Human Capital Accumulation: Education and Immigration

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Abstract

Education and immigration are examined and affirmed as drivers of sustainable productivity growth. In education, individuals see continuing benefits to educational investment, a view supported by individual rates of return from education. Private sector expenditure on education has increased substantially, Australia's public/private funding mix conforming to the OECD average. An expansion of migration is possible without unacceptable reduction in skill composition and may enhance Australian human resources development. The migration program should be set to underpin a 1.25 per cent population growth path and be focused on 'smart' growth and not just growth in numbers.

1. Introduction

This chapter examines the role of human resource development as a driver of growth for Australia. The focus is upon education and immigration as sources of human capital formation and upon associated policies for economic growth.

While the paper is ambitious it is not a truly comprehensive treatment, so that issues such as labour market programs, labour market structure, informal skilling and short courses, human resource management, overseas student markets, refugee issues and some others are not covered.

These latter are each important but the position taken here is that formal education and skilled migration are the core human resource concerns for building national capability to perform well in the liberalised environment created by the economic reform of recent decades. In a global knowledge economy smart growth in human resources is likely to be the key to being able to realise the benefits of new technology and of the more open global and domestic market environment.

People are ultimately the source of national capability and differential achievement in a globalised world. Education and skilled migration foster that capacity to capitalise on change and to benefit from it while muting the social costs. Indeed the building of human capital and social capital can be seen to be highly correlated, and are vehicles whereby both economic advance and improved equity can be complementary outcomes given good policy design. This chapter focuses on economic issues, but the broader context for these particular policies does deserve prominent recognition in policy development.

Improvement in Australian productivity growth in recent years has come from microeconomic reform (Productivity Commission 2000). Such reform has been beneficial because it has shaken up 80 years of institutional sclerosis. But growth by "shake-out" cannot, by its nature, be a sufficient source of sustainable growth. Instead new attention is required to capacity building to enable ongoing and equitable productivity enhancement in a competitive and globalised environment. In this

chapter education and migration are affirmed as core sources of sustainable productivity growth - and they are, arguably, core sources of social equity.

2. Education: A Human Capital Approach

Education as Investment

Mainstream economics considers educational outcomes to be the result of choices, at the margin, involving the costs and benefits of the alternatives. For individuals the major costs of the investment are the earnings foregone whilst learning (plus fees and other direct costs of education), and the major benefits accrue in the form of higher earnings than would otherwise have occurred.

For governments the issue is societal investments in education. The costs are outlays to education with the benefits being societal advantages above and beyond what accrue directly to the recipients of the education. Net societal benefits imply a role for government: subsidies to education should ensure that the right amount is delivered.

The human capital approach is adopted in what follows. We start with theory and an exploration of the individual perspective, with respect to Australian experience over the last two decades. The basic human capital predictions are supported, which suggests that the framework is useful. Changes in Australian education levels are then explored, as are variations in public/private sector financing. These areas are then put in an international context. A final section addresses several selective policy issues: how the recent Australian experience might be interpreted; and a way to improve current policy arrangements with respect to financing.

Individual Education Outcomes: 1982 and 1995

The outcomes of the individual investment process are illustrated in Table 1. They reflect annual pre-tax levels of individuals' earnings by age, for different levels of education and by sex for two periods of time, 1981/82 and 1994/95 - to show the extent to which the relationships have changed recently. The data are comparable and use two of the ABS' Income Distribution Surveys.

In exercises such as these stylised individuals are constructed. In our stylised examples, individuals have the choice at age 17 of: leaving school and undertaking no further education; leaving school and undertaking a Year 12 Certificate followed by a two year Diploma, both being undertaken at TAFE; completing high school and taking a four year degree at university; or doing the last and undertaking a two year Masters.

The table shows the nature of the costs and benefits of further educational investments, summarised as marginal rates of internal return i.e. the financial reward to educational choices.

Table 1
Marginal Internal Rate of Return Calculations (per cent)

	1981/82 Males	**1981/82 Females**	**1994/95 Males**	**1994/95 Females**
TAFE Qualification	5.2	6.6	11.8	13.0
Degree	10.1	11.6	13.2	11.3
Higher Degree	9.3	9.0	9.0	9.0

The major results are:

- educational investments have high returns for both men and women, in the range of 5-13 per cent (real) per annum;

- the returns were higher for women than men in 1981/82 for TAFE and undergraduate degrees; and

- there is broad stability in returns to education across the 13 year period, with the major exceptions of returns to TAFE, which have more than doubled for both sexes to be more in line with other education returns, and an increase in male benefit from a university degree.

Overall, for individuals, the data are supportive of the human capital perspective. This offers some confidence that the approach can be useful in an analysis of Australian educational experience and its relationship to economic growth. The more difficult issues concern societal benefits, the role of government and linkages with economic growth.

Education as Social Investment: Theory

Critical issues for policy concern the nature of social benefits and their likely size, given that economic theory suggests that answers to the latter should form the basis of the level of government subsidy. With respect to policy the essential concern is thus: what, and how valuable, are education externalities?

The externalities have been argued traditionally to include, among other things: reduced criminal activity, more informed public debate, better informed judgements with respect to health, and more sophisticated voting behaviour.

However, the value of these particular externalities is likely to be small and debatable relative to the externality effect of education on economic growth. Since the early 1960s it has been argued that in a world of rapidly changing information more highly educated workers have an advantage in adapting to different environments, in "dealing with disequilibria" - the capacity to
adjust to unanticipated shocks (Schultz, 1975; Huffman, 1974; Fane, 1975).[1]

Related issues have emerged in new growth theory, in which educational improvements are seen to facilitate technological progress, the engine of growth.[2] There are several (highly related) ways education is seen to impact on technological change:

- high levels of formal education are necessary for the successful introduction of capital equipment (Bartel and Lichtenburg, 1987);

- during periods in which a population is undergoing increases in education there will be an effective increase in the size of the labour force, so long as education raises productivity (Barro, 1991); and

- education disseminates knowledge and through this adds to growth because death does not result in knowledge loss (Lucas, 1988).

These notions have received wide acceptance in the economic research community. Their likely empirical importance is now considered.

Education as Social Investment: Evidence

Measuring the impact of education on economic growth is not straightforward. An important reason is that the growth impact of education on the skills of the labour force will be determined by both its quantity (higher participation rates) and its quality (the amount of knowledge imparted at any given schooling level). Understandably, given data availability, most analyses focus on the former.

[1] For education to result in social as well as private gains requires that the rents from the process are not captured completely by the educated individuals or the firms employing them. However, this will be the case if technological change flows easily from one workplace to the next (Romer, 1990).

[2] Dowrick (this volume) acknowledges the potential role of education in economic growth.

The best example in the Australian context is from Pope and Withers (1995). It suggests that in Australia over the last century or so economic growth (as measured by changes in output per head) has been influenced importantly by changes in aggregate skill levels. They find that in the 1930 to 1990 period, increases in school enrolments, university enrolments and years of labour market experience led to significant increases in annual per capita growth.

The role in economic growth of both the quality and quantity of education internationally are compared in Hanushek and Kimko, 2000. They test the extent to which educational quality as measured by standardised scores for mathematical and scientific literacy has contributed to economic growth differences averaged over thirty years across 139 countries. The test results are compared with the effect of changes in schooling quantities (as measured by the number of years of schooling).

They find that increases in workforce quality have a profound influence on economic growth, and by much more than quantities- where these can be measured seperately. For example, on average a one standard deviation increase in test scores adds about 1.0 per cent to a country's GDP per capita annual growth rate. By contrast increases in the quantity of schooling required to match this growth rate change seem to be very much higher: that is, to achieve a one per cent increase in the annual growth rate of a country's GDP per capita would require on average that workers had nine additional years of education.

The Hanushek and Kimko analysis says little about the sources of labour force quality, that is, the determinants of test scores. And it is very possible that these have been correlated over time with rising school participation rates, which suggests that the Pope and Withers conclusions concerning the role of educational quantities in Australian growth over time are robust but require unbundling- as indeed they were able to do for migration numbers and skill levels.

The Hanushek and Kimko main international result is nevertheless insightful in relation to this issue for Australia, since Australia has in fact had test scores below the average. Indeed their results imply that if Australian workforce quality had been the average of other countries over the thirty years from the 1960s, we would have experienced about a one per cent higher average GDP per capita annual growth rate,[3] which is a large increase.

It is important therefore to examine trends influencing the quantity and quality of education for Australia more closely. This is done in the next two sections.

3. Australian Educational Experience: Aggregate Changes Over Time

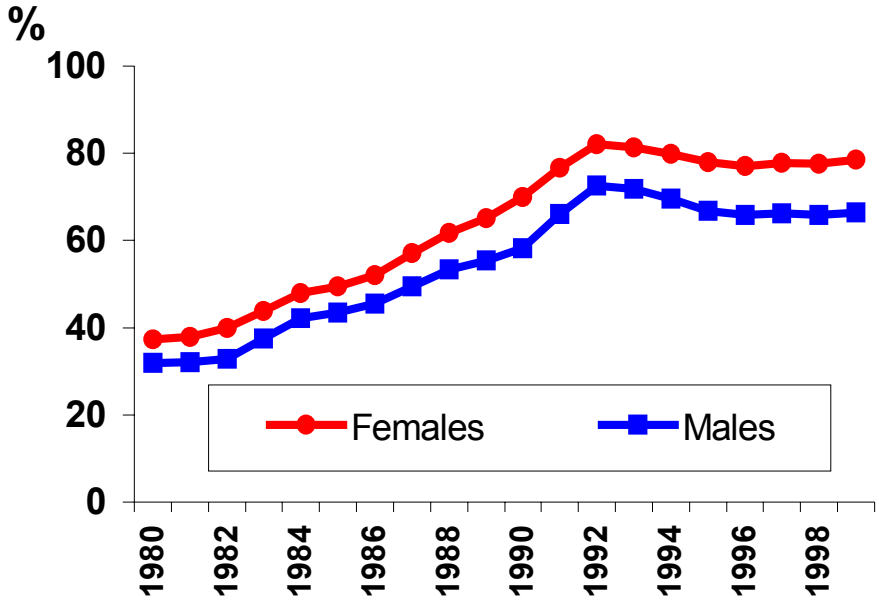
This section shows recent aggregate changes in Australian levels of education, with respect to secondary schooling, TAFE Diplomas and Certificates, and higher education. These data help motivate our main concern: government involvement in education and its implications for growth.

Year 12 Retention Rates

[3] Our estimate comes from the fact that the measure of quality for Australia is about one standard deviation below the average of the data.

Figure 1 shows Year 12 retention rates, measured as the proportion of a Year 7 cohort enrolled in Year 12 five years later, for the years 1980 to 2000.

Figure 1
Year 12 Retention Rates, 1980-2000.



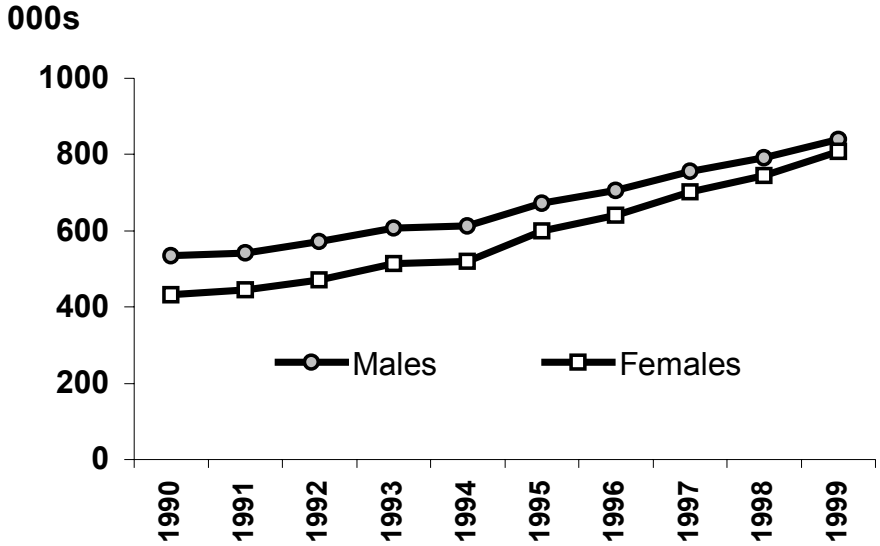
The main points are that: there has been a very significant increase in retention rates for both males and females in the 1980 to 2000 period, from about 35-40 per cent in 1980 to about 65-75 per cent in 2000; the pattern of change is very similar for boys and girls; and the rates of increase were very rapid for both sexes from 1980, but in 1993 both stopped growing, and even fell back a little. In 2000 there was a further decrease for boys.

TAFE Enrolments

Figure 2 shows enrolments in TAFE vocational courses in the 1990-2000 period. The focus is on professional courses: those taking at least one year and which lead to a Certificate or Diploma.

The data from Figure 2 suggest that: there has been a large increase in TAFE vocational enrolments over the last two decades; and the increase for females has been relatively high: from about 20 per cent lower than males in 1980 to equality in 2000.

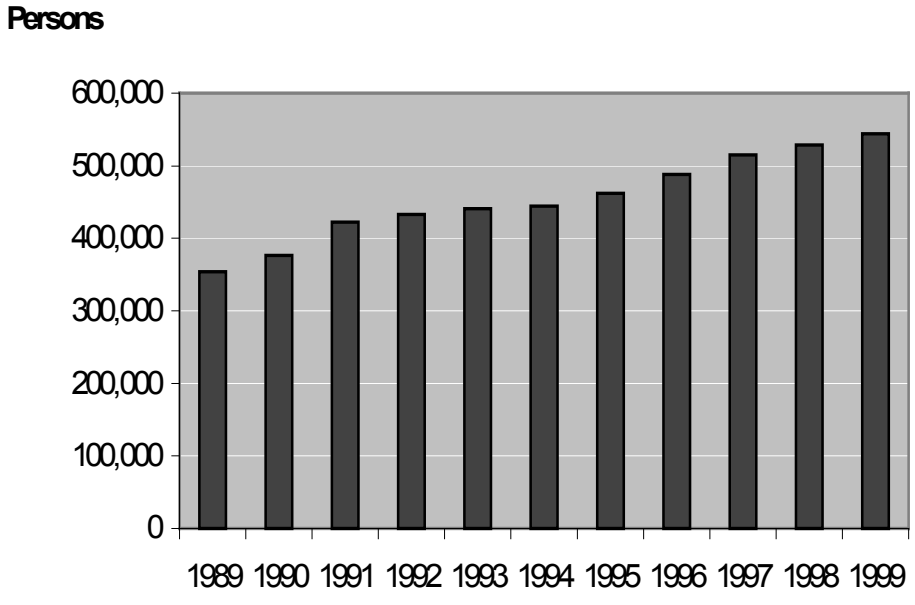
Figure 2
TAFE Enrolments, 1990-2000



University Enrolments

Total university enrolments for the last 10 years or so are shown in Figure 3. The obvious point from the Figure is that higher education enrolments have expanded considerably over the last decade or so, by around 50 per cent, or around 5 per cent a year. This has occurred in spite of the introduction of the Higher Education Contribution Scheme (HECS) in 1989 ie a (deferred) fee to be paid by students themselves or their families. The annual increase for women has been slightly but consistently higher than has been the increase for men, and at the end of the 1990s there were more women than men enrolled in university courses.

Figure 3
Higher Education Enrolments, 1989-1999



In general Australian education enrolments have increased in all areas over recent periods, and the increases have been very significant - particularly for women. These outcomes imply that private rates of return to education have remained strong over the last two decades, which is precisely the finding of the earlier analysis, and/or that quotas on entry to education places have been eased. Both are likely to have contributed.

The increase in quantities levelled off for schooling from 1993 and there is a need to monitor boys' participation which has recently declined. TAFE and university enrollments have continued to rise for more than a decade. Whether or not these quantity changes have been associated with changes in educational quality is now considered.

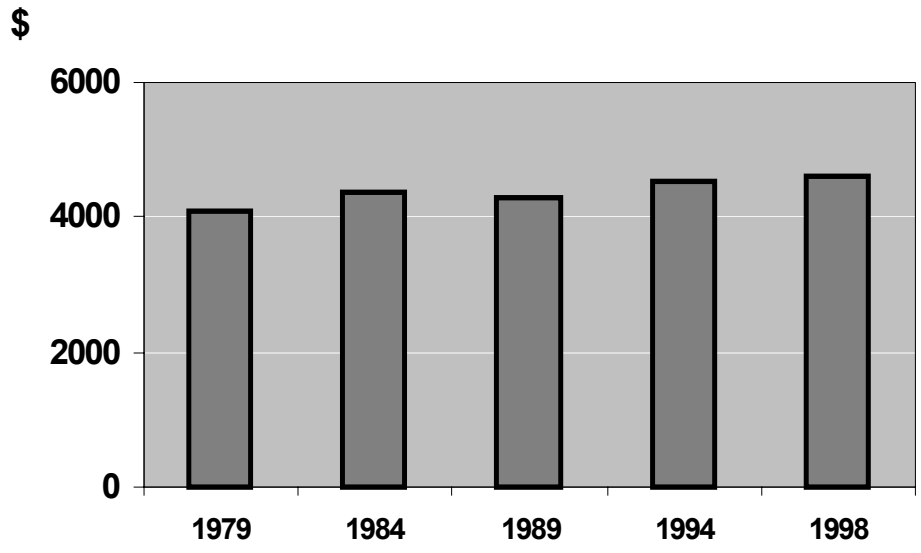
4. Australian Government Educational Inputs

A critical issue in assessing the stance of government educational policy in relation to quality relates to expenditure per student. This reflects the extent to which government is prepared to subsidise education in terms of per unit inputs. It is not a direct measure of quality, of course, but it is a possible indirect indicator for consideration when consistent and agreed direct measures are not available.

Primary and Secondary Per Student Government Expenditure

Figure 4 shows government outlays per student for various years over the last two decades. There has been a very small increase in government outlays per student. However, this result should be treated cautiously given the large compositional changes in school enrolments. That is, governments subsidise private schools but at a lower level than for private schools; thus a change in the public/private mix of students will influence these data.

Figure 4
Real Government Expenditure per School Student (1998$)

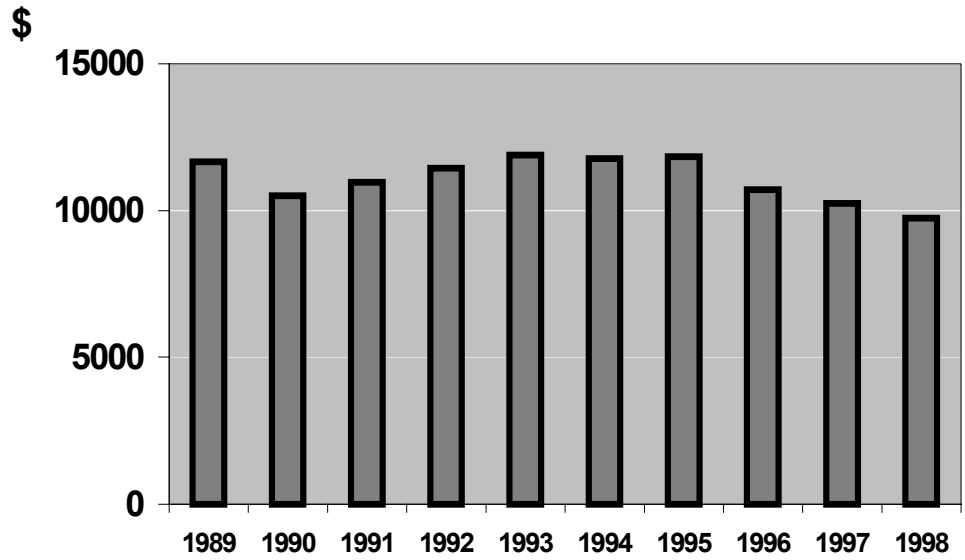


Source: *Calculations using Bourke (1999) and ABS Educational Expenditure data*

Higher Education Per Student Government Expenditure

Figure 5 shows real governmental outlays per university student, and reveals that since the mid-1990s there has been a consistent decline, of the order of 20 per cent. This could reflect compositional changes-such as between disciplines with different cost structures- but is much more likely to be the result of increased private payments for university services.

Figure 5
Real Government Expenditure per University Student (1998$)



Source: *TBA*

We conclude that over the last decade there has been some increase in government outlays per school student and a fall in government outlays per university student. Some part of this is reflected in the private/public proportions of educational expenditure, which are now considered.

5. Australian Educational Experience: Public/Private Changes Over Time

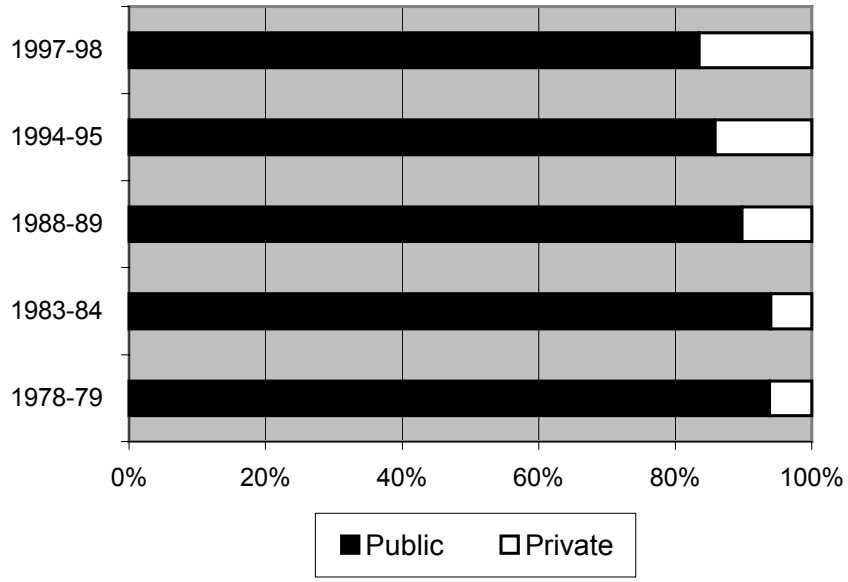
Section 3 showed that there have been considerable increases in educational enrolments in all areas, and Section 4 suggested that this has been accompanied by a small increase in government outlays per school student, but decreases for university students. What now follows offers complementary data illustrating the extent to which the picture presented by public spending is altered by examining how private funding as a proportion of all expenditure have changed. This helps us understand the extent to which educational enrolment levels have been the result of changes in private decisions too

Total Educational Expenditure

Figure 6 shows changes in total Australian educational expenditure over the last 20 years or so in terms of the public/private division. Government remains the dominant contributor of funding for education, although there has been a very significant decrease in the relative extent to which the

public sector has subsidised total education, with the increase in private sector support being around four-fold.[4]

Figure 6
Public/Private Australian Total Education Expenditure: 1979-1998



Source: *Gerald Bourke (1999).*

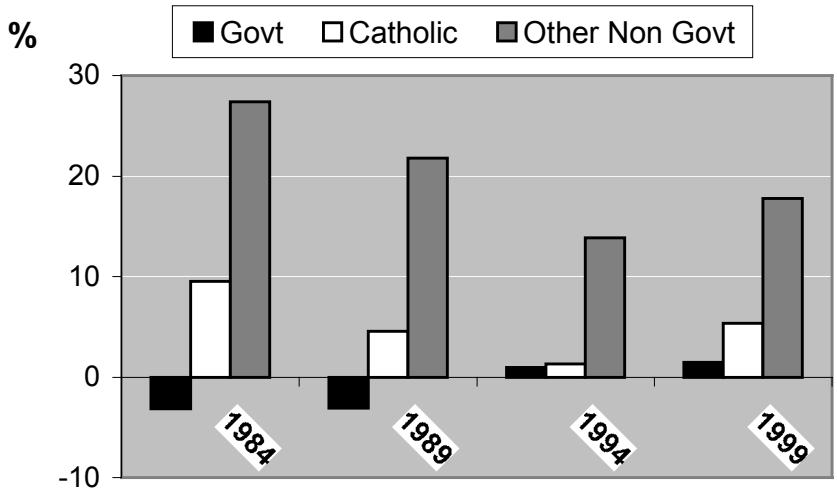
Schools Expenditure

One dimension of the public/private split for Primary and Secondary schooling, is the proportion of public recurrent outlays going to government and private schools. The basic message is that there has been a consistent decrease in the proportion of schools expenditure in government schools, from 81 per cent in 1979 to 69 per cent in 1999.

This situation can be understood to be a reflection in part of the very large changes which have taken place in the composition of school students, now illustrated in Figure 7. It shows changes in Primary and Secondary school enrolments over the last 20 years or so, for government, non-public (Catholic) and non-public (Other) sectors.

[4] The data could be understating changes in the extent of private sector support since it is unclear how HECS revenues have been included.

Figure 7
Percentage Change in Enrolments by School type (5 year period starting in 1979)



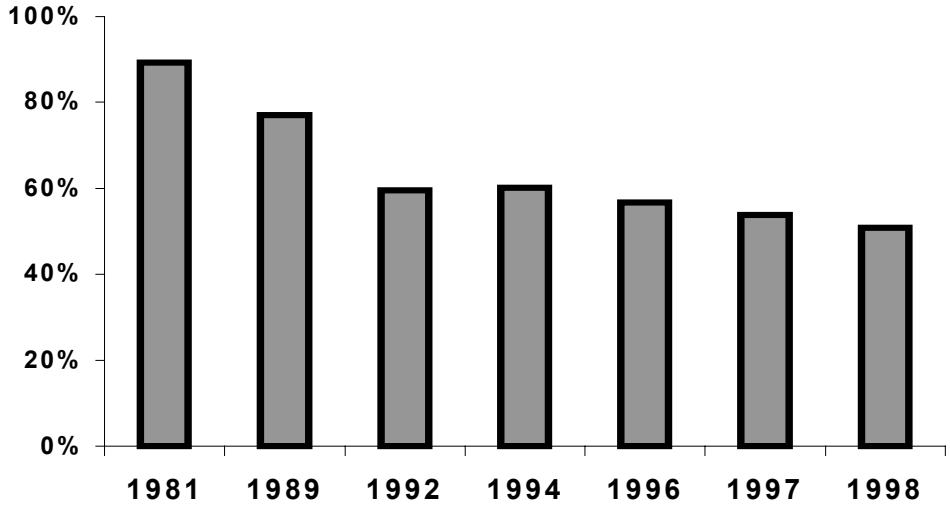
Source: *Calculations from the data presented in Bourke (1999).*

We note that: there has been a slight decrease in government enrolments; there has been an extremely large increase in non-Catholic private enrolments (averaging about 20 per cent for every 5-year period); and there has been a moderate increase in Catholic school enrolments (averaging about 4 per cent for each 5-year period).

Higher Education

Figure 8 illustrates changes in public/private sector financing of higher education over about the last 20 years or so.

Figure 8
Proportional Federal Government Expenditure in Higher Education, 1981-1998 (selected years)



Source: *Prior to 1993, DEET "National Report on Australia's Higher Education Sector", May 1993 (Table 4.6); from 1993 onwards, DETYA Selected Higher Education Finance Statistics.*

After 1989 (when private contributions began through the HECS system), there has been a marked decrease in the direct government financing proportion in higher education. From 1989 to 1992 the fall in public sector financing was around 20 percentage points, and the decrease in years after that has averaged around 2 percentage points per year.

In general, therefore, over the last 20 years Australian governments have decreased their education total expenditure in proportionate terms, from about 95 per cent to just over 80 per cent of all education outlays, public and private. The biggest change has occurred with respect to university funding, where the government decline has been from about 90 to about 60 per cent of total funding.

6. Australian Education Financing Experience in International Context

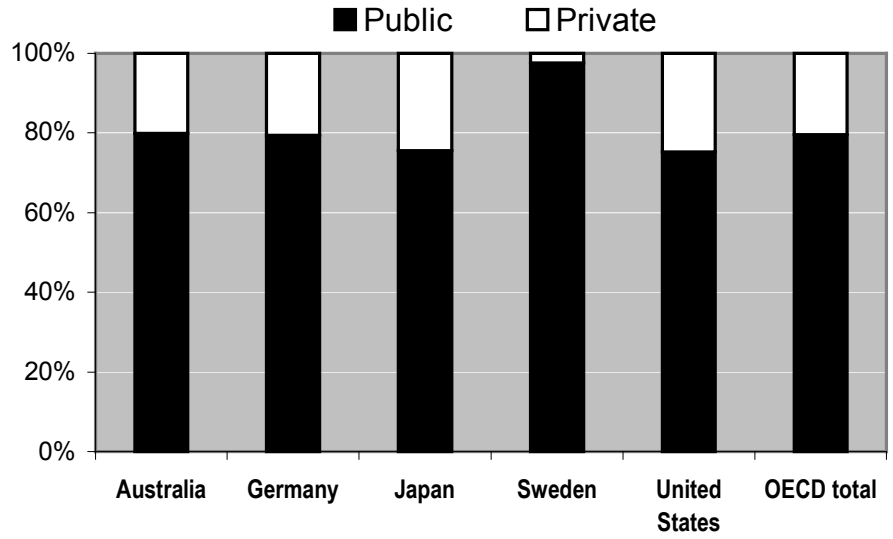
To understand further the policy position of Australian governments it is instructive to consider our expenditure levels and the public/private split with reference to similar countries.

While some limited comparisons are possible for different periods, the general paucity of data has meant that much of what now follows relates to single snapshots, for 1997.

Public/Private Total Educational Expenditure Proportions

Figures 10 shows the private/public mix for total educational expenditure for selected countries for 1997.

Figure 10
Public and Private Expenditure as Proportion of Total Expenditure in 1997 (various countries)



Source: *OECD, Education at a Glance, 1998*

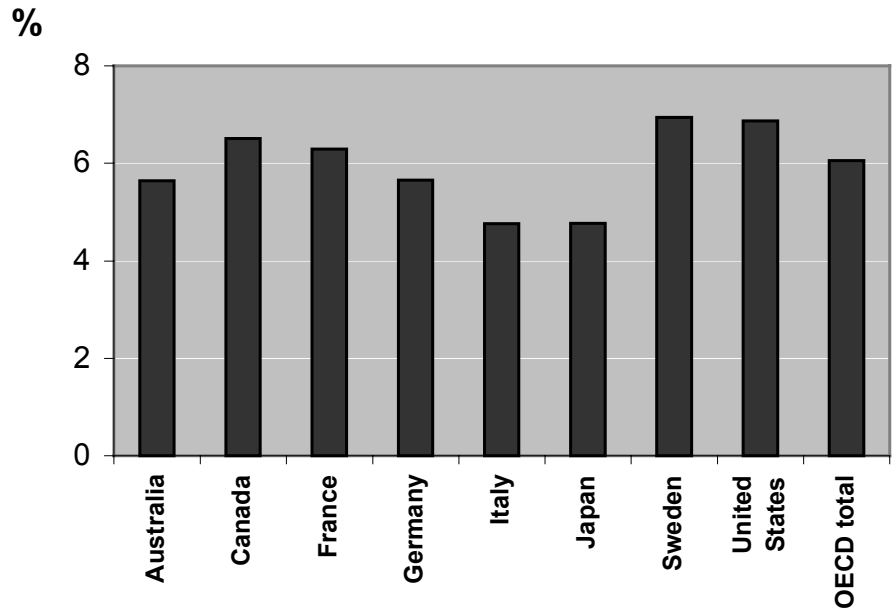
The data reveal that with respect to total educational expenditure the Australian public sector proportional contribution is now around about the average for the OECD, though we have seen that over the 1990s the Australian public sector contribution fell by about 5 percentage points. At the beginning of the period Australia had a relatively higher public sector contribution, but this had disappeared by the late 1990s.

In terms of sectors, for schools the Australian experience lies in the middle of the countries considered for schools, at about 85 per cent, and this is about the same as the OECD average.

For tertiary education, there are very large differences between countries in relation to public/private splits, from just over 40 per cent government for Japan, to about 90 per cent for Sweden. Again Australia lies in the middle, at just over 60 per cent, which is slightly higher than the OECD average.

The remaining issue is how the balance of public and private outlays add up to total national commitment to education. This is indicated for selected OECD countries (and OECD average) for 1998 in Figure 11. It is seen there that Australia is a little behind the average and significantly behind countries such as Canada, Sweden and the United States. Such comparisons can be-devilled by statistical quirks such as how training is measured and by factors such as disparate phases of the business cycle, but as a country with a relatively younger age structure than most OECD countries it seems likely that our outlays are at best average. Unless therefore other countries are over-spending (ie reaping lower net marginal benefit) or we are a more efficient provider than most, then Australia's performance may be sub-optimal.

Figure 11
Total Expenditure on all Education as a percentage of GDP, 1998



Source: *OECD, Education at a Glance, 1998.*

7. Interpreting the Current Role of Government in Education

Given data limitations, much of the information presented above should not yet be considered to be definitive evidence of the changing role of government in Australia with respect to education. In particular, international real unit total outlay data for the various levels of education are needed, as is comprehensive incorporation of TAFE-type studies on a consistent basis. With that said, six points can be noted:

- individuals have decided that there are continuing benefits to increases in educational investments, and this is supported by analysis of individual rates of return to education;
- expansion of enrolments has been very significant over the last several decades;
- this significant expansion has been accompanied by stable or increasing private rates of return, implying that expansion to date has not at all diluted private net benefit;
- schooling expansion has been supported by some increased public and, even more, increased private real unit outlays;
- university expansion has been accompanied by much reduced public real unit outlays and substantially increased private revenue;
- in current international context, Australian educational outlays in total are slightly below the OECD average, but the public/private funding mix broadly conforms to the OECD average.

These results are suggestive of the following. One is that Australian governments remain prepared to finance most educational expenditure. However, there has not been a

willingness in the public sector to substantially increase real unit subsidies for schooling, and the extent to which governments are prepared to subsidise unit costs in tertiary education has fallen.

Private sector expenditure on education has changed significantly over the last two decades, with there being a marked increase in private schooling, and also a considerable increase in higher education external funding, including student contributions. It is likely that these tertiary changes reflect the equity responses of the Labor Government to "free education" which led to the introduction of HECS in 1989 (Chapman, 1997).

There are significant issues for policy. The first relates to the implications for income distribution of an education system moving increasingly away from public funding. While educational expansion is arguably very healthy from a societal point of view the implications for inter-generational opportunities and intra-generational social justice may not be. As is increasingly understood, social capital influences growth in many ways along with direct investment in physical and human capital. Thus the expansion of private schooling under new funding arrangements needs close scrutiny for this reason, including in relation to the extent to which any perception of growing unfairness undermines co-operation with change in a dynamic economy.

Further, in the tertiary education sector there is a tendency to impose up-front student fees. This is, in fact, an inappropriate mechanism increasingly likely to limit the educational chances of prospective TAFE students in particular. Income contingent charging mechanisms, such as HECS, can be used for improved social and economic outcomes from education, and assessing their suitability for a range of educational pathways should be given policy priority.

Next, the question arises as to whether the quantity expansion in enrolment levels has come at the expense of education quality. As indicated in section 2 above, this is likely to be the key parameter in the role of education in productivity-driven economic growth. To determine this requires closer review of trends in cost per student, their linkage to educational outcomes and Australia's position on such indicators relative to other industrial nations.

Finally, the combination of public and private funding for educational expenditure now prevailing, still leaves Australia in the middle level of industrial countries even though its relatively younger demographic profile should lift it higher than most, other things being equal. It will therefore be important to determine the extent to which these trends are having negative impacts on Australia's capacity to compete globally and deliver increased living standards.

Withers (2000) has argued that an increase in total outlays on education, training and R&D from 8 per cent to 11 per cent of GDP is required if a sustainable growth target of 3 per cent capita growth is to be achievable. This is not to say that funding increases are the only requirement. Ongoing structural reform is also urgently needed. And one central requirement here is for a more flexible and responsive government schooling. Recent pathbreaking US work (Hoxby 2000) has shown that greater choice and competition within government education systems can jointly limit the outflow to private providers and improve educational achievement substantially – thus arguably advancing both efficiency and equity or social cohesion at the same time. Sims 2000 provides a reform agenda for Australian universities.

8. Economic Issues in Migration

Migration as Individual Investment

Immigration, like education, is often viewed by economists as an investment: current consumption is foregone by incurring costs in moving location so as to increase future earnings and other benefits. And this is indeed the outcome of the migration process to Australia. Earlier research established that both the average income levels and their growth across the countries of origin for Australian migrants were below those of Australia. For example, for the first forty years of the post-war period the migrant opportunity cost was an average growth rate for per capita income of 1.52 percent as opposed to an actual growth rate of 3.38 per cent in average incomes achieved by re-locating to Australia (Withers 1985)

Migrants themselves have therefore gained through their international mobility, and this point is relevant to evaluation of the outcomes of Australia's immigration program: one quarter of Australia's present population has improved its economic position as a direct result of the act of immigration to Australia.

It is also interesting to note that the one global econometric study of the welfare consequences of free movement of people across borders found that World GDP would double (Hamilton and Whalley 1994). In economic terms this would be predicted in the same way that removal of barriers of trade in goods and removal of capital controls leads to improved resource allocation and associated higher average incomes.

Migration as Social Investment

However it is a fact that population movements remain more regulated and controlled than do trade and capital movements. And this is true even for a so-called "settler" nation such as Australia.

Why might this be so? The basic reasons are probably to be found in the following popular beliefs variously present in the public or political mind:

- Migrants create unemployment, crowd-out local training and reduce per capita income.

- Migrants create balance of payments deficits, induce inflation and are a drain on the public purse.

- Migrants compromise Australia's carrying capacity, deplete resources, crowd cities and endanger ecosystems.

- Migrants create ethnic enclaves and undermine social cohesion.

Under the National Competition Policy that became pervasive in Australian micro-economic policy in the 1990s, a general presumption is that a legislative restriction on competition (e.g. migrant entry controls) should be repealed unless a public interest case to the contrary can be made. This is to say that the benefits of the restriction to the community as a whole should outweigh the costs, and the objectives of the legislation can only be achieved by that restriction.

In the case of some perceived costs of immigration that would, if valid, compromise the public interest, there is evidence that the perception is incorrect. With unemployment, for instance, there is a good amount of empirical evidence for Australia that immigration of the kind we have experienced has not added to the unemployment rate and indeed is likely to have reduced unemployment for the native population, including the long-term unemployed originally established in Pope and Withers (1985), the most recent documentation of this is in Shan and Sun (1998) and Konya (2000), and similar findings apply to the other economic effects eg public budget effects (ACIL Consulting 1999, Richardson 2001).

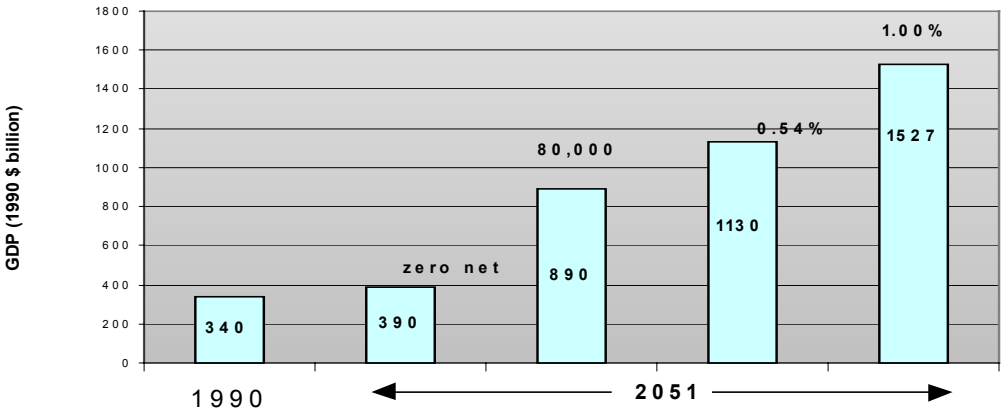
Other possible negative costs in areas like the environment are complex to analyse and a rich research base on population –environment linkages in Australia does not exist. The House of Representatives Long-Term Strategies Committee (1994) and the State of the Environment Advisory Council (1996) emphasised the knowledge gap. But even where demonstrable linkages do exist eg urban congestion, it remains important to establish that population restriction is the most effective means for reducing such costs, relative to other approaches and with due attention to balancing both losses and gains. A recent report by the Australian Academy of Technological Sciences and Engineering, (2001), finds that rarely is population the most suitable mechanism to gain relevant environmental benefit.

Naturally the further area of social cohesion is harder to quantify than others in effects. But even there a body of research challenges some common propositions about possible community cost. For example, claims of urban segregation and ghetto formation have been examined using residential concentration and mobility data and determined to be ill-founded for Australian experience, as are claims of disproportionate ethnic contribution to crime rates. Castles, Foster, Iredale and Withers (1998) provide a survey of the literature on these issues.

Any wholesale deregulation however is unlikely, despite such evidence as in this area contrary to the formal Competition Policy process applied to much legislation, the onus still seems to be on proponents of liberalisation to make a public interest case for deregulation. This may reflect some public attitudes and values not necessarily easily influenced by analysis and evidence. It is therefore not sufficient to disprove the negative views or to document better policy levers. Rather, the political economy seems to require that a positive case be developed.

An older "nation-building" case was previously accepted in a more pioneering Australia. The resonance of that in terms of raw labour power for clearing land and building cities and for working in factories and defending a continent on the fringe of populous Asia, has dissipated in modern times. Instead a new approach based on notions of global integration is emerging which is more supportive of a contemporary expansionist position.

On the economic front, a scale effect is fairly self-evident. But it can be given quantitative illustration. Without migrants and the children of migrants over the post-war period, our GDP would be more like $265 billion than $550 billion today. Migrants and their children have provided almost 10 per cent of the post-war growth in the Australian workforce. Taking this forward, a one per cent population growth will add about $600 billion more to Australia's GDP by 2051, as shown in Figure 12.



Source: Withers 1999

Figure 12
Aggregate Growth Effects
(alternative migration options)

But what of per capita benefit? Importantly, endogenous growth theory adds a new understanding of how such benefit may indeed be derived from population scale expansion - especially via skilled labour and with complementary physical investment. In earlier work anticipating the endogenous approach, John Nevile (1990) had found Australian population expansion to be a major source of technological change for Australia. In particular he concluded that a one percent increase in total output increased the rate of innovation by 0.6 percent and that this benefit in terms of translation into per capita growth was optimised with around 1.25% population growth. Australia currently has a 1% population growth rate and that is gradually declining on present trends.

Similarly, work by Brain et al (1979), Baker (1985), the Centre for International Economics (1988) and Withers (1987) had all shown a significant per capita pay-off from skilled migration. And, using an explicit modern endogenous growth model, Pope and Withers (1995) found high per capita pay-offs to both migration quantities and skills- as they did also for domestic education and work-force on-the-job training and experience.

Murphy (2001) and Access Economics (1998) provide recent supporting empirical micro-foundations for these results. For instance, Access Economics found that business migrant firms have a consistently better rate of exporting - with small firms exporting 10 times the value of other equivalent size Australian firms.

In common-sense terms what is said to be happening is that:

- A growing market, outstripping capacity, engenders confidence for investment;
- An increasingly large and skilled labour force ensures the capability to best add value to physical investment;
- Fresh perspectives and new ways of doing things enhance innovation; and
- A culturally diverse population promotes trade links and global integration.

And new international economic research is backing this up too and providing insight into the underlying mechanisms eg Lazear (2000) on cultural diversity and Quigley (1998) on agglomoration. For instance, for the United States, each extra two million people add about 8 percent to average productivity for a city. These effects of scale, diversity and agglomeration are missing in some earlier Australian studies which lead them to reach conclusions that the positive per capita effects are not clearly demonstrated.

Once such effects are acknowledged it is less surprising to find a recent London Economist survey of Australia offering a final section titled "Is anybody there?" and concluding its survey with the proposal that "perhaps this is the moment for (Australia) to start thinking about a new project: matching its population more closely to its size" (September 9-15, 2000, p.16)

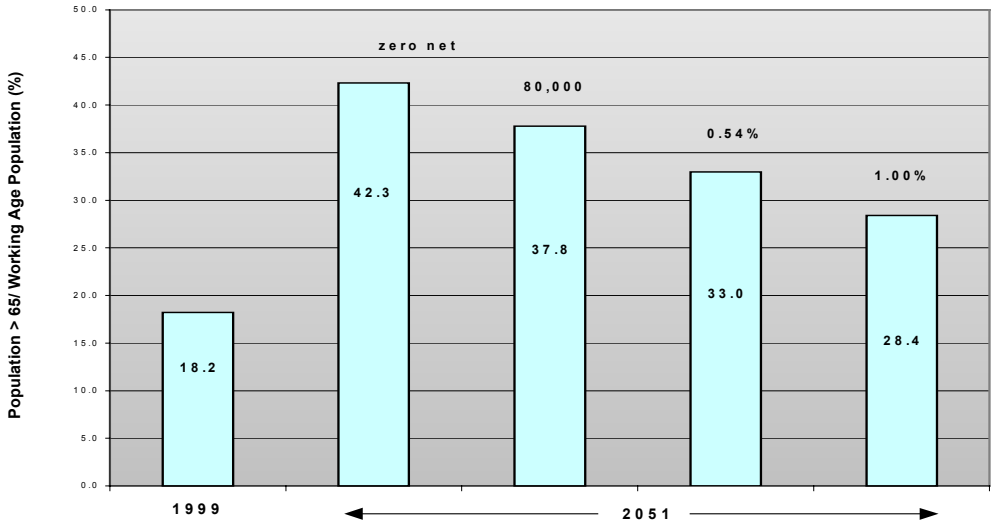
That said on the economics front, it is also arguable that there are also social benefits in terms of migration assisting with reduced health costs, retirement support costs and education costs as well as providing reunification and support for families otherwise

separated, itself an intrinsically desirable outcome in a society that sees families as the basic social unit, including for the care of dependents.

In this context the impact of immigration on reducing the adverse consequences of population ageing has attracted particular attention. There is a view among many demographers, however, that immigration can contribute only a small benefit there (McDonald and Kippen, 1999), and a view among some economists that the problem is anyway exaggerated in fiscal terms too or can readily be accommodated by policy (Productivity Commission, 1999). But there is an alternative view that sees an expansive immigration program as a useful component of the package of policy response to the ageing population eg. Alvarodo and Creedy (1998), Guest and McDonald (2000), Richardson (2001), Murphy (2001), though there is no suggestion that it is a single or simple solution, not that it should fully turn-back rather than merely mute the demographic trend.

It is estimated that a migration-based one percent population growth rate compared to the present migration level and fertility trend, can halve the extra share of GDP otherwise needed for aged support under present support policies – a saving of perhaps $25 billion in 1999 dollars (Withers, 2000). Figure 13 illustrates this.

Figure 13
Age Dependency Effects
(alternative migration options)



Source: Australian National University

9. Migration Rates: Changes Over Time

Despite the claims made for potential benefits of migration, Australia has been steadily reducing the rate of migration. Naturally there are fluctuations up and down from time to time in annual migration rates but the high and low migration points in the cycle have been getting lower almost continuously (Sims 2000). The trend is down.

The decline in permanent entry rates is complemented by a growing rate of emigration. Permanent departures have now reached 41,000 per annum in 2000 and they are even more skewed to high skills than is the entry program.

Nevertheless, while the post-war migration program has always delivered an average skill level ahead of the domestic Australian average (Withers 1989), this skill content has been further enhanced in recent years. According to the Immigration Department (DIMA 2000) the skill stream in migrant entry has risen from 29 per cent of the program in 1995-96 to a proposed 53 per cent in 2000-01. Birrell (2001) shows that it is the skilled entry program that prevents a major "brain-drain" from otherwise emerging for Australia.

While the settler arrivals rate has been declining, non-permanent population inflows have grown substantially. This is especially so for tourists and other visitors, but this trend includes steady expansion in business and skilled categories. Nevertheless, the stock (as opposed to flow) of all such persons as residents at any fixed time is only currently around 120,000.

The large magnitude of movements recorded eg 4 million tourists, therefore implies substantial turnover in both directions. It is in the nature of such movements that most are short-term and that even when long-term they still do mostly leave. So it is perhaps premature to shift primary policy focus yet to short and medium term entry, and ignore settler movements, even though temporary entry is correctly seen as of increasing importance and of considerable value for skill transfer and flexibility (Ruddock 2000).

10. Policy for Smart Growth

Determining the precise levels of immigration required into the future is a challenge. Illustrative long-term population consequences of alternative migration options are outlined in Figure 14.

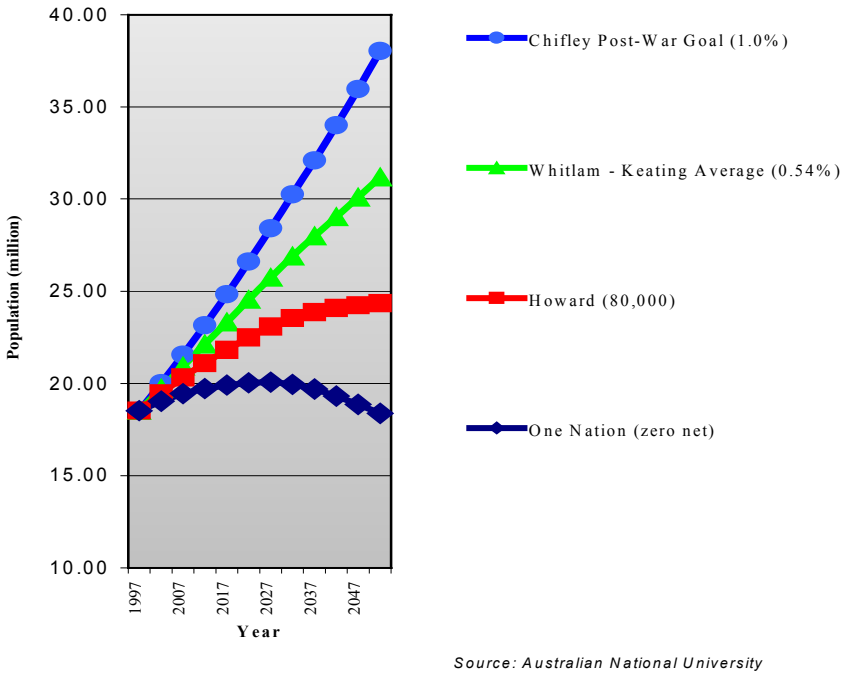


Figure 14 Migration Policy Settings
(alternative migration settings)

One benchmark for choosing is offered above in the work of Nevile. It is found that the optimum population growth historically for purposes of enhancing per capita income growth has been a rate of around 1.25%. Rates very much higher or lower were less beneficial. In the presence of a reducing fertility rate this implies increasing the migration rate over time to achieve this total population growth rate. Currently population growth is around 1% and falling.

While future fertility is difficult to predict, present trends would imply a migration program of 115,000 rising to 250, 000 by mid-century to match the Nevile target. This requires a migration rate averaging around or a little above the Whitlam-Keating average, starting below and rising above that average over time. Such levels could also contribute to social savings in relation to demographic ageing, perhaps by several percentage points of GDP relative to present migration settings, if the "alternative view" projections cited earlier are correct.

A key question is whether such an inflow can be achieved without reducing the economic skill quality of the intake. There is some concern that expanding migration must come at the expense of skill quality,
particularly in the presence of growing international competition for skilled migrants (Cobb-Clark and Connolly, 1997). Yet a balanced program is important for economic, social and political objectives to all be served.

There are reasons, in fact, why expansion may be possible without unacceptable reduction in skill composition:

- The broad parameters of the present points test used for selecting independent entrants (economic migrants) were set arbitrarily to deliver intake numbers around the then current level. In particular a weighting given to each component eg age, spouse skills, settlement capital, was quite arbitrary. The age weight could be reduced and the other two increased without any demonstrable loss.

- The present points test is set so high that the great majority of Australians would not be eligible. In fact, it need only ensure no dilution of average skill to be beneficial.

- The Government does not undertake, encourage or support the sustained, professional promotion of skilled and business immigration to Australia. It could.

Of course, to return to the competition policy framework adopted earlier in this chapter, greater liberalisation need not mean full deregulation. The evidence on benefit and limited adverse consequences from some expansion is drawn empirically from the range of Australian migration actually experienced. To go beyond this would be risky, in terms of known consequences. It is reasonable to believe that a rapid acceleration of immigration levels for instance, could well stretch Australia's economic, social and urban environmental capacities for healthy adjustment ie there may be genuine speed limits. Nevile's work cited above does show this for per capita income growth, quite apart from other criteria. He stresses that population growth that is too high (greater than
1.75%) and too low (less than 0.75%) may come at severe cost in living standards.

In summary, an expansion of migration may help enhance Australian human resources development and economic vigour. The migration program could be set to underpin a 1.25% population growth path and be focussed on "smart growth" and program balance and not just growth in numbers. For this to pay off, appropriate national policy settings for complementary investment in education, innovation, infrastructure and ecological sustainability are also required, as are the family-friendly workplace policies that will help reduce decline in fertility and increase the labour force participation rate, including for older workers (McDonald and Kippen 1999). Some of the education policy directions needed have also been discussed earlier in this chapter.

Such a package could significantly enhance Australian human resource development. Above all it should be stressed that immigration and education are complementary. Neither is a substitute for the other and their joint advancement will underpin growth and equity for a better future for the country.

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