

MIGRATION AND DEVELOPMENT

Guest lecture for “Governing Global Migration”

Ryan Edwards

Deputy Director, Development Policy Centre

Fellow, Arndt-Corden Department of Economics



Australian
National
University

My key conjecture and takeaway for today:

Migration is the single most powerful tool to reduce global poverty, increase incomes, and increase broader well-being, for individuals, local communities, and countries.

At a high level, it is that simple.

Relative to many anti-poverty interventions and development policies, it is the only one that you can argue is both transformational and more certain (c.f., economic growth, state-building, improved governance).

Outline

01 The welfare case for open borders

02 The place premium

03 Development and migration

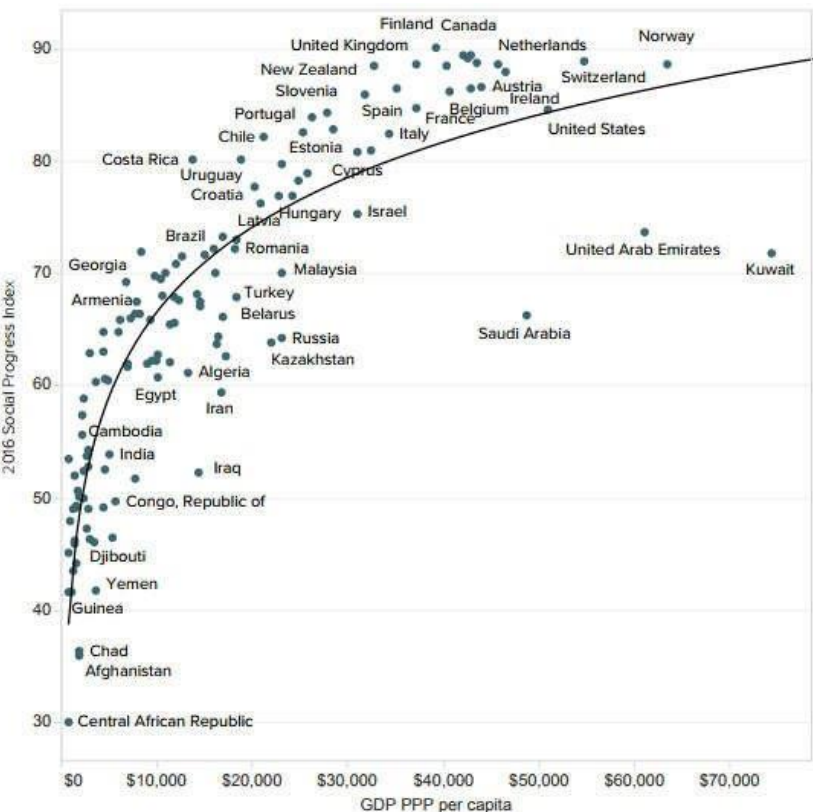
04 Internal migration and reallocation

05 Remittances and beyond

06 Impacts in sending countries

07 Focus – Brain drain or gain

08 Focus – Pacific-Australia migration



What is development?

“Human development is the expansion of people’s freedoms to live long, healthy and creative lives; to advance other goals they have reason to value; and to engage actively in shaping development equitably and sustainably on a shared planet.”

Primary HD outcomes are income, health, education, and distributional concerns like inequality and poverty.

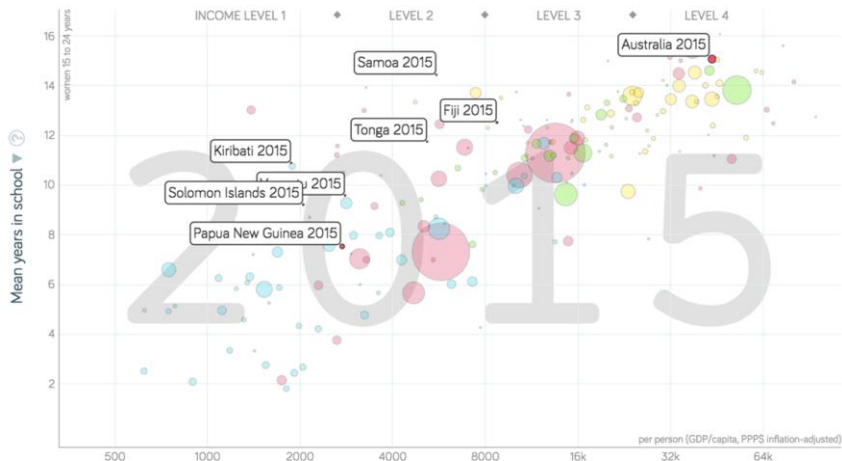
Freedom from extreme deprivation and poverty.

Income is, ironically, quite robustly correlated with a lot of the non-income measures we care about, across contexts

Whose development?

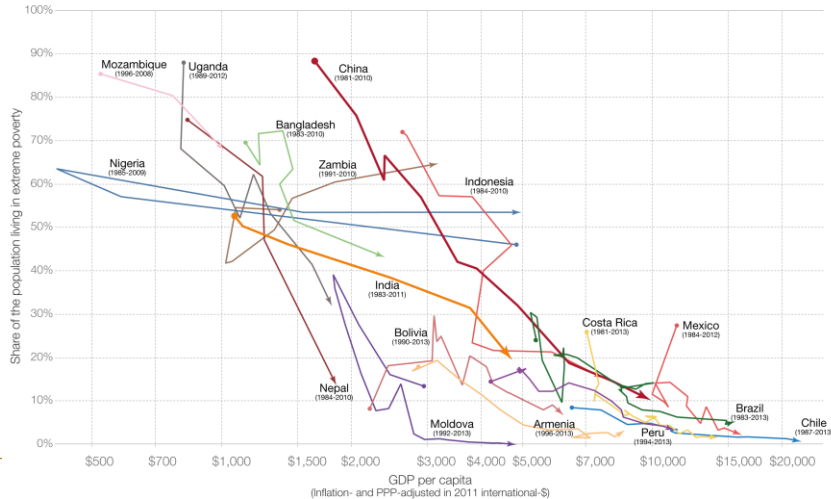
What is the actual empirical object of interest?

- Migrants themselves? (people are the centre of HD)
- Their households and families – at home or abroad?
- Sending communities, or whole country level?
 - Which do you think is hardest to make reliable empirical claims about? Why?



Share living in extreme poverty vs GDP per capita over time

Extreme poverty is defined as living with less than \$1.90/day. Both, poverty and GDP per capita are measured by adjusting for price changes over time and for price differences between countries (purchasing power parity (PPP) adjustment). Shown are selected countries for which data is available for longer periods of time.



Data source: World Bank
The visualization is available at OurWorldInData.org where you find more visualizations and research on global development.

Licensed under CC-BY-SA by the author Max Roser.

Figure 2: Median income/consumption of a country completely predicts the level of poverty

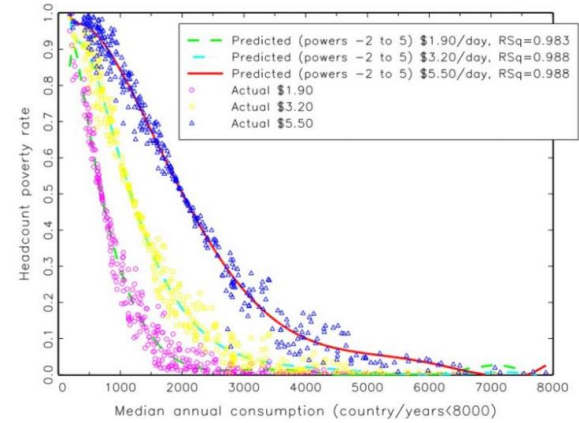
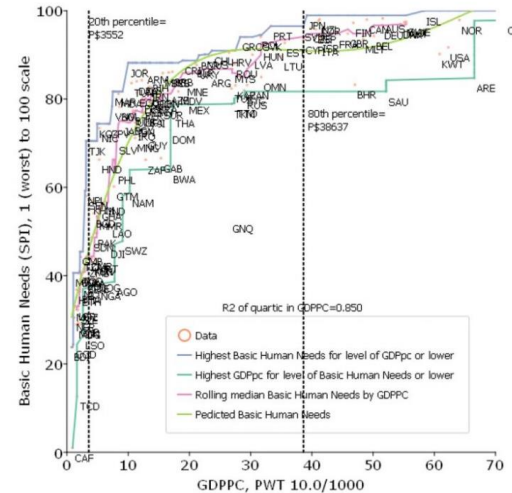


Figure 3: GDP per capita and the basics of human wellbeing



01

THE WELFARE CASE FOR OPEN BORDERS



The enormous gains from labour liberalisation

Likely the largest class of distortions on the global economy

40 percent of adults in the poorest quartile of countries would like to permanently move to another country (>60% in many)

U.S. Diversity Visa Lottery. 2010 fiscal year: 50,000 available visas

Guess how many applied..

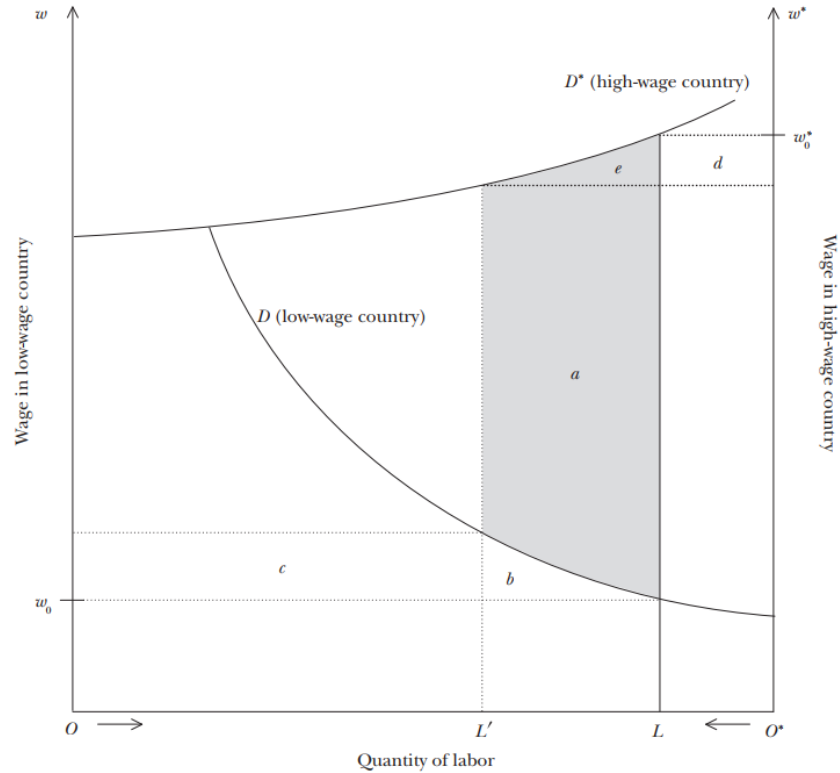
13.6 million. 272 applicants per slot. <0.5% chance.

Gains from removing these restrictions?

One to two orders of magnitude larger than dropping all remaining restrictions on international flows of goods and capital.

Figure 1

Determinants of the Gains from Emigration



Note: The migrants gain welfare corresponding to area $a + b$. In the low-income country, labor gains area c ; owners of other factors (say, capital and land) lose area $b + c$. In the high-income country, labor loses area d ; owners of other factors gain area $d + e$. In sum, the global welfare gain is $a + e$, the shaded area.

Table 1
Efficiency Gain from Elimination of International Barriers
(percent of world GDP)

All policy barriers to merchandise trade

1.8	Goldin, Knudsen, and van der Mensbrugghe (1993)
4.1	Dessus, Fukasaku, and Safadi (1999) ^a
0.9	Anderson, Francois, Hertel, Hoekman, and Martin (2000)
1.2	World Bank (2001)
2.8	World Bank (2001) ^a
0.7	Anderson and Martin (2005)
0.3	Hertel and Keeney (2006, table 2.9)

All barriers to capital flows

1.7	Gourinchas and Jeanne (2006) ^b
0.1	Caselli and Feyrer (2007)

All barriers to labor mobility

147.3	Hamilton and Whalley (1984, table 4, row 2) ^c
96.5	Moses and Letnes (2004, table 5, row 4) ^c
67	Iregui (2005, table 10.3) ^{c,d}
122	Klein and Ventura (2007, table 3) ^e

^a These studies assume a positive effect of trade on productivity; the other trade studies assume no effect.

^b Change in consumption rather than GDP.



02

THE PLACE PREMIUM



Impacts on migrants themselves

Stated preferences

Over 600 million worldwide about ten years ago

Revealed preferences

High costs paid to move

Repeat visits, staying on

The place premium

The difference you see in earnings for the same person, with the same skills and the same ability but when they are in a different labour market

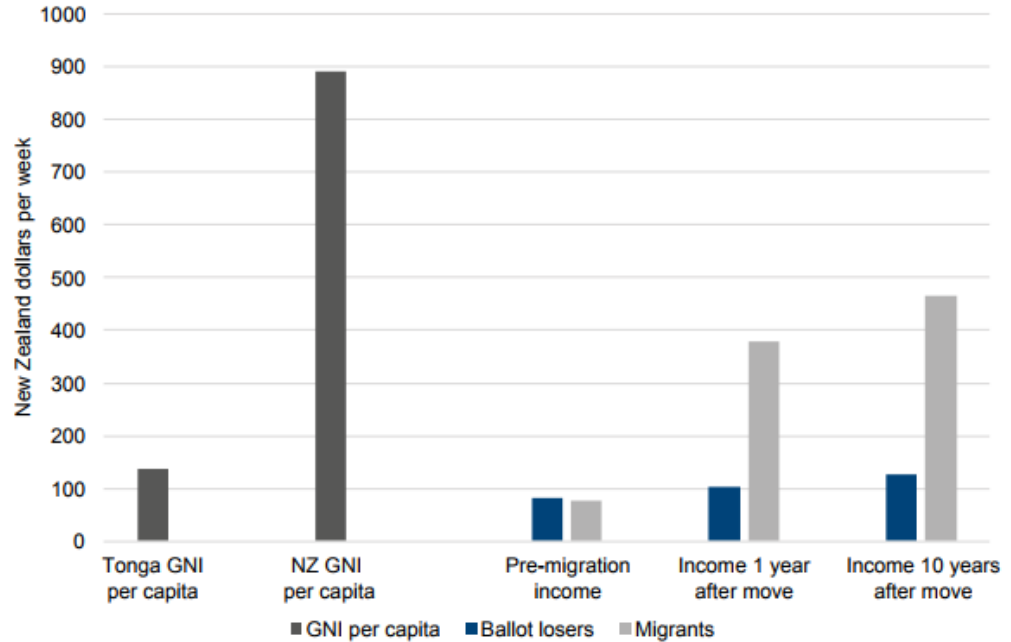
US: 2.6x Peru, 3.5x Philippines, Haiti and Nigeria, 7x (what do you notice?)

Tonga-NZ lottery: 3x (next slide)

Pacific labour mobility: 3x (Tonga) – 10x (Vanuatu)

Impacts on migrants themselves

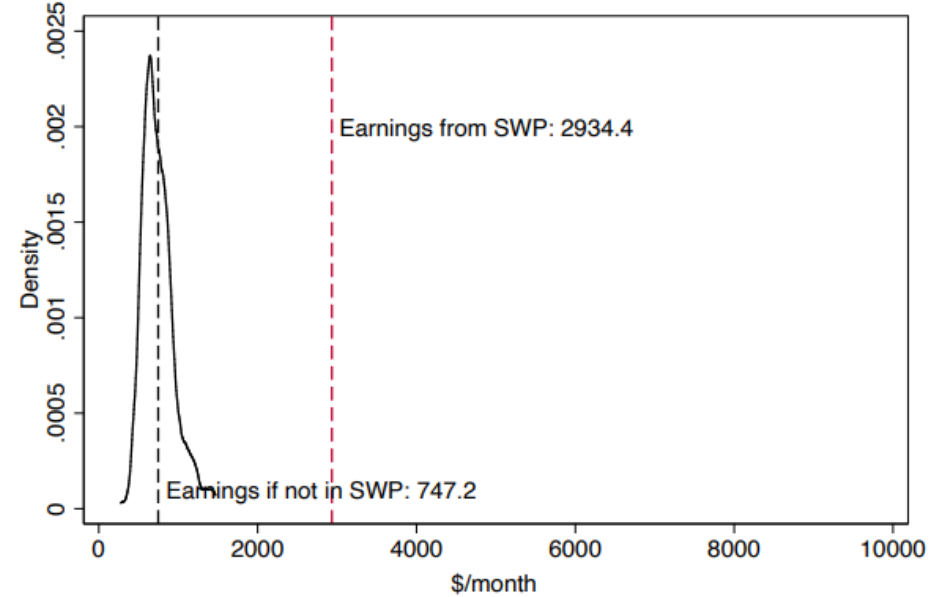
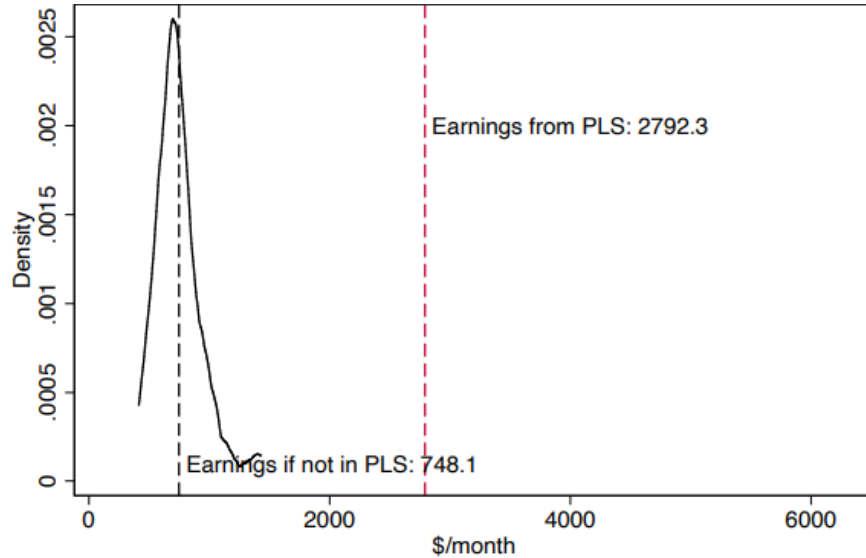
Figure 1 Short- and long-term gains from migrating from Tonga to New Zealand



Note: GNI per capita data are from the 2015 Human Development Report, and are converted into current weekly New Zealand dollars using a PPP to local currency exchange rate of 1.42 and dividing by 52 weeks.

Sources: Pre-migration income from 2002-2004, and income 1 year after move are from McKenzie et al. (2010); income ten years after move is from Gibson et al. (2015).

Impacts on migrants themselves



03

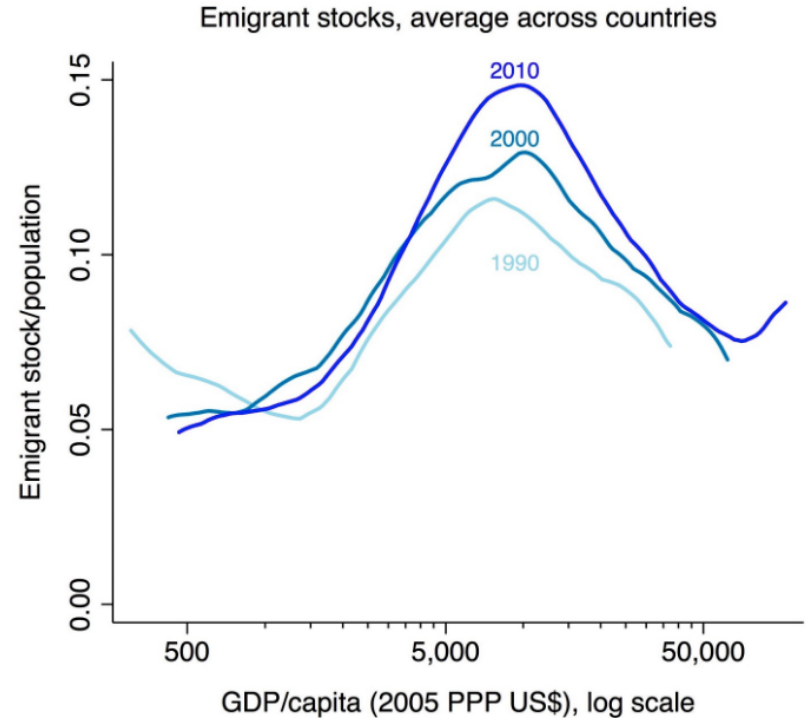
DEVELOPMENT AND MIGRATION



How does migration evolve with development?

Rising income might deter emigration: popular idea in aid and trade diplomacy.

Mobility transition: emigration rises with development until countries reach upper middle- Internal migration and reallocation income status, then falls.



Source: "Does Development Reduce Migration?"

<https://www.newsdeeply.com/refugees/community/2016/10/31/development-aid-to-deter-migration-will-do-nothing-of-the-kind>

Development and migration: why do people migrate?

Clearly, there are enormous welfare gains.

But a lot of people appear at country borders in desperation.

Law requires different treatment depending whether for personal safety or economic opportunity

How to tell the difference?

Common approach: Ask people why, and interrogate.

Problems here: strategic answers, or not the root cause.

E.g., moving for opportunity could be ripple effects of violence.

Can we do this empirically using data instead?

Focus on a change in violence or economic conditions, then look at decision to migrate, i.e., watch not what they say, but what they do.

Violence, development, and migration waves

Clemens, 2017

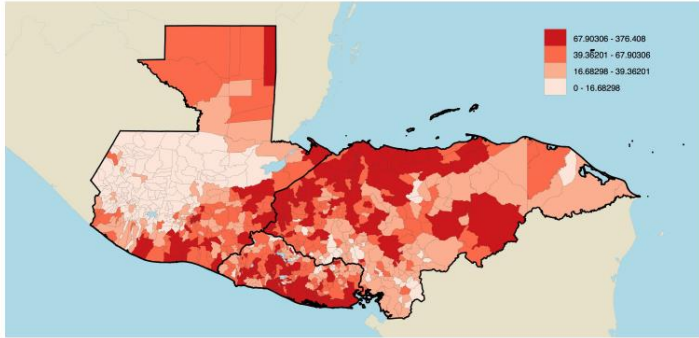
Data. All 179, 000 child apprehensions in the US after migrating alone and without visas from El Salvador, Honduras, and Guatemala from 2011 – 2016 (Unaccompanied Alien Children).

Context. Each UAC apprehensions costs around \$50,000 in federal expenditure. Since 2014, government spent 10x as much on UAC apprehension than on violence prevention in the Northern Triangle.

Empirical approach. Link migration decisions to violence and employment conditions in localities they come from, and employ a wide range of many-way fixed effects estimation approaches.

First rigorous quantitative evidence on relative effect of violence and economic drivers of migration to any rich country.

(a) Homicide rate, per 100,000 population, average 2011–2016



(b) UAC total, cumulative 2011–2016

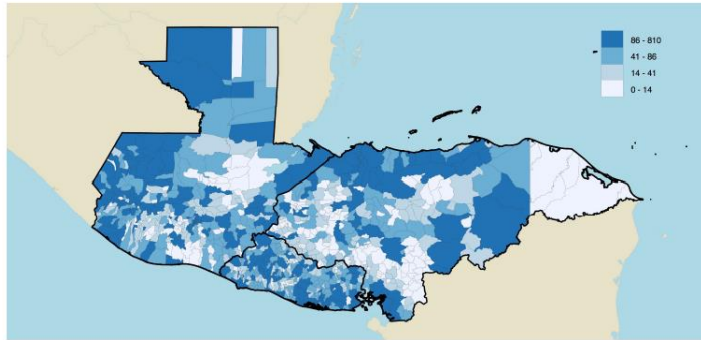
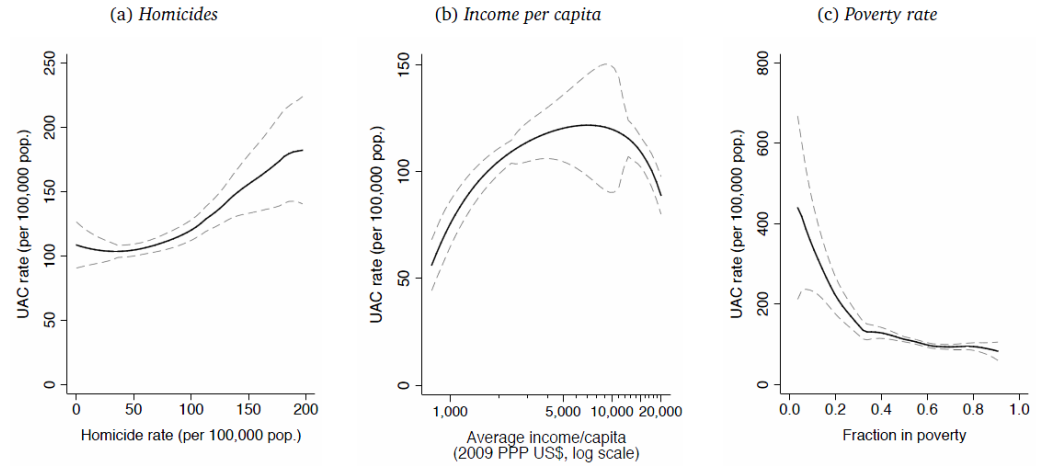


Figure 4: BIVARIATE RELATIONSHIPS WITH UAC RATE IN POOLED DATA



Local linear regressions with 95% confidence interval, Epanechnikov kernel. Bandwidths: homicides 50; inc./cap. 1.2 natural log points; poverty fraction 0.1. Data pooled across municipality-years. Average income per capita is estimated in 2009 (in 2009 PPP US\$). Poverty fraction estimated in 2007, at national poverty line.



Findings

Ten additional murders in the region caused six more children to migrate to the US (and be apprehended). An extra one death per year in the region causing cumulative 3.7 extra unaccompanied child apprehensions.

Eight percent of all 17 year olds in the region have been apprehended at the US border since 2011 (does not include those not apprehended, or who did not get to border).

Relative contributions of violence and economic drivers are roughly equal. Complex, mixed flow. Both drive. Economic conditions shape response to violence by moving.

Violent spikes explain more migration than persistent violence, but persistent unemployment explains more than transitory unemployment.

Implications for policy? US and international law recognizes three basic types: family migrants, economic migrants, and refugees. Drivers today are complex.

One child, could quite easily be simultaneously seeking all three.

Generalized violence (e.g., gangs) not recognized in refugee definition leaving those arriving in the US in a legal area unprotected under current asylum laws.

04

INTERNAL MIGRATION AND REALLOCATION



Internal migration

Cannot talk about migration and development without stressing the relative importance of internal migration

Vast majority of moves in developing countries are internal, not international

China's 2005 census counts 147 million internal migrants

More than 80 percent of African migrants never leave the continent

Substantial literature on labour reallocation

Think of welfare gains here as a sub-national equivalent of the figure just shown, indeed this is where the model comes from (i.e., Harris-Todaro)

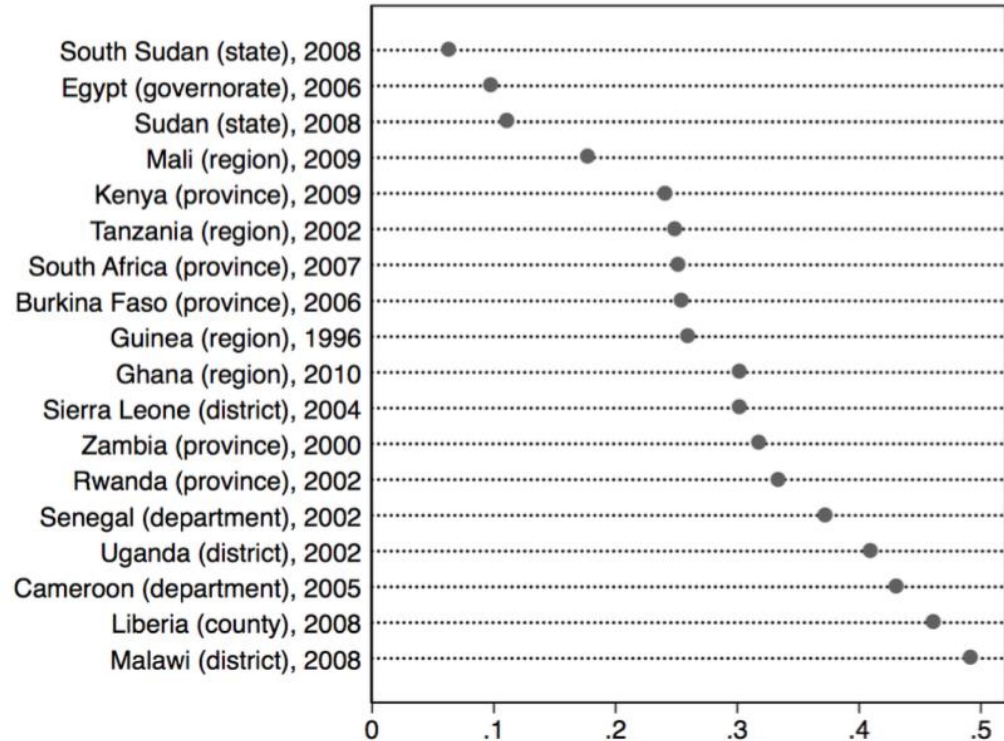
Rural-urban migration is quite literally development: structural change

Sub-national empirical work is generally more convincing than international

Allows you to hold the country-level environment constant, and look at relative changes and causal impacts within the same economy

Migration rates are really high

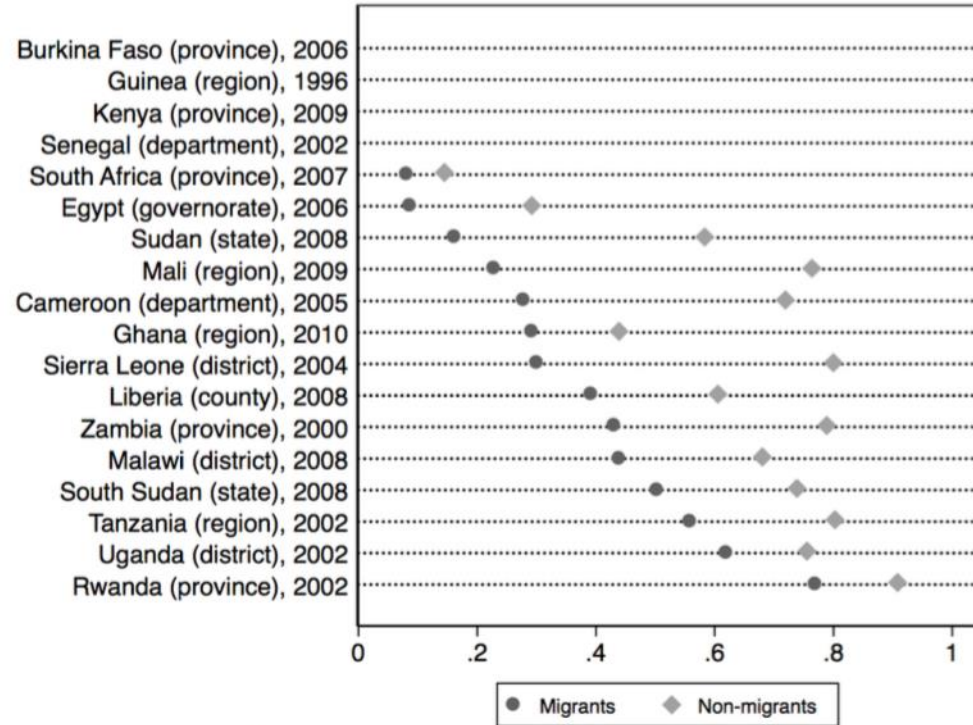
Migration rates, heads of household



Source: Census data from IPUMS International. Note that region sizes differ across countries. Migrants are identified using region of birth.

Migrants non-agricultural employment is much higher

Agricultural sector involvement, heads of household



Source: Census data from IPUMS International. Note that region sizes differ across countries. Migrants are identified using region of birth.

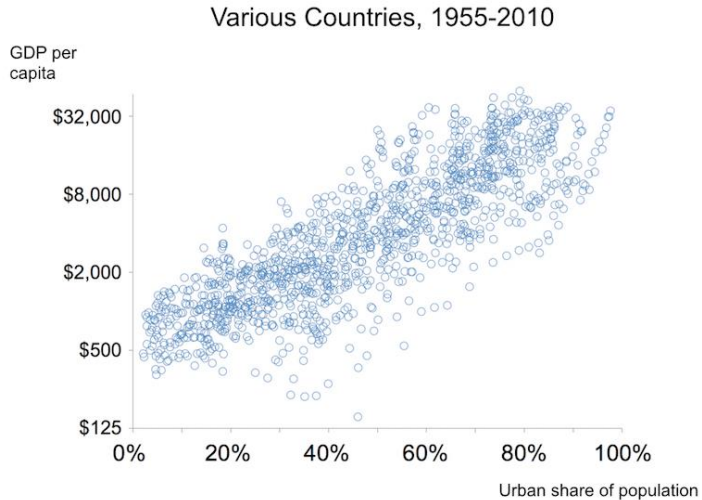
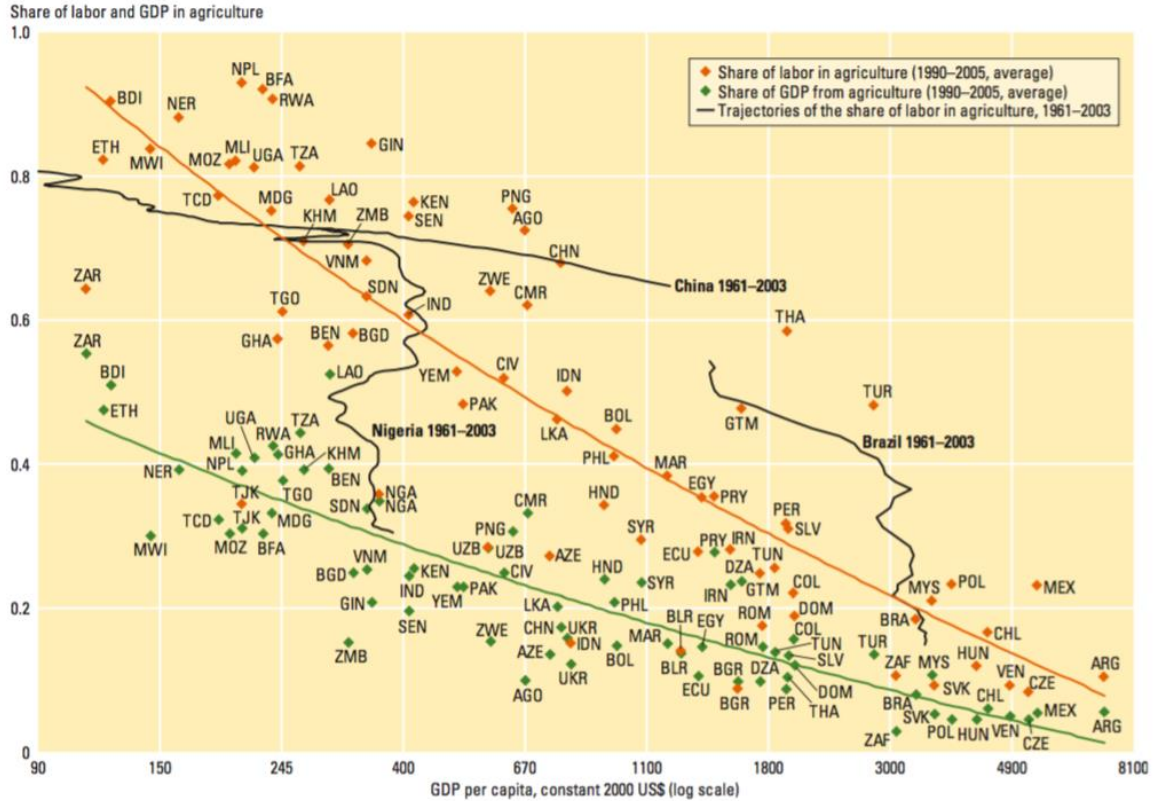


Figure 1.2 As countries develop, the shares of GDP and labor in agriculture tend to decline, but with many idiosyncrasies



05

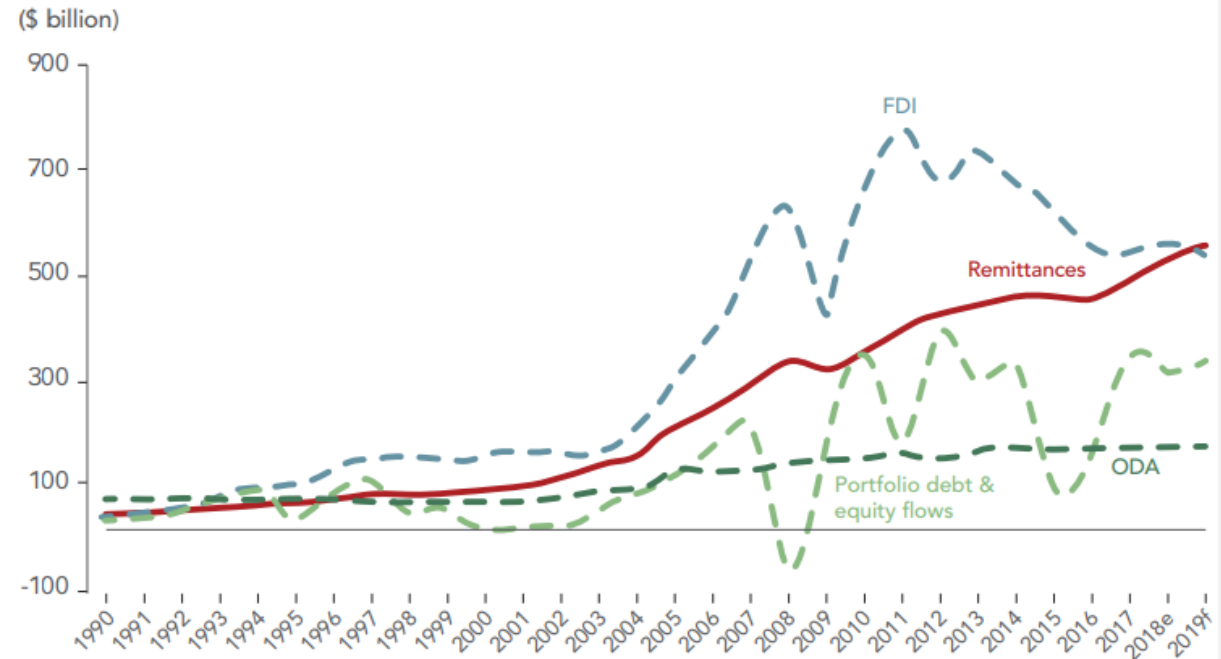
REMITTANCES AND BEYOND



Remittances are the largest international financial flow

Even the transfer costs of sending remittances are about equal to all foreign aid from the world's largest donor country, the United States

FIGURE 1.1a Remittance Flows to Low- and Middle-Income Countries Are Larger than Official Development Assistance and More Stable than Private Capital Flows, 1990–2019



Sources: World Bank staff estimates, World Development Indicators, and International Monetary Fund (IMF) Balance of Payments Statistics.

Notes: FDI = foreign direct investment; ODA = official development assistance. See appendix A in World Bank (2017) for data and forecast methods. e = estimates; f = forecasts.

Top recipient countries (2009)

What do you notice?

Table 1
Top Remittance Recipient Countries

	<i>Remittances received (in 2010; U.S.\$ billions)</i>		<i>Remittances received as % of GDP, 2009</i>
India	55.0	Tajikistan	35
China	51.0	Tonga	28
Mexico	22.6	Lesotho	25
Philippines	21.3	Moldova	23
France	15.9	Nepal	23
Germany	11.6	Lebanon	22
Bangladesh	11.1	Samoa	22
Belgium	10.4	Honduras	19
Spain	10.2	Guyana	17
Nigeria	10.0	El Salvador	16
Pakistan	9.4	Jordan	16
Poland	9.1	Kyrgyz Republic	15
Lebanon	8.2	Haiti	15
Egypt	7.7	Jamaica	14
United Kingdom	7.4	Bosnia and Herzegovina	13
Vietnam	7.2	Serbia	13
Indonesia	7.1	Bangladesh	12
Morocco	6.4	Philippines	12
Russian Federation	5.6	Albania	11
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How much do people actually send?

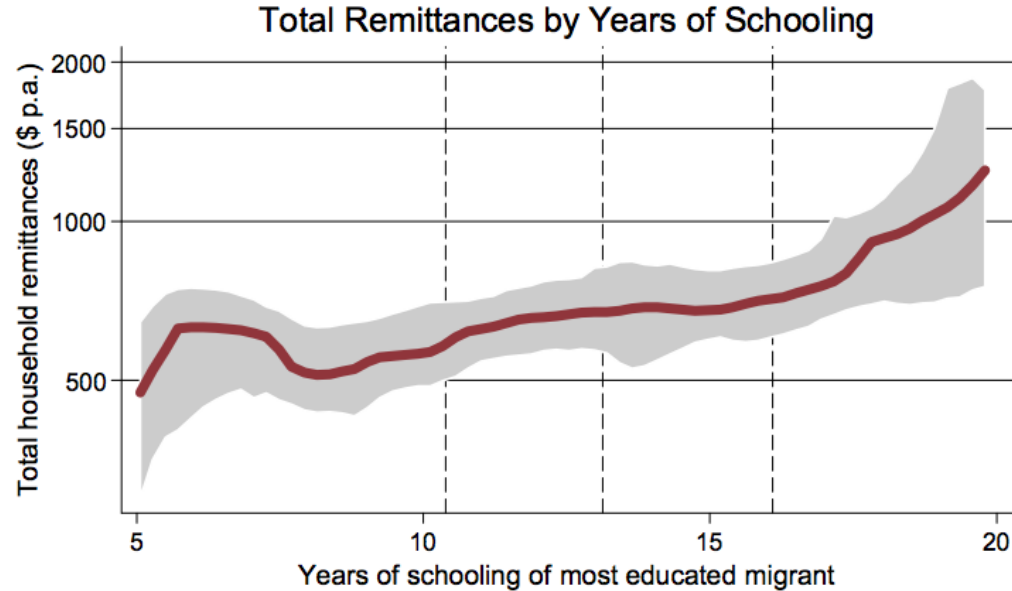
Table 2

Remittance Activity in Selected Migrant Origin–Destination Country Pairs

Origin country	Migrant destination country	Average remittances as a percentage of earnings	Average annual remittances (\$ value)	Data source	N
China	Australia	6.09%	\$552	Australia LSIA	65
Morocco	France	10.37%	\$1,283	France 2MO	128
Algeria	France	7.67%	\$1,079	France 2MO	121
Senegal	France	11.23%	\$1,517	France 2MO	40
Turkey	Germany	2.14%	\$512	Germany SOEP	334
Ghana	Italy	23.28%	\$2,528	Italy NIDI	497
Morocco	Spain	30.80%	\$2,947	Spain NIDI	461
Senegal	Spain	49.91%	\$3,304	Spain NIDI	399
Mexico	United States	31.12%	\$4,125	MMP	1268
Mexico	United States	1.91%	\$312	US NIS	790
Mexico	United States	10.80%	\$1,769	US Pew	321
El Salvador	United States	37.72%	\$5,314	ESSMF	877
China	United States	3.60%	\$568	US NIS	291
Philippines	United States	5.84%	\$958	US NIS	344
India	United States	1.39%	\$728	US NIS	526
Vietnam	United States	3.39%	\$297	US NIS	101
Cuba	United States	2.12%	\$230	US NIS	98
Cuba	United States	2.32%	\$398	US Pew	111
Dominican Republic	United States	9.14%	\$381	US Pew	95



Remittances
tend to
increase by
education
level and
income

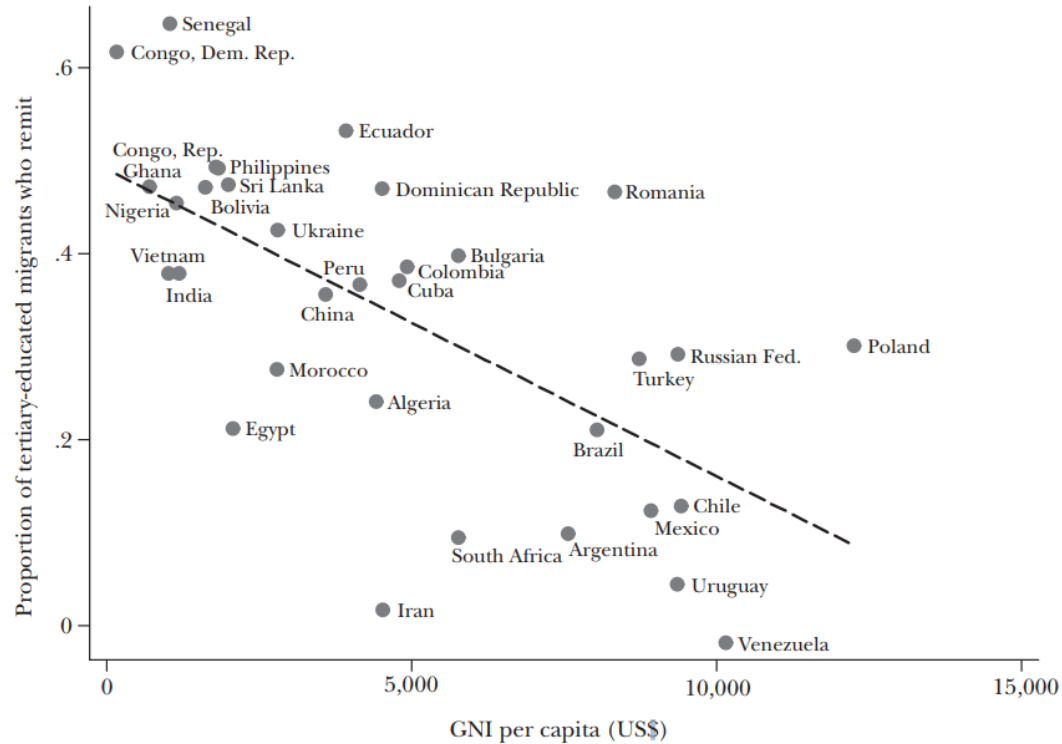


Semi-parametric regression line from partial linear model with dataset dummy variables evaluated at means. 95% pointwise confidence intervals shown from 500 bootstrap repetitions. Vertical lines separate quartiles.



Figure 2

High-Skilled Migrants from Poor Countries Are More Likely to Remit



Source: Database of Bollard, McKenzie, Morten, and Rapoport (forthcoming) and World Development Indicators.

Beyond remittances

Remittances are just one channel to think about migration and development, however important.

Cited often as a primary economic motivation, and have been argued to affect poverty alleviation, food security, human capital development, and other outcomes.

Hard to disentangle from moving and just one channel

[Impacts of migration on development in origin countries](#)

Helpful omnibus review in World Bank Research Observer. Five pathways: labor supply, human capital, entrepreneurship, welfare and poverty, institutions and social norms. See also Little Nomads for children.

But are we even thinking about remittances correctly?

Clemens and Ogden DPR [paper](#) and Devpolicy [podcast](#)

Table 1: Different assumptions emphasize different questions

Topic:	If remittances are a ...	
	... <i>windfall</i>	... <i>return on investment</i>
<i>Investment</i>	Do migrant families invest remittances?	How can more families invest in migration?
	How can policy get migrants to invest remittances?	How can policy reduce barriers to all kinds of investment?
	Do migrant families become dependent on remittances?	Can families now earn decent income without remittances?
	What do families sacrifice to engage in migration?	What do families sacrifice when they cannot migrate?
	What can be done so families need remittances less?	What limits the amount migrants remit to their families?
<i>Payments</i>	Do remittances cause financial development?	How can financial development facilitate remittances?
<i>Taxation</i>	What is the right tax on remittances?	What is the right subsidy/tax on the migration investment?
<i>Insurance</i>	Do remittances help insure against shocks?	How can more families use migration to recover from shocks?



06

IMPACTS IN MIGRANT- SENDING COUNTRIES



U.S. Diversity Visa Lottery (Mergo, 2016)

- ~1, 000, 000 people, targeting countries with historically low rates of immigration to the US.
- Probability less than 1%, millions of people competing for maximum of 55,000 immigrant visas.
- Ethiopia is around 6 – 8% of DV immigrants
- Source families:
 - Increased consumer expenditure
 - Do not diminish with duration
 - No effect on savings or business ownership
 - Food expenditure invariant to migrant gender, but durable ownership, water, and sanitation improvements mostly in families with male emigrants

<http://www.sciencedirect.com/science/article/pii/S0305750X16303515>

Impacts on sending communities:

Three studies

Abundance from abroad: migrant income and long-run development

Positive shocks to migrant income magnify over time as education levels rise, migration increases, and migrants enter higher-skilled, higher-wage jobs. Higher migrant income also causes higher domestic income, primarily from household entrepreneurship.

The Effect of Labor Migration on the Diffusion of Democracy: Evidence from a Former Soviet Republic

Emigration wave shifted electoral outcomes, political preferences, and led to the fall of the last communist government in Europe. Information and cultural diffusion channels.

The international transmission of local economic shocks through migrant networks

Mexican communities most connected to hardest hit US migrant destinations in Great Recession saw return migration increase, emigration decrease, remittance receipt decrease, increased local employment and hours but not wages, and investment in children and education significantly slowed.

South-south migration:

A relatively untapped opportunity?

Returns to International Migration: Evidence from a Bangladesh-Malaysia Visa Lottery

“South Asians traveling to richer Asian nations is the world's largest migration corridor. We track down applicants to a government lottery that randomly allocated visas to Bangladeshis for temporary labor contracts in Malaysia, five years later.

Most lottery winners migrate, and migrants' earnings triple. Their remittance raises their family's standard of living in Bangladesh. The migrant's absence pauses marriage and childbirth and shifts decision-making power toward females. Migration removes enterprising individuals, lowering household entrepreneurship, but does not crowd out other family members' labor supply.

A deferred migration offer never materialized for a subgroup. Their premigration investments in skills generate no returns in the domestic market.”

07

FOCUS — BRAIN DRAIN, OR GAIN?



Brain drain concerns are a constant feature of migration-development discourse

Canonical examples from the American Medical Association:

“SSA migrant physicians found in the December 2013 AMA Masterfile represent a significant loss for the health systems in the SSA region... SSA has lost between 14 and 28% of its physicians”

How harmful is the emigration of high-skilled workers?

Is # of doctors the key constraint in the health system?

No evidence for this – many other systemic failures...

Within-country migration often keeps physicians away from the poorest, e.g., Nairobi has 8% of Kenya’s population, 66% of physicians

No relationship between departure of physicians and nurses and poor health outcomes (Clemens, 2008).

Not just skilled workers too.

In the Pacific, you will often hear concerns about not just a brain drain, but a care drain, or a brawn drain, depending on who is leaving.

Temporary Pacific migration to Australia-NZ with PALM-RSE is predominantly low/unskilled

Brain drain concerns are huge in the Pacific

“Prime Minister Fiaame acknowledged labour schemes had been an invaluable source of income for Samoa during the pandemic, but said more problems had cropped up as they "broadened" beyond unskilled farm work to take in professions like aged care and hospitality.

"When we're feeling the impact of losing our human resources through these various labour schemes, we really do have to look at how we respond," she told the [ABC's The Pacific program](#).

Source: <https://www.abc.net.au/news/2023-08-31/fiaame-samoa-pacific-labour-scheme-australia/102794256>



The prime minister also said she worried about the program's underlying dynamics, arguing that Pacific nations risked being seen as "just these outposts where we grow people".

"You know, either to send them off as sportspeople, or to send them off as labour mobility teams and so forth, as though that's our lot in life," she said.

"I really don't like that.”"

Brain drain theory and assumptions

If you believe brain drain is real and harmful, you need to assume and defend:

Developing countries possess a finite stock of skilled workers

i.e. perfectly inelastic supply of skilled workers; lump of labour fallacy.

Mechanically true in the short run, but people respond to incentives created by migration

Philippines, despite massive out-migration, more nurses per capita at home than Britain

Skilled workers are not poor, e.g., Zambian nurses, \$1,500/annum, USD

Highly elastic behavioral response to wages in other countries

Or else people would not be leaving

No ancillary benefits from leavers

Wages of migrants often increase 5x

Sending just 1/5 back represents a gain

Migration prospects, integration (trade, investment), returning

Key reference: <https://foreignpolicy.com/2009/10/22/think-again-brain-drain/>

<https://devpolicy.org/thinking-about-brain-drain-20190903/>

Table 3

Direct Evidence on the Brain Gain Channel

<i>Channel</i>	<i>Ghana</i>	<i>Micronesia</i>	<i>New Zealand</i>	<i>Papua New Guinea</i>	<i>Tonga</i>
Proportion who took schooling actions due to prospect of migrating abroad	0.32	0.16	0.08	0.16	0.20
Teachers teach different things as a result of expectation some students will go abroad	0.08	0.35	n.a.	0.27	0.06

Source: Authors' surveys of top students and of teachers in their schools (Gibson and McKenzie, 2010).

Note: A teacher survey was not undertaken in New Zealand.

Abarcar and Theoharides

Medical Worker Migration and Origin-Country Human Capital: Evidence from U.S. Visa Policy

Most important brain drain study. Started when Paolo and Caroline were PhD students at U Michigan, just published recently.

Abstract: We exploit changes in U.S. visa policies for nurses to measure the origin-country human capital response to international migration opportunities. Combining data on all migrant departures and postsecondary institutions in the Philippines, we show that nursing enrollment and graduation increased substantially in response to greater U.S. demand for nurses. The supply of nursing programs expanded. Nurse quality, measured by licensure exam pass rates, declined. Despite this, for each nurse migrant, nine additional nurses were licensed. New nurses switched from other degree types but graduated at higher rates than they would have otherwise, increasing the human capital stock in the Philippines

This result, however, is not especially unique:

See <https://devpolicy.org/thinking-about-brain-drain-part-two-20190919/>

Looks like the same is happening right now with Nigeria-UK nurse flows...

Figure 1: Number of Departures of Nurse Migrants and Other Migrants (1990-2014)

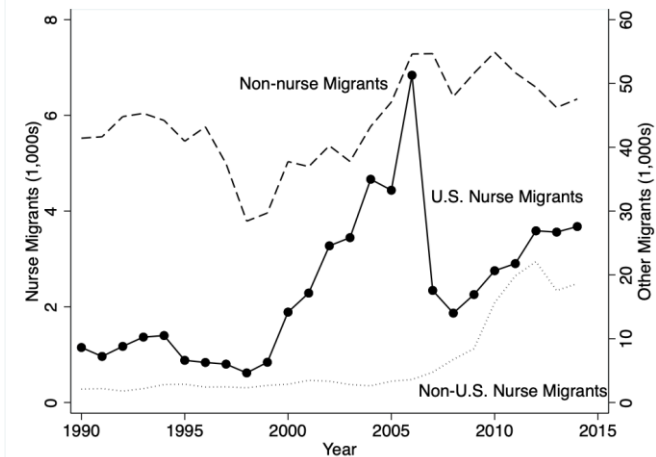


Figure 2: Effect of Visa Expansion and Contraction on U.S. Nurse Migration Rate

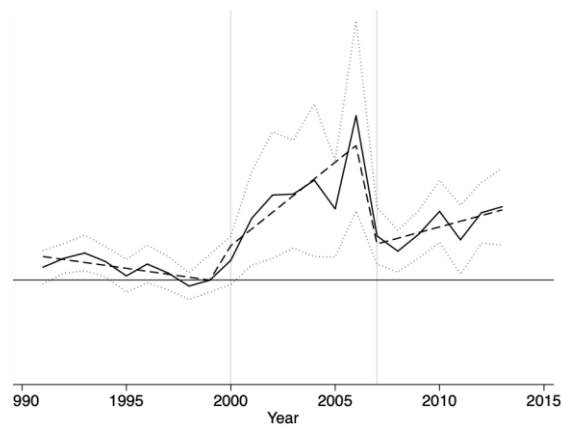


Figure 3: (a) Nursing Enrollment Rate

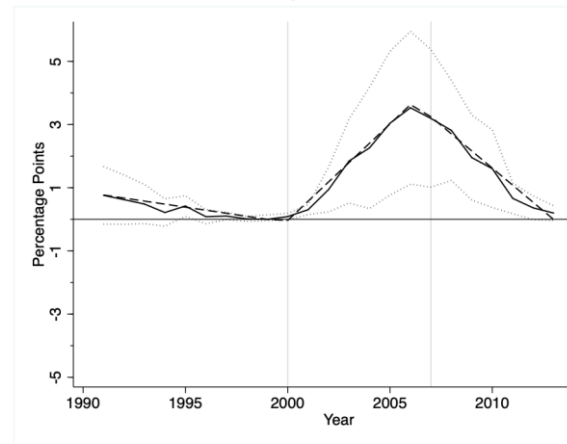


Figure 4: (a) Total Nursing Programs

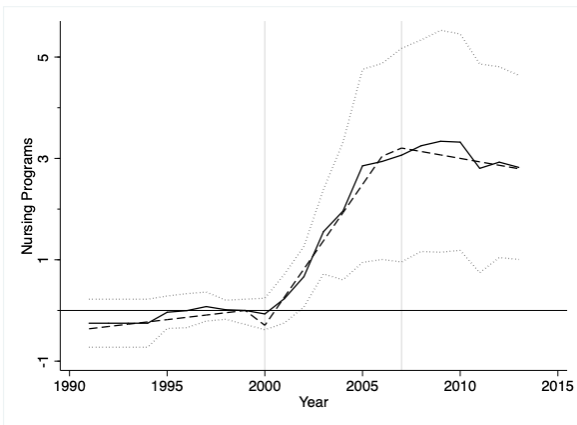


Figure 5: (a) Non-Nursing Enrollment Rate

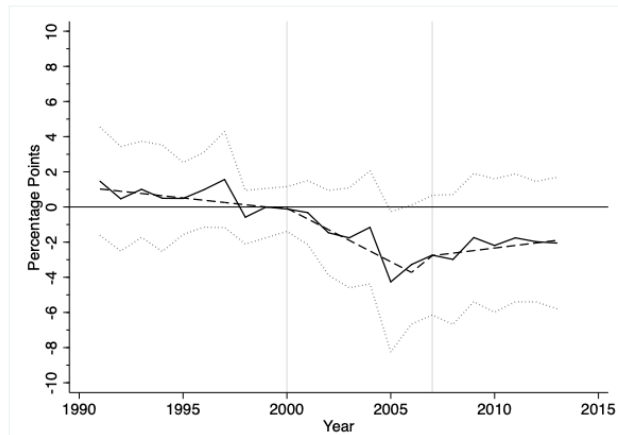
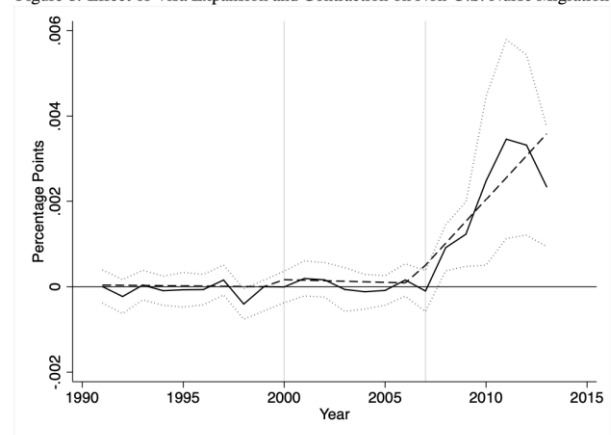
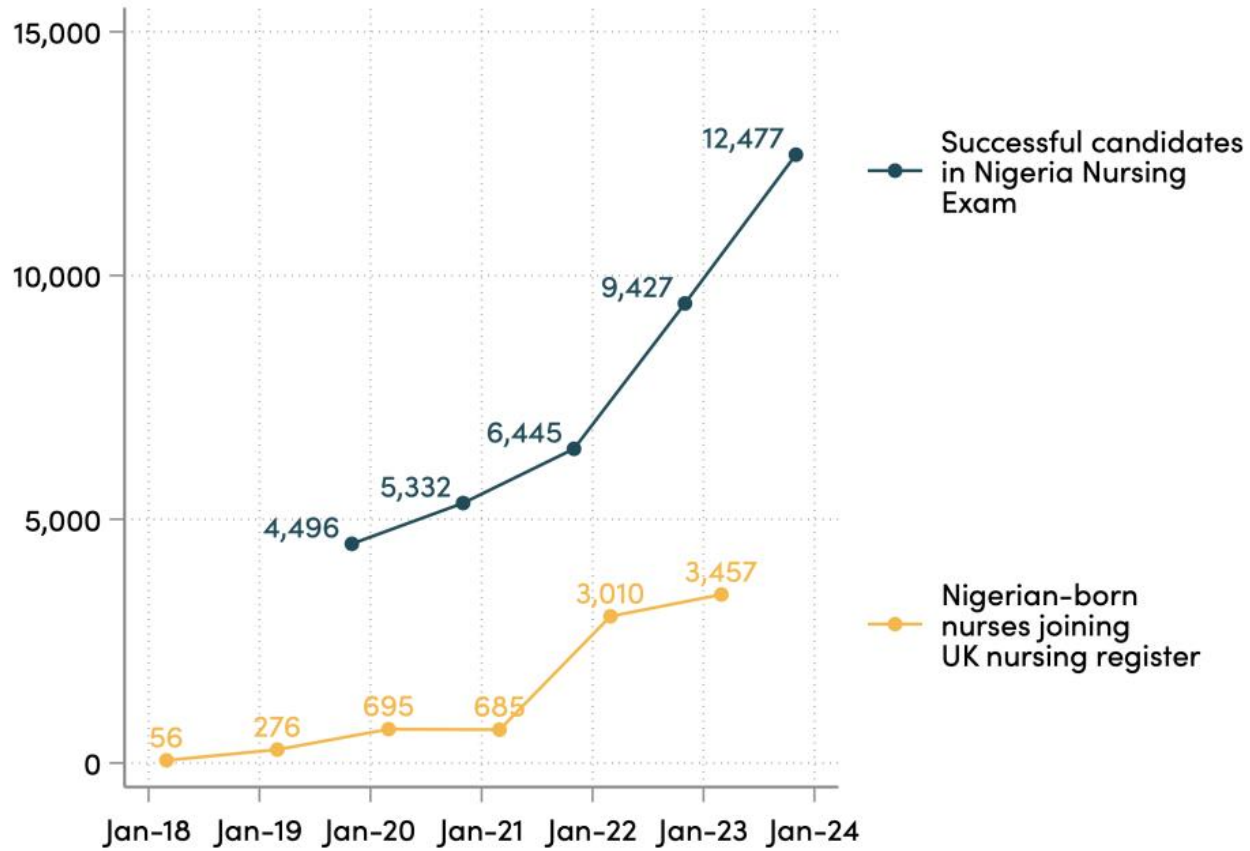


Figure 6: Effect of Visa Expansion and Contraction on Non-U.S. Nurse Migration





<https://www.cgdev.org/blog/uk-recruitment-nigerian-nurses-can-be-win-win>

1987 Fiji

coups:

Human Capital
Investment under Exit
Options

Chand and Clemens
2019

Induced sharp increase in discrimination against Indians
Large emigration wave, mostly by skilled Indians

Result: Increase in skill investment saw **net skill stocks rise**
Rather than general increase (e.g., from repatriated incomes),
heavy investment in migration-specific skills (max. points!)



Sitiveni Rabuka talks to journalists after declaring himself head of state on 1 October 1987. Steve Holland/AP Photo

Figure 1: The differential effect of post-1987 discrimination on emigration by skilled Indians

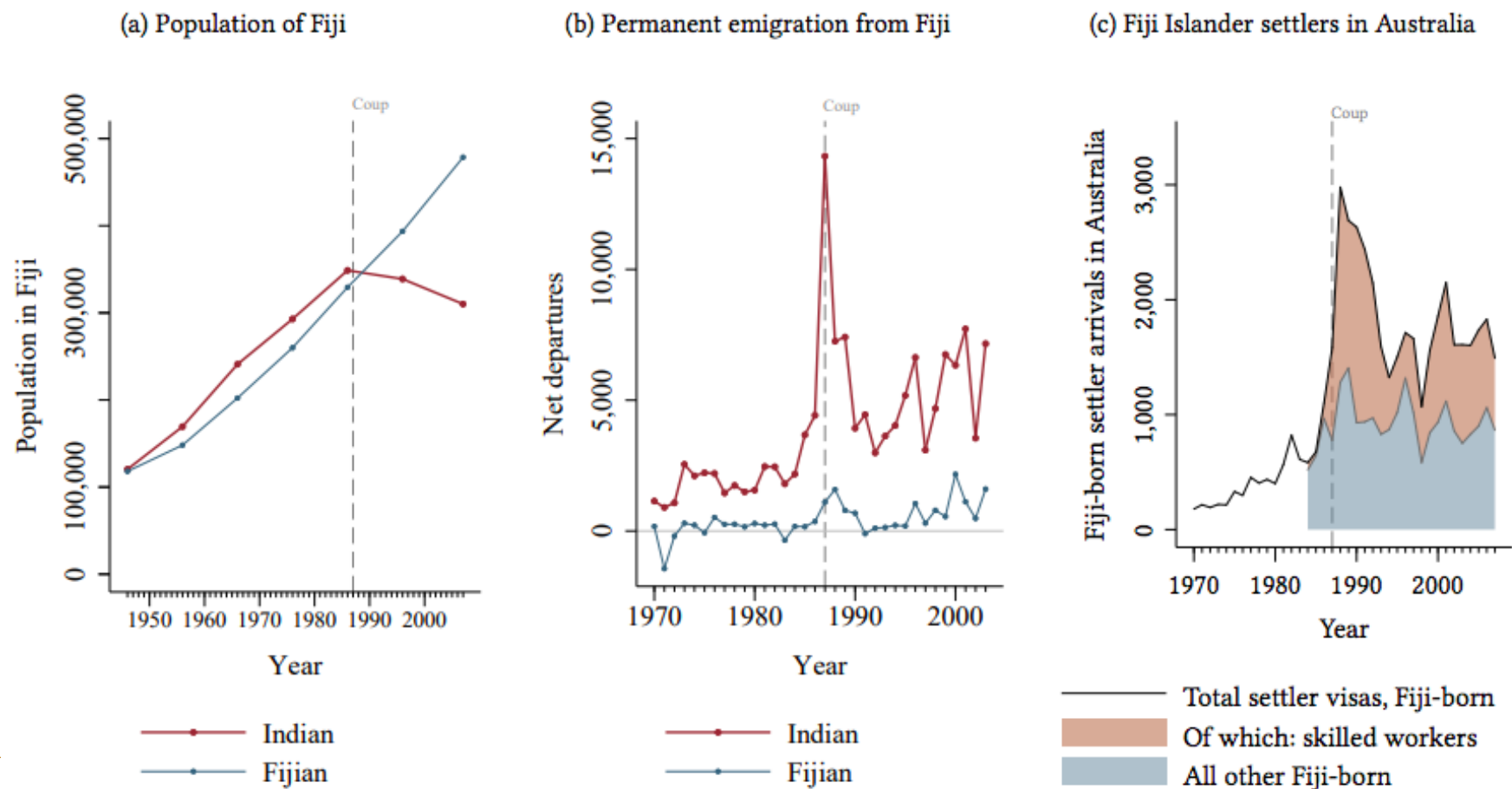
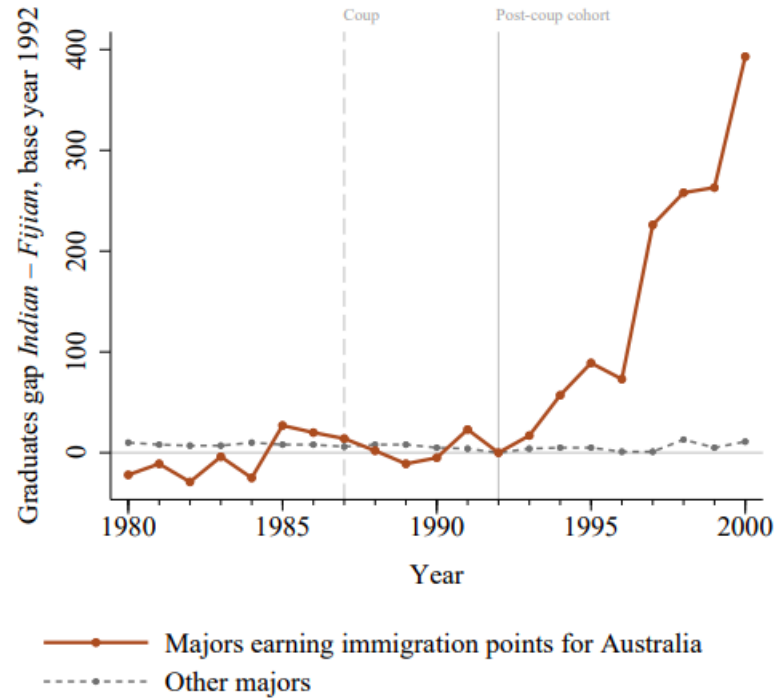


Figure 6: Event study coefficients: Graduates' majors at the University of the South Pacific in Fiji



Do skilled emigrants return?

Over third of migrants from Tonga returned home from New Zealand

Over 20% of US PhDs already have firm commitments to return

46 current and 165 former heads of government received higher education in the United States

Many governments mandate this, in any case

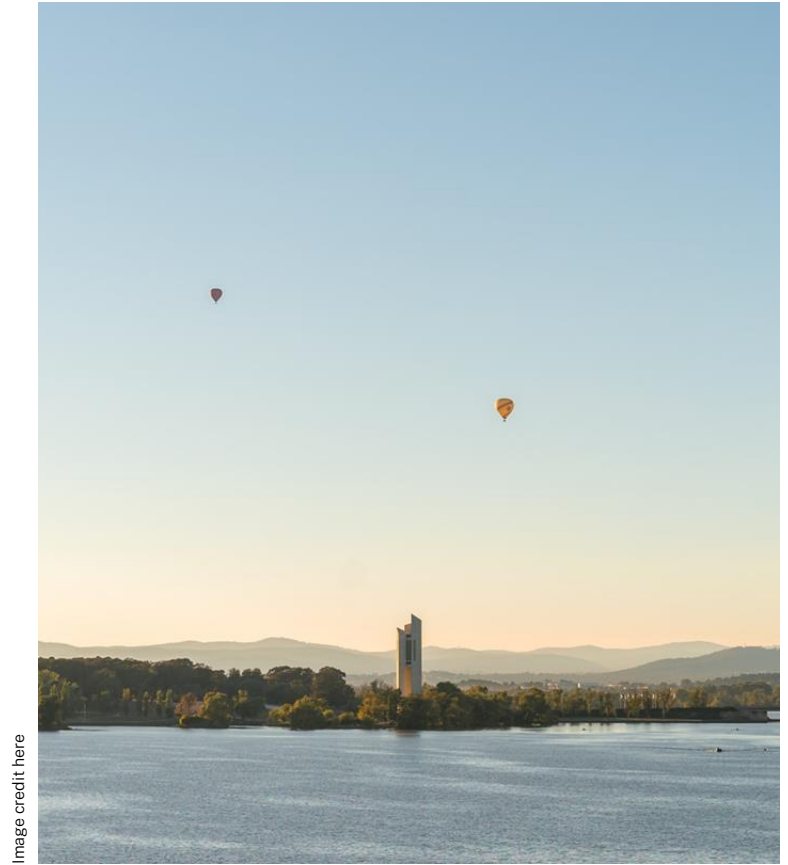


Image credit here

Brain drain summary: short vs long term dynamics

Short-run effects are ambiguous or negative

Aggregate skill quantity decreases and skill prices rise.

Ambiguous effect on sending country wages, as raises skill prices while reducing the average skill level and stock

Concerns most stark when the supply of education is inelastic, and countries are smaller, with limited opportunities to fill gaps left

Long run effects are overwhelmingly positive

General equilibrium: do skills respond to rising skill prices?

Yes, migration prospect effect, among other important channels.

Return of skilled “permanent” and other immigrants

08

FOCUS —
PACIFIC-
AUSTRALIA
MIGRATION



The rise of Pacific - Australia / New Zealand migration

1. Samoan Quota and Pacific Access Category
2. NZ pathway to Australia (continues)
3. Recognised Seasonal Employer Scheme (NZ)
4. Pilot Seasonal Pacific Worker Program (Australia)
5. Seasonal Worker Program (Australia)
6. Pacific Labour Scheme (Australia)
7. Pacific-Australia Labour Mobility (SWP + PLS)
8. Pacific Engagement Visa (Australia, permanent lottery)
9. Falepili Union (Australia, free movement compact)

What next?

It all began with the New Zealand's RSE scheme, and some careful economists

[Abstract](#) [Authors](#) [Supplemental Material](#)

Seasonal migration programs are widely used around the world, yet there is little evidence as to their development impacts. A multiyear prospective evaluation of New Zealand's Recognised Seasonal Employer (RSE) seasonal worker program allows us to measure the impact of participating in this program on households in Tonga and Vanuatu. Using a propensity-score prescreened difference-in-differences analysis based on surveys fielded before, during, and after participation, we find that the RSE has indeed had positive development impacts that dwarf those of other popular development interventions. It has increased income, consumption, and savings of households; durable goods ownership; and subjective standard of living. The results also suggest that child schooling improved in Tonga.

TABLE 3. AVERAGE IMPACT OF RSE PARTICIPATION ON HOUSEHOLD INCOME AND EXPENDITURE

Outcome Variable	Baseline Mean for RSE Households	Difference-in-Differences				
		All	PS-1	PS-2	PS-2-Trim	Nearest N
		(1)	(2)	(3)	(4)	(5)
A. Tonga						
Per capita income	979	331.0*** (99.3)	278.4*** (105.3)	233.1* (129.5)	325.3*** (90.9)	297.8** (143.1)
Log per capita income	6.57	0.355*** (0.071)	0.346*** (0.077)	0.290*** (0.094)	0.331*** (0.087)	0.377*** (0.104)
Per capita expenditure	829	224.1** (111.6)	127.1 (81.8)	104.6 (104.1)	142.4** (63.1)	106.7 (116.4)
Log per capita expenditure	6.58	0.124** (0.052)	0.117** (0.054)	0.083 (0.066)	0.106* (0.058)	0.124 (0.0755)
Per capita savings	150	106.8 (109.2)	151.3** (65.12)	128.5 (78.10)	183.0** (77.67)	191.1** (78.65)
Household size	5.70	0.098 (0.159)	-0.029 (0.152)	0.137 (0.224)	0.086 (0.217)	0.300 (0.266)
Number of observations		1,774	1,499	1,092	1,080	1,025
Number of households		448	379	274	274	257
B. Vanuatu						
Per capita income	85,282	42,861*** (15,201)	44,441*** (15,659)	48,241*** (16,388)	24,491*** (8,291)	55,111*** (15,157)
Log per capita income	10.73	0.320*** (0.104)	0.301*** (0.107)	0.364*** (0.116)	0.310*** (0.115)	0.516*** (0.126)



TABLE 4.—IMPACT OF RSE PARTICIPATION ON HOUSEHOLD ASSETS AND SUBJECTIVE STANDARD OF LIVING TWO YEARS LATER

Asset	Tonga Ever in RSE		Vanuatu Ever in RSE	
	PS-1	PS-2	PS-1	PS-2
Subjective standard of living	0.431*** (0.0940)	0.427*** (0.114)	0.766*** (0.202)	0.648*** (0.199)
Made any dwelling improvement	0.106*** (0.0391)	0.108** (0.0450)	0.0642 (0.0451)	0.0744 (0.0486)
Household bank account	0.0956** (0.0373)	0.140*** (0.0462)	0.185*** (0.0562)	0.166*** (0.0607)
Made any major asset purchase	0.163*** (0.0426)	0.113** (0.0521)	0.298*** (0.0592)	0.269*** (0.0628)
Number of households	372	271	269	225

TABLE 5.—IMPACT OF THE RSE ON CHILDREN'S SCHOOL ATTENDANCE IN FINAL ROUND SURVEY

	Aged 6 to 14 at Baseline			Aged 15 to 18 at Baseline		
	Full Sample	PS-1	PS-2	Full Sample	PS-1	PS-2
A. Tongan children						
Household is ever in the RSE	-0.004 (0.004)	-0.004 (0.004)	-0.005 (0.005)	0.129** (0.059)	0.136** (0.063)	0.094 (0.083)
Number of observations	478	414	286	167	144	97
Proportion of non-RSE students attending school	0.983	0.984	0.977	0.603	0.599	0.576
B. Ni-Vanuatu children						
Household is ever in the RSE	-0.006 (0.048)	-0.048 (0.055)	-0.044 (0.062)	-0.027 (0.107)	0.027 (0.123)	0.018 (0.127)
Number of observations	337	256	214	101	71	60
Proportion of non-RSE students attending school	0.816	0.817	0.799	0.388	0.403	0.379

Results show regression coefficients after controlling for baseline school attendance and age. Robust standard errors in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

A best buy for development ?

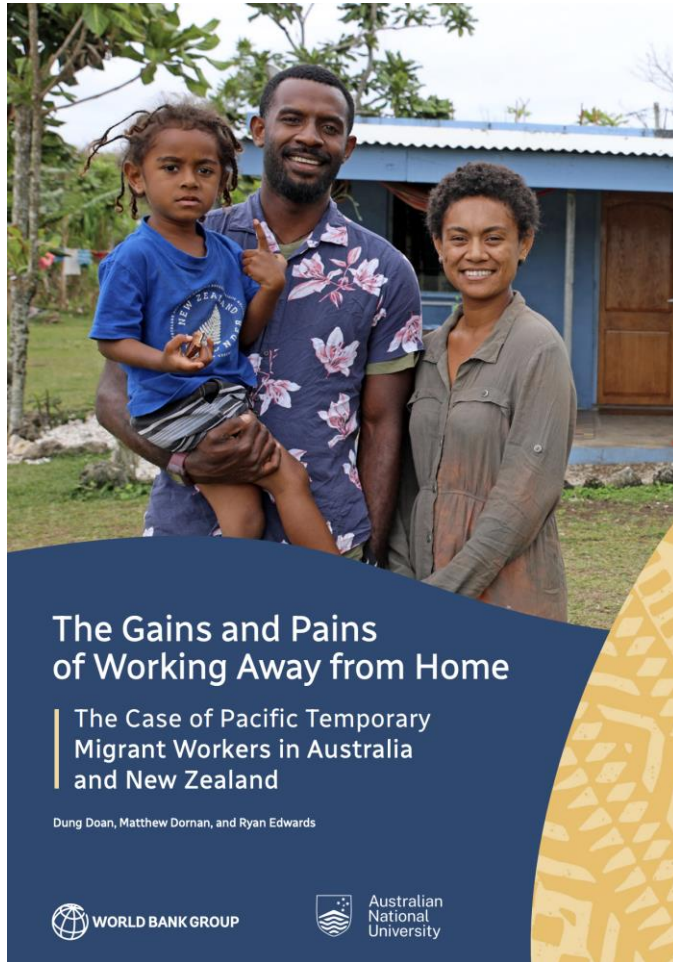
TABLE 6.—THE BIG PICTURE: NET IMPACTS AT THE MACROLEVEL

	Tonga	Vanuatu
Number of RSE workers in New Zealand, 2007–2008 and 2008–2009	1,971	3,590
Net income gain to country from first two years of program (NZ\$), Recognised Seasonal Employer program	5,333,526	9,714,540
New Zealand bilateral aid received in 2009–2010	12,700,050	20,701,000
Australian bilateral aid received in 2009–2010	20,664,000	56,088,000
Total export earnings 2008	11,340,600	43,296,000

Sources: New Zealand bilateral aid from MFAT annual report 2009–2010, <http://www.mfat.govt.nz/downloads/media-and-publications/annual-report/annualreport09-10.pdf>; Australian bilateral aid from Ausaid annual report 2009–2010, <http://www.ausaid.gov.au/anrep/rep10/pdf/anrep09-10entirereport.pdf>; export statistics from Prism: <http://www.spc.int/prism/trade-export-values-us-000>.



Further reading



If there are large efficiency and welfare gains from the freer movement of capital and trade flows, why not from labour flows as well?

What is the moral justification for discrimination on basis of birthplace?

