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Where do immigrants settle? Assessing the role of immigration policies.[ξ]

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This paper compares immigration flows in response to changes in labour market conditions to provide an assessment of Australia's selective immigration policies. We find employer-sponsored immigration varied in line with changes in regional wages, with immigrants being drawn to states with greater wage grown. In contrast, evidence does not support this trend for points-based immigrants. We account for the endogeneity bias by exploiting differences in the impact of exogenous commodity price fluctuations on regional wages. A complimentary analysis of a points-based immigration policy reform in 2012 further highlights the role of employers in alleviating the apparent misallocation of points-based immigrants.

JEL Codes: J21, J61, R23

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1. Introduction

A key challenge in advanced economies is the allocation of high-skilled immigrants to areas with labour shortages. Accessing the best and brightest individuals is crucial to a company's success (Kerr *et al.*, 2016) with high-skilled immigrants contributing to innovation, patenting and scientific publications (Hunt *et al.*, 2010; Kerr *et al.*, 2010; Moser *et al.*, 2014). Further, migration networks facilitate trade (Parsons *et al.*, 2016), boosts in total factor productivity (Hornung, 2014; Peri *et al.*, 2015) and firms employing high-skilled workers engage in international research and development collaboration (Foley *et al.*, 2013; Kerr *et al.*, 2015). However, it is also argued that immigration might cause the displacement of native workers whose skills are close substitutes (Borjas *et al.*, 2012, 2015; Cortes *et al.*, 2014; Glitz, 2012) and put downward pressure on wages (Borjas, 2003; Dustmann *et al.*, 2017; Dustmann *et al.*, 2016). Obviously, the costs and benefits of immigration depend on the size of émigré flows, immigrant characteristics, and distribution across occupations (Dustmann *et al.*, 2013; Peri *et al.*, 2009). To maximize net contributions, destination governments adopt selective policies to screen potential, high-skilled candidates. Of these, the two most common types are employer-sponsored and the points-based schemes. This study compares the effectiveness of these policies. The terms effectiveness and performance are used here and throughout this paper to refer to the matching of immigration distribution with the needs of the regional labour market.

Understanding the extent to which immigration policies shape the distribution of immigrants in corresponding to labour market changes is essential. The points-based scheme, in which immigrants are selected on the basis of their observable characteristics, has proven to be attractive to authorities (Bertoli *et al.*, 2016). In contrast, governments have introduced policies to increase barriers to curb employer-sponsored immigration. In the United States, for example, Republican senators Tom Cotton and David Perdue introduced a bill named RAISE (Reforming American Immigration for Strong Employment) Act to the United States Senate in 2017 (Cotton *et al.*, 2017). The goal of the bill is to replace employer-sponsored immigration programs with a points-based scheme[2]. In the United Kingdom, Boris Johnson, Michael Gove and Priti Patel, the leaders of the Vote Leave campaign, expressed their view by promoting application of an Australian-style points system (Asthana *et al.*, 2016). In

[2] The bill is backed by The White House (The White House Office of the Press Secretary, 2017).

Australia, the Department of Immigration and Border Protection (DIBP (2017) announced the 457 visa (the employer-sponsored visa) will be replaced with the Temporary Skill Shortage visa, which puts tougher requirements on candidates.

This raises the question of which scheme is more effective in matching immigrants with the demands of regional labour markets. The points-based scheme is clearly interventionist. However, The Economist (2016) suggests these interventions are less effective than employer interventions, resulting in asymmetric information, and distorting allocation quotas for occupations or areas utilising skilled-immigrant workers. Hunt (2017) comments that firms should act within the immigration system to maximise immigrants' contributions to the host country's economy, with no interference from states or provinces. Governments also usually have interventions to adjust employer-sponsored immigration flows, for example the U.S is putting a cap on H-1B admissions and selecting only STEM (science, technology, engineering and mathematics) candidates (Kerr *et al.*, 2010). Similarly, in Australia companies are required to prove they are unable to recruit suitably qualified natives prior to seeking access to employer-sponsored visa categories (DIBP, 2017). These procedures, of course, raise the costs to businesses, making narrowing of the talent gap more difficult. Therefore, an important second question is: to what extent should governments intervene in the market here?

Despite the broad interest in this issue little research has explored the effect of immigration policies on immigrants' location selection (Abramitzky *et al.*, 2017). Further, research comparing the effectiveness of employer-sponsored and points-based schemes in distributing new migrants to meet the needs of the labour market is limited (Hunt, 2017). Most previous studies focus on the assimilation of immigrants under different immigration systems, such as Antecol *et al.* (2003), who compare overall skill levels of U.S. immigrants with those in Australian and Canadian immigration systems. On the other hand, Antecol *et al.* (2006) compare earnings and employment assimilation between these countries over temporal dimensions.

To contribute to this debate, we evaluate whether, and how, immigration flows respond to changes in labour market conditions under two central policy designs: employer-sponsored and points-based workers' schemes. In particular, we compare how change in regional wages affect location selection of points-based and employer-sponsored immigrants. Research on this topic has been found to be problematic: Firstly, endogeneity is likely to be

present in Ordinary Least Squares (OLS) approaches because of the reverse effect of immigrants on wages. For example, immigrants might put pressure on the market equilibrium, thus leading to a decrease in wages; however, immigrants might also increase productivity, resulting in higher wages. Consequently, the direction of the bias is unclear. Additionally, there are unobserved individual-specific factors that may simultaneously impact on earnings and decisions of immigrants, for example unobserved ability (Aydemir *et al.*, 2011; Bertoli *et al.*, 2013). Secondly, previous studies on selection of immigrants have relied on Roy's (1951) and Borjas's (1987) theoretical predictions, which assume that migration costs are constant. However, due to differentials in economic conditions, labour market policies and institutions, results from cross-country comparisons are likely to violate this assumption (Grogger *et al.*, 2011; Parey *et al.*, 2015).

Both issues are addressed in the current paper. We use (ostensibly plausible) exogenous shocks in wages to overcome any endogeneity concerns. Furthermore, by employing policy setups in a single country (Australia), we avoid possible disparities in migration costs. Explicitly, the approach is to utilise commodity price fluctuations between 2001 and 2015, as these influenced earnings differentially across resource rich and poor states of the economy. We focus on major cities in the five most populous states to minimise differential trends in earnings and immigration caused by unobservable factors. Our premise is that where a commodity has exhibited larger, pre-existing shares of the economy, higher wage growth will occur, resulting in greater demand for high-skilled immigrants. Our empirical strategy is to leverage the interactions between state and commodity price effects as instruments for fulltime worker earnings. We then separately estimate the effect of wages on the scale of migration flows to different areas under two immigration schemes, verifying whether migration flows respond to growth in wages.

To consolidate our findings we additionally study the implications of a recent reform in Australian immigration policy. The Skilled Migrant Selection Model (SkillSelect), introduced in 2012, aims to curb "supply driven" points-based migration by requiring prospective immigrants to submit an online expression of interest (EOI) (Phillips *et al.*, 2012). Only those receiving an invitation allowed to lodge a visa application. This legislative modification also provides employer-sponsored migrants with higher processing priority than points-based migrants.

We present three significant findings; first, we show that the employer-sponsored immigration scheme distributed more high-skilled immigrants to regions experiencing higher wage growth. In particular a 1 per cent increase in wages in Western Australia (WA), the state that gained the most from resources boom, resulted in a 2.2 per cent increase in employer-sponsored immigration in relative to New South Wales (NSW). This made WA employers the largest increasing one in sponsoring high-skilled immigrants, followed by Queensland (QLD), the state that gained the second most from resources boom. Victoria (VIC) and South Australia (SA), where wages increased as same rate as NSW experienced same growth rate of employer-sponsored immigration with NSW. Second, the paper uncovers misallocation of immigrants under the points-based immigration scheme. More specifically, points-based immigrants preferred VIC and SA to WA, QLD and NSW even though the growth in wages in VIC and SA were lower than WA's and QLD's. Third, the 2012 policy reform reduced points-based arrivals in states with lower wage growth. In particular, SA experienced a decline relative to the rest of the country, while VIC's points-based immigration growth rate decreased in relative to the pre-reform period to be similar to that of NSW and QLD. This result illuminates the positive effect the reform had in redistributing supply-driven points-based immigrants to be better matched with regional areas experiencing wage growth.

The current research provides a unique contribution to the literature by assessing the role of immigration policies in shaping location selection patterns of immigrants, an area that has received little attention to-date (Abramitzky *et al.*, 2017). Moreover, we provide evidence that shifts in immigration policies have impacted on the regional distribution of immigrants.

2. Background

2.1. Roy-Borjas model

The theoretical underpinnings are based on the Roy-Borjas model; Building on the work of Roy (1951) and Sjaastad (1962), Borjas (1987, 1999) produced an income selection model explaining why people migrate from their home country. The model considers immigration as an investment activity. There are two countries: the origin country (0) and the host country (1). Individual earnings can be decomposed into an observed part (ζ_j) and an unobserved part (ε_j), where j =0 represents the home country and j =1 the host:

$$\ln(w_0) = \zeta_0 + \varepsilon_0 \tag{2.1}$$

$$\ln(w_1) = \zeta_1 + \varepsilon_1 \ . \tag{2.2}$$

Based on the work of Parey *et al.* (2015), we assume the earnings' vector (ζ_0, ζ_1, $\varepsilon_0, \varepsilon_1$) is normally distributed with means ($\varphi_0, \varphi_1, , 0, 0$) and variances ($\sigma_{\zeta_0}{}^2, \sigma_{\zeta_1}{}^2, \sigma_{\varepsilon_0}{}^2, \sigma_{\varepsilon_1}{}^2$). Base wage of the population at home and abroad are given by φ_0 and φ_1, respectively. Meanwhile, $\sigma_{\zeta_0}{}^2$ and $\sigma_{\zeta_1}{}^2$ are the respective variances, and the correlation is denoted ρ_ζ.

Assuming that individuals are rational, they will make the decision to migrate to a different country if the wage in that country, net of mobility cost (MC), is greater than the wage in their home country. In other words, residents will migrate if the sign of the index function is positive.

$$I = \ln\left(\frac{w_1}{w_0+MC}\right) \approx (\zeta_1 - \zeta_0 - \text{MC}/w_0) + (\varepsilon_1 - \varepsilon_0) > 0. \tag{2.3}$$

Let $\tau = \frac{MC}{w_0}$ be migration costs in time equivalent units, and let $v = (\zeta_1 + \varepsilon_1) - (\zeta_0 + \varepsilon_0)$ be wage disparity between the two countries that has disturbance $\sigma_v{}^2$; the emigration rate can be represented as:

$$P = \Pr\big((\varepsilon_1 - \varepsilon_0) > -(\zeta_1 - \zeta_0 - \tau)\big) = 1 - \Phi\left(-\frac{(\varphi_1 - \varphi_0 - \tau)}{\sigma_v}\right) = 1 - \Phi(Z), \tag{2.4}$$

where $Z = \left(-\frac{\varphi_1-\varphi_0-\tau}{\sigma_v}\right)$ and Φ is the standard normal distribution function. It could be interpreted that the emigration rate would be a function of migration cost, and base wages of destination and home countries. Borjas (1987) shows that earnings of migrants differ from base wages at home and abroad as follows:

$$\begin{aligned} E(\zeta_0|\text{I}>0) &= E(\zeta_0|((\zeta_1 + \varepsilon_1) > (\zeta_0 + \varepsilon_0 + \tau)) \\ &= \varphi_0 + \frac{\sigma_{\zeta_0}\sigma_{\zeta_1}}{\sigma_v}(\rho_\zeta - \frac{\sigma_{\zeta_0}}{\sigma_{\zeta_1}})\frac{\phi(Z)}{1-\Phi(Z)} \end{aligned} \tag{2.5}$$

$$\begin{aligned} E(\zeta_1|\text{I}>0) &= E(\zeta_1|((\zeta_1 + \varepsilon_1) > (\zeta_0 + \varepsilon_0 + \tau)) \\ &= \varphi_1 + \frac{\sigma_{\zeta_0}\sigma_{\zeta_1}}{\sigma_v}(\frac{\sigma_{\zeta_1}}{\sigma_{\zeta_0}} - \rho_\zeta)\frac{\phi(Z)}{1-\Phi(Z)}, \end{aligned} \tag{2.6}$$

where $\lambda(z) = \frac{\phi(Z)}{1-\Phi(Z)}$ is the inverse Mills ratio, and $\phi(Z)$ is density function. The terms 'negative selection' and "positive selection' are used by Borjas (1987), referring to

immigrants on average earning less or more in their home country than those who do not migrate, respectively.

Most previous literature focuses on the role of earnings inequality for migration decision; that is, on equations (2.5) and (2.6). However, importantly, we focus on equation (2.4) to assess the impact of immigration policies on the matching of immigrants' location selection with the needs of the labour market. In particular, we compare response emigration rates with changes in base wages of different destinations under aforementioned policies.

2.2. Existing empirical evidence

In recent decades, applied economists have typically estimated the role of income in accounting for international/bilateral migration flows (Belot *et al.*, 2012; Chiquiar *et al.*, 2005; Grogger *et al.*, 2011). Most of these studies, however, were conducted in settings where immigrants confronted legal barriers to migration and mobility costs were relatively high (Parey *et al.*, 2015). Consequently, results on location selection of migrants are conflicting. Furthermore, most existing studies explore characteristics of migration flow rather than the role of immigration policies in shaping distribution of immigrants. For example, Moraga (2011, 2013) found negative selection for (urban) Mexican emigrants to the United States (U.S.). In contrast, some influential studies report Mexican immigrants in the U.S. are not negatively selected, contradicting predictions generated from the Roy-Borjas framework (Chiquiar *et al.*, 2005; McKenzie *et al.*, 2007; Orrenius *et al.*, 2005). To reconcile, Chiquiar *et al.* (2005) suggests the discrepancy might be explained by disparities in migration costs and wealth constraints.

In addition to studies on Mexico-U.S. migration, other researchers have explored the self-selection of migrants between different sets of countries to the U.S. While Puerto Rico-U.S. migration performs in line with the model predictions (Borjas, 2008), the model does less well in explaining immigration patterns for other countries, including Norway-U.S. and Israel-U.S. (Abramitzky *et al.*, 2012; Gould *et al.*, 2016).

Similarly, the international migration literature shows mixed evidence. For example, Stolz *et al.* (2012) uncovered evidence of negative selection using a set of 52 source, and 5 migrant-receiving countries (U.S., U.K., Canada, Argentina and Norway) during the 19th century. Meanwhile, in a sample of 70 source countries and 21 OECD destination countries, Borjas's predictions can be explained only after combining the role of poverty thresholds operating in the home countries (Belot *et al.*, 2012). It has been argued that differences in

immigration policies and economic backgrounds across countries contribute to these mixed findings, for instance, the U.S. immigration policy exhibits greater openness to illegal migration, making it more responsive to labour market changes, whereas the policies in the U.K., Spain and Canada favour asylum seekers, insulating them from changes in the labour market (Hanson *et al.*, 2012). Furthermore, changes in immigration policy might impact migration selection, for example, the U.S.'s first immigration quota, under the Emergency Immigration Act of 1921, led to positive selection (Massey, 2016).

Empirical papers on internal migration similarly have mixed findings. Historical internal migration from Spanish provinces to Madrid in the early 20th century provide support for positive selection (Tapia *et al.*, 2017), while the degree of migrants' selectivity is different across other internal destinations, often displaying negative selection. Recent evidence has found that migrants to Spain's major cities are positively selected, though there is no evidence of self-selection of migrants to small cities (De la Roca, 2017). On the other hand, Collins *et al.* (2014) found evidence of a slight positive selection in the U.S. during the "Great Migration" period. In addition, (Borjas *et al.*, 1992) found U.S., young workers' mobility patterns during 1979-1986 support the Borjas model predictions, in that skilled workers relocate to regions with higher returns to skills. Even though both internal and international migration empirical studies provide contradictory support for the Roy-Borjas model, economists consistently continue (typically) to assert that migrants' decisions depend on the respective wage gaps (Grogger *et al.*, 2011; Hunt, 2006; Salisbury, 2014).

Overall, most international and internal migration studies suffer from three potential limitations. Firstly, they are possibly affected by endogeneity issues due to the reverse effect of immigrants on equilibrium wages and/or unobserved factors that simultaneously influence migrant decisions and their earnings (Bertoli *et al.*, 2013). Secondly, the literature typically ignores differences in economic/social conditions, or different migration policies of destination countries. Finally, while migrant selection has received enormous attention, few papers have compared the effectiveness of immigration policies in appropriately allocating immigrants. We add to this body of literature by assessing the effectiveness of immigration policies in matching \ immigration distribution with the needs of labour market.

2.3. Australian context

Australia's immigration policy currently relies on a grade point system (DIBP, 2017; Miller, 1999). This system allows Australia to open its borders to high-skilled immigrants while

restricting the flow of low-skilled immigrants. Following this, millions of high-skilled workers have sought to migrate to Australia, with India and China accounting for the largest proportions of migrants, according to the Department of Social Services (DSS) Settlement Database (2017). Antecol *et al.* (2006) found that in 1990 approximately 50 per cent of Australia's immigrants entered under the high-skilled visa policy, compared to only 8.2 per cent for the U.S. Administrative data from the Census that in 2016, 33 per cent of Australian citizens were born overseas. Of immigrants to Australia in 2016, around 67 per cent are skilled migrants.

Figure 1 shows that the three main streams of immigration in Australia are skilled, family re-union, and humanitarian visas. The increase in the total number of immigrants over the period from 2001-2015 was approximately 145 per cent, with the peak at around 200 thousand people migrating to Australia in 2011. Immigration of skilled migrants tripled during these fifteen years, accounting for 67.5 per cent of the overall expansion. In contrast, family and humanitarian streams accounted for 23.4 per cent and 2.5 per cent, respectively. This reflects the Australian government's prioritisation of immigration under the skilled stream.

Two backbone sub-classes dominate the Australian skilled immigration stream: the points-based scheme, and the employer-sponsored programme. The first scheme permits immigration to workers on the basis of their skills, youth, education, experience and fluency in English, recognising their potential benefit to Australia in the medium to long-term. Individuals considering a migration under this scheme are not backed by an employer or a family member in Australia, but are rather allocated points, with those awarded points above the Australian government's set threshold invited to apply for a relevant visa. The number of invitations issued are limited and based on government forecasts of labour market demand. Furthermore, a significant reform introduced in 2012 requires candidates to submit an expression of interest prior to being invited to lodge a visa application (Phillips *et al.*, 2012). Meanwhile, the employer-sponsored stream enables employers to nominate foreign candidates for permanent residency, allowing them to fill vacancies they have been unsuccessful in filling from the local job market. This scheme is similar to H-1b admissions in the United States.

According to the Settlement Database (2017), between 2001 and 2015 the number of Australian visas granted through the points-based stream rose sharply, from 14 thousand to

the peak at 60 thousand in 2008 before declining. Points-based migrants prefer to select populous states as their destinations, for example, NSW attracting the most skilled immigrants (35.3%), followed by VIC (26.6%). Both QLD (15.9%) and WA (15.7%) attract significantly less than both NSW and VIC, while SA (4.1%) attracts the fewest skilled immigrants. Similarly, the number of Australian visas granted under the employer-sponsored streamed increased six-fold, from just over 5 thousand to nearly 31 thousand, during the same period. In terms of geographical distribution, 34 per cent of workers were recruited by businesses located in NSW, while VIC accounted for 23 per cent of total offers; followed by WA with 20 per cent; and QLD and SA recording 19 and 2 per cent of offers respectively.

Our identification strategy (see below) relies on exploiting the differences in the impact of exogenous commodity price fluctuations on wages across the Australian states, as the export of commodities plays an integral role in Australia's economy (Bjørnland *et al.*, 2016). Table 1 highlights state-level contributions of agriculture, forestry and fishing, and mining in the fiscal years 1999-2000 (a year before our studied panel). As shown, WA, with 24 per cent of its total factor income (TFI) sourced from commodities, is the most dependent on these industries. This is far larger than QLD, the second state, where this proportion was only 11 per cent. NSW, VIC, and SA, in contrast, depend less on these industries comprising only 4, 5 and 7 per cent, respectively, of their TFIs. Therefore, commodity price fluctuations differently affect states leading to divergence in changes in regional wages.

Figure *2* illustrates the association between index of commodity price (ICP) and average wages across Australian states. It does appear to show that the index of commodity prices (ICP) quadrupled from 2001 to 2011, reaching its peak at 155 points. This coincided with earnings in WA rocketing, making it the highest paying state in 2011 (from third in 2001). NSW, VIC, and SA have seen similar changes in average earnings, while in QLD these have increased slightly faster. Figure *2* also illustrates two distinct periods for the ICP: Over the ten years from 2001 to 201 ICP experienced solid growth, while the more recent years (2011-2015) witnessed a mining downturn. As shown, the ICP lost nearly half of its value from 2011 to 2015, falling to its lowest point in 2015. Meanwhile, earnings in the resource-rich state of WA kept growing until 2014, perhaps due to existing contractual mining arrangements. On the other hand, as Figure A1 (Appendix) shows, the unemployment rate increased in WA. Our premise is that where a commodity has exhibited a larger, pre-existing share of the economy, higher wage growth will occur (in the upturn period), leading to higher demand in high-skilled immigrants.

3. Data

This paper employs unique and highly detailed data from several sources. Firstly, data on individual earnings sourced from the Household, Income, and Labour Dynamics in Australia (HILDA) survey (Wooden *et al.*, 2007). This survey, which provides rich information on earnings and personal characteristics, is a nationally representative longitudinal household survey, conducted annually by the Melbourne Institute of Applied Economic and Social Research, on behalf of the Department of Social Services. The Australian Bureau of Statistics' (ABS) Consumer Price Index (CPI) (ABS CPI, 2016) was used to calculate real wages, with data on annual commodity prices sourced from the Reserve Bank of Australia (RBA) (RBA ICP, 2016). We used administrative data from the Settlement Database (2017) to explore patterns of immigrant adjustment to earnings fluctuations, as it contains information on permanent migrants in Australia since 1993, including age on arrival, country of birth, English fluency, gender, first language, years of education, and visa sub-class. We included a variety of controls at regional level which were extracted from National Regional Profiles (NRP) (ABS NRP, 2015).

3.1. Wages

Data on individual earnings were sourced from the HILDA, with 15 waves utilised. Wave 1, conducted in 2001, included 7,682 households and 19,914 individuals. Those respondents continuing to be surveyed in subsequent waves. The survey has been continuously expanded to take into account changes in household composition. HILDA is ideal for our analysis as it allows us to track individuals over a long period while providing rich information across a broad range of social-demographic, personal characteristics and labour outcomes.

Across the fifteen waves of HILDA, the total number of observations was 217,917 (29,685 distinct individuals). Each individual was interviewed 7.34 times, on average. We restricted the sample to working-age individuals (from 18 to 64), who were full-time employed. In our panel, full-time employment is approximately 54 per cent, yielding an estimation sample of 69,640 observations. We used gross financial year wages and salaries to measure individual earnings.

We combined this data with the Reserve Bank of Australia's (RBA) Index of Commodity Prices (ICP) (RBA ICP, 2016). The ICP is the weighted arithmetic mean of recent variations in commodity prices, where the input to the ICP given to each commodity

takes into account its contribution to the total commodity export values in a base period.[3] Detailed definitions and descriptive statistics of variables used in the wage equations are given in Tables A2 and A3 (Appendix), respectively.

3.2. Immigration data

Data on immigration flows for 2001-2015 at Local Government Area's (LGAs) level were sourced from the Settlement Database, an administrative data source. This dataset, provided by the Australia DSS, archives information on permanent residents and some streams of temporary residents who have migrated to Australia since 1991 (more than 2 million observations) (Settlement Database, 2017). It combines monthly data from the Department of Immigration and Border Protection and several other sources, such as Medicare Australia. This dataset is pivotal to understanding the key drivers of immigration as it contains information on key relevant variables, such as age and calendar year of arrival, country of birth, citizenship, gender, and education, LGA of residence, visa sub-class, statistical sub-division and English proficiency. The detail of data allows us compare migrant inflows to specific LGAs, under different immigration schemes in response to wage increases. As a result, we can evaluate the effectiveness of each scheme.

3.3. Regional profile data

To control for a richer set of regional time-varying characteristics, we employed information from the National Regional Profile. The source includes information on various socio-economic characteristics of regions, for example, LGA housing affordability (housing price, number of dwelling units, proportion of residential houses, and the number of private houses), and age structure (births and deaths). Moreover, in the census years (2001 and 2006) data collection was extended to include education (number of persons who have a postgraduate degree, graduate diploma/certificate, bachelor degree, advance diploma/certificate, or certificate), number of taxpayers and occupation structure of the community (proportion of managers, professionals, and labourers). Due to changing LGA boundaries in 2006, we had to concord the LGA codes for years 2001 and 2006 with those for

[3] Currently, those commodities are rural commodities (wool, beef and veal, wheat, barley, canola, sugar, cotton, lamb and mutton), base metals (aluminium, lead, copper, zinc, nickel), bulk commodities (iron ore, metallurgical coal, thermal coal), other resources (LNG, crude oil, alumina, gold, copper ore) (see appendix table A1 for the detailed contribution of each commodity to ICP). The base-period is regularly updated by the RBA. In the latest update (2016), the 2014/15 average takes a value of 100.

2011. This dataset also allowed us control for time-variant characteristics, which might affect immigration decisions.

4. Baseline results

This section provides a baseline specification, comparing location choices of employer-sponsored and points-based immigrants in response to regional wage variations during the period 2001-2015. We substantiate the hypotheses that ICP fluctuations affected the differences in earnings' growth across Australian states; and that these disparities in turn affected the distribution of immigrants differently under the two immigration schemes.

4.1. ICP fluctuations and wages

We commence our empirical analyses by estimating the effect of commodity price shocks on employees' annual earnings using the baseline specification of

$$\ln(W_{i,s,t}) = \alpha_i + \gamma_s + \lambda_t + \sum_{s \subset N} \beta_s (\gamma_s \times ICP_t) + \theta \ln(X_{ist}) + \varepsilon_{ist}, \qquad (4.1)$$

where: the dependent variable is log gross financial year wages (AUD, 2011 prices) of individual *(i)* in state (*s)* at year (*t)*; α_i is the usual unobserved individual effect, capturing personal time-invariant characteristics; γ_s are state fixed effects, capturing any time-invariant differences across different states;λ_t are year fixed effects; and ICP_t is index of commodity prices (common to both states and individuals). Finally, X_{ist} is a vector of standard covariates, including gender, personal characteristics, union membership, experience, age, education, English proficiency, long term health status and location (Parey *et al.*, 2015), and ε_{lst} is the usual random error term. The coefficients of interest are β_s: the impact of commodity prices fluctuations on annual earnings in state *s*. To consolidate comparability across regions and reduce potential disparity trends, our baseline analysis focuses on the metro cities of five most populous states NSW, VIC, QLD, SA, and WA, which represent approximately 60 per cent of the total Australia population (Figure 3). N denotes the set of these studied states. Our baseline specification focuses on the period 2001 to 2015. In our regression results, we denote the interaction between γ_s *and* ICP_t as the "effect on state *s"*. Note that if there are only two states, equation (4.1) is a simple difference in differences (DD) regression (Angrist *et al.*, 2008).

Results are provided in Table 2. The dependent variable in all models is the (log of) individual's annual real wages in 2011 prices. Specifications in all Columns, except Column 1, contain individual fixed effects. Column 1 includes time invariant variables such as gender, type of high school the individual attended (catholic secondary school, private secondary school, and last school year overseas), individual characteristics (parental divorce/separation and number of siblings), and language proficiency (English as first language, and not born in an English speaking country). To explore whether the estimates are driven by time variant personal characteristics, all Columns except Column 2 control for a richer set of covariates, including union membership, quadratic experience, quadratic age, educational qualifications, presence of children under 6 years old, marital status, and long term health conditions and disabilities. State and year fixed effects are included in all Columns.

In general, we find a strong positive correlation between ICP and earnings growth in WA, where the contribution of resources is much higher than in the remaining states. A similar effect exists in QLD, but is more moderate. In particular, Column 3 presents estimates from our preferred specification with individual fixed effects and a vector of standard controls. Interestingly, every ten point increase in ICP led to an annual earnings increase of approximately 0.92 per cent in WA relative to NSW, the corresponding increase for QLD is 0.55 per cent (*t*-stat = 3.1). On the contrary, point estimates effects on SA (β_{SA} = 0.0004) and VIC (β_{VIC} = 0.0001) are not statistically significant, suggesting that ICP influence in these states was not different to that observed in NSW. The *F*-test is 143, indicating the null hypothesis H_0 that all coefficients are equal to 0 is strongly rejected by the data. Adjusted R square is 28.47, which is relatively high for a wage equation, (see e.g. Parey *et al.* (2015)). In addition, these results are very similar to Column 2 where we remove the vector of standard controls. These are reinforced by Column 1 where we remove both individual fixed effects and time-variant characteristics (the pooled OLS regressions).

The specifications presented so far use the full sample of 50,050 observations. We further disaggregate data into two sub-samples: natives and immigrants. Outcomes shown in the last two columns. Column 4 replicates the same specifications as column 3, though this time uses the subsample of native workers. The coefficient for WA is somewhat smaller (β_{WA} = 0.0068, *t*-stat = 2.7). Column 5 reports the impact on foreign-born workers. The coefficient for WA is now much larger (β_{WA}= 0.0148, *t*-stat = 3.7). The coefficient for QLD remains positive, but no statistically significant. The *F*-statistic is 23.22; much lower than the first

four Columns, however it is worth remembering that the foreign-born subset has only 12,193 observations.

These results suggest that workers in states more reliant on commodities expect higher wages than those in other states. They are also consistent with previous studies, for example, Acemoglu *et al.* (2013) found strong, positive evidence that economic subregions of the southern US, with greater oil intensity, experienced larger changes in income corresponding to oil price variations than areas with less oil intensity. We will use the interactions of the levels of state reliance on resource with ICP as instruments for state average wages in subsequent sections.

4.2. Wages and immigration distribution

In the previous subsection we showed that ICP differently affected regional wages. We turn now to the core research questions, corresponding to the effect of variation in regional wages on distribution of employer-sponsored and points-based immigrants. Our expectation is that employer-sponsored immigrants will migrate to regions where wages grow faster, meanwhile, points-based immigrants might not vary in line with wage levels. We propose a structural model explaining the impact of annual wages on employer-sponsored and points-based immigration inflows. The model is based on panel data regressions, taking the following form:

$$\ln(W_{s,t}) = \gamma_s + \lambda_t + \sum\nolimits_{s \subset N} \beta_s \, (\gamma_s \times ICP_t) + \varepsilon_{st} \, , \tag{4.2}$$

$$\ln(Y_{l,s,t}) = \gamma'_l + \lambda'_t + \sum\nolimits_{s \subset N} \tau_s \ln(W_{s,t}) + \zeta X_{ls(t-1)} + \varepsilon'_{lst}, \tag{4.3}$$

here equation (4.2) is the aggregate form (at state level) of equation (4.1). By inserting equation (4.2) into equation (4.3) we have a reduced-form of immigration decision specification, such that

$$\ln(Y_{l,s,t}) = \gamma'_l + \lambda'_t + \textstyle\sum_{s \subset N} \tau_s \beta_s \, (\gamma_s \times ICP_t) + \zeta X_{ls(t-1)} + \varepsilon_{lst} \, , \tag{4.4}$$

where t indexes years, l indexes LGAs, and s indexes states. λ'_t is defined similarly to λ_t in equation (4.1). The outcome variable $Y_{l,s,t}$ is the number points-based, or employer-sponsored immigrants to LGA (l) of state (s) in year (t). $X_{ls(t-1)}$ is a vector of other time-variant characteristics at LGA level in year t-1. This includes housing affordability (log number of dwelling units, log housing price, quadratic of log housing price, proportion of private

houses, and residential houses), age structure (log of number of deaths and log of number of births).[4] $\gamma'_l s$ are region fixed effects controlling for any time invariant differences across the different LGAs. ε_{st} and ε'_{lst} are independent and identically distributed. Again, in our result tables, interaction between $\gamma_s$and ICP_t is denoted by "effect on state *s*".

Earlier papers often estimate the effect of earnings on immigration in empirical models based on equation (4.3) by using OLS (Bertoli *et al.*, 2013). However, this approach might be affected by endogeneity issues due to the effect immigrants potentially have on wages. For example, immigrants might put pressure on the market equilibrium, thus, wages are likely to decrease, or immigrants could increase productivity, leading to higher wages. Consequently, the sign of the bias on τ_s is unclear. There might also be unobserved factors simultaneously affecting earnings and migration decisions. To manage this we instrument for variations in the area of worker earnings by using the interactions of ICP fluctuations with state dummies. As we have seen, ICP appears to be a strong driver of earnings in resource-rich states. Our identifying assumption is that ICP fluctuations affect wages directly, and while indirectly influencing through wages, they do not directly affect immigration flows. Indeed, Table 2 shows all *F*-statistics were found to be much greater than 10, supporting the validity of the instruments employed (Staiger *et al.*, 1997).

Clearly, not all immigration schemes are the same. Figure 4 plots the ICP and employer-sponsored migration flows since 2001, showing that employer-sponsored migration distribution is positively correlated with ICP growth. It was predicted WA would attract the most employer-sponsored immigrants given it experienced the fastest wages growth due to commodity boom, which was supported. Figure 5 shows the correlation between ICP and points-based immigration which was also found to be highly correlated. However, there is little evidence suggesting migrants were allocated in line with state commodities. More specifically, points-based immigrants targeted VIC and SA rather than WA or QLD.

The main results of the paper are reported in Tables 3 and 4. Table 3 displays points-based immigration flows and their drivers, according to a variety of different specifications. The dependent variable is the log of number of points-based immigrants. Columns 1 and 2 present OLS results from equation (4.3). Columns 3 and 4 are from the reduced form model of equation (4.4). The last two columns illustrate the outcomes from the structural form,

[4] Not reported in the paper, but available on request, the estimates are similar when controls at time *t* were used.

corresponding to a system of equations, (4.3) and (4.4), in which we instrument annual earnings by interaction between initial contribution of commodity to local economy and ICP.

Not surprisingly, points-based migrants were not moving in line with wages. According to structural estimates in Column 6 VIC ($Coeff_{VIC}$ = 2.7053, *t*-stat = 4.9) and SA ($Coeff_{SA}$= 2.2993, *t*-stat = 4.8) attracted higher levels of immigration than other states, with WA ($Coeff_{WA}$= -0.5362, *t*-stat = -2.0) seeing the lowest ratios. After removing the vector of standard controls in Column 5 the magnitude of point estimates are somewhat larger, though rank and confidence levels remained constant. In addition, point estimates from reduced form (Columns 3-4) and OLS (Columns 1-2) estimations are similar in terms of rank and confidence levels.

Table 4 illustrates opposing findings for employer-sponsored immigrants, who were affected by wage levels, confirming our hypotheses that settlement of employer-sponsored immigrants is motivated by wage growth. The dependent variable is the (log of the) number of employer-sponsored immigrants. In particular, structural estimates (Column 6) show that employers in WA ($Coeff_{WA}$= 2.2028, *t*-stat = 7.5) sponsored more immigrants than employers in NSW, with no difference in sponsorship for VIC, QLD, SA and NSW. In Column 5, we remove the vector of standard time-variant controls. In this case, the coefficient of WA remains significant at 1 per cent size, and the magnitude increasing ($Coeff_{WA}$ = 2.4886, *t*-stat = 9.6), while the coefficients for QLD ($Coeff_{QLD}$ = 1.7918, *t*-stat = 2.5), and SA ($Coeff_{SA}$ = 1.1265, *t*-stat = 2.2) became statically significant. The order of magnitude of the effects on WA, QLD and SA are consistent with the order of dependence of states on commodities in 2000, the year before our studied period, supporting our prediction that employers sponsored immigrants in line with wage changes.

Further support is found in reduced form estimations (Columns 3-4). WA witnessed an employer-sponsored migration increase of around 5.5 per cent for each 10-point ICP growth (Column 4). These results make sense as the rise in immigration only appears in WA LGAs with large contributions of resource and agriculture. Finally, for comparison, Columns 1-2 report the OLS results. Here, the magnitude of the coefficients of interest are much smaller than the structural estimates, confirming the need of structural estimates that take into account the issue of endogeneity..

To sum up, evidence suggests that in areas benefiting from the commodity boom, the points-based program is less effective in allocating high skilled migrants than the employer-sponsored scheme. Under the points-based policy, rising wages in WA did not attract more

high-skilled immigrants. Immigrants instead targeted VIC and SA, where wages only grew similarly to NSW. In contrast, WA employers sponsored more skilled than other states.

5. Robustness Checks

This section presents further robustness checks for our baseline analysis. Our identification strategy can be considered an extension of the simple, and popular, DD regression approach. However, Bertrand *et al.* (2004) argued the DD approach may suffer from serial autocorrelation problems if a large number of time periods are involved, resulting in overestimation of significance levels. Our baseline estimations use panel data spanning from 2001 to 2015, and while our period is less than the average 16.5 years surveyed in Bertrand *et al.'s* (2004) seminal work, we apply their simple solution to correct for possible serial correlation. Note we focus on the pre-reform period (2001-2011), while the post-reform period is studied in section 6.3. More specifically, we replicate the reduced-form estimates as in equation (4.4) but remove the time series dimension by collapsing the data into two periods: *ex-ante* and *ex-post* commodity boom. The former is created by averaging the data from 2001 to 2005, while the latter is for 2006-2011.

In addition, as 2001 and 2006 are census years, we use the census data to generate a larger set of controls than those used in previous sections. In particular, in addition to existing covariates, we add controls for education (per cent of residents whose postgraduate, graduate diploma/certificate, bachelor, advanced diploma/certificate, and certificates), population size (log of number of tax payers and its quadratic term), and occupation structure (per cent of people who work as managers, professionals and labourers).

Table 5 presents the results. In columns 1, 3, and 5 there are no time variant covariates X_{lst} while they are included in columns 2, 4, and 6. Our preferred estimations in Column 2 suggest SA ($\tau_{SA}\beta_{SA}$ = 0.0389, *t*-stat = 2.2) and VIC ($\tau_{VIC}\beta_{VIC}$ = 0.0373, *t*-stat = 2.7) were more attractive to points-based migrants after the commodity boom, while QLD did not experience a more rapid rate compared to NSW. WA ($\tau_{SA}\beta_{SA}$ = -0.0428, *t*-stat = -2.3) had the lowest points-based immigration growth rate in five states. The magnitudes of all variables of interest become somewhat larger when we remove the vector of standard time-variant controls in Column 1. The rank remains unchanged but WA ($\tau_{SA}\beta_{SA}$ = -0.0159, *t*-stat = -1.2) no longer differing from NSW. However, Column 4 shows the employer-sponsored migration rate in WA ($\tau_{WA}\beta_{WA}$ = 0.0935, t-stat = 5.8) was 9.35 per cent higher than those in

NSW and the rest of the country in response to each 10 points ICP increase. After removing the vector of controls in Column 3, the impact of ICP shocks coefficient in QLD becomes statistically significant. These estimations are perfectly in accordance with previous sections, suggesting that our findings are not affected by serial autocorrelation(s).

Results for family-based immigration are presented in columns 5 and 6, confirming our expectation that migrants entering under this stream did not locate to regions experiencing positive economic shock. The reasons behind this are twofold. Family visa allocations potentially affected by existing migrant networks, as well as links with those migrating under the points-based scheme. Existing links are more likely to attract immigrants rather than regional wages, and given the points-based system has a larger intake compared to than the employer-sponsored stream, it would be expected to have a larger impact on those entering through the family-based stream. Our findings are consistent, regardless of the various identification strategies, validating our empirical strategies.

6. Effect of points-based policy reform on the redistribution of immigrants

6.1. Incorporating a structural break

In 2012 the Australian government significantly reformed the points-based scheme (Phillips *et al.*, 2012), aiming to reduce supply-driven, points-based immigrants by requiring online submission of an expression of interest prior to lodging a visa application; while also giving priority to employer-sponsored immigrants. The number of points-based arrivals to Australia has significantly fallen since the reform (Settlement Database, 2017). This provides us with a unique opportunity to analyse the impact of policy reform on patterns of points-based immigration, potentially reinforcing our findings. In addition to the policy reform, the ICP actually spans two very contrasting periods. Over the ten years from 2001 to 2011 the commodity prices experienced solid growth, however, the more recent years of 2011-2015 witnessed the mining downturn. We extend the wage equation 4.1 to allow for a structural break at 2011.

$$\ln(W_{i,s,t}) = \alpha_i + \gamma_s + \lambda_t + \sum_{s \subset N} \beta_s (\gamma_s \times ICP_t) + \sum_{s \subset N} \mu_s (\gamma_s \times ICP_t \times Post_{reform}) + Post_{reform} + \theta \ln(X_{ist}) + \varepsilon_{lst}, \quad (6.1)$$

where:

$$Post_{reform} = \begin{cases} 0, & year \leq 2011 \\ 1, & year > 2011 \end{cases}.$$

The slopes in the two segments are β_s and $\beta_s + \mu_s$.

Table 6 presents the results allowing for such a break. In general, the slopes of the variables of interest (β_s) in the pre-reform segment remain unchanged relative to the findings of Table 3. This provides strong evidence that earnings of WA workers' grew much faster than those of NSW. QLD workers also gained more than those of NSW, but smaller than WA; while VIC and SA experienced similar rates with NSW.

We note several changes in the post-reform segment. The slope of WA is seen to become steeper ($\mu_{WA} \approx 0.004$) (Columns 1-3), suggesting stability in this finding, regardless of changes (pooled OLS, FE baseline, and FE with vector of standard controls). The pooled OLS estimate is significant at 5 per cent (*t*-stat = 2.3), while the estimates become more precise (statistically significant at 1 per cent) in both FE regressions. Also, μ_{WA} was even larger when the subset of native workers was used alone ($\mu_{WA} = 0.0051$, *t*-stat = 3.0). However, when we change to the subsample of foreign-born workers ($\mu_{WA} = 0.0022$, *t*-stat = 0.8) μ_{WA} is close to zero and statistically insignificant. There is no difference in other slopes between the two segments.

We now turn to our central objective, comparing the changes in the patterns of points-based and employer-sponsored migration distributions in the two periods. As it is complicated to incorporate threshold into the structural model, we only use the reduced-form equation. We revise equation 4.4 as follows.

$$\ln(Y_{l,s,t}) = \gamma'_l + \lambda'_t + \sum_{s \subset N} \tau_s \beta_s (\gamma_s \times ICP_t) + \sum_{s \subset N} \tau_s \mu_s (\gamma_s \times ICP_t \times Post_{reform}) + Post_{reform} + \zeta X_{ls(t-1)} + \varepsilon_{lst}, \quad (6.2)$$

where the coefficients of our interest are $\tau_s \beta_s$ and $\tau_s \beta_s + \tau_s \mu_s$. Results are presented in Table 7.

Column 2 shows the favoured estimates for the points-based scheme. Apparently, in the pre-reform period, points-based immigrants preferred VIC ($\tau_{VIC}\beta_{VIC}$ = 0.0311, *t*-stat = 4.9) and SA ($\tau_{SA}\beta_{SA}$ = 0.0408, *t*-stat = 5.4) to QLD ($\tau_{QLD}\beta_{QLD}$ = -0.0005, *t*-stat = -0.0), WA ($\tau_{WA}\beta_{WA}$ = -0.0105, *t*-stat = 1.6) and NSW. This confirms previously stated results (section

4.2) finding location choice of points-based immigrants is not motivated by wage growth. In the post-reform period, ICP had an inverse effect on QLD ($\tau_{QLD}\mu_{QLD}$ = -0.0396, *t*-stat = -4.8), while the slope of SA is flatter than in the pre-reform period ($\tau_{SA}\mu_{SA}$ = -0.0115, *t*-stat = -2.2). These estimations include LGA fixed effects and a vector of standard controls, furthermore our estimates are robust when we remove the vector of standard controls ($X_{ls(t-1)}$) in Column 1. This suggests that the tougher requirements on this type of migration (by adding a role for employers) effectively adjusted the migration flows. This adjustment narrowed the mismatching between wages and immigrant's location choice.

Column 4 replicates Column 2, but the dependent variable is now the (log of) number of employer-sponsored immigrants. In the pre-reform period, employers in WA ($\tau_{WA}\beta_{WA}$ = 0.0637, *t*-stat = 8.7) and QLD ($\tau_{QLD}\mu_{QLD}$ = 0.0266, *t*-stat = 2.1) sponsored more immigrants than those in NSW and the remaining states. In the post-reform period, the respective coefficient for QLD is close to zero, whilst that of WA becomes smaller than the pre-reform period. In Column 4, we remove the vector of usual time-variant controls. Results remain essentially unchanged, except the coefficients for WA and QLD became somewhat larger, and the coefficient of SA becomes significant. SA ($\tau_{SA}\beta_{SA}$ = 0.0205, *t*-stat = 2.5) employed slightly more immigrants than employers in NSW and VIC, but much less than those in WA and QLD. As seen, the rank of the magnitudes and the precise level of coefficients suggest that firms predominantly sponsored in regions experiencing growth in wages. As we do not have structural estimates we cannot directly see the transmission mechanism of the effects of wages on migration flows. However, we can indirectly infer that the wage elasticities of QLD and WA employer-sponsored immigration become close to zero.

Overall, the results of this section provide more robust evidence for the baseline findings. By adding the structural break we have addressed the issue, raised in subsection 4.2, regarding findings significantly varying between specifications with and without time variant controls. Evidence supported our prediction that immigration distributions are asymmetric between ICP pre- and post-reform periods. Moreover, policy-reform has resulted in positive changes with points-based immigrants better matched with areas benefiting more from commodities boom.

6.2. Pre-reform period

A remaining concern is that the ICP elasticity of WA earnings becomes larger in the post-reform period, which seems to contradict Figure 1 prompting a reminder that the post-reform period coincidently experienced a downturn in ICP. In addition, indirect inference shows the ICP elasticity of QLD employer-sponsored immigration is close to zero. However, Figure 4 shows a decline of about 50 per cent between 2012 and 2015, made QLD the fastest declining state in the group. Moreover, the evidence presented so far is based on combined data in pre- and post-reform periods. This approach has two implicit assumptions. First, that the two segments have equal disturbance variances. Second, in baseline estimations (section 4) we assumed that the slopes of all independent variables remained the same no matter the period, although we relaxed this assumption by allowing the coefficients on our variables of interest to change, but restricted all the remaining ones to be constant in subsection 6.1. If one of the two assumptions is not satisfied the estimates will be biased (Greene, 2003). A critical point is that unobserved factors might not be identical in the two periods. For example, internal migration flows, as an adjustment mechanism of native workers to respond with immigration inflows, differ. In addition, the internal migration asymmetries may also result in changing parameters of other variables. In this subsection, we relax those assumptions by disaggregating the data and using the subsamples separately in the following subsections.

We replicate the strategy applied in Section 4, but restrict the analysis to the pre-reform division of the sample (2001 to 2011). Table 8 presents the estimates based on the wage equation 4.1. Column 3 presents our preferred specification, including fixed effects and a wide range of control covariates. These results show that WA (β_{WA}= 0.0095, *t*-stat = 3.8) experienced much faster wage growth with respect to the ICP. QLD (β_{QLD}= 0.0053, t-stat = 2.6) ranked second; with VIC, SA, and NSW having the same wage returns to ICP. The results are robust across pooled OLS and fixed effects (without vector of time-variant controls) models presented in columns 1 and 2. In the subset of native workers (Column 4), the coefficient on WA is smaller than the respective coefficients for WA in Columns 1-3 (β_{WA} = 0.0060, *t*-stat = 2.0). On the contrary, in the foreign-born workers subset (Column 5), WA's coefficient is now much larger than corresponding coefficients for WA in preceding columns (β_{WA}= 0.0175, *t*-stat = 3.7). In this case, the coefficient for QLD is positive, but no statistically significant. In all models, *F*-test is greater than 20. These results are essentially very similar to those of Table 2 where our studied period was 2001-2015.

The patterns of points-based immigration distribution are reported in Table 9. The structural estimates in Column 6 show that VIC ($Coeff_{VIC}$= 2.5504, *t*-stat = 4.6) and SA ($Coeff_{SA}$= 1.9635, *t*-stat = 3.9) saw highest increase in points-based immigration. WA's point-based immigration rate ($Coeff_{WA}$= -1.2054, *t*-stat = -4.4), on the other hand, was lower than NSW and was the lowest in the country. Time-variant characteristics are removed in Column 5. In this case, results little change, except that QLD attracted as same immigration rate as NSW. These results are not different from those from the reduced-form (Columns 3-4) and OLS (Columns 1-2) regressions.

Patterns of employer-sponsored immigration distribution are shown in Table 10. According to structural estimates (column 6), WA ($Coeff_{WA}$= 2.2286, *t*-stat = 7.2) employers attracted substantially more immigrants than other states. After including a vector of time-variant controls (Column 6), the coefficient for WA becomes larger, followed by QLD ($Coeff_{QLD}$= 2.6121, *t*-stat = 3.3) and SA ($Coeff_{SA}$= 1.5003, *t*-stat = 2.7). As seen, these estimates are consistent in reflecting how commodities contribute to each state's economy. Moreover, the estimates are supported by reduced-form regressions (Columns 3-4). One more striking feature of this analysis is that the differences between OLS and structural estimates are not sizeable, consistent with Dustmann *et al.* (2013), who suggests that we should expect immigrants to arrive in localities experiencing positive economic shocks.

To sum up, these additional results are in line with previous ones suggesting the employer-sponsored immigration scheme is more effective in distributing high-skilled immigrants than the points-based scheme. In particular, under the points-based scheme the states benefiting the least from the commodity boom experienced the highest increase in number of migrants; whereas, under the employer-sponsored scheme immigrants migrated to states gaining the most from commodity boom.

6.3. Post-reform period

As mentioned earlier, the Australian government introduced a legislative change in the points-based immigration system in 2012 which reduced the number of points-based migrants to Australia (Phillips *et al.*, 2012; Settlement Database, 2017). Moreover, the ICP has experienced a significant decline since 2012, hence, this subsection re-uses the baseline approach to verify whether the policy reform and the ICP collapse caused immigration changes in the downturn period (2012-2015).

We begin by re-examining the potential effect of the ICP on wages (Table 11). Column 3 reports estimates from the fixed effects regression including the vector of time-variant controls. This, shows the ICP no longer caused the disparity in wage growth across states. In particularly, earnings of WA and QLD's workers whose growth rose no more rapidly than other states. Though the former two states rely more heavily on resources than the other states. The estimates may reflect time lags in the mining investment phase, or may result from homogeneity in labour markets across states. Homogeneity in labour markets may lead to natives using interstate migration as an effective tool in equalizing inter-regional earnings, in responses to the mining burst on WA and QLD labour markets and/or to the influx of immigration (Borjas, 2006). Furthermore, these results hold regardless of specification changes (pooled OLS – Column 1, fixed effects without controls – Column 2, subsample of natives - Column 4, subsample of foreign-born workers - Column 5).

Table 12 presents analysis of the regional distribution of points-based immigrants. Structural estimates (Column 6) show no statistical change between NSW and QLD, and while VIC rates remained the same as NSW, SA's ($Coeff_{SA}$= -9.1927, *t*-stat = -3.5) and WA's ($Coeff_{WA}$= -3.4595, *t*-stat = -2.2) significantly declined. Column 5 shows further analysis after removing the same time-variant covariates as in previous sections, and while the coefficient for WA ($Coeff_{WA}$= -1.9716, *t*-stat = -1.3) became statistically insignificant, no other significant changes were detected. Furthermore, estimations from reduced-form (Columns 3 and 4) and panel fixed effects (Columns 1 and 2) regressions show the same outcomes. Taken together, these results suggest a redistribution of point-based immigrants, reducing mismatching between wages and point-based immigrant's location choice. While these results may come from ICP shrinkage, they may also arise from policy change resulting in positive impact on the adjustment of migration flows.

The distribution of employer-sponsored immigrants (Table 13) show all regressions indicate a sizeable decline in QLD employer-sponsored immigration. In particular, both structural estimates with and without the vector of usual controls (Columns 6 and 5) show 1 per cent wage growth leads to similar patterns of employer-sponsored immigrant arrivals for WA and SA, VIC, and NSW, while, QLD experiences an 18 per cent decrease in comparison with the rest of the country. Columns 1 and 2 report the estimates from OLS regressions, showing around a 12 per cent reduction in QLD. The reduced-form specifications in Columns 3 and 4 suggest that a 10-point decline in ICP results in an 8 per cent decline in QLD employer-sponsored immigration. Despite the fact that these findings are quite significant,

they are still consistent with general patterns of employer-sponsored immigration flows shown in Figure 4. One possible interpretation is that QLD employers acted in response to high unemployment rates in the state during 2012-2015 (Appendix Figure A1) while in other states (including WA) the immigration rate was kept fixed.

Overall, results indicate that legislative changes in 2012 resulted in redistribution of points-based immigrants, resulting in a better matching of immigrants and changes in regional wages. Another strong finding is the confirmation that employer-sponsored flows are in line with labour market demand, consistent with our earlier findings.

7. Concluding remarks

Our analysis examines the effect of migration policies on the distribution of high-skilled immigrants. Comparisons of immigration flows to regions (in response to regional wage changes) under points-based and employer-sponsored schemes show the effectiveness of each policy in terms of pairing immigrants with the needs of local labour market. We show that the points-based scheme is less effective than the employer-sponsored immigration. Our results suggest employer-sponsored immigration flows alter effectively with changes in wages; while, there is no systematic evidence that points-based immigration scheme effectively locates immigrants in line with wage changes. This could be due to asymmetric information resulting in government interventions being less effective than employer programs, for example, the Australian government set a total number of places each year, and different thresholds set for occupations. This research highlights that the 2012 policy reform, which aimed to promote the role of employers in the points-based scheme, was effective in reducing the misallocation of points-based immigrants. Moreover, a battery of robustness checks confirm these findings.

The possible endogeneity bias in estimating the effect of wages on immigration distribution was addressed by using the Instrument Variable approach. We showed a significant divergence in the dependence of Australian states on commodities. Moreover, commodity prices highly correlate with wages, and while indirectly affecting immigration flows through wages, a direct effect was not identified. We, therefore, construct plausibly exogenous Instrumental Variables for states' average wages by exploiting the variations in commodity prices and the initial contribution of commodities to the states' economies. We document that during the upturn in commodity prices, resource-rich states experienced faster

wage growth than resource-poor states, while during the downturn period wage growth was similar across regions.

It is also worth noting that our results should be interpreted in light of the particular context of the study. First, resource booms may result in a two-speed economy, where employment in services and manufacturing industries hardly grow (Bjørnland *et al.*, 2016). Second, prior knowledge may impact upon location choice for points-based immigrants, for instance, Sydney and Melbourne, the two largest cities of Australia, likely to be better known than about other regions. Third, the quotas for immigrants' occupations might be subject to government adjustments to achieve medium and long-term goals, the extent of which may vary across countries. Therefore, further research could benefit from exploration into the distribution of points-based immigration in different countries, for example Canada or New Zealand. Notwithstanding these considerations, the effect of migration policies on the pairing immigrants with the needs of labour market analysed sheds light on the debate over advantages and disadvantages of employer-sponsored and points-based immigration schemes.

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Tables and Figures

Table 1: Industry contributions to total factor income in 1999–2000

	NSW	VIC	QLD	SA	WA
Agriculture, forestry and fishing	2%	3%	5%	5%	4%
Mining	2%	2%	6%	2%	20%

Notes: data are sourced from ABS State Accounts. ABS.Cat.No.5220.0 (ABS State Accounts, 2001).

Table 2: The effect of ICP on Australian states' full-time worker's annual earnings in 2001-2015

	Full Sample			Born in Australia	Born Overseas
	Pooled OLS	FE baseline	FE with controls	FE with controls	FE with controls
	(1)	(2)	(3)	(4)	(5)
Effect of ICP on annual earnings					
Effect on VIC	-0.0005	0.0020	0.0001	-0.0001	0.0010
	(-0.3)	(1.2)	(0.1)	(-0.1)	(0.3)
Effect on SA	0.0040	0.0012	0.0004	0.0001	0.0018
	(1.5)	(0.5)	(0.2)	(0.0)	(0.3)
Effect on QLD	0.0039^{+}	0.0076**	0.0055**	0.0056**	0.0052
	(1.9)	(4.1)	(3.1)	(2.8)	(1.4)
Effect on WA	0.0125**	0.0088**	0.0092**	0.0068**	0.0148**
	(5.1)	(4.0)	(4.3)	(2.7)	(3.7)
Personal characteristics					
Female	-0.2107**				
	(-39.4)				
Union member	0.0502**		0.0541**	0.0538**	0.0548**
	(8.7)		(7.2)	(6.1)	(3.7)
Experience	0.0220**		0.0119**	0.0108**	0.0146**
	(25.9)		(13.7)	(10.8)	(8.5)
Experience squared	-0.0005**		-0.0003**	-0.0003**	-0.0004**
	(-18.9)		(-11.1)	(-8.5)	(-7.2)
Age	0.0828**		0.1314**	0.1344**	0.1246**
	(48.5)		(48.3)	(43.7)	(20.3)
Age squared	-0.0009**		-0.0012**	-0.0013**	-0.0011**
	(-42.7)		(-38.9)	(-35.2)	(-16.3)
Parents ever got divorced	-0.0184*				

	(-2.2)			
Have child under 6 years-old	0.0255**	-0.0391**	-0.0473**	-0.0116
	(3.5)	(-5.3)	(-5.6)	(-0.8)
Siblings	-0.0112**			
	(-7.8)			
Married	0.0944**	0.0146+	0.0121	0.0228
	(16.3)	(1.7)	(1.2)	(1.2)
Education				
Postgraduate	0.5175**	0.1959**	0.1681**	0.3011**
	(43.8)	(4.7)	(3.6)	(3.1)
Graduate diploma/certificate	0.4561**	0.2081**	0.2313**	0.1800+
	(39.2)	(5.1)	(5.0)	(2.0)
Bachelor	0.4032**	0.1443**	0.1290**	0.2312**
	(46.0)	(3.9)	(3.1)	(2.6)
Advanced diploma/diploma	0.2436**	0.1174**	0.1287**	0.1014
	(24.3)	(3.6)	(3.6)	(1.3)
Certificate	0.1355**	0.1097**	0.1274**	0.0361
	(16.2)	(4.4)	(4.6)	(0.6)
Year 12	0.1391**	-0.0357	-0.0399	0.0040
	(15.1)	(-1.1)	(-1.1)	(0.1)
Catholic school	0.0398**			
	(5.9)			
Other non-government school	0.0624**			
	(6.5)			
Last school year overseas	-0.0469**			
	(-6.6)			
English proficiency				
English as first language	-0.0920**			

	(-6.2)				
Not born in an English-speaking country	-0.0695**				
	(-5.1)				
Health Status					
Long-term health condition or disability	-0.1031**		-0.0235**	-0.0191*	-0.0396*
	(-13.9)		(-3.2)	(-2.3)	(-2.6)
Constant	8.9430**	10.7750**	7.7563**	7.7771**	7.6321**
	(256.8)	(572.6)	(122.3)	(109.9)	(51.7)
Year FE	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes
Individual FE	No	Yes	Yes	Yes	Yes
N	50050	50050	50050	37857	12193
R^2	0.281	0.704	0.722	0.724	0.717
F	346.50	148.23	143.19	121.99	23.22

Notes: The dependent variable is the log gross individual real financial year wages and salaries. *t*-statistics are given in parentheses + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. Sample consists of residents who resided in major cities of five of the most populous states during 2001-2015. In columns (2), (3), (4), and (5), individual fixed effects are included. State and year fixed effects are included in all columns. "Effect on State (*s*)" are the main variables of interest and are defined as the interaction between the ICP and state dummy variables. ICP is scaled by dividing by 10. The data source for wage variables is the HILDA survey, the data source for ICP is the RBA ICP.

Table 3: The effect of earnings on regional distribution of points-based immigrants in 2001-2015

Variables	Panel FE		Panel FE- reduced form		Panel FE-structural form	
	(1)	(2)	(3)	(4)	(5)	(6)
Annual earnings in VIC	2.0367**	1.8405**			2.9746**	2.7053**
	(4.9)	(4.5)			(5.5)	(4.9)
Annual earnings in QLD	-2.4945**	-2.3894**			-0.9444	-1.0668
	(-5.4)	(-4.9)			(-1.5)	(-1.5)
Annual earnings in SA	0.6001+	0.4408			2.5144**	2.2993**
	(1.8)	(1.3)			(5.4)	(4.8)
Annual earnings in WA	-0.5864**	-0.7486**			-0.5063*	-0.5362*
	(-3.5)	(-4.1)			(-2.1)	(-2.0)
Effect on VIC			0.0335**	0.0308**		
			(5.5)	(5.1)		
Effect on QLD			-0.0160	-0.0155		
			(-1.5)	(-1.4)		
Effect on SA			0.0392**	0.0357**		
			(5.4)	(4.9)		
Effect on WA			-0.0135*	-0.0134*		
			(-2.2)	(-2.1)		
Log dwelling units		0.1109**		0.1002**		0.1078**
		(4.5)		(4.0)		(4.3)
Log housing price		0.3899		0.1118		0.0646
		(1.4)		(0.4)		(0.2)
Log housing price square		-0.0461*		-0.0242		-0.0184
		(-2.0)		(-1.1)		(-0.8)
Log no. deaths		-0.6164**		-0.6399**		-0.6069**
		(-7.5)		(-7.8)		(-7.2)
Log no. births		0.4779**		0.4459**		0.4827**
		(6.4)		(6.0)		(6.2)

Log no. private houses		-0.0669**		-0.0740**		-0.0675**
		(-2.6)		(-2.9)		(-2.6)
Residential		-0.0009		-0.0005		-0.0008
		(-1.2)		(-0.6)		(-1.1)
Constant	0.7476	1.2328	4.0952**	4.8218**	-5.6829*	-4.2897*
	(0.5)	(0.7)	(118.2)	(5.4)	(-2.5)	(-2.0)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
LGA Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	2040	2020	2040	2020	2040	2020
R^2	0.922408	0.927936	0.922016	0.927439		
F	95.4162	77.9354	94.4089	76.8917		

Notes: The dependent variable is the log yearly number of points-based immigrants who arrived to Australian LGAs in 2001-2015. *t*-statistics are shown in parentheses + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. Standard deviations are clustered at the LGA level. Annual earnings for each state is defined as the log of average real gross financial year wages and salaries (AUD, 2011 prices). "Effect on State (s)" are defined as the interaction between the ICP and state dummy variables. "Annual earnings" in states and "Effect on State (s)" are the main variables of interest. ICP is scaled by dividing by 10. All regressions include LGA and year fixed effects. The data for earnings, ICP, immigration, and regional time-variant controls variables are sourced from the HILDA survey, the RBA ICP, the Settlement Database, and the National Regional Profiles respectively.

Table 4: The effect of earnings on regional distribution of employer-sponsored immigrants in 2001-2015

Variables	Panel FE		Panel FE- reduced form		Panel FE-structural form	
	(1)	(2)	(3)	(4)	(5)	(6)
Annual earnings in VIC	0.4341	0.0149			0.6625	0.1150
	(1.0)	(0.0)			(1.1)	(0.2)
Annual earnings in QLD	-0.6283	-1.3219*			1.7918*	1.1409
	(-1.2)	(-2.4)			(2.5)	(1.5)
Annual earnings in SA	0.8614*	0.5400			1.1265*	0.6866
	(2.4)	(1.5)			(2.2)	(1.3)
Annual earnings in WA	1.3666**	0.8740**			2.4886**	2.2028**
	(7.3)	(4.4)			(9.6)	(7.5)
Effect on VIC			0.0075	0.0012		
			(1.1)	(0.2)		
Effect on QLD			0.0303**	0.0132		
			(2.6)	(1.1)		
Effect on SA			0.0176*	0.0098		
			(2.2)	(1.2)		
Effect on WA			0.0661**	0.0548**		
			(9.8)	(7.7)		
Constant	-2.4491	-4.7657**	2.8487**	-1.1859	-7.5184**	-6.6481**
	(-1.4)	(-2.6)	(76.0)	(-1.2)	(-3.1)	(-2.8)
Standard controls	No	Yes	No	Yes	No	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
LGA Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	2040	2020	2040	2020	2040	2020
R^2	0.920420	0.925422	0.922092	0.926800		
F	288.7152	222.1607	297.1604	227.7445		

Notes: The dependent variable is the log yearly number of employer-sponsored immigrants who arrived to Australian LGAs in 2001-2015. *t*-statistics are shown in parentheses + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. Standard deviations are clustered at the LGA level. Annual earnings for each state is defined as the log of average real gross financial year wages and salaries (AUD, 2011 prices). "Effect on State (s)" are defined as the interaction between the ICP and state dummy variables. "Annual earnings" in states and "Effect on State (s)" are the main variables of interest. ICP is scaled by dividing by 10. All regressions include LGA and year fixed effects. The vector of standard controls is the same as in Table 3. The data for earnings, ICP, immigration, and regional time-variant controls variables are sourced from the HILDA survey, the RBA ICP, the Settlement Database, and the National Regional Profiles respectively.

Table 5: The effect of ICP on regional distribution of immigrants in 2001-2011: Samples are aggregated to ex-ante and ex-post periods

Variables	Points-based		Employer-sponsored		Family-based	
	(1)	(2)	(3)	(4)	(5)	(6)
Effect on VIC	0.0511**	0.0373**	0.0186	-0.0021	0.0258**	0.0138+
	(3.8)	(2.7)	(1.3)	(-0.2)	(3.0)	(1.8)
Effect on QLD	0.0126	-0.0229	0.0604*	-0.0143	0.0369*	-0.0132
	(0.5)	(-0.8)	(2.4)	(-0.5)	(2.4)	(-0.8)
Effect on SA	0.0680**	0.0389*	0.0178	-0.0028	0.0612**	0.0410**
	(4.2)	(2.2)	(1.0)	(-0.2)	(5.8)	(4.0)
Effect on WA	-0.0159	-0.0428*	0.1012**	0.0935**	0.0422**	0.0230*
	(-1.2)	(-2.3)	(7.0)	(5.8)	(4.8)	(2.2)
Log dwelling units		0.0816		-0.0050		0.0226
		(0.9)		(-0.1)		(0.4)
Log housing price		1.3268		2.6879**		0.6052
		(1.2)		(2.7)		(0.9)
Log housing price square		-0.1280		-0.2700**		-0.0647
		(-1.3)		(-3.1)		(-1.1)
Log no. earners		2.4274		-1.6337		0.7987
		(1.1)		(-0.9)		(0.6)
Log no. earners square		-0.1189		0.0298		-0.0482
		(-1.1)		(0.3)		(-0.8)
Log no. deaths		-0.3541		0.3038		0.0318
		(-1.3)		(1.3)		(0.2)
Log no. births		0.4200		0.6508*		0.4661*
		(1.3)		(2.3)		(2.5)
Log no. private houses		0.0346		0.1681*		0.0723
		(0.4)		(2.4)		(1.6)
Residential		-0.0044+		-0.0040*		-0.0021
		(-1.9)		(-2.0)		(-1.6)
Postgraduate		-0.1166+		-0.0300		-0.0416
		(-2.0)		(-0.6)		(-1.2)

Graduate diploma/certificate		0.0501		-0.2222*		-0.0365
		(0.4)		(-2.2)		(-0.6)
Bachelor		0.1238**		0.1374**		0.0246
		(2.7)		(3.4)		(0.9)
Advanced diploma/certificate		0.0552		0.0345		0.0662+
		(0.9)		(0.7)		(2.0)
Certificate		0.0259		0.1436**		0.0621*
		(0.6)		(3.8)		(2.5)
Managers		-0.0363		-0.0120		0.0287
		(-0.8)		(-0.3)		(1.0)
Professionals		-0.0461		0.0234		-0.0061
		(-1.2)		(0.7)		(-0.3)
Laborers		0.0078		-0.0157		0.0238
		(0.2)		(-0.4)		(0.8)
Constant	4.3931**	-13.0547	3.2529**	-0.4247	6.0915**	-3.8094
	(99.9)	(-1.0)	(68.9)	(-0.0)	(211.7)	(-0.5)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
LGA Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	272	272	272	272	272	272
R^2	0.977297	0.983350	0.977735	0.989104	0.987942	0.993190
F	66.9056	19.9275	268.3006	113.8417	97.2267	38.0410

Notes: The dependent variable is the log number of points-based, employer-sponsored, and family-based immigrants who arrived to Australian LGAs in 2001-2011. Data are collapsed into two periods: ex-ante from 2001 to 2005, and ex-post from 2006 to 2011. *t*-statistics are shown in parentheses + p < 0.10, * p < 0.05, ** p < 0.01. Standard deviations are clustered at the LGA level. "Effect on State (s)" are defined as the interaction between the ICP and state dummy variables and are the main variables of interest. ICP is scaled by dividing by 10. All regressions include LGA and year fixed effects. The data for earnings, ICP, immigration, and regional time-variant controls variables are sourced from the HILDA survey, the RBA ICP, the Settlement Database, and the National Regional Profiles in combination with ABS census (2001) and ABS census (2006), respectively.

Table 6: The effect of ICP on Australian states' full-time workers annual earnings in 2001-2015, incorporating structural break at 2011 analysis

	Full Sample			Born in Australia	Born Overseas
	Pooled OLS	FE baseline	FE with controls	FE with controls	FE with controls
	(1)	(2)	(3)	(4)	(5)
Effect on VIC	-0.0003	0.0023	0.0004	0.0001	0.0012
	(-0.2)	(1.4)	(0.2)	(0.1)	(0.4)
Effect on SA	0.0040	0.0013	0.0005	-0.0001	0.0023
	(1.4)	(0.5)	(0.2)	(-0.0)	(0.4)
Effect on QLD	0.0033	0.0073**	0.0054**	0.0054**	0.0053
	(1.6)	(4.0)	(3.0)	(2.7)	(1.4)
Effect on WA	0.0107**	0.0079**	0.0082**	0.0056*	0.0143**
	(4.2)	(3.5)	(3.8)	(2.2)	(3.5)
Effect on VIC*Post reform	-0.0004	-0.0010	-0.0013	-0.0011	-0.0012
	(-0.3)	(-0.9)	(-1.2)	(-0.9)	(-0.6)
Effect on QLD*Post reform	0.0012	0.0012	0.0004	0.0008	-0.0004
	(0.9)	(1.0)	(0.3)	(0.6)	(-0.1)
Effect on SA*Post reform	-0.0002	-0.0003	-0.0002	0.0007	-0.0031
	(-0.1)	(-0.2)	(-0.1)	(0.4)	(-0.9)
Effect on WA*Post reform	0.0040*	0.0040**	0.0043**	0.0051**	0.0022
	(2.3)	(2.6)	(3.0)	(3.0)	(0.8)
Post reform	0.1108**	0.4928**	-0.4092**	-0.4259**	-0.3606
	(7.0)	(37.7)	(-3.2)	(-2.9)	(-1.4)
Constant	8.9444**	10.7755**	6.8508**	6.8769**	6.7290**
	(256.7)	(571.5)	(23.1)	(20.9)	(10.1)
Standard controls	Yes	No	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes
Individual FE	No	Yes	Yes	Yes	Yes
N	50050	50050	50050	37857	12193
R^2	0.281658	0.704633	0.722631	0.724654	0.717193

F	408.4394	154.2436	175.3455	142.8974	33.7048

Notes: The dependent variable is the log gross individual real financial year wages and salaries. *t*-statistics are given in parentheses + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. Sample consists of residents who resided in major cities of five most populous states in 2001-2015. In columns (2), (3), (4), and (5), individual fixed effects are included. State and year fixed effects are included in all columns. "Effect on State (s)" are defined as the interaction between the ICP and state dummy variables. Post Boom is dummy variable which takes value of 1 if year is greater than or equal to 2012, and takes value of 0 otherwise. "Effect on State (s)" and "Effect on State (s)"* Post Boom are our main variable of interest. ICP is scaled by dividing by 10. The vector of standard controls is the same as in Table 2. The data source for wage variables is the HILDA survey, the data source for ICP is the RBA ICP.

Table 7: The effect of ICP on regional distribution of immigrants in 2001-2015, incorporating structural break at 2011 analysis

Variables	Points-based		Employer-sponsored	
	(1)	(2)	(3)	(4)
Effect on VIC	0.0333**	0.0311**	0.0101	0.0045
	(5.2)	(4.9)	(1.5)	(0.7)
Effect on QLD	0.0037	-0.0005	0.0482**	0.0266*
	(0.3)	(-0.0)	(3.9)	(2.1)
Effect on SA	0.0447**	0.0408**	0.0205*	0.0122
	(5.9)	(5.4)	(2.5)	(1.5)
Effect on WA	-0.0113+	-0.0105	0.0738**	0.0637**
	(-1.8)	(-1.6)	(10.5)	(8.7)
Effect on VIC*Post reform	0.0004	0.0001	-0.0061	-0.0075
	(0.1)	(0.0)	(-1.3)	(-1.5)
Effect on QLD*Post reform	-0.0449**	-0.0396**	-0.0408**	-0.0395**
	(-5.6)	(-4.8)	(-4.7)	(-4.4)
Effect on SA*Post reform	-0.0126*	-0.0115*	-0.0066	-0.0051
	(-2.4)	(-2.2)	(-1.1)	(-0.9)
Effect on WA*Post reform	-0.0048	-0.0070	-0.0175**	-0.0227**
	(-1.1)	(-1.5)	(-3.5)	(-4.5)
Post reform	0.1166*	0.1875**	1.1492**	0.9849**
	(2.4)	(2.6)	(22.2)	(12.8)
Constant	4.0850**	4.5665**	2.8318**	-1.7922+
	(117.9)	(5.1)	(75.4)	(-1.9)
Standard controls	No	Yes	No	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
LGA Fixed Effects	Yes	Yes	Yes	Yes
N	2040	2020	2040	2020
R^2	0.923529	0.928485	0.923299	0.928104
F	80.2983	68.0469	247.7824	200.6221

Notes: The dependent variable is the log yearly number of points-based and employer-sponsored immigrants who arrived to Australian LGAs in 2001-2015, respectively. *t*-statistics are shown in parentheses + p < 0.10, * p < 0.05, ** p < 0.01. Standard deviations are clustered at the LGA level. "Effect on State (s)" are defined as the interaction between the ICP and state dummy variables. Post Boom is dummy variable which takes value of 1 if year is greater than or equal to 2012, and takes value of 0 otherwise. "Effect on State (s)" and "Effect on State (s)"* Post Boom are our main variable of interest. ICP is scaled by dividing by 10. The vector of standard controls is the same as in Table 3. The data for ICP, immigration, and regional time-variant controls variables are sourced from the RBA ICP, the Settlement Database, and the National Regional Profiles, respectively.

Table 8: The effect of ICP on Australian states' full-time workers annual earnings in the pre-reform period (2001-2011)

	Full Sample			Born in Australia	Born Overseas
	Pooled OLS	FE baseline	FE with controls	FE with controls	FE with controls
	(1)	(2)	(3)	(4)	(5)
Effect on VIC	-0.0004	0.0009	-0.0015	-0.0004	-0.0038
	(-0.2)	(0.5)	(-0.8)	(-0.2)	(-1.1)
Effect on SA	0.0053^{+}	0.0004	0.0003	-0.0003	0.0040
	(1.8)	(0.1)	(0.1)	(-0.1)	(0.6)
Effect on QLD	0.0044*	0.0073**	0.0053**	0.0059*	0.0040
	(2.0)	(3.5)	(2.6)	(2.6)	(0.9)
Effect on WA	0.0129**	0.0090**	0.0095**	0.0060*	0.0175**
	(4.8)	(3.5)	(3.8)	(2.0)	(3.7)
Constant	8.9964**	10.7957**	7.2433**	7.2274**	7.2708**
	(218.4)	(486.9)	(73.7)	(65.7)	(32.7)
Standard controls	Yes	No	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes
Individual FE	No	Yes	Yes	Yes	Yes
N	33840	33840	33840	25551	8289
R^2	0.278113	0.725491	0.741090	0.743799	0.734777
F	325.5332	139.9341	135.3362	111.2948	26.3284

Notes: The dependent variable is the log gross individual real financial year wages and salaries. *t*-statistics are given in parentheses + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. Sample consists of residents who resided in major cities of five most populous states in the pre-reform period from 2001 to 2011. In columns (2), (3), (4), and (5), individual fixed effects are included. State and year fixed effects are included in all columns. "Effect on State (*s*)" are the main variables of interest, and are defined as the interaction between the ICP and state dummy variables. ICP is scaled by dividing by 10. The vector of standard controls is the same as in Table 2. The data source for wage variables is the HILDA survey, the data source for ICP is the RBA ICP.

Table 9: The effect of earnings on regional distribution of points-based immigrants in the pre-reform period (2001-2011)

Variables	Panel FE		Panel FE- reduced form		Panel FE-structural form	
	(1)	(2)	(3)	(4)	(5)	(6)
Annual earnings in VIC	2.5530**	1.9682**			3.2773**	2.5504**
	(5.2)	(4.0)			(6.0)	(4.6)
Annual earnings in QLD	-0.7780	-2.2387**			-0.3320	-1.9682**
	(-1.2)	(-3.3)			(-0.5)	(-2.7)
Annual earnings in SA	1.8600**	1.1939**			2.8412**	1.9635**
	(4.4)	(2.7)			(5.7)	(3.9)
Annual earnings in WA	-0.7534**	-1.2866**			-0.6099*	-1.2054**
	(-3.4)	(-5.3)			(-2.5)	(-4.4)
Effect on VIC			0.0362**	0.0284**		
			(6.0)	(4.6)		
Effect on QLD			-0.0052	-0.0294*		
			(-0.5)	(-2.6)		
Effect on SA			0.0424**	0.0303**		
			(5.8)	(4.0)		
Effect on WA			-0.0154*	-0.0286**		
			(-2.5)	(-4.2)		
Constant	-3.0831	-5.1115*	4.0911**	-2.0261+	-6.8346**	-7.9354**
	(-1.6)	(-2.5)	(127.8)	(-1.8)	(-3.0)	(-3.5)
Standard controls	No	Yes	No	Yes	No	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
LGA Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	1496	1496	1496	1496	1496	1496
R^2	0.935463	0.938645	0.936134	0.938947		
F	117.2575	85.1054	119.5010	85.8420		

Notes: The dependent variable is the log yearly number of points-based immigrants who arrived to Australian LGAs in the pre-reform period 2001-2011. *t*-statistics are shown in parentheses + p < 0.10, * p < 0.05, ** p < 0.01. Standard deviations are clustered at the LGA level. Annual earnings for

each state is defined as the log of average real gross financial year wages and salaries (AUD, 2011 prices). “Effect on State (s)" are defined as the interaction between the ICP and state dummy variables. "Annual earnings" in states and “Effect on State (s)" are the main variables of interest. ICP is scaled by dividing by 10. All regressions include LGA and year fixed effects. The vector of standard controls is the same as in Table 3.The data for earnings, ICP, immigration, and regional time-variant controls variables are sourced from the HILDA survey, the RBA ICP, the Settlement Database, and the National Regional Profiles respectively.

Table 10: The effect of earnings on regional distribution of employer-sponsored immigrants in the pre-reform period (2001-2011)

Variables	Panel FE		Panel FE- reduced form		Panel FE-structural form	
	(1)	(2)	(3)	(4)	(5)	(6)
Annual earnings in VIC	1.2021*	0.1813			1.1202+	-0.2402
	(2.1)	(0.3)			(1.8)	(-0.4)
Annual earnings in QLD	2.2257**	-0.5429			2.6121**	-0.4796
	(3.1)	(-0.7)			(3.3)	(-0.6)
Annual earnings in SA	1.7805**	0.9250+			1.5003**	0.3480
	(3.7)	(1.9)			(2.7)	(0.6)
Annual earnings in WA	2.8709**	2.0053**			3.1698**	2.2286**
	(11.3)	(7.4)			(11.3)	(7.2)
Effect on VIC			0.0124+	-0.0029		
			(1.8)	(-0.4)		
Effect on QLD			0.0411**	-0.0097		
			(3.3)	(-0.8)		
Effect on SA			0.0224**	0.0044		
			(2.7)	(0.5)		
Effect on WA			0.0801**	0.0543**		
			(11.3)	(7.2)		
Constant	-11.0881**	-15.4478**	2.8232**	-9.2372**	-11.3857**	-13.6041**
	(-4.9)	(-6.7)	(76.9)	(-7.4)	(-4.4)	(-5.2)
Other controls	No	Yes	No	Yes	No	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
LGA Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	1496	1496	1496	1496	1496	1496
R^2	0.930116	0.936225	0.930377	0.936531		
F	336.1900	250.4232	337.8069	251.9403		

Notes: The dependent variable is the log yearly number of points-based immigrants who arrived to Australian LGAs in the pre-reform period 2001-2011. *t*-statistics are shown in parentheses + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. Standard deviations are clustered at the LGA level. Annual earnings for

each state is defined as the log of average real gross financial year wages and salaries (AUD, 2011 prices). “Effect on State (s)" are defined as the interaction between the ICP and state dummy variables. "Annual earnings" in states and “Effect on State (s)" are the main variables of interest. ICP is scaled by dividing by 10. All regressions include LGA and year fixed effects. The vector of standard controls is the same as in Table 3. The data for earnings, ICP, immigration, and regional time-variant controls variables are sourced from the HILDA survey, the RBA ICP, the Settlement Database, and the National Regional Profiles respectively.

Table 11: The effect of ICP on Australian states' full-time workers annual earnings in the post-reform period (2012-2015)

	Full Sample			Born in Australia	Born Overseas
	Pooled OLS	FE baseline	FE with controls	FE with controls	FE with controls
	(1)	(2)	(3)	(4)	(5)
Effect on VIC	-0.0001	0.0011	0.0005	0.0001	0.0013
	(-0.0)	(0.3)	(0.1)	(0.0)	(0.2)
Effect on SA	-0.0045	0.0009	-0.0004	0.0045	-0.0209^{+}
	(-0.6)	(0.2)	(-0.1)	(0.8)	(-1.8)
Effect on QLD	-0.0038	0.0052	0.0044	0.0052	-0.0010
	(-0.7)	(1.3)	(1.1)	(1.2)	(-0.1)
Effect on WA	-0.0010	0.0010	-0.0007	0.0026	-0.0103
	(-0.1)	(0.2)	(-0.1)	(0.5)	(-1.1)
Constant	8.8972**	10.8633**	6.5391**	6.7005**	5.6649**
	(152.2)	(255.2)	(24.6)	(22.5)	(9.2)
Other controls	Yes	No	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes
Individual FE	No	Yes	Yes	Yes	Yes
N	16210	16210	16210	12306	3904
R^2	0.280941	0.843083	0.847382	0.849949	0.839881
F	191.5172	23.7244	22.8835	17.8285	6.0000

Notes: The dependent variable is the log gross individual real financial year wages and salaries. *t*-statistics are given in parentheses + p < 0.10, * p < 0.05, ** p < 0.01. Sample consists of residents who resided in major cities of the five most populous states in the post-reform period from 2012 to 2015. In columns (2), (3), (4), and (5), individual fixed effects are included. State and year fixed effects are included in all columns. "Effect on State (*s*)" are the main variables of interest, and are defined as the interaction between the ICP and state dummy variables. ICP is scaled by dividing by 10. The vector of standard controls is the same as in Table 2. The data source for wage variables is the HILDA survey, the data source for ICP is the RBA ICP.

Table 12: The effect of earnings on regional distribution of points-based immigrants in the post-reform period (2012-2015)

Variables	Panel FE		Panel FE- reduced form		Panel FE-structural form	
	(1)	(2)	(3)	(4)	(5)	(6)
Annual earnings in VIC	1.7336	1.6084			1.1985	1.5363
	(0.4)	(0.4)			(0.2)	(0.2)
Annual earnings in QLD	-4.9534	-4.9263			-9.2194^{+}	-8.5557
	(-1.3)	(-1.2)			(-1.8)	(-1.5)
Annual earnings in SA	-6.9358**	-7.2822**			-8.4411**	-9.1927**
	(-3.3)	(-3.2)			(-3.5)	(-3.5)
Annual earnings in WA	-1.6503	-2.6138*			-1.9716	-3.4595*
	(-1.3)	(-2.0)			(-1.3)	(-2.2)
Effect on VIC			-0.0025	-0.0034		
			(-0.2)	(-0.3)		
Effect on QLD			0.0397^{+}	0.0363		
			(1.8)	(1.5)		
Effect on SA			0.0519**	0.0564**		
			(3.5)	(3.6)		
Effect on WA			0.0170	0.0298*		
			(1.3)	(2.2)		
Constant	17.4124	19.5206	4.1556**	3.4768	24.4103	26.5599
	(1.3)	(1.3)	(75.4)	(1.3)	(1.2)	(1.2)
Standard controls	No	Yes	No	Yes	No	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
LGA Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	544	524	544	524	544	524
R^2	0.973821	0.974785	0.973981	0.975014		
F	88.0031	43.5174	88.8952	44.1618		

Notes: The dependent variable is the log yearly number of points-based immigrants who arrived to Australian LGAs in the post-reform period 2012-2015. *t*-statistics are shown in parentheses + p < 0.10, * p < 0.05, ** p < 0.01. Standard deviations are clustered at the LGA level. Annual earnings for

each state is defined as the log of average real gross financial year wages and salaries (AUD, 2011 prices). “Effect on State (s)" are defined as the interaction between the ICP and state dummy variables. "Annual earnings" in states and “Effect on State (s)" are the main variables of interest. ICP is scaled by dividing by 10. All regressions include LGA and year fixed effects. The vector of standard controls is the same as in Table 3. The data for earnings, ICP, immigration, and regional time-variant controls variables are sourced from the HILDA survey, the RBA ICP, the Settlement Database, and the National Regional Profiles respectively.

Table 13: The effect of earnings on regional distribution of employer-sponsored immigrants in the post-reform period (2012-2015)

Variables	Panel FE		Panel FE- reduced form		Panel FE-structural form	
	(1)	(2)	(3)	(4)	(5)	(6)
Annual earnings in VIC	2.7957	3.5724			8.6079	10.5233
	(0.6)	(0.8)			(1.3)	(1.5)
Annual earnings in QLD	-11.4151**	-12.7665**			-18.0877**	-18.9239**
	(-2.6)	(-2.8)			(-3.2)	(-3.1)
Annual earnings in SA	2.2406	3.2926			0.8119	1.3936
	(1.0)	(1.3)			(0.3)	(0.5)
Annual earnings in WA	1.1753	1.6449			0.7509	0.9291
	(0.9)	(1.1)			(0.5)	(0.5)
Effect on VIC			-0.0183	-0.0212		
			(-1.3)	(-1.5)		
Effect on QLD			0.0778**	0.0823**		
			(3.2)	(3.2)		
Effect on SA			-0.0050	-0.0076		
			(-0.3)	(-0.4)		
Effect on WA			-0.0065	-0.0075		
			(-0.5)	(-0.5)		
Constant	-3.1184	-8.5512	4.1272**	3.8563	-11.3273	-18.7347
	(-0.2)	(-0.5)	(67.9)	(1.4)	(-0.5)	(-0.8)
Standard controls	No	Yes	No	Yes	No	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
LGA Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	544	524	544	524	544	524
R^2	0.967667	0.969781	0.968085	0.970050		
F	102.3211	51.8614	104.4104	52.5684		

Notes: The dependent variable is the log yearly number of employer-sponsored immigrants who arrived to Australian LGAs in the post-reform period 2012-2015. *t*-statistics are shown in parentheses + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. Standard deviations are clustered at the LGA level. Annual

earnings for each state is defined as the log of average real gross financial year wages and salaries (AUD, 2011 prices). “Effect on State (s)" are defined as the interaction between the ICP and state dummy variables. "Annual earnings" in states and “Effect on State (s)" are the main variables of interest. ICP is scaled by dividing by 10. All regressions include LGA and year fixed effects. The vector of standard controls is the same as in Table 3. The data for earnings, ICP, immigration, and regional time-variant controls variables are sourced from the HILDA survey, the RBA ICP, the Settlement Database, and the National Regional Profiles respectively.

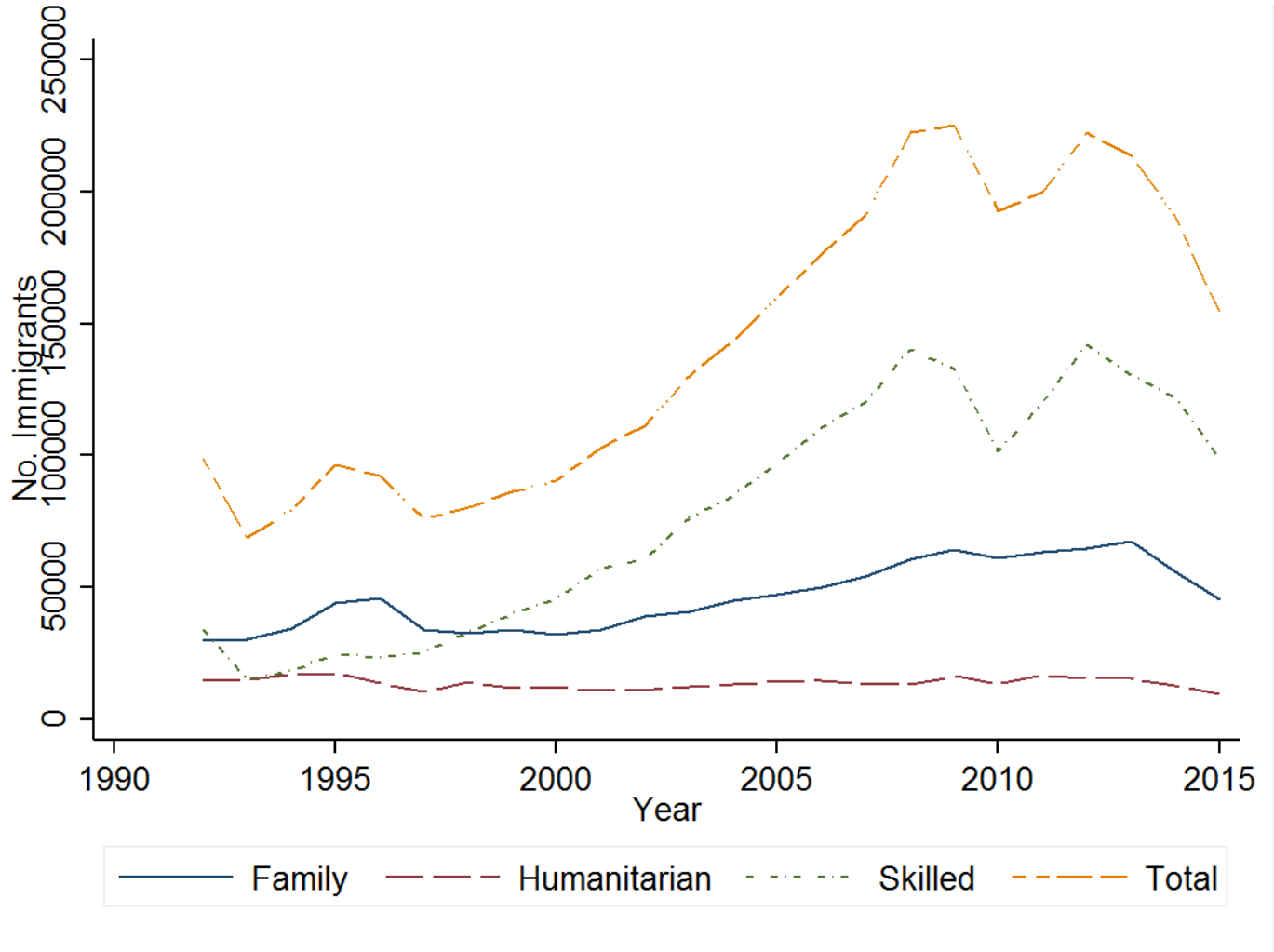

Figure 1: Number of immigrants to Australia by streams.

Notes: The data are sourced from the Settlement Database.

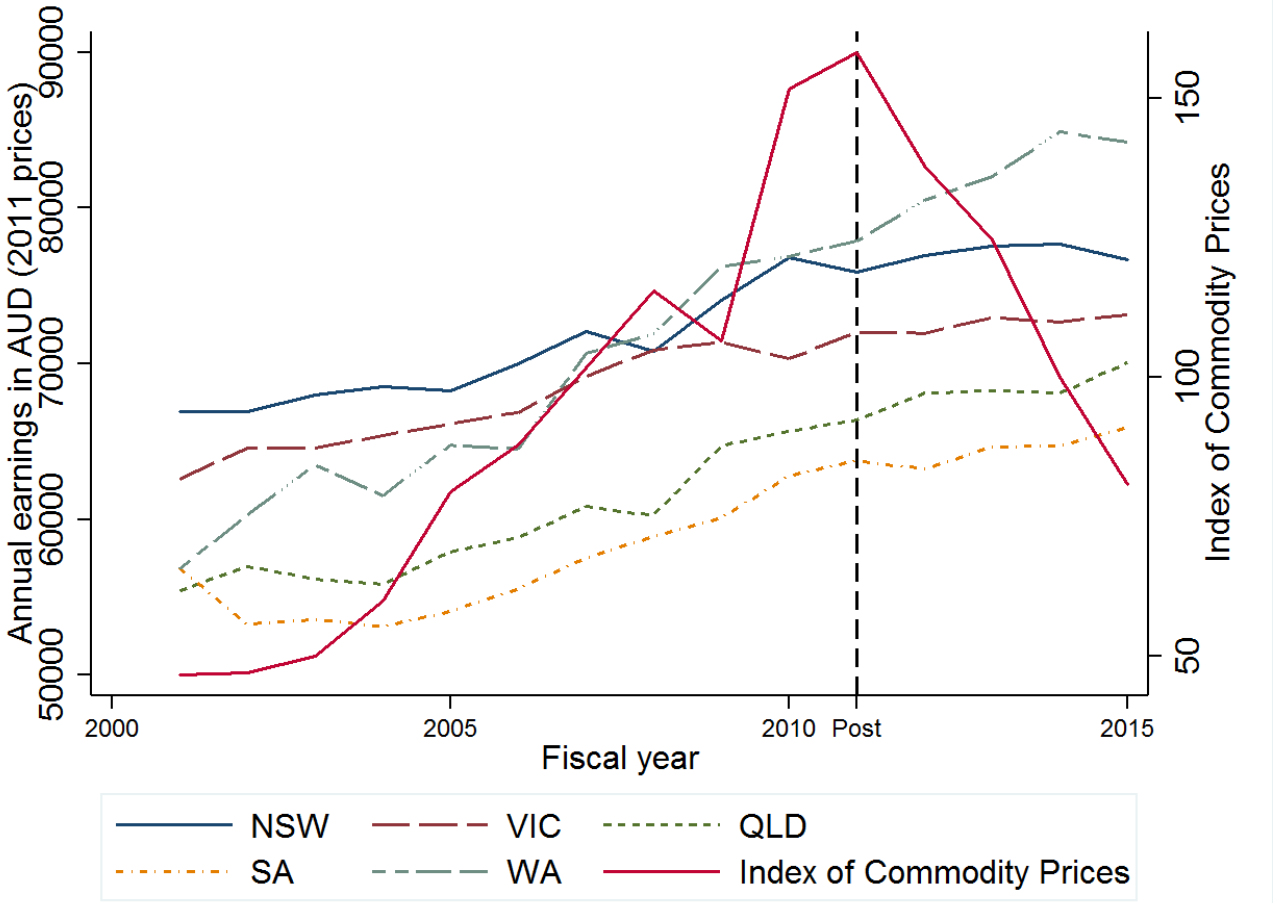

Figure 2: ICP and annual average earnings by state.

Notes: The data for earnings and ICP are sourced from the HILDA survey and ICP, respectively.

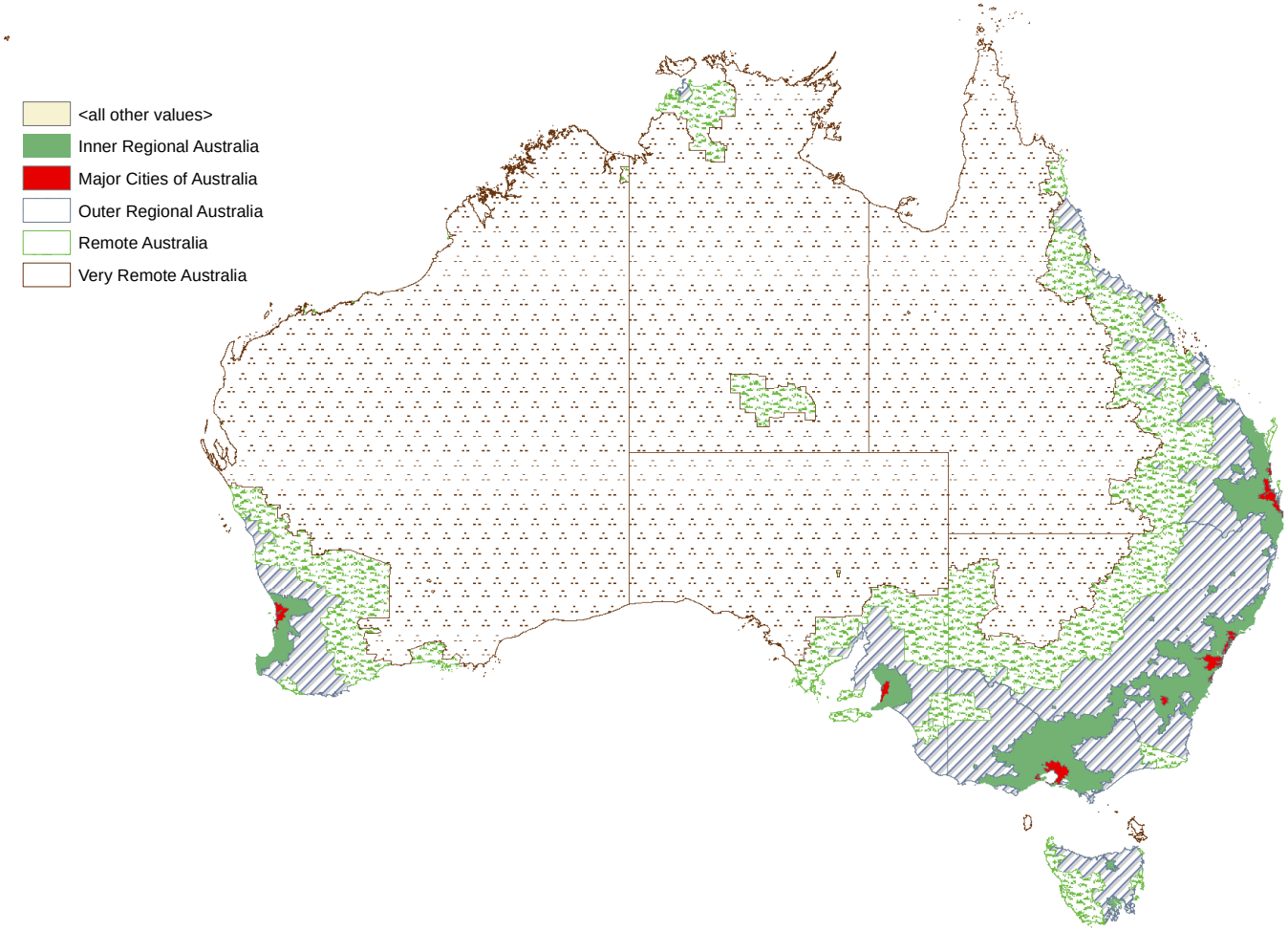

Figure 3 : Areas of Australia by remoteness index.

Notes: Data are sourced from ABS remoteness index ABS Cat.No.1270.0.55.005.

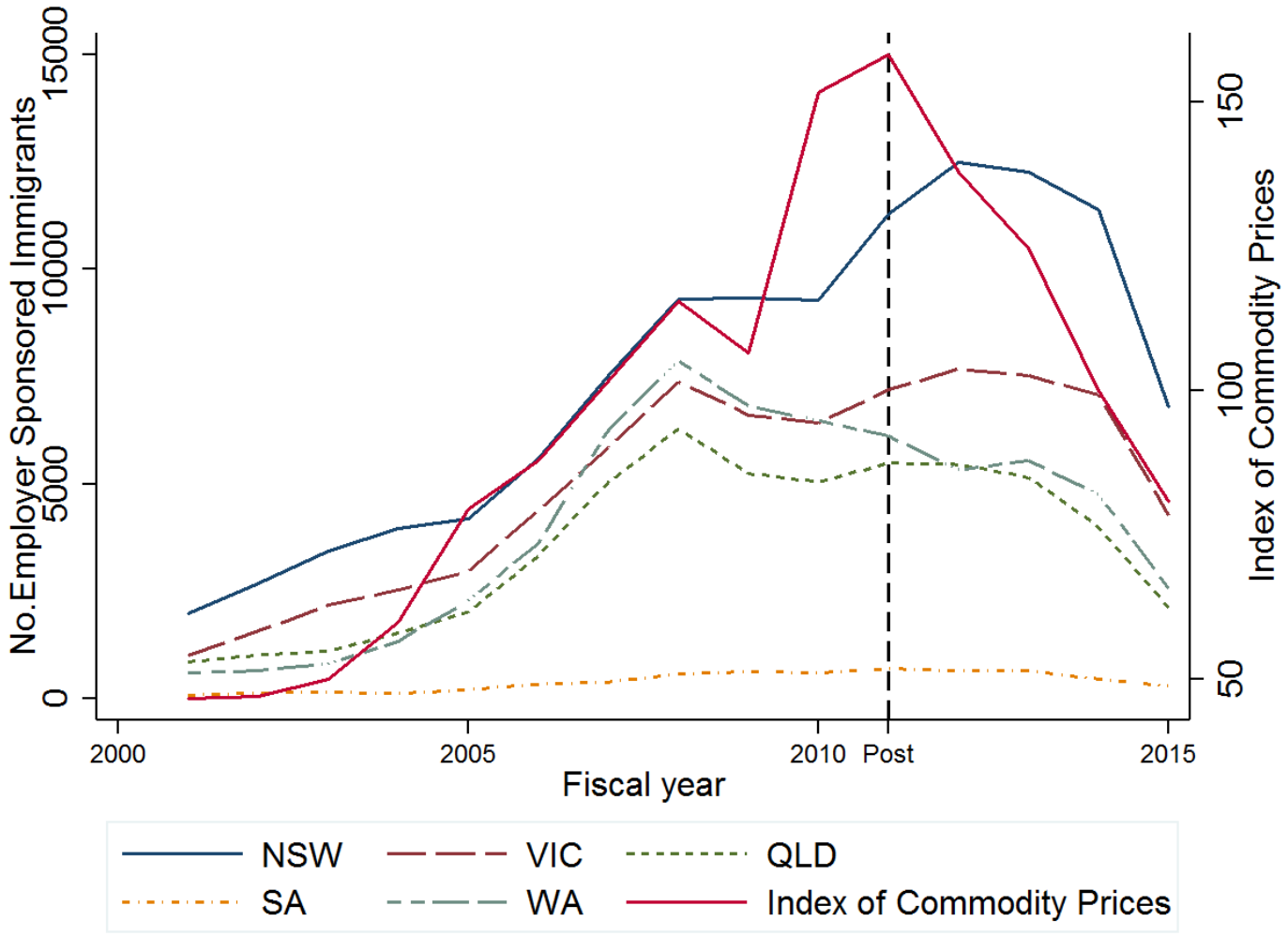

Figure 4: ICP and number of employer-sponsored immigrants by state.

Notes: The data for immigration and ICP are sourced from the Settlement Database and RBA ICP, respectively.

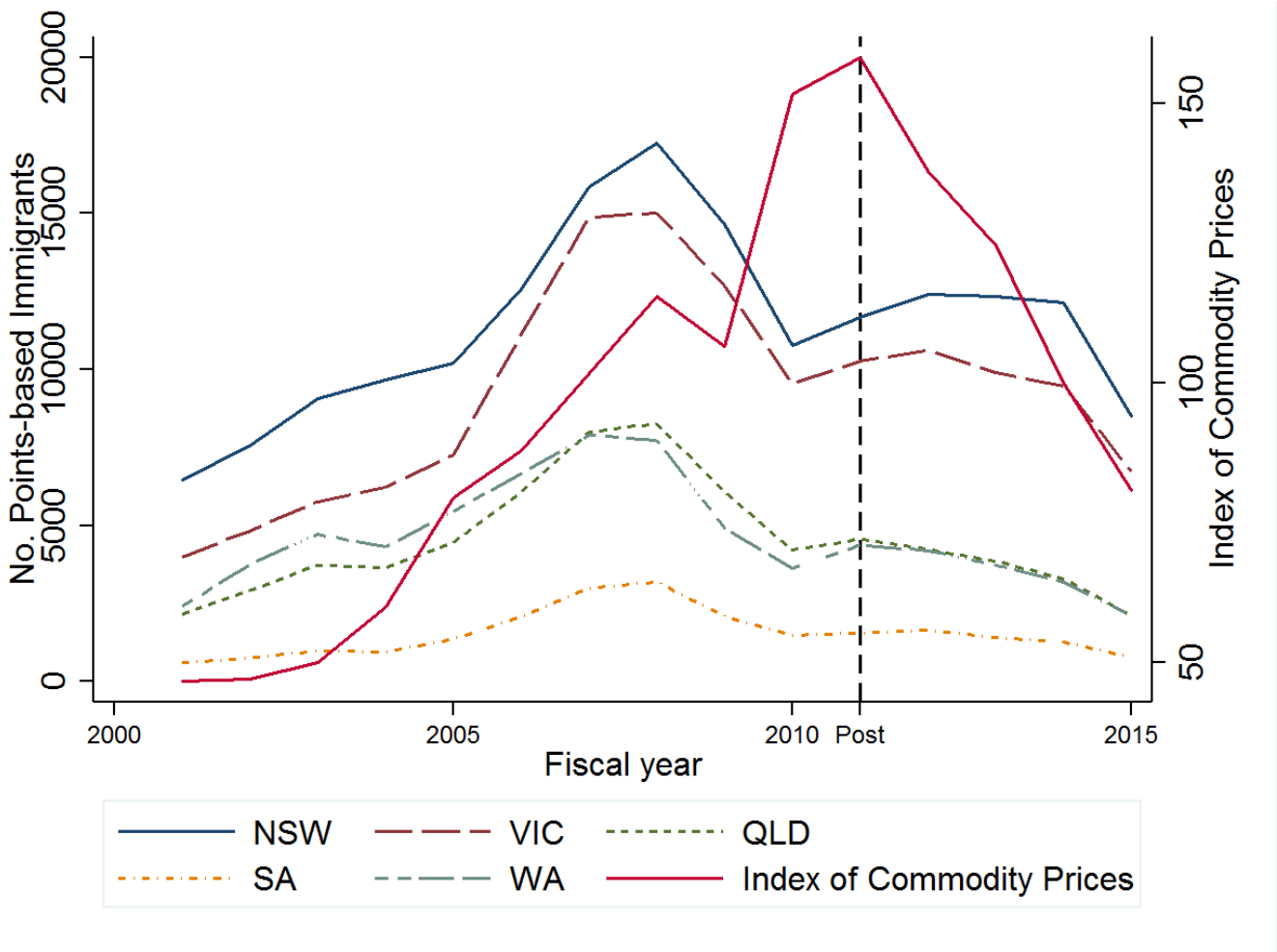

Figure 5: ICP and number of points-based immigrants by state.

Notes: The data for immigration and ICP are sourced from the Settlement Database and RBA ICP, respectively.

Appendix

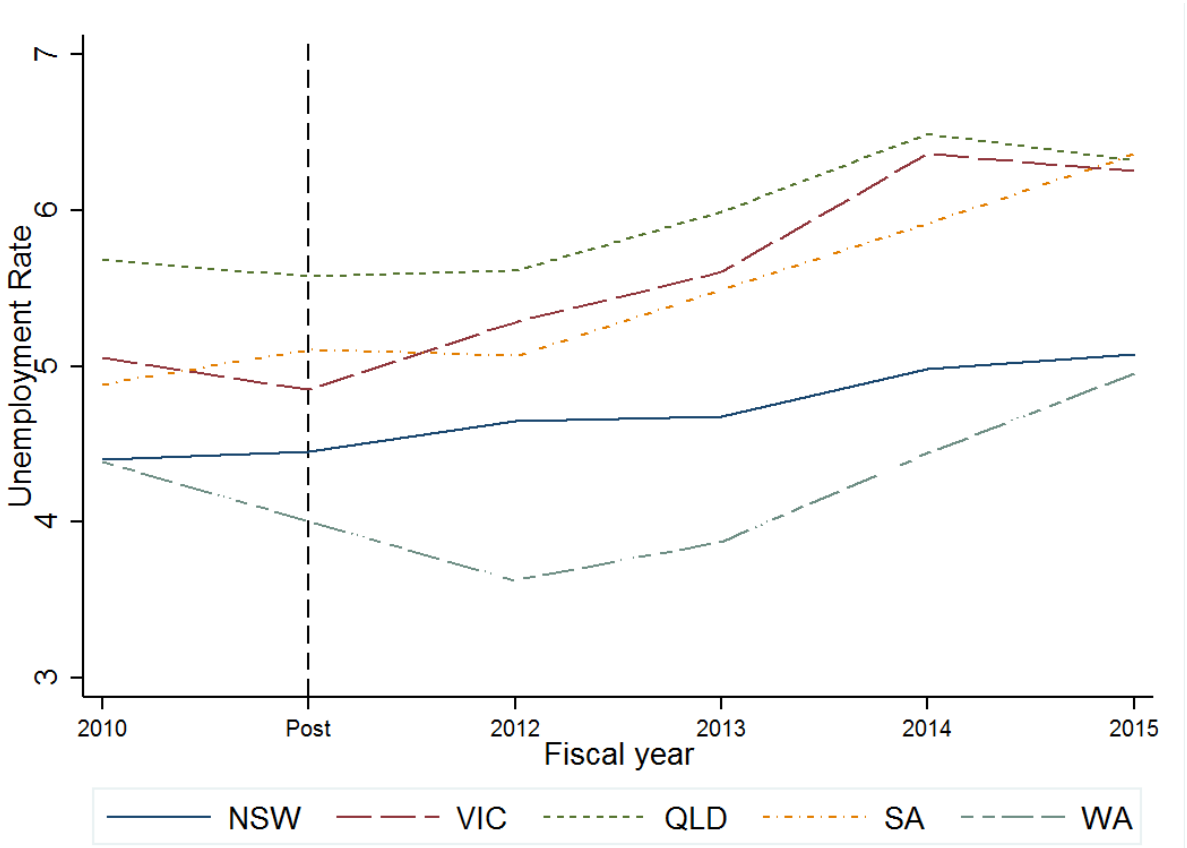

Figure A1: Regional unemployment rate by state.

Notes: Data are sourced from the Australian Government's Department of Jobs and Small Business, Labour Market Information Portal (http://lmip.gov.au/).

Table A1: ICP components and weights

		Weight	
		From 1 April 2016	1 April 2015 – 31 March 2016
Rural Commodities		*13.4*	*12.6*
	Wool	1.3	1.2
	Beef and veal	4.1	3
	Wheat	3.1	3.4
	Barley	0.9	0.8
	Canola	0.8	1
	Sugar	0.8	0.7
	Cotton	1	1.3
	Lamb and mutton	1.4	1
Base Metals		*5.3*	*5.1*
	Aluminium	2.1	2
	Lead	0.5	0.5
	Copper	1.9	1.8
	Zinc	0.5	0.5
	Nickel	0.3	0.4
Bulk Commodities		*54.4*	*55.5*
	Iron ore	33.9	34.7
	Metallurgical coal	11.9	12.1
	Thermal coal	8.6	8.7
Other Resources		*26.9*	*26.8*
	LNG	8.8	8.1
	Crude oil	4.9	5.3
	Alumina	3.5	3.1
	Gold	7.1	7.6
	Copper ore	2.8	2.8
Total		*100*	*100*

Notes: The weights are for the ICP based on average export values in 2010/11 and 2011/12.

Notes: the data source for ICP is the RBA ICP.

Table A2: Definition, measurement and sources of variables

Variable	Definition	Source
Income		
Annual earnings	Gross financial year wages and salaries (AUD, 2011 prices)	HILDA
Personal characteristics	*Personal characteristics*	
Female	Dummy variable: = 1 if interviewee is female, = 0 if otherwise	HILDA
Union member	Dummy variable: = 1 if interviewee belongs to a trade union or employee association, =0 if otherwise	HILDA
Experience	Years worked in current occupation	HILDA
Age	Age (years)	HILDA
Parents ever got divorced	Dummy variable: =1 if Parents have ever got divorced or separated, = 0 if otherwise.	HILDA
Has kid under 6 years-old	Dummy variable: =1 if interviewee has kid under 6 years-old, = 0 if otherwise.	HILDA
Siblings	Number of siblings.	HILDA
Married	Dummy variable: =1 if legally married, =0 if otherwise.	HILDA
Education		
Postgraduate	Dummy variable: =1 if postgraduate (includes doctoral and master degrees) is the highest education qualification achieved, =0 if otherwise.	HILDA
Graduate diploma/graduate certificate	Dummy variable: =1 if graduate diploma or graduate certificate are the highest education qualifications achieved, = 0 if otherwise.	HILDA
Bachelor	Dummy variable: =1 if Bachelor degree is the highest education qualification achieved, = 0 if otherwise.	HILDA
Advanced diploma/diploma	Dummy variable: =1 if advanced diploma and diploma are the highest education qualifications achieved, = 0 if otherwise.	HILDA
Certificate	Dummy variable: =1 if Certificate (Level 1, 2, 3,4) is the highest education qualification achieved, = 0 if otherwise.	HILDA
Year 12	Dummy variable: =1 if year 12 is the highest education qualification achieved, = 0 if otherwise.	HILDA

Catholic school	Dummy variable: =1 if attended Catholic school, = 0 if otherwise.	HILDA
Other non-government school	Dummy variable: =1 if attended Other non-government school, =0 if otherwise.	HILDA
Last school year overseas	Dummy variable: =1 if country of last school year is not Australia, =0 if otherwise.	HILDA
English as first language	Dummy variable: =1 if English was not the first language learned, =0 if otherwise.	HILDA
Not born in English speaking countries	Dummy variable: =1 not born in English speaking countries (the U.S., the U.K., Australia, New Zealand, Singapore, Ireland), =0 if otherwise.	HILDA
Health Status	*Health Status*	
Long term health condition or disability	Dummy variable: =1 if has long term health condition, disability, or impairment, =0 if otherwise.	HILDA
Location	*Location*	
Lives in outer regional Australia	Dummy variable: =1 if lives in outer regional Australia, =0 if otherwise.	HILDA
Live in inner regional Australia	Dummy variable: =1 if lives in inner regional Australia, =0 if otherwise.	HILDA
Live in remote Australia	Dummy variable: =1 if lives in remote Australia, =0 if otherwise.	HILDA
Lives in NSW	Dummy variable: =1 if lives in NSW, =0 if otherwise.	HILDA
Lives in QLD	Dummy variable: =1 if lives in QLD, =0 if otherwise.	HILDA
Lives in VIC	Dummy variable: =1 if lives in VIC, =0 if otherwise.	HILDA
Lives in SA	Dummy variable: =1 if lives in SA, =0 if otherwise.	HILDA
Lives in WA	Dummy variable: =1 if lives in WA, =0 if otherwise.	HILDA
Our variables of interest		
Index of Commodity Prices	Index of Commodity Prices	RBA
Effect QLD	Interaction between “Lives in QLD “and Index of Commodity Prices.	HILDA/RBA ICP
Effect VIC	Interaction between “Lives in VIC “and Index of Commodity Prices.	HILDA/RBA ICP
Effect SA	Interaction between “Lives in SA “and Index of Commodity Prices.	HILDA/RBA ICP

Effect WA	Interaction between “Lives in WA “and Index of Commodity Prices.	HILDA/RBA ICP

Table 3: Descriptive statistics for earnings analysis of full-time workers, 2001-2015

	Full Sample		Major Cities	Born in Australia	Born Overseas
	Mean	SD	Mean	Mean	Mean
Earnings					
Gross financial year wages and salaries (AUD, 2011 prices)	66100.78	43706.92	68757.79	65356.52	69059.48
Gender					
Female	0.38	-	0.39	0.38	0.38
Personal characteristics					
Union member	0.29	-	0.28	0.29	0.28
Experience	9.33	9.60	9.11	9.18	9.92
Age	38.80	11.79	38.63	37.92	42.28
Parents have ever got divorced or separate	0.10	-	0.10	0.10	0.10
Have kid(s) under 6 year-old	0.17	-	0.17	0.17	0.18
Siblings	2.69	1.84	2.63	2.62	3.00
Married	0.50	-	0.49	0.47	0.60
Education					
Postgraduate	0.06	-	0.07	0.05	0.10
Graduate diploma/graduate certificate	0.07	-	0.07	0.06	0.08
Bachelor	0.18	-	0.21	0.17	0.22
Advanced diploma/diploma	0.10	-	0.11	0.10	0.11
Certificate	0.16	-	0.16	0.16	0.15
Year 12	0.25	-	0.23	0.27	0.20
Catholic school	0.16	-	0.18	0.18	0.12
Other non-government school	0.07	-	0.08	0.08	0.03
Last school year Overseas	0.23	-	0.26	0.13	0.64

English proficiency					
English as first language	0.09	-	0.11	0.00	0.44
Not born in an English-speaking country	0.11	-	0.14	0.00	0.56
Health Status					
Long term health condition or disability	0.14	-	0.13	0.14	0.12
Location					
Live in outer regional Australia	0.08	-	0.00	0.10	0.04
Live in inner regional Australia	0.18	-	0.00	0.20	0.09
Live in remote Australia	0.01	-	0.00	0.01	0.01
Live in NSW	0.31	-	0.31	0.30	0.36
Live in QLD	0.23	-	0.20	0.25	0.18
Live in VIC	0.27	-	0.29	0.27	0.27
Live in SA	0.09	-	0.09	0.09	0.07
Live in WA	0.10	-	0.11	0.09	0.13
Observations	69640		50050	55643	13997

Notes: The sample consists of full-time employed individuals aged is 18- 65 years. "Major Cities" indicate residents who are living in major cities of the five most populous states of Australia. The major cities are defined based on a remoteness index provided by the Australia Bureau of Statistics. Educational variables show the percentage of individuals whose highest grade completed is that demonstrated. Experience is years in paid work. Data are sourced from HILDA survey.

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