

# **Welfare Policy and Labour Outcomes of Immigrants in Australia**

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## **ABSTRACT**

All immigrants (except for humanitarian migrants) had previously been denied access to welfare payments during the first six months after arrival in Australia, but in 1997 this period was extended to two years. According to labour supply theory, this change would cause a higher proportion of recent immigrants to more actively search for employment. This study investigates the impact of social security payment on labour market performance of recent immigrants to Australia before and after the policy change. Little research has been done on this issue, and their research suffers from methodological problems. Previous research has encompassed all migrants, which could bias the results due to the contamination of the selection criteria effects imposed on independent and skilled Australian linked categories. By contrast, this study isolates the family stream category from others, thereby separating the income-support policy effects from selection criteria effects. This research uses the first wave of two sets of Longitudinal Survey of Immigrants to Australia (LSIA) data to analyse the short-term immigrant labour market outcomes before and after the policy change. Oaxaca's decomposition method is modified to overcome the non-linear problem of cumulative density function. Employing the modified decomposition method, this study decomposes the labour market status into human capital endowments and returns to human capital endowments components. As predicted by labour supply theory, the results reveal that the restriction to welfare access entailed a higher proportion of LSIA 2 immigrants to more actively look for jobs. However, there is also evidence that more migrants from LSIA 2 were competing for low-skilled jobs with natives. The implication of the results suggests that restricted access to welfare has debarred immigrants from fully utilising their skills.

Key Words: Immigration; immigrant skills; immigration policy

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# 1 INTRODUCTION

Immigration is a contentious issue for most of the industrialized nations of the world. In Australia, some 25 per cent of the population is born outside Australia and another fifth have at least one parent born overseas (Richardson et al. 2004). Not surprisingly, immigration policy has been receiving increasing attention from policy makers and researchers.

In 1997, the Howard government introduced a radical reform to immigration policies: all immigrants (except humanitarian migrants) had previously been denied access to welfare payments and Austudy<sup>2</sup> during the first six months after arrival in Australia, but in 1997 this period was extended to two years (and access to the Special Benefit was almost removed).

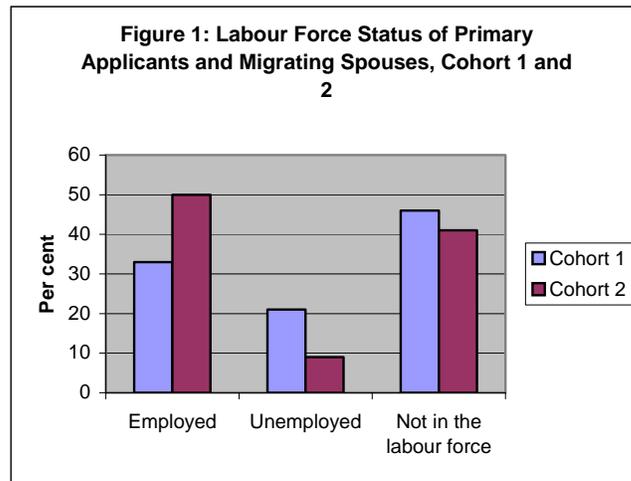
Additionally, the Australian immigration acceptance process adopted new selection criteria to emphasize the productivity-related characteristics in the immigrant selection process through a stricter points test. The intention was also to reduce the overall size of the immigrant intake. Moreover, the higher points test requirement adopted by Australian government from July 1999 pertaining to human capital endowment (i.e. age, skills and English ability) clearly shows the Australian government's increased emphasis on skill-related characteristics in order to intensify its economic focus.

Following the policy changes, the new immigrants dramatically outperformed those who came before the policy change in the Australian labour market

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<sup>2</sup> Austudy provides financial support for tertiary education students.

(Richardson et al. 2001; Cobb-Clark 2003). This is true for all visa categories except business skills, employer nomination<sup>3</sup> and humanitarian<sup>4</sup>. The improvement is also true for both genders six months after arrival time. Figure 1 demonstrates the difference in labour force status of primary applicants (PA) and migrating spouses (MU)<sup>5</sup> for all migrants between two cohorts.



Source: Richardson, et al. (2001)

The employment rate rose from 33 per cent in cohort 1 to 50 percent in cohort 2 and the non-participation rate fell from 46 per cent to 41 per cent. This left a question for researchers to probe that why cohort 2 migrants have done much better than cohort 1.

There are a number of reasons earlier identified by Richardson et al. (2001) contributing to the better labour outcome of cohort 2. First, they had better

<sup>3</sup> Immigrants for whom there was little change.

<sup>4</sup> Immigrants who make up a small proportion of the intake.

<sup>5</sup> The PA is the person upon whom the approval to immigrate was based. The groups of persons who migrate as part of the PA visa application are known as the migrating unit (MU).

levels of English and educational qualifications, and fewer people with low levels of each of these attributes due to higher selection criteria imposed by the Australian government. Secondly, migrants may have more incentives to look for jobs because of denial of access to social welfare payments for longer periods. Thirdly, there was an overall improvement in the state of the Australian labour market. Lastly, cohort 2 members might possess attributes that make them more employable in ways that are not captured in the observable characteristics.

Richardson et al. (2001) investigated the reasons for the improved labour outcomes of new migrants in the second cohort by using a standard pooled logit model. However, given the cross-sectional nature of the data, the accuracy of the results cannot be guaranteed due to the possibility of unobserved individual heterogeneity, and this problem could be particularly severe when the unobserved heterogeneity in individual human capital characteristics in the two cohorts is correlated with the returns attainable from related observed characteristics. This is in fact an omitted variables bias problem—the magnitude and direction are ambiguous between cohorts (Borjas 1985; Beggs and Chapman 1988; Cobb-Clark 2003). Such heterogeneity most likely, or to a greater extent, arises from the immigration policy changes that skilled-based (i.e. independent and skilled Australian linked) categories are subject to tighter selection criteria. However, other visa categories (e.g. family stream) are only affected by delayed access to social security payments: they have not faced more restrictive selection criteria, thus family stream category immigrants should have much less heterogeneity caused by policy changes than any other

category<sup>6</sup>. In addition, the sample size for the family stream category is satisfactorily large. Thus, it becomes possible to test the validity of the results from the standard pooled logit model for family stream category immigrants. That is, we can use probit marginal effect and decomposition method to infer that if the quality is constant between cohorts.

Since the family stream category has comprised a very large number of immigrants (see table 1) who are most likely to rely upon social security benefits, the importance of policy is paramount.

Labour supply theory hypothesizes that the income-support policy change would cause a higher proportion of recent immigrants to more vigorously search for work. The goal of this research is to examine the impact of the 1997 change in income-support policy on the labour market performance of recent immigrants to Australia. Empirical literature on this issue is still scarce, and their research suffers from methodological problems, such as the heterogeneity between the cohorts (Richardson et al. 2001). Although Cobb-Clark (2003) adopted the decomposition method to deal with heterogeneity problem, but the potential second-order effects<sup>7</sup> could complicate the results. While previous research has encompassed all migrants, this study isolates the family stream category from others to avoid the contamination of the selection criteria effects imposed on independent and skilled Australian linked categories, thereby second-order effects can be solved.

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<sup>6</sup> The humanitarian category is not affected by policy change, not considered further in this study.

<sup>7</sup> See Cobb-Clark (2003) for definition.

The study is organised as follows. The detailed overview of the LSIA data is presented in section 2. Section 3 considers the difference between the human capital endowments of the two cohorts. Then section 4 looks at the determinants of labour market participation and unemployment. Subsequently, differences in labour outcomes are decomposed into two components: human capital endowments and returns to human capital. Finally, the empirical results are discussed and conclusions derived.

## **2 DATA**

The LSIA consists of two entry cohorts. The first cohort arrived in the two year period September 1993 to August 1995.

In LSIA1, immigrants were interviewed three times. The first wave of interviews commenced in March 1994 (approximately six months after arrival). The second wave of interviews commenced one year later. The third wave of interviews commenced in March 1997. Each wave of interviews was spread over a two year period. There were 3124 primary applicants included in the LSIA2 sample. LSIA2 has two waves. The first interview was conducted approximately five or six months after arrival from March 2000, and the second interview commenced a year later.

Non-humanitarian immigrants can be classified into two groups: 1) Family Stream strictly based on family relationships, and 2) all other categories based

on potential labour market outcomes, including Independents<sup>8</sup>, Employer Nomination Scheme<sup>9</sup> (ENS), and Business Skills<sup>10</sup>. The Concessional Family category assesses individuals on the basis of both their family connections and their skills.

The LSIA are large and complex data sets. There are 75,000 PAs with 1, 344 observations on each person in LSIA1. Data manipulation can, at times, present problems. For example, the LSIA uses ABS standard classifications such as occupation and country. These code lists are subject to review and consequent change over time. For instance, in cohort 1, occupation was coded using the first edition Australian Standard Classification of Occupations (ASCO). In cohort 2, the second edition of this classification was used. Accordingly, results are not comparable between the LSIA cohorts at five levels of occupation classification, and care needs to be taken at broader levels. In cohort 2, I had to regroup nine major occupation groups into three occupation groups (i.e. Professional, Skilled and Unskilled) by their skill levels in order to make it comparable with cohort 1.

Similarly, LSIA1 used the Australian Standard Classification of Countries for Social Statistics (ASCCSS) for all questions asking for specific countries as an answer, where LSIA2 used the later Standard Australian Classification of Countries (SACC). Again, I had to combine some broader categories in cohort 1 to be comparable with cohort 2. For example, in cohort 1, Greece, Italy, Former

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<sup>8</sup> For those who pass the point test and do not have a family relationships

<sup>9</sup> For those who have pre-arranged employment with an Australian employer

<sup>10</sup> For those who meet certain capital requirements and wish to settle in Australia and develop new or existing businesses

Yugoslav Republics and other Southern European countries were combined into a single category in cohort 2, ‘Southern Europe’.

Further, code lists have gaps in the numbering sequence, and some questions are not consistent between the two cohort questionnaires. Some question asked in cohort 1 was not in LSIA2 and vice versa. This complicates the data transformations necessary for regression analysis, and some useful information was lost because of the combination of some categories.

Nevertheless, the LSIA has two advantages over other data sets for policy analysis. One advantage is that the policy change happened between just two cohorts. This is a perfect opportunity to examine the effect of policy change on immigrants. The other advantage is that the LSIA contains richer information about immigrants than any other data sets, which allows us to investigate immigrants’ behaviour from many perspectives.

For the purpose of isolating the income-support and labour market effects, this study only focuses on labour outcomes of family stream visa category immigrants who are primary applicants and aged between 15 and 65. This reduces the sample size to 2079 and 1403 for LSIA 1 and LSIA 2 respectively (i.e. about 49 per cent and 41 per cent of the totals).

## **3** DESCRIPTIVE ANALYSIS

### **3.1 Labour Market Status**

The use of the ‘employment to population ratio’<sup>11</sup> precipitates two benefits. 1) It is the single most useful figure for assessing the labour market success of a group. 2) A simple estimate of the unemployment rate is not particularly instructive about immigrants’ labour outcomes. For example, it does not distinguish between people who are not employed because they are not looking for work, and people who are unemployed despite seeking work. Thus ‘unemployment’ gains the full favour here.

[Table 1 here]

There is a modest increase in participation rate from 48 per cent (cohort 1) to 50 per cent (cohort 2) for the family stream. If we observe the table by gender, men experience a slightly lower participation rate for cohort 2. On the other hand, females have a slightly higher participation rate for cohort 2 than cohort 1.

Rising employment and falling unemployment accompanied this increase in participation rate for cohort 2. In contrast to participation, the change in employment to population ratio is a substantial. For each of the two cohorts, the employment to population ratio for family stream has risen from 29 per cent for cohort 1 to 39 per cent for cohort 2 with changes in selection criteria. For members of cohort 2, the magnitude of improvement in employment was substantial six months after migration, and was similar for both genders among those entering Australia between 1999 and 2000.

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<sup>11</sup> Employment to population ratio expresses the number of employed people from a specific group as a proportion of the total number of people who are in that group.

The magnitude of change in unemployment rate is even more striking. The unemployment rate of cohort 2 immigrants was less than half that of cohort 1 immigrants at the same stage of the settlement process. If we distinguish this result by sex, females underwent a more impressive drop in unemployment rate (42 per cent to 18 per cent) than males (39 per cent to 21 per cent).

Much of the higher rate of employment for cohort 2 is mirrored by a fall in unemployment. Over the period 1994 to 2000, the overall unemployment rate in Australia fell from 9.7 per cent to 6.6 per cent<sup>12</sup>. Unemployment nearly halved among recently arrived family stream migrants (from 41 per cent to 20 per cent) far exceeding this average native experience. It is to be expected that when the labour market is improving, the impact on new entrants to the labour force will be greater than the impact on the workforce as a whole. However as mentioned above, the different standard used by LSIA complicates this comparison.

### **3.2 Human Capital Endowment**

[Table 2 here]

A descriptive analysis of human capital endowment of family stream can give an explicit insight into the changes in ‘quality’ between two cohorts in terms of both absolute and relative values.

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<sup>12</sup> ABS catalogue no. 6291, table 91

There is not much change in demographic characteristics, except for marital status where 82 per cent of migrants from cohort 1 are married compared with 68 per cent of those from cohort 2.

Labour market status of migrants before arriving in Australia only changes a little between two cohorts. Members from cohort 2 experienced two months longer of unemployment in their home country than those from cohort 1 on average. In terms of labour market experience before migration, Australian government took in more less-experienced family stream migrants in 1999-2000 than 1995-1996. More professional and unskilled migrants had been taken in cohort 2 than cohort 1.

'Prior visit to Australia' is an important factor to job search, however there is no change between two cohorts. English ability of migrants is much improved in cohort 2 by taking in more native English speakers and less poor English speakers. Not surprisingly, we would expect more migrants in cohort2 are from ESB countries, such as UK, Ireland and North America and less from NESB countries, such as North Africa, Middle East, Southern and Central Asia. But a spectacular increase in the number of North and East Asian immigrants of cohort 2 was unexpected. From the aspect of education, members from cohort 2 are better educated although not very significant in absolute value.

[Table 3 and 4 here]

Both male and female follow a similar pattern as above except for three differences. 1) There are many more female unskilled migrants but less male

unskilled accepted in 1999-2000. 2) More male migrants came from Northern Europe than female in cohort 2. In contrast, many female migrants came from UK and Ireland. 3) Male migrants of cohort 2 seem to favour Victoria for residence only, but female migrants prefer to stay in NSW.

From the descriptive analysis, there seems no significant change in human capital endowment between two cohorts as a whole. Even though there exists a noteworthy percentage change, it is not large in the absolute value. Hence, one would expect a constant quality across two cohorts for the family stream, but this should be double checked with further empirical analysis in the following section.

## **4** ECONOMETRIC EVIDENCE

This study separately estimates the determinants of participation, and unemployment conditional upon participation. Hence two separate labour outcomes are considered: the labour market participation rate and unemployment rate for participants only. This allows us to shed light on both an immigrant's desire to work and on those factors pertaining to successful labour market experience.

### **4.1 Empirical Framework<sup>13</sup>**

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<sup>13</sup> This section is based on Greene (2003).

It is assumed that an individual immigrant would participate in the Australian labour market only if the returns to this action exceed the value of their time in alternative activities. Here we have:

$$P_i^* = X_i \beta + \varepsilon_i \quad (1)$$

where  $P_i^*$  is the latent labour market status of individual 'i',  $X_i$  is a vector of regressors for individual 'i' and  $\beta$  is a vector of coefficients. Hence, we have:

$$\Pr(P_{ij} = 1) = \Pr(P_i^* > 0) = \Pr(X_{ij} \beta_j + \varepsilon_i > 0) = \Phi(X_{ij} \beta_j) \quad (2)$$

where  $j=1, 2$  indexes cohorts,  $P_{ij}=1$  for labour market participants and 0 otherwise,  $\varepsilon_i \sim N(0,1)$ ,  $\Phi(\cdot)$  is the cumulative distribution function, and  $\beta_j$  is a vector of parameters to be estimated.  $X_{ij}$  is a vector of human capital endowment, which includes the variables such as gender, age, marital status, weeks since migration, skills before migration, labour market status before migration, work experience, English proficiency, education, country of birth, prior visit to Australia, and state of residence.

An alternative approach is adopted for a measure of unemployment experience. Conditional upon seeking market work, the probability of immigrant  $i$  being unemployed at the interview date is:

$$\Pr(U_{ij} = 1 | P_{ij} = 1) = \Pr(X_{ij}\theta_j + \omega_i > 0 | P_{ij} = 1) = \Phi(X_{ij}\theta_j) \quad (3)$$

where  $U_{ij} = 1$  for those unemployed and 0 otherwise,  $\omega_i \sim N(0,1)$  and  $\theta_i$  is a vector of returns to human capital endowment.

Both equations (2) and (3) are estimated for family stream immigrants aged 15-65 through a probit model. Unfortunately, small sample size (especially cohort 2) excludes the possibility of estimating the models separately by gender, although it did not seem to be much different in raw data by gender (see table 4 and 5).

In LSIA, quite a few missing observations occur for ‘professional, skilled or unskilled before migration’. For instance, there are 626 out of 2079 observations missed for cohort 1— almost 30% of total sample. Modified zero-order regression is to fill the missing value with zeros and add a new variable that takes the value one for missing observations and zero for complete ones.

Multicollinearity problem is also present in the regression for cohort 2 but not cohort 1. Correlation test has been done to find the variables that are highly correlated. Unfortunately, no particular two variables are highly correlated. Hence, I surmise that the multicollinearity problem arises because of the shortage of sample for cohort 2. Since the small sample size might cause the dummy set of ‘migrant’s skills’ to somehow correlate with that of labour market status before migration (i.e. migrants had to be employed before migration to become skilled).

Since multicollinear problems come from the dummies variables, a common solution to combine two categories, the ‘higher degree’ and ‘post graduate diploma’, then merge ‘work experience’ categories. It solves the multicollinear problems but at the expense of losing some valuable information. Unfortunately, the ‘missing value’ dummy still dropped out due to multicollinearity.

## **4.2 Empirical Results**

Coefficients and marginal effects from the probit models are shown in the tables. All standard errors are robust to heteroscedasticity. Moreover, the regression includes a weighting procedure to correct for the different sample proportions between different groups of migrants in the data files.

Chow tests are also utilised to test the joint probabilities of those sets of dummy variables.

### **4.2.1 Participation**

[Table 5 here]

Over the 1990s, females were less likely to participate in the labour market than males for the members of the family stream. This result reveals that men had more incentives to look for a job during that period. Age was positively related to migrants’ decision to participate in labour market for cohort 1, and this effect

was 5 percentage points higher than cohort 2. This change shows that younger people engaged in job search after policy change.

Compared with non-participation before migration, migrants who were employed in their home country were less likely to look for employment in the Australian labour market. This is an odd result. Perhaps these migrants had a higher reservation wage, which is the wage below which an individual is unwilling to accept a particular job offer, preferring instead to opt for non-participation. But 6 percentage points change between two cohorts reveals that cohort 2 migrants adjusted their reservation wages upward. Migrants, who were unemployed migrants before migration in cohort 1, were 23 percentage points higher in the participation rate than those in cohort 2. There was a significant drop in the participation rate among migrants without any work experience or between one or two years across cohorts, except for those with up to one year work experience.

Migrants' decision to participate in the labour market is closely related to their English ability for both cohorts. The better English they possess, the more confident they are of their success in gaining employment. For instance, migrants from both cohorts were less likely to participate in the labour market relative to native English speakers. The birth countries of migrants have confirmed this proposition. Migrants from ESB, such as UK, Ireland, North America, Southern and Northern Europe were more likely to engage in job search compared with migrants from Oceania in cohort 2. By contrast, migrants from NESB go the other way around.

An interesting pattern of participation rate exists in the education category that there was an improvement in the participation rate of migrants with tertiary education relative to those with schooling below year 12 across cohorts. This is also evidence that migrants lowered their reservation wages after the policy change.

Generally, there was an improvement in the labour participation rate for migrants reside in all major states relative to Northern Territory, except for those who reside in South Australia (SA) and Tasmania. The reason behind in those two states could be either the deterioration in the labour market condition, which frustrated them and caused them not to look for work, or cheaper living expenses, which allowed them to live without wage income, or both.

Overall, cohort 2 migrants seem to respond the welfare policy change by lowering their reservation wages. The explanatory power of the equation is 24 and 34 per cent for cohort 1 and 2 respectively. The equation consists of a large proportion of dummy variables, thus this is a reasonable result.

#### **4.2.2 Unemployment**

[Table 6 here]

Insight into the change in the labour market performance can be gained by observing the difference in the return to human capital endowments between

two cohorts. It seems that older migrants entering Australia in 1999-2000 had higher unemployment rate than earlier migrants.

Migrants, who were employed before migration, were more likely to gain jobs than those who were not in the labour market. The change in 'unemployed before migration' across cohorts is striking, 39 percentage points. Cohort 2 migrants, who were unemployed in home country, were facing serious unemployment difficulties relative to non-participants.

Professional or skilled migrants are usually expected to have higher employability than unskilled migrants. However, the results present us a different case for migrants after the policy change that more unskilled immigrants were more likely to get a job. Two implications can be derived: 1) Professional and skilled migrants might have a higher reservation wage than unskilled migrants. 2) More immigrants from the family stream in cohort 2 were engaging in low-skilled jobs after migration. Therefore it is likely that they were competing for job opportunities with low-skilled natives. English ability resembles this case again for cohort 2. The better English the migrants had, the more likely they were unemployed, although it is not statistically significant.

There was an improvement in the employment for migrants from ESB and North and East Asian countries relative to those from Oceania after the policy change, but the improvement is much more substantial for ESB countries. By contrast, migrants from other NESB countries struggled to find a job in 1999-2000.

Changes in the pattern of relative unemployment rate across education categories are more difficult to quantify. However, it seems that migrants with more than year 12 schooling had problems in finding a job after the policy change, except for those holding a trade qualification or higher degree had better employment outcomes.

The patterns for family stream migrants who were not subject to selection criteria suggest that income-support policy and labour market improvement seems to play an important role in producing the results.

Due to the potential existence of heterogeneity between the cohorts, two cohorts cannot be simply pooled to examine the welfare effects. However, the Oaxaca decomposition method can be employed here to deal with this problem, as discussed in the following section.

## **5** DECOMPOSITION

In this section, the Oaxaca decomposition method is modified to analyse the policy effect. Basically, the participation rate and unemployment experience differentials are decomposed into characteristics-related and returns-to-characteristics-related components. The change in the selection criteria is expected to have its most direct effect on changes in characteristics themselves, while labour market conditions and welfare policy work most directly alter the returns to characteristics in the Australian labour market. Higher selection

criteria improve the ‘quality’ of immigrants. Since the family stream immigrants are not subject to a point test, a constant quality is expected across cohorts. I have separated family stream category from other categories, thereby separating the income-support policy effects from selection criteria effects. Changes in labour market conditions shift the wage distribution and raise the returns to market work, and restricted access to welfare payment alters the cost and benefits of job search. The following decomposition analysis sheds light on the potential role of labour market conditions and welfare payment in aiding immigrants’ early settlement.

### 5.1 Methodology

Firstly we consider labour market participation. Recall that  $X_{ij}$  is a vector of human capital endowments influencing labour market status, while  $\beta_j$  is a vector of returns to those characteristics. Let  $X_j$  capture the characteristics of a representative person of cohort j. Following Cobb-Clark (2000), a representative foreign-born individual ( $\hat{X}_j$ ) such that he or she has a predicted probability of labour market participation equal to the cohort sample average and such that his or her endowments are in the same proportion is defined as the average endowments of foreign-born men or women in the cohort. In fact,  $\hat{X}_j = a_j \bar{X}_j$  where  $a_j$  is a cohort-specific scaling factor. The predicted cohort differential in the probability of participating in the Australian labour market is:

$$\hat{p}_2 - \hat{p}_1 = \Phi(\hat{X}_2 \hat{\beta}_2) - \Phi(\hat{X}_1 \hat{\beta}_1) \quad (4)$$

where  $\hat{p}_1$  and  $\hat{p}_2$  are the predicted probabilities of participation for the representative members from cohort 1 and cohort 2 respectively. Firstly,  $\hat{X}_1$  is treated as the norm. By adding and subtracting  $\Phi(\hat{X}_1\hat{\beta}_2)$  from the right hand side of equation (4) we can decompose the participation gap into returns-related and characteristics related components as following:

$$\hat{p}_2 - \hat{p}_1 = [\underbrace{\Phi(\hat{X}_1\hat{\beta}_2) - \Phi(\hat{X}_1\hat{\beta}_3)}_{\text{HumanCapitalEndowment}}] + [\underbrace{\Phi(\hat{X}_1\hat{\beta}_2) - \Phi(\hat{X}_2\hat{\beta}_2)}_{\text{ReturntoCharacteristic}}] \quad (5)$$

The decomposition given by equation (5) is not unique. To assess the robustness of the results, another decomposition of the participation gap is also considered when  $\hat{X}_2$  is taken as the norm. By adding and subtracting  $\Phi(\hat{X}_2\hat{\beta}_1)$  from the right hand side of equation (4) we have:

$$\hat{p}_2 - \hat{p}_1 = [\underbrace{\Phi(\hat{X}_2\hat{\beta}_1) - \Phi(\hat{X}_2\hat{\beta}_3)}_{\text{ReturntoCharacteristic}}] + [\underbrace{\Phi(\hat{X}_2\hat{\beta}_1) - \Phi(\hat{X}_1\hat{\beta}_1)}_{\text{HumanCapitalEndowment}}] \quad (6)$$

Equation (5) weights differences in characteristics by cohort 2 returns and equation (6) weights differences in characteristics by cohort 1 returns.

The decomposition procedure for the probabilities of unemployment is analogous to participation.

## 5.2 Results

[Table 7 here]

The results of the decomposition analysis are significant. Firstly consider the sources of cohort difference in labour market unemployment rate for newly arrived family stream PAs. Immigrants who arrived in Australia between 1999 and 2000 (Cohort 2) were 21 per cent lower in labour market unemployment rate six months after arrival than those who arrived five years earlier (Cohort 1). Approximately all of this decrease is due to the returns to characteristics rather than differences in the characteristics themselves. There are two key implications from these results.

1) The homogeneity in migrants 'quality' exists across two cohorts. The underlying reason is that family stream PAs are not subject to tighter selection criteria, thus their qualities are not 'contaminated' during the immigration process. Even though the Australian government 'caps and queues' aged parents, they adopted the 'first come, first serve' policy to family stream PAs. There is no bias in the selection process hence the constant migrant's quality.

2) The denial of access to social welfare forces more family stream PAs from cohort 2 to more actively look for employment. Recall that there was an overall improvement in the state of the Australian labour market between early and late 1990s. Since the homogeneous quality of family stream immigrants across two cohorts, the result from Richardson et al. (2001)'s standard logit model is valid that there is little effect of labour market condition on immigrants' labour outcome. The result is also consistent with her proposition earlier identified that

migrants may have more incentives to look for jobs as a consequence of denial of access to social welfare payments for longer periods.

Due to the small difference in the participation rate between two cohorts, the results of decomposition analysis are very sensitive to little change in each component. Therefore, this result does not present useful information on participation rate.

### **5.3 Diagnosis**

Due to the small sample size of family stream, many coefficients are not statistically significant in the regression result. However, we keep all the coefficients for two reasons:

1) The point of the decomposition is to take something (usually the difference in average outcomes for two groups, say average wages for men and women) and divide it into two or more parts. Then by looking at the parts it might tell us something useful about the process driving the difference in outcomes. If we do not use all the coefficients the decomposition will not sum to the total difference that we are trying to explain. So we would then have a residual component (i.e., the part due to insignificant coefficients) that really would not have a much useful interpretation.

2) There are a number of sets of dummy variables in the data. Normally, we need to identify things in the standard way by dropping one category. However,

the coefficients reflect the choice you made about the omitted category (i.e., the union of all the omitted dummies). A different choice of the dummy to be dropped will change the coefficients. So the coefficients themselves are dependent on the functional form choice in a way that is not informative. Therefore, constants should be considered together with other coefficients.

In summary, anything that factors into the regression model also needs to be factored into the decomposition, even though the coefficients are insignificant. As a result of the small sample size, a few dummy variables sets and missing values, some coefficients are not statistically significant in the regression results. The decomposition analysis still remains informative. However, the reader should be wary of the reliability of the results.

Furthermore, this result is somewhat sensitive to the model specification (see decomposition 1). There are large differences in the level of characteristics and returns components between two decompositions. As described above, the non-parametric decomposition technique may be sensitive to the choice of the dummy that is dropped. To check this, an analysis is conducted using five different choices. The results show that there was a slight change in each component for decomposition 2. By contrast, decomposition 1 is quite sensitive to the choices of dummy that is dropped. However, the cohort differences in labour market status remain unchanged. Hence, I presume that the problem might come from either  $\Phi(\hat{X}_1\hat{\beta}_2)$  or  $\Phi(\hat{X}_2\hat{\beta}_1)$ . Note that the Oaxaca decomposition method utilises the fact that the least squares regression line goes through the sample means of the data, so  $\bar{X}_j$  is used to characterise the

representative person results in predicted probabilities of participation or unemployment (point A in figure 5) that do not equal the sample averages (point B). Therefore, we have to scale it down from point B to point A. During the scaling process,  $\hat{X}_1$  has been adjusted to be much smaller than  $\hat{X}_2$ , in other words, norm  $\hat{X}_1$  fits the data better than  $\hat{X}_2$  in the decomposition. But the estimate  $\hat{\beta}_2$  is still the same as before the adjustment, as a result,  $\Phi(\hat{X}_1\hat{\beta}_2)$  has been overestimated. By contrast, the adjustment for  $\hat{X}_1$  was fairly small, so that  $\Phi(\hat{X}_2\hat{\beta}_1)$  yielded more reliable results than  $\Phi(\hat{X}_1\hat{\beta}_2)$ . Thus, decomposition 2 is preferred to decomposition 1. This seems to be confirmed by the descriptive analysis in section 3.2 where it was shown that there was little change in the characteristics of migrants from the two cohorts.

## 6 DISCUSSION AND CONCLUSION

Although two cohorts of migrants arrived in Australia only five years apart on average, the differences in their labour market status were substantial. The policy change in 1997 could be the major contribution to this extraordinary phenomenon. The results from decomposition analysis are consistent with the suspicion. Approximately all of the increase in employment rate is due to the returns to characteristics instead of differences in the characteristics themselves. Two key implications for family stream are derived from the results. 1) The ‘quality’ of migrants is almost constant between two cohorts, as is observed from descriptive analysis. 2) The denial of access to social welfare forced more migrants from cohort 2 to more actively search for jobs where there was a slight

impact of overall labour market improvement on immigrants' labour outcomes. Unfortunately, the decomposition analysis does not offer us useful information on participation rate due to the small difference in the participation rate across cohorts.

In standard decomposition analysis for the immigrants from all categories, second-order effects identified by Cobb-Clark (2003) could complicate the interpretation of the results. Significant second-order effects may yield a biased decomposition result. Since family stream immigrants are not subject to selection criteria, however, the family stream can be isolated from other visa categories, so that the income-support policy effects can be separated from selection criteria effects. Subsequently, not only can we avoid the containment of second-order effects — selection criteria effects — but we can also identify the second-order effects (if any) — labour market improvements and restricted access to welfare effects— from human capital endowment component. This allows more reliable interpretation.

As implied by equation (4), the cohort gap in the probability of participation rate is a non-linear function of  $\hat{X}_j$  and  $\hat{\beta}_j$ <sup>14</sup>, which makes the standard Oaxaca decomposition method invalid. Cobb-Clark (2003) employed a linear approximation developed by Doiron and Riddell (1994). However, this approximation could overstate or understate the actual result from B to C (see figure 2), leading to a biased result. The model presented above overcomes this

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<sup>14</sup> Because the cumulative normal distribution is not linear.

problem by targeting the point A (actual value) and estimating each component separately, which provides more reliable estimates.

Employment per se may be a very poor indicator of labour market success if the immigrant concerned is a job that does not make full use of his or her skills and abilities (e.g. are those immigrants without job security payment forced to take bad jobs?). It is, therefore, necessary to also observe the indicators that reflect on the 'quality' of that job, such as earnings and occupational status. There is evidence shown in section 4 that more migrants from cohort 2 were competing for low-skilled jobs with natives.

It is also crucial to be aware of the time element associated with the migratory and settlement process. Just because recent arrivals may be highly concentrated in the unemployed stock or in low-paying, low-status occupations, it does not mean that they will necessarily remain there forever. As the settlement process proceeds, information gathering, skill adaptation and acquisition, language learning and experience in the Australian labour market are all likely to help the immigrants to better search and compete for better jobs.

Australia is a prosperous society today mostly due to its highly skilled people in the workplace. However, a potential lack of skilled employees in Australia could be a major impediment to further economic expansion. One efficient solution is to acquire more skilled migrants. According to the ABS, Australia accepted 43, 500 migrants in 2002-03. This offers an opportunity to obtain the demanded skills immediately. But this poses policy makers a new question: how

would we keep skilled migrants in Australia and compete for more skilled migrants with other major migrant-receiving countries?

At the initial stage, finding a job is the main symbol of success of their immigration process in the labour market, thereby migrants are able to establish financial independence and contribute their human endowments to Australia's economy. If immigrants only to find no jobs available, they are likely to rely on the social welfare system once they are qualified, hence an added burden on the taxation system. Even though they found employment in the Australian labour market, immigrants whose productive potential is not fully realised might choose to emigrate to their origins or re-migrate to other countries with more job opportunities. Therefore, policy makers must not follow a myopic prescription in terms of policy design (e.g. fewer burdens for taxpayers or boost the employment rate of migrants) that could preclude Australian from enjoying many benefits that a well-organised immigration policy could bestow on the Australia.

Overall, this study revealed that the restriction to welfare access caused immigrants to more actively look for jobs. However, there is also evidence that more migrants might compete for low-skilled jobs with natives, and not fully utilise their skills. Further, the results of this study lend support to the reliability of estimates. Despite its shortcomings, this analysis provided a new way in examining the response of new migrants to welfare change in the labour market performance and has paved the way for future research in this area.

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## Appendix

**Table 1: Family Stream Labour Market Outcomes of LSIA1 and LSIA2 by Gender (Ratio and t-value)**

	Participation		Employment to population		Unemployment conditional on participation	
<b>Total</b>						
Cohort 1	0.48		0.29		0.41	
Cohort 2	0.50		0.39		0.20	
Difference (C2-C1)	0.02	(1.38)	0.10*	(6.45)	-0.21*	(-9.16)
<b>Men</b>						
Cohort 1	0.73		0.44		0.39	
Cohort 2	0.72		0.55		0.21	
Difference (C2-C1)	-0.01	(-0.47)	0.11*	(3.70)	-0.18*	(-6.20)
<b>Women</b>						
Cohort 1	0.33		0.19		0.42	
Cohort 2	0.37		0.29		0.18	
Difference (C2-C1)	0.04*	(1.95)	0.10*	(5.32)	-0.24*	(-7.10)

Note: \* mean that the difference of ratio between the cohorts is statistically significant at 5 per cent level.

**Table 2: Family Stream Human Capital Endowment, LSIA1 and LSIA2a (Means and Standard Deviations)**

Total	Cohort 1		Cohort 2		Percent Change
	Mean	Std. Dev	Mean	Std. Dev	
<b>Weeks Since Migration</b>	18	5.1	21	5.1	18
<b>Demographic</b>					
Female (%)	62	0.5	61	0.5	-2
Age	31	10.7	32	11.2	1
Married (%)	82	0.4	68	0.5	-18
<b>LM Experience Before Migration</b>	(%)		(%)		
Employed before migration	68	0.5	66	0.5	-3
Unemployed before migration	3	0.2	3	0.2	-8
Non-Participant before migration	30	0.5	32	0.5	8
No Work Experience	30	0.5	33	0.5	9
WE less than 1 year	10	0.3	15	0.4	39
WE between 1 and 2 years	15	0.4	12	0.3	-19
WE between 2 and 5 years	19	0.4	19	0.4	-4
WE greater than 5 years	25	0.4	22	0.4	-13
Professional before migration	42	0.5	47	0.5	11
Skilled before migration	46	0.5	40	0.5	-12
Unskilled before migration	11	0.3	13	0.3	11
<b>Prior Visit to Australia</b>	47	0.5	47	0.5	-1
<b>English Ability</b>	(%)		(%)		
Native speaker	17	0.4	23	0.4	36
English well	37	0.5	38	0.5	1
English not well	46	0.5	39	0.5	-14

<b>Education</b>	(%)		(%)		
Higher degree	3	0.2	6	0.2	90
Post graduate diploma	4	0.2	4	0.2	-1
Bachelor degree or equivalent	17	0.4	19	0.4	12
Tech/prof qual diploma/certificate	23	0.4	22	0.4	-6
Trade	5	0.2	5	0.2	-1
12 or more years of schooling	23	0.4	21	0.4	-8
Schooling below year 12	25	0.4	23	0.4	-7
<b>Country of Birth</b>	(%)		(%)		
Oceania	4	0.2	5	0.2	17
UK & Ireland	4	0.2	7	0.3	70
Southern Europe	7	0.3	4	0.2	-49
Western Europe	5	0.2	5	0.2	-6
Northern Europe	3	0.2	4	0.2	56
South & Eastern Europe	12	0.4	10	0.3	-19
North Africa & Mid East	17	0.4	8	0.3	-55
Southern Asia	19	0.4	4	0.2	-79
North & East Asia	10	0.3	35	0.5	233
Southern & Central Asia	6	0.2	3	0.2	-52
Northern America	3	0.2	6	0.2	114
South America	7	0.2	5	0.2	-26
Central America & Caribbean	1	0.1	2	0.1	93
Other Africa	5	0.2	4	0.2	-20
<b>State of Residence</b>	(%)		(%)		
NSW	34	0.5	41	0.5	21
Victoria	20	0.4	24	0.4	18
Queensland	18	0.4	9	0.3	-50
South Australia	8	0.3	5	0.2	-38
Western Australia	9	0.3	10	0.3	4
Tasmania	3	0.2	3	0.2	4
Northern Territory	5	0.2	2	0.1	-60
ACT	10	0.3	6	0.2	-40

Note:

<sup>a</sup> Sample size is 2079 and 1403 for LSIA 1 and 2 respectively.

**Table 3: Family Stream Male Human Capital Endowment, LSIA1 and LSIA2, (Means and Standard Deviations)**

<b>Total</b>	<b>Cohort 1</b>		<b>Cohort 2</b>		<b>Percent Change</b>
	<b>Mean</b>	<b>Std. Dev</b>	<b>Mean</b>	<b>Std. Dev</b>	
<b>Weeks since migration</b>	18	5.4	22	5.1	18
<b>Demographic</b>					
Age	32	10.6	32	11.2	2
Married (%)	82	0.4	66	0.5	-19
<b>LM Experience Before Migration</b>	(%)		(%)		
Employed before migration	78	0.4	75	0.4	-4
Unemployed before migration	3	0.2	3	0.2	-24
Non-Participant before migration	18	0.4	22	0.4	21

No Work Experience	19	0.4	24	0.4	22
WE less than 1 year	10	0.3	14	0.4	41
WE between 1 and 2 years	16	0.4	14	0.3	-17
WE between 2 and 5 years	22	0.4	22	0.4	-2
WE greater than 5 years	32	0.5	26	0.4	-17
Professional before migration	41	0.5	50	0.5	21
Skilled before migration	43	0.5	38	0.5	-11
Unskilled before migration	15	0.4	12	0.3	-19
<b>Prior Visit to Australia</b>	51	0.5	50	0.5	-1
<b>English Ability</b>	(%)		(%)		
Native speaker	20	0.4	28	0.4	39
English well	37	0.5	36	0.5	-2
English not well	43	0.5	36	0.5	-16
<b>Education</b>	(%)		(%)		
Higher degree	4	0.2	7	0.2	73
Post graduate diploma	4	0.2	3	0.2	-6
Bachelor degree or equivalent	16	0.4	18	0.4	16
Tech/prof qual diploma/certificate	23	0.4	21	0.4	-9
Trade	8	0.3	8	0.3	-6
12 or more years of schooling	22	0.4	22	0.4	1
Schooling below year 12	23	0.4	20	0.4	-12
<b>Country of Birth</b>	(%)		(%)		
Oceania	4	0.2	5	0.2	22
UK & Ireland	7	0.3	8	0.3	25
Southern Europe	11	0.3	6	0.2	-46
Western Europe	6	0.2	6	0.2	-4
Northern Europe	2	0.1	5	0.2	120
South & Eastern Europe	9	0.4	7	0.3	-25
North Africa & Mid East	21	0.4	8	0.3	-60
Southern Asia	13	0.3	3	0.2	-75
North & East Asia	8	0.3	28	0.4	265
Southern & Central Asia	5	0.2	4	0.2	-20
Northern America	3	0.2	9	0.3	188
South America	7	0.3	4	0.2	-49
Central America & Caribbean	1	0.1	3	0.2	131
Other Africa	5	0.2	5	0.2	0
<b>State of Residence</b>	(%)		(%)		
NSW	36	0.5	36	0.5	-2
Victoria	24	0.4	29	0.5	21
Queensland	19	0.4	11	0.3	-45
South Australia	10	0.3	5	0.2	-49
Western Australia	12	0.3	10	0.3	-22
Tasmania	3	0.2	3	0.2	-2
Northern Territory	5	0.2	1	0.1	-82
ACT	10	0.3	6	0.2	-39

**Table 4: Family Stream Female Human Capital Endowment, LSIA1 and LSIA2, (Means and Standard Deviations)**

<b>Total</b>	<b>Cohort 1</b>		<b>Cohort 2</b>		<b>Percent Change</b>
	<b>Mean</b>	<b>Std. Dev</b>	<b>Mean</b>	<b>Std. Dev</b>	
<b>Weeks since migration</b>	18	4.9	21	5.1	17
<b>Demographic</b>					
Age	31	10.8	31	11.1	0
Married (%)	83	0.4	69	0.5	-17
<b>LM Experience Before Migration</b>					
	(%)		(%)		
Employed before migration	61	0.5	60	0.5	-3
Unemployed before migration	3	0.2	3	0.2	6
Non-Participant before migration	36	0.5	38	0.5	4
No Work Experience	37	0.5	39	0.5	5
WE less than 1 year	11	0.3	15	0.4	39
WE between 1 and 2 years	14	0.3	11	0.3	-21
WE between 2 and 5 years	18	0.4	16	0.4	-6
WE greater than 5 years	21	0.4	19	0.4	-9
Professional before migration	44	0.5	45	0.5	4
Skilled before migration	47	0.5	41	0.5	-13
Unskilled before migration	9	0.3	13	0.3	52
<b>Prior Visit to Australia (%)</b>	45	0.5	45	0.5	0
<b>English Ability</b>					
	(%)		(%)		
Native speaker	15	0.4	20	0.4	32
English well	37	0.5	38	0.5	3
English not well	48	0.5	42	0.5	-13
<b>Education</b>					
	(%)		(%)		
Higher degree	3	0.2	6	0.2	102
Post graduate diploma	4	0.2	4	0.2	2
Bachelor degree or equivalent	18	0.4	20	0.4	9
Tech/prof qual diploma/certificate	23	0.4	22	0.4	-4
Trade	2	0.2	2	0.2	6
12 or more years of schooling	24	0.4	21	0.4	-13
Schooling below year 12	25	0.4	24	0.4	-4
<b>Country of Birth</b>					
	(%)		(%)		
Oceania	4	0.2	4	0.2	13
UK & Ireland	2	0.1	6	0.2	150
Southern Europe	5	0.2	2	0.2	-53
Western Europe	4	0.2	4	0.2	-10
Northern Europe	3	0.2	4	0.2	27
South & Eastern Europe	15	0.4	12	0.3	-17
North Africa & Mid East	14	0.3	7	0.3	-49
Southern Asia	22	0.4	4	0.2	-80
North & East Asia	12	0.3	39	0.5	223
Southern & Central Asia	7	0.3	2	0.2	-65
Northern America	3	0.2	5	0.2	63
South America	6	0.2	6	0.2	-10
Central America & Caribbean	1	0.1	1	0.1	51

Other Africa	5	0.2	3	0.2	-33
<b>State of Residence</b>	(%)		(%)		
NSW	32	0.5	45	0.5	38
Victoria	18	0.4	21	0.4	15
Queensland	18	0.4	8	0.3	-53
South Australia	7	0.3	5	0.2	-29
Western Australia	8	0.3	10	0.3	29
Tasmania	2	0.1	2	0.2	9
Northern Territory	5	0.2	3	0.2	-47
ACT	10	0.3	6	0.2	-39

**Table 5: Determinants<sup>a</sup> of Participation for Family Stream, LSIA1 and LSIA2**

	Cohort 1			Cohort 2			C2-C1 <sup>b</sup> p-value
	dF/dx	Coef.	t	dF/dx	Coef.	t	
<b>Weeks Since Migration</b>	0.00	-0.01	-(0.81)	0.01**	0.02	(1.75)	0.04
<b>Demographic</b>							
Female	-0.43*	-1.14	-(12.36)	-0.40*	-1.11	-(8.01)	0.97
Age	0.07*	0.18	(7.01)	0.02**	0.06	(1.63)	0.01
Age <sup>2</sup>	0.00*	0.00	-(7.52)	0.00*	0.00	-(2.34)	0.01
Married	-0.03	-0.06	-(0.52)	-0.05	-0.12	-(0.98)	0.85
<b>LM Experience Before Migration</b>							
Employed before migration	-0.12	-0.30	-(1.30)	-0.06	-0.16	-(0.49)	0.16
Unemployed before migration	0.36*	1.07	(3.63)	0.13	0.35	(1.20)	
No Work Experience	0.04	0.11	(0.90)	-0.29*	-0.74	-(1.88)	0.05
WE less than 1 year	-0.01	-0.02	-(0.10)	0.11	0.28	(1.14)	
WE between 1 and 2 years	0.15*	0.38	(2.53)	0.00	-0.01	-(0.05)	
WE between 2 and 5 years	0.07	0.18	(1.39)	0.06	0.15	(0.81)	
Professional before migration	0.00	0.01	(0.06)	0.04	0.10	(0.39)	0.79
Skilled before migration	-0.01	-0.03	-(0.16)	0.06	0.16	(0.70)	
Missing Value	-0.37*	-0.98	-(3.64)				
<b>Prior Visit to Australia</b>	0.09	0.23	(1.42)	0.10	0.24	(1.59)	0.96
<b>English Ability</b>							
English well	-0.11**	-0.29	-(1.81)	-0.14*	-0.36	-(1.85)	0.24
English not well	-0.16*	-0.40	-(2.30)	-0.30*	-0.76	-(3.30)	
<b>Education</b>							
Higher degree	-0.18**	-0.46	-(1.76)	0.02	0.05	(0.17)	0.61
Post graduate diploma	-0.09	-0.23	-(0.99)	0.00	0.01	(0.04)	
Bachelor degree or equivalent	-0.03	-0.07	-(0.47)	0.09	0.24	(1.10)	
Tech/prof qual diploma/certificate	0.00	0.01	(0.05)	0.05	0.13	(0.66)	
Trade	-0.09	-0.23	-(1.14)	0.05	0.12	(0.37)	
12 or more years of schooling	-0.01	-0.01	-(0.11)	-0.05	-0.13	-(0.63)	

<b>Country of Birth</b>							0.05
UK & Ireland	-0.22*	-0.58	-(1.99)	0.11	0.30	(0.93)	
Southern Europe	-0.07	-0.17	-(0.69)	-0.02	-0.04	-(0.12)	
Western Europe	0.02	0.04	(0.15)	-0.13	-0.34	-(1.03)	
Northern Europe	0.06	0.15	(0.51)	0.09	0.22	(0.63)	
South & Eastern Europe	-0.04	-0.11	-(0.69)	-0.03	-0.07	-(0.23)	
North Africa & Mid East	0.03	0.07	(0.35)	-0.19	-0.49	-(1.57)	
Southern Asia	-0.02	-0.06	-(0.31)	-0.26*	-0.66	-(2.08)	
North & East Asia	0.04	0.10	(0.41)	-0.11	-0.29	-(1.07)	
Southern & Central Asia	-0.10	-0.25	-(0.98)	-0.18	-0.45	-(1.35)	
Northern America	-0.23*	-0.61	-(1.93)	-0.05	-0.12	-(0.35)	
South America	-0.14	-0.35	-(1.32)	-0.19	-0.48	-(1.55)	
Central America & Caribbean	-0.19	-0.50	-(1.32)	-0.28*	-0.73	-(2.01)	
Other Africa	0.06	0.14	(0.55)	-0.18	-0.44	-(1.27)	
<b>State of Residence</b>							0.02
NSW	-0.05	-0.13	-(0.84)	0.22*	0.58	(1.94)	
Victoria	-0.06	-0.15	-(1.03)	0.13	0.35	(1.16)	
Queensland	-0.06	-0.15	-(1.04)	0.17	0.46	(1.30)	
South Australia	-0.02	-0.05	-(0.26)	-0.05	-0.13	-(0.35)	
Western Australia	-0.03	-0.07	-(0.43)	0.22*	0.61	(1.78)	
Tasmania	0.20**	0.54	(1.70)	-0.06	-0.15	-(0.39)	
ACT	-0.08	-0.20	-(1.10)	-0.02	-0.05	-(0.14)	

Note:

- 1) <sup>a</sup> The omitted categories are non-participant before migration, work experience greater than 5 years, unskilled before migration, native English speaker, schooling below year 12, Oceania and Northern Territory.
- 2) <sup>b</sup> Significance level of the difference in the marginal effects between cohorts.
- 3) \* and \*\* mean that the estimate is statistically significant at the 5 per cent and 10 per cent level respectively.
- 4) Cohort 1: Number of observations = 2079 Log likelihood = -1089.61 Pseudo R<sup>2</sup> = 0.24
- 5) Cohort 2: Number of observations = 1373 Log likelihood = -628.67 Pseudo R<sup>2</sup> = 0.34

**Table 6: Determinants<sup>a</sup> of Unemployment for Family Stream, LSIA1 and LSIA2**

	<b>Cohort 1</b>			<b>Cohort 2</b>			<b>C2-C1<sup>b</sup></b>
	<b>dF/dx</b>	<b>Coef.</b>	<b>t</b>	<b>dF/dx</b>	<b>Coef.</b>	<b>t</b>	<b>p-value</b>
<b>Weeks Since Migration</b>	0.00	-0.01	-(0.82)	-0.01	-0.04*	-(1.98)	0.14
<b>Demographic</b>							
Female	0.13*	0.34	(2.96)	0.00	0.01	(0.04)	0.13
Age	-0.02	-0.04	-(1.01)	0.06*	0.23	(2.75)	0.01
Age <sup>2</sup>	0.00	0.00	(1.53)	0.00*	0.00	-(2.30)	0.01
Married	0.13*	0.35	(2.18)	0.06	0.27	(1.10)	0.82
<b>LM Experience Before Migration</b>							
Employed before migration	-0.07	-0.18	-(0.63)	-0.09	-0.31	-(0.76)	0.19
Unemployed before migration	-0.03	-0.07	-(0.23)	0.36*	1.03	(1.87)	
WE up to 2 years	-0.05	-0.13	-(0.86)	-0.09	-0.39	-(0.70)	0.26
WE greater than 2 years	-0.04	-0.10	-(0.67)	-0.20	-0.77	-(1.27)	
Professional before migration	-0.17*	-0.46	-(2.25)	0.18	0.69	(1.52)	0.03
Skilled before migration	-0.16*	-0.43	-(2.14)	0.28*	0.98	(2.08)	
Missing Value	-0.06	-0.17	-(0.50)				

<b>Prior Visit to Australia</b>	0.04	0.09	(0.44)	-0.04	-0.15	-(0.75)	0.27
<b>English Ability</b>							0.23
English well	0.13**	0.35	(1.75)	-0.05	-0.21	-(0.79)	
English not well	0.09	0.24	(1.10)	-0.07	-0.30	-(0.85)	
<b>Education</b>							0.05
Higher degree/Post graduate diploma	-0.02	-0.05	-(0.19)	-0.06	-0.25	-(0.68)	
Bachelor degree or equivalent	-0.05	-0.14	-(0.72)	0.16**	0.57	(1.73)	
Tech/prof qual diploma/certificate	0.00	-0.01	-(0.05)	0.14	0.49	(1.62)	
Trade	0.10	0.27	(0.97)	0.00	0.01	(0.03)	
12 or more years of schooling	-0.12*	-0.33	-(1.99)	0.09	0.34	(1.00)	
<b>Country of Birth</b>							0.00
UK & Ireland	0.10	0.25	(0.63)	-0.22*	-1.28	-(3.01)	
Southern Europe	-0.08	-0.22	-(0.67)	-0.16*	-1.30	-(2.99)	
Western Europe	-0.01	-0.03	-(0.08)	-0.13**	-0.72	-(1.70)	
Northern Europe	0.11	0.29	(0.74)	-0.11	-0.62	-(1.46)	
South & Eastern Europe	-0.04	-0.11	-(0.51)	-0.16*	-1.01	-(2.52)	
North Africa & Mid East	-0.07	-0.19	-(0.69)	0.28*	0.87	(1.94)	
Southern Asia	-0.11	-0.29	-(1.07)	-0.11	-0.59	-(1.22)	
North & East Asia	-0.13	-0.37	-(1.20)	-0.22*	-1.08	-(2.89)	
Southern & Central Asia	-0.10	-0.26	-(0.80)	0.15	0.48	(0.91)	
Northern America	0.16	0.41	(0.98)	-0.17*	-1.16	-(2.79)	
South America	-0.24*	-0.73	-(2.19)	-0.14**	-0.90	-(1.82)	
Central America & Caribbean	-0.35*	-1.47	-(2.45)	-0.14**	-0.97	-(1.77)	
Other Africa	0.07	0.17	(0.53)	-0.07	-0.35	-(0.79)	
<b>State of Residence</b>							0.53
NSW	-0.03	-0.08	-(0.42)	0.09	0.36	(0.58)	
Victoria	0.07	0.17	(0.95)	0.21	0.70	(1.13)	
Queensland	-0.04	-0.11	-(0.59)	0.15	0.52	(0.83)	
South Australia	-0.06	-0.17	-(0.63)	0.33	0.97	(1.44)	
Western Australia	-0.01	-0.02	-(0.08)	0.03	0.13	(0.21)	
Tasmania	0.36*	0.95	(2.67)	0.42**	1.19	(1.63)	
ACT	0.00	0.00	(0.00)	0.02	0.06	(0.09)	

Note:

- 1) <sup>a</sup> The omitted categories are non-participant before migration, no work experience, unskilled before migration, native English speaker, schooling below year 12, Oceania and Northern Territory.
- 2) <sup>b</sup> Significance level of the difference in the marginal effects between cohorts.
- 3) \* and \*\* mean that the estimate is statistically significant at the 5 per cent and 10 per cent level respectively.
- 4) Number of observations = 996 Log likelihood = -603.13 Pseudo R<sup>2</sup> = 0.10
- 5) Number of observations = 695 Log likelihood = -281.88 Pseudo R<sup>2</sup> = 0.24

**Table 7: Decomposition of Cohort Gap in Labour Market Status**

Participation	Decomposition 1		Decomposition 2	
	Level	Per cent	Level	Per cent
<b>Difference (Cohort 2- Cohort 1)</b>	0.026		0.026	
Characteristics	0.052	200	0.006	23
Returns	-0.026	-100	0.020	77

<b>Unemployment</b>	Level	Per cent	Level	Per cent
<b>Difference</b> (Cohort 2- Cohort 1)	-0.210		-0.210	
Characteristics	-0.150	72	-0.012	5
Returns	-0.060	28	-0.198	95

**Figure 2: Linear Approximation**

