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# Oklahoma Economic Outlook 2016

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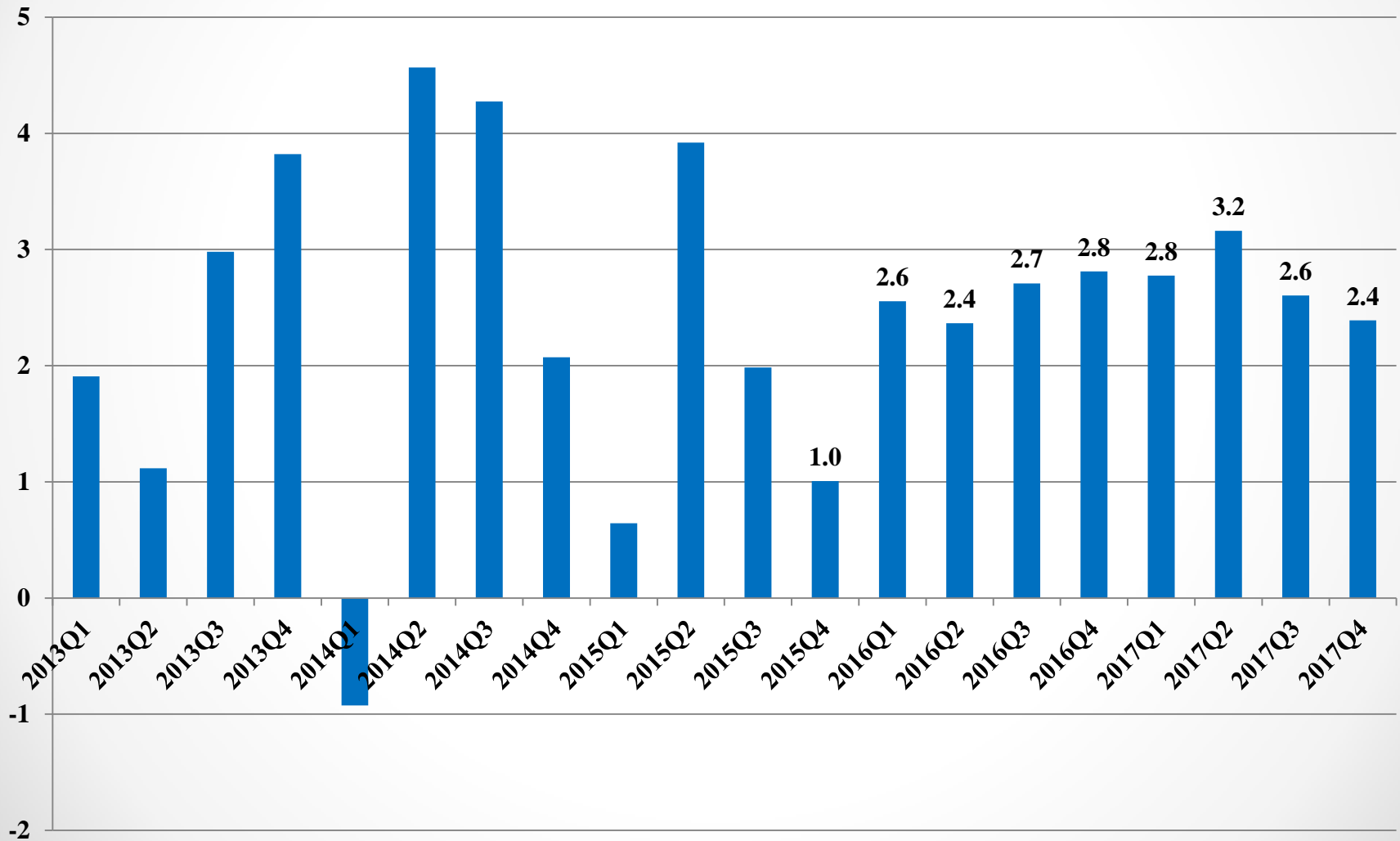


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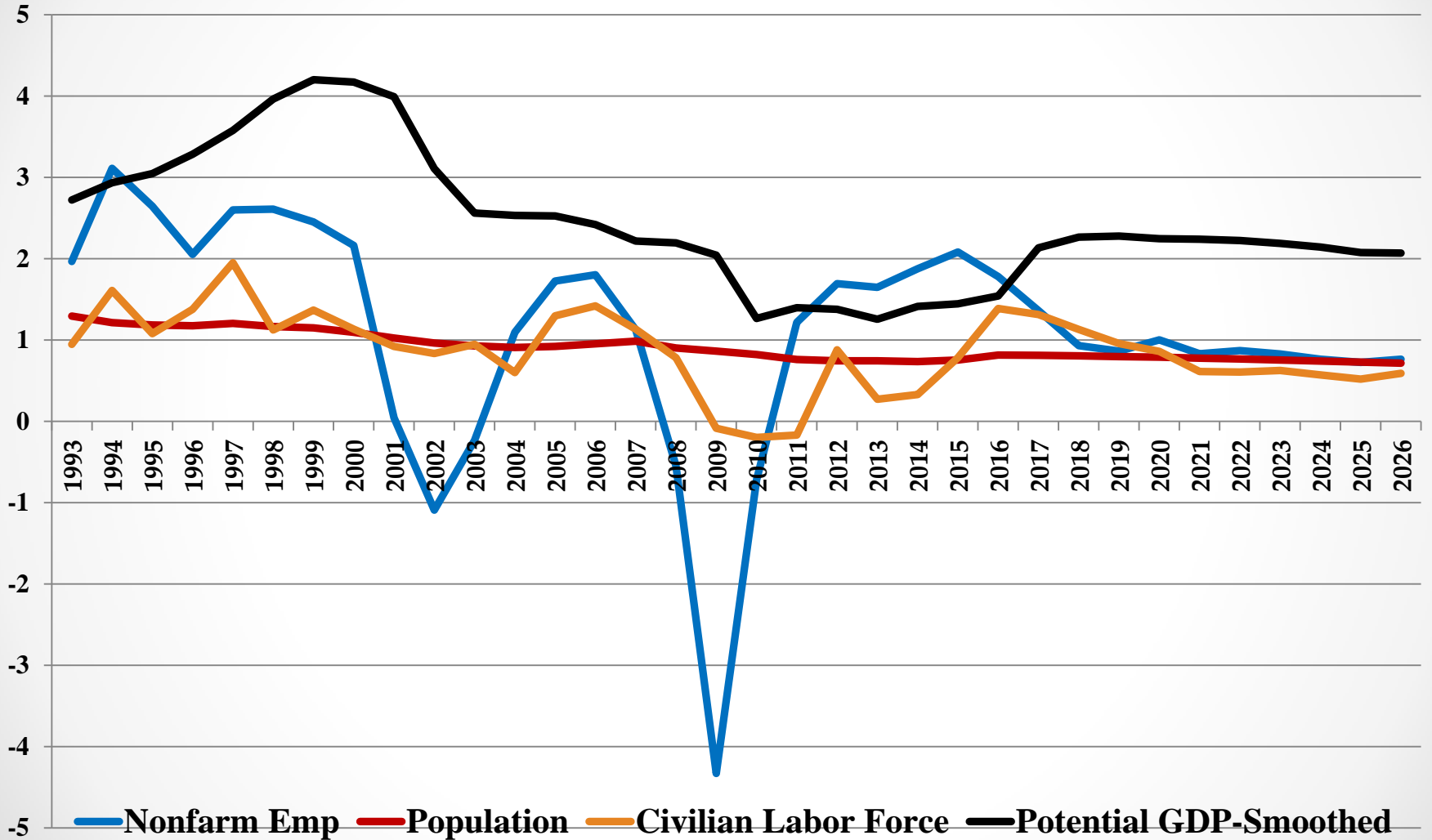
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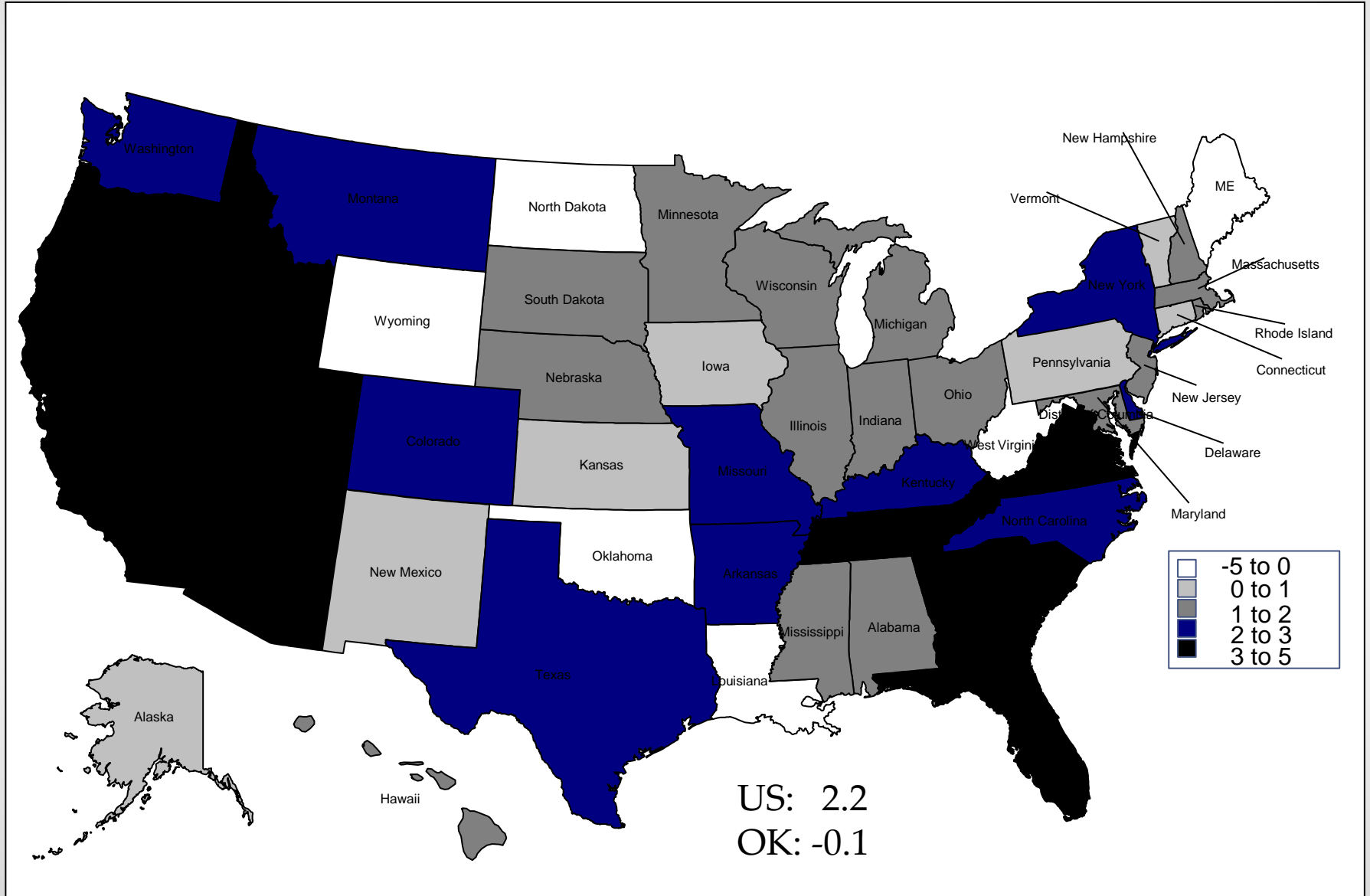
# U.S. Real Gross Domestic Product Growth (%): IHS Global Insight Forecast (March, 2016)



# U.S. Potential GDP Growth (%): Population and Labor Force Growth Constraints (IHS Global Insight, Inc.)



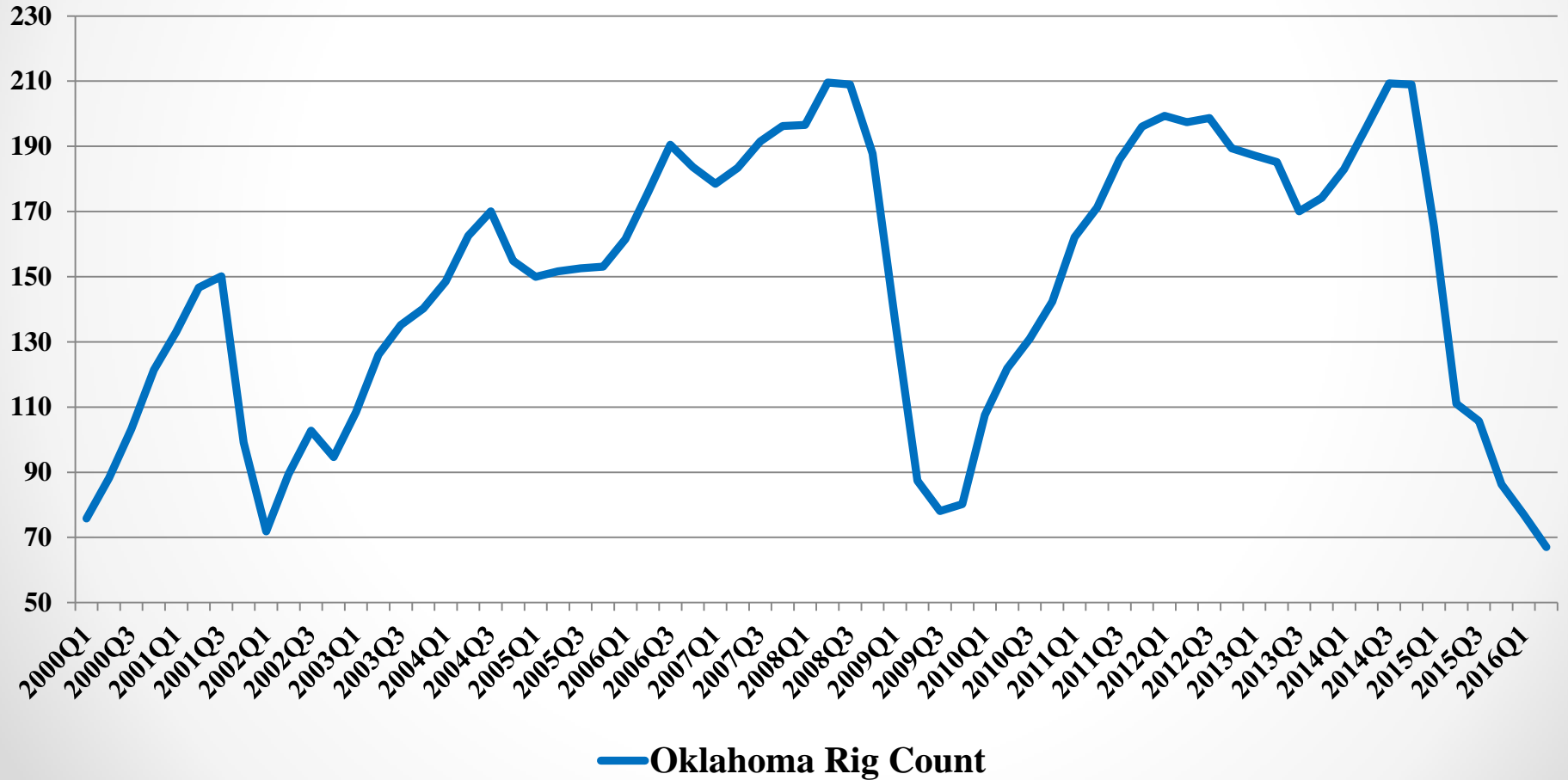
# QCEW 3<sup>rd</sup> Quarter: 2014-2015 Total Employment Growth Rates (%)



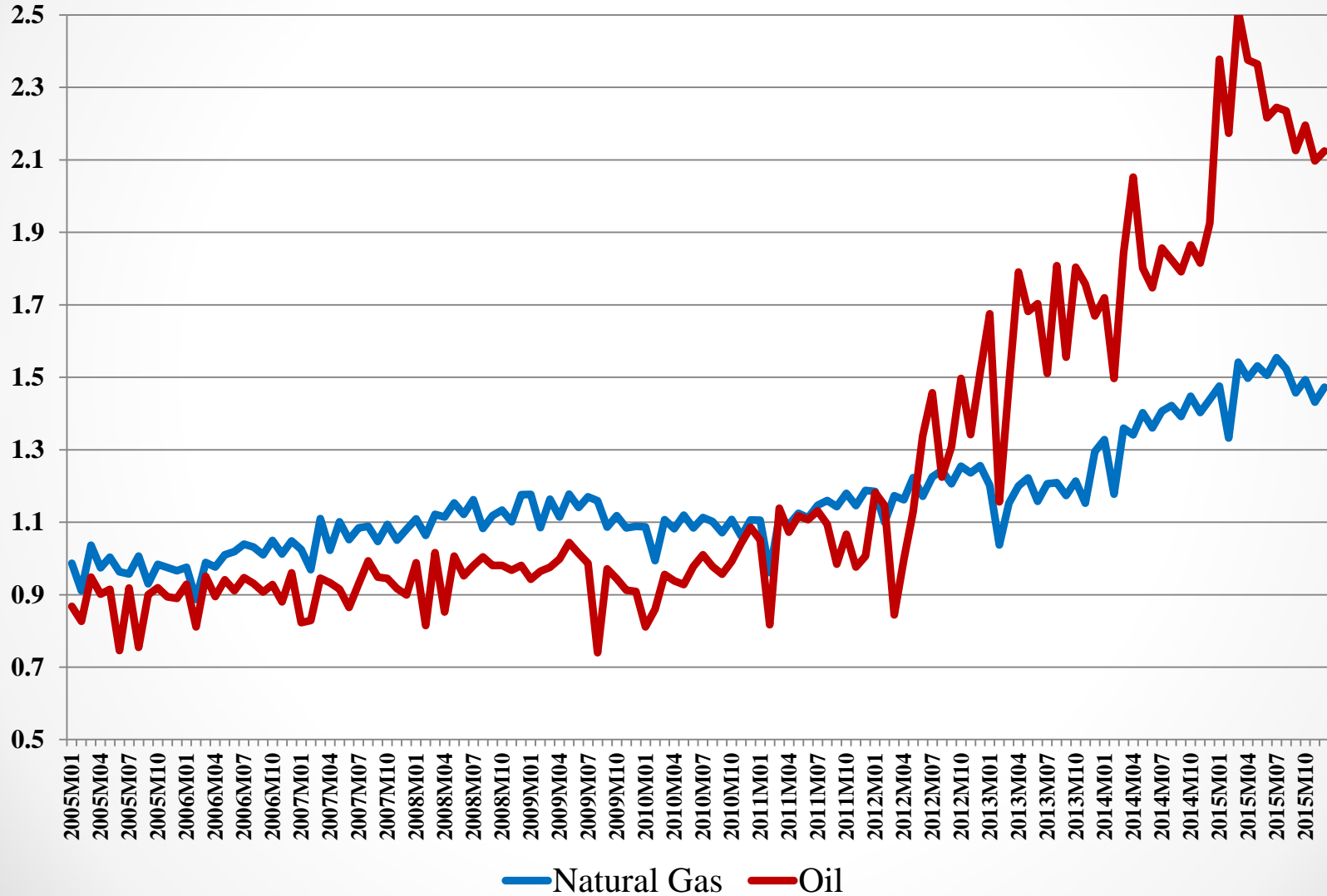
## Employment Growth Patterns (QCEW 3<sup>rd</sup> Quarter 2014-2015)

- **Energy** states have 2.2 percentage points **lower** employment growth on average (AK, CO, LA, MT, ND, OK, TX, WV, WY)
- **0.5** percentage point faster growth per change in **amenity rank** on a 1-7 scale by USDA Economic Research Service:
  - CO-average amenity rank 5.4; OK-average amenity rank 3.7 (about U.S. average)
  - implies **0.85** percentage point **lower growth** relative to **Colorado**
- **Retirement destination** (faster growth, insignificant statistically)
- **Manufacturing** states insignificant (IL, IN, MI, OH, PA, WI)
- **Farm** states insignificant (though negative) (IA, MT, NE, ND, SD)
- More restrictive housing regulatory environment (**Wharton Residential Land Use Regulatory Index**), no effect

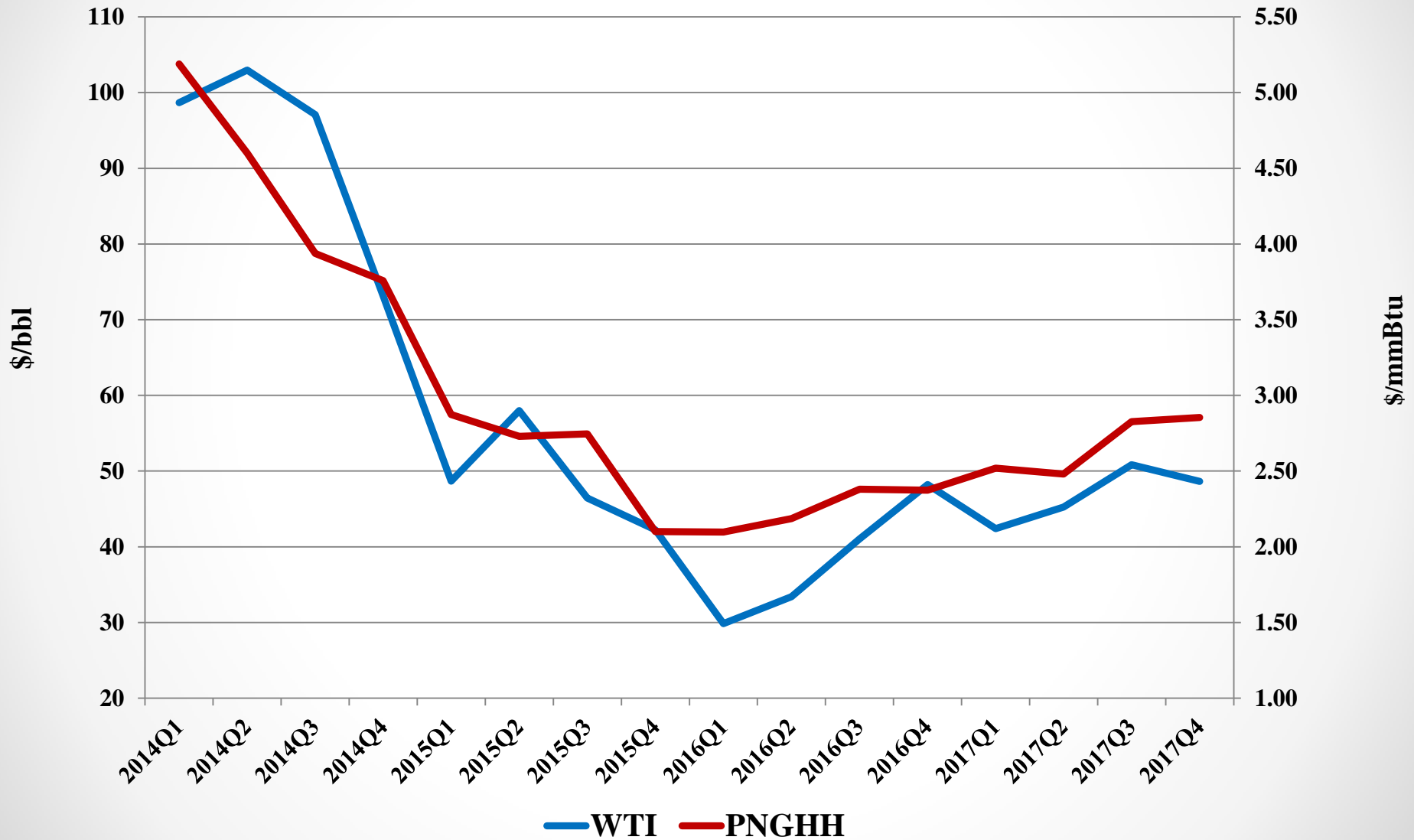
# Oklahoma Rig Count (Baker-Hughes, Inc.)



# Oklahoma Energy Production (2000:1=1)

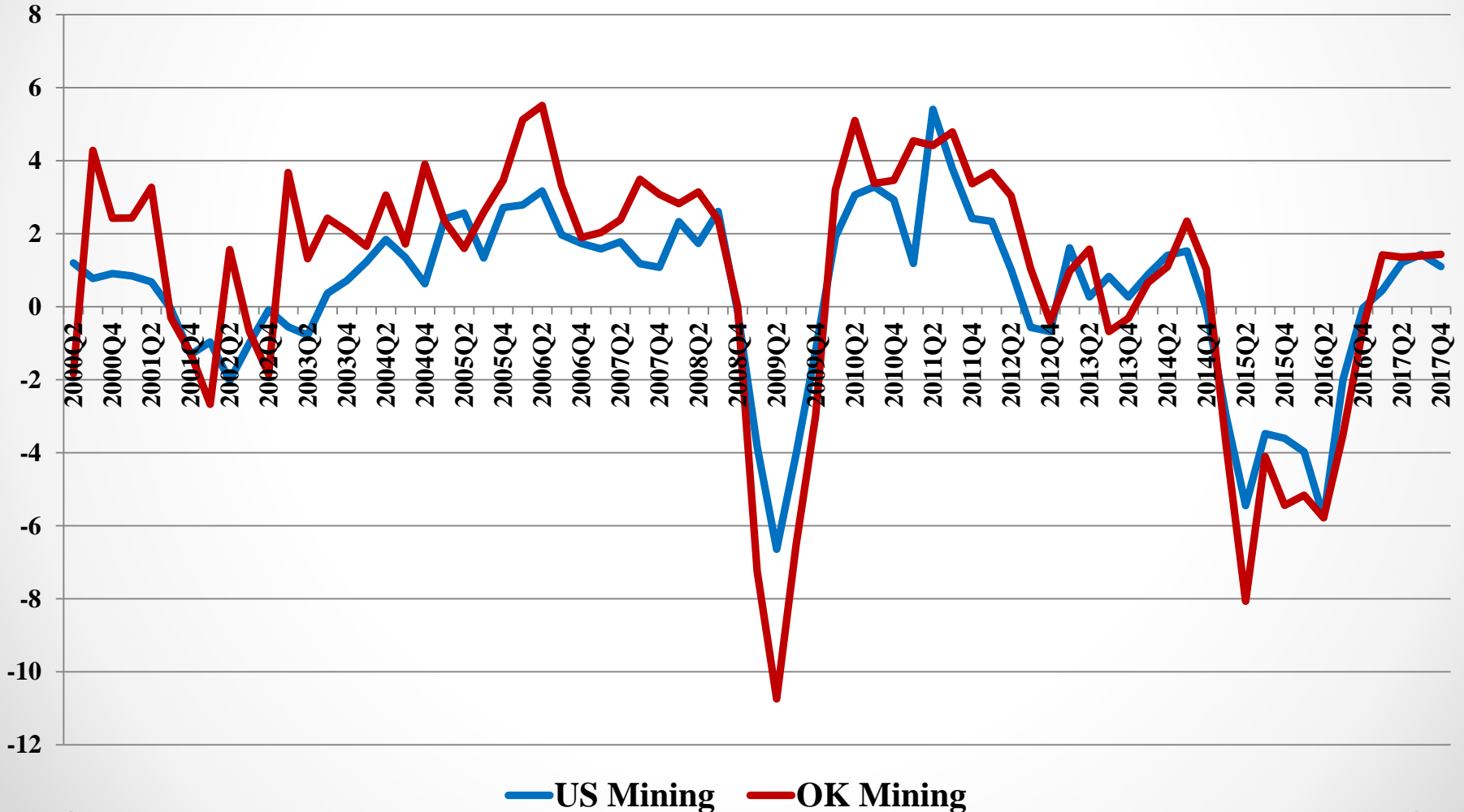


# Energy Prices (IHS Global Insight, Inc.): West Texas Intermediate Oil (WTI) and Henry Hub Natural Gas (PNGHH)

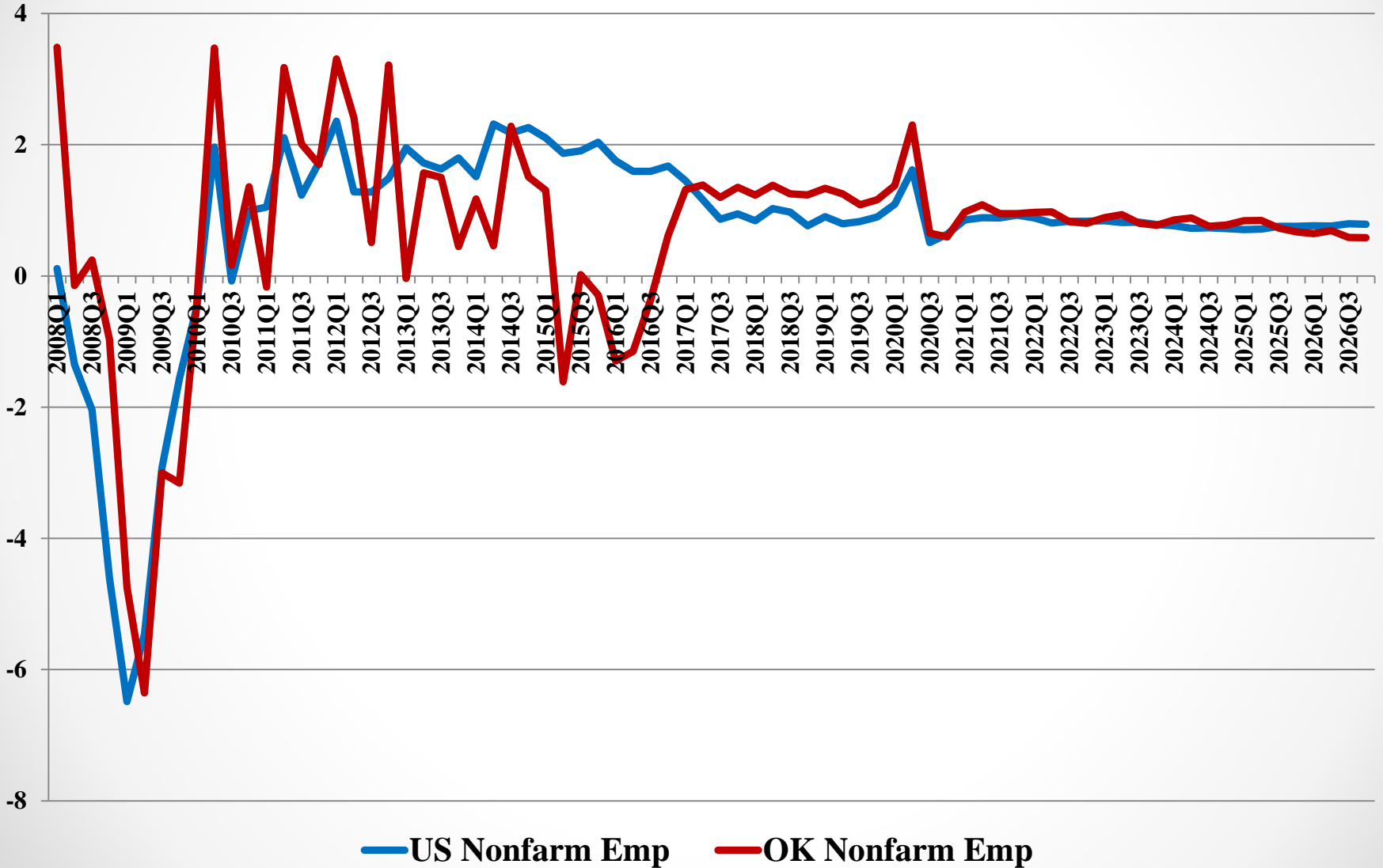




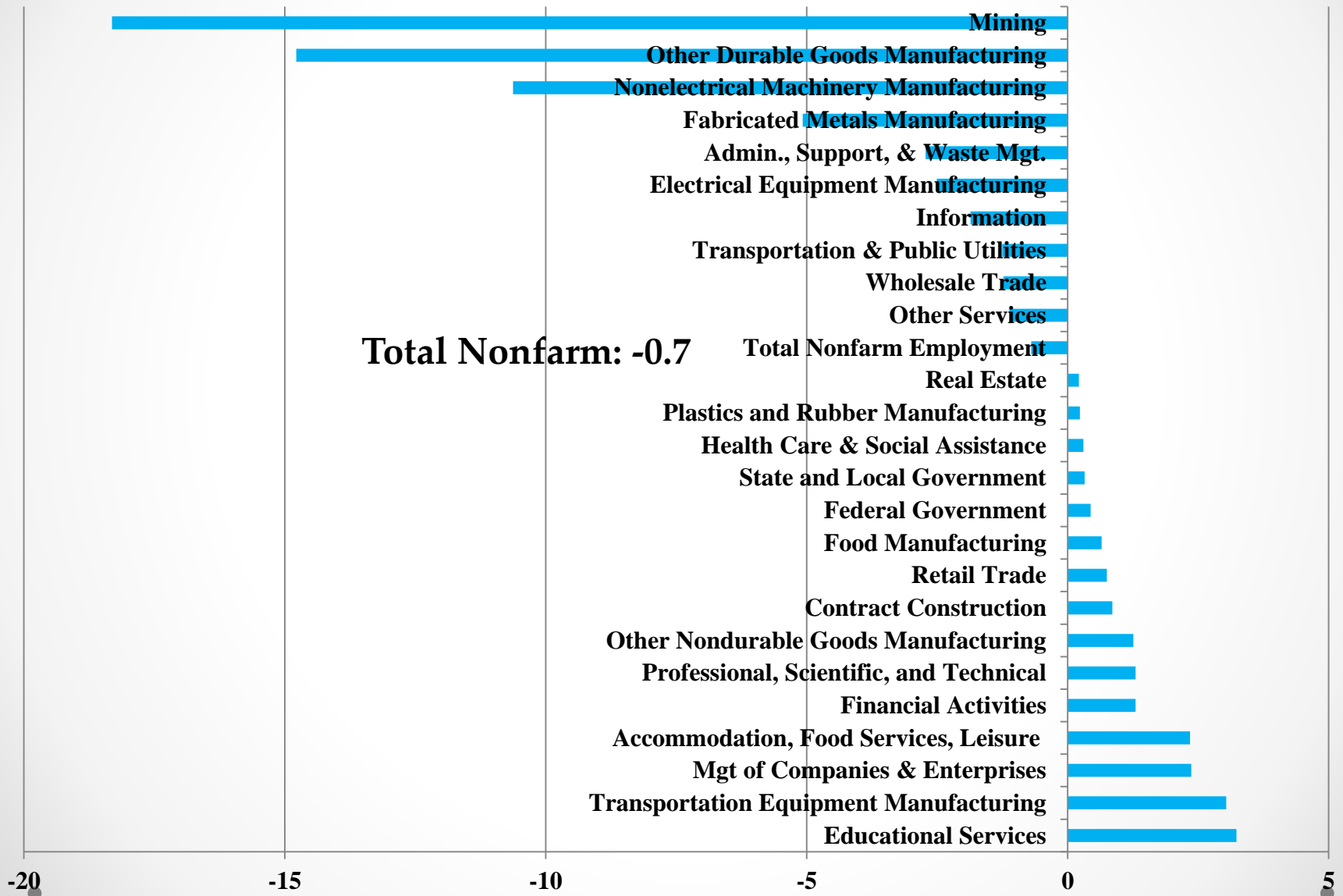
# U.S. and Oklahoma Mining Employment Growth (Annualized Rates)



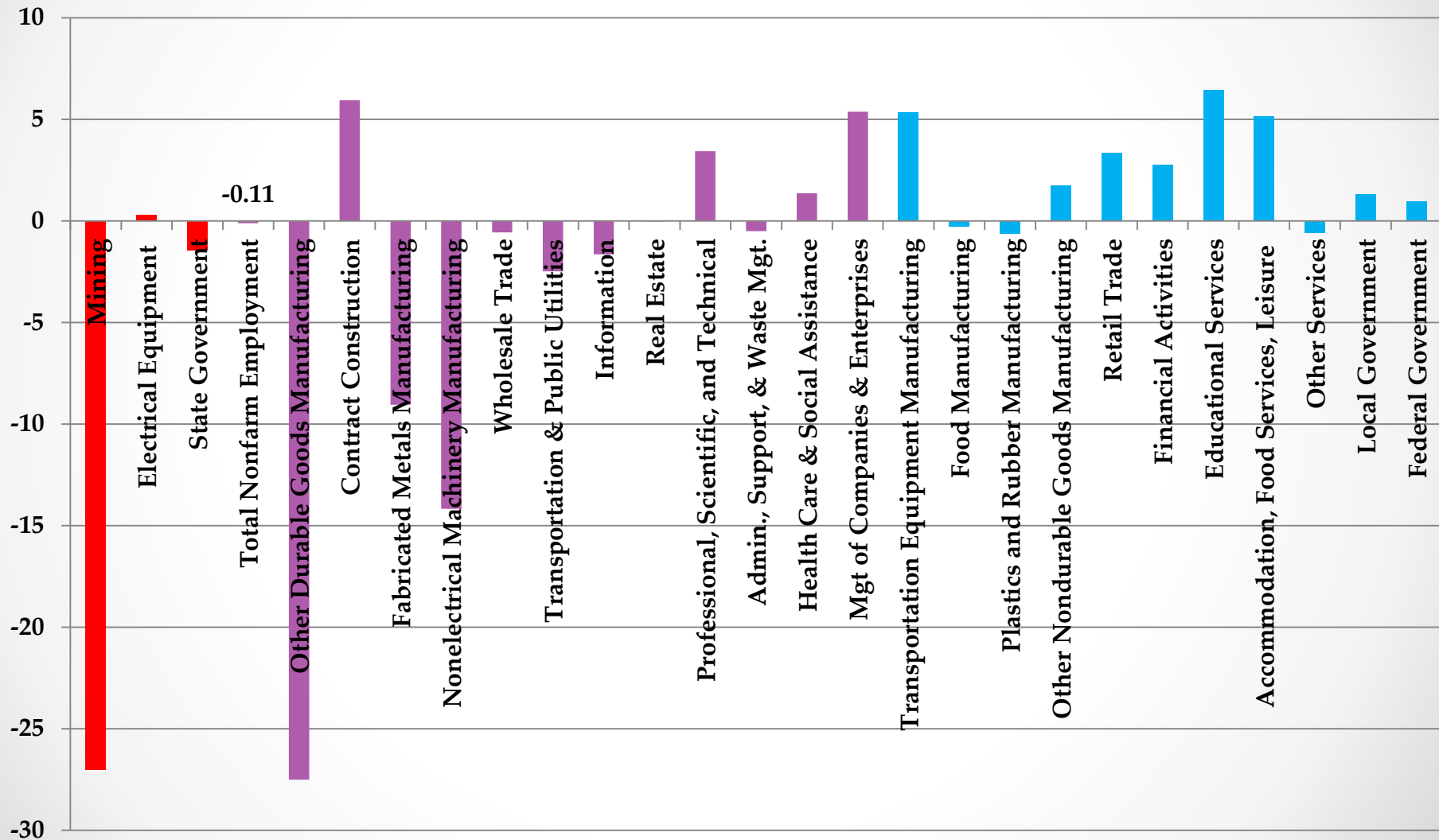
# US and Oklahoma Nonfarm Employment Growth Rates (%)



# Sector Change in Oklahoma Employment (%): 2016

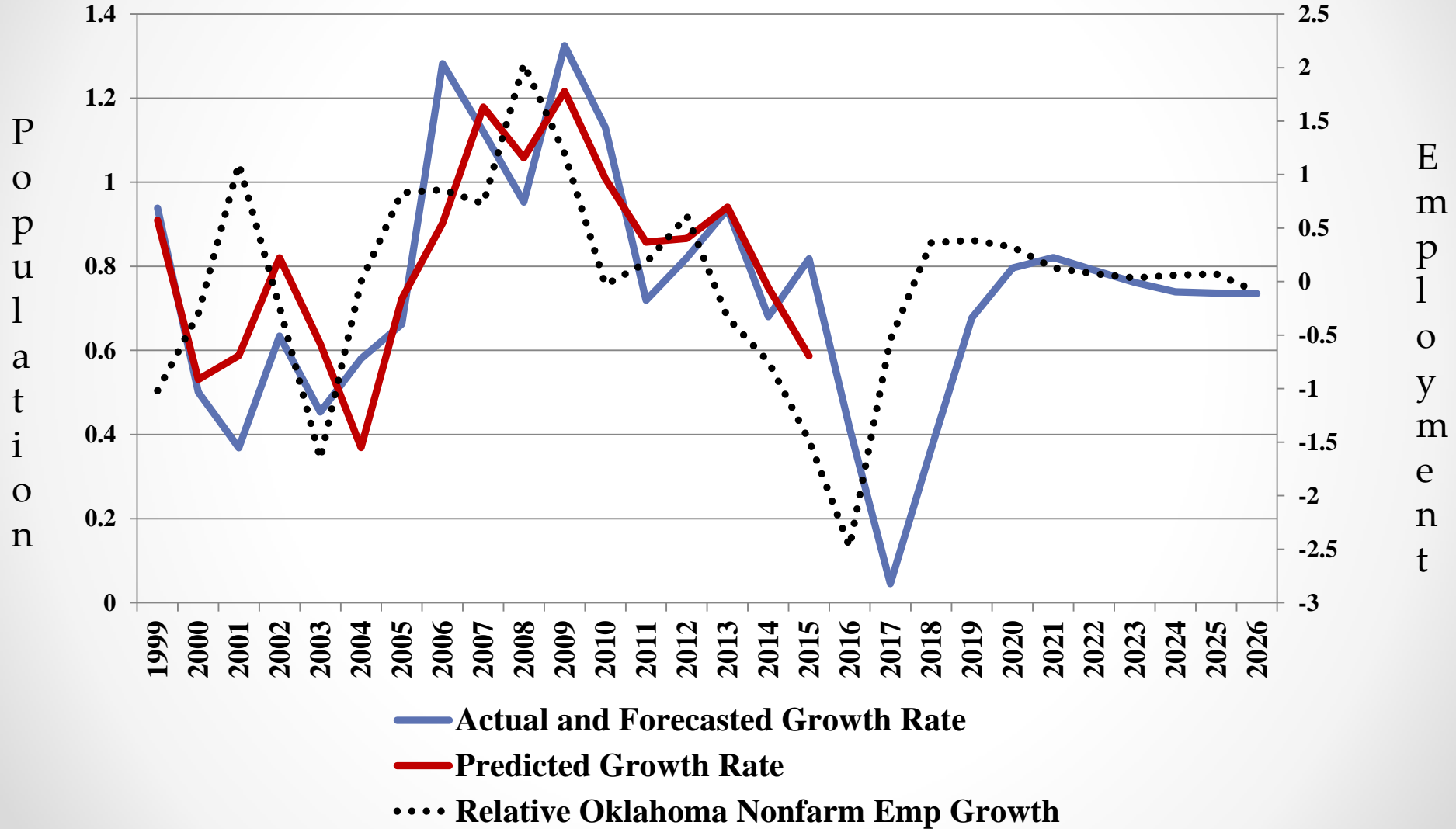


# 2014-2016 %Change Employment: Structural Vector Autoregression (SVAR) Analysis (1998:1-2015:4)

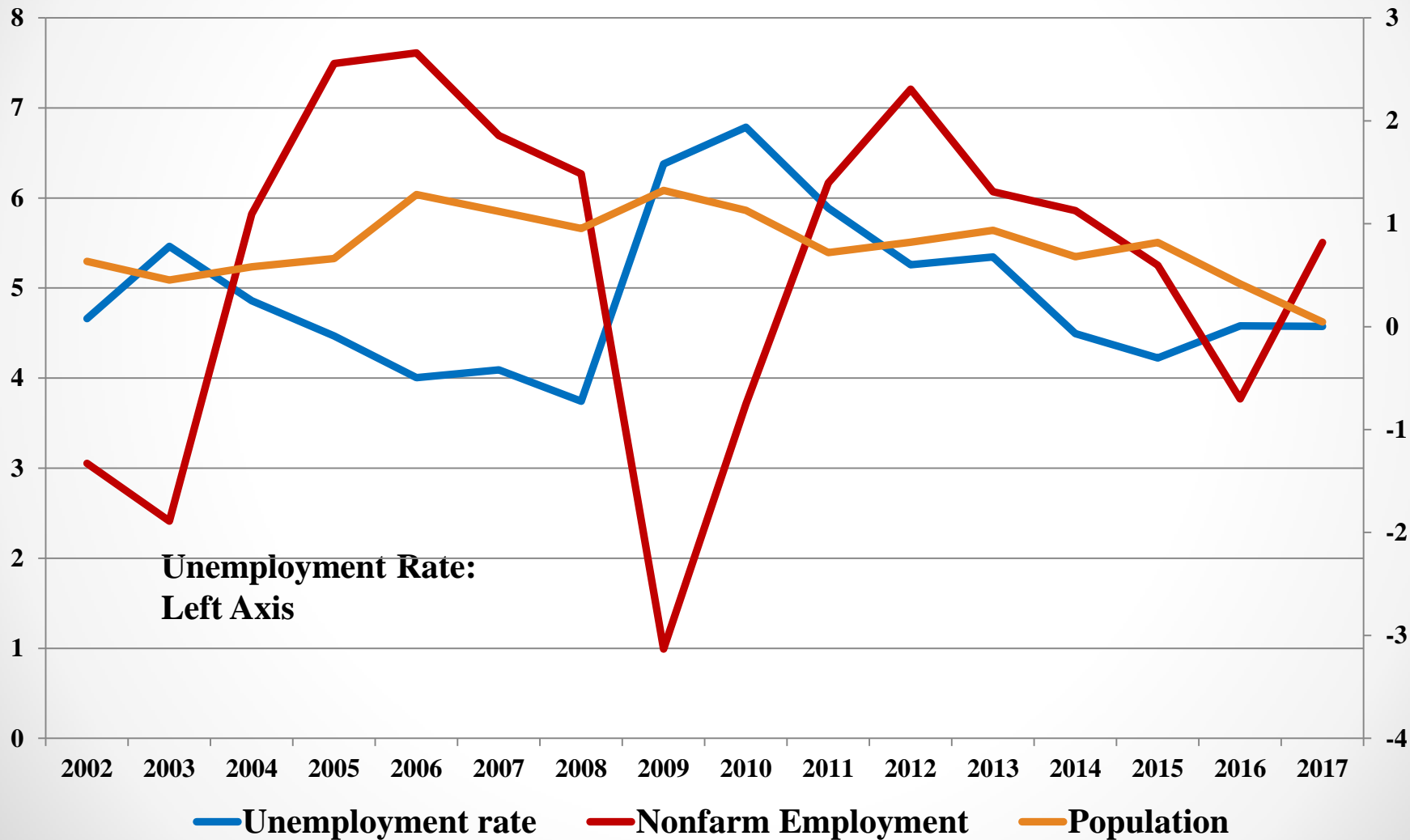


**Red: Energy Dominated; Purple: U.S. Industry Dominated; Blue: No Energy Influence**

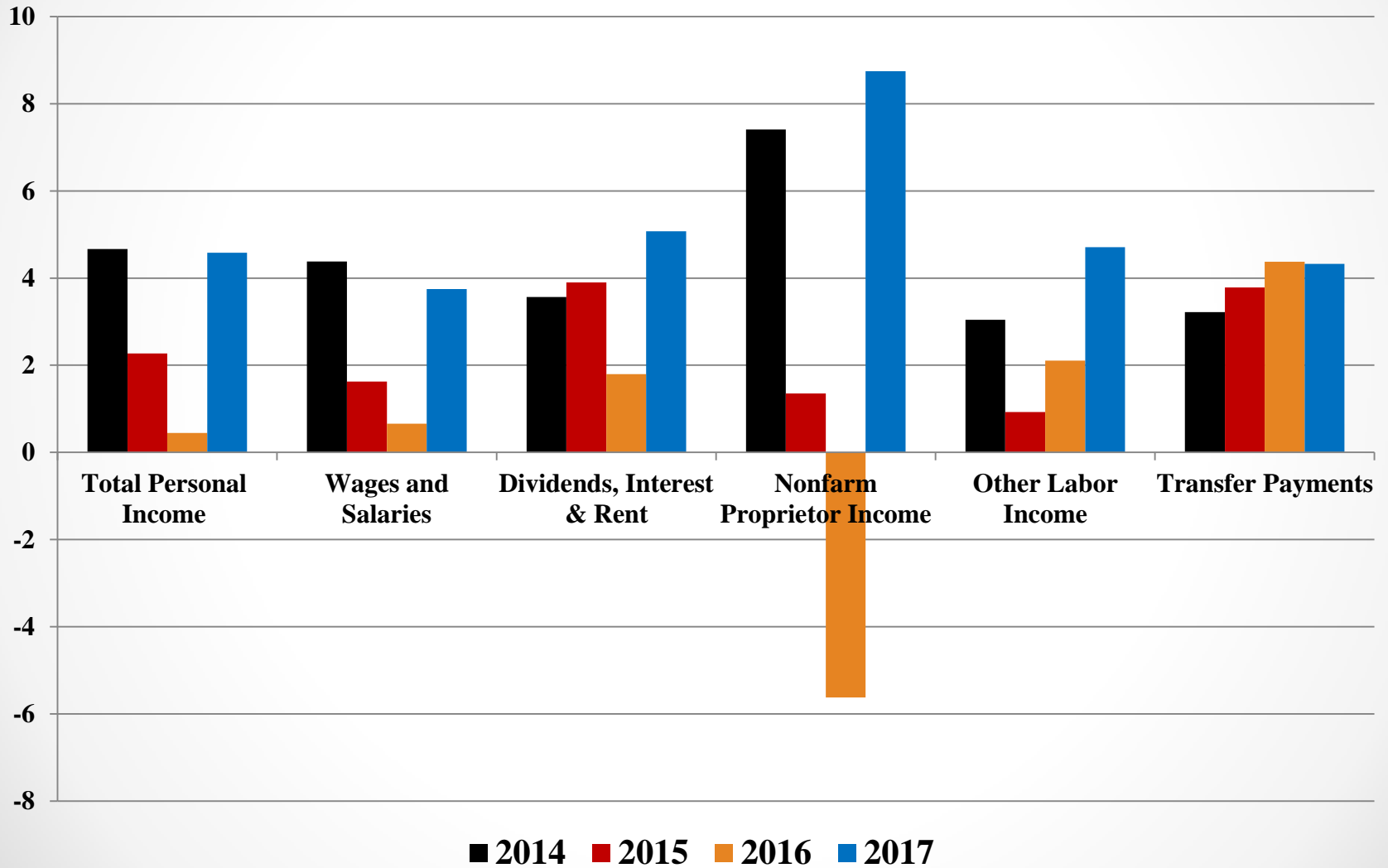
# Oklahoma Population Growth Rates (%)



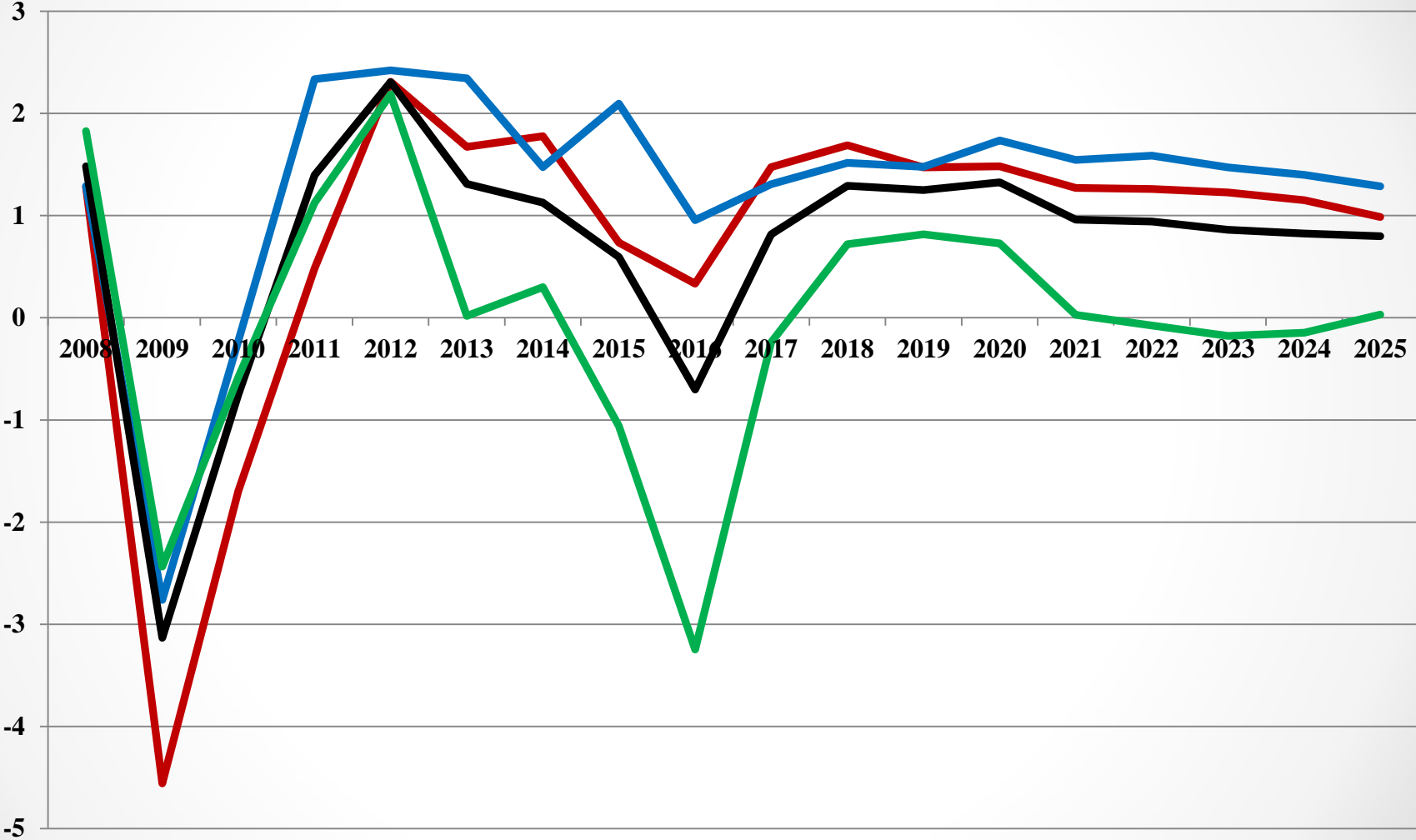
# Oklahoma Unemployment Rate (Nonfarm Employment and Population Growth Rates) (%)



# Oklahoma Personal Income and Components (%Change)



# Oklahoma Major Metro Total Nonfarm Employment Growth Rates (%)



— Tulsa — OKC — OK — ROS

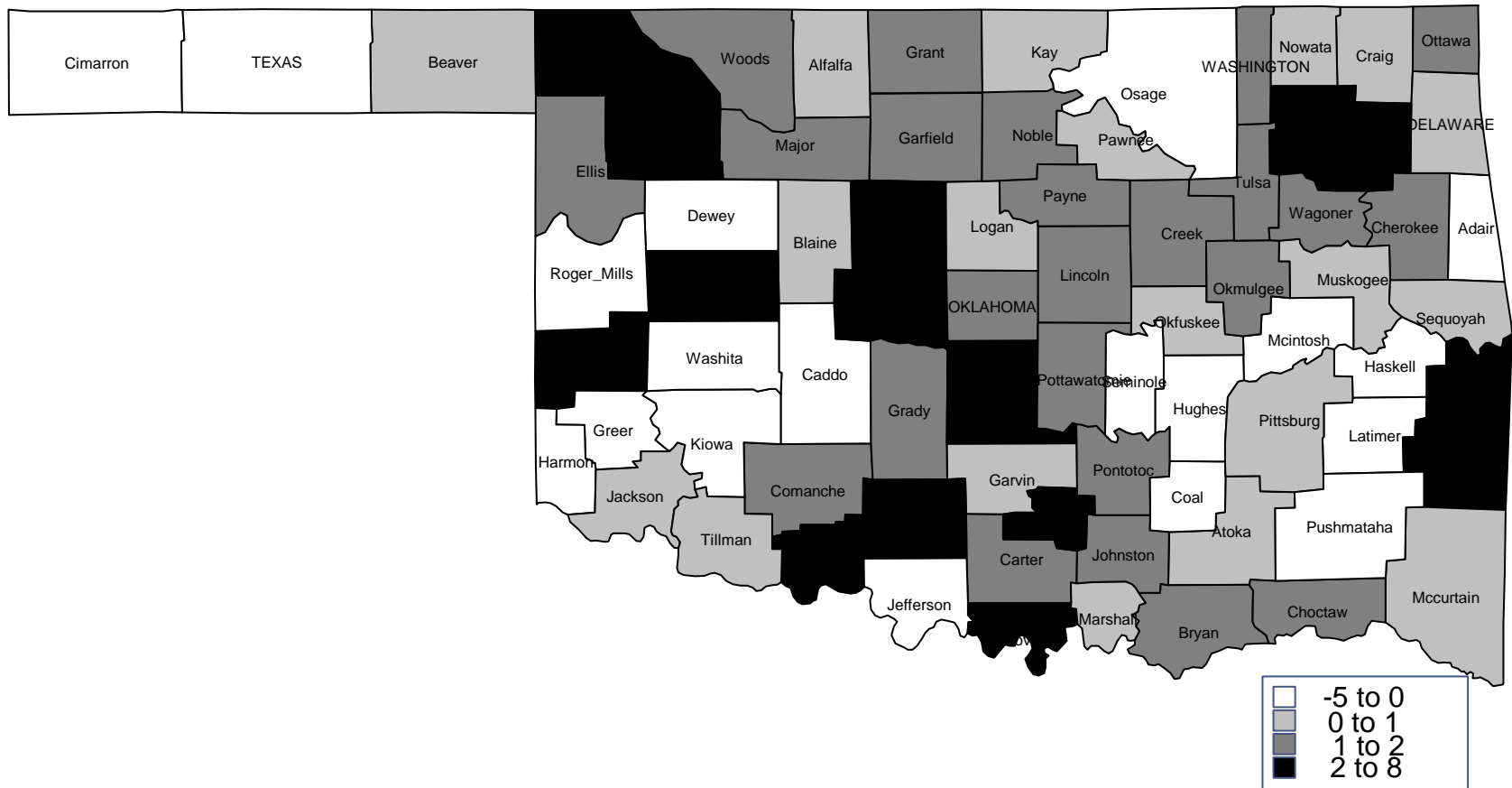


# Correlations of Oklahoma County QCEW Employment Growth between Periods

	2001-2008	2008-2010	2010-2014	2014-2016	2016-2025
2001-2008	1.00				
2008-2010	0.02	1.00			
2010-2014	0.23	0.12	1.00		
2014-2016	0.45	0.01	0.32	1.00	
2016-2025	0.82	0.23	0.61	0.57	1.00

- Pattern during expansion (2001-2008) uncorrelated with that during recession (2008-2010) ( $r=0.02$ )
- 2001-2008 patterns becomes slightly correlated with 2010-2014 ( $r=0.23$ ), increasingly so with 2014-2016 ( $r=0.45$ ) and highly correlated with 2016-2025 ( $r=0.82$ )
- Expectation is past growth patterns to re-emerge in the long-run

# 2015-2016 Forecasted Employment Growth (%)



# 2015-2016 Analysis (QCEW % Change)

County	2014-2015	2015-2016
All Counties (unweighted average)	0.57	0.66
Oklahoma County	2.67	1.71
OKC Metro	1.25	1.89
Tulsa County	2.36	0.98
Tulsa Metro	0.82	1.12
Lawton Metro	1.96	1.17
Nonmetro-Metro Adjacent (25 counties)	0.79	0.44
ERS Farm (15 counties)	0.64	-0.21
ERS Mining (6 counties)	0.77	1.34
Fracking (16 counties)	1.19	0.22
ERS Manufacturing (12 counties)	1.31	1.59
ERS Federal/State Government (14 counties)	0.92	1.27
ERS Persistent Poverty (14 counties)	-0.66	-0.70

# Forecast Risks

- Oil prices fall further, no or sluggish world cutbacks in production
- Slowing economic growth worldwide, slow growth in demand for oil and weakened U.S. economy

Thank you for your attention