Immigrants and the Distribution of Income: National and International Comparisons

Author:
Saunders, Peter

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by

Peter Saunders

THE UNIVERSITY OF
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Anthony King
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Abstract

This paper explores and compares the income distribution position of immigrants and non-immigrants using three different approaches. The first two of these require the existing dichotomous distinction between immigrant and non-immigrant families or income units - the appropriate units of analysis for distributional purposes - to be extended to a more complex but more appropriate three-way classification. This extended classification is then used to compare distributional positions using Australian income survey data for 1990. The results indicate that there is virtually no difference between the distributional profiles of immigrant and non-immigrant units. A similar analysis is then applied to data for four countries - Australia, Canada, (West) Germany and the United States - using data from the Luxembourg Income Study. Despite some data limitations, the analysis indicates that immigrants perform considerably better, in terms of distributional outcomes, in Australia and Canada than in either Germany or the United States. Finally, comparisons are made of the 1986 wage incomes of two groups of working-age Italians, one still residing in Italy and another which had emigrated to Australia. Using a human capital earnings function, the analysis indicates that those Italians who emigrated to Australia had earnings which were generally well above what is estimated they would have been earning if they had remained in Italy.

1 Introduction

This paper addresses two topics which have been generating considerable research interest and policy concern in recent times. The first is the distribution of income, an area of research which has expanded enormously over the last two decades. This has been a consequence of both methodological advance and improved data, both of which have been fuelled by the growing interest in inequality in policy circles and amongst the public at large. The second topic is immigration, which has also increased dramatically throughout the world over the last two decades and become a contentious policy issue in many countries. Accompanying this growth in the overall rate of immigration have been fundamental changes in the nature of immigration, with traditional permanent migratory moves declining relative to temporary migration of contract workers, illegal immigrants and refugees (OECD, 1993). These changes have affected the source-country pattern of immigrants to traditional destination countries and, because of chain-migration effects (Birrell, 1990) will continue to affect future patterns (Stahl et al., 1993).

Research on both income distribution and immigration has, with few exceptions, proceeded along parallel paths, despite the fact that there are obvious points of connection. One of these arises in the labour market. A good deal of research into the economic impact of immigration has focused on the labour market outcomes of immigrants (e.g. Borjas, 1993; Chiswick, 1978; Chiswick and Miller, 1985). However, despite the fact that access to employment and to earnings is a major determinant of distributional position, relatively little research has systematically followed up on the relationship between immigration and income distribution. Two exceptions are the studies by Buss et al. (1989) and Rodgers (1981), although the latter is concerned with internal migratory movements rather than cross-national migration.

The need for more research in this area has long been acknowledged. For example, a recent Australian review of the economic impact of immigration notes that:

> The effect of immigration on income distribution is very much a matter for empirical determination, but there is as yet little evidence on which to proceed. (Foster and Baker, 1991: 126)

Even so, some of the research which has taken place seems to arrive at conclusions on the basis of somewhat dubious evidence. Thus Simon (1989), for example, observes that even in a country like the United States where the population has been 'swelled greatly' (Simons, 1989: 261) by immigration for two centuries, the income distribution 'is not particularly wide' (p. 261). This point is taken up by Foster and Baker (1991) in their Australian review, where they argue that:

> ... the fact that countries such as the United States and Australia, with long histories of immigration, have internationally low levels of income inequality, suggests that longer-term pressures towards equalisation must offset any intrinsically adverse short-term impacts. (Foster and Baker, 1991: 126)

Without more detailed information, it is difficult to know what to make of such claims. It is important, as Borjas (1987) makes clear, to separate aging and cohort effects in any analysis of immigrant incomes, although this is extremely difficult to do when using data from a single cross-section. It is also necessary to emphasise that the scope of any cross-country comparisons will have a big impact on the inequality rankings of countries like Australia and the United States. Among industrial nations, the distributional comparisons derived from the Luxembourg Income Study (LIS) database show, contrary to the claims made by Simon (1989), that both countries are characterised by a relatively large degree of income inequality. (Atkinson, Rainwater and Smeeding, 1994, forthcoming; Smeeding, O'Higgins and Rainwater, 1990; Smeeding and Coder, 1993).[1]

Of interest in this context is the recent study by Borjas (1987) which addresses the link between income inequality and immigration in both theoretical and empirical terms. Borjas notes that, for a given differential in

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[1]   Even for the broader range of countries included in the Human Development Index (HDI) constructed by the United Nations Development Program (UNDP, 1993), the rankings of both Australia and the United States decline when the HDI is adjusted for differences in income inequality (UNDP, 1993: 17).

absolute income levels, the degree of inequality in the income distributions of the source (S) and destination (D) countries will influence the incentive for individuals to move from S to D. Thus, if country D has a more equal distribution than country S, migration from S to D will effectively 'insure' low income workers against poor labour market outcomes while serving to 'tax' the successes of high income immigrant workers. This implies that as inequality in source-country (S) increases relative to inequality in the destination-country (D), high income workers in S will face a reduced incentive to migrate to D and, as a consequence, the average (income-producing) quality of D's immigrants will fall. The empirical work reported by Borjas confirms that the degree of source country income inequality has a significant inverse effect on the earnings and incomes (relative to the measured skills) of immigrants in the United States (Borjas, 1987).

Against this background, this paper presents results from a comparative analysis of the income distribution position of immigrants. The comparisons are conducted in several layers and in two dimensions. The basic approach is descriptive, focusing on comparing the distributional position of immigrant and non-immigrant groups. No attempt is made to estimate the **impact** of immigration on the distribution of income, although the results of an analysis of this issue are presented in the report by Saunders and King (1994).

The distributional comparisons are undertaken in three ways; first, by comparing immigrants and non-immigrants within a single country (Australia); second, by extending this analysis to several countries using data from the Luxembourg Income Study (LIS); and third, using LIS data as a basis for comparing the incomes of those born in one specific country (Italy) who are still residing in that country, with Italian-born immigrants living in Australia. Each type of analysis employs a different counterfactual to compare immigrant and non-immigrant incomes, and while the results presented here are preliminary, they will hopefully contribute to a better appreciation of some of the underlying issues and effects.

The paper is organised as follows: Section 2 provides a brief overview of the scale of immigration in Australia and describes how immigration policies have changed in recent years. Section 3 addresses an issue which has largely been ignored to date in the literature, the question of how to define an immigrant income unit (or family) for the purposes of

distributional analysis. The practical significance of adopting a range of possible approaches is illustrated using Australian data. Section 4 presents comparisons of the income distributional positions of immigrant and non-immigrant income units living in Australia in 1990, while section 5 presents similar results for four countries using data from the second wave (circa 1985) of LIS. Section 6 employs a human capital model to compare the earnings of a group of Italians who were still residing in Italy in 1986 with the earnings of a second group of Italians who were living in Australia in that year. Section 7 briefly summarises the main findings.

2 Immigration in Australia

Australia, along with Canada, New Zealand and the United States, is a nation where immigration has played a key role in its economic, social, demographic and cultural development. The similarity of experience in all four countries has recently been described in the following terms:

> (All) four countries (are) united by their long-established and distinctive involvement in welcoming, and often actively recruiting, permanent immigrants ... While these countries are not unique in having long-term foreign-born residents, they are distinguished by their ideology of immigrant settlement reflected in entry and settlement policies. Immigrants are viewed as future citizens who will settle permanently. This contrasts with other countries in which rights to citizenship and residence are viewed as existing within a framework of shared ethnicity. (Stahl et al., 1993: 83)

The actual demographic impact of immigration has, however, been a good deal lower in the United States over the last three decades or so than in the other three countries. By 1990, only 8.7 per cent of the US population were foreign-born, compared with 16 per cent in Canada and 14 per cent in New Zealand. The Australian figure was significantly higher again, with around 22 per cent of the population born overseas in 1990. Corresponding figures for a range of European countries in 1989 (1985 for France) were: Belgium, 8.9 per cent; France, 6.8 per cent; Luxembourg, 27.5 per cent; Netherlands,

4.3 per cent; Norway, 3.3 per cent; Sweden, 5.4 per cent; and Switzerland, 15.6 per cent.[2]

It is clear that, however one chooses to measure it, immigration has been of significant proportions in Australia. In purely demographic terms, net overseas migration added just over 1.30 million to the resident population between 1980 and 1992, a period when the total population grew by 2.76 million or 18.6 per cent (Shu et al., 1994, Table 1.1). Immigration thus contributed almost half (47.2 per cent) of total population growth in Australia over this period. Its impact was, however, extremely variable, with the annual rate of net overseas migration varying between 44.5 thousand (in 1992) and 172.8 thousand (in 1988). Year-to-year variations in the immigrant in-take exhibit a clear cyclical pattern, declining sharply in the recessionary periods 1981-83 and 1990-92 (Shu et al., 1994), but growing steadily in most of the intervening period.

For most of the post-war period, Australian immigration policies have exerted entry controls by specifying a restricted number of entry categories and the requirements necessary to fit those categories (Holton and Sloan, 1994). Broadly speaking, there have been four such categories: skill migration and family union (both of which involve application of a 'points system' within some sub-categories), refugees and special eligibility (mainly immigration from New Zealand, where no restriction applies) (Holton and Sloan, 1994: 297).[3]

In financial year 1992-93, these four categories accounted for 29.0 per cent, 42.1 per cent, 14.3 per cent and 13.1 per cent, respectively, of the total number of settler arrivals (Shu et al., 1994, Table 3.2).[4] The breakdown of the immigrant in-take in that year by birthplace was; Oceania (12.5 per cent); Europe (including the former USSR) (29.1 per cent); Asia (43.2 per cent); Africa and the Middle East (10.5 per cent); and North and South

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2   The original cited source for these figures is the OECD (1991a). They have been taken here from Table 3.1 and page 84 of Stahl et al. (1993).

3   The longer-term development of Australian immigration policy is discussed by Smith (1979).

4   There is a small fifth category which contributed 1.5 per cent of the 1992-93 intake.

America (4.6 per cent). This represents an enormous compositional change over the three decades since 1962-63, when immigration from the United Kingdom and Ireland alone accounted for 44.3 per cent of total immigration, Europe as a whole 84.9 per cent, and Asia such a small percentage as not to warrant separate enumeration (Shu et al., 1993, Table 3.3).

These short-term and longer-term changes in the level and composition of the immigrant intake have seen 'the immigration debate' hotly contested in Australia, despite the fact that immigration has been treated as a bi-partisan issue politically - a reaction in large part to the 'White Australia policy' which prevailed for much of the post-war period until its official abandonment in the mid-1970s. In 1989, the Bureau of Immigration Research (BIR) was established by the federal government (it was re-named the Bureau of Immigration and Population Research, BIPR, in 1993) and charged with conducting and funding research on all aspects of immigration and promoting public discussion and understanding of the issues. In 1992-93, the budget of the BIPR was almost $6.9 million, out of total outlays on immigration of $241.8 million by the federal Department of Immigration and Ethnic Affairs.[5]

The research funded by the BIPR, both internal and external, has contributed greatly to the knowledge base relating to immigration issues. A major BIPR-funded report which reviewed the issues went to a second printing before selling out and was released in second edition earlier this year (Wooden et al., 1994) providing ample evidence of the degree of interest in the subject. That review again points to the lack of research devoted to analysing the effects of immigration on income distribution, a situation which has to some extent been rectified by the BIPR-funded research project from which Sections 3 and 4 of this paper draw (Saunders and King, forthcoming).

3   Defining an Immigrant Unit

Defining as immigrants those **individuals** who were born overseas is straightforward and non-controversial. Such a definition can be used

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5   Other federal programs targeted to immigrants in 1992-93 include immigrant education ($90.3 million) and immigrant settlement support ($44.6 million).

directly in, for example, studying the profile and determinants of immigrant earnings, where the focus is explicitly on individuals. However, in income distribution research, the basic unit of analysis generally encompasses a group of related (sometimes unrelated) individuals who live together and are assumed to pool their resources (Atkinson, 1983). The income received by all members of the group is then aggregated, adjusted for need using an equivalence scale and person-weighted in describing the distribution and measuring the degree of inequality (Atkinson and Micklewright, 1992; O'Higgins, Schmaus and Stephenson, 1990; Saunders, Stott and Hobbes, 1991). Although now widely accepted as the best method for linking conventional distributional analysis with the study of the inequality of individual well-being, the method raises issues concerning the degree of income sharing (Jenkins, 1991) and equivalence scale sensitivity (Buhmann et al., 1988) While important, these issues are not discussed further here.

However, what is important in the current context is to recognise that when a **group** of individuals is the basic unit of analysis, the definition and identification of immigrant status becomes more problematical. This is because units may be mixed, in the sense that they can contain some adults who were born overseas and some who were not. Or a family may comprise overseas-born parents and their Australian-born children. In a country like Australia, where immigrants are so prevalent in the population, such cases occur frequently enough to make the issue a substantive one.

Most studies attempt to overcome the problems this raises by in effect ignoring them. This is done by arbitrarily assigning to the unit as a whole the immigrant status of one particular member, the head (or reference person in) the unit, normally the male partner in couples. This might once have been justified, but it no longer seems appropriate. Furthermore, it can lead to the reporting of statistics on the circumstances of 'immigrants' so defined which are extremely misleading. For example, Whiteford (1991) criticises no less an authority than the Australian Bureau of Statistics (ABS) for identifying immigrant families by the immigrant status of the male adult and using this to compare the population ratios of 'immigrant' and 'Australian' families who are in receipt of government cash benefits (ABS, 1989). Whiteford notes that the problem with this approach is that:

> ... the ratios are calculated including people in the numerator (the beneficiary population from a specific birthplace plus their dependants, who may or may not be from the same birthplace) who are not in the denominator, (the total population from that birthplace). (Whiteford, 1991: 13)

The use of such a definition also means that people's immigrant status can change when their family circumstances change (see below).

Despite these kinds of problems, most existing research on immigrants and income distribution, both in Australia (Kakwani, 1986; Meagher and Dixon, 1986) and elsewhere (Simon, 1989; Smeeding, Torrey and Rein, 1988; Sorensen et al., 1992) use the conventional (unit or family head) approach to define the immigrant status of all members of the unit.[6] By way of illustration of the practical importance of such considerations, Table 1 indicates that in Australia in 1990, 17 per cent of all married couple income units had one overseas-born partner and one Australian-born partner. These figures indicate that the percentage of immigrant couples in Australia could be estimated to be as low as 21.8 per cent (defined on the basis of both partners being born overseas) or as high as 38.8 per cent (defined on the basis of at least one partner, male or female, being born overseas).

These problems do not arise in units where there is only one adult present i.e. single people or sole parent families. The problems emerge for couples, where there are four possible approaches to establishing a dichotomous (immigrant/non-immigrant) classification of the immigrant status of a couple on the basis of where the two partners were born.[7]

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6   Simon notes that; 'choosing the appropriate methods of measuring income distribution is a thorny problem..... The family rather than the individual seems the appropriate choice of unit' (Simon, 1989: 255), but does not go on to explore what this implies for the definition of immigrant families. He does, however, cite a range of Australian and Canadian Census-based evidence (e.g. Richmond and Zubrzycki, 1984) which disaggregates families into those where both parents were born in the country of residence, those where both were born elsewhere, and those where only one parent was born elsewhere.

7   The following discussion ignores the immigrant status of children in considering the migrant status of the income unit. The analysis is extended to cover this aspect in Saunders and King (1994, forthcoming).

Table 1: Married Couple Income Units by Birthplace of Male and Female Partners: Australia, 1990

Status	Numbers ('000)	Percentage of all couples (%)
Both partners born in Australia	2421.0	61.2
Male partner only born in Australia	289.5	7.3
Female partner only born in Australia	385.4	9.7
Neither partner born in Australia	862.1	21.8
Total	**3958.0**	**100.0**

Source: 1990 Survey of Income and Housing Costs and Amenities, unit record file.

The first two of these employ the characteristics of just one partner:

i) the traditional **male-priority** definition, under which the unit is deemed to be an immigrant unit if the male partner was born overseas; and

ii) the **female-priority** definition, under which the unit is deemed to be an immigrant unit if the female partner was born overseas.

The other two possible approaches involve consideration of the immigrant status of both partners in the couple:

iii) an **inclusive** definition, under which the unit is deemed to be an immigrant unit if either the male or the female partner was born overseas; and

iv) a **limited** definition, under which the unit is deemed to be an immigrant unit only if both partners were born overseas.

Which of these four alternative definitions is the more useful for income distribution analysis? In an era when the 'male breadwinner' model of families prevailed, there might have been some justification for the traditional definition with its focus on the characteristics of the male partner in couples.

Times have, however, changed and, more often than not, both partners in a couple of working age are active in the paid labour force (King 1993; Saunders 1993). With labour force activity providing the single most important source of income, consideration of the distribution of economic power within couples would suggest that for **analytical** purposes, use of the female's characteristics will have a stronger claim than it had in the past, though it may still have a weaker claim than use of the male's characteristics. For **descriptive** purposes, it would seem that describing the immigrant status of the couple in terms of the immigrant status of the female partner would have an equal claim. On balance, if reference is to be made to the characteristics of just one member in a couple, it is still probably more appropriate in income distribution analysis to refer to the male partner.

Ascribing to the couple the immigrant status of just one partner does, however, seem unduly restrictive. The inclusive definition, which defines couples as immigrant units if either of the partners were born overseas, appears preferable. If immigrant couples are to be defined as those where one or both partners were born overseas, there does not seem to be any strong argument to restrict the former group to couples where it is the male who was born overseas. It was suggested earlier that, if it is deemed necessary to make a choice between referring to the male or female partner, then the former is preferable. The inclusive definition, however, does not demand such a choice. The limited definition is, as its name suggests, restrictive and would result in couples where only one partner was born overseas being defined as non-immigrant. It would be a useful definition for identifying wholly-immigrant couples but the non-immigrant group so-defined would be a rather mixed bag.

These problems of definition stem from the attempt to define, as immigrant or non-immigrant, couples which comprise one partner born overseas and one born in Australia. None of the possible alternative definitions considered above is entirely satisfactory and, as long as the definition of immigrant status allows only two discrete categories (immigrant and non-immigrant) problems will inevitably remain. The question which needs to be asked, and which does not seem to have been addressed systematically elsewhere is **why should the immigrant status classification of units be restricted to just two categories?**

When we look at other characteristics of income units, we do not feel the need to impose a dichotomous classification. Take the analogous example of a classification of units according to their labour force status. At one level, all individual adults can be classified as either earners or non-earners. Then, when we classify income units by earner status, we do not find ourselves trying to decide whether those couples with just one earner should be called 'earner' or 'non-earner' units, or whether they should be classified as such on the basis of the status of the male or female partner. Instead, what we do is create a third category by distinguishing between no-earner, one-earner and two-earner couples (with possible further distinction according to which partner is the earner in a one-earner couple). These distinctions are made because it is recognised that one-earner couples are different from both no-earner couples and two-earner couples.

No-one appears to have argued in support of a dichotomous classification of immigrant status on the grounds that couples comprising one immigrant and one non-immigrant are essentially the same as either couples with two immigrant partners or couples with no immigrant partners. Or, specifically with regard to the traditional male-priority definition, no-one seems to have argued that couples with one immigrant and one non-immigrant are essentially the same as couples with no immigrant partners when it is the female who is the immigrant and essentially the same as couples with two immigrant partners when it is the male who is the immigrant.

The traditional (male priority) dichotomous approach also leads to anomalous situations in which changes in the income unit status of individuals can also change their immigrant status. Thus, if an overseas-born female resident marries an Australian-born male, her immigrant status changes from overseas-born to Australian-born. If they separate, it will change back again. If, on separation, they have children who then live with their mother, their status will also change along with that of their mother. As the number of marital dissolutions and re-marriages increase, the number of instances where these circumstances arise will increase.

In summary **there does not appear to be any good reason to retain a dichotomous classification of the immigrant status of income units.** Ultimately, how immigrant status is determined depends upon the purpose at hand. The arguments for extending the definition in the context of distributional analysis relate partly to the appropriate choice of unit for

distributional purposes, but also because an extended definition better reflects the reality of societies in which immigrant and non-immigrant adults are increasingly living together.

Accordingly, it was proposed by Saunders and King (1994, forthcoming) that a basic definition of the immigrant status of income units should include the following **three** categories:

i)   immigrant units;

ii)   non-immigrant units; and

iii)   mixed units.

This categorisation, termed the **extended definition**, clearly has no impact on the classification of one-adult income units.   Differences do arise, however, in the case of two-adult units, who would   be assigned an immigrant status as follows:[8]

-      immigrant (where **both** adults were born overseas);

-      non-immigrant (where **neither** adult was born overseas); and

-      mixed (where **one** adult was born overseas).

In the two following sections, the extended definition is employed to describe the position of immigrants in the Australian income distribution (Section 3) and (in Section 4) to compare the distributional position of immigrants in Australia, Canada, (West) Germany and the United States.

4   The Distributional Position of Immigrants in Australia

In locating immigrants in the overall distribution of income and making comparisons with the position of the Australian-born population, attention

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8   The implications of the adoption of this approach are discussed in detail in Saunders and King (forthcoming). It should be acknowledged that even under this extended classification, the immigrant status of mixed units may change if the adult partners divorce or separate. But at no time will an overseas-born adult be classified as belonging to a non-immigrant income unit (or vice versa).

focuses on two specific distributional indicators. These are the distribution of gross income unit income among income units and the distribution of equivalent disposable income unit income among individuals. The first measure can be justified on the grounds that it is the most common of all distributional indicators, the second on the grounds that it more closely approximates the distribution of individual well-being in the community at large.

The data used in the analysis is contained on the unit record file based on the 1990 Survey of Income and Housing Costs and Amenities. The survey, undertaken by the ABS between October and December 1990, provides income on a current (weekly) and annual (1989-90) basis, although only the latter is used here. Data is also available on a range of housing indicators and other sociodemographic characteristics (ABS, 1992). The survey covers all persons aged 15 or over living in private and special dwellings but excludes the institutional population and a small number of other groups.[9] About one third of one per cent of the Australian population was surveyed and after removing those who were out of scope, or who did not provide all the required information, or who refused to participate, the sample encompasses just over 14,600 households containing more than 30,400 individuals. Information on income tax payments was not collected, but tax liabilities were imputed by ABS prior to release of the unit record file.

The upper panel of Table 2 shows the percentage of each income unit type defined by their immigrant status in each of the deciles of the **overall** distribution of gross unit income in Australia in 1989-90. The lower panel shows the corresponding mean gross income levels, for each decile, in total and for each income unit type within each decile. If immigrant status bore no relation, direct or indirect, to distributional outcome, the figures within each decile across each immigrant-status income unit type would, aside from any sampling error, be identical. Comparing the results in this way allows an assessment of whether or not there are systematic differences

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9   Immigrants who arrived in Australia after 30 June in the survey year are not included in the sample. Those immigrants who arrived during the financial year 1989-90 are also excluded from the analysis undertaken here (though not necessarily from the survey itself) because of the absence of data on annual income.

Table 2: The Position of Immigrant and Non-Immigrant Income Units in the Distribution of Gross Income Unit Income: Australia, 1989-90

Income decile	All income units	Single-adult units Immigrant	Single-adult units Non-immigrant	Couple income units Immigrant	Couple income units Non-immigrant	Couple income units Mixed
		The percentage of each income unit type in each decile				
First	10.0	21.9	17.6	3.2	1.8	1.7[a]
Second	10.0	21.5	18.8	2.2	1.1	0.5[a]
Third	10.0	11.3	12.9	10.5	7.2	5.4
Fourth	10.0	8.2	11.7	10.9	9.1	6.6
Fifth	10.0	10.6	13.4	8.7	7.3	6.5
Sixth	10.0	10.3	10.8	9.4	9.2	9.6
Seventh	10.0	7.9	7.9	11.0	12.0	13.1
Eighth	10.0	4.3	3.7	14.5	15.8	17.1
Ninth	10.0	2.4	1.9	15.9	18.1	17.4
Tenth	10.0	1.6[1]	1.4	13.7	18.4	22.0
		Mean income ($) of income units in each decile				
First	4 670	4 710	4 820	3 880	3 540	3 320[a]
Second	8 220	8 180	8 200	8 670	8 540	8 200[a]
Third	11 610	11 410	11 420	11 820	11 970	11 940
Fourth	15 320	15 230	15 410	15 230	15 220	15 500
Fifth	20 280	20 300	20 220	20 360	20 360	20 420
Sixth	25 720	25 850	25 560	25 940	25 800	25 890
Seventh	32 110	31 780	31 900	32 360	32 180	32 410
Eighth	40 250	39 730	39 870	40 430	40 330	40 330
Ninth	51 860	52 030	50 680	52 220	51 760	52 380
Tenth	88 150	81 670[a]	101 480	81 710	88 440	89 280

Note: a) Estimate based on a small sample size and may be unreliable.

Source: 1990 Survey of Income and Housing Costs and Amenities, unit record file.

across the income distribution which can be attributed to differences in immigrant status. The income distribution among the Australian-born population is in effect being used as the counterfactual against which to assess the income distribution among the immigrant population.

Considering first single-adult income units, the estimates in columns two and three of Table 2 reveal that immigrants tend to be somewhat over-represented (relative to Australian-born single-adult units) at both extremes of the distribution, with the differences at the bottom being somewhat more

marked than those at the top. The lowest quintile of the distribution contains over 43 per cent of all immigrant units, but only 36 per cent of all non-immigrant units. The corresponding percentages in the top quintile of the distribution are four per cent and just over three per cent, respectively.[10]

The estimates in the lower panel of Table 2 show how similar the two distributions for single-adult units are in terms of mean incomes within each decile. The only substantial difference here is in the top decile, where the mean income of non-immigrants is well above that of immigrants, although small sample size suggests that a note of caution should be applied to this difference. Aside from this, the profile of mean incomes across the distribution is remarkably similar for both immigrant and non-immigrant single-adult income units.

Turning to income units containing two adults, the upper panel of Table 2 shows some marked differences, with immigrant units more predominant among the lower deciles and less predominant among the higher deciles than non-immigrant couples. Mixed couple units are least predominant of all at the bottom of the distribution and most predominant at the top. In total, 35.5 per cent of immigrant couples are in the lower half of the distribution and the remaining 64.5 per cent in the upper half. The corresponding percentages for non-immigrant couples are 26.5 per cent and 73.5 per cent, respectively. For the third group of mixed couples, the figures are 20.7 per cent and 79.3 per cent, respectively.

The lower panel of Table 2 reveals, however, that the mean incomes of immigrant couples in the two lowest deciles are in fact higher than the corresponding mean incomes of non-immigrant couples. Above that, the mean income profiles of the two groups are virtually identical, until the highest decile, when the non-immigrant group has a higher mean income. The mean income profile of the mixed group is similar to that of the other two groups, except in the highest decile where it exceeds even that of non-immigrant couples.

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10   Note that this refers to location in the distribution of income among all income units, not to the location in the distribution of income among only single-adult income units.

The results in Table 2 thus suggest that there is little difference in the distributional positions of immigrant and non-immigrant single-adult income units in Australia, but a somewhat worse position for immigrant couples than for non-immigrant couples and a somewhat better position for mixed couples than for either of the other two groups of couples. However, even this conclusion must be qualified, because no account has yet been taken of differences in need between the immigrant and non-immigrant groups.

Table 3 presents estimates of the distribution of individual (person-weighted) equivalent disposable income, in which each person has been allocated to the appropriate decile of the distribution according to the equivalent income of the income unit to which they belong.[11] These results indicate that once adjustments are made for differences in need using the detailed Henderson equivalence scale, there is virtually no difference whatever in the location of immigrant and non-immigrant individuals in the distribution of equivalent disposable income. There is again a slight tendency for immigrant individuals to be over-represented in both the lowest and highest deciles of the distribution, but these differences are so small as to suggest that it would be difficult to reject the working hypothesis that the overall distributional outcomes of Australian-born and overseas-born individuals are identical.

It is, of course, possible that this overall similarity conceals a good deal of variation within the immigrant category. In order to explore this issue, the procedures used to derive the estimates in Table 3 were repeated, after distinguishing immigrant individuals first, according to their country of birth and second, according to their time of arrival in Australia.[12] The

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11   The immigrant status of the different income units now becomes irrelevant, because immigrant status is uniquely determined for each individual. For children, their place of birth (Australia or overseas) was imputed using a randomised assignment method explained in detail in (Saunders and King, forthcoming; Appendix 4.). The equivalence scale used (the detailed Henderson scale) is that developed by the Commission of Inquiry into Poverty (1975) and described in Whiteford (1985).

12   Country of birth and time of arrival (both in broad groupings) are the only two variables available in the ABS income surveys which relate specifically to the characteristics of immigrants.

Table 3: The Position of Individuals by Immigrant Status in the Distribution of Individual Equivalent Disposable Income: Australia, 1989-90[a] (Percentages)

Deciles	Percentage of group in decile		Percentage in decile belonging to group	
	Overseas-born individuals	Australian-born individuals	Overseas-born individuals	Australian-born individuals
First	10.8	9.8	22.9	77.1
Second	9.5	10.1	20.2	79.5
Third	10.3	9.9	21.9	78.0
Fourth	9.2	10.2	19.6	80.3
Fifth	9.7	10.0	20.6	78.7
Sixth	10.2	10.0	21.7	78.7
Seventh	9.9	10.0	21.1	78.7
Eighth	9.9	10.0	21.1	78.7
Ninth	10.1	10.0	21.5	78.7
Tenth	10.4	9.9	22.1	77.9
Total	**100.0**	**100.0**	**21.3**	**78.7**

Note: a)   Numbers may not add due to rounding.

Source: 1990 Survey of Income and Housing Costs and Amenities, unit record file.

distributional differences revealed by this more detailed analysis (described in Saunders and King, 1994) were greater, although they were somewhat less marked when immigrants were classified by time of arrival than by country of origin.

In both cases, the observed differences were not large and even these might disappear if a more sophisticated analysis was undertaken which adjusted for differences in age and other relevant characteristics which differ between the Australian-born and immigrant populations. This reinforces the view that it makes little sense to treat all immigrants as if they are a single homogeneous group in distributional analysis. Even the rather crude country of birth and time of arrival classifications point to the heterogeneity of the immigrant population, a feature which is further exacerbated in other dimensions (such as age - see Whiteford, 1991).

5   The Distributional Position of Immigrants: International Comparisons

Thus far, the distributional positions of immigrant and non-immigrant units within a single country have been compared. The analysis is now extended to comparisons across four countries using data from the Luxembourg Income Study (LIS) database. Despite the richness of the LIS database as a source of comparative information on a range of indicators of economic well-being, the quality of the information in LIS on immigrant status is not good.[13]   Against this, however, it has to be remembered that where immigrant status can be ascribed, the quality of the LIS data as a whole allows one to undertake good cross-country comparisons of the circumstances of the immigrant and non-immigrant populations.

Many countries included in the LIS database provide no information whatever on the immigrant status of the individuals, families or households included in the survey. Of those that do, attention focuses on the 'second wave' of LIS data covering years around 1985. The analysis was thereby restricted to only four countries, Australia, Canada, Germany and the United States.[14] Information on the scope and content of the immigrant status variables actually employed in the analysis is provided in Table 4.

The information in Table 4 indicates that the immigrant status variables for two of the four countries actually refer to race or nationality, rather than place of birth as such. It was thus only possible to proceed with an analysis covering all four countries by defining all units in the German data set who were not of German nationality as immigrants and by defining all Hispanic units in the United States data as immigrants.[15] These assumptions are best

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13   This mainly reflects the 'lowest common denominator' approach to developing the LIS database. However, even where more detailed information was available on the original datasets for some countries (e.g. the country of birth and time of arrival data for overseas-born Australians) this information was not transposed onto the LIS version of the Australian tape.

14   The German data in fact covers only West Germany prior to unification.

15   The procedure incorporates all white, black and 'other race' families into the non-immigrant population. This is probably more accurate than alternative procedures, such as excluding non-white families from the analysis entirely, because many of these were born in the United States. However, the results for the United States need to be interpreted with caution because of the race and ethnicity-based differences in socioeconomic position which make the non-immigrant group particularly heterogeneous.

Table 4: Immigrant Status Variables Included in the Second Wave of the Luxembourg Income Study Database

Country	Survey year	Immigrant characteristics	Degree of detail
Australia	1986[a]	Country of birth	8 categories
Canada	1987	Time of arrival	8 categories
Germany	1984	Nationality[b]	7 categories
United States	1986	Race[c]	4 categories

Notes: a) The Australian data used in this and subsequent Tables refer to the financial year (July to June) 1985-86.

b) The German dataset include an over-sampling of Turkish-headed households, unlike many other German household survey databases which exclude immigrant workers entirely.

c) The four race categories identified in the United States dataset are: whites, blacks, Hispanics and other.

Source: LIS database.

described as heroic. However, the only alternative is to exclude Germany and the United States from the analysis entirely. The assumptions will inevitably lead to inaccuracies in the data for these two countries as compared to the data for Australia and Canada, and this needs to be borne in mind when interpreting the results which follow.[16]

Counteracting these difficulties, one advantage of the LIS data is that the immigrant status of both adult partners in couples can be identified. This means that it is possible to distinguish immigrant families (those where both partners were immigrants) from non-immigrant families (where neither partner was an immigrant) and from mixed families (where only one adult partner was an immigrant). The three-way classification of couple families adopted earlier could thus be applied again. It would be unwise, in light of the shortcomings of the data on immigrant status already described, to undertake too sophisticated an analysis of the comparative distributional position of immigrant and non-immigrant families using the LIS data. For

16 For ease of exposition, the terms immigrants or non-immigrants will henceforth be used to cover each of the groups classified by the immigrant status characteristics shown in Table 4.

this reason, the analysis is restricted to a comparison of the distribution of individual (person-weighted) equivalent disposable income among individuals in each country.

In constructing this distribution, the equivalence scale suggested by the Organisation for Economic Cooperation and Development (OECD) for use by countries which do not have their own scale has been used.[17] The OECD scale is used widely in international comparisons and is more appropriate in the current context than the Henderson scale used earlier. The differences between the two scales, and those associated with the way the LIS data have been constructed, explain why the Australian results in this section differ from those presented earlier.

Table 5 summarises data on the structure of the four survey populations included in the analysis, classified according to their immigrant status. As indicated earlier, families containing more than one adult are separated into non-immigrant families (in which all adults were born in the host nation), immigrant families (in which all adults were foreign-born) and a mixed category which contains both immigrant and non-immigrant adults.[18] These results indicate that, in proportionate terms, Australia has the largest immigrant population of the four countries studied, with over 21 per cent of all families containing only immigrant adults and a further 10 per cent containing both foreign-born and domestic-born adults. Next comes Canada, with an immigrant share in the population about two-thirds that of Australia. The estimated immigrant populations in Germany and the United States are far smaller (around 7 per cent of all families) a reflection in part

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17   The limitations of using a common equivalence scale in cross-national research are acknowledged. The OECD scale assigns a weight of 1.0 to the first adult in each family, a weight of 0.7 to the second and subsequent adults, and a weight of 0.5 to each dependent child in the family. Compared to the detailed Henderson scale used in Section 3 for Australia, the OECD scale assigns a greater weight to the needs of children (relative to the needs of adults) and embodies lower economies of scale than the Henderson scale.

18   It should be emphasised that the LIS database adopts the family as the basic unit of analysis rather than the narrower income unit concept used in the previous section. This means that there can be more than two adults in any single family in the LIS database, which implies that the scope of immigrant, non-immigrant and mixed families can differ slightly from those based on income units. This will also lead to differences between the results for Australia presented here and those presented earlier.

Table 5: The Immigrant Structure of Families in Four Countries (Percentages)

Country	Year	Families with one adult		Families with more than one adult			All families
		Immigrant	Non-immigrant	Immigrant	Non-immigrant	Mixed	
Australia	1986	9.1	30.3	12.2	38.8	9.5	100.0
Canada	1987	6.6	32.4	9.6	45.4	6.1	100.0
Germany[a]	1984	2.5	36.0	3.0	56.4	2.1	100.0
United States[b]	1986	3.0	39.8	2.8	53.0	1.3	100.0

Notes: a) German immigrants are defined to be those who are not of German nationality.

b) United States immigrants are defined to be those of Hispanic race.

Source: LIS database.

of the way in which immigrants have been defined in these countries (Table 4) but also an indication that immigration has been lower in the United States and Germany than in Australia and Canada (Shu and Khoo, 1993: 31).

Table 6 presents the estimates obtained by deriving the overall income distribution for each country, dividing the distribution into deciles, and then allocating the various family types classified by their immigrant status into each decile of the distribution. As noted earlier, it was not possible to identify the country of birth (or nationality or race) of children, so that in constructing Table 6 all children were assigned the immigrant status of the family as a whole. This meant that even though the deciles of the distribution are defined over individuals, children were located in the distribution according to the immigrant status of their family.[19]

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19 This implies, for example, that in the case of mixed families, while the immigrant status of each adult could be assigned precisely, all children in the family were automatically assigned the mixed status. An alternative approach, shown by Saunders and King (forthcoming) to be very accurate for Australia, involves assuming that all dependent children were born after their parents immigrated and thus treating them as non-immigrant individuals.

Table 6: The Distribution of Equivalent Net Family Income Among Individuals in Four Countries (Percentages of each family type in each decile)

Decile[a]	Families with one adult		Families with more than one adult		
	Immigrant	Non-immigrant	Immigrant	Non-immigrant	Mixed

Australia, 1985-86

First	13.7	14.9	12.3	7.9	7.3
Second	17.2	15.3	9.5	8.8	5.6
Third	9.0	10.4	9.0	10.8	7.6
Fourth	5.7	6.7	9.5	11.4	11.3
Fifth	6.1	5.2	8.5	11.6	13.6
Sixth	6.9	6.8	10.8	10.3	13.4
Seventh	8.7	7.6	12.1	10.1	10.5
Eighth	9.1	8.0	9.8	10.4	11.5
Ninth	11.4	12.0	10.0	9.6	8.4
Tenth	12.1	13.3	8.5	9.1	10.6
Total[b]	5.4	16.4	16.0	49.8	12.3

Canada, 1987

First	18.9	18.3	9.6	7.4	6.1
Second	10.5	13.0	10.2	9.3	7.6
Third	13.1	9.7	11.4	9.4	11.1
Fourth	11.9	8.2	12.1	10.3	7.9
Fifth	6.8	7.4	8.5	11.5	9.0
Sixth	5.3	7.0	10.5	11.4	8.3
Seventh	4.7	8.3	12.4	10.2	11.0
Eighth	8.4	7.4	8.5	10.6	14.8
Ninth	9.3	9.7	7.5	10.2	14.2
Tenth	11.1	10.9	9.3	9.8	10.0
Total[b]	3.8	17.8	13.5	57.4	7.5

Germany, 1984

First	11.5	14.1	29.3	7.8	5.9
Second	6.4	9.9	21.1	9.4	8.5
Third	2.1	9.8	12.7	9.9	12.3
Fourth	10.3	7.0	7.6	11.0	8.9
Fifth	5.5	7.9	9.0	10.8	6.1
Sixth	5.2	9.2	7.1	10.3	15.1
Seventh	7.4	9.7	3.3	10.4	14.8
Eighth	9.6	7.9	3.0	10.9	11.4
Ninth	36.7	11.1	4.7	9.6	9.5
Tenth	5.4	13.5	2.3	9.8	7.4
Total[b]	1.4	18.5	4.7	72.6	2.8

Table 6: The Distribution of Equivalent Net Family Income Among Individuals in Four Countries (Percentages of each family type in each decile) (Continued)

Decile[a]	Families with one adult		Families with more than one adult		
	Immigrant	Non-immigrant	Immigrant	Non-immigrant	Mixed
United States, 1986					
First	33.0	18.0	18.8	5.7	9.0
Second	25.5	13.9	21.0	7.3	9.0
Third	12.1	10.3	14.8	9.5	10.0
Fourth	7.2	9.0	12.9	10.4	6.7
Fifth	5.1	8.3	8.2	10.8	14.2
Sixth	4.9	8.0	6.5	11.2	8.7
Seventh	3.1	7.6	6.6	11.2	14.2
Eighth	3.7	7.7	4.9	11.5	7.3
Ninth	3.8	7.9	4.1	11.4	11.5
Tenth	1.8	9.3	2.2	11.1	9.4
Total[b]	2.5	24.3	4.5	67.1	1.7

Note: a) The deciles are defined for the distribution of individual (person-weighted) equivalent disposable incomes for the whole population.
        b) These totals indicate the percentage of individuals belonging to each family type.

Source: LIS database.

In order to gain a better appreciation of what these results imply, it is instructive to conduct the following simple thought experiment: imagine that distributional position was in no way affected by either family type or by immigrant status. Then, aside from random sampling errors - which should not be large given the sample sizes which underlie these estimates - one would expect to find each of the five population subgroups shown in Table 6 distributed equally across each decile of the distribution; that is, that the entries in each cell of the table would be 10 per cent (because the distributions are separated into deciles).

This is an extreme situation which would not be expected to hold in practice. Single people, for example, are likely on average to be lower in the income distribution than families with more than one adult, in part because larger families may contain more than one earner, but also because couples tend to have more children and thus receive more income in the form of family benefits. In addition, many single people will be retired and living predominantly on a pension. The estimates in Table 6, because they

are based on the use of an equivalence scale, take account of some (but not all) of these differences.

However, the main point of interest lies not in considering the differences across population subgroups, but those across immigrant status types for families of a given type. If immigrant status has no impact on distributional outcome, one would expect the column entries in Table 6 for the one-adult and multiple-adult families to be very similar. In particular, one would expect to observe little difference between the entries in columns one and two, and between the entries in columns three, four and five. The degree of similarity in the figures in these columns will, however, reflect differences in immigrant status as well as other differences between immigrant and non-immigrant families within family types. Where, for example, single immigrants are younger than non-immigrant single people, one might expect more of the latter to be dependent on a pension and thus in the lower deciles of the distribution. Such age and other effects are not taken into account in these estimates, and the consequences of this need to be kept in mind.

Comparing the degree of similarity in the figures in columns one and two, and in colums three, four and five, the general patterns which emerge from Table 6 are fairly clear. In **Australia**, the differences between the distributional positions of immigrant and non-immigrant families are generally small, with the only marked difference being the high percentage of immigrant families with more than one adult in the lowest decile of the income distribution. In **Canada**, the general picture is much the same as in Australia, although there is somewhat more of a tendency for immigrant families to be heavily concentrated in the lower deciles of the distribution than their non-immigrant counterparts. In both Canada and Australia, the mixed category of families which contain both immigrant and non-immigrant adults is substantial in size. While this group has a distributional profile closest to that of the non-immigrant group in Australia, in Canada the position of the mixed group more closely resembles that of the immigrant group. The overall impression for both Australia and Canada is, however, that immigrants are well-assimilated in both countries in terms of distributional outcomes, and that distributional location is largely independent of immigrant status.

A quite different pattern is evident in the results for Germany and the United States. Recall that the immigrant variables are less satisfactory in these countries and that the relative size of the immigrant populations are much lower than in Australia and Canada. In the case of **Germany**, single immigrants appear to do better than their non-immigrant counterparts - although the population is small and sampling error is likely to be a problem.[20] In contrast, immigrant families with more than one adult do considerably worse in distributional terms in Germany than non-immigrant families, being heavily concentrated in the three lowest deciles and relatively scarce in the top half of the adjusted distribution. The mixed category has a distributional profile much more like that of non-immigrants, which suggests that one way for immigrants to overcome the disadvantages they appear to face in Germany is through marrying German nationals.

Finally, in the **United States** the distributional position of immigrants relative to that of non-immigrants seems worst of all. This result is all the more striking because the non-immigrant population as defined here contains all black families, who are known to suffer income and other disadvantages in the United States (Smeeding, Torrey and Rein, 1988; Wilson 1987). The percentage of single adult immigrant individuals in the bottom quintile of the distribution is almost twice that of their non-immigrant counterparts, while the corresponding relativity for families with more than one adult exceeds three. This, combined with the far lower prevalence of immigrants in the upper reaches of the distribution illustrates the significance of immigrant status (more accurately, racial status) in determining distributional position in the United States.

Despite the limitations which inevitably attach to them, the results presented in this section suggest that the patterns existing in Australia and Canada - where the immigrant populations are largest in relative terms - are very different from those in Germany and the United States. In the former two countries, the distributional positions of immigrants are very similar to those of non-immigrants, which suggests that immigrant status is of little relevance in determining one's distributional position. In contrast, in Germany and the United States - where the immigrant status data are of

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20   Small sample size probably explains the large proportion of one-adult families in the ninth decile of the German distribution.

admittedly lower quality - immigrant families fare considerably worse in terms of distributional outcomes than their non-immigrant counterparts.

6 Comparing the Wage Incomes of Immigrant and Non-immigrant Italians

In the two previous sections, the incomes of the domestic-born (non-immigrant) population have been used as a counterfactual against which to compare the incomes of (foreign-born) immigrants. This kind of research provides useful insights into the extent to which immigrants are able to assimilate (economically and socially) into their new country of residence, the existence and extent of discrimination against immigrants, and the factors which influence these events. A different comparison is now undertaken which approaches the whole issue in a somewhat different way. Here, the focus is not on comparing the incomes of **people born in different countries and living in the same country**, but on comparing the incomes of **people born in the same country but living in different countries**.

The question to be addressed here is thus whether or not the process of migration causes those undertaking it to have lower or higher incomes than what they would have had if they had not emigrated. It should be emphasised that this question is addressed using a snapshot of data for a single year. No attempt is made to address the issues (financial and other) underlying the decision to emigrate in the first place, which obviously involves comparisons which stretch over a longer timeframe than a single year. In effect, the decision to emigrate is taken as given and the question posed is what difference it makes *ex post* to the (wage) incomes of those who have undertaken it. To the extent that any clear answer to this question can be discerned, some light may be shed on the role of financial considerations in motivating immigration decisions.[21]

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21 The (anticipated) financial gain is not, of course, the only factor which influences the decision to migrate. As Borjas (1987) notes, we do not observe wholescale migration of entire populations, even where national income levels differ, because: '...it is not the differences in mean income levels that determine the extent of migration, but the differences in mean income levels net of migration costs. These migration costs will be both monetary and psychic' (Borjas, 1987: 535; emphasis in the original). It is worth noting that there is also likely to be a psychic component to the mean income comparisons.

The question posed above is very general and in attempting to answer it, it is necessary to restrict its scope considerably. This is done in several dimensions. First, attention focuses on earnings rather than income. This avoids most of the complications arising from the existence of different tax and benefit structures in the source and destination countries. It also allows the analysis to focus on the individual, thus side-stepping the complexities of defining immigrant income units discussed in Section 3.

In practical terms, the analysis is further restricted by data availability. To undertake the comparisons, two datasets are required, the first of which provides information on the relevant characteristics of the residents of a particularly country, and a second which provides similar information for people who were born in that country but now reside elsewhere. Data comparability is thus required in two dimensions, across countries and across different sub-groups within each country, so as to ensure cross-country comparability for a specific group. The group selected for such a comparison are working-age Italians, for whom the two datasets which satisfy the above requirements are the second wave of LIS data for Italy and the 1986 Income Distribution Survey for Australia which permits people who were born in Italy to be identified.[22]

The source for the Italian data in LIS is the sample survey of family budgets conducted regularly since the mid-1960s by the Bank of Italy. The survey (described in more detail in Brandolini, 1992 and Brandolini and Sestito, 1994) covers the entire non-institutional population and is conducted in two stages, the first of which involves selection of a sample of municipalities, the second involving selection of a sample of families within these municipalities. Sample size has risen steadily from around 3000 in the 1960s to about 8000 by 1986. There have been some problems with the response rate which fell to 37 per cent in 1989 after averaging around 60 per cent in the earlier years of the 1980s (Brandolini, 1992, Table 2). Comparison of the incomes reported in the survey with National Accounts aggregates (reported in Brandolini, 1992) indicates that while employment income is well covered, income from self-employment, property income and

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22 The 'second wave' of LIS data for Australia could not be used because, as noted earlier, details of country of birth and other immigrant characteristics were not transposed onto the LIS version of the Australian data file.

income from transfers (all expressed net of personal tax) are seriously underestimated.[23]

The main reason why it is possible to identify Italian-born respondents in the Australian income data is that, historically at least, Italy has been a major source country for Australian immigration. A recent report notes that many of the settlers who came to Australia in the 1960s came from Italy, although these numbers gradually tapered off in the 1970s and 1980s to the point where, in 1992, they represented less than one per cent of the total immigrant intake (ABS, 1994: 11). However, this reduction in the **flow** of immigrants from Italy had not greatly influenced the **stock** of (working-age) Italian immigrants living in Australia by 1986, even though the average age of Italian-born Australians could be expected to be rising steadily - both absolutely and relative to the rest of the Australian population.[24]

Because the number of working-age, Italian-born people living in Australia in 1986 is so small, direct comparison with the earnings of the working-age population living in Italy would be greatly affected by the different characteristics of the two groups. With regard to age alone, there are already good grounds to expect considerable differences, reflecting the slowdown in migration from Italy to Australia already discussed. An alternative method of comparison is thus required which standardises the earnings of the two groups for differences in their age structure and other relevant characteristics. The methodology employed for this purpose is the theory of human capital formation, which explains earnings in terms of a number of human capital (education and training) variables, supplemented by a range of variables identifying the socioeconomic characteristics of the person and the nature of the job they are occupying.

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23 Brandolini (1992, Table 11) estimates that the degree of income understatement in the 1986 Bank of Italy survey was 6.5 per cent (for after-tax income from employment), 58.7 per cent (for after-tax income from self-employment), 22.2 per cent (for after-tax property income) and 22.6 per cent (for after-tax income from transfers).

24 Data derived from the 1991 Census indicates that there were almost 255,000 Italian-born immigrants in Australia in 1991 which, along with their more than 198,000 Australian-born children represented 453,000 people or 2.7 per cent of the total population (BIPR, 1993, Table 5.5). This percentage still represented the second largest overseas birthplace grouping in 1991 (behind the United Kingdom), despite the fact that the flow of immigrants from Italy had, by 1991, been declining steadily for almost twenty-five years. However, the trend away from immigration from Italy described earlier suggests that the separate identification of Italian-born immigrants in Australian household surveys may not continue too long into the future.

The basic human capital earnings model can be written in the following form:

$$\ln(w) = f(h_1 ... h_m; p_1 ... p_n; c_1 ... c_k) \tag{1}$$

where $\ln(w)$ is the natural logarithm of annual wage and salary income, h_1 ... h_m is a vector of human capital variables, p_1 ... p_n is a vector of personal characteristics variables, and c_1 ... c_k is a vector of job characteristics variables.

The methodology then involves estimating equation (1) using the LIS sample of working-age Italians living in Italy and using these estimates to predict the wage incomes of the sub-sample of working-age Italian-born residents of Australia.[25] These wage income predictions were then converted from lire to Australian dollars and compared with the actual recorded wage incomes of Italian-born immigrants in the same age range living in Australia.

In principle, this is a relatively straightforward exercise. In practice, however, a number of obstacles resulting from the limitations of the data required several compromises to be made. It was necessary, for example, for all of the independent variables in the human capital model to be specified identically in both countries. This was relatively straightforward in some cases (e.g. age and family status) but more problematic in others (e.g. level of education and occupation). The nature of these compromises was such as to render the whole analysis exploratory and the results preliminary. The following account of procedures and results needs to be assessed keeping with these limitations and qualifications in mind.

The basic sample was restricted to persons aged between 21 and 64 years, who were workers with a positive wage and salary income, were not self-employed or students and who had information available on all the characteristics included in the human capital model. Initially, it was intended to restrict the analysis to full-year, full-time workers only, but this was not possible because the LIS version of the Italian data does not

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25   To be strictly accurate, it is not possible to distinguish those in the Italian LIS dataset who were born in Italy from Italian residents who were born overseas. Estimates of the immigrant population in Italy are hard to come by, although Stahl et al. (1993) cite the estimate of Venturini (1990) that the foreign-born population living in Italy in 1987 was almost 561,700. Given a total population in that year of almost 56.7 million (OECD, 1992a) this implies that immigrants represent less than one per cent of the total Italian population.

incorporate the full-time/part-time distinction which is contained on the original Italian data.[26]

One further problem relates to the fact that the Italian earnings are net of personal tax payments and it is currently virtually impossible to recover pre-tax (gross) labour incomes.[27] The only way to achieve consistency in income concepts was thus to subtract (total) personal tax payments from gross wage and salary incomes in Australia in an attempt to derive a measure which was as close as possible to that used in Italy.[28] This latter complication is again unfortunate, as it had been hoped to avoid the effects of differences in taxes and transfers in the two countries and focus solely on labour market outcomes as measured by gross earnings.

Once the samples for the two countries had been derived, the Italian sample contained 6599 persons, while there were 136 Italian-born Australian residents who were within-scope as defined above in the Australian survey. Table 7 presents some descriptive statistics for both samples when expressed using the relevant (person) weights. The Italian sample contains a somewhat higher percentage of female workers, while the Australian sample is a good deal older on average, reflecting the slowdown in migration from Italy to Australia mentioned earlier. In overall terms, 50 per

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26   According to data from the Bank of Italy, in 1985 only 5.3 per cent of all Italian workers were part-time, while only 4.5 per cent of all employees worked part time. This information was provided in private correspondence by Andrea Brandolini. I would like to thank him for his advice on several aspects of the Italian data, but do not wish to implicate him in anyway with how those data have been used here.

27   This may eventually be possible using a tax imputation model developed at the Bank of Italy.

28   The Italian net wage variable deducts personal taxes (including employee and employer social security contributions) on wage income only, whereas the Australian data only identifies **total** personal taxes. An estimate of personal tax liabilities on earned income only in Australia was derived, at the person level, by multiplying recorded (total) tax by the ratio of wage and salary income to total gross income. This was not possible using the LIS version of the Australian data because gross income is not provided at the person level for Australia in the LIS database. It was thus necessary to apply the method by using the Italian LIS data and data on Italian-born workers from the original Australian unit record data (where gross income at the person level was available). In practice, the procedure used to estimate the tax on wage income in Australia caused little variation from the actual recorded (total) tax payments in the majority of cases. Estimated tax differed from recorded tax by two per cent or less in 80 per cent of the 135 cases, while the difference exceeded five per cent in only 11 per cent of cases.

Table 7: The Characteristics of Italians Aged 21 to 64 Living in Italy and Australia in 1986[a] (Percentages)

Characteristic	Italians living in Italy	Italians living in Australia
Gender		
male	64.7	72.6
female	35.3	27.4
Age		
under 25	8.7	4.5
25 to 34	27.1	16.6
35 to 44	31.1	28.9
45 to 54	23.8	37.2
55 to 64	9.3	12.8
Family Type		
single person	2.7	5.3
married couple (mc) only[b]	9.5	11.0
mc plus dependants only	39.0	33.2
mc plus others only	24.1	19.9
mc plus dependants plus others	16.2	18.4
sole parents (sp) plus dependants only	0.8	0.9
sp plus dependants plus others	1.4	2.1
more than one unmarried adult	6.2	9.1
Total Sample Size ('000)	16046	101

Notes: a)   Weighted estimates.
            b)   This category includes a few cases where the partner is over the age of 64.

Source: LIS database.

cent of the Australian sample was aged 45 or over, while only 33 per cent of the Italian sample was in this age range. The differences in family structure are not that great, although there are relatively more single people and families without children living in Australia, and a higher percentage of families with children living in Italy. These differences are again likely to be at least partly a consequence of the differences in age structure.

Table 8 provides information on the specifications of the independent variables used in the human capital regression model, while Table 9 presents the OLS estimates of the model derived from the (unweighted)

Table 8: Independent Variables Used in the Human Capital Earnings Model (Dependent Variable = Logarithm of Annual Wage and Salary Income)

Variable Name[a]	Definition
AGE	Age of person
AGESQD	Square of AGE
LOWEDUC*	low level of education
MIDEDUC	middle level of education
HSEDUC	education to high school level
DEGEDUC	education to degree or equivalent level
GENDER	male = 1; female = 0
MARSTAT	married = 1; not married = 0
CHILD	children present = 1; no children present = 0
YNGCHILD	youngest child aged under 5 = 1; otherwise = 0
OCCMAN	occupation = manager, supervisor, top-level white collar
OCCWCOL*	occupation = low- or middle-level white collar
OCCBCOL*	occupation = other or blue collar
INDAGR	industry = agriculture
INDMAM*	industry = manufacturing or mining
INDPAD	industry = public administration
INDWRET	industry = wholesale or retail trade
INDTAC	industry = transport and communication
INDFAI	industry = finance and insurance
INDCON	industry = construction
INDOTH	industry = other

Note: a) Variables indicated by an asterisk (*) were used as the missing category in the estimated regression model.

Italian sample. As noted earlier, the independent variables shown in Table 8 had to be defined so as to be consistent across both countries. This involved choosing categories which at times cut across the available national classifications in somewhat arbitrary ways. Some inevitable inaccuracies are likely to result from this process, although checks were made with the national data in order to avoid introducing any major errors.[29]

Despite these problems, the results presented in Table 9 show that even this relatively simple human capital model performed reasonably well when estimated from the Italian data. Virtually all of the independent variables

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29 The two main areas of difficulty were in relation to the use of a common specification for the education and occupation variables.

Table 9: Ordinary Least Squares Estimates of the Italian Wage Income Function (Dependent Variable = Logarithm of Annual Wage and Salary Income)

Variable Name	Coefficient (t-statistic and significance)[a]	
INTERCEPT	7.6638	(89.2)***
AGE	0.0671	(15.4)***
AGESQD (x 10^2)	-0.0073	(13.6)***
MIDEDUC	0.0520	(3.2)***
HSEDUC	0.0734	(4.0)***
DEGEDUC	0.0522	(2.2)**
GENDER	0.2764	(19.5)***
MARSTAT	0.0360	(1.9)*
CHILD	-0.0322	(2.3)**
YNGCHILD	-0.0188	(1.1)
OCCMAN	0.5569	(21.3)***
OCCWCOL	0.2454	(17.7)***
INDAGR	-0.7268	(22.6)***
INDPAD	-0.0095	(0.6)
INDWRET	-0.0847	(4.1)***
INDTAC	0.0461	(2.0)**
INDFAI	0.2197	(7.2)***
INDCON	-0.1802	(7.4)***
INDOTH	-0.2444	(11.1)***

Sample size = 6599; R^2 = 0.353; F = 201.0***

Note: a) */**/*** denotes significance at the 10/5/1 per cent level.

Source: LIS database (Italy, 1986).

were statistically significant and the explanatory power of the model gives cause for some satisfaction - albeit modest. The estimates themselves confirm other earnings function estimates derived from the LIS database (Lorenz and Wagner, 1990; Knudsen and Peters, 1994). They indicate that the age-earnings profile follows an inverted U-shape, that men's wage incomes (or earnings) are higher than women's, that being married is associated with higher earnings, and that having children (though not specifically **young** children) is associated with lower earnings. The coefficients on the education variables are all statistically significant and follow the expected pattern, with the exception of the unexpectedly low (relative) coefficient on the tertiary education variable (DEGEDUC).

The next step in the analysis involved using the regression estimates in Table 9 to predict the earnings of the sample of Italian-born Australians

given the details of their personal circumstances, education, job characteristics, and so on.[30] The resulting predictions are expressed in Italian lire and had to be converted to Australian dollars before a comparison with actual earnings could be undertaken.

A good deal of recent comparative research has favoured the use of purchasing power parity (PPP) exchange rates in converting from national to common currencies (e.g. Smeeding, Torrey and Rein, 1988; Bradshaw et al., 1993).   However, while the use of PPP exchange rates may be appropriate where the focus is on comparing consumption-based indicators of living standards, this is not the main focus here. Indeed, it is preferable in the current context if the currency conversions do **not** incorporate the effects of changes in the price of consumption goods, because it is a comparison of the earnings levels themselves, not the living standards which can be supported by those earnings, which is of interest here. It was thus decided to convert the Italian earnings regression predictions to Australian dollars using the actual 1986 lire/dollar exchange rate.[31]

Table 10 shows the distribution of the ratio of the actual (Australian) wage incomes (w^A) of Italian-born immigrants to Australia to the Australian dollar equivalent of their predicted wage incomes (w^P), derived from the regression estimates in Table 9. In interpreting these results, the comments made earlier about the limitations which attach to the data, particularly those

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30   Haveman and Buron (1993) have recently noted that this procedure assigns the same earnings to each individual with the same characteristics, a procedure which; '... neglects the role of unobserved human capital and labour demand characteristics and "luck" in the earnings determination process, and hence leads to a compressed distribution of (earnings) for each race-gender group and for the entire population' (Haveman and Buron, 1993: 145). To avoid this, they use a procedure which randomly shocks each cell prediction assuming a normal distribution with variance equal to the regression standard error. This procedure has not been applied here at this stage, although it obviously could be.

31   Use of the 1986 exchange rate is appropriate given that the main purpose of the exercise is a point-in-time comparison of income levels in 1986. If instead, the focus was on identifying the factors underlying the original decision to migrate, a longer timeframe would be required, as would the use of (actual and expected) exchange rates prevailing when the decision to emigrate was itself taken. The lira/dollar exchange rate in 1986 was Lr 996.7 = A$1 (OECD 1992b, Table E). The GDP purchasing power parity (PPP) rate of currency exchange in 1985 was Lr 1038 = A$1 (OECD, 1992c). Use of a PPP exchange rate would thus reinforce the conclusions discussed below.

Table 10: Frequency Distribution of the Ratio of Actual to Predicted Net Wage Incomes of Italians Living in Australia, 1985-86 (Weighted estimates)

Ratio of actual to predicted wage and salary income	Percentage
Less than 0.60	9.3
0.60 to 0.79	4.6
0.80 to 0.89	7.6
0.90 to 0.99	2.8
1.00 to 1.09	15.7
1.10 to 1.19	8.6
1.20 to 1.39	16.4
1.40 to 1.59	13.9
1.60 or greater	20.9

Source: See text.

relating to the inability to distinguish between full-time and part-time workers on the LIS version of the Italian data, and the problems involved in achieving consistency in the tax variables in the two datasets need to be kept very much in mind.

Two other important considerations also need to be mentioned before discussing the results. Both relate to the issue of self-selection and the biases to which it can give rise. Because the sample comprises Italian-born workers who were residing in Australia in 1986, it effectively excludes any Italian immigrants who subsequently returned to Italy or emigrated from Australia to a third country.[32] Some of these return-immigrants would have been induced to return home because of a lack of labour market success in Australia, while others may have returned to Italy **because** of their economic success in Australia. If the former (latter) group dominates, the sample of workers who remained in Australia will be self-selected on the basis of their relative (lack of) economic success. Either way, a bias will be

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[32]   In a recent study of Australian emigration, Hugo (1994, Table 5.6) indicates that between 1975-76 and 1990-91, permanent departures from Australia averaged 23.2 thousand a year, of whom 16.2 thousand were overses-born. Total emigration was equivalent on average to 24 per cent of the average annual number of permanent arrivals (96.9 thousand) over the same period. Amongst Italian-born individuals, over 80 per cent of those departing permanently from Australia returned to Italy (Hugo, 1994, Figure 5.9).

built into the remaining sample and hence into the results. The second factor to emphasise is that the Australian sample excludes Italian-born people who were either unemployed or not in the labour force, and this could also give rise to problems of self-selection. A more complete analysis which attempted to take account of these factors would have to focus on the **probability** of being in work in addition to the level of wage income received once work is found.

The main feature to emerge from the estimates in Table 10 is that they suggest that migration from Italy to Australia has proved to be of considerable *ex post* financial advantage (at least in terms of wage incomes) for those who have remained in Australia and, in 1986 at least, also had a job. The actual wage and salary incomes of Italian-born Australians in 1985-86 exceed the predictions derived from the Italian earnings model in over 75 per cent of cases, and exceed the predictions by a margin of more than 40 per cent in over a third of cases. In contrast, less than 14 per cent had actual wage incomes in Australia which fell substantially (i.e. more than 20 per cent) below what the human capital model predicts their (Italian) earnings capacity to be. For the great majority of Italian immigrants to Australia, the results thus suggest that immigration is associated with higher wage incomes, at least amongst those who remained in Australia and had a job.

Table 11 explores the aggregate wage income data underlying Table 10 in more detail, focusing on gender, age and time-of-arrival differences.[33] These estimates have been rounded to the nearest ten dollars, but given the numerous assumptions required to derive them, even this probably gives an unwarranted impression of accuracy. Overall, the differential of actual to predicted wage incomes - a crude measure of the gross financial return to migration - is just over 24 per cent, although the mean ratio is much higher for males (1.276) than for females (1.150). The patterns revealed in relation

33 The time-of-arrival data were derived by matching the LIS and domestic Australian datasets because as noted earlier, time of arrival was not coded in the LIS version of the Australian data. It would have been interesting to disaggregate the data by region in order to explore locational differences in wage incomes in both countries and the role these play in these results, although this was not possible.

Table 11: Characteristics of the Ratio of Actual to Predicted Net Wage Incomes of Italians Living in Australia, 1985-86[a] (Weighted estimates)

	(1) Actual wage income (A$)		(2) Predicted wage income (A$)		Mean ratio of (1) to (2)	Median ratio of (1) to (2)
	mean	median	mean	median		
Entire Sample	13780	14260	11500	10960	1.242	1.225
Gender						
male	15160	15280	12440	11690	1.276	1.258
female	10020	10520	8940	9430	1.150	1.075
Age						
under 25	12340	12390	8690	8790	1.517	1.479
25 to 34	13420	12700	10660	9890	1.296	1.112
35 to 44	14360	14500	11990	11190	1.249	1.324
45 to 54	13270	13400	12050	11300	1.131	1.095
55 to 64	14920	15260	11140	11300	1.355	1.355
Time of Arrival in Australia						
before 1950	13530	13800	11150	11540	1.252	1.140
1950-59	13460	14380	12080	11300	1.163	1.177
1960-69	13800	12700	10840	10300	1.288	1.152
1970-79	14620	14250	10900	10960	1.364	1.443
after 1980	15900	15210	10630	11920	1.608	1.479

Note: a)   All estimates rounded to the nearest A$10.

Source: See text.

to age and time of arrival in Australia are, not surprisingly, very similar, illustrating again the dominant role of cohort effects.[34]

The estimates suggest that the returns to immigration are highest for the youngest (most recently-arrived) cohort of immigrants, where the mean ratio of actual to predicted earnings exceeds 50 per cent. Thereafter, there is a general tendency for the mean ratio to decline with age up until age 54 and then to rise again quite sharply up to age 64. Overall, the estimates in Table 11 indicate that **even after allowing for the higher skill levels of more**

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34   In the limit, if immigrants all chose to emigrate at the same age the age, and time-of-arrival patterns in Table 11 would be identical (aside from approximations arising from inconsistent data categorisations). The patterns actually observed in Table 11 are in fact not that different from this.

recent cohorts of Italian immigrants, those who arrived in Australia more recently have received wage incomes which represent a higher premium over their estimated earnings capacity in Italy than those who arrived in earlier years. This may partly reflect the targeting of the immigrant in-take achieved through the Australian immigration policy 'points system' (see Section 2), which may have reinforced the self-selection of immigrants who knew that emigration would be particularly advantageous to them.

It is important to emphasise that these results do not contradict the conventional view that immigration is associated with initially low earnings, which rise over time as recognised skills and English language proficiency are acquired, and as the general processes of assimilation work themselves through. Here, we are comparing the wage incomes of Italian immigrants, not with those of other residents of Australia, but with their counterparts in Italy. In any case, the inability to distinguish between cohort and life cycle effects cautions against drawing any firm conclusions along these lines from Table 11. To unravel these forces, it would be necessary to have access to longitudinal data which would allow the cohort and life cycle effects to be separately identified and quantified.[35]

One issue which does warrant a little further comment concerns the treatment of taxation in the estimated model and, more substantially, what is implied by having to conduct the analysis on post-tax rather than pre-tax wage and salary incomes. This is a potentially significant issue, given the different tax systems in existence in Australia and Italy in 1986. According to OECD data, revenue from taxes on personal income plus employee and employer social security contributions averaged 14.0 per cent of GDP in Australia in 1985-86, while in Italy in 1986, the corresponding figure was more than half as big again, at 22.4 per cent (OECD, 1991b). This difference partly reflects the higher overall tax burden in Italy (36.1 per cent of GDP compared with 30.3 per cent in Australia) but, more significantly, it reflects the heavy reliance on social security contributions in Italy.[36]

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35   Beginning in 1994, the BIPR will assemble such a database by tracking the experiences of about 5000 households over a five year period. Some initial analysis of the prototype survey is presented by Murphy (1994).

36   There are no social security contributions in Australia, where all (cash) social benefits are financed from general revenue.

Should one take account of these differences, and if so how? One obvious approach would be to scale up all personal taxes in Australia by 22.4/14.0 so as to match the overall Italian personal tax burden while maintaining the Australian pattern of tax incidence. However, this approach assumes that there is no relation between the direct tax burden and the level of wages, i.e. that there is no backward shifting of contributions on to wages. An alternative view would be that social security contributions represent deferred wages which are ultimately financed through wage reductions. On this view, current (net) money wages in Italy are artificially depressed, and this could explain the wage income shortfalls observed in Tables 10 and 11. This, however, raises further questions relating to the effective incidence of personal income taxes in Australia (which also finance future social benefits) and the whole question of differences in the two tax structures and what account should be taken of these.

These issues extend far beyond the scope of this paper and cannot be resolved without opening up several avenues of inquiry which, while important, deserve separate and more considered treatment. Rather than attempt this, the issue of tax differences should serve to further qualify the empirical results presented earlier. These indicate that the majority of immigrants from Italy to Australia received higher net wages than they would have received if they had remained in Italy. Against this, they also face a lower personal tax burden in Australia and are thus likely to be eligible to receive lower social benefits when they are sick or unemployed, or when they retire. Further research would be required to establish how immigration from Italy to Australia affects the **lifetime** incomes of those who have undertaken it. One final complication concerns the possibility that the higher tax burden in Italy (and the associated level of forced saving thus implied) may have been a factor motivating the move to the lower-taxed Australia in the first place.

7 Summary

The results presented in this paper require little by way of summary. It will by now be obvious that the number of qualifications attaching to the results increases progressively through the preceeding five sections of the paper. Those presented in Section 6, in particular, represent the initial outcome of

on-going research and need to be seen in this light. They are exploratory and preliminary: exploratory in the sense that the methodology on which they are based is still being developed; and preliminary because a number of the assumptions and procedures employed are in need of further refinement.

The main aim of the paper has been to compare the position of immigrants and non-immigrants in the distribution of income. This has been undertaken in three different ways, firstly within a single country (Australia), secondly across four countries (Australia, Canada, (West) Germany and the United States), and thirdly by comparing the wage incomes of working-age Italians living in Italy with working age Italian-born residents of Australia.

Underlying the first two of these approaches is the need to develop a more refined immigrant-status classification of income units that is better suited to the techniques used in research on income distribution. The paper argues against the conventional dichotomous (immigrant/non-immigrant) classification because of its arbitrary treatment of couple income units comprising one domestic-born and one foreign-born partner. It argues instead for a three-way classification which, in addition to immigrant and non-immigrant units, should also include a third (mixed) category.

The results in Sections 4 and 5 utilise this three-way classification to compare the distributional position of income units of different immigrant status, firstly within Australia, followed by a comparison of Australia with three other countries using the Luxembourg Income Study (LIS) database. Despite numerous data limitations, the comparisons suggest that immigrants in Australia and Canada fare better in terms of overall distributional outcomes than immigrants in either Germany or the United States.

The results in Section 6 compare the wage incomes of Italian-born working age people living in Australia with an estimate of what their wage incomes would have been had they remained in Italy. The latter estimate was derived from the earnings capacity predictions derived from estimates of a human capital model fitted to data on the wage incomes and other characteristics of working age people living in Italy.

The results which emerge from this analysis are preliminary and need to be interpreted cautiously, but they suggest that most Italians who emigrated to Australia before 1985 and who were working in 1986 had wage incomes

which exceeded the wage incomes they would have received had they remained in Italy. These results provide a new and different perspective on the task of comparing immigrant and non-immigrant incomes, but further refinement of the approach is required. This paper is thus only an initial step in addressing the complex set of issues concerning the relationship between immigration and income distribution.

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