



Original Article

Development Impacts of Seasonal and Temporary Migration: A Review of Evidence from the Pacific and Southeast Asia

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Abstract

Seasonal and temporary migration programs are widely used around the world, yet there is scant evidence as to their development impacts. Absent such evidence, it is difficult to evaluate whether the proliferation of temporary worker programs in recent years is a useful development. This article reviews studies that attempt to measure impacts of seasonal and temporary migration with a particular focus on evidence from the Pacific and Southeast Asia.

Key words: circular migration, development impacts, evaluation, seasonal migration, temporary migration

JEL codes: O12, J61, F22.

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1. Introduction

Restrictions on the international movement of labour are the largest distortions in the world economy, with estimated gains from the elimination of these barriers often in the range of 50–150 per cent of world gross domestic product (Clemens 2011). These barriers make increased migration likely the most effective mechanism to rapidly increase incomes of people from poor countries, since cross-border price wedges for similar labour are up to 1000 per cent (Clemens et al. 2008). But the existence of these barriers also attests to the fact that increased international migration is controversial, with migrant-receiving countries worried about the costs of assimilating workers and their families, and migrant-sending countries worrying about the permanent loss of talented workers and the externalities they are presumed to create. Temporary or circular migration programs are seen as a way of overcoming such concerns and enabling poorer, less-skilled workers to benefit from the higher incomes to be earned abroad as part of a ‘triple-win’, whereby migrants, the sending country, and the receiving country all benefit.

Many migration arrangements can be described as circular, repeat, seasonal or temporary. While circularity is not built into all programs, the time-limited contracts and the limited opportunities in the home country often mean that temporary workers go back and forth repeatedly (Newland et al. 2008). A range of skills are covered, from programs for the temporary entry of highly skilled labour in

specialised jobs (e.g. the H-1B visa in the United States) to programs for the entry of low skilled young women, such as those from Indonesia and the Philippines who work as maids and caregivers in Malaysia and Singapore. Sectors of employment are typically restricted, such as the migration of seasonal workers from the Pacific Islands to work in the horticultural sector in Australia and New Zealand, and freedom of workers to move between employers in the same sector is usually limited. The duration of entry can vary from a few months, such as for seasonal workers in agriculture, tourism and some types of construction, to several years. For example, Korea's Employment Permit System (EPS) issues temporary work visas for three years that are renewable up to five years, and the H-1B visa program in the United States allows admission for up to six years. Programs also vary in whether effective control of the border gate is entirely with governments (certification), whereby the employer has to convince labour and immigration authorities that local workers are not available versus programs where the employer has some practical control over migrant worker entry since the employer just needs to attest that there is no adverse effect on local workers and that the migrant will be paid prevailing wages or better, with checks made by labour authorities only in cases of complaints (Martin 2007).

There are several hundred of these bilateral temporal workers agreements worldwide, with the number increasing rapidly in recent years. Even a decade ago, it was noted that there were over 170 bilateral agreements among just the Organisation for Economic Co-operation and Development countries (Newland et al. 2008), with a similar number within Latin America (IOM 2005). A continued rise in the migration pressures underlying these sorts of temporary worker agreements can be expected in future in response to international wage gaps, rising demand for labour-intensive services such as nursing care, divergent trends in youth and elderly populations in developed and developing countries, and catch up from the previously 'everything but labour' nature of globalisation in the post-World War II era (Pritchett 2006).

This proliferation of temporary migration programs is covered in a number of studies that describe various migration programs and processes. Recent reviews of this literature include Constant et al. (2012), who discuss the advantages and disadvantages of circular migration and describe some characteristics of circular migrants. These authors also discuss examples from the historical record of the perverse consequences of restricting circular migration, which can lead to an increase in overstaying. Contrary to common belief, Constant et al. (2012) note that acquiring the host country's citizenship does not necessarily immobilise immigrants; instead, by providing freedom of re-entry it encourages outmigration. A particular focus on Asia and the Pacific is provided by Hugo (2009), who reviews best practice in development-oriented temporary migration programs. Two of the most prominent recent seasonal migration programs in the region—New Zealand's Recognized Seasonal Employer (RSE) scheme and Australia's Pacific Seasonal Worker Pilot Scheme (PSWPS) are described by Ramasamy et al. (2008) and Ball (2010), respectively.

The focus of the current review is somewhat different. Instead of just describing various migration programs and the characteristics of the participants, we pay particular attention to studies that attempt to measure impacts of seasonal and temporary migration. The reason for this particular focus is that without an understanding of impacts, it is impossible to judge whether the expansion of temporary migration programs is a positive development. That such impact evaluations are just a small subset of the broader migration literature has been noted by previous reviews. According to Constant et al. (2012, p. 2), 'empirical evidence about circular migration is scarce and empirical analyses are limited due to missing or problematic data'. Moreover, until recently, the few studies that did exist were based on ex post surveys of migrants and lacked credible counterfactuals for what would have happened to households in the absence of migration (e.g. Basok 2000). New studies that primarily have been focused on recently introduced seasonal worker programs in the Pacific and on the

long-established phenomenon of Filipino temporary migration help provide more rigorous evidence as to the impacts.

This focus also means that we necessarily cover an empirical literature because the effects of migration—whether temporary or permanent—on household welfare and broader economic development in source communities is *a priori* unclear. Migrant-sending households and their communities can benefit from remitted and repatriated earnings, but the local incomes and other household inputs that migrants would have generated locally are lost. It is therefore an empirical matter as to whether the opportunity costs are outweighed by the new income from abroad. Given the enormous wage gains possible from migration, our prior should be that for the household as a whole (including the migrant) these opportunity costs should be far less than the gain, but, especially with permanent migration, much of the gain may go to the migrant with the remaining household members not necessarily being better off. Moreover, there is no reason that impacts in one context will necessarily apply elsewhere since the selectivity into the program and the opportunity costs of temporary absence may vary quite widely between countries.

An example of this specificity comes from the differing impacts of two concessional settlement migration schemes that New Zealand has for the neighbouring Pacific countries of Samoa and Tonga. The short-run effect of immigration to New Zealand from Tonga under the Pacific Access Category is to reduce consumption, diet quality, income and financial access and increase the poverty rate of the left-behind members of the migrant's household (Gibson et al. 2011). Yet in Samoa, migration through the similar but larger and longer established Samoa Quota (SQ) appears to reduce poverty among remaining members of households sending SQ migrants, at least in the medium term (Gibson et al. 2013). Both of these concessional migration schemes are oversubscribed, and so use a random ballot to select among the applicants. Hence, the usual selection biases, where households participating in international migration differ from

non-participants in unobservable ways (e.g. ambition, motivation, talent), should not apply. Instead, it appears to have been a difference in *intra-household* selectivity into migration in the two countries that mattered. Samoan households relied relatively less on the labour earnings of the potential migrants before migration, whereas the Tongan movers had been earning much more than average, and so the remaining household members suffer a larger opportunity cost of their absence in terms of these foregone labour earnings, with extra remittance income not being sufficient to make this difference up, at least in the short run. The longer run impact may differ and may come through the opportunity for those left behind to eventually reunite with the migrant at destination.

This example from the Pacific shows the potentially subtle nature of migration impacts. In both cases, the use of a random ballot greatly assisted with the careful empirical evaluation, and some of the impacts would have been missed if the common non-experimental evaluation techniques typically applied to observational data had been relied upon. The impacts of temporary migration are potentially even more complex, since this involves both a temporary source of new income and a temporary change in household composition and the location of household economic activities (the household becomes a transnational unit with members in two countries). There are large literatures on the effects of temporary income shocks on households (e.g. Hall & Mishkin 1982), and also on the effects of changes in household composition on well-being (for example, Lang & Zagorsky 2001). But the joint effects of these two changes, as occurs with the temporary migration of a household member to an overseas labour market, and then the undoing of these changes upon the worker's return, is rarely studied (Clemens & Tiongson 2012).

The remainder of the article is structured as follows. Section 2 discusses views of development impact and the factors which may influence this impact in the context of temporary migration. Section 3 turns to the empirical evidence, with attention paid especially to

studies using quasi-experimental methods to measure impacts of seasonal and temporary migration on the households supplying workers. In order to go from household-level impacts to aggregate impacts, the size of various seasonal and temporary migration programs must be considered. In Section 4, there is a discussion of the debate in the literature on ‘numbers versus rights’ which may help provide some insight into the contrasting experiences of the recently introduced seasonal migration schemes of Australia and New Zealand. Section 5 concludes.

2. A Framework for Thinking about Development Impacts

In order to review the evidence on the development impacts of seasonal and temporary migration, some discussion of what is meant by development impact is required. One view is that development occurs only if there is a long-term improvement in household welfare and in the economic viability of local communities. This view is implied by the remarks made by the New Zealand Minister of Foreign Affairs, Winston Peters, at the time that New Zealand’s RSE scheme was approved:¹

First and foremost it will help alleviate poverty directly by providing jobs for rural and outer island workers who often lack income-generating work. The earnings they send home will support families, help pay for education and health, and sometimes provide capital for those wanting to start a small business.

A similar view is implied by the comment of Barber et al. (2005) that, in the context of one-shot schemes, a one-year migration opportunity may be too short for migrants to earn enough to set up a business or make other meaningful investments at home. The threats to development impact under this view are that either too little of the income earned abroad returns to the household because the migrant consumes too much, the transactions costs of running a transnational household are too high, or that what money does return is

unwisely spent on things that may raise short-term utility but leave the household no better off in the long term. For example, claims by Pessar (2005) that remittances and earnings of lower skilled temporary migrants are usually spent on conspicuous consumption, and non-productive investment are consistent with this pessimistic view that there is no development impact from participating in temporary migration.

However, this pessimistic view fails to recognise that the characteristics of source communities that make temporary labour migration attractive relative to local options may also mean that there is only limited scope for productive investment. This is particularly true in the Pacific Islands, where small market sizes, long distances to other markets and high transactions costs limit the scope for business development, as noted in a recent *Pacific Futures* report (World Bank 2011). Instead, it may be that in such communities, the best opportunity to bring about a long-term improvement in well-being is by recurrent participation in seasonal or temporary migration. The appropriate research question then would be whether the welfare consequences of long-term and recurrent splitting of families outweigh the benefits of having workers access a rich country labour market.

At least five factors likely matter to the development impact of a temporary migration program. These factors may vary between countries, or even between communities within a country, so development impacts could differ even when workers from different countries or communities carry out similar tasks during their sojourn as guest workers in the host country.

- Productivity: all else the same, development impacts should be larger the more productive the migrants are when engaged in temporary work. Migrants from different countries may have varying levels of productivity, even for the same tasks in the host country, if returnees are more productive than newcomers and if the likelihood of return varies (perhaps because other schemes are available to some countries and not others, or variation

1. ‘Seasonal work policy benefits Pacific says Peters’, *Islands Business*, 26 October 2006.

in transactions costs affects net returns). While no quantitative data have been published, the qualitative evaluation of New Zealand's RSE program found a majority of employers reporting that second season workers (many of whom were returnees) had higher productivity than the first season workforce, with less need for training compared with their previous experience of a constantly churning workforce (NZDoL 2010).

- **Selectivity:** the nature of development impacts depends on which households are selected to supply workers, particularly for distributional concerns such as poverty. For New Zealand's RSE program, which recruited workers from multiple countries, the workers from Tonga were drawn from the poorer parts of the income distribution, so any positive household-level impacts likely are pro-poor (Gibson et al. 2008), but workers from Vanuatu were from richer than average households (McKenzie et al. 2008). This difference in selectivity may have reflected greater familiarity with international migration in Tonga, whereas in Vanuatu the poorest households lacked information about the program in the first year and may lack resources to finance the costs of the travel process. Moreover, average levels of education are considerably higher in Tonga, so if employers looked for similarly educated workers from both countries (because of a need for certain levels of English competency) such workers are found higher up the skills and income distribution in Vanuatu than in Tonga.
- **Opportunity costs:** if the temporary migrant had not become a guest worker they otherwise would have been working in either market or non-market production in the home country. The nature of that production and the reliance of their household on it (for example, the differing intra-household selectivity in Tonga and Samoa noted above) will influence the development impacts of the worker's absence from the household. Returning to the example of the RSE, less than 10 per cent of the workers from Tonga had been in wage employment prior to leaving for New

Zealand, while two fifths of the workers from Vanuatu had been previously employed, so the opportunity cost was likely greater for participants from Vanuatu. This argument also applies to non-market production; for example, in Samoa workers selected into the RSE were required by leaders of some villages to plant extra Taro (*Colocasia esculenta*) before leaving, so as to provide a food source for their family while the worker was absent (Gibson et al. 2013). It should also be noted that in the case of wage employment, the opportunity cost to sending households (absent members no longer working in wage employment) is likely to represent a gain to individuals in different households that are not participating in migration (but who can now potentially be employed in those wage jobs), although the literature to date in Asia and the Pacific has not been able to document the size of such spillovers.²

- **Transactions costs:** in order for the temporary migrant to remain part of the life of their household, they likely spend money on communication and, potentially, transport if home visits during the work period are permitted. Moreover, they will typically be remitting rather than just repatriating earnings upon their return home, so money transfer fees and exchange rate commissions add to the costs facing a transnational household. These transactions costs affect not only the net return to the household from having a member working abroad but also the time profile of income, which may have welfare consequences. For example, Gibson and McKenzie (2013) report that workers in New Zealand's RSE scheme remitted or brought back with them an average of NZ\$5,500. For Tongans, half was remitted and half repatriated, but for workers from Vanuatu just 10 per cent was remitted and the rest repatriated after the work period because of the limited financial access and high transactions costs of sending money. Perhaps as a consequence, families of RSE workers from Vanuatu ate

2. See Mishra (2007) for evidence from Mexico that emigration has increased wages for remaining workers in sending regions.

less varied diets and suffered more health complaints, while their worker was abroad on the RSE, compared with similar households who had not sent seasonal workers, but there was no such effect on the left behind family of RSE workers in Tonga (Rohorua et al. 2009).

- Absorptive capacity: any surplus that households make from participating in temporary migration is available for investing in the local economy. But whether it makes sense to direct investment into localities which may have a low density of economic activity, poor infrastructure and high-transactions costs is debatable. In many cases, the returns from investment in mobile human capital (through better schooling and nutrition) may make more sense, since those returns are not tied to activities in a particular geographic location, especially for households who have already shown a willingness to be internationally mobile.

There is no study in the literature which has provided credible empirical evidence on all five of these factors so as to form an overall picture of the development impacts of seasonal or temporary migration. Most of the available evidence is on selectivity, opportunity costs and transactions costs, and knowledge of these three factors does at least allow impacts at the household level to be calculated.

3. Empirical Evidence

There are difficult challenges in attempting to empirically estimate the development impacts of any type of migration, even restricting attention just to measuring household-level impacts. As noted by McKenzie (2012, p. 2):

[M]igrants are special—they differ in some combination of motivation, skills, wealth, drive, ambition, risk preferences, access to networks, entrepreneurial attitude, and a plethora of other attributes from the rest of the population who don't migrate. . . . [consequently]. . . . comparisons of migrant and non-migrant households are unlikely to be able to give convincing estimates of the impacts of migration.

To overcome this challenge, researchers are turning to experiments, where randomisation

is either from policy design (such as from the U.S. Green Card lottery) or from researcher design. The advantage of experiments is that with full randomisation and full compliance, the only reason one individual or household engages in migration and another does not is purely chance. Hence, the non-migrant household in this happy circumstance can serve as a valid counterfactual for what may have happened to the household with migrants, in the absence of migration. Such a counterfactual allows researchers to make credible estimates of the impacts of migration.

There is yet to be such ongoing experiments with international seasonal or temporary migration and in fact much of the published empirical research on seasonal and temporary migration falls well short of this experimental standard.³ In fact, studies of seasonal and temporary migrants often lack data on the family left behind because they are fielded just in the host country (e.g. Basok 2000; Tan & Gibson 2011). Even if fieldwork spans both source and host countries, some studies are just of households with seasonal migrants (e.g. Basok 2003), so there are no control groups to see what might have happened to the household if the worker had not migrated. Also, it is unusual for these surveys to have baseline information so as to control for pre-existing differences, which might otherwise be wrongly attributed to participation in the migration program. However, some non-experimental studies that are carefully conducted using quasi-experimental methods may be more informative than much of the literature, and these

3. A researcher-designed experiment with in-country seasonal migration conducted in Bangladesh is analysed by Bryan et al. (2012). Beam et al. (2013) report on an experiment designed to spur temporary migration from the Philippines, highlighting the difficulties of unilateral facilitation policies in getting workers to leave. Clemens (2010) exploits a quirk in the administrative process for granting H1-B temporary skilled-worker visas to the United States in 2007 and 2008, which saw a limited random ballot used to select which applications to process. Clemens finds that workers from a multinational Indian software company who randomly gained an H1-B visa and then worked on-site with clients of that company in the United States experienced almost a threefold increase in real wages (measured in PPP dollars).

are reviewed here, grouping them by the type of approach used.

3.1 Regression-Discontinuity Studies

Clemens and Tiongson (2012) examine the impact on households in the Philippines of supplying workers under Korea's Employment Permit System (EPS). These workers are issued temporary visas to work in Korea on job contracts that are for a sojourn of up to three years, with no possibility for permanent settlement. In keeping with other guest worker programs, fairly narrow specifications are sought which restrict the range of applicants; in this case it is for 18–39 year olds, with either high school or vocational qualifications and two years of work experience or a tertiary degree and one year of work experience. Most of the work is in manufacturing plants and in the sample used by Clemens and Tiongson, over three quarters of the applicants were males.

Even with these narrow specifications, the majority of households in the Philippines with members fitting these criteria do not supply applicants to the EPS program. Therefore, attempts to evaluate the impacts of supplying an EPS worker face the problem that the self-selected applicants may differ in unobservable ways from members of groups used as a counterfactual for what outcomes would have been for these households had they not supplied an EPS worker. To overcome this problem, Clemens and Tiongson exploit the fact that starting in 2005, all Filipino applicants for EPS jobs had to take a 90-minute examination that tested their basic listening and reading in Korean, with a score of at least 120 points out of 200 needed to secure a work permit. The households containing applicants who scored just below this threshold are used as a counterfactual for the households where the EPS worker scored just above the threshold. Specifically, they conducted a survey in 2010 of 899 households, who in the first five rounds of testing between September 2005 and May 2007 had a member who scored within five points of the cut-off, with 460 households

having someone who failed the test and 439 having someone who exceeded the threshold.

With this sample, Clemens and Tiongson are able to estimate impacts of participating in the EPS guest worker program using a 'regression discontinuity design' which is a quasi-experimental estimator that relies on the presence of a threshold or cut-off that alters behaviour. In this case, the EPS applicants scoring just below 120 wanted to be guest workers in Korea, had similar ability to those who scored 120 or slightly more, but were unable to migrate because of the binding threshold. The households of these applicants should provide a valid counterfactual in a situation such as this temporary migration program where randomisation is infeasible because employers prefer not to have randomly chosen workers. Compared with these counterfactual households, the households where a member worked in the EPS had higher spending on health and education, were more likely to put children into private school, borrowed less from extended family, but did not differ in terms of savings, labour supply of the spouse or other family members, and investing in entrepreneurial activities. Clemens and Tiongson conclude that these households were credit-constrained human capital investors who prioritise education and migration over physical capital (entrepreneurship and savings).

3.2 Matched Difference-in-Difference Studies

Gibson and McKenzie (2013) examine the impact on households in Tonga and Vanuatu of supplying workers under New Zealand's RSE scheme. These workers are issued a visa that allows temporary migration for work in the horticulture and viticulture industries for a maximum of seven months in any 11-month period, although in practice, most work contracts are for six months or less. The workers must be recruited by a recognised employer (one whose 'Application to Recruit' was approved by the New Zealand labour ministry) who pays half of the return airfare, offers at least 240 hours of work at market pay rates, provides accommodation and pastoral care,

and is required to pay the costs associated with worker removal from New Zealand if workers become illegal. The workers may be re-employed in subsequent years, either with the same or a new employer. Across the first four years of the scheme, which began in April 2007, over half (54.4 per cent) of all RSE workers returned at least once to work in another season, while 23 per cent of workers from the first season participated in all four seasons (Merwood 2012).

Four waves of specially conducted surveys fielded in Tonga and Vanuatu between 2007 and 2010 were used by Gibson and McKenzie (2013) to estimate RSE impacts, with these two countries chosen because they supplied the largest number of RSE workers. The baseline survey was fielded before workers had left to work in New Zealand in the first season, and then re-interviews were carried out 6, 12 and 24 months later. The RSE workers carry out a variety of seasonal tasks that range from pruning vines (both grape and kiwi fruit), to picking citrus, grapes, kiwifruit, pip fruit and stone fruit, and working in pack houses. The recruitment is therefore spread throughout the year since there is not one defined season that workers are recruited for, and so the baseline survey was fielded from October 2007 to April 2008. In each country, the sample was of approximately 450 households, drawn from about 50 communities, including households supplying workers, households with applicants who had not been recruited, and non-applicant households.

Using these rich baseline data and knowledge of how recruitment in each country occurred (each Pacific country supplying workers set its own approach to forming a pool of applicants that employers could recruit from), Gibson and McKenzie use a 'propensity-score matching' approach to identify households to act as comparison groups for those households who supplied RSE workers. The propensity score is the probability of supplying a worker, which was modelled as a function of demographic variables, characteristics of the 18–50-year-old males in the household (they are the group most likely to participate), the household's prior experience

and network in New Zealand, household baseline assets and housing infrastructure, location, and past household wage and salary history. One variant of the propensity score further restricted attention just to applicants, to potentially screen on demand for the RSE (although non-application was typically due to lack of information so some non-applicants exhibit characteristics quite close to those of applicants). Attention was then restricted to households with propensity scores in the range of 0.1 to 0.9, to pre-screen the estimation sample to just those households that were as similar as possible prior to the RSE. The four waves of data were then used to estimate panel difference-in-differences and fixed-effects regression models, where the difference-in-differences method controls at the group level for any baseline differences in outcomes between the participants and the comparison groups, while fixed effects controls for baseline differences at the household level.

The results showed large positive effects on the households ever supplying RSE workers. In both Tonga and Vanuatu, the per capita income of participating households rose by over 30 per cent relative to the comparison groups, while per-capita expenditure and savings also rose. Subjective economic welfare measured in the final wave survey increased by almost half a standard deviation for participants in both countries who also purchased more durable assets. In Tonga, RSE households also doubled the rate of home improvement compared with the control group households, and in both countries, participating households became more likely to have a bank account, likely reflecting more formal savings. In addition, there was some evidence that in Tonga the school attendance rates for 16 to 18 year olds in participating households increased.

One further aspect of the evaluation by Gibson and McKenzie (2013) is that they went beyond the impacts just on the participating households and attempted to calculate macro effects of the RSE on the supplying countries. Specifically, per worker estimates of the average impact of the program on household income over the first two years were scaled up

by the total number of worker–seasons supplied by each country (this equals 3,590 for Vanuatu and 1,971 for Tonga).⁴ These totals of \$NZ5.3 million in Tonga and \$NZ9.7 million in Vanuatu were equivalent to 42–47 per cent of total annual bilateral aid from New Zealand to these countries. Another way of viewing these totals is that they were equivalent to almost one half of annual export earnings for Tonga and one quarter of annual export earnings for Vanuatu. The econometric estimates of the income gains to participating households were also cross-validated, by working backwards from the reported median after-tax earnings per season of NZ\$12,000 for each RSE worker.⁵ After deducting costs for accommodation, food, health insurance and contribution to airfares, a net return of approximately NZ\$5,500 per worker was available; spreading this over the number of family members and the number of repeat seasons and allowing for the opportunity costs of the production that the worker would otherwise have contributed in the home country, gave an expected income gain that accorded well with the econometrically estimated income gain for participating households.

3.3 Accounting Approaches

Gibson and McKenzie (2011) use a somewhat similar ‘earnings accounting’ approach to estimate the impacts on households in Tonga and Kiribati of supplying workers in the first two years of Australia’s PSWPS. Since only a small number of workers had been recruited for the PSWPS at the time, the samples available to be surveyed were too small to enable the econometric procedure used in the estima-

tion of RSE impacts.⁶ Instead, these authors combined data on the incomes earned in Australia, the costs borne by the workers, and remittances and repatriated earnings (from surveys of the workers in Australia and surveys of the returned workers and family in their home communities), and the extant results from the parallel analysis of the RSE program to get a sense of the opportunity cost of participation. Specifically, average after tax earnings for a six-month season were estimated to be in the range A\$12,000–\$13,000, which was consistent with the minimum work hours guaranteed by the PSWPS and with prevailing wages in Australia.⁷ Deducting weekly expenses and the various set-up costs (clearances and visas, transportation, work clothing) left average net earnings of A\$6,000 for the Tongan workers and A\$4,500 for the i-Kiribati workers (who appeared to face higher costs). This is the amount available to be either remitted or repatriated when the worker returns, and is consistent with the Tongan workers in the first year of the PSWPS reporting that they remitted an average of A\$5,000. But the additional income available to the households supplying the PSWPS workers is less than this, since there is an opportunity cost of the foregone income and household production that the worker would have contributed had they not migrated. Gibson and McKenzie (2011) use the result from the RSE evaluation that the true net gain is about 70 per cent of the amount remitted or repatriated, and estimate that households supplying PSWPS workers gained approximately A\$460 per capita, which was an income increase of around 39 per cent.

An additional emphasis of the Gibson and McKenzie (2011) study was on spatial targeting. All else the same, cost-minimising

4. A worker who participates in the RSE in one season and who returns again the next season is counted as two worker-seasons in the administrative data that were used to calculate these totals.

5. Merwood (2012) uses administrative data from the 2007/2008 season through to the 2009/2010 season to estimate median earnings for workers from Tonga and Vanuatu that ranged from NZ\$11,800 (for ni-Vanuatu workers in 2009/2010) to \$12,950 (for Tongans in 2007/2008). The mean of these medians is \$12,320, which accords well with the survey estimates reported by Gibson and McKenzie (2013).

6. A total of 89 workers were surveyed in Australia, including 20 who were surveyed in both 2009 and 2010. A total of 273 households were surveyed in Tonga, including 125 that were surveyed in each year. In Kiribati, there was a single survey of 120 households.

7. In comparison with the RSE, wages are higher in Australia, and the PSWPS guarantees a longer minimum work period. But on the other hand, seasonal workers were taxed at a higher rate in Australia, and they also appeared to face higher costs for food, health insurance, transportation and communication.

employers would prefer to hire workers from the most convenient locations within supplying countries, which may limit the geographic spread of benefits from participating in seasonal migration. Offsetting this, public policy may attempt to distribute the benefits by mandating recruitment from more remote areas, such as the Niuas (Niufo'ou and Niuto-putapu) and the Ha'apai group of islands in Tonga. A particular challenge to spatial targeting in the Pacific is that extended family structures and flexible land use rights may allow people to resettle in response to spatially localised economic incentives. In other words, there may be inflow of people from outside the targeted areas who move in order to gain eligibility. In fact, just over 40 per cent of the Tongan workers surveyed had moved to facilitate recruitment into the PSWPS, with almost one third of the movements being out from the main islands in response to the perceived greater odds of being recruited from the outer islands.

4. Program Size and 'Numbers versus Rights'

The aggregate development impacts of seasonal or temporary migration depend not only on the size of per household impacts, which are the main focus of the studies reviewed above, but also on how large are the programs. This point was explicitly noted by Gibson and McKenzie (2011) in their calculation of the benefits to Kiribati, Tonga and Vanuatu from supplying workers to Australia's PSWPS. Even though the income gains for households supplying to the PSWPS were the same order of magnitude as for those supplying workers to New Zealand's RSE scheme (at between 30–40 per cent), the aggregate gains were only three per cent of those for the RSE at that time because of the very small scale of Australia's program. In terms of aggregate development impacts, this issue of scale is of first-order importance, compared with second-order factors such as the nature of selection into the scheme (that is, rich or poor households) and the local absorptive capacity for investment of

any surplus that households make from participating in the scheme.

Given the importance of the scale of temporary migration programs in terms of both understanding their overall welfare impacts, as well as in the contribution that they make to meeting the needs of employers abroad, it is important to consider why the scale varies so much across different programs. One key (and provocative) explanation offered by two experts on seasonal migration schemes, Martin Ruhs and Philip Martin, is that there is an inverse relationship between scale (the number of migrants) and the rights given to low-skilled migrant workers in high-income countries. That is, countries with more low-skilled migrant workers offer them relatively few rights while those with fewer migrants typically provide more rights (Ruhs & Martin 2008, p. 249). This claimed relationship occurs because more rights for migrants will mean typically higher costs for employers, limiting labour demand for migrants. The claimed inverse relationship between migrant rights and migrant numbers caused considerable debate, with several studies claiming to refute the relationship (Cummins & Rodriguez 2010; UNDP 2010) although not always restricting attention to just low-skilled or temporary migrants.

Stronger evidence for a tradeoff between rights and numbers comes from work by McKenzie et al. (2013). They use a unique database of all work contracts issued to Filipino workers between 1992 and 2009 to examine how the number of migrants going to a destination country and the wages those migrants are paid changes with business cycle conditions at destination. They find a large significant response of migrant numbers to shocks at destination, but no significant wage response, which they interpret as providing evidence that binding minimum wages help cause those who do migrate to be paid higher wages, but mean that opportunities to migrate are limited and that migrant numbers become vulnerable to economic conditions abroad. A case study of the impact of an increase in the minimum wage paid to domestic workers offers further support to this interpretation:

doubling the minimum wage paid to Filipina migrants lead to a 55 per cent reduction in employment of Filipina domestic workers.

If an expanded definition of 'rights' is used, then this relationship provides one way to view the contrasting experiences of the recently introduced seasonal migration schemes of Australia and New Zealand. Workers under both schemes had similar legal rights, but the two schemes differ in the 'right' they gave a seasonal worker to expect to make an economic surplus from their participation in seasonal work. The New Zealand RSE scheme stipulates that employers have to provide a minimum of just 240 hours of work at the prevailing hourly wage rate or higher. Consequently, many participants in the RSE work for much shorter spells than the seven-month maximum allowed by the scheme; in the surveys used by Gibson and McKenzie (2013), approximately one quarter of workers reported spells of four months or less, and a few workers had spells that were as short as two months. It is possible that these short spells did not generate an economic surplus for the worker and their household. In contrast, in its initial phase, the Australian pilot scheme guaranteed a minimum of six months of work at 30 hours per week, which was eventually revised to five months at 35 hours per week or four months at 38 hours per week.

One way to characterise this difference between the two schemes is that the RSE provides an *opportunity* for workers to earn an income, but there is no *guarantee* that they will make an economic surplus from their participation.⁸ In contrast, the much higher minimum work threshold for the Australian PSWPS provided more of a guarantee of making a surplus. Of course this higher minimum work threshold for Australia's scheme makes it less flexible and therefore potentially more expensive for employers, which may limit labour demand for seasonal workers coming under this scheme.

In addition to the longer minimum work guarantee, several other differences between the two schemes are likely to have made the

PSWPS relatively more expensive for employers in Australia compared to the RSE for employers in New Zealand (Hay & Howes 2012). Initially, approved employers had to be labour-hire companies rather than growers, while the RSE was agnostic as to whether growers or contractors employed workers. Another source of relatively higher costs was red tape and compliance; while not easily quantified this was noted as a deterrent by many employers interviewed by Hay and Howes (2012), especially the market testing for whether local labour was available. The small size of the PSWPS also contributed to higher costs in two ways; many employers were simply unaware of the scheme so there was an information cost, and because it was just a pilot with no assurance that it would continue there was risk for employers investing in it. Perhaps the most important factor in making PSWPS a relatively costly source of labour compared with the RSE is the much greater reliance on backpackers by the Australian horticultural industry. The final factor considered by Hay and Howes (2012) is that seasonal work in Australia may not be attractive to Pacific workers because of unfavourable tax rules and remittance costs, compared with the situation in New Zealand—although they consider the labour demand side explanations far more important than any supply side explanations.

Some evidence on this last point is available from a survey of village leaders in Tonga that we conducted in 2012, so as to obtain information on the participation in Australia's and New Zealand's seasonal work schemes by households in their village. The respondents were typically town officers or church ministers, and in many cases, the screening of applicants for forming a 'work-ready' pool had been carried out by these leaders, so they were well informed about the programs and their prevalence in their villages. We also asked these leaders to offer their opinion on which country workers from their village preferred to do seasonal work in, as a way of better understanding the supply side of the market from the country that has been the largest supplier of workers to Australia's scheme and the second largest supplier to New Zealand's scheme.

8. We are grateful to John Roseveare, one of the lead implementers of the RSE, for this terminology.

Before reporting the results, it is helpful to recall the scale of these two schemes. For the first three years of Australia's PSWPS (from 2007/2008 to 2010/2011), annual recruitment averaged just 172 workers, while at the same time New Zealand's RSE scheme was recruiting over 7,200 workers per year (Hay & Howes 2012). While there was an expansion in the final year of the Australian pilot, with approximately one thousand workers hired, the overall PSWPS recruitment was still much less than had been predicted at the design stage, with just 1,534 of 2,500 visas available being issued.⁹ Since the PSWPS was just a pilot while the RSE was fully operational, this comparison of the numbers recruited may seem unfair, except for the fact that the RSE had been operational for only one year prior to the start of the pilot of Australia's scheme and was created fully fledged rather than with a four-year, small-scale pilot. So the question remains of why a relatively large seasonal work scheme quickly got off the ground in one country but not another, despite targeting similar workers and the same industry (Hay & Howes 2012).

The survey results are reported in Table 1 for the 78 village leaders who participated. These leaders were drawn from 40 different villages, with just over three quarters on Tongatapu and the remainder from Vava'u and 'Eua. There was a clear preference for working in Australia's Seasonal Worker Program (Table 1). Specifically, 41 per cent of the leaders indicating that workers from their village preferred to be recruited into this scheme versus only 20 per cent indicating a preference by their villagers for New Zealand's RSE scheme (and 39 per cent felt that workers were indifferent between the two schemes). This difference in stated preferences is statistically significant at the $P < 0.02$ level ($t = 2.44$). Australia's scheme was favoured entirely for economic reasons, with factors such as the higher incomes and better returns,

9. At the end of the pilot scheme, Australia set up the Seasonal Worker Program (SWP), to run from 1 July 2012 to 30 June 2016. The SWP will allow 12,000 places over that period (so an average of 3,000) per year. Of these, 10,450 are allocated to the horticultural sector, so this will still be just one third the size of the RSE.

Table 1 Experience of and Preference for Seasonal Work in Australia and New Zealand

	<i>Australia</i>	<i>New Zealand</i>
Per cent indicating this country as the preferred choice of seasonal workers from their village†	41.3 (5.7)	20.0 (4.6)
Per cent of households in the village who ever had members participate in seasonal work from this country	2.7 (0.4)	20.8 (2.2)
Per cent of households in the village with members participating within the last 12 months in seasonal work from this country	1.6 (0.3)	6.7 (1.2)

Source: Author's survey of 78 leaders in 40 villages in Tonga in 2012.

Standard errors in ().

†Thirty-nine per cent of respondents reported that preferences for working in Australia and New Zealand were the same.

and stronger value of the Australian dollar mentioned. Moreover, among the leaders who felt that New Zealand was a preferred choice for workers from their village, the stated reasons were all variants of the fact that they had not yet had an opportunity to participate in Australia's program, with the New Zealand program preferred just because it was the only one available to them to date.

All of the surveyed villages had at least some households who had ever participated in the RSE, with a minimum of eight participating households and a maximum of 68. However, in 11 of the 40 villages, there had not yet been any recruitment of workers into Australia's pilot scheme or its replacement. Relating these participation numbers to the total number of households in each village, it is apparent that just over one fifth of all households had some-time or other experienced RSE seasonal work in New Zealand versus just 2.7 per cent of households with experience in Australia (Table 1). Since the RSE has been operating for longer than the Australian schemes, this 'stock' measure of participation may be misleading, so the final row of Table 1 provides a 'flow' measure of the average percentage of households in each village supplying workers to each

scheme in the previous 12 months—this also shows that the New Zealand program was recruiting approximately four times as many workers as Australia's program in these areas.

This analysis shows clearly that the small size and slow growth of Australia's seasonal work program does not reflect constraints from the worker supply side. If anything, the Australian scheme is more popular than the RSE for those workers who can access both schemes. Therefore, the reasons for the small size of the Australian seasonal work program must lie with some of the demand-side explanations provided by Hay and Howes (2012).

5. Conclusions

Seasonal and temporary migration is widely discussed, appears to be increasing—at least in terms of the growth in the number of agreements between countries if not in terms of the number of workers—but is only rarely analysed using empirically credible methods. The challenges to credible evaluation come from the self-selection into migration of both households and workers within households, and from the difficulty of measuring the effects of temporary income changes and temporary changes in household structure and the location of economic activities. The studies reviewed here suggest that seasonal and temporary migration can have large development impacts, at least on the households supplying workers. While such effects can be added up to produce national totals, the overall development impacts may differ from the sum of these household-level impacts. It remains a task for future research to adequately measure these aggregate level development impacts.

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