

The Effect of Ethnic Residential Segregation on Wages of Migrant Workers in Australia

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Main Research Questions

Integration and Segregation

- Integration often measured in wages
- Does regional segregation affect wages (integration)?
 - positive: human capital agglomeration; lower costs; network may provide access to jobs
 - negative: enclaves are holding migrants back; less integration needed; jobs provided by network are low-pay jobs
- Implications for immigration policy possibly large

Existing Literature

Non-comprehensive overview

- Blacks in the US: Cutler and Glaeser (1997, 2000)
- Migrants in the US: Borjas (2000)
- Refugees in Sweden and Denmark: Edin et al. (2007), Damm (2009)
- Migrants in Australia: Chiswick and Miller (1985)

IV estimates find mostly negative effects; natural experiments positive; external validity questionable.

⇒ **Mixed evidence, sparse literature on Australia**

Basic Framework

Wage Regression

$$\ln w_{ijt} = \beta_1 X_{it} + \beta_2 Z_{jt} + \gamma S_{jt} + \alpha_j + \alpha_t + \varepsilon_{ijt}$$

- w_{ijt} hourly wage of migrant i , living in region j at time t
- X_{it} individual characteristics (education, occupation, age, etc.)
- Z_{jt} neighbourhood characteristics
- S_{jt} index of segregation
- α_j, α_t regional fixed effect, time dummy

Problem: location choice is endogenous

Segregation

Definition of Segregation

- Exposure Index: share of migrants in a certain area
interpretation: probability to meet a migrant in a certain area
- Dissimilarity Index:

$$DI = 0.5 \sum_{j=1}^J \left| \frac{M_{SLA_j}}{M_{SSD}} - \frac{N_{SLA_j}}{N_{SSD}} \right|$$

with M : number of migrants and N : number of natives; values between $[0,1]$

interpretation: proportion of migrant population which would have to move areas to become distributed in the same way as natives

Endogenous Location Choice

IV Estimation

Immigration to Australia is determined by a point-based scheme. Immigrants willing to live in certain postcode areas can gain additional points.

Empirical strategy:

- Dummy variable for eligible postcodes serves as IV
- Inclusion of population growth as control variable

HILDA and Australian Census

Regional and Individual Data

Individual Data

- Australian HILDA Data including postcodes (POA)
- Migrants in 2001 and 2006

Regional Data

- Australian Census Data: postcode, SLA/SSD level, NRP data
- Postcode (2,524); SLA: Statistical Local Area (1,426); SSD: Statistical District (217)

Data sets are merged at the postcode level. POA to SLA translation from the ABS (if needed).

Descriptive Statistics

	Mean	Std. Dev.	Min.	Max.
Hourly Wage	21.30	15.16	0.48	479.4
Age	40.5	11.4	18	65
Female	0.465	0.499	0	1
Postgraduate degree	0.137	0.344	0	1
Bachelor or diploma	0.315	0.465	0	1
Certificate I-IV	0.181	0.385	0	1
Year 12	0.182	0.386	0	1
Year 11 or below	0.185	0.388	0	1
Part-Time	0.255	0.436	0	1
Exposure	0.301	0.120	0.046	0.628
Dissimilarity Index	0.020	0.020	0	0.125
N	3017			

Postcode Level, Exposure Index

	OLS	FE	IV 1	IV 2
Exposure Index	-0.0390 (-0.52)	-1.029 (-0.91)	0.579*** (3.38)	0.690*** (3.07)
N	3017	3017	3017	1300
R ²	0.171	0.396	0.145	0.165
Shea-Partial R ²			0.195	0.208
F(1 st stage)			158.4	169.2

t statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

FE: Postcode Fixed Effects

IV 1: Dummy variable for eligible postcodes

IV 2: Dummy variable for eligible postcodes and inclusion of population growth as control variable

SLA Level, Exposure Index

	OLS	FE	IV 1	IV 2
Exposure Index	0.0414 (0.42)	0.101 (0.07)	0.667*** (3.33)	0.779*** (3.10)
N	3017	3017	3017	1300
R ²	0.171	0.337	0.153	0.175
Shea-Partial R ²			0.221	0.229
F(1 st stage)			140.6	135.3

t statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

FE: SLA Fixed Effects

IV 1: Dummy variable for eligible postcodes

IV 2: Dummy variable for eligible postcodes and inclusion of population growth as control variable

SSD Level, Exposure Index

	OLS	FE	IV 1	IV 2
Exposure Index	0.286*** (2.82)	-1.110 (-0.60)	0.665*** (3.24)	0.816*** (3.19)
N	3017	3017	3017	1300
R ²	0.174	0.337	0.169	0.194
Shea-Partial R ²			0.298	0.294
F(1 st stage)			61.91	62.64

t statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

FE: SLA Fixed Effects

IV 1: Dummy variable for eligible postcodes

IV 2: Dummy variable for eligible postcodes and inclusion of population growth as control variable

SSD Level, Dissimilarity Index

	OLS	FE	IV 1	IV 2
Dissimilarity Index	0.107 (0.15)	-0.714 (-0.18)	12.66* (1.77)	13.72* (1.78)
N	3017	3017	3017	1300
R ²	0.171	0.337	-0.0503	-0.0918
Shea-Partial R ²			0.0201	0.0271
F(1 st stage)			4.553	6.311

t statistics in parentheses

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FE: SLA Fixed Effects

IV 1: Dummy variable for eligible postcodes

IV 2: Dummy variable for eligible postcodes and inclusion of population growth as control variable

Magnitude of Results

Effect size and significance

- Significant and positive effects roughly similar for both measures of segregation
- Results are in line with newer research for Northern Europe (from natural experiments)

Elasticity at the mean:

Exposure Index (postcode):	0.335	×	0.690	=	0.231
Exposure Index (SLA):	0.308	×	0.779	=	0.239
Exposure Index (SSD):	0.299	×	0.816	=	0.243
Dissimilarity Index (SSD):	0.020	×	13.720	=	0.274

$$\Delta w\% = 1\% \cdot \bar{S} \cdot \hat{\gamma}$$

Results

- First attempt to measure effects of segregation on individual and small regional level in Australia
- Insignificant effect in simple OLS and FE regressions
- IV strategy yields positive wage effects, wage elasticity of about 0.25
- No negative effects found in any specification

Future Research

- Different effects for certain groups:
 - English- vs. non-English-speaking countries or origin
 - High-skilled vs. low-skilled immigrants
 - ...
- Cohort effects
 - first vs. second generation
- Quantile regression: low-income vs. high-income