten years from now, it might be that my solution, maybe a variant of it, or an evolution of it, could become more standard."

Bethel points to Moore's law, which states computer technology increases by a factor of two every 18 months. "As processors improve over the next decade or so and they become more parallel, they will have more power to draw graphics. And the algorithms I used in my project will scale with those processors.

"My research was focused on seeing if that direction was possible," he says. "I really took off with it outside of what I was required to do. I overachieved a bit on it. That was because I really enjoyed it and I think the result I got was pretty impressive."

Zach Bethel's Research

Bethel's short video demo of his project can be seen below:


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Computer Science And Engineering (CSE) Department

[Overview](#) [Degrees & Majors](#) [Highlights](#) [Faculty & Staff](#)

Mission

- In support of the overall University Mission, the mission of Computer Science and Engineering is to educate men and women who sense God's calling to technical professions in the disciplines of Computer Science, Systems, and Computer Engineering.
- To accomplish this mission we commit to honor God in all we do as we pursue academic and moral excellence
- Pray for and mentor our students to aid them in becoming outstanding professionals highly motivated to serve Christ
- Affirm that all truth - including mathematics and science - is God's truth and that the Christian faith should permeate all learning
- Cultivate a technically current and challenging curriculum that compares favorably with the best undergraduate programs in the nation
- Encourage service learning experiences to not only enrich learning but also to bless the Christian church, advance the Gospel, and minister love and redemption to a needy world
- Foster the desire and the skills for life-long learning necessary in today's quickly changing technological environment

Departmental Integration of Faith and Learning

- Ethics emphasis: the department has a strong emphasis on ethics issues in the curriculum.
- Global and Christian outreach emphasis: The Center for Missions Computing and course projects expose students to Kingdom-oriented uses of technology on a global scale.
- Off-campus applications: seniors discuss family/career balance, individual commitment and priorities, time management and other topics in an off-campus setting.

Programs or Facilities

- History: 40 years of continuous computer science education
- Facilities: Excellent facilities for Computer Science undergraduates including servers, a 16 node Beowulf cluster parallel processing system, and a multi-core CUDA GPU system
- Systems Concentration: Analysis and design courses provide both behavioral and technical preparation
- Intelligent Systems (also called Artificial Intelligence or AI) Track: Extensive course offerings not typically found in undergraduate programs
- Graphics: Five courses specializing in user interface design and creation of graphics software with laboratories equipped for high-speed animation
- Software Studio: Provides four semesters of increasingly responsible experience on continuing long-term real world projects - many of which are in support of missions agencies
- Computer Engineering: Combination of computer science, math and physics courses
- Research Projects: Student research is conducted continuously (focusing on AI and graphic applications, software development for Wycliffe Bible Translators, TU satellite/balloon projects, and commercial applications)
- Programming Contests: Annual participation in regional contests with excellent placement
- Programming Languages: Theoretical constructs taught through a variety of programming languages and operating system environments
- Mobile Computing: class devoted to development of iPhone apps

Aspects of Taylor's Computer Science, Systems, and Computer Engineering Curriculum

- Size: Computer science has enough majors to add diversity and competence to the major
- Curriculum breadth: Specialization available in artificial intelligence, business, graphics, mathematics, and software studio
- Departmental fund-raising: Using funds donated by alumni, the department annually offers merit scholarships to top high school students from across the nation.
- Systems Analysis at Taylor is unique in that systems can be combined with other disciplines as a cognate, for example, business, psychology, biology, etc. We are among approximately a dozen schools nationwide, secular and Christian, where this is possible.
- Excellent practicum placement: Taylor students participate in practicums in organizations as far reaching as General Motors, Ernst and Whitney, Motorola, International Telephone and Telegraph, ICP, small businesses, mission organizations (i.e., Operation Mobilization, Wycliffe Bible Translators, and Sudan Interior Mission), and newspapers
- Excellent job placement: Recent graduates are working for companies and agencies such as Accenture, Chick-Fil-A, CNN, Dreamworks Animation, Dunn Systems, Electronic Arts, Eli Lilly, Hewlett-Packard, Lockheed Martin, Ontario Systems, Raytheon, Revere Group, Rockwell Collins, RT Logic, Sentry Data Systems, and Wycliffe Bible Translators.

- The *Ilium* yearbook makes use of the Media Lab and has specialized offices for its staff

Aspects of Taylor’s Media Communication Department Curriculum

- Film students create advanced film projects using state of the art cameras, professional actors and Final Cut Pro editing facilities.
- Media students work with professors on video/film and public relations projects for real world clients.
- Connections to film and media industry professionals mean a variety of guest speakers and workshops allow for networking throughout the year.
- The best student work is entered in professional competition and film festivals regularly and multiple trophy cases showcase the award-winning work of Taylor media communication students.
- An annual course in independent filmmaking includes a trip to the Sundance Film Festival

Graduation Requirements

- All students in the media communication department must complete Senior Capstone, a final course that prepares them for the job market or graduate school and includes preparation of a professional portfolio.
- All department majors are required to work with campus media for at least three semesters
- All media communication department majors must have an off-campus practicum or internship

Departmental Integration of Faith and Learning

- All media communication majors take a course in media theory and ethics designed to confront students with issues they are likely to face in the future.
- All media communication majors take two courses that deliberately examine media industries and output from the perspective of a Christian worldview.
- All media communication courses focus on understanding other people and meeting their needs with a servant’s heart and with professional integrity.
- All media communication majors learn to be proficient storytellers in print and/or visual media, telling the human story with authenticity and with the goal of positive cultural transformation

Travel Study Opportunities

- Washington Journalism Center Study in the nation’s capital and intern for a major news organization
- Los Angeles Film Studies Center Study in Hollywood and intern in the film industry.
- Contemporary Music Center in Nashville Learn the music industry from the inside out.
- Study film at the Sundance Film Festival and participate in the Windrider Forum, a week-long faith & film workshop.
- Study abroad for a semester. Taylor has programs of its own in Ecuador and Ireland, in addition to many programs offered by the CCCU

Affiliation with Collegiate and/or Professional Organizations

- University Film and Video Association
- The Windrider Forum
- Heartland Film Institute
- Indiana Association of School Broadcasters
- Indiana Broadcasters’ Association
- Broadcast Educators’ Association
- International Association of Business Communicators
- College Media Advisers
- Society of Professional Journalists
- ACCM
- Baptist Press

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DEPARTMENT OF TELECOMMUNICATIONS



Undergraduate Program | Programs Offered

Certificate in Game Studies

The Certificate in Game Studies is intended for students who want to focus specifically on designing and building interactive games. A student may earn an area certificate as part of completing the bachelor's degree and in addition to completing requirements for a major. The Area Certificate in Game Studies is available to students outside the telecommunications major or minor.

The program requires the completion of a 13 credit core and 15 credit hours of electives. Each course must be completed with a minimum grade of C- or higher.

This limited certificate programs are for students who do not major or minor in Telecommunications. If you are a major or minor in Telecommunications and have an interest in these topics, see the Department's full Program in Game Design.

Required Courses

Telecommunications (13 credit hours)

- T160 Videogames: History and Social Impact (3 cr.)
- T206 Introduction to Design and Production (3 cr.)
- T284 Introduction to Interactive Media Design (3 cr.)
- T367 Theory and Practice of Game Design (3 cr.)
- T460 Projects in Game Design (1 cr.)

Electives

At least 9 of the 15 credit hours of electives must be at the 300-400 level.

Computer Science

- A116 Multimedia Communications (1.5 cr.)
- A201 Introduction to Programming (4 cr.)

Fine Arts

- D210 Digital Art (3 cr.)
- D310 Interactive Multimedia (3 cr.)
- D317 Video Art (3 cr.)

Telecommunications

- T260 The Videogame Industry (3 cr.)
- T353 Audio Production (3 cr.)
- T361 Interactive Transmedia Design (3 cr.)
- T364 Introduction to 3D Digital Modeling and Animation (3 cr.)
- T366 Multiplayer Game Design (3 cr.)
- T369 Sound Design (3 cr.)
- T433 Advanced Projects in Web Design (3 cr.)
- T461 Advanced Interactive Transmedia Design (3 cr.)
- T464 Advanced 3D Digital Modeling and Animation (3 cr.)

Theatre and Drama

- T438 Lighting Design (3 cr.)

Jacobs School of Music

- Z361 Introduction to MIDI and Computer Music (3 cr.)

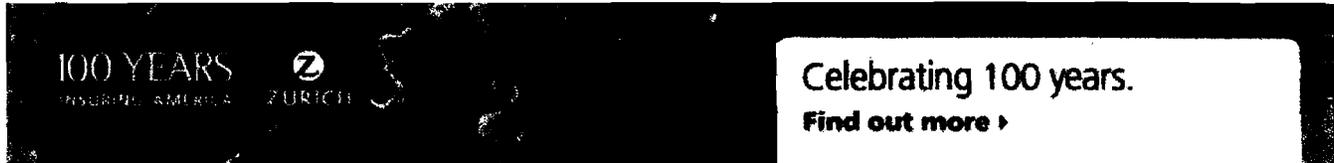
Students seeking the certificate should contact an undergraduate advisor in the Department of Telecommunications before beginning study. The semester prior to graduation, students must present their program of study to an undergraduate advisor in the Department of Telecommunications for certification.

Revised August 2008



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Video Gaming Technologies - Franklin, TN

or assemble VGT Player Terminals Must be able to obtain a **gaming** license Assist in design, implementation, and maintenance of test strategy documents May design, implement, and maintain QA SharePoint pages Mentors Quality Assurance Analyst...

3 days ago from American Society for Quality

- **Vice President, Game Technology**

Warner Bros. Entertainment - Burbank, CA

Scaleform, etc.). * In-depth knowledge of core videogame **technologies** including networking, rendering, streaming, ... * Experience as a licensee and/or licensor of videogame **technologies** a plus...

2 days ago from Warner Bros. Entertainment Inc.

- **Technical Program Manager, Advanced Gaming Technology**

Amazon - Seattle, WA

to drive the delivery of the Amazons **Advanced Gaming Technologies**. The person in this role will provide technical ... discipline * 6-10 years hands-on engineering experience in **video** game, mobile content, or related fields * Bachelor...

3 days ago from Amazon.com

- **Vice President, Game Technology**

Time Warner - Burbank, CA

Scaleform, etc.). * In-depth knowledge of core videogame **technologies** including networking, rendering, streaming, ... * Experience as a licensee and/or licensor of videogame **technologies** a plus...

2 days ago from Time Warner Inc.

- **Game Video Reviewer**

Urban Interns - Los Angeles, CA

Responsibilities: We are a **gaming** looking for someone to do game reviews on iphone/ipad games. You will be in charge of ... own camera, iPhone and iPad to do these reviews. Must have **video** production skills, in editing, recording, audio,...

30+ days ago from Urban Interns

- **VIDEO GAME DESIGN INSTRUCTOR**

Keiser University - Pembroke Pines, FL

Advising students Recording grades and submitting reports **Video** Game Design Instructor must have a Bachelor's degree and 3 years of experience. This is a full time position that requires day and evening availability. Only online...

2 days ago from Keiser University

- **Game Video Editor**

Chinasoft International - Kirkland, WA

Eastside AAA Game Studio needs a **Video** Editor to create broadcast quality media for upcoming game release. Start ... Responsibilities: * Along with the rest of the **video** team, the awesomest candidate will create...

30+ days ago from ChinaSoft International

- **SR. JAVA DEVELOPER- LINUX, SPRING, HIBERNATE-VIDEO GAME**

Adecco - San Diego, CA

and Technical is searching for a Sr. Java Developer for a **Video Game** company in San Diego, Ca. The ideal candidate will have experience with Java server software development for the Linux platform. The Senior Java Engineer will help build...

30+ days ago from Adecco

- **PS Technology - Utility Developer - Gaming Technology**

Union Pacific - Okemos, MI

hardware control interfaces, networked multi-player, **video capture**, etc.) with a focus on conversion of existing ... software designs that may include new and unfamiliar **technologies**. * Provide general programming assistance and...

7 days ago from Union Pacific

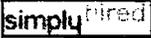
- **Sr. Software Engineer I (Video Gaming Development)**

Robert Half Technology - Irvine, CA

Senior Software Engineer I Our client in the **gaming** industry is seeking a talented and enthusiastic senior software ... training and professional experience *A passion for **video games** Pluses *Excellent communications skills and...

27 days ago from BullhornReach.com

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