

EVALUATING THE ACCURACY OF ECONOMIC IMPACT ESTIMATES OF A 2013 BEEF PLANT CLOSURE

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2017 Mid-Continent Regional Science Association Conference

Toledo, Ohio, June 7-9, 2017

Cargill Plant Closure

In January 2013, the Plainview, Texas Cargill meat-packing plant announced its closure, resulting in losses of

- 2012 sales of \$1.67 Billion per ReferenceUSA
- 2,000+ direct jobs
- equivalent to 13% of the labor force in Hale County, where most employees lived

Methods

- **Goals:**
 - ▣ Build policy-relevant understanding and reduce fear
 - ▣ Accurate but conservative
- **Account for labor from surrounding counties**
 - ▣ Estimate employees by county of residence
 - ▣ Remove induced effects from nonlocal labor
- **Prevent double counting of beef production losses**
 - ▣ Cattle numbers were already down, wrong to double count
 - ▣ Zeroed local beef purchases

Estimated direct employment and labor income losses by county

County	Employment	Labor Income
Castro	8	\$224,448
Floyd	58	\$1,627,248
Hale	1,462	\$41,017,872
Lamb	40	\$1,122,240
Swisher	50	\$1,402,800
Other Counties	538	\$15,094,128
Total	2,156	\$60,488,736

Estimated Impacts

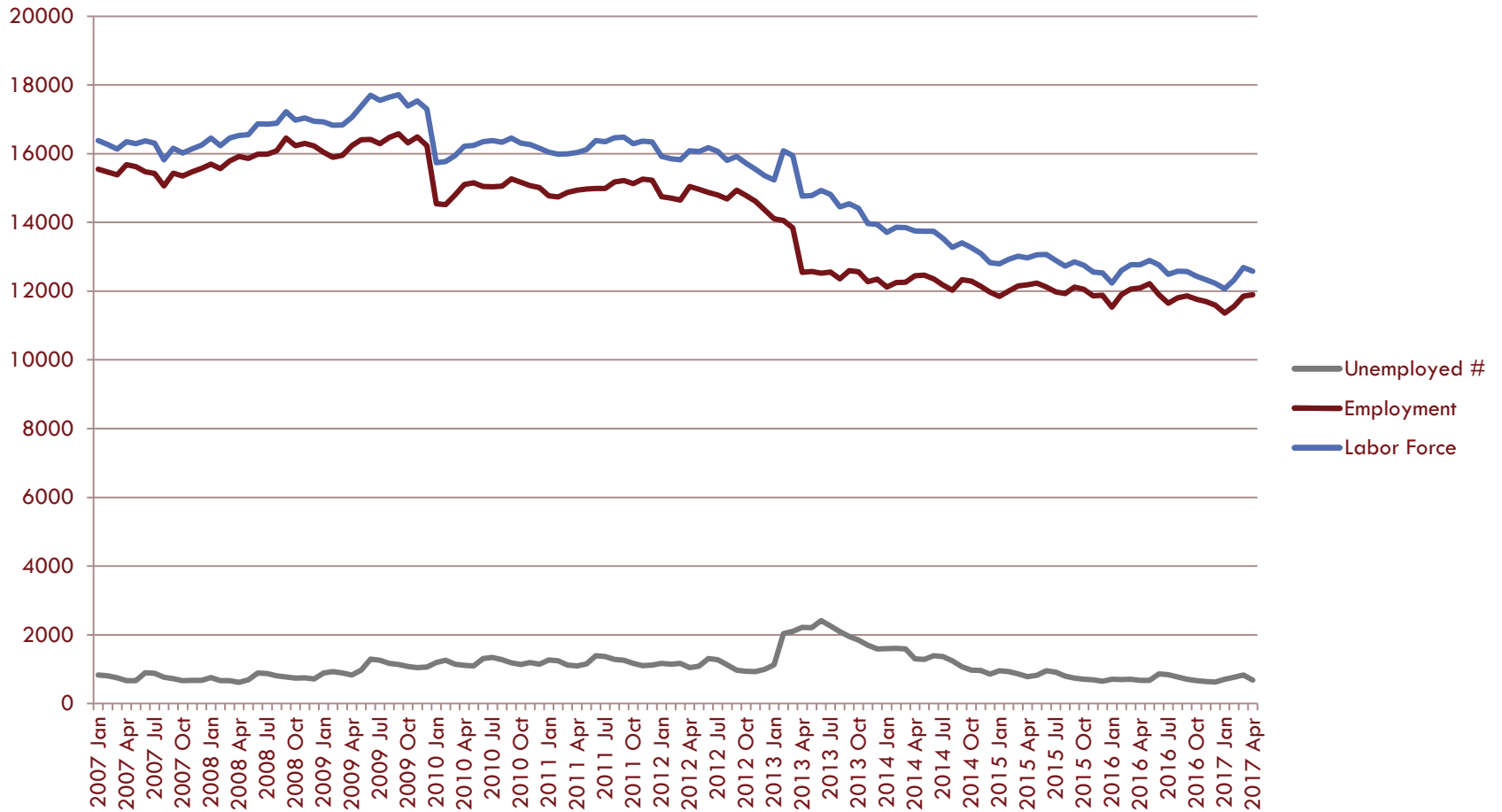
Impact Type	Output	Value Added	Labor Income	Employment
Direct Effect	\$866.6 M	\$199.0 M	\$45.7 M	1,462.00
Indirect Effect	\$132.9 M	\$63.9 M	\$39.8 M	767.4
Induced Effect	\$36.9 M	\$22.1 M	\$11.7 M	366
Total Effect	\$1.0 B	\$285.9 M	\$97.2 M	2,595.40

Ability to Validate Results

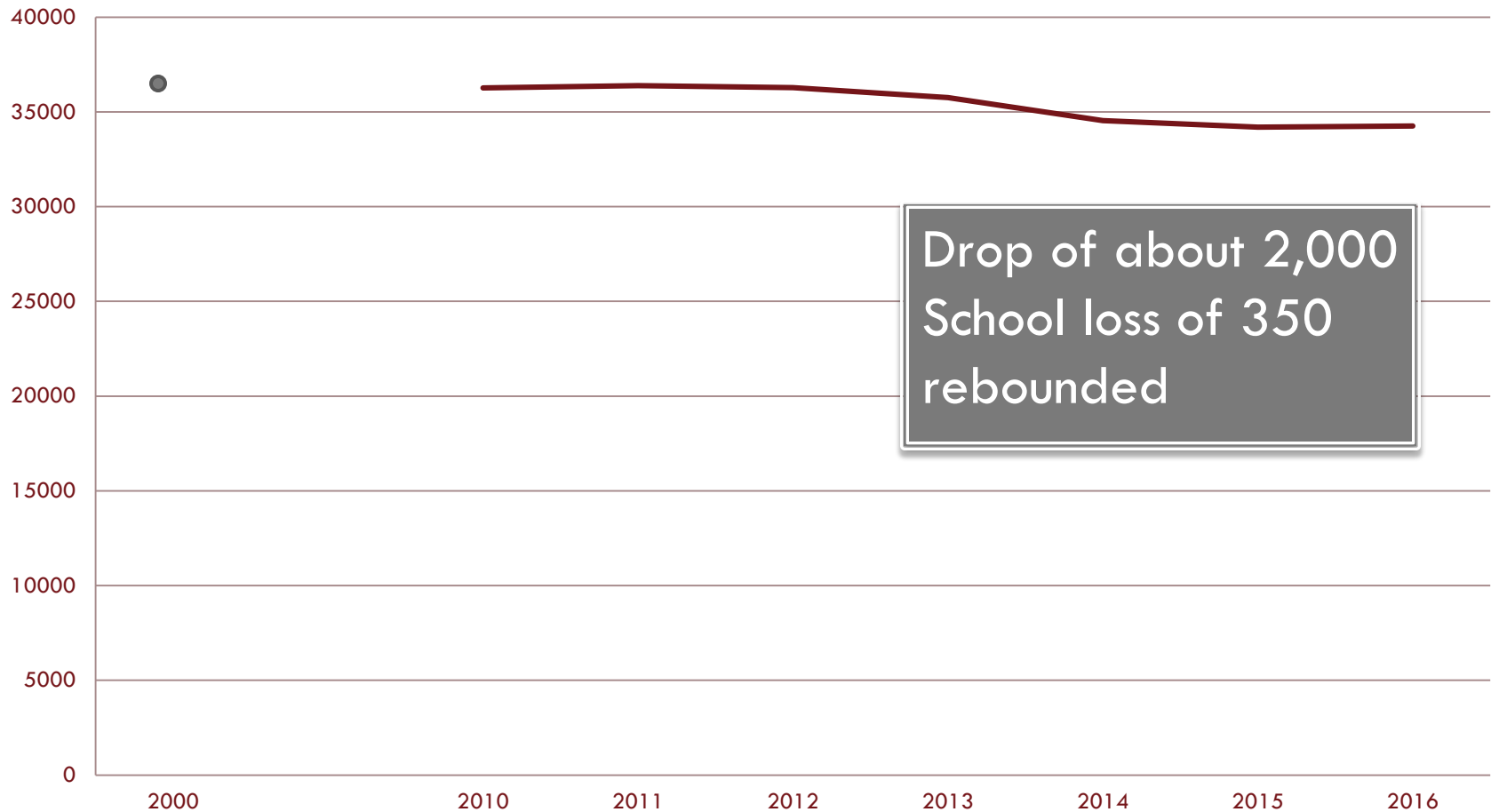
- Large loss in a small economy
- Concentrated in a single, identifiable industry
- Sustained/permanent loss
- Ongoing interaction with local and regional economic and political leaders to account for both resultant and exogenous activity



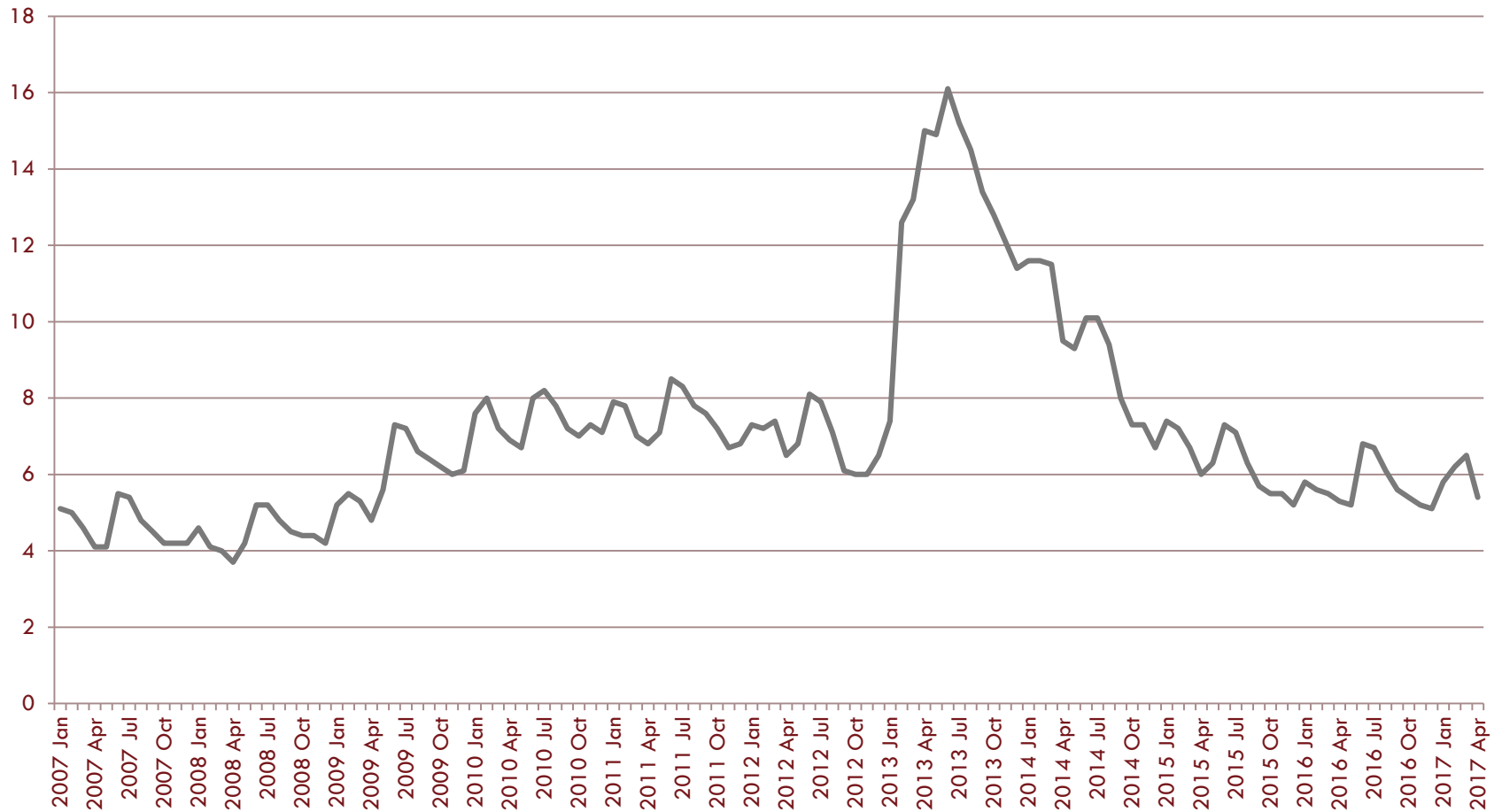
Hale County Labor (BLS)



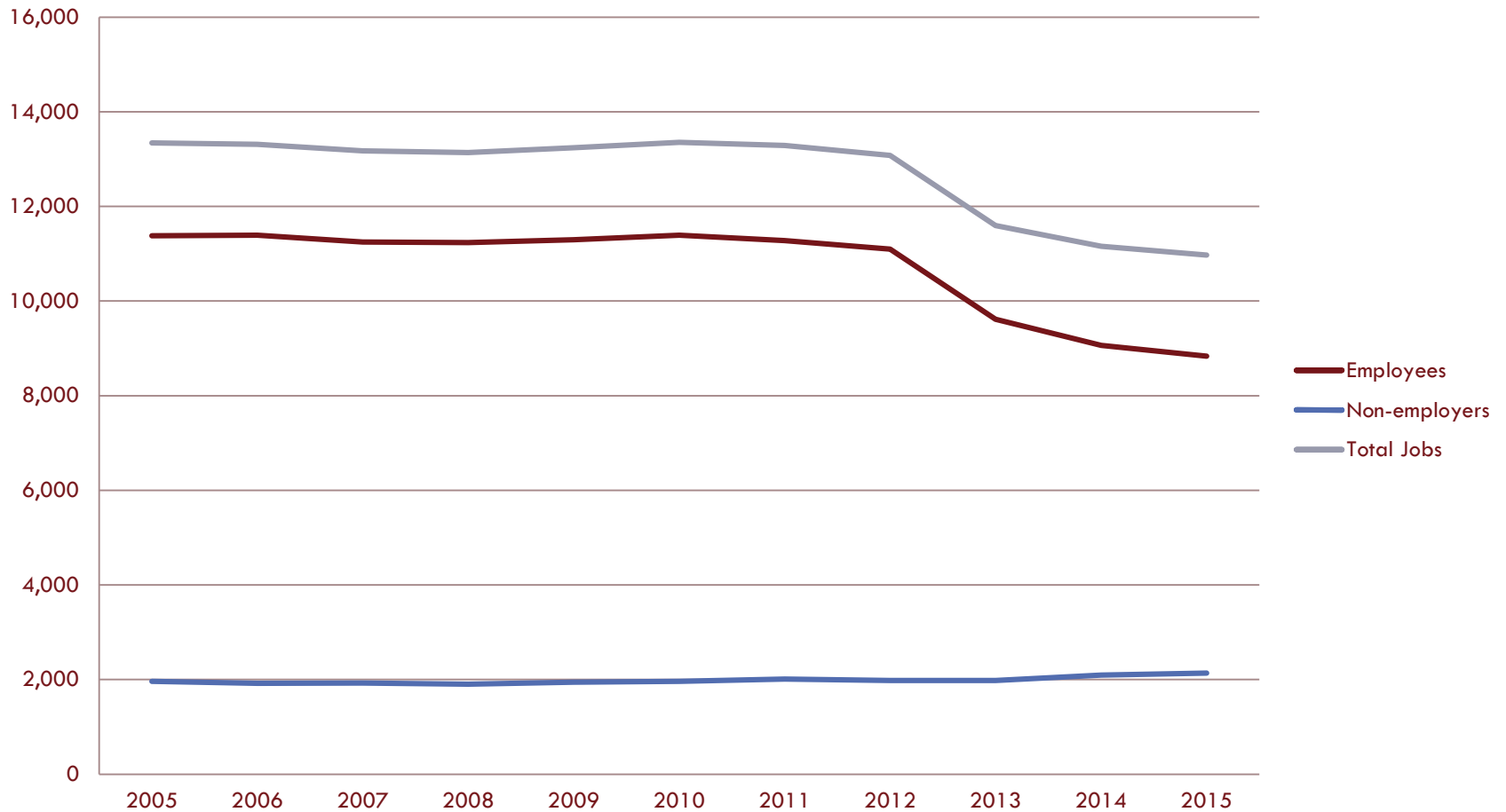
Population (Census)



Hale County Unemployment Rate



Employment and Non-employers (CBP)



Comparing estimated and actual employment

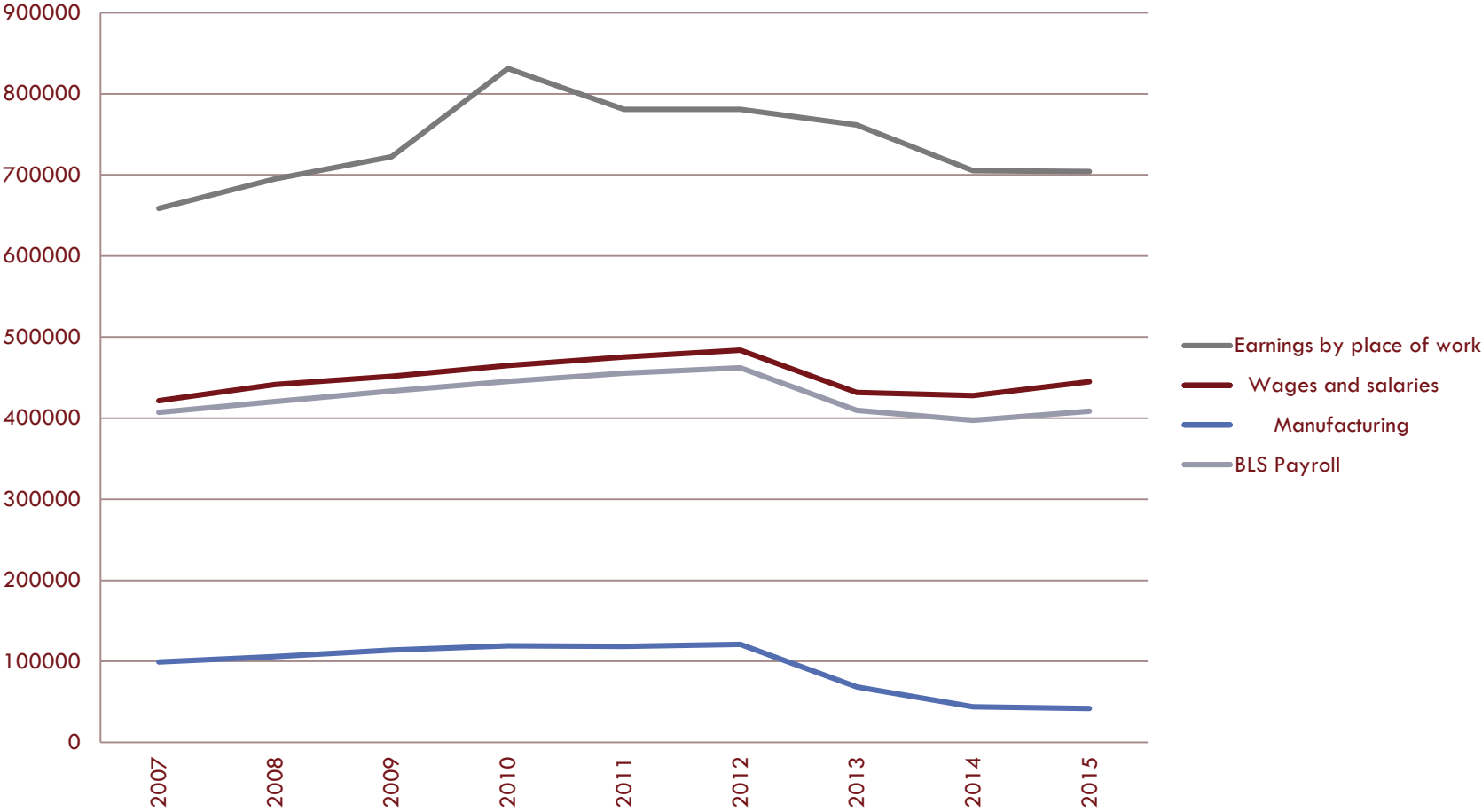
- Estimated losses of 2,595 to Hale County
- BLS Actual = 2,225 Jan 2013 – Dec 2015
- BLS Actual = 2,250 Jan 2013 – Mar 2017
- BEA Actual = 2,303 2012 – 2014
- BEA Actual = 2,185 2012 – 2015
- CBP w NE Actual = 2,109 2012 – 2015

Comparing estimated and actual employment

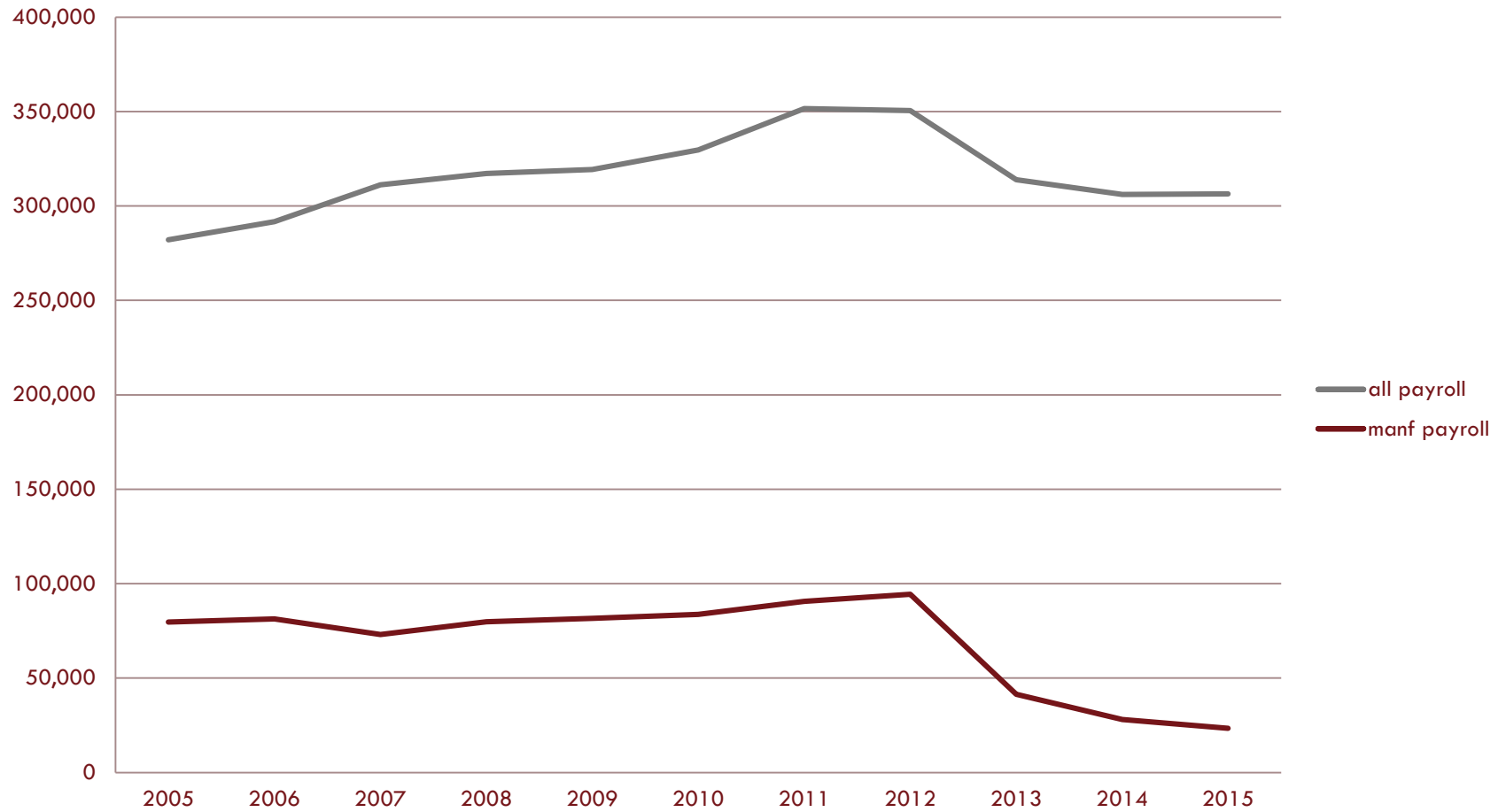
- BEA Manufacturing loss = 2,043 2012-2014
- BLS Manufacturing loss = 1,874 2012-2014
- CBP Manufacturing Loss = 1,926 2012-2015

- Overestimated. But partially offset by new car dealership cluster, wind distribution, and hospital expansion. So probably not too bad.

Personal Income (BEA)



Payroll (CBP)



Labor Income / Earnings

- Estimated losses of \$97.1 million to Hale County
 - BEA earnings loss = \$56.0 million 2012 – 2014
 - CBP payroll loss = 44.4 million 2012 – 2014
-
- Estimated losses of \$45.7 million to Hale County
 - BEA manf earnings loss = \$77.1 million 2012 –14
 - CBP payroll loss = 44.4 million 2012 - 2014

Labor Income / Earnings

- Underestimated direct labor income loss
- Overestimated total labor income loss
- Labor income loss was mitigated by other industries, especially in the 2nd year (2013-14)
- Transfer payments up
- Indirect effects virtually non-existent

Bright Spots

- 3 new car dealerships
- Wind energy distribution
 - ▣ Transportation
 - ▣ Retail
 - ▣ Hotel
- Hospital expansion

- Temporary adjustments in oil fields

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Induced Effect	\$36.9 M	\$22.1 M	\$11.7 M	366
Total Effect	\$1.0 B	\$285.9 M	\$97.2 M	2,595.40
Direct + Induced	\$903.5 M	\$221.9 M	\$57.4 M	1,828.0

IMPLAN Variation Year-to-Year

Year	Industry Code	Output	Employee Compensation
2009	59	\$947,225,024	\$76,026,480
2012	59	\$629,761,719	\$70,062,576
2013	89	\$481,030,945	\$30,793,751
2014	89	\$160,829,117	\$9,273,456

IMPLAN Meat Processing Sector Multipliers

	Output	Value Added	Labor Income	Employment
2009	1.2639	0.3660	0.1378	4.0259
2012	1.1514	0.1604	0.1534	4.2362
2013	1.1788	0.2383	0.1350	3.0200

Impacts using different data years

	Output	Value Added	Labor Income	Employment
2009	\$1.0 B	\$285.9 M	\$97.2 M	2,595.4
2012	\$662.1 M	\$69.1 M	\$73.8 M	1,759.0
2013	\$1.4 B	\$254.5 M	\$139.7 M	2,728.9

	Estimated Direct
2009	\$866.6 M
2012	\$626.1 M
2013	\$1.2 B

Conclusions—Impact Analysis

- I-O performed well for this plant closure with ongoing losses (at least two years out)
- The data year matters and should be selected to match the event or approximate current conditions
- Test data and assumptions against other IMPLAN and non-IMPLAN data and studies
- Customization of the model to local conditions is important if possible

Conclusions—Community Response

- **Economies are resilient**
- Job re-training is important
- Self-employment may become more important and can be cultivated
- Look for new competitive advantages

Thank you.

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