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The melting-pot and the economic integration of immigrant families: ancestral and generational variations in Australia

Abstract. The melting pot argument, whereby economically heterogeneous multi-cultural societies, characterised by high levels of immigration from a variety of origins, become more homogeneous over time, has attracted much attention, especially in North America. Australia has similarly experienced major waves of immigration from a wide range of cultural backgrounds. This paper reports successful tests of hypotheses, derived from the melting-pot model, that economic integration of immigrant groups there has also resulted in reduced inter-group occupational and income differences across successive generations, but that the pace of integration can vary across ethnic groups. Using a bespoke tabulation from the 2011 Australian census we explore differences among ten immigrant (ancestry) groups in their educational qualifications, and their occupational and income distributions, using a recently-developed method to identify significant patterns within large contingency tables. We find that by the third generation there were no substantial differences either across the ten groups chosen to represent four main waves of immigration to Australia or between these groups and the non-immigrant population.

Keywords: immigration, melting-pot, ancestry, economic integration, Australia

Introduction

Immigrants have become increasingly important to developed-nation labour markets since World War II, with their economic (structural) integration into the receiving countries' workforces seen as an important indicator of a successful immigration policy. Particular attention has focused on inter-generational economic mobility (as in special issues of *The B.E. Journal of Economic Analysis and Policy*, 2007(2) and *Ethnic and Racial Studies*, 2010(7)), linked to educational achievement (Schneider and Crul, 2010, 1145). To this, Boyd (2002) added a need to take account in both national and cross-national research of country-specific differences in immigration histories associated with assimilation outcomes.

Most studies of economic integration – implicitly if not explicitly – are set in the context of the 'melting-pot model' long used to characterise changes in United States' society over more than two centuries of immigration from a wide range of ethnic backgrounds. As Borjas (1992, 123) expressed it, the model claims that 'over time, the children and grandchildren of immigrants moved out of ethnic enclaves, discarded their social and cultural background, and experienced economic mobility'. But many studies, such as Glazer and Moynihan's (1963) classic *Beyond the Melting Pot*, challenged that interpretation, showing that some groups discarded their social and cultural backgrounds more readily and rapidly than others, and that the pace of economic mobility varied considerably among the country's many ethnic groups. An alternative model – segmented assimilation (Portes and Zhou, 1993) – was formulated. In this, whereas the linear model of economic integration associated with social and cultural assimilation was followed by some groups, others retained their cultural values and developed their own 'ethnic enclave economies' separate from, yet integrated with, the wider economy. Yet other groups, through various forms of disadvantage and discrimination, experienced what Boyd (2002, 1038) terms 'truncated assimilation', with much less movement towards a situation – as seen in their educational qualifications, occupational

structures, and incomes – comparable to that of the host society. Boyd (2002), however, has argued that this segmented assimilation model is not in accordance with the Canadian situation, where economic integration has been the norm across all minority groups.

Has that been the case in Australia too, a country that has experienced very substantial immigration from a wide range of sources encompassing varied social and cultural backgrounds over recent decades? With regard to economic integration, have members of all of those immigrant groups and, especially, their successor generations (the children and grandchildren of immigrant families) been equally successful, or some more successful than others in gaining qualifications, obtaining jobs and earning incomes that mean their situations are not distinguishable from those of the host population? Has Australia, like Canada, conformed to the melting-pot model, or is the situation there, as in the United States, better represented by either or both of the segmented and truncated assimilation models?

There is evidence in the literature of considerable variation within immigrant-receiving countries relating to the cultural (ethnic) background mix of immigrants which Crul and Vermeulen (2003, 983) and Borjas (1993) suggested played a part in integration outcomes. As Khoo et al. (2002) found for Australia, Boyd (2002) for Canada, and Portes and MacLeod (1996) for the United States, while socioeconomic outcomes (occupational and educational attainment) of the second generation as a whole were better than for their non-immigrant peers, there was considerable diversity of outcomes by parents' country of origin. Recognising this, Borjas (1992) had earlier introduced the concept of 'ethnic capital': intergenerational labour market outcomes in the second and subsequent generations depend on different ethnic environments, such as differences in attitudes to education, which is an important influence on economic performance. As a consequence, those from markedly different backgrounds from the receiving society may take longer to integrate and achieve the levels of social and economic mobility attained by those who differ less. Two hypotheses derived from Borjas' (1992, 1993) work are relevant to the study of Australian migrants and their descendants undertaken here:

1. That regardless of where the parents and/or grandparents come from, intergenerational achievement will result in succeeding generations moving closer to the general population average in, for example, income levels (Borjas – 1993, p.133–terms this 'regression toward the mean across generations'); but
2. That inter-generational movement towards economic integration may not occur evenly (i.e. at the same rate) across ethnic groups.

We evaluate those hypotheses here with data for Australia, one of several dominantly English-speaking countries that has experienced growing ethnic diversity over the last half-century through substantial migration streams from a range of – mainly European and Asian – origins. The flexibility of access to Australian census data allows the creation of bespoke tabulations of individuals' ancestry – by generation and age – with their labour market situations, facilitating direct tests of the hypotheses regarding convergence of those situations across the generations, although potentially at differential rates.

Successful intergenerational integration is especially important in Australia, where immigrants are regarded as pivotal to shaping the nation's economy because of their post-World War II impact on the size and composition of the population and labour force (ABS, 2007). The 2014 *International Migration Outlook* report (OECD, 2014) shows that 27.3 per cent of all Australians were born overseas, compared with 24.1 per cent in New Zealand, 19.8

per cent in Canada, 13 per cent in the US, and 1.9 per cent in Britain; 25 per cent of Australians by ancestry are from non-English speaking backgrounds.

Nevertheless, the intergenerational integration of immigrant groups is relatively under-researched in the Australian context. As recently as two decades ago, Vasta (1994, 21) noted that concern with Australia's second generation of immigrant parents was relatively recent (cf. Khoo et al. 2002). Two decades later, Sweetman and van Ours (2014) extended the debate, identifying a need to document the economic integration patterns of immigrants, their children *and grandchildren* within countries and to compare such outcomes across nations as members of the third generation of those claiming an immigrant ancestry complete their schooling and enter the workforce. We address this gap with Australian data, as a contribution to greater understanding of inter-generational trends of economic integration.

Research framework

Boyd (2002, 1038) refers to the American integration literature identifying two possible outcomes for immigrant offspring of relevance here. One, a linear integration model, suggests that after two or three generations immigrants' descendants approximate closely to the occupational and income structures of the host society. According to this model, immigrants' grandchildren (born in the country of parents also born in the country – the third-plus generation) out-perform the children of immigrant parents (the second generation) who in turn out-perform the first-generation immigrants themselves. The second model embraces socioeconomic disadvantage, especially among those who are socially and/or culturally most distant from the host or receiving society, referred to in the American literature as 'segmented assimilation' (Portes and Zhou, 1993; Zhou, 1997). This scenario is sometimes seen to date from the relaxation of immigration policies relating to the exclusion of what became known in Canada as 'visible minorities'; such relaxation occurred in the United States in the mid-1960s, in Canada between 1962 and 1967, in Australia (the demise of the 'White Australia' policy) in the early 1970s, and in New Zealand in the mid-1980s.

These changes to the racial and ethnic composition of immigrant flows to those countries emphasised ethnic differences and potential discrimination based on social distance and issues of national identity (Forrest and Dunn, 2006). But in the absence of the special circumstances relating to America's immigration history, in particular the presence there of a large 'involuntary minority' comprising a highly disadvantaged and racially identified underclass of Black Americans (Boyd, 2002, 1043), Boyd and Grieco (1998) found that the linear model of integration best reflected the distinction in Canada between visible minorities and the rest of the population. In terms of educational attainment, Boyd (2002) similarly found greater achievement (compared with the first or immigrant generation) in the second generation, but decline (under-achievement) in the third generation. Evidence suggests that the Australian experience largely reflects Canada's (Forrest and Dunn, 2006, 205-210) with the linear model of intergenerational integration applying in both cases. This would be subject, however, to either any disadvantage suffered by particular ancestral groups associated with ethnic discrimination in a post-White Australian, 'multicultural' society (Forrest and Dunn, 2010) or the presence of any Australian immigrant underclass as suggested by Khoo et al. (2002, 143-144).

Post-1945 migrant cohorts settled in Australia under two quite different sets of economic conditions and policy settings (Forrest et al., 2006): an industrial economy during an extended period of economic boom during the 1950s and 1960s; and a service economy

emphasising skilled (white collar) employment during a period of alternating boom and recession starting a decade later. Examination of occupational backgrounds of first-generation immigrants during the industrial period led Collins (1978) to suggest the development of two main labour force segments: those from either northwestern Europe or English-speaking backgrounds focusing on white-collar jobs; and mainly manual occupations among those from southern Europe – semi-skilled (processing and production) and unskilled occupations associated with low levels of educational attainment. There is descriptive evidence, however, that such segmentation had no lasting effect: the proportion with tertiary qualifications was substantially higher among the second generation of immigrants from southern and eastern Europe, with much higher proportions in professional occupations than in the first (immigrant) generation, compared with the Australian-born (Khoo et al., 2002, 53-55).

The post-1970s decades, on the other hand, were a period of economic restructuring and adjustment to new forces of global competition, interspersed with short periods of recession, during which Australia's migration policy settings were transformed in several ways. The first was the result of the ending in the 1970s of the 'White Australia' policy whereby people of 'colour' were barred from entering the country. Australia was opened up to people from anywhere in the world, subject only to policy settings regarding needed qualifications and skills. The second reflected the new emphasis on immigrants with skills, especially professional and para-professional qualifications, during the 1980s and 1990s. Finally, in the face of persistently inferior labour market outcomes among professionals from non-English-speaking-background source countries, there was a move from about 2000 to 'select for success' (Hawthorne, 2005) by redefining acceptable levels of human capital in terms of 'minimum threshold standards' for 'core employability factors of skill, age and English language ability' (DIMA, 1999, 12), irrespective of ethnic background.

Given those particular features of Australia's changing labour markets and immigration flows, the following sections analyse data from the most recent (2011) census. This provides information on educational attainment, occupation and income for all adults as well as their reported ancestry, and – as detailed below – a particular facility available on the Australian Bureau of Statistics (ABS) website allows bespoke cross-tabulations of those variables to be obtained for the entire population. The next section describes those data, and is followed by one introducing the methodology deployed for their analysis to test the hypotheses set out in the introduction.

Data

The goal in this study was to explore whether there are substantial (and statistically significant) differences across generations within a range of Australian immigrant groups and their successors in their degree of economic integration. For that – as used to be the case with US data (employed in Borjas, 1993) and continues to be in Canada (Boyd, 2002) – we use information from census questions that asked respondents to identify their ancestry (i.e. where they and their parents were born). These data allow direct comparison between generations within and across such ancestral groups as well as between those groups and those who identify as having Australian ancestry, commonly associated with Anglo cultural backgrounds (Forrest and Dunn, 2006). Further, a flexible feature of the Australian census has allowed us to produce a customised data set derived directly from the totality of the original, individual returns so that there is no problem of ecological inference (see also Subramanian et al. 2009).

The data were assembled using the 2011 Australian census Tablebuilder facility.¹ The individuals included in these customised tables are all those aged between 20 and 69 who were in the workforce – either employed or unemployed and seeking work; students, homemakers, carers and those who had either retired from work or left the labour force for other reasons (such as health) are excluded. Data were obtained for members of several of the country's main ancestral groups only, selected to exemplify its major recent immigrant flows. Census respondents were asked to nominate their ancestry and place of birth (including their parents'). Members of each of the ancestry groups identified were classified into: first generation – parents and respondent all born outside Australia; second generation – respondent born in Australia to both parents who were born outside Australia; third and subsequent generations – respondent and both parents born in Australia, but, as with the second generation, with a claimed ancestry associated with one of the ten groups. Following a suggestion by Khoo et al. (2002, 12-13), they were also classified by age groups – 20-29; 30-49; and 50-69. This partly takes into account different age distributions in the second generation relating to their parents' group migration history, and partly makes some allowance for the small numbers among those aged 30 and over for major groups who had migrated to Australia since the early 1970s.

The ten ancestral groups selected for study were chosen as representatives of Australia's various immigrant waves:

- Wave 1: immigrants from the United Kingdom and Ireland. These two groups predominated in the pre-1945 migrant streams and still remain among the top countries by birth of immigrants (Ho and Jakubowicz, 2013, 4).
- Wave 2: immigrants from Greece, Italy and a first stream from the Former Yugoslavia. With the industrial boom that followed the Second World War substantial numbers of immigrants from these countries were attracted to occupy vacancies in the labour market that those from the UK and Ireland were no longer filling (Price, 1963).
- Wave 3: immigrants from Asia, especially China and India. The 'White Australia' policy prevented migration from Asian countries until the early 1970s, when this ban was removed and increasing numbers were recruited, many of them to work in the expanding service sector (Forrest et al, 2014).
- Wave 4: concurrently with those from Wave 3, immigrants – many of them refugees – from Lebanon in the mid-1970s (mainly Christians) and, in a later period, Muslims plus a second stream arising from the breakup of the Former Yugoslavia, similarly comprising both Christians and Muslims.² Conflict in those two countries encouraged many to move to Australia, which operated a separate scheme for refugees and their dependants from that which regulated the Wave 3 migrants (whose access was governed according to their skills and other criteria relative to the country's current labour demand). However, many of the refugees were, like the skilled immigrants, also well-educated (Forrest et al., 2013). Each group was subdivided here into those with Christian and Muslim religious affiliations, though there were very few in the oldest age group (50-69) for the third generation.

¹ For details on the Tablebuilder facility see <http://www.abs.gov.au/websitedbs/censushome.nsf/home/tablebuilder> – accessed 23 June 2015.

² A third major refugee group – from Vietnam in the late 1970s – could not be separately analysed here because many of them claimed Chinese ancestry.

That the ten groups represent different immigration waves and streams is clearly illustrated by Table 1, which shows the percentage of each immigrant group in each generation and each age group, as well as the total number in the relevant age groups and labour force. Those from the UK and Ireland were predominantly third-generation settlers, with the largest percentages in the oldest age group. Most Greeks and Italians enumerated in the 2011 census were second-generation Australians, and the majority were aged 30-49, whereas most of the Chinese and Indians were of the first-generation, with twice as many young adults as the previous two groups. Immigrants from Lebanon and the Former Yugoslavia were more varied, although the modal generation was the first. Inclusion of several groups of recent migrants means that they have few third-generation members – and in some cases not many second-generation members either. However, because of a major feature of the adopted method, as described below (the downweighting of the estimated rates where small numbers are involved), this does not produce major analytical problems, enabling us to explore whether there are significant differences in situations where the population is relatively small.

These data gave a core matrix comprising ten ancestry groups, by three generations, by three age groups: 90 cells in all. Three further sets of information were added in turn to this core matrix, producing three large matrices that were separately analysed:

- Each individual's highest educational qualification in three categories: those who left school at the minimum leaving age; those who stayed at school for a further two years to obtain their Higher School Certificate (or its equivalent); and those who obtained a Tertiary education qualification, comprising a degree or Advanced Certificate.³ This gave final matrix of 10 x 3 x 3 x 3, with 270 cells;
- Each individual's occupation, in four categories – professional and managerial; clerical, sales and other white collar service occupations; technical and other skilled blue-collar occupations; and semi- and un-skilled blue-collar occupations – plus a fifth category for those who were unemployed. This gave a 10 x 3 x 3 x 5 final matrix, with 450 cells.
- Each individual's weekly income, in five categories – A\$200-399; A\$400-799; A\$800-1,249; A\$1,250-1,999; A\$2000< – giving a further 450-cell matrix.

Methodology

Many analyses of intergenerational data, especially of human capital effects such as educational attainment or economic capital effects like occupation or income, are either descriptive (e.g. Khoo et al., 2002), or use a multiple regression framework. Among the latter, however, many focus on independent variables as main effects only. Examples in the context of intergenerational change are the regression analyses by Boyd (2002) of educational attainment and Hammarstedt (2009) of income differentials. Few of these studies, if any, also explore the interaction terms involving two or more of those main effects, partly because sample sizes are too small. They thus fail to investigate any evidence of intra-group heterogeneity – of variations between generations within a single age group, for example. Yet 'most social scientists would probably agree that the assumption of constant effects embedded in main effects is theoretically implausible' (Elwert and Winship, 2010, 328) and

³ These data were collated from two separate tables via the Tablebuilder facility; it was not possible to identify separately those who gained a Year-12 qualification but did not proceed to a tertiary-level qualification.

Noted American statistician Andrew Gelman argues that ‘treatment interactions and subgroup analysis are important, but they should be estimated using multilevel models’.⁴

A recently-developed approach using multi-level modelling of large contingency tables is thus adopted here for analysis of intergenerational variations, by age and ancestry group, in occupations and incomes. (The method is set out in full detail in Jones et al., 2015.) Standard procedures – such as multiple regression with the percentage of each age/generation/immigrant group in each occupational or income category as the dependent variable and those three sets of groups as the independent variables – are not feasible because of the closed number set problem,⁵ plus the difficulty of identifying interactions among the independent variables. Hence the development of a procedure which assesses whether the number of individuals in each cell of a contingency table (e.g. the two 450-cell tables described above) is significantly larger or smaller than would be expected if there were no variation across cells – for example, if the proportion of individuals in each generational, age and ancestry group in a given occupational category is invariant.

The method derives an expected value for each cell (i.e. assuming that the proportion of individuals in a given occupation for each generation and age-group cell of the contingency table for a particular ancestry group is the same as for that cell across all ancestry groups). It then takes the ratio of the observed to expected values, and models the logged ratios to derive credible intervals around the estimated ratio. This uses a multi-level modelling strategy with Full Bayesian estimates, based on work on disease incidence rates which may be unstable because of either or both of small observed and expected values (Clayton and Kaldor, 1987). The modelled estimates of the (logged) rates are automatically downweighted towards no effect of the observed being equal to the expected when they are based on small absolute numbers and the analysis is thereby protected from the over-interpretation of unreliable effects; distinctively high or low relative rates based on reliable evidence are not downweighted. All estimates are accompanied by their Bayesian credible (confidence) intervals (Jones et al., 2015). Importantly, the model is equivalent to the fully-saturated one and thus takes into account all of the multi-way interactions among the independent variables (in this case age, generation and ancestry).

For each cell in the contingency table, therefore, we have an observed and expected value, the logged estimate of the ratio between those two,⁶ and the low and high credible (confidence) intervals (CIs) around that ratio – calculated as 1.95 of the standard error. A logged ratio estimate of 0.0 indicates that the observed number of observations in the cell is the same as the expected number; a negative estimate indicates that the observed number is less than the expected, and a positive ratio indicates more observed than expected. With those estimates we can establish (in line with our two hypotheses):

- Whether any logged ratio is significantly different from zero (i.e. the ratio and its CIs are either all positive or all negative so that the spread of values does not incorporate

⁴ http://andrewgelman.com/2011/01/07/small_world_mit/ – accessed 23 June 2015.

⁵ Because the percentages sum to 100 the dependent variables are not independent of each other and their standard errors will be correlated. Alternative procedures, such as seemingly unrelated regression, can tackle that issue, but not that associated with interactions.

⁶ The natural log is used to better satisfy the Normality assumption that is used to specify the random effects model that underlies the analysis of the table. It also means that the modelled predicted counts of the table can never be estimated to be negative values on the raw scale.

zero), indicating that there are either more or fewer individuals in that cell than expected at the chosen significance level (0.05 or better); and

- Whether any logged ratio is significantly different from any other (i.e. that the two ratios' CIs do not overlap).

For each of the 450-cell matrices, therefore, we have an estimate of whether the observed number in each cell (of second-generation Greeks aged 20-29 with incomes of A\$200-399, for example) is significantly different from the expected number (if Greeks of that age group and generation had the same proportion in that income group as all of the other ancestral groups).

Table 2 illustrates this with two examples taken from the ratios in the occupational distribution contingency table. For the first of the above questions – whether groups have logged observed:expected ratios significantly different from zero – we use the example of second-generation immigrants aged 20-29 in the managerial and professional occupations. The first eight coefficients in the upper block of the table are all negative and significantly different from zero (because their High CI values are also less than zero): the two significantly positive coefficients indicate that only young, second-generation immigrants from India and China had more individuals in the higher status occupations than would be the case if there were no generational and age differences in the occupational distribution. In the second example (first-generation immigrants aged 30-49 in the semi- and un-skilled occupations) three of the coefficients are significantly negative – those of Irish, UK or Chinese ancestry have fewer in that occupational group than expected – whereas a further six are significantly positive. Individuals in that generation and age group from India and Greece, plus the two groups from each of Lebanon and the Former Yugoslavia, are more likely to be in semi- and un-skilled occupations than expected.

Regarding the second question – whether there are significant differences between any pair of immigrant groups, holding generation and age constant – the ordering of the ten ancestry groups in the table allows an assessment of whether each has a ratio significantly different from its nearest neighbour. The ratios are organised from the largest negative to the largest positive value; whether there is a significant difference between any ratio and that for the group above it in the rank-ordering is shown in the final column (Y indicating a significant and N an insignificant difference). Thus there is no significant difference between Yugoslav and Lebanese Muslims (upper panel), for example, because the CIs for the latter overlap those of the former; the LowCI for Lebanese Muslims (-0.53) is a larger negative number than the HighCI (-0.34) for Yugoslav Muslims. But there is no overlap between the next pair so the ratio for UK immigrants is significantly different from that for Lebanese Muslims. Overall, there are four significant breaks in that sequence: as well as that between Lebanese Muslims and those from the UK there are also significant differences between UK and Yugoslav Christian immigrants, between Greek and Indian, and between Indian and Chinese in their ratios of observed to expected numbers in that occupational group. The second example (lower panel) – for first-generation individuals aged 30-49 in semi- and un-skilled occupations – contains seven significant breaks: most of the groups, in the given order, have more individuals than expected in those occupations than the group immediately above them in the rank ordering. These significant differences suggest clear variations in the pace of economic integration across the ten groups, therefore; the melting pot process was operating more rapidly for some groups – notably those from the UK and Ireland whose cultural and social backgrounds were similar to those of earlier settlers – than for groups, especially those from Lebanon and the former Yugoslavia, with very different backgrounds.

As specified earlier, our main interest in these analyses is whether there are significant inter- and intra-generational differences among the ancestry groups in their occupational and income distributions which would be indicative of greater (more rapid) economic integration of some groups than others into Australian society. But such analyses need to take generational and age distributions into account because Table 1 showed substantial differences among the ten groups in these: those with UK ancestry should have more in the higher status occupations and earning the higher incomes because more of them are in the third generation than, say, those with Indian ancestry. In subsequent sections, therefore, we look first at generational and age distributions before turning to any differences between ancestry groups. Before that, however, we briefly examine whether there are significant differences across the ancestry groups – holding age and generation constant – in their educational achievements, for which the multi-level approach is not relevant because the age groups analysed vary according to the qualification.

Differences in human capital

One reason why different ancestry groups may vary in their levels of economic integration – their occupational and income distributions – may be because they differ in their human capital, indexed here by their educational qualifications. If members of some groups, holding constant their age and generation, have lower qualifications on average than other groups then their occupational and income attainment levels may vary accordingly. To inquire whether this was so, we analyse three achievement levels:

- The percentage whose educational qualifications ended at the minimum school-leaving age, for which the denominator is all those aged 20-69 (by age 20 everybody would have completed their high school education);
- The percentage whose educational trajectories proceeded to the Australian Higher School Certificate (HSC) or its equivalent, normally taken two years after the minimum school-leaving age, for which the denominator is also all those aged 20-69; and
- The percentage with tertiary qualifications (a Degree or Advanced Certificate), for which the denominator is all those aged 25-69 (assuming that all – other than mature students – will have obtained a first degree by the age of 25).

To test for variations in qualification levels associated with generation, age and ancestry stepwise ordinary least squares multiple regression models were tested for each of those three dependent variables: the data refer to all those in the indicated age groups. The first model included dummy variables for generation (contrasting those of the second and third generations with the first) and age group (contrasting those aged 30-49 and 50-69 with those aged 20-39); the second added a series of dummy variables for nine of the ancestry groups, contrasting them with the largest – those with UK ancestry (Table 3).

By generation, the main differences are with the lowest qualification level – those who left school at the earliest possible age. Second-generation immigrants were significantly more likely than those of the first generation to have these minimal qualifications only, and those in the third generation were even more so (by some 5 percentage points in the former case, and 13 in the latter).⁷ Those who had been in Australia longest were much more likely to have the

⁷ A 2 standard error test indicates that the confidence intervals for the two coefficients at both steps (e.g. 4.9 for second generation and 13.1 for third generation at the first step) do not

minimum educational standards than were recent arrivals, suggesting difficulties (especially for those from very different cultural backgrounds and unfamiliar with the English language) assimilating to the Australian educational system.⁸ The significant coefficients for the third generation in the analysis of Year-12 qualifications sustain that interpretation: the third-plus generation were much less likely (by some 18 percentage points) to have achieved that qualification level than the first generation – high school attainment regressed in the second generation compared with the first, and noticeably so in the third-plus. But those differences are much weaker with regard to Tertiary qualifications, for which the only significant difference is 7 percentage points between the first and third generations

The differences across the three age groups are generally much stronger than those across generations, and are also statistically significant. Older immigrants are much less likely (some 31 percentage points) than their younger counterparts to have proceeded further than the minimum school-leaving age and, complementing that, also less likely to have HSC or Tertiary qualifications. The smaller coefficients for the latter suggest, however, that those who do proceed beyond the statutory minimum age for education are more likely to proceed to a degree-level qualification.

Further to these differences across the generations and age groups, the models' second step, which introduces dummy variables to explore ancestry-group differences, indicates few substantial – let alone statistically significant – differences between the educational qualifications reported by immigrants from the UK and their contemporaries in the other nine groups. Only two – Chinese and Indians – were much more likely to have degree-level qualifications, holding age and generation constant (with the complementary smaller percentages having left school at the minimum age only); the Chinese, for example, were nearly 18 percentage points more likely to have a degree or similar qualification than those with a UK ancestry, holding age and generation constant. Only the Lebanese Muslims were substantially and significantly less likely to have Tertiary-level qualifications than those from the UK.

The results of these regressions indicate, therefore, that, holding constant age and generational variations, there were very few significant differences across the ten ancestry groups in their educational qualifications. The absence of any such differences means, therefore, that any variations in occupational attainment and income levels would not reflect inter-group differences in human capital. Significant age group and generational differences, however, especially the former, clearly suggest – in line with our second hypothesis – uneven convergence towards the overall pattern because of inter-ancestral group age and generational differences. And it is to those differences that we now turn.

Economic integration I: occupations

The preceding analyses have shown strong differences among Australia's main immigrant groups in their educational qualifications according to age and generation, but only minimally

overlap, indicating that the latter is significantly larger than the former; both are significantly different from zero.

⁸ The large, negative coefficients for Chinese and Indians in the second step model for Year 10 qualifications only suggests that they – as is widely observed – place a high premium on education and thus have assimilated more readily to the Australian system (as indicated by their positive coefficients for the higher-level qualifications).

for their ancestry. Does this also apply to their labour market situations? In particular, whereas there might be significant differences in occupational and income distributions across the age and generational groups, are there additional significant differences relating to ancestral background? A negative answer would imply that the process of economic integration into Australian society was not differentiated by immigrant origin; members of all groups – holding constant age and generation – are as equally likely to have prospered (or not).

Table 4 shows the number of modelled logged observed:expected ratios for each occupation, generation and age group that were statistically significantly different from zero – either positively (>0) or negatively (<0): a positive ratio indicates more individuals in that cell than expected, and a negative ratio indicates fewer. The first block of data gives the number for each generation by age combination (the maximum possible in each cell, and each pair of cells for each occupation, is 10)⁹ and the two lower blocks give the separate sums for each generation and age group (with the maximum possible being 30).

Several clear patterns can be discerned from the summary tables at the foot of each block. For example, most first-generation groups – irrespective of age and ancestry – were significantly under-represented in the two white-collar occupational groups (they have significant ratios in the <0 columns), and significantly over-represented in the two blue-collar groups and also among the unemployed (the >0 columns). Third-generation groups, on the other hand, were more likely to be over- than under-represented in the white-collar occupations, indicating a clear social mobility shift characteristic of economic integration by the immigrant groups. Across the age groups, there were clear differences between those aged 20-29, on the one hand, and those aged 50-69, on the other: the former are under-represented in the professional and semi- and un-skilled occupations, but over-represented in the other two occupational categories plus among the unemployed; those aged 50-69 show the reverse polarisation – over-represented in the occupational groups at the two ends of the status spectrum (professional and semi- and un-skilled) and under-represented in the other three.

The overall picture from Table 4 is of very substantial differences across generational and age groups, therefore. For each row in the summary blocks there is a potential total of 150 significant differences, either positive or negative. For the three generations there were 118, 109 and 83 respectively, indicating that the great majority of differences by generation were significantly different from zero – but more so in the first generation than the third. Similarly, there were 117, 111 and 84 significant differences for the three age groups. For those longest-established in Australia and the oldest among them, therefore, the number in each occupational group was more likely to be statistically similar to that for all groups as a whole, compared to the more recent arrivals and the youngest members. But the overall impression is that across the ancestry groups, the different age and generational groups had statistically significant different occupational distributions.

Given that the majority of generational and age groups had occupational distributions significantly different from those expected, does this also imply significant differences among the ten ancestry groups within each generation and age group? Table 5 summarises the number of significant differences in each, recalling that from the discussion of the example in Table 2 the maximum number possible is nine. Only two of the 45 cells approach

⁹ For example, the sum of professions in the 1st generation aged 20-69 >0 is 6; the sum for age group 20-29 for all three generations >0 is 2.

that maximum: there are seven significant differences in the rank ordering of the ten groups among those aged 30-49 in the first generation for the semi-/un-skilled occupational group, and also six for the unemployed group.

One conclusion stands out from this summary table, therefore: there was a clear generational gradation in the number of significant differences between pairs of immigrant groups, with 56 (of a possible total of 135) in the first generation, 29 in the second, and just 6 in the third. The first generation had many more significant differences in the oldest two of the three age groups, whereas in the second they were concentrated in the younger two groups. But the dominant finding is that among third generation Australian immigrants there were very few significant differences across the ten ancestry groups studied here in their occupational distributions. Differences in the first generation had largely disappeared and – in Borjas’ terminology – there had been ‘regression toward the mean’; all groups had similar occupational distributions by the third generation; the melting-pot was working.

What of the detailed rank ordering of the ten ancestry groups; are there any common patterns? The five columns on the left-hand side of Table 6 rank order the ten according to their modelled logged ratios for each of the five occupational groups among the first-generation 30-49 year-olds; those with a negative ratio are shown in italics and those with a positive ratio in bold. The first column – for the professional and managerial occupations – has the UK and Irish with the largest positive ratios, indicating more in that occupational group than expected, whereas the four refugee groups – at the head of the column – have negative values, indicating fewer than expected. The reverse situation is shown for the semi- and un-skilled occupations; the Irish and UK immigrants again occupy one extreme of the ranking for unemployed persons, with the two Lebanese (but not Yugoslav) groups in two of the three lowest places. In general, therefore, the integration process for that generation and age group saw those from the UK and Ireland having moved in substantial numbers into the higher status occupations sooner than the Lebanese and Former Yugoslavs. As a consequence those with British Isles’ ancestry were under-represented and those from Lebanon and the Former Yugoslavia over-represented in the lower status occupations and among the unemployed. Those with Greek, Italian, Chinese and Indian ancestry occupied intermediate positions in most of the rankings, although the Greeks and Italians had the highest levels of over-representation in the clerical and sales occupational group – indicative of the segments of the labour market to which they gravitated within Australian towns and cities – and the Chinese and Indians were the most under-represented groups in the skilled blue-collar jobs. Again, therefore, the evidence points to the relevance of the melting-pot rather than the segmented/truncated assimilation models: all groups were moving in the same direction, though at different speeds.

Economic integration II: incomes

Table 7 replicates Table 4 for the analyses of income distributions. The number of ancestry groups with more rather than fewer than expected people in the lowest income category declined from the first to the third generation, for example, but increased slightly across the three age groups. Unsurprisingly, young people, and especially those in the first generation, were very unlikely to be over-represented in the highest income groups. Overall, there was an increase in the numbers earning low incomes between the first two generations followed by a decrease in the third; regarding the highest incomes, there was a slight increase between the first two generations.

As with the occupational distributions, there was a substantial number of statistically significant differences in income distributions by generation and age across the ten ancestry groups. Summaries of the number of significant differences at the foot of Table 7 also show that those significant differences were most prevalent among the first generation and young immigrants. Of the possible 150 significant differences there were 134 for the first generation, 118 for the second and 80 for the third; similarly, there were 125 for those aged 20-29, 107 for those aged 30-49, and 100 for the oldest group.

Table 8 replicates Table 5 with a summary of the number of significant differences between pairs of ancestral groups in the rank orderings of their logged ratios, by generation and age group. The same clear pattern emerges for incomes across the generations as for the occupational groups, with 44 significant differences in the first, 14 in the second, and just 5 in the third. Most of the significant differences in the first generation were in the older two age groups.

The second block of five columns in Table 6, referring again to first-generation immigrants aged 30-49 but this time for the five income groups, provides a further set of clear rankings indicating the different pace of integration experienced by the various groups. Thus the Lebanese Christians, Lebanese Muslims and Former Yugoslav Muslims – but not the Former Yugoslav Christians (most of whose first-generation members arrived in Australia earlier than those in the other three groups) – have the highest levels of over-representation in the two low income groups and the highest levels of underrepresentation in the three higher income groups; those with UK and Irish ancestry are in the opposite situation – overrepresented in the higher and underrepresented in the lower income groups. Again, the various ancestry groups proceeded towards full integration at different rates.

Full Integration?

Borjas argued that if, by the third generation, the occupational and income distributions for immigrant groups had ‘regressed toward the mean’, there should be at most only minimal differences between the two (immigrant and non-immigrant) population segments. Table 9 addresses this, comparing the two distributions for all ten ancestry groups in the third generation, by age group, with those for the non-immigrant Australian population – those who did not claim an extra-Australian ancestry.

The conclusion is very clear. Third-generation settlers in Australia scarcely differed from their host society in either their occupational or their income distributions, within each of the three age groups comprising the working-age population. The maximum percentage point difference in any pair of columns is just five – in the percentage aged 50-69 earning the lowest weekly incomes (with more Australians than immigrants in that category). There is only one four-point difference and there are four three-point differences. Of course, the third generation, as Table 1 showed, is dominated by those with UK and Irish ancestry, whose pace of integration has generally been greater than that of the other groups. It could be, therefore, that analyses in two or more decades time might falsify that conclusion, with third generation members of some ancestral groups having, for example, lower incomes than others. However, the results of the analyses reported in Tables 4-7, based on an analytical procedure that takes particular account of small numbers in some cells of a contingency table, do not support such an argument. Whatever the ancestral group, the second and, especially, third generations rarely differ significantly from each other in their occupational structures and income distributions.

Borjas further argued that inter-generational movement towards economic integration may not occur evenly across ethnic groups. This is addressed in Table 10 which, for each ancestry group, excepting Lebanese Muslims because of lack of numbers, compares its occupational distribution with that of people nominating Australian ancestry. Here, however, the third generation experience among ethnic groups in Australia indicates almost complete integration following the linear model, similar to the Canadian experience. With only two exceptions, ethnic groups are above or close to the Australian norm in all occupational categories, with a general emphasis on white collar occupations, especially among the Irish and Lebanese Christians. Among the two exceptions, Italians show less emphasis on managerial-professional positions, but with a higher proportion in clerical-sales jobs. The main variant is Lebanese Muslims who are relatively low in managerial-professional employment levels but above the Australian average in clerical-sales and technical-skilled positions. The stand-out difference for this group is its high rate of unemployment, however, reflecting more general concern about the social and economic integration of Muslims in Australia (Hassan, 2010).

Conclusions

This paper has tested two hypotheses regarding the economic integration of different immigration groups in Australia. It has deployed an original, bespoke data set cross-classifying the entire Australian workforce by age, generation and ancestry group, according to both their occupational and income distributions – with additional information on their educational qualifications. An innovative statistical procedure designed to identify the significant differences in such large contingency tables – containing 450 cells each, with very substantial variations in both the observed and expected cell values – has identified where there are major differences.

The conclusions are clear and are in line with the melting-pot model; there is no evidence that members of any of the groups whose economic situations have been analysed here have experienced substantial disadvantages in their adaptation to the Australian labour market. Over three generations the economic circumstances of the selected immigrant groups in Australia have converged and become no different overall from those of Australians who claim no overseas ancestry. By the third generation there has been full economic (structural) integration across all ten of the ancestry groups studied. The pace of that integration has varied across the groups, and the analyses showed significant differences in their first and second generations in both their occupational structures and income distributions. Nevertheless, by the third generation there were very few significant differences between pairs of immigrant groups in their proportions in any one occupational or income category. The ten ancestry groups chosen here to reflect the four main waves of immigration to Australia, have converged on that common position at different rates, holding constant age and generation; in general, those with UK and Irish ancestries integrated at a faster rate than, say, those from Lebanon and the Former Republic of Yugoslavia. Whatever the starting point, in terms of both occupation and incomes, non-immigrant and third-generation immigrant Australians form a homogeneous workforce.

As has been widely noted, there are substantial differences between countries in the rates of immigrant economic integration – reflecting a combination of local social, economic and cultural circumstances plus the cultural and other characteristics of the migrant groups. The Australian experience may not be shared by other multi-cultural, multi-ethnic societies, therefore, but the analyses presented here have identified no clear evidence that some groups

have integrated more readily than others there. Those analyses have focused on only a selection of the many ancestral groups now resident in Australia, and further questions remain to be addressed – have there been differences within some if not all of the ancestry groups in the rates of economic integration between men and women, for example, and have those who live in the major cities had different experiences from those in the smaller towns and rural areas?¹⁰ The analyses presented here have provided a framework within which such questions can be addressed. Australia, from the available data, appears to be a classic ‘melting-pot’.

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¹⁰ One difficulty in addressing these questions is that, even though data are available for the entire population nevertheless given the size of the matrices – five generations and three age groups plus five occupational and five income groups – for each ancestry group the number of cells with small numbers of observations, and thus relatively unreliable estimates of observed:expected ratios can be quite large. Adding further classifications – male:female and/or city:urban:rural, for example – would rapidly exacerbate that problem.

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Table 1. Generational and age structures of the ten ancestry groups in Australia – percentages of those in the workforce.

| | Generation | | | Age Group | | | Total |
|--------------------------|-----------------|-----------------|-----------------|-----------|-------|-------|-----------|
| | 1 st | 2 nd | 3 rd | 20-29 | 30-49 | 50-69 | |
| UK | 16 | 8 | 76 | 19 | 46 | 35 | 3,019,079 |
| Ireland | 8 | 4 | 88 | 20 | 45 | 35 | 507,027 |
| Greece | 19 | 72 | 9 | 13 | 63 | 24 | 110,075 |
| Italy | 18 | 57 | 25 | 19 | 52 | 29 | 273,199 |
| China | 86 | 11 | 3 | 37 | 43 | 20 | 229,764 |
| India | 95 | 4 | 1 | 39 | 52 | 9 | 177,045 |
| Fmr Yugoslavia Christian | 51 | 47 | 2 | 18 | 56 | 26 | 90,554 |
| Fmr Yugoslavia Muslim | 86 | 13 | 1 | 33 | 51 | 16 | 4,977 |
| Lebanon Christian | 48 | 48 | 4 | 22 | 50 | 28 | 37,302 |
| Lebanon Muslim | 52 | 47 | 1 | 38 | 51 | 11 | 18,079 |
| TOTAL | 24 | 13 | 63 | 21 | 47 | 32 | 4,467,101 |

Table 2. Rank ordering of the ten ancest7 groups according to their modelled ratios, for two generations, age groups and occupations

| | O | E | LowCI | Ratio | HighCI | Sig |
|---|--------|--------|-------|-------|--------|-----|
| <i>Second generation, aged 20-29, Professional and Managerial</i> | | | | | | |
| Yugoslav Muslim | 49 | 91 | -0.71 | -0.52 | -0.34 | |
| Lebanese Muslim | 1,142 | 1,900 | -0.53 | -0.48 | -0.44 | N |
| UK | 14,240 | 20,263 | -0.37 | -0.35 | -0.32 | Y |
| Yugoslav Christian | 2,497 | 3,368 | -0.31 | -0.28 | -0.24 | Y |
| Ireland | 1,447 | 1,838 | -0.26 | -0.22 | -0.17 | N |
| Lebanese Christian | 1,926 | 2,305 | -0.20 | -0.16 | -0.12 | N |
| Italy | 4,234 | 4,978 | -0.17 | -0.14 | -0.11 | N |
| Greece | 2,479 | 2,845 | -0.15 | -0.11 | -0.08 | N |
| India | 1,644 | 1,470 | 0.09 | 0.13 | 0.18 | Y |
| China | 9,105 | 7,438 | 0.20 | 0.22 | 0.25 | Y |
| <i>First generation, aged 30-49, Semi- and Un-skilled</i> | | | | | | |
| Ireland | 1,573 | 2,642 | -0.54 | -0.49 | -0.45 | |
| UK | 22,632 | 34,048 | -0.41 | -0.38 | -0.36 | Y |
| China | 12,292 | 13,012 | -0.06 | -0.03 | -0.01 | Y |
| Italy | 1,802 | 1,771 | -0.00 | 0.04 | 0.08 | Y |
| India | 13,289 | 12,372 | 0.06 | 0.09 | 0.12 | N |
| Greece | 938 | 789 | 0.14 | 0.19 | 0.25 | Y |
| Lebanese Christian | 1,277 | 1,074 | 0.14 | 0.19 | 0.24 | N |
| Lebanese Muslim | 1,320 | 829 | 0.44 | 0.48 | 0.53 | Y |
| Yugoslav Christian | 5,293 | 2,889 | 0.60 | 0.63 | 0.66 | Y |
| Yugoslav Muslim | 577 | 257 | 0.76 | 0.82 | 0.88 | Y |

Key: O – observed number; E – expected number; Ratio – the modelled ratio; LowCI – the lower credible interval; HighCI – the higher credible interval; Sig – whether the ratio is significantly different from that in the previous row (Y – Yes; N – No).

Table 3. Stepwise regression analyses of the percentage of individuals with the specified educational qualifications, showing regression coefficients and their standard errors

| Variable | Year 10 | | Year 12 | | Tertiary | |
|--------------------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | 1 | 2 | 1 | 2 | 1 | 2 |
| Constant | 5.7 (1.7) | 10.3 (2.6) | 83.6 (3.9) | 79.7 (6.1) | 46.3 (3.6) | 46.3 (4.5) |
| Generation (comparator: First) | | | | | | |
| Second | 4.9 (1.9) | 4.9 (1.7) | -2.0 (4.3) | -1.9 (4.1) | 1.4 (3.9) | 1.4 (3.0) |
| Third | 13.1 (1.9) | 13.2 (1.8) | -17.9 (4.4) | -18.3 (4.1) | -4.2 (4.2) | -7.4 (3.2) |
| Age group (comparator: 20-29) | | | | | | |
| 30-49 | 5.7 (1.9) | 5.7 (1.7) | -11.1 (4.3) | -11.1 (4.0) | -7.8 (4.0) | -7.8 (3.0) |
| 50-69 | 13.2 (1.9) | 13.3 (1.8) | -30.5 (4.4) | -30.9 (4.2) | -19.2 (4.1) | -20.8 (3.2) |
| Ancestry (comparator: UK) | | | | | | |
| Irish | -4.2(3.1) | | -0.7(7.2) | | 7.0(5.3) | |
| Greek | -9.5 (3.1) | | 5.3(7.2) | | 0.1(5.3) | |
| Italian | -0.4(3.1) | | -4.1(7.2) | | -1.5(5.3) | |
| Yugoslav Christian | -5.4(3.1) | | 7.8(7.2) | | -11.0(6.1) | |
| Yugoslav Muslim | -5.1(4.0) | | 6.0(9.3) | | -10.0(6.9) | |
| Chinese | -10.5 (3.1) | | 16.2 (7.2) | | 17.9 (5.4) | |
| Indian | -6.6 (3.1) | | 12.8(7.2) | | 14.6 (5.4) | |
| Lebanese Christian | -3.5(3.1) | | 7.7(7.2) | | 2.4(5.4) | |
| Lebanese Muslim | -1.2(3.2) | | -9.9(7.5) | | -17.6 (5.5) | |
| R ² | 0.52 | 0.60 | 0.44 | 0.51 | 0.20 | 0.54 |

Note: Statistically significant coefficients at the 0.05 level or better are shown in bold.

Table 4. Number of ancestry groups in each generation and age group with statistically significant modelled logged ratios greater than and less than zero in the five occupational categories.

| Generation/ Age Group | Occupation | | | | | | | | | |
|--------------------------|--------------|----|----------|----|-----------|----|-------------|----|------------|----|
| | Professional | | Clerical | | Technical | | S/Unskilled | | Unemployed | |
| | >0 | <0 | >0 | <0 | >0 | <0 | >0 | <0 | >0 | <0 |
| 1 20-29 | 0 | 10 | 5 | 3 | 7 | 2 | 4 | 4 | 9 | 0 |
| 30-49 | 3 | 6 | 0 | 7 | 8 | 2 | 6 | 3 | 7 | 3 |
| 50-69 | 3 | 7 | 1 | 9 | 7 | 1 | 7 | 1 | 4 | 5 |
| 2 20-29 | 2 | 8 | 10 | 0 | 7 | 2 | 0 | 9 | 8 | 1 |
| 30-49 | 6 | 2 | 5 | 4 | 5 | 3 | 1 | 6 | 2 | 5 |
| 50-69 | 6 | 0 | 5 | 0 | 0 | 8 | 2 | 3 | 2 | 6 |
| 3 20-29 | 0 | 7 | 7 | 0 | 6 | 0 | 1 | 7 | 6 | 0 |
| 30-49 | 6 | 1 | 0 | 1 | 1 | 2 | 1 | 4 | 2 | 5 |
| 50-69 | 6 | 0 | 1 | 0 | 0 | 6 | 3 | 3 | 0 | 4 |
| <i>Sum – Generations</i> | | | | | | | | | | |
| 1 | 6 | 23 | 6 | 19 | 22 | 5 | 17 | 8 | 20 | 8 |
| 2 | 14 | 10 | 20 | 4 | 12 | 13 | 3 | 18 | 12 | 12 |
| 3 | 12 | 8 | 8 | 1 | 7 | 8 | 5 | 14 | 8 | 9 |
| <i>Sum – Age Groups</i> | | | | | | | | | | |
| 20-29 | 2 | 25 | 22 | 3 | 20 | 4 | 5 | 20 | 23 | 1 |
| 30-49 | 15 | 9 | 5 | 12 | 14 | 7 | 8 | 13 | 11 | 13 |
| 50-69 | 15 | 7 | 7 | 9 | 7 | 15 | 12 | 7 | 6 | 15 |

Table 5. Number of statistically significant differences between adjacent pairs of ancestry groups in their modelled logged ratios, by generation, age group and occupational category

| Generation | 1 | | | 2 | | | 3 | | |
|----------------------------|---|---|---|---|---|---|---|---|---|
| Age Group | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| Managerial/Professional | 1 | 4 | 5 | 4 | 2 | 1 | 0 | 0 | 1 |
| Clerical/Sales | 1 | 3 | 4 | 0 | 1 | 0 | 0 | 0 | 0 |
| Technicians/Skilled Trades | 3 | 4 | 4 | 1 | 2 | 1 | 0 | 0 | 0 |
| Semi- and Unskilled | 2 | 7 | 5 | 4 | 5 | 1 | 1 | 1 | 0 |
| Unemployed | 4 | 6 | 3 | 3 | 2 | 2 | 1 | 1 | 1 |

Key to age groups: 1 – 20-29; 2 – 30-49; 3 – 50-69.

Table 6. Rank ordering of the ten ancestry groups according to their modelled logged ratios for the five occupational and income groups: those in the first generation aged 30-49 (negative ratios are shown in italics and positive ratios in bold)

| | Occupation | | | | | Income Group | | | | |
|----|------------|-----------|-----------|-----------|-----------|--------------|-----------|-----------|-----------|-----------|
| | PM | CS | Te | SU | Un | 200 | 400 | 800 | 1250 | 2000 |
| 1 | <i>YM</i> | <i>LM</i> | <i>In</i> | <i>Ir</i> | <i>Ir</i> | <i>Ir</i> | <i>Ir</i> | <i>LM</i> | <i>LM</i> | <i>LM</i> |
| 2 | <i>LM</i> | <i>Ir</i> | <i>Ch</i> | <i>UK</i> | <i>UK</i> | <i>In</i> | <i>UK</i> | <i>LC</i> | <i>YM</i> | <i>YM</i> |
| 3 | <i>YC</i> | <i>YM</i> | Gr | <i>Ch</i> | <i>It</i> | <i>UK</i> | In | <i>YM</i> | <i>LC</i> | <i>LC</i> |
| 4 | <i>LC</i> | <i>In</i> | UK | It | YC | <i>It</i> | YC | <i>UK</i> | It | <i>Ch</i> |
| 5 | <i>Gr</i> | <i>Ch</i> | YC | In | YM | <i>YC</i> | It | <i>Ir</i> | Ch | <i>YC</i> |
| 6 | <i>It</i> | <i>LC</i> | It | Gr | Gr | <i>Ch</i> | Gr | <i>Gr</i> | YC | <i>It</i> |
| 7 | Ch | <i>YC</i> | Ir | LC | Ch | <i>Gr</i> | Ch | Ch | In | <i>Gr</i> |
| 8 | In | <i>UK</i> | LC | LM | LC | LC | YM | In | UK | In |
| 9 | UK | It | YM | YC | In | YM | LC | YC | Ir | UK |
| 10 | Ir | Gr | LM | YM | LM | LM | LM | It | Gr | Ir |

Key

Occupations: PM – professional and managerial; CS – clerical and sales; Te – technical; SU – semi- and un-skilled; Un – unemployed.

Income groups: 200 – A\$200-399; 400 – A\$400-799; 800 – A\$ 800-1,249; 1250 – A\$1,250-1,999; 2000 – A\$2,000<.

Immigrant groups: UK – United Kingdom; Ir – Ireland; Gr – Greece; It – Italy; Ch – China; In – India; YC – Former Yugoslav Christians; YM – Former Yugoslav Muslims; LC – Lebanese Christians; LM – Lebanese Muslims.

Table 7. Number of ancestry groups in each generation and age group with statistically significant modelled logged ratios greater than and less than zero in the five income groups.

| Generation/ Age Group | Income | | | | | | | | | |
|--------------------------|-----------|----|-----------|----|-------------|----|---------------|----|----------|----|
| | \$200-399 | | \$400-799 | | \$800-1,249 | | \$1,250-1,999 | | \$2,000< | |
| | >0 | <0 | >0 | <0 | >0 | <0 | >0 | <0 | >0 | <0 |
| 1 20-29 | 1 | 6 | 9 | 1 | 5 | 1 | 1 | 5 | 0 | 9 |
| 30-49 | 2 | 7 | 8 | 2 | 4 | 2 | 4 | 3 | 3 | 5 |
| 50-69 | 6 | 3 | 7 | 1 | 1 | 8 | 0 | 6 | 2 | 6 |
| 2 20-29 | 1 | 7 | 10 | 0 | 8 | 1 | 0 | 8 | 0 | 10 |
| 30-49 | 0 | 9 | 6 | 2 | 4 | 3 | 7 | 1 | 8 | 2 |
| 50-69 | 1 | 6 | 7 | 0 | 0 | 2 | 0 | 2 | 3 | 1 |
| 3 20-29 | 0 | 7 | 7 | 0 | 6 | 0 | 0 | 6 | 0 | 8 |
| 30-49 | 1 | 6 | 3 | 1 | 3 | 0 | 6 | 1 | 7 | 1 |
| 50-69 | 0 | 6 | 3 | 0 | 0 | 2 | 0 | 3 | 4 | 2 |
| <i>Sum – Generations</i> | | | | | | | | | | |
| 1 | 9 | 16 | 24 | 4 | 10 | 11 | 5 | 14 | 5 | 20 |
| 2 | 2 | 22 | 23 | 2 | 12 | 6 | 7 | 11 | 11 | 13 |
| 3 | 1 | 19 | 13 | 1 | 9 | 2 | 6 | 10 | 11 | 11 |
| <i>Sum – Age Groups</i> | | | | | | | | | | |
| 20-29 | 2 | 20 | 26 | 1 | 19 | 2 | 1 | 19 | 0 | 27 |
| 30-49 | 3 | 22 | 17 | 5 | 11 | 5 | 17 | 5 | 18 | 8 |
| 50-69 | 7 | 15 | 17 | 1 | 1 | 12 | 0 | 11 | 9 | 9 |

Table 8. Number of statistically significant differences between adjacent pairs of ancestry groups in their modelled logged ratios, by generation, age group and income group

| Generation | 1 | | | 2 | | | 3 | | |
|----------------|---|---|---|---|---|---|---|---|---|
| Age Group | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| A\$200-399 | 3 | 4 | 5 | 1 | 1 | 1 | 0 | 0 | 1 |
| A\$400-799 | 1 | 3 | 3 | 1 | 2 | 1 | 0 | 1 | 0 |
| A\$800-1,249 | 2 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| A\$1,250-1,999 | 0 | 4 | 3 | 0 | 2 | 1 | 1 | 0 | 1 |
| A\$2,000< | 0 | 4 | 5 | 1 | 3 | 0 | 0 | 1 | 0 |

Key to age groups: 1 – 20-29; 2 – 30-49; 3 – 50-69.

Table 9. Occupational and income distributions (percentages of column totals) of third-generation ancestral and non-ancestral Australians, by age group.

| | 20-29 | | 30-49 | | 50-69 | |
|----------------------------|-------|-----|-------|-----|-------|-----|
| | Im | Aus | Im | Aus | Im | Aus |
| <i>Occupation</i> | | | | | | |
| Managerial/Professional | 26 | 23 | 38 | 35 | 39 | 35 |
| Clerical/Sales | 36 | 36 | 31 | 31 | 31 | 32 |
| Technicians/skilled trades | 18 | 20 | 13 | 14 | 11 | 11 |
| Semi- and Un-skilled | 13 | 14 | 14 | 16 | 16 | 19 |
| Unemployed | 6 | 7 | 4 | 4 | 3 | 3 |
| <i>Income</i> | | | | | | |
| A\$200-399 | 19 | 20 | 13 | 15 | 23 | 28 |
| A\$400-799 | 36 | 37 | 26 | 26 | 28 | 29 |
| A\$800-1,249 | 29 | 28 | 25 | 25 | 22 | 20 |
| A\$1,250-1,999 | 14 | 13 | 23 | 23 | 18 | 15 |
| A\$2000< | 3 | 3 | 13 | 12 | 10 | 8 |

Im – immigrant groups; Aus – Australian ancestry

Table 10. Occupational (percentages of row totals) of third-generation non-ancestral Australians, all age groups

| <u>Ancestry</u> | <u>Occupation Group</u> | | | | |
|-----------------------|-------------------------|-----------------|-------------------|---------------------|-----------------|
| | <u>Man/Prof</u> | <u>Cler/Sal</u> | <u>Tech/Skill</u> | <u>Semi/Unskill</u> | <u>Unemploy</u> |
| Australian | 31.9 | 32.6 | 14.8 | 16.2 | 4.5 |
| British | 33.4 | 33.2 | 13.6 | 15.0 | 4.8 |
| Irish | 38.6 | 36.3 | 8.1 | 12.5 | 4.7 |
| Greek | 32.1 | 32.4 | 14.5 | 16.3 | 4.8 |
| Italian | 26.7 | 38.6 | 16.1 | 12.9 | 5.8 |
| Chinese | 36.4 | 32.1 | 10.0 | 17.5 | 4.0 |
| Indian | 31.8 | 34.0 | 13.5 | 15.1 | 5.6 |
| Fmr Yugo. (Christian) | 34.1 | 35.8 | 18.1 | 10.7 | 3.2 |
| Lebanese (Christian) | 38.4 | 36.8 | 12.3 | 7.0 | 5.5 |
| Lebanese (Muslim) | 22.7 | 39.8 | 18.7 | 11.4 | 7.3 |

Note: Muslims from the former Yugoslavia were excluded for lack of 3rd generation numbers.