Income Contingent Collection of a 'Brain Drain Tax': Theory, Policy and Empirical Potential

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Abstract

The purpose of this study is to explore income contingent loans as a mechanism for collecting a "Brain Drain Tax" as proposed by Bhagwati. As originally proposed, developing countries would receive taxes levied on emigrants from developing countries to recompense them for the losses imposed by the brain drain. Income continent loans provide a potential method of collection as a notional debt could be imposed at the time of immigration and paid off over time though income tax levies. Using Australia as a case study, we explore the potential revenue that would be collected through the Higher Education Contribution Scheme (HECS) from a notional debt of $5000 (Australian) per skilled immigrant. Using census data we estimate around 25,000 skill immigrants per year would incur a notional HECS debt of $125 million (Australian) with around half being repaid under current income threshold arrangements. Extending the tax to unskilled migrants would more than double the revenue. The study finally highlights several administrative and legal issues that would need to be resolved, including options for remitting funds back to developing countries.

Keywords

Brain drain tax, income contingent loans, income contingent debt

1. Introduction

It has been more than 40 years since Jagdish Bhagwati proposed setting up a form of financial redistribution arrangement in order for developing countries to receive revenue from taxes (more accurately, debts) levied on immigrants from developing countries (Bhagwati and Dellalfar, 1973). In his original proposal he considered ways to implement a policy which allows compensation to less developed countries (LDC) for the losses imposed by the brain drain, losses which essentially take the form of foregone social returns to education. His preferred method of implementation was for the developed country (DC) to collect it, from the immigrants by the tax authority of the host country and repatriated to the LDC of origin. The so-called "brain drain tax"(BDT) would be collected for a defined period of several years or capped at a maximum amount.

Since this idea was first proposed trends towards globalisation have been associated with considerably increased human capital flows, with recent estimates suggesting that more than one-third of total immigration to OECD countries comes from developing countries (Docquier and Marfouk, 2006). There has been substantial debate on the positive and negative effects of the brain drain of developing countries (Beine, Docquier and Rapoport, 2007), with the potential beneficial effects for sending countries including remittances and the associated consumption and increased educational investments at home. While the benefits of remittances are clear, several administrative issues associated with the collection of the BDT in developed countries remain unresolved (Wilson 2005).

With this as context there are two essential contributions of this paper. The first is to provide the background to the fact that in many developed countries there is now a practical way to implement such a system with the use of the personal income tax system, the mechanism associated with the collection of income contingent university loans (ICL). The conceptual and practical bases of ICL are described and examined.

Second is an illustration of the potential financial resources that might be able to be collected from immigrants through the ICL mechanism, and these are considered with a hypothetical empirical case study involving Australia. This country is an ideal example for such an exercise for two reasons: Australia has had an effective ICL in place for over 25 years, and is also a country with a high level of immigration, skilled immigration in particular.

The paper is structured as follows. The next section examines the analytical and conceptual foundation of ICL collection, although in the context of the BDT a more precise term would be income contingent debt (ICD) collection. The third section explains the empirical methodology used for the exercise and the data related to the application involving both skilled and total Australian adult immigration. The fourth section presents and interprets the potential quantum of BDT funds which might be collected. Finally, we consider some potential legal, administrative and policy issues involving the implementation of a BDT in Australia.

2. Why use income contingent debt collection?

(a) Background

We begin with a description and explanation of the origins of ICL, which started on a national scale with reform to higher education tuition in Australia in 1989 and is known as the Higher Education Contribution Scheme (HECS, or now known as HECS-HELP). A summary of the effects of HECS-HELP from a number of perspectives is presented, and the conceptual basis of ICL is examined.

(b) The Australian and international experience with ICL for higher education

In 1989 the Australian government introduced the first university tuition loan program in which debts would be collected through the income tax system depending on the participant's income (see Chapman, 1997 and Chapman, Higgins and Stiglitz, 2014). The policy is an arrangement known as an ICL, a debt that differs critically from conventional loans in that repayments occur if and only when debtors' incomes reach a given level.

HECS-HELP works as follows. Upon enrolment at an Australian university, domestic students are charged tuition (of between about $US5,000 and $US9,000 per full time year of study, depending on the course chosen). This amount can be paid up-front (with a small discount), or collected through the income tax system depending on debtors' future incomes. About 85 per cent of students opt for the pay later arrangement, and start to repay if and only when their personal incomes exceed around $A54,000 per annum (in 2015 dollars), with repayments being a set proportion of the debtor's income (beginning at 4 and increasing dependent on income to a maximum of 8 per cent of income). Since its inception HECS-HELP has collected about 80 per cent or more of the total debts.

Following the Australian experience eight other countries have adopted similar student loan schemes. This has happened in New Zealand (1992), South Africa (1994), United Kingdom of Great Britain and Northern Ireland (1997), Thailand (for 2006 only), Ethiopia (1999), Hungary (2003), Republic of Korea (2011) and Malaysia (expected in 2016). In 2013, a bi-partisan legislative bill, known as the Earnings Contingent Education Loans (ExCEL) Act, was introduced in the United States Congress, but it was not passed. If the bill had become law, it would have had the effect of introducing to the United States a broadly-based ICL. It would not be an exaggeration to suggest that there has been, and continues to be, a quiet revolution internationally with respect to the collection of student debt.

Considerable research of ICL has been undertaken, including the effects on student access and equity, and the costs involved in making ICL operational though the income tax system. Much of this research has been conducted with respect to Australian higher education, in part because of the longevity of the HECS-HELP system (for a summary, see the chapter by Chapman in Chapman, Higgins and Stiglitz, 2014). There is little doubt that:

    (i)   The institution of HECS-HELP has had no adverse effects on the participation of relatively poor prospective students;

    (ii)   The Australian higher education system has expanded very considerably (by a factor of around 2.5 times), with the increase in student numbers being made possible by the considerably higher amounts of financial resources available to the Australian government as a result of the tuition system; and

(iii)   HECS-HELP has turned out to be very efficient to operate, with the administrative costs estimated to be of the order of 3-4 per cent per annum of the revenue raised.

This last point is considered by Stiglitz (in Chapman, Higgins and Stiglitz, 2014) to be a major advantage of the use of the income tax system for debt collection.

The theoretical basis for the use of ICL is now considered in a broader policy context.

(c) The conceptual advantages of ICL and ICD collection

A major role recognised for government involves the management and distribution of risks. The concept of risk plays a central and unifying role in current analyses of a wide range of social and political issues, similar to that performed by the concept of globalisation in the 1990s (Quiggin, 2004).

The role of government, and particularly of the welfare state, has been reinterpreted with an increasing emphasis on risk and uncertainty, and across the social sciences there are different analytical approaches. When government is considered in its role as a risk manager, new aspects of both existing policies and future policy options are revealed. In *When All Else Fails,* for example, David Moss (2003) provides a fine historical analysis of the role of the state as the ultimate risk manager. Through analysis of government legislative reforms in the United States over the last two hundred years, Moss promotes an understanding of the risk management role of the state, which can take many diverse forms, such as laws associated with limited liability, the application of speed limits for automobiles, national health insurance, occupational health and safety legislation, disaster relief and social security.

Barr (2001) has written a similar treatment of the welfare state as that promoted by Moss, in which the potential role of government is analysed in the context of insurance failure, which is conventionally seen in the economics literature to be a consequence of asymmetric information. In the absence of markets providing accessible and affordable insurance Barr argues that government has a unique role to play as a 'piggy bank', an efficient institution to manage and decrease the costs to citizens of the unavoidable uncertainties associated with human events. As stressed by many, there are disparate ways in which government intervention can help manage the risk of citizens, an obvious instrument outside the United States being universal health care insurance.

In the current context of the potential use of the income tax system to collect debts from immigrants it is very important to realise that ICL for higher education are simply a subset of the many risk management instruments available to government, a point made explicitly in Shiller (2003). What ICL offer, after all, is insurance against consumption hardship and protection against the costs of default that arise with mortgage-type loans when the incomes of debtors are low. That is, and this is the critical point for policy, income contingent debt collection is, simply and powerfully, a consumption smoothing mechanism. And, as both Stiglitz and Denniss emphasise (in Chapman, Higgins and Stiglitz, 2014), this is a very inexpensive way for governments to deliver to citizens major financial insurance benefits.

3. Towards an understanding of the empirical prospects of the proposed system: a case study of Australia

(a) Background

We now present a hypothetical example of how the policy mechanism might work using data on Australian immigration as if members of the group were subjected to the repayment of an income contingent debt (ICD) applying the Australian income contingent loan mechanism (HECS-HELP). Two illustrations of the revenue expected to be raised are for skilled (defined as graduate) immigrants from LDCs, and for the total number of immigrants from LDCs arriving in Australia after the age of 22 years. We have limited the application of the modelling to adult immigrants only simply because it is these immigrants that the governments of source countries have clearly outlaid significant resources for the education, health and other public sector expenditures, and thus for whom the equity case for reimbursement is most obvious.

(b) The data: number of immigrants to Australia from developing countries

The Australian Bureau of Statistics 2011 Census is sourced to approximate the population of immigrants from developing countries, with the figures extracted by selecting persons who had arrived in Australia in 2010 or earlier, and whose country of birth was a developing country. The definition of "developing country" is somewhat arbitrary, but it can be argued that this is not particularly important because the goal is to illustrate, very roughly only, what levels of revenue might be made available with the use of the HECS-HELP system applied to immigrants. Table 1 shows the number of migrants to Australia in 2010 aged 22 and over in total, and also skilled immigrants. Only those developing countries with relatively high numbers of skilled immigrants are listed.
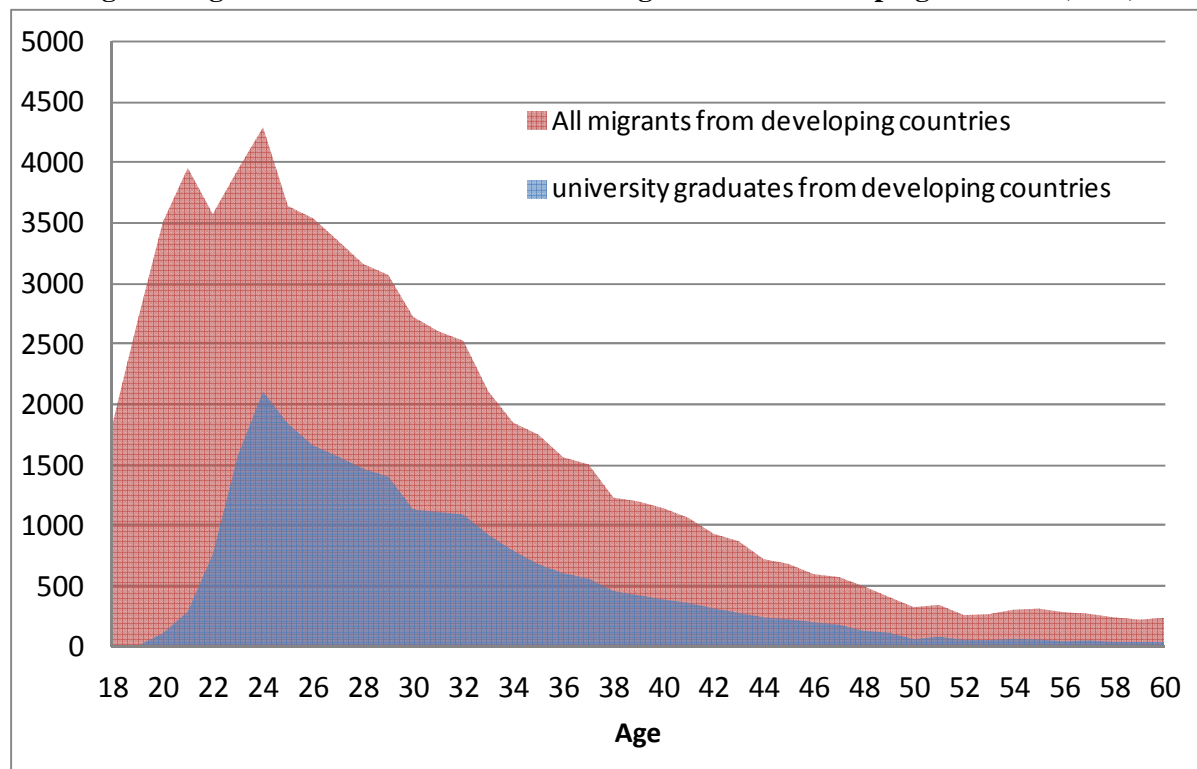
Table 1.Australian immigrants from developing countries in 2010

Country	Skilled immigrants	All immigrants
India	6,023	13,589
China	5,434	19,742
Philippines	2,851	5,604
South Africa	1,324	3,981
Malaysia	1,312	5,050
Sri Lanka	1,066	3,141
Iran	836	2,516
Indonesia	835	3,023
Thailand	688	1,957
Vietnam	660	3,363
Bangladesh	593	1,759
Pakistan	586	1,944
Brazil	552	1,215
Colombia	441	897
Egypt	373	534
Nepal	268	828
Zimbabwe	238	892
Total	**~24,000**	**~70,000**

Source: Authors' estimates based on ABS Census (2011).

Age distributions of the immigrant population will be critical to the levels of debt that might be recovered, since if immigrants are arriving at relatively old ages the prospects of collecting revenue could also be relatively low. Consequently, figure 1 shows the age distribution of immigrants from developing countries in 2010, according to skill category. It is clear that the overall permanent migrant population over the age of 18 is heavily weighted to young adults. For both skilled and total immigrant population groups, 80 per cent of migrants between the ages of 18 and 60 are aged 35 or under, and 90 per cent are aged 40 and under.

Figure 1.Age distribution of Australian immigrants from developing countries (2010)

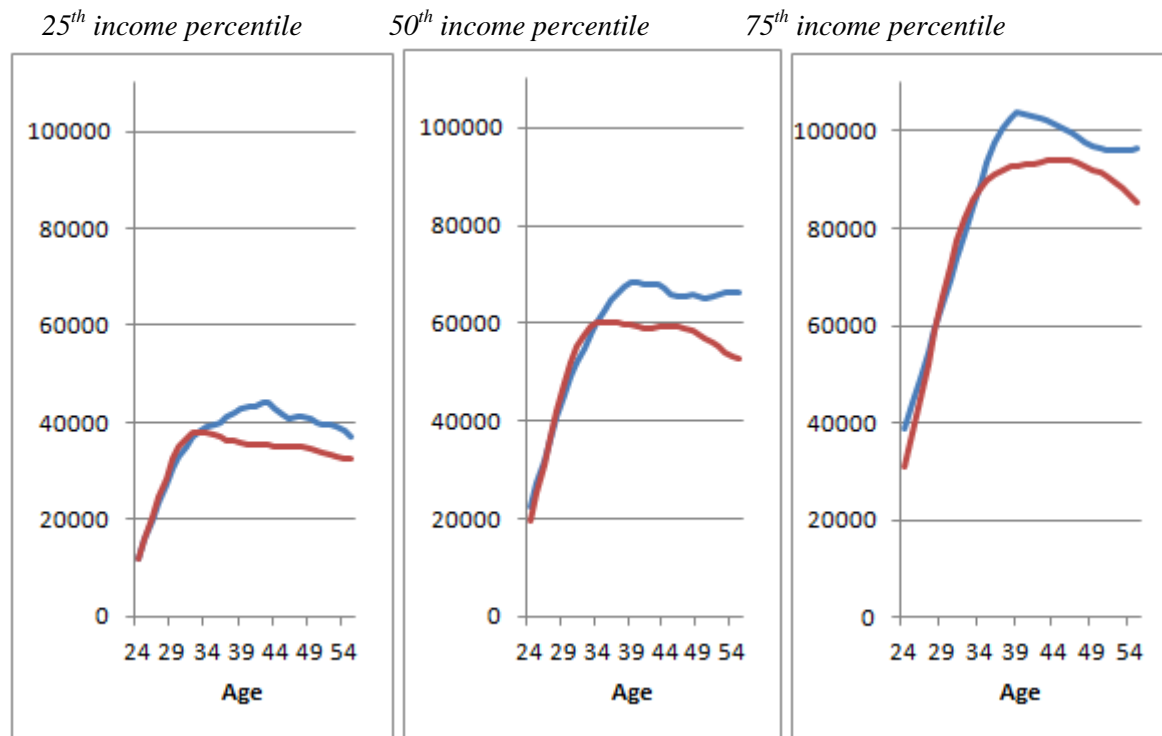*Source*: Authors' estimates based on ABS Census (2011)

(c) Estimates of immigrant lifetime earnings

The 2011 Australian Census was used to estimate age-income profiles for migrants from developing countries. In order to estimate incomes for skilled migrants, assumptions are required because the Census data do not record whether the university degree was obtained within Australia or in the migrant's home country. Thus we limit the bachelor degree population to those persons aged 22 years and over on arrival in Australia, under the assumption that those arriving at or over this age are likely to have already completed their undergraduate studies prior to migrating.

Total personal income for full-time and part-time employed persons was extracted from the data by age and duration since arrival in Australia. Income was recorded in discrete bands and was then converted (using linear interpolation between income bands) to estimate income percentiles corresponding with each age and by duration in Australia.

Figure 2 shows an example of the age-income profiles disaggregated by income percentiles for a hypothetical cohort of immigrants arriving in Australia in their early 20s. The data are shown in this way because the method used to calculate the revenue expected to be collected is made operational by calculating the figures across the whole income distribution by age of immigrants.

Figure 2. Immigrant projected annual incomes[1]

25th income percentile   *50th income percentile*   *75th income percentile*

Source: Author estimates based on ABS Census (2011)

The main results should be interpreted as follows. The red line in the above plots gives the 25th, 50th and 75th projected income percentiles for the cohort of migrants from developing countries who arrived in Australia in their early 20s, and their projected income at subsequent ages in 2016 Australian dollars (before allowing for productivity growth).[2] The blue line gives the same income percentiles for a hypothetical cohort of migrants from developing countries who arrived with a tertiary qualification.

(d) What should the level of BDT be?

The level of debt required to be repaid is clearly a question for policy, but for illustrative purposes we have chosen the figure of $A5,000. In part, this figure seemed apposite because it is the approximate expenditure involved in producing a tertiary qualified immigrant, calculated from a weighted average

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[1] All figures in the paper, unless otherwise stated, are in Australian dollars. The current exchange rate with the US dollar is 1.3:1 (that is, 77 US cents buys 1 Australian dollar).

[2] It can be seen from the figure that immigrant incomes are typically very low when they first arrive given the need to find jobs and to adjust to the new country environment, such as with the acquisition or improvement of English. The figure here is for a hypothetical cohort of immigrants who arrive in Australia in their early 20s. Similar figures could be produced for cohorts arriving at older ages.

annual expenditure per student from the countries under consideration. Appendix Table A provides these estimates in US$ for the developing countries with the most skilled migrants to Australia from World Bank statistics (2015).[3] It should be emphasised that this figure is arbitrary and suggestive only, and even using source country university costs as a basis for the illustration is problematic given the very high variance in these figures that is apparent from the data presented in the Appendix.

4. Methodology and results

(a) Method

The method and assumptions that have been used to calculate the expected repayments, the unpaid debt and the time to repayments are now described.

On the basis of an average debt per migrant of $A5,000 we are able to use the Australian HECS-HELP collection parameters to calculate the required loan repayments on the basis of projected income at each point of time in which debt is being repaid. We assume that migrants are aged in their early 20s on arrival in Australia, and that their income follows the smoothed projected cohort income as derived and described in the lifetime income section above.[4] All income percentiles ranging from the 1st to the 99th percentile were included in the modelling. The smoothed income profiles were adjusted to 2016 dollars and productivity growth of 1.5 per cent real was added to the projected income.

The income percentiles used in the model are only for the population of employed migrants, and excludes those who are out of the labour force or unemployed. When estimating the amount of unpaid debt, we allow for the proportion of the population who are not expected to repay due to long-term non-employment.[5]

Although a complicated model could be constructed that incorporates select employment proportions, for the current example simplified assumptions are deemed sufficient for our intended illustration. The modelling technique assumes that an individual at a particular income percentile remains at that percentile for their working life and that that those who are employed stay employed, and those not employed stay not employed.

Clearly it is a limitation to use static income profiles and employment states because individuals undergo income and labour force mobility throughout their lives. An individual at the 50th percentile of income will generally not stay at the 50th percentile, or even close to this, for their entire working

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[3] The weighted average (weighted by the number of skilled migrants from each developing country) in USD is 1,252 (in 2013 dollars) per annum (or approximately AUD 1,600 per annum). A three year degree would therefore result in subsidies of approximately AUD 5,000 per student.

[4] The income projections used were derived from salary and wage data. Taxable income used to determine HECS-HELP repayments includes other components of income, including non-cash fringe benefits, reportable superannuation contributions, and negatively geared rental losses. Inclusion of these components (all of which are small relative to salary and wages) in the income projections used in the model would be expected to result in a slightly lower repayment subsidy than reported in the results.

[5] Analysis of Australian Census (2011) data indicates that after an initial period of low employment in the three years following migration, both skilled and all migrants from developing countries experience a long term employment rate of between 80 and 85 per cent.

lives. Similarly, a migrant who is out of the labour force or unemployed five years after arrival, may seek and find employment in the future. Even so, as an approximation of the true expected lifetime experience of people it appears that this static approach is an acceptable, albeit very rough, estimate.[6]

(b) Results

Table 2 presents estimates of the discounted present value of the debt that could be collected for annual cohorts of adult immigrants, both skilled and in total.

Table 2.ICD estimates ($A): Australian immigrants from LDCs

	Skilled migrants	All migrants
Population (per annum)	25,000	70,000
Employed population	20,000	56,000
Total amount owing	$125,000,000	$350,000,000
Average shortfall per employed person	$1,950	$2,270
Total shortfall for employed population	$39,000,000	$127,000,000
Total shortfall	$64,000,000	$197,000,000
Total amount repaid	$61,000,000	$153,000,000
Proportion repaid	49 per cent	44 per cent

The data reveal the following:

(i) Imposing a debt obligation of $A5,000 per immigrant, to be paid through the HECS-HELP system would result in about $A60 million recovered if applied to each entering annual cohort of adult skilled immigrants from developing countries;

(ii) With the application of the arrangements for all adult immigrants the amount of money recovered would be around $A150 million for each entering annual cohort of all immigrants from developing countries; and

(iii) Beyond the total dollar figures, and most importantly, the system allows fairly compelling proportions of repayment of the debt, of the order of 45-50 per cent. So long as the debts are set at the sort of level we have chosen, it is apparent that there is great potential for quite significant debt revenue collection streams from this type of BDT.[7]

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[6] Research by Higgins and Sinning (2013) has shown that ignoring mobility across income bands and labour force states can underestimate ICL repayments, and overestimate Government costs by as much as 10 per cent. Our model and results can therefore be considered conservative, with the true amount of funds recovered likely to be more than the amounts reported.

[7] In addition to using the existing Australian ICL scheme rules, for comparison we have also undertaken the calculations using a lower income threshold. The expected income profiles for skilled migrants are lower than for Australian graduates. The current minimum income threshold is $53,345 (2014/15), and is projected to be $56,264 in 2016/17. At this income level, ICL debtors are required to repay 4 per cent of their income. For

Extrapolating these numbers globally provides an indication of the potential world-wide financial implications. Using data from Docquier and Marfouk (2006) we calculate approximately 11.3 million skilled migrants from developing countries had settled in the OECD as at 2000.[8] Docquier and Marfouk (2006) estimate a net flow of approximately an additional 800,000 skilled migrants into the OECD per annum. We use this figure of 800,000 as a rough estimate of the magnitude of annual brain drain to OECD countries.[9]

The magnitude of the potential impact of the proposed policy can be appreciated if we extrapolate the example above to just this aggregate skilled migrant population. If each of these 800,000 skilled migrants had an average debt associated with public university outlays of $A5,000 (or approximately $US4,000), and if approximately 50 per cent of this debt was recoverable (consistent with the proportion repaid under the Australian income contingent loan arrangements explored above), this represents a potential flow to developing countries of over $US1.5 billion.[10]

Although this amount may seem small relative to the annual outlays of $US134 billion for foreign aid reported by the OECD (OECD, 2015), only about 7 per cent of the total aid money, or $US10 billion, was committed to education. An increase in this amount by 15 per cent via an extra $US1.5 billion of funds potentially recovered annually from just skilled migrants could be a significant boon for educational development within developing countries provided that these funds were directed back into the educational system (an issue taken up further below).

5. Unresolved issues

(a) Who might be eligible and why?

The calculations presented above are illustrative only and reflect two quite distinct approaches to the issue of the potential design of a "brain drain tax". In the first instance, we have applied the scheme only to immigrants who arrive as graduates, the basic motivation being to estimate the orders of magnitude involved with such debts reflecting the costs to source countries of their governments' investments in the emigrants' tertiary education financing.

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comparison, assuming a minimum threshold of $40,000 at 2 per cent income, this would increase the debt recovery to over 60 per cent for skilled migrants

[8]Docquier and Marfouk (2006) define skilled migrants as "...those who have at least tertiary education attainment wherever they completed their schooling" (p156).

[9]Docquier and Marfouk (2006) note that a limitation in their analysis is that the migrant data do not indicate if the tertiary education was obtained in the home country prior to migration. Subsequent work by Beine et al. (2007) showed that that corrected rate of skilled emigration ranges from 48.5 to 95 per cent the uncorrected rate, depending on the country of origin. If we include migrants with lower levels of educational attainment (i.e., primary or secondary), the total increases to 17.4 million emigrants to the OECD in 1990 and 28.2 million in 2000.

[10] Extension of this work could explore the implications to individual developing countries based on the specific public subsidies incurred with tertiary study, the magnitude of the extent of brain drain impacting on each individual country (for example, based on the proportion of the resident skilled population that emigrate to OECD countries), and therefore the materiality of the potential financial gains.

But there is a broader issue explored as well, which is more consistent with the motivation of the original BDT proposed by Jagdish Bhagwati 40 years ago. This is the notion that the governments of source countries should for equity reason be provided with compensation for the loss of all their adult emigrants. Obviously from the hypothetical results this is a much more significant exercise than if the scheme applies only to immigrants with tertiary education qualifications.

The extent of coverage, by skill age and source country, would clearly be a matter for government decision. Some might argue that the policy could, or even should, be applied to all immigrants, regardless of whether or not the country of origin is a developing country, and this has not been explored empirically.

(b) The legal issues

Under the current domestic Australian scheme, the HECS-HELP debt, as explained in section 2(ii) above, is an income contingent loan (ICL) that is repaid by the students on a deferred payment basis through the tax system.

The provisions for collection are in the *Higher Education Funding Act 1988 (Cth)*. If an individual student is eligible for a HECS-HELP loan in respect of a university placement, the funds are paid directly to the university by the Australian government. Repayment of this loan by the individual to the government is deferred until the individual's HECS-HELP repayment income exceeds a prescribed minimum, which is indexed annually to the Consumer Price Index (currently 2.1 per cent per annum).

The HECS-HELP repayment income is the sum of the individual's taxable income as defined for income tax purposes plus non-cash employment fringe benefits and some superannuation (pension) contributions made by their employer. In addition net exempt foreign employment income (for example, if the student works to deliver foreign aid and any net investment losses (for example, on rental property) are also added back. The repayment parameters have been explained briefly in a previous section.

Constitutionally, the HECS-HELP debt is likely to be treated as a loan repayment to the government in relation to a fee for service; however, it is also possible that it may be characterised as a 'tax' being a compulsory payment to government. Collections must go into consolidated revenue of the Commonwealth Government. Collection is administered by the Australian Taxation Office in the same way as income tax, so that pay-as-you-go wage withholding systems and normal taxation and debt recovery mechanisms apply.

The proposed BDT on migrants could be structured in a similar way. The Australian Parliament has broad Constitutional powers to legislate for migrants in the Constitution Act 1901 (Cth), including under: s 51(xix) on naturalization and aliens; s 51(xxvii) immigration and emigration; s 51(xxix) external affairs; s 51(xxx) the relations of the Commonwealth with the islands of the Pacific; and s 51(ii) the power to levy taxation. Any of these powers may support legislation to implement such a scheme.

As explained above, the shortfall in recovered debt from skilled migrants is about 50 per cent, indicating that a large proportion of migrants with tertiary education are estimated with our method to not earn above the current threshold of $A53,345 for a sufficient period over their lifetime to pay the

BDT. This may have positive equity implications, but it also significantly limits the amount of revenue that could be raised by the charge. One possibility is for a lower threshold to apply as indicated in the footnote following table 2.

Perhaps the simplest approach would be for the BDT to be treated as a charge or fee levied on immigration, collected on a deferred payment basis through the tax system in the same way as HECS-HELP debt, once the migrant earns income over the designated threshold (in this context, it is relevant to note that migrants are already required to pay a number of fees or charges). The migrant would have a deferred liability recorded on entry and would receive a statement and number; once working, the migrant must have a tax file number and would be in the normal tax collection system. There are precedents; for example, new migrants must take out private health insurance and if not, they must pay a loading to the government for Lifetime Health Cover.[11] On this basis, the proposed collection mechanism would be fairly seamless in administration and would likely cost little to implement.

(c) Potential effects on remittances

It needs to be acknowledged that there is some potential for a BDT to diminish the size of remittances because, after all, the proposed policy would decrease the disposable incomes of immigrants. Moreover, is it not the case that immigrants from developing countries are already assisting their country of origin through remittances?

Two points are relevant to this. First, the size of the suggested BDT of a total of $5000 is a very small proportion of an immigrant's expected lifetime income in a country such as Australia, and would be less than one third of one percentage point of lifetime income for an adult entering their new country in their early twenties. As well, the debt is collected by way of income contingency, which means that immigrants would only be repaying when they are able to, and those experiencing relatively low lifetime incomes would not be repaying anything. Our best guess is that the proposed system would not affect remittances.

A second point on this issue is that remittances are paid typically to members of an immigrant's family and do not directly provide recompense to the governments who would receive directly the proceeds of a BDT. This is the whole point of Bhagwati's original proposal, a point now addressed.

(d) What the BDT revenue should not be used for

The proposed mechanism set out above would enable the "brain drain" migrant charge to be collected and owned by the Australian government, but says nothing about how the revenue raised would be expended. Indeed, as a matter of law, there would be no requirement for the Australian government even to inform the country of emigration of the proposed charge.

However, the reasons for a "brain drain" tax are referred to at the beginning of this paper: so that developing countries may receive revenue of taxes levied on emigrants to developed countries. As a matter of policy this suggests that "brain drain" revenues should be either remitted directly to the country from which the emigrant arrives, by specific agreement with that country, or put to another relevant development purpose that is agreed with the specific country or with a group of countries.

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[11]http://www.privatehealth.gov.au/healthinsurance/incentivessurcharges/lifetimehealthcover.htm

The proposed mechanism could contribute to develop and support diplomatic relations with the emigrant country.

As emphasis to the above, the system described and the results modelled and reported above was motivated by Bhagwati in order to address what is clearly a major source of international labour mobility inequity and unfairness. Poor countries are providing investments to citizens, many who end up with considerable and expensive skills financed in the main by disadvantaged governments, the beneficiaries of which move to high income countries. BDTs are designed to redress some part of this obvious injustice, and while we are not moral philosophers we stress that for governments to use the sort of system examined to reduce foreign aid budgets, or for expenditures on domestic purposes, would be in marked contradistinction to the ethical basis of a BDT.

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Appendix

Table A. Annual expenditure per student on tertiary education per capita ($US)

India	808
China	N/A
Philippines	267
South Africa	N/A
Malaysia	6,422
Sri Lanka	793
Iran	814
Indonesia	842
Thailand	1,126
Vietnam	760
Bangladesh	192
Pakistan	N/A
Brazil	3,188
Colombia	1,837
Egypt	N/A
Nepal	246
Zimbabwe	752

Source: Authors' estimates based on World Bank education indicators and GDP estimates (World Bank, 2015). N/A is included for those countries where expenditure as a percentage of GDP was not available from at least the year 2000 or thereafter.