

# SA-BLADE PILOT PROJECT

Integration and analysis with sub-national micro-data

BLADE Expo: 13 February 2020

## DISCLAIMER:

The views expressed in this report are those of the author(s) and do not necessarily reflect those of the Government of South Australia.



***SA BLADE links*** SA program and administrative data with Commonwealth data from the ATO and the ABS Business Register, using the ABNs as the linking key.

The purpose of SA BLADE is to:



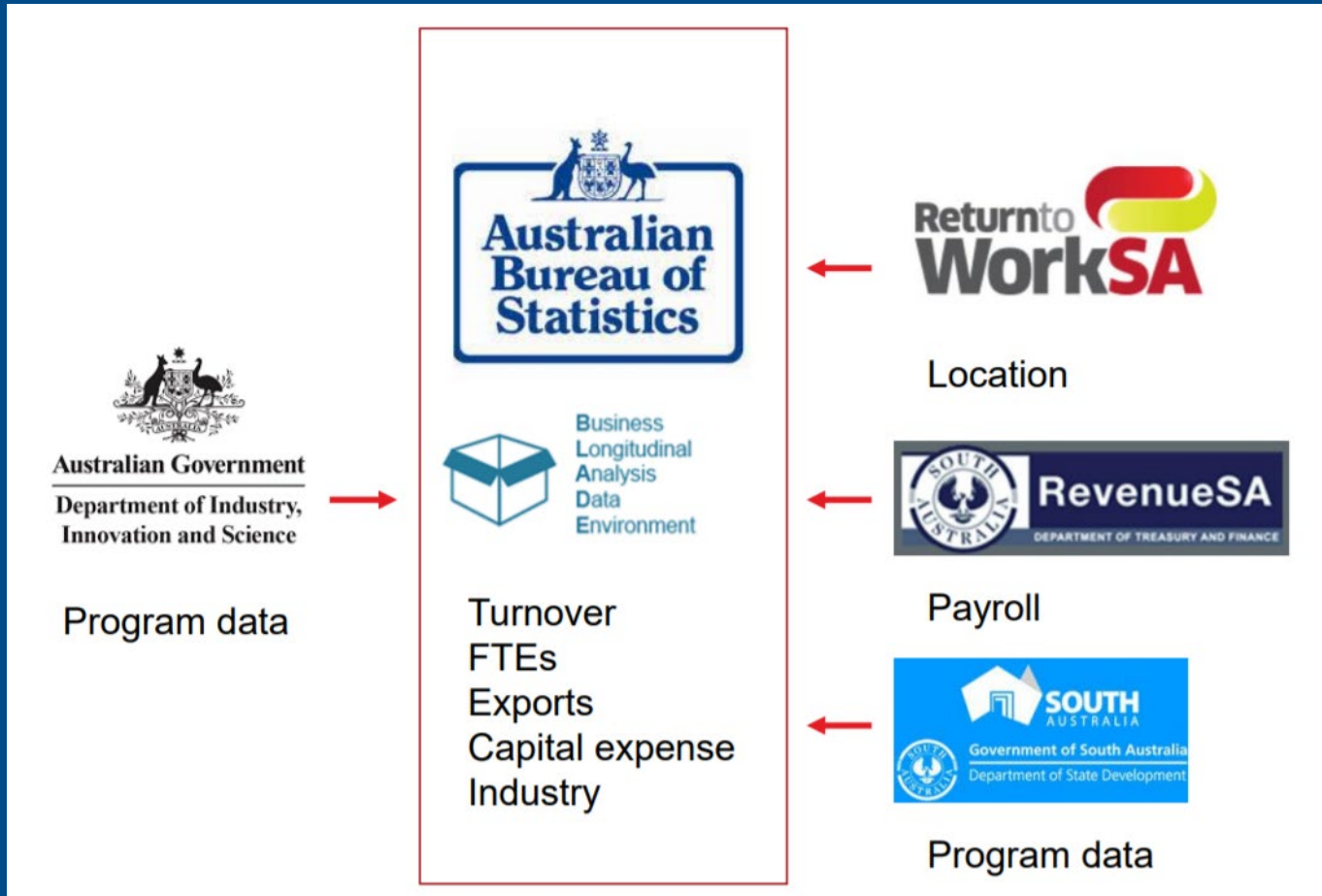
Improve business location data

Provide better economic analysis

Inform future policy

The purpose of the pilot is to **evaluate what's possible**

# SA Government contributed key datasets



# THE CONTEXT

The Sydney Morning Herald

## BHP mothballs Olympic Dam expansion

By Peter Ker  
August 22, 2012 – 3:31pm

BHP Billiton has taken the axe to more than \$US30 billion in spending on Australian expansion projects, in the clearest sign yet that the nation is past the peak of its resources boom.

news.com.au

News Corp Australia

National | World | Lifestyle | Travel | Entertainment | Technology | Finance | Sport

finance business

## South Australia stunned as GM announces Holden's closure in Adelaide in 2017

THE Australian car industry is all but dead and South Australia is in shock following confirmation that Holden will cease production after more than 60 years.

Tory Shepherd and Joshua Dowling

The Advertiser JANUARY 29, 2014 1:14PM

national south australia

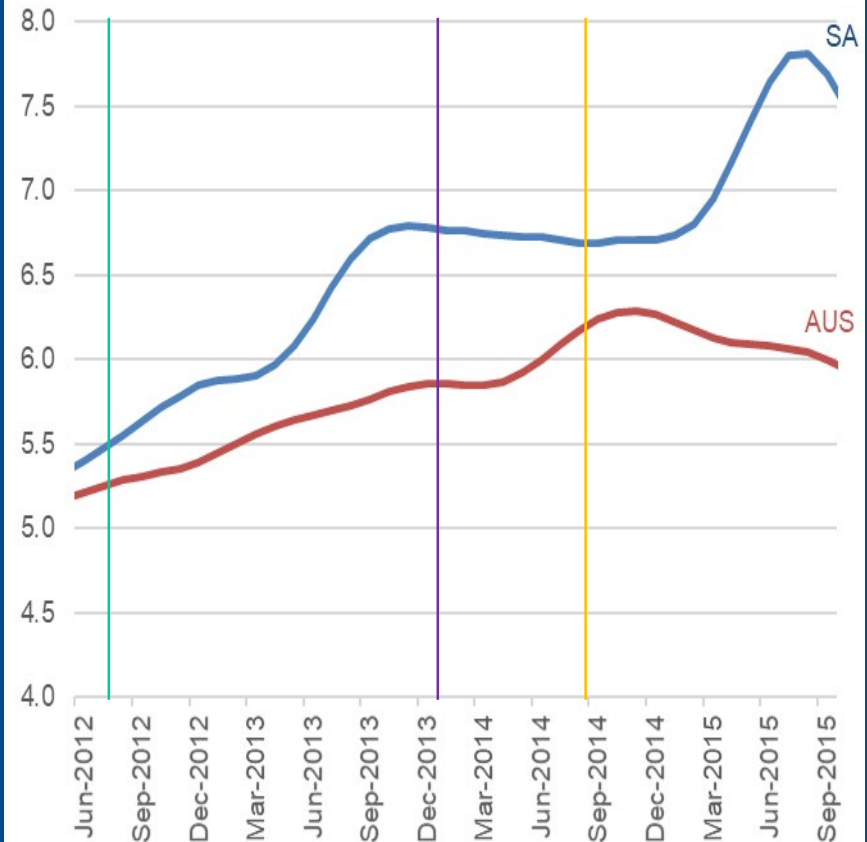
## Abbott Government to spend \$20 billion on Japanese submarines in major blow to SA's defence industry

THE Premier and Prime Minister have both responded after The Advertiser today revealed the next generation of Australian submarines is all but certain to be built in Japan, not the Adelaide shipyard.

Ian McPhedran National Defence Writer

News Corp Australia Network SEPTEMBER 8, 2014 6:01PM

### Unemployment rate, trend



# THE NEED



Australian Government  
Department of Industry and Science

Office of the  
Chief Economist

RESEARCH PAPER 4/2015

## The employment dynamics of Australian entrepreneurship

Luke Hendrickson<sup>a</sup>, Stan Bucifal<sup>a</sup>, Antonio Balaguer<sup>a</sup>  
and David Hansell<sup>b</sup>

Department of Industry and Science<sup>a</sup> and Australian Bureau of Statistics<sup>b</sup>

September 2015

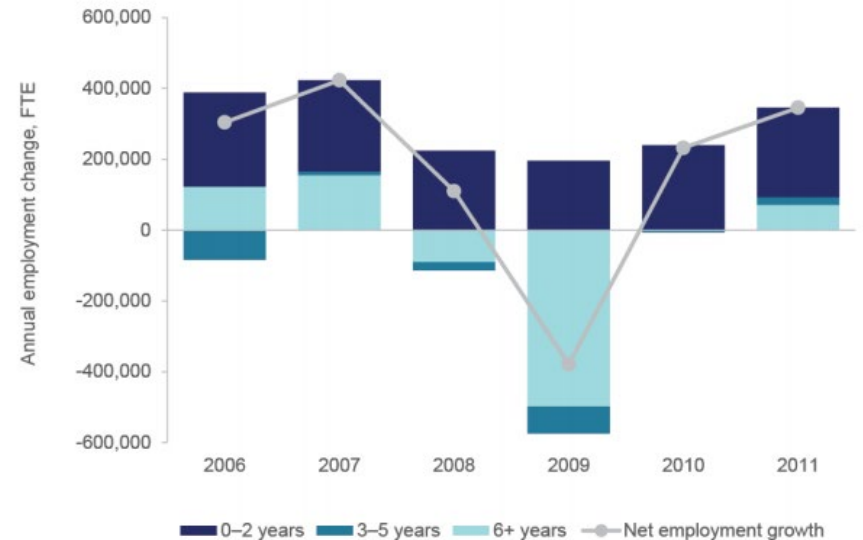
### Abstract

This research paper is the first in a series to explore the dynamics of employment and productivity growth in Australian firms using the newly created Expanded Analytical Business Longitudinal Database. This paper examines the contribution of young firms, particularly start-ups, to net job creation in the Australian economy between 2001–2011. The results show that young SMEs contribute disproportionately to job creation. Young SMEs (firms aged 0–5 years) made the highest contribution to net job creation in Australia (40 per cent) and start-up activity (firms aged 0–2 years) is responsible for most of this growth. Australia's start-up activity is high but they tend to reach smaller sizes relative to other OECD countries examined to date. A very small fraction (3 per cent) of start-ups drive the majority (77 per cent) of their post-entry job creation. These high growth start-ups also show superior sales and profit performance but lower labour productivity performance compared to other surviving start-ups.

JEL Codes: J21, L26, M13, O31, O57

Keywords: Australia, creative destruction, DynEmp, entrepreneurship, employment, innovation, OECD, productivity, start-up

Figure 2.3: Net employment growth by firm age, 2006–2011



Notes: Employment is measured in Full Time Equivalents (See Appendix A). Results are for all non-government sectors and exclude non-employed firms. Young firms are 0–5 years and mature firms are 6+ years. Start-ups are defined as a subset of young firms that are 0–2 years of age.

Source: ABS (2015) Expanded Analytical Business Longitudinal Database 2001–02 to 2012–13

## Driving question:

Is this pattern the same for South Australia?



# THE PROBLEM

There are few statistics available relating to sub-state economic activity.

*BLADE is a complete record of all businesses, so offers the opportunity to do state and sub-state analysis, IF location data is of sufficient quality.*

**Our pilot study is partly aimed at enhancing business location data in SA and explore its potential for State and sub-state analyses.**

# LOCATION of ECONOMIC ACTIVITY:

What do we know from each data set?

	LEED	Census	BLADE	BLADE-RTW
Employee place of residence	Yes	Yes	No	No
Employee place of work	No	Yes	Yes	Yes
Firm location	No	No	Yes (Primary only)	Yes (All)
Employer operations	No	No	Yes (National only)	Yes (National & SA?)



# BLADE BUSINESS LOCATION

BLADE's use of ATO information:

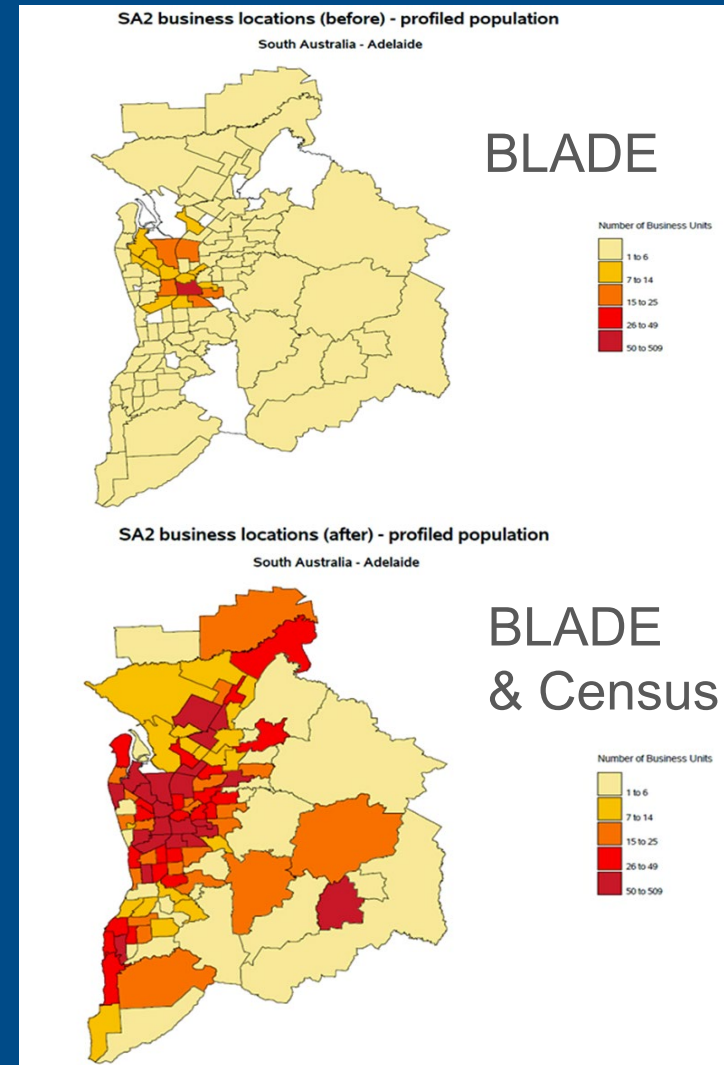
- Business address for tax filing purposes may not line-up with the actual site of operations.

How do we impute business activity to complex or profiled firms with:

- Multi-state operations
- Multiple operations within a state

Complex firms may be small in number, *but*:

- They account for a larger share of the employment or output



# What is a firm?

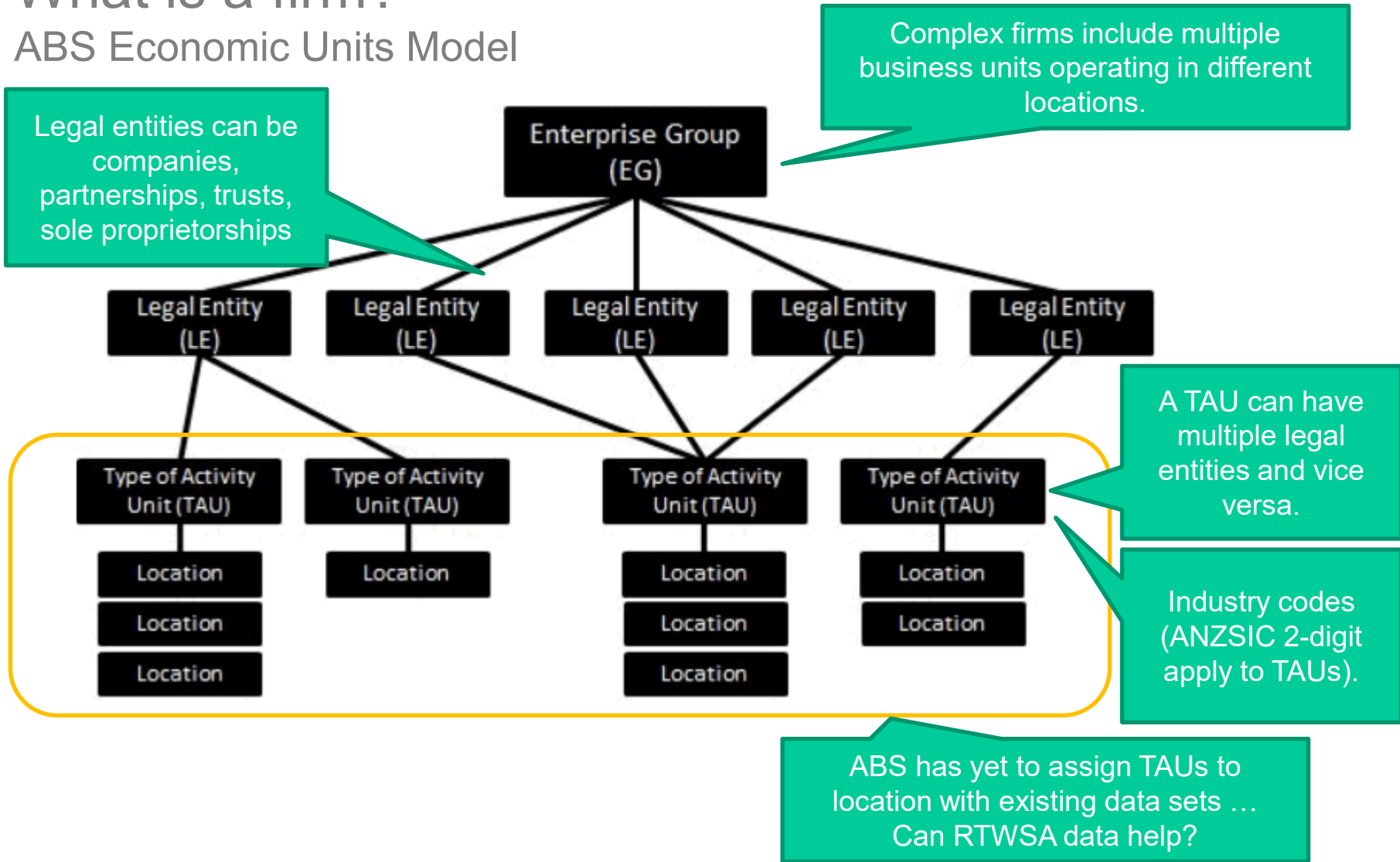
ABS Economic Units Model

Large complex businesses on BLADE are split up into their main production “type of activity units” – this is done to enable industry analysis.

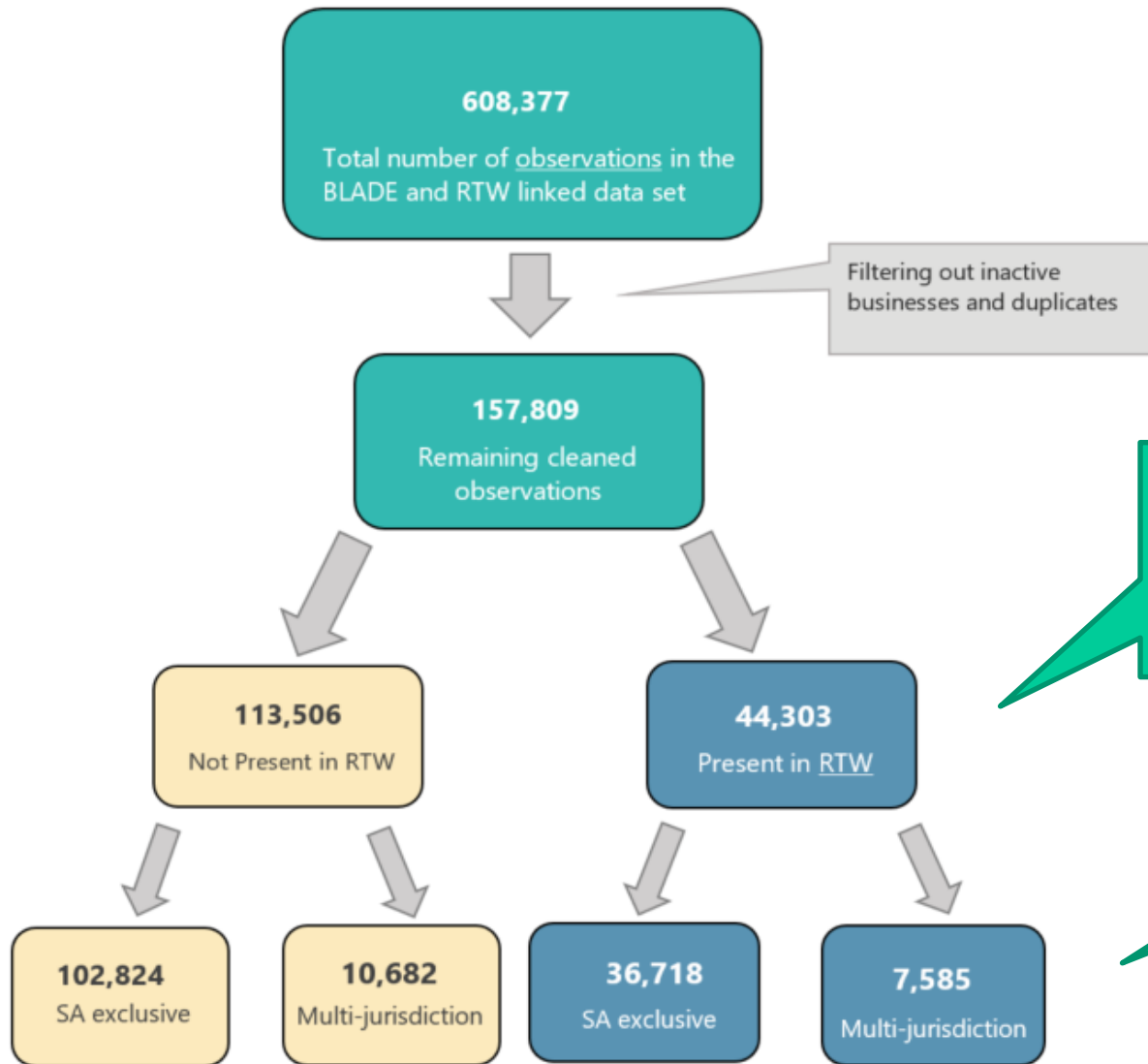
These multiple “type of activity” units may also operate at different locations

# What is a firm?

## ABS Economic Units Model



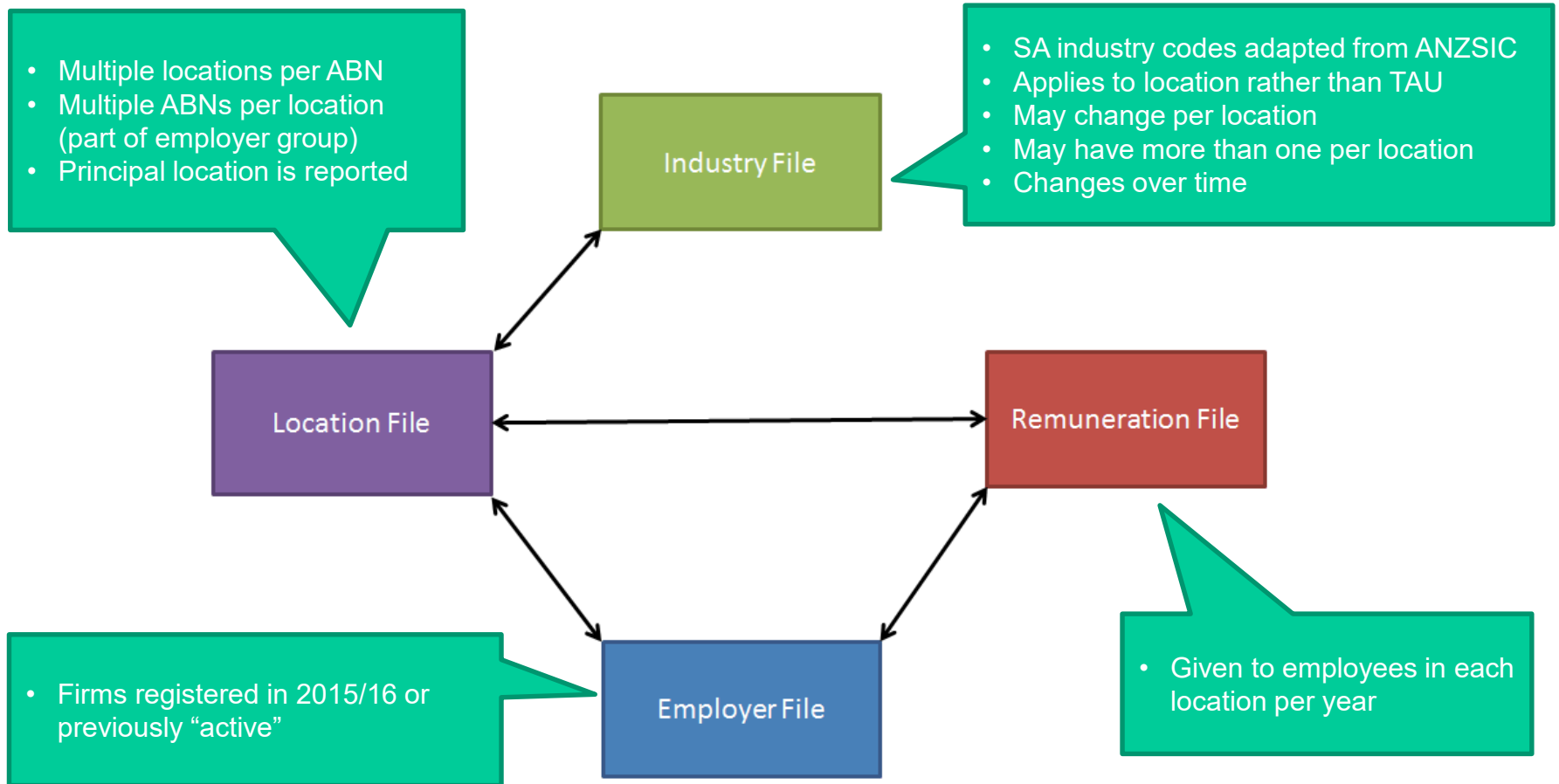
# BLADE & RTWSA DATA (2015/16)



How much of SA employment is captured by these firms?

How do we impute SA-based employment?

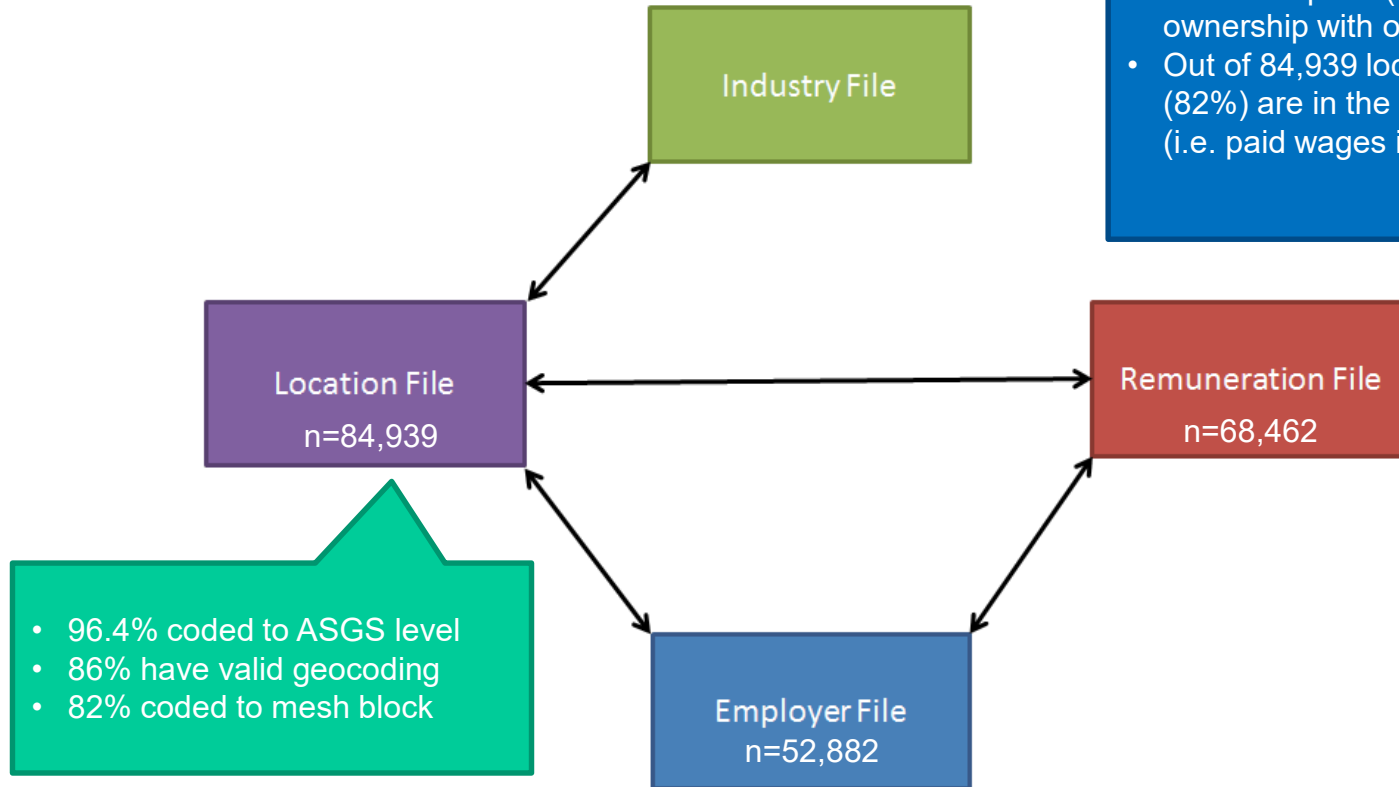
# RETURN TO WORK SA DATA



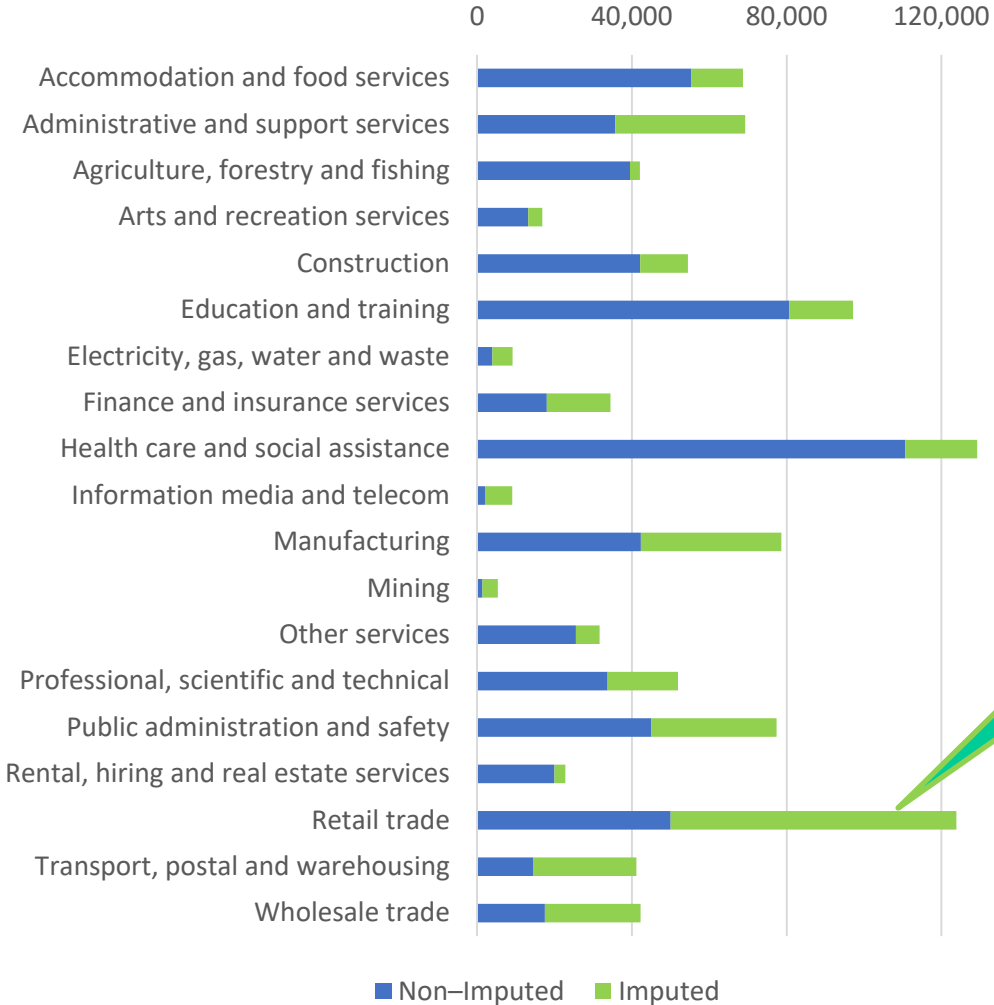
# RETURN TO WORK SA DATA

In 2015-16, RTW identified:

- 52,882 employers
- Operating across 84,939 locations
- 74% simple (stand alone),
- 25% “complex” (common ownership with other locations).
- Out of 84,939 locations, 68,462 (82%) are in the remuneration file (i.e. paid wages in 2015-16).



# SA JOB COUNTS USING BLADE-RTWSA (15/16)



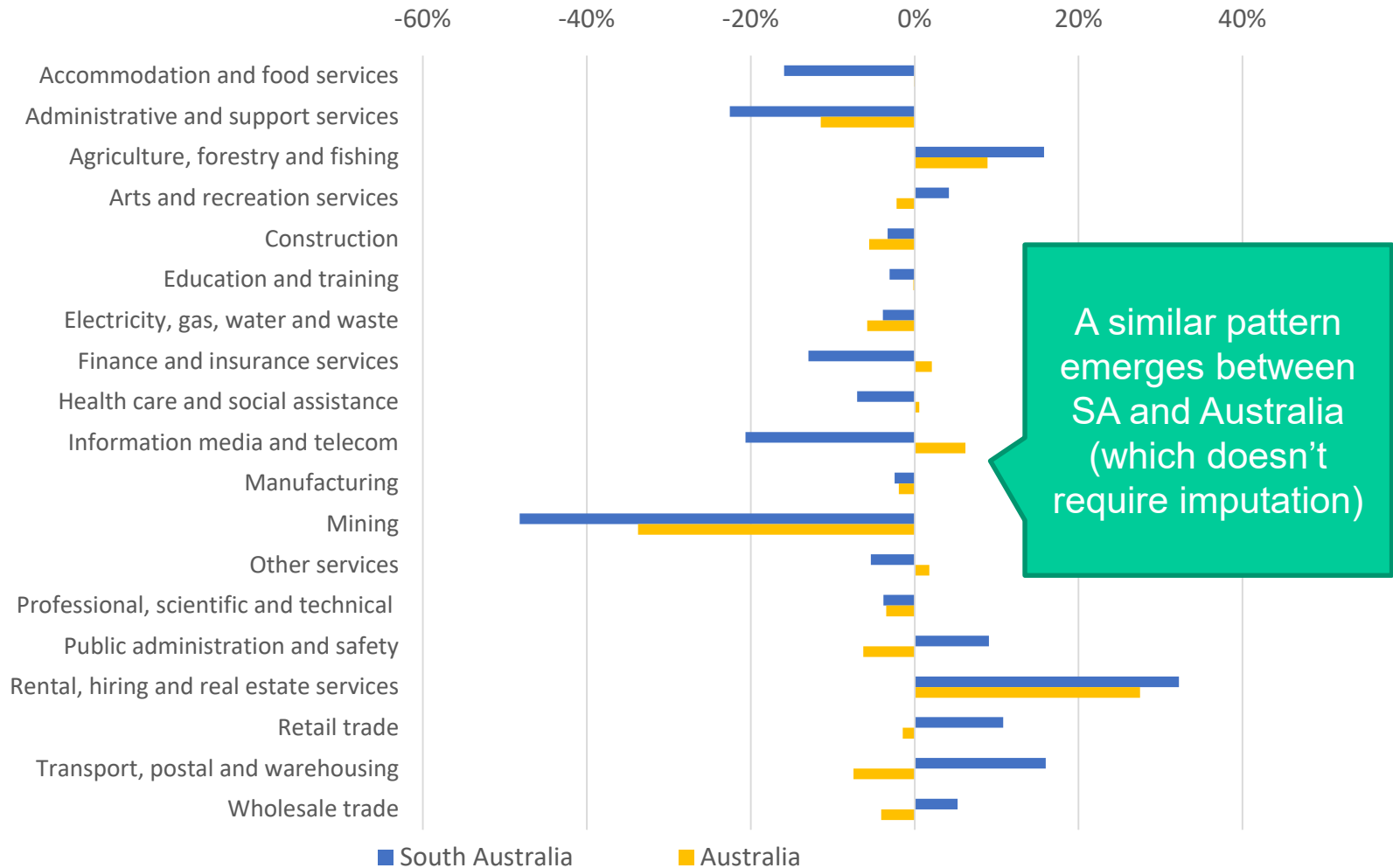
Derived from remuneration information of firms with multi-state operations

# LINKED EMPLOYER-EMPLOYEE DATA (LEED) VS BLADE-RTW SA JOB COUNT (15/16)





# DISCREPANCIES (LEED MINUS BLADE-RTW) SA AND NATIONAL TALLIES (15/16)



# THE NEXT PHASE

## Defining Clusters of Related Industries\*

Mercedes Delgado

Michael E. Porter

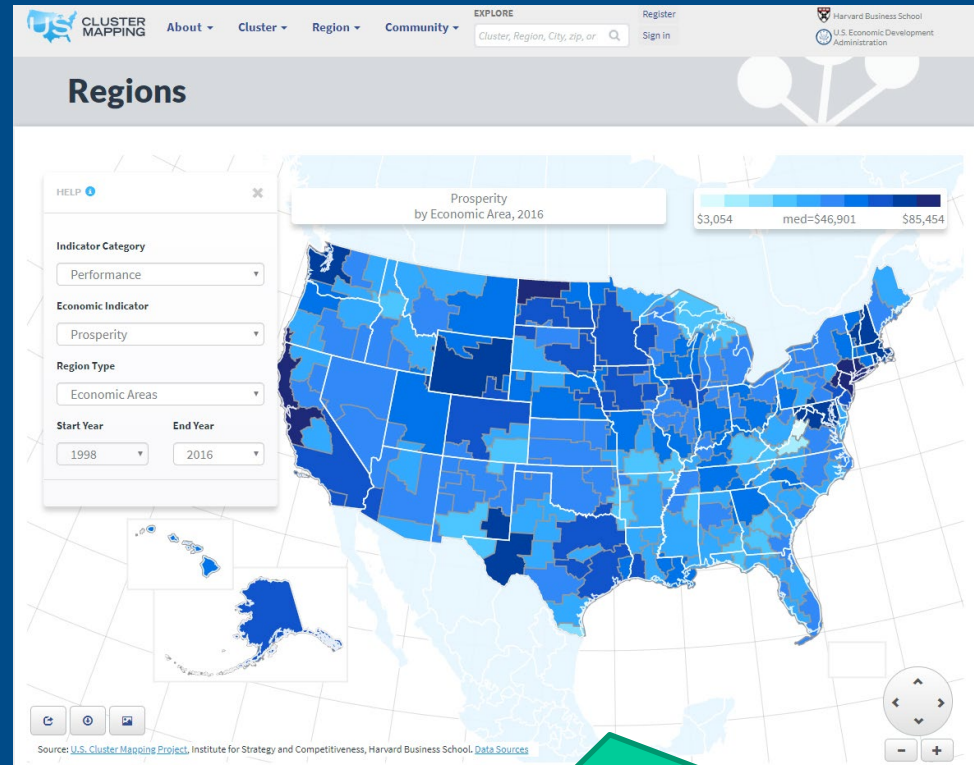
Scott Stern

11/27/2014

### Abstract

Clusters are geographic concentrations of industries related by knowledge, skills, inputs, demand, and/or other linkages. There is an increasing need for cluster-based data to support research, facilitate comparisons of clusters across regions, and support policymakers and practitioners in defining and evaluating regional strategies. This paper develops a novel clustering algorithm that systematically generates and assesses sets of cluster definitions (i.e., groups of closely related industries). We implement the algorithm using 2009 data for U.S. industries (6-digit NAICS), and propose a new set of benchmark cluster definitions that incorporates measures of inter-industry linkages based on co-location patterns, input-output links, and similarities in labor occupations. We also illustrate the algorithm's ability to compare alternative sets of cluster definitions by evaluating our new set against existing sets in the literature. We find that our proposed set outperforms other methods in capturing a wide range of inter-industry linkages, including grouping industries within the same 3-digit NAICS.

\* Acknowledgments: This project has been funded by a grant from the Economic Development Administration of the U.S. Department of Commerce. We thank Bill Simpson, Xiang Ao, Rich Bryden, and Sam Zyontz for their invaluable assistance with the analysis. We also acknowledge the insightful comments of two anonymous reviewers, Harald Bathelt, Ed Feser, Frank Neffke, Juan Alcacer, Bill Kerr, Fiona Murray, Christian Ketels, James Delaney, Brandon Stewart, Muhammed Yildirim, Ram Mudambi, Sergio Probst, Jorge Guzman, Sarah Jane Maxted and the participants in the Industry Studies Association Conference, NBER Productivity Seminar, Temple University Seminar, and the Symposium on the Use of Innovative Datasets for Regional Economic Research at George Washington University. Author contact information: Mercedes Delgado (Temple University; mdelgado@temple.edu; to whom correspondence should be addressed); Michael E. Porter (Harvard University; mporter@hbs.edu); and Scott Stern (MIT Sloan, NBER; stern@mit.edu).

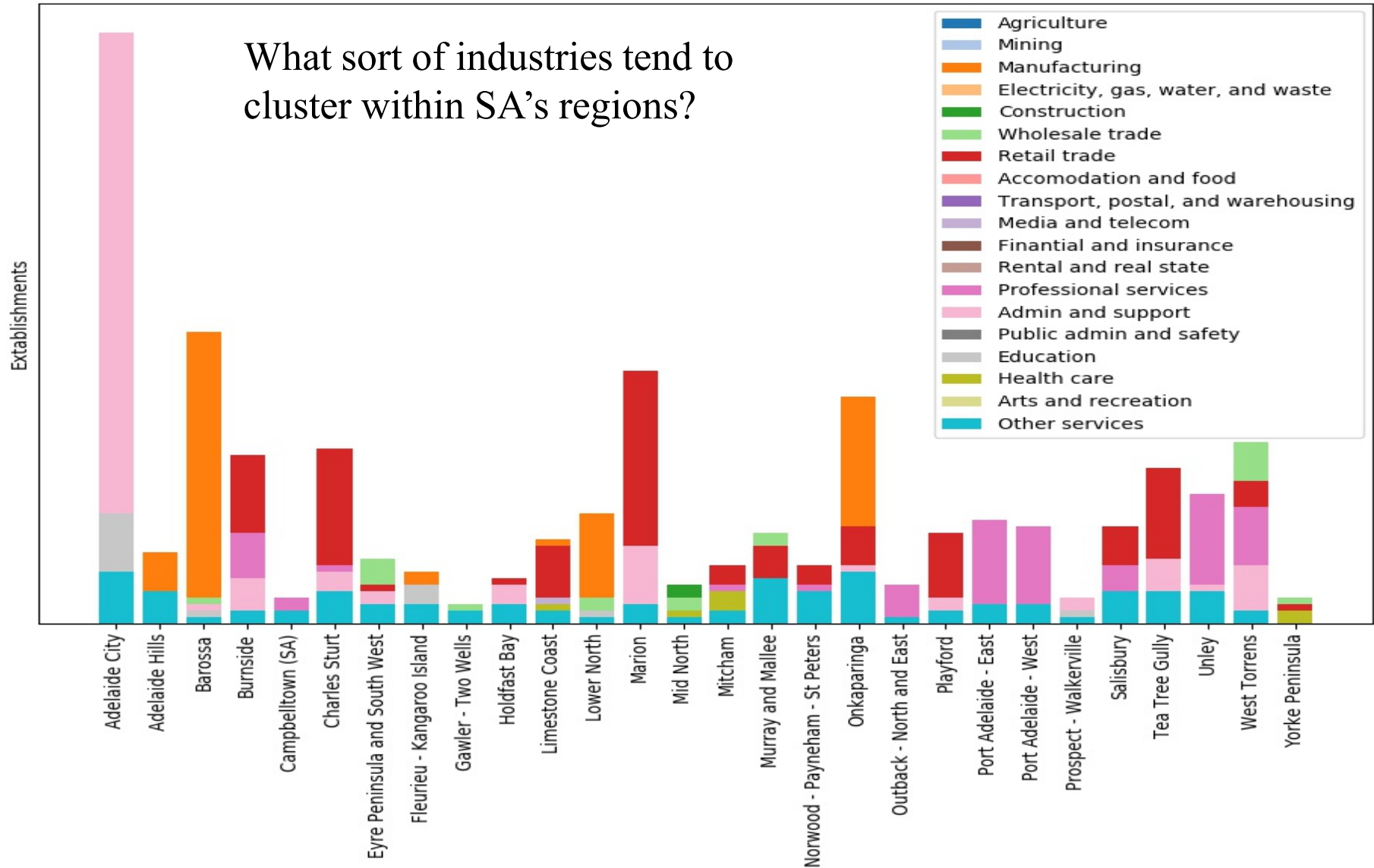


**Replicating this for Australia:  
Developing an economic geography for the  
nation and the states**



# Mapping clusters of tradable industries

What sort of industries tend to cluster within SA's regions?



# *Next steps*

- SA BLADE 2.0 – SABRE
- Sponsoring academics
- ARC linkage with Team Australia

***Thank you!***

**Emmanuel Santos**  
**SA BLADE Project Coordinator**  
T: 08 8429 5059  
E: *Emmanuel.Santos@sa.gov.au*