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Research on Immigration and Integration in the Metropolis

Working Paper Series

97-05

Savings, Tax Contributions and Australian Immigration
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June 1997

RIIM

Research on Immigration and Integration in the Metropolis

The Vancouver Centre is funded by grants from the Social Sciences and Humanities Research Council of Canada, Citizenship & Immigration Canada, Simon Fraser University, the University of British Columbia and the University of Victoria. We also wish to acknowledge the financial support of the Metropolis partner agencies:

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Savings, Tax Contributions and Australian Immigration*

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June 1997

* This paper was presented June 17, 1997 at a seminar sponsored by the Vancouver Centre for Excellence on Immigration (RIIM). I would like to thank seminar participants, Don DeVoretz, Daniel Hiebert and John Hayfron for their helpful comments. I gratefully acknowledge financial support from a University of New England research grant (IRG). Additional research support was provided by the RIIM, Department of Economics, Simon Fraser University, during my sojourn as a visiting researcher in May-June, 1997.

The author would like to thank Sydney Preston for her copyediting services in the preparation of this paper.

Abstract

This paper estimates the potential impact of immigration on household sector savings in Australia using the 1988-89 Household Expenditure Survey. The study observes that both the voluntary and involuntary (or net tax contribution) components of saving are smaller for a typical immigrant household than for a typical Australian-born household. The poor savings performance of immigrants arises from a consumption gap, rather than an income gap. Even after controlling for household characteristics, we find that savings rates vary by country of origin. The Asian-born household's savings rate is not significantly different from that of the Australian-born, but savings rates of all other overseas birthplace groups are significantly lower. This finding is robust to the alternative measures of savings and model specification. Australia's national savings in 1988-89 would have been approximately A\$2.4 billion more if a foreign-born household had saved as much as a typical Australian-born household.

1. Introduction

Australia is one of the major immigrant-receiving countries in the world with an immigration program similar to that of Canada. The immigrant population in Australia constitutes 22.2 percent of the total population. Thus, the role of this demographic group in both the goods and factor markets may affect macroeconomic outcomes in Australia. A major macroeconomic problem confronting the Australian economy is the persistent current account deficit, which is transparent from its net foreign debt of over \$185 billion. The decline in the national savings rate, accompanied by a trend growth in foreign debt over the period 1973-93, indicates that low savings rather than strong ability to attract foreign capital was a major contributor to Australia's foreign debt.¹ The ratio of household savings to disposable income in Australia declined from more than 10 percent in the early 1970s to around 3 percent in 1995. Given this background, an empirical analysis of the saving behaviour of Australian and foreign-born households may be useful in evaluating the possible impact of immigration on household sector savings.

There exist *a priori* reasons to believe that the savings behaviour of immigrants may differ from those born in Australia. First, immigrants are not a random sample drawn from abroad. Indeed, the foreign-born are doubly selected. At the first stage, immigrants self select and participate in a worldwide immigration market. At the second stage, from this pool of self-selected agents, each immigrant-demanding country (i.e., Australia, Canada and the U.S.A.) selects immigrants based on a set of objective criteria that is primarily linked to domestic labour market conditions and demographic requirements. However, Australia's ability to compete for skilled immigrants of traditional source countries (western Europe) was weaker than that of other the two major immigrant-receiving countries (the U.S.A. and Canada). This was partly attributed to its geographical isolation and the existence of a generous social security program. The latter has caused a small after-tax skilled-unskilled real wage gap. A household's skills or the endowment of human capital may affect its current savings through its effect on lifetime income. Hence, the saving behaviour of immigrants who are doubly selected may differ from those born in Australia.

Second, in recent years, immigration from countries with high savings rates (e.g., Asian countries such as Hong Kong, Singapore, South Korea, China and India) has increased significantly. Table 1 shows that the Asian-born population constituted 4.3 percent of total immigrant intake before 1950. This share increased to 16.4 percent during 1980-89. Thus, it may be interesting to examine whether or not

¹ See EPAC (1988) and Fitzgerald (1993) for an analysis of Australia's saving performance.

this birthplace group continues to retain its old saving behaviour in the new country of residence - Australia.

Third, after the replacement of the *White Australia Immigration Policy* by a universalistic immigration policy in 1973, the composition of immigrant intake shifted away from the UK and Ireland towards Asia, and other European countries.² In addition to this long-run factor, cyclical fluctuations in domestic economic activity also influenced the composition of immigrant intake. Over the period 1977-92, net migration to Australia from Asia increased significantly and was insensitive to business-cycle fluctuations in Australia, while net immigration from traditional source countries fluctuated procyclically with no significant trend. This finding seems to suggest that the ‘push’ factors of migration played a dominant role for Asian migrants. The impact of the change in the immigration policy on household sector savings can be evaluated indirectly by comparing the savings performance of the recent immigrant cohort (arrived after the abolition of the white Australia policy) with that of the distant immigrant cohort (arrived before the abolition of the white Australia policy).

The above arguments provide an *a priori* rationale to pursue this study. Previous Australian research on immigration has primarily focused on the labour market performance of immigrants, the impact of immigration on trade, per capita income, consumption pattern and unemployment.³ Although the literature covers a wide range of issues, the saving behaviour of the foreign-born population is an under-researched area. An early study by Duloy (1967) investigated the impact of immigration on structural changes in Australia. This study observed a lower propensity among immigrants to consume on arrival, and attributed this finding to their lower asset holdings. In contrast to this result, Brain (1979) and Baker (1985a) found that immigration increased per capita consumption in Australia. This prediction was based on the simulation of macro models.

Further studies (Gaetjens 1980; Baker 1985b), based on the 1974-75 Household Expenditure Survey (HES), also found a higher propensity for immigrant households to consume, implying a lower savings rate. However, they observed a convergence towards the savings level of the Australian-born with length of residence. This finding obtains further support from a study by Hellwig *et al.* (1992). Using the 1984 HES data, Hellwig *et al.* investigated income and expenditure patterns of immigrants in

² After the formation of the European Economic Community (EEC), Australia’s exports to its major trading partners in Europe (particularly the UK) had declined, inducing Australia to search for new trading partners in Asia. The abolition of the White Australia Policy was partially predicated on Australia’s presumed trade expansion in Asia and attracting skilled immigrants from non-traditional source countries.

³ See Wooden *et al.* (1994) for a comprehensive survey of the literature.

Australia. The study observed that the household savings ratio was 0.6 percent for immigrants and 3.9 percent for the Australian-born population. However, no systematic relationship was found between the savings rate and the length of residence in Australia.

Both studies noted above used the concept of voluntary saving (out of disposable income) to study the saving behaviour of immigrants. This is obviously an important concept in investigating the household's motives for saving as the household has full control over the use of its voluntary saving. However, in addition to voluntary saving, the household contributes taxes to and receives benefits from the government treasury. Thus, a broader definition of saving, which includes both voluntary and involuntary saving, is needed to evaluate a household's overall contribution to national savings. This study will make an attempt to overcome the deficiency of previous studies by using alternative measures of saving that include both voluntary and involuntary components of household saving. In addition, the study provides estimates of household savings functions and utilizes those estimates to predict the impact of immigration on household sector savings in Australia.

2. Conceptual Framework

This section presents a conceptual framework for empirical analysis. First, we present alternative definitions of household saving, then identify factors that determine household saving behaviour, and finally, argue that endowment of these factors and the household's saving response to these factors may differ by birthplace.

Measurement of Household Savings

A household's voluntary saving can be expressed as the difference between its disposable income and its consumption expenditure. That is,

$$(1) \quad \text{VSAV} = Y + \text{DBEN} - \text{DTAX} - E$$

where, VSAV = voluntary saving, Y = household private income, DBEN = direct benefits, DTAX = direct taxes, and E = consumption expenditure. Using this definition of saving, previous studies (Baker, 1985b and Hellwig *et al.*, 1992) provide estimates of savings rates by birthplace after controlling for age and arrival period. A broader definition of household saving can be found by rewriting equation (1) as:

$$(2) \quad \text{VSAV} + (\text{DTAX} - \text{DBEN}) = \text{Y} - \text{E}$$

The left-hand side of this equation represents household direct savings (DSAV), which includes the household's voluntary savings out of disposable income and its net direct tax contribution. It is important to note that in equation (1) consumption expenditure, E, includes indirect taxes paid by the household, but income does not include indirect benefits received by the household. Thus, equation (1) can be modified to obtain a measure of voluntary savings out of final income⁴:

$$(3) \quad \text{FSAV} = \text{Y} + \text{DBEN} + \text{IBEN} - \text{DTAX} - \text{ITAX} - \text{C}$$

where FSAV is the voluntary savings out of final income, IBEN and ITAX are indirect government benefits and taxes respectively, and C is consumption expenditure exclusive of indirect taxes paid by consumers. To obtain total savings of the household, equation (3) can be rewritten as:

$$(4) \quad \text{FSAV} + (\text{DTAX} - \text{DBEN}) + (\text{ITAX} - \text{IBEN}) = \text{Y} - \text{C}$$

The left-hand side of this equation provides us a measure of the overall contributions of the household towards national savings. This is termed as total household savings (TSAV) and it is the difference between household private income and consumption expenditures net of indirect taxes.

Theoretical Background

Explanations for household savings include three major motives for savings: life-cycle motive, transfer motive, and precautionary motive.⁵ The life-cycle theory presumes that a typical household uses capital markets to smooth consumption over its life cycle. This theory suggests that, despite large fluctuations in current income, the level of consumption remains reasonably stable over an individual's lifetime. Human capital theory, on the other hand, suggests that a typical individual's age-earnings profile follows an inverted U-pattern. The income and consumption behaviour together imply an inverted U-shape age-savings profile. In general, the pure life-cycle model suggests that household savings depends on lifetime income, the stage of household life cycle, interest rate, and tastes and preferences of the household.

⁴ The term "final income" is defined by the Australian Bureau of Statistics as: Final Income = private income + direct government benefits + indirect government benefits - direct taxes - indirect taxes, (ABS, Cat. No. 6537.0, Appendix B, p.62).

⁵ Another important motive for saving is to meet the cost of lumpy consumption items such as houses and automobiles.

Contrary to the prediction of the life cycle model, evidence from recent Australian and Canadian cross-sectional studies indicate an upward-sloping age-savings profile for the elderly.⁶ Strictly speaking, these cross-section data-based analyses cannot be used to refute the prediction of the life-cycle model. The upward-sloping age-savings profile for the elderly may be attributed to the fact that the rich live longer, and thus, over-represent the cohort of the elderly.

However, given the apparent inadequacy of the life-cycle theory, attempts have been made to extend the life-cycle model in three key directions to produce more realistic predictions.⁷ First, a bequest motive is incorporated in the life-cycle model to explain the high rate of savings for the elderly. The life-cycle plan of savings in this modified model depends crucially on marginal utility the household receives from its own consumption *vis-à-vis* bequests. The second factor in explaining the high rate of savings for the elderly is the uncertain date of death. The impact of uncertain lifetime on an individual's savings choice depends on his/her degree of mortality risk aversion. In particular, an elderly person with a high degree of mortality risk aversion will save more to finance consumption over any unanticipated retirement life. Third, the social security system may also affect personal voluntary savings plan by facilitating intertemporal (e.g., the superannuation plan), intergenerational (e.g., age pension) and intragenerational (e.g., job search allowance) transfer of income. In general, the effect of social security benefits on personal savings is ambiguous⁸

This study neither undertakes a test of the pure life-cycle model nor makes any attempt to evaluate the appropriateness of any extended version of life-cycle models outlined above. However, we utilize the above background to examine whether or not the foreign-born differs from the Australian-born with respect to each of the theoretical arguments. The saving behaviour of immigrants may differ from those of the Australian-born due to several factors:

⁶ Using the 1984 Australian HES data, Hellwig *et al.* (1992) find no systematic pattern in the age profile of saving. However, they note that elderly households save the most among all age cohorts. An alternative method to explain household saving is to analyze the underlying consumption-age profile. The general premise of an upward-sloping consumption-age profile, and consequently dissaving in retirement (Auerbach and Kotlikoff 1987) are not supported by Hellwig *et al.* Their study reports a sharp decrease in consumer spending for the elderly. In the Canadian context, Robb and Burbridge (1989) and Marr and McCready (1989) also found a downward-sloping consumption-age profile late in the life cycle, implying dissaving in the retirement life span.

⁷ These extensions include: the incorporation of public annuities in the household budget constraint (Feldstein, 1974, 1977); recognition of a transfer motive (bequests and *inter vivo* transfers) within the family (e.g., Blinder, 1973) and the inclusion mortality risk in the model (e.g., Yaari (1965), Davies (1981) and Hurd (1989)).

⁸ For details see Feldstein and Pellechio (1979) and Kotlikoff (1979).

First, the endowment of lifetime resources, which include inheritance, earnings and annuities, may differ by birth status due to following reasons:

- (1) Given that the foreign-born population is the first generation resident population in Australia, their inheritance or initial assets at the beginning of Australian economic life may be lower than the Australian-born population.
- (2) Most immigrants enter Australia either at the last stage of their schooling period or after the completion of formal education, but they continue to invest in the acquisition of further human capital that is *specific* to the Australian labour market (e.g., language proficiency, formal education, vocational training, firm-specific training etc.). Thus, the earnings profile of the immigrant may initially fall short of but ultimately catch up to the earnings profile of the Australian-born. Put differently, lifetime earnings of immigrants may not necessarily be the same as those of the Australian-born.
- (3) The stage of the household life cycle and its labour market performance are key determinants of its entitlement to social security benefits. Thus, if the foreign-born differ from the Australian-born with respect to those factors, the impact of the social security system on savings will differ by birth status.

Second, foreign-born households face an interruption in their life cycle consumption plans due to their migration to a new country of residence. More specifically, the act of migration involves the selling of used consumer durables in the country of emigration and the acquisition of consumer durables at the early stage of settlement in the host country. This process contributes to low or negative savings for the recent cohort of immigrants.

Third, in addition to the above *transitional effect*, a persistent difference in savings between the foreign and Australian-born households may arise from permanent differences in skills, and tastes and preferences across ethnic groups.⁹ For example, it is widely believed that immigrants originating from Asian countries have a stronger preference than the Australian-born for both intra- and inter-generational

⁹ The ethnic composition of the foreign-born population is significantly different from that of the Australian-born population.

transfers within the extended family unit. Thus, these immigrants may exhibit a different savings profile, *ceteris paribus*.

3. Empirical Work

The Model

The conceptual framework presented in the last section suggests that the desired savings of the household primarily depends on lifetime income, the stage of life cycle, the interest rate, and preference parameters. The life-cycle theory explains saving behaviour of a household over its life cycle, while the data are available for a single time period for a sample of heterogeneous households. Therefore, an empirical model based on general life-cycle ideas must control for the household-specific characteristics in order to obtain plausible estimates of the impact of age and income on savings. The interest rate effect on savings, and lifetime income cannot be estimated from our cross-sectional data set. Hence, interest rate is ignored from the savings model, and current income resulting from both human and non-human resources of the household is used to capture the effect of average lifetime income on desired household savings.¹⁰ Furthermore, the distribution of savings is highly skewed, and the observed age profile of savings is upward sloping in the late stage of the life cycle. To take into account the former, savings are expressed as a quadratic function of ‘income’, and to capture the latter effect, savings are expressed as a cubic function of ‘age’. For an immigrant household, we add the ‘years since migration’ variable to this list of factors to capture the *transitional effect*. The following savings function is used for empirical analysis:

$$(5) \quad S = \alpha_0 + \sum_{j=1}^3 \alpha_j \text{Age}^j + \alpha_4 Y + \alpha_5 Y^2 + X\beta + \varepsilon$$

where, S = weekly household savings, Age = the age of the household reference person, Y = usual weekly household income, X is a vector of control variables and ε is a random error term. The elements of the vector X are place of birth (or arrival period), gender of the household head/reference person,

¹⁰ Feldstein and Pellechio (1979) used average income for two consecutive years as a proxy for average lifetime earnings, while our model uses ‘usual household income’. In addition, we initially included “mortgage debt” and “outright ownership of a dwelling” in the saving function to overcome the deficiency of our income measure. However, those variables were excluded from the final results due to their statistical insignificance.

presence of an unemployed person in the household, area of residence (urban/rural), size and composition of the household and the number of credit cards in the household. The choice of the control variables is based on our *a priori* knowledge of the data, a partial F-test and theoretical considerations.

The Data

This study uses the 1988-89 Household Expenditure Survey (HES) for empirical analysis.¹¹ The HES is the only nationwide micro data set available in Australia to conduct an analysis of savings at the household level. It is believed that income may be subject to under-reporting and expenditure may be subject to over-reporting. Hence, as a residual savings may be underestimated if the HES data are employed. Although we recognize the possible existence of measurement errors in the savings data, no adjustment has been made because any type of adjustment to the micro data based on aggregate household sector savings would be arbitrary.¹² There exists no *a priori* reason to believe that measurement error in savings is correlated with birthplace. That is, there is no motivation for the foreign-born to understate their implied savings by a larger fraction than the Australian-born given that the government tax system does not discriminate residents by birthplace. Furthermore, the focus of the present study is not on the absolute magnitude of household savings, but on savings of an immigrant household relative to that of an Australian-born household. Since there exists no *a priori* reason to believe that the measurement error in household saving is correlated to birthplace, the HES data are chosen to study the immigrant-native differential savings rates.

The 1988-89 HES microdata file includes 5158 Australian-born and 2067 foreign-born households. Before turning to our econometric results, some evidences from the raw data are worth mentioning. Table 2 presents descriptive statistics for the successive income concepts that are used for computing alternative measures of household savings. The average weekly private income of foreign-

¹¹ The primary objective of the HES was to provide data to update the weighting pattern of the consumer price index and conduct analysis of the expenditure pattern of the household. The limitation of the survey in providing an appropriate estimate of saving arises from the concepts of income and expenditure used in the survey and the scope of the survey. First, income data collected in the HES are current usual income from all regular sources and its main components are: wages and salaries, income obtained from self-employment, government direct benefits, income from investments and other regular private income. Transitory income/receipts are excluded from the definition of income. Exclusion of transitory receipts from the definition of income leads to an underestimation of the saving rate. Second, expenditure data, include the full range of private consumption and the HES adopts the acquisitions rather than the payments approach to collect expenditure data. Thus, the difference between income and expenditure computed from the HES may not provide us an accurate measure of current household saving.

¹² Note that aggregate household saving data provided in the National Income Account includes savings of both private households and unincorporated enterprises, while the scope of the HES data is limited to private households only. Thus, there is no direct way to adjust microdata using information from National Income Account.

born households is only A\$10 less than that of Australian-born households. Both the direct and indirect tax contributions of immigrants were slightly smaller, but benefits were significantly larger than their Australian-born counterparts. Consequently, we observe that a foreign-born household's net direct tax contribution was A\$17 less than an Australian-born household. Its net indirect tax contribution was A\$28 less than the Australian-born household.

A typical immigrant's total consumption expenditure was 7.24 percent higher than that of a typical Australian-born, but no significant difference in the structure of consumption was observed by birthplace (see Table 3).

Descriptive statistics for alternative measures of saving can be found in Table 4. Regardless of the definition of saving used, the data reveal that the foreign-born population save less than the Australian-born population. In particular, average voluntary saving (out of disposable income) of all overseas birthplace groups is negative, although the Australian-born household's saving is positive but small in magnitude. An exception to this general pattern of relatively low saving for immigrants occurs in the case of Oceanic immigrants. For this birthplace group, both the direct and total saving are greater than that of Australian-born households. The profile of immigrant saving with respect to 'years since immigration' implies an inverted U-shaped relationship. Put differently, most recent (arrived in 1980-89) and distant (arrived before 1950 or between 1950 and 1959) cohorts of immigrants save less compared to any other cohort of immigrants. This finding is attributed to the over-representation of the elderly and the young in the 'distant' and 'recent' cohorts of immigrants respectively. Our regression analysis will isolate the 'age effect' of saving from the effect of 'years since migration'.

Observed age profiles of income, consumption and saving by birthplace are presented in Figures 1 to 5. The first figure indicates no quantitatively significant difference in income by birthplace. One noticeable feature is that foreign-born households with reference persons aged 40-54 years obtain a smaller private income than that of the corresponding Australian-born age cohort. However, consumption expenditures of this age cohort do not vary by birthplace. The observed age profile of immigrant saving lies below the age profile of Australian-born saving regardless of what definition of household saving we use (see figure 3 to 5). The age profile of saving is upward sloping for the elderly (reference person aged 65 or more) - an outcome of the faster rate of decline in consumption relative to the rate of decline in income. In general, the age profile of saving exhibits a pronounced inverted U-shape when saving includes both voluntary and involuntary components. It seems to indicate that the age

profile of voluntary saving would be compatible with the life cycle model if government had not influenced the household's life cycle plan through the tax and transfer system.

The age profiles of immigrant saving for different arrival cohorts are presented in figures 6 to 8. In general, we observe that saving increases with the length of residence in Australia. However, due to the multiple intersections of the age profiles of different arrival cohorts (partly resulting from small cell sizes), it is not possible to draw any firm conclusion from this diagram about the relationship between saving and length of residence in Australia. With some exceptions, all Australian-born age cohorts outperform their foreign-born counterparts with respect to saving.

4. Major Findings

The empirical analysis of saving behaviour is conducted at two levels. First, a single saving equation is estimated for the whole sample of households under the assumption that economic and demographic characteristics affect the saving behaviour of the Australian-born and the foreign-born household identically. A set of dummy variables for birthplace is included in the basic saving function to estimate partial impact of immigration status on saving. In addition, an equation incorporating the dummy variables for arrival period is estimated to capture the joint impact of Borjas' so called 'cohort quality' and 'years since migration' variables. Second, the assumption of the identical parameter vector by birthplace is relaxed and a birth status-specific saving equation is estimated.

Results for Voluntary Saving

The results for household voluntary saving are presented in Table 5. The first equation in column 1 indicates that an immigrant saves 29 dollars (out of disposable income) less per week than an Australian-born, after netting out the effect of income and age on saving. Inclusion of an additional set of control variables in the saving function (column 2) leads us to infer that an immigrant household's weekly saving is approximately 26 dollar less than an Australian-born household's saving. Thus, the coefficient of our main variable of interest (dummy variable of immigration) is not too sensitive to the inclusion of additional control variables in the model.

Next, the dummy variable for immigration is replaced by a set of five dummy variables representing country/region of birth of the household reference person. The results indicate that the

saving of an Asian-born household is not significantly different from that of an Australian-born household, but all other overseas birthplace groups save a significantly smaller amount than an Australian-born with comparable economic-demographic characteristics.

The last column of Table 5 includes estimates for the coefficients of immigrant arrival dummies. The results indicate that even after controlling for 'age', the finding from the raw data remains valid. That is, the most recent and distant cohorts of immigrant households save less than comparable Australian-born households. For other immigrants, dissaving increases, rather than decreases with the years of residence in Australia. However, this finding is not statistically significant.

Predicted age-saving profiles of household voluntary saving, based on birthplace-specific saving functions, are presented in Figure 9. The age-saving profile of a typical foreign-born household lies below the corresponding profile of a typical Australian-born household. For both birthplace groups, the age-saving profile of the elderly (aged 65 or over) is upward sloping.

Results for Total Saving

Total savings (TSAV) includes both voluntary and involuntary savings, and gives the household's overall contribution to national savings. Table 6 presents the results for total savings. One interesting feature is that our findings, with regard to the impact of birthplace and arrival period, are not sensitive to the definition of savings used. Obviously, the absolute magnitudes of the coefficients vary due to the variation in the definition of the dependent variable, but the qualitative predictions with respect to the effects of birthplace remain unchanged.

The results for our control variables have changed in the expected direction. For example, voluntary saving of a female-headed household is more, but its total savings is less than a male-headed household. This finding is partially attributed to the over-representation of females in the cohort of single parent families. The presence of an unemployed person in the household increases voluntary saving but reduces total savings. We interpret the former finding as the outcome of the precautionary savings motive and the latter finding reflects that an unemployed person contributes less net taxes than that of an employed person. A similar interpretation is also applicable to the coefficient of the aged-dependency ratio. Finally, the finding with respect to the impact of credit cards is worth mentioning. The availability of credit cards significantly reduces household savings. Put differently, a household

facing liquidity constraints might save more than a household (with comparable characteristics) with access to consumer lending/borrowing.

Predicted age profiles of household total savings, based on birthplace-specific savings functions, are presented in Figure 10. Unlike the age profile of voluntary saving, the age profile of total savings exhibits an inverted U-shape pattern. A typical foreign-born household saves less than a typical Australian-born household at all ages.

5. Concluding Remarks

This paper investigated the saving behaviour of Australian and foreign-born households. The household saves voluntarily to finance consumption over retirement life span, to meet future cost of purchasing 'lumpy' items (house, automobile etc.), to transfer wealth to children in the form of human capital (children's education) or non-human capital (bequests), and to meet unanticipated expenses arising from uncertainty of consumption and income streams over the life cycle. In addition to this voluntary saving, the household also undertakes involuntary saving in the form of net tax contribution to the government treasury. Using the 1988-89 Australian Household Expenditure Survey, this study observes that both voluntary and involuntary saving of the foreign-born household is lower than that of the Australian-born household. This key finding holds regardless of the definition of saving, or the empirical model. In particular, this study estimates that an immigrant household's annual voluntary saving out of disposable income is A\$1,350 less than that of an Australian-born household with similar economic-demographic characteristics. In 1989, 1.4 million out of 5.4 million (private) households in Australia were foreign-born. Thus, we infer that aggregate voluntary household saving would have been at least A\$2 billion more (in 1989 A\$) if the immigrant household had saved as much as the Australian-born household.

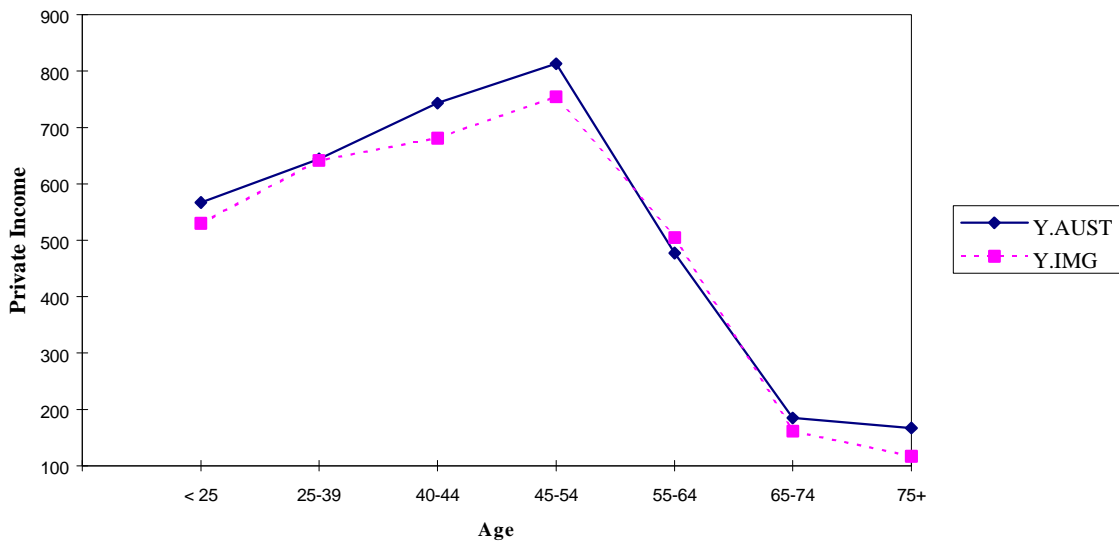
The results with respect to total household savings (TSAV) can be used to predict the impact of the immigrant's savings decisions on national savings. Our empirical model predicts an annual total savings gap of at least A\$1612 between an Australian-born and a foreign-born household. Based on this prediction, this study claims that Australia's national savings in 1988-89 would be at least A\$ 2.4 billion more if a foreign-born household could match the average weekly savings of a typical Australian-born household.

The differential saving behaviour by birth status arises from a consumption gap, rather than an income gap. Thus, immigration may stimulate the economy in the short-run through its expansionary effect on consumption demand. Specifically, producers of the non-traded sector of the economy face a significant expansion in demand for their products from immigration. In the absence of immigration, Australia would have had to increase its exports by a similar magnitude.

In making decisions about the flow and composition of immigrants, the demand boost resulting from the poor saving performance of immigrants may be a consideration in the short run. However, it must be emphasized that most people migrate to Australia to live permanently and the government has no economic policy tool that can be used discriminately to influence savings decisions of a specific birthplace group. Therefore, Australia's long-term considerations, such as the problem of a low savings rate and consequent growth in national debt, should be taken into account in determining the annual flow and composition of immigrant intake. However, it is important to emphasize that the poor saving performance of immigrants should not be considered in isolation. This is just one dimension of a household's economic activity.

Figure 1

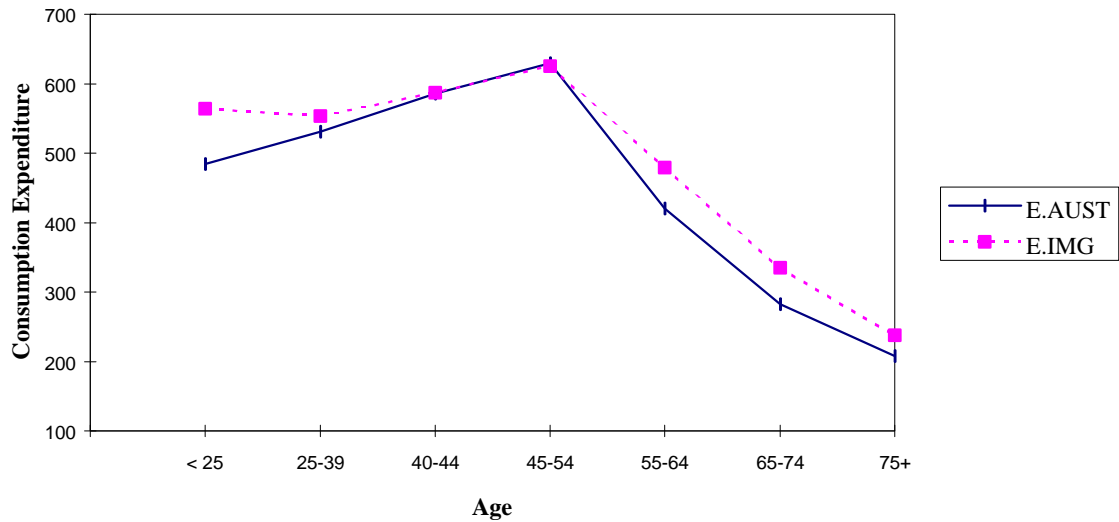
Average Weekly Private Income by Age and Birth Place



Data Source: 1988-89 Household Expenditure Survey, Australia.

Figure 2

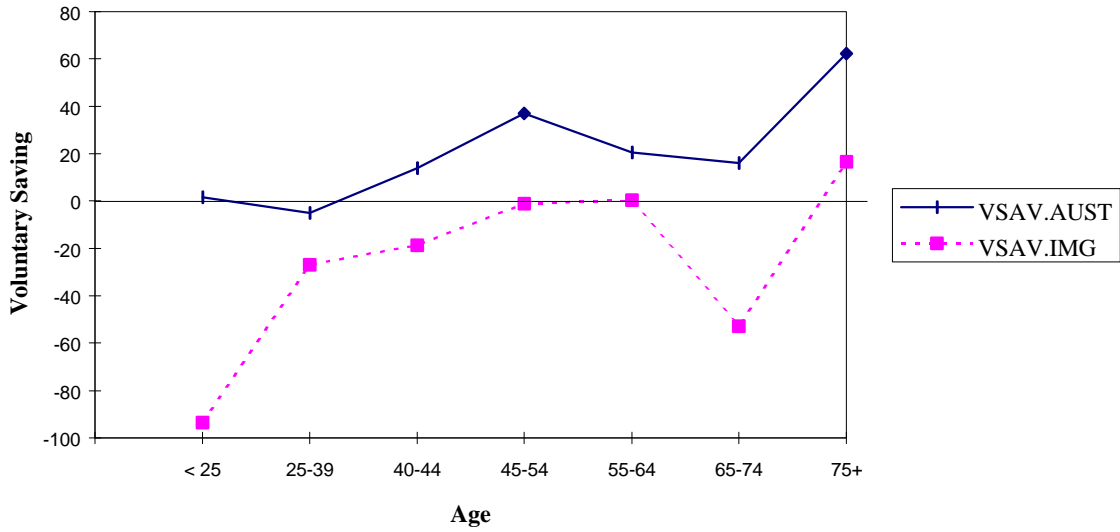
Average Weekly Household Consumption Expenditure by Age and Birth Place



Data Source: 1988-89 Household Expenditure Survey, Australia.

Figure 3

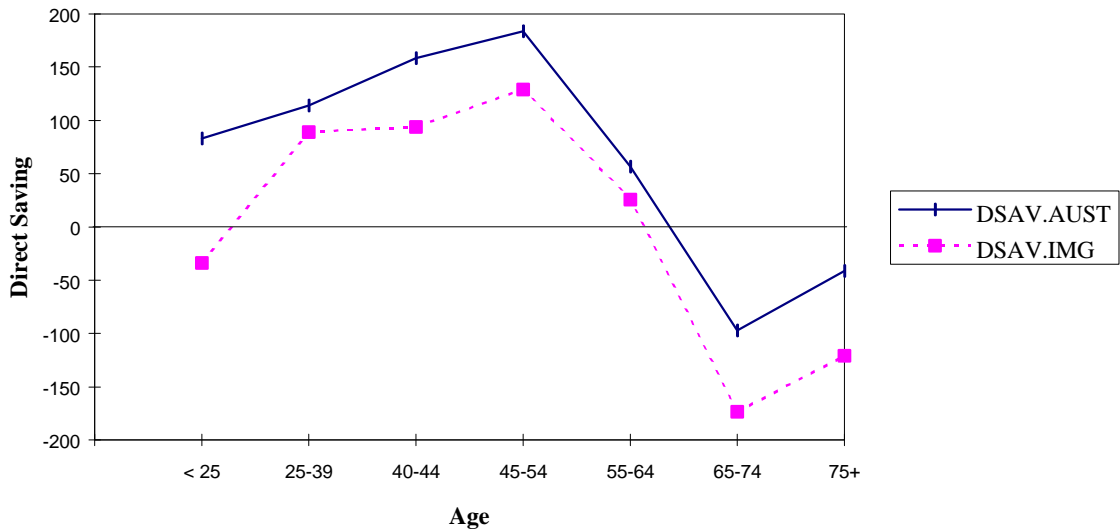
Average Voluntary Household Saving by Age and Birth Place



Data Source: 1988-89 Household Expenditure Survey, Australia.

Figure 4

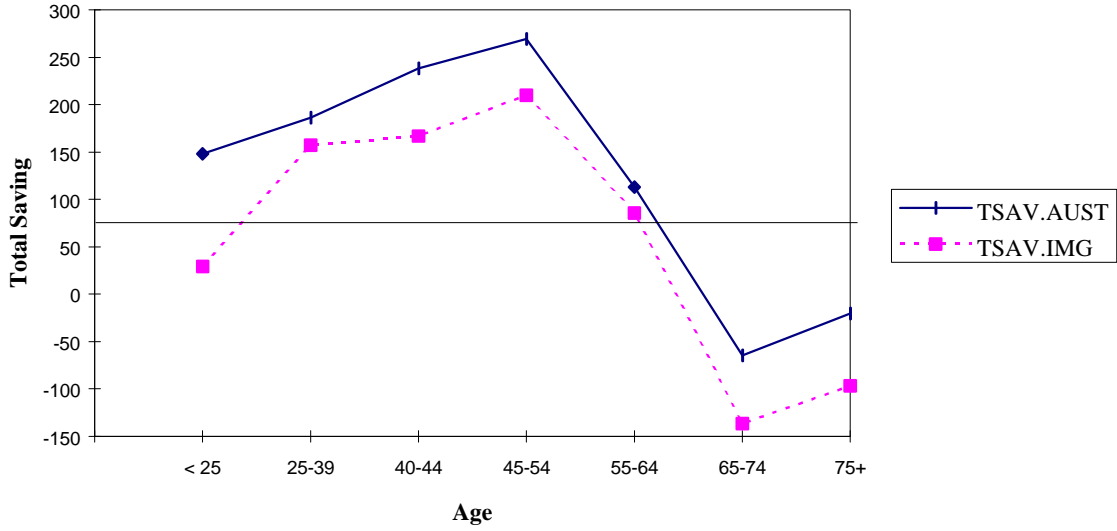
Average Weekly Household Direct Saving by Age and Birth Place



Data Source: 1988-89 Household Expenditure Survey, Australia.

Figure 5

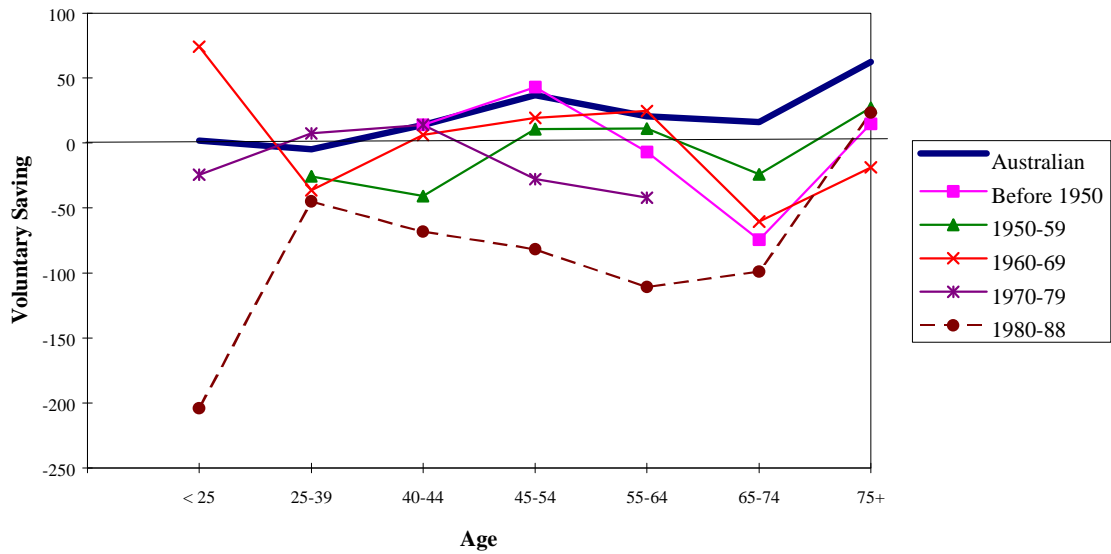
Average Weekly Household Total Saving by Age and Birth Place



Data Source: 1988-89 Household Expenditure Survey, Australia.

Figure 6

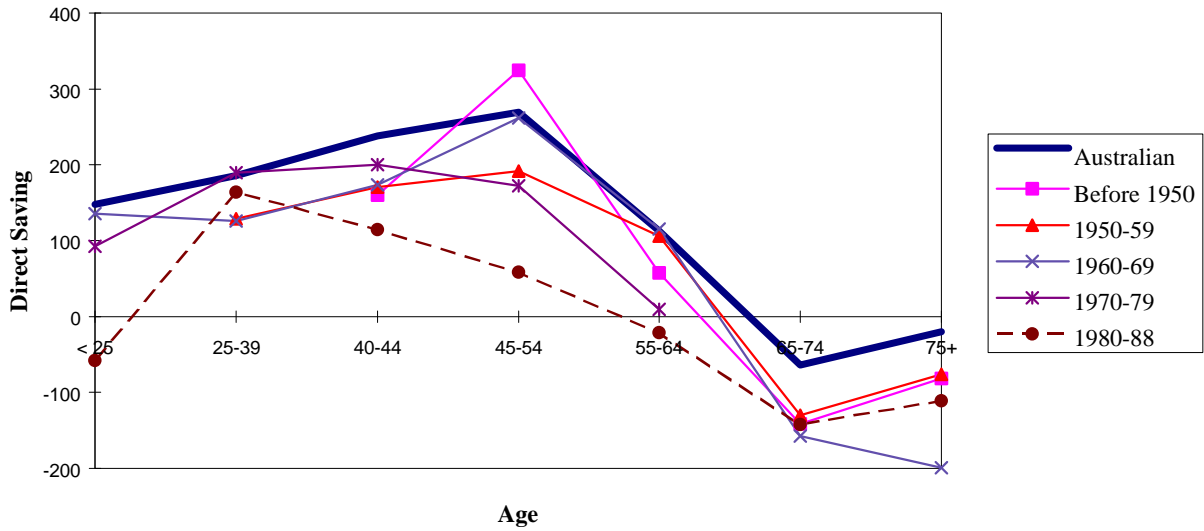
Household Average Weekly Voluntary Saving by Birth Place and Arrival Period



Data Source: 1988-89 Household Expenditure Survey, Australia.

Figure 7

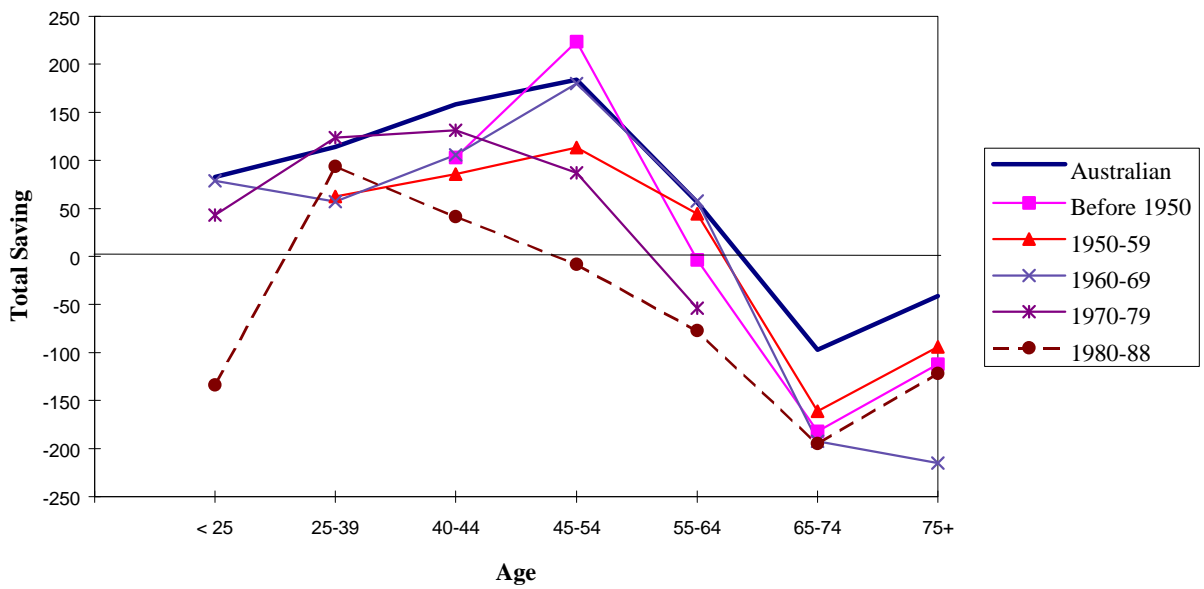
Average Household Weekly Direct Saving by Immigrant Arrival Period



Data Source: 1988-89 Household Expenditure Survey, Australia.

Figure 8

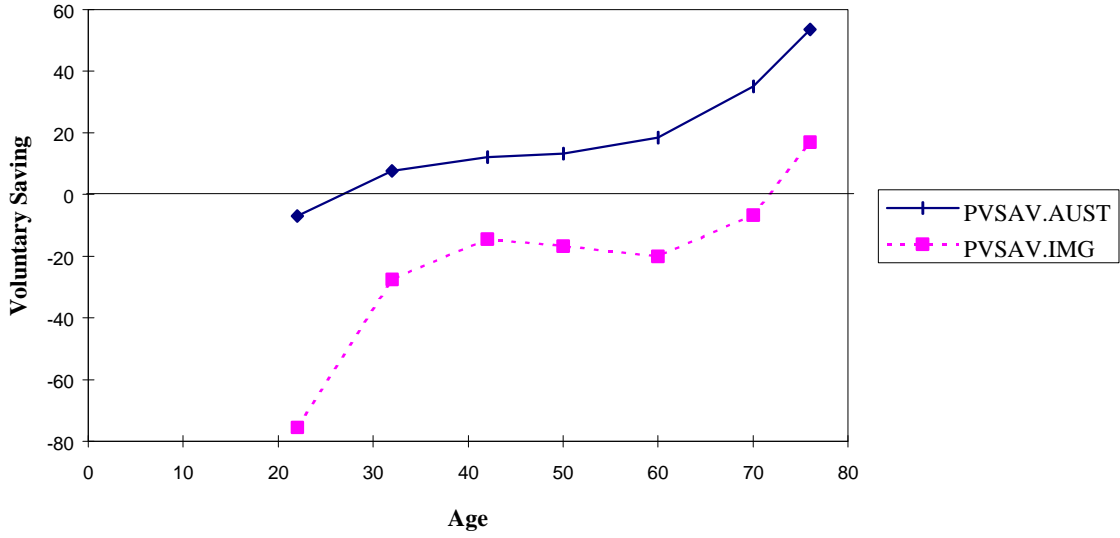
Average Household Weekly Total Saving by Birth Place and Arrival Period



Data Source: 1988-89 Household Expenditure Survey, Australia.

Figure 9

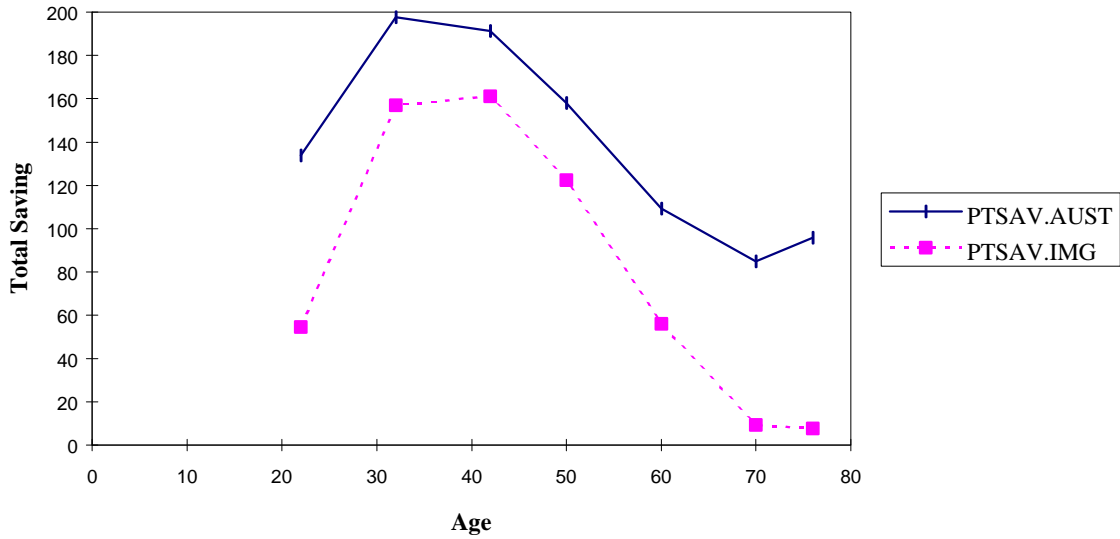
Predicted Age-Profiles of Voluntary Saving by Birth Place



Source: Table 6

Figure 10

Predicted Age-Profiles of Total Saving by Birth Place



Source: Table 6

Table 1
Foreign-born Population by Country of Birth and Arrival Period
(In Percentage)

Country of Birth	Arrival Period				
	Before 1950	1950-59	1960-69	1970-79	1980-89
UK & Ireland	50.7	32.0	48.8	39.8	27.6
Other Europe	4.8	5.1	6.3	20.8	29.9
Asia	4.3	0.2	3.6	11.9	16.4
Oceania	36.8	60.3	37.6	16.9	14.1
Other	3.3	2.4	3.6	10.5	12.0
Total	100	100	100	100	100

Data Source: 1988-89 Household Expenditure Survey, Australia.

Table 2
Average Weekly Household Income,
Government Benefits and Taxes by Birthplace*

	Australian Born	Foreign Born	Immigrant-Native Gap
(1) Private Income	578.79 (551.0)	568.99 (502.99)	-9.8
(2) Government Direct Benefits	61.68 (8.69)	69.20 (96.36)	7.52
(3) Gross Income [(1) + (2)]	640.47 (51.94)	638.19 (457.93)	-2.28
(4) Government Direct Taxes	134.78 (167.19)	131.35 (155.18)	-3.34
(5) Disposable Income [(3) - (4)]	505.69 (359.89)	506.84 (314.58)	1.15
(6) Government Indirect Benefits	109.40 (86.16)	125.90 (98.30)	16.5
(7) Disposable Income Plus Indirect Benefits [(5) + (6)]	615.09 (377.96)	632.74 (338.94)	17.65
(8) Indirect Taxes	65.32 (50.65)	64.79 (50.41)	-0.53
(9) Final Income [(7) - (8)]	549.76 (352.88)	567.95 (314.16)	18.19
(10) Net Direct Tax [(4) - (2)]	73.09 (219.55)	62.15 (214.27)	-10.94
(11) Net Indirect Tax [(8) - (6)]	-44.08 (95.82)	-61.11 (273.37)	-17.03
(12) Net Tax [(10) + (11)]	29.02 (269.02)	1.04 (273.37)	-27.97
Number of Households	5158	2067	

Data Source: 1988-89 Household Expenditure Survey, Australia

* Standard deviations are given in parenthesis.

Table 3
Breakdown of Average Weekly Household Expenditure
by Birthplace

	Percentage of Total Consumption Expenditure (E)	
	Australian Born	Foreign Born
1. Current Housing Costs	14.4	14.7
2. Fuel and Power	2.7	2.5
3. Food and Non Alcoholic Beverages	18.8	19.5
4. Alcoholic Beverages	3.6	3.0
5. Tobacco	1.4	1.3
6. Clothing and Footwear	5.9	5.9
7. Household Furnishings and Equipment	7.2	7.2
8. Household Services and Operation	4.8	4.9
9. Medical Care and Health Expenses	4.4	4.0
10. Transport	15.2	15.0
11. Recreation and Entertainment	12.0	12.2
12. Personal Care	2.0	1.9
13. Miscellaneous Commodities and Services	7.7	7.9
Household Weekly Expenditure (\$)*	489.56 (342.30)	525.02 (342.23)

Data Source: 1988-89 Household Expenditure Survey, Australia.

* Standard deviations are given in parenthesis.

Table 4
Average Weekly Income, Expenditures and Savings by
Country of Birth and Arrival Period*

	Y	DY	E	C	VSAV	DSAV	TSAV	n
All Households	575.98 (537.50)	506.01 (347.51)	499.70 (342.63)	434.53 (301.68)	6.31 (311.51)	76.28 (432.98)	141.45 (437.85)	7225
Australian-Born	578.78 (551.00)	505.69 (359.89)	489.56 (342.30)	424.24 (300.59)	16.13 (317.15)	89.22 (442.40)	154.55 (447.44)	5158
Foreign-Born	568.97 (502.30)	506.84 (314.58)	525.02 (342.23)	460.23 (302.91)	-18.19 (294.83)	43.97 (406.85)	108.76 (411.26)	2067
UK & Ireland	562.58 (505.99)	501.97 (311.62)	511.76 (342.98)	445.98 (302.61)	-9.79 (276.27)	50.81 (387.72)	116.59 (396.93)	810
Other Europe	534.15 (468.32)	490.72 (303.63)	503.43 (323.63)	439.96 (285.75)	-12.40 (291.80)	31.03 (394.09)	94.19 (395.48)	709
Asia	562.69 (532.15)	505.35 (317.80)	518.43 (290.03)	463.77 (260.62)	-13.07 (296.01)	44.27 (462.07)	98.92 (467.09)	274
Oceanic	743.37 (575.29)	602.86 (366.17)	645.22 (385.43)	564.30 (339.43)	-42.36 (303.57)	98.15 (420.25)	179.07 (428.01)	144
Other	619.02 (471.03)	521.82 (308.90)	607.85 (439.99)	536.72 (392.49)	-86.04 (390.65)	11.17 (450.10)	82.30 (435.35)	130
Immigrants Arrival in Australia								
before 1950	330.82 (419.89)	376.60 (280.97)	393.32 (278.79)	344.28 (242.16)	-16.7206 (242.26)	-62.50 (334.43)	-13.46 (335.92)	209
1950 - 1959	505.56 (484.62)	476.59 (314.75)	486.22 (351.39)	423.61 (307.57)	-9.62 (283.07)	19.34 (375.99)	81.95 (380.10)	494
1960 - 1969	618.96 (532.35)	536.17 (328.81)	534.48 (340.51)	467.04 (303.37)	1.68 (307.93)	84.47 (434.84)	151.92 (440.00)	553
1970 - 1979	641.65 (498.65)	545.53 (306.59)	549.98 (317.88)	481.89 (279.64)	-4.45 (293.63)	91.66 (423.37)	159.75 (428.23)	427
1980 - 1989	627.45 (478.42)	531.36 (298.47)	605.24 (363.92)	536.53 (325.90)	-73.88 (312.00)	22.21 (407.34)	90.93 (408.80)	384

n = Number of Households

Y = Private Income

DY = Disposable Income

E = Consumption Expenditure

C = Consumption Expenditure Net of Indirect Taxes

VSAV = Voluntary Saving (DY - E)

DSAV = Direct Saving (Y - E)

TSAV = Total Saving (Y - C)

Data Source: 1988-89 Household Expenditure Survey, Australia.

* Standard deviations are given in parenthesis.

Table 5
Estimated Savings Functions
Dependent Variable: Weekly Voluntary Saving
Sample Size: 7225

Variable	Column 1	Column 2	Column 3	Column 4
Constant	66.771	-261.49*	-260.06*	-258.24*
Age	-17.472*	11.413*	11.464*	11.474*
Age ²	0.302*	-0.241*	-0.244*	-0.247*
Age ³	-0.00124*	0.00169*	0.00171*	0.00176*
Dinc	0.356*	0.507*	0.508*	0.507*
Dinc ²	0.000054*	0.000035*	0.000035*	0.000035*
Img	-29.289*	-25.941*		
Female		17.243*	16.859*	17.047*
Unemployed		19.252**	19.963**	20.415**
Urban		-30.695*	-31.597*	-29.707*
Aged		44.559*	45.889*	45.618*
Family Size		-42.450*	-42.808*	-42.363*
Credit Card		-44.407*	-43.903*	-44.818*
UK & Ireland			-19.287*	
Other Europe			-21.848*	
Asia			0.040585	
Oceania			-82.704*	
Other			-75.338*	
Arrived Before 1950				-33.562*
1950-59				-17.947
1960-69				-11.398
1970-79				-4.7061
1980-89				-76.508*
R-square	0.26	0.32	0.32	0.32
F-Statistics	430.85	276.62	208.73	209.16

Notes: t-statistics are computed using the White's Heteroskedasticity-consistent variance-covariance matrix of the coefficients.

* The coefficient is statistically significant at the 5 percent level.

** The coefficient is statistically significant at the 10 percent level.

Table 6
Estimated Savings Functions
Dependent Variable: Total Savings
Sample Size: 7225

Variable	Column 1	Column 2	Column 3	Column 4
Constant	-300.990*	-753.960*	-753.800*	-751.24*
Age	0.382	45.051*	45.190*	45.102*
Age ²	-0.0694	-0.942*	-0.947*	-0.948*
Age ³	0.00082	0.00586*	0.00589*	0.00592*
Y	0.949*	1.102*	1.103*	1.102*
Y ²	0.000028**	0.0000081	0.0000080	0.0000082
Img	-42.776*	-30.709*		
Female		-22.358*	-22.517*	-22.517*
Unemployed		-63.409*	-62.697*	-62.513*
Urban		-34.665*	-35.211*	-33.903*
Aged		9.984	11.210	10.986
Family Size		-78.318*	-78.579*	-78.239*
Credit Card		-26.702*	-26.254*	-27.017*
UK & Ireland			-27.780*	
Other Europe			-22.785*	
Asia			-20.041	
Oceania			-69.747*	
Other			-66.210*	
Arrived Before 1950				-38.969*
1950-59				-24.721*
1960-69				-16.285
1970-79				-14.880
1980-89				-72.070*
R-square	0.63	0.68	0.68	0.68
F-Statistics	2050.03	1269.15	952.78	954.17

Notes: t-statistics are computed using the White's Heteroskedasticity-consistent variance-covariance matrix of the coefficients.

* The coefficient is statistically significant at the 5 percent level.

** The coefficient is statistically significant at the 10 percent level.

Table 7
Estimated Birthplace-Specific Savings Functions
Dependent Variable: Savings
Sample Size: 7225

	Australian-born		Foreign-born	
	Dependent Variable			
	VSAV	TSAV	VSAV	TSAV
Constant	-207.52*	-701.11*	-479.57*	-959.40*
Age	8.124**	42.176*	23.302*	57.328*
Age ²	-0.176**	-0.893*	-0.468*	-1.158*
Age ³	0.00129*	0.00562*	0.00306*	0.00697*
Income	0.538*	1.117*	0.386*	0.859*
Income ²	0.000031*	0.0000041	0.000067*	0.00016*
Female	16.641*	-25.330*	16.579	-22.490
Unemployed	17.406	-68.832*	17.976	-58.056*
Urban	-32.524*	-38.349*	-22.582**	-15.743
Aged	49.725*	4.700	22.839	13.999
Family Size	-45.515*	-78.221*	-33.339*	-76.156*
Credit Card	-51.507*	-33.415*	-26.215*	-9.973
R-Square	0.36	0.70	0.19	0.62
F-Statistics	264.04	1088.58	43.39	309.11
Sample Size	5158	5158	2067	2067

Notes: t-statistics are computed using the White's Heteroskedasticity-consistent variance-covariance matrix of the coefficients.

The 'income' variable is measured as disposable income and private income in the equation for VSAV and TSAV respectively

VSAV = Voluntary Saving Out of Disposable Income

TSAV = Total Savings Inclusive of Net Tax Contribution

* The coefficient is statistically significant at the 5 percent level.

** The coefficient is statistically significant at the 10 percent level.

APPENDIX

Table A1
Household Direct Taxes and the Breakdown of Direct Benefits

	Average Weekly Household Direct Taxes/Benefits	
	Australian-born	Foreign-born
<i>Direct Taxes</i>	134.78	131.50
<i>Direct Benefits</i>		
Age Pension	18.96	21.67
Invalid Pension	4.68	6.94
Widow's Pension	3.05	3.29
Unemployment Benefits	6.93	9.01
Sickness Benefits	1.04	2.61
Veteran's Affairs Pension	11.51	6.81
Sole Parent Pension	5.61	3.16
Wife's Pension	1.27	2.62
Family Allowance	5.06	5.31
Government Subsidy Assistance	1.52	3.34
Government Benefits	2.07	4.43
Total Direct Benefits	61.68	69.20

Notes:

1. Direct tax is the personal income tax including the medicare levy. Estimates of weekly direct tax are based on the tax eligibility criteria for 1988-89, gross income of family members and household members.

2. Direct benefits refer to regular direct government cash payments to the household with no obligation to provide goods and services in return.

For further details about the computation procedure see ABS cat. no. 6537.0

Data Source: 1988-89 Household Expenditure Survey, Australia.

Table A2
Breakdown of Household Indirect Taxes and Benefits

	Average Weekly Household Indirect Taxes/Benefits	
	Australian-born	Foreign-born
<i>Indirect Taxes</i>		
Petroleum Products	9.71	9.83
Tobacco Products	4.15	4.23
Alcohol	5.20	4.47
Ownership of Dwellings	4.87	5.33
Other Commodities	41.39	40.93
Total Indirect Taxes of all Commodities	65.32	64.79
<i>Indirect Benefits</i>		
Full-time University/College Education	5.36	9.24
Part-time University/College Education	2.64	2.66
Full-time TAFE Education	0.84	1.96
Part-time TAFE Education	3.53	3.99
Tertiary Education n.e.c.	0.04	0.05
Tertiary Education	12.41	17.9
Preschool Education	1.06	0.97
Independent Primary School Education	2.06	2.83
Government Primary School Education	14.37	14.91
Independent Secondary School Education	2.59	3.68
Government Secondary School Education	13.95	17.91
School Education	34.03	40.30
Other Education	1.88	2.21
Sub Total Education	48.32	60.41
Hospital Care	26.49	28.39
Medical Clinics	13.97	14.50
Prescription Subsidies	3.74	3.95
Other Health	2.65	3.05
Sub Total Health	46.86	49.98
First Home Buyers	0.56	0.91
Government Renters	2.18	2.08
Housing	2.74	2.99
Welfare	11.48	12.60
Total Indirect Benefits	109.40	125.90

Notes:

1. Indirect taxes are imputed according to the value of household expenditures on specific commodities and services incurring indirect tax. In estimating indirect taxes, the ABS has taken into account taxes placed on both the intermediate use and final demand value of the goods and services.

2. Indirect benefits refer to non-cash benefits and services received from the Government. Except for first home purchase, these benefits exclude cash outlays.

For further details about the computation procedure see ABS cat. no. 6537.0.

Data Source: 1988-89 Household Expenditure Survey, Australia.

Table A3
Estimated Saving Functions
Dependent Variable: Voluntary Saving Out of Final Income
Sample Size: 7225

Variable	Column 1	Column 2	Column 3	Column 4
Constant	-46.546	-339.97*	-300.71*	-300.21*
Age	-9.813*	13.370*	11.735*	11.817*
Age ²	0.140	-0.282*	-0.247*	-0.253*
Age ³	-0.00014	0.0021*	0.0017*	0.0018*
Finc	0.536*	0.466*	0.702*	0.702*
Finc ²	0.000029**	0.000040*	0.0000090	0.0000091
Img	-24.146*	-21.499*		
Female		41.516*	29.340*	29.683*
Unemployed		21.437**	35.692*	36.430*
Urban		-20.862*	-37.568*	-35.639*
Aged		74.991*	67.012*	66.862*
Family Size		11.612*	-33.025*	-32.642*
Credit Card		-46.064*	-49.987*	-50.923*
UK & Ireland			-16.227**	
Other Europe			-21.353*	
Asia			3.191	
Oceania			-88.218*	
Other			-66.597*	
Arrived Before 1950				-26.922**
1950-59				-15.562
1960-69				-12.032
1970-79				-2.505
1980-89				-74.228*
R-square	0.38	0.31	0.43	0.43
F-Statistics	747.35	265.79	344.39	344.74

Notes: t-statistics are computed using the White's Heteroskedasticity-consistent variance-covariance matrix of the coefficients.

* The coefficient is statistically significant at the 5 percent level.

** The coefficient is statistically significant at the 10 percent level.

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