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

P.N. (Raja) Junankar

Satya Paul

and

Wahida Yasmeen

School of Economics and Finance

University of Western Sydney

Corresponding Author: P.N. (Raja) Junankar,
School of Economics and Finance
University of Western Sydney
Campbelltown Campus
Locked Bag 1797
Penrith South DC
NSW 1797
AUSTRALIA
Email: raja.junankar@uws.edu.au

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 (Section 2) 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 (Section 2) has focussed on wage discrimination, however, our paper is based on assessing the extent of discrimination in finding employment that 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) the Netherlands from 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. Section 4 of the paper provides a description of the LSIA data and Section 5 provides some descriptive statistics about labour market outcomes. Section 6 provides some econometric estimates using probit estimation. Our results suggest that there are significant "unexplained differences" that may be ascribed to discrimination against Asian migrants. Section 7 provides conclusions and suggestions for future work.

Are Asian Migrants Discriminated Against in the Labour Market? A Case Study of Australia[1]

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 Australia (LSIA). The paper begins (Section 2) 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 (Section 2) has focussed on wage discrimination, however, our paper is based on assessing the extent of discrimination in finding employment that 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) the Netherlands from 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. Section 4 of the paper provides a description of the LSIA data and Section 5 provides some descriptive statistics about labour market outcomes. Section 6 provides some econometric estimates using probit estimation. Our results suggest that there are significant "unexplained differences" that may be ascribed to discrimination against Asian migrants. Section 7 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. 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[2]) 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.

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 (1994) 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

---

[2] In our analysis we are comparing Asians with non-Asians.

migrants or native born Australians. A study by Wooden (1991) looks at the experience of refugees in the labour market and does separate out the ESB and NESB into country groups by introducing shift dummies. However, this does not allow for differences between different groups for various characteristics. 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 2000) 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 and a total of 5192 principal applicants were interviewed. Wave 2 interview was 12 months later that is, 18 months after arrival consisting of 4469 principal applicants. Wave 3 was 24 months after arrival interviewing 3752 principal applicants enabling the analysis of their labour market performance in the settlement process.

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 except for special cases like family migrant and the humanitarian (refugee) categories. 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.

In this paper we are concerned with the success or failure of Asian migrants in finding employment *conditional on being in the labour force*[3]. The analysis is restricted to the principal applicants who are in the labour force, that is, the individuals who are employed or unemployed and looking for a job. Employed persons are those who are earning a wage or salary, conducting their own business and other employed. Unemployed are the individuals looking for a full time or part time job.

---

[3] In our estimation we have not corrected for possible selection bias. Given our data set it is not possible to find variables that would affect the participation decision but not affect the probability of being unemployed. Our results are therefore *conditional on being in the labour force*.

We divide English speaking ability into two segments: people who speak English as "their first language" or "very well" and those who mention that their English speaking ability is "well", "not well" or "not at all".

Asians are defined as those migrants from South Asia (Indian subcontinent), East and Southeast Asians (China, Korea, Viet Nam etc.), as well as (using common Department of Immigration and Multicultural Affairs definitions) from the Middle East or North Africa (Turkey, Egypt, Iran, Iraq etc). The sample size for Asians in the first wave is 2648. Among the non-Asians we include all migrants from Europe, both NESB (Poland, Russian Federation, Ukraine etc.) and ESB (U.K., Ireland etc.), North and South America and Africa (excluding North Africa), a total of 2544 in the first wave. In the second wave the sample size for Asians and non-Asians becomes 2263 and 2206, respectively. In the last or third wave the number of respondents reduces to 1903 and 1849 Asians and non-Asians, respectively.

The visa categories of the migrants are described in five separate groups in our data source: (i) Preferential Family, (ii) Concessional Family, (iii) Independent/ Employer Nomination Scheme, (iv) Business Skills, and (v) Humanitarian or refugees. Migrants who are selected entirely on the basis of family relationships are categorised as Preferential Family migrants. Those who are selected partly on the basis of family relationship are Concessional Family migrants. Skill-based migrants who are selected without family relationship are classified as Independent and migrants with offers of employment before migration are classified as Employer Nomination Scheme. Migrants who meet certain capital requirements are Business Skills migrants. We estimate equations for the probability of being unemployed and the transitions from unemployment to employment from wave to wave.

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 amongst 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 amongst 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 host 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 unemployment rates among Asian and non-Asian migrants. 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, unemployment rates declined sharply amongst both Asian and non-Asian migrants. After 30 months of their migration to Australia, unemployment rate amongst non-Asian migrants converges approximately to the national average (9%) but the unemployment rate amongst Asian migrants is double the national average. It seems that the head-start disadvantage in terms of high unemployment rates that 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. Some of the unemployed persons may find employment; others might have left the labour force or might not have responded to the survey. Similarly some of the 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 immigrants 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

8

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
Sample Size (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
Labour Force									
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
Participation 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
Unemployment 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
Average. Age (yrs.)	34	32	33	36	36	36	35	34	35
Visit Australia (%)	34.5	35.2	34.8	53.2	51.5	52.5	44.0	43.4	43.8
English Well (%)	29.2	23.1	26.5	51.8	39.5	46.5	40.7	31.3	36.7
Married (%)	72.7	79.4	75.6	77.4	78.5	77.9	75.1	79.0	76.8
Visa Status 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
Educational 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

Migrants Category	UU (%)	UE (%)	UNR (%)	EE (%)	EU (%)	ENR (%)
Wave 1 to Wave 2						
All Migrants						
Total	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						
Total	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						
Total	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
Wave 2 to Wave 3						
All Migrants						
Total	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						
Total	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						
Total	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[4]. 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 probit estimation. In addition, we would lose observations due to attrition and non-response problems. As such we have maintained our estimation for each

---

[4] See Baltagi (1995) Chapter 10.

Wave. 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[5]), 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[6]. 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 Φ 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

---

[5] 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.

[6] 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, controlling for important characteristics, 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 Significant Coefficients

Variables	Probability of being Unemployed in Wave 1	PUE Wave 1 to Wave 2	Probability of being Unemployed in Wave 2	PUE Wave 2 to Wave 3	Probability of being Unemployed in Wave 3
Asian	n.s.	-0.9707	n.s.	-0.9256	n.s.
Age	0.0094	-0.0103	0.0048	-0.0141	0.0050
Visited Australia Prior to Migration	n.s.	0.1567 (10%)	-0.0902	0.2101	-0.0501
Asian and Visited Australia	-0.1146	n.s.	n.s.	n.s.	n.s.
English Ability (*Best or Very Well*)	-0.2345	n.s.	-0.0965	n.s.	-0.0445
Asian and English Ability	0.1683	n.s.	n.s.	n.s.	n.s.
Visa Category (*Business Skills/ENS*) Preferential Family Concessional Family Independent Refugee	0.6245 0.5702 0.5685 0.7735	-0.9713 -0.9255 -0.9300 -0.9628	0.3313 0.3559 0.3230 0.6058	-0.9810 -0.9629 -0.8742 -0.9913	0.1975 0.1331 n.s. 0.3853
Asian and Visa Category (*Business Skills/ENS*) Preferential Family Concessional Family Independent Refugee	n.s.	0.7079 0.6921 0.6803 0.6830	n.s.	0.6947 0.6683 0.4799 0.7536	n.s.
Education	n.s.	n.s.	n.s.	n.s.	n.s.
Asian and 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. Marginal effects are 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.

3. Omitted or default dummies are in parentheses.

Table 3 summarises the broad results obtained when looking at significant coefficients of variables performing simple tests of significance variable by variable. The table lists the marginal probabilities if they are statistically significant. For example, in the column for Probability of Unemployment (PU) in Wave 1 as the migrant gets older the probability of unemployment increases. The effect of good English speaking ability is to decrease the probability of being unemployed for non-Asians but the interactive term for (Asian and English) is positive. Which implies 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 Asians is not significant in the unemployment equations when taken independently. 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. Migrants who have visited Australia prior to migration are more likely to be employed and likely to move from unemployment to employment in wave 2 and wave 3, except in Wave 1 when the probability of being unemployed for the migrants who visited Australia before migration is not significant. These results support the findings of Cobb-Clark (2000) where she finds that migrants who visited Australia are more likely to be employed in both Waves 1 and 2 compared to the migrants who come for the first time to Australia.. She did not consider transition probabilities so we cannot compare our results with her findings in this regard.

It is important to note that we have controlled for English language ability (which is the usual reason given for NESB migrants showing poorer performance 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 exactly confirms our findings both for the probability of being unemployed in any specific wave and for the transition probabilities from wave to wave. However, Asians are less likely to move from unemployment to employment compared to non-Asian migrants.

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 not significant. As a way of seeing whether the non-significance of the education variables was due to this correlation with the visa categories, we re-estimated the equations separately for each visa category. Our results were substantially unchanged with education variables remaining (in general) insignificant.[7]

---

[7] We thank Bruce Chapman for suggesting this test.

As discussed earlier we carried out tests to see whether there were significant differences between Asian and non-Asian migrants; between Female and Male migrants; and a joint test of differences between Asian/non-Asian and Female/Male. We estimated the equations by imposing the same set of coefficients for the relevant groups and tested the restrictions using a chi-squared test. These results are presented in Table 4. 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 between waves

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. We also carried out similar tests where we compared Asians (as defined above) with non-Asians who were defined as migrants from Europe and North America (i.e. excluding migrants from Africa and South America). The results for these tests were substantially the same as those described in this paper.

Table 4
Summary of Tests of Significance between Asian and Non-Asian, Female and Male, and both
(χ^2 values are presented below)

	Probability of Unemployment	Transition Probability (Unemployment to Employment between Waves)
Wave 1		
Asian/Non-Asian	63.17	1958.70
Female/Male	5805.88	7.09 *
Female/Male & Asian/Non-Asian	5890.15	2042.81
Wave 2		
Asian/Non-Asian	30.84	333.52
Female/Male	17.13 **	87.96
Female/Male & Asian/Non-Asian	47.50	418.06
Wave 3		
Asian/Non-Asian	23.23	n.a.
Female/Male	21.99	
Female/Male & Asian/Non-Asian	43.69	n.a.

Source: Probit estimates, Tables A 2.1 through A2.5
Notes:
1. * denotes not significant.
2. ** denote significant at 10% level .
3. All other χ^2 values are significant at 1% level.
4. n.a. = not available as we do not have information after Wave 3.

Since the estimated equations with marginal probabilities are sometimes difficult to interpret we compare some estimated probabilities of unemployment for Asians and non-Asians for particular values of education, visa status, etc. As an illustration we estimated the predicted probabilities of being unemployed for those migrants who had Visited Australia prior to migration, speak English as the best language or very well, are Married, Preferential Family migrants, with education at Technical/Professional level and live in New South Wales. Table 5 provides these probabilities for different age groups for Males and Females separately: we see that in general Asians have a higher probability of being unemployed. Another feature of this set of results is that there appears to be a decrease in the *differences* between Asians and non-Asians between Waves 1 and 2, but increasing in Wave 3. The overall unemployment rate in Australia was falling between Waves 1 and 2, but constant or rising between Waves 2 and 3. In the first Wave, the probability of being unemployed for all migrants is very high with the probability of Asian migrants (both male and female) being unemployed greater than non-Asian migrants in all three age groups. In the second Wave, the probability of being unemployed among all migrants becomes smaller than the first wave. Though the probability of being unemployed among the Asians remain greater than the non-Asians (except 25 year olds). In the third Wave, the probability of Asians being unemployed remains greater than non-Asians (again except 25 year olds). Although the probabilities of being unemployed fall for all migrants over the three Waves (especially between Waves 1 and 2), there appears to be an increasing element of discrimination between Waves 2 and 3 (see the rows called "Percentage difference").

Table 5
Predictions in Wave 1, Wave 2 & Wave 3 (all in percent):

Wave 1						
	Age 25		Age 35		Age 45	
Age 25	Male	Female	Male	Female	Male	Female
Asian	13.62	24.81	22.04	31.09	32.85	37.95
Non-Asian	12.48	23.14	19.19	27.64	27.74	32.54
Difference (Asian - non-Asian)	1.14	1.67	2.85	3.45	5.11	5.41
Percentage difference	9.1 %	7.2 %	14.9 %	12.5 %	18.4 %	16.6 %

Wave 2						
	Age 25		Age 35		Age 45	
	Male	Female	Male	Female	Male	Female
Asian	4.49	4.22	7.52	6.24	11.91	8.94
Non-Asian	4.89	4.60	7.32	6.06	10.58	7.86
Difference (Asian - non-Asian)	-0.40	-0.38	0.20	0.18	1.33	1.08
Percentage difference	-8.2 %	-8.3 %	2.7 %	3.0 %	12.6 %	13.7 %

Wave 3		
Age 25	Age 35	Age 45

	Male	Female	Male	Female	Male	Female
Asian	2.35	4.26	6.03	7.06	13.15	11.09
Non-Asian	2.61	4.67	5.23	6.15	9.60	7.97
Difference	-0.26	-0.41	0.80	0.91	3.55	3.12
Percentage difference	-10.0 %	-8.8 %	15.3 %	14.8 %	37.0 %	39.1 %

Note: *Probability of Unemployment for Asians & Non-Asians in sub-category Male & Female in three age groups, those who Visited Australia before migration, speak English as the best language or very well, Married, Preferential Family migrants with education at Technical/Professional Level and live in NSW.*

Our estimated probit functions support the view that there are significant differences between Asian and non-Asian migrants' probability of getting a job after controlling for demographic variables, English language ability, and the visa category of the migrant. Similarly, we find that for transitions from unemployment to employment Asians do worse after controlling for human capital, demographic variables, English language ability, and the visa category of the migrant. These "unexplained differences" could be due to various problems of measurement or due to exclusion of some explanatory variables. However, we suggest that Asian migrants generally do worse than non-Asian migrants probably 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 all the migrants arrived in Australia (roughly) at 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[8]. 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.

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.

4. Conclusions and suggestions for future research

---

[8] It is still possible that employers would prefer migrants with qualifications from the UK than from Vietnam.

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.

References

Altonji, J.G. & R. Blank (1999) "Race and Gender in the Labor Market", Chapter 48 in *Handbook of Labor Economics* Vol. 3A, edited by O.C. Ashenfelter and D. Card, North-Holland, Elsevier, Amsterdam.

Arrow, K. (1973) "The Theory of Discrimination", in Orley Ashenfelter and Albert Rees (Eds.) *Discrimination in Labor Markets*, Princeton University Press, Princeton.

Arrow, K. (1973) "What has Economics to say about Racial Discrimination", in *Journal of Economic Perspectives*, 12 (2), 91-100.

Baltagi, B.H. (1995) *Econometric Analysis of Panel Data*, John Wiley and Sons, Chichester.

Becker, G.S. (1957) *The Economics of Discrimination*, Chicago University Press, Chicago.

Beggs, J.J. & B.J. Chapman (1990) "Search efficiency, skill transferability and immigrant relative unemployment rates in Australia", *Applied Economics*, 22 (2), 249-260.

Blau, F. and L. Kahn (2000) "Gender Differences in Pay", *Journal of Economic Perspectives*, 14 (4), 75-99.

Borjas, G.J. (1994) "The Economics of Immigration", *Journal of Economic Literature*, 32 (4), 1667-1717.

Borjas, G.J. (1999) "The Economic Analysis of Immigration", Chapter 28 in *Handbook of Labor Economics* Vol. 3A, edited by O.C. Ashenfelter and D. Card, North-Holland, Elsevier, Amsterdam.

Chapman, B. and R.R. Iredale (1993) "Immigrant Qualifications: Recognition and Relative Wage Outcomes", *International Migration Review*, 27 (2), 359-387.

Chapman, B. and A. Salvage (1994) "Immigrant Male Wages in Australia: The Role of Education", Centre for Economic Policy Research, Discussion Paper No. 304, Australian National University, Canberra.

Chiswick, B. (1983) "An Analysis of the Earnings and Employment of Asian-American Men", *Journal of Labor Economics,* 1 (2), 897-921.

Cobb-Clark, D.A. (2000) "Do Selection Criteria Make a Difference? Visa Category and the Labour Market Status of Immigrants to Australia", *Economic Record*, 76 (232), 15-31.

Cobb-Clark, D.A. and B. Chapman (1999) "The Changing Pattern of Immigrants' Labour Market Experiences", Centre for Economic Policy Research Discussion Paper No. 396, Australian National University, Canberra.

Darity, W.A. and P.J. Mason (1998) "Evidence on Discrimination in Employment", *Journal of Economic Perspectives*, 12 (2), 63-90.

Department of Immigration and Multicultural Affairs (1999) *Longitudinal Survey of Immigrants to Australia, User Documentation for August 1999 Release of Unit Record Data, Waves 1-3*, Canberra.

Evans, M.D.R. & J. Kelley (1986) "Immigrants' Work: Equality and Discrimination in the Australian Labour Market", *Australia New Zealand Journal of Sociology*, 22 (2), 187-207.

Heckman, J.J. (1998) "Detecting Discrimination", *Journal of Economic Perspectives*, 12 (2), 101-116.

Hum, D. and W. Simpson (1999) "Wage Opportunities for visible minorities in Canada, *Canadian Public Policy*, 25, 379-394.

Hum, D. and W. Simpson (2000) "Closing the Wage Gap: Economic Assimilation of Canadian Immigrants Reconsidered", *Journal of International Migration and Integration*, 1 (4), 427-441.

Kidd, M. P.& Xin Meng (1997) "Trends in the Australian Gender Wage Differential over the 1980s: Some Evidence on the Effectiveness of Legislative Reform" *Australian Economic Review*; 30(1), 31-44.

LaLonde, R.J. and R.H. Topel (1991) "Immigrants in the American Labor Market: Quality, Assimilation, and Distributional Effects", *American Economic Review*, 81 (2), 297-302.

Miller, P. (1986) "Immigrant unemployment in the first year of Australian labour market activity", *Economic Record*,

Oaxaca, R. (1973) "Male-Female Wage Differentials in Urban Labour Markets", *International Economic Review,* 14(3), 693-709.

Phelps, E.S. (1972) "The Statistical theory of racism and sexism", *American Economic Review*, 62(4), 659-61.

VandenHeuevel, A. and M. Wooden (2000) "Immigrants' Labour Market Experiences in the Early Settlement Years", *Australian Bulletin of Labour*, 26 (1), 59-69.

Will, L.M. (1997) Australian Non-English Speaking Background Immigrants' Income Adjustment, Ph.D. thesis submitted to the Australian National University, Canberra (unpublished).

Williams, L.S., J. Murphy and C. Brooks (1997) *Initial Labour Market Experiences of Immigrants, Results from the Longitudinal Survey of Immigrants to Australia*, Department of Immigration and Multicultural Affairs, AGPS, Canberra.

Wooden, M. (1994) "The labour market experience of immigrants", in *Australian Immigration: A Survey of the Issues* by M. Wooden, R. Holton, G. Hugo, and J. Sloan, Canberra: AGPS.

Wooden, M. (1991) "The experience of refugees in the Australian labour market", *International Migration Review*, 25 (3), 514-535.

Appendix 1
Variable Definitions for Wave 1, 2 and 3:

Unemployed =1 if Unemployed
         =0 otherwise
PUE = 1 if Migrant moved from Unemployment to Employment over the Waves.
   =0 otherwise.

Married = 1 if Migrant is Married or Previously Married
     = 0 Otherwise

Visit Aust = 1 if Migrant Visited Australia Before Migration
      = 0 Otherwise

Female = 1 if Migrant is Female
     = 0 Otherwise

Asian = 1 if Migrant is Asian
     = 0 Otherwise

English = 1 if Migrant Speaks English Best or Very well
     = 0 Otherwise

Degree = 1 if Migrant has Degree or Higher Education
     = 0 Otherwise

Tech = 1 if Migrant has Technical/Professional Qualification (diploma/certificate)
   = 0 Otherwise

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

Note: Asians are the migrants who were born in any Asian countries and in any country of the
     Middle East or North Africa (See text for details).
     School Category is the default or omitted category for Education throughout the study.

Visa Category Dummies:

Pref = 1 if Migrated under Preferential Family Category
   = 0 Otherwise

Conc = 1 if Migrated under Concessional Family Category
     = 0 Otherwise

Ind = 1 if Migrated under Independent Category
     = 0 Otherwise

Ref = 1 if Migrated under Humanitarian Category (or Refugee)
     = 0 Otherwise

Business = 1 if Migrated under Business & Employer Nomination Category
       = 0 Otherwise
Note: Business Category was used as the default visa category throughout this study.

State Dummies:

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

QLD = 1 if Migrant interviewed in or lives in QLD
     = 0 Otherwise

WA = 1 if Migrant interviewed in or lives in Western Australia
     = 0 Otherwise

NT = 1 if Migrant interviewed in or lives in NT
     = 0 Otherwise

NSW = 1 if Migrant interviewed in or lives in NSW

Note: NSW is the omitted or default dummy variable for the State Dummies throughout

the study.

Table A2.1
Probability of Unemployment in Wave 1

Variables	Marginal Probabilities	Robust Std. Errors	P>|z|
Age	.009	.002	.000
Visited Australia	-.032	.032	.318
English	-.234	.031	.000
Female	-.771	.010	..
Married	.020	.036	.487
Preferential Family	.624	.064	.000
Concessional Family	.570	.070	.000
Independent	.569	.069	.000
Refugee	.774	.030	.000
Asian	.024	.138	.861
Degree or Higher Eduction	.043	.044	.321
Technical/Professional Qualification	-.026	.040	.522
Victoria	.152	.024	.000
QLD	-.108	.028	.001
SA	.125	.049	.007
WA	.028	.032	.373
Tasmania	-.137	.082	.178
NT	-.091	.074	.273
ACT	-.016	.055	.781
Asian andAge	.002	.003	.536
Asian and VisitAus.	-.114	.034	.002
Asian and English	.168	.046	.000
Asian and Married	.033	.046	.465
Asian and Preferential Family	-.014	.102	.892
Asian andConcessional Family	-.036	.098	.722
Asian and Independent	-.015	.100	.882
Asian and Refugee	-.005	.116	.967
Asian and Degree or Higher	.070	.057	.204
Asian andTechnical/Professional	-.026	.052	.617
Female and Age	-.005	.003	.098
Female and VisitAus.	-.130	.035	.001
Female and English	.065	.046	.148
Female and Married	.024	.051	.635
Female and Preferential Family	.900	.010	.000
Female and Concessional Family	.787	.011	.000
Female and Independent	.819	.011	.000
Female and Refugee	.761	.011	.000
Female and Degree or Higher	-.039	.054	.484
Female and Tech/Prof.	.012	.059	.831

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

Variables	Marginal Probabilities	Robust Std. Errors	P>|z|
Age	-.010	.004	.013
Visit Aus.	.159	.082	.067
English	-.050	.085	.554
Female	-429	.220	.033
Married	-.200	.087	.028
Preferential Family	-.971	.018	.000
Concessional Family	-.926	.027	.000
Independent	-.930	.027	.000
Refugee	-.963	.019	.000
Asian	-.971	.003	..
Degree or Higher Education	.105	.094	.268
Technical/Professional Qualification	.063	.087	.479
Victoria	-.002	.046	.971
QLD	.055	.097	.583
SA	.026	.094	.783
WA	.032	.073	.663
Tasmania	..	..	..
NT	..	..	..
ACT	-.170	.126	.183
Asian and Age	-.003	.005	.619
Asian and VisitAus.	-.005	.108	.962
Asian and English	.128	.093	.187
Asian and Married	.118	.112	.299
Asian and Preferential Family	.708	.033	.000
Asian and Concessional Family	.692	.033	.000
Asian and Independent	.680	.033	.000
Asian and Refugee	.683	.033	.000
Asian and Degree or Higher	-.087	.116	.450
Asian and Technical/Professional	-.019	.119	.872
Female and Age	.006	.007	.388
Female and VisitAus.	.114	.109	.320
Female and English	.098	.098	.335
Female and Married	-.021	.119	.859
Female and Preferential Family	.051	.136	.709
Female and Concessional Family	..	..	..
Female and Independent	.142	.133	.325
Female and Refugee	.224	.119	.117
Female and Degree or Higher	.083	.122	.506
Female and Tech/Prof.	.128	.127	.349

Table A2.3
Probability of Unemployment in Wave 2

Variables	Marginal Probabilities	Robust Std. Errors	P>|z|
Age	.005	.002	.001
VisitAus.	-.090	.026	.001
English	-.096	.026	.000
Female	.250	.159	.071
Married	.056	.029	.072
Preferential Family	.331	.073	.000
Concessional Family	.356	.083	.000
Independent	.323	.082	.000
Refugee	.606	.080	.000
Asian	.052	.104	.618
Degree or Higher Education	.009	.032	.767
Technical/Professional Qualification	-.015	.031	.620
Victoria	.027	.018	.118
QLD	-.004	.026	.891
SA	.074	.042	.051
WA	-.033	.024	.202
Tasmania	-.139	.024	.030
NT	-.105	.046	.151
ACT	.022	.046	.617
Asian and Age	.001	.002	.487
Asian and VisitAus.	-.036	.030	.259
Asian and English	.031	.036	.367
Asian and Married	-.004	.040	.916
Asian and Preferential Family	-.021	.070	.771
Asian andConcessional Family	-.059	.058	.374
Asian and Independent	-.080	.052	.216
Asian and Refugee	.020	.086	.812
Asian and Degree or Higher	.029	.043	.486
Asian and Technical/Professional	-.023	.037	.552
Female and Age	-.002	.002	.430
Female and VisitAus.	-.034	.032	.315
Female and English	-.045	.032	.315
Female and Married	-.031	.040	.450
Female and Preferential Family	-.013	.093	.888
Female and Concessional Family	-.006	.101	.955
Female and Independent	-.043	.084	.645
Female and Refugee	-.103	.050	.162
Female and Degree or Higher	-.073	.032	.047
Female and Tech/Prof.	-.060	.033	.116

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

Variables	Marginal Probabilities	Robust Std. Errors	P>|z|
Age	-.014	.006	.028
Visited Australia	.210	.094	.057
English	.025	.125	.843
Female	.684	.088	.000
Married	.332	.160	.042
Preferential Family	-.981	.011	.000
Concessional Family	-.963	.014	.000
Independent	-.874	.026	.000
Refugee	-.991	.006	000
Asian	-.926	.047	.000
Degree or Higher Education	.081	.137	.559
Technical/Professional Qualification	.202	.106	.089
Victoria	-.067	.062	.272
QLD	.135	.091	.193
SA	-.081	.138	.547
WA	.083	.094	.405
Tasmania	..	..	..
NT	..	..	..
ACT	.036	.179	.846
Asian and Age	.002	.008	.816
Asian and VisitAus.	-.207	.170	.211
Asian and English	.014	.152	.930
Asian and Married	-.214	.169	.220
Asian and Preferential Family	.695	.042	.000
Asian andConcessional Family	.668	.026	..
Asian and Independent	.480	.033	.000
Asian and Refugee	.754	.036	.000
Asian and Degree or Higher	-.092	.168	.577
Asianand Technical/Professional	-.043	.166	.792
Female and Age	.016	.010	.120
Female and VisitAus.	-.153	.206	.441
Female and English	.145	.147	.398
Female and Married	-.252	.193	.186
Female and Preferential Family	-.820	.028	.000
Female and Concessional Family	-.767	.025	.000
Female and Independent	-.712	.025	..
Female and Refugee	-.752	.026	.000
Female and Degree or Higher	.206	.120	.176
Female and Tech/Prof.	.007	.212	.975

Table A2.5
Probability of Unemployment in Wave 3

Variables	Marginal Probabilities	Robust Std. Errors	P>|z|
Age	.005	.001	.000
Visited Australia.	-.050	.021	.019
English	-.045	.020	.030
Female	.151	.138	.188
Married	-.100	.039	.002
Preferential Family	.198	.068	.001
Concessional Family	.133	.070	.022
Independent	.062	.062	.260
Refugee	.385	.101	.000
Asian	-.065	.083	.426
Degree or Higher Education	-.001	.025	.956
Technical/Professional Qualification	-.000	.026	.997
Victoria	.017	.014	.224
QLD	-.027	.017	.150
SA	.070	.039	.044
WA	-.022	.017	.226
Tasmania	-.038	.037	.421
NT	-.060	.033	.274
ACT	-.012	.033	.723
Asian and Age	.002	.001	.213
Asian and VisitAus.	-.035	.022	.157
Asian and English	.004	.027	.880
Asian and Married	.059	.036	.087
Asian and Preferential Family	.031	.067	.611
Asian and Concessional Family	.012	.053	.833
Asian and Independent	.029	.074	.671
Asian and Refugee	.015	.052	.783
Asian and Degree or Higher	.002	.031	.960
Asian and Technical/Professional	-.031	.024	.238
Female and Age	-.003	.002	.070
Female and VisitAus.	.002	.029	.936
Female and English	-.038	.022	.125
Female and Married	.038	.040	.306
Female and Preferential Family	-.006	.068	.927
Female and Concessional Family	.075	.113	.422
Female and Independent	-.027	.063	.708
Female and Refugee	.008	.079	.922
Female and Degree or Higher	-.061	.020	.020
Female and Tech/Prof.	.003	.032	.919