

**Are Asian Migrants Discriminated Against in the  
Labour Market?  
A Case Study of Australia**

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**Keywords:** Immigrants, discrimination, unemployment, mobility.

## **Are Asian Migrants Discriminated Against in the Labour Market? A Case Study of Australia**

This paper explores the issue of discrimination against Asian migrants in the Australian labour market using an unique panel data set, the Longitudinal Survey of Immigrants to Australia (LSIA). The paper begins with a discussion of discrimination in the labour market following on the classic papers by Phelps (1973), Arrow (1973) and Becker (1957) and the problems involved in some of the methods employed to estimate the extent of discrimination. Most of the earlier literature has focussed on the wage discrimination, however, our paper is based on assessing the extent of discrimination in finding employment which is a prerequisite to obtaining a wage. In our opinion, most of the wage discrimination studies underestimate the extent of discrimination since many members of the discriminated group do not find employment in the first place and hence have a zero wage. There are two aspects of discrimination we study: firstly, the probability of being unemployed is likely to be different for the discriminated group (given the same observable characteristics), and secondly, the transition probabilities of moving from unemployment to employment may be different for the discriminated group. Most of the earlier Australian research has focussed on differences between English speaking migrants and non-English speaking background migrants (NESB migrants) which unfortunately does not distinguish between European migrants from (say) Holland from the Vietnamese migrants. In our study we focus on discrimination against people of colour, in particular Asian migrants relative to other migrants. We are obviously aware of the problems involved in ascribing all the differences between Asian migrants and other migrants to discrimination although we try to control for most of the variables that are likely to affect labour market success. The next section of the paper provides a description of the LSIA data and the following section provides some descriptive statistics about labour market outcomes. The next section provides some econometric estimates using probit estimation. Our results suggest that there is discrimination against Asian migrants. A final section provides conclusions and suggestions for future work.

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# Are Asian Migrants Discriminated Against in the Labour Market? A Case Study of Australia

## 1. Introduction

This paper explores the issue of discrimination against Asian migrants in the Australian labour market using an unique panel data set, the Longitudinal Survey of Immigrants to Australian (LSIA)<sup>1</sup>. The paper begins with a discussion of discrimination in the labour market following on the classic papers by Phelps (1973), Arrow (1973) and Becker (1957) and the problems involved in some of the methods employed to estimate the extent of discrimination. Most of the earlier literature has focussed on wage discrimination, however, our paper is based on assessing the extent of discrimination in finding employment which is a prerequisite to obtaining a wage. In our opinion, most of the wage discrimination studies underestimate the extent of discrimination since many members of the discriminated group do not find employment in the first place and hence have a zero wage<sup>2</sup>. There are two aspects of discrimination we study: firstly, the probability of being unemployed is likely to be different for the discriminated group (given the same observable characteristics), and secondly, the transition probabilities of moving from unemployment to employment may be different for the discriminated group. Most of the earlier Australian research has focussed on differences between English speaking migrants and non-English speaking background migrants (NESB migrants) which unfortunately does not distinguish between European migrants from (say) Holland from the Vietnamese migrants. In our study we focus on discrimination against people of colour, in particular Asian migrants relative to other migrants. We are obviously aware of the problems involved in ascribing all the differences between Asian migrants and other migrants to discrimination although we try to control for most of the variables that are likely to affect labour market success. The next section of the paper provides a description of the LSIA data and the following section provides some descriptive statistics about labour market outcomes. The next section provides some econometric estimates using probit estimation. A final section provides conclusions and suggestions for future work.

## 2. Main hypotheses/Models

The main aim of this paper is to see whether there is discrimination against Asian migrants (or visible minorities). Discrimination entails different treatment of a group of people who have identical qualifications, experience, skills, etc. It is often suggested that we should distinguish between *pre-labour market entry* and *post-labour market entry* discrimination.

*Pre-labour market entry discrimination* would cover unequal access to education and training, unequal access to health and housing, etc. People who have been forced to live in poor housing (for example) would tend to go to schools which are worse than average and hence receive poor education and make them less attractive to employers in the future.

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<sup>1</sup> We are grateful to the Department of Immigration and Multicultural Affairs, Commonwealth Government of Australia for providing us with the unit record data from the Longitudinal Survey of Immigrants to Australia.. We thank David Osborne and his colleagues at the Department for their help in using the data. They are not responsible for any views expressed in this paper. We gratefully acknowledge the support for this research by a University of Western Sydney Macarthur Foundation Grant. We also thank Deborah Cobb-Clark for help with interpreting the LSIA data.

<sup>2</sup> Some studies do allow for the sample selection bias by using the Heckman correction, see Hum and Simpson (2001).

Poor education, lack of social networks for people coming from disadvantaged background, poor social skills, etc. would make it more difficult for this group of people to compete in the labour market once they try to find jobs, or when they try to get pay rises, or find new jobs.

*Post-labour market entry discrimination* consists of discrimination by employers in their hiring policies, wage policies, and/or promotion policies. If employers hire (say) a white person given two people (white/Asian<sup>3</sup>) with identical education and experience had applied we would call it discrimination if it happened on a more than random basis. This discrimination may be due to what Becker (1957) calls an employer's "taste" or it could be because employers are concerned that their employees may not wish to work with the discriminated group or because the employer believes the customer/client may not wish to deal with that group. There is a literature on so-called "statistical discrimination", Arrow (1973), where employers in a market with imperfect information may use some visible characteristic to discriminate on the basis of some past experience. Similarly, if the wages of non-Asian and Asian were different even though they had identical measurable characteristics we would suspect discrimination.

In this paper we are concerned with labour market success defined as being employed (or lack of success as being unemployed), and with the transitions from unemployment to employment. If Asian migrants were being discriminated against we would, *ceteris paribus*, expect them to have a higher probability of being unemployed, and lower transition probabilities from unemployment to employment. In usual labour market models we hypothesise that the probability of unemployment is a joint probability of being offered a job and accepting the offer. The offer of a job is dependent on the employer's expectation of the productivity of the potential employee that would depend on measurable characteristics like age, education, experience, etc. The probability of accepting an offer would depend on the reservation wage of the potential employee that would depend on his/her preference for leisure and outside options in terms of wealth, social security benefits etc.

In this paper we are concerned with the success or failure of Asian migrants in finding employment. We estimate equations for the probability of being unemployed and the transitions from unemployment to employment. In this data set the unemployed are defined as persons who are not working and actively searching for work in the last *two* weeks. This definition is different from the usual International Labour Organisation (and the Australian Bureau of Statistics) definition where the person has to be searching for work for *four* weeks.

### **3. Some Evidence from Previous Studies**

As mentioned earlier most studies of migrants in Australia have compared non-English speaking background (NESB) migrants with English speaking background (ESB) migrants, see Wooden (1990) for a review of the literature. One exception to this literature is a paper by Evans and Kelley (1986) (using data from the public use sample of the 1981 Australian Census) that is concerned with discrimination in the Australian labour market using occupational status as the dependent variable. They find that migrants from Mediterranean countries who were educated overseas performed worse than other

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<sup>3</sup> In our analysis we are comparing Asians with non-Asians.

migrants or native born Australians. Again most studies have concentrated on estimating wage equations, Chapman and Salvage (1994), although a few have explored the probability of migrants facing unemployment in the early phases of their arrival in Australia, Miller (1986). Borjas (1994) provides a detailed review of literature on the success of migrants in (especially) the US labour market where most of the studies have focussed on earnings functions, and a few have compared wage differences between ethnic groups (Asians/Hispanics/Whites). Chiswick (1983) has compared earnings of Asian Americans with rest and found that they have higher earnings than whites.

A big concern in the US literature has been on the assimilation of migrants into the US labour market. Assimilation has been understood to be either a convergence of migrant *wage rates* to native wages or a convergence of migrant *earnings* over time (the latter could be simply because migrants work longer hours). In these cross section studies there are potential problems of confusing earnings of different cohorts that may give the impression of assimilation in the US. Borjas (1994) in summarising his earlier work argues that if the earlier cohorts arriving in the US were higher quality (productivity) migrants than more recent ones, a cross section study that includes a variable "years of residence" would give a misleading result of assimilation. In our study we do not focus on wages or earnings, but in any case since we are dealing with one cohort this problem would not affect our analysis. In our study we see if there are improvements in the probabilities of labour market success of Asian migrants relative to non-Asian migrants over time.

In some recent work Hum and Simpson (1999 and 2001) using Canadian longitudinal data (Survey of Labour and Income Dynamics, SLID) estimate earnings functions and allow for discrimination against visible minorities (migrants of colour). In the first paper they use cross-section data from the first Wave to estimate wage equations allowing for intercept differences (and interactive dummies) between different ethnic groups. In particular, they use a Heckman correction for the probability of employment in their wage equations and find that even after controlling for the usual human capital variables there are significant differences between the wages of "visible minorities" and the rest. In a subsequent paper they consider the issue of assimilation and find that visible minorities wages do not converge to that of native Canadians. These results suggest that there is a form of discrimination against visible minorities in the Canadian labour market. Our paper is an attempt to provide some evidence using Australian longitudinal data on discrimination against Asian migrants.

In an important paper exploring the success of migrants who have entered under different visa categories (Family, Skilled, Humanitarian), Cobb-Clark (2000), estimates the probability of participating in the labour market and (conditional on participating) the probability of employment. She uses data from Waves 1 and 2 of the LSIA data set for her analyses. She finds that (surprisingly) education is not an important explanatory variable although English language ability plays an important role. However, curiously males who improved their English worsened their employment probabilities! Compared to the economic skills migrants (Business Skills/Employer Nominated Scheme) all other visa categories do worse, especially the Humanitarian category. In the second Wave most visa category employment prospects improve although the Humanitarian category does not improve as much and the gap widens between them and the rest. Migrants who visited Australia prior to migrating had a higher probability of being employed perhaps because

they had a better knowledge of employment opportunities (presumably those visitors who thought that they would not find suitable employment decided not to migrate).

#### **4. The Longitudinal Survey of Immigrants to Australia: Description of Sample**

The Longitudinal Survey of Immigrants to Australian (LSIA) data were collected to inform policy makers about the settlement process of immigrants to Australia. The sample is a stratified random sample of all Principal Applicants aged 15 years and over who arrived in Australia between September 1993 and August 1995. The first wave of interviews were in March 1994, the second wave in March 1995, and the third wave in March 1997 (each wave of interviews was spread out over two years). The first interview was after six months of arrival, Wave 2 was 12 months later and Wave 3 was 24 months after arrival.

Besides the usual demographic information this data set contains information on education, English language ability, some information about previous labour market experience, and the visa category under which the Principal Applicant was admitted. In our analysis we have limited our sample to Principal Applicants. As the data are for migrants who arrived between September 1993 and August 1995 as Principal Applicants they would all have been selected on a points basis which emphasises age, education, and skills allowing for special cases like the humanitarian (refugee) category. This is one of the few data sets on migrants in Australia where we have information on the visa category under which they entered the country. Since we would expect migrants who entered on an employer nominated scheme (ENS) to find employment immediately on arrival we can control for this variable. Similarly, we would expect refugees not to have been screened on the basis of their employability (using English language, education, skills, experience, etc.) and hence expect them to have a lower success rate in the labour market.

All applicants entered the labour market roughly at the same time and hence we do not have some of the problems of confounding cohort effects with other aspects. The period 1993-95 was a period when employment was growing and unemployment was declining gradually. Since the applicants all came with qualifications from overseas we assume that there was no pre-labour market discrimination in the source country against residents of that country. In addition, all the educational qualifications of the Principal Applicant would have been acquired in the source country so that we do not have to be concerned about whether the qualifications were achieved in Australia or overseas.

In this paper we are concerned with the success or failure of Asian migrants in finding employment *conditional on them being in the labour force*. We estimate equations for the probability of being unemployed and the transitions from unemployment to employment. In this data set unemployment is defined as a person who is not working and was actively searching for work in the last *two* weeks. This definition is different from the usual International Labour Organisation (and the Australian Bureau of Statistics) definition where the person has to be searching for work for *four* weeks.

#### **5. A Preliminary Analysis of the LSIA**

Table 1 provides summary information on some key characteristics of Asian and non-Asian migrants interviewed in Wave 1, Wave 2 and Wave 3. The table reveals significant similarities as well as differences between Asian and non-Asian migrants. Non-Asian

migrants appear to have an advantage over Asian migrants in terms of their ability to speak English well. About 40 % of non-Asians could speak English well whereas among Asian migrants only 25% could speak English well. About half of the non-Asian migrants visited Australia prior to their migration, whereas the figure for Asian migrants is about two-fifths. The distribution of Asian migrants by the level of education seems to be different from that of non-Asian migrants. For instance, the proportion of degree holders in the Asian migrants is higher than that in non-Asian migrants.

The distribution of Asian migrants by visa status category is broadly similar to that of non-Asian migrants. About 75 % of migrants are married and their average age is similar for Asian and non-Asian migrants.

There are significant differences in participation rates between Asian and non-Asian migrants. The participation rates among Asian male and female migrants are lower than their non-Asian counterparts, see Cobb-Clark (2000) for a discussion of this issue. As the migrants live longer in the country, they acquire more information about the labour market and thus improve their participation rate in the labour market.

There are also significant differences in the unemployment rates among the Asian and non-Asian migrants. The unemployment rates among Asian male and female migrants are about 50 % higher than amongst their non-Asian counterparts in each wave of the survey. This could be due to differences in their human capital and other characteristics or due to discrimination or due to both. We explore this issue further using probit analysis in Section 6.

During the initial adjustment period, the unemployment rates declined sharply in both Asian and non-Asian migrants. After 30 months of their migration to Australia, the unemployment rates amongst non-Asian migrants converges approximately to the national average (9%) but the unemployment rates amongst Asian migrants is double the national average. It seems that the head-start disadvantage in terms of high unemployment rate that the Asian migrants have either due to discrimination or other reasons does not disappear in the medium term. The longitudinal data for a period longer than that covered by the present survey is required to explore this issue satisfactorily.

We now turn briefly to looking at the mobility of labour between different labour market states. If some unemployed have become employed, others might have left the labour force or might not have even responded. Similarly some employed might have lost jobs over the period. Understanding this type of mobility in the labour force is important in understanding the possibility of discrimination against Asian migrants. Accordingly, we classify the movements of male and female migrants of each group from Wave  $i$  to Wave  $j$  into six mutually exclusive categories:  $U_i U_j$  = unemployed remaining unemployed;  $U_i E_j$  = unemployed becoming employed;  $U_i NR_j$  = unemployed not responding;  $E_i E_j$  = employed remaining employed;  $E_i U_j$  = employed becoming unemployed;  $E_i NR_j$  = employed not responding.

Table 2 presents estimates of the mobility of Asian and non-Asian migrants in each category. Several things are worth noting from this table.

First, the proportion of Asians remaining unemployed (UU) from Wave 1 to Wave 2 is significantly higher than their non-Asian counterparts. On the other hand, the proportion of

Asian unemployed becoming employed (UE) is significantly lower than the non-Asian group. This is true for male and female migrants separately. This implies that as compared to the unemployed non-Asian migrants, unemployed Asian migrants have been less successful in getting employment. Several factors might be responsible for this:

- (a) The human capital and other skill related characteristics of unemployed Asian migrants might be lower than those of non-Asian migrants.
- (b) Employers may not have acquired full information about the skills of Asian migrants.
- (c) Employers may not recognise educational qualifications (or consider them to be of lower value) of Asian migrants from their source country, see Chapman and Iredale (1990).
- (d) Employers may feel less comfortable working with Asian migrants and thus might have given jobs to non-Asian migrants even if the Asian migrant could have done the job with the same efficiency.
- (e) Employers may feel that their customers (clients) would prefer to deal with non-Asian employees.

All these explanations, except (a), are manifestations of discrimination against Asian migrants. What is crucial is to separate out the effects of human capital related variables and discrimination on an Asian migrant's probability of being unemployed, or moving from unemployment to employment. This issue is explored in Section 6.

Second, the non-response rate from unemployed Asian and non-Asian migrants is very high and almost identical in Wave 2 and Wave 3 of the Survey. This is not surprising in view of the possibility that some migrants might have changed their residence or left the country or might not felt like responding due to stress and depression due to unemployment.

Third, a very high proportion of employed remain employed. The proportion of Asians employed remaining employed in the next Wave is lower than that of non-Asian employed remaining employed (about 4 percentage points in the case of males and 9 percentage points in the case of females).

Fourth, about 4 percent of employed Asian migrants lost their jobs over the period of one year (from Wave 1 to Wave 2) as against a figure of 2 per cent in the case of employed non-Asian migrants. The difference between Asian and non-Asians narrowed down significantly from Wave 2 to Wave 3. That is, once Asian migrants are employed, their probability of losing their job becomes similar to that of non-Asian migrants. This is understandable in view of the fact that once employers come to know the skills of Asian migrants through their employment, they become less discriminatory against them.

Fifth, the non-response rate amongst the employed is lower than that amongst unemployed in both migrant groups in Wave 2 and Wave 3.

In the next section we explore these issues using econometric methods.



**Table 1**  
**Characteristics of Migrants**

Characteristics	Asian Migrants			Non-Asian Migrants			All Migrants		
	M	F	M+F	M	F	M+F	M	F	M+F
<b>Sample Size</b> (persons)									
Wave 1	1450	1115	2565	1508	1119	2627	2958	2234	5192
Wave 2	1237	950	2187	1316	966	2282	2553	1916	4469
Wave 3	1041	800	1841	1119	792	1911	2160	1592	3752
<b>Labour Force</b>									
Wave 1	1036	428	1464	1138	482	1620	2174	910	3084
Wave 2	965	381	1346	1089	468	1557	2054	849	2903
Wave 3	859	379	1238	965	411	1376	1824	790	2614
<b>Participation</b> Rate (%)									
Wave 1	71.4	38.4	57.1	75.5	43.1	61.7	73.5	40.7	59.4
Wave 2	78.0	40.1	61.5	82.7	48.4	68.2	80.4	44.3	65.0
Wave 3	82.2	47.4	67.2	86.2	51.9	72.0	84.4	49.6	69.7
<b>Unemployment</b> Rate (%)									
Wave 1	46.1	49.1	47.1	28.2	30.9	29.0	36.7	39.7	37.6
Wave 2	28.7	27.6	28.4	14.6	16.9	15.3	21.2	21.7	21.4
Wave 3	17.3	20.3	18.3	9.2	13.1	10.4	13.0	16.6	14.1
<b>Average. Age</b> (yrs.)	34	32	33	36	36	36	35	34	35
<b>Visit Australia</b> (%)	34.5	35.2	34.8	53.2	51.5	52.5	44.0	43.4	43.8
<b>English Well</b> (%)	29.2	23.1	26.5	51.8	39.5	46.5	40.7	31.3	36.7
<b>Married (%)</b>	72.7	79.4	75.6	77.4	78.5	77.9	75.1	79.0	76.8
<b>Visa Status</b> Category									
Preferential family(%)	25.9	59.9	40.7	30.8	61.4	43.9	28.4	60.6	42.3
Concessional Family (%)	21.6	11.4	17.2	17.4	6.7	12.8	19.5	9.0	15.0
Independent (%)	20.7	10.6	16.3	19.7	12.2	16.5	20.2	11.4	16.4
Refugee (%)	19.2	13.6	16.8	15.1	15.6	15.3	17.0	14.6	16.0
Business Skill (%)	12.6	4.5	9.0	17.0	4.1	11.5	14.9	4.4	10.3
<b>Educational</b> Level									
Degree and above (%)	44.4	38.9	42.0	38.6	31.8	35.7	41.4	35.4	38.8
Technical (%)	23.5	16.5	20.4	39.1	31.2	35.8	31.5	23.9	28.2
Others (%)	32.1	44.6	37.6	22.3	37.0	28.5	27.1	40.7	33.0

Source: LSIA. Authors' calculations.

**Table 2**  
**Mobility of Migrant Labour**

<b>Migrants Category</b>	<b>UU (%)</b>	<b>UE (%)</b>	<b>UNR (%)</b>	<b>EE (%)</b>	<b>EU (%)</b>	<b>ENR (%)</b>
<b>Wave 1 to Wave 2</b>						
All Migrants						
Both Sexes	26.90	36.03	37.06	77.70	2.91	19.38
Males	30.16	38.42	31.41	80.72	3.27	16.00
Females	19.67	30.75	49.58	70.13	2.00	27.87
Asian						
Both Sexes	29.71	32.17	38.11	74.42	4.26	23.91
Males	33.26	34.94	31.80	78.31	4.84	16.84
Females	21.70	25.94	52.35	64.35	2.78	32.87
Non-Asian						
Both sexes	22.76	41.70	35.53	79.91	2.00	18.09
Males	25.54	43.61	30.84	82.37	2.20	15.42
Females	16.78	37.58	45.64	73.39	1.50	24.62
<b>Wave 2 to Wave 3</b>						
All Migrants						
Both Sexes	22.58	37.42	40.00	73.06	2.71	24.22
Males	25.69	41.05	33.25	76.27	2.72	21.01
Females	15.22	28.80	55.98	65.26	2.70	32.04
Asian						
Both Sexes	24.35	36.38	39.27	71.27	3.53	25.20
Males	27.80	39.00	33.20	74.27	3.63	22.00
Females	15.24	29.52	55.24	63.77	3.26	32.97
Non-Asian						
Both Sexes	19.75	39.07	41.18	74.38	2.12	23.50
Males	22.01	44.65	33.34	77.74	2.04	20.22
Females	15.19	27.85	56.96	66.32	2.31	31.37

Notes: UU = unemployed remaining unemployed; UE = unemployed becoming employed; UNR = unemployed not responding; EE = employed remaining employed; EU = employed becoming unemployed; ENR = employed not responding.

*Source:* LSIA. Authors' calculations.

## **6. Econometric Analysis of Labour Market Success of Asian Migrants**

This section considers the probability of being unemployed in Wave 1, Wave 2, and Wave 3 taken separately. Ideally, we could pool the data set and use fixed effects estimation to control for heterogeneity. Since we are using probit estimation there are problems with using them<sup>4</sup>. Further, since the time period between different Waves of the Survey is fairly short most of the explanatory variables are fixed over the sample period so we cannot use fixed effects with logit estimation. In addition, we would lose observations due to attrition and non-response problems. As such we have maintained our estimation for each Wave.

<sup>4</sup> See Baltagi (1995) Chapter 10.

Subsequently we estimate transition probabilities from Unemployment in Wave  $i$  to Employment in Wave  $j$ .

To explain the probability of being unemployed we used Education as a human capital variable (but we did not have a good measure of experience<sup>5</sup>), English language ability, demographic variables and a variable to capture the screening effects before entry was granted to Australia (Visa Category). In an earlier phase of our research we had used a variable that had information about pre-migration occupation but the estimates were insignificant and was dropped subsequently. In addition we used State Dummies to allow for different industry/occupation demands for labour. Precise definitions of the explanatory variables used in our estimation are given in Appendix 1.

To focus on our variable of interest we introduced a zero-one Dummy for migrants coming from Asian countries<sup>6</sup>. As is common in Australian studies of immigration, we included people from the Middle East in our definition of Asia. In all our estimations the procedure we followed was to allow for a simple intercept Dummy for Asian and then interacted the Dummy with all the explanatory variables except the State Dummies. This allowed us to test for differences in the intercepts and slopes of the explanatory variables. Finally, we used a Female Dummy that was also interacted with the explanatory variables to test for significant differences between males and females.

The probability of migrant  $i$  being unemployed in Wave  $t$  is assumed to be given by:

$$\Pr(U_{it}^* | X_{it}) = \Phi(X_{it}\beta)$$

where  $\Phi$  is the standard normal cumulative distribution function.  $U=1$  if the migrant  $i$  is unemployed in Wave  $t$ , 0 otherwise.  $X_{it}$  is a vector of human capital characteristics (education, English ability, visit to Australia prior to migration), demographic and geographic variables (age, marital status, State of residence) and Asian and Female intercept and interaction dummies, which enable us to test the following three hypotheses:

- $H_0(1)$  = There is no difference between Asian and non-Asian migrants;
- $H_0(2)$  = There is no difference between Female and Male migrants;
- $H_0(3)$  = There is no difference between Asian-non-Asian **and** Female-Male migrants.

The details of variables are given in the Appendix 1.

Similar equations were also estimated for the transition probability from Unemployment in Wave  $i$  to Employment in Wave  $j$ . Since we have three Waves of data from the LSIA we can see how Asian migrants fare relative to non-Asian migrants one year after their arrival and two years after their arrival. If it were simply that Asian migrants have poorer English language ability and poorer information networks then as their knowledge of the

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<sup>5</sup> Since our data are on a disparate group of migrants with very different educational and employment backgrounds, the usual Mincer experience variable (Age - Years of Education - 5) is likely to be a very poor measure.

<sup>6</sup> Ideally, we would like to have a variable to capture "visible minorities" or people of colour, but most of the migrants from South Africa or Zimbabwe are probably white. In future research we plan to see if we can explore this dimension further.

Australian labour market improves they should become more like the non-Asians, *ceteris paribus*.

It is usual in labour market analysis to find significant differences between Females and Males (see Cobb-Clark, 2000). However, our main focus of inquiry is whether there is a significant difference in the labour market for Asians and non-Asians. If we find that there are significant differences and that Asians have a higher probability of being unemployed then we consider that to be *prima facie* evidence for "discrimination", see Altonji and Blank (1999). In a final section we discuss some of the possible reasons why the differences may not be due to discrimination but to other factors.

In Table 3 we present a summary of our results using Probit estimation techniques. All equations were estimated using STATA version 6 and all standard errors provided are corrected for heteroscedasticity (White corrected standard errors). The detailed results are presented in an Appendix 2 where we list the marginal effects derived from probit estimation. For continuous (cardinal) variables they are evaluated at the means while for dichotomous variables they are derived for a unit change in the variable.

**Table 3**  
**Summary of Signs of Significant Coefficients**

<b>Variable</b>	<b>PU Wave 1</b>	<b>PUE Wave 1</b>	<b>PU Wave 2</b>	<b>PUE Wave 2</b>	<b>PU Wave 3</b>
Asian Dummy	n.s.	Negative	n.s.	Negative	n.s.
Age	Positive	Negative	Positive	Negative	Positive
Asian * Age	n.s.	n.s.	n.s.	n.s.	n.s.
Visit Aus.	n.s.	Negative (10 %)	Negative	Positive	Negative
Asian * Visit Aus	Positive	n.s.	n.s.	Negative (10 %)	n.s.
English	Negative	n.s.	Negative	n.s.	Negative
Asian * English	Positive	Positive (10 %)	n.s.	n.s.	n.s.
Visa	Positive	Negative	Positive	Negative	Positive
Asian * Visa	n.s.	n.s.	n.s.	Positive	n.s.
Education	n.s.	n.s.	n.s.	n.s.	n.s.
Asian * Education	n.s.	n.s.	n.s.	n.s.	n.s.

*Source:* Probit Estimates, Appendix Tables A 2.1 through A 2.5

*Notes:*

1. Positive and Negative stand for signs of the marginal effects derived from a probit equation that are significant at the 5 % level when taken individually. Parentheses list if it is significant at only 10 %.
2. n.s. = Not significant at 5 % level taking individual coefficients separately. Joint tests are reported separately. Note variables may be non-significant individually but may be jointly significant as a set.

Table 3 summarises the broad results we obtained when we look at significant coefficients of variables when we do simple tests of significance variable by variable (although we have grouped some variables in the above table). The table lists the sign of the marginal probabilities if they are statistically significant: for example in the column for PU Wave 1 as the migrant gets older the probability of unemployment increases. The effect of good English is to decrease the probability of unemployment for non-Asian but the interactive term for (Asian\*English) is positive implying that the impact of English on the probability of being unemployed for Asian migrants does not decrease as much as for non-Asians. It is interesting to note that the intercept dummy for Asian is not significant in the unemployment equations when taken by itself. However, the transition probabilities are lower for Asians than non-Asians. Older migrants are more likely to be unemployed but more likely to move from unemployment to employment. Curiously, migrants who have visited Australia prior to migration are more likely to be unemployed and less likely to move from unemployment to employment (except in Wave 2 when the probability of moving from unemployment to employment is higher). This result contrasts with Cobb-Clark (2000) where she finds that migrants who visited Australia are more likely to be employed in Waves 1 and 2. The difference in results may be due to Cobb-Clark using a balanced sample while we have used essentially two cross-section data sets for the probability of unemployment where the probabilities are conditional on being unemployed in the appropriate Wave. She does not consider transition probabilities so we cannot compare our results with her.

It is important to note that we have controlled for English language ability (which is the usual reason given for NESB migrants having poorer results in the labour market). What we find is that good English language ability decreases the probability of being unemployed although the effect is smaller for Asians in Wave 1. Since we control for English speaking ability the poorer labour market prospects for Asians cannot be due to language difficulties.

Similarly, we have controlled for the different visa categories under which the migrants entered Australia. Clearly, as demonstrated in Cobb-Clark (2000), there are significant differences between the probability of being unemployed for different groups. Humanitarian visa category people (refugees) who would have not been screened on the basis of English language ability, skills, education, etc. would have a higher risk of unemployment compared to the Employer Nominated Scheme visa holders. Similarly, migrants coming to join their families have greater difficulties in the labour market. That is exactly our finding both for the probability of being unemployed and also for the transition probabilities. However, Asians are less likely to move from unemployment to employment.

A curious result we get is the non-significance of education variables. This may be because when we control for visa category and English language ability we are probably picking up the effects of education. Our results are similar to Cobb-Clark (2000) where the education variables are usually non-significant.

*One of the main features to stand out is the consistency of the results when we test for differences between Asians and non-Asians: **in all cases** we find that we reject the joint hypothesis of equality of coefficients.* This is true whether we look at the probabilities of being unemployed or the transition probabilities of moving from unemployment to employment.

In fact what we observe is that in each Wave there is a significant difference between Asians and non-Asians: *the unemployment probabilities are higher for Asians.*

**Table 4**  
**Summary of Tests of Significance between Asian and Non-Asian and between Female and Male, and both**

**Wave 1**

	PU	PUE
Asian/Non-Asian	Yes	Yes
Female/Male	Yes	No
Female/Male <b>and</b> Asian/Non-Asian	Yes	Yes

**Wave 2**

	PU	PUE
Asian/Non-Asian	Yes (Intercept & slopes not significant individually)	Yes
Female/Male	No	Yes
Female/Male <b>and</b> Asian/Non-Asian	Yes	Yes

**Wave 3**

	PU	PUE
Asian/Non-Asian	Yes	n.a.
Female/Male	Yes	
Female/Male <b>and</b> Asian/Non-Asian	Yes	n.a.

*Source:* Probit estimates, Tables A 2.1 through A2.5

*Note:* n.a. = not available as we do not have information about the outcomes after Wave 3.

To summarise: we have found that there are significant differences between Asian and non-Asian migrants when we estimated probit functions for the probability of unemployment and for the transitions from unemployment to employment after controlling for human capital, demographic variables, English language ability, and the visa category of the migrant. We suggest that the fact that Asians generally do worse than non-Asians is likely to be due to discrimination in the Australian labour market. Since our sample is restricted to the Principal Applicants, the migrants have been selected by using the same points system for acquiring their visas. As such there is no reason to believe that there are significant differences in the quality/productivity of Asians compared to non-

Asians (after controlling for the above mentioned variables). Similarly, since we control for English language ability we are not confounding these effects with discrimination.

We argued that since the migrants all arrived in Australia at roughly the same time we do not have some of the problems that were raised in the early literature about cohort effects, nor about where the educational qualifications were acquired. Similarly, since we have controlled for the visa category of the migrants we have allowed for distinct differences between migrants in terms of their ability to find work. It is worth noting that we are comparing Asian migrants with non-Asian migrants who arrived at the same time so that we do not have to worry about problems of pre-labour market entry discrimination. As regards comparisons between males and females pre-labour market entry discrimination may be important even in this case.

However, although we believe there is discrimination against Asian migrants, the *extent* of discrimination could be biased if we have excluded an important explanatory variable, see Altonji and Blank (1999). In particular, it is possible that there are differences in qualities of migrants (e.g. motivation, tastes) which may lead us to find significant differences between the two groups. It is of course possible that the differences in probabilities between Asian and non-Asians are due to differences in the quality of the educational qualifications. However, in general we found that education was not a significant variable. Alternatively, employers are not valuing Asian qualifications as highly as non-Asian qualifications, see Chapman and Iredale (1990). Finally, the differences between Asian and non-Asian migrants may not be due to discrimination but due to non-Asians having access to better social networks which help them in the labour market. All these qualifications must be kept in mind in evaluating our general findings.

## **7. Conclusions and suggestions for future research**

The main aim of this paper was to investigate if there were differences in the labour market success between Asian and non-Asian migrants which we could ascribe to discrimination, that is differences that could not be explained by variables like human capital, English language ability, demographic variables, etc. Using the LSIA we estimated probit equations for the probability of unemployment and transition probabilities from unemployment to employment. We found significant differences between Asian and non-Asian migrants that could not be explained by usual explanatory variables. We argue that these differences are probably due to discrimination against Asian migrants. Further research would look at differences in the earnings of Asian migrants compared to non-Asian migrants. In our analysis we have not explicitly allowed for sample attrition problems nor have we pooled the data set using a balanced sample or used unbalanced samples with appropriate estimation techniques. These are further avenues to explore.

Most of the earlier research in Australia has focussed on earnings functions where researchers have found significant differences between English speaking background (ESB) migrants and non-English speaking background (NESB) migrants where these differences are usually ascribed to poor English language ability. However, in comparison to earlier research we have investigated the issue of discrimination against Asian migrants controlling for English language ability. This research needs to be extended by allowing for possible discrimination against Hispanics as well as against Asians. The number of migrants in Australia from black Africa is too small to carry out any sensible comparisons.

To summarise, we have found *prima facie* evidence for discrimination against Asian migrants which policy should address in the future. This discrimination may be because of employers not willing to adequately recognise qualifications of Asian migrants or due to pure discrimination.



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## **Appendix 1**

### **Variable definitions for Wave 1, 2 and 3:**

Unempl=1 if unemployed  
=0 otherwise

PUE = 1 if moved from Unemployment to Employment  
0, otherwise.

#### **Visa Category**

Pref = Preferential Family

Conc = Concessional Family

Ind = Independent

Ref = Humanitarian

(Business Skills and Employer Nomination is the default )

Married = 1 if Married or Previously Married  
= 0 Otherwise

VisitOZ = 1 if Visited Australia Before Migration  
= 0 Otherwise

Female = 1 if Female  
= 0 Otherwise

Asian = 1 if Asian  
= 0 Otherwise

English = 1 if English best/very well  
= 0 Otherwise

Degree = 1 if Degree or higher  
= 0 Otherwise

Tech = 1 if Technical/Professional Qualification diploma/certificate  
= 0 Otherwise

School = 1 if 12 or fewer years of Schooling  
= 0 Otherwise

#### **State Dummies:**

NSW (the default)

Victoria =1 if Person interviewed or lives in Victoria  
= 0 Otherwise

QLD = 1 if QLD  
= 0 Otherwise

WA = 1 if Western Australia  
= 0 Otherwise

NT = 1 if NT  
= 0 Otherwise

Asian = Country of Birth was an Asian country, a country from the Middle East or North Africa.

## Appendix 2

**Table A2.1**  
**Probability of Unemployment in Wave 1**

<b>Variables</b>	<b>Marginal Probabilities</b>	<b>Robust Std. Errors</b>	<b>P&gt; z </b>
Age	.009	.002	.000
Visit Aus.	.039	.031	.207
English	-.218	.031	.000
Female	-.859	.007	.295
Married	.027	.035	.734
Preferential Family	.630	.063	.000
Concessional Family	.581	.069	.000
Independent	.577	.068	.000
Refugee	.779	.029	.000
Asian	-.206	.149	.180
Degree or Higher	.041	.043	.335
Technical/Professional Qualification	-.030	.039	.456
Victoria	.153	.023	.000
QLD	-.106	.028	.001
SA	.126	.049	.007
WA	.027	.032	.384
Tasmania	-.138	.082	.176
NT	-.090	.074	.276
ACT	-.013	.055	.813
Asian* Age	.002	.003	.520
Asian*VisitAus.	.107	.039	.007
Asian*English	.139	.045	.001
Asian*Married	.021	.046	.648
Asian*Preferential Family	-.022	.101	.831
Asian*Concessional Family	-.058	.094	.561
Asian*Independent	-.031	.098	.760
Asian*Refugee	-.020	.112	.859
Asian*Degree or Higher	.077	.057	.165
Asian*Technical/Professional	-.014	.053	.798
Female* Age	-.000	.000	.123
Female* VisitAus.	-.147	.043	.001
Female*English	.071	.046	.114
Female*Married	.022	.051	.667
Female*Preferential Family	.901	.010	.000
Female*Concessional Family	.788	.011	.000
Female*Independent	.820	.011	.000
Female*Refugee	.762	.011	.000
Female*Degree or Higher	-.041	.054	.455
Female*Tech/Prof.	.006	.058	.914

**Table A2.2**  
**Transition Probability from Unemployment in Wave 1**  
**To**  
**Employment in Wave 2**

<b>Variables</b>	<b>Marginal Probabilities</b>	<b>Robust Std. Errors</b>	<b>P&gt; z </b>
Age	-.010	.004	.018
Visit Aus.	-.166	.088	.058
English	-.074	.085	.382
Female	.111	.270	.689
Married	-.205	.086	.028
Preferential Family	-.975	.014	.000
Concessional Family	-.931	.020	.000
Independent	-.935	.022	.000
Refugee	-.967	.015	.000
Asian	-.978	.017	.000
Degree or Higher	.095	.094	.316
Technical/Professional Qualification	.062	.087	.479
Victoria	-.003	.047	.944
QLD	.044	.099	.662
SA	.026	.093	.785
WA	.030	.073	.688
Tasmania			
NT			
ACT	-.173	.126	.179
Asian* Age	-.004	.005	.506
Asian*VisitAus.	.014	.107	.895
Asian*English	.163	.089	.086
Asian*Married	.125	.112	.269
Asian*Preferential Family	.706	.025	.000
Asian*Concessional Family	.699	.018	.000
Asian*Independent	.686	.024	.000
Asian*Refugee	.693	.025	.000
Asian*Degree or Higher	-.072	.116	.530
Asian*Technical/Professional	-.016	.118	.895
Female* Age	.000	.000	.311
Female* VisitAus.	-.111	.118	.347
Female*English	.106	.097	.295
Female*Married	-.028	.119	.816
Female*Preferential Family	-.200	.142	.166
Female*Concessional Family	-.248	.152	.123
Female*Independent	-.093	.163	.566
Female*Refugee			
Female*Degree or Higher	.074	.123	.558
Female*Tech/Prof.	.126	.127	.354

**Table A2.3**  
**Probability of Unemployment in Wave 2**

<b>Variables</b>	<b>Marginal Probabilities</b>	<b>Robust Std. Errors</b>	<b>P&gt; z </b>
Age	.005	.002	.004
VisitAus.	-.119	.025	.000
English	-.072	.034	.022
Female	.273	.160	.054
Married	.060	.029	.057
Preferential Family	.365	.072	.000
Concessional Family	.388	.083	.000
Independent	.345	.082	.000
Refugee	.655	.072	.000
Asian	.099	.110	.364
Degree or Higher	.025	.034	.464
Technical/Professional Qualification	-.013	.032	.689
Victoria	.024	.018	.165
QLD	-.007	.026	.778
SA	.073	.042	.057
WA	-.039	.024	.125
Tasmania	-.141	.022	.017
NT	-.111	.045	.0139
ACT	.028	.049	.547
Asian* Age	.001	.002	.520
Asian* VisitAus.	.011	.034	.735
Asian*English	-.020	.036	.582
Asian*Married	-.004	.040	.930
Asian*Preferential Family	-.032	.069	.654
Asian*Concessional Family	-.072	.054	.265
Asian*Independent	-.087	.050	.172
Asian*Refugee	-.013	.076	.870
Asian*Degree or Higher	.022	.044	.602
Asian*Technical/Professional	-.011	.041	.775
Female* Age	-.002	.002	.404
Female* VisitAus.	-.046	.030	.151
Female*English	-.014	.041	.727
Female*Married	-.034	.039	.406
Female*Preferential Family	-.026	.086	.773
Female*Concessional Family	-.004	.095	.968
Female*Independent	-.059	.074	.491
Female*Refugee	-.105	.049	.145
Female*Degree or Higher	-.077	.033	.046
Female*Tech/Prof.	-.059	.035	.135

**Table A2.4**  
**Transition Probability from Unemployment in Wave 2**  
**To**  
**Employment in Wave 3**

<b>Variables</b>	<b>Marginal Probabilities</b>	<b>Robust Std. Errors</b>	<b>P&gt; z </b>
Age	-.015	.006	.025
VisitAus.	.230	.093	.042
English	.047	.100	.635
Female	.647	.027	
Married	.364	.154	.023
Preferential Family	-.981	.011	.000
Concessional Family	-.962	.014	.000
Independent	-.876	.026	.000
Refugee	-.991	.006	.000
Asian	-.913	.055	.000
Degree or Higher	.077	.136	.577
Technical/Professional Qualification	.200	.107	.092
Victoria	-.067	.062	.2370
QLD	.130	.093	.213
SA	-.105	.141	.443
WA	.083	.095	.410
Tasmania			
NT			
ACT	.027	.182	.883
Asian* Age	.002	.008	.777
Asian* VisitAus.	-.297	.167	.078
Asian*English	.013	.118	.910
Asian*Married	-.238	.165	.163
Asian*Preferential Family	.669	.042	.000
Asian*Concessional Family	.655	.027	
Asian*Independent	.474	.033	.000
Asian*Refugee	.737	.038	.000
Asian*Degree or Higher	-.126	.170	.449
Asian*Technical/Professional	-.051	.167	.756
Female* Age	.019	.010	.061
Female* VisitAus.	-.177	.202	.365
Female*English	.115	.123	.393
Female*Married	-.292	.190	.125
Female*Preferential Family	-.819	.031	.000
Female*Concessional Family	-.768	.029	.000
Female*Independent	-.712	.026	.000
Female*Refugee	-.751	.028	.000
Female*Degree or Higher	.187	.124	.219
Female*Tech/Prof.	.012	.202	.951

**Table A2.5**  
**Probability of Unemployment in Wave 3**

<b>Variables</b>	<b>Marginal Probabilities</b>	<b>Robust Std. Errors</b>	<b>P&gt; z </b>
Age	.005	.001	.000
VisitAus.	-.053	.021	.013
English	-.044	.020	-.031
Female	.161	.138	.160
Married	-.106	.040	.001
Preferential Family	.178	.061	.001
Concessional Family	.119	.063	.023
Independent	.051	.056	.315
Refugee	.361	.093	.000
Asian	-.090	.080	.260
Degree or Higher	-.005	.025	.857
Technical/Professional Qualification	-.006	.024	.794
Victoria	.017	.014	.214
QLD	-.025	.018	.201
SA	.072	.039	.029
WA	-.022	.017	.233
Tasmania	-.037	.037	.429
NT	-.060	.033	.276
ACT	-.011	.034	.750
Asian* Age	.001	.001	.320
Asian* VisitAus.	-.028	.023	.276
Asian*English	.003	.026	.904
Asian*Married	.070	.037	.046
Asian*Preferential Family	.071	.078	.282
Asian*Concessional Family	.013	.061	.830
Asian*Independent	.058	.083	.415
Asian*Refugee	.012	.063	.838
Asian*Degree or Higher	.007	.032	.834
Asian*Technical/Professional	-.021	.026	.451
Female* Age	-.003	.002	.066
Female* VisitAus.	.004	.030	.898
Female*English	-.038	.022	.128
Female*Married	.039	.040	.297
Female*Preferential Family	-.013	.064	.849
Female*Concessional Family	.065	.106	.471
Female*Independent	-.033	.058	.637
Female*Refugee	.002	.075	.984
Female*Degree or Higher	-.060	.020	.021
Female*Tech/Prof.	.005	.033	.871