



ST. CLOUD STATE  
U N I V E R S I T Y

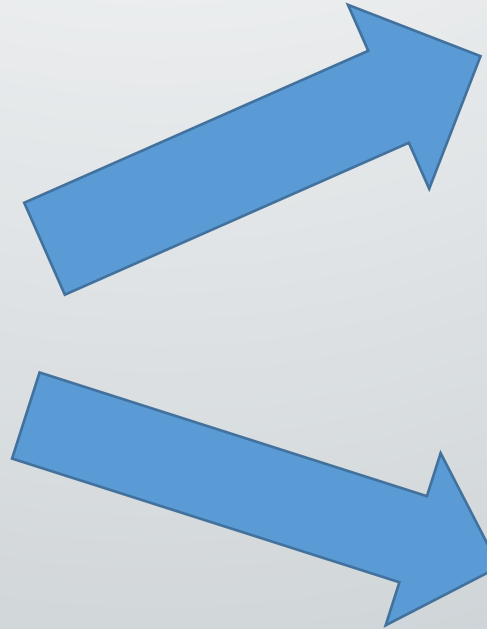
***“Does the business cycle impact  
our enrollments?”***

*King Banaian*

*Dean, School of Public Affairs*

**UNLEASH *AMAZING***

# *The opportunity cost of enrollment*

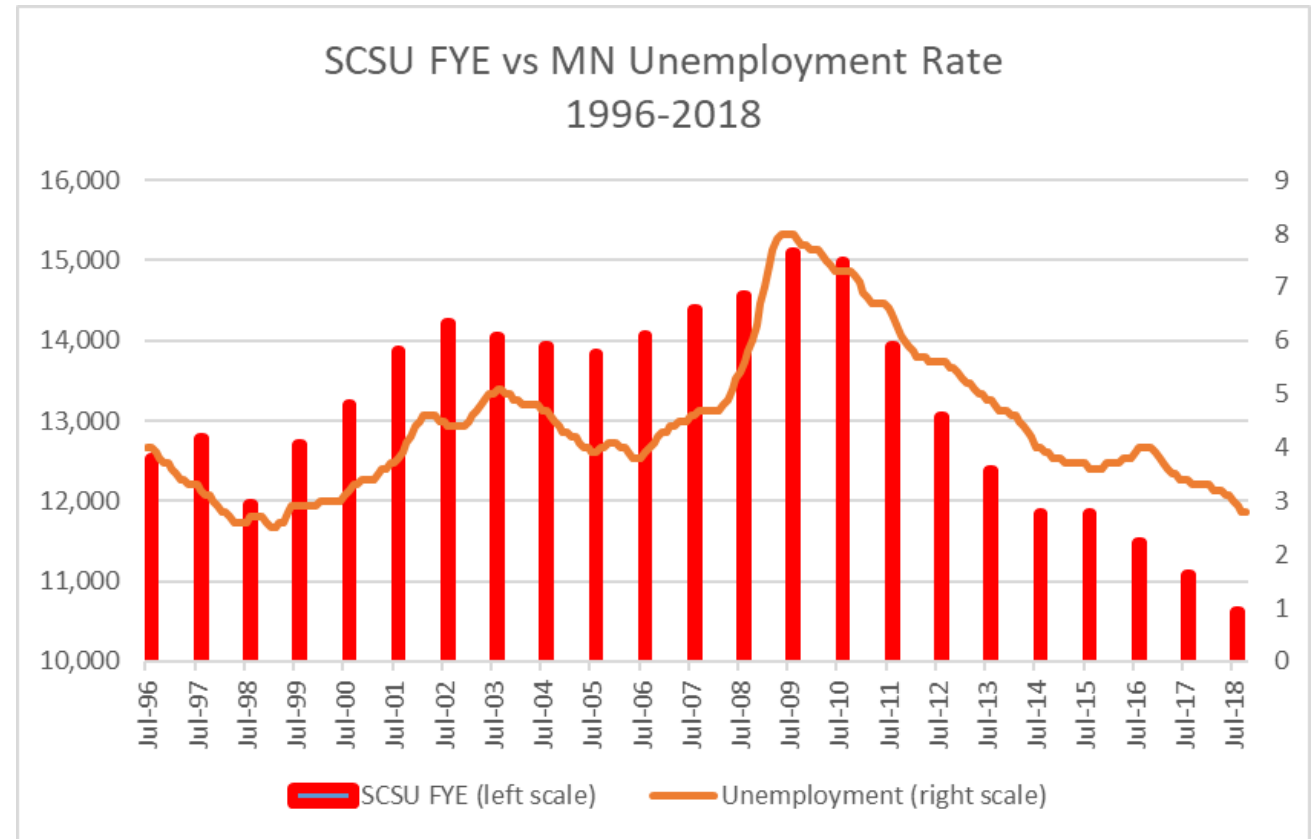


# JOBS vs ENROLLMENT

We last had this unemployment rate and this labor shortage back in the late 1990s.

Tight labor markets bid students away from classrooms.

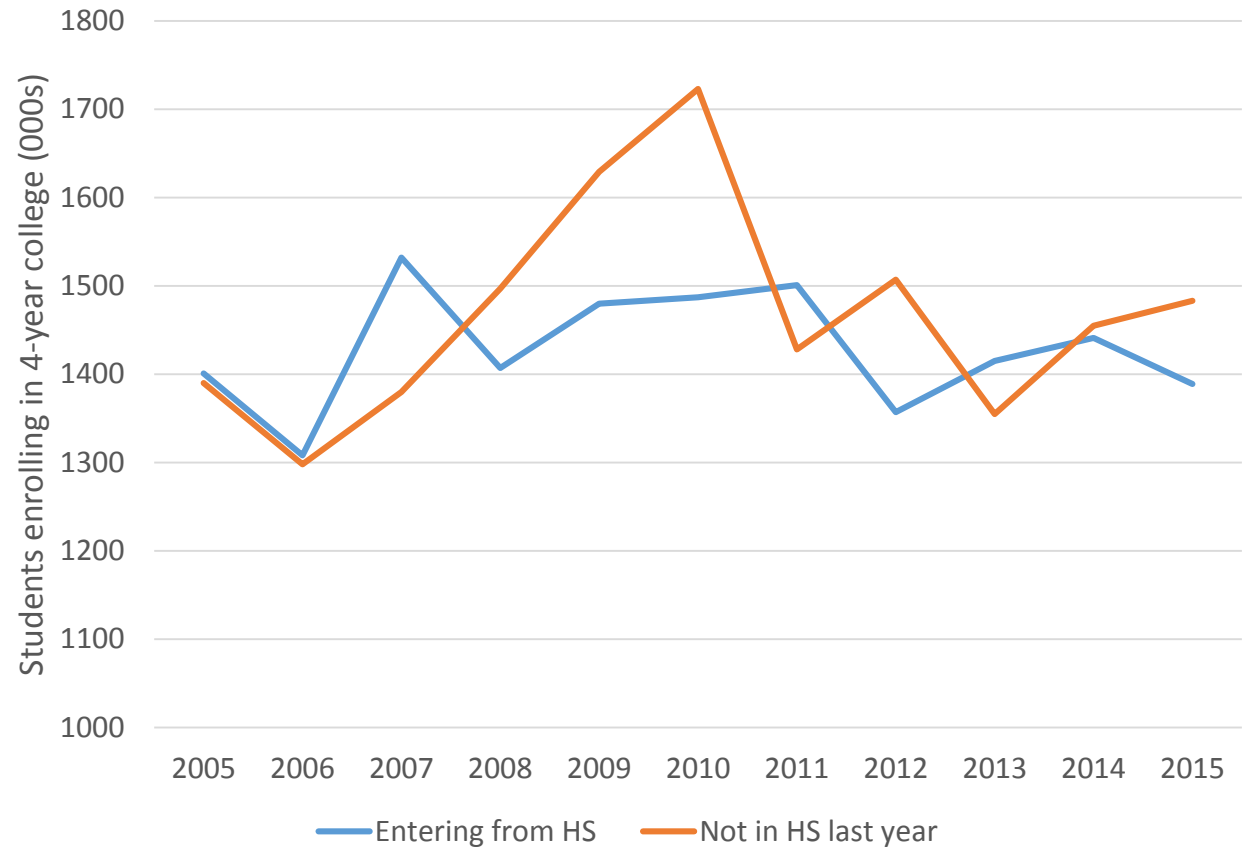
- Erik Schmidt (U.S. Census, 2018) shows postsecondary enrollment rose from 17.2m in 2006 to 20.4m in 2011 and back to 19.1m in 2015.
- Diana Barbu (Fla. St. dissertation, 2015) shows public enrollments increase 1.2% for males and 1.9% for females when the national unemployment rate increases 1%.
- Amy Gehring (DEED, 2013) finds relationship is only significant for four-year institutions, strongest in northwest Minnesota. *“More than half the variation in new enrollments for state universities can be explained by the unemployment rate.”*



The impact of the recession was more on 4-year institutions than 2-year or grad schools

*The rise was about 1.5% of all people 15-34.*

4-year college enrollment by prior year status  
(Source: Schmidt (2018))



# Modeling

- Two very naïve models
  - Pure time-series analysis (2 lags plus a trend)
  - Use unemployment rate in August and the age-18 population data (do these variable add anything?)
- One VAR model that includes other state universities
  - Impact of demographic and business cycle should affect our sister institutions
- Fitted data initially 1996-2013 for fall headcount and FYE.

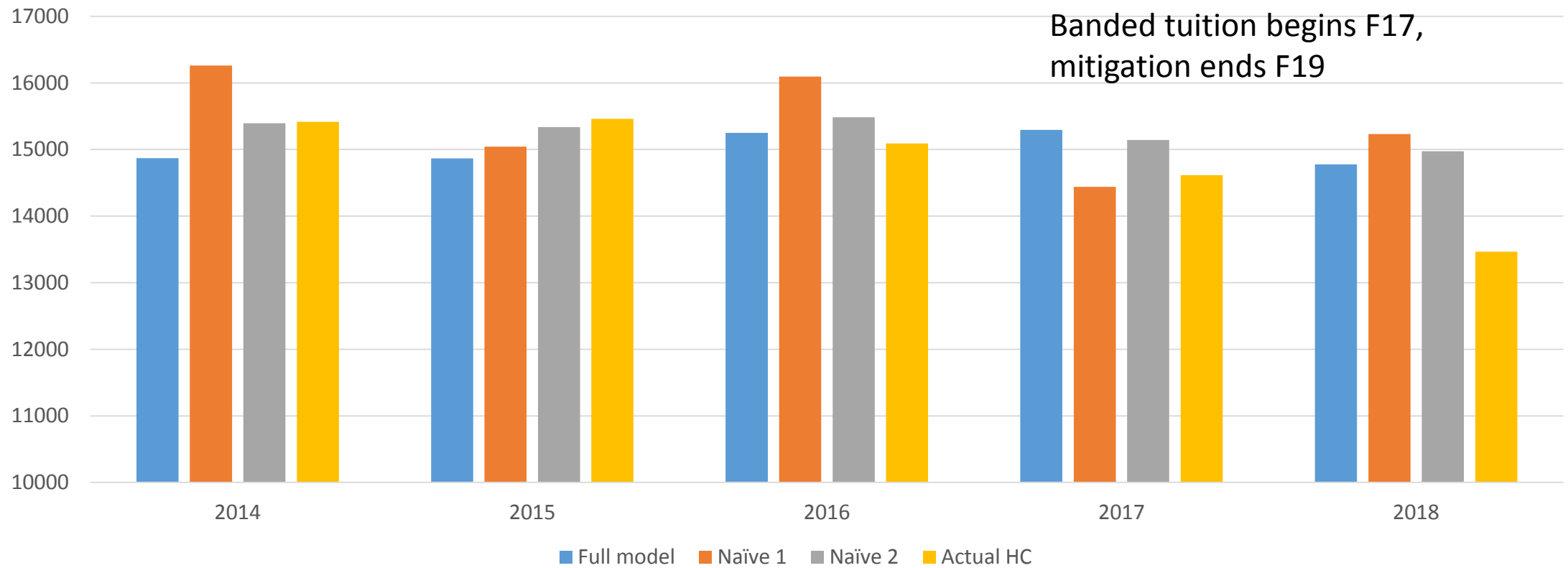
## ***Results (qualitative)***

- $R^2$  of naïve model (time series only) 0.745 for FYE, .906 for headcount
- Including unemployment and population raises it to 0.804 for FYE, .908 for HC.
  - Coefficient test strongly rejects the null hypothesis that these two variables have no effect.
- Headcount is better fit than FYE. Impact might be more on part-time students.
- Vector time series methods use many parameters but give us good fit in-sample.
- Question is out-of-sample predictiveness

# Headcount results

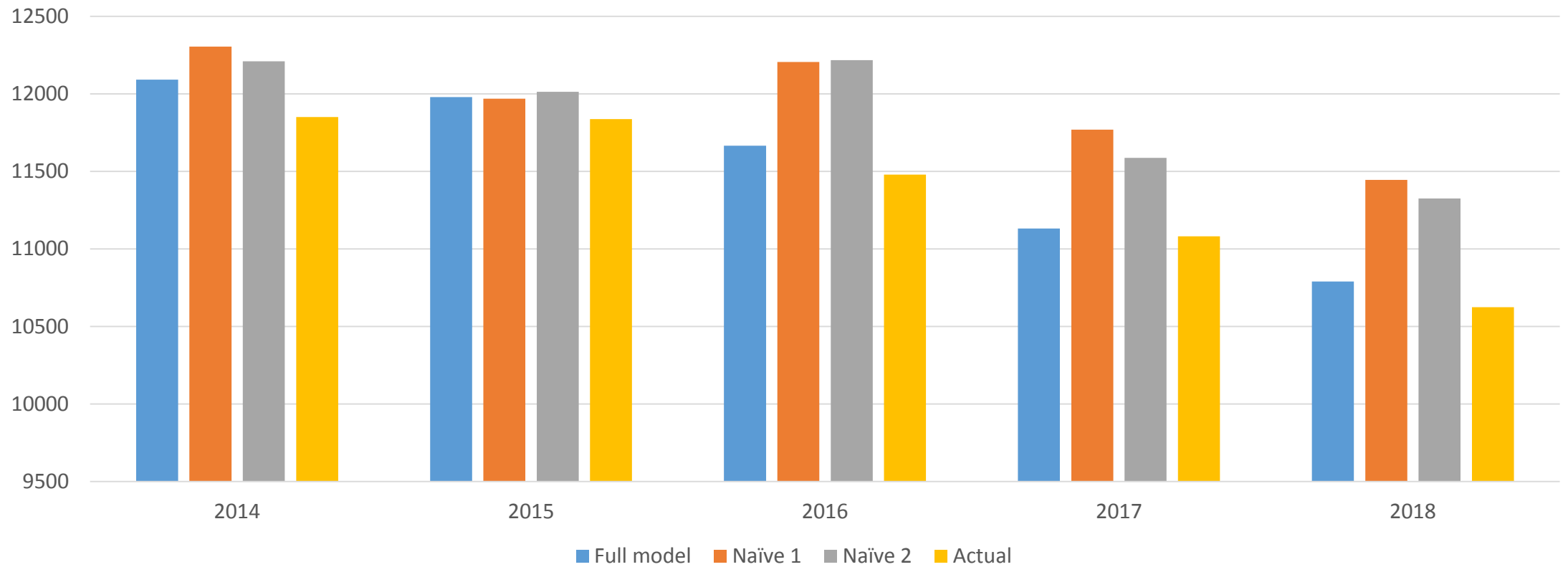
*Ex ante* models for headcount

Banded tuition begins F17,  
mitigation ends F19



# ***FYE results***

*1-step ahead forecasts of FYE*





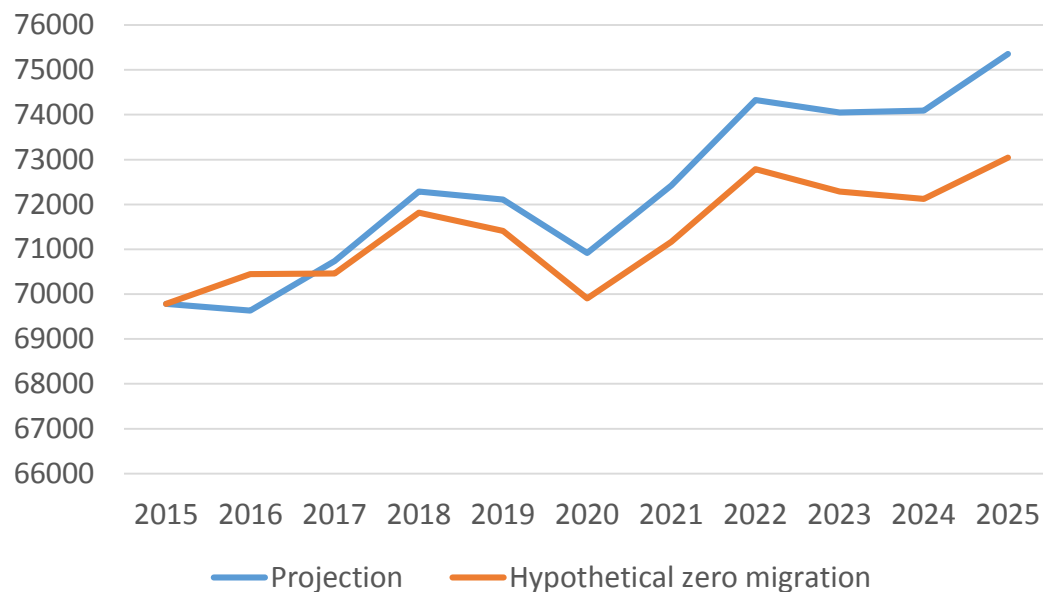
# *Impact of demographic and business cycle (in percentages)*

	Age 18 population (+1%)		Unemployment rate (+1%)	
	Headcount	FYE	Headcount	FYE
SCSU				
Without state university effects	<b>0.50%</b>	<b>0.96%</b>	<b>4.29%</b>	<b>3.70%</b>
With state university effects	<b>-0.02%</b>	<b>-0.03%</b>	<b>0.64%</b>	<b>2.77%</b>
MANKATO				
Without state university effects	<b>-0.31%</b>	<b>&lt;0.01%</b>	<b>0.99%</b>	<b>0.78%</b>
With state university effects	<b>-0.37%</b>	<b>-0.12%</b>	<b>-0.51%</b>	<b>1.08%</b>

# Impact of migration

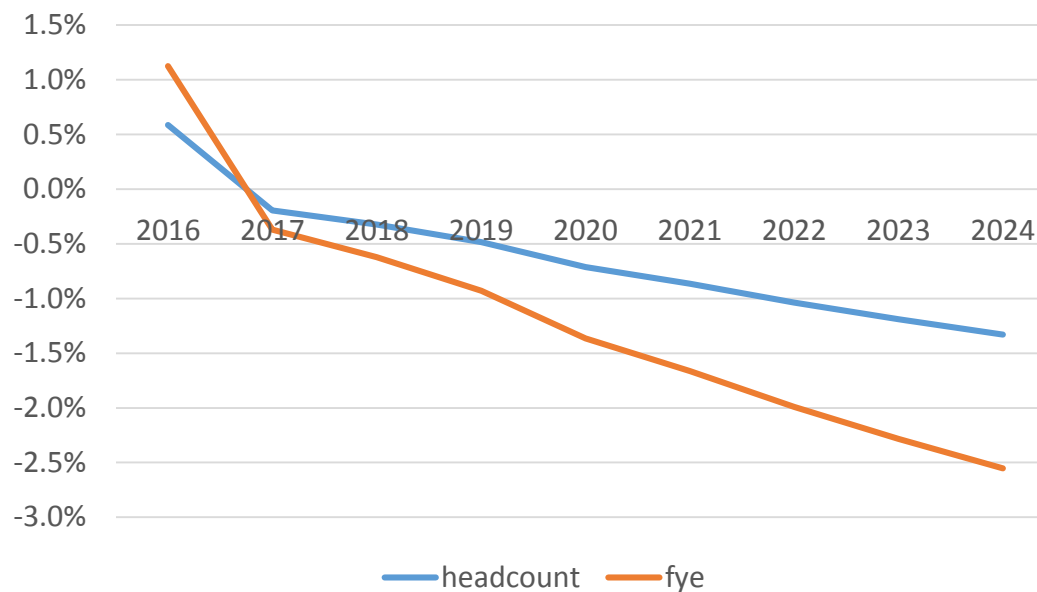
## State demographer's estimate of impact of migration on age 18 population

Impact of no-migration hypothesis on age 18 population in Minnesota



## Impact might be zero (with state university effects) but might be negative otherwise

Impact of migration on SCSU headcount and FYE (no state university effects)



# What will be next August's unemployment rate?

- August 2018 rate was 2.9%
- Forecast for Minnesota from MMB is for drop in 2019 unemployment rate from 3% to 2.4%
- Seems likely natural rate of unemployment for Minnesota is closer to 3%

<b>Estimated 2018 FYE</b>		<b>10,625</b>
Impact from other universities	From 30-day reports, various sources	+32
Age 18 population in Minnesota	-175 (-0.24%)	+8
Unemployment impact	-0.6% (from MMB)	-228
<b>Estimated 2019 FYE</b>		<b>10,437</b>
Memo: current university estimate		10,548

# Ask Questions!

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- @profbanaian on Twitter
- Search “SCSU School of Public Affairs” on Facebook

