The University of Adelaide

School of Economics

NEW IMMIGRANTS

IN THE

AUSTRALIAN LABOUR MARKET

A Comprehensive Analysis of Employment, Entry Wages, Wage Mobility and Occupational Transition

Thesis Presented for Examination and Admission to the Degree of
Master of Economics by Research

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To my wife Tamara,

And to the little precious ones, Salomé and Allegra

Thank you for being patient and supportive

ACKNOWLEDGEMENTS

When I enrolled into the Masters' Program by Research at the School of Economics, University of Adelaide, I had no illusions about the amount of time and effort that I needed to mobilise in order to successfully complete the program. I also knew, from the Honours' experience, the impossible balance and discipline I needed put in place to satisfy the requirements of full time studies, demands of full time work, as well as my spousal and parental responsibilities. Half way through the course, I was offered a job on the other side of the world, in Burkina Faso, West Africa, and I accepted it hoping that I could complete the Thesis write up 'in the evenings and on weekends'. It was simply mad to imagine that this was possible. Something was going to give. In the end, all these things suffered to a certain extent, but the overall balance prevailed. Two years behind schedule and after three months of working day and night, here is the Masters' Dissertation I set out to write.

In my opinion, the family side suffered most and it would be an understatement to simply acknowledge the patience of my wife and our two daughters, with a husband and father who has been either not there or has been there without really being available. I dedicate this work to their kindness and serenity. I also thank my extended family and all our friends, particularly Emily, Mick and Marlene, for their generosity and for filling the gaps on the family side.

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None of the above people is responsible for any errors or inaccuracies left in this work. To the contrary, they all helped improve it, each one in their own way, and along the way, they made this adventure bearable and - in the end - worthwhile. Thanks again!

ABSTRACT

The Longitudinal Survey of Immigrants to Australia, Cohort 1 (LSIA-C1) includes information on labour force status and occupations twelve months prior to immigration, as well as labour force status, wages, hours worked, use of qualifications and occupations of respondents around six, eighteen and forty two months after migration (among other information).

Using data from the LSIA dataset, I analyse the labour force experience of immigrants who arrived in Australia between September 1993 and August 1995, within the theoretical framework of the Human Capital Theory. I subdivide the respondents in three groups: those who gain employment within six months of arrival (Type 1), those who are employed three and a half years after arrival following a spell of unemployment (Type 2), and those who remain non-employed after three and a half years of settlement (Type 3).

Following a descriptive analysis of labour force transition probabilities and other demographic characteristics for all Types, Type 1 and Type 2 hourly entry wages are analysed and compared. In addition, Type 1 wage growth over the three and a half year period of settlement is studied. Finally, occupational transition probabilities of Type 1 and 2 are carefully investigated.

This analysis reveals a general 'randomness' in the entry wages and some wage mobility for Type 1 immigrants. However, even three and a half years after Type 1 immigrants start work, a large proportion of their wages distribution still remains random. This is found to be mainly due to three causes: (1) Pre-migration qualifications have virtually no relationship with entry jobs or entry wages; (2) there is hardly any job mobility over the period of the survey: Most immigrants stay in their first jobs and occupations and generally do not move back towards their pre-migration occupations; (3) the apparent weekly wage growth of immigrants is found to come mainly from an increased number of hours worked, while the hourly wage growth appears to come from regular on-the-job pay increases, rather than from occupational adjustment.

While four years of settlement is a relatively small timeframe in the life of an immigrant, these results are worrying as they reject the now well established theory and empirical findings of immigrants' upward labour market adjustment post-migration. Further research is needed to better understand the root causes of this lack of immigrant job and occupational adjustment and what can be done about it.

Statement of Originality

To the best of my knowledge and belief, this work contains no material which:

- Has been accepted for the award of any other degree or diploma in any university or other tertiary institution; or

- Has been previously published or written by another person, except where due referenced has been made in the text.

Authorisation for Loan and Photocopying

I give consent to this copy of my Thesis, when deposited in the University Library, being available for loan and photocopying.

Adelaide, 28 May 2004. (First submission for examination)
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CHAPTER 1:

INTRODUCTION

1.1. Background

Australia prides itself on being historically an immigrants' country. Together with the United States and Canada, Australia is one of the three biggest immigrant recipient countries in the world. About one in four of the 19 millions Australians were born overseas. In recent times, immigration has again come to the forefront of the political debate in Australia, namely on issues such as the increase in the so-called 'illegal' immigrants, including 'boat people', the detention of 'illegal' asylum seekers, and a number of associated ethical issues, as well as broader issues such as the role Australia plays or should play in the resettlement of refugees, concerns over Australia's diversity and cross-cultural tolerance, and immigrants' social integration in a context of rising racial and religious extremism. Beyond these political topics are a number of age-old economic questions such as Australia's 'optimal carrying capacity', whether or not immigrants are a drain on, or add to, the Australian economy, whether or not immigrants take the jobs of less skilled 'natives'[1], Australia's ability to compete in the current era of falling fertility rates and ageing population in industrialised countries and the consequential need to attract a young skilled labour force.

Given that immigration debates are often driven by political sensitivities or emotions, and that attitudes towards immigration are often painted in black or white, it is important to understand, at a scientific level, the dynamics at play in the migration processes and their consequences both for the immigrants and for the receiving country.

From the immigrant's perspective, success in the labour market is a major - often the most important - factor in overall settlement success. From the receiving country's perspective, the economic success of an immigration program depends on how well the immigrants perform in the labour market. A working migrant adds value to the economy through direct production (work or creation of employment) and the re-injection of income (taxation, spending or investment) in the economy. The contribution of this paper to the immigration debate consists of conducting an analysis of the first cohort of the LSIA in order to provide some answers to the following question:

- *How do recent immigrants fare in the Australian labour market, and in contrast to pre-migration characteristics (age, pre-migration education level and work experience, former home country or*

1 In Australia, the term native often refers to people of Aboriginal or Torres Strait Island heritage. In this context it simply means those who were born in Australia.

region, migration conditions or visa category, etc...), to what extents are labour market behaviours or strategies associated with outcomes (earnings, earnings mobility and occupational mobility)?

This question will be answered by analysing data from the Longitudinal Survey of Immigrants to Australia (LSIA), cohort 1, first using transition probabilities tables between the pre-migration labour force status and the self – reported statuses at the time of each interview for all immigrants. The transition probability tables will show immigrants movements between labour force and occupational statuses at the three interview times. Movements in and out of the labour force, occupational, job changes or changes in hours worked are not *necessarily* a bad thing for new immigrants, as they may be involved in formal education or training, thereby investing in skills to build up their human capital. The subject of this Thesis is precisely to establish what impact – if any - these movements (or lack thereof) have on new migrants' earnings and occupation outcomes 42 months after arrival.

Transition probability tables establish simple paths and two-way correlations. However, when several things are changing at the same time, transition probability tables may not allow the researcher to identify and separate partial correlations or the relative influence of the many variables surrounding the immigrant during the period under investigation. Where necessary these tables will be complemented by a series of regression equations of key outcomes such as labour force status, wage and occupational standing on other characteristics such as age, educational attainment prior to immigration, pre-migration experience, English language skills at the time of their first interview, etc.

Though success is a complex concept and encompasses several areas of the human (immigrants') life, in most economic studies, income or earnings (be it wage, salary or profit) are used as proxies for success, for want of a more complete measure, mainly because income or earnings are easily observable and measurable variables. While one cannot claim to have a complete measure of success for recent immigrants to Australia, it remains true that earning a wage commensurate with one's qualifications, experience and industry standards contributes to the wider notion of personal success.

While I do not claim to be able to fully measure the immigration success of recent immigrants to Australia, it remains true that having a job, earning a wage, salary or other income from a productive activity and having this income increase over time contributes to the notion of success for most people, including recent immigrants.

1.2. Australia's Immigration History in Brief[2]

Following the creation of Australia as a Federation of its 6 States in 1901, the number of Australians born overseas increased from 857,586 people (1901 census) to 3,908,267 in 1996 (1996 census). In 1901, the *« Immigration Restriction Act »* was introduced and consisted of ensuring that immigrants to Australia are predominantly of Anglo-Celtic heritage. This policy came to be famously known as the 'White Australia Policy' and its effect was to eliminate non-European migration. In the first part of the 20th century, the overseas born were mainly from the United Kingdom.

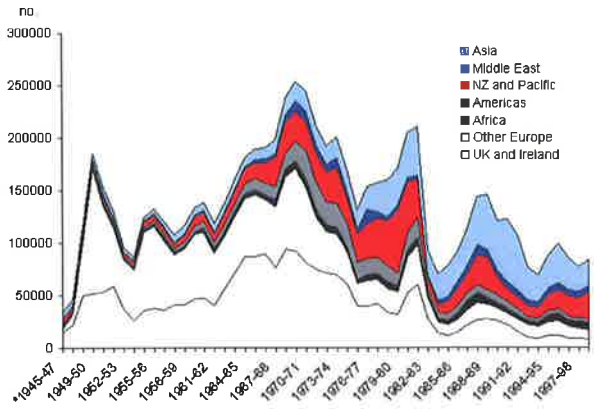
After World War II, Australia experienced an unprecedented economic boom and embarked on an ambitious immigration policy, which had the effect of diversifying further the origins of immigrants. The *«Immigration Restriction Act»* was partly lifted in 1947 to allow for business immigrants from non-European origin, who had lived in Australia for fifteen years at least to stay on a permanent basis. The objective of the expansion of the immigration effort was to increase the Australian population by 1 percent per year through immigration. Compared to war-torn Europe, Australia presented great economic opportunities, which could not have been exploited without additional labour force. In addition, it was perceived by the community at large that the Australian population was too small to defend a land as vast as Australia in the event of a foreign attack[3]. The 50s and 60s were characterised by the signing of several agreements with mainly European governments for assisted migration schemes and by a gradual relaxation of the restrictions on non-European migration. However, British migration was still highly encouraged through policies such as 'Bring out a Briton', 'Nest Egg' or the introduction of an English dictation test for immigrants.

Starting in 1966, Australia's immigration program objectives were gradually shifted to focus on applicant's ability and suitability rather than being race-based. At the same time, there was growing public unease about the capacity to successfully resettle new immigrants. Consequently, immigrants' intake was gradually reduced. Also in the 70's, Australia started accepting refugees. By the mid-1970s the White Australia Policy was officially abolished and Australia started attracting and accepting non-European settlers, especially those of Asian origin, due to proximity. The proportion of immigrants from Asian countries grew steadily, while that of Anglo-European immigrants gradually declined, as the graph below shows. The graph also shows that the peak number of post-World War 2 immigrants' intake occurred around 1970, when about 250,000 people entered Australia.

2 This section's source is: DIMIA(2001); Immigration : Federation to Century's end : 1901 – 2000 ; Canberra; and Hugo, Graeme (2002); Year Book Australia 2002 Population Centenary Article - A century of population change in Australia ABS Cat No:1301.0

3 Hence the expression 'Populate or perish'.

Chart 1.1: Australia's Post World War II Immigration Intake



Copied from: Hugo, Graeme (2002); Year Book Australia 2002 Population Centenary Article - A century of population change in Australia ABS Cat No:1301.0.

Between the 70s and 80s, immigration policy became more articulated through the creation of quotas and migration categories and the introduction of migrants' assessments tests. From 1985 onwards, economic considerations, namely the impact of immigration on the Australian economy and economic/demographic planning became the centrepiece of the Australian immigration policy. Attracting migrants with business potential and sought after professional skills became the main focus of the Australian immigration. The entries under the skills and business stream of visas were substantially increased.

Today, there are three main streams within the Australian immigration policy: The skills and business stream, the Family stream and the Humanitarian stream. While the proportion of entries in each stream changes annually, the current policy is more and more geared towards attracting skilled and young immigrants who are thought to have more economic / productive potential.

1.3. Document Layout

Following this general introduction, the following chapter consists of an exploration of the literature to date on the economic immigration and research on the main determinants of earnings/wages. The main theoretical foundations and empirical findings are presented. Chapter 3 is concerned with presenting the methodology and analytical framework used in this Thesis, including a brief presentation of the LSIA dataset and the main data transformations operated prior to conducting the analyses. Chapter 4 gives the reader a flavour of the main characteristics of the studied respondents: It presents and comments on the key descriptive statistics in anticipation of the following chapter (5), which presents the main research results. Chapter 6 concludes with a summary of the main findings, some caveats and retrospection, as well as suggested further research areas. Attachments include all data manipulation syntaxes as well as the raw results.

CHAPTER 2:

THEORETICAL AND EMPIRICAL BACKGROUND (LITERATURE REVIEW)

Most past research on the economics of immigration has concentrated on measuring either the economic impact of immigration *on natives*, or the success of immigration for immigrants *in relation to natives*. This Thesis' concerns the same subject of interest – immigrants' success – but it departs from past research focus by analysing immigrants' labour market success *without reference to natives*.

In this chapter, a brief review of pertinent literature is presented and a summary of the main linkages between different findings or theoretical methods is given. This serves as a guide to the methodology used in the present research, which is discussed in the next chapter. As previously mentioned, this thesis is a cross-section between the economics of immigration and labour market mobility topics. Consequently, the literature review below is a cross section of the two areas of inquiry. Both theoretical research and empirical findings are presented together to make the flow of ideas smooth.

2.1. Labour Supply, Occupations, Wages and Wage Mobility: Theory and Evidence

2.1.1. Foundations: The Human Capital Theory and Earnings Function[4]

As with most things in modern economics, the official genesis of modern labour economics, particularly the foundation of the Human Capital Theory can be traced back to Adam Smith's 'Theory of Wages' in his '*An Inquiry into the Nature and Causes of the Wealth of Nations*'[5]. Smith argues that there are five determinants of wage differences among people, which he summarises in the following words:

> "First, the wages of labour vary with the ease or hardship, the cleanliness or dirtiness, the honourableness or dishonourableness of the employment [...] Secondly, the wages of labour vary with the easiness and cheapness, or the difficulty and expense of learning the business. [...] Thirdly, the wages of labour in different occupations vary with the constancy or inconstancy of employment. [...] Fourthly, the wages of labour vary accordingly to the small or great trust which must be reposed in the workmen. [...] Fifthly, the wages of labour in different employments vary according to the probability or improbability of success in them."
>
> (Smith, 1776 at www.econlib.org/library/Smith/smWN.html)

With regards to the second determinant of wage differences, Smith adds that:

4 For a good and to-the-point review of the Human Capital Theory's story, see Chiswick (August 2003); "Jacob Mincer, Experience and the Distribution of Earnings"; IZA Discussion Paper No 847; For other reviews and related work, see Willis; Katz and Autor; and Card; all three in The Handbook of Labor Economics (Ch10, Ch26 and Ch 30); (1999).

5 Smith, Adam (1776), Book 1, Chapter X, Of Wages and Profit in the different Employments of Labour and Stock.

> "When any expensive machine is erected, the extraordinary work to be performed by it before it is worn out, it must be expected, will replace the capital laid out upon it, with at least the ordinary profits. A man educated at the expense of much labour and time to any of those employments which require extraordinary dexterity and skill, may be compared to one of those expensive machines. The work which he learns to perform, it must be expected, over and above the usual wages of common labour, will replace to him the whole expense of his education, with at least the ordinary profits of an equally valuable capital. It must do this, too, in a reasonable time, regard being had to the very uncertain duration of human life, in the same manner as to the more certain duration of the machine. [...] The difference between the wages of skilled labour and those of common labour is founded upon this principle. [...]"
>
> (Smith, 1776 at www.econlib.org/library/Smith/smWN.html)

As the following sections show, the Human Capital Theory is closely related to Smith's second determinant. This parallel between investment in physical capital and investment in education is at the core of the Human Capital Theory, hence the name 'Human Capital'.

While Adam Smith spoke of human capital in a certain way, nearly all studies of earnings, earnings growth, and their determinants, take Gary S. Becker's Human Capital Theory (Becker, 1964) as a starting point, because he was the first to refer to Adam Smith's idea of the education investment as Human Capital, and was among the first to model Human Capital analysis in a mathematical fashion. Becker's Human Capital Theory views individuals as 'profit' maximising production units who make purposeful decisions about the types and amounts of their 'investment' in skills in order to maximise their (expected) return to these same skills in the labour market. Investment in education (which has been generally extended to mean any form of skills acquisition) is a rational individual decision, which is determined by the expected returns to it, in the form of earnings, in the same manner that the expected profit guides a firm's investment in capital equipment and the resources mix within its production function.

Becker argues that a person's level of 'human capital' is the principal determinant of labour earnings and that differences in earnings among individuals (or groups of people) are accounted for chiefly by differences in their levels of human capital. Human capital is an aggregation of a person's education level, skills and experience. While this is the theoretical definition of human capital, it should be stressed that any action or behaviour that enhances one's future earnings can be considered human capital: This include things such as health care, personal hygiene, networking, choice of residence, etc... Indeed migration itself is a form of human capital investment.

For Becker, human capital investment is a function of (1) the value or *utility* of education other than expected monetary gain – i.e. how much one 'enjoys' studying (which depends on family, social and cultural values), (2) the *efficiency* in learning – i.e. how 'good' a student one is, and (3) the net present value of *expected lifetime earnings* at the individual's 'discount rate' (or the difference between earnings with and without the additional unit of education). Holding (1) and (2) constant across individuals, Becker asserts that each person makes

utility - maximizing education choices; which can be translated as an equalization of marginal cost and marginal benefit of education, as shown in the equation below:

$$C = \sum_{t=n}^{64} \frac{E_t}{(1+r)^{t-n}} \qquad (1)$$

C is the marginal cost of an additional 'unit' of education (including the opportunity cost of foregone earnings), E_t represents additional earnings from the last 'unit' of education in period *t* (or marginal benefit of education), *r* is the discount rate, and n is the age on completing education. It can be seen that earnings at any time t represent the rental value of the human capital stock at that time. It is interesting to note that the value of human capital stock, just like physical capital, can increase over time through additional training or experience and can decrease through depreciation or obsolescence.

Equation (1) can be rephrased as the following decision rule: Whenever the discounted net returns (net earnings) of an additional unit of education are positive, other things equal, the individual will 'purchase' or 'invest in' the additional unit of education. It is easy to see that people with a high discount rate (r) are less keen to invest in training. Also, investment in training is negatively related to age (n). It is easy to see that as n approaches 64, [t – n] approaches zero, and $(1+r)^{t-n}$ approaches one. At the limit n = t = 64, $C=E_t$ and there is no more investment[6]. For example, when a young man and an old man face the same marginal costs of education, the expected marginal return *per unit of time* will need to be much higher for the older man than for the younger in order for the older man to purchase the same units of education as the young man's. This is obvious given that the older man expects to have less time to use - and enjoy the returns to - his investment. According to Becker, it is rational to expect that investments in education will be concentrated in the early age of a person. These investments continue to increase in the adult life, but at a decreasing rate, over a person's lifetime.

In reality, human capital can be acquired either through formal schooling, informal education or on-the-job training. The latter aspect of education is often assimilated to work and supplied by the employer free or at a discounted price. However, literature shows that employer-provided training is generally very specific, so that it is difficult for the employee to transfer skills acquired through it across jobs.

6 Or any additional investment would be economically irrational. However, as retired people have been sometimes known to enrol in education, it is more realistic and appropriate to soften this theoretical finding: 64 is taken as the usual retirement age, but in reality, some people continue to be active beyond this age. In addition, remember that there are non-pecuniary aspects to education which this model assumes away.

Becker and Chiswick (1966) went on to develop a model that gives the relationship between earnings and schooling, known as the schooling-Earnings Function. They express earnings in a given year j (E_j) as a function of a person's earnings in the absence of any investment (E_o) plus the sum of his annual returns (r_j) from past human capital investments (C_j). C_j is the sum of foregone earnings plus direct costs of investment in year j, it can be expressed as (k_j) a fraction of what the person's earnings in year j-1 would have been had he not invested in education (E_{j-1}). In mathematical symbols,

$C_j = k_j E_{j-1}$; and

$$E_j = E_o + \sum_{j=1}^{n} r_j C_j = E_o + \sum_{j=1}^{n} r_j k_j E_{j-1} \qquad (2)$$

Using mathematical induction, transforming equation (2) in its natural log form, and assuming that the term $r_j k_j$ is 'small', Becker and Chiswick arrive at the following expression:

$$LnE_j \cong LnE_o + \sum_{j=1}^{n} r_j k_j \qquad (3)$$

Equation (3) states that (log) earnings are a function of the rate of return from investments in human capital (rj), the investment ratio (kj) and the number of periods of investment (n). This function is known as the 'Schooling-Earnings Function'. Later on, Chiswick (1967) separated 'human capital investment' into 'schooling' (s), 'on-the-job training' (j) and 'other human capital' (residual), by re-expressing equation 3 as:

$$LnE_j = LnE_o + \sum_{s=1}^{S} r_s k_s + \sum_{j=1}^{J} r_j k_j + U \qquad (4)$$

Mincer (1974) further developed the Human Capital Theory by making a thorough evaluation of on the job training (He started this work earlier – see Mincer, 1962). He defined the following earnings function for a given individual at time t.

$$LnE_t = LnE_o + r_s \sum_{i=0}^{s-1} K_i + r_p \sum_{j=0}^{t-1} K_j \qquad (5)$$

Where: E_t represents the potential gross earnings at time t

E_o is the initial earnings capacity with zero human capital investment

K_t is the time-equivalent amount of human capital investment: It represents the proportion of E_t spent on human capital

i= 0 through s-1 is the time span when the individual is in formal schooling

j = 0 through t-1 is the time when the individual acquires non-school human capital

r_s is the rate of return to school-acquired human capital and

r_p is the same for non-school human capital (medical care, on-the job training, self-teaching, acquisition of information, etc...)

Note the similarity and (slight) differences between Chiswick's and Mincer's specifications of the earnings function. Similar to Chiswick, Mincer splits a person's active life into the schooling period and the working period; but unlike Chiswick's function which is continuous throughout life, Mincer estimates the returns to human capital at a given time in life; hence the returns to human capital are constant in Mincer's specification. The subscripts s and p (or s and j for Chiswick) show that the rate of return to human capital acquired through formal schooling may be different from that of human capital acquired otherwise.

While E_t stands for *potential gross* earnings at time t, it should be obvious that part of E_t will be spent as K_j at time t. Therefore, for estimation purposes, observed earnings at time t, Y_t (i.e. wages or/and salaries) are generally used. In this case, they approximately represent $Y_t = E_t (1 - K_{jt})$. Mincer assumes that $E_t = Y_t$ so that K_{jt} is only the opportunity cost of training.

During formal schooling years, K_{it} is close to unity for most students, so that it can be assumed that $K_{it} = 1$. When a person enters the workforce, Kj becomes lower than unity and continues to decline with age and earnings growth (remember that K_{jt} is a *fraction* of E_t). This property means that human capital investments increase at a decreasing rate. Assuming a geometric decline in the post schooling investment profile over time, the following specification is used for K_j:

$$K_j = K_o e^{-\beta_j}$$

Mincer's log - earnings function (Equation (5)) is therefore concave and it can be rewritten as follows:

$$LnY_t = LnE_o + r_s S + r_p \frac{K_o}{\beta}(1 - e^{-\beta_t}) + Ln(1 - K_t) \qquad (6)$$

Mincer uses several econometric functional forms to estimate equation 3 above and finds that the model specification with the highest explanatory power is one where the last portion of Equation (3) is entered as a second order quadratic, to express the diminishing returns to human capital investments, as follows:

$$LnY_t = \beta_0 + \beta_1 S + \beta_2 X_t + \beta_3 X_t^{\,2} + U \qquad (7)$$

This log-linear function is known as the ***human capital earnings function***[7] and is used widely in estimations of earnings, earnings mobility and earnings distribution.

Variable X serves as a proxy for post school investments in human capital. As X is usually difficult to observe directly, Mincer proposed that it be estimated as [Age – S – 5]. Assuming that people start work as soon as they finish school and do not experience spells of non-employment thereafter, this specification would equate X to the value of work experience. However, as Mincer finds, where employment is not continuous, as is the case for women who interrupt their careers during child rearing periods, [Age –S – 5] is a poor approximation of experience; suggesting that it is necessary to separate men's earnings' approximations from women's.

Applying this specification to a sample of the 1960 US census, Mincer was able to explain close to 60 percent of males' earnings' structure. Rahm (1971) used the same earnings function specification for separate occupations and found that standardising for occupations raises the explanatory power to over 80 percent. It may therefore be helpful to add occupational dummies in statistical estimations of earnings. Chiswick (1974) standardised the same function within US regions and was able to explain close to 90 percent of earnings differentials in the US.

Mincer's estimation of female earnings profile showed that effectively, the experience variable X for females is poorly approximated by [Age –S – 5]. Women who have children stop working and their human capital depreciates. When they return to the workforce (usually when children reach school age), they also resume human capital investments. Therefore, their investment profile is different from that of men. Mincer states that the earnings profiles of men are steepest and concave, those of childless women are comparable to men's but less steep and less concave, while those of mothers are double-peaked and least steep.

While the review of theoretical work on the Human capital Theory has focused on Becker, Chiswick and Mincer, it is important to mention that others contributed to the model in many ways. These include Griliches, Shultz[8] and Taubman among others[9].

7 For a complete and very thorough exposition of Mincer's work on the Human Capital Earnings Function, see Mincer (1974).

8 Shultz was the first economist to formally publish a paper on the returns to education. He defined 'human capital' as a 'product of deliberate investment that yields returns" and as "the knowledge and skills that people acquire through education and training".

9 For a simple chronology of the Human Capital Theory, see Nafukho, F. M., Hairston, N. & Brooks, C. (2003).

2.1.2. Wage Mobility

It is a good thing to have a job and earn a wage or salary. It is better when that wage or salary increases over time. While the Human Capital Theory is concerned with an estimation of the distribution of earnings ***levels***, it is just as useful as a basis for understanding the differences in earnings ***changes*** (or mobility) among different individuals. In fact, the Human Capital Theory is, in essence, a theory of earnings mobility, in that it is concerned with a lifetime question and uses dynamic variables.

The question of earnings mobility has provided a substantial amount of research opportunities for economists, both theoretically and empirically. The issue is primarily about which types or groups of persons are likely to move to higher paying jobs, and which jobs offer more opportunities for wages or salaries increases; or what are the dynamics for wage growth. Earnings mobility of immigrants in particular has been the subject of substantial empirical research in the major immigrant destination countries, including Australia, although for immigrants, most of the research has been concerned with comparing immigrants' to natives' earnings. Most studies use equation (4) or some variation of it as a basis for analysis. The usual framework for analysing earnings mobility consists predominantly in one or a combination of the following comparisons of wage changes:

- for different demographic groups (by gender, ethnic groups, age, etc...)
- for different worker characteristics and behaviours (education levels, job movers versus stayers, quits or layoff, etc...)
- for different types of workplaces or industries, jobs or occupations (the labour market segmentation theory)

For new immigrants, entering the labour force in a new country is comparable to joining the labour force for the first time. Despite the fact that a large number of immigrants have prior work experience, they nevertheless need to adjust to a whole new culture, new work ethics, as well as new industrial relations environment and practices. Thus new immigrants' labour force experience can be analysed in the same way as the labour force mobility of new workers starting in entry-level jobs.

Starting with the US, past empirical research based on pseudo-panel data (US censuses) showed that US immigrants' earnings increased steeply in time between the 60s and the 70s, to catch up and even overtake comparable natives' earnings. This suggests a positive correlation between the length of time after immigration and the wage of immigrants (Borjas, 1982, Borjas, 1985; Chiswick, 1978, Long, 1980). Similar results were observed in Canada (Baker and Benjamin, 1994; Bloom and Gunderson, 1991), Europe

(Dustman, C. and Pereira. S.C, 2003; Pischke, J.S and Krueger, A; 1995) and Australia (Beggs and Chapman, 1990, 1988). Chiswick (1978), using the 1970 US census data, interpreted the wage rise as proof that immigrants were being 'Americanised', or more generally, 'assimilated'. Borjas (1985), on the other hand saw Chiswick's findings of a wage 'convergence' as an indication that new immigrants were simply less skilled than older ones. The main reason for this difference in interpretation is that the results are not drawn from longitudinal data: Specific individuals cannot be tracked across time. Since Borjas' and Chiswick's studies used different cohorts and different periods, they include aging, cohort and period effects that they cannot separate. In the LSIA data used for this research, only the age effect is present – and therefore relatively easy to isolate - since the immigrants are part of the same cohort and arrived in same period.

Using longitudinal data from a sample of scientists and engineers in the US, Borjas (1989) finds that the previously observed earnings' 'convergence' rate of immigrants to natives is very small among this group; and in fact finds that this group of immigrants never catches up with natives. He also finds confirmation of a significant drop in the skills of these immigrants in the decades 60s and 70s; and sizeable emigration rates; as the immigrants sample is characterised by poor labour market outcomes. Earnings of those who re-emigrate are about 11 percent lower than those of immigrants who stay in the US. However, Borjas's findings cannot be simply generalised as the sample he uses is very specific (scientists and engineers).

Nevertheless, more recent studies find that immigrants' earnings are generally significantly lower than those of comparable natives at the earlier stages of settlement, because they lack country-specific skills that employers in the destination country deem important, and because they forego some income while they invest in these country-specific skills (Borjas, 1995, Chiswick, 1978). Immigrants' earnings recover at variable rates, according to their skills, demographic characteristics and reasons for migration. There is no indication, however, that immigrants' wages in general, catch up with natives' or that their initial earnings are correlated with subsequent earnings growth – either positively or negatively (Borjas, 1999).

The scarcity of good longitudinal data on immigrants' earnings has contributed to the lack of definitive answers to this issue. In this respect, the Australian LSIA provides a very useful and welcome addition to the available data on immigrants in general and to their economic success in particular. Researchers in Australia and elsewhere (Among others, Cobb Clark (2001, 2003), Chiswick, Lee and Miller (2002a, 2002b, 2003), Richardson et al (2001, 2002), VandenHeuvel and Wooden (2000), William et al (1997) and Wooden (1994)) have used the LSIA data extensively, but a lot of information has still not been exploited in academic research, as the database is relatively new.

2.1.3. Occupations and the ANU3 Index: An Alternative Measure of Labour Market Success

Another way in which labour market success has been appraised is by looking at various categorical aspects of employment, such as occupations, job tenure, mobility and satisfaction, industries of employment, English proficiency, etc... Note that these aspects of employment success and wages have also been used as predictors of one another. Other studies have used index measures of jobs or occupational 'prestige'. One particular set of index measures which has been used widely in Australia (mainly in sociological studies) is the ANU index of occupational 'prestige'. The ANU3 in particular is an updated version of earlier occupational prestige indices in Australia[10]. It was developed by Jones (1989) following the ANU2 by Broom, Duncan Jones, Jones and McDonnell (1977). The ANU3 is a summary measure of the authority, rewards, required skills and social regards attached to occupations, grouped under the Australian Standard Classification of Occupations (ASCO1). Jones (1989) provides a detailed expose of the ANU3 status scale, which assigns each occupation (at the ASCO 4-digit level) an index ranging from 0 to 100 points.

In developing the ANU2, Broom *et al* issued a questionnaire to a random sample of doctors, lawyers, high school teachers, and social workers, each comprising 750 persons. Each questionnaire included a 9-point rating scale for 200 occupations randomly split in four groups of 54 (each respondent answered questions for 50 professions, plus the 4 professions of the respondents). These responses were matched to selected variables of the 1971 Australian census. In matching the responses to the census variables, Broom et al looked for variables that (i) "could be causes of occupational status", (ii) "might be consequences or outcomes of occupational achievement", or (iii) "associated with socially valued aspects of an occupation" (Broom *et al*, 1977). Note that income was not one of the variables included in the measure of the ANU2, as there was no question on income in the 1971 survey. Apart from housing and vehicle ownership, no aspect of the ANU2 was related to financial aspects of occupations.

Using information from the ANU2 score, Jones (1989) updated the link between this scale and the then new ASCO1 and took advantage of the availability of income data and hours worked (reflecting the increasing instance of part-time work) to account for the relationship between these two variables. He also included interaction variables for age and age at leaving school to account for the increase in school leaving age. He fitted a regression to estimate an index measure for occupations grouped in the ASCO1, which gave a social prestige score from 0 to 100. The Table below shows the mean ANU3 scores at the one-digit level of ASCO1. Results at the 4-digit level of ASCO1 assigns the highest score (100) to "Specialist medical practitioners" and the lowest score (0) to "Ushers & door attendants".

10 Following a reclassification of occupations by the Australian Bureau of Statistics, McMillan and Jones (2000) updated the ANU3 in terms of the new ASCO2 (ANU3-2). Currently, there is another, more complete update, the ANU4, which is based on the ASCO2, also developed by McMillan and Jones (2000).

Table 2.1: ANU3-1 Mean Scores by ASCO Categories

ASCO Code	Indicative Occupational Title	Mean ANU3 Score	Standard Deviations
1	Managers & administrators	52.4	12.0
2	Professionals	64.9	11.4
3	Para-professionals	44.7	7.8
4	Tradespersons	25.4	6.7
5	Clerks	27.1	5.1
6	Salespersons and related workers	27.0	9.1
7	Plant and machine operators, and drivers	12.1	5.2
8	Labourers and related workers	9.5	5.6

Source: IPUMSI www.ipums.org

A descriptive paper by Chiswick, Lee and Miller (2002) uses the LSIA data and the ANU3 index to measure the occupational mobility of male immigrants. The variables they use in the estimations of occupational mobility include sex, whether the migrant comes from an English-speaking country, and visa category. They find a U shaped 'pathway' indicating an initial fall in occupational status in the first year or so after migration, followed by gradual upward adjustment. However, due to the short timeframe, their research does not establish whether immigrants ever return to their pre-migration occupational status. Occupational attainment at the third wave is positively correlated with high levels of educational attainment, being from an English-speaking developed country, and being a business immigrant. Chiswick, Lee and Miller's findings will be revisited in Chapter 5.

2.2. Economic Theories of immigration and some evidence

2.2.1. The migration decision

From the immigrant's perspective, at least those for whom immigration is an economic choice (economic immigrants, as opposed to humanitarian or family immigrants), expected earnings in the host country are a central variable in their migration decision. Sir John Hicks (1932, p76 – cited in Borjas, 1999), in 'The Theory of Wages' put it as follows: "differences in net economic advantages, chiefly differences in wages, are the main causes of immigration". Going from Hicks' assertion, it is clear that economic immigration is a production decision, just the same way that capital movements are: A worker has skills to sell and s/he searches for opportunities to sell them in the market where s/he gets the highest possible price, given 'market research' and 'delivery' costs (i.e. migration costs).

For a two-country model, the source country (S) and the destination country (D), Borjas (1999) defines the potential migrant problem as follows:

The earnings distribution of workers in S are given by

$$Ln(W_S) = \mu_S + v_S \text{ ; With } v_S \sim N(0, \sigma^2). \quad (8)$$

The potential earnings distribution, if the entire working population in S (or if a representative sample of the population from S) was to migrate from S to D is then given by

$$Ln(W_D) = \mu_D + v_D \text{ ; With } v_D \sim N(0, \sigma^2). \quad (9)$$

Equations (5) and (6) simply state that the two earnings distributions are random across the population, with mean μ and an error term v. For ease of comprehension, equation (9) can be reinterpreted as 'potential earnings of immigrants from S to D assuming they are randomly chosen among the population in S or as 'what the average S resident could earn if she migrated to D'. From the two earnings distributions the following *potential* lifetime income equation for the *potential* immigrant can be derived:

$$I = Ln(\frac{W_D}{W_S + C}) \approx (\mu_D - \mu_S - \pi) + (v_D - v_S) \quad (10)$$

Where C is a measure of migration costs and π is a time-equivalent version of these costs.

Equation (10) is a migration decision rule and can be interpreted as follows: A potential migrant from S will migrate to D only if I>0. In other words, migration occurs when mean earnings in D are higher than mean earnings in S plus migration costs (all in log); that is, if the benefits (earnings) from migrating are higher than the costs (foregone earnings – or opportunity cost and actual costs) of migrating. It is easy to see from equation (10) that the immigration rate increases when mean incomes in country S (source) fall relative to mean incomes in country D (destination), and when time-equivalent migration costs fall.

2.2.2. Pre-migration characteristics: The question of migrants' self-selection

Equation (10) above suggests that people who migrate are not randomly distributed across the population of the country of origin, rather, they are a select group whose characteristics are predetermined by the relative returns to skills in the home country vis-a-vis the destination country. Borjas (1999) argues that if the income distribution in the source country is relatively narrow (i.e. the returns to skills are relatively small); skilled workers will find it more suitable to migrate towards a country that pays a larger skills premium. In the opposite

case, if skills are well rewarded in the source country and the social welfare is generous for less skilled persons in the destination country, low skilled workers are more likely to migrate. Borjas refers to the first case as 'positive selection' and the later as 'negative selection'.

Another factor, also obvious from equation (10), which is expected to influence the migration decision and have an impact on the composition of immigrants, is the cost of migration. Some skilled workers may have skills that are specific to their source country. For example, the average lawyer would find it more difficult than the average economist to exercise his profession in a foreign country because the skills required for practising law are usually more country-specific, while economic theory is more transferable. Similarly, a driver would face higher migration costs than a bricklayer. In general, beside the fact that some professions are more mobile than others, less skilled workers face lower skills-related migration costs than high skilled ones. As we will see, highly skilled immigrants face a deeper negative earnings and occupational shock than less skilled ones. This suggests that migration costs are positively correlated with skills levels.

2.2.3. Post-migration behaviour: Investment and Work.

Equation (10) can be generalized to mean that the immigration decision rule is: *"Migrate whenever expected net present value of utility (or expected utility stream) in the destination country is higher than the net present value of utility in the home country"*. This generalization allows the reader to realise that the same decision rule holds for economic migrants (who migrate for work or business-related reasons) and non-economic migrants (refugees/humanitarian and family migrants). Reframing the immigration rule in terms of utility also allows the reader to appreciate the fact that a significant proportion of migrants to Australia say that they do so not for their own benefit, but for example for their children's education (parental altruism); while others cite reasons such as the fact that Australia is a peaceful and democratic country, non-polluted and uncrowded environment, or broadly and generic 'for better prospects'. In any case, the *determinants* of immigration are the same for both types of migrants' 'utility'. What is likely to differ is the *process* of migration the *post-migration behaviour*, and their labour market outcomes.

Economic migrants are self-selected people who have made an assessment of their skills in terms of migration timing and suitability to the destination skills market and determined that they will gain from selling their skills in the destination country. They make labour market assessments of their expected economic success because it is their main - if not single - objective. Their own assessment is also crosschecked and validated by immigration officials from the destination country through review and approval of their immigration application. On the other hand, non-economic migrants may do so to be close to family or to get away from

persecution, and their applications are assessed in that logic. As most studies of immigrants' economic performance confirm, non-economic migrants are likely to be less equipped or less adapted to the labour market in the destination country, both in comparison to natives, but also in comparison to economic immigrants. While their utility and welfare may be improved, they are more likely to under-perform in the labour market and to suffer more from a drop in economic standing (earnings, occupation, etc...) than are economic immigrants.

This notion is very similar to the observed differences in labour market experience and earnings between workers who quit their jobs and those who are laid off. Research in job mobility and job displacement shows that labour turnover explains a lot about wage growth, both within the job and across jobs. Quits generally lead to higher wages while layoffs lead to wage drops. Generally, the prospect of a job change creates a disincentive to invest in specific training. Borjas (1981) finds that people who change jobs frequently may earn less over their life course, despite having short run higher wages, while stable workers earn more in the long run: Quits lead to a jump in the intercept of the wage function, but cause its slope to flatten over time. Similarly, Bartel and Borjas (1978) find that young men who quit their jobs have significant wage gains compared to those who stay. However, older men who quit only fare better when they quit because they found a better job. But again, young and old stayers experience steeper wage growth per time period than movers. Job stability is associated with a steeper lifetime wage function, while job mobility shifts the wage function's intercept up but at the same time flattens its slope in the long term. Since economic migrants are comparable to quits, they are likely to experience a 'wage honeymoon', while humanitarian immigrants, who are comparable to redundant workers, are likely to do worse in the initial period after immigration, but their long term 'recovery' might be better. If this is so, it is important to know whether, in comparison to economic immigrants, humanitarian migrants actually fare worse in the initial period after migration, if they recover over time, and if so, how long it takes them to recover, who recover faster/slower among them (i.e. what other characteristics are at play), etc...

Human capital theory would also suggest that, where there is an expectation or a possibility of return (which is more likely for economic immigrants than for others), there is little incentive to invest in training which is specific to the destination country; while the opposite is true for refugees/ humanitarian immigrants who cannot easily return home. If the costs of return migration are very high, then there is a higher incentive to invest in destination-country-specific skills. Investment in training is expected to be significant for humanitarian and family immigrants in comparison to economic immigrants, particularly those who expect to remigrate. In addition, refugees in particular are expected to have a heightened sense of the importance of investment in human capital in the destination country because they would have lost physical capital (possibly for good) and

their home country specific human capital accumulated in their former home country (as human capital is not always easily transferable).

For example, Borjas (1982) analyses the earnings of male Hispanic immigrants in the US and finds that the rate of Cuban immigrants' earnings growth exceeds that of other Hispanic groups. He attributes this difference to the fact that Cuban immigrants are mostly political refugees who cannot return to Cuba, and that they invest heavily in US-specific human capital in the first years after migration. In another paper, Borjas (1989) uses the 1972-1978 longitudinal survey of natural and social scientist and engineer immigrants to the US to analyse their earnings profile. He finds that a significant number of them remigrated and that those who did so had a relatively poor labour market experience, with earnings 11 percent lower than the average. A comparison of Borjas (1982) and Borjas (1989) suggests that the causal relationship between remigration and labour market behaviour is unclear: Do expectations of remigration induce the intensity of country-specific skills (and thus earnings) or is it the other way round? It would appear logical to presume that a poor migration experience can lead to remigration, but it is also necessary to keep in mind that (1) the market for a number of skilled professions has become internationally open and skilled workers are more and more mobile worldwide, and (2) in the case of Australia, a number of migrants, especially skilled ones apply for migration as a cost-cutting or investment measure (lower taxes, etc...), while others may use Australia as a transit country towards others (eg: North America). In both cases, investment in Australia-specific skills other than English may not be a priority.

Another issue that is likely to influence post-migration human capital investment is pre-existing level of human capital: Do skilled migrants invest more or less in country-specific skills than less skilled ones? It may be possible that highly skilled immigrants face very high investment costs, particularly in terms of the opportunity cost of foregone income. However, it is also possible to imagine that highly skilled migrants are better at learning and enjoy it most. In the former case, they would be less likely to invest in training, while in the latter; they would be more willing to invest in training.

To tackle this question, Borjas (1999) estimates the immigrant's entry wage as follows: Assume the immigrant arrives from her home country with K 'efficiency units' or 'skills' to sell. Upon arrival, she loses a fraction of these skills, corresponding to non-transferable skills; so that she can effectively sell $K(1-\delta)$ units of skills. If the immigrant has two periods to live in the destination country, the investment period and the payoff period, she also devotes some of her effort (s) towards acquiring country-specific skills, which, in time, will increase her skills by a factor of g percentage points. With an *inverse discounting factor* ρ (a high value of ρ corresponds to a low discount rate), and assuming for simplicity that the going rate for one unit of 'skills' is one dollar (or normalising unit wage rate to 1), the net present value of her 'new lifetime' income (V) can be written as:

$$V = (1-\delta)K(1-s) + \rho[(1-\delta)K(1+g)] \tag{11}$$

and a human capital production function in log terms,

$$g = s^{\alpha}[(1-\delta)K]^{\alpha+\beta-1}. \tag{12}$$

It is important to mention here that the meaning of ρ can be extended to include a measure of the *(inverse)* likelihood of return migration, so that a high value of ρ corresponds to a low discount rate and/or a low probability or remigration. Equation (11) expresses expected post-migration lifetime income as a sum of two things:

- $(1-\delta)K(1-s)$ is the total earnings during the investment period. It corresponds to the total price of the immigrant's skills available for sale (that is, net of the proportion lost upon entry and the proportion used for investment)
- $\rho[(1-\delta)K(1+g)]$ is the discounted value of earnings during the payoff period. It includes the price of the entry skills (less the skills lost upon entry) to which the additional country-specific skills acquired in the investment period are added (all discounted).

Equation (12) states that the percentage increase in human capital is a function of the fraction of 'skills' used to invest $\alpha<0$ because of diminishing marginal productivity to human capital investments. Immigrants choose the rate of investment in human capital that maximises expected earnings. The first order condition for this human capital investment is:

$$s = (\alpha\rho)^{\frac{1}{1-\alpha}}(1-\delta)K^{\frac{\alpha+\beta-1}{1-\alpha}} \tag{13}$$

From equation (13) it is easy to see that the relationship between human capital investment (s) and the *inverse* discounting rate ρ is positive, meaning that migrants with a high discount rate or a high probability of remigration will invest less in country-specific skills. It is instructive to compare this result with that from equation 1, namely that, in general, individuals with a high discount rate and older people invest less in human capital: Older people can be compared with migrants who have a high remigration probability in that the time they expect to spend 'exploiting' human capital is shorter than that of younger people or permanent immigrants. The same logic can be used for primary carers of children (mostly women), as they interrupt their careers for some time in order to care for children. The time they have left to 'harvest' the fruit of their

investment in education is lower and interrupted; rendering the expected present value of returns to education lower than that of young males.

On the other hand, equation (10) shows that the relationship between human capital investment (s) and initial human capital (K) depends on the sign of ß. Highly skilled workers invest more in education when $\alpha+ß>1$ and invest less if $\alpha+ß<1$. We know that $\alpha<0$, but the sign of ß is difficult to assess. The relationship between immigrants' pre-migration human capital and post migration human capital investment is a matter of empirical research, as theoretically, it is impossible to predict. Nonetheless, empirically, this relationship is equally as evasive: For example, Chiswick and Miller (1994) find a positive correlation, while Borjas (1982) and Khan (1997) find mixed or negative correlations.

Research that uses the family instead of the individual as unit of analysis finds some evidence of 'specialisation' among family members in the initial settlement years, with some members investing in country-specific skills, while others work to finance this investment (Duleep and Sanders (1993), Long (1980)). This suggests a family-based investment strategy and points to the fact that studies that use the individual as unit of analysis might be missing some information. As an example of research in post-migration behaviour using family as a unit of research, Cobb-Clark, Connolly and Worswick (2001) studied the job search and education investment of immigrant *families* in Australia using the LSIA dataset. Their work reveals that immigrants with higher education qualifications are more likely to invest in additional education immediately after migration. They also find that, visa categories, are a better predictor of post-migration investment than the level of pre-migration qualification: Immigrants, particularly men, in independent, humanitarian and concessional family visa categories, are more likely to enrol in school than business immigrants. Also, immigrants from non-English-speaking countries are more likely to be unemployed and to be enrolled in education than those from English-speaking countries.

2.2.4. Brief digression: The impact of immigrants on natives and on the host country's economy.

In standard microeconomic theory, an influx of immigrants of working age in an economy corresponds to an increase in labour supply. In a simplified economy with homogeneous, linear, continuous and twice-differentiable production function, and a homogeneous labour supply function, the overall effect of immigration on natives is positive IF the wage of native workers is sufficiently elastic. A resulting second effect of immigration is a redistribution of national income from labour to capitalists. This second effect can be cancelled if immigrants contribute capital that is proportional to their labour supply contribution. In this case,

the effect of immigration on the economy is just an increase in GDP with no impact on capital/labour ratio in the host country (Borjas, in Handbook of Labour Economics, 1999; pp 1701-1703).

In a more realistic economy, with heterogeneous labour supply (for example skilled and unskilled workers), the relative price of labour and capital is determined by their marginal productivity. The impact of an influx of immigrants on the economy will now depend on the skills distribution of immigrants relative to natives. Borjas (1999) shows that in the case of an elastic capital supply function, the country is better off admitting immigrants who have skills that are complementary to those of natives. When capital is inelastic, the theoretical results are indeterminate: The 'immigrant surplus' is larger when immigrants' skills complement natives' skills; but also when immigrants' skills complement native-owned capital. Nonetheless, empirical evidence from the US data finds very little impact of immigrants on the US labour market (Borjas, 1995a; Borjas *et al*, 1996; Johnson, 1997). Despite the complexity brought about by the elasticity of capital in the host country, it appears that immigrants' skills relative to those of natives are a key factor in the immigration decision of immigrants, but also in determining the immigration policy of host countries.

2.2.5. Immigrants labour force strategies and outcomes.

As a conclusion to this Chapter, and to introduce the next, a summary of the factors that are likely to influence immigrants labour market 'experience'; success or otherwise (be it in terms of earnings and earning mobility, or in terms of occupation and occupational mobility), include general demographic characteristics, pre-migration factors, as well as post-migration ones. The above analysis suggests that immigrants' labour market outcomes are likely to be explained by the following variables:

(a) Total years of education completed prior to migration. Here quality of education should also be considered, although this is difficult to estimate. In the LSIA, information on overseas (pre-migration) qualifications assessment is provided so that education level can be estimated using the Australian equivalent qualification, for respondents who have had their qualifications assessed.

(b) Total years of labour market experience; estimated as [age (in years) – years in education – five – known time out of the labour force] in the origin country.

(c) Other aspects of pre-migration 'human capital' such as English language proficiency at the time of migration. In previous research (including research using the LSIA data- see Richardson *et al* (2001)

and Chiswick *et al* (2002, 2003)), English proficiency has been found to be a significant factor in the immigrant's labour market experience; hence the usefulness of separating it out.

(d) An estimation of post-migration human capital investment (proxied by post-migration main activity).

(e) Other labour market behaviour aspects such as job mobility or emigration expectations/plans.

(f) Socio-economic characteristics such as gender, age, marital status, region of origin, etc.

(g) Demand-side aspects such as the State of settlement.

The estimation of pre-migration education and labour market experience ((a) and (b)) also needs to take into account the fact that not all human capital is transferable. This is difficult to estimate directly, other than accounting for non-transferable human capital as part of the residual in the regressions of earnings. Also, although not considered here, other environmental factors such as the cyclical or structural state of the economy in the host country, as well as institutional issues such as the welfare system, industrial relations, etc... all have an impact on labour market behaviour and outcomes.

CHAPTER 3:

INTRODUCTION TO THE LSIA, ANALYTICAL FRAMEWORK AND METHODOLOGY

3.1. The *Longitudinal Survey of Immigrants to Australia (LSIA)* in brief

The Australian Department of Immigration, Multicultural and Indigenous Affairs (DIMIA) conducted a survey on a stratified sample of recent immigrants who arrived between September 1993 and August 1995. This first Cohort of the Longitudinal Survey of Immigrants to Australia (LSIA- Cohort 1) was interviewed three times: The first interviews (Wave 1) were conducted around 6 months after arrival for a total of 6,961 respondents and started in March 1994. The second interviews (Wave 2) happened a year later (1.5 years after arrival – started in March 1995) and Wave 3 interviews were conducted a further two years later (3.5 years after arrival – started in March 1997)[11]. All three waves of interviews comprised an individual identification number for each interviewee and the same (or similar) questions, so that it is possible to track the evolution of the same person over the survey period. In addition, in Wave 1, respondents were asked a number of questions about their pre-migration situation, including their labour force and employment information up to twelve months prior to migration. This gives the researcher a total observation period of approximately four and a half years (of which three and a half years relate to their Australian experience) for each individual immigrant surveyed.

Given that the surveyed population is a stratified sample of all immigrants who arrived at approximately the same period, in order to make the analysis relevant for the entire immigrant population, each observation was assigned a series of optional weights which can be applied according to the purpose of the research. For the purpose of this study, a weight that relates the LSIA respondents to the entire on-shore immigrant population who arrived in the survey period was applied, so that all statistics reported in this study can be extrapolated to the population of immigrants who arrived between September 1993 and August 1995.

The LSIA surveys are a good source of statistical information on recent immigrants, and to date contain the only truly longitudinal information on immigrants to Australia and one of a few in the world. Several research papers have already been produced in Australia, using the LSIA data.

11 Cohort 2 of the LSIA consists of 4181 respondents at its wave 1, who arrived between September 1999 and August 2000. It started towards the end of 2000 and its Wave 2 results were released in 2003.

The LSIA-1 dataset is very large and encompasses areas other than labour market. The entire dataset was not needed for the purpose of this thesis. The following initial data preparation process was followed prior to the analysis presented in this Thesis:

The original Cohort 1 database consists of two separate files for each one of the three interview waves. Each wave had a data file for the Principal Applicant (PA) and another for the Migration Unit Spouse (MU), or six files in total, for 6,961 individual respondents at Wave 1 (subsequent waves had less respondents – this is the usual attrition problem in longitudinal datasets). For Wave 1, the total number of PA was 5,192 individual respondents (78.9% of total), of whom 41.3% of total were male PA and 37.6% were female PA. The remaining 21% were MU. The MU information was set aside and not analysed, primarily for convenience, as the PA database includes important labour force information that the MU dataset does not; but also, to a lesser degree, in order to eliminate a potential bias due to the possibility of different migration behaviour or motives of MU compared to PA in general.

Next, the three PA datasets were merged into one single longitudinal PA dataset, in function of the person's tracking number (ID), to make all observations longitudinal (the person ID number is the variable that allows over-time tracking of each individual interviewee). As subsequent waves reached a smaller number of respondents due to attrition, only 3,618 primary applicants responded to all three waves. Respondents who missed wave 2 or/and wave 3 were also dropped from the analysis. The resulting dataset contained information for 3,618 PA who answered all 3 waves.

From the 3,618 respondents, the following two categories of observations were also removed for obvious reasons: (1) A total of 456 persons who were retired, pensioners or whose current main activity was reported as unknown at wave 1, 2 or 3; and (2) an additional 21 people who were aged 65 or more at wave 3. The resulting final dataset (which was called C1PA), comprised information for 3,141 primary applicants aged between 15 and 64 throughout the interview period, who were neither retired, nor pensioners and whose main activity was known at all three waves. This dataset formed the analytical basis of the present study. As reported earlier, weights were applied to this dataset to make the results extendable to the entire onshore immigrant population at the time of the survey. Additional variables were calculated by recoding or combining existing ones. Details of this process are given in Appendix 1.

3.2. Analytical framework

The aspects of immigrants' labour market outcomes that this Thesis aims to analyse can be grouped into three broad categories:

- For all respondents, what are their labour force statuses on arrival (wave 1), how it relates to pre-migration labour force status and how it evolves over time (wave 2 and 3), the determinants of initial status (wave 1) and of final status (wave 3).

- For respondents employed at wave 3, what is their wage profile and what are its determinants; how their wage relates to pre-migration versus post-migration characteristics. In particular, for respondents who were employed at all three waves, what are the direction and determinants of their wage mobility and how does their wage profile at wave 3 differ from that of people who experienced a spell of post-migration unemployment.

- Again, for respondents employed at wave 3, what is their occupational profile and what are its determinants; how their occupational status relates to pre-migration versus post-migration characteristics. In particular, for respondents who were employed at all three waves, what are the direction and determinants of their occupational mobility and how does their occupational profile at wave 3 differ from that of people who experienced a spell of unemployment.

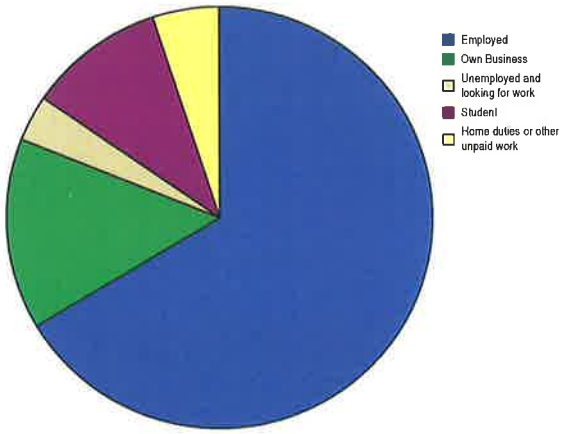
It is crucial to specify that the usual definition of 'labour force status' is slightly different from the one used here. The LSIA data does not code respondents according to the standard definition of labour force status. Instead, there is a question in which immigrants were asked to state their 'main activity' at each wave as well as in the 12 months prior to migration; within a choice of 11 activities: (1) a wage or salary earner; (2) conducting own business but not employing others; (3) conducting own business and employing others; (4) other employed; (5) unemployed and looking for full time work; (6) unemployed and looking for part-time work; (7) student; (8) Home duties; (9) Retired (10) Aged pensioner; and (11) other pensioner. Responses to this question were used to assign 'labour force statuses' to each respondent. Activities (1) and (4) were grouped as 'employed'; (2) and (3) as 'Own Business'; (5) and (6) as 'Unemployed'; (7) remained 'Student' and (8) remained 'Home duties'. People who chose (9), (10) or (11) were removed from the sample.

In order to simplify the analysis, the first task was to subdivide the sample in a coherent way. Since being employed is a prerequisite to earning a wage or having an *occupation* (as defined by ASCO 1), the respondent labour force status is the primary level of analysis. Therefore, it was logical to start by an examination of the respondents' labour market status at all waves: Who is in the labour force and who is out, of those in the labour force, who is employed, who owns a business, and who is unemployed; of those not in the labour force, who is in education (investing in human capital) and who is 'not economically active'. The Pie Charts below (Chart 1) give a first snapshot view of the broad labour force situation of all respondents by

grouping them according to their self-reported 'main activity' at four observation points (last 12 months prior to migration, wave 1, wave 2 and wave 3). Males' data is presented on the left hand side, while females' is on the right hand side. These charts, as well as Table 2 below reveal dramatic changes from pre-migration to wave 1, and relatively smaller change from wave 1 to wave 3. In particular, there is little change from wave 2 to 3. From Pre-migration to wave 1, there is a dramatic fall in employment, which is compensated by an increase in unemployment for males, and by an increase in home duties for females.

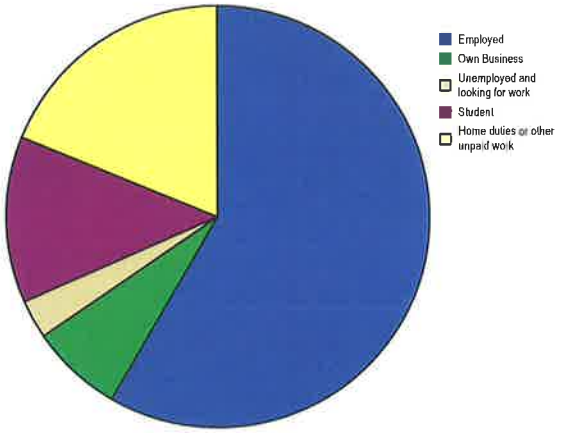
Chart 3.A: Broad Labour Force Status for Males and Females

Males: Broad Labour Force Status in Former Home Country



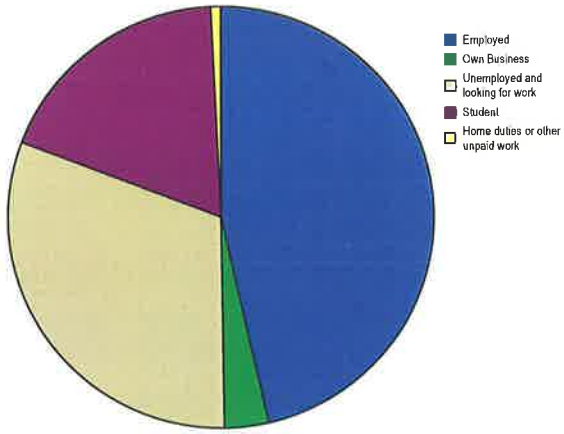
Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

Females: Broad Labour Force Status in Former Home Country



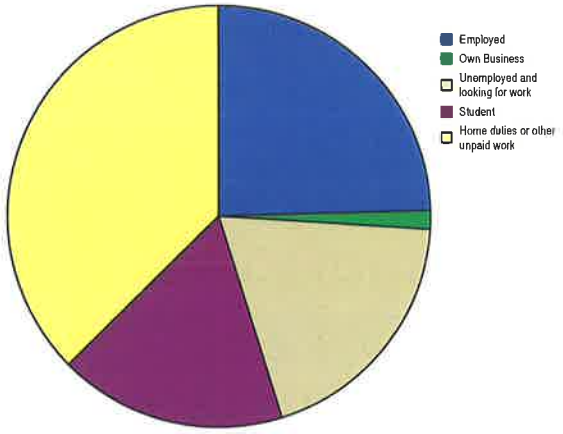
Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

Males: Broad Labour Force Status at Wave 1



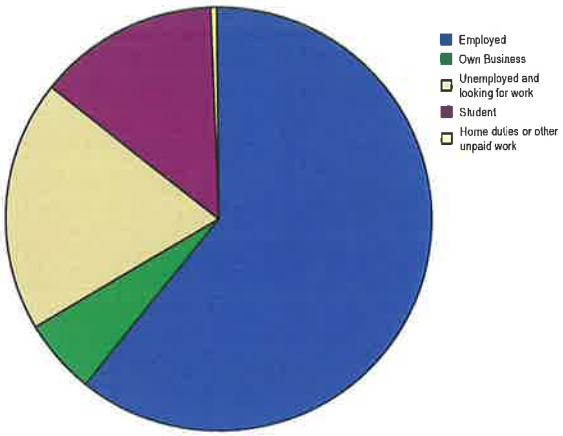
Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

Females: Broad Labour Force Status at Wave 1



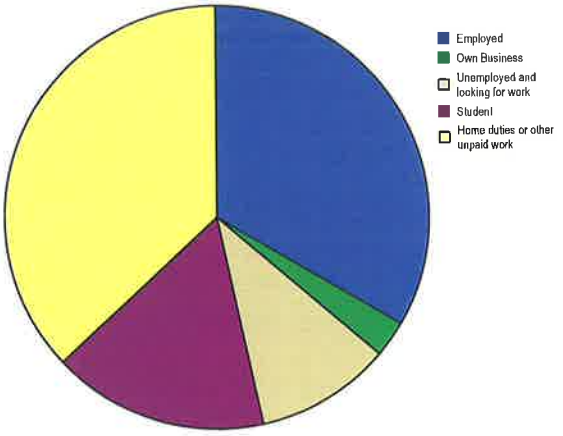
Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

Males: Broad Labour Force Status at Wave 2



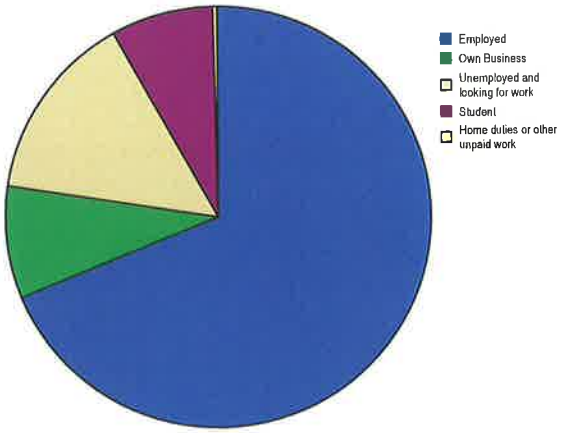
Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

Females: Broad Labour Force Status at Wave 2



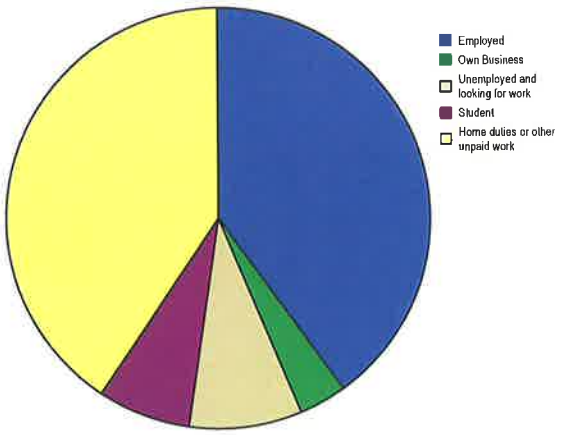
Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

Males: Broad Labour Force Status at Wave 3



Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

Females: Broad Labour Force Status at Wave 3



Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

About four fifth of males and two thirds of females were employed or conducting a business in the 12 months before migration. By wave 1, this proportion had fallen to about half for males and to a quarter for females. It then rose to two thirds for males (a third for females) at wave 2 and again to around three quarters for males (just under half for females) at wave 3. For males, unemployment rose from fewer than 5 percent prior to migration, to over 30% at wave 1, and declined to about 15% at wave 3, while for females, it rose from 3% to 19%, and then fell again to 9% at wave 3. Business ownership also declined from 15% (7% for females) to 3.3% (1.4%) at wave 1, then rose to around 8.6% (3.7%) at wave 3. In contrast, the proportion in education increased from 10% (13%) to 18% (17%) at wave 1, and then declined to 8% (7%) at wave 3. Prior to migration, 5% of males were 'at home', but this proportion declined to less than 1% after migration. Typically, the labour force supply functions of males are very inelastic. For females, the 'at home' trend was very different: 19% were 'at home' prior to migration. After migration this proportion jumped to 37% at wave 1, and then rose again to 41% at wave 3. This could mean that females found it best to stay at home in Australia,

perhaps due to family obligations and/or the employment (dis)incentive built into the Australian family welfare system.

At all three waves, males are overrepresented among the employed and the unemployed while almost all those at home are females. The proportion of students and the unemployed increased after migration for both gender, and both had a gradual recess at waves 2 and 3. Still, at wave 3, the proportion of the unemployed was three times higher than prior to migration for females and four times higher for males. There were twice as many females in home duties at wave 3 than before migration. Further details of the labour force status will be reported in Chapter 4 (Transition Probability Tables).

Table 3.1[12]: Broad Labour Force Status by Sex

Broad Labour Force Status by Sex													
		Employed		Own Business		Unemployed		Student		Home / Other		Total[1]	
		Number	% of All	Number	% of All	Number	% of All	Number	% of All	Number	% of All	Number	% of All
Before Migration	All	36,219	62.58	6,366	11.00	1,882	3.25	6,661	11.51	6,745	11.65	57,873	100.00
	Female	16,231	58.39	1,960	7.05	828	2.98	3,545	12.75	5,232	18.82	27,796	48.03
	Male	19,988	66.46	4,406	14.65	1,054	3.50	3,116	10.36	1,513	5.03	30,077	51.97
Wave 1	All	20,788	35.92	1,401	2.42	14,676	25.36	10,384	17.94	10,624	18.36	57,873	100.00
	Female	6,824	24.55	398	1.43	5,341	19.21	4,841	17.42	10,392	37.39	27,796	48.03
	Male	13,964	46.43	1,003	3.33	9,335	31.04	5,543	18.43	232	0.77	30,077	51.97
Wave 2	All	27,589	47.67	2,500	4.32	8,663	14.97	8,730	15.08	10,394	17.96	57,876	100.00
	Female	9,283	33.40	778	2.80	2,887	10.39	4,593	16.52	10,256	36.90	27,797	48.03
	Male	18,306	60.86	1,722	5.72	5,776	19.20	4,137	13.75	138	0.46	30,079	51.97
Wave 3	All	31,838	55.01	3,608	6.23	6,758	11.68	4,297	7.42	11,377	19.66	57,878	100.00
	Female	11,133	40.05	1,017	3.66	2,397	8.62	1,971	7.09	11,279	40.58	27,797	48.03
	Male	20,705	68.83	2,591	8.61	4,361	14.50	2,326	7.73	98	0.33	30,081	51.97

1: Total varies slightly due to rounding of weighted data

Source: LSIA

In the search for an easy and comprehensive way to analyse the data, the best way proved to be also the simplest: A three-way split of respondents according to their employment status at wave three (the outcomes), with reference to previous waves (the pathways to the outcome), as follows:

- 18,570 people said they were **employed at all three waves** (i.e. whose main activity was 'a wage or salary earner, conducting own business or other employed at wave 1, 2 and 3). Henceforth, this group will be referred to as **'Type 1'** respondents.

12 The percentage information in Table 2 needs some explanation: The percentages for females and males in all columns refer to the total number of the relevant gender, while the top right hand percentage for each cell refers to 57,876, the total weighted sample size (which may vary by one or two, due to rounding). For example, employed migrants prior to immigration (42,584) represent 73.58 percent of all immigrants (57,875). However, the females among them (18,190) are about 65% percent of all females.

- A further 17,144 people were reportedly **employed at wave 3 but not at wave 2 or/and wave 1** (in other words they had a spell of non-employment before wave 3). This group is hereafter called **'Type 2'** respondents. For information, 6,834 were non-employed at both waves 1 and 2; 8,867 people were non-employed at wave 1 only; and only 1,445 people were non-employed at wave 2 only.

- Finally, 22,161 people said they were **non-employed at wave 3** regardless of their status at wave 1 and 2. This group is hereafter referred to as **'Type 3'**. Of these, 17,586 were non-employed throughout the period under study (79.4 percent of the non-employed at wave 3), 1,331 were employed at Wave 1 only, 1,962 were employed at wave 2 only; and 1,280 were employed at both waves. In other words, the bulk of the non-employed at wave 3 were non-employed throughout the survey period[13].

This data filtering allows a clear cut analysis of the outcomes listed at the beginning of this section (labour force status, wages and occupation), but also – coincidently - offers a relatively even grouping of the data. Each sub-sample is large enough to allow for detailed analysis and statistical inference. All subsequent analyses distinguish between these 'Types' of immigrants. Comparisons between the three types and between each type and the total sample are made where appropriate. In addition to the immigrant '*Type*' subdivision of the sample, where appropriate, results are reported separately for males and females.

Following the immigrant '*Type*' filter, the first level of analysis consisted of defining the characteristics of those in each 'Type'. In particular, it is useful to estimate the determinants or predictors of immigrants who gain employment upon arrival. For Type 1 immigrants, besides knowing who they are, the main research focus will be on their earnings and occupational mobility. For Type 2 immigrants, it is interesting to know what pathways they follow towards employment, and how their wave 3 earnings and occupational attainments compare to those of Type 1 immigrants. For Type 3 immigrants, the goal will be to know who they are and what they do.

Chapter 4 gives a series of descriptive statistics pertinent to labour market information for each Type and by gender at each wave of the survey, as well as pre-migration information where available. In Chapter 5, Transition Probability Tables are given for labour force characteristics, wage mobility and occupational mobility, further extending the information presented in Table 3 and Chapter 4.

13 Note that following data transformations, there was some labour market reassignment, which resulted in a slight increase in the number of Type 3 people and a reduction in the number of people in the other two categories.

3.3. Modelling Labour Force Participation, Employment, Earnings and Occupational Attainment[14]

3.3.1. Labour Force Participation and Employment

Labour force participation can be broadly defined as a state where a person is either employed or unemployed and actively looking for employment. Therefore, with reference to the LSIA population subdivision chosen for Chart 1 and Table 2, '*students*' and '*others*' will be taken to be '*out of the labour force*', while '*employed*' and '*unemployed*' are '*in the labour force*' (or participate in the labour force). To be '*employed*' or '*unemployed*', one has to be part of the labour force. This is the usual terminology used in labour economics. While, generally, analyses of labour force participation take the population aged 15 or more as base; for the analysis of employment, it makes sense to reduce the base population to only those who participate in the labour force.

In this section, labour force participation is assumed given, and we focus only on employment (versus unemployment). However, labour force participation is analysed in exactly the same way. Separate theoretical discussions of the two issues would have been just a repetition of the same principles and methodology. The only difference between the two issues is the base population considered for analysis.

Provided that observed individuals participate in the labour force, employment is generally considered a discrete binary 'choice' or 'state', with unemployment as the alternative[15]. Like other dichotomous choices or states, they can be modelled using the Logit model. The Logit estimation is then used as a measure of the odds that a person will be in the observed state. Given that the focus group consists of all people (in the labour force or not), the simplest way to represent a person's employment status at time t would be in binary form as follows:

- $E_t = 1$ if the person is employed at time t, and
- $E_t = 0$ if he is unemployed

The reasoning of Logit models is that behind the dummy variable representing the observable dichotomous state, in this case E (for Employed), there is an underlying unobserved latent continuous variable corresponding to the 'probability', 'likelihood', 'ability', 'willingness' or 'propensity' (P_t^e) to be in the observed dichotomous state (E) at time t. The Logit regression for employment estimates the extent to which personal characteristics and 'environmental' factors have an effect on the odds that a person is employed. This can be expressed mathematically in the following equation:

14 All analyses were done separately for males and females.

15 For a thorough literature review of Qualitative Response Models, see Amemiya (1981), Journal of Economic Literature, Vol XIX (December), pp1483-1536.

$$Y_t = Ln\frac{P_t^e}{1-P_t^e} = \beta_0 + \sum_{j=1}^{K}\beta_j X_{tj} + U_t, \qquad (14)$$

The X_{tj}'s are observable characteristics or factors affecting the odds in favour of employment, the β's are coefficients measuring the relative influence of the X_{tj}'s, and the cumulative distribution of U is logistic (hence the name 'logit'), with mean 0 and variance 1[16]. If the group being assessed consists of people in the labour force only; then the expression $E_t = 0$ corresponds to the state of being unemployed.

It is necessary to keep in mind that results of simple Logit estimations are interpreted ***with reference to the alternative*** option or state. In the present case however, the population studied includes also people who were not in the labour force (i.e. not employed and not actively looking for work at time t, such as students and those whose activities are usually referred to as 'home duties')[17]. Therefore, there are several alternatives to employment, grouped in three: Unemployed, Student, or Home Duties/Other. This makes the analysis a little bit more elaborate, and requires the use of a choice of two options, both of which can be applied with the Multinomial Logistic estimation. The multinomial estimation method is similar to the simple Logit, except that it allows the analysis of several states, with one of them being the reference state.

- The first option consists of considering only people in the labour force and estimating the odds of being employed. This method would be preceded by a similar analysis of the odds of participating in the labour force, versus not participating. This option can be applied with either the simple Logit estimation method (for a binary dependent variable) or with the more general multinomial logistic method (where the dependent variable is categorical but can take on more than two values).

- The second option consists of taking the entire population and estimating simultaneously the odds of falling in one of three categories (employed, unemployed, student), with 'home duties' taken as reference. In this case, only the multinomial logistic method can be used, as the dependent variable has four possible values.

Given the extensive descriptive statistic and in the interest of brevity, the second option was used and the following were selected as potential explanatory variables:

16 For an elaborate discussion of Logit models see for example Maddala (1992), "Introduction to Econometrics", 2nd Ed, pp322-333.

17 This is why $E_t = 0$, in this case represents the 'non-employed' state, as distinct from the 'unemployed' state.

- Age bracket of the respondent at wave 1 (in brackets of 10 from 15 to 64).
- Former home region of the respondent,
- Visa category, with Humanitarian category as control variable
- Whether the person is married at wave 1 (or otherwise as control variable),
- English proficiency at wave 1 (high English proficiency dummy, with low or no English as control),
- Pre-migration Education Level at wave 1 (tertiary, technical or trade, with year 12 or less as control)
- Pre-migration Broad labour force status (four categories, with home duties as control), and
- Whether the person visited Australia prior to migration

Males' data was analysed separately from females' due to the markedly different labour force profile as indicated by the descriptive statistics. Results obtained using this model provided no further insight than the information presented in the descriptive statistics, and was therefore removed from the text.

3.3.2. Wages and Wage Mobility

The wage distribution was analysed at waves 1 and 3 for employed people at all waves (Type 1); while a separate analysis was conducted, only at wave 3, for people employed at wave 3 who gained employment after wave 1 (Type 2). Both wave 3 regressions were compared for the two types of immigrants. A separate regression of earnings was also fitted for all people employed at wave 3 regardless of their labour force status at wave 1 or 2 to assess the effect of labour force status at wave 1 and 2 on wave 3 earnings.

Following the discussion in section 3, in order to test how well the pure Human Capital Earnings Function fits the immigrants' data we have, the initial regression equation is both wave 1 and 3 was based on Mincer's formulation (equation 7), repeated below for reference:

$$LnY_t = \beta_0 + \beta_1 S + \beta_2 X_t + \beta_3 X_t^2 + U \qquad (15)$$

Several transformations were needed to arrive at a Mincer-type equation. Below is an explanation of these transformations and the variables within the LSIA data that correspond to each variable in the above model.

- ***Wages:***

A major shortfall of the LSIA dataset is that it reports weekly earnings (wages, salaries, and business, farm or partnership income) in discrete brackets rather than as a continuous variable, from zero to $SA 962 or more

per week. The relevant survey question asks: "Which one category best describes your average weekly income from all wage and salary jobs. That is before any deductions such as tax or superannuation? Just say the letter after the line". An additional issue is that wage brackets do not have the same width. This formulation of weekly earnings means that it is impossible to observe and therefore account for the distribution of earnings within earnings brackets with precision, thereby loosing sight of any intra-bracket information. For example, a person in the second bracket earns between $1 and $57 per week. In the estimation of earnings mobility, if this person really earns $10 per week at wave 1, and $50 at wave 3, it is impossible to account for this five-fold wage increase ($40 more). On the other hand, if this person earns $50 in wave 1 and $60 in wave 3, the 1.2 fold increase ($10 more) is accounted for.

There are techniques for estimating the unobserved wage distribution within brackets, but these techniques require additional assumptions which were out of the scope of this Thesis, and previous research has concluded that the value-added from these techniques is very small (for example, see Miller, 1989[18]). Instead of approximating the earnings distribution in each bracket, it was simply and rather crudely assumed that earnings are evenly distributed within each earnings bracket, so that on average the mean, and median wages are the same; and that each bracket can be estimated by its mean. The open-ended bracket was initially assumed to be equal to 1.5 times its lower bound, following other past research practices. Again, this was a crude estimation. Using this option (1.5 times $962=$1,443) tended to excessively inflate the distribution of earnings at the top, leading to high volatility in the estimations and possible heteroskedasticity.

There are other ways of estimating the open-ended bracket, including an algorithm presented in Jones (1989 - http://ipumsi.anu.edu.au/calculate.phtml), which takes into consideration the second last bracket's values as well as its frequency to calculate imputed mean and median for the last bracket. Jones cites two methods/sources for estimating the open-ended bracket (Miller, 1964; and Parker and Fenwick, 1983). In particular Parker and Fenwick recommend using the median for estimation[19]. This technique resulted in different approximations for each wave, due to the different frequencies within the second last bracket. This method was preferred to the first one. However, due to the potential bias caused by the different imputed wages for each wave, it was decided to retain the value obtained for wave 1 (which turned out to be $ 1,169) and impose it on all waves[20]. For all subsequent calculations and estimations, weekly wages in the last open-

18 Miller, P.W. 1989. "An Economic Analysis of Citizenship in Australia" Photocopied. Nedlands: University of Western Australia, Department of Economics.

19 Jones: (http://ipumsi.anu.edu.au/calculate.phtml) refers to the algorithm for calculating Pareto income estimate for open-ended bracket described in Herman P. Miller (1966), US Bureau of Statistics, Income Distribution in the United States, a 1960 Census Monograph, pp 216-217; and presents a calculation tool for the algorithm for calculating the last income category median or mean described in Parker and Fenwick, Social Forces, 61, March 1983, page 875. This later tool was utilised for the calculation of the last bracket imputed income.

20 This option gives an amount similar to the one obtained by imposing that the imputed earnings value equals the lower bound of the open-ended bracket plus the bandwidth of the second last bracket, which gives $1,153 per week ($962 + 191).

ended bracket are assumed to be $1,169 per week. Table 4 below presents the weekly wage brackets, their respective bandwidths and the assigned value.

Table 3.2: Weekly Wage Bands and Wage Mid-Points

Wage Bracket	Bandwidth	Assigned value (Mid Point)
None	0	0
$1 - $57	57	$29.00
$58 - $96	39	$77.00
$97 - $154	58	$125.50
$155 - $230	76	$192.50
$231 - $308	78	$269.50
$309 - $385	77	$347.00
$389 - $481	96	$433.50
$482 - $577	96	$529.50
$578 - $673	96	$625.50
$674 - $769	96	$712.50
$770 - $961	191	$865.50
$962+	***	$1,169.00

Following this transformation of wage brackets into mid-bracket wage values, it was necessary to control for hours worked on weekly incomes. As we will see further below, failure to control for hours worked can (and has) lead to the wrong conclusions. For example, when two people earn an imputed amount of $712.50 per week, but work respectively 10 and 20 hours a week, it is necessary to account for this difference so that they earn respectively $71.25 and $35.63 per hour. Besides refining the precision of the true earnings distribution, an additional bonus from calculating hourly earnings is that it further smoothes out the arbitrariness imposed by the earnings data in terms of brackets: Calculating hourly earnings effectively resulted in a pseudo-continuous earnings distribution, making it possible to effectively assume continuity of the earnings distribution[21]. Nonetheless, it is important to point out that results obtained from this analysis should be interpreted with the caveat that the hourly wage have been approximated and not directly observed.

The LSIA data accounts for three kinds of paid time (only job, first job and second job)[22]. Although the survey questionnaires indicates that data on hours worked was collected only for people who were employed in a paid job (excluding those who owned a business), the LSIA dataset includes hours worked information for all respondents, regardless of their main activity. In the creation of hourly wages, an important assumption was made: Employed people whose hours worked were not reported and who did not report any other source of paid income (second job or business) were assumed to have worked 40 hours a week. The choice of 40 hours a week is due to the fact that 40 hours is the mode and corresponds roughly to full time work.

21 The assumption of continuity is, mathematically and economically, very important for optimization purposes and for any function to be adequately estimated using standard OLS regression techniques.

22 Although for wave 1, only two of these work times are available.

Subsequently, it was a matter of dividing the total weekly wages by the number of hours worked per week in a job or business (for non-zero hours). All people who had previously reported being employed or in business, but who, either reported zero hours worked or zero earnings, were recoded as unemployed. Following this reassignment of labour force statuses, we ended up with:

- 11,199 Type 1 males and 4,211 Type 1 females (total 15,410);
- 9,504 Type 2 males and 6,923 Type 2 females (total 16,427);
- 9,375 Type 3 males and 16,664 Type 3 females (total 26,039).

About 37 percent of all males were employed at all three waves (Type 1); with the remaining types equally balanced; while 60 percent of females were non-employed throughout the period (Type 3) and only 15 percent of females were Type 1.

Finally, the natural logarithm of hourly wages was computed to form the dependent variable in equation 15.

A plot of the hourly wages revealed a small number of outliers. These consisted essentially of people who reported being in the highest earnings bracket, but said they only worked less than five hours a week or so. In order to reduce the effect of these outliers on the overall estimation, hourly wages below $1 or above $60 were removed from the wages and wage mobility analyses. This corresponded to the removal of 3 people with wages higher than $60 per hour and 4 people whose hourly wage was below $1 at wave 1, as well as 6 people who earned more than $60 per hour and 11 people who earned less than $1 at wave 3. One of these was the same person in both waves. The earnings information at wave 2 is of little concern because for earnings mobility, only wave 1 and 3 are considered.

- ***Wage Mobility***

Following the above-described methodology used for the estimation of wages, the computation of wage mobility was relatively straightforward: For Type 1 people whose hourly wage was between $1and $60 at both wave 1 and Wave 3,

[Wage Mobility] = {[Wage at Wave 3] – [Wage at Wave 1]} / [Wage at wave 1]

The wage mobility variable (WAGEMOB) was used as the dependent variable for estimating wage mobility from wave 1 to wave 3, under the premise that the determinants of wages at wave 3 can, in theory, also explain the distribution of wage mobility.

- ***Years of Schooling:***

The variable E in Mincer's equation (7) refers to years of studies. The LSIA dataset is rich in the education aspect of immigrants. There is information not only about detailed pre-migration education levels (from less than 6 years of schooling to postgraduate or higher), but also about the field of study (area of educational focus), the schooling style (full time, part time, apprenticeship, etc...), as well as the number of years of post-secondary studies, for those with tertiary or professional qualifications.

While in the estimation of the likelihood of participation and employment, categorical variables for education levels were used, a continuous variable, Years of Schooling (YOS), is used as variable S in the estimation of the determinants of earnings and earnings mobility. In the estimation of years of studies, information on education level was taken for people who reported having year 12 or equivalent, or less, and recoded in years of studies as follows:

- Those with 12 years or more (but no degree), were assumed to have 12 years of studies;
- Those who had finished years 10-11 were given 10.5 years of schooling;
- Those with year 7-9 were given 8 years of schooling;
- Those with year 6 or less were given five years of schooling;
- Those classified as 'other' were assumed to have zero years of schooling.

For people with post-secondary qualifications, there was direct information on how long it took them to complete their qualification. However, consideration needed to be given to their 'enrolment status':

- Those who reported studying full time were imputed the years they reported plus 12 (for primary and secondary education);

- For those who studied part time, some full time and some part time, or through an apprenticeship, it was considered that their studies were half time and their years of studies were assumed to be half of the time it took them to complete their qualifications.

The final distribution of years of schooling ranges from zero to 29 (for information only, the person who has 29 years of schooling is a life scientist, by ASCO 1 classification).

- ***Experience:***

Variables X and X^2 in Mincer's earnings equation refer to an estimation of 'potential' experience, which is taken to be equal to [Age] – [Years of Schooling] – [5 years][23], and its square. Using this method resulted in four observations having negative years of experience, partly due to the use of estimated years of schooling in the formula for potential experience. These observations were simply recoded as having zero years of experience. Last, following from Mincer, the square of Years of experience was computed.

Following the estimation of Mincer's equation, other variables were added onto it through a stepwise regression method and their contribution to the wage distribution was assessed. The variables added to Mincer's equation are:

(a) for wages at wave 1:
- Dummies for visa category,
- Dummies for former main region of residence,
- Dummies for initial place of residence (initially, dummies were created for cities that had 5% of more of the respondents. Following preliminary results, it was decided to just have a dummy variable equal to one if the respondent settled in Sydney, Melbourne or Brisbane (SYMEBRI));
- Dummy for whether the respondent is married;
- Dummy for whether the person is proficient in English – A person is considered as having high English proficiency if she speaks reads and writes English well or very well or does so for at least two of the three measures of English skills.

(b) for wages at wave 3 and wage mobility of people employed at all waves (Type 1): In addition to the above, the following variables were included in the model and their contribution was assessed:
- Hourly wage at wave 1 and wave 2 (not included for the estimation of earnings mobility);
- Initially, a dummy for whether the person changed jobs between wave 1 and wave 3 was also created, but it was found that very few people changed jobs between waves so that this dummy was dropped. The lack of job mobility is a central issue of the findings of this research. Past wage mobility research has consistently found that most wage mobility comes from job mobility. More comments on this puzzle will be given further below.

23 Some studies use 5 years, while others use 6, depending on the age at which school starts in the relevant country. Either one is fine as this term is a constant and has little effect on the accuracy of the earnings regression estimation.

(c) For wages at wave 3 of people employed at wave 3 but not at wave 1 or/and 2 (Type 2), as well as for comparison between Types 1 and 2 respondents, dummy variables for broad labour force status at wave 1 and 2 were included instead of variables reported at point (b) above.

The results of the earnings and earnings mobility analysis are presented in Section 5.2 below.

3.3.3. Occupations and Occupational Mobility

In order to complement the wage and wage growth analysis, the ANU3.1 index data was also intended to be used as a dependent variable in the same regressions as the ones where the hourly wages were used. However, for reasons explained in Section 5.3 below, such a regression was, in the end, not necessary. Nevertheless, ANU3.1 data was used in descriptive statistics to analyse immigrants' occupational mobility.

The LSIA does not include the ANU3.1 scores, but has detailed information on respondents' occupation, coded according to the Australian Standard Classification of Occupations – version 1 (ASCO 1). Information on the ANU3.1 scores is available for download on http://ipumsi.anu.edu.au/calculate.phtml. This information was downloaded and matched with the LSIA respondents' occupational classifications 12 months prior to migration, and at each one of the three waves of the survey.

The additional benefit of including the ANU scores analysis is that this allows the researcher to truly compare pre-migration conditions to post-migration pathways up to wave 3. A similar analysis was conducted by Chiswick, Lee and Miller (2003 – Discussion paper and forthcoming publication) as a test for the immigrants' assimilation hypothesis. They found that effectively the ANU3.1 scores follow an unfinished U shaped transition, with immigrants entering the Australian labour market through jobs with lower ANU3.1 scores than the ones they had prior to migration, then moving gradually upwards towards jobs with similar ANU3.1 scores than pre-migration, albeit by wave 3, the upward transition remains to be finished. This suggests the presence of assimilation, but complete assimilation takes longer than four years of settlement. A big question mark that a comparison between Chiswick *et al*'s work and the almost total lack of job mobility raises is how can there be occupational mobility after migration if people are not changing jobs? Chiswick *et al*'s findings will be cross-checked. Results from the estimation of occupational attainment and their comparisons with those of the wage and wage mobility estimation are presented in Section 5.3.

CHAPTER 4:

DESCRIPTIVE STATISTICS

4.1. Background

As an introduction to this chapter, let us recap the data analysis progress so far: Each one of the respondents to all three waves of the LSIA 1 was assigned specific weight to allow the researchers to extrapolate results to the whole onshore immigrant population (that is all immigrants visaed offshore, who effectively settled in Australia at the same period as the surveyed sample). Weighted data shows a total of 57,876 new migrants aged 15 to 64, who were not pensioners or retirees and whose main activity was known at the time of the survey interview. 52 percent were male and 48 percent were female. For analytical purposes, this population was split in the three sub-samples according to their employment status (Type 1, 3 and 3) as described in Section 3. This chapter's objective is to give the reader a more detailed inspection of the characteristics of people in these three subgroups and separated by gender.

A series of descriptive statistics, including some demographic information and transition probability tables (or turnover tables), pertaining to these three groups' characteristics are presented in tabular form and discussed below. In addition to standard theory, the information given below will serve as a guide in the selection of key variables for analysing the determinants of wave 3 outcomes. The demographic information below comprise the age distribution of respondents, their visa categories, marital status and English proficiency at wave 1, their pre-migration formal qualifications, as well as their re-emigration expectations at wave 3. Further down, transition probability tables for labour force status for all respondents, use of qualifications for Types 1 and 2 respondents, as well as occupational mobility for Type 1 respondents are presented and discussed.

4.2. Demographic statistics

- ***Gender and Age***

Of the 57,876 immigrants, 52 percent or 30,079 are male and the remaining 48 percent or 27,797 are female. However, employment statuses are not evenly distributed by gender: Of the 18,570 employed at all three waves (Type 1), male respondents represent 73.5 percent. On the other hand, females are over-represented among the non-employed at wave 3 (Type 3), with a proportion of 70 percent.

The immigrants' population is relatively young, with 51.5 percent of them aged between 25 and 34. A further 22 percent are aged between 35 and 44 and 19.5% are younger, aged 15 to 24 year old. On average, younger females aged 15 to 24 are almost the double of younger males, with 12.7 percent of the total versus 6.8 percent, indicating a relatively younger female migrant population, in comparison to their male counterparts. This might explain why more females than males are not in the labour force, but it does not explain why they are mostly 'at home' and not in formal education.

Table 4.1: Age Distribution by Type and Sex

TYPE 1 MALES: Age Groups at Wave 1

	Frequency	Percent
1 15 to 24	1175	10.5
2 25 to 34	7075	63.2
3 35 to 44	2679	23.9
4 45 to 54	253	2.3
5 55 to 64	16	.1
Total	11199	100.0

TYPE 2 MALES: Age Groups at Wave 1

	Frequency	Percent
1 15 to 24	1213	12.8
2 25 to 34	5089	53.5
3 35 to 44	2526	26.6
4 45 to 54	573	6.0
5 55 to 64	105	1.1
Total	9505	100.0

TYPE 3 MALES: Age Groups at Wave 1

	Frequency	Percent
1 15 to 24	1558	16.6
2 25 to 34	3974	42.4
3 35 to 44	2338	24.9
4 45 to 54	1229	13.1
5 55 to 64	276	2.9
Total	9375	100.0

TYPE 1 FEMALES : Age Groups at Wave 1

	Frequency	Percent
1 15 to 24	577	13.7
2 25 to 34	2628	62.4
3 35 to 44	916	21.8
4 45 to 54	89	2.1
Total	4210	100.0

TYPE 2 FEMALES: Age Groups at Wave 1

	Frequency	Percent
1 15 to 24	1619	23.4
2 25 to 34	3596	52.0
3 35 to 44	1544	22.3
4 45 to 54	159	2.3
5 55 to 64	4	.1
Total	6921	100.0

TYPE 3 FEMALES: Age Groups at Wave 1

	Frequency	Percent
1 15 to 24	5156	30.9
2 25 to 34	7441	44.7
3 35 to 44	2612	15.7
4 45 to 54	1155	6.9
5 55 to 64	301	1.8
Total	16665	100.0

A breakdown of this general information is given in the above Tables. The 25 to 34 year old are over-represented among Type 1 for both genders, counting for 63 percent of males and 62 percent of females. This is not a surprise as this age group is usually the most active in employment. Older men and women (45 and older) as well as younger ones (15 to 24) are more likely to be Type 3.

In summary being 25 to 34 years old is associated with higher chances than average of being in employment; while being of any other age group carries a higher risk of being non-employed at all three waves.

- ***Visa Category***

Immigrants under the Preferential Family/Family Stream visa grouping count for 56.2 percent of all recent immigrants. The next group in numbers are the 'Independent' immigrants for 18.2 percent, then 'Humanitarian' immigrants for 13.9 percent, then 'Concessional Family/Skilled Australian Linked' for 8.5 percent, and finally, 'Business Skills/Employer Nomination Scheme' for just 3.2 percent. A higher than average proportion of females are in the Preferential Family/Family Stream category, counting for 36.2 percent of the total, versus just 20.1 percent for males (which makes up 56.2 of the total). Consequently, females are underrepresented in all other visa categories.

Table 4.2: Visa Category Distribution by Type and Sex

TYPE 1 MALES: MAJOR VISA GROUP

	Frequency	Percent
1 PREF FAM	4447	39.7
2 CONC FAM / SAL	1483	13.2
3 BUSINESS / ENS	924	8.3
4 INDEPENDENT	4004	35.8
5 HUMANITARIAN	341	3.0
Total	11199	100.0

TYPE 2 MALES: MAJOR VISA GROUP

	Frequency	Percent
1 PREF FAM	3347	35.2
2 CONC FAM SAL	1146	12.1
3 BUSINESS / ENS	98	1.0
4 INDEPENDENT	2515	26.5
5 HUMANITARIAN	2400	25.2
Total	9505	100.0

TYPE 3 MALES: MAJOR VISA GROUP

	Frequency	Percent
1 PREF FAM	3811	40.6
2 CONC FAM /SAL	948	10.1
3 BUSINESS / ENS	527	5.6
4 INDEPENDENT	1466	15.6
5 HUMANITARIAN	2622	28.0
Total	9375	100.0

TYPE 1 FEMALES: VISA MAJOR VISA GROUP

	Frequency	Percent
1 PREF FAM	2474	58.8
2 CONC FAM / SAL	449	10.7
3 BUSINESS / ENS	161	3.8
4 INDEPENDENT	1055	25.1
5 HUMANITARIAN	71	1.7
Total	4210	100.0

TYPE 2 FEMALES: MAJOR VISA GROUP

	Frequency	Percent
1 PREF FAM	4910	70.9
2 CONC FAM / SAL	497	7.2
3 BUSINESS / ENS	22	.3
4 INDEPENDENT	818	11.8
5 HUMANITARIAN	675	9.8
Total	6921	100.0

TYPE 3 FEMALES: MAJOR VISA GROUP

	Frequency	Percent
1 PREF FAM	13557	81.4
2 CONC FAM / SAL	400	2.4
3 BUSINESS / ENS	98	.6
4 INDEPENDENT	671	4.0
5 HUMANITARIAN	1939	11.6
Total	16665	100.0

In terms of employment outcomes, for males there seems to be no clear relationship between visa category and employment outcomes for Preferential Family and Concessional Family immigrants. For other visa categories the trend is very obvious: Business migrants are either Type 1 or Type 3; Independent migrants are more likely to be Type 1, while being a Humanitarian immigrant carries a high risk of being either Type 2 or three. There are hardly any Humanitarian immigrants among Type 1 males, and hardly any business/ENS immigrants among Type 2 males. For females Preferential Family and Humanitarian females are concentrated within Type 3 and Type 2, while females in the other visa categories are more likely to be Type 1. Most of the results presented in this subsection are normally expected.

- ***Marital Status***

Three quarters of immigrants were married at the time of the first wave interview, evenly divided between genders. A further 21.7 percent were never married, most of them males (13.6 percent against 8 percent of females). The remaining 3.4 percent were separated, divorced or widowed. Against the general trend, females who never married were more likely to be in employment at all waves in comparison to the average.

While people of both sexes who never married were more likely to be employed at all waves (28 percent of this group of males and 38 percent of females, versus 21.7 percent of all immigrants), married females were more likely to be Type 3 (85 percent of Type 3 females are married, compared to 57 percent of Type 1 and 74 percent of type 2). For males, the effect of marriage is almost absent as the proportions of married men and those of men who never married are close for all three Types.

Table 4.3: Marital Status by Type and Sex

TYPE 1 MALES: MARITAL STATUS AT WAVE 1

MARITAL STATUS	Frequency	Percent
1 MARRIED	7731	69.0
2 SEPARATED	102	.9
3 DIVORCED	180	1.6
5 NEVER MARRIED	3185	28.4
Total	11199	100.0

TYPE 2 MALES: MARITAL STATUS AT WAVE 1

	Frequency	Percent
1 MARRIED	7032	74.0
2 SEPARATED	82	.9
3 DIVORCED	51	.5
4 WIDOWED	22	.2
5 NEVER MARRIED	2319	24.4
Total	9505	100.0

TYPE 3 MALES: MARITAL STATUS AT WAVE 1

	Frequency	Percent
1 MARRIED	6826	72.8
2 SEPARATED	41	.4
3 DIVORCED	105	1.1
4 WIDOWED	13	.1
5 NEVER MARRIED	2390	25.5
Total	9375	100.0

TYPE 1 FEMALES: MARITAL STATUS AT WAVE 1

	Frequency	Percent
1 MARRIED	2393	56.8
2 SEPARATED	27	.6
3 DIVORCED	181	4.3
4 WIDOWED	20	.5
5 NEVER MARRIED	1582	37.6
Total	4210	100.0

TYPE 2 FEMALES: MARITAL STATUS AT WAVE 1

	Frequency	Percent
1 MARRIED	5146	74.4
2 SEPARATED	60	.9
3 DIVORCED	113	1.6
4 WIDOWED	102	1.5
5 NEVER MARRIED	1500	21.7
Total	6921	100.0

TYPE 3 FEMALES: MARITAL STATUS AT WAVE 1

	Frequency	Percent
1 MARRIED	14203	85.2
2 SEPARATED	221	1.3
3 DIVORCED	309	1.9
4 WIDOWED	361	2.2
5 NEVER MARRIED	1571	9.4
Total	16665	100.0

These results suggest that being married carries a high risk of non-employment for females, but has a relatively small effect on employment of males. This is consistent with the traditional stereotype of a male breadwinner and his wife who looks after the home and children.

- ***English Proficiency***

Due to the way English proficiency variables were set up in the data file, it was necessary to make a couple of assumptions in order to generate consistency between the analysis of responses to the questions on spoken, written and read English.

First, for all people who named English as an answer to the question 'What language do you speak well?' or to the question 'What is the main language spoken in your Australian home?' but for whom there were no responses to questions 'How well would you say you speak/read/write English?', their responses to the last question(s) were recoded as 'Very well or well'. The assumption here is that if one speaks English well among other languages, or if English is their main language at home, then they ought to speak it well.

Second, for people who answered 'Not at all' to the question 'How well would you say you speak English?' but who did not have an answer to the questions 'How well would you say you read/write English?' their missing response was recoded as 'Not at all'. The assumption is that if one cannot speak a language, generally they cannot read or write it either. Following these transformations, a variable called ENGPRO was computed as an average of responses to how well respondents speak, read and write English. This variable serves as a summary of the three aspects of English proficiency for the immigrant. In this section, only English proficiency at Wave 1 is considered.

Table 4.4: English Proficiency Distribution by Type and Sex

TYPE 1 MALES: English Proficiency at wave 1

	Frequency	Percent
1.00 - HIGHEST	9526	85.1
1.33	415	3.7
1.67	339	3.0
2.00	665	5.9
2.33	96	.9
2.67	19	.2
3.00 - LOWEST	139	1.2
Total	11199	100.0

TYPE 2 MALES: English Proficiency at wave 1

	Frequency	Percent
1.00 - HIGHEST	5168	54.4
1.33	969	10.2
1.67	904	9.5
2.00	1696	17.8
2.33	219	2.3
2.67	22	.2
3.00 - LOWEST	527	5.5
Total	9505	100.0

TYPE 3 MALES: English Proficiency at wave 1

	Frequency	Percent
1.00 - HIGHEST	4161	44.4
1.33	847	9.0
1.67	945	10.1
2.00	1904	20.3
2.33	106	1.1
2.67	140	1.5
3.00 - LOWEST	1272	13.6
Total	9375	100.0

TYPE 1 FEMALES: English Proficiency at wave 1

	Frequency	Percent
1.00 - HIGHEST	3897	92.6
1.33	95	2.3
1.67	47	1.1
2.00	134	3.2
2.33	5	.1
2.67	4	.1
3.00 - LOWEST	28	.7
Total	4210	100.0

TYPE 2 FEMALES: English Proficiency at wave 1

	Frequency	Percent
1.00 - HIGHEST	4206	60.8
1.33	400	5.8
1.67	499	7.2
2.00	1213	17.5
2.33	83	1.2
2.67	42	.6
3.00 - LOWEST	478	6.9
Total	6921	100.0

TYPE 3 FEMALES: English Proficiency at wave 1

	Frequency	Percent
1.00 - HIGHEST	7121	42.7
1.33	1754	10.5
1.67	1188	7.1
2.00	3051	18.3
2.33	278	1.7
2.67	138	.8
3.00 - LOWEST	3134	18.8
Total	16665	100.0

It is clear that English proficiency is closely related to employment outcomes: As many as 85 percent of Type 1 males and 93 percent of Type 1 females had the highest level of English proficiency at wave 1. This compares to 54 percent (males) and 60 percent (females) of Type 2; and just 44 percent and 42 percent for Type 3. On the other hand, those with the lowest English proficiency level (could not speak, read or write English at all) are concentrated among Type 3 people. This is confirmation that English proficiency is a very important skill to have for one to be able to gain employment in Australia.

- ***Formal Qualifications***

At wave 1, respondents were asked to indicate the equivalent of their formal pre-migration qualifications within a range of educational levels (ranging from postgraduate and higher degree down to less than 6 years of schooling). The tables below show that 19.3 percent of Type 1 males (16 percent for females) had postgraduate qualifications. This compares to 15 percent of Type 2 (8 percent) and 12 percent of Type 3 (6 percent).

Having a bachelors' degree was also positively related to employment: 23 percent of Type 1 males (29 percent for females) had a bachelor's degree, compared to 21 (26) percent of Type 2 and 17 (19) percent of Type 3. There was a similar trend for technical, professional diploma and certificates for both genders, as well as trade qualifications for males. Type 3 respondents had a higher proportion of people with year 12 or less. A tertiary qualification seems to be crucial in securing employment for recent immigrants.

Table 4.5: Pre-Migration Formal Qualifications by Type and Sex

TYPE 1 MALES: HIGHEST FORMAL QUALIFICATIONS

	Frequency	Percent
1 Higher degree	1341	12.0
2 Postgrad diploma	815	7.3
3 Bachelor degree	2590	23.1
4 Tech/Prof Dipl/Cert	2595	23.2
5 Trade	1757	15.7
6 Year 12	1230	11.0
7 Year 10-11	517	4.6
8 Year 7-9	245	2.2
9 Year 6 or less	93	.8
Total	11199	100.0

TYPE 2 MALES: HIGHEST FORMAL QUALIFICATIONS

	Frequency	Percent
1 Higher degree	911	9.6
2 Postgrad diploma	472	5.0
3 Bachelor degree	2015	21.2
4 Tech/Prof Dipl/Cert	2266	23.8
5 Trade	1164	12.3
6 Year 12	1304	13.7
7 Year 10-11	575	6.1
8 Year 7-9	558	5.9
9 Year 6 or less	240	2.5
Total	9505	100.0

TYPE 3 MALES: HIGHEST FORMAL QUALIFICATIONS

	Frequency	Percent
1 Higher degree	710	7.6
2 Postgrad diploma	435	4.6
3 Bachelor degree	1628	17.4
4 Tech/Prof Dipl/Cert	1840	19.6
5 Trade	949	10.1
6 Year 12	1601	17.1
7 Year 10-11	1002	10.7
8 Year 7-9	703	7.5
9 Year 6 or less	463	4.9
Total	9375	100.0

TYPE 1 FEMALES: HIGHEST FORMAL QUALIFICATIONS

	Frequency	Percent
1 Higher degree	297	7.1
2 Postgrad diploma	362	8.6
3 Bachelor degree	1238	29.4
4 Tech/Prof Dipl/Cert	1402	33.3
5 Trade	29	.7
6 Year 12	531	12.6
7 Year 10-11	207	4.9
8 Year 7-9	135	3.2
9 Year 6 or less	10	.2
Total	4210	100.0

YPE 2 FEMALES: HIGHEST FORMAL QUALIFICATIONS

	Frequency	Percent
1 Higher degree	268	3.9
2 Postgrad diploma	250	3.6
3 Bachelor degree	1862	26.9
4 Tech/Prof Dipl/Cert	1384	20.0
5 Trade	142	2.0
6 Year 12	1268	18.3
7 Year 10-11	561	8.1
8 Year 7-9	684	9.9
9 Year 6 or less	424	6.1
Total	6921	100.0

YPE 3 FEMALES: HIGHEST FORMAL QUALIFICATIONS

	Frequency	Percent
1 Higher degree	434	2.6
2 Postgrad diploma	522	3.1
3 Bachelor degree	3181	19.1
4 Tech/Prof Dipl/Cert	3348	20.1
5 Trade	305	1.8
6 Year 12	3661	22.0
7 Year 10-11	2231	13.4
8 Year 7-9	1776	10.7
9 Year 6 or less	1097	6.6
Total	16665	100.0

- ***Re-emigration expectation***

A short note on re-emigration expectations of immigrants is necessary because, *a priori*, employment and re-emigration expectations can influence each other: For policy reasons, there is no need to be overly concerned about the employment outcome for immigrants who might use Australia as a transit country to somewhere else. On the other hand, from the immigrant's point of view – in particular for economic immigrants - , a poor labour market experience can lead to re-emigration. The data seems to contradict this initial assessment, as we show below.

Table 4.6: Re-emigration Expectations by Type and Sex

TYPE 1 MALES: Expect to Re-Emigrate at Wave 3

	Frequency	Percent
1 Yes - to former home country	333	3.0
2 Yes - to another country	136	1.2
3 No	9832	87.8
4 Not Sure or Not Reported	898	8.0
Total	11199	100.0

TYPE 1 FEMALES: Expect to Remigrate at Wave 3

	Frequency	Percent
1 Yes - to former home country	116	2.8
2 Yes - to another country	50	1.2
3 No	3888	92.4
4 Not Sure or Not Reported	156	3.7
Total	4210	100.0

TYPE 2 MALES: Expect to Remigrate at Wave 3

	Frequency	Percent
1 Yes - to former home country	353	3.7
2 Yes - to another country	29	.3
3 No	8576	90.2
4 Not Sure or Not Reported	548	5.8
Total	9505	100.0

TYPE 2 FEMALES: Expect to Remigrate at Wave 3

	Frequency	Percent
1 Yes - to former home country	184	2.7
2 Yes - to another country	115	1.7
3 No	6220	89.9
4 Not Sure or Not Reported	402	5.8
Total	6921	100.0

TYPE 3 MALES: Expect to Remigrate at Wave 3

	Frequency	Percent
1 Yes - to former home country	128	1.4
2 Yes - to another country	53	.6
3 No	8775	93.6
4 Not Sure or Not Reported	419	4.5
Total	9375	100.0

TYPE 3 FEMALES: Expect to Remigrate at Wave 3

	Frequency	Percent
1 Yes - to former home country	554	3.3
2 Yes - to another country	110	.7
3 No	15242	91.5
4 Not Sure or Not Reported	758	4.6
Total	16665	100.0

At each wave, respondents were asked whether they expect to emigrate to their former home country or to another country. From the responses obtained at wave 3, around 4.2 percent of Type 1 male respondents expect to re-emigrate, against 4 percent for Type 2 and 2 percent for Type 3. For females, 4 percent of Type 1 immigrants expect to re-emigrate compared to 4.4 percent of Type 2 and 4 percent of Type 3. For males, more Type 1 people than average expect to re-emigrate; while for females, there are no real differences in the re-emigration expectations among Types.

4.3. Labour Force Transition Probability Tables

While the statistical information presented above gives some broad demographic idea on who is most likely to be in one or the other employment group, it does not give any indication on mobility or change over time. There is no information on the labour force or occupational road taken by immigrants between wave 1 (or their pre-migration status where data is available) and their labour force or occupational status at wave 3. Transition probability tables provide the most basic and easiest way to analyse stability or change between two status variables and between two points in time. In the present case, it will be between 12 months prior to migration (where data is available) and wave 1, between wave 1 and 2, and between wave 2 and 3.

Below, a number of tables showing descriptive statistics pertaining to the labour market and occupational changes from former home country (where data exists), to wave 1, wave 2 and wave 3 states are presented and discussed. In order to simplify and focus the discussion, the three employment groups are treated separately and specific information is analysed for each group:

- For Type 1 immigrants, the focus will be on their use of qualifications. Wages and occupational mobility will be analysed in detail in Chapter 5.
- For Type 2 immigrants, it will be interesting to look at their main activity prior to wave 3, their use of qualifications at wave 3 and its comparison with that of Type 1 immigrants.
- For Type 3 immigrants, those non-employed at wave 3, only their main activity prior to wave 3 will be analysed, then a comparison with Group 2 of main activities prior to wave 3 will be made.

The main point of this section is, for each group, to analyse any general trends, which each group or any subgroup of each group has in common and which separates it from the rest of immigrants.

4.3.1. Type 1 Respondents

- ***Pre-migration Labour Force Status (Main Activity)***

As shown in Chapter 3 (Chart 1 and Table 2), about three quarters (exactly 73.6 percent) of all immigrants under study were employed or had their own business in the 12 months prior to immigration (81 percent of males and 65 percent of females). The students and those occupied with home duties (or arranging the migration process) represented roughly the same proportion (11.5 and 11.7 percent), while only 3.3 percent were unemployed and looking for work.

Table 4.7: Type 1 Immigrants' Labour Force Status Transition Tables

Type 1 Males: Broad Labour Force Status in Former Home Country

	1 Employed	2 Own Business	3 Unemployed	4 Student	5 Home duties	Total
Count	8848	1086	339	602	324	11199
%	79.0%	9.7%	3.0%	5.4%	2.9%	100.0%

Type 1 Females: Broad Labour Force Status in Former Home Country

	1 Employed	2 Own Business	3 Unemployed	4 Student	5 Home duties	Total
Count	3609	107	77	218	200	4211
%	85.7%	2.5%	1.8%	5.2%	4.7%	100.0%

In comparison to the average of all respondents, 89 percent of Type 1 male respondents (88 percent for females), were also employed or had a business in the 12 months prior to immigration; just over 5 percent were students while the unemployed and those 'at home' represented less than 5 percent each. Prior employment seems to signal a higher likelihood of employment immediately after migration. Further below, a comparison of employment likelihood of Type 1 immigrants with other Types' is given.

- ***Use of qualifications***

The use of one's qualifications at work is a measure of the match between a job and the person who performs it. The Table below shows changes in the self-reported use of qualifications in the main job for Type 1 respondents. While 54% of Type 1 respondents (males and females) used their qualifications all the time or often in their former home country, only 39% said the same thing at wave 1.

Table 4.8: Type 1 Immigrants' Use of Qualifications Transition Tables

Type 1 Males: Use of Qualifications in Former Home Country by Use of Qualifications in Main Job at Wave 1

		Use of Qualifications in Main Job at Wave 1				
Use of Qualifications FHC		1	2	3	9	Total
1 All the time or often (53.9%)	Count	3609	1170	1147	106	6032
	% within useqfhc	59.8%	19.4%	19.0%	1.8%	100.0%
2 Sometimes or rarely (9.1%)	Count	231	509	274	0	1014
	% within useqfhc	22.8%	50.2%	27.0%	.0%	100.0%
3 Never (11.0%)	Count	189	231	785	27	1232
	% within useqfhc	15.3%	18.8%	63.7%	2.2%	100.0%
9 Not reported (26.1%)	Count	291	316	278	2036	2921
	% within useqfhc	10.0%	10.8%	9.5%	69.7%	100.0%
Total	Count	4320	2226	2484	2169	11199
	% within useqfhc	38.6%	19.9%	22.2%	19.4%	100.0%

Type 1 Males: Use of Qualifications in Main Job at Wave 1 by Use of Qualifications in Main Job at Wave 3

		Use of Qualifications in Main Job at Wave 3				
Use of Qualifications at Wave 1		1	2	3	9	Total
1 All the time or often (38.6%)	Count	3440	580	252	47	4319
	% within useqw1	79.6%	13.4%	5.8%	1.1%	100.0%
2 Sometimes or rarely (19.9%)	Count	1003	727	473	23	2226
	% within useqw1	45.1%	32.7%	21.2%	1.0%	100.0%
3 Never (22.2%)	Count	602	476	1238	167	2483
	% within useqw1	24.2%	19.2%	49.9%	6.7%	100.0%
9 Not reported (19.4%)	Count	294	208	386	1281	2169
	% within useqw1	13.6%	9.6%	17.8%	59.1%	100.0%
Total	Count	5339	1991	2349	1518	11197
	% within useqw1	47.7%	17.8%	21.0%	13.6%	100.0%

Type 1 females: Use of Qualifications in Former Home Country by Use of Qualifications in Main Job at Wave 1

		Use of Qualifications in Main Job at Wave 1				
Use of Qualifications in FHC		1	2	3	9	Total
1 All the time or often (54.3%)	Count	1310	471	491	12	2284
	% within useqfhc	57.4%	20.6%	21.5%	.5%	100.0%
2 Sometimes or rarely (10.3%)	Count	149	171	113	0	433
	% within useqfhc	34.4%	39.5%	26.1%	.0%	100.0%
3 Never (4.0%)	Count	61	14	94	0	169
	% within useqfhc	36.1%	8.3%	55.6%	.0%	100.0%
9 Not reported (31.4%)	Count	115	5	333	870	1323
	% within useqfhc	8.7%	.4%	25.2%	65.8%	100.0%
Total	Count	1635	661	1031	882	4209
	% within useqfhc	38.8%	15.7%	24.5%	21.0%	100.0%

Type 1 Females: Use of Qualifications in Main Job at Wave 1 by Use of Qualifications in Main Job at Wave 3

		Use of Qualifications in Main Job at Wave 3				
Use of Qualifications at Wave 1		1	2	3	9	Total
1 All the time or often (38.8%)	Count	1418	145	44	27	1634
	% within useqw1	86.8%	8.9%	2.7%	1.7%	100.0%
2 Sometimes or rarely (15.7%)	Count	254	170	106	131	661
	% within useqw1	38.4%	25.7%	16.0%	19.8%	100.0%
3 Never (24.5%)	Count	385	235	324	88	1032
	% within useqw1	37.3%	22.8%	31.4%	8.5%	100.0%
9 Not reported (21.0%)	Count	46	0	149	687	882
	% within useqw1	5.2%	.0%	16.9%	77.9%	100.0%
Total	Count	2103	550	623	933	4209
	% within useqw1	50.0%	13.1%	14.8%	22.2%	100.0%

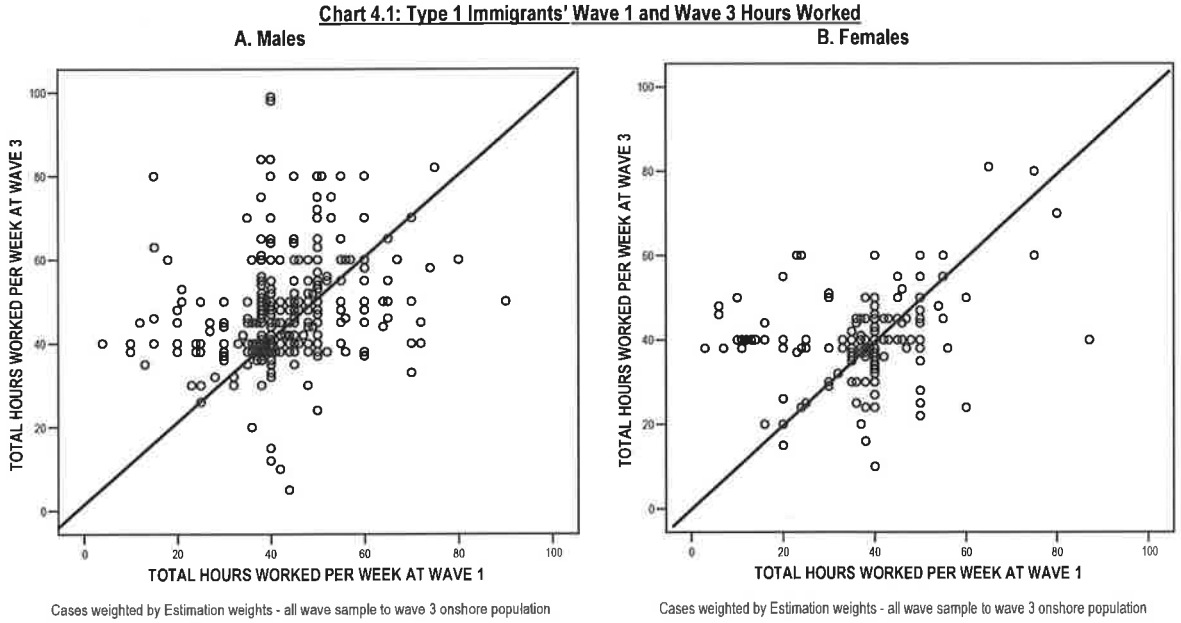
At wave 3, this proportion increased to 48% for males and 50% for females. Fewer respondents than prior to migration report using their qualifications all the time or often at wave 3, but there is an upward trend from wave 1 in this proportion. It is most surprising that at wave 3, almost as many people are using their

qualifications as they did prior to migration, given the lack of job mobility. It is left to the reader to further analyse information contained in the above Tables; however, it is clear from these tables that immigrants start work in jobs that have little to do with their qualifications; then gradually 'adjust'. Given that less than 1 percent of respondents reported a job change over the period, and given the high rate of 'not reported', this information needs to be taken with some reserve.

- ***Hours Worked***

An important aspect of a person's working life is how many hours they work. The hours worked not only affect income in an absolute sense, but their variability or stability indicates how secure the person's income stream is. Also, while the regular official full time work is 37.5 hours a week in Australia, the simple distinction between full time and part-time work is not as appropriate as it is practical for reporting purposes. Actual hours worked are generally continuous and have hardly any resemblance to the full time-part time dichotomy. The plots below show the relationship between hours worked at wave 1 and at wave 3 for Type 1 immigrants. The diagonal line passes through points where hours worked have not changed between wave 1 and 3. Above the line, weekly hours worked have increased, and below the line, they have decreased.

Chart 4.1: Type 1 Immigrants' Wave 1 and Wave 3 Hours Worked



For both wave 1 and wave 3, both females and males worked between about 20 hours and 90 hours per week, with large concentrations around 40 hours. On average the hours worked do not significantly change between wave 1 and 3; although there is evidence of substantial individual changes, upward and downward. This large and apparently random variation in hours worked points to the presence of casual employment and possible income instability/irregularity. Further analysis of wages and wage changes is given in Chapter 5.

- ***Job Mobility***

Previous research in wage mobility shows that job mobility is a key determinant of wage mobility: Job movers usually have higher wages than job stayers in the short term. Table 4.9 below indicates that only 6.5 percent of Type 1 males and 11% of females changed jobs in the first three and a half years of settlement. This rate of job mobility is very small considering that further below we find that immigrant entry jobs do not match their pre-migration formal qualifications or occupations. Also, the fact that more immigrants stay in their entry jobs is likely to result in little or no wage growth and little or no occupational mobility, as we find below in Chapter 5.

Table 4.9: Type 1 Immigrants' Job Mobility Tables

TYPE 1 MALES: Changed Jobs

	Frequency	Percent
0 NO	10468	93.5
1 YES	731	6.5
Total	11199	100.0

TYPE 1 FEMALES: Changed Jobs

	Frequency	Percent
0 NO	3756	89.2
1 YES	454	10.8
Total	4210	100.0

4.3.2. Type 2 Respondents

- ***Broad Labour force status (Main Activity)***

Type 2 respondents are people who had a spell of non-employment between wave 1 and wave 3. Below is an analysis of their main activity prior to migration, at wave 1 and at wave 2. In comparison to Type 1 people of whom 88-89 percent were employed or had a business prior to migration, 83 percent of Type 2 males and 70% of the females were also employed or had a business prior to immigration. These proportions are between those of the total population (Table 2) and those of Type 1 migrants. This gives some confirmation to the proposition that prior employment signals post-migration employability.

At wave 1, only 13 percent of Type 2 males and 15 percent of the females were employed or had a business; while close to 60 percent of males (33 percent for females) were unemployed. At wave 2, these proportions changed dramatically: Over 50 percent of males and just fewer than 50 percent of females were employed. Unemployment fell to 30 percent and 14 percent. So, about half of Type 2 people were non-employed for less than 18 months. For the remainder of the survey period, they were employed.

The students' proportion was 28 percent for males and 22 percent for females at wave 1, and then it fell to 12 percent and 18 percent at wave 2. While virtually no males were 'at home' for both waves, females at home represented 30 percent of all Type 2 females at wave 1 and 19 percent at wave 2.

Table 4.10: Type 2 immigrants' Labour Force Status Transition Tables

Type 2 Males: Broad Labour Force Status In Former Home Country by Broad Labour Force Status at Wave 1

		Broad Labour Force Status at Wave 1					
Broad LF Status in FHC		1	2	3	4	5	Total
1 Employed (69.3%)	Count	811	177	4139	1395	68	6590
	% within lfsfhc	12.3%	2.7%	62.8%	21.2%	1.0%	100.0%
2 Own Business (13.2%)	Count	119	35	649	455	0	1258
	% within lfsfhc	9.5%	2.8%	51.6%	36.2%	.0%	100.0%
3 Unemployed (2.9%)	Count	24	0	172	75	0	271
	% within lfsfhc	8.9%	.0%	63.5%	27.7%	.0%	100.0%
4 Student (10.0%)	Count	40	0	236	592	84	952
	% within lfsfhc	4.2%	.0%	24.8%	62.2%	8.8%	100.0%
5 Home duties (4.6%)	Count	6	0	262	165	0	433
	% within lfsfhc	1.4%	.0%	60.5%	38.1%	.0%	100.0%
Total	Count	1000	212	5458	2682	152	9504
	% within lfsfhc	10.5%	2.2%	57.4%	28.2%	1.6%	100.0%

Type 2 Females: Broad Labour Force Status in Former Home Country by Broad Labour Force Status at Wave 1

		Broad Labour Force Status at Wave 1					
Broad LF Status in FHC		1	2	3	4	5	Total
1 Employed (60.7%)	Count	482	53	1709	839	1119	4202
	% within lfsfhc	11.5%	1.3%	40.7%	20.0%	26.6%	100.0%
2 Own Business (8.9%)	Count	134	17	193	70	204	618
	% within lfsfhc	21.7%	2.8%	31.2%	11.3%	33.0%	100.0%
3 Unemployed (2.6%)	Count	10	17	19	71	65	182
	% within lfsfhc	5.5%	9.3%	10.4%	39.0%	35.7%	100.0%
4 Student (14.6%)	Count	296	0	203	442	73	1014
	% within lfsfhc	29.2%	.0%	20.0%	43.6%	7.2%	100.0%
5 Home duties (13.1%)	Count	13	23	179	114	578	907
	% within lfsfhc	1.4%	2.5%	19.7%	12.6%	63.7%	100.0%
Total	Count	935	110	2303	1536	2039	6923
	% within lfsfhc	13.5%	1.6%	33.3%	22.2%	29.5%	100.0%

Type 2 Males: Broad Labour Force Status at Wave 1 by Broad Labour Force Status at Wave 2

		Broad Labour Force Status at Wave 2					
Broad LF Status at Wave 1		1	2	3	4	5	Total
1 Employed (10.5%)	Count	0	264	642	95	0	1001
	% within lfsw1	.0%	26.4%	64.1%	9.5%	.0%	100.0%
2 Own Business (2.2%)	Count	89	102	0	21	0	212
	% within lfsw1	42.0%	48.1%	.0%	9.9%	.0%	100.0%
3 Unemployed (57.4%)	Count	3609	91	1392	343	24	5459
	% within lfsw1	66.1%	1.7%	25.5%	6.3%	.4%	100.0%
4 Student (28.2%)	Count	1203	66	699	716	0	2684
	% within lfsw1	44.8%	2.5%	26.0%	26.7%	.0%	100.0%
5 Home duties (1.6%)	Count	54	0	84	0	14	152
	% within lfsw1	35.5%	.0%	55.3%	.0%	9.2%	100.0%
Total	Count	4955	523	2817	1175	38	9508
	% within lfsw1	52.1%	5.5%	29.6%	12.4%	.4%	100.0%

Type 2 Females: Broad Labour Force Status at Wave 1 by Broad Labour Force Status at Wave 2

		Broad Labour Force Status at Wave 2					
Broad LF Status at Wave 1		1	2	3	4	5	Total
1 Employed (13.5%)	Count	0	154	342	291	149	936
	% within lfsw1	.0%	16.5%	36.5%	31.1%	15.9%	100.0%
2 Own Business (1.6%)	Count	39	40	2	8	20	109
	% within lfsw1	35.8%	36.7%	1.8%	7.3%	18.3%	100.0%
3 Unemployed (33.3%)	Count	1622	10	213	212	245	2302
	% within lfsw1	70.5%	.4%	9.3%	9.2%	10.6%	100.0%
4 Student (22.2%)	Count	605	7	266	478	179	1535
	% within lfsw1	39.4%	.5%	17.3%	31.1%	11.7%	100.0%
5 Home duties (29.5%)	Count	914	10	159	241	714	2038
	% within lfsw1	44.8%	.5%	7.8%	11.8%	35.0%	100.0%
Total	Count	3180	221	982	1230	1307	6920
	% within lfsw1	46.0%	3.2%	14.2%	17.8%	18.9%	100.0%

- ***Use of Qualifications***

Around 54 percent of Type 1 people used their qualifications often prior to migration. For Type 2 immigrants, only 46 percent of the males and 40 percent of females did so. At wave 3, only 35 percent of Type 2 males and 30 percent of females said they used their qualifications all the time or often. This compares to 48 percent and 50 percent for Type 1, and is even lower than the proportion of 39 percent reported by Type 1 males and females at wave 1. It seems that there is a positive relationship between the capacity to gain employment soon after arrival in Australia and the ability to use one's qualification in that employment. Those who gain employment fast are also more able to use their skills. The data suggests that waiting for the right job-skills match offers no more chances of finding it than searching on the job and gives credit to labour market segmentation models of job search, which argue that entry jobs are primarily 'bad' jobs, but serve as a platform for job search (for employees) and as a screening tunnels (for employers) for capable workers, who move into 'good' jobs[24].

Table 4.11: Type 2 Immigrants' Use of Qualifications Transition Tables

Type 2 Males: Use of Qualifications in Former Home Country by Use of Qualifications in Main Job at Wave 3

		Use of Qualifications in Main Job at Wave 3				
Use of Qualifications in FHC		1	2	3	9	Total
1 All the time or often (46.2%)	Count	2132	882	954	427	4395
	% within useqfhc	48.5%	20.1%	21.7%	9.7%	100.0%
2 Sometimes or rarely (10.0%)	Count	342	146	425	35	948
	% within useqfhc	36.1%	15.4%	44.8%	3.7%	100.0%
3 Never (4.9%)	Count	155	43	229	43	470
	% within useqfhc	33.0%	9.1%	48.7%	9.1%	100.0%
9 Not reported (38.8%)	Count	706	222	815	1950	3693
	% within useqfhc	19.1%	6.0%	22.1%	52.8%	100.0%
Total	Count	3335	1293	2423	2455	9506
	% within useqfhc	35.1%	13.6%	25.5%	25.8%	100.0%

Type 2 Females: Use of Qualifications in Former Home Country by Use of Qualifications in Main Job at Wave 3

		Use of Qualifications in Main Job at Wave 3				
Use of Qualifications in FHC		1	2	3	9	Total
1 All the time or often (39.5%)	Count	1403	356	820	156	2735
	% within useqfhc	51.3%	13.0%	30.0%	5.7%	100.0%
2 Sometimes or rarely (4.2%)	Count	82	113	99	0	294
	% within useqfhc	27.9%	38.4%	33.7%	.0%	100.0%
3 Never (4.9%)	Count	107	12	209	14	342
	% within useqfhc	31.3%	3.5%	61.1%	4.1%	100.0%
9 Not reported (51.3%)	Count	512	269	709	2062	3552
	% within useqfhc	14.4%	7.6%	20.0%	58.1%	100.0%
Total	Count	2104	750	1837	2232	6923
	% within useqfhc	30.4%	10.8%	26.5%	32.2%	100.0%

24 For labour market segmentation literature, see for example Osberg et al (1986), or Dickens and Lang (1988)among others.

4.3.3. Type 3 Respondents

- ***Main Activity***

What do the non-employed do and what was their pre-migration main activity? Compared to Type 1 and Type 2 males, for whom over 80 percent (70 percent for females) were also employed or ran a business prior to migration, about 70 percent of Type 3 males (58 percent of females) were employed or had a business before migrating. For males, a larger proportion than that of Type 1 and 2 had a business prior to migration (22 percent, versus 9.7 and 13.2 - for females the figures are 7.4 percent versus 2.5 and 8.9).

A greater proportion of Type 3 people were also non-employed prior to migration. Compared to around 5 percent or less of Type 1 people who were students, unemployed or at home (both males and females) and to 5, 10 and 5 percent for Type 2 males (total 20 percent) and 3, 15 and 13 percent for Type 2 females (total 31 percent) who were respectively unemployed, students and at home prior to migration, 5, 17 and 8 percent of Type 3 males (total 30 percent) and 3, 14 and 25 percent of Type 3 females (total 42 percent) were respectively unemployed, students and at home before migration. Just as prior employment signals post-migration employment, the same logic holds for non-employment. Note however that here the non-employed are a very diverse group including self-employed people, the unemployed, students and those 'at home'.

Note however that the difference between Type 2 and Type 3 females is due to the large proportion of Type 3 females 'at home', while the difference between Type 2 and Type 3 males comes from the large proportion of Type 3 students. The unemployed are comparable for Type 2 and 3 males and females. At wave 1, 41 percent of Type 3 males were unemployed while 31 percent were students. These proportions evened up at wave 2 (32 percent for both activities) and evolved to 47 and 25 percent at wave 3.

Table 4.12: Type 3 Immigrants' Labour Force Status Transition Tables

Type 3 Males: Broad Labour Force Status in Former Home Country by Broad Labour Force Status at Wave 1

		Broad Labour Force Status at Wave 1					
Broad LF Status in FHC		1	2	3	4	5	Total
1 Employed (48.5%)	Count	944	332	1916	1339	18	4549
	% within lfsfhc	20.8%	7.3%	42.1%	29.4%	.4%	100.0%
2 Own Business (22.0%)	Count	342	412	912	365	30	2061
	% within lfsfhc	16.6%	20.0%	44.3%	17.7%	1.5%	100.0%
3 Unemployed (4.7%)	Count	152	0	224	53	16	445
	% within lfsfhc	34.2%	.0%	50.3%	11.9%	3.6%	100.0%
4 Student (16.7%)	Count	201	0	447	916	0	1564
	% within lfsfhc	12.9%	.0%	28.6%	58.6%	.0%	100.0%
5 Home duties (8.1%)	Count	127	47	377	188	17	756
	% within lfsfhc	16.8%	6.2%	49.9%	24.9%	2.2%	100.0%
Total	Count	1766	791	3876	2861	81	9375
	% within lfsfhc	18.8%	8.4%	41.3%	30.5%	.9%	100.0%

Type 3 Females: Broad Labour Force Status in Former Home Country by Broad Labour Force Status at Wave 1

		Broad Labour Force Status at Wave 1					
Broad LF Status in FHC		1	2	3	4	5	Total
1 Employed (50.5%)	Count	1228	128	1587	1554	3924	8421
	% within lfsfhc	14.6%	1.5%	18.8%	18.5%	46.6%	100.0%
2 Own Business (7.4%)	Count	195	84	104	168	685	1236
	% within lfsfhc	15.8%	6.8%	8.4%	13.6%	55.4%	100.0%
3 Unemployed (3.4%)	Count	24	0	192	107	245	568
	% within lfsfhc	4.2%	.0%	33.8%	18.8%	43.1%	100.0%
4 Student (13.9%)	Count	98	0	543	901	771	2313
	% within lfsfhc	4.2%	.0%	23.5%	39.0%	33.3%	100.0%
5 Home duties (24.8%)	Count	134	76	611	576	2729	4126
	% within lfsfhc	3.2%	1.8%	14.8%	14.0%	66.1%	100.0%
Total	Count	1679	288	3037	3306	8354	16664
	% within lfsfhc	10.1%	1.7%	18.2%	19.8%	50.1%	100.0%

Type 3 Females: Broad Labour Force Status at Wave 1 by Broad Labour Force Status at Wave 2

		Broad Labour Force Status at Wave 2					
Broad LF Status at Wave 1		1	2	3	4	5	Total
1 Employed (10.1%)	Count	630	115	25	150	759	1679
	% within lfsw1	37.5%	6.8%	1.5%	8.9%	45.2%	100.0%
2 Own Business (1.7%)	Count	73	164	0	0	51	288
	% within lfsw1	25.3%	56.9%	.0%	.0%	17.7%	100.0%
3 Unemployed (18.2%)	Count	331	49	798	444	1414	3036
	% within lfsw1	10.9%	1.6%	26.3%	14.6%	46.6%	100.0%
4 Student (19.8%)	Count	399	18	276	1803	810	3306
	% within lfsw1	12.1%	.5%	8.3%	54.5%	24.5%	100.0%
5 Home duties (50.1%)	Count	459	211	804	966	5915	8355
	% within lfsw1	5.5%	2.5%	9.6%	11.6%	70.8%	100.0%
Total	Count	1892	557	1903	3363	8949	16664
	% within lfsw1	11.4%	3.3%	11.4%	20.2%	53.7%	100.0%

Type 3 Males: Broad Labour Force Status at Wave 2 by Broad Labour Force Status at Wave 3

		Broad Labour Force Status at Wave 3				
Broad LF Status at Wave 2		2	3	4	5	Total
1 Employed (23.0%)	Count	972	823	331	27	2153
	% within lfsw2	45.1%	38.2%	15.4%	1.3%	100.0%
2 Own Business (12.8%)	Count	1148	51	0	0	1199
	% within lfsw2	95.7%	4.3%	.0%	.0%	100.0%
3 Unemployed (31.6%)	Count	258	2355	281	65	2959
	% within lfsw2	8.7%	79.6%	9.5%	2.2%	100.0%
4 Student (31.6%)	Count	201	1050	1708	6	2965
	% within lfsw2	6.8%	35.4%	57.6%	.2%	100.0%
5 Home duties (1.1%)	Count	12	82	6	0	100
	% within lfsw2	12.0%	82.0%	6.0%	.0%	100.0%
Total	Count	2591	4361	2326	98	9376
	% within lfsw2	27.6%	46.5%	24.8%	1.0%	100.0%

Type 3 Females: Broad Labour Force Status at Wave 2 by Broad Labour Force Status at Wave 3

		Broad Labour Force Status at Wave 3				
Broad LF Status at Wave 2		2	3	4	5	Total
1 Employed (11.4%)	Count	92	553	143	1104	1892
	% within lfsw2	4.9%	29.2%	7.6%	58.4%	100.0%
2 Own Business (3.4%)	Count	365	39	9	146	559
	% within lfsw2	65.3%	7.0%	1.6%	26.1%	100.0%
3 Unemployed (11.4%)	Count	120	499	83	1201	1903
	% within lfsw2	6.3%	26.2%	4.4%	63.1%	100.0%
4 Student (20.2%)	Count	115	841	1199	1207	3362
	% within lfsw2	3.4%	25.0%	35.7%	35.9%	100.0%
5 Home duties (53.7%)	Count	325	465	537	7621	8948
	% within lfsw2	3.6%	5.2%	6.0%	85.2%	100.0%
Total	Count	1017	2397	1971	11279	16664
	% within lfsw2	6.1%	14.4%	11.8%	67.7%	100.0%

The volatility in unemployment mirrors the temporary increase in employment for this group from 19 percent at wave 1 to 23 percent at wave 2. Business ownership went up from 8 percent at wave 1 to 13 percent at wave 2, and then jumped to 28 percent at wave 3 – A remarkable progression. It is possible to speculate that setting up a business takes time as owners need to carefully analyse the market, weigh the risks and returns, study the business rules, regulations, practices, taxation, etc... before setting up their business, hence the acceleration in the percentage of business owners.

Over 50 percent of Type 3 females were at home at all three waves (50, 54 and 68 percent). The unemployed and students' proportions changed from 18 and 20 percent at wave 1 to 11 and 20 percent at wave 2, and then to 14 and 12 percent at wave 3. Business ownership was very low (2, 3 and 6 percent).

In conclusion to this chapter, it is clear that past employment is a strong signal of the ability to gain employment post-migration. Finding employment quickly also appears to be associated with a higher capacity to use one's qualification, although the data does not allow being conclusive on this issue.

We now proceed in Chapter 5 with an investigation of the wage distribution and wage growth of employed people. Also in Chapter 5, occupation and occupational mobility is explored in details.

CHAPTER 5:

IMMIGRANT'S LABOUR FORCE BEHAVIOUR, EMPLOYMENT STRATEGIES AND EARNINGS OUTCOMES

In this chapter, the main empirical results of the estimation of wages distributions are presented, using stepwise entry multivariate regression analysis. Several wage equations are estimated, for Type 1 and 2 males and females, starting with Mincer-type wage equations, which are then 'augmented' by the addition of socio-economic or demographic variables. The purpose of this 'augmentation' is to see whether there are any migrants' characteristics which are significantly correlated with employment strategies and/or earnings outcomes. Non-significant variables are systematically removed from the regression through an iterative process. Graphic plots are used to give the reader a visual assessment of the relationships between key variables and to complement the regression analyses. The explanatory power of each function is assessed at each step and for each respondent subgroup, using adjusted R^2 (i.e. corrected for degrees of freedom). The regression results discussed concern non-standardised coefficients; however, standardised coefficients as well as key statistics are also shown in the results' tables for information.

We start in section 5.1 below with the estimation of Type 1 respondents' entry wages and a study of their wage growth from wave 1 to wave 3. An assessment of Type 2 respondents' wave 3 'entry' wages as well as their comparison with wave 3 wages of Type 1 people follows in section 5.2. Section 5.3 uses both the ANU3 index and occupation categories and focuses on an assessment of occupational mobility and attainment, from pre-migration occupations right through to wave 3 occupations for Type 1 and 2 immigrants. The relationship between occupations and wages is also appraised. Note that in this Chapter, only the wages of people employed in a job at wave 1 and wave 3 are considered. Self-employed people (who run their own business) were dropped from the wage analyses due to the notorious lack of reliability of their earnings.

5.1. Immigrants' Entry Wages and Wage Mobility: A Test for Becker and Mincer

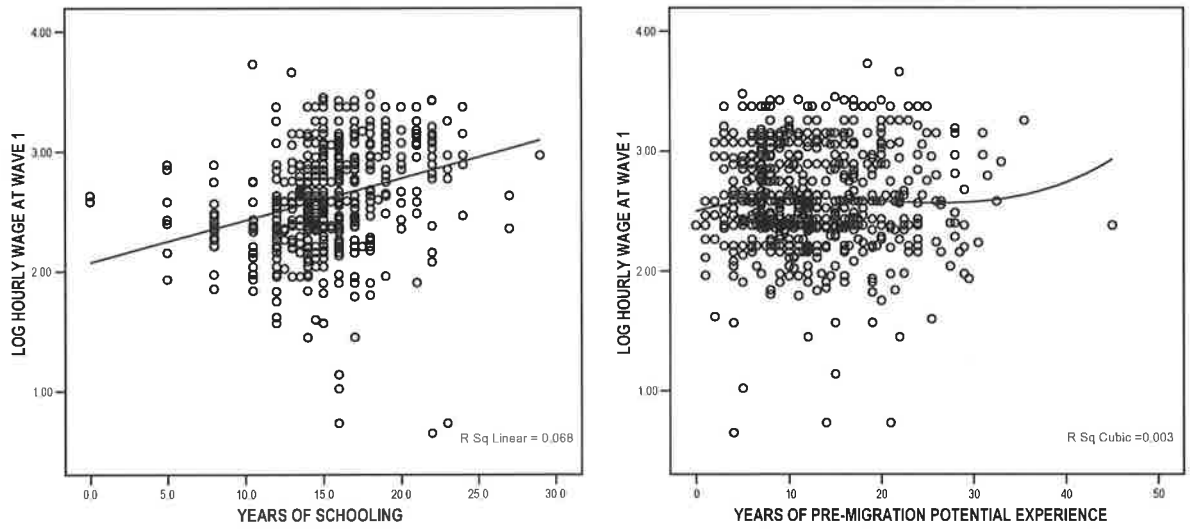
The results presented in this section are for people who were employed at the relevant estimation wave, and whose computed hourly wages were between $1 and $60. These wage boundaries were set to eliminate artificial influences from outlier observations and resulted in the elimination of 29 (weighted) observations whose hourly wages were higher than $60 per hour, 630 observations with earnings less than $1 at wave 1 as well as 88 observations with more than $60 in hourly wages and 458 observations with earnings of less than $1 at wave 3. Most of the observations removed from analysis are the same at waves 1 and 3. An important caveat to note is that since the wage analysis is only done for people employed at each estimation wave, the results are only relevant for that group. Since labour force participation and unemployment are relatively high

for some groups of immigrants (and for immigrants in general); results cannot be directly extrapolated to the general immigrant population at large.

5.1.1. Entry Wages: Does Pre-migration Human Capital Matter?

According to Mincer's (1974) theory and empirical results, as well as other similar empirical estimates, human capital, broadly defined as education and work experience, can explain over half of the earnings distribution. This appears not to be true for immigrants when only pre-migration human capital is considered. The plots below use data for Type 1 male and female to show the relationship between their hourly earnings and years of schooling on one hand, and pre-migration experience on the other.

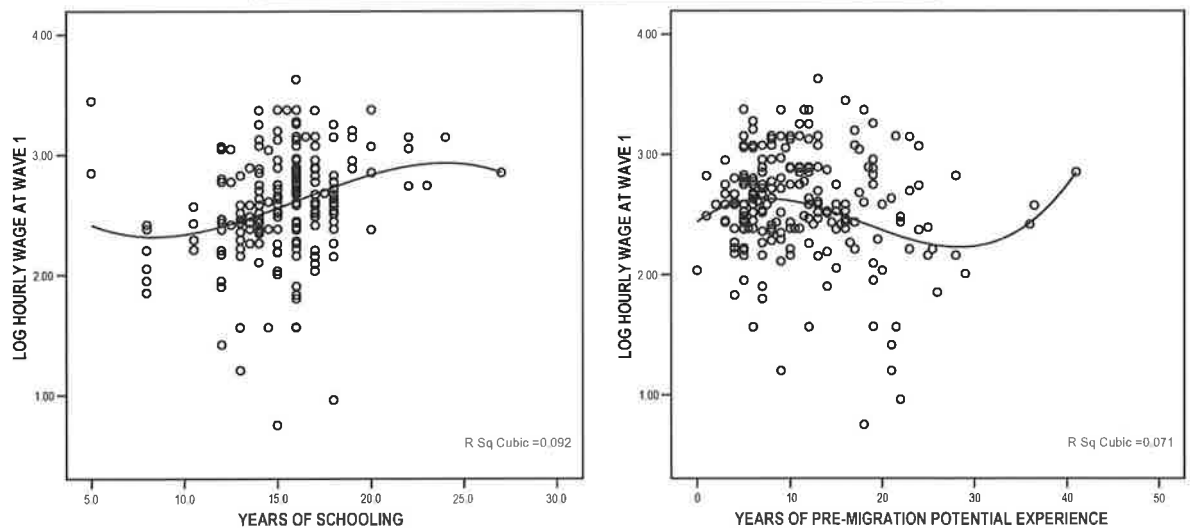
Chart 5.A: Men's Log Hourly entry wages, Years of Schooling, and Experience



Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

Chart 5.B: Women's Log Hourly entry wages, Years of Schooling, and Experience



Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

Clearly, there is some positive relationship between years of schooling on one hand, and log hourly earnings at wave 1 on the other, but there seems to be very little or no relationship with pre-migration experience. However, there is also very large external influence (or random variability). A regression equation was fitted using Mincer-type earnings equations to estimate the hourly wage distribution of new immigrants employed. The first equation used was the exact replica of Mincer's earnings equation:

$$Ln(WAGE1_I) = C + \beta_1 YOS_I + \beta_2 EXP_I + \beta_2 EXP_I^2 + U_I$$

Where YOS stands for years of schooling (continuous variable), and EXP is a proxy-experience variable computed in the same way as Mincer's potential experience variable. The explanatory power of this equation came to an R^2 of just 0.076 for males and 0.096 for females, meaning that this model explains less than 10% of the wage variations at wave 1.

The obvious issue with such an equation is that the two experience variables are highly correlated. In our case, the linear correlation coefficient was as high as 0.95. Another concern is that in Mincer's equation, PREXSQ enters the model to account for the decreasing rate of returns to experience with age. This is useful when one is estimating a lifetime series of earnings. It is unlikely that, in a four-year period of settlement, the concavity in experience of the wage function. Due to these issues and the fact that, graphically, there is little or no relationship between log wages at wave 1 and experience, both experience terms were removed from the estimation of entry wage. On average, pre-migration experience has no relationship with immigrants' entry earnings whatsoever.

Following the removal of the experience terms the regression coefficient for YOS was 0.035 for males and 0.045 for females with respective R^2 of 0.068 for males and 0.086 for females. An extra year of schooling increases the wage by 3.5 per cent for males and by 4.5 percent for females.

This finding of a positive relationship between entry wages and years of pre-migration schooling is important, although it leaves us still searching for the other determinants of immigrants' entry wages. One obvious place to look is into other somewhat remote social indices of ability to perform in the Australian labour market, such as English language proficiency and occupation, as well as other demographic variables, such as region of origin, visa category, age and region of initial settlement, which may be themselves potentially related to labour market ability.

We proceeded to estimate a wage equation where the dependent variables, in addition to YOS are:

- ENGHIW1 is a dummy for high English proficiency at wave 1 with low or no English as default;

- SYMEBRI, is a dummy for region of initial settlement being one of the three major eastern Capital Cities: Sydney, Melbourne or Brisbane, with the rest of the country as default;
- VISIT: a dummy variable equal to 1 if the respondent visited Australia prior to migration;
- FHASIA and FHEUNA: a dummy variable equal to one if the immigrant is respectively from Asia and from Europe or North America;
- MARW1: a dummy variable equal to one if the immigrant is married at wave 1; and
- IMECO: a dummy variable equal to one if the immigrant entered under 'skills-assessed' visa categories (Independent, Preferential Family/Skilled Australian Linked; and Business Skills and Employer Nomination Scheme).

We called this regression 'Model 1'. After five iterations for males and six for females, the model results are shown in Tables 5.1 and 5.2 below. The model explains 18% of the wage variations for males and 16% for females.

Table 5.1: Entry Wage Model 1 Results for Males

Model	Unstdzed Coeffs		Stdzed Coeffs	t-Stat	Sig.	Correlations			Collinearity Statistics	
variables	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
(CONSTANT)	1.90	0.02		93.75	0.00					
YOS	0.02	0.00	0.17	17.89	0.00	0.26	0.17	0.15	0.77	1.30
ENGHIW1	0.18	0.01	0.16	17.55	0.00	0.26	0.16	0.15	0.88	1.14
FHASIA	-0.14	0.01	-0.17	-18.38	0.00	-0.13	-0.17	-0.16	0.90	1.11
IMECO	0.13	0.01	0.17	17.88	0.00	0.21	0.17	0.15	0.80	1.25
VISIT	0.12	0.01	0.16	17.76	0.00	0.20	0.17	0.15	0.90	1.11
SYMEBRI	0.09	0.01	0.10	11.56	0.00	0.02	0.11	0.10	0.94	1.06
MARW1	0.05	0.01	0.05	6.14	0.00	0.00	0.06	0.05	0.95	1.05

Dependent Variable: LNWAGE1 LOG HOURLY WAGE AT WAVE 1

Table 5.2: Entry Wage Model 1 Results for Females

Model	Unstdzed Coeffs		Stdzed Coeffs	t-Stat	Sig.	Correlations			Collinearity Statistics	
variables	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
(CONSTANT)	2.07	0.04		55.21	0.00					
YOS	0.04	0.00	0.25	15.14	0.00	0.29	0.23	0.21	0.72	1.39
MAR	-0.19	0.01	-0.23	-14.33	0.00	-0.27	-0.22	-0.20	0.81	1.24
FHASIA	-0.15	0.01	-0.16	-10.16	0.00	-0.08	-0.16	-0.14	0.80	1.25
FHEUNA	-0.06	0.01	-0.07	-4.37	0.00	0.01	-0.07	-0.06	0.79	1.26
ENGHIW1	0.06	0.02	0.04	2.61	0.01	0.13	0.04	0.04	0.90	1.11
IMECO	0.03	0.01	0.04	2.28	0.02	0.24	0.04	0.03	0.66	1.50

Dependent Variable: LNWAGE1 LOG HOURLY WAGE AT WAVE 1

The main differences between the results for males and those for females are (1) the fact that marriage exerts a negative pressure on females' entry wage (less 19%) but is insignificant for males; (2) prior visits are

insignificant for females but add 12% to the males' entry wages. Also, both English proficiency and being an economic immigrant have a positive effect for both genders, but this effect is very small for females.

While these findings are consistent with other past research, the low R^2 suggests that the model is not well specified. It is necessary to then extend or modify the model in the hope that its explanatory power would significantly improve. The extended model, called 'Model 2' is shown in the equation below:

$$Ln(HWAGEW1)_I = \beta_0 YOS + \beta_1 AGEW1 + \beta_2 ENGHIW1 + \beta_3 SYMEBR + \beta_4 + EMPFHC +$$
$$\beta_5 BUSFHC + \beta_6 UNEFHC + \beta_7 STUFHC + \beta_8 VPREF + \beta_9 VCONF + \beta_{10} VBSEN + \beta_{11} VINDP +$$
$$\beta_{12} FHOCAN + \beta_{13} FHNSWE + \beta_{14} FHUKIR + \beta_{15} FHEOTE + \beta_{16} FHMENA + \beta_{17} FHSEAS +$$
$$\beta_{18} FHNEAS + \beta_{19} FHSOAS + \beta_{20} FHNOAM + \beta_{21} FHSAC + \beta_{22} FHSOA + \beta_{23} VISIT + U$$

Where:

- AGEW1 is the respondent's age at wave 1 – a continuous variable;
- EMPFHC, UNEFHC and STUFHC are dummies for whether the respondent was employed, had a business or was unemployed in the 12 months prior to migration, with home duties as the default;
- VPREF, VCONF, VBSEN and VINDP are dummies for visa categories in self-explanatory way, with the humanitarian category as the default;
- FHOCAN, FHNSWE, FHUKIR, FHEOTE, FHMENA, FHSEAS, FHNEAS, FHSOAS, FHNOAM, FHSAC and FHSOA are dummies for whether the respondent's former home region was Oceania and Antarctica, North south or western Europe, UK or Ireland, Eastern or Other Europe, Middle East or North Africa, South East Asia, North East Asia, South Asia, North America, South America and the Caribbean, and Southern and Other Africa; with 'Not stated' as the default category.

After 21 iterations for males and 19 for females, Model 1 accepted the following variables as predictors with a somewhat better – if quite low as well - R^2 of 0.24 for males and 0.23 for females. The coefficients are shown in Tables 5.3 for males and 5.4 for females.

Table 5.3: Entry Wage Model 2 Results for Males

Model	Unstdzed Coeffs		Stdzed Coeffs	t-Stat	Sig.	Correlations			Collinearity Statistics	
variables	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
(Constant)	1.75	0.03		54.08	0.00					
YOS	0.02	0.00	0.12	12.43	0.00	0.26	0.12	0.10	0.69	1.46
ENGHIW1	0.13	0.01	0.12	12.45	0.00	0.26	0.12	0.10	0.71	1.41
FHNOAM	0.29	0.02	0.17	18.94	0.00	0.20	0.18	0.16	0.86	1.16
FHSSOA	0.31	0.02	0.14	16.29	0.00	0.16	0.15	0.13	0.91	1.10
FHNSWE	0.12	0.01	0.14	14.60	0.00	0.14	0.14	0.12	0.76	1.32
VINDP	0.26	0.02	0.32	12.82	0.00	0.16	0.12	0.11	0.11	9.42
VBSEN	0.31	0.02	0.22	13.14	0.00	0.20	0.12	0.11	0.25	4.05

VISIT	0.07	0.01	0.10	10.41	0.00	0.20	0.10	0.09	0.80	1.25
FHMENA	0.15	0.02	0.07	7.96	0.00	-0.05	0.08	0.07	0.86	1.16
FHSOAS	-0.08	0.01	-0.07	-7.29	0.00	-0.09	-0.07	-0.06	0.84	1.19
MARW1	0.04	0.01	0.05	5.57	0.00	0.00	0.05	0.05	0.85	1.17
FHOCAN	-0.04	0.02	-0.02	-2.25	0.02	-0.07	-0.02	-0.02	0.91	1.09
VCONF	0.12	0.02	0.10	5.46	0.00	-0.08	0.05	0.05	0.20	5.07
VPREF	0.10	0.02	0.13	4.92	0.00	-0.16	0.05	0.04	0.10	9.79
STUFHC	0.23	0.02	0.13	9.76	0.00	0.07	0.09	0.08	0.36	2.80
EMPFHC	0.20	0.02	0.21	10.09	0.00	0.04	0.10	0.08	0.16	6.16
UNEFHC	0.24	0.03	0.11	8.88	0.00	-0.02	0.08	0.07	0.47	2.13
BUSFHC	0.19	0.02	0.14	8.56	0.00	-0.04	0.08	0.07	0.24	4.09
FHEOTE	0.05	0.03	0.02	2.10	0.04	-0.01	0.02	0.02	0.95	1.05

Dependent Variable: LNWAGE1 LOG HOURLY WAGE AT WAVE 1

Table 5.4: Entry Wage Model 2 Results for Females

Model	Unstdzed Coeffs		Stdzed Coeffs	t-Stat	Sig.	Correlations			Collinearity Statistics	
variables	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
(CONSTANT)	2.31	0.06		36.12	0.00					
YOS	0.03	0.00	0.20	10.69	0.00	0.29	0.16	0.15	0.54	1.84
MARW1	-0.19	0.01	-0.23	-14.73	0.00	-0.27	-0.22	-0.20	0.74	1.36
EMPFHC	0.32	0.03	0.28	10.37	0.00	0.13	0.16	0.14	0.26	3.81
VCONF	-0.55	0.05	-0.42	-10.08	0.00	-0.01	-0.15	-0.14	0.11	9.31
VPREF	-0.49	0.05	-0.59	-9.67	0.00	-0.25	-0.15	-0.13	0.05	20.07
FHNEAS	-0.16	0.02	-0.12	-8.15	0.00	-0.06	-0.13	-0.11	0.80	1.25
FHSEAS	-0.14	0.02	-0.11	-6.81	0.00	-0.07	-0.10	-0.09	0.67	1.48
STUFHC	0.28	0.04	0.15	7.36	0.00	0.03	0.11	0.10	0.44	2.27
FHNSWE	-0.09	0.02	-0.09	-5.58	0.00	-0.02	-0.09	-0.08	0.71	1.41
FHMENA	-0.40	0.07	-0.08	-5.56	0.00	-0.06	-0.09	-0.08	0.97	1.03
VINDP	-0.41	0.05	-0.43	-7.60	0.00	0.22	-0.12	-0.10	0.06	17.69
VBSEN	-0.32	0.06	-0.15	-5.43	0.00	0.14	-0.08	-0.07	0.23	4.28
ENGHIW1	0.13	0.03	0.08	4.98	0.00	0.13	0.08	0.07	0.64	1.56
FHEOTE	-0.13	0.05	-0.04	-2.52	0.01	-0.05	-0.04	-0.03	0.91	1.10
FHSOAS	0.14	0.04	0.05	3.54	0.00	0.03	0.05	0.05	0.79	1.27
FHNOAM	0.07	0.03	0.04	2.56	0.01	0.11	0.04	0.03	0.84	1.19
FHUKIR	0.06	0.02	0.04	2.40	0.02	0.06	0.04	0.03	0.74	1.36
UNEFHC	0.16	0.05	0.05	3.03	0.00	-0.06	0.05	0.04	0.59	1.69
BUSFHC	0.10	0.05	0.04	2.20	0.03	-0.03	0.03	0.03	0.55	1.82

Dependent Variable: LNWAGE1 LOG HOURLY WAGE AT WAVE 1

For males, other things equal, being from North America or Sub Saharan Africa is associated with an entry wage premium of 30%. Independent and Business visa categories carry a premium of 26 and 31% respectively. For females, all visa categories have negative coefficients, which suggest that humanitarian female migrants have a better starting wages than the others. Having been either in the labour force or studying prior to migration has positive effects, especially having been employed, which raises the starting wage by 32 percent (other things equal) have the highest positive coefficient.

Note however the significantly high VIF statistics (a VIF higher than 2 is considered significant) on visa categories and main activity in former home country, which indicates the presence of significant multicollinearity. As multicollinearity tends to lead to exaggerated explanatory power, and this model only explains around 20 percent of the wage variation, there is no point in spending too much effort on statistical

diagnostics. Instead, the model without these variables (Model 4) is taken to be the preferred fit of the wage equation for Type 1 migrants.

Where does this leave the immigrants' entry wage discussion? Generally, a wage regression equation that explains around 20 percent of the wage variation is not satisfactory. However, in the context of newly settled immigrants, this explanatory power seems relatively good, particularly when one considers that (1) the dependent variable (Log wage) was estimated starting from weekly expected wage bands rather than actual observed wages and was derived on the basis of weekly expected hours of work rather than observed hours worked; and (2) the population consists of recent immigrants with no prior references or work histories in Australia. Certainly, a significant amount of 'guessing' or 'intuition' of immigrant's ability is to be expected from the employer. Also, the fact that often employed new migrants do not start their employment history in Australia in their field of expertise would explain what the model is not able to explain. The occupational mobility of immigrants will be examined thoroughly in section 5.3 below.

There are two possibilities that the seemingly random entry wage distribution might explain:

- First, it has been documented that in the early settlement period, working immigrants take jobs regardless of the match between their background and the job. For example, a university graduate medical doctor might start as a taxi driver or as a waiter, or as a cleaner. This may be motivated by the need to just do something, or the need to earn some income while they search for suitable jobs, or attend some training, or just to get a foot in the door. In this case, immigrants who change jobs are more likely to have wages that reflect their skills in their subsequent jobs, while those who stay in their jobs never receive their 'right' wages; that is, there is a searching and matching process that is employee-driven, starting from random premises. If this is true, it is also likely that immigrants' jobs at wave 1 are random in terms of occupations and that employed new immigrants gradually move up both horizontally (change occupations and/or employers) and vertically (move on the wage ladder).

- Second, it is also possible that in the early settlement period, employers do not have any consideration for pre-migration characteristics in their remunerations, and they use this period for screening. In this case, employed immigrants who stay in their jobs are likely to earn a wage that is suited to their pre-migration skills and experience, while those who move might start again from a random base in the next period. In this case, there is a screening process that is employer-driven. If this is true, immigrants start in their occupations and those who are able move up vertically but not horizontally.

- A third possibility, maybe the most realistic, is that the two processes occur at the same time and job changes do not have any effect on the wage mobility of immigrants.

Unfortunately, the data does not allow estimating the effect of job mobility on wage mobility in a statistically sensible way, because only a few people changed jobs between wave 1 and 3 (6.5 percent of males and 11 percent of females). The number of job movers is too small to make job mobility a valid explanatory variable. Nevertheless, job change or not, wage mobility is an important aspect of immigrants' work history in its own right and we proceed to analyse its determinants in the same way that wage levels are analysed in this section. This will constitute the test for presence (or not) of vertical wage mobility. With regards to horizontal mobility, the occupational transition of immigrants will be analysed further in Section 5.3 below.

5.1.3. Wage Mobility: Does the entry wage 'randomness' settle in the medium term?

One way to test the relative effect of horizontal versus vertical moves on immigrant wages is to look at wage mobility from wave 1 to wave 3.

- Some low-capacity immigrants might start with high wages relative to their capacity, and the sorting process adjusts their wages downward,

- Other high capacity immigrants start with low wages relative to their capacity, and either on-the-job screening or the matching process will ensure that their wage moves upwards to their equilibrium level.

However, given the finding of very little job mobility among new immigrants, it is unlikely that there is any significant 'screening' or 'sorting' taking place. It is thus expected that there will not be any major wage mobility within the first three and a half years of settlement. Nevertheless, it is useful to check this in a rigorous manner before drawing any final conclusions.

In order to measure this, a variable WAGEMOB was created as a measure of the wage change from wave 1 to wave 3, relative to the entry wage, as shown by the following expression:

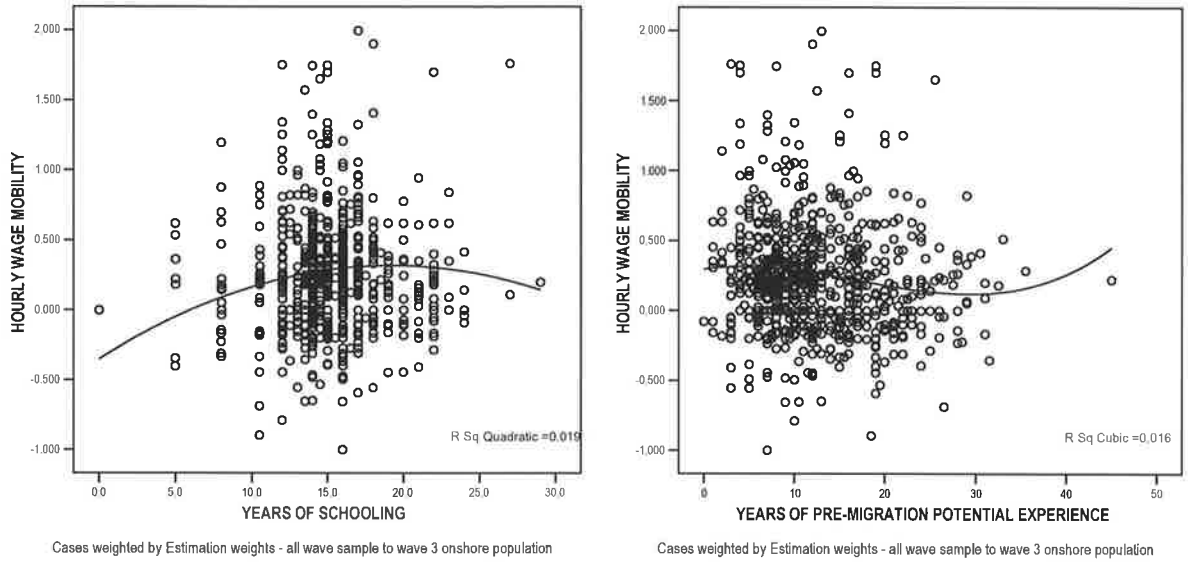
$$WAGEMOB = \frac{WAGEW3 - WAGEW1}{WAGEW1}$$

An initial regression was fitted where WAGEMOB was used as the dependent variable, while years of schooling (YOS) and pre-migration experience (PREEXP) were used as explanatory variables. With an R^2 of

0.022 for males and 0.003 for females, the coefficients for YOS and PREEXP for males are respectively 0.013 and -0.006, while for females, only YOS is significant with a coefficient of 0.003. There seems to be a very weak or no relationship between these variables.

The scatter plots between YOS, PREEXP and WAGEMOB are presented below in Chart 5.C and 5.D, to give the reader a graphic view of the (lack of) relationship between wage mobility on one hand, and YOS and PREEXP on the other.

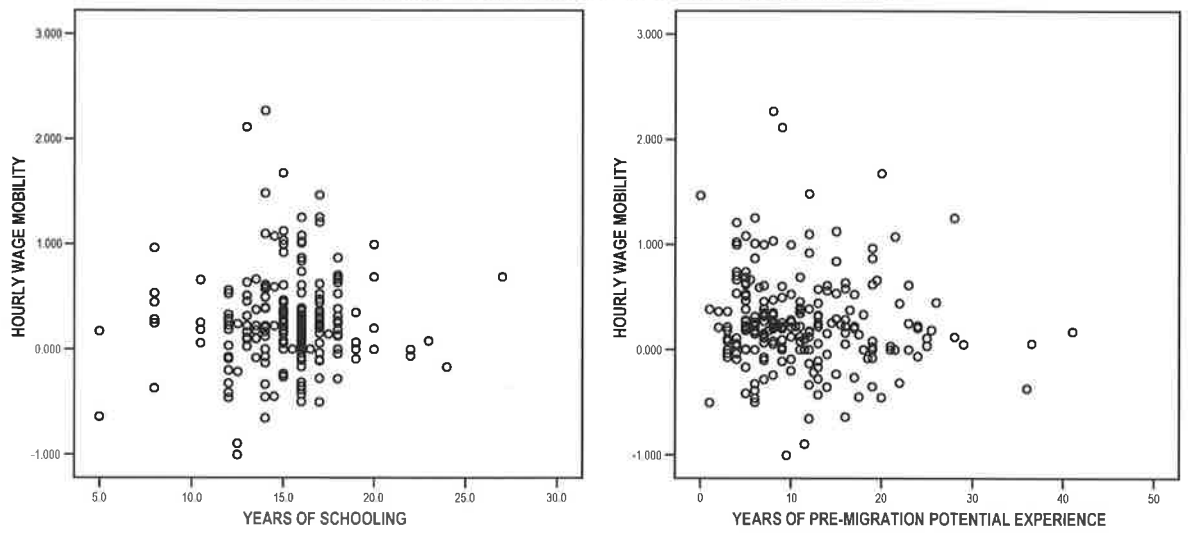
Chart 5C: Male's Wage Mobility, Years of Schooling, and Experience



Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

Chart 5.D: Female's Wage Mobility, Years of Schooling, and Experience



Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

Now the focus turns on the search for other variables that might explain the wage mobility distribution. Among these variables figure the same variables used previously for the estimation of the wage at wave 1. But before

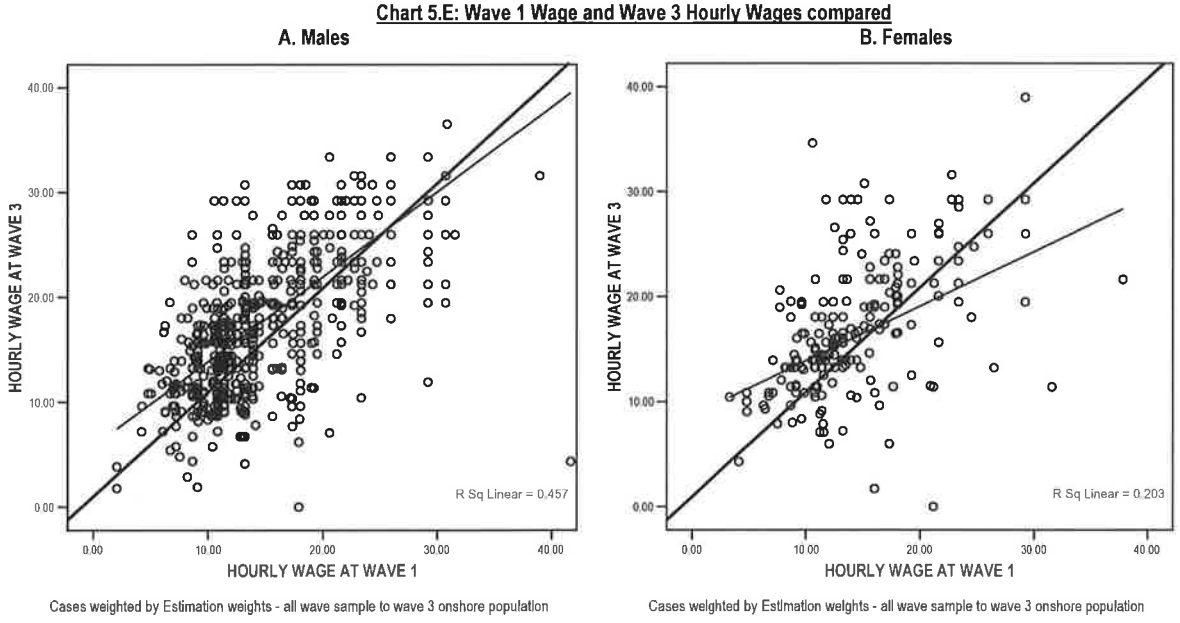
proceeding in this direction, it is useful to have a brief assessment of the relationship between entry wage and wage mobility. Below are plots of the two wages for males on the left and for females on the right; with the knowledge that:

$$WAGEMOB = \frac{WAGEW3 - WAGEW1}{WAGEW1} = \frac{\Delta_1^3(WAGE)}{WAGEW1} = \frac{WAGEW3}{WAGEW1} - 1$$

Therefore, the shape of WAGEMOB is explained by the relationship between WAGEW3 and WAGEW1. If WAGEW3 is equal to WAGEW1, then the above expression equals zero. A negative value for WAGEMOB indicates a wage drop, while a positive value indicates a wage increase. Below are charts showing this relationship. First, hourly wages at wave 1 and wave 3 are plotted against each other; then weekly wages are also compared.

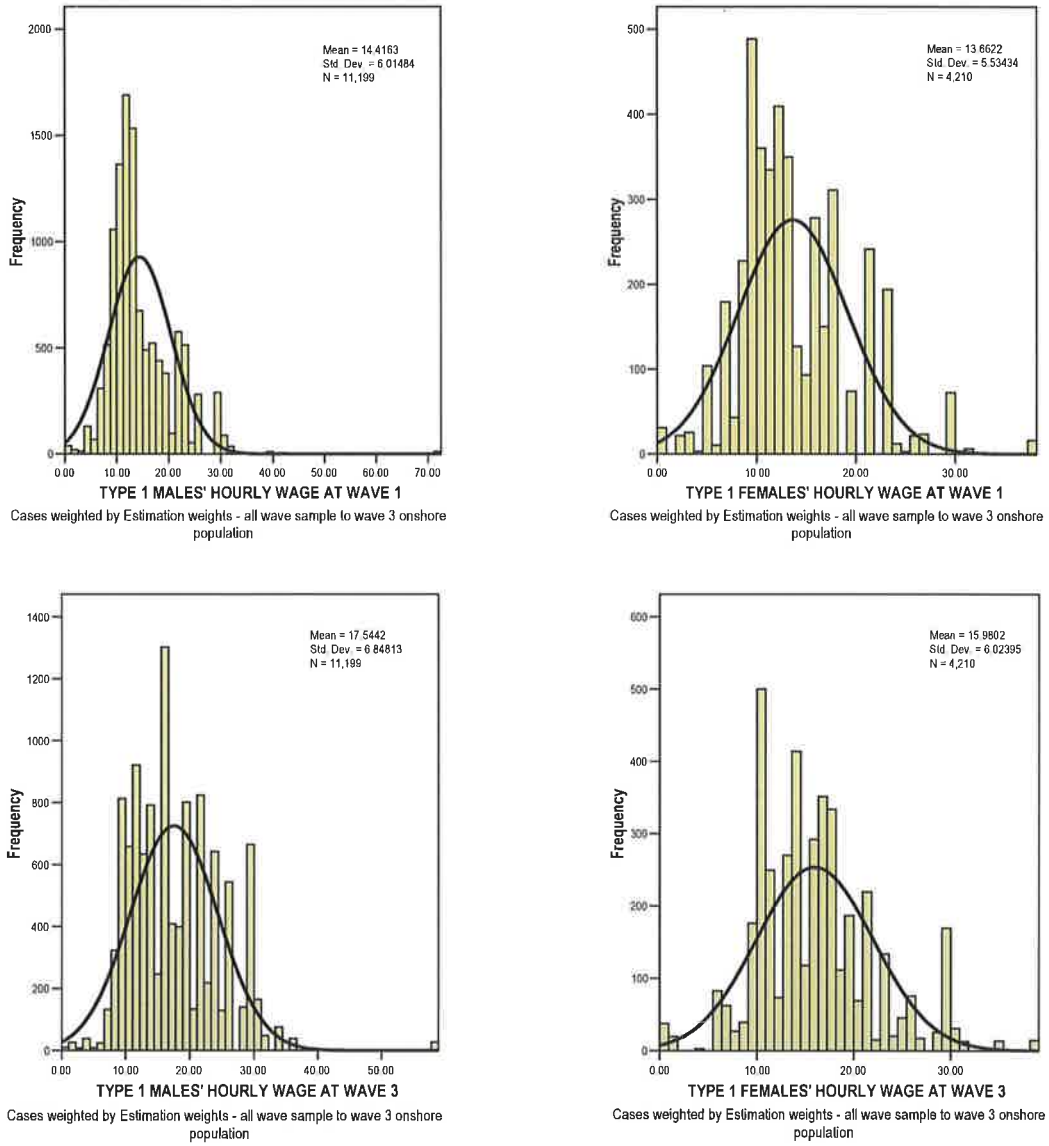
The hourly wages plots show evidence of a positive relationship between wages at wave 1 and at wave 3, especially for males. The linear relationship between the two waves' wages is given by the off-diagonal line, with its R^2 value given (0.46 for males and 0.23 for females). It is therefore reasonable to expect similar regression results for wage at wave 3 as those for wage at wave 1, and to expect a large unexplained proportion of wage mobility. The diagonal line indicates all the points where wage at wave 1 is equal to wage at wave 3. All points above (or to the left of) the diagonal line indicate that the hourly wage was higher at wave 3 than at wave 1. For both males and females, most points have this characteristic, indicating that most respondents had an increase in hourly wages between wave 1 and wave 3.

Chart 5.E: Wave 1 Wage and Wave 3 Hourly Wages compared



A previous study, using weekly earnings, has also found that the majority of immigrants enjoy higher wages at wave 3 than at wave 1[25]. Information in the above plots confirms this finding. But just how much have the hourly wages increased on average? The plots below give a graphic view of the wage increase from wave 1 to wave 3. For males, the average wage grew from $14.42 to $17.54 per hour, while for females; the wage growth was from $13.66 to $15.98 per hour. However, with this growth in hourly wages also came an increase in the standard deviation, indicative of larger wage disparity.

Chart 5.F: Type 1 Immigrants' Hourly Wages at Wave 1 and at Wave 3



A regression model for wage mobility similar to 'Model 1' above was fitted and its results are presented below in Tables 5.5 and 5.6. The R^2 for males was only 0.027 and 0.071 for females. The results of this regression are to be interpreted with the above discussion on the relationships between wages and hours at waves 1 and 3 in mind. A positive coefficient indicates that the relevant variable is positively related to wage growth.

25 For example, Ngo (2002), Honours' Thesis, Adelaide University

This Table shows higher wage adjustment for people from Europe and North America. This can be explained by the relative ease with which immigrants from (mainly) Western countries can signal their ability to employers in the initial period. After a certain time, these immigrants prove themselves better than others as they adjust to working conditions in Australia easier than others. Also, immigrants from Asia start their working life with a wage disadvantage, but their disadvantage appears to decrease over time (0.06). On the other hand, visiting Australia prior to migration and being married guarantee a premium entry wage (+12% and +5% respectively), but this advantage seems to decrease over time for males.

Table 5.5: Wage Mobility Model 1 Coefficients for males

Model	Unstdzed Coeffs		Stdzed Coeffs	t-Stat	Sig.	Correlations			Collinearity Statistics	
variables	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
CONSTANT	0.04	0.02		1.64	0.10					
YOS	0.01	0.00	0.10	9.10	0.00	0.11	0.09	0.09	0.78	1.29
VISIT	-0.06	0.01	-0.07	-7.06	0.00	-0.05	-0.07	-0.07	0.91	1.10
FHEUNA	0.08	0.01	0.09	8.60	0.00	0.04	0.08	0.08	0.78	1.28
FHASIA	0.06	0.01	0.07	6.25	0.00	0.05	0.06	0.06	0.76	1.31
MARW1	-0.04	0.01	-0.04	-4.67	0.00	-0.05	-0.04	-0.04	0.95	1.05
ENGHIW1	0.03	0.01	0.03	2.66	0.01	0.05	0.03	0.02	0.88	1.13
IMECO	0.02	0.01	0.02	2.20	0.03	0.07	0.02	0.02	0.79	1.26

Dependent Variable: WAGEMOB HOURLY WAGE MOBILITY

For females, being an economic migrant and married increases the wage growth rate by respectively 20% and 16%. Remember that for female migrants, being married, from Europe or North America, or from Asia, had negative relationships with the entry wage, while years of schooling and high English proficiency were associated with higher starting wages. Here, the relative (dis)advantages due to these factors seem to disappear over time, with wages of females from Europe or North America, and from Asia growing respectively at 7% and 13% more than average over the period under review; while the wage gap between more educated females and those who start with high English skills on the one hand, and the rest of the female immigrants on the other hand, narrows as the later group improve their English skills.

Table 5.6: Wage Mobility Model 1 Coefficients for Females

Model	Unstdzed Coeffs		Stdzed Coeffs	t-Stat	Sig.	Correlations			Collinearity Statistics	
variables	B	Std.	Beta			Zero-order	Partial	Part	Tolerance	VIF
CONSTANT	0.02	0.05		0.40	0.69					
IMECO	0.20	0.02	0.22	12.11	0.00	0.14	0.19	0.18	0.66	1.51
MARW1	0.16	0.02	0.18	10.41	0.00	0.06	0.16	0.16	0.79	1.27
VISIT	0.13	0.02	0.13	8.05	0.00	0.12	0.13	0.12	0.86	1.16
FHASIA	0.13	0.02	0.12	7.28	0.00	0.08	0.11	0.11	0.79	1.27
FHEUNA	0.07	0.02	0.08	4.56	0.00	0.03	0.07	0.07	0.76	1.31
SYMEBRI	0.07	0.02	0.06	4.20	0.00	0.06	0.07	0.06	0.97	1.03
YOS	-0.01	0.00	-0.05	-2.89	0.00	0.05	-0.05	-0.04	0.71	1.42
ENGHIW1	-0.06	0.03	-0.04	-2.18	0.03	0.01	-0.03	-0.03	0.87	1.15

Dependent Variable: WAGEMOB HOURLY WAGE MOBILITY

While the trends in entry wages and wage growth explained by the usual wage determinants are clear, and show a general upward trend in wages; the inevitable conclusion, given the low explanatory power of the above regressions, is that for migrants who gain employment upon arrival, a greater portion of their wages in the first few years after migration is not explained by what the usual labour market theories would predict. Neither the entry wage, nor the wage growth in the early settlement years have a defining relationship with their pre-migration human capital, their former home region, where they settle initially, the visa category under which they enter Australia, their age at immigration, or even whether they are proficient in English on arrival.

Either the main determinant(s) of immigrants' wages within four years of settlement have to be found elsewhere, or the immigrant wage setting mechanisms simply do not follow the usual 'rules'. Wages in the early settlement period are based on unobserved characteristics or are simply random. Statistically, this means that, *a priori*, a Western-educated scientist or engineer who enters the Australian labour market and gains employment without any investment in Australia-specific skills has little chances of earning a wage that is statistically different from that of an unskilled refugee from Sudan or Afghanistan, and their wage mobility within four years is unlikely to be statistically different from one another. This is the case regardless of where either of them settles. It is possible, as we will verify in section 5.3 below, that both immigrants could end up in the same or similar entry jobs, thereby making the Engineer's or scientist's skills temporarily irrelevant. With data spanning only four years of settlement, it is unfortunately impossible to make any comment on how long this 'randomness' lasts or whether it ever disappears.

One thing that appears to hold is that pre-migration characteristics are not given much consideration in the wage-setting process. This leads to the obvious question of whether it is beneficial, in the medium term, for a new immigrant to start employment immediately upon arrival, or whether it is best to spend some time without work, possibly investing in country-specific skills. The next section tests this question by comparing the wages at wave three for immigrants who were employed at all three waves (Type 1) with those of immigrants who had a spell of non-employment but were employed at wave three (Type 2).

5.2. Immigrants' Wage at wave 3: Is Foot in the Door better than Pick and Choose?

Now that we have established the presence of a large unexplained portion of the entry wage and wage growth, but with an overall increase in hourly wages for Type 1 male immigrants, the question is whether it is better to start employment soon after arrival, or whether a 'wait and see' or a 'pick and choose' or else 'invest in local human capital first' strategy offers any better outcome. In other words, are Type 2 immigrants any better-off, wage-wise, than Type 1 immigrants at wave 3? In this section, wave 3 wages of Type 1 and Type 2 immigrants are analysed separately, and results for both groups are compared at each step. But first, it is

necessary to compare the distributions of wages and hours worked at wave 3 for Type 1 and 2. We do so using the following tables and plots for Type 2 respondents, and comparing them with similar ones (above) for Type 1 immigrants.

The tables below (Table 5.7) indicate that Type 1 immigrants, both males and females, work on average more hours than their Type 2 counterparts. Type 1 males work about 45 hours a week and females work close to 40 hours a week, while Type 2 males work close to 41 hours and females work 37 hours per week.

The wages plots below (Chart 5.G) are for Type 2 males and females. It is interesting to realise that Type 2 people earn comparable hourly wages at wave 3 as did Type 1 people at wave 1. At wave 3, Type 2 males earn $14.76, while females earn $12.92 per week. Type 1 males and females earned respectively $14.41 and $13.66 at wave 1. It appears that there is no advantage in waiting for a better job. The sooner one gets in a job after migration, the better.

Table 5.7: Hours Worked at Wave 3

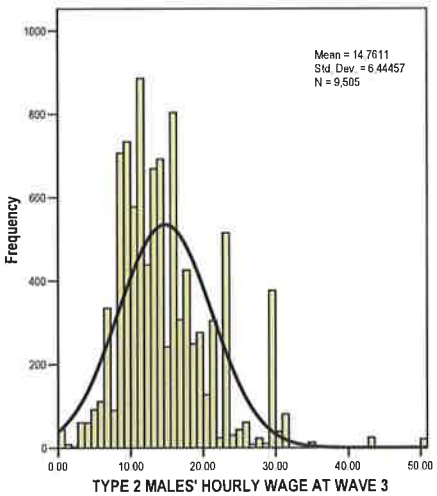
TYPE 1 : HOURS WORKED AT WAVE 3

	N	Min	Max	Mean	Std. Dev
MALES	11199	5	99	45.11	9.537
FEMALES	4210	10	81	39.62	7.961

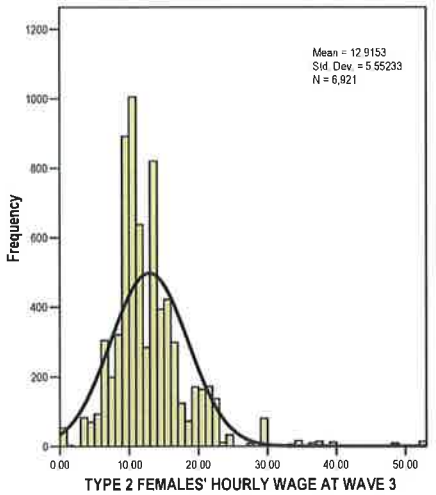
TYPE 2 : HOURS WORKED AT WAVE 3

	N	Min	Max	Mean	Std. Dev
MALES	9505	5	99	40.52	10.618
FEMALES	6921	4	99	36.66	12.643

Chart 5.G: Type 2 Immigrants' Hourly Wages at Wave 3



Cases weighted by Estimation weights - all wave sample to wave 3 onshore population



Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

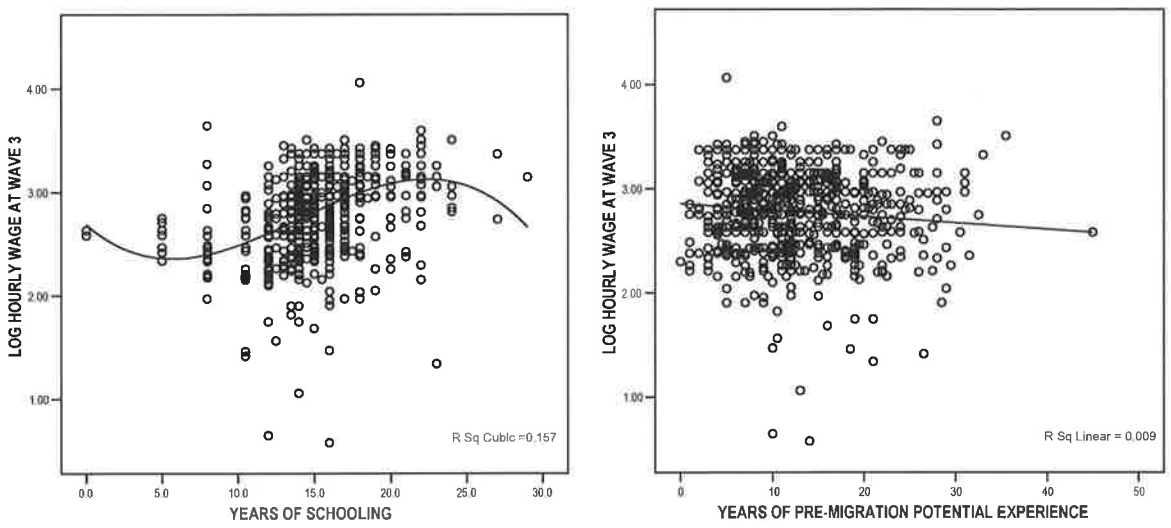
Following the finding of similar entry wages for Type 1 and Type 2 respondents, three years apart, we continue with an investigation of the determinants of both Types' wages at wave 3. Given the random nature of entry wages at wave 1, as time goes by, employed immigrants (Type 1) should be better able to prove themselves, or move into jobs that are better suited to their skills, so that wages should normally adjust to reflect the qualifications and experience of their incumbents. Also, having taken the time to acquire Australia-specific skills or to adjust their pre-migration skills to Australian standard, and having had three and a half

years of exposure to the Australian labour market, Type 2 immigrants' entry wages should normally be a better reflection of their skills and abilities.

Below are more plots, this time showing Type 1 and Type 2 males' and females' log hourly wages against their years of schooling and their pre-migration experience. As the wage - years of schooling scatter-plot clearly demonstrates, for Types 1 and Type 2 males, wave 3 wages are very similar in that both are, somewhat mildly, positively related to years of schooling, but with still a very large wage variation uncaptured by this variable. The right hand side plot, for wave-pre-migration potential experience, shows that there is absolutely no relationship between pre-migration experience and wages at wave 3 for both Type 1 and Type 2. The plots for females (not presented) follow the same trend. It is probably too far fetched to expect that pre-migration experience will play any substantial role at wave 3 when we had shown that it does not count at wave 1. However, there is at least in theory the possibility that once the immigrant has spent some time learning about the Australian labour market, they are more capable of presenting and demonstrating their past experience to potential employers; but the data we have seems to indicate the contrary.

A Mincer-type stepwise entry regression model of wages at wave 3 returned an R^2 of 0.143 for Type 1 males and 0.150 for Type 2 males, but rejected experience for both. For Type 1 males, the coefficient for YOS is 0.053, while for Type 2; the coefficient for YOS is 0.054. This can be interpreted as saying that for males, other things equal; an additional year of schooling adds around 5.4% to the wage at wave 3, regardless of prior work experience in Australia. The R^2 of 0.14 with only one variable compares favourably with the R^2 of 0.068 for Type 1 males at wave 1. For females, the Mincer-type estimation also only accepted YOS, with an R^2 of 0.136 and a coefficient of 0.052 for Type 1, and an R^2 of only 0.02 and a coefficient of 0.015 for Type 2.

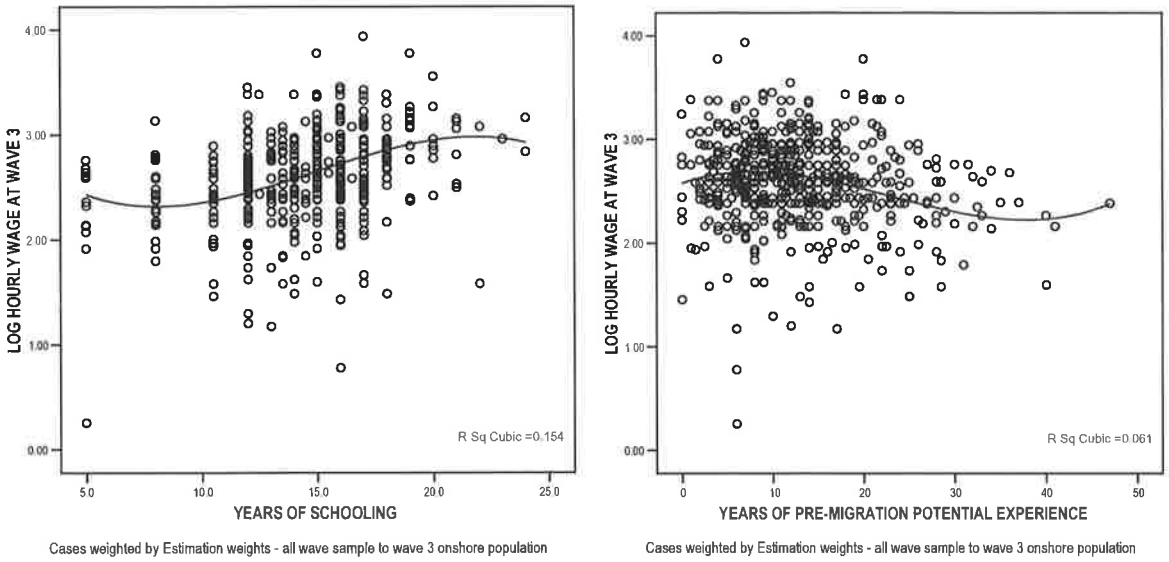
Chart 5.H: Type 1 Male's Wave 3 Wage, Years of Schooling, and Experience



Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

Chart 5.I: Type 2 Male's Wave 3 Wage, Years of Schooling, and Experience



The R^2 of 0.136 for Type 1 females at wave 3 is an improvement to the Wave 1 R^2 of 0.086. At wave 1, for Type 1 people, we found that an extra year of schooling increases the wage by 3.5 per cent for males and by 4.5 percent for females. There is evidence of an increase in the importance of pre-migration schooling for Type 1 people, while for Type 2, schooling explains very little of females' wages but is somewhat considered in the wage setting for males. This suggests that for females, pre-migration education is a relatively important determinant of wages for those who seek employment upon arrival, but not so for the others.

A regression of the natural log of wave 3 wages against variables used for Model 4 above (YOS, ENGHIW1, SYMEBRI, FHEUNA, FHASIA, VISIT, MARW1, and IMECO) was fitted. Its results are presented in the tables below. For Type 1 males, this regression explains 25% of the wage variation, and 22.6% for females. For Type 2 males, this regression returned an R^2 of 0.27 for males and 0.195 for females. For males, a wage estimation model with an explanatory power of 25% or higher is generally considered satisfactory and is a significant improvement from the R^2 obtained for a similar regression at wave 1 for Type 2 immigrants (0.18). For females also, the increase in the explanatory power from 16% to 19.5% is notable, as earnings estimations for females tend to be volatile due to the complexity of household work, childbearing and cultural constraints that affect females more than males.

The variables selected and their coefficients for each gender and immigrant Type are presented in the Tables below. It is cumbersome to go through all the variables, but as an example of the way these Tables could be interpreted, Type 2 male economic immigrants earn 24% more than the rest of Type 2 immigrants, and those with high English skills earn an 18% wage premium. Those from Asia fare worse by 15% on average, while those from Europe and North America enjoy a positive wage differential of 12 percent in comparison to the

average. Prior visit and being married add respectively 7% and 2% to the wage; and the effect of an additional year of schooling on wages is just 2%.

While the effect of schooling appears low, this variable is continuous, unlike the others: Other things equal, the effect of five years of schooling would be a 10% wage premium above average; which is not negligible. Also, note the negative coefficient on FHASIA for all groups (except for Type 1 females, where this variable was not selected). For Type 2 females note also the negative coefficients on ENGHIW1, SYMEBRI and FHEUNA; indicating that females with these characteristics fare worst by the percentage indicated by these variables' respective coefficients, in comparison to other Type 2 females.

Table 5.8: Wave 3 Wage Model Coefficients for Type 1 Males

Model		Unstdzed Coeffs		Stdzed Coeffs	t-Stat	Sig.	Correlations			Collinearity Statistics	
	variables	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
	CONSTANT	1.83	0.02		91.26	0.00					
	YOS	0.04	0.00	0.26	28.17	0.00	0.38	0.26	0.23	0.77	1.29
	ENGHIW1	0.22	0.01	0.19	21.68	0.00	0.31	0.20	0.18	0.88	1.14
	IMECO	0.17	0.01	0.21	22.72	0.00	0.30	0.21	0.19	0.83	1.21
	FHEUNA	0.09	0.01	0.10	10.98	0.00	0.09	0.10	0.09	0.76	1.31
	VISIT	0.08	0.01	0.10	11.79	0.00	0.15	0.11	0.10	0.91	1.10
	SYMEBRI	0.10	0.01	0.11	12.76	0.00	0.03	0.12	0.10	0.92	1.09
	FHASIA	-0.05	0.01	-0.05	-5.55	0.00	-0.03	-0.05	-0.05	0.76	1.32
Dependent Variable: LNWAGE3 LOG HOURLY WAGE AT WAVE 3											

Table 5.9: Wave 3 Wage Model Coefficients for Type 2 Males

Model		Unstdzed Coeffs		Stdzed Coeffs	t-Stat	Sig.	Correlations			Collinearity Statistics	
	variables	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
	CONSTANT	2.10	0.02		113.50	0.00					
	IMECO	0.24	0.01	0.27	26.55	0.00	0.37	0.26	0.23	0.72	1.39
	YOS	0.02	0.00	0.16	15.20	0.00	0.37	0.15	0.13	0.73	1.37
	ENGHIW1	0.18	0.01	0.21	19.66	0.00	0.36	0.20	0.17	0.69	1.45
	FHASIA	-0.15	0.01	-0.16	-16.02	0.00	-0.09	-0.16	-0.14	0.81	1.23
	FHEUNA	0.12	0.01	0.12	12.53	0.00	0.15	0.13	0.11	0.85	1.18
	VISIT	0.07	0.01	0.07	7.91	0.00	0.17	0.08	0.07	0.89	1.13
	MARW1	0.02	0.01	0.02	2.72	0.01	0.02	0.03	0.02	0.97	1.03
Dependent Variable: LNWAGE3 LOG HOURLY WAGE AT WAVE 3											

Table 5.10: Wave 3 Wage Model Coefficients for Type 1 Females

Model		Unstdzed Coeffs		Stdzed Coeffs	t-Stat	Sig.	Correlations			Collinearity Statistics	
	variables	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
	CONSTANT	1.99	0.03		58.13	0.00					
	IMECO	0.23	0.01	0.29	18.95	0.00	0.40	0.28	0.26	0.79	1.26
	YOS	0.03	0.00	0.19	12.23	0.00	0.36	0.19	0.17	0.74	1.35
	VISIT	0.08	0.01	0.09	6.67	0.00	0.16	0.10	0.09	0.94	1.06
	SYMEBRI	0.08	0.01	0.08	5.96	0.00	0.10	0.09	0.08	0.99	1.01
	ENGHIW1	0.11	0.02	0.07	4.97	0.00	0.20	0.08	0.07	0.88	1.13
Dependent Variable: LNWAGE3 LOG HOURLY WAGE AT WAVE 3											

Table 5.11: Wave 3 Wage Model Coefficients for Type 2 Females

Model		Unstdzed Coeffs		Stdzed Coeffs	t-Stat	Sig.	Correlations			Collinearity Statistics	
	variables	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
	CONSTANT	2.57	0.03		84.92	0.00					
	IMECO	0.22	0.02	0.28	9.22	0.00	0.21	0.25	0.23	0.70	1.42
	SYMEBRI	-0.14	0.02	-0.20	-6.82	0.00	-0.17	-0.19	-0.17	0.74	1.34
	VISIT	0.23	0.02	0.37	11.26	0.00	0.21	0.30	0.28	0.58	1.74
	ENGHIW1	-0.20	0.02	-0.29	-9.47	0.00	0.00	-0.26	-0.24	0.66	1.52
	MARW1	0.21	0.02	0.25	8.83	0.00	0.02	0.24	0.22	0.77	1.30
	FHASIA	-0.18	0.02	-0.27	-8.73	0.00	-0.13	-0.24	-0.22	0.67	1.50
	FHEUNA	-0.15	0.03	-0.22	-5.89	0.00	0.04	-0.16	-0.15	0.47	2.14
Dependent Variable: LNWAGE3 LOG HOURLY WAGE AT WAVE 3											

5.3. Immigrants' Occupational Transition: Assimilation Revisited.

Another factor which might explain the apparent randomness of immigrants' entry wages and the apparent lack of wage 'correction' in the medium term has been studied by Chiswick, Lee and Miller (2004 - forthcoming). Chiswick et al find an incomplete U - shaped path for immigrants' occupational transition. They argue that the majority of immigrants start their employment in occupations that are below their skills or experience, and while there is a gradual adjustment over the period under observation, some of the occupational mismatch persists at the end of four years of the LSIA survey. The depth of the U is bigger for more skilled immigrant in the 'high' ASCO categories (those with the highest ANU scores such as Managers and Administrators, Professionals and Para-professionals), while for occupations that do not require high degree of specialisation (Labourers, Machine Operators, etc...), the U is shallow.

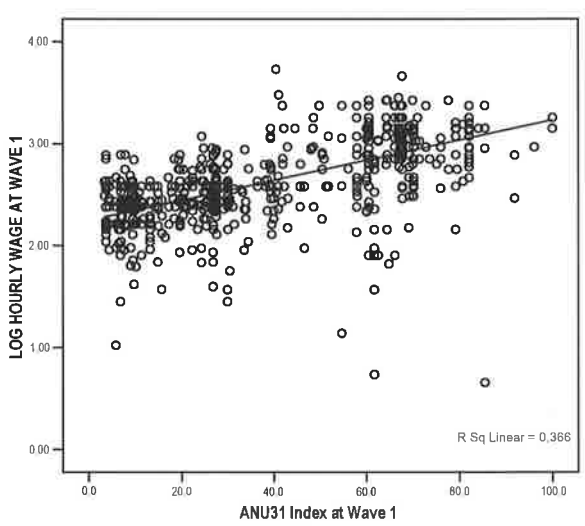
Until now, information on immigrants' occupation has been left out of the discussion. This was done on purpose, partly because the measure of occupation used here is more consistent than that of wage, and required particular attention, but also because the ANU3 occupational index, which gives an indication of occupational prestige (Jones, 1989) is significantly correlated to wage, as shown in the left hand side Charts below for the case of LSIA PA respondents who were employed in all three waves.

Due to this high correlation, and to the fact that the immigrant's occupations are recorded in their full details at the ASCO 1 four-digit level (unlike their wages which are given in bands), the occupational transition information can be used as a further test for the causes of immigrants' wage randomness. Including the ANU3 in the estimation of wages or vice versa would trivialise the estimation. Below is a comparison between the ANU3 measure and wages for Type 1 respondents.

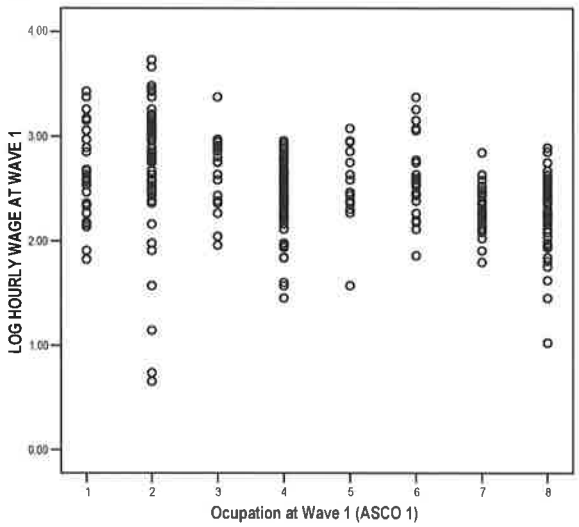
5.3.1. Occupations and Wages

The charts below on the left-hand side show a very clear positive correlation between the two variables at each wave. Also, for males, there are three points of concentration: Two at the low-end of the ANU-3 index (one between 10 and 17; and another between 20 and 30), and a third at the high end between 60 and 70. These concentration points correspond to the large proportion of immigrants in three professions: Professionals (ASCO 1 category 2, which counts for 26.7% of all Type 1 males at wave 1, 27.9% at wave 2 and 25.3% at wave 3), Tradespersons (Category 4, with 20.2%, 22.2% and 20.9%), and Labourers (Category 8, with 21%, 15.5% and 13.9%). What happens to people in these categories has a defining effect on summary statistics.

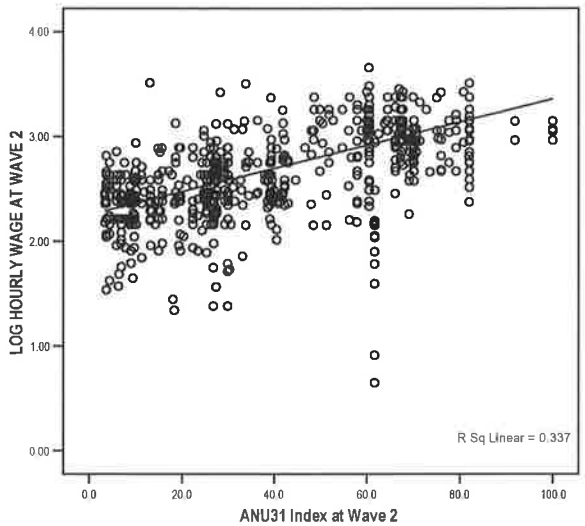
Chart 5.J: Wage, Occupation[26] and the ANU3 for Type 1 Male Immigrants



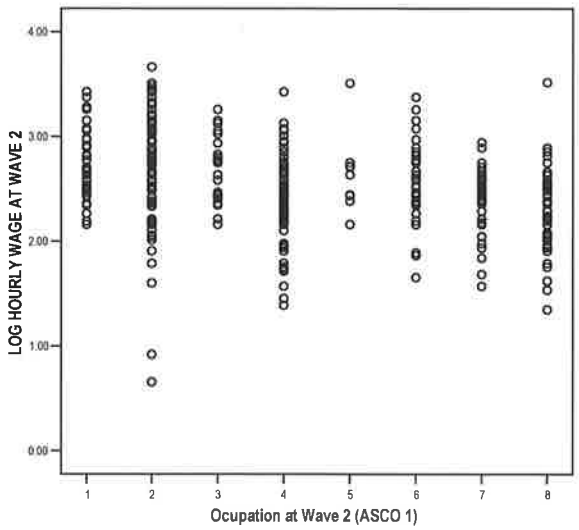
Cases weighted by Estimation weights - all wave sample to wave 3 onshore population



Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

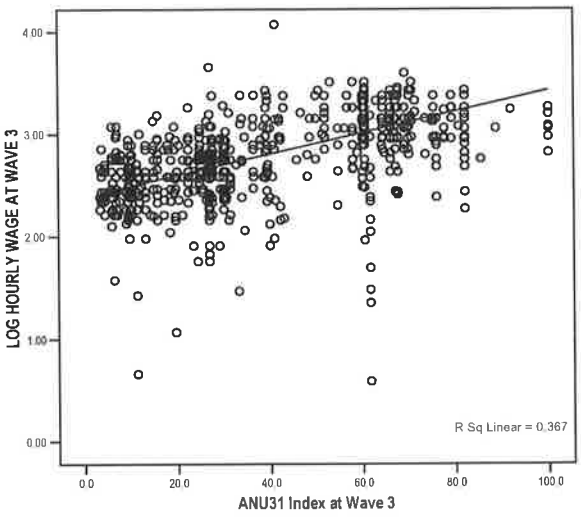


Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

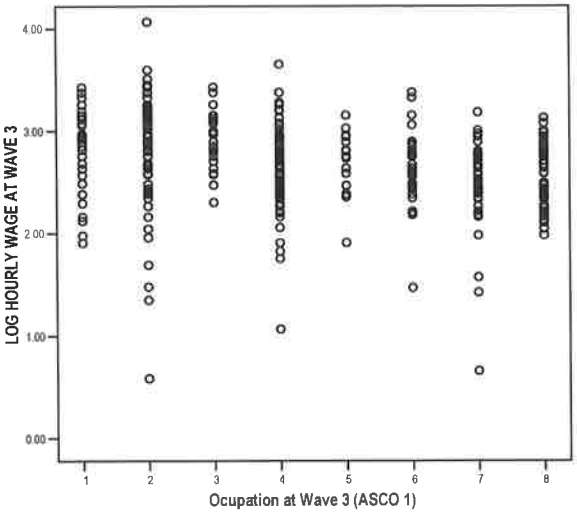


Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

26 (1) Managers and Administrators; (2) Professionals; (3) Para-professionals; (4) Tradespersons and related; (5) Clerks; (6) Salespersons; (7) Machine Operators and Drivers; (8) Labourers

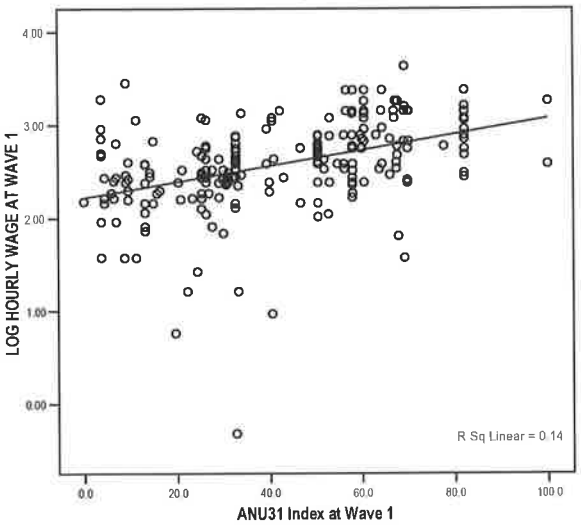


Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

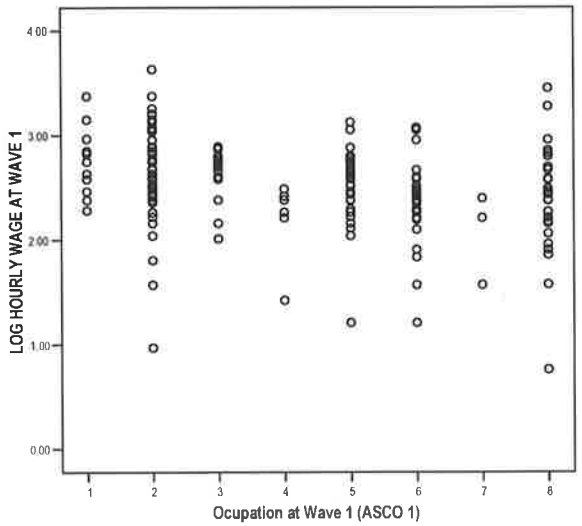


Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

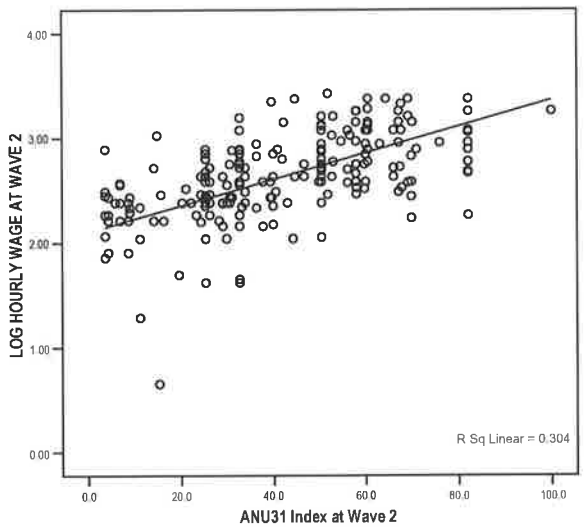
Chart 5.K: Wage, Occupation and the ANU3 index for Type 1 Female Immigrants



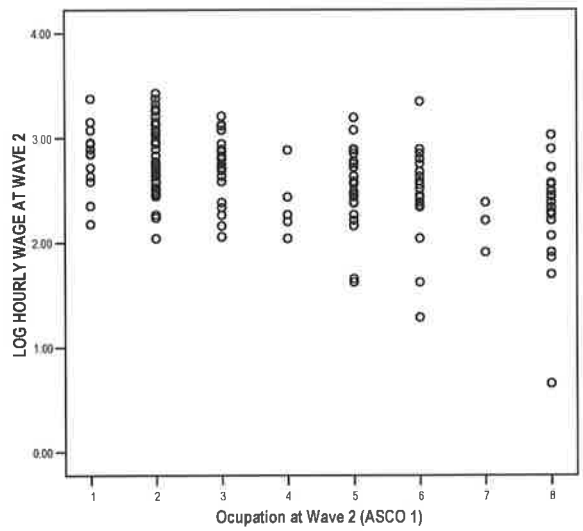
Cases weighted by Estimation weights - all wave sample to wave 3 onshore population



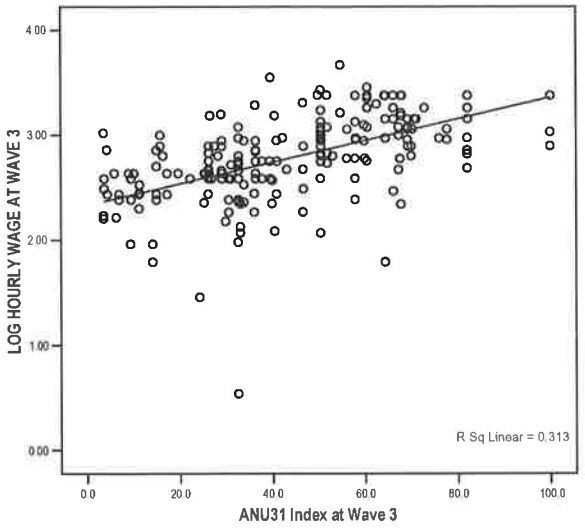
Cases weighted by Estimation weights - all wave sample to wave 3 onshore population



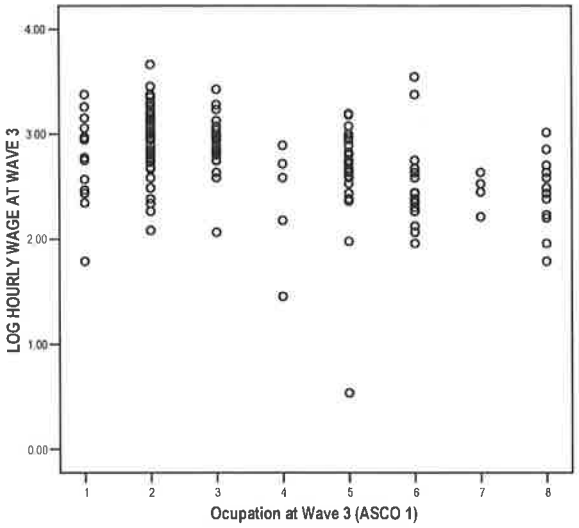
Cases weighted by Estimation weights - all wave sample to wave 3 onshore population



Cases weighted by Estimation weights - all wave sample to wave 3 onshore population



Cases weighted by Estimation weights - all wave sample to wave 3 onshore population



Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

The other important information, also regarding the relationship between occupations and wages, is shown on the right-hand side charts. These charts plot immigrants log wages against the ASCO 1 one-digit level occupations. It is very obvious that there is virtually no clear wage-occupation differentiation, that is, people in different occupations seem to earn comparable wages. For most males, irrespective of their occupational categories, their log hourly wages are between 2 and 3 throughout the period. For females, there is a slight increase at waves 2 and 3 for those in the 'high' occupational categories.

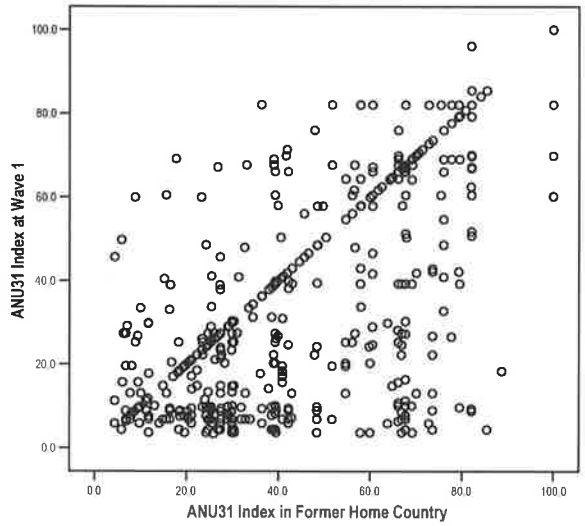
5.3.2. Going Up, Going Down, or Going Nowhere? Is There Occupational Adjustment?

Chiswick, Lee and Miller's U findings were based on the calculation of mean ANU scores for immigrants at each wave. Typically, they find that the average ANU3 score for all immigrants was 48% in the last year prior to migration, then it dropped to around 41% in the first job, and rose again to around 43%. Females and males both have similar ANU3 drops at their first job; but females recover better than males. The top four ASCO professional categories typically have a fall in their ANU3 scores, but the bottom four do not experience any fall. In fact, for them the first job in Australia has roughly the same ANU3 score as their last pre-migration job and things improve from there. In other words, less skilled workers better their occupational standing as soon as they start working. Compared to non-English speakers, English-speaking migrants have a shallow drop and a faster/larger recovery – they also end up with higher average ANU3 score than prior to migration. Skilled migrants have no change in their ANU3 scores throughout the period, while refugees fare worst than all other visa categories: Their ANU3 scores fall further and their adjustment is slower.

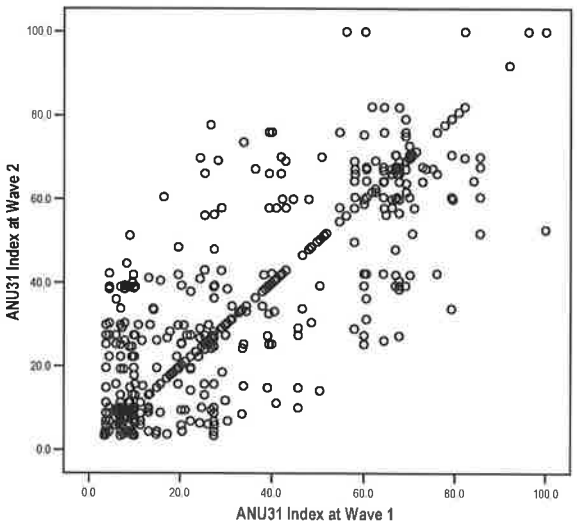
This summary of Chiswick *et al*'s work shows that, in the details, the U-shaped occupational transition is not exactly a U. First, it is natural that people in lower professions cannot have a large fall in their ANU3 scores because they are already low: The lower limit is zero. Second, it is also natural that for those in high

profession, the ANU3 score will fall if their labour market adjustment is not immediate. But beyond these comments, the plots below paint an even more mixed picture: The first plot, both for males and for females shows that effectively, most people have an ANU3 drop from the last pre-migration job to their wave 1 job. However, there is also evidence of people who do better in their wave 1 job than in their last pre-migration job, and this is so across the board. From wave 1 to wave 3, there seems to be no overall positive or negative trend. The last plot for each gender gives the ANU3 transition summary from pre-migration to wave 3. For both males and females, the last plot looks very similar to the first, which further confirms that not much happens between wave 1 and wave 3 in terms of occupational adjustment. From this perspective, Chiswick *et al*'s U-shaped transition looks more like an L.

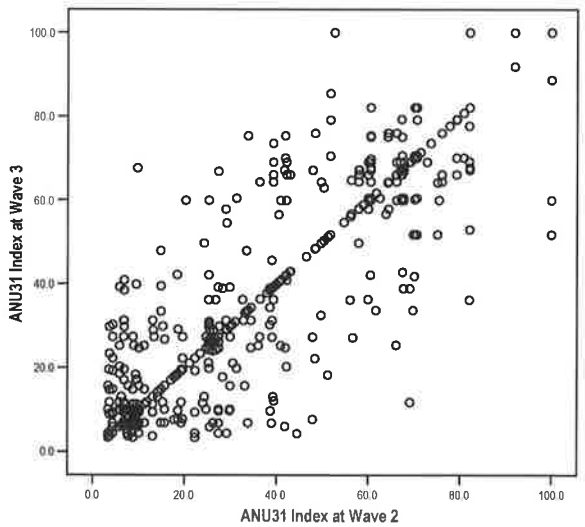
Chart 5.L: Occupational Transition Plots for Type 1 Males



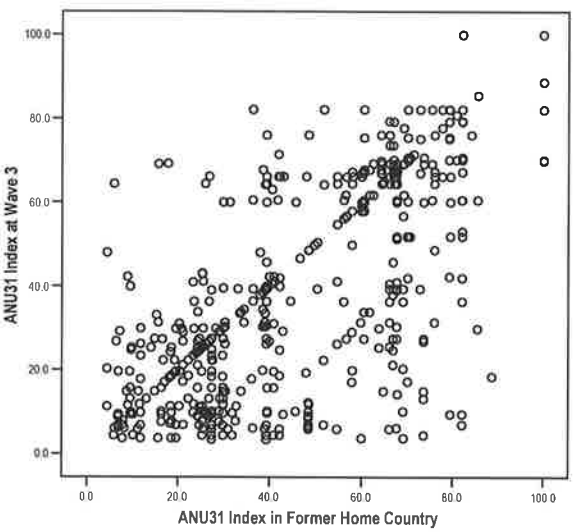
Cases weighted by Estimation weights - all wave sample to wave 3 onshore population



Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

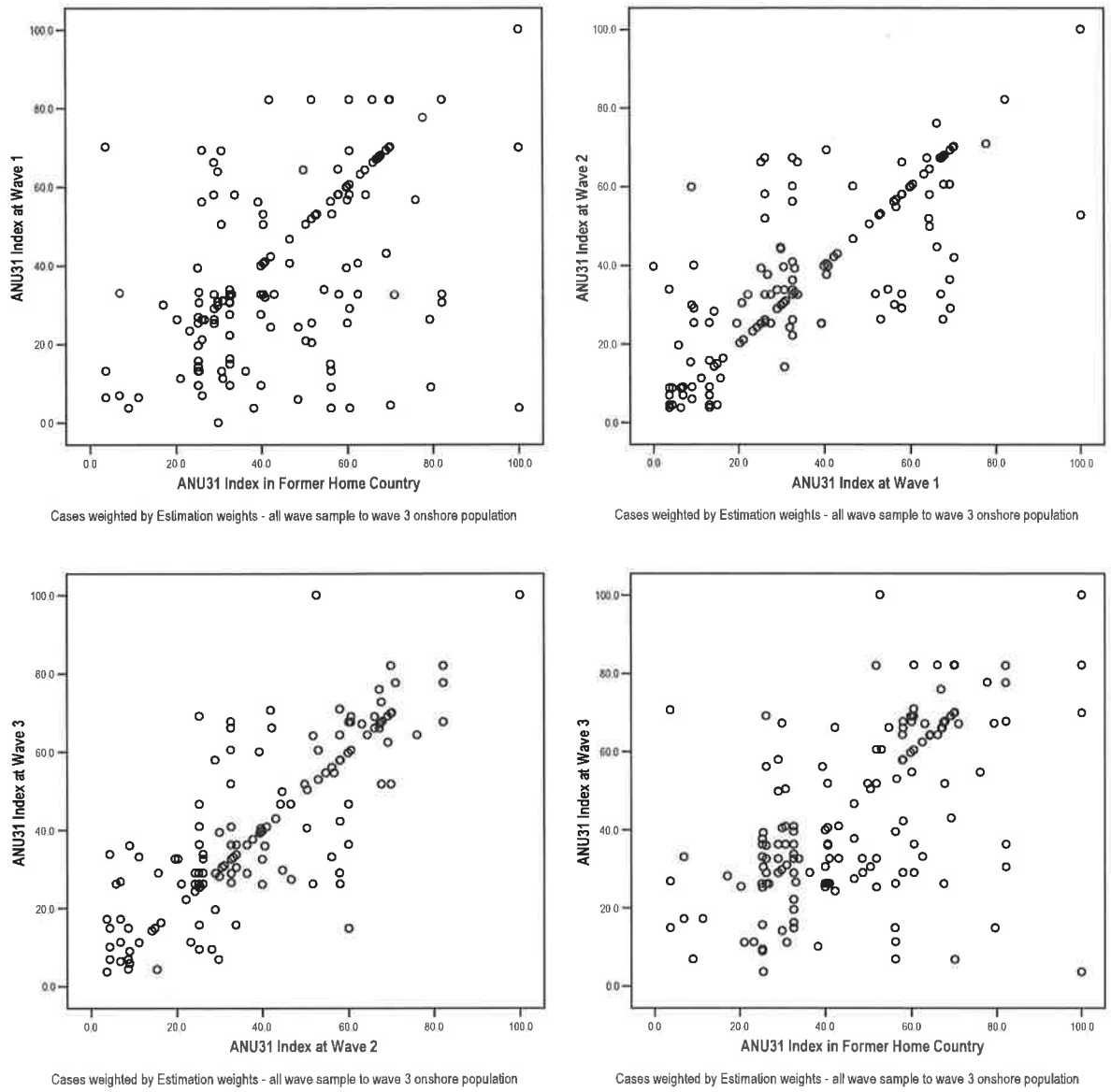


Cases weighted by Estimation weights - all wave sample to wave 3 onshore population



Cases weighted by Estimation weights - all wave sample to wave 3 onshore population

Chart 5.M: Occupational Transition Plots for Type 1 Females



More details on occupational transition are given in the cross-tabulations presented below for Type 1 respondents, and further down for Type 2 respondents. The bottom row of each occupational category gives the percentage of people in that category in the first period that joined the category in the relevant column in the second period, and so forth. The diagonal from top-left to bottom-right of each table gives the proportion of people in each occupational category that did not change professions.

The first Table shows that, apart from Professionals, Tradespersons and Machines Operators / drivers, less than half the people in each pre-migration occupation remained in it at wave 1. Prior to migration, 3,446 male immigrants (33.6% of all Type 1 males) were professionals. Of these, 2,429 (70%) remained professional at wave 1; 162 (4.7%) became Managers and Administrators, while the rest went into 'lower' ASCO 1 categories. The biggest proportion became labourers (252 or 7.3%). But professionals were the most occupationally stable group. Only 33% of pre-migration Managers and Administrators remained as such at wave 1, while 26.5% became labourers. In the same way, between 25% and 31% of males in all occupations apart from

professionals and Para-professionals became labourers. In the opposite direction, 39% of labourers became machine operators and 24 percent became salesmen, 16% of para-professionals became professionals, 7 percent of salesmen became tradesmen, 7% of machine operators became tradesmen. At the extreme, 2.3% of pre-migration Machine Operators and 1.1 of labourers became professionals at wave 1, while 4 percent of salesmen became managers. As the plots and tables below show, while there is some upward mobility, the transition from pre-migration to wave 1 occupations displays a generally 'negative' trend. From wave 1 onward, occupational stability became the norm for males. The only sign of significant mobility comes from wave 1 machine operators and labourers for whom 21% of each became tradesmen. For labourers, there is no other way but up, while for machine operators to compensate the above upward mobility, 22 percent became labourers. Between waves 2 and 3, the only major movement comes from 27% of salesmen who became managers.

Type 1 females, unlike males, seem to have a relatively stable occupational transition. The majority of all females, except pre-migration clerks and machine operators, remained in their occupations at wave 1, and even the two exceptions moved equally up and down the occupational ladder.

The proportion of males in the top three occupations fell from 12, 33 and 6 percent prior to migration (total 52 percent) to 7, 27 and 4 percent at wave 1 (total 38 percent); then 8, 28 and 4 percent at wave 2 (total 40 percent), and then 13, 25 and 5 percent at wave 3 (total 43 percent).

Tables 5.12: Occupational Transition Tables for Type 1 Males

Type 1 Males: Ocupation in Former Home Country (ASCO 1) by Ocupation at Wave 1 (ASCO 1)

		Ocupation at Wave 1 (ASCO 1)								
Ocupation in FHC (ASCO 1)		1	2	3	4	5	6	7	8	Total
1 Man and Adm (12.1%)	Count	410	104	8	155	61	42	135	330	1245
	% within occ_fhc	32.9%	8.4%	.6%	12.4%	4.9%	3.4%	10.8%	26.5%	100.0%
2 Professionals (33.6%)	Count	162	2429	133	129	112	152	77	252	3446
	% within occ_fhc	4.7%	70.5%	3.9%	3.7%	3.3%	4.4%	2.2%	7.3%	100.0%
3 Para Profs (5.7%)	Count	14	93	196	87	32	76	5	83	586
	% within occ_fhc	2.4%	15.9%	33.4%	14.8%	5.5%	13.0%	.9%	14.2%	100.0%
4 Trades (27.8%)	Count	22	9	37	1604	33	77	192	883	2857
	% within occ_fhc	.8%	.3%	1.3%	56.1%	1.2%	2.7%	6.7%	30.9%	100.0%
5 Clerks (5.0%)	Count	0	61	11	0	183	83	22	152	512
	% within occ_fhc	.0%	11.9%	2.1%	.0%	35.7%	16.2%	4.3%	29.7%	100.0%
6 Sales (8.0%)	Count	30	38	0	57	28	354	84	233	824
	% within occ_fhc	3.6%	4.6%	.0%	6.9%	3.4%	43.0%	10.2%	28.3%	100.0%
7 M Op / Dri (3.5%)	Count	0	8	11	24	0	17	206	89	355
	% within occ_fhc	.0%	2.3%	3.1%	6.8%	.0%	4.8%	58.0%	25.1%	100.0%
8 Labourers (4.3%)	Count	0	5	10	15	0	107	171	132	440
	% within occ_fhc	.0%	1.1%	2.3%	3.4%	.0%	24.3%	38.9%	30.0%	100.0%
Total	Count	638	2747	406	2071	449	908	892	2159	10270
	% within occ_fhc	6.2%	26.7%	4.0%	20.2%	4.4%	8.8%	8.7%	21.0%	100.0%

Type 1 Males: Ocupation at Wave 1 (ASCO 1) by Ocupation at Wave 2 (ASCO 1)

		Ocupation at Wave 2 (ASCO 1)								
Ocupation at Wave 1 (ASCO 1)		1	2	3	4	5	6	7	8	Total
1 Man and Adm (6.9%)	Count	486	172	0	5	10	96	0	0	769
	% within occ_w1	63.2%	22.4%	.0%	.7%	1.3%	12.5%	.0%	.0%	100.0%
2 Professionals (26.8%)	Count	213	2627	41	54	20	43	0	0	2998
	% within occ_w1	7.1%	87.6%	1.4%	1.8%	.7%	1.4%	.0%	.0%	100.0%
3 Para Profs (3.9%)	Count	23	49	240	38	0	19	42	28	439
	% within occ_w1	5.2%	11.2%	54.7%	8.7%	.0%	4.3%	9.6%	6.4%	100.0%
4 Trades (18.8%)	Count	0	31	31	1650	0	58	189	146	2105
	% within occ_w1	.0%	1.5%	1.5%	78.4%	.0%	2.8%	9.0%	6.9%	100.0%
5 Clerks (4.9%)	Count	66	156	22	10	118	171	0	5	553
	% within occ_w1	11.9%	28.2%	4.0%	1.8%	21.3%	30.9%	.0%	.9%	100.0%
6 Sales (8.5%)	Count	89	57	7	9	34	657	9	90	952
	% within occ_w1	9.3%	6.0%	.7%	.9%	3.6%	69.0%	.9%	9.5%	100.0%
7 M Op / Dri (9.4%)	Count	0	28	54	224	26	0	485	231	1048
	% within occ_w1	.0%	2.7%	5.2%	21.4%	2.5%	.0%	46.3%	22.0%	100.0%
8 Labourers (20.9%)	Count	15	0	74	500	138	88	280	1241	2336
	% within occ_w1	.6%	.0%	3.2%	21.4%	5.9%	3.8%	12.0%	53.1%	100.0%
Total	Count	892	3120	469	2490	346	1132	1005	1741	11200
	% within occ_w1	8.0%	27.9%	4.2%	22.2%	3.1%	10.1%	9.0%	15.5%	100.0%

Type 1 Males: Ocupation at Wave 2 (ASCO 1) by Ocupation at Wave 3 (ASCO 1)

		Ocupation at Wave 3 (ASCO 1)								
Ocupation at Wave 2 (ASCO 1)		1	2	3	4	5	6	7	8	Total
1 Man and Adm (8.0%)	Count	568	186	17	13	24	66	13	4	891
	% within occ_w2	63.7%	20.9%	1.9%	1.5%	2.7%	7.4%	1.5%	.4%	100.0%
2 Professionals (27.9%)	Count	463	2521	90	0	12	34	0	0	3120
	% within occ_w2	14.8%	80.8%	2.9%	.0%	.4%	1.1%	.0%	.0%	100.0%
3 Para Profs (4.2%)	Count	44	28	298	50	6	0	0	44	470
	% within occ_w2	9.4%	6.0%	63.4%	10.6%	1.3%	.0%	.0%	9.4%	100.0%
4 Trades (22.2%)	Count	0	31	85	1675	74	44	213	368	2490
	% within occ_w2	.0%	1.2%	3.4%	67.3%	3.0%	1.8%	8.6%	14.8%	100.0%
5 Clerks (3.1%)	Count	6	9	0	62	205	34	5	26	347
	% within occ_w2	1.7%	2.6%	.0%	17.9%	59.1%	9.8%	1.4%	7.5%	100.0%
6 Sales (10.1%)	Count	312	6	58	122	115	424	17	79	1133
	% within occ_w2	27.5%	.5%	5.1%	10.8%	10.2%	37.4%	1.5%	7.0%	100.0%
7 M Op / Dri (9.0%)	Count	12	0	23	90	0	0	700	180	1005
	% within occ_w2	1.2%	.0%	2.3%	9.0%	.0%	.0%	69.7%	17.9%	100.0%
8 Labourers (15.5%)	Count	116	44	19	329	31	69	280	851	1739
	% within occ_w2	6.7%	2.5%	1.1%	18.9%	1.8%	4.0%	16.1%	48.9%	100.0%
Total	Count	1521	2830	590	2341	467	671	1228	1552	11200
	% within occ_w2	13.6%	25.3%	5.3%	20.9%	4.2%	6.0%	11.0%	13.9%	100.0%

On the other hand, the proportion of Type 1 males in the bottom two occupational categories (machine operators/drivers and labourers) were 3.5 and 4 percent prior to migration (total 7.5 percent), and they jumped to 9 and 21 percent at wave 1 (total 30 percent). They were 9 and 16 percent at wave 2 (total 25 percent) and then 11 and 14 at wave 3 (total 25 percent). Note the increase in the last two occupations at wave 1 and subsequent stability. The proportion in the middle three occupations (tradespersons, clerks, and salespersons) were 28, 5 and 8 percent prior to migration (total 41 percent), then 20, 4 and 9 percent at wave 1 (total 33 percent); 22, 3 and 10 percent at wave 2 (total 33 percent), and 20, 4 and 6 percent at wave 3 (total

30 percent). Besides tradespersons whose pre-migration proportion fell, the other two categories were relatively stable.

Tables 5.13: Occupational Transition Tables for Type 1 Females

Type 1 females: Ocupation in FHC (ASCO 1) by Ocupation at Wave 1 (ASCO 1)

		Ocupation at Wave 1 (ASCO 1)								
Ocupation in FHC (ASCO 1)		1	2	3	4	5	6	7	8	Total
1 Man and Adm (11.0%)	Count	59	61	0	3	122	155	0	16	416
	% within occ_fhc	14.2%	14.7%	.0%	.7%	29.3%	37.3%	.0%	3.8%	100.0%
2 Professionals (34.9%)	Count	49	839	9	0	260	67	0	93	1317
	% within occ_fhc	3.7%	63.7%	.7%	.0%	19.7%	5.1%	.0%	7.1%	100.0%
3 Para Profs (10.6%)	Count	0	12	349	0	0	14	0	26	401
	% within occ_fhc	.0%	3.0%	87.0%	.0%	.0%	3.5%	.0%	6.5%	100.0%
4 Trades (1.9%)	Count	0	0	0	43	10	18	0	0	71
	% within occ_fhc	.0%	.0%	.0%	60.6%	14.1%	25.4%	.0%	.0%	100.0%
5 Clerks (20.9%)	Count	3	99	0	0	426	215	0	45	788
	% within occ_fhc	.4%	12.6%	.0%	.0%	54.1%	27.3%	.0%	5.7%	100.0%
6 Sales (15.6%)	Count	39	24	12	26	50	389	0	48	588
	% within occ_fhc	6.6%	4.1%	2.0%	4.4%	8.5%	66.2%	.0%	8.2%	100.0%
7 M Op / Dri (0.2%)	Count	0	0	0	0	0	0	6	0	6
	% within occ_fhc	.0%	.0%	.0%	.0%	.0%	.0%	100.0%	.0%	100.0%
8 Labourers (4.7%)	Count	0	25	0	0	0	16	80	56	177
	% within occ_fhc	.0%	14.1%	.0%	.0%	.0%	9.0%	45.2%	31.6%	100.0%
Total	Count	155	1060	370	72	868	874	86	284	3769
	% within occ_fhc	4.1%	28.1%	9.8%	1.9%	23.0%	23.2%	2.3%	7.5%	100.0%

Type 1 Females: Ocupation at Wave 1 (ASCO 1) by Ocupation at Wave 2 (ASCO 1)

		Ocupation at Wave 2 (ASCO 1)								
Ocupation at Wave 1 (ASCO 1)		1	2	3	4	5	6	7	8	Total
1 Man and Adm (3.7%)	Count	75	41	8	0	0	31	0	0	155
	% within occ_w1	48.4%	26.5%	5.2%	.0%	.0%	20.0%	.0%	.0%	100.0%
2 Professionals (27.1%)	Count	88	856	36	0	145	15	0	0	1140
	% within occ_w1	7.7%	75.1%	3.2%	.0%	12.7%	1.3%	.0%	.0%	100.0%
3 Para Profs (8.8%)	Count	0	0	370	0	0	0	0	0	370
	% within occ_w1	.0%	.0%	100.0%	.0%	.0%	.0%	.0%	.0%	100.0%
4 Trades (1.7%)	Count	23	0	26	23	0	0	0	0	72
	% within occ_w1	31.9%	.0%	36.1%	31.9%	.0%	.0%	.0%	.0%	100.0%
5 Clerks (22.3%)	Count	74	70	34	0	752	8	0	0	938
	% within occ_w1	7.9%	7.5%	3.6%	.0%	80.2%	.9%	.0%	.0%	100.0%
6 Sales (21.3%)	Count	32	2	0	0	53	784	0	25	896
	% within occ_w1	3.6%	.2%	.0%	.0%	5.9%	87.5%	.0%	2.8%	100.0%
7 M Op / Dri (3.8%)	Count	0	0	0	0	0	0	80	79	159
	% within occ_w1	.0%	.0%	.0%	.0%	.0%	.0%	50.3%	49.7%	100.0%
8 Labourers (11.4%)	Count	20	0	0	6	31	33	45	344	479
	% within occ_w1	4.2%	.0%	.0%	1.3%	6.5%	6.9%	9.4%	71.8%	100.0%
Total	Count	312	969	474	29	981	871	125	448	4209
	% within occ_w1	7.4%	23.0%	11.3%	.7%	23.3%	20.7%	3.0%	10.6%	100.0%

For females, the proportions in the top three professions were 11, 35 and 11 percent prior to migration (total 57 percent), then 4, 28 and 10 percent at wave 1 (total 42 percent); 7, 23 and 11 percent at wave 2 (total 41 percent), and then 9, 24 and 11 percent at wave 3 (total 44 percent). Those in the lower two professions went from 5 percent to 10 percent, to 14 percent, and then ended up at 13 percent. Females in the middle three

professions were 2, 21 and 16 percent prior to migration (total 39 percent), then 2, 23 and 23 percent at wave 1 (total 48 percent); 1, 23 and 21 percent at wave 2 (45 percent), and finally 2, 24 and 17 percent at wave 3 (total 43 percent).

As the Tables contain a lot of disaggregated information, it is left to the reader to analyse them in further detail as and if needed. Nevertheless, we retain that there is evidence of major reshuffling of occupations at wave 1, with high and middle level occupations loosing people to lower level occupations, and little evidence of a readjustment towards pre-migration occupational proportions.

Type 1 Females: Ocupation at Wave 2 (ASCO 1) by Ocupation at Wave 3 (ASCO 1)

		Ocupation at Wave 3 (ASCO 1)								
Ocupation at Wave 2 (ASCO 1)		1	2	3	4	5	6	7	8	Total
1 Man and Adm (7.4%)	Count	180	52	11	23	24	3	0	20	313
	% within occ_w2	57.5%	16.6%	3.5%	7.3%	7.7%	1.0%	.0%	6.4%	100.0%
2 Professionals (23.0%)	Count	113	755	0	47	32	23	0	0	970
	% within occ_w2	11.6%	77.8%	.0%	4.8%	3.3%	2.4%	.0%	.0%	100.0%
3 Para Profs (11.3%)	Count	12	34	413	0	15	0	0	0	474
	% within occ_w2	2.5%	7.2%	87.1%	.0%	3.2%	.0%	.0%	.0%	100.0%
4 Trades (0.7%)	Count	0	0	0	16	0	0	7	6	29
	% within occ_w2	.0%	.0%	.0%	55.2%	.0%	.0%	24.1%	20.7%	100.0%
5 Clerks (23.3%)	Count	0	110	33	0	729	110	0	0	982
	% within occ_w2	.0%	11.2%	3.4%	.0%	74.2%	11.2%	.0%	.0%	100.0%
6 Sales (20.7%)	Count	66	46	24	0	172	562	0	0	870
	% within occ_w2	7.6%	5.3%	2.8%	.0%	19.8%	64.6%	.0%	.0%	100.0%
7 M Op / Dri (3.0%)	Count	0	0	0	0	0	0	0	125	125
	% within occ_w2	.0%	.0%	.0%	.0%	.0%	.0%	.0%	100.0%	100.0%
8 Labourers (10.7%)	Count	0	0	0	5	35	23	37	349	449
	% within occ_w2	.0%	.0%	.0%	1.1%	7.8%	5.1%	8.2%	77.7%	100.0%
Total	Count	371	997	481	91	1007	721	44	500	4212
	% within occ_w2	8.8%	23.7%	11.4%	2.2%	23.9%	17.1%	1.0%	11.9%	100.0%

On the basis of the above graphic and tabular evidence, it is clear that the finding of an apparent random wage setting system for immigrants as well as the apparent lack of explanation to the generalised wage adjustment by the usual Human Capital variables is due primarily to the fact that most immigrants start their employment in Australia in professions that are different from the ones they were qualified for prior to migration, and this occupational mismatch persists over the survey period.

The lack of occupational mobility should not really be a surprise, given that only a very small proportion of people report changing jobs (less than 10 percent) – in fact, the real surprise here is that *some* people change professions without changing jobs; but there is no simple way of cross-checking how this is possible. The other surprise is the significant increase over time of people who report using their skills. It is possible that the skills required to do one job change over time (the job title does not change, but its content or the responsibilities/skills required to do it change – in other words, the job 'grows on' its incumbent), in which case

the information given may be accurate. However, as the use of qualification information is a self-reported variable, it is also possible that people adjust their views or expectations on 'using qualifications' as time goes by. In any case, it is clear from the data that the reasons why wages do not adjust are to be found in the lack of occupational mobility. The lack of occupational adjustment for males is a serious issue and should be a major concern for both immigration and labour market policy-makers.

The tables and charts below show occupational information on Type 2 respondents similar to the one presented above for Type 1. The ANU3 by log wage and the occupation by log wage plots are very similar to the ones for Type 1 respondents, and so are both groups' pre-migration to wave 3 ANU3 transition plots, apart from the fact that Type 2 females appear to end up in lower occupations, in comparison to their Type 1 counterparts. The ANU3 transition Tables confirm this general picture.

Chart 5.N: Wage, Occupation and the ANU3 for Type 2 Male Immigrants

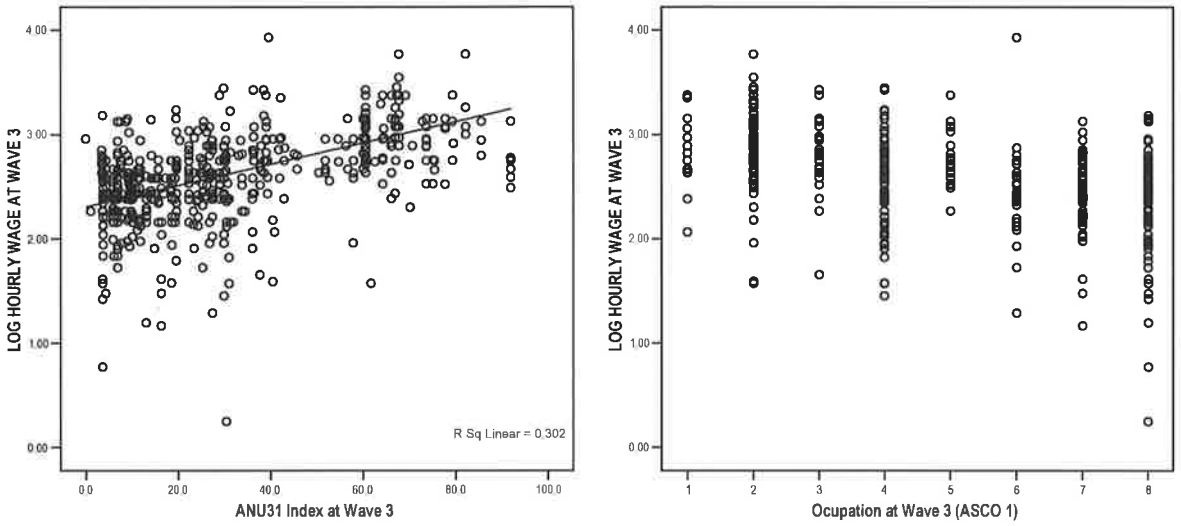
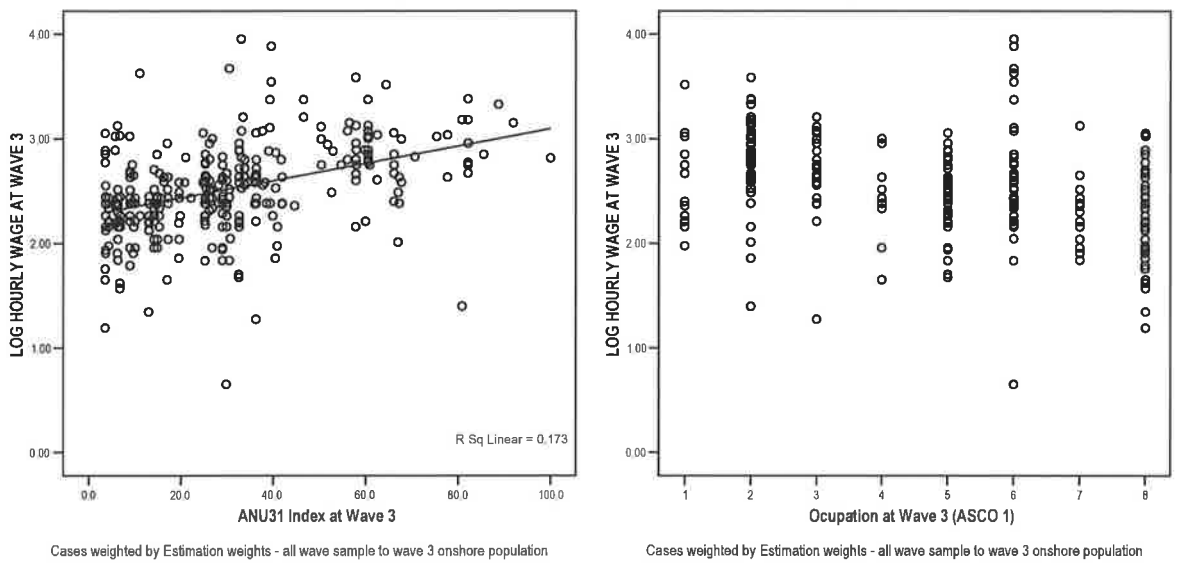


Chart 5.O: Wage, Occupation and the ANU3 for Type 2 Female Immigrants



Similar to Type 1 males, Type 2 males are dominated by pre-migration professionals (32% for Type 2 and 34 for Type 1) and tradesmen (27% and 28%). The pre-migration occupational composition of females on the other hand is slightly different: while both were dominated by professionals and clerks, the proportion of professionals was lower for type 1 than for type 2 females (35% versus 46%) and that of clerks was higher (21% against 13%). Female clerks are more likely to find jobs soon after arrival than professionals.

Tables 5.14: Occupational Transition Table for Type 2 Immigrants

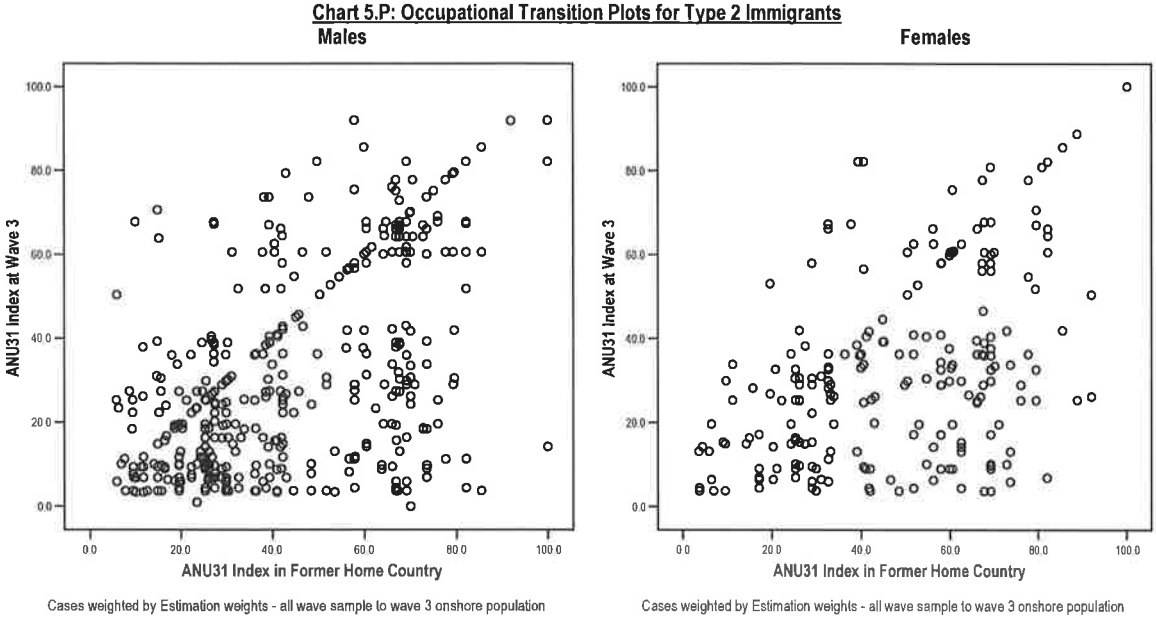
Type 2 Males: Ocupation in FHC (ASCO 1) by Ocupation at Wave 3 (ASCO 1) Crosstabulation

		Ocupation at Wave 3 (ASCO 1)								
Ocupation in FHC (ASCO 1)		1	2	3	4	5	6	7	8	Total
1 Man & Adm (9.4%)	Count	151	97	38	82	81	75	119	105	748
	% within occ_fhc	20.2%	13.0%	5.1%	11.0%	10.8%	10.0%	15.9%	14.0%	100.0%
2 Prof (31.9%)	Count	87	1467	137	260	98	102	131	262	2544
	% within occ_fhc	3.4%	57.7%	5.4%	10.2%	3.9%	4.0%	5.1%	10.3%	100.0%
3 Para Prof (3.7%)	Count	4	44	76	53	0	7	35	79	298
	% within occ_fhc	1.3%	14.8%	25.5%	17.8%	.0%	2.3%	11.7%	26.5%	100.0%
4 Trades (27.1%)	Count	0	158	54	894	17	76	341	616	2156
	% within occ_fhc	.0%	7.3%	2.5%	41.5%	.8%	3.5%	15.8%	28.6%	100.0%
5 Clerks (5.3%)	Count	0	8	0	150	94	21	0	153	426
	% within occ_fhc	.0%	1.9%	.0%	35.2%	22.1%	4.9%	.0%	35.9%	100.0%
6 Sales (10.3%)	Count	0	137	41	33	3	65	267	271	817
	% within occ_fhc	.0%	16.8%	5.0%	4.0%	.4%	8.0%	32.7%	33.2%	100.0%
7 M Op / Dri (4.5%)	Count	0	8	8	52	35	0	148	107	358
	% within occ_fhc	.0%	2.2%	2.2%	14.5%	9.8%	.0%	41.3%	29.9%	100.0%
8 Labrs (6.8%)	Count	0	31	0	46	0	12	103	346	538
	% within occ_fhc	.0%	5.8%	.0%	8.6%	.0%	2.2%	19.1%	64.3%	100.0%
Total	Count	242	1950	354	1651	328	358	1144	1939	7966
	% within occ_fhc	3.0%	24.5%	4.4%	20.7%	4.1%	4.5%	14.4%	24.3%	100.0%

Type 2 Females: Occupation in FHC (ASCO 1) by Ocupation at Wave 3 (ASCO 1) Crosstabulation

		Ocupation at Wave 3 (ASCO 1)								
Ocupation in FHC (ASCO 1)		1	2	3	4	5	6	7	8	Total
1 Man& Adm (10.1%)	Count	30	27	53	0	152	52	0	171	485
	% within occ_fhc	6.2%	5.6%	10.9%	.0%	31.3%	10.7%	.0%	35.3%	100.0%
2 Prof (45.7%)	Count	162	673	131	14	531	186	123	368	2188
	% within occ_fhc	7.4%	30.8%	6.0%	.6%	24.3%	8.5%	5.6%	16.8%	100.0%
3 Para Prof (4.2%)	Count	0	53	60	8	22	9	0	47	199
	% within occ_fhc	.0%	26.6%	30.2%	4.0%	11.1%	4.5%	.0%	23.6%	100.0%
4 Trades (7.3%)	Count	0	0	0	141	0	0	54	154	349
	% within occ_fhc	.0%	.0%	.0%	40.4%	.0%	.0%	15.5%	44.1%	100.0%
5 Clerks (13.4%)	Count	9	38	93	0	232	209	23	38	642
	% within occ_fhc	1.4%	5.9%	14.5%	.0%	36.1%	32.6%	3.6%	5.9%	100.0%
6 Sales (10.7%)	Count	0	8	21	14	100	128	44	200	515
	% within occ_fhc	.0%	1.6%	4.1%	2.7%	19.4%	24.9%	8.5%	38.8%	100.0%
7 M Op / Dri (3.9%)	Count	0	0	0	0	0	10	155	24	189
	% within occ_fhc	.0%	.0%	.0%	.0%	.0%	5.3%	82.0%	12.7%	100.0%
8 Labrs (4.6%)	Count	0	0	0	8	10	3	0	198	219
	% within occ_fhc	.0%	.0%	.0%	3.7%	4.6%	1.4%	.0%	90.4%	100.0%
Total	Count	201	799	358	191	1047	597	399	1200	4792
	% within occ_fhc	4.2%	16.7%	7.5%	4.0%	21.8%	12.5%	8.3%	25.0%	100.0%

Chart 5.P: Occupational Transition Plots for Type 2 Immigrants



It is possible to speculate that there may be some gender 'labelling' here, as clerical jobs have been traditionally dominated by females, while professional work has been a predominantly male occupation. 36 percent of pre-migration Type 2 males became labourers – the biggest post-migration occupational change for this group as a whole.

In conclusion for this chapter, there are six main findings: First, there is a very large part of the immigrants' wage distribution that remains unexplained by the traditional wage determinants. In fact, most of the entry wage distribution seems to be random. Second, there is also clear evidence that wages of immigrants who start work upon arrival increase in the first three years of settlement, but this wage growth is also largely unexplained by the usual wage/wage mobility determinants. This suggests that the observed wage growth comes from tenure and possibly the usual periodical pay increases rather than a real wage/skills adjustment. Third, the determinants of the wage distribution of those who start work after a spell of unemployment are not any clearer than those of immigrants who gain employment soon after arrival, although, on average they are similar to starting wages of those who gain employment upon arrival. There is no wage premium for a 'wait and see' employment strategy. To the contrary, there seems to be a time penalty for waiting because by wave 3, Type 1 immigrants enjoy relatively higher wages than Type 2 immigrants. The data does not allow us to verify whether the wage growth of Type 2 immigrants is higher, lower or not different from that of Type 2 immigrants. Fourth, we find that the seemingly random wages of immigrants are explained by the fact that most immigrants work in professions and jobs that are different from those they occupied prior to migration and do not relate to their skills and qualifications. Fifth, the lack of wage adjustment is due to the general lack of occupational adjustment over the period under review: Generally, immigrants stay in their entry jobs over the period reviewed. Sixth, while pre-migration employment signals the likelihood of post-migration

employment, for males there seems to be little pre-migration occupational difference between Type 1 and Type 2 males; while for females there is some evidence that pre-migration occupation matters.

As a general conclusion, the next chapter gives a summary of the main findings, some caveats, as well as issues that this research has not touched, which are suggested for further research.

CHAPTER 6:

CONCLUSIONS, CAVEATS AND FURTHER RESEARCH

This research had set out to analyse the labour market outcomes of recent immigrants to Australia, and their determinants, in light of the pathways and strategies they use, as well as their pre-migration characteristics. The LSIA primary Applicant respondents were divided into three groups: People employed at all three waves of the survey, people who had a spell of unemployment but were employed at wave 3, and those who were non-employed, that is those whose main activity was not paid employment, at wave 3 (include business owners, students, the unemployed and those 'at home'). Males' information was treated separately from females. It has established several issues and findings, of which the following are notable:

- There is an apparent randomness in the immigrant wages in the first three and a half years of settlement: A large part of the wages distribution is neither related to years of education, nor to years of potential experience of immigrants, and while adding a number of socio-economic variables helps to explain more of the wage distribution, still there remains a very large unexplained portion of the wage distribution. Here the novelty of this research is that actual hourly wages are used instead of weekly wages or wage brackets which fail to consider the actual hours worked. Wages at wave 3 are found to be slightly more related to the usual determinants of wages distribution, but the largest proportion of the wage distribution still remains randomly distributed for Type 1 and 2 immigrants.

- There is evidence of a generalised lack of job and occupational mobility in the three to four years of settlement, indicative of stagnation in the immigrant occupational outcomes and pointing to a lack of 'assimilation' or 'adjustment' from the post immigration entry job;

- The likelihood of employment is positively related to immigrant's pre-migration employment status and educational level. In particular a bachelors' degree is a determining factor in the ability to find employment after migration. However, while education is a key determinant for employment, it has little effect on the distribution of wages for employed people.

- There is a significant trend for non-employed females to be engaged in home duties, post-migration, and for non-employed males to be mainly unemployed and actively looking for work;

The finding of jobs and occupational rigidities for a group of the labour force is a signal that something is wrong in the labour market of immigrants. This calls for further investigation into the causes of these rigidities.

Nonetheless, this research falls short of including in the analysis a number of the labour market aspects that are known to have an effect on employment, earnings and/or occupational mobility. Among these are:

- The effect of the Australian qualifications assessment mechanisms. This is a weakness of this research as the LSIA includes information on qualifications assessment. The decision to exclude this information was deliberate because its inclusion would have required a more specialised attention due to the way this information is coded. The analytical framework of this research, particularly with regards to qualifications, was principally concerned with using the same variables as those used by the Human Capital Theory. This is why Years of Schooling' were used as a proxy for qualifications. The conversion of qualifications into their Australian assessed equivalent, and then the transformation of the latter into their equivalent years of schooling would have involved a lot of guessing and approximation, which, with the already discussed crude hourly wage estimation, would have further compromised the accuracy of findings.

- Demand-side structural or cyclical impediments or enhancing effects on immigrants' occupational adjustment, such as labour market institutions, or the structure of labour demand during the survey period, in terms of the prevalent general employment/unemployment rates, business confidence, etc... Also, the analysis in this research does not account for the effect of inflation and other concomitant macroeconomic conditions. As this study covers four years of settlement, economic cyclical conditions are expected to play a role, especially on employment and wages. For example, it is certain that the observed wage growth was offset to a certain degree by inflation. It is also clear that the family size and welfare system play a key role in the decision to take up employment or not and the choice of hours worked. Inclusion of these effects would have required more information and a more complex analysis well beyond what is usually required for a Masters Thesis.

There are several issues surrounding immigration and the labour market, and one cannot possibly explore them all. More research is needed to further understand immigrants' transition within the Australian labour market, what causes them to remain in jobs and occupations that are, for many of them, not related to their pre-migration occupations, and what can be done to encourage 'assimilation' within the labour market.

Finally, it is important to put a general caveat regarding the interpretation and extrapolation of this research's findings: Both the sample and estimation methods used do not allow for the conclusions to be directly generalized or extrapolated without due care and adjustment to the entire immigrants' population. Where applicable, these issues were discussed within the relevant sections. Further research is necessary before such generalization can be safely done.

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Attachment 1: Thesis Syntax Code

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* Ben Safari's Master's Thesis
*LSIA Primary Applicants' Data Analysis Syntax

* 1. Merging Files C1W1PA, C1W2PA and C1W3PA to get a longitudinal database

*MATCH FILES /FILE=*
 /FILE='C:\Documents and Settings\crsinstall\My Documents\Saff Stuff\Masters'+
 ' Work\Research\C1W2PA.SAV'
 /RENAME (arrdate person stratum visa_mj visa_mn visacat visagrp wt_w1af2 =
  d0 d1 d2 d3 d4 d5 d6 d7)
 /BY form_id
 /DROP= d0 d1 d2 d3 d4 d5 d6 d7.
*EXECUTE.

*MATCH FILES /FILE=*
 /FILE='C:\Documents and Settings\crsinstall\My Documents\Saff Stuff\Masters'+
 ' Work\Research\C1W3PA.sav'
 /RENAME (arrdate person stratum visa_mj visa_mn visacat visagrp wt_w1af2 =
  d0 d1 d2 d3 d4 d5 d6 d7)
 /BY form_id
 /DROP= d0 d1 d2 d3 d4 d5 d6 d7.
*EXECUTE.

* After this, I eliminated
        1574 people who did not answer all 3 waves;
        456 retired, pensioners (all) or 88 (current main activity unknown) at w1 or w2 or w3;
        21 people who were 65+ at w3;
        The resulting sample was 3,141 primary applicants.

* Weighting all data by onshore immigrant population for longitudinal analysis (weight recommended by DIMIA)

Weight by WT_W3AF6

*Recoding Sex

*RECODE aaa04 (CONVERT)
 ('1'=1) ('2'=2)
*INTO SEX .
*VARIABLE LABELS SEX 'Sex' .
*VALUE LABELS SEX 1 'MALE' 2 'FEMALE' .
*EXECUTE .

*Recoding Main Activity variables

*RECODE
  aa22
  (1=1)  (4=1)  (2=2)  (3=2)  (5=3)  (6=3)  (7=4)  (8=5)  (9=6)  (10=6)
  (11=6)  (12=6)  (13=6)  (14=6)  (15=6)  (16=6)  (88=6)  (98=6)  (99=6)
  INTO  MACT_FHC .
*VARIABLE LABELS MACT_FHC 'Main Activity in last 12 months in FHC'.
*EXECUTE .

*RECODE
  ao02
  (1=1)  (4=1)  (2=2)  (3=2)  (5=3)  (6=3)  (7=4)  (8=5)
  INTO  MACT_W1 .
*VARIABLE LABELS MACT_W1 'Main Activity at Wave 1'.
*EXECUTE .

*RECODE
  bo30
```

```
  (1=1) (4=1) (2=2) (3=2) (5=3) (6=3) (7=4) (8=5)
  INTO MACT_W2 .
*VARIABLE LABELS MACT_W2 'Main Activity at Wave 2'.
*EXECUTE .

*RECODE
  co34
  (1=1) (4=1) (2=2) (3=2) (5=3) (6=3) (7=4) (8=5)
  INTO MACT_W3 .
*VARIABLE LABELS MACT_W3 'Main Activity at Wave 3'.
*EXECUTE .

* Recoding occupation status variables into ASCO 1 format

*RECODE
  aa27
  (1=Copy) (2=Copy) (3=Copy) (4=Copy) (5=Copy) (6=Copy) (7=Copy)
  (8=Copy) (9=Copy) (SYSMIS=SYSMIS) (0000 thru 0009=Copy) (1000 thru
  1999=1) (2000 thru 2999=2) (3000 thru 3999=3) (4000 thru 4999=4) (5000
  thru 5999=5) (6000 thru 6999=6) (7000 thru 7999=7) (8000 thru 8999=8)
  (9000 thru 9999=9) (ELSE=Copy) INTO OCC_FHC .
*VARIABLE LABELS OCC_FHC 'Ocupation in FHC (ASCO 1)'.
*EXECUTE .

*RECODE
  ao12
  (1=Copy) (2=Copy) (3=Copy) (4=Copy) (5=Copy) (6=Copy) (7=Copy)
  (8=Copy) (9=Copy) (SYSMIS=SYSMIS) (0000 thru 0009=Copy) (1000 thru
  1999=1) (2000 thru 2999=2) (3000 thru 3999=3) (4000 thru 4999=4) (5000
  thru 5999=5) (6000 thru 6999=6) (7000 thru 7999=7) (8000 thru 8999=8)
  (9000 thru 9999=9) (ELSE=Copy) INTO OCC_W1 .
*VARIABLE LABELS OCC_W1 'Ocupation at Wave 1 (ASCO 1)'.
*EXECUTE .

*RECODE
  bo19
  (1=Copy) (2=Copy) (3=Copy) (4=Copy) (5=Copy) (6=Copy) (7=Copy)
  (8=Copy) (9=Copy) (SYSMIS=SYSMIS) (0000 thru 0009=Copy) (1000 thru
  1999=1) (2000 thru 2999=2) (3000 thru 3999=3) (4000 thru 4999=4) (5000
  thru 5999=5) (6000 thru 6999=6) (7000 thru 7999=7) (8000 thru 8999=8)
  (9000 thru 9999=9) (ELSE=Copy) INTO OCC_W2 .
*VARIABLE LABELS OCC_W2 'Ocupation at Wave 2 (ASCO 1)'.
*EXECUTE .

*RECODE
  co19
  (1=Copy) (2=Copy) (3=Copy) (4=Copy) (5=Copy) (6=Copy) (7=Copy)
  (8=Copy) (9=Copy) (SYSMIS=SYSMIS) (0000 thru 0009=Copy) (1000 thru
  1999=1) (2000 thru 2999=2) (3000 thru 3999=3) (4000 thru 4999=4) (5000
  thru 5999=5) (6000 thru 6999=6) (7000 thru 7999=7) (8000 thru 8999=8)
  (9000 thru 9999=9) (ELSE=Copy) INTO OCC_W3 .
*VARIABLE LABELS OCC_W3 'Ocupation at W3 (ASCO 1)'.
*EXECUTE .

* Recoding Age into Age Groups at W1.

*RECODE
  aaa06
  (15 thru 24=1) (25 thru 34=2) (35 thru 44=3) (45 thru 54=4)
  (55 thru 64=5) INTO AgeGRP .
*VARIABLE LABELS AgeGRP 'Age Groups at Wave 1'.
*VALUE LABELS AgeGRP 1 '15 to 24' 2 '25 to 34' 3 '35 to 44' 4 '45 to 54' 5 '55 to 64'.
*FORMAT AgeGRP (f1.0).
```

```
*EXECUTE .

* Recoding Use of Qualifications in main job at all waves onto three categories

*RECODE
  aa32
  (1=1) (2=1) (3=2) (4=3) (8=9) (9=9) (sysmis=9) INTO USEQFHC .
*VARIABLE LABELS USEQFHC 'Use of Qualifications in Former Home Country'.
*VALUE LABELS USEQFHC
  1 'All the time or often'
  2 'Sometimes or rarely'
  3 'Never'
  9 'Not reported' .
*FORMAT USEQFHC (f1.0).
*EXECUTE .

*RECODE
  ao15
  (1=1) (2=1) (3=2) (4=2) (5=3) (8=9) (9=9) (sysmis=9) INTO USEQW1 .
*VARIABLE LABELS USEQW1 'Use of Qualifications in Main Job at Wave 1'.
*VALUE LABELS USEQW1
  1 'All the time or often'
  2 'Sometimes or rarely'
  3 'Never'
  9 'Not reported' .
*FORMAT USEQW1 (f1.0).
*EXECUTE .

*RECODE
  bo23
  (1=1) (2=1) (3=2) (4=2) (5=3) (8=9) (9=9) (sysmis=9) INTO USEQW2 .
*VARIABLE LABELS USEQW2 'Use of Qualifications in Main Job at Wave 2'.
*VALUE LABELS USEQW2
  1 'All the time or often'
  2 'Sometimes or rarely'
  3 'Never'
  9 'Not reported' .
*FORMAT USEQW2 (f1.0).
*EXECUTE .

*RECODE
  co27
  (1=1) (2=1) (3=2) (4=2) (5=3) (8=9) (9=9) (sysmis=9) INTO USEQW3 .
*VARIABLE LABELS USEQW3 'Use of Qualifications in Main Job at Wave 3'.
*VALUE LABELS USEQW3
  1 'All the time or often'
  2 'Sometimes or rarely'
  3 'Never'
  9 'Not reported' .
*FORMAT USEQW3 (f1.0).
*EXECUTE .

* Recoding Job Satisfaction variables into four categories

*RECODE
  aa30
  (1=1) (2=1) (3=2) (4=3) (5=4) (6=4) (7=4) (8=9) (9=Copy)
  INTO Jsatfhc .
*VARIABLE LABELS Jsatfhc 'Job Satisfaction in former home country'.
*VALUE LABELS jsatfhc
  1 'Loved it or liked it'
  2 'Job was OK'
  3 'Do not care - Was just a job'
```

```
  4 'Disliked it or hated it'
  9 'Not reported' .
*FORMAT Jsatfhc (f1.0).
*EXECUTE .

*RECODE
  ao13
  (1=1) (2=1) (3=2) (4=3) (5=4) (6=4) (7=4) (8=9) (9=Copy)
  INTO JsatW1 .
*VARIABLE LABELS JsatW1 'Job Satisfaction at Wave 1' .
*VALUE LABELS jsatW1
  1 'Love it or like it'
  2 'Job is OK'
  3 'Do not care - It is just a job'
  4 'Dislike it or hate it'
  9 'Not reported' .
*FORMAT JsatW1 (f1.0).
*EXECUTE .

*RECODE
  bo21
  (1=1) (2=1) (3=2) (4=3) (5=4) (6=4) (7=4) (8=9) (9=Copy)
  INTO JsatW2 .
*VARIABLE LABELS JsatW2 'Job Satisfaction at Wave 2' .
*VALUE LABELS jsatW2
  1 'Love it or like it'
  2 'Job is OK'
  3 'Do not care - It is just a job'
  4 'Dislike it or hate it'
  9 'Not reported' .
*FORMAT JsatW2 (f1.0).
*EXECUTE .

*RECODE
  co20
  (1=1) (2=1) (3=2) (4=3) (5=4) (6=4) (7=4) (8=9) (9=Copy)
  INTO JsatW3 .
*VARIABLE LABELS JsatW3 'Job Satisfaction at Wave 3' .
*VALUE LABELS jsatW3
  1 'Love it or like it'
  2 'Job is OK'
  3 'Do not care - It is just a job'
  4 'Dislike it or hate it'
  9 'Not reported' .
*FORMAT JsatW3 (f1.0).
*EXECUTE .

* Recoding Former Country of residence into Former Main Region of Residence.

*RECODE
  aa01
  (9998=00) (9999=00) (sysmis=00)
  (1000 thru 1999=10)
  (2000 thru 2099=22)
  (2100 thru 2199=20)
  (2200 thru 2499=21)
  (2500 thru 2699=22)
  (3000 thru 3299=30)
  (4000 thru 4199=40)
  (5000 thru 5199=50)
  (6000 thru 6199=60)
  (7000 thru 7199=70)
  (8000 thru 8399=80)
```

```
  (9000 thru 9299=90)
  INTO  FMRR .
*VARIABLE LABELS FMRR 'Former Main Region of Residence'.
*VALUE LABELS FMRR
  00 'Mising or not reported'
  10 'Oceania and Antarctica'
  20 'North, South and Western Europe'
  21 'UK and Ireland'
  22 'Former USSR, Baltic States and Other Europe'
  30 'Middle East and Nth Africa (incl Sudan & Cape verde)'
  40 'South East Asia'
  50 'North East Asia'
  60 'Southern Asia'
  70 'North America'
  80 'Central and South America and the Carribeans'
  90 'Sub Saharan and other Africa'
*EXECUTE .

*Recoding main activity into 'broad labour force status'

RECODE
  mact_fhc
  (1=1) (2=2) (3=3) (4=4) (5=5) (6=5) (SYSMIS=5) INTO  LFSFHC .
VARIABLE LABELS LFSFHC 'Broad Labour Force Status in Former Home Country'.
VALUE LABELS LFSFHC
  1 'Employed'
  2 'Own Business'
  3 'Unemployed and looking for work'
  4 'Student'
  5 'Home duties or other unpaid work' .
EXECUTE .

RECODE
  mact_w1
  (1=1) (2=2) (3=3) (4=4) (5=5) (6=5) (SYSMIS=5) INTO  LFSW1 .
VARIABLE LABELS LFSW1 'Broad Labour Force Status at Wave 1'.
VALUE LABELS LFSW1
  1 'Employed'
  2 'Own Business'
  3 'Unemployed and looking for work'
  4 'Student'
  5 'Home duties or other unpaid work' .
EXECUTE .

RECODE
  mact_w2
  (1=1) (2=2) (3=3) (4=4) (5=5) (6=5) (SYSMIS=5) INTO  LFSW2 .
VARIABLE LABELS LFSW2 'Broad Labour Force Status at Wave 2'.
VALUE LABELS LFSW2
  1 'Employed'
  2 'Own Business'
  3 'Unemployed and looking for work'
  4 'Student'
  5 'Home duties or other unpaid work' .
EXECUTE .

RECODE
  mact_w3
  (1=1) (2=2) (3=3) (4=4) (5=5) (6=5) (SYSMIS=5) INTO  LFSW3 .
VARIABLE LABELS LFSW3 'Broad Labour Force Status at Wave 3'.
VALUE LABELS LFSW3
  1 'Employed'
  2 'Own Business'
```

```
  3 'Unemployed and looking for work'
  4 'Student'
  5 'Home duties or other unpaid work' .
EXECUTE .

*Recoding English proficiency responses at wave 1

*DO IF (al02 = 'AA04').
*RECODE
  al06 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='1') .
*END IF .
*EXECUTE .

*DO IF (al04 = 'AA04') .
*RECODE
  al06 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='1') .
*END IF .
*EXECUTE .

*DO IF (al02 = 'AA04') .
*RECODE
  al07 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='1') .
*END IF .
*EXECUTE .

*DO IF (al04 = 'AA04') .
*RECODE
  al07 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='1') .
*END IF .
*EXECUTE .

*DO IF (al02 = 'AA04') .
*RECODE
  al08 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='1') .
*END IF .
*EXECUTE .

*DO IF (al04 = 'AA04') .
*RECODE
  al08 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='1') .
*END IF .
*EXECUTE .

*DO IF (al06 = '4') .
*RECODE
  al07 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='4') .
*END IF .
*EXECUTE .

*DO IF (al06 = '4') .
*RECODE
  al08 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='4') .
*END IF .
*EXECUTE .

*Recoding English proficiency responses at wave 2

*DO IF (bl02 = 'AA04') .
*RECODE
  bl04 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='1') .
*END IF .
*EXECUTE .
```

```
*DO IF (bl03 = 'AA04') .
*RECODE
 bl04 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='1') .
*END IF .
*EXECUTE .

*DO IF (bl02 = 'AA04') .
*RECODE
 bl05 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='1') .
*END IF .
*EXECUTE .

*DO IF (bl03 = 'AA04') .
*RECODE
 bl05 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='1') .
*END IF .
*EXECUTE .

*DO IF (bl02 = 'AA04') .
*RECODE
 bl06 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='1') .
*END IF .
*EXECUTE .

*DO IF (bl03 = 'AA04') .
*RECODE
 bl06 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='1') .
*END IF .
*EXECUTE .

*DO IF (bl04 = '4') .
*RECODE
 bl05 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='4') .
*END IF .
*EXECUTE .

*DO IF (bl04 = '4') .
*RECODE
 bl06 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='4') .
*END IF .
*EXECUTE .

*Recoding English proficiency responses at wave 3

*DO IF (cl02 = 'AA04') .
*RECODE
 cl04 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='1') .
*END IF .
*EXECUTE .

*DO IF (cl03 = 'AA04') .
*RECODE
 cl04 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='1') .
*END IF .
*EXECUTE .

*DO IF (cl02 = 'AA04') .
*RECODE
 cl05 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='1') .
*END IF .
*EXECUTE .

*DO IF (cl03 = 'AA04') .
```

```
*RECODE
  cl05 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='1') .
*END IF .
*EXECUTE .

*DO IF (cl02 = 'AA04') .
*RECODE
  cl06 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='1') .
*END IF .
*EXECUTE .

*DO IF (cl03 = 'AA04') .
*RECODE
  cl06 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='1') .
*END IF .
*EXECUTE .

*DO IF (cl04 = '4') .
*RECODE
  cl05 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='4') .
*END IF .
*EXECUTE .

*DO IF (cl04 = '4') .
*RECODE
  cl06 ('1'='1') ('2'='2') ('3'='3') ('4'='4') (ELSE='4') .
*END IF .
*EXECUTE .

* Recoding English proficiency variables into three responses

*RECODE
  al06
  (1=1) (2=1) (3=2) (4=3) INTO SPENGW1 .
*VARIABLE LABELS SPENGW1 'How well Speak English at Wave 1'.
*VALUE LABELS SPENGW1
  1 'Very well or well'
  2 'Not well'
  3 'Not at all' .
*FORMAT SPENGW1 (f1.0).
*EXECUTE .

*RECODE
  bl04
  (1=1) (2=1) (3=2) (4=3) INTO SPENGW2 .
*VARIABLE LABELS SPENGW2 'How well Speak English at Wave 2'.
*VALUE LABELS SPENGW2
  1 'Very well or well'
  2 'Not well'
  3 'Not at all' .
*FORMAT SPENGW2 (f1.0).
*EXECUTE .

*RECODE
  cl04
  (1=1) (2=1) (3=2) (4=3) INTO SPENGW3 .
*VARIABLE LABELS SPENGW3 'How well Speak English at Wave 3'.
*VALUE LABELS SPENGW3
  1 'Very well or well'
  2 'Not well'
  3 'Not at all' .
*FORMAT SPENGW3 (f1.0).
*EXECUTE .
```

```
*RECODE
 al07
 (1=1) (2=1) (3=2) (4=3) INTO RDENGW1 .
*VARIABLE LABELS RDENGW1 'How well Read English at Wave 1'.
*VALUE LABELS RDENGW1
 1 'Very well or well'
 2 'Not well'
 3 'Not at all' .
*FORMAT RDENGW1 (f1.0).
*EXECUTE .

*RECODE
 bl05
 (1=1) (2=1) (3=2) (4=3) INTO RDENGW2 .
*VARIABLE LABELS RDENGW2 'How well Read English at Wave 2'.
*VALUE LABELS RDENGW2
 1 'Very well or well'
 2 'Not well'
 3 'Not at all' .
*FORMAT RDENGW2 (f1.0).
*EXECUTE .

*RECODE
 cl05
 (1=1) (2=1) (3=2) (4=3) INTO RDENGW3 .
*VARIABLE LABELS RDENGW3 'How well Read English at Wave 3'.
*VALUE LABELS RDENGW3
 1 'Very well or well'
 2 'Not well'
 3 'Not at all' .
*FORMAT RDENGW3 (f1.0).
*EXECUTE .

*RECODE
 al08
 (1=1) (2=1) (3=2) (4=3) INTO WRENGW1 .
*VARIABLE LABELS WRENGW1 'How well Write English at Wave 1'.
*VALUE LABELS WRENGW1
 1 'Very well or well'
 2 'Not well'
 3 'Not at all' .
*FORMAT WRENGW1 (f1.0).
*EXECUTE .

*RECODE
 bl06
 (1=1) (2=1) (3=2) (4=3) INTO WRENGW2 .
*VARIABLE LABELS WRENGW2 'How well Write English at Wave 2'.
*VALUE LABELS WRENGW2
 1 'Very well or well'
 2 'Not well'
 3 'Not at all' .
*FORMAT WRENGW2 (f1.0).
*EXECUTE .

*RECODE
 cl06
 (1=1) (2=1) (3=2) (4=3) INTO WRENGW3 .
*VARIABLE LABELS WRENGW3 'How well Write English at Wave 3'.
*VALUE LABELS WRENGW3
 1 'Very well or well'
 2 'Not well'
```

```
  3 'Not at all' .
*FORMAT WRENGW3 (f1.0).
*EXECUTE .

*Computing a single variable for English proficiency (read, write and speak)

*COMPUTE ENGPROW1 = (spengw1+rdengw1 + wrengw1) / 3 .
*VARIABLE LABELS ENGPROW1 'English Proficiency at wave 1'.
*EXECUTE .

*COMPUTE ENGPROW2 = (spengw2+rdengw2 + wrengw2) / 3 .
*VARIABLE LABELS ENGPROW2 'English Proficiency at wave 2'.
*EXECUTE .

*COMPUTE ENGPROW3 = (spengw3+rdengw3 + wrengw3) / 3 .
*VARIABLE LABELS ENGPROW3 'English Proficiency at wave 3'.
*EXECUTE .

*Recoding emigration expectations at W3

RECODE CJ01 (CONVERT) INTO EMFHCW3 .
VARIABLE LABELS EMFHCW3 'EXPECT TO RETURN IN FHC AT WAVE 3' .
FORMAT EMFHCW3 (f1.0) .
EXECUTE .

RECODE CJ04 (CONVERT) INTO EMOTHW3 .
VARIABLE LABELS EMOTHW3 'EXPECT TO  REMIGRATE TO OTHER COUNTRY AT WAVE 3' .
FORMAT EMOTHW3 (f1.0) .
EXECUTE .

RECODE EMOTHW3 (SYSMIS=0) (ELSE=COPY) .
EXECUTE .

RECODE
  EMOTHW3 (0=1) (1=2) (2=3) (9=4) INTO REMW3 .
VARIABLE LABELS REMW3 'Expect to Remigrate at Wave 3'.
VALUE LABELS REMW3
  1 'Yes - to former home country'
  2 'Yes - to another country'
  3 'No'
  4 'Not Sure or Not Reported' .
FORMAT REMW3 (f1.0) .
EXECUTE .

********** Recoding ASCO in FHC into ANU3-1 index**********

RECODE
  aa27 (CONVERT)
( '1' = 1 ) ( '1101' = 1101 ) ( '2707' = 2707 ) ( '4411' = 4411 ) ( '6201' = 6201 ) ( '8205' = 8205 )
( '2' = 2 ) ( '1103' = 1103 ) ( '2799' = 2799 ) ( '4413' = 4413 ) ( '6301' = 6301 ) ( '8299' = 8299 )
( '3' = 3 ) ( '1201' = 1201 ) ( '2801' = 2801 ) ( '4501' = 4501 ) ( '6401' = 6401 ) ( '8301' = 8301 )
( '4' = 4 ) ( '1301' = 1301 ) ( '2803' = 2803 ) ( '4503' = 4503 ) ( '6403' = 6403 ) ( '8401' = 8401 )
( '5' = 5 ) ( '1303' = 1303 ) ( '2805' = 2805 ) ( '4505' = 4505 ) ( '6405' = 6405 ) ( '8403' = 8403 )
( '6' = 6 ) ( '1305' = 1305 ) ( '2807' = 2807 ) ( '4507' = 4507 ) ( '6501' = 6501 ) ( '8405' = 8405 )
( '7' = 7 ) ( '1307' = 1307 ) ( '2809' = 2809 ) ( '4509' = 4509 ) ( '6503' = 6503 ) ( '8407' = 8407 )
( '8' = 8 ) ( '1309' = 1309 ) ( '2811' = 2811 ) ( '4511' = 4511 ) ( '6505' = 6505 ) ( '8409' = 8409 )
( '11' = 11 ) ( '1311' = 1311 ) ( '2813' = 2813 ) ( '4601' = 4601 ) ( '6507' = 6507 ) ( '8411' = 8411 )
( '12' = 12 ) ( '1313' = 1313 ) ( '2815' = 2815 ) ( '4603' = 4603 ) ( '6599' = 6599 ) ( '8413' = 8413 )
( '13' = 13 ) ( '1315' = 1315 ) ( '2817' = 2817 ) ( '4605' = 4605 ) ( '6601' = 6601 ) ( '8415' = 8415 )
( '14' = 14 ) ( '1317' = 1317 ) ( '2819' = 2819 ) ( '4607' = 4607 ) ( '6603' = 6603 ) ( '8499' = 8499 )
( '15' = 15 ) ( '1319' = 1319 ) ( '2901' = 2901 ) ( '4609' = 4609 ) ( '6605' = 6605 ) ( '8901' = 8901 )
( '16' = 16 ) ( '1399' = 1399 ) ( '2903' = 2903 ) ( '4701' = 4701 ) ( '6607' = 6607 ) ( '8903' = 8903 )
( '21' = 21 ) ( '1401' = 1401 ) ( '2905' = 2905 ) ( '4703' = 4703 ) ( '6609' = 6609 ) ( '8905' = 8905 )
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( '22' = 22 ) ( '1501' = 1501 ) ( '2907' = 2907 ) ( '4705' = 4705 ) ( '6699' = 6699 ) ( '8907' = 8907 )
( '23' = 23 ) ( '1503' = 1503 ) ( '2909' = 2909 ) ( '4799' = 4799 ) ( '7101' = 7101 ) ( '8909' = 8909 )
( '24' = 24 ) ( '1505' = 1505 ) ( '2911' = 2911 ) ( '4801' = 4801 ) ( '7103' = 7103 ) ( '8911' = 8911 )
( '25' = 25 ) ( '1507' = 1507 ) ( '2999' = 2999 ) ( '4803' = 4803 ) ( '7105' = 7105 ) ( '8913' = 8913 )
( '26' = 26 ) ( '1599' = 1599 ) ( '3101' = 3101 ) ( '4805' = 4805 ) ( '7107' = 7107 ) ( '8915' = 8915 )
( '27' = 27 ) ( '1601' = 1601 ) ( '3103' = 3103 ) ( '4901' = 4901 ) ( '7201' = 7201 ) ( '8917' = 8917 )
( '28' = 28 ) ( '2101' = 2101 ) ( '3201' = 3201 ) ( '4903' = 4903 ) ( '7203' = 7203 ) ( '8919' = 8919 )
( '29' = 29 ) ( '2103' = 2103 ) ( '3203' = 3203 ) ( '4905' = 4905 ) ( '7205' = 7205 ) ( '8921' = 8921 )
( '31' = 31 ) ( '2105' = 2105 ) ( '3205' = 3205 ) ( '4907' = 4907 ) ( '7207' = 7207 ) ( '8923' = 8923 )
( '32' = 32 ) ( '2107' = 2107 ) ( '3207' = 3207 ) ( '4909' = 4909 ) ( '7209' = 7209 ) ( '8925' = 8925 )
( '33' = 33 ) ( '2109' = 2109 ) ( '3299' = 3299 ) ( '4911' = 4911 ) ( '7211' = 7211 ) ( '8999' = 8999 )
( '34' = 34 ) ( '2199' = 2199 ) ( '3301' = 3301 ) ( '4913' = 4913 ) ( '7299' = 7299 ) ( '2607' = 2607 )
( '35' = 35 ) ( '2201' = 2201 ) ( '3303' = 3303 ) ( '4915' = 4915 ) ( '7301' = 7301 ) ( '2701' = 2701 )
( '39' = 39 ) ( '2203' = 2203 ) ( '3305' = 3305 ) ( '4917' = 4917 ) ( '7303' = 7303 ) ( '2703' = 2703 )
( '41' = 41 ) ( '2205' = 2205 ) ( '3307' = 3307 ) ( '4919' = 4919 ) ( '7305' = 7305 ) ( '2705' = 2705 )
( '42' = 42 ) ( '2207' = 2207 ) ( '3401' = 3401 ) ( '4921' = 4921 ) ( '7307' = 7307 ) ( '4403' = 4403 )
( '43' = 43 ) ( '2209' = 2209 ) ( '3501' = 3501 ) ( '4923' = 4923 ) ( '7309' = 7309 ) ( '4405' = 4405 )
( '44' = 44 ) ( '2211' = 2211 ) ( '3901' = 3901 ) ( '4925' = 4925 ) ( '7311' = 7311 ) ( '4407' = 4407 )
( '45' = 45 ) ( '2213' = 2213 ) ( '3903' = 3903 ) ( '4927' = 4927 ) ( '7313' = 7313 ) ( '4409' = 4409 )
( '46' = 46 ) ( '2215' = 2215 ) ( '3905' = 3905 ) ( '4929' = 4929 ) ( '7315' = 7315 ) ( '6101' = 6101 )
( '47' = 47 ) ( '2217' = 2217 ) ( '3907' = 3907 ) ( '4931' = 4931 ) ( '7317' = 7317 ) ( '6103' = 6103 )
( '48' = 48 ) ( '2219' = 2219 ) ( '3909' = 3909 ) ( '4999' = 4999 ) ( '7399' = 7399 ) ( '6105' = 6105 )
( '49' = 49 ) ( '2301' = 2301 ) ( '3911' = 3911 ) ( '5101' = 5101 ) ( '7401' = 7401 ) ( '6199' = 6199 )
( '51' = 51 ) ( '2303' = 2303 ) ( '3913' = 3913 ) ( '5103' = 5103 ) ( '7403' = 7403 ) ( '8109' = 8109 )
( '52' = 52 ) ( '2305' = 2305 ) ( '3915' = 3915 ) ( '5105' = 5105 ) ( '7405' = 7405 ) ( '8199' = 8199 )
( '53' = 53 ) ( '2307' = 2307 ) ( '3999' = 3999 ) ( '5201' = 5201 ) ( '7407' = 7407 ) ( '8201' = 8201 )
( '54' = 54 ) ( '2309' = 2309 ) ( '4101' = 4101 ) ( '5203' = 5203 ) ( '7409' = 7409 ) ( '8203' = 8203 )
( '55' = 55 ) ( '2311' = 2311 ) ( '4103' = 4103 ) ( '5301' = 5301 ) ( '7411' = 7411 )
( '56' = 56 ) ( '2313' = 2313 ) ( '4201' = 4201 ) ( '5303' = 5303 ) ( '7413' = 7413 )
( '59' = 59 ) ( '2315' = 2315 ) ( '4203' = 4203 ) ( '5305' = 5305 ) ( '7415' = 7415 )
( '61' = 61 ) ( '2317' = 2317 ) ( '4205' = 4205 ) ( '5401' = 5401 ) ( '7417' = 7417 )
( '62' = 62 ) ( '2319' = 2319 ) ( '4207' = 4207 ) ( '5403' = 5403 ) ( '7419' = 7419 )
( '63' = 63 ) ( '2321' = 2321 ) ( '4209' = 4209 ) ( '5499' = 5499 ) ( '7421' = 7421 )
( '64' = 64 ) ( '2323' = 2323 ) ( '4211' = 4211 ) ( '5501' = 5501 ) ( '7423' = 7423 )
( '65' = 65 ) ( '2399' = 2399 ) ( '4213' = 4213 ) ( '5503' = 5503 ) ( '7425' = 7425 )
( '66' = 66 ) ( '2401' = 2401 ) ( '4301' = 4301 ) ( '5505' = 5505 ) ( '7427' = 7427 )
( '71' = 71 ) ( '2403' = 2403 ) ( '4303' = 4303 ) ( '5601' = 5601 ) ( '7429' = 7429 )
( '72' = 72 ) ( '2405' = 2405 ) ( '4305' = 4305 ) ( '5603' = 5603 ) ( '7431' = 7431 )
( '73' = 73 ) ( '2407' = 2407 ) ( '4307' = 4307 ) ( '5605' = 5605 ) ( '7433' = 7433 )
( '74' = 74 ) ( '2501' = 2501 ) ( '4309' = 4309 ) ( '5901' = 5901 ) ( '7435' = 7435 )
( '81' = 81 ) ( '2503' = 2503 ) ( '4311' = 4311 ) ( '5903' = 5903 ) ( '7499' = 7499 )
( '82' = 82 ) ( '2505' = 2505 ) ( '4313' = 4313 ) ( '5905' = 5905 ) ( '8101' = 8101 )
( '83' = 83 ) ( '2601' = 2601 ) ( '4315' = 4315 ) ( '5907' = 5907 ) ( '8103' = 8103 )
( '84' = 84 ) ( '2603' = 2603 ) ( '4399' = 4399 ) ( '5909' = 5909 ) ( '8105' = 8105 )
( '89' = 89 ) ( '2605' = 2605 ) ( '4401' = 4401 ) ( '5999' = 5999 ) ( '8107' = 8107 )
(' ' = sysmis)
INTO  ASCO1FHC .
VARIABLE LABELS ASCO1FHC 'ASCO1 Occupation Code in Former Home Country '.
FORMAT ASCO1FHC (f4.0).
EXECUTE .

RECODE
 ASCO1FHC
( 1 = 52.4 ) ( 1101 = 97 ) ( 2707 = 60.5 ) ( 4411 = 26.2 ) ( 6201 = 39.3 ) ( 8205 = 6.1 )
( 2 = 64.9 ) ( 1103 = 96.1 ) ( 2799 = 67.2 ) ( 4413 = 24 ) ( 6301 = 25.3 ) ( 8299 = 19.9 )
( 3 = 44.7 ) ( 1201 = 76 ) ( 2801 = 50.8 ) ( 4501 = 31.7 ) ( 6401 = 25.2 ) ( 8301 = 3.7 )
( 4 = 25.4 ) ( 1301 = 64.4 ) ( 2803 = 45.1 ) ( 4503 = 27.4 ) ( 6403 = 11.2 ) ( 8401 = 12.2 )
( 5 = 27.1 ) ( 1303 = 66.1 ) ( 2805 = 46.6 ) ( 4505 = 26.2 ) ( 6405 = 36 ) ( 8403 = 11.6 )
( 6 = 27 ) ( 1305 = 60 ) ( 2807 = 54.7 ) ( 4507 = 15.5 ) ( 6501 = 31.9 ) ( 8405 = 14.8 )
( 7 = 12.1 ) ( 1307 = 57.9 ) ( 2809 = 56.6 ) ( 4509 = 28.8 ) ( 6503 = 21.1 ) ( 8407 = 1.9 )
( 8 = 9.5 ) ( 1309 = 71 ) ( 2811 = 58.9 ) ( 4511 = 29 ) ( 6505 = 9.5 ) ( 8409 = 1.6 )
( 11 = 96.6 ) ( 1311 = 75.4 ) ( 2813 = 31.9 ) ( 4601 = 29.9 ) ( 6507 = 30.5 ) ( 8411 = 1 )
( 12 = 76 ) ( 1313 = 84.1 ) ( 2815 = 41.1 ) ( 4603 = 36.1 ) ( 6599 = 27.5 ) ( 8413 = 0.6 )
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( 13 = 67.4 ) ( 1315 = 63 ) ( 2817 = 44.2 ) ( 4605 = 29.2 ) ( 6601 = 29.9 ) ( 8415 = 19.3 )
( 14 = 48.5 ) ( 1317 = 82 ) ( 2819 = 44.8 ) ( 4607 = 19.6 ) ( 6603 = 30.7 ) ( 8499 = 7.6 )
( 15 = 42.5 ) ( 1319 = 64.8 ) ( 2901 = 79.3 ) ( 4609 = 20.5 ) ( 6605 = 20.8 ) ( 8901 = 0 )
( 16 = 42.2 ) ( 1399 = 69.1 ) ( 2903 = 80.8 ) ( 4701 = 23.3 ) ( 6607 = 15.3 ) ( 8903 = 13.2 )
( 21 = 71.2 ) ( 1401 = 48.5 ) ( 2905 = 77.7 ) ( 4703 = 24.3 ) ( 6609 = 39.6 ) ( 8905 = 10.1 )
( 22 = 68.1 ) ( 1501 = 40.9 ) ( 2907 = 66 ) ( 4705 = 26.8 ) ( 6699 = 33.1 ) ( 8907 = 5.9 )
( 23 = 81.9 ) ( 1503 = 39.9 ) ( 2909 = 69.8 ) ( 4799 = 14.1 ) ( 7101 = 15.7 ) ( 8909 = 15.3 )
( 24 = 65.5 ) ( 1505 = 42.2 ) ( 2911 = 53 ) ( 4801 = 28 ) ( 7103 = 16.4 ) ( 8911 = 18.4 )
( 25 = 60.3 ) ( 1507 = 54.7 ) ( 2999 = 51.8 ) ( 4803 = 10 ) ( 7105 = 11.8 ) ( 8913 = 8.2 )
( 26 = 68.9 ) ( 1599 = 44.6 ) ( 3101 = 41.7 ) ( 4805 = 8.9 ) ( 7107 = 13.3 ) ( 8915 = 17.2 )
( 27 = 59.2 ) ( 1601 = 42.2 ) ( 3103 = 41.9 ) ( 4901 = 7.9 ) ( 7201 = 17.8 ) ( 8917 = 13.1 )
( 28 = 48.5 ) ( 2101 = 67 ) ( 3201 = 39 ) ( 4903 = 19.3 ) ( 7203 = 3.4 ) ( 8919 = 13.1 )
( 29 = 63.5 ) ( 2103 = 79.2 ) ( 3203 = 38.2 ) ( 4905 = 18.1 ) ( 7205 = 8.1 ) ( 8921 = 14.2 )
( 31 = 41.8 ) ( 2105 = 85.5 ) ( 3205 = 45.7 ) ( 4907 = 27.6 ) ( 7207 = 12.5 ) ( 8923 = 10.8 )
( 32 = 41.5 ) ( 2107 = 70.1 ) ( 3207 = 42.9 ) ( 4909 = 32.3 ) ( 7209 = 5.3 ) ( 8925 = 30.4 )
( 33 = 59.5 ) ( 2109 = 69.9 ) ( 3299 = 48 ) ( 4911 = 17.1 ) ( 7211 = 29.2 ) ( 8999 = 9.8 )
( 34 = 50.4 ) ( 2199 = 70.6 ) ( 3301 = 66.8 ) ( 4913 = 16.8 ) ( 7299 = 6.3 ) ( 2607 = 61.7 )
( 35 = 53.6 ) ( 2201 = 67.5 ) ( 3303 = 60 ) ( 4915 = 6.5 ) ( 7301 = 29.5 ) ( 2701 = 57.9 )
( 39 = 35.8 ) ( 2203 = 67.4 ) ( 3305 = 54.6 ) ( 4917 = 12.6 ) ( 7303 = 7.1 ) ( 2703 = 58 )
( 41 = 27.1 ) ( 2205 = 56.3 ) ( 3307 = 56.7 ) ( 4919 = 31 ) ( 7305 = 20.3 ) ( 2705 = 56.1 )
( 42 = 22.2 ) ( 2207 = 72.8 ) ( 3401 = 50.4 ) ( 4921 = 21.2 ) ( 7307 = 35.9 ) ( 4403 = 26.1 )
( 43 = 33.2 ) ( 2209 = 73.6 ) ( 3501 = 53.6 ) ( 4923 = 14.9 ) ( 7309 = 8.9 ) ( 4405 = 18.6 )
( 44 = 21.5 ) ( 2211 = 67.7 ) ( 3901 = 37.7 ) ( 4925 = 24.3 ) ( 7311 = 9.9 ) ( 4407 = 23.4 )
( 45 = 26.6 ) ( 2213 = 66.9 ) ( 3903 = 34.4 ) ( 4927 = 31 ) ( 7313 = 10.1 ) ( 4409 = 23.5 )
( 46 = 30.2 ) ( 2215 = 75.1 ) ( 3905 = 33.5 ) ( 4929 = 25.5 ) ( 7315 = 11.7 ) ( 6101 = 49.8 )
( 47 = 25.2 ) ( 2217 = 67.3 ) ( 3907 = 39.5 ) ( 4931 = 38.7 ) ( 7317 = 21.5 ) ( 6103 = 48.6 )
( 48 = 12 ) ( 2219 = 64.2 ) ( 3909 = 41.7 ) ( 4999 = 29.8 ) ( 7399 = 11.2 ) ( 6105 = 43 )
( 49 = 24 ) ( 2301 = 91.9 ) ( 3911 = 51.3 ) ( 5101 = 32.6 ) ( 7401 = 6.8 ) ( 6199 = 39.3 )
( 51 = 29.7 ) ( 2303 = 100 ) ( 3913 = 32.6 ) ( 5103 = 22.2 ) ( 7403 = 8.6 ) ( 8109 = 14.9 )
( 52 = 33.8 ) ( 2305 = 88.7 ) ( 3915 = 25.9 ) ( 5105 = 30.7 ) ( 7405 = 8.8 ) ( 8199 = 6.9 )
( 53 = 28.8 ) ( 2307 = 79.5 ) ( 3999 = 36.3 ) ( 5201 = 33.8 ) ( 7407 = 9.4 ) ( 8201 = 19.6 )
( 54 = 18.8 ) ( 2309 = 63.1 ) ( 4101 = 24.7 ) ( 5203 = 33.8 ) ( 7409 = 5.9 ) ( 8203 = 13.7 )
( 55 = 22 ) ( 2311 = 71.4 ) ( 4103 = 27.4 ) ( 5301 = 29 ) ( 7411 = 14.1 )
( 56 = 25.5 ) ( 2313 = 67.9 ) ( 4201 = 19.2 ) ( 5303 = 24.3 ) ( 7413 = 6.1 )
( 59 = 24.2 ) ( 2315 = 60.8 ) ( 4203 = 19.3 ) ( 5305 = 33.6 ) ( 7415 = 15.7 )
( 61 = 45.8 ) ( 2317 = 67.8 ) ( 4205 = 22.3 ) ( 5401 = 19.6 ) ( 7417 = 25.2 )
( 62 = 39.3 ) ( 2319 = 43.5 ) ( 4207 = 3.4 ) ( 5403 = 16.3 ) ( 7419 = 9.9 )
( 63 = 25.3 ) ( 2321 = 52.7 ) ( 4209 = 13.4 ) ( 5499 = 19.9 ) ( 7421 = 6.3 )
( 64 = 18.4 ) ( 2323 = 85.4 ) ( 4211 = 37.9 ) ( 5501 = 24.8 ) ( 7423 = 11.4 )
( 65 = 20.3 ) ( 2399 = 60.2 ) ( 4213 = 18.8 ) ( 5503 = 25.5 ) ( 7425 = 9.7 )
( 66 = 29.6 ) ( 2401 = 56.2 ) ( 4301 = 28.3 ) ( 5505 = 20.3 ) ( 7427 = 6.4 )
( 71 = 12.8 ) ( 2403 = 62.5 ) ( 4303 = 30.3 ) ( 5601 = 26.2 ) ( 7429 = 3.6 )
( 72 = 13.5 ) ( 2405 = 69.2 ) ( 4305 = 39.5 ) ( 5603 = 27.4 ) ( 7431 = 11.3 )
( 73 = 15.1 ) ( 2407 = 67.7 ) ( 4307 = 36.4 ) ( 5605 = 16.6 ) ( 7433 = 8.7 )
( 74 = 8.3 ) ( 2501 = 82.1 ) ( 4309 = 38.5 ) ( 5901 = 26.9 ) ( 7435 = 6.9 )
( 81 = 7.7 ) ( 2503 = 63.8 ) ( 4311 = 27.3 ) ( 5903 = 41.1 ) ( 7499 = 10.1 )
( 82 = 16.4 ) ( 2505 = 40.5 ) ( 4313 = 32.8 ) ( 5905 = 28.2 ) ( 8101 = 7.8 )
( 83 = 3.7 ) ( 2601 = 59.8 ) ( 4315 = 31.3 ) ( 5907 = 26.6 ) ( 8103 = 4.4 )
( 84 = 8.8 ) ( 2603 = 56.5 ) ( 4399 = 34.4 ) ( 5909 = 14.3 ) ( 8105 = 9 )
( 89 = 11.8 ) ( 2605 = 77.7 ) ( 4401 = 19.6 ) ( 5999 = 15.7 ) ( 8107 = 7.2 )
(sysmis = sysmis)
 INTO  ANU31FHC .
VARIABLE LABELS ANU31FHC 'ANU31 Index in Former Home Country'.
FORMAT ANU31FHC (f3.1).
EXECUTE .

*Recoding ASCO 1 at wave 1 into ANU3-1 index

RECODE
  ao12 (CONVERT)
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EXECUTE .

*Recoding ASCO 1 at wave 2 into ANU3-1 index

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FORMAT ASCO1W2 (f4.0).
EXECUTE .

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VARIABLE LABELS ANU31W2 'ANU31 Index at Wave 2'.
FORMAT ANU31W2 (f3.1).
EXECUTE .

*Recoding ASCO 1 at wave 3 into ANU3-1 index

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VARIABLE LABELS ASCO1W3 'ASCO1 Occupation at Wave 3 '.
FORMAT ASCO1W3 (f4.0).
EXECUTE .

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( 28 = 48.5 ) ( 2101 = 67 ) ( 3201 = 39 ) ( 4903 = 19.3 ) ( 7203 = 3.4 ) ( 8919 = 13.1 )
( 29 = 63.5 ) ( 2103 = 79.2 ) ( 3203 = 38.2 ) ( 4905 = 18.1 ) ( 7205 = 8.1 ) ( 8921 = 14.2 )
( 31 = 41.8 ) ( 2105 = 85.5 ) ( 3205 = 45.7 ) ( 4907 = 27.6 ) ( 7207 = 12.5 ) ( 8923 = 10.8 )
( 32 = 41.5 ) ( 2107 = 70.1 ) ( 3207 = 42.9 ) ( 4909 = 32.3 ) ( 7209 = 5.3 ) ( 8925 = 30.4 )
( 33 = 59.5 ) ( 2109 = 69.9 ) ( 3299 = 48 ) ( 4911 = 17.1 ) ( 7211 = 29.2 ) ( 8999 = 9.8 )
( 34 = 50.4 ) ( 2199 = 70.6 ) ( 3301 = 66.8 ) ( 4913 = 16.8 ) ( 7299 = 6.3 ) ( 2607 = 61.7 )
( 35 = 53.6 ) ( 2201 = 67.5 ) ( 3303 = 60 ) ( 4915 = 6.5 ) ( 7301 = 29.5 ) ( 2701 = 57.9 )
( 39 = 35.8 ) ( 2203 = 67.4 ) ( 3305 = 54.6 ) ( 4917 = 12.6 ) ( 7303 = 7.1 ) ( 2703 = 58 )
( 41 = 27.1 ) ( 2205 = 56.3 ) ( 3307 = 56.7 ) ( 4919 = 31 ) ( 7305 = 20.3 ) ( 2705 = 56.1 )
( 42 = 22.2 ) ( 2207 = 72.8 ) ( 3401 = 50.4 ) ( 4921 = 21.2 ) ( 7307 = 35.9 ) ( 4403 = 26.1 )
( 43 = 33.2 ) ( 2209 = 73.6 ) ( 3501 = 53.6 ) ( 4923 = 14.9 ) ( 7309 = 8.9 ) ( 4405 = 18.6 )
( 44 = 21.5 ) ( 2211 = 67.7 ) ( 3901 = 37.7 ) ( 4925 = 24.3 ) ( 7311 = 9.9 ) ( 4407 = 23.4 )
( 45 = 26.6 ) ( 2213 = 66.9 ) ( 3903 = 34.4 ) ( 4927 = 31 ) ( 7313 = 10.1 ) ( 4409 = 23.5 )
( 46 = 30.2 ) ( 2215 = 75.1 ) ( 3905 = 33.5 ) ( 4929 = 25.5 ) ( 7315 = 11.7 ) ( 6101 = 49.8 )
( 47 = 25.2 ) ( 2217 = 67.3 ) ( 3907 = 39.5 ) ( 4931 = 38.7 ) ( 7317 = 21.5 ) ( 6103 = 48.6 )
( 48 = 12 ) ( 2219 = 64.2 ) ( 3909 = 41.7 ) ( 4999 = 29.8 ) ( 7399 = 11.2 ) ( 6105 = 43 )
```

```
 ( 49 = 24 ) ( 2301 = 91.9 ) ( 3911 = 51.3 ) ( 5101 = 32.6 ) ( 7401 = 6.8 ) ( 6199 = 39.3 )
 ( 51 = 29.7 ) ( 2303 = 100 ) ( 3913 = 32.6 ) ( 5103 = 22.2 ) ( 7403 = 8.6 ) ( 8109 = 14.9 )
 ( 52 = 33.8 ) ( 2305 = 88.7 ) ( 3915 = 25.9 ) ( 5105 = 30.7 ) ( 7405 = 8.8 ) ( 8199 = 6.9 )
 ( 53 = 28.8 ) ( 2307 = 79.5 ) ( 3999 = 36.3 ) ( 5201 = 33.8 ) ( 7407 = 9.4 ) ( 8201 = 19.6 )
 ( 54 = 18.8 ) ( 2309 = 63.1 ) ( 4101 = 24.7 ) ( 5203 = 33.8 ) ( 7409 = 5.9 ) ( 8203 = 13.7 )
 ( 55 = 22 ) ( 2311 = 71.4 ) ( 4103 = 27.4 ) ( 5301 = 29 ) ( 7411 = 14.1 )
 ( 56 = 25.5 ) ( 2313 = 67.9 ) ( 4201 = 19.2 ) ( 5303 = 24.3 ) ( 7413 = 6.1 )
 ( 59 = 24.2 ) ( 2315 = 60.8 ) ( 4203 = 19.3 ) ( 5305 = 33.6 ) ( 7415 = 15.7 )
 ( 61 = 45.8 ) ( 2317 = 67.8 ) ( 4205 = 22.3 ) ( 5401 = 19.6 ) ( 7417 = 25.2 )
 ( 62 = 39.3 ) ( 2319 = 43.5 ) ( 4207 = 3.4 ) ( 5403 = 16.3 ) ( 7419 = 9.9 )
 ( 63 = 25.3 ) ( 2321 = 52.7 ) ( 4209 = 13.4 ) ( 5499 = 19.9 ) ( 7421 = 6.3 )
 ( 64 = 18.4 ) ( 2323 = 85.4 ) ( 4211 = 37.9 ) ( 5501 = 24.8 ) ( 7423 = 11.4 )
 ( 65 = 20.3 ) ( 2399 = 60.2 ) ( 4213 = 18.8 ) ( 5503 = 25.5 ) ( 7425 = 9.7 )
 ( 66 = 29.6 ) ( 2401 = 56.2 ) ( 4301 = 28.3 ) ( 5505 = 20.3 ) ( 7427 = 6.4 )
 ( 71 = 12.8 ) ( 2403 = 62.5 ) ( 4303 = 30.3 ) ( 5601 = 26.2 ) ( 7429 = 3.6 )
 ( 72 = 13.5 ) ( 2405 = 69.2 ) ( 4305 = 39.5 ) ( 5603 = 27.4 ) ( 7431 = 11.3 )
 ( 73 = 15.1 ) ( 2407 = 67.7 ) ( 4307 = 36.4 ) ( 5605 = 16.6 ) ( 7433 = 8.7 )
 ( 74 = 8.3 ) ( 2501 = 82.1 ) ( 4309 = 38.5 ) ( 5901 = 26.9 ) ( 7435 = 6.9 )
 ( 81 = 7.7 ) ( 2503 = 63.8 ) ( 4311 = 27.3 ) ( 5903 = 41.1 ) ( 7499 = 10.1 )
 ( 82 = 16.4 ) ( 2505 = 40.5 ) ( 4313 = 32.8 ) ( 5905 = 28.2 ) ( 8101 = 7.8 )
 ( 83 = 3.7 ) ( 2601 = 59.8 ) ( 4315 = 31.3 ) ( 5907 = 26.6 ) ( 8103 = 4.4 )
 ( 84 = 8.8 ) ( 2603 = 56.5 ) ( 4399 = 34.4 ) ( 5909 = 14.3 ) ( 8105 = 9 )
 ( 89 = 11.8 ) ( 2605 = 77.7 ) ( 4401 = 19.6 ) ( 5999 = 15.7 ) ( 8107 = 7.2 )
 (sysmis = sysmis)
 INTO  ANU31W3 .
VARIABLE LABELS ANU31W3 'ANU31 Index at Wave 3'.
FORMAT ANU31W3 (f3.1).
EXECUTE .


*******Recoding Income bands into mid-point average income

*WAVE 1

*CATEGORICAL VARIABLE FOR WAGE AND SALARY INCOME PER WEEK

RECODE au05 (CONVERT) ('A'=1) ('B'=2) ('C'=3) ('D'=4) ('E'=5) ('F'=6) ('G'=7) ('H'=8)
 ('I'=9) ('J'=10) ('K'=11) ('L'=12) ('M'=13) ('8'=99) ('9'=99) INTO AWSIW1.
VARIABLE LABELS AWSIW1 'income from wage and salary per week' .
VALUE LABELS AWSIW1
  1 'None Nil'
  2 '$1 to $57pw'
  3 '$58 to $96pw'
  4 '$97 to $154pw'
  5 '$155 to $230pw'
  6 '$231 to $308pw'
  7 '$309 to $385pw'
  8 '$386 to $481pw'
  9 '$482 to $577pw'
  10 '$578 to $673pw'
  11 '$674 to $769pw'
  12 '$770 to $961pw'
  13 '$962+ pw'
  99 'NOT REPORTED'.
FORMAT AWSIW1(f2.0).
EXECUTE .

*CONTINUOUS VARIABLE FOR WAGE AND SALARY INCOME PER WEEK (BRACKETS MID POINTS).

COMPUTE WAGEW1=AWSIW1.
RECODE WAGEW1 (1=0) (2=29) (3=77) (4=125.5) (5=192.5) (6=269.5) (7=347)
 (8=433.5) (9=529.5) (10=625.5) (11=721.5) (12=865.5) (13=1169).
VARIABLE LABELS WAGEW1'Gross Average Weekly Wage and Salary at Wave 1'.
```

```
FORMAT WAGEW1 (f4.1).
EXECUTE .

*CATEGORICAL VARIABLE FOR BUSINESS FARM OR PARTNERSHIP INCOME PER WEEK.

RECODE au07 (CONVERT) ('A'=1) ('B'=2) ('C'=3) ('D'=4) ('E'=5) ('F'=6) ('G'=7) ('H'=8)
 ('I'=9) ('J'=10) ('K'=11) ('L'=12) ('M'=13) ('8'=99) ('9'=99)
 INTO ABPIW1.
VARIABLE LABELS ABPIW1 'Income from business farm or partnership per week'.
VALUE LABELS ABPIW1
  1 'None Nil'
  2 '$1 to $57pw'
  3 '$58 to $96pw'
  4 '$97 to $154pw'
  5 '$155 to $230pw'
  6 '$231 to $308pw'
  7 '$309 to $385pw'
  8 '$386 to $481pw'
  9 '$482 to $577pw'
  10 '$578 to $673pw'
  11 '$674 to $769pw'
  12 '$770 to $961pw'
  13 '$962+ pw'
  99 'NOT REPORTED'.
FORMAT ABPIW1(f2.0).
EXECUTE .

*CONTINUOUS VARIABLE FOR BUSINESS FARM OR PARTNERSHIP INCOME PER WEEK (BRACKETS MID POINTS).

COMPUTE BUSIW1=ABPIW1.
RECODE BUSIW1(1=0) (2=29) (3=77) (4=125.5) (5=192.5) (6=269.5) (7=347)
 (8=433.5) (9=529.5) (10=625.5) (11=721.5) (12=865.5) (13=1169).
VARIABLE LABELS BUSIW1 'Gross Average Weekly Business Farm or Partnership Income at Wave 1'.
FORMAT BUSIW1 (f4.1).
EXECUTE .

*WAVE 2

*CATEGORICAL VARIABLE FOR WAGE AND SALARY INCOME PER WEEK

RECODE bu06 (CONVERT) ('A'=1) ('B'=2) ('C'=3) ('D'=4) ('E'=5) ('F'=6) ('G'=7) ('H'=8)
 ('I'=9) ('J'=10) ('K'=11) ('L'=12) ('M'=13) ('8'=99) ('9'=99) INTO AWSIW2.
VARIABLE LABELS AWSIW2 'income from wage and salary per week' .
VALUE LABELS AWSIW2
  1 'None Nil'
  2 '$1 to $57pw'
  3 '$58 to $96pw'
  4 '$97 to $154pw'
  5 '$155 to $230pw'
  6 '$231 to $308pw'
  7 '$309 to $385pw'
  8 '$386 to $481pw'
  9 '$482 to $577pw'
  10 '$578 to $673pw'
  11 '$674 to $769pw'
  12 '$770 to $961pw'
  13 '$962+ pw'
  99 'NOT REPORTED'.
FORMAT AWSIW2 (f2.0).
EXECUTE .

*CONTINUOUS VARIABLE FOR WAGE AND SALARY INCOME PER WEEK (BRACKETS MID POINTS).
```

```
COMPUTE WAGEW2=AWSIW2.
RECODE WAGEW2 (1=0) (2=29) (3=77) (4=125.5) (5=192.5) (6=269.5) (7=347)
 (8=433.5) (9=529.5) (10=625.5) (11=721.5) (12=865.5) (13=1169).
VARIABLE LABELS WAGEW2 'Gross Average Weekly Wage and Salary at Wave 2'.
FORMAT WAGEW2 (f4.1).
EXECUTE .

*CATEGORICAL VARIABLE FOR BUSINESS FARM OR PARTNERSHIP INCOME PER WEEK.

RECODE bu08 (CONVERT) ('A'=1) ('B'=2) ('C'=3) ('D'=4) ('E'=5) ('F'=6) ('G'=7) ('H'=8)
 ('I'=9) ('J'=10) ('K'=11) ('L'=12) ('M'=13) ('8'=99) ('9'=99)
 INTO ABPIW2.
VARIABLE LABELS ABPIW2 'Income from business farm or partnership per week'.
VALUE LABELS ABPIW2
  1 'None Nil'
  2 '$1 to $57pw'
  3 '$58 to $96pw'
  4 '$97 to $154pw'
  5 '$155 to $230pw'
  6 '$231 to $308pw'
  7 '$309 to $385pw'
  8 '$386 to $481pw'
  9 '$482 to $577pw'
  10 '$578 to $673pw'
  11 '$674 to $769pw'
  12 '$770 to $961pw'
  13 '$962+ pw'
  99 'NOT REPORTED'.
FORMAT ABPIW2 (f2.0).
EXECUTE .

*CONTINUOUS VARIABLE FOR BUSINESS FARM OR PARTNERSHIP INCOME PER WEEK
*(BRACKETS MID POINTS).

COMPUTE BUSIW2=ABPIW2.
RECODE BUSIW2 (1=0) (2=29) (3=77) (4=125.5) (5=192.5) (6=269.5) (7=347)
 (8=433.5) (9=529.5) (10=625.5) (11=721.5) (12=865.5) (13=1169).
VARIABLE LABELS BUSIW2 'Gross Average Weekly Business Farm or Partnership Income at Wave 2'.
FORMAT BUSIW2 (f4.1).
EXECUTE .

*WAVE 3

*CATEGORICAL VARIABLE FOR WAGE AND SALARY INCOME PER WEEK

RECODE cu06 (CONVERT) ('A'=1) ('B'=2) ('C'=3) ('D'=4) ('E'=5) ('F'=6) ('G'=7) ('H'=8)
 ('I'=9) ('J'=10) ('K'=11) ('L'=12) ('M'=13) ('8'=99) ('9'=99) INTO AWSIW3.
VARIABLE LABELS AWSIW3 'income from wage and salary per week' .
VALUE LABELS AWSIW3
  1 'None Nil'
  2 '$1 to $57pw'
  3 '$58 to $96pw'
  4 '$97 to $154pw'
  5 '$155 to $230pw'
  6 '$231 to $308pw'
  7 '$309 to $385pw'
  8 '$386 to $481pw'
  9 '$482 to $577pw'
  10 '$578 to $673pw'
  11 '$674 to $769pw'
  12 '$770 to $961pw'
  13 '$962+ pw'
  99 'NOT REPORTED'.
```

```
FORMAT AWSIW3 (f2.0).
EXECUTE .

*CONTINUOUS VARIABLE FOR WAGE AND SALARY INCOME PER WEEK
*(BRACKETS MID POINTS).

COMPUTE WAGEW3=AWSIW3.
RECODE WAGEW3 (1=0) (2=29) (3=77) (4=125.5) (5=192.5) (6=269.5) (7=347)
 (8=433.5) (9=529.5) (10=625.5) (11=721.5) (12=865.5) (13=1169).
VARIABLE LABELS WAGEW3 'Gross Average Weekly Wage and Salary at Wave 3'.
FORMAT WAGEW3 (f4.1).
EXECUTE .

*CATEGORICAL VARIABLE FOR BUSINESS FARM OR PARTNERSHIP INCOME PER WEEK.

RECODE cu08 (CONVERT) ('A'=1) ('B'=2) ('C'=3) ('D'=4) ('E'=5) ('F'=6) ('G'=7) ('H'=8)
 ('I'=9) ('J'=10) ('K'=11) ('L'=12) ('M'=13) ('8'=99) ('9'=99)
 INTO ABPIW3.
VARIABLE LABELS ABPIW3 'Income from business farm or partnership per week'.
VALUE LABELS ABPIW3
  1 'None Nil'
  2 '$1 to $57pw'
  3 '$58 to $96pw'
  4 '$97 to $154pw'
  5 '$155 to $230pw'
  6 '$231 to $308pw'
  7 '$309 to $385pw'
  8 '$386 to $481pw'
  9 '$482 to $577pw'
  10 '$578 to $673pw'
  11 '$674 to $769pw'
  12 '$770 to $961pw'
  13 '$962+ pw'
  99 'NOT REPORTED'.
FORMAT ABPIW3(f2.0).
EXECUTE .

*****CONTINUOUS VARIABLE FOR BUSINESS FARM OR PARTNERSHIP INCOME PER WEEK
*****(BRACKETS MID POINTS).

COMPUTE BUSIW3=ABPIW3.
RECODE BUSIW3 (1=0) (2=29) (3=77) (4=125.5) (5=192.5) (6=269.5) (7=347)
 (8=433.5) (9=529.5) (10=625.5) (11=721.5) (12=865.5) (13=1169).
VARIABLE LABELS BUSIW3 'Gross Average Weekly Business Farm or Partnership Income at Wave 3'.
FORMAT BUSIW3 (f4.1).
EXECUTE .

*******Adding up income from wages and salary and income from business, farm or partnership

RECODE
  WAGEW1  (SYSMIS=0) .
EXECUTE .
RECODE
  BUSIW1  (SYSMIS=0) .
EXECUTE .

COMPUTE WEARNW1 = WAGEW1 + BUSIW1 .
VARIABLE LABELS WEARNW1 'WEEKLY EARNINGS AT WAVE 1 = WAGEW1 + BUSIW1' .
FORMAT WEARNW1 (f4.2).
EXECUTE .

RECODE
  WAGEW2  (SYSMIS=0) .
```

```
EXECUTE .
RECODE
  BUSIW2  (SYSMIS=0) .
EXECUTE .

COMPUTE WEARNW2 = WAGEW2 + BUSIW2 .
VARIABLE LABELS WEARNW2 'WEEKLY EARNINGS AT WAVE 2 = WAGEW2 + BUSIW2' .
FORMAT WEARNW2 (f4.2).
EXECUTE .

RECODE
  WAGEW3  (SYSMIS=0) .
EXECUTE .
RECODE
  BUSIW3  (SYSMIS=0) .
EXECUTE .

COMPUTE WEARNW3 = WAGEW3 + BUSIW3 .
VARIABLE LABELS WEARNW3 'WEEKLY EARNINGS AT WAVE 3 = WAGEW3 + BUSIW3' .
FORMAT WEARNW3 (f4.2).
EXECUTE .

******************ADDING UP WEEKLY HOURS WORKED FOR ALL JOBS**********************

*IMPORTANT NOTE:
*ALTHOUGH THE QUATIONNAIRE SHOWS THAT HOURS WORKED WERE ONLY ASKED
*EMPLOYED PEOPLE (ao02=1, bo30=1, co34=1), DATA WAS COLLECTED FOR ALL PEOPLE
*FOR HOURS WORKED, FOR 'EMPLOYED' PERSONS (AO02=1-4),
*I HAD TO CHANGE 98 AND 99 VALUES AS FOLLOWS
*    1) AT ao05, bo10, bo13 AND co14, THERE WAS NO PROBLEM
*    2) AT ao06, bo14 AND co14 I CHANGED IT TO 40 HOURS (MODE)
*    3) AT ap06, bp06 AND cp06 I CHANGED IT TO ZERO

RECODE AO06 (98=40) (99=40) (ELSE=COPY).
EXECUTE .
RECODE BO14 (98=40) (99=40) (ELSE=COPY).
EXECUTE .
RECODE CO14 (98=40) (99=40) (ELSE=COPY).
EXECUTE .
RECODE AP06 (98=0) (99=0) (ELSE=COPY).
EXECUTE .
RECODE BP06 (98=0) (99=0) (ELSE=COPY).
EXECUTE .
RECODE CP06 (98=0) (99=0) (ELSE=COPY).
EXECUTE .


***************************WEEKLY HOURS FOR WAVE 1***********************************


RECODE
  ao05 (SYSMIS=0) (ELSE=Copy) INTO  WHFJW1 .
VARIABLE LABELS WHFJW1 'WEEKLY HOURS WORKED IN FIRST JOB AT W1'.
FORMAT WHFJW1 (f2.0).
EXECUTE .

RECODE
  ao06 (SYSMIS=0) (ELSE=Copy) INTO  WHOJW1 .
VARIABLE LABELS WHOJW1 'WEEKLY HOURS WORKED IN ONLY JOB AT W1'.
FORMAT WHOJW1 (f2.0).
EXECUTE .

RECODE
```

```
  ap06
  (SYSMIS=0)  (ELSE=Copy)  INTO  WHSJW1 .
VARIABLE LABELS WHSJW1 'WEEKLY HOURS WORKED IN SECOND JOB AT W1'.
FORMAT WHSJW1 (f2.0).
EXECUTE .

COMPUTE WHW1 = WHFJW1 + WHOJW1+WHSJW1 .
VARIABLE LABELS WHW1 'TOTAL HOURS WORKED PER WEEK AT WAVE 1' .
FORMAT WHW1 (f2.0).
EXECUTE .

*******************HOURLY WAGES AND EARNINGS FOR WORKING PEOPLE

IF (WHW1 > 0) HEARNW1 = WEARNW1 / WHW1 .
VARIABLE LABELS HEARNW1 'HOURLY EARNINGS AT WAVE 1 ' .
FORMAT HEARNW1 (f3.2).
EXECUTE .

IF (WHW1 > 0) HWAGEW1 = WAGEW1 / WHW1 .
VARIABLE LABELS HWAGEW1 'HOURLY WAGE AT WAVE 1 ' .
FORMAT HWAGEW1 (f3.2).
EXECUTE .


**************WEEKLY HOURS FOR WAVE 2***************

RECODE
  BO10 (SYSMIS=0) (ELSE=Copy) INTO  WHPJW2 .
VARIABLE LABELS WHPJW2 'WEEKLY HOURS WORKED IN PRESENT JOB AT W2'.
FORMAT WHPJW2 (f2.0).
EXECUTE .

RECODE
  BO13 (SYSMIS=0) (ELSE=Copy) INTO  WHFJW2 .
VARIABLE LABELS WHFJW2 'WEEKLY HOURS WORKED IN FIRST JOB AT W2'.
FORMAT WHFJW2 (f2.0).
EXECUTE .

RECODE
  BO14 (SYSMIS=0) (ELSE=Copy) INTO  WHOJW2 .
VARIABLE LABELS WHOJW2 'WEEKLY HOURS WORKED IN ONLY JOB AT W2'.
FORMAT WHOJW2 (f2.0).
EXECUTE .

RECODE
  BP06
  (SYSMIS=0)  (ELSE=Copy)  INTO  WHSJW2 .
VARIABLE LABELS WHSJW2 'WEEKLY HOURS WORKED IN SECOND JOB AT W2'.
FORMAT WHSJW2 (f2.0).
EXECUTE .

COMPUTE WHW2 = WHPJW2+WHFJW2 + WHOJW2+WHSJW2 .
VARIABLE LABELS WHW2 'TOTAL HOURS WORKED PER WEEK AT WAVE 2' .
FORMAT WHW2 (f2.0).
EXECUTE .

**************HOURLY WAGES FOR WORKING PEOPLE

IF (WHW2 > 0) HEARNW2 = WEARNW2 / WHW2 .
VARIABLE LABELS HEARNW2 'HOURLY EARNINGS AT WAVE 2 ' .
FORMAT HEARNW2 (f3.2).
EXECUTE .
```

```
IF (WHW2 > 0) HWAGEW2 = WAGEW2 / WHW2 .
VARIABLE LABELS HWAGEW2 'HOURLY WAGE AT WAVE 2 ' .
FORMAT HWAGEW2 (f3.2).
EXECUTE .

**********WEEKLY HOURS FOR WAVE 3**************************

RECODE
  CO10 (SYSMIS=0) (ELSE=Copy) INTO  WHPJW3 .
VARIABLE LABELS WHPJW3 'WEEKLY HOURS WORKED IN PRESENT JOB AT W3'.
FORMAT WHPJW3 (f2.0).
EXECUTE .

RECODE
  CO13 (SYSMIS=0) (ELSE=Copy) INTO  WHFJW3 .
VARIABLE LABELS WHFJW3 'WEEKLY HOURS WORKED IN FIRST JOB AT W3'.
FORMAT WHFJW3 (f2.0).
EXECUTE .

RECODE
  CO14 (SYSMIS=0) (ELSE=Copy) INTO  WHOJW3 .
VARIABLE LABELS WHOJW3 'WEEKLY HOURS WORKED IN ONLY JOB AT W3'.
FORMAT WHOJW3 (f2.0).
EXECUTE .

RECODE
  CP06
  (SYSMIS=0)  (ELSE=Copy)  INTO  WHSJW3 .
VARIABLE LABELS WHSJW3 'WEEKLY HOURS WORKED IN SECOND JOB AT W3'.
FORMAT WHSJW3 (f2.0).
EXECUTE .

COMPUTE WHW3 = WHPJW3+WHFJW3 + WHOJW3+WHSJW3 .
VARIABLE LABELS WHW3 'TOTAL HOURS WORKED PER WEEK AT WAVE 3' .
FORMAT WHW2 (f2.0).
EXECUTE .

**********HOURLY WAGES FOR WORKING PEOPLE

IF (WHW3 > 0) HEARNW3 = WEARNW3 / WHW3 .
VARIABLE LABELS HEARNW3 'HOURLY EARNINGS AT WAVE 3 ' .
FORMAT HEARNW3 (f3.2).
EXECUTE .

IF (WHW3 > 0) HWAGEW3 = WAGEW3 / WHW3 .
VARIABLE LABELS HWAGEW3 'HOURLY WAGE AT WAVE 3 ' .
FORMAT HWAGEW3 (f3.2).
EXECUTE .

*****RECLASSIFYING EMPLOYED PEOPLE WITH ZERO HOURS WORKED AS UNEMPLOYED

DO IF (WHW1 = 0) .
RECODE
  ao02 ('1'='5') ('2'='5') ('3'='5') ('4'='5') ('5'='5') ('6'='6') ('7'='7') ('8'='8') .
END IF .
EXECUTE .

DO IF (WHW1=0).
RECODE
  LFSW1 (1=3) (ELSE=COPY).
END IF.
EXECUTE.
```

```
DO IF (WHW2 = 0) .
RECODE
 BO30 ('1'='5') ('2'='5') ('3'='5') ('4'='5') ('5'='5') ('6'='6') ('7'='7') ('8'='8') .
END IF .
EXECUTE .

DO IF (WHW2=0).
RECODE
 LFSW2 (1=3) (ELSE=COPY).
END IF.
EXECUTE.

DO IF (WHW3 = 0) .
RECODE
 CO34 ('1'='5') ('2'='5') ('3'='5') ('4'='5') ('5'='5') ('6'='6') ('7'='7') ('8'='8') .
END IF .
EXECUTE .

DO IF (WHW3=0).
RECODE
 LFSW3 (1=3) (ELSE=COPY).
END IF.
EXECUTE.

*RECLASSIFYING EMPLOYED PEOPLE WITH ZERO HOURLY EARNINGS LESS AS UNEMPLOYED

DO IF (HEARNW1 = 0) .
RECODE
 ao02 ('1'='5') ('2'='5') ('3'='5') ('4'='5') ('5'='5') ('6'='6') ('7'='7') ('8'='8') .
END IF .
EXECUTE .

DO IF (HEARNW1=0).
RECODE
 MACT_W1 (1=3) (ELSE=COPY).
END IF.
EXECUTE.

DO IF (HEARNW1=0).
RECODE
 LFSW1 (1=3) (ELSE=COPY).
END IF.
EXECUTE.

DO IF (HEARNW2 = 0) .
RECODE
 BO30 ('1'='5') ('2'='5') ('3'='5') ('4'='5') ('5'='5') ('6'='6') ('7'='7') ('8'='8') .
END IF .
EXECUTE .

DO IF (HEARNW2=0).
RECODE
 MACT_W2 (1=3) (ELSE=COPY).
END IF.
EXECUTE.

DO IF (HEARNW2=0).
RECODE
 LFSW2 (1=3) (ELSE=COPY).
END IF.
EXECUTE.

DO IF (HEARNW3 = 0) .
```

```
RECODE
  CO34 ('1'='5') ('2'='5') ('3'='5') ('4'='5') ('5'='5') ('6'='6') ('7'='7') ('8'='8') .
END IF .
EXECUTE .

DO IF (HEARNW3=0).
RECODE
  MACT_W3 (1=3) (ELSE=COPY).
END IF.
EXECUTE.

DO IF (HEARNW3=0).
RECODE
  LFSW3 (1=3) (ELSE=COPY).
END IF.
EXECUTE.


********** Job Mobility between waves

RECODE bo12 (CONVERT) INTO CHJW2 .
VARIABLE LABELS CHJW2  JOB STABILITY BETWEEN W1 AND W2'.
FORMAT CHJW2 (F1.0).
EXECUTE.

RECODE CHJW2 (0=0)(1=0)(2=1)(8=0)(9=0) (SYSMIS=0) INTO CHJOBW2 .
VARIABLE LABELS CHJOBW2 'CHANGED JOBS BETWEEN W1 AND W2'.
VALUE LABELS CHJOBW2
  0 'NO'
  1 'YES' .
FORMAT CHJOBW2 (F1.0).
EXECUTE.

RECODE co12 (CONVERT) INTO CHJW3 .
VARIABLE LABELS CHJW3 'CHANGED JOBS BETWEEN W2 AND W3'.
FORMAT CHJW3 (F1.0).
EXECUTE .

RECODE CHJW3 (0=0)(1=0)(2=1)(8=0)(9=0) (SYSMIS=0) INTO CHJOBW3 .
VARIABLE LABELS CHJOBW3 'CHANGED JOBS BETWEEN W2 AND W3'.
VALUE LABELS CHJOBW3
  0 'NO'
  1 'YES' .
FORMAT CHJOBW3 (F1.0).
EXECUTE.

**********Dummy for Job Mobility between waves

DO IF (CHJOBW2=1 or CHJOBW3 =1) .
COMPUTE CHJOB = 1.
FORMAT CHJOB (f1.0).
END IF .
EXECUTE .

RECODE CHJOB (1=1) (else=0) INTO JMOBIL .
VARIABLE LABELS JMOBIL 'Changed Jobs' .
VALUE LABELS JMOBIL
 1 'Changed Jobs'
 0 'Stayed in same job or not reported' .
FORMAT JMOBIL (f1.0) .
EXECUTE .

********SEX INTO DUMMY FOR MALE - DEFAULT IS FEMALE
```

```
RECODE  AAA04 (CONVERT) ('1'=1) ('2'=2) INTO SEX .
VARIABLE LABELS SEX 'SEX OF RESPONDENT' .
VALUE LABELS SEX
  1 'Male'
  2 'Female' .
FORMAT SEX (f1.0) .
EXECUTE .

RECODE SEX (1=1) (2=0) INTO MALE .
VARIABLE LABELS MALE 'RESPONDENT IS MALE' .
VALUE LABELS MALE
  1 'Male'
  0 'Female' .
FORMAT MALE (f1.0) .
EXECUTE .

**********AGE GROUP INTO DUMMIES FOR EACH GROUP - DEFAULT IS 55 TO 64

RECODE AGEGRP (1=1) (ELSE=0) INTO AGE1524 .
VARIABLE LABELS AGE1524 'AGE 15 TO 24' .
FORMAT AGE1524 (f1.0) .
EXECUTE.

RECODE AGEGRP (2=1) (ELSE=0) INTO AGE2534 .
VARIABLE LABELS AGE2534 'AGE 25 TO 34' .
FORMAT AGE2534 (f1.0) .
EXECUTE.

RECODE AGEGRP (3=1) (ELSE=0) INTO AGE3544 .
VARIABLE LABELS AGE3544 'AGE 35 TO 44' .
FORMAT AGE3544 (f1.0) .
EXECUTE.

RECODE AGEGRP (4=1) (ELSE=0) INTO AGE4554 .
VARIABLE LABELS AGE4554 'AGE 45 TO 54' .
FORMAT AGE4554 (f1.0) .
EXECUTE.

*******FORMER REGION INTO DUMMIES FOR EACH REGION
*'*******MISSING OR NOT REPORTED' IS DEFAULT

RECODE FMRR (10=1) (ELSE=0) INTO FHOCAN.
VARIABLE LABELS FHOCAN 'FORMER HOME REGION IS OCEANIA OR ANTARCTICA' .
FORMAT FHOCAN (f1.0) .
EXECUTE.

RECODE FMRR (20=1) (ELSE=0) INTO FHNSWE.
VARIABLE LABELS FHNSWE 'FORMER HOME REGION IS NORTH SOUTH OR WESTERN EUROPE' .
FORMAT FHNSWE (f1.0) .
EXECUTE.

RECODE FMRR (21=1) (ELSE=0) INTO FHUKIR.
VARIABLE LABELS FHUKIR 'FORMER HOME REGION IS UK AND IRELAND' .
FORMAT FHUKIR (f1.0) .
EXECUTE.

RECODE FMRR (22=1) (ELSE=0) INTO FHEOTE.
VARIABLE LABELS FHEOTE 'FORMER HOME REGION IS EASTERN AND OTHER EUROPE' .
FORMAT FHEOTE (f1.0) .
EXECUTE.

RECODE FMRR (30=1) (ELSE=0) INTO FHMENA.
```

```
VARIABLE LABELS FHMENA 'FORMER HOME REGION IS MIDDLE EAST OR NORTH AFRICA' .
FORMAT FHMENA (f1.0) .
EXECUTE.

RECODE FMRR (40=1) (ELSE=0) INTO FHSEAS.
VARIABLE LABELS FHSEAS 'FORMER HOME REGION IS SOUTH EAST ASIA' .
FORMAT FHSEAS (f1.0) .
EXECUTE.

RECODE FMRR (50=1) (ELSE=0) INTO FHNEAS.
VARIABLE LABELS FHNEAS 'FORMER HOME REGION IS NORTH EAST ASIA' .
FORMAT FHNEAS (f1.0) .
EXECUTE.

RECODE FMRR (60=1) (ELSE=0) INTO FHSOAS.
VARIABLE LABELS FHSOAS 'FORMER HOME REGION IS SOUTHERN ASIA' .
FORMAT FHSOAS (f1.0) .
EXECUTE.

RECODE FMRR (70=1) (ELSE=0) INTO FHNOAM.
VARIABLE LABELS FHNOAM 'FORMER HOME REGION IS NORTH AMERICA' .
FORMAT FHNOAM (f1.0) .
EXECUTE.

RECODE FMRR (80=1) (ELSE=0) INTO FHCSAC.
VARIABLE LABELS FHCSAC 'FORMER HOME REGION IS CENTRAL SOUTH AMERICA AND CARRIBEANS'.
FORMAT FHCSAC (f1.0) .
EXECUTE.

RECODE FMRR (90=1) (ELSE=0) INTO FHSSOA.
VARIABLE LABELS FHSSOA 'FORMER HOME REGION IS SUB SAHARAN AND OTHER AFRICA' .
FORMAT FHSSOA (f1.0) .
EXECUTE.

*******FORMER REGION INTO DUMMIES FOR MAIN REGION

RECODE FMRR  (20=1) (21=1) (22=1) (70=0) (ELSE=0) INTO FHEUNA .
VARIABLE LABELS FHEUNA 'FHR IS EUROPE OR NORTH AMERICA' .
FORMAT FHEUNA (f1.0) .
EXECUTE .

RECODE FMRR  (40=1) (50=1) (60=1) (ELSE=0) INTO FHASIA .
VARIABLE LABELS FHASIA 'FHR IS ASIA' .
FORMAT FHASIA (f1.0) .
EXECUTE .

*************VISA CATEGORY DUMMIES - 'HUMANITARIAN' IS DEFAULT

RECODE VISA_MJ (CONVERT) ('1'=1) ('2'=2) ('3'=3) ('4'=4) ('5'=5) INTO VISA .
VARIABLE LABELS VISA 'MAJOR VISA GROUP' .
VALUE LABELS VISA
  1 'PREFERENTIAL FAM FAM STREAM'
  2 'CONCESSIONAL FAM SKILLED OZ LINKED'
  3 'BUSINESS SKILLED EMPLOYER NOMINATION SHEME'
  4 'INDEPENDENT'
  5 'HUMANITARIAN' .
FORMAT VISA (f1.0) .
EXECUTE .


RECODE VISA (1=1) (ELSE=0) INTO VPREF .
VARIABLE LABELS VPREF 'PREFERENTIAL FAMILY VISA' .
FORMAT VPREF (f1.0) .
```

```
EXECUTE .

RECODE VISA (2=1) (ELSE=0) INTO VCONF .
VARIABLE LABELS VCONF 'CONCESSIONAL FAMILY VISA' .
FORMAT VCONF (f1.0) .
EXECUTE .

RECODE VISA (3=1) (ELSE=0) INTO VBSEN .
VARIABLE LABELS VBSEN 'BUSINESS ENS VISA' .
FORMAT VBSEN (f1.0) .
EXECUTE .

RECODE VISA (4=1) (ELSE=0) INTO VINDP .
VARIABLE LABELS VINDP 'INDEPENDENT VISA' .
FORMAT VINDP (f1.0) .
EXECUTE .

*VISA TYPE DUMMIES

RECODE VISA (1=1) (ELSE=0) INTO IMFAM .
VARIABLE LABELS IMFAM 'FAMILY IMMIGRANT' .
FORMAT IMFAM (f1.0) .
EXECUTE .

RECODE VISA (2=1) (3=1) (4=1) (ELSE=0) INTO IMECO .
VARIABLE LABELS IMECO 'ECONOMIC IMMIGRANT' .
FORMAT IMECO (f1.0) .
EXECUTE .

******ENGLISH PROFICIENCY DUMMIES - LOW OR NO ENGLISH IS DEFAULT

******ENGLISH PROFICIENCY DUMMIES AT WAVE 1

RECODE ENGPROW1 (1=1) (1.33=1) (ELSE=0) INTO ENGHIW1 .
VARIABLE LABELS ENGHIW1 'HIGH PROFICIENCY IN ENGLISH AT W1' .
FORMAT ENGHIW1 (f1.0) .
EXECUTE .

RECODE ENGPROW1 (1.67=1) (2=1) (2.33=1) (ELSE=0) INTO ENGMEW1 .
VARIABLE LABELS ENGMEW1 'MEDIUM PROFICIENCY IN ENGLISH AT W1' .
FORMAT ENGMEW1 (f1.0) .
EXECUTE .

*******ENGLISH PROFICIENCY DUMMIES AT WAVE 2

RECODE ENGPROW2 (1=1) (1.33=1) (ELSE=0) INTO ENGHIW2 .
VARIABLE LABELS ENGHIW2 'HIGH PROFICIENCY IN ENGLISH AT W2' .
FORMAT ENGHIW2 (f1.0) .
EXECUTE .

RECODE ENGPROW2 (1.67=1) (2=1) (2.33=1) (ELSE=0) INTO ENGMEW2 .
VARIABLE LABELS ENGMEW2 'MEDIUM PROFICIENCY IN ENGLISH AT W2' .
FORMAT ENGMEW2 (f1.0) .
EXECUTE .

*******ENGLISH PROFICIENCY DUMMIES AT WAVE 3

RECODE ENGPROW3 (1=1) (1.33=1) (ELSE=0) INTO ENGHIW3 .
VARIABLE LABELS ENGHIW3 'HIGH PROFICIENCY IN ENGLISH AT W3' .
FORMAT ENGHIW3 (f1.0) .
EXECUTE .

RECODE ENGPROW3 (1.67=1) (2=1) (2.33=1) (ELSE=0) INTO ENGMEW3 .
```

```
VARIABLE LABELS ENGMEW3 'MEDIUM PROFICIENCY IN ENGLISH AT W3' .
FORMAT ENGMEW3 (f1.0) .
EXECUTE .


*********PREMIGRATION LABOUR FORCE DUMMIES - HOME DUTIES IS DEFAULT**********

RECODE LFSFHC (1=1) (ELSE=0) INTO EMPFHC .
VARIABLE LABELS EMPFHC 'WAS EMPLOYED IN 12 MONTHS PRIOR TO MIGRATION' .
FORMAT EMPFHC (f1.0) .
EXECUTE .

RECODE LFSFHC (2=1) (ELSE=0) INTO BUSFHC .
VARIABLE LABELS BUSFHC 'HAD A BUSINESS IN 12 MONTHS PRIOR TO MIGRATION' .
FORMAT BUSFHC (f1.0) .
EXECUTE .

RECODE LFSFHC (3=1) (ELSE=0) INTO UNEFHC .
VARIABLE LABELS UNEFHC 'WAS UNEMPLOYED IN 12 MONTHS PRIOR TO MIGRATION' .
FORMAT UNEFHC (f1.0) .
EXECUTE .

RECODE LFSFHC (4=1) (ELSE=0) INTO STUFHC .
VARIABLE LABELS STUFHC 'WAS A STUDENT IN 12 MONTHS PRIOR TO MIGRATION' .
FORMAT STUFHC (f1.0) .
EXECUTE .

*********WAVE 1 LABOUR FORCE DUMMIES - HOME DUTIES IS DEFAULT********
*********WMPW1 ALSO SERVE AS POST-MIGRATION EXPERIENCE DUMMY******

RECODE LFSW1 (1=1) (ELSE=0) INTO EMPW1 .
VARIABLE LABELS EMPW1 'WAS EMPLOYED AT WAVE 1'.
FORMAT EMPW1 (f1.0) .
EXECUTE .

RECODE LFSW1 (2=1) (ELSE=0) INTO BUSW1 .
VARIABLE LABELS BUSW1 'HAD A BUSINESS AT WAVE 1'.
FORMAT BUSW1 (f1.0) .
EXECUTE .

RECODE LFSW1 (3=1) (ELSE=0) INTO UNEW1 .
VARIABLE LABELS UNEW1 'WAS UNEMPLOYED AT WAVE 1'.
FORMAT UNEW1 (f1.0) .
EXECUTE .

RECODE LFSW1 (4=1) (ELSE=0) INTO STUW1 .
VARIABLE LABELS STUW1 'WAS A STUDENT AT WAVE 1'.
FORMAT STUW1 (f1.0) .
EXECUTE .

*********WAVE 2 LABOUR FORCE DUMMIES - HOME DUTIES IS DEFAULT********
*********WMPW2 ALSO SERVE AS POST-MIGRATION EXPERIENCE DUMMY******

RECODE LFSW2 (1=1) (ELSE=0) INTO EMPW2 .
VARIABLE LABELS EMPW2 'WAS EMPLOYED AT WAVE 2'.
FORMAT EMPW2 (f1.0) .
EXECUTE .

RECODE LFSW2 (2=1) (ELSE=0) INTO BUSW2 .
VARIABLE LABELS BUSW2 'HAD A BUSINESS AT WAVE 2'.
FORMAT BUSW2 (f1.0) .
EXECUTE .
```

```
RECODE LFSW2 (3=1) (ELSE=0) INTO UNEW2 .
VARIABLE LABELS UNEW2 'WAS UNEMPLOYED AT WAVE 2'.
FORMAT UNEW2 (f1.0) .
EXECUTE .

RECODE LFSW2 (4=1) (ELSE=0) INTO STUW2 .
VARIABLE LABELS STUW2 'WAS A STUDENT AT WAVE 2'.
FORMAT STUW2 (f1.0) .
EXECUTE .


*****MARITAL STATUS DUMMIES 'SEP, DIV, WID OR OTHER' IS DEFAULT******

**WAVE 1

RECODE AAA07 (CONVERT)  ('1'=1) ('2'=2) ('3'=3) ('4'=4) ('5'=5) ('8'=8) INTO MARISTW1 .
VARIABLE LABELS MARISTW1 'MARITAL STATUS AT WAVE 1' .
VALUE LABELS MARISTW1
  1 'MARRIED'
  2 'SEPARATED'
  3 'DIVORCED'
  4 'WIDOWED'
  5 'NEVER MARRIED'
  8 'DATA MISSING'.
FORMAT MARISTW1 (f1.0) .
EXECUTE .

RECODE MARISTW1 (1=1) (ELSE=0) INTO MARW1 .
VARIABLE LABELS MARW1 'MARRIED AT WAVE 1'.
FORMAT MARW1 (f1.0) .
EXECUTE .

RECODE MARISTW1 (5=1) (ELSE=0) INTO NMARW1 .
VARIABLE LABELS NMARW1 'NEVER MARRIED AT WAVE 1'.
FORMAT NMARW1 (f1.0) .
EXECUTE .

** FOR LOGIT MODEL ONLY***

RECODE MARISTW1 (1=1) (ELSE=2) INTO MARRIED1 .
VARIABLE LABELS MARRIED1 'MARRIED AT WAVE 1'.
FORMAT MARRIED1 (f1.0) .
EXECUTE .

**WAVE 2

RECODE BAA07 (CONVERT)  ('1'=1) ('2'=2) ('3'=3) ('4'=4) ('5'=5) ('8'=8) INTO MARISTW2 .
VARIABLE LABELS MARISTW2 'MARITAL STATUS AT WAVE 2' .
VALUE LABELS MARISTW2
  1 'MARRIED'
  2 'SEPARATED'
  3 'DIVORCED'
  4 'WIDOWED'
  5 'NEVER MARRIED'
  8 'DATA MISSING'.
FORMAT MARISTW2 (f1.0) .
EXECUTE .

RECODE MARISTW2 (1=1) (ELSE=0) INTO MARW2 .
VARIABLE LABELS MARW2 'MARRIED AT WAVE 2'.
FORMAT MARW2 (f1.0) .
EXECUTE .
```

```
RECODE MARISTW2 (5=1) (ELSE=0) INTO NMARW2 .
VARIABLE LABELS NMARW2 'NEVER MARRIED AT WAVE 2'.
FORMAT NMARW2 (f1.0) .
EXECUTE .

**WAVE 3

RECODE CAA07 (CONVERT)  ('1'=1) ('2'=2) ('3'=3) ('4'=4) ('5'=5) ('8'=8) INTO MARISTW3 .
VARIABLE LABELS MARISTW3 'MARITAL STATUS AT WAVE 3' .
VALUE LABELS MARISTW3
  1 'MARRIED'
  2 'SEPARATED'
  3 'DIVORCED'
  4 'WIDOWED'
  5 'NEVER MARRIED'
  8 'DATA MISSING'.
FORMAT MARISTW3 (f1.0) .
EXECUTE .

RECODE MARISTW3 (1=1) (ELSE=0) INTO MARW3 .
VARIABLE LABELS MARW3 'MARRIED AT WAVE 3'.
FORMAT MARW3 (f1.0) .
EXECUTE .

RECODE MARISTW3 (5=1) (ELSE=0) INTO NMARW3 .
VARIABLE LABELS NMARW3 'NEVER MARRIED AT WAVE 3'.
FORMAT NMARW3 (f1.0) .
EXECUTE .


*********DUMMY FOR PRE-MIGRATION VISIT TO AUSTRALIA***

********* NO VISIT IS DEFAULT***

RECODE AB09 (CONVERT) ('1'=1) ('2'=2) INTO PREMVIS .
VARIABLE LABELS PREMVIS 'PRE MIGRATION VISIT' .
VALUE LABELS PREMVIS
  1 'YES'
  2 'NO' .
FORMAT PREMVIS (f1.0) .
EXECUTE .

RECODE PREMVIS (1=1) (2=0) INTO VISIT .
VARIABLE LABEL VISIT 'VISITED AUSTRALIA BEFORE MIGRATION' .
FORMAT VISIT (f1.0) .
EXECUTE .

*********YEARS OF STUDY - CONTINUOUS VARIABLE********

RECODE AM01 (CONVERT) ('1'=1) ('2'=2) ('3'=3) ('4'=4) ('5'=5)
  ('6'=6) ('7'=7) ('8'=8) ('9'=9) ('88'=88) INTO HFQUAL .
VARIABLE LABELS HFQUAL 'HIGHEST FORMAL QUALIFICATIONS' .
VALUE LABELS HFQUAL
  1 'Higher degree'
  2 'Postgrad diploma'
  3 'Bachelor degree or equivalent'
  4 'Tech/Prof Dipl/Cert'
  5 'Trade'
  6 'Year 12'
  7 'Year 10-11'
  8 'Year 7-9'
  9 'Year 6 or less'
  88 'other' .
```

```
FORMAT HFQUAL (f2.0) .
EXECUTE .

RECODE AM05 (98=0) (99=0) (SYSMIS=0) (ELSE=COPY) INTO YOPS .
VARIABLE LABELS YOPS 'YEARS OF POST SECONDARY STUDY' .
FORMAT YOPS (f2.0) .
EXECUTE .

****IMPORTANT****
*PEOPLE WHOSE POST SECONDARY STUDIES INVOLVED SOME PART TIME
*OR ALL PART TIME OR APPRENTICESHIP WERE ASSUMED TO BE HALF-TIME
*STUDENTS SO THEIR YOS ARE HALF OF WHAT THEY REPORTED.

IF (AM04='1') YOS=12+YOPS.
IF (AM04='2') YOS=12+(YOPS/2) .
IF (AM04='3') YOS=12+(YOPS/2) .
IF (AM04='4') YOS=12+(YOPS/2) .
IF (HFQUAL=6) YOS=12 .
IF (HFQUAL=7) YOS=10.5 .
IF (HFQUAL=8) YOS=8 .
IF (HFQUAL=9) YOS=5 .
IF (HFQUAL=88) YOS=0 .
VARIABLE LABELS YOS 'YEARS OF SCHOOLING' .
FORMAT YOS (f2.1).
EXECUTE .

********INITIAL SETTLEMENT LOCATION ********

RECODE ADD01 (CONVERT) INTO PINRES .
FORMAT PINRES (f5.0) .
VARIABLE LABELS PINRES 'PLACE OF INITIAL RESIDENCE' .
EXECUTE .

RECODE  PINRES
  (105=10) (10500 thru 10599=10) (11000 thru 19999=11)
  (205=20) (20500 thru 20599=20) (21000 thru 29999=21)
  (305=30) (30500 thru 30599=30) (31000 thru 39999=31)
  (405=40) (40500 thru 40599=40) (41000 thru 49999=41)
  (505=50) (50500 thru 50599=50) (51000 thru 59999=51) (540=51)
  (605=60) (60500 thru 60599=60) (61000 thru 69999=61)
  (705=70) (70500 thru 70599=70) (71000 thru 79999=71)
  (805=80) (80500 thru 80599=80) (81000 thru 89999=81)
  (905=90) (90500 thru 99999=90)  INTO REGION .
VARIABLE LABELS REGION 'REGION OF INITIAL RESIDENCE' .
VALUE LABELS REGION
  10 'Sydney'
  11 'NSW non-Sydney'
  20 'Melbourne'
  21 'VIC non-Melbourne'
  30 'Brisbane'
  31 'QLD non-Brisbane'
  40 'Adelaide'
  41 'SA non-Adelaide'
  50 'Perth'
  51 'WA non-Perth'
  60 'Hobart'
  61 'TAS non-Hobart'
  70 'Darwin'
  71 'NT non-Darwin'
  80 'Canberra'
  81 'ACT non-Canberra'
  90 'Other' .
FORMAT REGION (f2.0) .
```

```
EXECUTE .

*****RECODING INITIAL RESIDENCE FOR LARGER SUBGROUPINGS******

RECODE REGION
  (10=1) (20=2) (30=3) (40=4) (50=5) (60=6) (70=6) (80=6)
  (11=7) (21=7) (31=7) (41=7) (51=7) (61=7) (71=7) (81=7) (90=7) INTO RESIDE.
VARIABLE LABELS RESIDE 'PLACE OF INITIAL RESIDENCE' .
VALUE LABELS RESIDE
  1 'Sydney'
  2 'Melbourne'
  3 'Brisbane'
  4 'Adelaide'
  5 'Perth'
  6 'Other Capital City'
  7 'Non Catpital City' .
FORMAT RESIDE (f2.0) .
EXECUTE .

**** EASTERN MAJOR CITIES DUMMY *****

RECODE RESIDE
  (1=1) (2=1) (3=1) (ELSE=0) INTO SYMEBRI .
VARIABLE LABELS SYMEBRI 'INITIAL SETTLEMENT IS SYDNEY MELBOURNE OR BRISBANE' .
VALUE LABELS SYMEBRI
  1 'INITIAL RESIDENCE IS SYDNEY BRISBANE OR MELBOURNE'
  0 'INITIAL RESIDENCE IS NOT SYDNEY BRISBANE OR MELBOURNE' .
FORMAT SYMEBRI (f1.0) .
EXECUTE .

*** INITIAL SETTLEMENT DUMMIES ***
***ONLY 'REGIONS' WITH 5% OR MORE OF THE SURVEY POPULATION WERE COUNTED FOR THIS
***CANBERRA, DARWIN AND HOBART WERE GROUPED. BENCHMARK IS ALL NON CAPITAL CITY GROUPED.

RECODE REGION (10=1) (ELSE=0) INTO SYD .
VARIABLE LABELS SYD 'INITIAL SETTLEMENT IS SYDNEY' .
FORMAT SYD (f1.0) .
EXECUTE .

RECODE REGION (20=1) (ELSE=0) INTO MEL .
VARIABLE LABELS MEL 'INITIAL SETTLEMENT IS MELBOURNE' .
FORMAT MEL (f1.0) .
EXECUTE .

RECODE REGION (30=1) (ELSE=0) INTO BRN .
VARIABLE LABELS BRN 'INITIAL SETTLEMENT IS BRISBANE' .
FORMAT BRN (f1.0) .
EXECUTE .

RECODE REGION (40=1) (ELSE=0) INTO ADL .
VARIABLE LABELS ADL 'INITIAL SETTLEMENT IS ADELAIDE' .
FORMAT ADL (f1.0) .
EXECUTE .

RECODE REGION (50=1) (ELSE=0) INTO PER .
VARIABLE LABELS PER 'INITIAL SETTLEMENT IS PERTH' .
FORMAT PER (f1.0) .
EXECUTE .

RECODE REGION (60=1) (70=1) (80=1) (ELSE=0) INTO HCD .
VARIABLE LABELS HCD 'INITIAL SETTLEMENT IS HOBART CANBERRA OR DARWIN' .
FORMAT HCD (f1.0) .
EXECUTE .
```

```
**********PROXY FOR PREMIGRATION EXPERIENCE**********

IF LFSFHC=1 PREEXP=AAA06-YOS-5 .
IF LFSFHC=2 PREEXP=AAA06-YOS-5 .
IF LFSFHC=3 PREEXP=AAA06-YOS-5 .
IF LFSFHC=4 PREEXP=AAA06-YOS-6 .
IF LFSFHC=5 PREEXP=AAA06-YOS-6 .
VARIABLE LABELS PREEXP 'YEARS OF PRE-MIGRATION POTENTIAL EXPERIENCE' .
EXECUTE .

IF PREEXP <0 PREEXP=0 .
EXECUTE .

*****PREMIGRATION EXPERIENCE SQUARED*****

COMPUTE PREXSQ = PREEXP * PREEXP .
VARIABLE LABELS PREXSQ 'PRE-MIGRATION EXPERIENCE SQUARED' .
EXECUTE .

RECODE AAA06 (ELSE=COPY)  INTO AGEW1 .
VARIABLE LABELS AGEW1 'AGE AT WAVE 1' .
FORMAT AGEW1 (f2.0) .
EXECUTE .

*******Recoding highest formal qualifications into five categories

RECODE AM01 (CONVERT) INTO FORQUAL .
FORMAT FORQUAL (f2.0) .
EXECUTE .

RECODE
  FORQUAL
  (01=1)  (02=1)  (03=2)  (04=3)  (05=3)  (06=4)
  (07=5)  (08=5)  (09=5)  (88=5)  INTO HIQUAL .
VARIABLE LABELS HIQUAL 'Highest formal qualifications' .
VALUE LABELS HIQUAL
  1 'Higher degree or Postgrad diploma'
  2 'Bachelor degree or equivalent'
  3 'Tech/Prof Dipl/Cert or Trade'
  4 'Secondary or year 12'
  5 'Less than 12 years of schooling' .
FORMAT HIQUAL (f1.0) .
EXECUTE .

*RECODING FOMAL QUALIFICATIONS INTO THREE EDUCATION CATEGORIES

RECODE HIQUAL (1=1) (2=1) (3=2) (4=3) (5=3) INTO EDUC .
VARIABLE LABELS EDUC 'EDUCATION LEVEL PRIOR TO MIGRATION' .
VALUE LABELS EDUC
  1 'TERTIARY'
  2 'TECH PRO OR TRADE'
  3 ' SECONDARY OR LESS' .
FORMAT EDUC (f1.0) .
EXECUTE .

**** DUMMIES FOR FORMAL QUALIFICATIONS

RECODE HIQUAL (1=1) (ELSE=0) INTO QUALTER .
VARIABLE LABELS QUALTER 'HAS TERTIARY QUALIFICATIONS' .
FORMAT QUALTER (f1.0) .
EXECUTE .
```

```
RECODE HIQUAL (1=1) (ELSE=0) INTO QUALTPT .
VARIABLE LABELS QUALTPT 'HAS TECH PRO OR TRADE QUALIFICATIONS' .
FORMAT QUALTPT (f1.0) .
EXECUTE .

RECODE HIQUAL (1=1) (ELSE=0) INTO QUALSEC .
VARIABLE LABELS QUALSEC 'HAS SECONDARY QUALIFICATIONS OR LESS' .
FORMAT QUALSEC (f1.0) .
EXECUTE .

****LOG HOURLY EARNINGS AND LOG HOURLY WAGE AT WAVE 1***

DO IF (HEARNW1>0) .
COMPUTE LNEARN1 = LN(HEARNW1) .
VARIABLE LABELS LNEARN1 'LOG HOURLY EARNINGS AT WAVE 1' .
END IF .
EXECUTE .

DO IF (HWAGEW1>0) .
COMPUTE LNWAGE1 = LN(HWAGEW1) .
VARIABLE LABELS LNWAGE1 'LOG HOURLY WAGE AT WAVE 1' .
END IF .
EXECUTE .

****LOG HOURLY EARNINGS AND LOG HOURLY WAGE AT WAVE 2***

DO IF (HEARNW2>0) .
COMPUTE LNEARN2 = LN(HEARNW2) .
VARIABLE LABELS LNEARN2 'LOG HOURLY EARNINGS AT WAVE 2' .
END IF .
EXECUTE .

DO IF (HWAGEW2>0) .
COMPUTE LNWAGE2 = LN(HWAGEW2) .
VARIABLE LABELS LNWAGE2 'LOG HOURLY WAGE AT WAVE 2' .
END IF .
EXECUTE .

****LOG HOURLY EARNINGS AND LOG HOURLY WAGE AT WAVE 3***

DO IF (HEARNW3>0) .
COMPUTE LNEARN3 = LN(HEARNW3) .
VARIABLE LABELS LNEARN3 'LOG HOURLY EARNINGS AT WAVE 3' .
END IF .
EXECUTE .

DO IF (HWAGEW3>0) .
COMPUTE LNWAGE3 = LN(HWAGEW3) .
VARIABLE LABELS LNWAGE3 'LOG HOURLY WAGE AT WAVE 3' .
END IF .
EXECUTE .

*****COMPUTING PROPORTION OF AGE SPENT STUDYING

COMPUTE YOSAGE=YOS/AGEW1 .
VARIABLE LABELS YOSAGE 'PROPORTION OF AGE SPENT STUDYING' .
FORMAT YOSAGE (f3.2) .
EXECUTE .

*****COMPUTING EARNINGS AND WAGE MOBILITY VARIABLES

DO IF (HEARNW1>0) .
COMPUTE EMOB=(HEARNW3-HEARNW1)/HEARNW1 .
```

```
VARIABLE LABELS EMOB 'HOURLY EARNINGS MOBILITY' .
FORMAT EMOB (f6.3) .
END IF .
EXECUTE .

DO IF (HWAGEW1>0) .
COMPUTE WAGEMOB=(HWAGEW3-HWAGEW1)/HWAGEW1 .
VARIABLE LABELS WAGEMOB 'HOURLY WAGE MOBILITY' .
FORMAT WAGEMOB (f6.3) .
END IF .
EXECUTE .

*****COMPUTING LABOUR FORCE PARTICIPATION VARIABLES

RECODE LFSFHC (1=1) (2=1) (3=1) (4=0) (5=0) INTO LFPFHC .
VARIABLE LABELS LFPFHC 'LABOUR FORCE PARTICIPATION STATUS IN FHC' .
VALUE LABELS LFPFHC
 0 'NOT IN THE LABOUR FORCE'
 1 'IN THE LABOUR FORCE'.
FORMAT LFPFHC (f1.0) .
EXECUTE .

RECODE LFSW1 (1=1) (2=1) (3=1) (4=0) (5=0) INTO LFPW1 .
VARIABLE LABELS LFPW1 'LABOUR FORCE PARTICIPATION STATUS AT WAVE 1' .
VALUE LABELS LFPW1
 0 'NOT IN THE LABOUR FORCE'
 1 'IN THE LABOUR FORCE' .
FORMAT LFPW1 (f1.0) .
EXECUTE .

RECODE LFSW2 (1=1) (2=1) (3=1) (4=0) (5=0) INTO LFPW2 .
VARIABLE LABELS LFPW2 'LABOUR FORCE PARTICIPATION STATUS AT WAVE 2' .
VALUE LABELS LFPW2
 0 'NOT IN THE LABOUR FORCE'
 1 'IN THE LABOUR FORCE' .
FORMAT LFPW2 (f1.0) .
EXECUTE .

RECODE LFSW3 (1=1) (2=1) (3=1) (4=0) (5=0) INTO LFPW3 .
VARIABLE LABELS LFPW3 'LABOUR FORCE PARTICIPATION STATUS AT WAVE 3' .
VALUE LABELS LFPW3
 0 'NOT IN THE LABOUR FORCE'
 1 'IN THE LABOUR FORCE' .
FORMAT LFPW3 (f1.0) .
EXECUTE .

> < <= >=

**********General Demographics for all**********

*FILTERING FOR SEX

USE ALL.
COMPUTE filtr1_$=(SEX=1).
VARIABLE LABEL filtr1_$ 'RESPONDENT IS MALE (FILTER)'.
VALUE LABELS filtr1_$  0 'Not selected' 1 'Selected'.
FORMAT filtr1_$ (f1.0).
EXECUTE

USE ALL.
COMPUTE filtr2_$=(SEX=2).
VARIABLE LABEL filtr2_$ 'RESPONDENT IS FEMALE (FILTER)'.
VALUE LABELS filtr2_$  0 'Not selected' 1 'Selected'.
```

```
FORMAT filtr2_$ (f1.0).
EXECUTE

******** Filter for Type of Immigrants by Employment Outcomes ******

* Filtering data by lfsw3=lfsw2=lfsw1=1 (employed at all three waves)

USE ALL.
COMPUTE filtr3_$=(lfsw3 =1 & lfsw2=1 & lfsw1=1).
VARIABLE LABEL filtr3_$ 'EMPLOYED AT ALL THREE WAVES (FILTER)'.
VALUE LABELS filtr3_$  0 'Not selected' 1 'Selected'.
FORMAT filtr3_$ (f1.0).
EXECUTE

*Filtering data by lfsw3=1 but lfsw2 and lfsw1 is not 1 (Empl at W3 but not at other waves)

USE ALL.
COMPUTE filtr4_$=(lfsw3 = 1  &  (lfsw2 > 1  or  lfsw1 > 1)).
VARIABLE LABEL filtr4_$ 'EMPLOYED AT WAVE 3 BUT NOT AT WAVE 1 AND/OR 2 (FILTER)'.
VALUE LABELS filtr4_$  0 'Not Selected' 1 'Selected'.
FORMAT filtr4_$ (f1.0).
EXECUTE .

*Filtering data by lfsw3 is not 1 (Not empl at wave three )

USE ALL.
COMPUTE filtr5_$=(lfsw3 > 1).
VARIABLE LABEL filtr5_$ 'NON-EMPLOYED AT WAVE 3 (FILTER)'.
VALUE LABELS filtr5_$  0 'Not Selected' 1 'Selected'.
FORMAT filtr5_$ (f1.0).
EXECUTE .


* FILTER FOR HOURLY WAGES BETWEEN $1 AND $60

USE ALL.
COMPUTE filtr6_$=(HWAGEW1 <= 60 & HWAGEW1 >= 1) .
VARIABLE LABEL filtr6_$ 'WAVE 1 WAGE BETWEEN $1 AND $60 (FILTER)'.
VALUE LABELS filtr6_$  0 'Not Selected' 1 'Selected'.
FORMAT filtr6_$ (f1.0).
EXECUTE .

USE ALL.
COMPUTE filtr7_$=(HWAGEW3 <= 60 & HWAGEW3 >= 1) .
VARIABLE LABEL filtr7_$ 'WAVE 3 WAGE BETWEEN $1 AND $60 (FILTER)'.
VALUE LABELS filtr7_$  0 'Not Selected' 1 'Selected'.
FORMAT filtr7_$ (f1.0).
EXECUTE .

USE ALL.
COMPUTE filtr8_$=(FILTR3_$=1 OR FILTR4_$=1) .
VARIABLE LABEL filtr8_$ 'EMPLOYED AT WAVE 3 (FILTER)'.
VALUE LABELS filtr8_$  0 'Not Selected' 1 'Selected'.
FORMAT filtr8_$ (f1.0).
EXECUTE .


******** THIS REGRESSION OF LNEARN3 HAS RSQ OF 0.533 FOR SEX=1 (MALE) AND OF 0.33 FOR SEX=2 (FEMALE)- KEEP FOR
REVIEW

*REGRESSION
 /DESCRIPTIVES MEAN STDDEV CORR SIG N
 /SELECT= SEX EQ 2
```

```
  /MISSING MEANSUB
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT LNEARN3
  /METHOD=REMOVE LNEARN1 QUALTER SYMEBRI PREEXP PREXSQ YOS ENGHIW3 LNEARN2 VPREF VCONF VBSEN VINDP
FHOCAN FHNSWE FHUKIR
  FHEOTE FHMENA FHSEAS FHNEAS FHSOAS FHNOAM FHCSAC CHJOBW2 CHJOBW3 ANU31W3
  /PARTIALPLOT ALL
  /RESIDUALS HIST(ZRESID) NORM(ZRESID) .

***REMOVING REGION OF ORIGIN (BELOW) DOES NOT ALTER MUCH THE ABOVE MODEL NOW FOR MALES RSQ=0.528 AND FOR
FEMALES RSQ=0.325
***FURTHER REMOVING VISA CATEGORY DUMMIES (BELOW)REDUCES THE RSQ TO 0.513 FOR MALES AND TO 0.318 FOR
FEMALES
***VISA CATEGORY SEEMS TO E SIGNIFICANT FOR MALES
***FURTHER REMOVING PREEXP AND PREXPSQ REDUCES THE RSQ TO 0.511 FOR MALES AND TO 0.308 FOR FEMALES
***FURTHER REMOVING QUALTER DOES NOT CHANGE THE MODEL: FOR MALES RSQ=511 AND FOR FEMALES RSQ=0.306
***FURTHER REMOVING ENGHIW3: FOR MALES RSQ=0.509 AND FOR FEMALES TO 0.303.
***FURTHER REMOVING SYMEBRI: FOR MALES RSQ=507  AND FOR FEMALES RSQ=0.288
***FMRR, PREMIGRATION EXPERIENCE HAVING TERTIARY QUALIFICATIONS AND ENGLISH SKILLS AT W3 HAVE MARGINAL VALUE
FOR EMPLOYED IMMIGRANTS.
***LIVING IN SYDNEY MELB OR BRIZ HAS MARGINAL EFFECT FOR MALES.

***ADDING VISA CATEGORIES AGAIN MALES RSQ=0.525 FEMALES 0.297
***FURTHER ADDING SYMEBRI FOR MALES RSQ=0.527 AND FOR FEMALES RSQ=0.313
***ADDING AGEW1: RSQ= 0.527 (NO CHANGE)  AND FOR FEMALES RSQ=0.313 (NO CHANGE) SO AGE WAS REMOVED AGAIN
***ADDING CAPITAL CITY DUMMIES: FOR MALES RSQ=0.538 AND FOR FEMALES RSQ=0.337
***ADDING LAF IN FHC CATEGORY DUMMIES FOR MALES RSQ=0.541 FOR FEMALES RSQ= 0.376
***ADDING ENGHI AND ENGME AT WAVES 1,2,3 FOR MALES RSQ=0.549 FOR FEMALES RSQ= 0.385
***REMOVING YOS: MALE=0.546 FEMALE=383 SO YOS HAS MARGINAL EFFECT
***ADDING YOSAGE: MALE 0.548 FEMALE =0.383 SO YOSAGE HAS MINOR EFFECT AS WELL

*REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /SELECT= SEX EQ 2
  /MISSING MEANSUB
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT LNEARN3
  /METHOD=REMOVE LNEARN1 LNEARN2 ANU31W3 VPREF VCONF VBSEN VINDP SYMEBRI CHJOBW2 CHJOBW3 SYD MEL
  BRN ADL PER HCD EMPFHC UNEFHC STUFHC ENGHIW1 ENGMEW1 ENGHIW2 ENGMEW2 ENGHIW3 ENGMEW3 YOSAGE
  /PARTIALPLOT ALL
  /RESIDUALS HIST(ZRESID) NORM(ZRESID) .

FILTER OFF.
USE ALL.
EXECUTE .

FREQUENCIES
  VARIABLES=lfsfhc lfsw2 lfsw1 lfsw3
  /PIECHART  PERCENT
  /ORDER=  ANALYSIS .

***THIS MODEL WORKS RELATIVELY WELL TO PREDICT LFS AT W1
***ADDING SYMEBRI HAS NO EFFECT

NOMREG
  lfsw1  (BASE=LAST ORDER=ASCENDING) BY lfsfhc engprow1 SEX agegrp fmrr EDUC  WITH PREEXP YOSAGE
  /CRITERIA CIN(95) DELTA(0) MXITER(20) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001) SINGULAR(0.00000001)
  /MODEL =  SEX EDUC  | FORWARD = agegrp
  /STEPWISE = PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE)
```

```
  /INTERCEPT =EXCLUDE
  /PRINT = CELLPROB FIT PARAMETER SUMMARY LRT CPS STEP MFI
  /SUBPOP SEX agegrp EDUC  .


*****THIS MODEL IS SUPER FOR EMPLOYED PEOPLE IT PREDICTS CORRECTLY 74% OF THE EMPLOYED PEOPLE AT W1.
*****NOTE THAT HOME DUTIES IS THE REFERENCE CATEGORY.
*****ESTIMATING THE SAME MODEL FOR MALES ONLY AND REMOVING SEX FROM THE ANALYSIS

NOMREG
  lfsw1  (BASE=LAST ORDER=ASCENDING) BY lfsfhc engprow1 SEX agegrp fmrr EDUC  WITH PREEXP YOSAGE
  /CRITERIA CIN(95) DELTA(0) MXITER(20) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001) SINGULAR(0.00000001)
  /MODEL =  SEX EDUC  | FSTEP =  agegrp
  /STEPWISE = PIN(.05) POUT(0.1) MINEFFECT(0) MAXEFFECT(100) RULE(SINGLE)
  /INTERCEPT =EXCLUDE
  /PRINT = CELLPROB CLASSTABLE FIT PARAMETER SUMMARY LRT CPS STEP MFI
  /SCALE = PEARSON
  /SUBPOP SEX agegrp EDUC  .
EXECUTE .

***THIS HAS TOO M ANY EMPTY CELLS ALTHOUGH IT CORRECTLY ESTIMATES 80 PERCENT OF EMPLOYED PEOPLE AT W1

NOMREG
  lfsw1  (BASE=LAST ORDER=ASCENDING) BY lfsfhc engprow1 SEX agegrp fmrr EDUC  WITH PREEXP YOSAGE
  /CRITERIA CIN(95) DELTA(0) MXITER(40) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001) SINGULAR(0.00000001)
  /MODEL =  SEX EDUC  | FORWARD = agegrp lfsfhc engprow1 fmrr
  /STEPWISE = PIN(.05) POUT(0.1) MINEFFECT(0) MAXEFFECT(100) RULE(SINGLE)
  /INTERCEPT =EXCLUDE
  /PRINT = CELLPROB CLASSTABLE FIT PARAMETER SUMMARY LRT CPS STEP MFI
  /SCALE = PEARSON
  /SUBPOP SEX agegrp EDUC lfsfhc engprow1 fmrr .


*****ESTIMATING THE SAME MODEL FOR MALES ONLY AND REMOVING SEX FROM THE ANALYSIS

USE ALL.
COMPUTE filtr9_$=(sex =1).
FORMAT filtr9_$ (f1.0).
FILTER BY filtr9_$.
EXECUTE .

USE ALL.
COMPUTE filtr10_$=(LFPW1=1).
FORMAT filtr10_$ (f1.0).
FILTER BY filtr10_$.
EXECUTE .

****THIS ESTIMATES CORRECTLY 90% OF EMPLOYED MALES AND 74 PERCENT FOR FEMALES - GREAT!

NOMREG
  EMPW1  (BASE=FIRST ORDER=ASCENDING) BY lfsfhc engprow1 agegrp fmrr EDUC  WITH PREEXP YOSAGE
  /CRITERIA CIN(95) DELTA(0) MXITER(20) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001) SINGULAR(0.00000001)
  /MODEL =  EDUC  | FSTEP =  agegrp fmrr
  /STEPWISE = PIN(.05) POUT(0.1) MINEFFECT(0) MAXEFFECT(100) RULE(SINGLE)
  /INTERCEPT =EXCLUDE
  /PRINT = CELLPROB CLASSTABLE FIT PARAMETER SUMMARY LRT CPS STEP MFI
  /SCALE = PEARSON
  /SUBPOP agegrp EDUC  fmrr .

FILTER OFF.
USE ALL.
EXECUTE .
```

```
FILTER OFF.
USE ALL.
EXECUTE .

****ALTHOUGH THIS MODEL ESTIMATES CORRECTLY EMPLOYED MALES (85%, IT CONTAINS TOO MANY ZEROS
****- PLUS THE ONE ABOVE IS BETTER IN TERMS OF CASES ESTIMATED CORRECTLY.

NOMREG
  lfsw1  (BASE=LAST ORDER=ASCENDING) BY lfsfhc engprow1 agegrp fmrr EDUC  WITH PREEXP YOSAGE
  /CRITERIA CIN(95) DELTA(0) MXITER(40) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001) SINGULAR(0.00000001)
  /MODEL =  EDUC  | FORWARD = agegrp lfsfhc engprow1 fmrr
  /STEPWISE = PIN(.05) POUT(0.1) MINEFFECT(0) MAXEFFECT(100) RULE(SINGLE)
  /INTERCEPT =EXCLUDE
  /PRINT = CELLPROB CLASSTABLE FIT PARAMETER SUMMARY LRT CPS STEP MFI
  /SCALE = PEARSON
  /SUBPOP agegrp EDUC lfsfhc engprow1 fmrr .


USE ALL.
COMPUTE filtr9_$=(sex =1).
FORMAT filtr9_$ (f1.0).
FILTER BY filtr9_$.
EXECUTE .

REGRESSION
  /SELECT= lfsw1 EQ 1
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS CI BCOV R ANOVA COLLIN TOL CHANGE ZPP
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT HEARNW1
  /METHOD=STEPWISE YOS PREEXP PREXSQ ENGHIW1
  /RESIDUALS DURBIN
  /CASEWISE PLOT(ZRESID) OUTLIERS(3) .

FILTER OFF.
USE ALL.
EXECUTE .



**WAVE 1 WAGE REGRESSION FOR TYPE 1 MALES
**WAVE 1 WAGE REGRESSION FOR TYPE 1 FEMALES (REPLACE FILTR_1 BY FILTR_2 TO SELECT FEMALES)
**FOR ALL EMPLOYED AT WAVE 3, SELECT FILTR5_$=0 INSTEAD OF FILTR 3 OR 4.
*** DO NOT SAVE DATA FILE AFTER 'SELECT IF' COMMAND

SELECT IF (FILTR1_$=1 & FILTR5_$=0 & FILTR7_$=1) .

*GRAPH
  /SCATTERPLOT(BIVAR)=YOS WITH LNWAGE3
  /MISSING=LISTWISE .

*GRAPH
  /SCATTERPLOT(BIVAR)=PREEXP WITH LNWAGE3
  /MISSING=LISTWISE .

*GRAPH
  /SCATTERPLOT(BIVAR)=PREEXP WITH YOS
  /MISSING=LISTWISE .


** SIMPLE MINCER TYPE REGRESSION
```

```
REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS BCOV R ANOVA COLLIN TOL CHANGE ZPP
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT LNWAGE3
  /METHOD=STEPWISE YOS PREEXP
  /PARTIALPLOT ALL
  /RESIDUALS HIST(ZRESID) .

* MINCER WITH NO PREXSQ

REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS BCOV R ANOVA COLLIN TOL CHANGE ZPP
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT LNWAGE3
  /METHOD=STEPWISE YOS
  /PARTIALPLOT ALL
  /RESIDUALS HIST(ZRESID) .

***AGE, ENGLISH PROFICIENCY, FORMER HOME REGION,
*** VISA CATEGORY, REGION OF SETTLEMENT AND PRIOR VISIT

REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS BCOV R ANOVA COLLIN TOL CHANGE ZPP
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT LNWAGE3
  /METHOD=STEPWISE YOS ENGHIW1 SYMEBRI FHEUNA FHASIA VISIT MARW1 IMECO
  /PARTIALPLOT ALL
  /RESIDUALS HIST(ZRESID) .

***EMPLOYMENT STATUS

REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS BCOV R ANOVA COLLIN TOL CHANGE ZPP
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT LNWAGE3
  /METHOD=STEPWISE YOS ENGHIW1 SYMEBRI FHEUNA FHASIA VISIT MARW1 IMECO
  EMPFHC  BUSFHC STUFHC UNEFHC
  EMPW1  BUSW1 STUW1 UNEW1
  EMPW2  BUSW2 STUW2 UNEW2
  /PARTIALPLOT ALL
  /RESIDUALS HIST(ZRESID) .

USE ALL .
EXECUTE .


**DEMO STAT FOR TYPE 1 MALES
**REPLACE FILTR_1 BY FILTR_2 TO SELECT FEMALES
**REPLACE FILTR_3 BY FILTR_4 TO SELECT TYPE 2 AND BY FILTR_5 TO SELECT TYPE 3
** DO NOT SAVE DATA FILE AFTER RUNNING THIS ANALYSIS
```

```
SELECT IF (FILTR2_$=1 & FILTR3_$=1) .

*FREQUENCIES
 VARIABLES=agegrp VISA MARISTW1 fmrr engprow1 HFQUAL REMW3  jmobil
 /ORDER=  ANALYSIS .

*GRAPH
 /SCATTERPLOT(BIVAR)=WAGEW1 WITH WAGEW3
 /MISSING=LISTWISE .

*DESCRIPTIVES
 VARIABLES=HWAGEW1 WHW1
 /STATISTICS=MEAN STDDEV MIN MAX .

*GRAPH
 /HISTOGRAM(NORMAL)=HWAGEW1 .

*DESCRIPTIVES
 VARIABLES=HWAGEW3 WHW3
 /STATISTICS=MEAN STDDEV MIN MAX .

*GRAPH
 /HISTOGRAM(NORMAL)=HWAGEW3 .

GRAPH
 /SCATTERPLOT(BIVAR)=WHW1 WITH WHW3
 /MISSING=LISTWISE .

**WAGE MOBILITY REGRESSION FOR TYPE 1 MALES
**WAGE MOBILITY REGRESSION FOR TYPE 1 FEMALES (REPLACE FILTR_1 BY FILTR_2 TO SELECT FEMALES)

SELECT IF (FILTR2_$=1 & FILTR3_$=1 & FILTR6_$=1& FILTR7_$=1) .

SELECT IF (WAGEMOB LT 2.5) .

*GRAPH
 /SCATTERPLOT(BIVAR)=YOS WITH WAGEMOB
 /MISSING=LISTWISE .

*GRAPH
 /SCATTERPLOT(BIVAR)=PREEXP WITH WAGEMOB
 /MISSING=LISTWISE .

*GRAPH
 /SCATTERPLOT(BIVAR)=HWAGEW1 WITH HWAGEW3
 /MISSING=LISTWISE .

*GRAPH
 /SCATTERPLOT(BIVAR)=VISA WITH WAGEMOB
 /MISSING=LISTWISE .

*GRAPH
 /SCATTERPLOT(BIVAR)=FMRR WITH WAGEMOB
 /MISSING=LISTWISE .


** SIMPLE MINCER TYPE REGRESSION

* MINCER WITH NO PREXSQ

REGRESSION
 /DESCRIPTIVES MEAN STDDEV CORR SIG N
 /MISSING LISTWISE
```

```
  /STATISTICS COEFF OUTS BCOV R ANOVA COLLIN TOL CHANGE ZPP
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT WAGEMOB
  /METHOD=  STEPWISE YOS PREEXP
  /PARTIALPLOT ALL
  /RESIDUALS HIST(ZRESID) .

REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS BCOV R ANOVA COLLIN TOL CHANGE ZPP
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT WAGEMOB
  /METHOD=STEPWISE YOS ENGHIW1 SYMEBRI FHEUNA FHASIA IMECO MARW1 VISIT
  /PARTIALPLOT ALL
  /RESIDUALS HIST(ZRESID) .

*AGE, ENGLISH PROFICIENCY, EMPLOYMENT STATUS IN FHC, FORMER HOME REGION,
* VISA CATEGORY AND REGION OF SETTLEMENT

*REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS BCOV R ANOVA COLLIN TOL CHANGE ZPP
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT WAGEMOB
  /METHOD=STEPWISE AGEW1 ENGHIW1  SYMEBRI
  EMPFHC BUSFHC UNEFHC STUFHC VPREF VCONF VBSEN VINDP
  FHOCAN FHNSWE FHUKIR FHEOTE FHMENA FHSEAS FHNEAS FHSOAS
  FHNOAM FHCSAC FHSSOA VISIT
  /PARTIALPLOT ALL
  /RESIDUALS HIST(ZRESID) .

USE ALL .
EXECUTE .
```