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Market? Further Evidence on Job Quality*

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DO MIGRANTS SUCCEED IN THE AUSTRALIAN LABOUR MARKET? FURTHER EVIDENCE ON JOB QUALITY¹

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ABSTRACT

Since the election of a Coalition Government in Australia in 1996, new immigrants have had to face tougher selection criteria and increased financial pressure. Most studies so far have ignored the issue of the quality of the jobs obtained by new immigrants to Australia and whether the policy change has contributed to improve or worsen job quality among immigrants. More specifically, do stronger incentives to find jobs quickly involve a bigger drop in occupational levels or delayed upward mobility? Job quality is thought to be related to the channels of information used by immigrants in their job search. Some studies suggest that jobs found via networks of same origin migrants are of lower quality. It is the purpose of this paper to provide some clues to answer these questions. Using the Longitudinal Survey of Immigrants to Australia (LSIA), we estimate the probabilities for immigrants to find “good jobs”, controlling for their initial employability upon arrival in Australia. We test several models involving various definitions of “good job”, from objective conditions, based on the nature and status of the occupation, to more subjective conditions based on job satisfaction. We show that the sole effect of being a second cohort migrant is beneficial for the probability to both find a job and a “good job”. Hence, migrants arrived after the policy change are indeed of better quality, even though the effect on job quality is rather small. Moreover, informal channels of information on job prospects have been slightly more efficient in enabling second cohort migrants to find good jobs, even though they still provide individuals with a disadvantage compared to formal channels.

Keywords: migrants, job quality, immigration policy, migrant networks.

JEL Classification: J61, J68, C25

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1. Introduction

Since the election of a Coalition Government in Australia in 1996, new immigrants have had to face tougher selection criteria and increased financial pressure. Notably, the new policy involves increased tightness in the selection criteria used by the Department of Immigration and the introduction of a two years waiting period for non-refugees before accessing social security benefits. This change has probably led to stronger self selection among prospective migrants towards better employability for the latter waves of migration. Recent studies conducted, notably by Cobb-Clark (2000, 2003) and Thapa and Gørgens (2006), have shown that immigrants arriving after the policy change experienced higher probabilities of employment and found jobs earlier. However, most studies have ignored the issue of the quality of the jobs obtained by new immigrants to Australia and whether the policy change has contributed to an improvement or a worsening of the job quality among immigrants (Junankar and Mahuteau 2005). Theoretically, the two years waiting period before access to social security benefits would have decreased individuals' reservation wages, leading to increased labour force participation (as wage earners, or self employment, or business owners). The side effect of this is that migrants would be more willing to accept job offers that are inferior to their prior training, former occupation or intended occupation.

Indeed, the process of migration is commonly associated with downward occupational mobility due to the migrants' country-specific human capital being imperfectly transferable to the host country or as a consequence of poor English proficiency (Bauer and Zimmermann 1999). Studies in a wide range of institutional arrangements have shown that the downward occupational mobility observed in early stages of settlement are usually associated with a phase of recovery after some time spent in the host country (see Chiswick 1979; Duleep and Regets 1996; Bauer and Zimmermann 1999; Chiswick *et al.* 2002b). Typically, migrants exhibit U-shaped patterns of occupational mobility between

their former occupation, their first job in the host country and later jobs (Chiswick *et al.* 2002a).

This paper explores the possibility that this pattern may have been altered by the introduction of the new migration policy that prevented the access to social security benefits for two years. More specifically, do stronger incentives to find jobs quickly involve a bigger drop in occupational levels or delayed upward occupational mobility?

Another issue is whether the channels through which immigrants find their first jobs have been affected by the introduction of the new policy. A number of studies have highlighted the importance of family, friends and, more generally, ethnic networks in facilitating new migrants' labour market outcomes in the host country (Montgomery 1991; Yamauchi and Tanabe 2006). Besides providing basic help such as accommodation, incumbent migrants are a source of information about job prospects and may provide direct assistance via referrals. Yet it is often observed that such direct help is usually unidirectional; from higher skilled incumbent migrants towards lower skilled new migrants, that is, lower skilled jobs. Consequently, the "friends" and "acquaintances" channels of information are more likely to be associated with lower quality job prospects compared to the formal channels commonly used by the native population. It is then interesting to investigate whether new immigrants have increased their recourse to the "ethnic" network after the policy change and whether it has resulted in them finding better or worse jobs.

It is the purpose of this paper to provide some clues to answer these issues. We develop an econometric model aimed at testing whether the additional pressure faced by later waves of migrants is associated with those migrants getting lower quality jobs and/or increased duration before landing a "good job". The second aim of the paper is to check whether migrants' labour market outcomes have subsequently been altered by the increased recourse to informal channels of information on job prospects as pointed out in Junankar and Mahuteau (2005). The data used in this paper are from the Longitudinal Surveys of Immigrants to

Australia (LSIA) conducted by the Department of Immigration and Multicultural and Indigenous Affairs (DIMIA). In our previous paper we had only used the first Wave of the first and second cohorts to study the likelihood of obtaining a good job. In this paper we extend that study by using the data from all the Waves. In other words we are using the panel data set for the two cohorts and study whether the migrants obtain a good job during the period of about three and a half years for the first cohort and about two and a half years for the second cohort.

The specification of the model needs to allow for changes in both the macroeconomic conditions of the labour market and, more importantly, in the migrants' quality since it was the stated intention of the policy change to obtain higher quality migrants. For example, besides tightening up of the points system, family migrants were also being assessed on a points system. Consequently we adopt a bivariate Probit specification, controlling first for immigrants' employability upon entering Australia and, second, investigating the ease with which they obtain good jobs. In other words, we estimate the migrants' probabilities to find a "good job", given they actually find a job. Data from the LSIA offers the advantage of being composed of two cohorts of immigrants having settled in Australia before (cohort 1) and after (cohort 2) the policy changes, each of them involving several waves of interviews (3 for cohort 1, and 2 for cohort 2) spanning from 10 days after arrival to up to 4 years.¹

We test several models, involving several definitions of what constitutes a "good job", from objective conditions, based on the nature of the occupation and their social status rank, to more subjective conditions, where the focus shifts to the individuals' satisfaction with their current main job and/or whether they intend to search for better occupations in the near future.

Our main results show that the sole effect of being a second cohort migrant is beneficial for the probability to both find a job and a "good job". This implies

¹ Each waves of interview is intended to survey Immigrants within 6 months, 18 months and 24 months after arrival. However, there are large variations in the actual time immigrants have been in Australia at the moment of each wave of interview. This explains why some immigrants have actually been in Australia for almost 4 years when answering the third interview.

that second cohort migrants are indeed of better quality even though the effect on job quality is rather small. When analysing time spent in Australia and probability to find a job, one observes a quadratic relationship suggesting that immigrants increase their employability after some time spent in their host country but up to some maximum beyond which, for those who have not yet found a job, their probability to eventually be employed decreases at an increasing rate. Interestingly, the result seems reversed when one focuses on job quality. Indeed, the calculated marginal effects suggest the existence of a U-shape relationship between time and job quality. This implies that individuals stick to the first job they find for some time without being able to find better prospects (if anything, they get worse jobs if mobility occurs) for a while after settlement, reach a trough, but then recover from it rapidly. However, upon analysing the interaction effect of time and cohort, one finds that second cohort migrants experience a twice-steep decline of their probability to have a good job upon arrival and shortly after, reaching a minimum faster than first cohort migrants, yet recovering at the same pace later on. This result suggests that even though migrants arriving after the policy change are indeed of slightly better quality, those who do not land a good job quickly have to wait longer before experiencing a significant upward occupational mobility.

Regarding the effect of the sources of information on the current main job found by individuals, one observes that alternative channels to using the Australian (English language) press, including informal channels, contribute to increasing the probability to find a job. Individuals investigating the labour market on the sole basis of the Australian press, which can be approximated as the formal channel through which natives find job offers, are on average worse off in terms of finding a job. As regards job quality, informal job search techniques lead to lower job quality. However, second cohort migrants who use those informal channels seem to use it more efficiently as it contributes to reduce the differential with the formal channel. For example, while people who use friends and family are respectively around 18 percent and 23 percent worse off in terms of job quality, second cohort migrants using the same channel improve their probability

of having a good job by respectively 3 percent and 7 percent. In conclusion, informal channels have been slightly more efficient in enabling second cohort migrants to find a good job, even though they still provide individuals with a disadvantage compared to formal channels.

2. Literature review

Cobb-Clark (2000, 2003) and Richardson *et al.* (2001, 2002) have explored various aspects of the settlement of migrants in Australia. These papers compare the first LSIA cohort with the first wave of the second LSIA cohort and come to the conclusion that the migrants are more likely to be employed in the second cohort compared to the first cohort, that they are less likely to be unemployed, etc. and suggest that this is due to a combination of the tightening up of the selection criteria between the two cohorts and because of the limited access to social security benefits for the second cohort. Cobb-Clark (2003) estimates an equation for the participation decision, an equation for unemployment (conditional on being in the labour force), and an equation for the duration in months looking for work after arrival in Australia until the interview date. The first two equations are estimated by Probit methods while the third equation is estimated by Ordinary Least Squares. The results show that females from the second cohort have higher participation rates and lower unemployment rates, and spend less time unemployed. In contrast, there are no significant differences for males between the first and second cohorts in terms of the coefficients on the independent variables: the higher participation rates and lower unemployment rates are due to different human capital characteristics. The conclusions of the study are that the better performance of the second cohort is primarily due to the tightening of the selection criteria and the composition of the migrants in terms of the visa categories. In particular, it should be noted that the paper was based on the first Wave of each cohort, that is, after the migrants had been in Australia for only about six months.

Thapa and Gørgens (2006) explore the duration of unemployment of migrants using the LSIA data. They find that migrants in the second cohort had a

shorter duration of unemployment before finding their first job compared to migrants in the first cohort. In their paper, they point out data problems as the LSIA did not ask for a calendar diary of events so there are some problems of finding out when the first job was actually begun. They also study the different methods of job search and find that “friends” were the most important source for finding their first job. They estimate hazard function models (semi-parametric Cox model and fully parameterised Weibull model) for the duration to find the first job. The results are similar to many other results in that migrants with visas as Independent migrants or Business Skills migrants had a shorter duration, English-speaking migrants and European migrants had higher probabilities of finding their first job, while the results for education are mixed. Migrants with trade qualifications are more likely to find a job compared to those with a Bachelors degree. The results also suggest that the reason for the second cohort to have better employment probabilities was due to the better macroeconomic conditions prevailing in Australia rather than due to the tighter selection criteria for the second cohort.

Chiswick and Miller (2004) study the role of ethnic networks in the United States of America in the geographical location of migrants. They find that there is a significant concentration of ethnic groups, especially greater amongst those migrants who do not use English at home. Yamauchi and Tanabe (2006) study the role of non market networks among migrants in Bangkok, Thailand and find that there are economies of scale in information networks and that the higher the proportion of the earlier migrants that are employed, the greater the advantage for newer migrants.

In an earlier paper, Junankar and Mahuteau (2005) looked at the probability of migrants finding their first job, and whether it was a good job, using the LSIA data sets for the first and second cohorts. They defined a job as good if it meets the following objective conditions: firstly, that the employees are using their existing qualifications in their current job, and that their occupational ranking is the same or better. The subjective definition we use is that: s/he likes their job,

wants to stay in the same job, and holds only one job. They found that, in general, there was a significant difference between the first and second cohorts: the LSIA 2 cohort was less likely to hold a good job after controlling for education, visa category, etc. In the present paper we extend this study to using the panel data set and compare the behaviour over time.

3. Data

The Longitudinal Surveys of Immigrants to Australia provide a rich source of data to analyse the settlement issues of new migrants in Australia. An important difference from most other data sets on migrants is that the LSIA provides information on the visa category under which the migrants arrived in Australia. This is clearly very important as people who may have come to Australia as refugees or as family migrants would have more difficulty in entering the labour market compared to economic migrants who have been assessed on a Points system that gives higher points to those with higher levels of education and higher skills and in occupations that are looking for employees.

There have been two cohorts for whom data have been collected by the Department of Immigration and Citizenship (as it is now called). The first cohort entered Australia between September 1993 and August 1995 and the second cohort entered between September 1999 and August 2000. The first cohort was interviewed three times: 6 months after arrival (Wave 1), 18 months after arrival (Wave 2), and 42 months after arrival (Wave 3). The second cohort was interviewed only *twice*: 6 months after arrival (Wave 1) and 18 months after arrival (Wave 2). The first cohort consisted of 6,960 primary applicants and their spouses and the second cohort consisted of 4,181 primary applicants and their spouses.² In the first cohort there were 5,192 Principal Applicants (43.03 percent female) and in the second cohort there were 3,124 Principal Applicants (45.84 percent female). This paper focuses on the labour market behaviour of Principal Applicants only.

² Further details can be found in Cobb-Clark (2001).

Between the two cohorts there were several significant policy changes that probably affected the composition of the migrant intake and their behaviour after entering Australia. In particular, there were several changes in the selection procedure for entering Australia that, in effect, made it more difficult for family members to enter, a tightening of the points test and the English language test, and a decrease in the humanitarian (refugee) category. These changes are discussed in detail in Cobb-Clark (2003). These changes are likely to have affected the quality of migrants in terms of their human capital characteristics. In other words, the second cohort of the LSIA is not strictly speaking comparable to the first cohort. The tightening up of entry conditions for family migrants could have affected the quality of potential applicants, especially if they came from cultures where an extended family is an important social group. Would you move to a country where you were unable to bring your ailing old-age parents?

Another important change that took place was the eligibility for unemployment and other social security benefits. For the first cohort, migrants had a waiting period of six months before they became eligible for social security benefits (excluding the humanitarian category of migrants who had access to all benefits without a waiting period). For the second cohort, the waiting period had been increased to *two years* as well as the tightening up of procedures for access to these benefits. These changes are likely to have affected the decisions of the potential migrants on whether to apply to migrate to Australia. In addition, once they entered Australia the lack of access to social security benefits may affect the labour market behaviour of these migrants by influencing their reservation wage.

4. Econometric model

We aim at finding out the determinants of the migrants' probabilities to land a good job in Australia. More specifically, we want to know whether the second cohort migrants, who have benefited from better macroeconomic conditions than the first cohort and have been subjected to more thorough selection procedures, display a better performance than the first cohort in terms of job quality. The premise that second cohort migrants are of better quality since the selection

criteria have been tightened and thus should obtain better jobs than their predecessors may be offset by the added pressure bestowed upon them by the removal of social benefits for a period of two years after arrival in Australia. Indeed, the new policy may have led new migrants of the second cohort to hastily accept lower quality jobs and may have altered their ability to switch to better jobs after some time spent in Australia. The absence of social security benefits in the settlement phase contributes to the decrease of the migrants' reservation wages and we may expect that this would have led to an increased labour supply and a comparatively smaller time allocation towards adapting one's pre-existing human capital to the Australian context, thus delaying migrants' access of a good job. If this hypothesis is true, we should observe a positive effect of belonging to the second cohort on the migrants' probability to find a job in Australia but a negative effect on the subsequent job quality. Junankar and Mahuteau (2005) find such an effect when job quality is assessed on the basis of objective measures for migrants taken after 6 months of settlement in Australia. In the present study, we try to take advantage of the longitudinal aspect of the LSIA data and aim at investigating whether time spent in Australia enables second cohort migrants to recover from their relative job quality disadvantage observed after 6 months in Australia. Given that the second cohort migrants are demonstrated to have higher abilities (Cobb-Clark 2000), one may assume that with time, first and second cohort migrants' job quality attainments should not display any significant difference or, if any, the advantage should go to the second cohort migrants.

One difficulty of such studies is to come up with a satisfactory definition of job quality. As in Junankar and Mahuteau (2005), we use two sets of definitions, based on subjective and objective criteria. A first approach consists in attributing a good job to a migrant if she, herself, rates her current main job as a good job. We use this definition in the first model whereby the dependent variable is defined as taking value 1 if the migrant considers her job as a good job.³ However, in order to give more impact on the individual's own judgement about

³ The dependent variable in that case has value 1 if the migrant loves her current main job "best job I have ever had" or likes it, "it is really a good job".

her job, we focus on the self rating satisfaction on the job for individuals who also state that their primary motivation for migrating to Australia was to benefit from better job opportunities. These individuals are more likely to make a less forgiving assessment of their current situation.

A number of issues arise from adopting job satisfaction as a definition for job quality. First, different macroeconomic conditions and availability of social transfers may alter what one judges as a good job. It is possible that a second cohort migrant with no access to any social safety net may consider herself lucky enough to have a job and would then rate her current main job higher than she would, had she had access to social benefits. A second issue pertains to the migrant's actual reference when assessing the quality of her job. In the early stages of the settlement and for some time after migration, individuals are very likely to compare their current situation to the circumstances they used to face in their former country. Hence, we complement the first definition with a second subjective definition of job quality whereby we compare current main job satisfaction with the level of satisfaction on the last job held in the former country. Therefore the second dependent variable will take value 1 if job satisfaction on the current main job rates higher than (or the same as) in the former country.

The second set of dependent variables we use in the estimations adopt objective criteria to assess the quality of the jobs obtained by the new migrants. An obvious measure consists in comparing the individual's occupation ranking from one wave to another and from the occupation held in the former country to the current main job. These objective definitions account for the improvement made by the migrants from their former country and throughout their stay in Australia rather than actually accounting for job quality per se. Migrants being a rather heterogenous group, it makes more sense to look at their improvements in terms of occupation. Previous studies show that migrants with higher ranked occupations in their former country suffer a larger downward shock upon settlement in the host country⁴ but tend to recover more rapidly than migrants at

⁴ See Chiswick *et al.* (2002).

the lower end of the spectrum of occupations, even more so when the migrants considered are refugees.

According to our first objective definition, we consider a migrant as having a good job if her current main job in Australia is at least equivalent (in terms of ASCO⁵ 2 digits) as the job held in the former country. In spite of its relative objectivity, this definition also presents some shortcomings related to the relative inadequacy between the ASCO classification and the actual occupations' socioeconomic ranking. Among various attempts at reconciling occupation ranking and socioeconomic status, McMillan and Jones (2000) offer a composite index that may be useful to assess job quality. The ANU3_2 synthetic scale integrates a number of relevant socioeconomic dimensions in order to give a more exhaustive assessment of the social status attached to each occupation as described by the ASCO. It takes into account the prestige, requirements (notably in terms of education), the rewards and power attached to the listed occupations. The ANU3 scale assigns a number between 0 and 100 to the occupations classified under ASCO with the lowest score, 0.8, assigned to Railway Labourers (ASCO: 9915) and the highest score of 99.2 to Specialist Medical Practitioners (ASCO 2312). It is tied to the ASCO in that, on average, high ASCO numbers receive lower ANU3 score and *vice versa*. Yet noticeable crossings occur for occupations that are not too far apart in the ASCO classification. For example Importers and Exporters are ranked high in the ASCO scale (1190) but get a ANU3 score of only 41.9, which is lower than most of the ASCO 2000s and some of the 3000s.

Our second objective definition of job quality relies on the ANU3 occupation status scale. We consider that a migrant obtains a good job if the social status associated to her current occupation is not less than her status in the former country and/or previous waves of interview. Using both subjective and objective definitions of job quality is useful not only because we cover a larger spectrum of quality measures but also because comparisons between the two broad categories

⁵ ASCO stands for Australian Standard Classification of Occupations.

are informative. Indeed, we can distinguish between what belongs to a migrant's perception of her outcome (subjective) and her actual outcome (objective) and highlight potential discrepancies.

We observe job quality (either subjective or objective) only for migrants holding a job, whether employed, self employed or business owner. Hence we define a two equation model where we first estimate the probability for the migrants to hold a job. Then, for those who do, we estimate the probabilities for their occupation to be a good job. In other words, we estimate the probability to have a good job *conditional* on being employed. We estimate a separate model for each definition of a good job.

The first equation not only serves a practical purpose of controlling for selection in the estimation of job quality but it also provides relevant information on migrants' employability in Australia and how it may have been affected by the policy changes after 1997. Since the tightening up of the selection criteria affects second cohort migrants and aims at attracting better quality individuals, we expect to observe better employability for this cohort of the dataset.

The model is described as follows (the subscripts are dropped for clarity):

$$y_2^* = \beta_2' X_2 + \varepsilon_2 \quad (1)$$

where the observable counterpart of y_2^* is $y_2 = 1$ if $\varepsilon_2 > -\beta_2' X_2$ (and $y_2 = 0$ otherwise), the observation of whether the migrant has a job or not.

$$y_1^* = \beta_1' X_1 + \varepsilon_1 \quad (2)$$

where $y_1 = 1$ if $\varepsilon_1 > -\beta_1' X_1$ and $y_1 = 0$ if $\varepsilon_1 \leq -\beta_1' X_1$, the observation of whether the migrant has a good job. The observation mechanism is such that y_1 is not observed if y_2 is zero. Furthermore, we assume that the disturbances follow a bivariate normal distribution with correlation coefficient ρ ;

$$(\varepsilon_2, \varepsilon_1) \sim \text{BVN}(0, 0, 1, 1, \rho).$$

Ideally, this model should be estimated taking full advantage of the longitudinal nature of the LSIA dataset, that is, using panel estimates for the vectors of parameters, including random effects capturing time effects. However, the majority of the exogenous variables available for the estimations display no or little time variance. The reason for this is that migrants are interviewed at most three and a half years after arriving in Australia (third wave) which is a relatively short period of time for one to observe important variations compared to Wave 1. Moreover, the bulk of the questions asked of the migrants to do with how migrants are likely to fare in the labour market are intrinsically time invariant (individual characteristics, past experience and life in former country, etc.). To our knowledge, the body of research using the LSIA have recognized this shortcoming of the database and have tried to account for whatever relevant time variations by the use of dummies and interaction variables, namely by using difference in difference estimators to capture differences between two cohorts of individuals. We follow the same approach in the present study. The model tested may be described more specifically as:

$$y_2^* = \beta_2' X_2 + \varepsilon_2 = \zeta_2' Z_2 + \delta_2 C + \omega_2' W_2 + \varepsilon_2 \quad (3)$$

$$y_1^* = \beta_1' X_1 + \varepsilon_1 = \zeta_1' Z_1 + \delta_1 C + \omega_1' W_1 + \varepsilon_1 \quad (4)$$

$$y_2 = 1 \text{ if } y_2^* > 0, 0 \text{ otherwise,}$$

$$y_1 = 1 \text{ if } y_1^* > 0, 0 \text{ otherwise,}$$

$$(\varepsilon_2, \varepsilon_1) \sim \text{BVN}(0, 0, 1, 1, \rho).$$

Z is a matrix of individual characteristics such as those commonly encountered in migrants' labour force participation estimations, namely age (in quadratic form), gender, marital status, visa category, education level, former occupation, English proficiency measures, time since arrival. We introduce a set of dichotomous variables indicating the origin of the migrant's information concerning job opportunities. More specifically, we test whether friends, family and ethnic

groups contribute to the new migrants' labour market outcome both in terms of probability to find a job and ability to find a good job. Evidence indicates that incumbent migrants may facilitate the entry into the labour market of fellow country people, providing accommodation, information (Chiswick *et al.* 2001, Yamauchi and Tanabe 2006) or referrals (Montgomery 1991). However, they may also perceive new migrants as a potential competition.⁶ Other models suggest that highly skilled migrants tend to facilitate fellow migrants' labour force participation but to lower skilled jobs. This would suggest that friends and acquaintances are instrumental in new migrants accessing the job market but may not be as helpful with respect to job quality.

C is a dummy variable allowing for different intercepts for second cohort migrants. W is a matrix of interaction variables allowing different slope coefficients for second cohort migrants and providing the difference in difference estimators of interest. We test two types of interaction terms. First we test whether migrants settling in Australia after the policy change do indeed find jobs more quickly but also whether it takes longer to land a good job. The added pressure to find a job for these individuals should lead to a significant and positive effect of the interaction term between cohort and time spent in Australia but should be significant and negative in the job quality equation if we accept the assumption that new migrants accept bad jobs first and do not move rapidly thereafter. Second we test a number of assumptions regarding immigrants' use of alternative channels of information concerning job prospects in Australia. Namely, friends, acquaintances and family, while being a source of help in finding a first job given that more formal channels may be less accessible upon settlement in Australia, may prove to have a negative effect on the job quality. We test this assumption and check whether the effect of the information channels on job prospects affects first and second cohort migrants differently in a context where the latter have had larger recourse to these sources of information.

⁶ See Heitmueller (2003); Yamauchi and Tanabe (2006).

The use of a bivariate Probit allows us to account for the fact that some of the determinants of labour force participation may be different from those of the job quality without altering the identification of the model's parameters. In other words, elements of Z_1 may be different from those of Z_2 .

We estimate the probability for a migrant to obtain a good job given that she participates in the labour force (and is employed) by full information maximum likelihood methods. The corresponding optimal values of the parameters are then given by:

$$\left[\beta_j^*, \rho^*, \sigma_{\varepsilon_1}^*, \sigma_{\varepsilon_2}^* \right] \in \text{ArgMax} \left[\begin{array}{l} \sum_{y_2=1, y_1=1} \log \Phi_2(\beta_2' X_2, \beta_1' X_1, \rho) + \\ \sum_{y_2=1, y_1=0} \log \Phi_2(-\beta_2' X_2, \beta_1' X_1, -\rho) - \sum_{y_2=0} \log \Phi(-\beta_2' X_2) \end{array} \right] \quad (5)$$

The first two elements of the likelihood function account for the contributions to the likelihood of observations where migrants are employed and may have respectively a good or a bad job. The last element accounts for contributions to the likelihood made by unemployed migrants. The model is identified so long as there is at least one variable present in the first equation but excluded in the second. Our model fulfils this requirement since there is no reason to impose that the determinants of finding a job may be exactly the same as the factors influencing job quality.⁷

Because of the non linear nature of the model, the parameters obtained in this estimation do not represent the marginal effects of each variable on the conditional probability to obtain a good job. Several marginal effects may be computed since one can define several conditional means out of a bivariate Probit model. However, since one observes job quality only for individuals holding a job, we are mainly interested in the effect of each variable on the probability of holding a good job conditioned on being employed.

⁷ Since each equation involves both dummies and continuous variables, we have rescaled the latter type of variables in order to facilitate convergence of this rather unstable type of model. This method is traditionally in use in the literature.

Therefore, the joint probability, evaluated as

$P(y_1 = 1, y_2 = 1 | X_1, X_2) = \Phi_2(\beta_2' X_2, \beta_1' X_1, \rho)$ is hardly of interest for us. The conditional probability from which we derive the marginal effects associated to the variables is then defined as:

$$E[y_1 | y_2 = 1, X_1, X_2] = P(y_1 = 1 | y_2 = 1, X_1, X_2) = \frac{\Phi_2(\beta_2' X_2, \beta_1' X_1, \rho)}{\Phi(\beta_2' X_2)} \quad (6)$$

A number of issues arise in the computation of the marginal effects due to the nature of the variables used in the equations of the model. For continuous variables such as age, time spent in Australia, etc., the computation is relatively straightforward⁸. Since the marginal effects vary with the values taken by the variables composing the model, our results usually report marginal effects evaluated at the sample means of the variables, unless otherwise stated.

For dummy variables, evaluating marginal effects at their sample mean is meaningless since these variables are binary. The marginal effects are then computed as the difference between the estimated conditional probability for a dummy variable d set to 1 and the same conditional probability when the dummy is set to 0, that is,⁹

$$\frac{\Delta E[y_1 | y_2 = 1, X_1, X_2]}{\Delta d} = E[y_1 | y_2 = 1, X_1, X_2, d = 1] - E[y_1 | y_2 = 1, X_1, X_2, d = 0]$$

A larger issue arises for the computation of the marginal effects of interaction terms outlined in the matrix $W_j, j=1,2$ in the model. We extensively use these variables in order to capture the differential effects associated with the characteristics of the second cohort's individuals as opposed to first cohort migrants who came under different migration policies. If we denote by $w_{ik} = C_i z_{ik}$ an interaction variable used in any of the $W_j, j=1,2$ matrices and C the dummy

⁸ See Greene (1996).

⁹ Standard errors are recomputed accordingly using the delta method.

indicating the cohort to which a given migrant i belongs, the marginal effect associated with the interaction variable w_k can be expressed as:¹⁰

$$\frac{\Delta \left(\frac{\partial E[y_1 | y_2 = 1, X_1, X_2]}{\partial w_k} \right)}{\Delta C} = \Delta \left[\frac{1}{\Phi(X' \gamma_2)} \left[\left[\phi((2y_1 - 1)X_1' \beta_1) \Phi \left(\frac{(2y_2 - 1)X_2' \beta_2 - \rho((2y_1 - 1)X_1' \beta_1)}{\sqrt{1 - \rho^2}} \right) \right] \gamma_1 \right. \right. \\ \left. \left. + \left[\phi((2y_2 - 1)X_2' \beta_2) \Phi \left(\frac{(2y_1 - 1)X_1' \beta_1 - \rho((2y_2 - 1)X_2' \beta_2)}{\sqrt{1 - \rho^2}} \right) - \Phi_2(\cdot) \frac{\phi(X' \gamma_2)}{\Phi(X' \gamma_2)} \right] \gamma_2 \right] \right] \Delta C$$

with $X = X_1 \cup X_2$

The tables of results incorporate the estimated marginal effects for each variable using the appropriate computations involved by the nature of the variables as described above.

5. Results

Table 1 summarizes the marginal effects obtained for each model involving an objective definition of job quality while Table 2 offers the same computation for the subjective definitions. The figures presented are such that we decompose the marginal effects of each variable between their direct effect (on job quality) and their indirect effect via the probability to find a job. The total effect of each variable on the conditional probability to find a good job is the sum of the two marginal effects (if the considered variable is used in both equations). Interpreting the decomposition of these marginal effects is useful since we may observe some determinants which affect both dependent variables in opposite directions. This decomposition is definitely relevant for our purpose since we want to test the hypothesis that second cohort migrants are likely to find a first job more quickly than earlier migrants but may hold a bad job longer.

Whether one analyses the objective or subjective definitions retained for job quality, the results are fairly similar with few exceptions for definitions related to direct comparisons between labour market outcomes in the former country and in

¹⁰ Idem as ⁹

Australia. All the definitions focusing on the individuals' improvements once in Australia produce comparable marginal effects for each variable in the good job estimations. The traditional trilogy of tests (LM, LR, Wald) were conducted in order to check the hypothesis that all coefficients are null in each model. For all models, we comfortably reject this hypothesis. Moreover, tests of the hypothesis that the residuals of both equations are uncorrelated ($\rho = 0$) was overwhelmingly rejected for all models, hence justifying the bivariate structure of our estimations.

Regarding the selection equation on the probability to find a job in Australia, the estimates only differ marginally from one model to another which is desirable and to be expected.

5.1 Probability to have a job in Australia

The results of this first step corroborate earlier studies by Junankar and Mahuteau (2005), Cobb-Clark (2000), Richardson *et al.* (2000, 2001). Namely, higher levels of education are beneficial to the probability to find a job. Immigrants with a bachelor degree (or higher) experience about 6 percent extra probability to find a job upon arrival compared to someone who only completed HSC or equivalent. Tests¹¹ of equality of the marginal effects obtained for each education variable are all rejected with a probability of error lower than 0.1 percent and imply the superiority of holding a bachelor degree over any other education level on the probability to find a job. Moreover, whether immigrants have only completed primary or secondary school does not significantly alter their employment probability. Noticeably, individuals with a Technical degree are 2 percent less likely to find a job, though the effect is weak.

As commonly observed in previous studies, migrant's age has a quadratic effect on the probability to find a job. Moreover females are much worse off than males with an average probability 15 percent lower than males. This is a relatively strong result since we control for visa status, notably family reunion visa. Marital status gives an advantage to non married individuals in their ability to find a job.

¹¹ All the tests performed in this paper, which involved comparisons of the estimates of the marginal effects were systematically done using LM, LR and Wald tests conjointly.

The visa status and English proficiency play an important role in the ability to find a job. Refugees experience a much tougher situation on the labour market compared to any other visa categories, even family reunion visas, being up to 30 percent less likely to find a job than individuals entering under the points system. In addition, people coming from a non English speaking background country are almost 10 percent worse off and so are individuals who were unemployed in their former country.

The results obtained on the information channels used by immigrants to find a job highlight much better performances associated with more informal and ethnic network based sources of information than through the use of the English speaking press. Family and friends take an active part in providing immigrants with adequate information to find their first job, more so than if they tried to use channels commonly utilized by natives. A further analysis aimed at testing the equality of the marginal effects associated with the friends and family led to accept the hypothesis that they are not significantly different. This result brings further evidence to earlier studies stressing the role of family and earlier migrants originating from the same country in the new migrants' positive labour market outcome (Chiswick *et al.* 2002a and 2002b) and justifies the existence of local agglomeration of migrants of the same ethnicity. Noticeably, immigrants who rely on information provided by the government are more likely to find a job than if they had used any other channel. The superiority of the marginal effect attached to government agencies is statistically significant.

The effect of being a second cohort migrant is captured not only through the variable Cohort but also by interaction variables crossing cohort and a number of variables deemed to have their effect altered because of the policy change incurred by the second cohort migrants. At first our estimations involved further interaction variables with visa status as we expected refugees to fare even worse since the policy change.¹² However, none of the marginal effects associated with these variables were significant both for the employment and good job equations.

¹² Results available on demand.

This result is not that surprising given that we control in large part for immigrants' characteristics.

A crucial variable in the assessment of the cohort effect is the interaction between time spent in Australia and cohort. Interestingly, these interaction effects are not significant in the job equations, indicating that second cohort migrants do not experience an acceleration of their ability to find a job after arrival in Australia. They simply keep their initial advantage of about 6 percent upon settlement. This result may indicate that second cohort migrants have benefited from the better macroeconomic conditions prevailing in Australia at the time. There may also be a residual effect attached to the quality of the later migration cohort that is not captured by the observable characteristics, but it should be minor since we control for visa categories, education and labour market outcomes in the former country. About the latter variable, we observe that immigrants who not only participated in the labour force in their former country but who also had an activity for which they received payment (as a business owner or a salary earner) are about 10 percent more likely to find a job in Australia. Altogether, if we use the estimates of the marginal effects of time to describe immigrants' probability profiles, we observe that they reach a maximum in their employment probability in the vicinity of three years after arrival. Note however, that these out-of-sample simulations can only be taken as very rough approximations of the actual, unknown, probability profiles.

In the following Section, we analyse the estimations of job quality for both cohort migrants.

5.2 Probability to have a good job in Australia

The first striking result which corroborates earlier studies is that University graduates (and those with higher qualifications) seem to experience a larger negative shock on the quality of their first jobs than other, less educated individuals. Since part of an individual's human capital is not fully transferable to a new country, those more endowed before migration are bound to experience a larger loss upon settlement in the host country. Therefore, this result is not

surprising. Besides, we tested whether there exists a cohort effect related to education but found none which suggests that the policy change has not substantially altered the effect of education on immigrants' job quality. Furthermore, when job quality is based on objective criteria, university graduates seem to experience a larger initial negative shock than if job quality is assessed through individuals' own judgment. Further tests show that this difference is statistically different (at a 1 percent level) which suggests a somewhat biased self assessment from the immigrants. Finally, when comparing the same marginal effects between model 1 or 2 and model 3, we observe the same significant difference in terms of marginal effects associated with university degrees.

Since the third model is restricted to job quality comparisons between former country and Australia and both model 1 and 2 look at the progression in Australia, the difference between the two marginal effects may be interpreted as evidence that in further jobs, University graduates do not tend to improve their situation much. Recovery must intervene in later jobs than those observed after 24 months upon settlement (which is the limit in the sample). This is corroborated by the analysis of the time variables below. Altogether, we observe that the marginal effect for University degree obtained in model 3 (objective definition) is not statistically different from those obtained in the models involving subjective definitions. This result may suggest that up to 24 months after settlement in Australia, immigrants still compare their current situation with the one they had in their former country. Indeed, their self assessment would be a rather good estimate (from their part) of the actual objective job quality difference when it is measured as a comparison to the former country. The relative optimism of the university graduates with regards to their job quality is matched with that of individuals having completed a technical qualification. Indeed, the latter report higher self assessed job quality compared to the objective measures used in the estimations. Like for university graduates, the discrepancy between objective and subjective assessment of job quality is significant. The main difference between the two categories of individuals is that being a technician actually leads to higher

job quality from the start. Other types of education are found to be little different from high school certificate in influencing immigrants' job quality upon arrival.

The pure effect of cohort on job quality is not clear. For models 2, 3, and 4, the marginal effects are not significant while it is positive in model 1 and negative in model 5. Hence, straight on arrival second cohort migrants do not seem to get significantly different quality jobs. Yet, given that the negative marginal effect is obtained for the subjective comparison between the last job held in the former country and the current main job in Australia, the result suggests second cohort migrants have a tendency to be less satisfied of their outcome in Australia. This does not mean that the jobs obtained are of lower quality, especially given the positive marginal effect obtained in the first model. Since second cohort migrants had to face tougher selection criteria and knew about them before migrating, it is possible that this cohort of migrants are intrinsically more motivated than past migrants, hence likely to be more disappointed with their first labour market outcome than others. It is the most plausible explanation for the sign difference obtained between objective and subjective definitions, and that is also compatible with the hypothesis that second cohort migrants are of better quality.

As regards the direct effect of time on immigrants' ability to find good jobs, we observe a negative quadratic relationship, that is the probability to find a good job is at first decreasing, reaches a minimum, and recovery occurs. We observe this pattern for all models. However, when investigating whether there is a cohort effect related to time (interaction variable), we observe significant differences between the two types of measures of job quality. Models involving objective definitions (with the exception of model 3) show a further negative effect of time for second cohort migrants. This result corroborates our hypothesis that after the policy change, new migrants have experienced delayed upward occupational mobility compared to previous migrants. As mentioned above, we did not really expect models based on subjective definitions to match the same result as the added pressure on second cohort migrants to find a job may have altered their perception of what constitutes a good job. Given the new two years waiting period

before access to social security benefits, some migrants may be grateful enough to have been able to find a job and would then be more likely to consider it a good job.

A rather surprising result is obtained for the interaction between time and cohort for model 3. Indeed, contrary to the first two objective definitions, we obtain a positive marginal effect associated with being a second cohort migrant. This result suggests that second cohort migrants obtain better jobs than first cohort individuals when the comparison is made with the last job held in their former country but seem to fare worse than first cohort migrants when attention is focused on the progression inside Australia, that is, for later jobs. This effect is partly due to the fact that a larger proportion of second cohort migrants shift from salaried activities as their first job to self employment. As model 3 is based on the social ranking of activities (based on the ANU_3 classification), this type of shift may very well be associated with a downward move on the socioeconomic ladder.

As mentioned in Section 4, we are mainly interested in the probability for migrants to obtain good jobs conditioned on their ability to find a job (refer to equation (6)). Hence, any variable in the selection equation has an indirect effect on the good job probability. In other words, given that the time variables are present in both equations, they produce both a direct and indirect effect on the probability to find a good job. It is then interesting to look at the total effect of time on those probabilities.

In order to make the results more legible, we used the marginal effects obtained for time variables (time, time squared, interaction time, and cohort) and conducted simulations of the total effect (indirect and direct effects) of time on the probabilities. Since the marginal effects in the tables are given for the sample means, we had to recalculate the slope coefficients for the different intervals of time considered in order to have a better picture of the time effect on the probabilities. The results are summarized in Figure 1 to Figure 5 in the Appendices up to 24 months after arrival; the simulations are based on the marginal effects that could be calculated from our sample. The total relationship

between time and probabilities for time beyond two years after settlement was obtained by applying the in-sample marginal effects to out-of-sample time periods. Therefore, these simulations must only be taken as an illustration of the pattern of the probabilities with time; they are only a rough approximation of the actual, unknown and unobservable, probability paths. Yet, these simulations are informative and enable us to give a comprehensible outlook of the differences between first and second cohort migrants.

When we focus our attention on the first two objective definitions, that is, when we compare occupations (and socioeconomic ranking) throughout the migrants' stay in Australia, we observe that the total effect of time on migrants' ability to land a good job gives the advantage to second cohort migrants up to about a year and a half after settlement. Later on, first cohort migrants are more likely to be observed as having a good job than more recent migrants. The initial advantage observed for second cohort migrants is mainly due to their higher ability to find jobs upon settlement (indirect effect). The models based on subjective definitions, however, give the advantage to second cohort migrants with no obvious faster recovery for first cohort migrants. As mentioned earlier, this result is caused largely by the direct effect of time rather than indirect as in the models based on objective definitions. Part of this result may be due, as already stated, to second cohort migrants being more likely to be satisfied with whatever job they find given the large pressure they have to find a job. Altogether though, it is probably safer to give more credit to the results obtained on objective definitions regarding the effect of time on job quality reached by either cohort of migrants.

Regarding the effect of the channels of information used by migrants to find a job, the use of the bivariate structure in our estimation enables us to decompose the total effect into the direct effect on job quality and the indirect on the probability to have a job, like we did for time variables. Looking at the direct effects, we observe that any information channel other than 'English speaking press' (reference category) has a negative effect on job quality whatever the

definition. The relatively large negative marginal effect obtained for sponsor is mainly due to the fact that we were not able to distinguish between types of sponsors. Had we been able to do so, we would have found different marginal effects between sponsors related to family reunion, spouse visa categories and actual professional sponsors. The latter category of sponsor must prove a lack of the required skills in Australia in order to justify their sponsorship. Therefore this latter category of sponsor would probably be associated to higher job quality. As for family reunion type of sponsor, the requirement is that they must be able to financially support the migrant after settlement, should he or she experience difficulties to sustain themselves. This type of sponsorship is definitely not informative of the type of job sponsors would be likely to recommend to the migrants.

The negative direct effect obtained for 'ethnic press' suggests that jobs obtained via ethnic networks are of a lower average quality than jobs obtained via traditional, native, channels. This is corroborated by the same negative values obtained for 'family' and 'friends'. However, information gathered from friends appears to have a less negative influence on job quality than family and ethnic press. This difference is statistically significant for all models (except model 5). Information from friends is probably more purposively sought for by migrants, hence an increased probability that this information converts into a good job. A similar idea can be found in Yamauchi and Tanabe (2006) who explain the relative success of regional migrants in Thailand by the number and type of individuals they are in contact with. In their model, information given by unemployed people on job prospects is of lower quality and poor informative value (larger variance) than that obtained from already employed people. The difference we observe between friends and family may allow us to generalize this idea to job quality and suggest that family conveys lower quality information than friends about available jobs. The latter would logically be solicited if they already have a job that the migrant considers desirable to apply to. They are more likely to be better informed about job vacancies and may also provide referrals

(Montgomery 1991) so that the variance of the signal they generate towards new migrants is probably smaller than that of families taken in a broader sense.

Even though jobs obtained via the intermediation of government agencies are of lower quality compared to the reference category, we observe that migrants using this type of intermediation are slightly better off, quality wise, than if they use any other channels of information. This result is certainly due to the fact that migrants using this channel of information are a more selected group than the bulk of other migrants in so much as their skills and education must be matching those that are advertised by the Department of Immigration as being sought for in Australia.

The comparison between the two broad categories of good job definitions is informative as regards the effects of the channels of information leading to the migrants' current main jobs. Indeed, looking at the marginal effects of model 1 and 2 compared to model 4, that is, for models focusing on migrants' improvements once in Australia, we observe statistically larger values for objective definitions. In other words, whatever the channel of information used to find a job, migrants seem more pessimistic than necessary about the situation their information channel lead them to. Yet, when looking at models focusing on comparisons with the former country of residence, we obtain the reverse effect, that is, migrants are worse off compared to their initial situation in their former country than they actually are ready to admit. This result may be indicative that migrants are somewhat disappointed with the help they received from their source in their later achievements in Australia.

When we focus on the effect of the information channels on the second cohort migrants (interaction variables), the results display some sensitivity to the various good job definitions. For instance, upon looking at whether the marginal effect for government agencies is significantly different for second cohort migrants, one observes that it is not for the first two models (progression in Australia based respectively on ASCO and ANU3 scales) while it is in the other models. When significant, the marginal effect is negative which implies that

second cohort migrants using this channel of information are on average worse off than earlier migrants. The fact that the marginal effect of this interaction term is significant for model 3 but not for the two previous models, suggests that most of the difference between cohort 2 and cohort 1 migrants who use this channel comes from the comparison with the former country of residence and not from the progression after arrival. Hence, the role of government agencies has not significantly changed since the policy changes when we focus on job quality. Only second cohort migrants' perception has in a negative way.

Second cohort migrants who have used their sponsors as a source of information about their current main job are better off in terms of occupation ranking (model 1) but, strangely, not in terms of socioeconomic ranking (model 2) nor in any other way job quality may be measured, even subjectively. This suggests that the improvement in terms of occupation is so marginal that it is not captured by the alternative ANU3 scale.

Turning to the effect of family and friends on second cohort migrants' outcome, we notice that the latter improve their probability of having a good job by respectively 7 percent and 3 percent by using this source of information. These informal channels have been slightly more efficient in enabling second cohort migrants to find a good job, even though they still provide individuals with a disadvantage compared to formal channels (indirect effect). Once more, there exists a discrepancy between migrants' perception of job quality enabled by the information given by family and friends and the reality. Looking at the improvements once in Australia and comparing model 1 or 2 with model 3, we observe that the marginal effects in model 3 are only about half of that of model 1 and 2 for friends and family interaction terms. Hence, second cohort migrants only credit family and friends for half of their actual contribution in finding a good job. However, when the focus is on comparisons between former country and current main job in Australia, second cohort migrants seem to give them more credit than necessary for the negative shock observed.

Finally, the estimations show that English proficiency certainly does not help finding a good job in the early stages of settlement in Australia. When compared with individuals with limited English abilities, individuals with very good and good English fluency fare worse up to 10 percent. Like education, early on after arrival, English proficiency is not of such a great help for migrants as they lack the relevant information and characteristics for them to compete effectively against natives on the labour market. At the same time, less educated and proficient migrants are more suited to the jobs where a larger concentration of migrants is usually found. This explains the somewhat counterintuitive effect of English abilities upon arrival in Australia. Yet, as one usually observes for education, we can expect English fluency to payoff in later jobs.

6. Conclusion

In this paper we have studied the probability of new migrants of finding a “good job” using data from two cohorts of the Longitudinal Surveys of Immigrants to Australia. In particular, we study whether the changes in the social security support for the second cohort led to a change in the probability of getting a job and getting a good job. We define a “good job” both objectively and subjectively: a good job in our objective definition is based on the nature of the occupation and the social status of the occupation (using the ANU scale) and the subjective definition that relies on the satisfaction of the migrant with their job and whether they intend to search for another job. We have used bivariate probit estimation methods so that the probability of finding a good job is conditioned by the probability of finding a job. In this study we extended our previous research in Junankar and Mahuteau (2005) by studying the role of ethnic networks in providing information to find a good job using all the waves in the LSIA for the two cohorts. Our results support earlier work in that the second cohort have a higher probability of finding a job and finding a good job. Interestingly, the probability of getting a good job at first decreases with the time they spend looking for their first job but then after some time the probability again increases, that is there is a U-shaped relationship. Second cohort migrants follow a similar

path although they have a steeper fall in the probability followed by a quicker upwards movement. We find that the different search methods lead to different results: informal job search methods lead to lower job quality but the second cohort migrants seem to use this channel more efficiently.

Table 1. Estimations of the probability to obtain a good job (objective definitions), Decomposition of the marginal effects.

Variable	Model 1: Socio economic ranking definition of good job (progression in Australia)		Model 2: ASCO 2 digits definition of good job (progression in Australia)		Model 3: Socio economic ranking definition of good job (progression from former country)	
	Job(Y2)	Good Job(Y1)	Job(Y2)	Good Job(Y1)	Job(Y2)	Good Job(Y1)
	Age rescaled (/100)	1.8206*** (0.5929)		1.7848*** (0.5971)		1.8565*** (0.5803)
Age squared rescaled	-2.8173*** (0.8104)		-2.7772*** (0.8153)		-2.9103*** (0.7921)	
married	-0.0395*** (0.0131)	0.014** (0.0061)	-0.0418*** (0.0132)	0.0108* (0.0062)	-0.0336*** (0.0123)	0.0114* (0.0059)
Female	-0.1525*** (0.0137)	0.0518*** (0.0061)	-0.155*** (0.0137)	0.0547*** (0.0061)	-0.1402*** (0.0136)	0.0327*** (0.0058)
Non English speaking background	-0.0708** (0.0331)		-0.0649* (0.0341)		-0.0992*** (0.0339)	
Education variables (highest level completed):						
University degree (bachelor or more)	0.0592*** (0.0161)	-0.0462*** (0.0071)	0.0617*** (0.0162)	-0.046*** (0.0073)	0.0491*** (0.0147)	-0.0286*** (0.0069)
Trade qualification	0.0276 (0.0263)	-0.0035 (0.0101)	0.0304 (0.0266)	-0.0056 (0.0104)	0.0233 (0.0255)	-0.0165* (0.0096)
Technician qualification	-0.0247* (0.0145)	0.0154** (0.0069)	-0.0239 (0.0147)	0.0168** (0.0070)	-0.0237* (0.0134)	0.0131** (0.0065)
Primary school	-0.0742 (0.0477)		-0.0706 (0.0446)		-0.0709 (0.0451)	
Cohort	0.0601*** (0.0144)	0.0288* (0.0167)	0.0594*** (0.0146)	0.0236 (0.0168)	0.0561*** (0.0137)	-0.0036 (0.0159)
Spent some time in Australia before migration	0.0971*** (0.0131)		0.0983*** (0.0130)		0.0965*** (0.0126)	
Time since settlement (rescaled)	0.5637*** (0.0674)	-0.1226*** (0.0362)	0.5704*** (0.0676)	-0.1082*** (0.0365)	0.5273*** (0.0649)	-0.1336*** (0.0337)
Time since settlement squared (rescaled)	-0.2712*** (0.0434)	0.0389* (0.0240)	-0.2727*** (0.0436)	0.0271* (0.0242)	-0.2576*** (0.0413)	0.0774*** (0.0223)
Salary earner or business owner in former country	0.0934*** (0.0205)		0.0893*** (0.0207)		0.0864*** (0.0196)	
Business visa	0.2466*** (0.0328)		0.2516*** (0.0328)		0.2381*** (0.0319)	
Family visa	0.1783*** (0.0244)		0.1814*** (0.0244)		0.1776*** (0.0243)	
Independent visa	0.2744*** (0.0288)		0.2731*** (0.0286)		0.2699*** (0.0288)	
Channel of information on job (reference is Australian press):						
Ethnic press	0.7532*** (0.0602)	-0.2351*** (0.0239)	0.7607*** (0.0599)	-0.253*** (0.0251)	0.685*** (0.0584)	-0.2449*** (0.0228)
Sponsor	0.8117*** (0.0565)	-0.3025*** (0.0259)	0.831*** (0.0558)	-0.2977*** (0.0262)	0.7321*** (0.0562)	-0.1742*** (0.0228)
Government	0.9563*** (0.0616)	-0.1552*** (0.0167)	0.973*** (0.0608)	-0.1551*** (0.0169)	0.8816*** (0.0632)	-0.111*** (0.0155)
Private agency	0.8599*** (0.0520)	-0.2396*** (0.0191)	0.87*** (0.0516)	-0.2574*** (0.0199)	0.7984*** (0.0531)	-0.2245*** (0.0182)
Family	0.7887*** (0.0404)	-0.2381*** (0.0132)	0.8006*** (0.0393)	-0.2546*** (0.0135)	0.726*** (0.0425)	-0.2*** (0.0116)

Friend	0.7632*** (0.0368)	-0.188*** (0.0110)	0.7732*** (0.0355)	-0.1992*** (0.0113)	0.6997*** (0.0397)	-0.1551*** (0.0099)
Self	0.7625*** (0.0367)	-0.252*** (0.0110)	0.7747*** (0.0355)	-0.267*** (0.0114)	0.6982*** (0.0400)	-0.2163*** (0.0098)
Other	0.6067*** (0.0512)	-0.2563*** (0.0241)	0.6145*** (0.0506)	-0.25*** (0.0243)	0.5528*** (0.0514)	-0.2577*** (0.0238)
Number of person in household		0.0049*** (0.0018)		0.0049*** (0.0018)		0.0055*** (0.0018)
Interaction time cohort		-0.1773*** (0.0317)		-0.1598*** (0.0318)		0.2533*** (0.0317)
Very good English fluency		-0.0989*** (0.0083)		-0.1041*** (0.0085)		-0.0811*** (0.0081)
Good English Fluency		-0.0553*** (0.0074)		-0.0615*** (0.0075)		-0.0404*** (0.0073)
Cannot speak English		-0.0024 (0.0182)		-0.0077 (0.0186)		0.0078 (0.0189)
Interaction Channel of information on job and Cohort:						
Ethnic press cohort2		0.012 (0.0387)		0.0472 (0.0396)		0.0374 (0.0401)
Sponsor cohort2		0.078** (0.0386)		0.0638 (0.0398)		-0.0387 (0.0350)
Government cohort2		-0.0031 (0.0330)		-0.0054 (0.0336)		-0.0763** (0.0367)
Private agency cohort2		0.0159 (0.0260)		0.0262 (0.0263)		-0.029 (0.0255)
Family cohort2		0.0716*** (0.0199)		0.0684*** (0.0198)		0.056*** (0.0212)
Friend cohort2		0.031** (0.0158)		0.0444*** (0.0160)		-0.0364** (0.0164)
Self cohort2		0.0074 (0.0162)		0.0034 (0.0164)		-0.038** (0.0160)
Other cohort2		0.0535* (0.0318)		0.0231 (0.0327)		0.0043 (0.0315)
<hr/>						
Estimate of the correlation between disturbances:	ρ	0.6385***		0.6465***		0.6283***
	σ_ρ	0.0174		0.0169		0.0174
Number of observations:		10411		10411		4595
Likelihood:		-6935.127		-6967.727		-2891.083

Note

*** $p < 0.01$, ** $0.01 \leq p < 0.05$, * $0.05 \leq p < 0.10$

Table 2. Estimations of the probability to obtain a good job (subjective definitions), decomposition of the marginal effects.

Variable	Model 4: Subjective definition 1: Satisfaction on current main job		Model 5: Subjective definition 2: Comparison satisfaction on current main job and occupation in former country	
	Job(Y2)	Good Job(Y1)	Job(Y2)	Good Job(Y1)
	Age rescaled (/100)	2.0119*** (0.6127)		1.6726*** (0.5662)
Age squared rescaled	-3.1288*** (0.8348)		-2.6916*** (0.7724)	
married	-0.0388*** (0.0137)	0.0162*** (0.0062)	-0.038*** (0.0124)	0.0098* (0.0057)
Female	-0.1588*** (0.0142)	0.0432*** (0.0062)	-0.1412*** (0.0136)	0.0766*** (0.0061)
Non English speaking background	-0.0835** (0.0419)		-0.0454 (0.0307)	
Education variables (highest level completed):				
University degree (bachelor or more)	0.056*** (0.0165)	-0.0225*** (0.0072)	0.0456*** (0.0145)	-0.0347*** (0.0069)
Trade qualification	0.0434 (0.0278)	0.0121 (0.0106)	0.0304 (0.0240)	0.0099 (0.0099)
Technician qualification	-0.0208 (0.0147)	0.0317*** (0.0072)	-0.0222* (0.0129)	0.0131** (0.0066)
Primary school	-0.0587 (0.0451)		-0.0661 (0.0507)	
Cohort	0.0599*** (0.0155)	0.0068 (0.0166)	0.0504*** (0.0142)	-0.0316** (0.0155)
Spent some time in Australia before migration	0.1102*** (0.0135)		0.1207*** (0.0131)	
Time since settlement (rescaled)	0.5838*** (0.0683)	-0.1851*** (0.0365)	0.5331*** (0.0652)	-0.1126*** (0.0359)
Time since settlement squared (rescaled)	-0.28*** (0.0443)	0.0958*** (0.0241)	-0.2573*** (0.0408)	0.0628*** (0.0240)
Salary earner or business owner in former country	0.0693*** (0.0218)		0.0926*** (0.0204)	
Business visa	0.2835*** (0.0345)		0.2664*** (0.0332)	
Family visa	0.2008*** (0.0256)		0.1781*** (0.0243)	
Independent visa	0.3119*** (0.0302)		0.2738*** (0.0296)	
Channel of information on job (reference is Australian press):				
Ethnic press	0.764*** (0.0614)	-0.297*** (0.0257)	0.6683*** (0.0604)	-0.1555*** (0.0251)
Sponsor	0.8398*** (0.0578)	-0.326*** (0.0272)	0.7376*** (0.0576)	-0.1774*** (0.0231)
Government	0.9879*** (0.0642)	-0.1932*** (0.0169)	0.8836*** (0.0651)	-0.1788*** (0.0154)
Private agency	0.8928*** (0.0536)	-0.2744*** (0.0206)	0.7522*** (0.0564)	-0.1725*** (0.0175)
Family	0.8024*** (0.0414)	-0.2923*** (0.0140)	0.7242*** (0.0447)	-0.1804*** (0.0120)
Friend	0.7826*** (0.0376)	-0.235*** (0.0118)	0.694*** (0.0413)	-0.1436*** (0.0102)
Self	0.7814*** (0.0302)	-0.2776*** (0.0118)	0.6823*** (0.0413)	-0.1489*** (0.0102)

	(0.0380)	(0.0118)	(0.0418)	(0.0100)
Other	0.6346***	-0.3331***	0.5561***	-0.1727***
	(0.0532)	(0.0275)	(0.0504)	(0.0227)
Number of person in household		0.0036**		-0.0044***
		(0.0018)		(0.0017)
Interaction time cohort		0.0611*		-0.0252
		(0.0320)		(0.0300)
Very good English fluency		-0.0993***		-0.0747***
		(0.0086)		(0.0081)
Good English Fluency		-0.0554***		-0.0523***
		(0.0077)		(0.0073)
Cannot speak English		0.0031		0.0368*
		(0.0191)		(0.0190)
Interaction Channel of information on job and Cohort:				
Ethnic press cohort2		-0.0156		-0.0593
		(0.0365)		(0.0362)
Sponsor cohort2		0.0025		-0.027
		(0.0386)		(0.0343)
Government cohort2		-0.0967***		-0.1092***
		(0.0344)		(0.0311)
Private agency cohort2		0.0498*		-0.0632***
		(0.0270)		(0.0231)
Family cohort2		0.0401**		-0.0735***
		(0.0203)		(0.0186)
Friend cohort2		0.0148		-0.1024***
		(0.0170)		(0.0154)
Self cohort2		0.0072		-0.0958***
		(0.0171)		(0.0158)
Other cohort2		0.0524		-0.0128
		(0.0349)		(0.0333)
<hr/>				
Estimate of the correlation between disturbances:	ρ	0.6008***		0.6336***
	σ_ρ	0.0191		0.0185
Number of observations:		10411		10411
Likelihood		-6333.537		-6921.162

Note

*** $p < 0.01$, ** $0.01 \leq p < 0.05$, * $0.05 \leq p < 0.10$

Appendices:

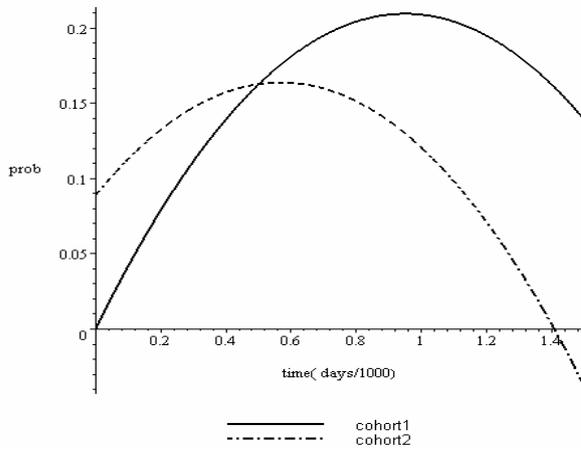


Figure 1: Total effect of time on the conditional probability to get a good job (objective definition, model 1),

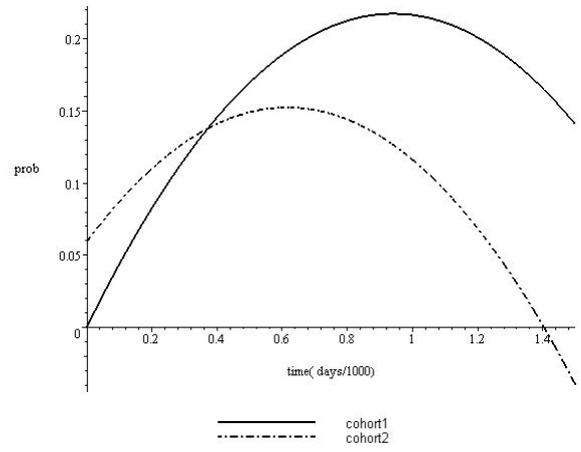


Figure 2: Total effect of time on the conditional probability to get a good job (objective definition, model 2)

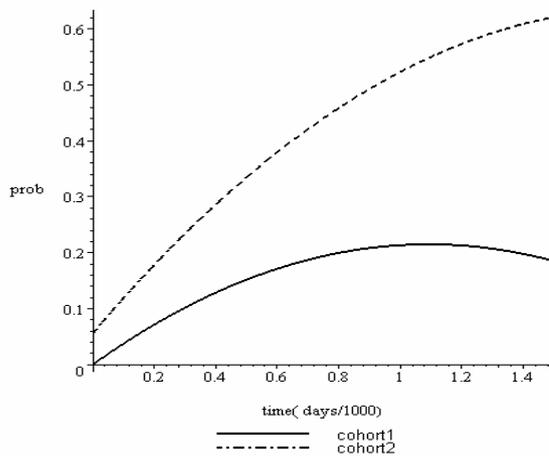


Figure 3: Total effect of time on the conditional probability to get a good job (objective definition, model 3)

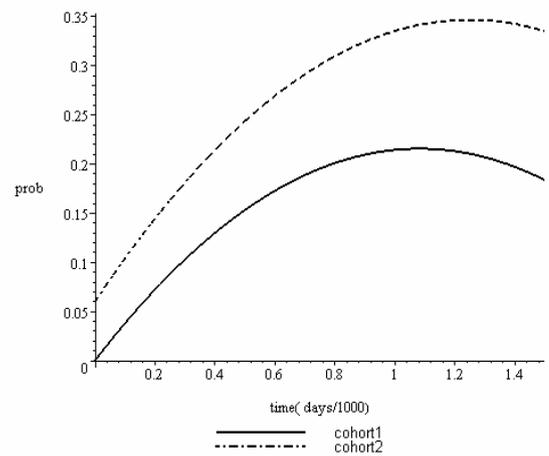


Figure 4: Total effect of time on the conditional probability to get a good job (subjective definition, model 4)

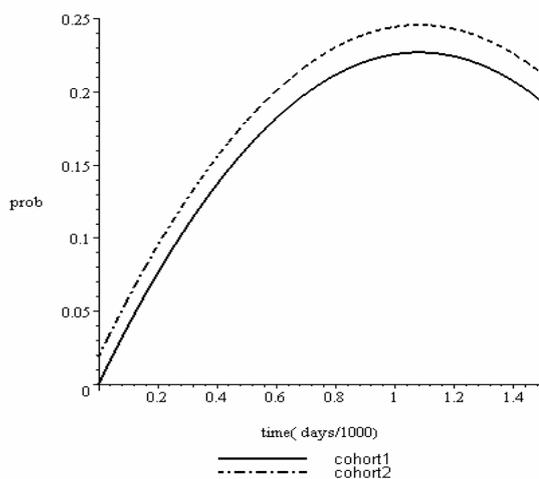


Figure 5: Total effect of time on the conditional probability to get a good job (subjective definition, model 5)

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