THE LABOUR MARKET IMPACTS OF LOWER-SKILLED TEMPORARY IMMIGRATION: EVIDENCE FROM THE PALM SCHEME

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Question

How does temporary immigration of fundamental, lower-skilled workers affect incumbent workers' wages and occupations?

- Economists are generally unable to reach a consensus on how temporary, lower-skilled immigration might affect wages
- A common view is that low-skilled migration suppresses the wages in the occupations sectors that immigrants work

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This paper $\Rightarrow$ Use relatively new **administrative data** and the high-profile **Pacific-Australia Labour Mobility (PALM) Scheme** to estimate the impacts of **temporary, low-skilled immigration** on **incumbent wages** in Australia

What We Do—Research Design

Empirical setting

- SWP commenced in 2012 and PLS in 2019. Both are now PALM.
- Workers are sponsored by employers, generally unable to move (location, employer, occupation) throughout their placement
- Identify PLS and SWP workers in the visa and travellers module, and then identify exposed workers by occupations in MADIP

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Difference in differences: compare changes in wages in exposed occupations against other low-skilled occupations not exposed

- **Occupation-level annual panel:** allow people to move in/out
- **Individual-level annual panel:** individual FEs
- **Long differences:** simpler and longer exposure

What We Find—Results Preview

1. No evidence that SWP/PLS suppressed wages of Australian workers in the occupations most exposed to these two schemes
   - If anything, the trends appear to be the opposite
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2. **Workers in "PLS/SWP exposed" occupations are highly mobile**
   - Here,"PLS/SWP Exposed" occupations are ANSCO 6-digit occupations with more than 50 SWP/PLS workers
   - Large wages gains for people who left these occupations
   - Further work needed to determine whether and how much driven by schemes, given baseline mobility

Rest of this talk

1. Conceptual framework
2. MADIP
3. Empirical setting: PALM scheme
4. Empirical strategy
5. Occupation-level analysis
6. Individual-level analysis
7. Descriptive evidence on occupational mobility and wages
8. Summary and next steps

How does immigration affect native wages and employment?

Traditional view $\Rightarrow$ increase LS, w falls; demand curve slopes down

Often used to justify nativist labour market / immigration policy

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Modern view ⇒ Many factors push in other direction: immigrants increase demand, immigrants work in different sectors, and complementarity (e.g., occupational upgrading, task specialisation)

Which holds for Australia and its unique labour market institutions?

Breunig et al (2017) ⇒ no effect. HILDA. National skill cell approach.

Crown et al (2020) ⇒ increase wages and specialisation. HILDA and high-skill visa.

MADIP

MADIP

MADIP is the secure **Multi-Agency Data Integration Platform** that provides access to Australian administrative data.

- Contains information on health, education, visas, travellers, government payments, income and taxation, employment, and population demographics, including the census
- Longitudinal data on entire population from 2000 to 2022.

This paper uses the **ATO's Individual Tax Returns and Home Affairs' visas and travellers module**

- Track all Australian tax payers in 9 years from 2011 to 2019

Nine years of panel data, 2011–19

The ATO provides earnings in tax data for everyone every year
(primary outcome and panel set up)

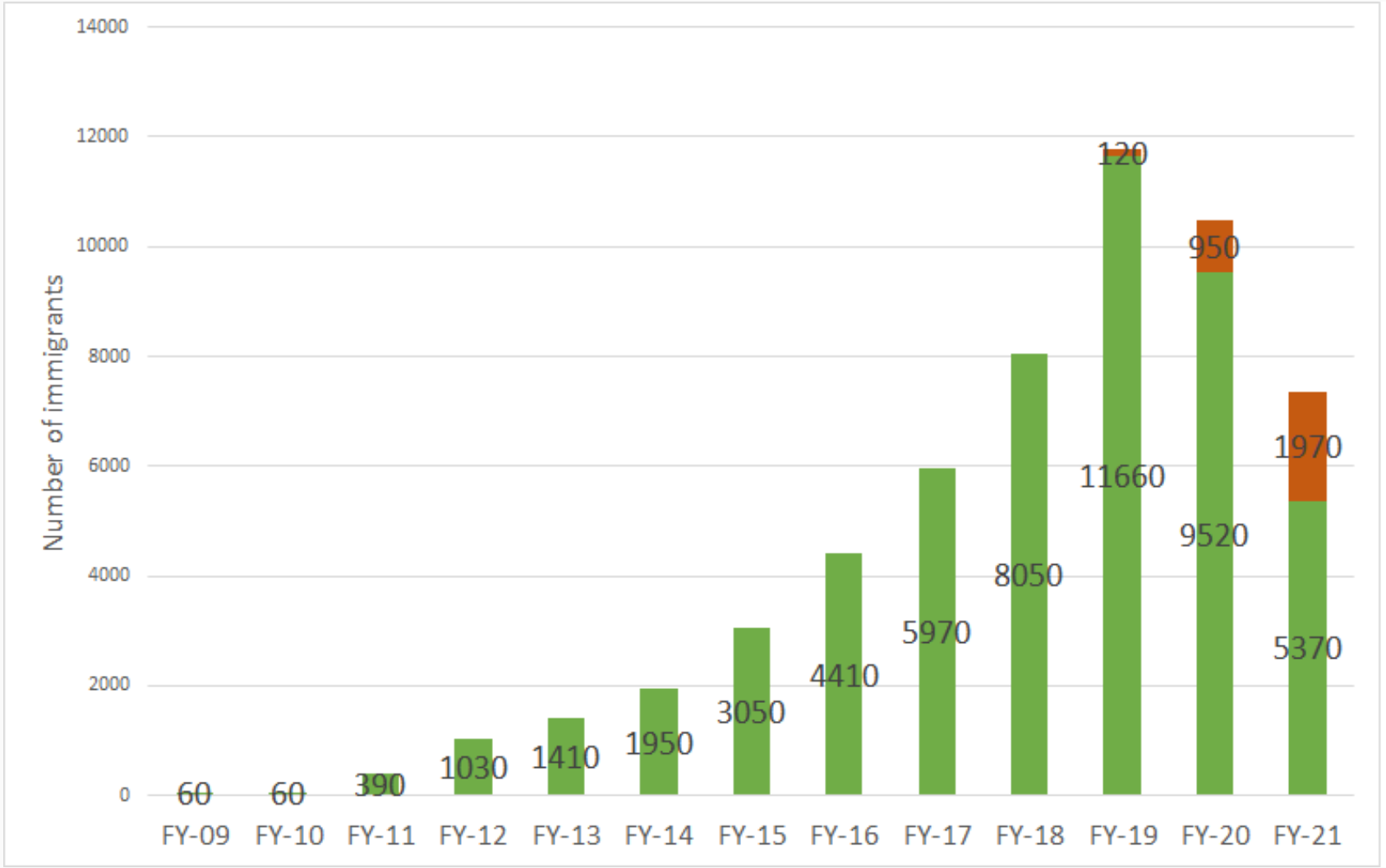
- **More than** 65 million observations
- Before and after the establishment of the SWP/PLS

Identify PLS and SWP workers with the Department of Home Affairs'
visas & travellers module

- The visa data allow identifying workers' occupation at the 6 digit ANSCO classification level
- About 12,000 SWP/PLS visas were granted in fiscal FY 2018–19

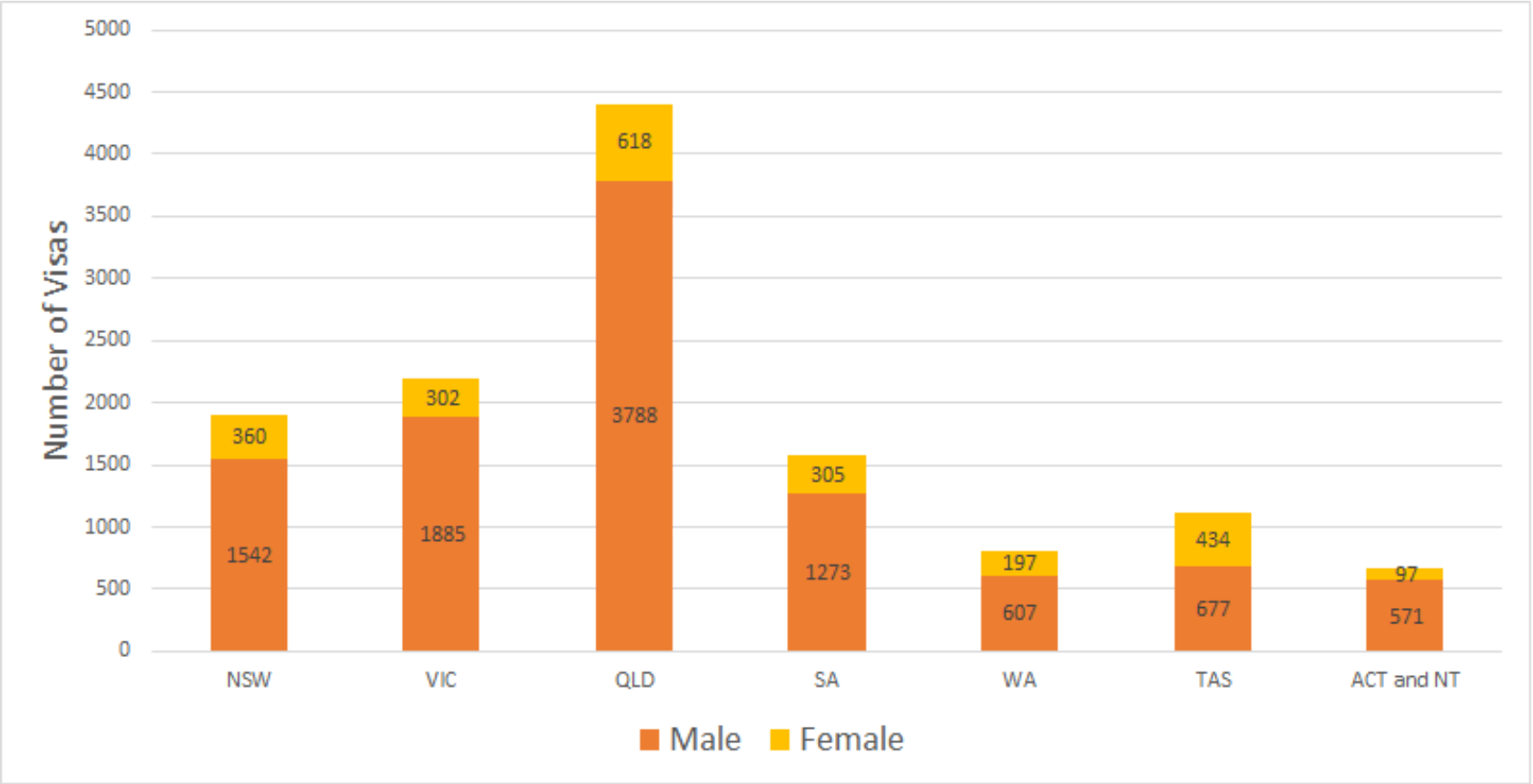
Empirical setting: PALM scheme

PALM visas granted by year



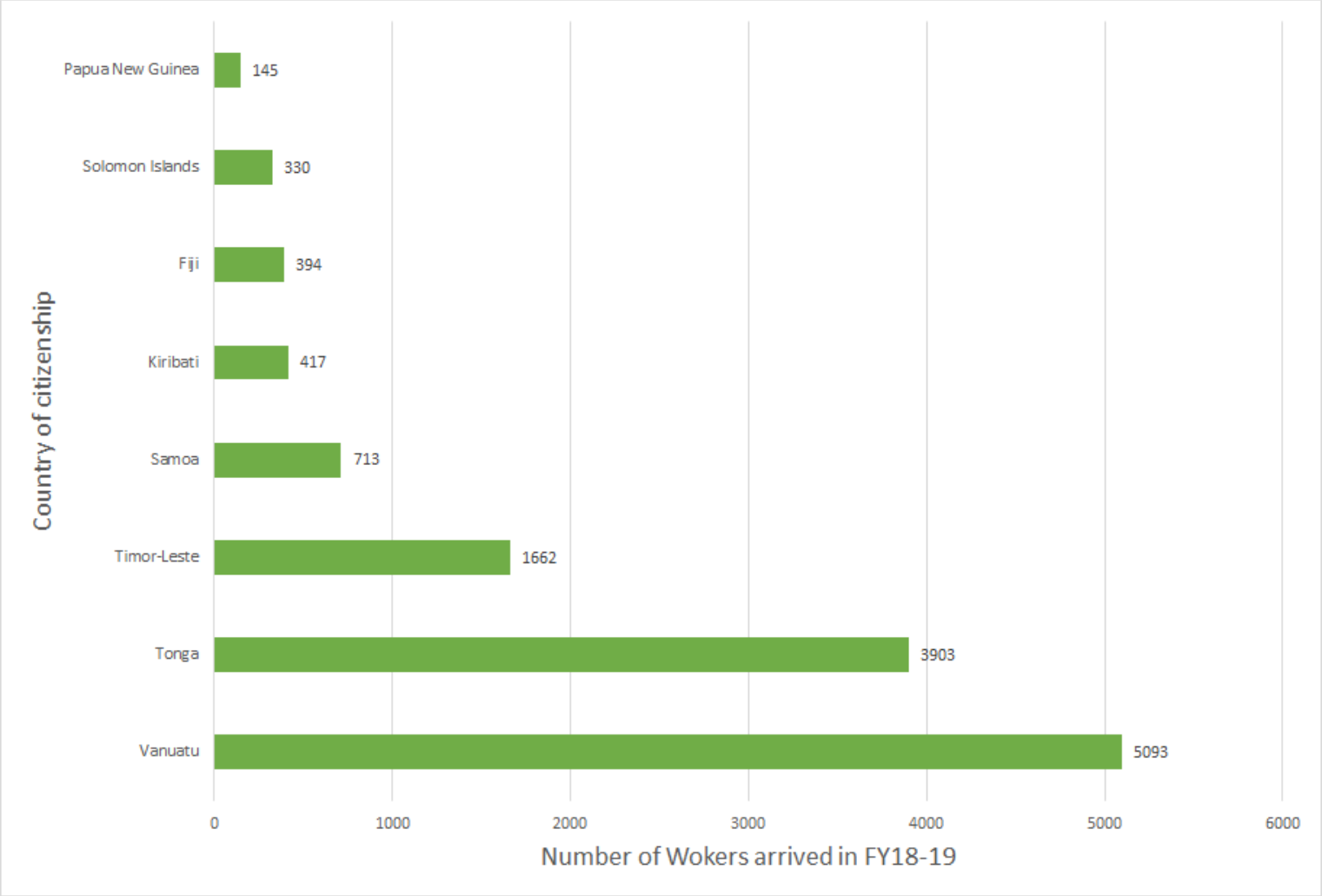
Data are sourced from Home Affairs via ABS MADIP. Red is PLS. Green is SWP.

State of residence and gender, FY18-19



Data are sourced from Home Affairs via ABS MADIP. Queensland received the most visas in FY18-19 while Tasmania has the best gender balance, by quite the margin.

Visas by country of citizenship



Data are sourced from Home Affairs via ABS MADIP.

Visas by occupation, 2017–21

Fiscal Year	Occupation	Visas granted	Percentage
2018	Factory Process Workers	1310	16.25
	Farm, Forestry and Garden Workers	5960	73.95
	Other Labourers	550	6.82
	Others	240	2.98
2019	Factory Process Workers	1620	13.73
	Farm, Forestry and Garden Workers	9060	76.78
	Other Labourers	880	7.46
	Others	240	2.03

Data are sourced from Home Affairs via ABS MADIP. Occupation of SWP migrants had been recorded since November 2016.

Occupations are based 2-digit ANZSCO classification.

SWP/PLS workers, by occupation, 2019

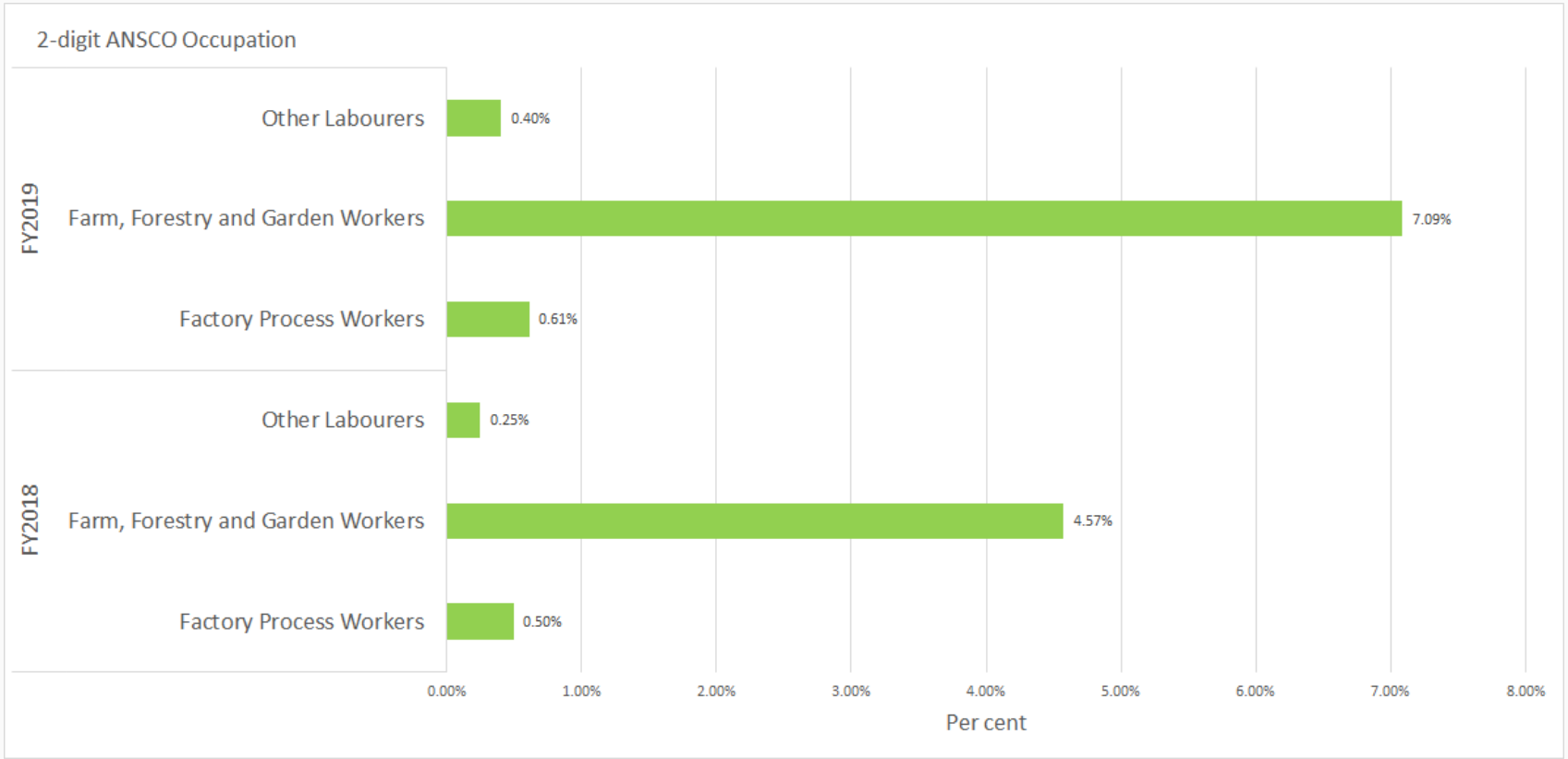
Fiscal year	Occupation	N workers	SWP/PLS visas
FY2018	Farm, Forestry and Garden Workers	130,360	5,960
	Factory Process Workers	264,340	1,310
	Other Labourers	223,470	550
FY2019	Farm, Forestry and Garden Workers	127830	9,060
	Factory Process Workers	265780	1,620
	Other Labourers	217560	880

Data are sourced from Home Affairs via ABS MADIP.

Occupations are based on 2-digit ANSCO classification.

Note that we don't have occupation data of PALM migrants before Nov 2016, hence these years.

SWP/PLS AS A SHARE OF ALL WORKERS, 2019



Data from Home Affairs via ABS MADIP. Occupations are based on 2-digit ANSCO codes.

Empirical strategy

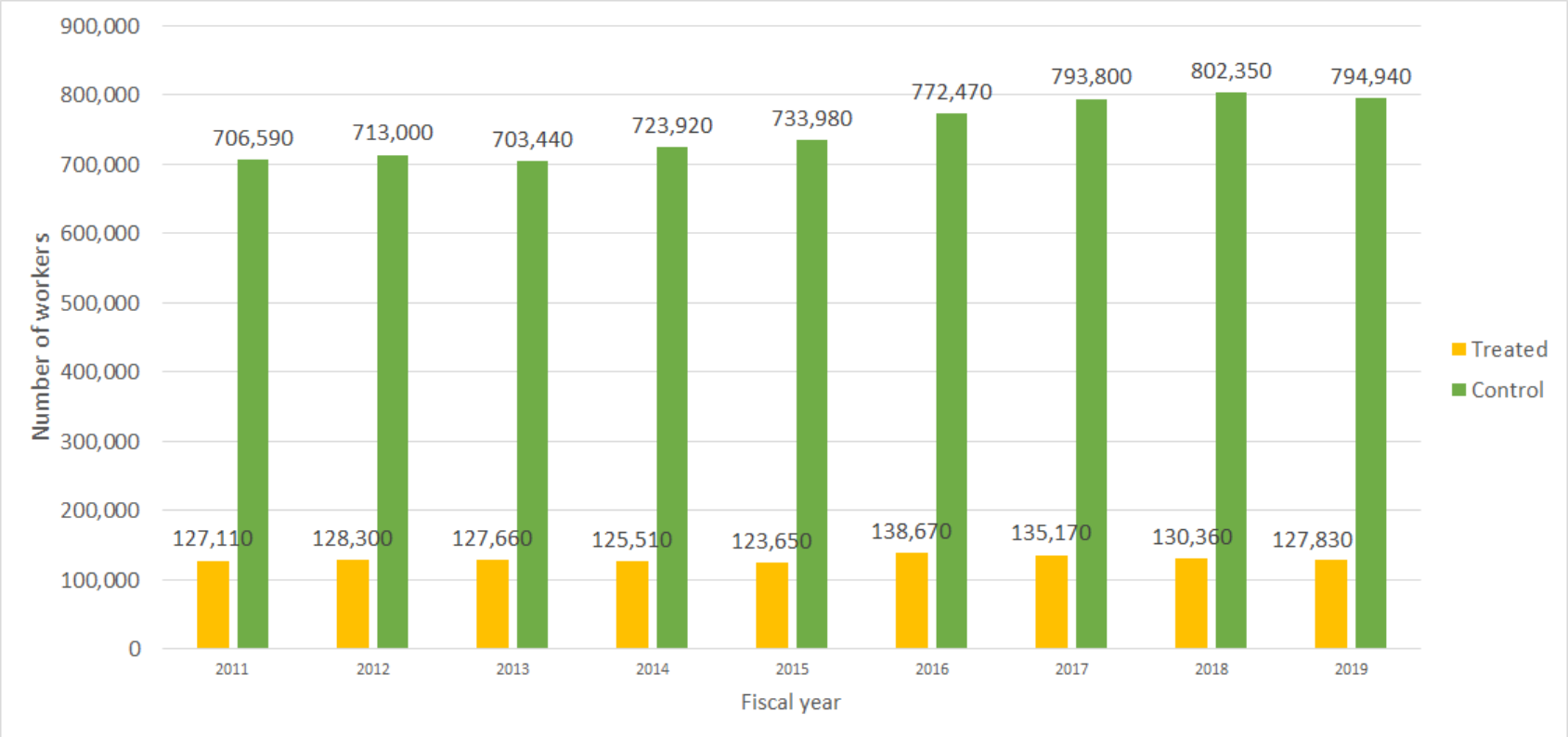
Preliminaries

Define three groups of workers:

1. Group 1 (treated): SWP/PLS exposed workers $\Rightarrow$ worked in occupations belong to ANSCO 2-digit code group 84: Farm, Forestry and Garden Workers.
2. Group 2 (control): Labourers $\Rightarrow$ workers in occupations with 1-digit ANZSCO code equal to 8 (i.e., lower skilled) minus Group 1 and those with 2-digit ANSCO group 83 (Factory Process Workers).
3. Group 3: All other workers $\Rightarrow$ All workers excluding Group 1 and those whose 2-digit ANSCO group 83.

Note: during the studied period 2011-2019, Australia experienced a decline in manufacturing sectors; thus we remove workers whose 2-digit ANSCO group 83: Factory Process Workers from our analysis.

"Treatment" versus "Control"



Data are sourced from ATO individual tax returns.

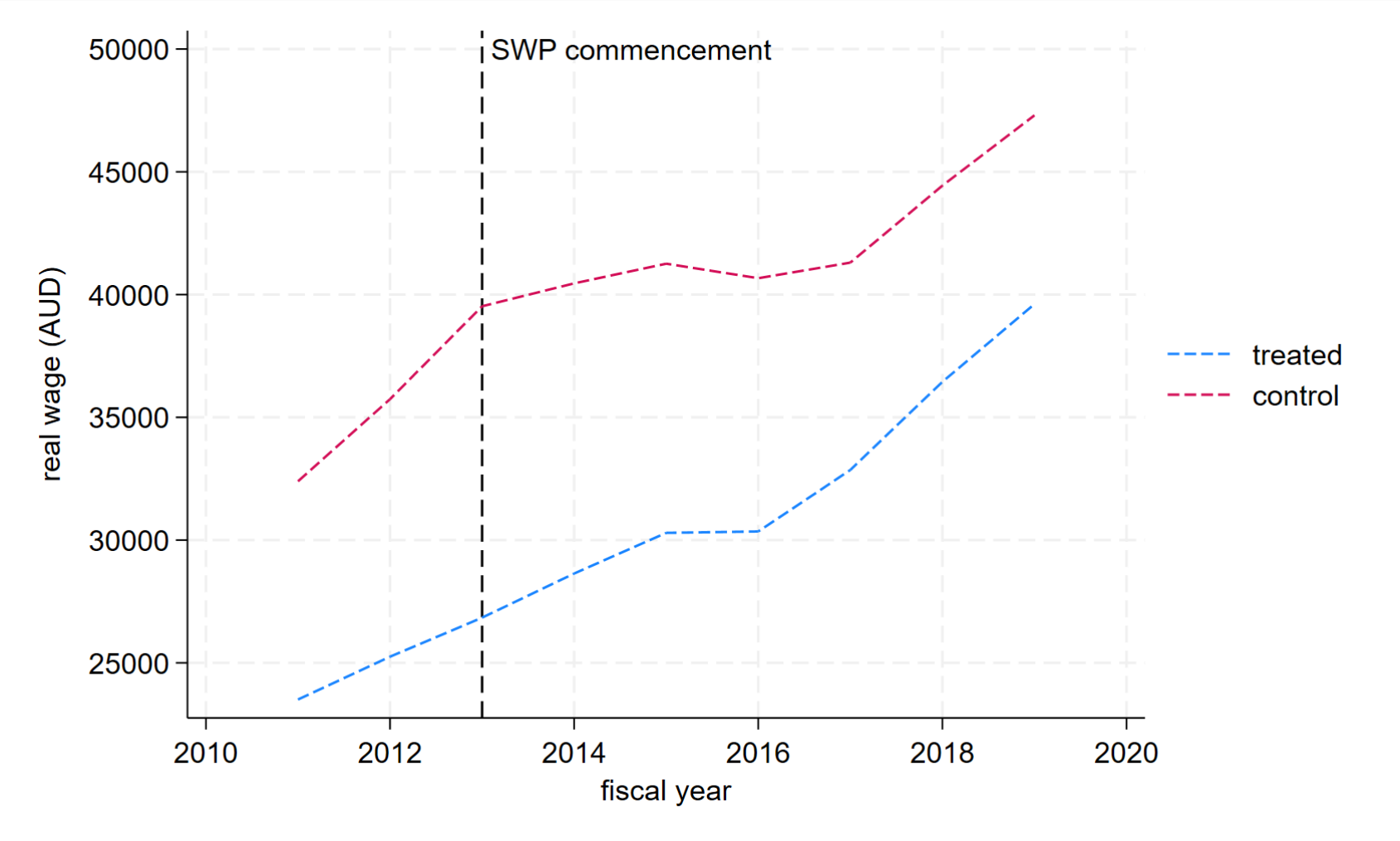
Relative changes in real wages

Group	Change from 2011–19
Workers exposed to SWP/PLS workers	72.26%
All other workers	65.65%
Labourers	71.00%

Data from ATO individual tax returns. Wages at constant 2011 prices.

A simple difference in difference design uses "four averages and three subtractions" (Ashenfelter, via Cunningham, 2023) to recover causal effects from these different rates of change, under relatively few assumptions

Changes in real wage levels across sectors



Data are sourced from ATO individual tax returns. Constant 2011 dollars throughout.

Overview of approaches

1. **Occupation-level analysis** to look at effects on average wages for sectors, allowing people to move
   - Annual panel DD estimates
   - Event study

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1. **Occupation-level analysis** to look at effects on average wages for sectors, allowing people to move
   - Annual panel DD estimates
   - Event study
2. **Individual-level analysis** tracking each individual worker over time and including individual fixed effects
   - Annual panel DD estimates
   - Event study
   - Long difference

We present each specification before each respective result

Occupation-level analysis

Occupation specification

$$Y_{jt} = \delta_t + \gamma_j + \beta \text{Treated}_j * \text{Post}_{t>2012} + \epsilon_{jt} \quad (1)$$

- Y_{jt}: Average real wage of worker in occupation j, in year t
- δ_t, γ_j: year and occupational fixed effects
- $\text{Post}_{t>2012}$: indicator = 1 year $>$ 2012, 0 otherwise
- Treated: = 1 if Group 1- ANSCO 2-digit code group 84: Farm, Forestry and Garden Workers.
- β: treatment effect of SWP-PLS exposure

Data: Data are aggregated to 6-digit ANSCO occupation code.

Additional details

- The **average wages** were computed by **wages of all workers who worked in the 6 digit ANCSO occupation.**
- The **treatment group** has 33 6-digit code occupations
- The **control group** has 64 6-digit code occupations:
  - 2-digit occupation code: 81, Cleaners and Laundry Workers
  - 82, Construction and Mining Labourers
  - 85, Food Preparation Assistants
  - 89, Other Labourers

Occupation-level result

	Log of real wage
Treated*Post	0.0384***
	(0.05)
Occupation fixed effects	Yes
Year fixed effects	Yes
Observations	869
R2	0.185
F	52

Data are sourced from ATO annual individual tax returns from 2011 to 2019. We aggregate data to 6-digit ANSCO occupation. Our key variable of interest is Treated $*$ Post, which shows the effect of SWP/PLS on wages of incumbents: 3.8 percent faster wage growth from 2011–19.

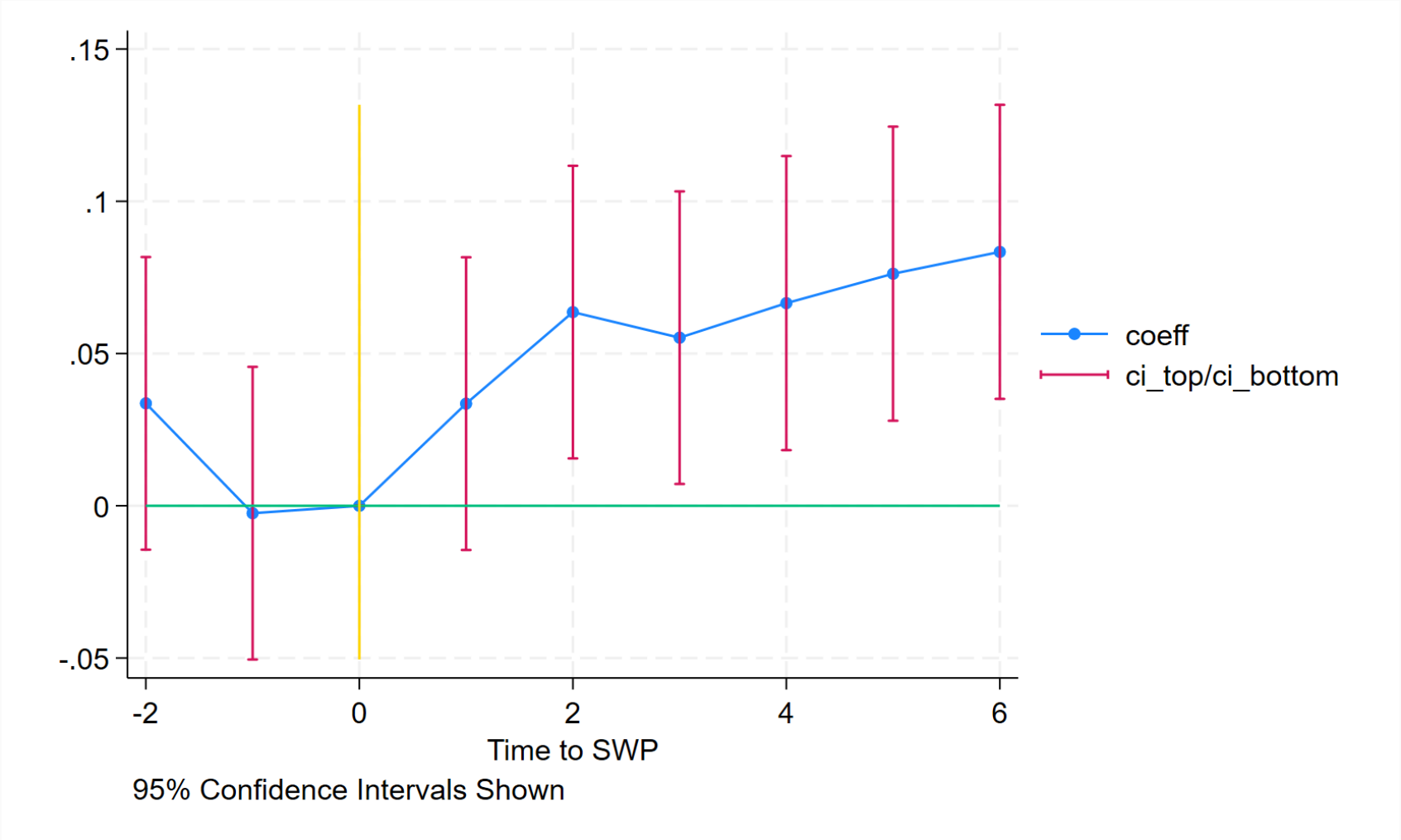
Occupation-level event study specification

We also estimate an event study variant of (1):

$$Y_{jt} = \delta_t + \gamma_j + \sum_{k=1(k\neq 3)}^{9} \beta_k * \text{TtoSWP}(t = k) * \text{Treated}_j + \epsilon_{jt} \qquad (2)$$

- TtoSWP(t = k): a vector of dummy year indicators corresponding to years from 2011 to 2019.
- The 2013 fiscal year is the first fiscal year of SWP commencement and is used as baseline in the estimates.
- β_k: treatment effect of SWP-PLS exposure

Occupation-level event study result



Data are sourced from Home Affairs via ABS MADIP.

Individual-level analysis

Individual-level specification

$$Y_{ijt} = \omega_i + \gamma_j + \delta_t + \beta \text{Treated}_{ij} * \text{Post}_{t>2012} + X_{i,t} + \epsilon_{ijt} \quad (3)$$

where

- Y_{ijt}: real wage of worker i, in occupation j, in year t
- δ_i: individual fixed effects
- $\text{Post}_{t>2012}$: indicator = 1 in 2019, 0 otherwise
- Treated_{ij}: = 1 if workers i belong to Group 1- ANSCO 2-digit code group 84: Farm, Forestry and Garden Workers.
- β: treatment effect of SWP-PLS exposure

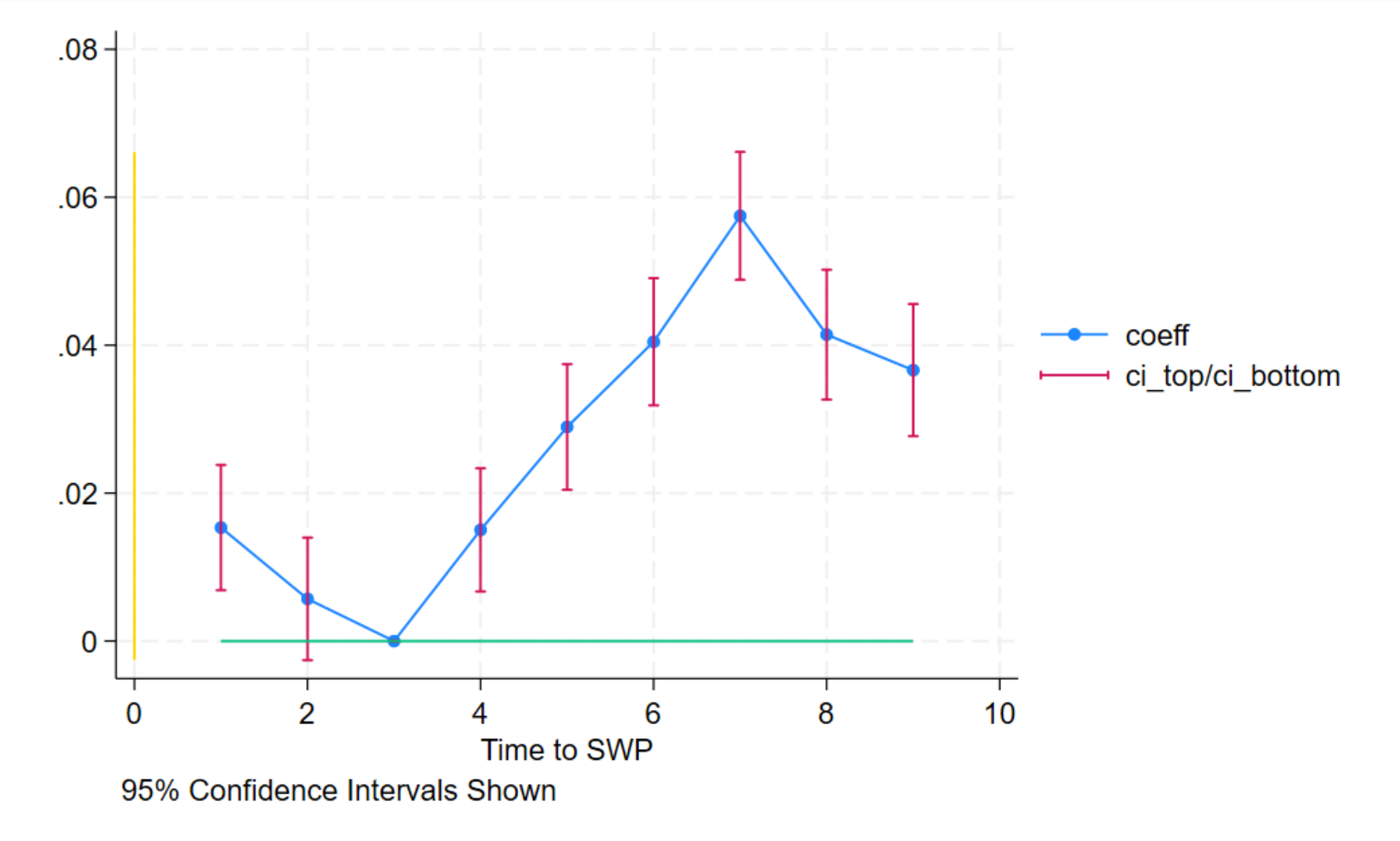
Data: annual panel data on individual non-SWP/PLS workers from 2011 to 2019.

Individual-level results

	Log of real wage (1)	Log of real wage (2)
Treated*Post	0.0195***	0.0170***
	(0.000)	(0.000)
Individual fixed effects		Yes
Occupation fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Observations	2782016	2651973
R2	0.245	0.697

Data are sourced from ATO annual individual tax returns from 2011 to 2019. Our key variable of interest is Treated $*$ Post, which shows the effect of SWP/PLS on wages of incumbents: 1.7-1.95 percent faster wage growth from 2011–19.

Individual-level event study result



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Two period individual specification

Recall that for the most treated occupations, visa holders are a quite small share of that sector in several “treated” years, i.e., there is a relatively low “dose” of the treatment.

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We use a long difference-type specification, before and after the scheme ramped up, with a 2011–19 balanced panel.

We alternatively define treatment and control groups:

- Group 1: SWP/PLS exposed workers $\Rightarrow$ worked in occupations with more than 50 SWP/PLS immigrants in 2019 (6-digit ANZSCO)
- Group 2: Labourers $\Rightarrow$ workers in occupations with 1-digit ANZSCO code equal to 8 (i.e., lower skilled workers), minus Group 1

Two period 2011–19 specification

$$Y_{ijt} = \delta_i + \gamma_j + \text{Post}_{t\geq 2012} + \beta \text{Treated}_j * \text{Post}_{t\geq 2012} + X_{i,t} + \epsilon_{ijt} \quad (4)$$

where

- Y_{ijt}: real wage of worker i, in occupation j, in year t
- δ_i, γ_j: individual and occupational fixed effects
- $\text{Post}_{t\geq 2012}$: indicator = 1 in 2019, 0 otherwise
- Treated: = 1 if occupation has 50 SWP + PLS workers in 2019
- β: treatment effect of SWP-PLS exposure

Data: panel data on individual non-SWP/PLS workers in 2011 & 2019.

"Control" group: Group 2, labourers (ANZSCO classification 8) minus those in SWP/PLS-exposed occupations (Group 1)

Two-period results

	Log of real wage	Log of real wage
Treated*Post	0.0868**	0.0333**
	(0.000)	(0.000)
Age		-0.526
		(0.083)
Age2		-0.00137**
		(0.000)
Occupation fixed effects	No	Yes
Individual fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Observations	1171715	1171715
R2	0.185	0.255
F	23685.4	755.8

Data are sourced from ATO individual tax returns. We tracked workers in two years 2011 and 2019. Our key variable of interest is Treated $*$ Post, which shows the effect of SWP/PLS on wages of incumbents: 3.3 percent faster wage growth from 2011–19.

Occupational mobility—
Some descriptive evidence

Occupational mobility

The period from 2011 to 2019 witnessed a huge amount of low-skilled workers in Australia upgrade their occupations.

In our estimation sample, this rate of change was largest in SWP-PLS exposed occupations, relative to labourers and to all other workers.

Group	N workers 2011	N workers 2019	Changes
Group 1: SWP/PLS exposed occupations	125,815	92,925	-26.14%
Group 2: Labourers	527,114	427238	-18.95%
Group 3: All other workers	6,663,695	6,696,585	0.49%

Data are sourced from ATO individual tax returns. Estimation sample is a panel of the universe of individuals filing positive wages in their tax returns in both years.

Occupational mobility and wages

Workers in our sample (i.e., universe of individuals filing positive earnings in both years) who moved out of SWP-PLS exposed occupations typically more than double their earnings.

Group	2011 (AUD)	2019 (AUD)	Changes (%)
Group 1: Workers moved out of SWP/PLS exposed occupations	29,565	66,316	124%
Group 2: Labourers	36,657	62,684	71%
Group 3: All other workers	52,915	87,656	66%

Data are sourced from ATO individual tax returns. We tracked 93397 workers who worked in SWP/PLS exposed occupations in 2011 but moved out of these occupations in 2019.

Caveat: descriptive evidence does not tell us whether PLS-SWP causes these movements, whether stopping natives from taking jobs in exposed occupations, or whether these movements happen anyway.

Conclusion

Summary

What we did. use administrative tax and visa data covering all Australian workers to (a) estimate the **impacts of the SWP and PLS** on incumbent worker wages in affected occupations, and (b) **examine the movement of people** from these occupations and their earnings

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Putting the evidence together. Workers accrue 3—10x earnings gains (PLMS). Natives experience wage gains: small for those in exposed occupations; large for those working in other occupations instead

Limitation and Next Steps

Limitations

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Next steps

1. Estimate effects on employment and occupational shifts
2. Focus also on local labour markets
3. Link with business data to investigate effects on firms

Thank You

Please send any comments and suggestions to

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