

# Two Tales of Two States: Storytelling with Regional Science

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NARSC Presidential Address

Minneapolis, MN

November 10, 2016

# The Experiments

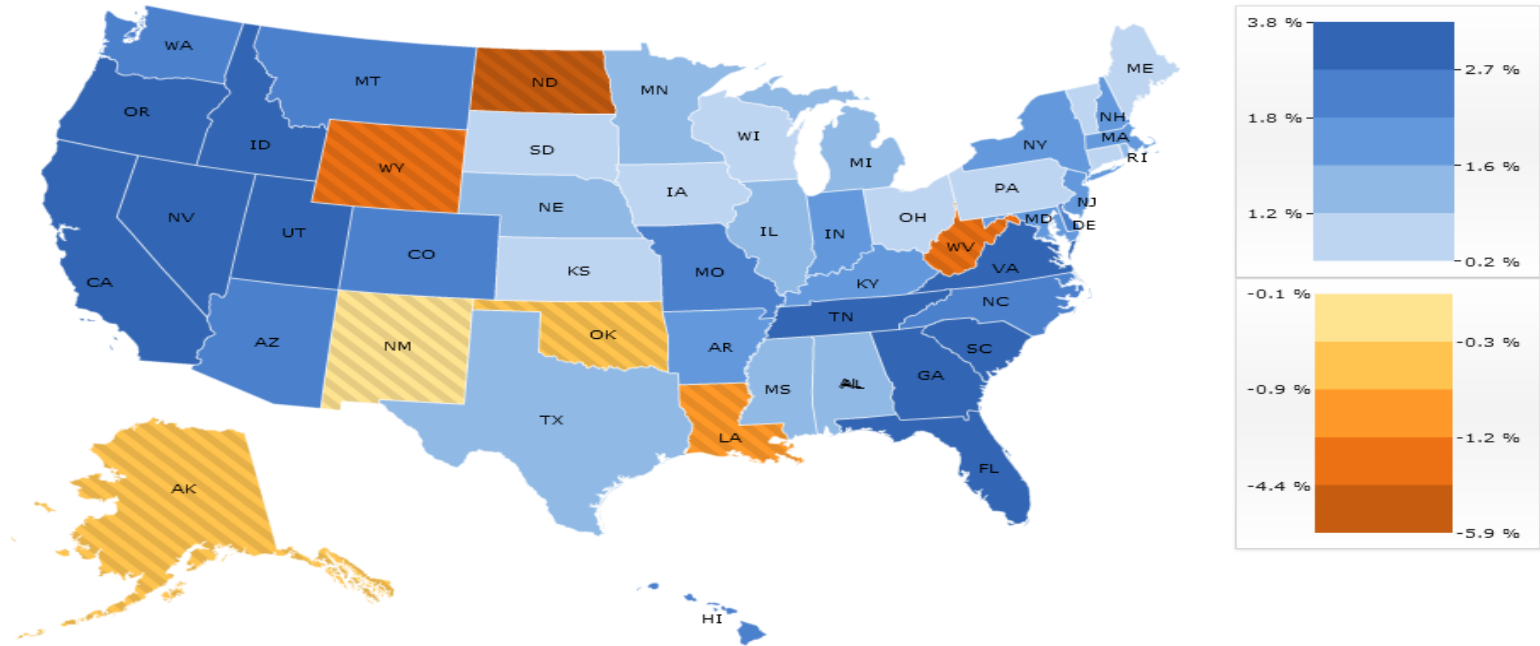
- Two recent controversial experiments in state economic governance: Kansas and Wisconsin
- Kansas and Wisconsin experiments began with election of their current Republican governors in 2010, Sam Brownback and Scott Walker, both taking office January 2011
- Walker survived a recall election in Wisconsin during 2012, and both were re-elected in 2014

- **Wisconsin** (NCSL State Actions Database and other sources)
  - immediately cut taxes for business in 2011-2013 budget (reducing corporate income taxes); reduced personal income collections through changing deductions etc.; cut funding for K-12 education; limited how much property tax could be raised; raised college tuition 5.5%; **changed collective bargaining process for most public employees**; rejected federal health care funds for Medicaid expansion; rejected (federal) ARRA funds for high-speed rail
  - 2013-2015: budget further reduced corporate taxes, raised fees, large reduction in personal income taxes through reduced rates
  - 2015: increased the standard deduction for married filers (takes effect FY2017); approved a one-time decrease in the manufacturing and agricultural corporate income tax credit

- **Kansas** (NCSL State Actions Database and other sources)
  - rejected Medicaid expansion
  - 2012: three-bracket structure of 3.5, 6.25 and 6.45 percent was collapsed into two brackets of 3.0 and 4.9 percent
  - repeal of several income tax credits, the exemption of certain non-wage business income of "pass-through" entities and increasing the standard deduction for head of household and married taxpayers filing jointly
  - 2013: for FY 2014, current bottom bracket of 3.0 percent reduced to 2.7 percent and the top bracket of 4.9 percent is reduced to 4.8 percent. Rates will continue to be reduced each year through 2018.

- deduction for certain gambling losses was repealed altogether and most other deductions (except for charitable contributions, which was fully retained) were reduced by 30 percent in 2013, 35 percent in 2014, 40 percent in 2015, 45 percent in 2016 and 50 percent in year 2017 and thereafter
- reduced standard deductions that had been raised the previous year
- 2015: raised the sales and use tax rate from 6.15 percent to 6.5 percent; increased the cigarette tax rate by \$0.50 per pack (from \$0.79 to \$1.29)
- approved an income tax package that contained several components including slowing down the scheduled rate cuts and repealing itemized deductions except those for charitable contributions, mortgage interest and property taxes paid; package also included a low-income exclusion applicable in tax year 2016 that eliminates income tax liability for low-income taxpayers

### 12 month percent change in employment, Total, all industries , Total Covered Dec 2014-Dec 2015 (p)



Source: U.S. Bureau of Labor Statistics ([www.bls.gov](http://www.bls.gov))

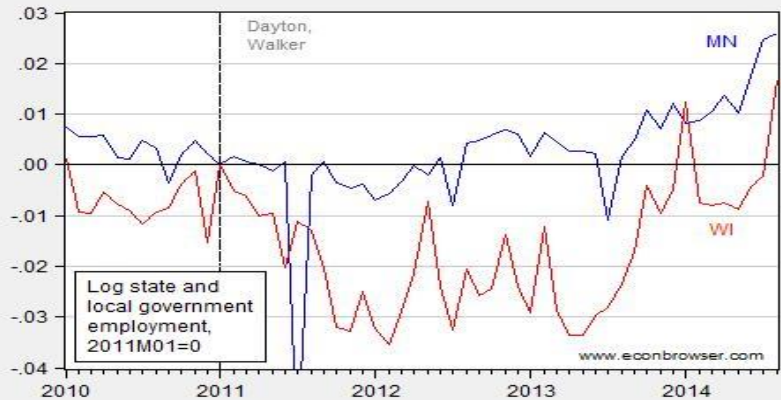
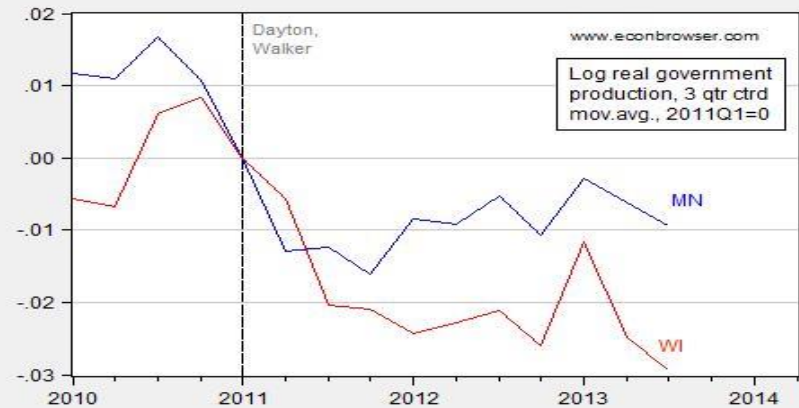
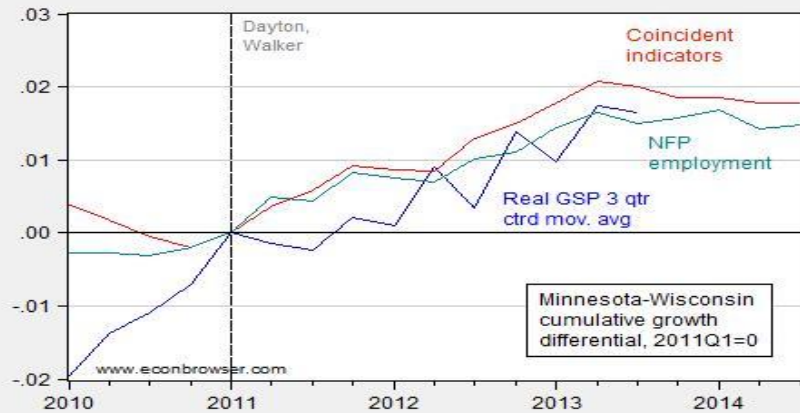
# Media Reports of the Economic Effects of the Experiments

- Wisconsin routinely compared to Minnesota
  - thought to have similar economic structure and size, Menzi Chinn (2014)  
<http://econbrowser.com/archives/2014/09/a-fiscal-tale-of-two-states-minnesota-vs-wisconsin>
  - “both states have four seasons with an added emphasis on snow and winter. Both states have a lot of lakes. Minnesota is referred to as the Land of 10,000 Lakes and Wisconsin is noted as the Nation’s Dairy Land and has even more lakes” Barnard-Schaber (2015)  
[\(http://new.scenewspaper.com/2015/02/tale-of-two-states-wisconsin-and-minnesota-a-socioeconomic-experiment-in-real-time/\)](http://new.scenewspaper.com/2015/02/tale-of-two-states-wisconsin-and-minnesota-a-socioeconomic-experiment-in-real-time/)
  - “but Minnesota’s performance has been credited to having both the major university and the state capital in its major metropolis and a business community that is more innovative” (Thompson, 2016a)  
<http://urbanmilwaukee.com/2016/02/04/data-wonk-has-walker-shrunk-wisconsins-economy/> (also see Thompson, 2016b, <http://urbanmilwaukee.com/2016/01/22/data-wonk-has-walker-grown-wisconsins-economy/>)

# Minnesota Policy Actions

- “Governor Dayton (a Democrat) of Minnesota pushed a sharp increase on taxes for the top 2 percent to pay for his plan. And soon he and legislators passed laws that expanded unionization, froze college tuition, increased the minimum wage, required equal pay for women, legalized same-sex marriage, eased voter restrictions, boosted primary education spending and established all-day kindergarten.” Patterson (2015), <http://www.afscme.org/blog/minnesota-vs-wisconsin-a-tale-of-two-states>
- 2013: (implemented in subsequent fiscal years): modifications that brought in additional corporate and business taxes; raised fees and miscellaneous taxes; authorized a new personal income tax bracket at 9.85 percent on married and joint filers earning \$250,000 of taxable income; expanded sales tax base (NCSL State Actions Database); expanded Medicaid coverage (<https://www.healthinsurance.org/minnesota-medicaid/>)





“... entirely predictable given standard theory while supply side factors highlighted by Governor Walker were unlikely to have a noticeable effect at that time horizon; the Governor’s August 2013 pledge to create 250,000 net new jobs by the end of his first term would not be met, undershooting by over 100,000 according to forecasts from the Walker administration’s own March 2014 *Wisconsin Economic Outlook*” Source: Menzie Chinn (2014)

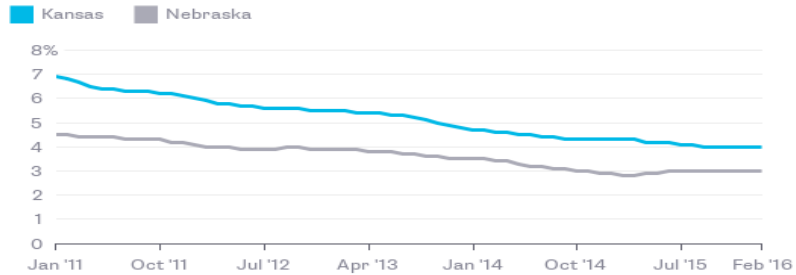
- Kansas compared to neighbors, particularly Nebraska
  - similar median income, per capita income, percentage of population in urban areas, similar area under cultivation, though Kansas has larger population (Fox, 2016), <https://www.bloomberg.com/view/articles/2016-03-29/kansas-tried-tax-cuts-its-neighbor-didn-t-guess-which-worked>
  - both states have a major interstate running east-west
  - Kansas ranked 10th in crude oil production, while Nebraska ranked 22<sup>nd</sup> (Fox, 2016)
  - Kansas also could have suffered from significant aerospace reductions (Menzie Chinn, 2015), <http://econbrowser.com/archives/2015/07/messages-from-the-june-state-employment-release>

# Nebraska Policy Actions

- Republican Governor and legislators (elected in nonpartisan primary and runoff); rejected Medicaid expansion
- 2011: \$3.5 dollar assessment on nursing home beds (\$14.2 million addition); personal income tax credit for “angel” investors (start-up high growth ventures) (\$2.1 million reduction)
- 2012: reduced personal income tax rates across most brackets (\$7.7 million reduction)
- 2013: eliminated state alternative minimum tax (projected \$7.8 million reduction); increased income tax credit for contributions to education savings plans (projected \$1.3 million reduction); provided a corporate tax credit from renewable electricity production (projected \$7.5 million cost)
- 2014: exclude some sources of personal income from taxation; added a couple of small sales tax exemptions
- Source: NCSL State Actions Database

## Going Back to Work

Unemployment rate, seasonally adjusted

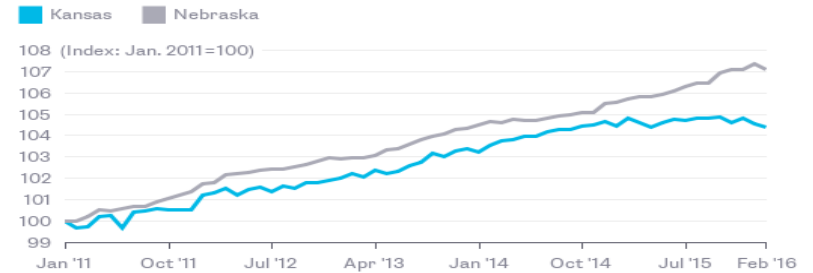


Source: Bureau of Labor Statistics

BloombergView

## Kansas Lags Behind

Nonfarm payroll employment, seasonally adjusted

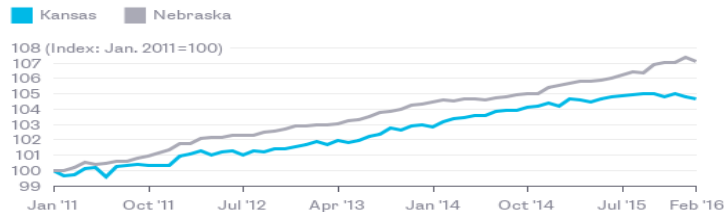


Source: Bureau of Labor Statistics

BloombergView

## With the Oil-Related Jobs Removed

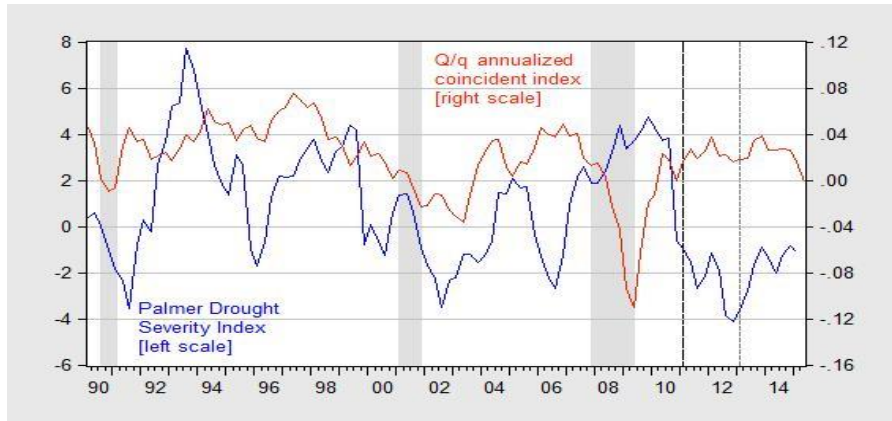
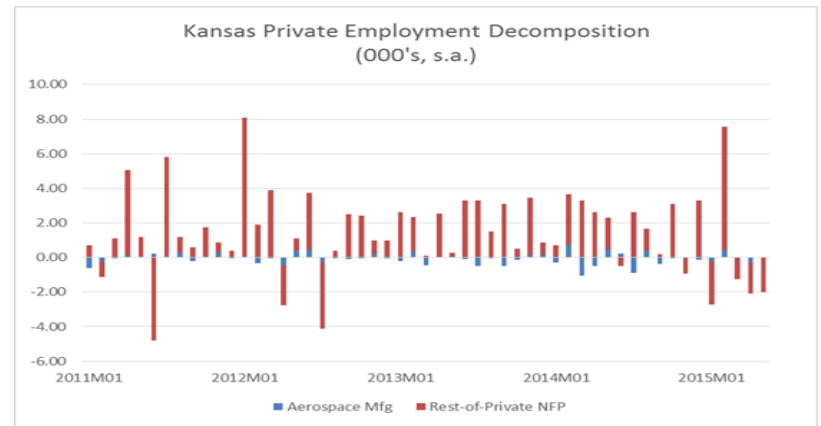
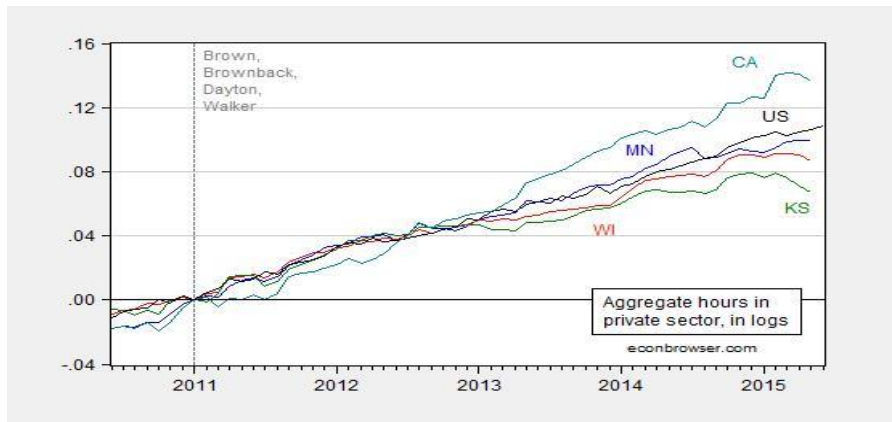
Nonfarm payroll employment, seasonally adjusted



Sources: Bureau of Labor Statistics, author's calculations

BloombergView

“Kansas has lagged Nebraska in job creation since 2011, and the gap has widened since late 2014. Instead of adding the 25,000 jobs a year that Brownback promised, Kansas actually lost 5,400 jobs over the 12 months ending in February” Fox (2016)



Source: Menzi Chinn (2015; 2016)  
<http://econbrowser.com/archives/2015/07/messages-from-the-june-state-employment-release>;  
<http://econbrowser.com/archives/2015/08/kansas-the-macro-outlook>

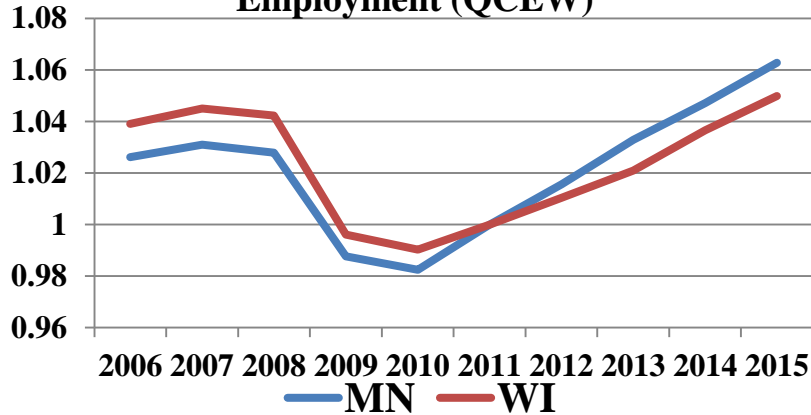
”I would argue much of the downturn especially post January 2013 is self-inflicted, due to the fiscal policies implemented”

# The Stories from Regional Science

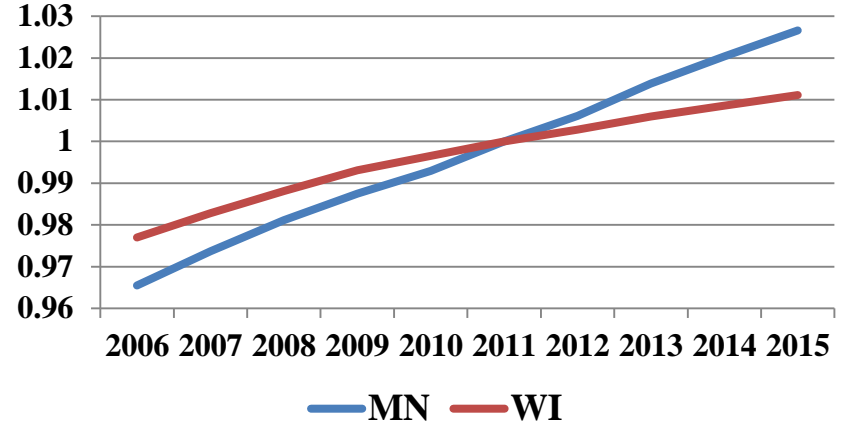
- Need more rigorous analysis of the performance of the Wisconsin and Kansas economies
  - CGE and supply-side models typically ignore public expenditure effects (Partridge and Rickman, 2010), cannot capture effects of disruption and increased uncertainty
  - How did their growth compare pre- and post-2011? *Use differences-in-differences (DID)*
  - What would have been their expected growth rates given their industry compositions in 2011? *Use shift-share analysis (control for post-2011 national industry shifts)*
  - Were there differences at the borders? *Compare border counties (control for state composition differences)*
  - Are there better matches than Minnesota and Nebraska? *Use Synthetic Control Matching (SCM)*
  - What is the appropriate metric? *Use multiple indicators to assess overall economic performance (Partridge and Rickman, 1999; 2003)*

# Wisconsin vs. Minnesota (DID)

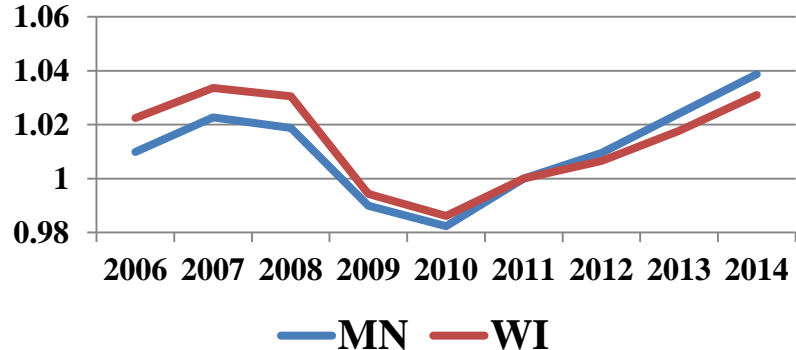
## Annual Average BLS Total Nonfarm Employment (QCEW)



## U.S. Census Population

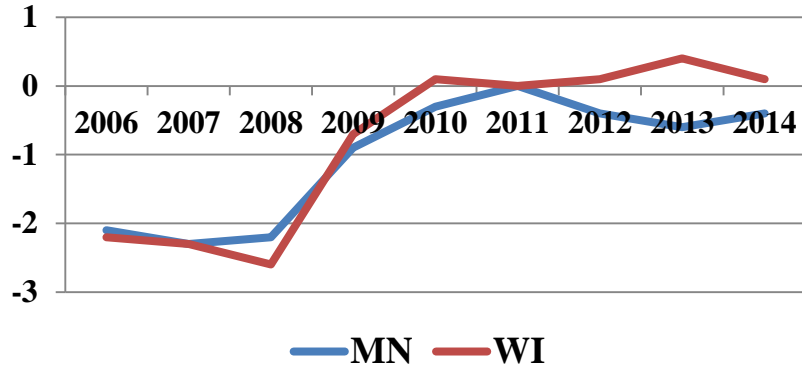


## BEA Total Employment

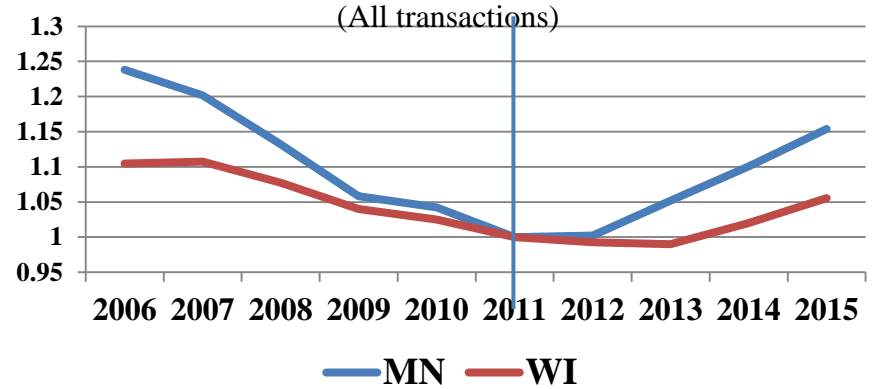


No visible effects found for labor force/population, unemployment rate, and per capita income.

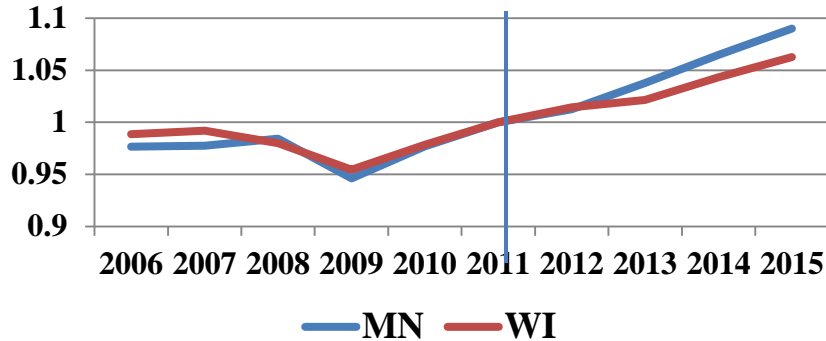
### SAIPE Poverty Rate (2011=0)



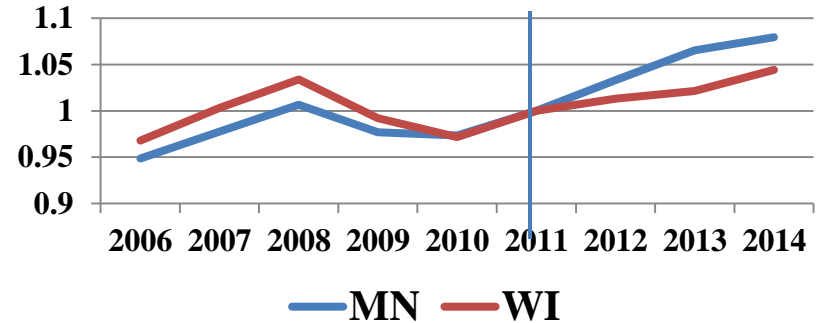
### FHFA Housing Price Index (All transactions)



### BEA Real State Gross Domestic Product



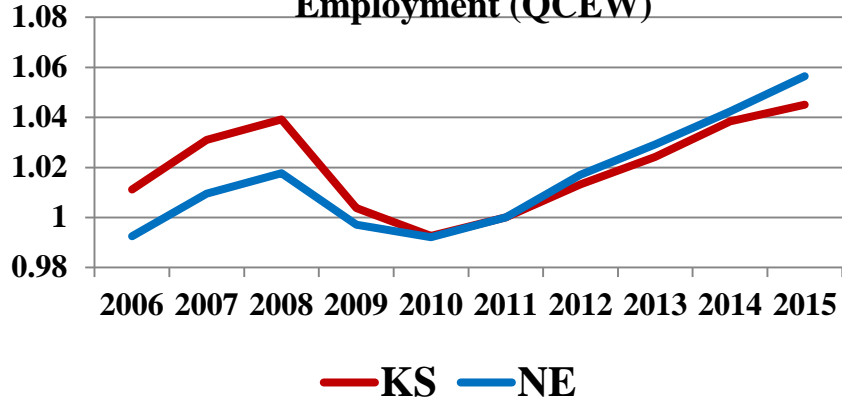
### SAIPE Median Household Income



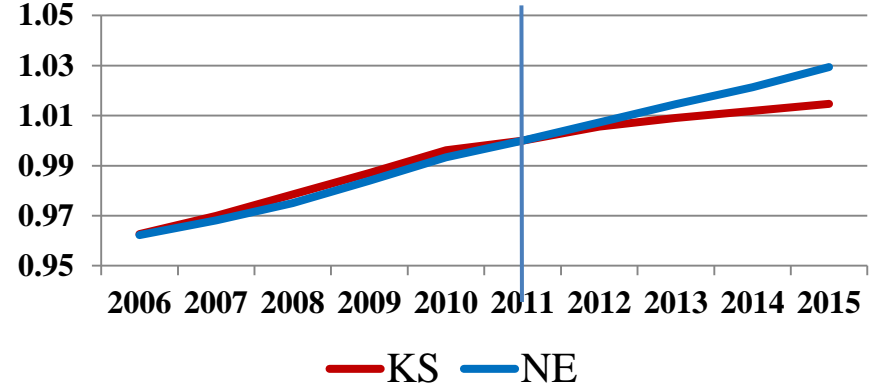


# Kansas vs. Nebraska (DID)

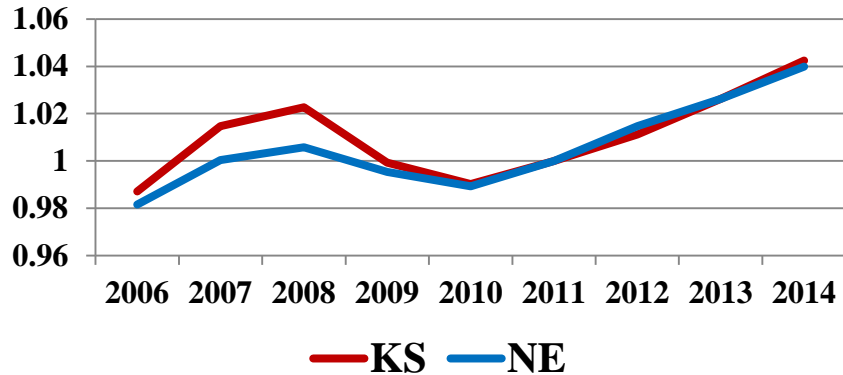
## Annual Average BLS Total Nonfarm Employment (QCEW)



## U.S. Census Population



## BEA Total Employment

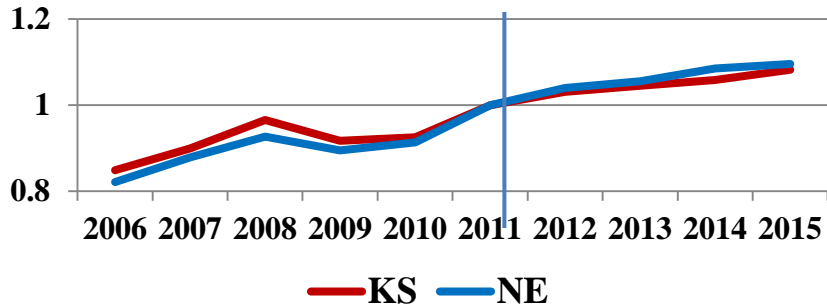


No effects found for labor force/population;

Greater reduction in unemployment rate for Kansas;

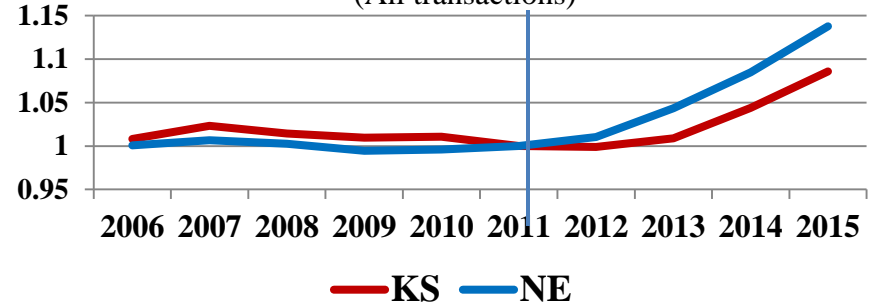
Slightly higher median income for Kansas

### BEA Per Capita Income

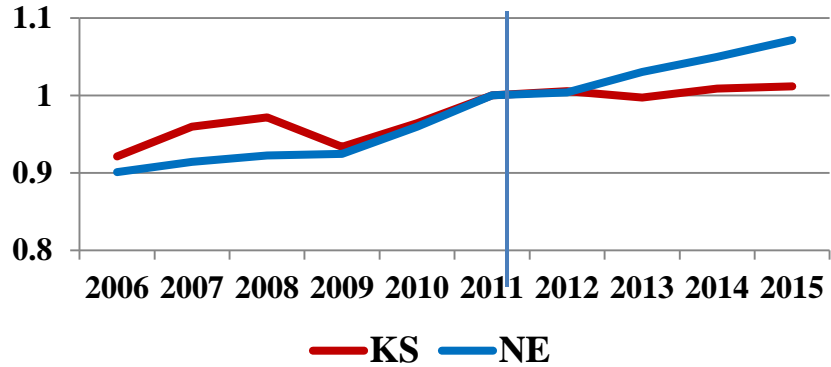


### FHFA Housing Price Index

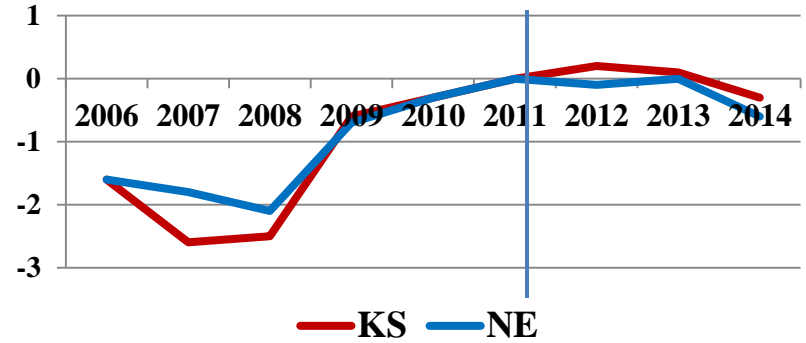
(All transactions)



### BEA Real State Gross Domestic Product



### SAIPE Poverty Rate (2011=0)



- Not all indicators show pre-intervention tracking between the pairs of states
- Are the state pairs good matches?
- Examination of counties on borders of the two states would control for other unmeasured characteristics (though ignore spillover effects)
- Can examine predicted employment changes based on shift-share model, controls for imperfection of match in industry composition.
- Use Synthetic Control Method (SCM) to create potentially better matches at the state level

# Border County Comparison

|                        | Wisconsin-Minnesota | Kansas-Nebraska |
|------------------------|---------------------|-----------------|
| QCEW Total Employment  | -0.87%              | 0.64%           |
| Labor Force/Population | -0.40%              | 0.49%           |
| Unemployment           | -0.05%              | 0.08%           |
| BEA Population         | 1.32%               | 0.21%           |
| BEA Per Capita Income  | -0.04%              | -5.92%          |
| BEA Total Employment   | -0.40%              | 0.16%           |
| BEA W&S Employment     | -0.35%              | 1.10%           |
| SAIPE Poverty Rate     | -0.19%              | -0.01%          |
| SAIPE Median Income    | 1.64%               | 2.06%           |

BEA indicators: 2011-2014 minus 2008-2011

BLS indicators: 2011-2015 minus 2007-2011

SAIPE indicators: 2011-2014 minus 2008-2011

Annualized changes, average of border county percentage changes

Using matched-border counties based on contiguity-does not change signs and hardly affects the magnitudes (not shown)

# Shift-Share Analysis

- Shift-share model separates regional employment growth into three effects: national, industry mix and competitive (Loveridge and Selting, 1998)
- Industry mix effect (im) represents the growth attributable to the region's (r) composition of industries (i)
- Industry level:  $\Delta im_{i, (t-0)}^r = (e_{i,0}^r) * ((\% \Delta e_{i,(t-0)}^n) / 100)$
- Sum of the above expression across industries (i) is predicted change in regional employment from period 0 to t attributable to its employment composition of industries in time 0; then convert to rate of change
- Reflects employment effects of international trade shocks, national productivity shocks and national industry restructuring (Partridge et al., forthcoming)
- Often used as an exogenous instrument for employment growth (e.g., Bartik, 1991; Moretti, 2010)
- Difference between actual employment growth and predicted effect from industry composition is the competitive effect

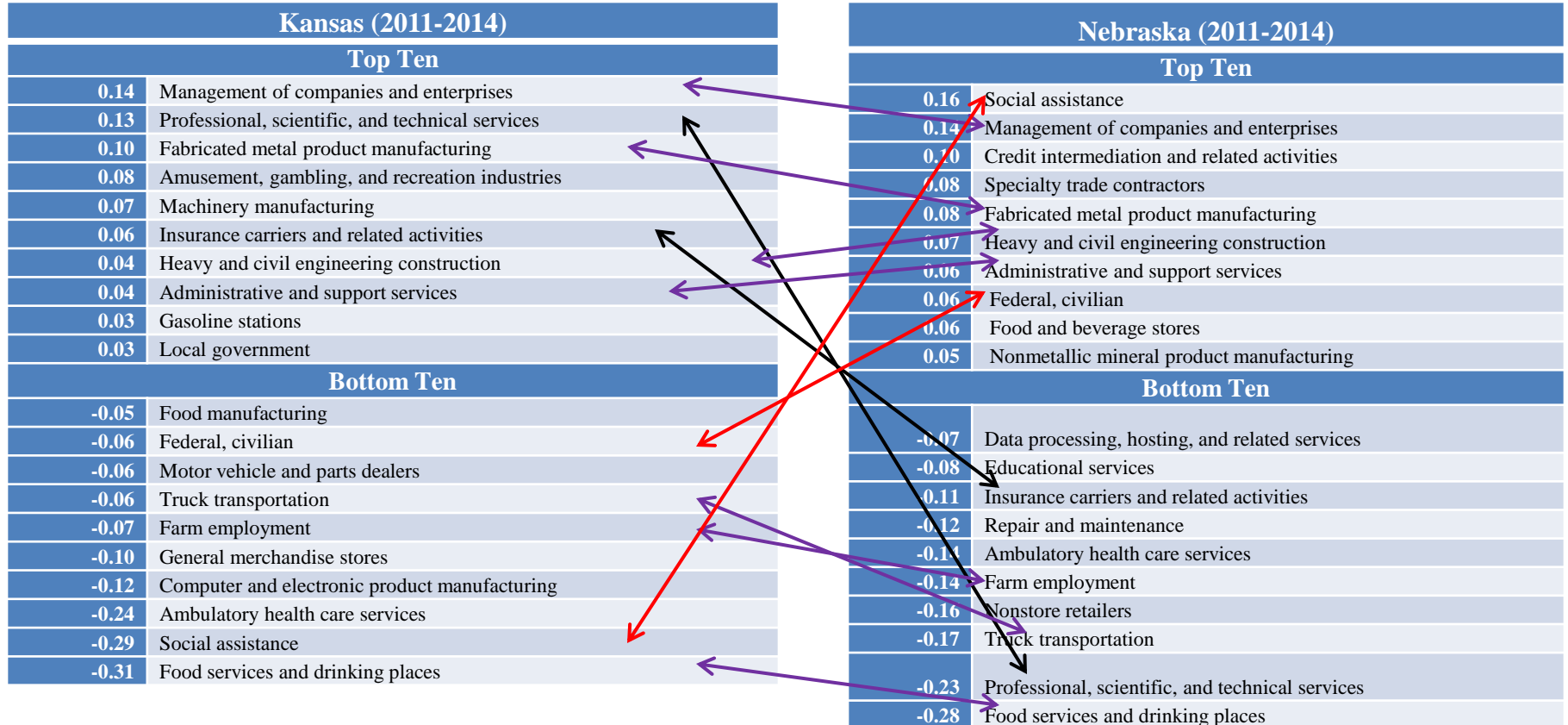
|              | Predicted (%)<br>(Industry Mix Effect) |           | Actual (%) |           | Actual-Predicted (%)<br>(Competitive Effect) |           | DID (%)      |
|--------------|--|-----------|------------|-----------|--|-----------|--------------|
|              | 2007-2011                              | 2011-2014 | 2007-2011  | 2011-2014 | 2007-2011                                    | 2011-2014 | Post-Pre     |
| <b>MN</b>    | -2                                     | 5.29      | -2.22      | 3.87      | -0.22  | -1.42     | <b>-1.2</b>  |
| <b>WI</b>    | -3.2                                   | 5.32      | -3.25      | 3.11      | -0.05  | -2.21     | <b>-2.16</b> |
| <b>WI-MN</b> | -1.2                                   | 0.03      | -1.03      | -0.76     | 0.17   | -0.79     | <b>-0.96</b> |
| <b>KS</b>    | -1.86                                  | 5.45      | -1.45      | 4.25      | 0.41   | -1.2      | <b>-1.61</b> |
| <b>NE</b>    | -2.17                                  | 5         | -0.04      | 3.99      | 2.13   | -1.01     | <b>-3.14</b> |
| <b>KS-NE</b> | 2.2                                    | 0.45      | -1.41      | 0.26      | -3.61  | -0.19     | <b>1.53</b>  |
| <b>US</b>    | -2.01                                  | 5.4       | -2.01      | 5.4       | 0  | 0         | 0            |

Data Source: BEA Total Industry Employment

# Industry Competitiveness Effects on BEA Total Employment Growth: Wisconsin and Minnesota

| Wisconsin (2011-2014) |   | Minnesota (2011-2014) |  |
|-----------------------|---|-----------------------|--|
| <b>Top Ten</b>        |   | <b>Top Ten</b>        |  |
| 0.18                  | State government  | 0.11                  | Local government                               |
| 0.08                  | Publishing industries (except Internet)                             | 0.11                  | Hospitals                                      |
| 0.05                  | Management of companies and enterprises                             | 0.09                  | State government                               |
| 0.04                  | Mining (except oil and gas)   | 0.07                  | Specialty trade contractors                    |
| 0.04                  | Food manufacturing  | 0.05                  | Heavy and civil engineering construction       |
| 0.03                  | Machinery manufacturing   | 0.04                  | Computer and electronic product manufacturing  |
| 0.03                  | Plastics and rubber products manufacturing                          | 0.04                  | Construction of buildings                      |
| 0.03                  | Electrical equipment, appliance, and component manufacturing        | 0.03                  | Printing and related support activities        |
| 0.02                  | Printing and related support activities                             | 0.03                  | Nursing and residential care facilities        |
| 0.02                  | Paper manufacturing   | 0.02                  | Ambulatory health care services                |
| <b>Bottom Ten</b>     |   | <b>Bottom Ten</b>     |  |
| -0.08                 | Truck transportation  | -0.05                 | Amusement, gambling, and recreation industries |
| -0.09                 | Personal and laundry services                                       | -0.06                 | Educational services                           |
| -0.10                 | Local government  | -0.08                 | Personal and laundry services                  |
| -0.11                 | Social assistance   | -0.08                 | Management of companies and enterprises        |
| -0.12                 | Hospitals   | -0.10                 | Insurance carriers and related activities      |
| -0.13                 | Nonstore retailers  | -0.11                 | Farm employment                                |
| -0.15                 | <b>Professional, scientific, and technical services (MN=-0.017)</b> | -0.11                 | General merchandise stores                     |
| -0.16                 | Insurance carriers and related activities                           | -0.23                 | Food services and drinking places              |
| -0.18                 | Administrative and support services                                 | -0.33                 | Administrative and support services            |
| -0.36                 | Food services and drinking places                                   | -0.35                 | Social assistance                              |

# Industry Competitiveness on BEA Total Employment Growth : Kansas and Nebraska





- using 2007 employment shares for 2011-2014 instead of 2011 shares does not affect the results
- disadvantage, U.S. is benchmark; comparison of Wisconsin shift-share results to Minnesota and those of Kansas to Nebraska's still have other potential problems of matching
- limited indicators at the industry level
- can have spillover effects between the pairs of states (e.g., input-output linkages)

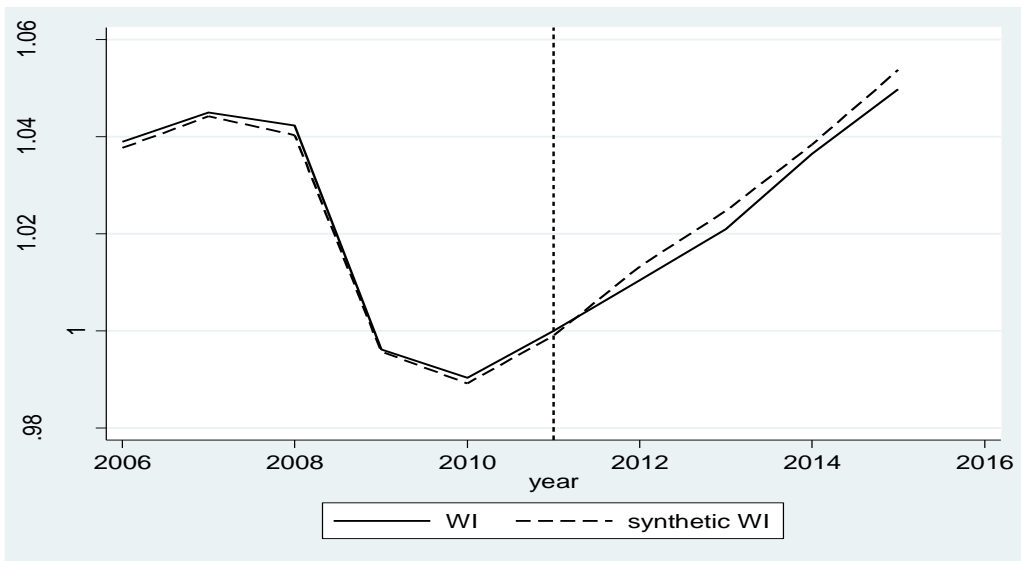
# Synthetic Control Method

- provides a comparison or control unit, or **synthetic control**, that is a **combination of donor states; weights** applied to states **based on pre-intervention characteristics** (predictor variables) in **matching pre-intervention** paths of the indicator variables between the state of interest and the synthetic control group (Abadie and Gardeazabal 2003; Abadie et al., 2010)
- **has been applied at the U.S. state level** (e.g., Abadie et al., 2010; Bohn et al., 2014; Ando, 2015; Liu, 2015; Munasib and Rickman, 2015; Eren and Ozbeklik (2016); Luechinger and Roth (2016); Rickman, Wang and Winters 2016)
- **avoids** necessity of finding a “**twin**” for **comparison**, which is difficult at the state level
- can then apply **difference-in-differences between state of interest and the synthetic control group**; i.e., the difference between the predicted and the actual outcomes in the post-Walker/Brownback period (2011) relative to the difference prior to their taking office is their predicted impacts
- predictions are based on the ‘optimal’ weights applied to the outcomes of the contributor states to the synthetic control group
- remove Minnesota from donor pool for Wisconsin and Nebraska from donor pool for Kansas

- Predictor variables from regional science literature (pre-intervention) (Munasib and Rickman, 2015; Rickman, Wang and Winters 2016)
  - USDA (ERS) state level: natural amenity scale; rural-urban continuum code; manufacturing dependence; mining dependence; farm dependence; persistent poverty counties; retirement destination; recreation dependence; long-term population losses (all pre-2006, i.e., 2000 or earlier)
  - population density (2000)
  - industry mix employment growth four-digit level (2002-2007) (Dorfman et al., 2010)
  - educational attainment among population (25+): high school completion; associates degree, bachelor's degree (2000)
  - Fraser's Economic Freedom Index (Goetz et al., 2011)
  - pre-intervention values of outcome variable (2006, 2008, 2010)

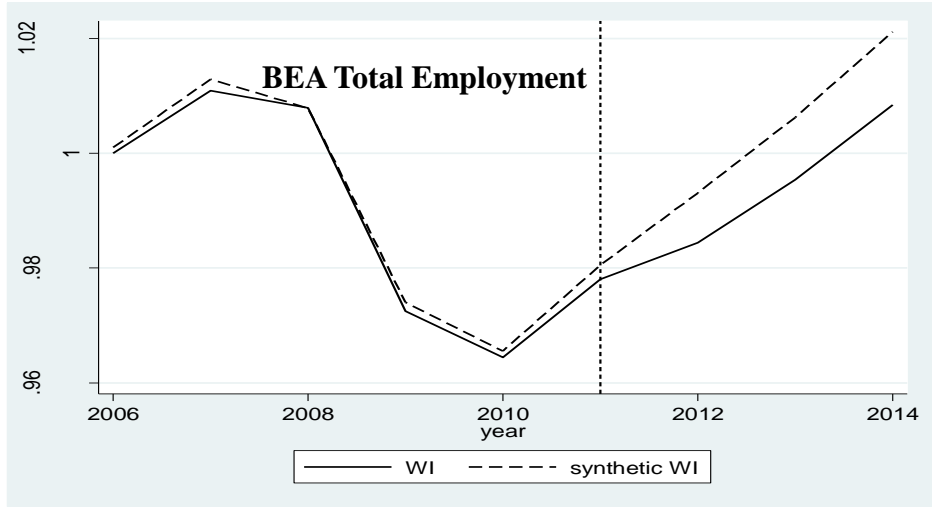
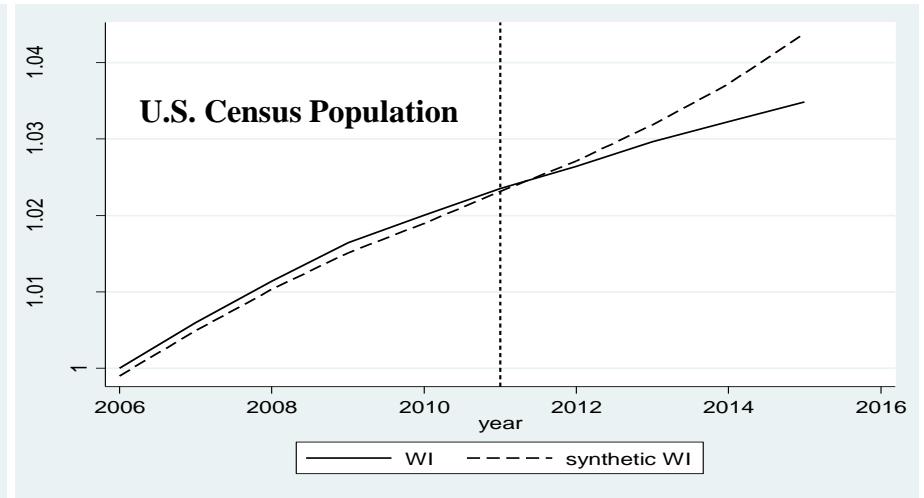
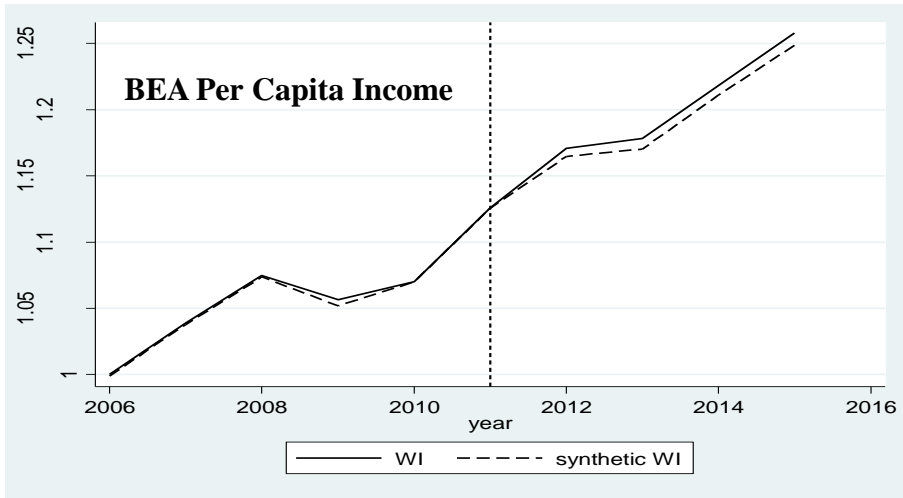
# Wisconsin

**BLS (QCEW) Nonfarm Employment**



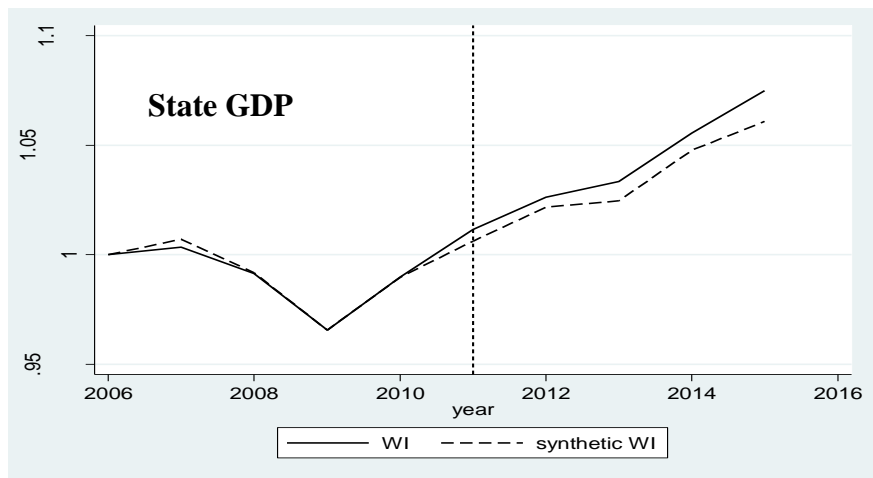
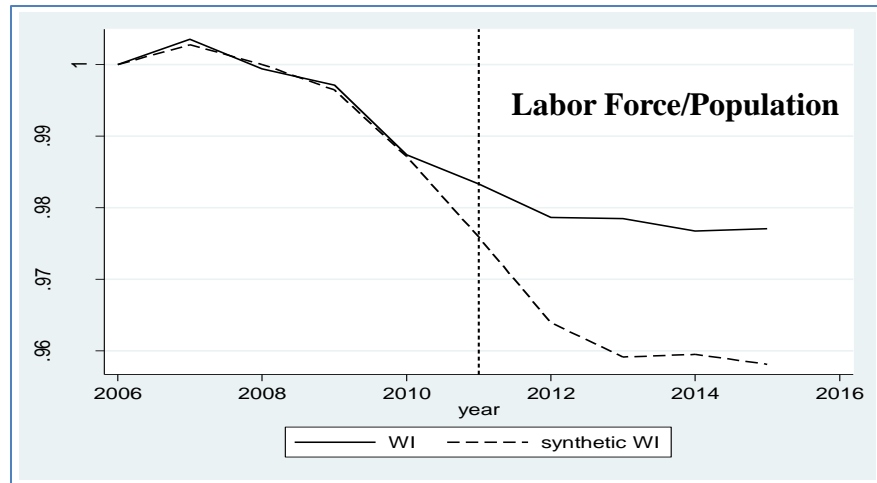
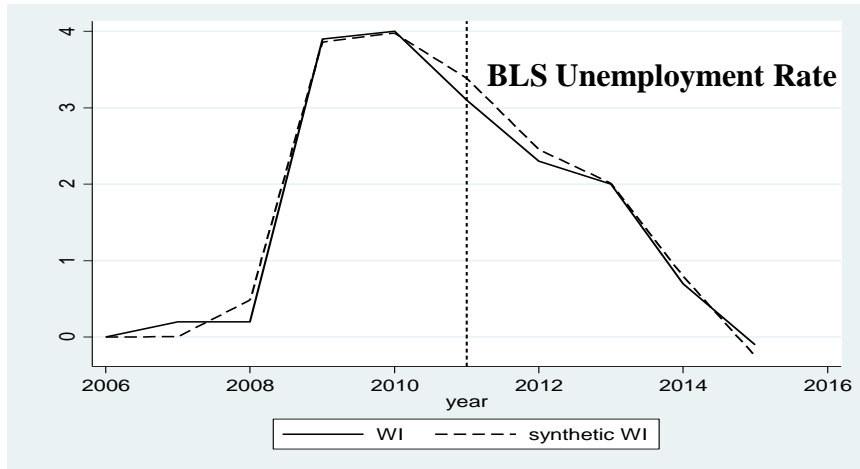
| Predictor Variables          | WI-SYN        | WI-MN  |
|------------------------------|---------------|--------|
| <b>Amenity scale</b>         | <b>-0.63</b>  | 1.023  |
| <b>Mining dependence</b>     | <b>-0.001</b> | -0.002 |
| <b>Mft dependence</b>        | <b>0.068</b>  | 0.257  |
| <b>Farm dependence</b>       | <b>0.001</b>  | -0.008 |
| Retirement dest              | 0.013         | -0.003 |
| Persistent poverty           | -0.012        | 0      |
| <b>Population loss</b>       | <b>0.014</b>  | 0.109  |
| <b>Recreation county</b>     | <b>0.008</b>  | 0.031  |
| <b>Rural urban continuum</b> | <b>0.126</b>  | 0.273  |
| <b>Bachelors degree</b>      | <b>-0.007</b> | -0.036 |
| <b>Associates degree</b>     | <b>0.002</b>  | -0.004 |
| <b>High school degree</b>    | <b>0.015</b>  | 0.054  |
| Population density           | -72.326       | 36.7   |
| Economic freedom index       | -0.708        | -0.1   |
| State industry mix02-07      | -0.018        | -0.017 |

| State | Weight |
|-------|--------|
| NH    | 0.379  |
| OH    | 0.325  |
| IA    | 0.119  |
| NC    | 0.102  |
| ME    | 0.032  |
| MI    | 0.025  |
| MS    | 0.011  |
| AL    | 0.006  |



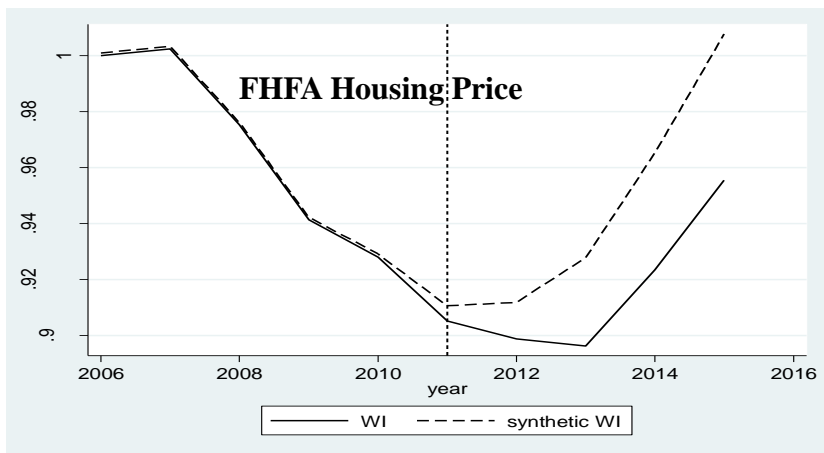
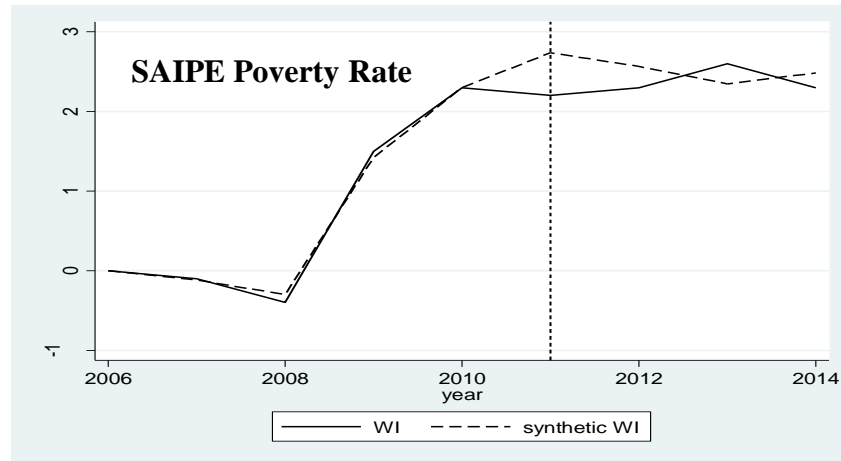
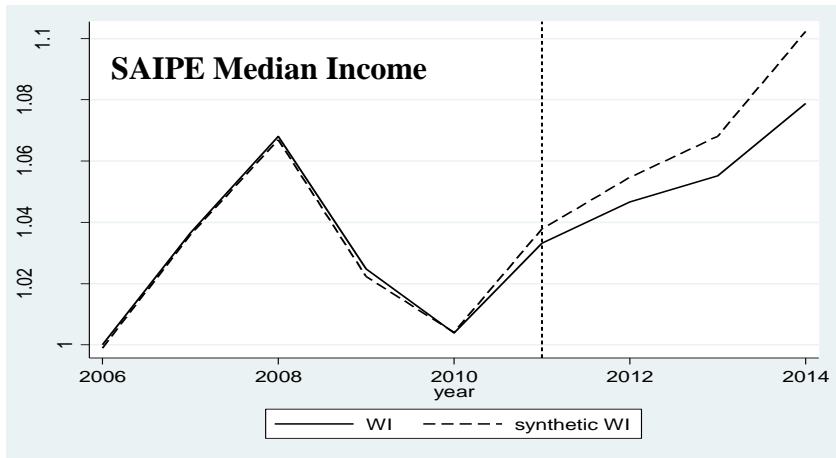
## Synthetic Weights

| Per Capita Income |              | Population |              | Total Employment |              |
|-------------------|--------------|------------|--------------|------------------|--------------|
| <i>ME</i>         | 0.422        | <b>OH</b>  | <b>0.223</b> | <b>OH</b>        | <b>0.381</b> |
| <b>OH</b>         | <b>0.203</b> | <i>OR</i>  | 0.181        | <b>IA</b>        | <b>0.282</b> |
| <i>OR</i>         | 0.16         | <b>IA</b>  | <b>0.175</b> | <b>MI</b>        | <b>0.138</b> |
| <b>IA</b>         | <b>0.069</b> | <b>MI</b>  | <b>0.137</b> | <i>WA</i>        | 0.129        |
| <i>NH</i>         | 0.061        | <i>ME</i>  | 0.11         | <b>VT</b>        | <b>0.07</b>  |
| <i>ID</i>         | 0.042        | <i>WA</i>  | 0.088        | <i>SC</i>        | 0.001        |
| <i>IN</i>         | 0.021        | <b>VT</b>  | <b>0.053</b> |                  |              |
| <b>MI</b>         | <b>0.002</b> | <i>UT</i>  | 0.032        |                  |              |
| <i>PA</i>         | 0.001        |            |              |                  |              |
| <b>VT</b>         | <b>0.001</b> |            |              |                  |              |



## Synthetic Weights

| Unemployment |              | Labor Force/Pop |              | Real GDP |              |
|--------------|--------------|-----------------|--------------|----------|--------------|
| AR           | 0.582        | OH              | 0.373        | OH       | 0.261        |
| MI           | <b>0.237</b> | MI              | <b>0.232</b> | IA       | 0.23         |
| WA           | 0.181        | OR              | 0.194        | ME       | 0.202        |
|              |              | CT              | 0.096        | NH       | 0.088        |
|              |              | NH              | 0.096        | NY       | 0.07         |
|              |              | RI              | 0.009        | MI       | <b>0.066</b> |
|              |              |                 |              | OR       | 0.054        |
|              |              |                 |              | RI       | 0.016        |
|              |              |                 |              | NC       | 0.013        |



## Synthetic Weights

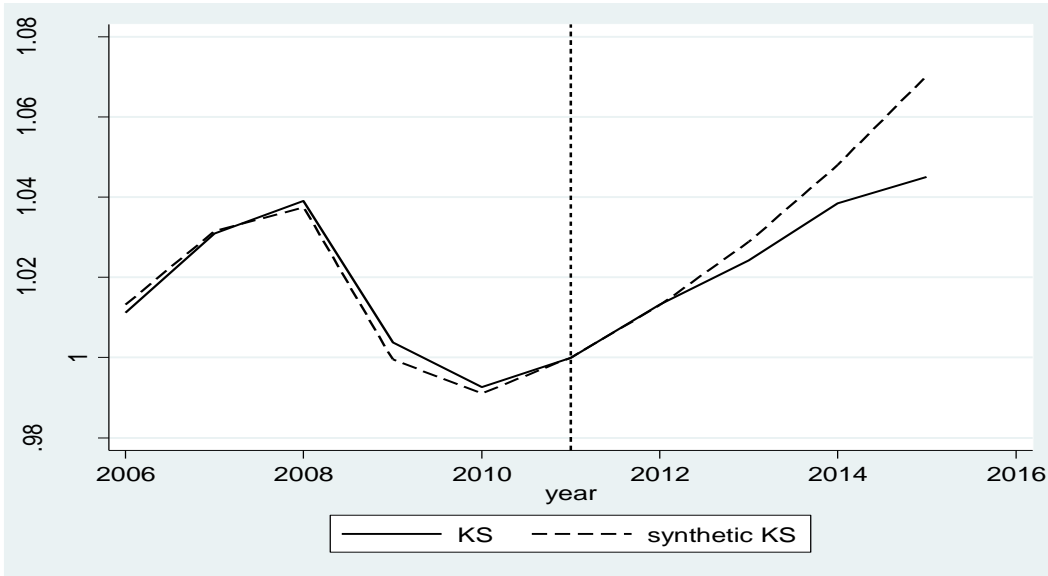
| Median Income |              | Poverty Rate |              | FHFA Housing Price |              |
|---------------|--------------|--------------|--------------|--------------------|--------------|
| VT            | 0.371        | <b>OH</b>    | <b>0.471</b> | IN                 | 0.464        |
| MI            | 0.226        | AL           | 0.292        | MI                 | 0.123        |
| <b>OH</b>     | <b>0.192</b> | TN           | 0.238        | NC                 | 0.114        |
| IN            | 0.178        |              |              | ID                 | 0.087        |
| IA            | 0.016        |              |              | <b>OH</b>          | <b>0.087</b> |
| ME            | 0.016        |              |              | MS                 | 0.068        |
|               |              |              |              | IA                 | 0.058        |

- States matching Wisconsin out of 10 SCMs
  - OH (9); **MI (9)**; **IA (7)**; ME (5); **VT (4)**; NH (4); OR (4); IN (3); **WA (3)**
- States matching Minnesota out of 10 SCMs
  - **VT (8)**; **MI (8)**; IL (6); VA(5); **WA (4)**; SD (4); **IA (4)**; RI (3)
- Wisconsin Predictions Comparison: DID vs SCM
  - MN DID: WI disadvantage in **QCEW employment, BEA total employment; population, real GDP, FHFA housing price, poverty, median income**
  - SCM: WI disadvantage in **QCEW employment (slight); BEA total employment; population; FHFA housing price; median income**
- Minnesota SCM Predictions Comparison
  - MN advantage in per capita income (slight); **population; BEA total employment; real GDP; poverty; median income**; unemployment; labor force/population



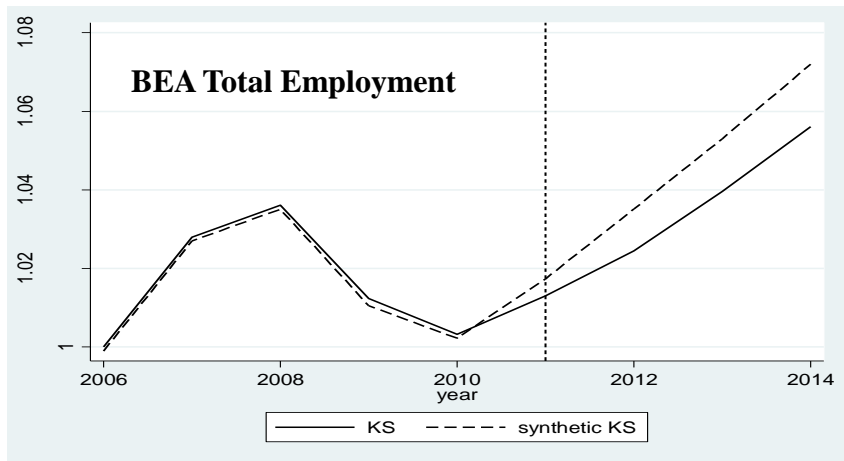
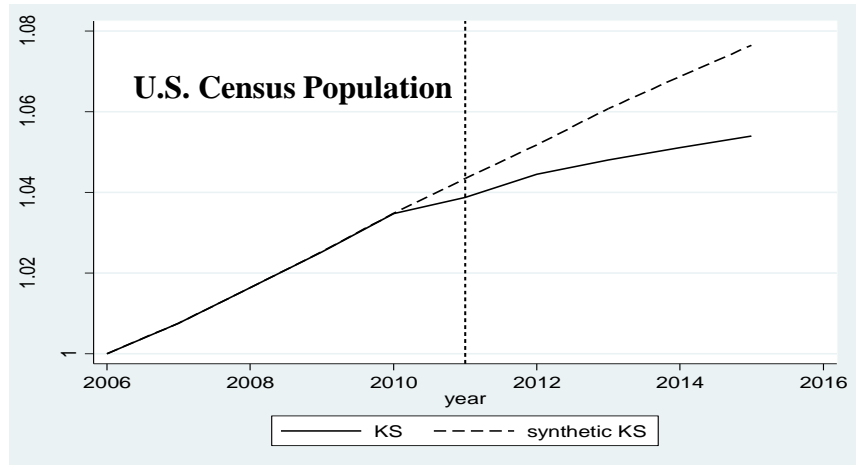
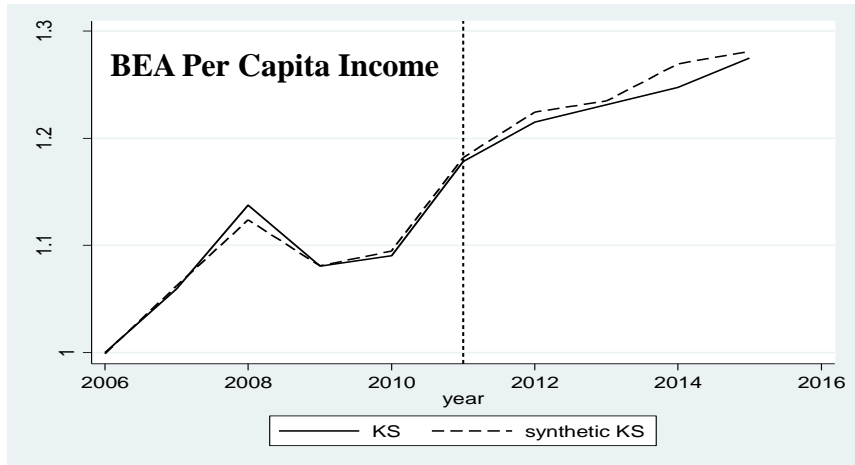
# Kansas

**BLS (QCEW) Nonfarm Employment**



|                                | KS-SYN        | KS-NE        |
|--------------------------------|---------------|--------------|
| Amenity scale                  | -2.333        | 0.759        |
| <b>Mining dependence</b>       | <b>0.001</b>  | 0.003        |
| <b>Mft dependence</b>          | <b>0.177</b>  | 0.218        |
| <b>Farm dependence</b>         | <b>-0.022</b> | -0.138       |
| Retirement dest                | -0.113        | 0.004        |
| Persistent poverty             | -0.055        | -0.004       |
| Population loss                | 0.119         | 0.057        |
| Recreation county              | -0.043        | -0.007       |
| <b>Rural urban continuum</b>   | <b>0.461</b>  | -0.6         |
| Bachelors degree               | 0.006         | 0.005        |
| <b>Associates degree</b>       | <b>-0.009</b> | -0.014       |
| <b>High school degree</b>      | <b>0.003</b>  | -0.01        |
| Population density             | -36.326       | 10.7         |
| Economic freedom index         | 0.154         | -0.1         |
| <b>State industry mix 0207</b> | <b>-0.005</b> | <b>0.005</b> |

| State | Weight |
|-------|--------|
| WA    | 0.46   |
| MO    | 0.34   |
| SD    | 0.2    |



## Synthetic Weights

### Per Capita Income

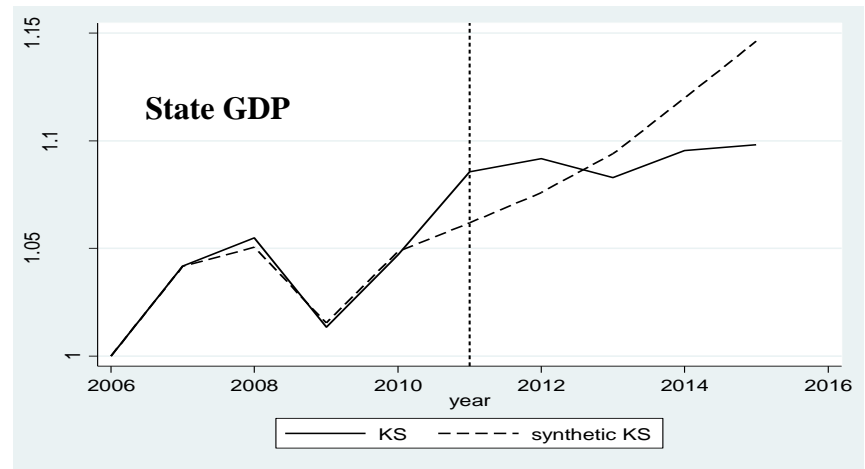
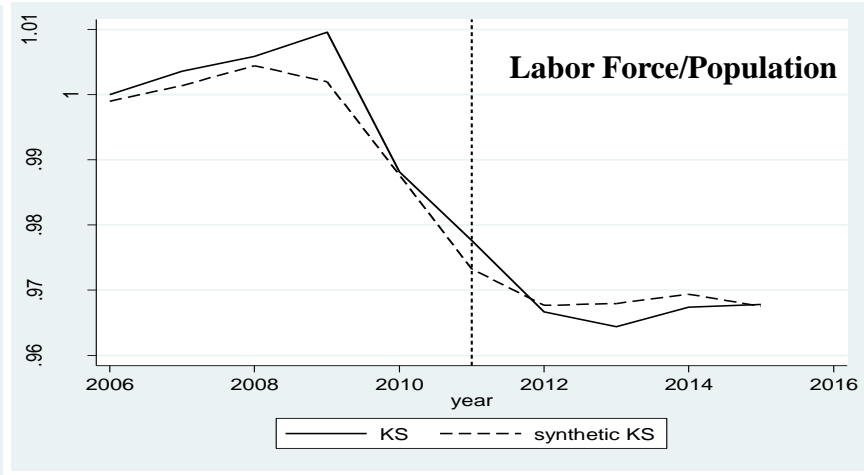
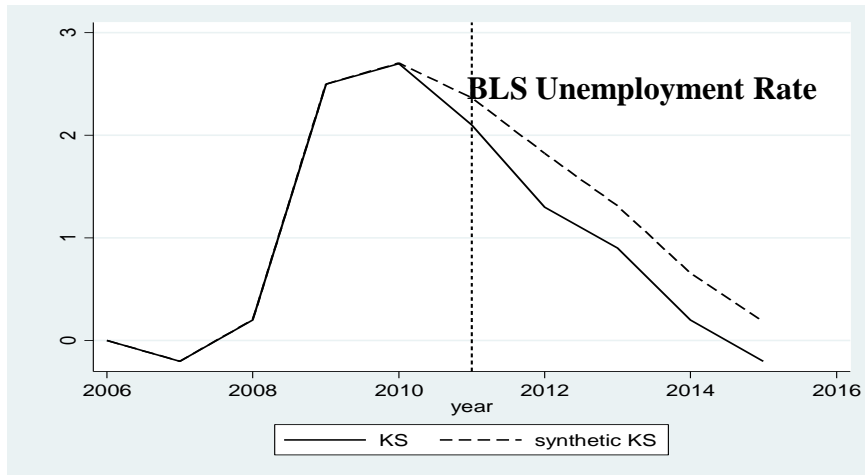
|           |              |
|-----------|--------------|
| <b>IA</b> | <b>0.737</b> |
| <b>UT</b> | <b>0.254</b> |
| <b>SD</b> | <b>0.008</b> |

### Population

|           |              |
|-----------|--------------|
| CA        | 0.348        |
| <b>IA</b> | <b>0.273</b> |
| VA        | 0.149        |
| <b>SD</b> | <b>0.097</b> |
| MD        | 0.051        |
| KY        | 0.01         |
| WA        | 0.009        |
| <b>UT</b> | <b>0.007</b> |
| ID        | 0.005        |
| PA        | 0.005        |
| AR        | 0.004        |
| RI        | 0.004        |

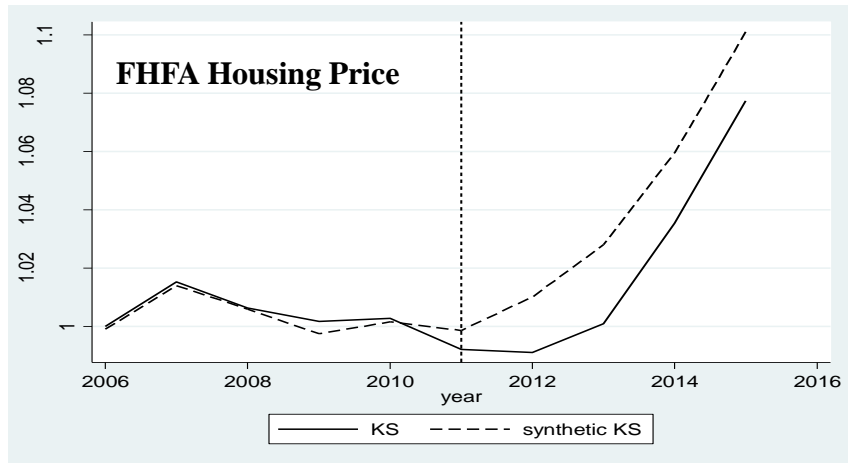
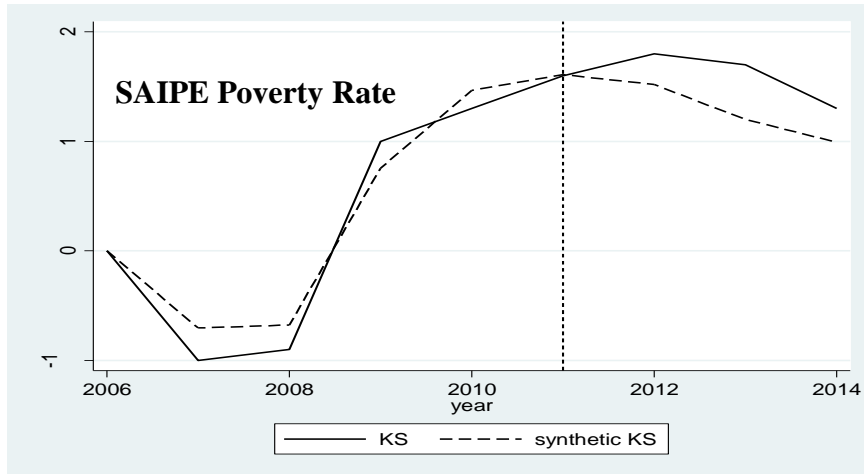
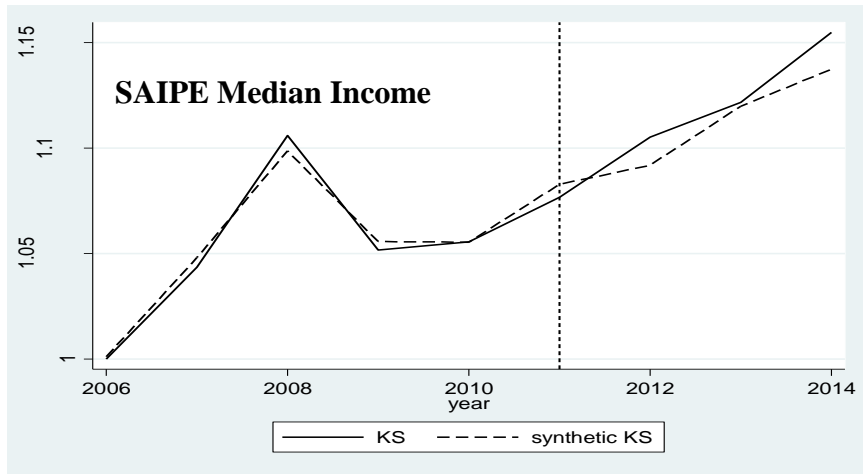
### Total Employment

|           |              |
|-----------|--------------|
| WA        | 0.321        |
| <b>IA</b> | <b>0.263</b> |
| <b>SD</b> | <b>0.192</b> |
| <b>UT</b> | <b>0.134</b> |
| MA        | 0.069        |
| NY        | 0.011        |
| VA        | 0.006        |
| NC        | 0.003        |



## Synthetic Weights

| Unemployment |              | Labor Force/Pop |              | Real GDP  |              |
|--------------|--------------|-----------------|--------------|-----------|--------------|
| <b>SD</b>    | <b>0.476</b> | IA              | 0.367        | WA        | 0.509        |
| AR           | 0.159        | NH              | 0.264        | IN        | 0.354        |
| IA           | 0.149        | <b>SD</b>       | <b>0.088</b> | <b>SD</b> | <b>0.102</b> |
| WA           | 0.122        | UT              | 0.067        | ID        | 0.034        |
| MD           | 0.079        | MI              | 0.017        | NC        | 0.001        |
| KY           | 0.014        |                 |              |           |              |
| MS           | 0.001        |                 |              |           |              |
| PA           | 0.001        |                 |              |           |              |



## Synthetic Weights

### Median Income

|           |              |
|-----------|--------------|
| AL        | 0.615        |
| WA        | 0.138        |
| <b>SD</b> | <b>0.119</b> |
| IA        | 0.073        |
| PA        | 0.034        |
| UT        | 0.012        |
| VA        | 0.01         |

### Poverty Rate

|           |              |
|-----------|--------------|
| UT        | 0.385        |
| NH        | 0.373        |
| <b>SD</b> | <b>0.242</b> |

### FHFA Housing Price

|           |              |
|-----------|--------------|
| IA        | 0.85         |
| <b>SD</b> | <b>0.039</b> |
| KY        | 0.036        |
| MA        | 0.03         |
| CA        | 0.009        |

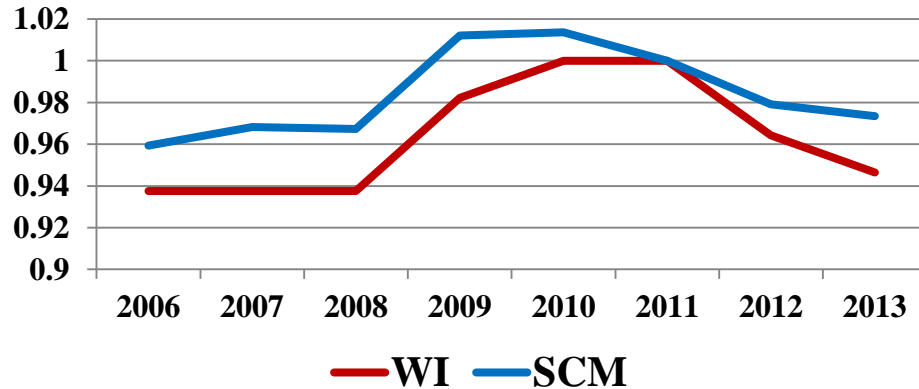
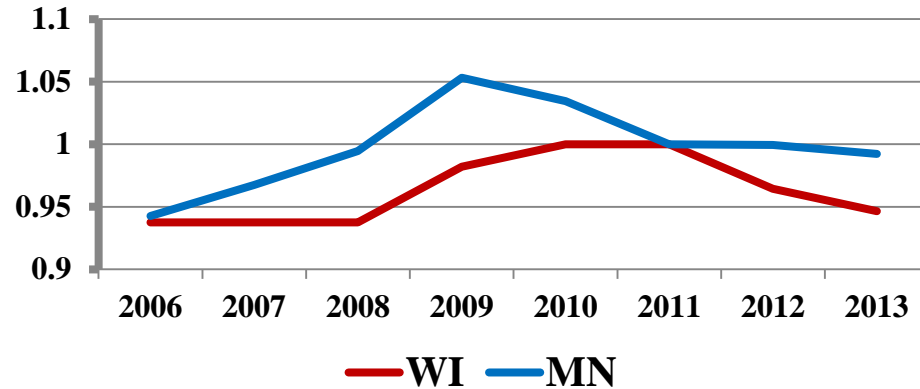
- States matching Kansas out of 10 SCMs
  - **SD (10); IA (7);** UT (6); WA (6); KY (3); PA (3)
- States matching Nebraska out of 10 SCMs
  - **SD (10); IA (6);** MD (4); VA (4); IL (3); NY (4); NH (3); NJ (3)
- Kansas Predictions Comparison: DID vs SCM
  - NE DID: KS disadvantage in **QCEW employment (slight); population; per capita income (slight); GDP; FHFA housing price; poverty rate (slight);**
  - SCM: KS disadvantage in **QCEW employment; population; BEA total employment; per capita income (slight); real GDP; FHFA housing price; poverty rate;** median income
- Nebraska SCM Predictions Comparison
  - Nebraska advantage in **QCEW employment; per capita income; real GDP; FHFA housing price; labor force/population**
  - disadvantage in population; poverty

# Policies of Wisconsin SCM States

- **Ohio: expanded Medicaid;** resumed phasing in personal income tax cut (2011); personal income tax rate reduction of 8.5 percent for FY 2013, 9 percent in FY 2014 and 10 percent in FY 2015 (costing \$1,224.0 million in FY 2014); increased the small business income tax deduction from 50 percent of income up to \$250,000 for FY2014 (\$534 million); approved EITC to 5% of federal credit for FY2014 (\$67 million); offsets in personal income taxes over \$200 million (FY2014); increased sales and use taxes (\$230 million); temporarily increase the small business income tax deduction from 50 percent to 75 percent (FY2015) (\$300 million); continued phasing down personal income tax rates as approved in a 2013 tax reform package (FY2015) (\$150 million); increase personal exemption amounts (\$74 million)
- **Michigan: expanded Medicaid** under alternative plan; reduced business taxes (\$1 billion) and raised personal income taxes (\$559 million) (2011); reduced personal income tax and raised personal exemption amount (\$102 million); reinstated the 6 percent use tax on Medicaid managed care organizations (\$580 million)
- **Iowa: expanded Medicaid** under alternative plan; restructured personal income tax (\$249.2 million) for FY 2013

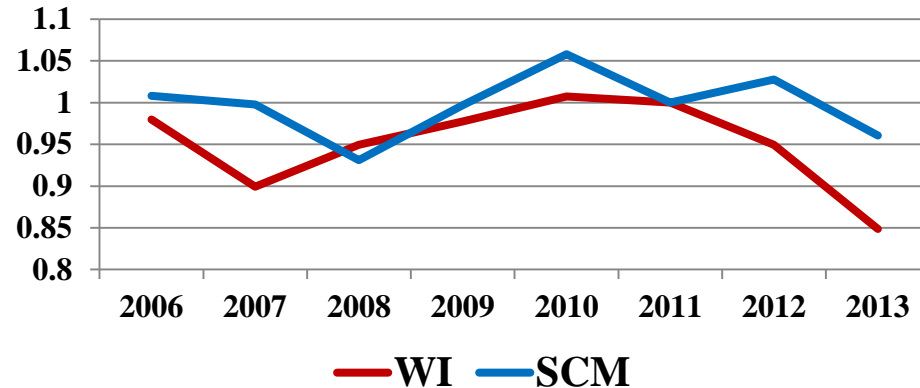
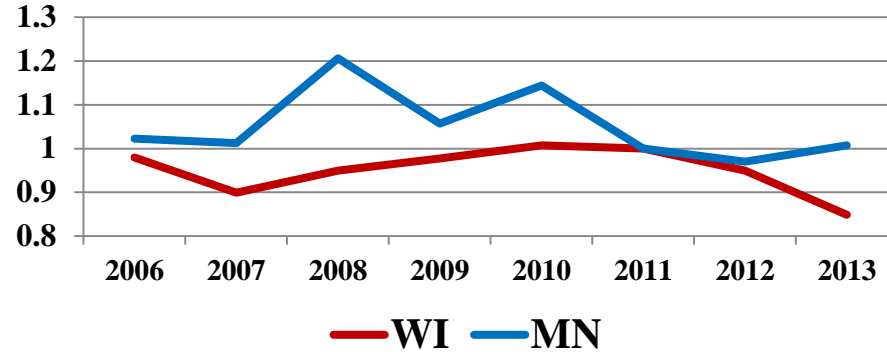
# Real Per Capita General State and Local Expenditures

(Annual Survey of Government Finances: Urban Institute-<http://slfdqs.taxpolicycenter.org/pages.cfm>)



# Real Per Capita Total Highway Capital Outlays

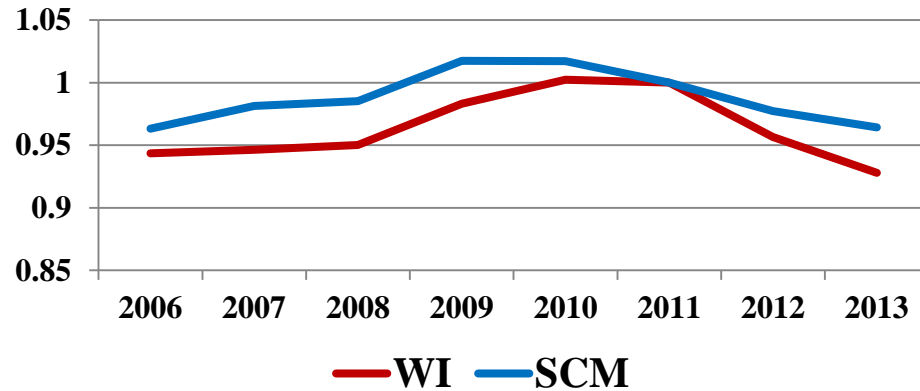
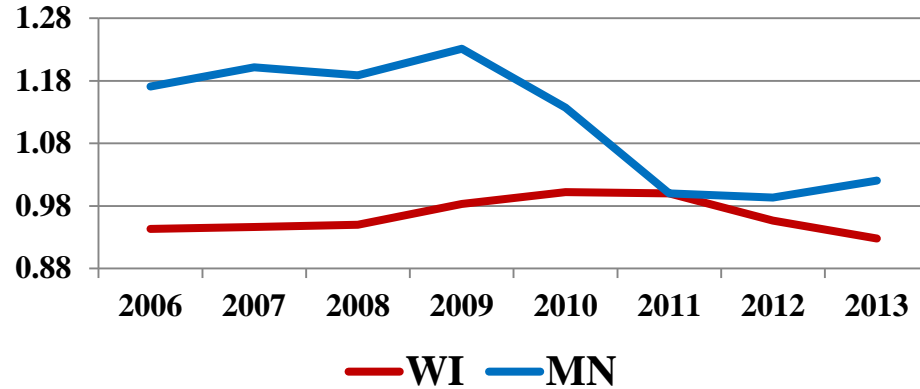
(Annual Survey of Government Finances : Urban Institute-<http://slfdqs.taxpolicycenter.org/pages.cfm>)





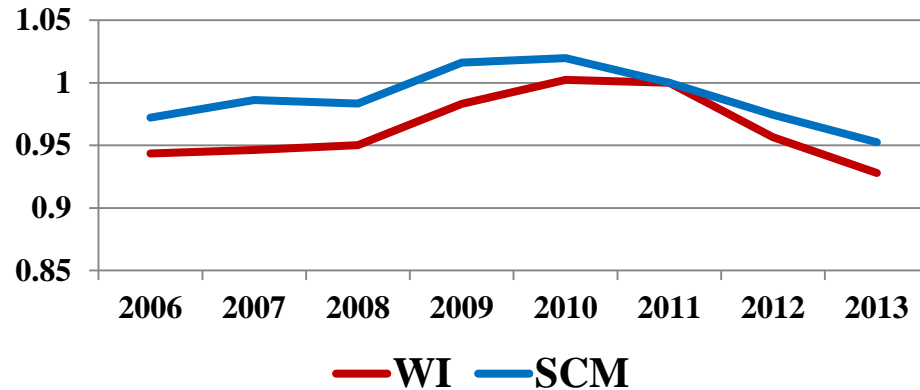
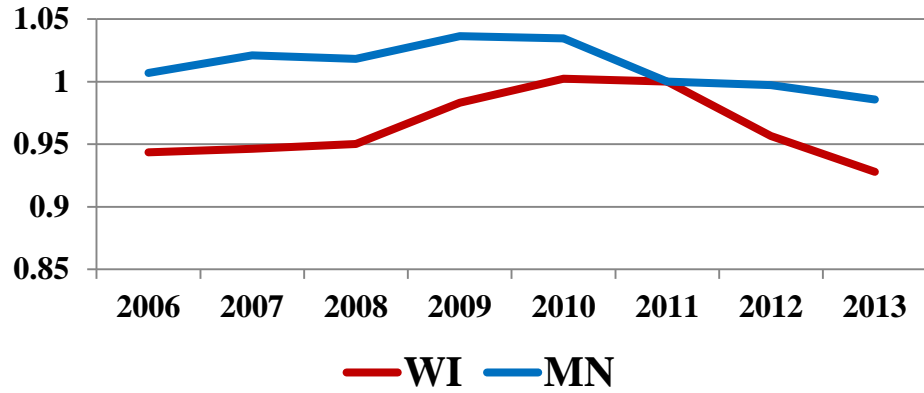
# Real Per Capita Total Construction Expenditures

(Annual Survey of Government Finances : Urban Institute-<http://slfdqs.taxpolicycenter.org/pages.cfm>)



# Real Per Capita Total Education Expenditures

(Annual Survey of Government Finances : Urban Institute-<http://slfdqs.taxpolicycenter.org/pages.cfm>)

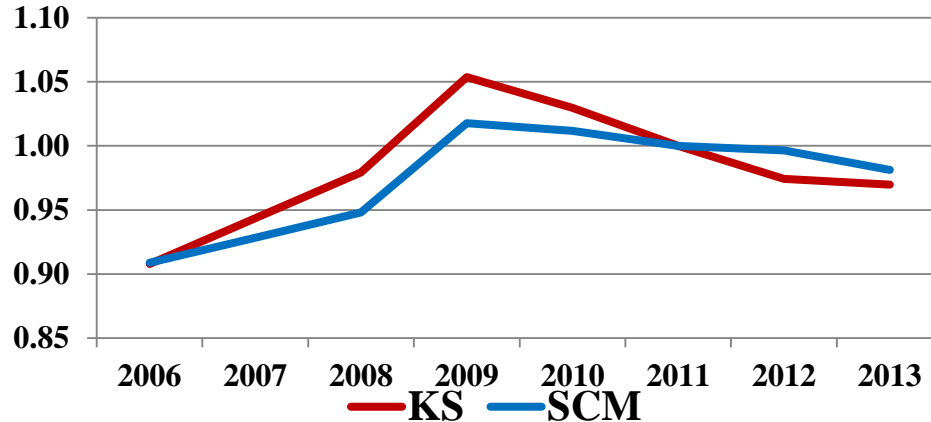
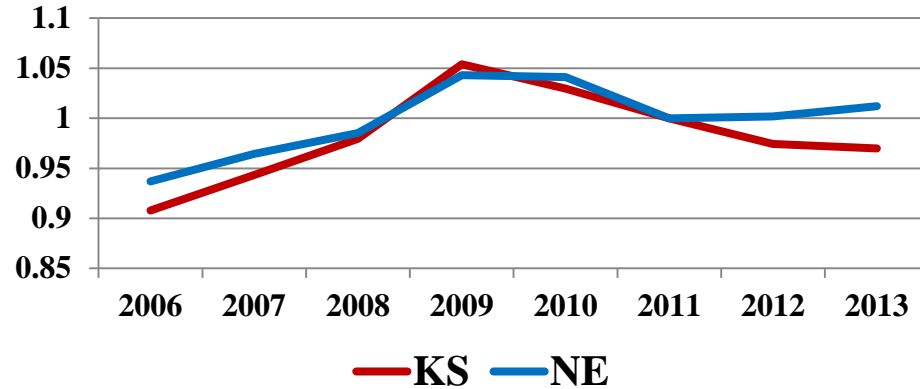


# Policies of Kansas SCM States

- **South Dakota:** still considering Medicaid expansion; modest cuts in sales and use taxes, offset by increased fees (2012); made a temporary tourism tax increase of 0.5 percent permanent (2013/2014);
- **Iowa:** expanded Medicaid under alternative plan; restructured personal income tax (\$249.2 million) for FY 2013
- **Utah:** rejected Medicaid expansion

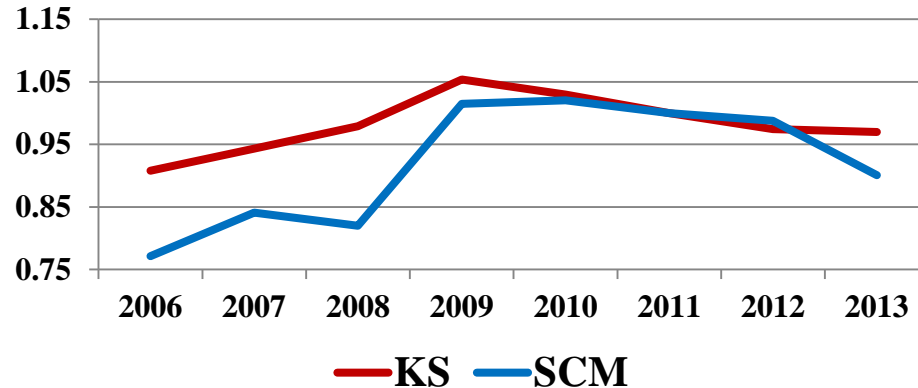
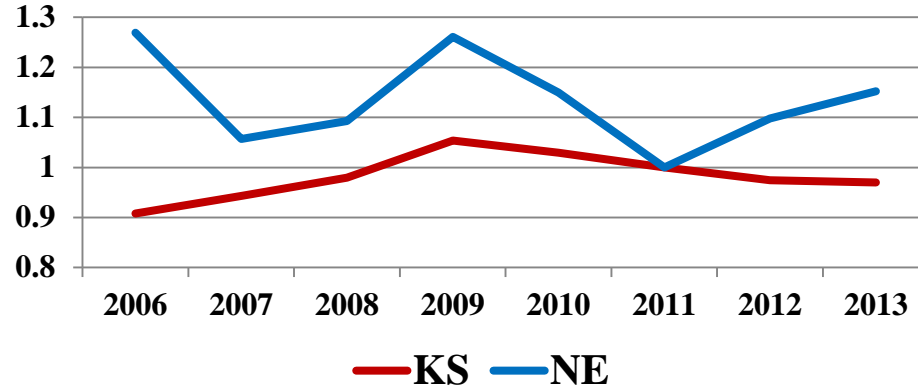
# Real Per Capita General State and Local Expenditures

(Annual Survey of Government Finances: Urban Institute-<http://sldqs.taxpolicycenter.org/pages.cfm>)



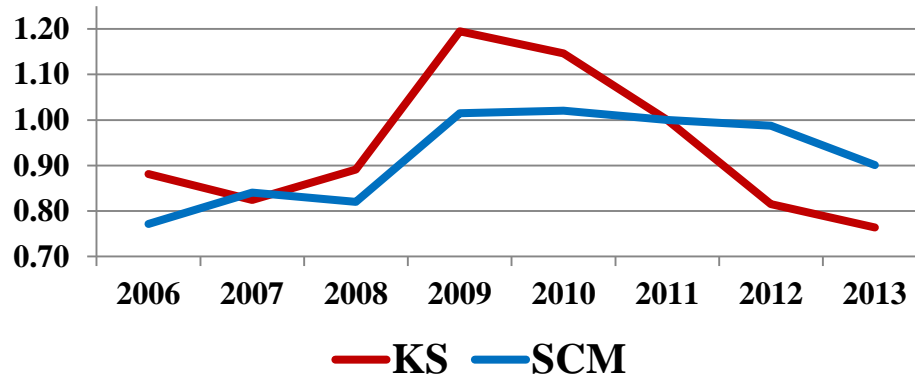
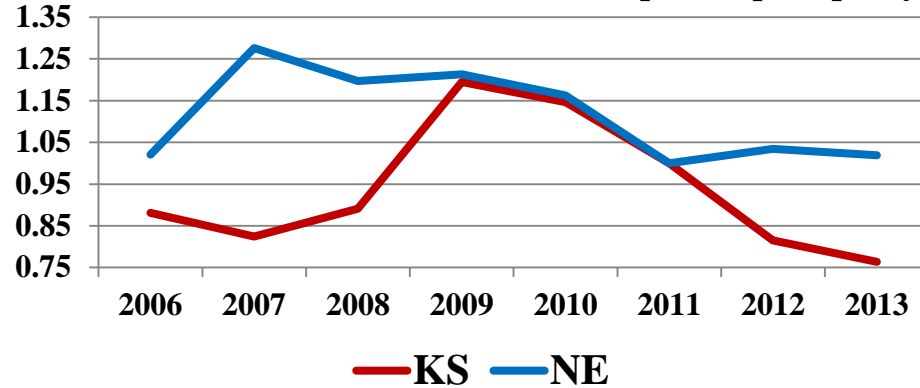
# Real Per Capita Total Highway Capital Outlays

(Annual Survey of Government Finances : Urban Institute-<http://slfdqs.taxpolicycenter.org/pages.cfm>)



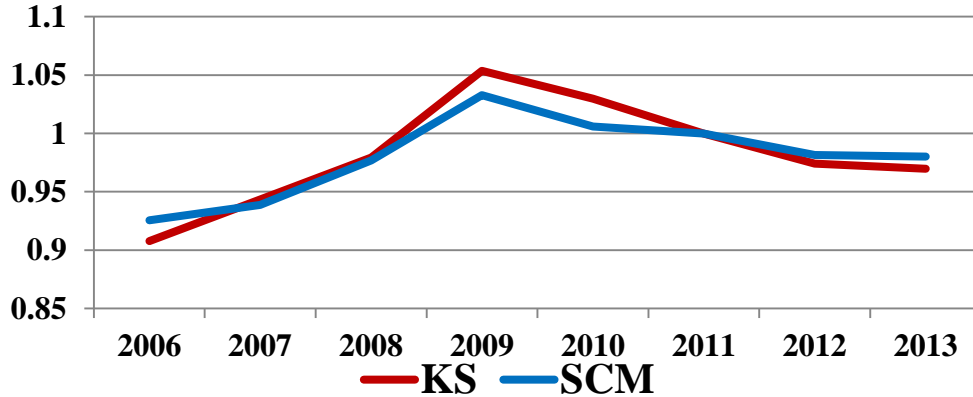
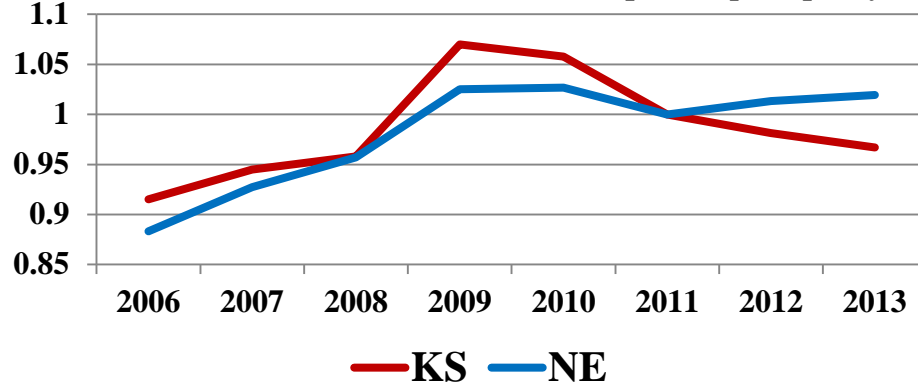
# Real Per Capita Total Construction Expenditures

(Annual Survey of Government Finances : Urban Institute-<http://slfdqs.taxpolicycenter.org/pages.cfm>)



# Real Per Capita Total Education Expenditures

(Annual Survey of Government Finances : Urban Institute-<http://sfdqs.taxpolicycenter.org/pages.cfm>)



# Conclusions

- Kansas and Wisconsin state tax cuts led to reductions in tax revenues at current rates, leading to spending cuts; i.e., there were insufficient supply-side effects to maintain tax revenue collections and likely negative short-term demand effects
- Kansas and Wisconsin experiments do not appear to be working in the short run (Kansas-Nebraska shift-share and border county questions Kansas disadvantage somewhat)
- Potentially harmful in long run if spending drops below optimal levels in terms of growth and prosperity
- Need for more evidenced-based policy, policy making based on ideology alone more likely doomed to failure
  - Examine several indicators (Partridge and Rickman, 2003) and use alternative empirical approaches



- Slowing growth and increasing income inequality worldwide
  - Automation
  - Demography
  - Globalization
  - High levels of government debt
- Politicians often offering simple solutions to complex problems
- Will be all the greater need for regional scientists to be engaged in the formulation and implementation of information-based policy!

Thank you