Reconsidering low-paid jobs as stepping stones

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NEW ZEALAND
WORK RESEARCH INSTITUTE
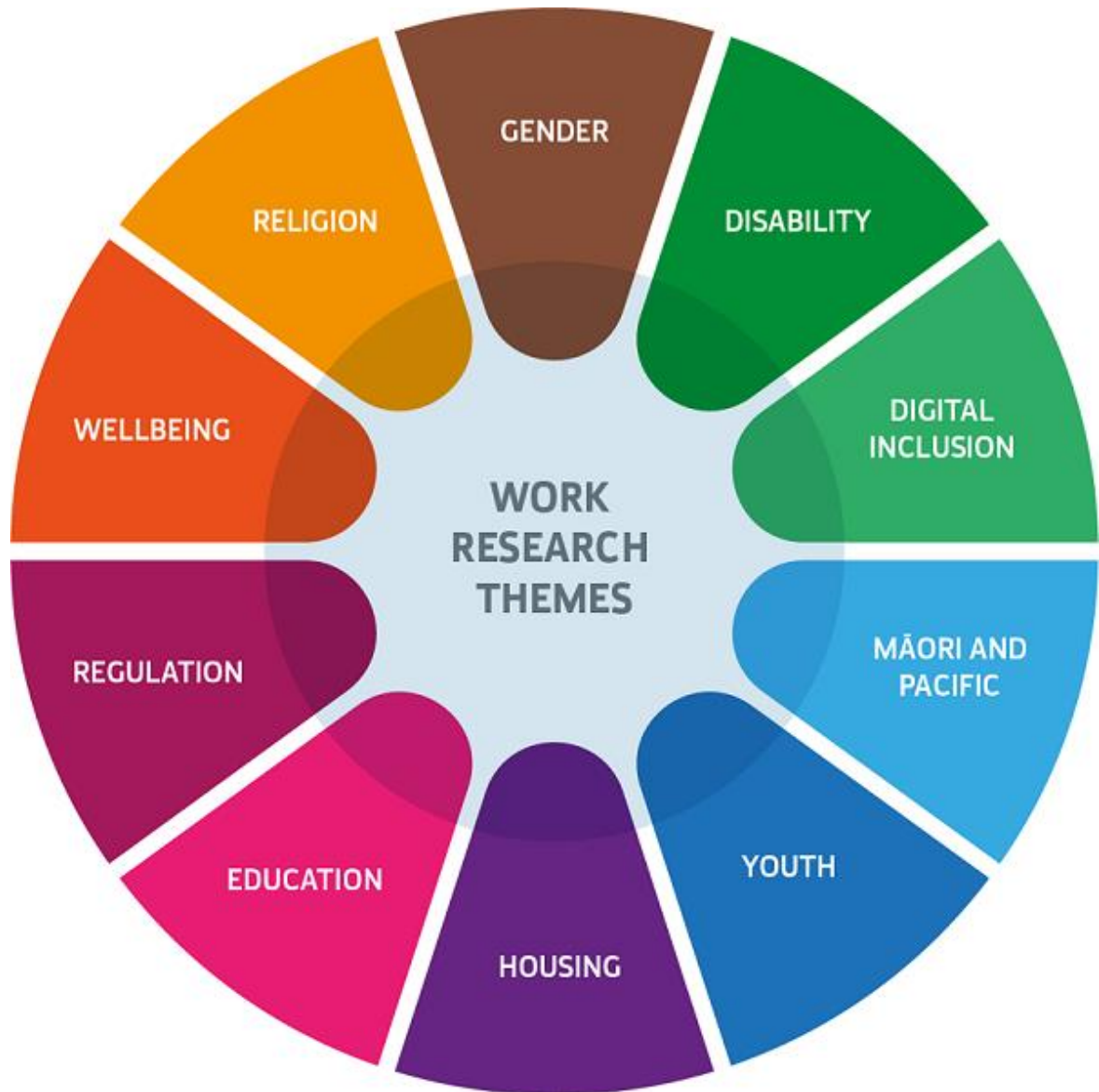
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Plan for today

- Give an overview of what we do at the NZ Work Research Institute (NZWRI)

  Highlight recent projects – particularly those that utilise the IDI

- Low-paid jobs as stepping stones or dead ends

Our Themes

GENDER

DISABILITY

RELIGION

DIGITAL INCLUSION

WELLBEING

WORK RESEARCH THEMES

MĀORI AND PACIFIC

REGULATION

EDUCATION

HOUSING

YOUTH

NZWRI in numbers

- Established in 2008

- 10 research themes and 6 specialist research groups (encompassing 70 researchers)

- 90+ international research associates

- 12 advisory board members from government, business and the community

Our Focus

Primary Surveys

World Internet Project

NZ Aged Care Workforce Survey

UN Women's Empowerment Principles Survey

Attitudes towards inclusion of te reo and tikanga Māori

Big Data

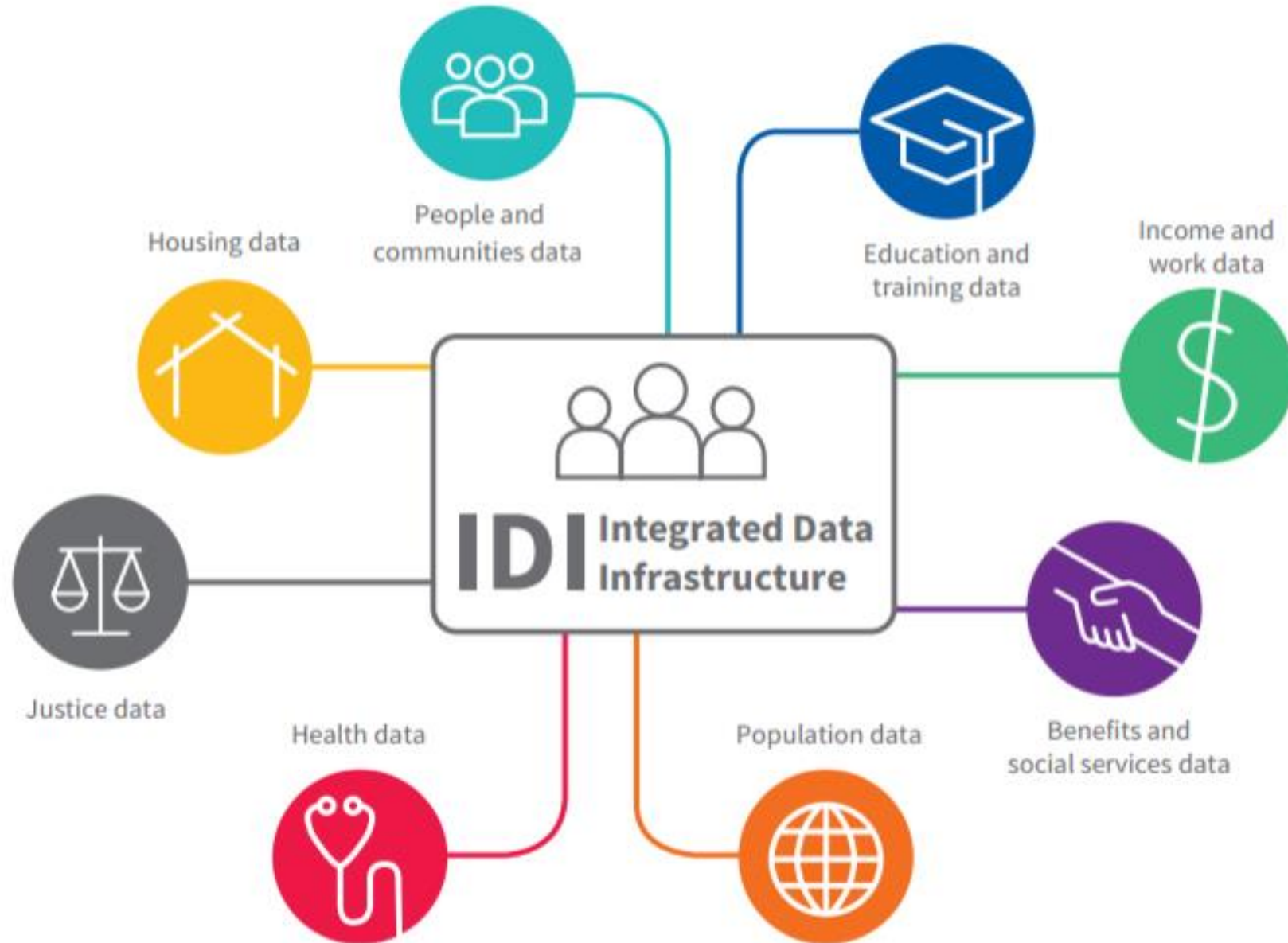Empirical evidence of the gender pay gap in New Zealand

Residential movement in New Zealand: Quantifying and characterising the transient population

Explaining ethnic disparities in bachelor's qualifications: participation, retention and completion in NZ

Big Data – The IDI

Selected recent research

- Quantifying and characterising the transient population

- Explaining ethnic disparities in bachelor's qualifications

- Parenthood and labour market outcomes

- Evaluating the implementation of Health Care Homes in Wellington

- In-work poverty in NZ

- Low-paid jobs as stepping stones or dead ends

SNZ Disclaimer

- Access to the data used in this study was provided by Statistics New Zealand under conditions designed to give effect to the security and confidentiality provisions of the Statistics Act 1975.

- The results presented in this study are the <u>work of the authors, not of Statistics NZ</u>.

Motivation

Background:

- Intensive discussion on inequality (e.g. OECD 2015, IMF 2017)
- Numerous studies on the effect of low pay employment on labour market prospects:
  - ➤ Low-paid face a high level of state dependence (see, beside others, Uhlendorff 2006, Cappellari 2007, Buddelmeyer et al. 2010, Clark & Kanellopoulos 2013, Fok et al. 2015, Cai et al. 2017)
  - ➤ Risk of staying low-paid employed is usually exceeded by the chances of becoming higher-paid employed
  - ➤ *Conclusion*: 'a trajectory to 'decent' jobs' [Fok et al. 2015, p. 892]

Motivation

Aim of this study:

- Discuss the prevailing identification strategy which is based on annual labour market information ('point-in-time')

- Compare the results with a model that uses administrative data with monthly earnings information and accounts for the intensity of the low pay attachment ('monthly')

Findings

1) Annual share of individuals affected by low pay is underestimated

2) Level of low pay attachment varies across individuals

3) Intensity of low pay attachment over time is highly correlated

$$\Downarrow$$

Conventional identification strategy *under*- and *over*estimates the persistence in low pay substantially

Literature Review

Table 1: Low pay persistence of related studies

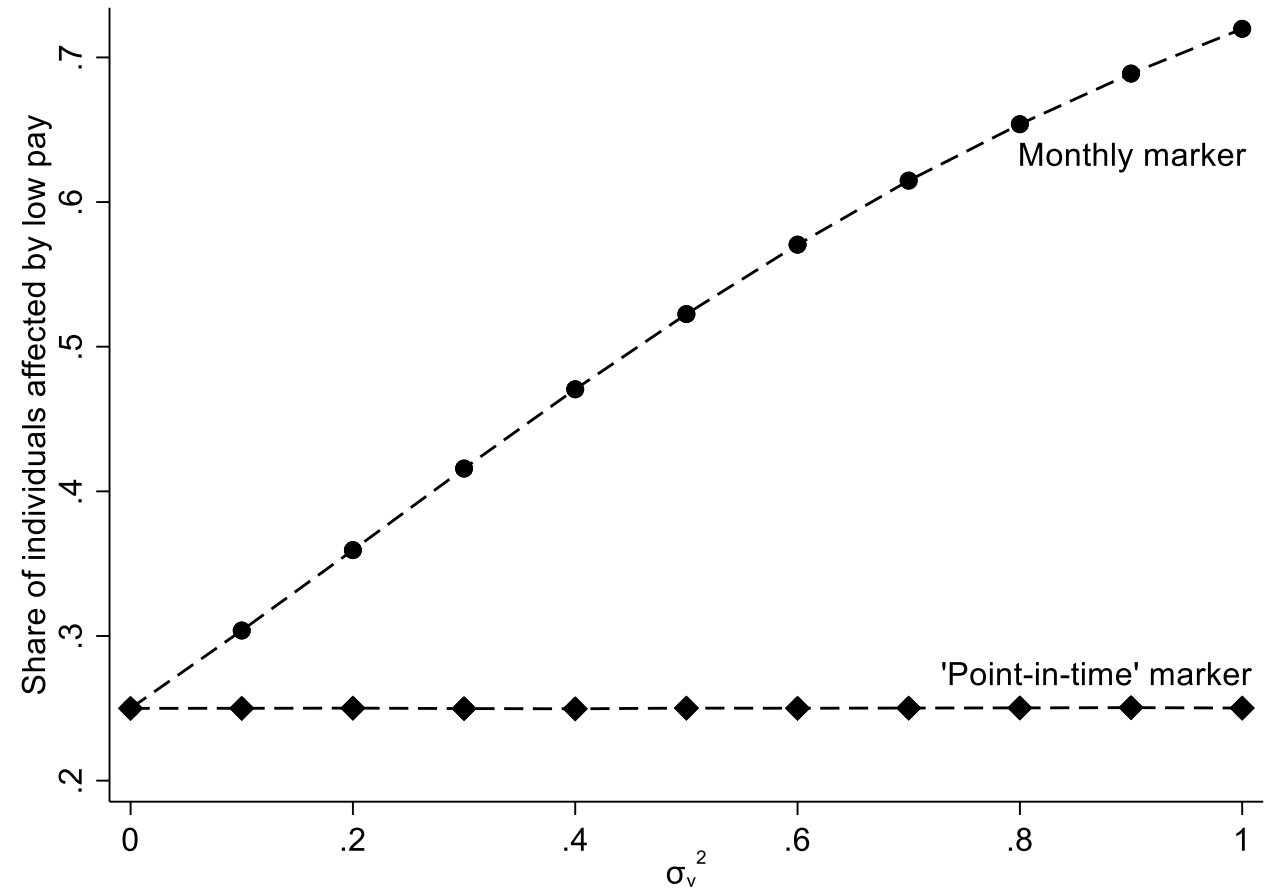| Study	$P\left(\mathrm{Lp}_t | \mathrm{Lp}_{t-1}\right)$	$P\left(\mathrm{Hp}_t | \mathrm{Lp}_{t-1}\right)$
Cai et al. (2017, Table 2)	0.196	0.556
Cai et al. (2017, Table 6)	0.272	0.472
Mosthaf (2014, Table 5)	0.083 – 0.168	0.695 – 0.789
Uhlendorff (2006, Table 7)	0.050	0.888
Clark & Kanellopoulos (2013, Table 4)	0.033 (Spain) – 0.133 (Portugal)	-

Note: Cai et al. (2017) provides estimates based on the BHPS (Table 2) and Understanding Society data (Table 6). Mosthaf (2014) provides a range of estimates based on different qualification groups. Clark & Kanellopoulos (2013) provides a range of estimates based on data from twelve countries.

Conceptual framework

To understand how low pay persistence estimates may change after accounting for monthly variation of wages and salaries.

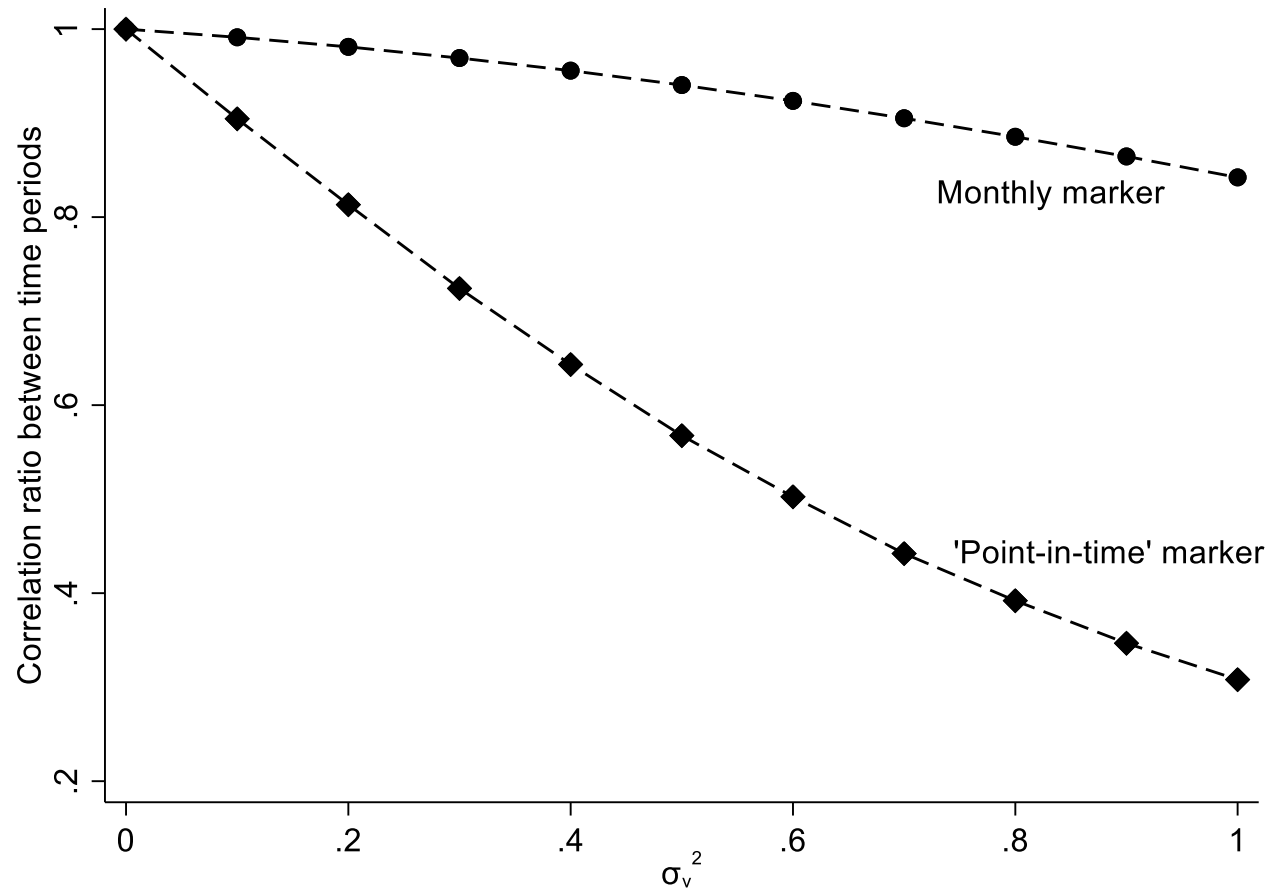We then run a simulation to investigate how changes in the monthly variation in individuals' wages and salaries (σ_v^2) affect share of low pay workers, and estimates of low pay persistence

Simulation

Conceptual framework

Simulation

Data

Central Linking Concordance
(unique identifier, basic demographic information)

IR tax data
(information on monthly wages & salaries)

Census 2013
(information on individual and household characteristics)
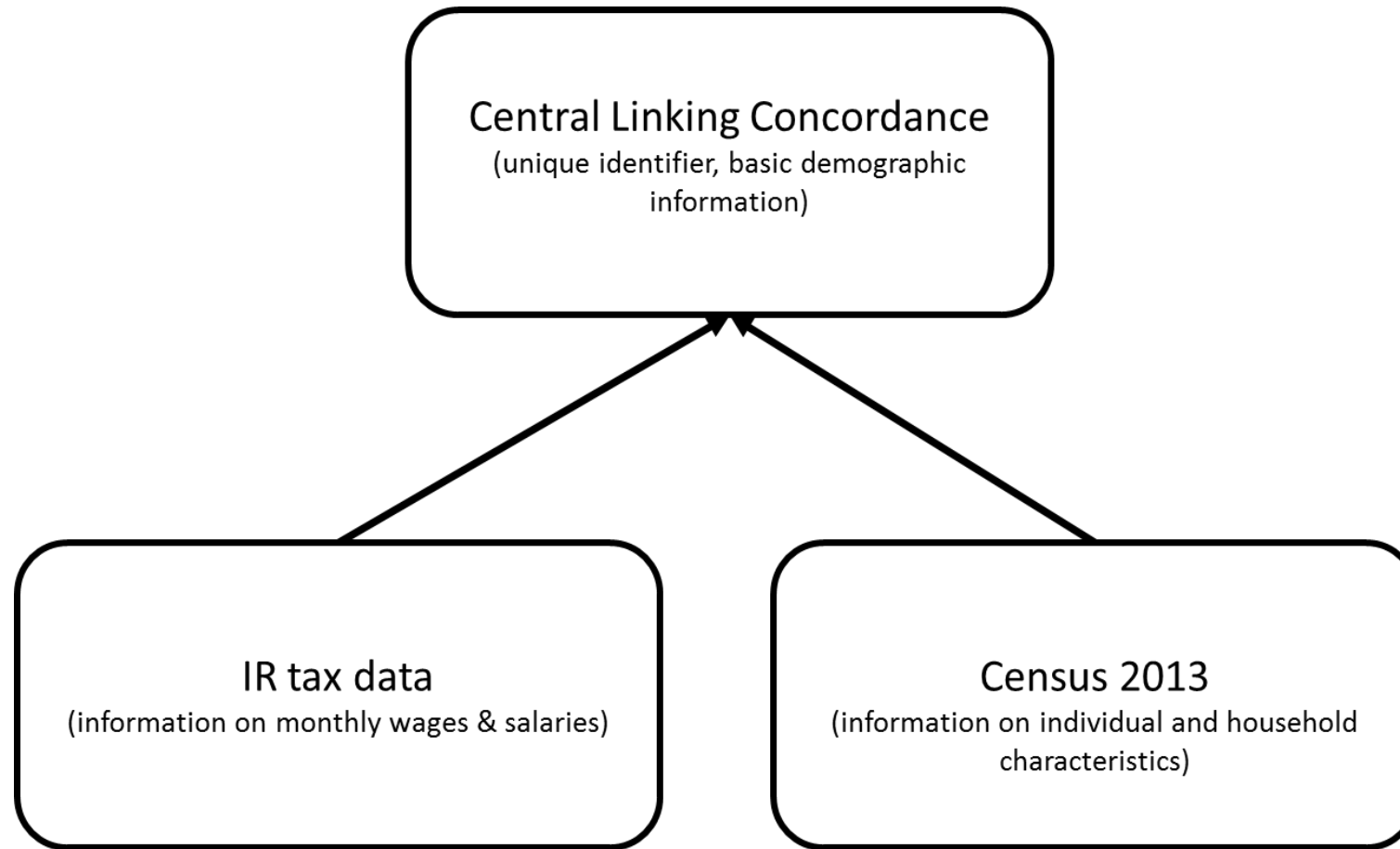
Source: own representation.

Sample

We focus on 2007 to 2013, males aged 25 to 45:

- To control for individual and household characteristics we use information provided by the 2013 Census => we only consider wage data over the years 2007 to 2013

- As the IR tax data does not include information on working hours, we focus on prime aged men (NZ specific OECD data in the respective time frame under study indicates that approximately 95 percent of this age group of men are working fulltime).

- The age restrictions employed also mitigate the influence of schooling or early retirement schemes on our analysis.

Definitions

- Men with their earnings belonging to the 10th lowest percentile are defined as low pay

- Next, the level of low pay attachment per year is ascertained and the following three groups are created:
  - *Higher pay*: individuals with no low pay experience in a year.
  - *Weak low pay:* individuals who have worked in the low wage sector but for less than 6 months within a year.
  - *Strong low pay:* individuals who have worked at least 6 months of a year in the low wage sector.

Prevalence

Table 2: Prevalence of low pay employment

Monthly marker		'Point-in-time' marker		
		Higher pay$_t$	Low pay$_t$	Share$_t$
	Higher pay$_t$	100.00	0.00	77.44
	Weak low pay$_t$	81.81	18.19	12.31
	Strong low pay$_t$	24.78	75.22	10.26
	Share$_t$	90.05	9.95	

Notes: Data sourced from IDI (2018). Authors' calculations. Based on a random subsample of population of interest $N = 47,496$. Time period $= 2007$ to 2013.

Transition probabilities

Table 3: Transition matrix of the labour market positions ('Point-in-time' marker)

	Higher pay t	Low-pay t	Total $t-1$
Higher pay $t-1$	96.53	3.47	90.05
Low-pay $t-1$	31.37	68.63	9.95
Total t	90.05	9.95	

Notes: Data sourced from IDI (2018). Authors' calculations. Based on a random subsample of population of interest $N = 47,496$. Time period = 2007 to 2013.

Transition probabilities

Table 4: Transition matrix of the labour market positions (Monthly marker)

	Higher pay$_t$	*Weak low pay$_t$*	*Strong low pay$_t$*	*Total$_{t-1}$*
Higher pay$_{t-1}$	93.19	6.60	0.20	77.12
Weak low pay$_{t-1}$	42.32	46.93	10.75	12.64
Strong low pay$_{t-1}$	2.18	12.53	85.29	10.25
Total$_t$	77.44	12.31	10.26	

Notes: Data sourced from IDI (2018). Authors' calculations. Based on a random subsample of population of interest $N = 47,496$. Time period = 2007 to 2013.

Econometric Model

- First-order Markov process

- Apply a dynamic random effects multinomial logit model (Uhlendorff 2006, Mosthaf 2014, Fok et al. 2015, Cai et al. 2017).

- Control for unobserved heterogeneity (Heckman 1981a) and its correlation with the initial conditions (Heckman 1981b)

Results

Predicted transition probabilities ('Point-in-time' marker)

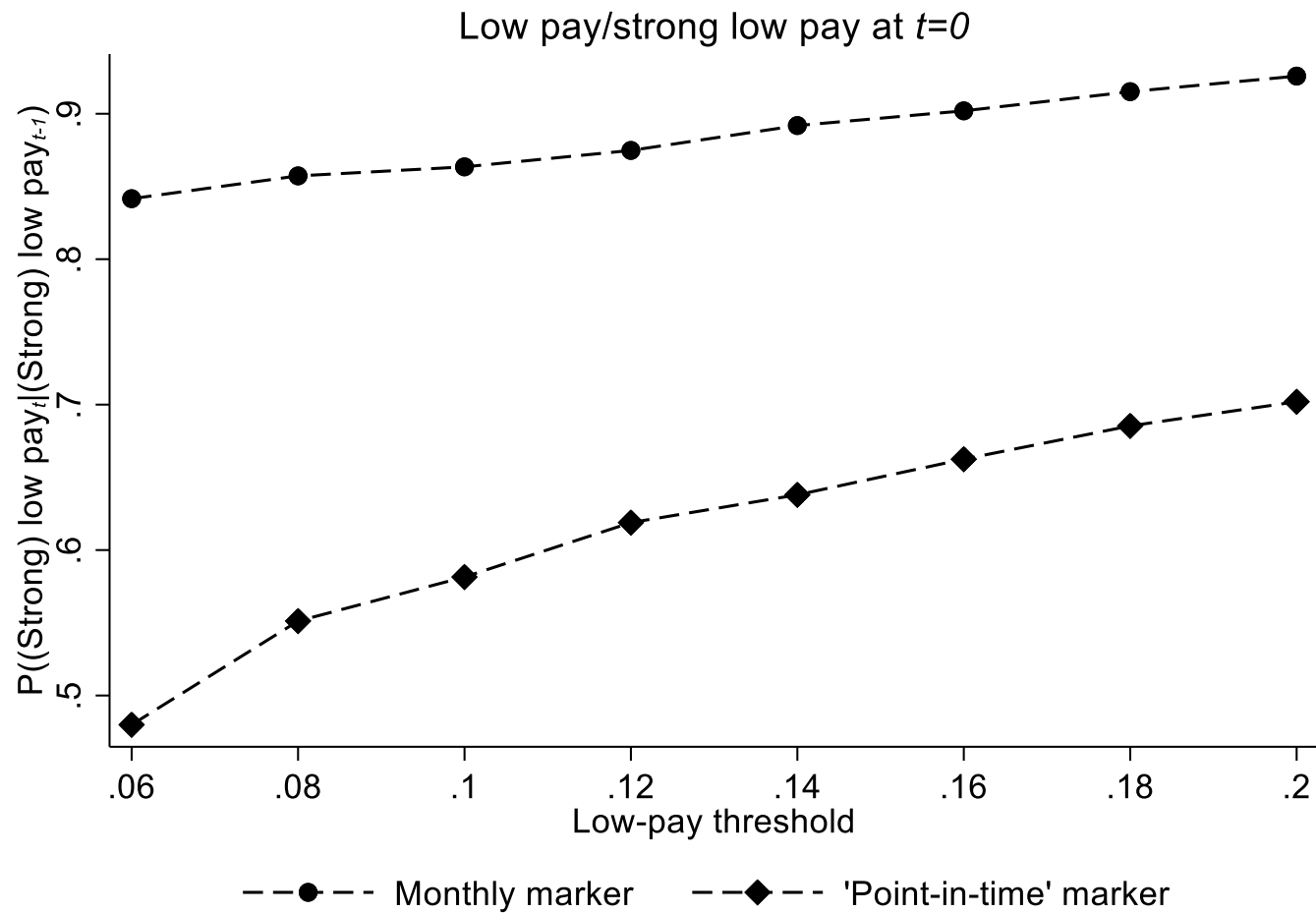|		At t = 0	
	Total	Higher Pay	Low Pay
$P(Higherpay_t|Higherpay_{t-1})$	0.9643	0.9882	0.8058
	(0.0847)	(0.0104)	(0.1214)
$P(Lowpay_t|Higherpay_{t-1})$	0.0357	0.0118	0.1942
	(0.0847)	(0.0104)	(0.1214)
$P(Higherpay_t|Low\ pay_{t-1})$	0.8664	0.9226	**0.4185**
	(0.1936)	(0.0593)	(0.1800)
$P(Lowpay_t|Low\ pay_{t-1})$	0.1336	0.0774	**0.5815**
	(0.1936)	(0.0593)	(0.1800)

Notes: Data sourced from IDI (2018). Authors' calculations. Based on a random subsample of population of interest $N = 47,496$. Time period = 2007 to 2013. Numbers in parenthesis refer to standard deviations.

Predicted transition probabilities (monthly marker)

		At $t = 0$		
	Total	Higher pay	Weak low pay	Strong low pay
$P(\text{Higher pay}_t \mid \text{Higher pay}_{t-1})$	0.8892	0.9617	0.7736	0.5825
	(0.1631)	(0.0266)	(0.1083)	(0.1482)
$P(\text{Weak low pay}_t \mid \text{Higher pay}_{t-1})$	0.1012	0.038	0.2199	0.3555
	(0.1386)	(0.0263)	(0.1027)	(0.1083)
$P(\text{Strong low pay}_t \mid \text{Higher pay}_{t-1})$	0.0096	0.0003	0.0065	0.0620
	(0.0301)	(0.0005)	(0.0065)	(0.0469)
$P(\text{Higher pay}_t \mid \text{Weak low pay}_{t-1})$	0.7611	0.8808	**0.5016**	0.2392
	(0.2571)	(0.0706)	(0.1484)	(0.1254)
$P(\text{Weak low pay}_t \mid \text{Weak low pay}_{t-1})$	0.1856	0.1140	**0.4358**	0.4222
	(0.1603)	(0.0654)	(0.1117)	(0.0513)
$P(\text{Strong low pay}_t \mid \text{Weak low pay}_{t-1})$	0.0533	0.0052	**0.0626**	0.3386
	(0.1263)	(0.0060)	(0.0443)	(0.1342)
$P(\text{Higher pay}_t \mid \text{Strong low pay}_{t-1})$	0.4349	0.5318	0.1011	**0.0145**
	(0.2523)	(0.1605)	(0.0679)	(0.0130)
$P(\text{Weak low pay}_t \mid \text{Strong low pay}_{t-1})$	0.3089	0.3317	0.4018	**0.1219**
	(0.1069)	(0.0840)	(0.0760)	(0.0476)
$P(\text{Strong low pay}_t \mid \text{Strong low pay}_{t-1})$	0.2562	0.1366	0.4970	**0.8635**
	(0.2653)	(0.0895)	(0.1322)	(0.0593)

Notes: Data sourced from IDI (2018). Authors' calculations. Based on a random subsample of population of interest $N = 47{,}496$. Time period = 2007 to 2013. Numbers in parenthesis refer to standard deviations.

Results

Low pay/strong low pay at $t=0$

y-axis: P((Strong) low pay$_t$|(Strong) low pay$_{t-1}$)

x-axis: Low-pay threshold

— ● — Monthly marker   — ◆ — 'Point-in-time' marker

Conclusions

- Prior studies have estimated the extent to which individuals working in low wage at t-1 are likely to find themselves in low wage at subsequent time points.

- Many find strong state dependence, but also higher probability of transitioning to higher pay -------- stepping stone effects

- Past literature often based on point-in-time information on an annual basis

- We use IDI and can differentiate based on monthly information – intensity of low pay attachment

Conclusions

- Based on prevailing identification strategy (point-in-time marker), we estimate 58% probability low pay cycle persists; 42% stepping stone effects

- After differentiating according to intensity of attachment, we find heterogenous results.

  - If weak low pay – 50 / 50 chance of stepping stone versus low pay persistence

  - If strong low pay – 86% probability of staying strong low pay, 1.5% probability of moving into higher pay.

Thank you very much for your time

Questions?

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