



# The microeconomic determinants of emigration and return migration of the best and brightest: Evidence from the Pacific

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## ABSTRACT

A unique survey which tracks worldwide the best and brightest academic performers from three Pacific countries is used to assess the extent of emigration and return migration among the very highly skilled, and to analyze, at the microeconomic level, the determinants of these migration choices. Although we estimate that the income gains from migration are very large, not everyone migrates and many return. Within this group of highly skilled individuals the emigration decision is found to be most strongly associated with preference variables such as risk aversion and patience, and choice of subjects in secondary school, and not strongly linked to either liquidity constraints or to the gain in income to be had from migrating. Likewise, the decision to return is strongly linked to family and lifestyle reasons, rather than to the income opportunities in different countries. Overall the data suggest a relatively limited role for income maximization in distinguishing migration propensities among the very highly skilled, and a need to pay more attention to other components of the utility maximization decision.

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## 1. Introduction

Brain drain has long been one of the most common concerns developing countries have about migration. This concern has been amplified in recent years by the rapid increase in skilled emigration, driven in large part by developed countries shifting to more skill-intensive immigration systems. There is a long, mostly theoretical, literature on the *consequences* of brain drain for developing countries, with recent literature also pointing to the possibility of “brain gain” from highly skilled emigration through impacts such as an increase in the incentives to acquire human capital, remittances sent home, and return migration. There is much less research on the *determinants* of the brain drain. Portes (1976) asked the central research question which has so far not been addressed. He wrote (p. 490) “given the...attractions of emigration, the real question is often not why some professionals migrate but why so few in fact leave”.

Several recent papers look at the macroeconomic determinants of why the level of brain drain varies across countries (Docquier et al., 2007; Belot and Hatton, 2008; Beine et al., 2008). They find country size to be an important determinant, with much higher emigration levels from small states. Such analysis provides a first step towards understanding why some countries have higher brain drain levels than others, but does not allow us to answer the key question posed by Portes, which is at the individual level, why do some highly skilled individuals within a country leave, while others stay. Moreover, amongst those who go, why do some return?

Answering this question requires data on highly skilled individuals who stay and on the emigrants. Existing surveys consist of one group but not others, preventing this comparison being made. This paper presents evidence from new surveys designed by the authors to study the individual level microeconomic determinants of the brain drain, and the determinants of return migration among the highly skilled. We focus our study on three small states with varying levels of development, population size, and brain drain. The three countries are: Tonga, population 112,000, for which Docquier and Marfouk (2005) estimate 75% of those with tertiary education live abroad; Papua New Guinea (PNG), population 6.3 million, with an estimated 29% brain drain rate; and New Zealand, population 4.1 million, which

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along with Ireland, has the highest rate of skilled emigration in the OECD, at 24.2% (OECD, 2005).

In each country we have collected the names of individuals who were the highest achieving students in their country at the end of high school, for students graduating high school between 1976 and 2004. Depending on the country, these are either the top students in nationwide competitive examinations, or the students placed top in their class at the most academically prestigious schools in the country. We then tracked down these former top students, wherever in the world they currently live, and surveyed them. The surveys ask detailed questions on incomes and occupations available at home and abroad, risk aversion, discount rates, parental background, and other socioeconomic factors that are likely to predict migration and return. The surveys also collect more qualitative evidence on a range of different social and cultural push and pull factors.

Using these data we measure the emigration rates and return migration rates of the most academically talented individuals in each country, and examine which characteristics predict emigration and return. We find the incidence of ever migrating is very high, with 83% of Tongan top students, 67% of New Zealand top students and 37% of PNG top students having ever worked or studied abroad. The incidence of return migration is also high, with between one-quarter and one-third of top students in each country being return migrants.

We find that most of the highly skilled say that salaries would be higher for them overseas. However, among these individuals, the decision to migrate is found to be most strongly associated with preference variables, such as risk aversion and patience, and with subjects studied in secondary school, and not strongly linked with economic variables such as liquidity constraints, the extent of the gain in income to be had from migration, or macroeconomic factors. Likewise we find the decision to return amongst ever migrants is most strongly associated with preferences, with family and lifestyle reasons being stronger predictors of return than the extent of the income gains from migrating. We also find educational bonding to be an important reason for return of Papua New Guineans, with little subsequent re-migration after the two-year required period is completed. Overall the data support a limited role for income maximization in determining the migration decisions of the highly skilled, and a need to consider the other elements of the utility maximization problem.

We acknowledge upfront several caveats in making broad conclusions from this analysis. The first is that our focus is on individuals who were at the very top of their high school classes in three small countries in the Pacific. Brain drain is particularly a concern in small island nations, and it appears likely our findings would generalize to other small countries, but different motivations may be driving high-skilled migration from larger countries with wider local career options. Academic high-achievers are not the only group of interest for brain drain discussions, but we believe they are certainly an important group which has the virtue of being well-defined, of interest to policymakers, and where membership in the group is itself not the result of migration. Third, despite our best efforts we are not able to track all top students. The evidence we have suggests little bias in terms of observable variables for who we can track, except for more difficulty tracking older individuals. Nevertheless, we believe any bias will be towards tracking individuals who have been more successful among the population under study, which for study of highly-skilled migration seems to be capturing the key individuals of interest. Finally, we note that just because we do not find certain variables such as the income gains to help in predicting migration among this elite group does not mean that income gains do not matter for migration – the fact that the best and brightest average US \$1000 a week gain from migrating may well help explain higher migration rates among this group than among less skilled individuals, even if differences in income gains to be had among top students do not help predict why one top student migrates and another does not.

The remainder of the paper is structured as follows. Section 2 describes the construction of the sample frame and the survey implementation.

Section 3 analyzes the incidence of emigration and return migration among the top students. Section 4 models the determinants of ever migrating and return migration. Section 5 concludes.

## 2. Putting together a sample frame and the survey

To examine the determinants of highly-skilled emigration, we need comprehensive data on both the highly skilled who migrate and those who return. Standard surveys do not provide this information. Many studies of migration use nationally representative surveys in the migrant origin country. Typically households are then asked to report on absent migrant members. Such surveys suffer two drawbacks for studying the migration of the highly skilled. First, they miss individuals who migrate with their entire households, which may be more likely for the highly skilled than the less skilled.<sup>1</sup> Secondly, nationally representative surveys will contain few, if any, of the most highly skilled individuals from a country. Specialized surveys of immigrants in the destination country can help solve the first issue, but again will contain very few highly skilled migrants and lack comparable data on non-migrants. Census microdata from both source and destinations may contain sufficient numbers of the highly skilled, but do not have enough detailed information on these individuals to examine the determinants of migration. Given these problems, we developed a new specialized survey approach.

We apply this new approach in the Pacific, which is the region with the highest brain drain rate in the world (Docquier and Marfouk, 2005). By focusing on one region, with similar migrant destinations, we can take advantage of economies of scale in surveying emigrants, and compare neighboring countries with differing emigration options. Within the Pacific we selected countries which provide a broad range of development levels and migration experiences, and where we had the necessary contacts to make the surveying feasible. The countries chosen, along with their population, and 2000 brain drain rates for those who entered their destination country after age 18 are<sup>2</sup>:

- Tonga: 112,000 population, 65.1% brain drain
- Papua New Guinea: 6.3 million population, 36.9% brain drain
- New Zealand: 4.1 million population, 15.8% brain drain

A concern with existing efforts to quantify the brain drain at a more micro-level through studies of doctors or professors is the extent to which individuals self-select into occupations based on the ease of emigration in that occupation. Rather than focus on specific occupations, we therefore choose to focus on individuals with high ability. Specifically, our sample frame is individuals who were the very top academic performers in their country at the end of secondary school, which allows us to identify individuals before they have self-selected into particular careers or migrated overseas for tertiary education. We decided to focus on students graduating high school between 1976 and 2004. Records are likely to be better for more recent students, but they are younger and have had less time to study or work abroad. A detailed [online appendix](#) discusses the sample frame construction, tracking approach, response rates and possible impacts of non-response in each country, with a brief overview below.

Our New Zealand (NZ) sample frame comprised one older group and three (partially overlapping) younger groups; members of New Zealand's Mathematical Olympiad team since 1988 ( $n=73$ ); members of New Zealand's Chemistry Olympiad team since 1992 ( $n=48$ ); and students who were either top overall, top in each subject or top of their sub-population (by gender and ethnicity) in University Bursary examinations from 1991 to 2004 ( $n=484$ ). For the older group,

<sup>1</sup> See for example McKenzie and Rapoport (2010), who find that more-educated Mexican immigrants in the U.S. are more likely to have their spouse accompany them than less-educated Mexican immigrants.

<sup>2</sup> Brain drain rates are from the new estimates controlling for age of entry, from Beine et al. (2007).

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