

**Remarks of Michael Clemens on May 26, 2009 in Washington, DC at the conference
*Beyond the Fence: Research Lessons on How Immigration and Remittances Shape Global
Development***

Thank you very much, Lant. Thanks everybody for coming also. Continuing the focus on skilled workers now, there's definitely a worldwide trend toward skill selectivity in immigration policy, and the U.S. might well be part of that in years to come. It was a part of making immigration policy more focused on skills and more transparently focused on skills was a big part of previous attempts at immigration reform.

So the question in my mind is if the U.S. admits selectively more engineers, nurses, and scientists, many of them from developing countries, what happens to the number of engineers, nurses, and scientists in developing countries? So if you want to learn something about it, about something, go where it happens. And I want to talk about a place that experienced and is experiencing one of the largest movements of skilled workers anywhere, and astonishingly to me hasn't experienced a decline in the number of skilled workers inside. And I want to argue that looking scientifically at what happens in the Republic of the Fiji Islands, which is where we're going to go, might give us an interesting way to think about this big policy question.

So here is one way to economically conceive of an increase – a selectively greater openness to skilled worker immigration in destination countries. Let's say suppose we think of it as an increase in the relative value of skilled workers, human capital, in origin countries abroad versus at home. And I just want to say that again, an increase in the relative value of skilled workers in origin countries, value of human capital abroad versus at home.

Now, it's been long recognized in theoretical models – and Andrew Mountford and Odith Dart came out with similar models around the same time, that in principle the effect of a change like that on steel stocks in developing countries could go either way; that is, an increase in the returns – the value of people's human capital could tend – could motivate more acquisition of human capital, and that would tend to increase the stocks of human capital in origin countries.

At the same time, that only happens if some of those people actually are able to immigrate and realize that higher value which would tend to decrease the stock of human capital in developing countries. Theoretical models like that have been thoughtfully criticized among others by Morris Shift, but how would we test a model like that in the real world.

And it's pretty clear what we would need. We would need two groups of people, skilled workers – I shouldn't say skilled workers – two groups of people in a developing country, one of which experienced a higher relative return to human capital – expected relative return to human capital abroad, and the group of which was identical in absolutely every way except that they did not experience that difference. So here's a place where a randomized controlled trial would be highly desirable but extremely difficult and costly because you'd have to maintain these incentives over years and years for human capital investment to adjust.

So what I want to argue is that something interesting, something like that hypothetical experiment actually happened in the Republic of the Fiji Islands, and let's take a look at it. So what is Fiji? That's Fiji. If you're in New Zealand, go straight north, and in the middle of the ocean you'll find a small, lower-middle income country with the population of Guyana and the living standard roughly of the Philippines or El Salvador, and crucially for this experiment, it's a multiethnic country. The vast majority of the population is made up either of indigenous islanders known there as Fijians, such as this woman and her child, this woman – this gentleman back there, and people of South Asian decent known there as Indians, such as this gentleman, her and him – Stretsein and Suva.

So what's the experiment? The experiment is that I assert there was a sudden and sustained change in the relative expected value of human capital abroad versus at home for part of the population for the Indians. And what happened is that in 1987 for the first time since Fijian independence from Great Britain, a political party with broad support among the Indian population won parliament. This was seen as a threat by many Fijians and a couple of weeks later, a colonel in the Fijian-dominated military walked into parliament while it was in session with a band of masked guys, escorted the prime minister out to control the government. Since then there have been three more coups all of which in one way or another tended to consolidate Fijian power over the country. The point is this wasn't reversed.

And not long after the coup, a new constitution was put in place and it's an explicitly racist constitution. It – just to list a few of the things that went on right after the coup, Fijians were guaranteed a permanent majority in parliament. The post of prime minister was reserved for Fijians, especially high-level jobs and government jobs, but even mid-level physicians were explicitly and implicitly reserved for Fijians. The Fiji development bank made a big credit facility for Fiji-owned – Fijian-owned businesses exclusively. There was a spate of harsh anti-union legislation, the unions being dominated by Indians. There was a promise of negotiation to open up more land ownership for Indians who can only own 8 percent of the land in Fiji, and that collapsed. And particularly important for this study, public subsidies for scholarships to study at the tertiary level were heavily skewed against Indians and in favor of Fijians.

So the bottom line is that a lot of Indians perceived their prospects in the country would be permanently diminished, and they started to leave. And they started to leave on mass. Here's the population of Fiji since 1880. Total in green. These are the Indians in red, and the Fijians in blue up till – the census of 1986 right before all of this happened, and since then, squinting at this, you can imagine that the Indian population is something like 30 or 40 percent off the counterfactual. They've been flooding out, and they've been mostly going to Australia, New Zealand and Canada.

And what makes this scientifically interesting is that it was sudden and unexpected, it was sustained, and it only happened to part of the population. So you can see all sorts of quasi control groups and quasi treatment groups developing, one of which is how were Indians behaving before this sudden and unexpected shock, and how did Fijians behave before and

after it. Tracing some of them across the border, these are censuses of New Zealand – Fiji-born people living in New Zealand. This is Indians, 1986 – the coup is in 1987. The Indians pour in, and this is all other ancestries. And heavily skill focused, which is why – which is where we come back to this policy question.

So by an accident of history, the three primary destination countries, other commonwealth countries for these people have point systems. Canada was the first, and Australia and New Zealand actually modeled theirs on Canada. So if you are Indo-Fiji and wanting to get out, and you have an undergraduate degree, particularly in certain disciplines, you can almost write your visa, and if you don't, the way the point system works is that it's very hard. If you have close family you can make it work, but it's very hard.

So these are settler arrivals, permanent arrivals in Australia, Fiji-born, spiking – this is the total number of Indians spiking after the coup in 1987, and this is skill stream in red, all others in blue, which is sort of flat. That is all pretty much the new immigration after the coups was, as you saw before, Indian and here you're seeing skilled, highly skill focused.

So what happened? What happened is that Indians around this time – and this is the mind-blowing facts to me – poured into school at a time when their prospects in the country were being permanently diminished, many of them thought. They poured into universities. So this is government statistics on the fraction of 18-year-olds enrolling in form seven, which is the government definition of the first year of tertiary education in Fiji. Here's up until the coup. There were a couple of years of chaos where the ministry of education didn't issue annual reports, which is why there is this gap. And this is Indians; Fijians in blue. The Indians are so high that this is the tertiary enrollment rate for American 18-year-olds.

Now the Indo-Fijians are above us and this is quite a poor country. We're talking about very high levels. This is graduations now – another flow measure – not enrollment but graduations from the University of the South Pacific, one of the four faculties of the most important tertiary education institution in Fiji. Here's the coup in 1987, racist constitution in 1990. The next year the first entering class would be 1991. Four years later, there's a huge divergence, racial divergence in graduations. Indians relative to Fijians are pouring into school.

So that's just a bunch of facts, a bunch of numbers we collected. How can we interpret these facts? And I assert that they can be interpreted as these coups caused huge human capital investment in Fiji, and they did it by causing immigration of skilled workers, and that's an incredibly strong statement, but whenever any social scientist says cause and effect people get really nervous.

So we need to think carefully about that and we need to think particularly about three big questions, one about internal validity. Was there more human capital investment after the coups than there would have been had the coups not happened. Second, about construct validity – not such a common term but the meaning there is did it happen through the mechanism that I claim it did because every experimental intervention is in fact a bundle of

different things. Was there something else about the coups that caused this that had nothing to do with immigration? And finally external validity. What can we in this room learn from Fiji anyway?

So just to talk about internal validity, the biggest concern is that the Indians are not Fijians. They're different. They look different, they have different cultures, they speak different languages, but I want to emphasize that we're not talking about an Indian over-class at all. These are not – (inaudible) – Indians. These are two groups of poor people. Here in the mid-'80s, before all of this happened, same fertility. Poverty rate is actually higher among the Indians. Very similar average incomes, life expectancy, infant mortality. Two groups of poor people, comparably poor people.

So of course there could be unobserved things in this table – unobservable differences between these groups that affect our behavior at the – in tertiary education. So let's go to some census data. And for reasons only they understand, the Fijians gave us the entire census of 1986 and 1997. So the reason there are no standard errors in this table is because this is full universe; this is every 18-year-old in the nation.

So simple differences and differences of regression here points out that Indians – this is the coefficient on Indian in a regression with tertiary attainment on the left-hand side, zero or on. This is just saying that in the 1986 census, right before all of this happened, an Indian 18-year-old was 1.2 percentage points more likely to have attained tertiary education than a Fijian 18-year-old. In 1996, 11.9 percentage points more so that the difference in difference is 10.7 percent.

Simple differences and differences account for time invariant unobserved differences between the groups, but there was a lot of time variance stuff going on obviously. So we might want to control for stuff – this next column controls for a bunch of indicators of wealth – household construction materials, what kind of toilet you have, electricity, the profession of the household head, province dummies to control for internal movements. Doing all of that, the (dif in dif ?) actually goes up slightly. It doesn't go down at all. That doesn't explain the difference.

A simple dif in dif makes lots of other assumptions too, one of which is that the counterfactual expansion path would have been linear, and it could have been lots of things. It could have grown exponentially or something like that, which is why these are – (inaudible) – odd ratios for the economists in the audience. This is just pointing out that not just the arithmetic difference between groups, but the ratio of the likelihood that an 18-year-old Indian was – had attained tertiary education went up by 48 percent. Big differences. And an interesting falsification exercise is that this didn't happen for secondary education, which is not directly relevant to immigration prospects.

So about construct validity, again, could there be some other reason, some other thing happening around the time of the coup that's making these people absolutely pour into school?

Yes, many things. So here are just quickly our four plausible things that could be going on. Maybe those Indians were pouring into school in order to compete for a diminishing pool of jobs in a racist country – nothing to do with immigration. Certainly possible, but what's fascinating is that we have these graduation data that you saw discipline by discipline and the Indians are pouring into exactly those subjects in the University of the South Pacific that get you more points because they're on the skilled occupations list of Australia and New Zealand. I'm talking about actuaries, accountants, English teachers, and especially information technology.

And there are lots of disciplines that are more locally relevant – oceanography, tourism, agriculture, those are exactly the disciplines where you don't get that big split between Indians and Fijians, and I people were signaling for the domestic markets, you'd expect exactly the opposite. You would expect that to be precisely where you get the difference.

Another possible explanation: what if the returns to other assets were going way, way down, if there were a massive campaign of capital expropriation against Indians – window-smashing campaign, taking away bank accounts. People might invest in a more mobile form of capital, their brains. The thing is that didn't happen. There were no big expropriations of Indians. As I mentioned, Indians can't own 92 percent of the land in Fiji. That was true before independence, after independence, and is still true – no big return to land – no big change in the return to land, no big turn in the returns to low-skilled human capital either – real-wage series for construction agriculture didn't change around this time.

A third one, it could be that the – hypothetically that the government was vastly expanding the supply of tertiary education. As I mentioned, the scholarships were shifted heavily against Indians at this time, so if they're going into school more than Fijians, it's because of demand from the scholarship side. We also have data on the aggregate institutional subsidies to the biggest universities, and they don't change very much during the 1990s either. This is primarily a demand-driven phenomenon.

Last one – could it be that this is all because of remittances, that the reason that the in the late 1990s kids were able to go into school, Indian kids were able to go into school, is that their relatives immigrated to Australia in the early 1990s and we're just sending back money even though their demand didn't change. We have a household income and expenditure survey showing that Indians spend a lot more on tertiary education than Fijians, and that difference actually goes up when you control for remittances. So, again, lots of other possible pathways that could be going on that don't have to do with immigration, but the evidence we could gather just isn't compatible with any of them.

So finally external validity. Who cares about Fiji? Fiji is far away and it doesn't really look much like this place. I just – I want to point out two attractive features of all of this for external validity, one of which is that this is occurring in a setting of very high skill selectivity, very strong incentives. There pretty much isn't illegal immigration from Fiji to Australia. You'd have to swim. And you can't do boat people in this setting. It just doesn't work. And all of the primary destinations, where everybody's relatives are, have very clear – very explicit point

systems, very clear incentives. And it's a huge exodus. So an interesting aspect of this for external validity is that this is I think the largest exodus of skilled people from a developing country in recent history. So if you're going to see a brain drain, this is it. This is where you'd expect to find it.

MR. : (Off mike.)

MR. CLEMENS: What's that?

MR. : (Off mike.)

MR. CLEMENS: Yeah, yeah. Great term. Yeah. (Laughter.)

So also some unattractive aspects for external validity, obviously something could be different about Indo-Fijians. You know, maybe somehow they value education more, they respond to incentives more. All of these people – not all – the vast majority of these people are descended from indentured laborers, almost all of whom were dolets (ph) or untouchables, these are – these are – these are not people culturally predisposed to acquire education at some sort of basic level. It's also possible that people could respond differently to a decrease in prospects at home and its effect on the relative foreign home return to human capital, then they would respond to an increase abroad. Lots of experimental evidence showing that people respond to gains and losses differently.

So I don't want to push the external validity too much, but I think that Fiji gives us an interesting way to think about questions of interest to us. Final picture – how big is this effect? I just want to point out that this is a huge, and it's so big that I'm going to make the really bizarre claim that all of those people pouring into school actually compensated for the loss from immigration in Fiji. I'm not saying that that would happen everywhere or could happen everywhere, but I think that it actually did happen in Fiji, so what this is – we're taking again the fact that we have the entire census of 1986 and 1996, and this is just a cohort analysis of how many people disappeared or appeared between the two censuses.

For example, take some – the group of people who was 20 years old in 1986, subtract about 25 percent, and you get the number of Indians who was 30 years old in 1996; that is, if you're Indian and 20 years old in 1986, chances were about a quarter that you were out because death rates are very low in this subpopulation. As you can see, immigration much, much more different for Indians than for Fijians.

This top group is Indians and Fijians with tertiary education attainment. And remember, these are people being counted in the country, so this is net of all of those departures, and it's going up more for young Indians than it is for Fijians – net of all of these guys leaving who are heavily skilled focused. And it turns out that not in terms of percentages but in terms of absolute numbers, if you integrate between these two curves – here the Indians are higher; here the Fijians are higher, you get almost zero. That is, the number of tertiary

educated Indians in the country, in Fiji went up by the same absolute number as the number of tertiary educated Fijians at a time when, remember, the absolute population of the Indians is going down. Amazing. The only way that that could happen is if they're pouring into school and if they're pouring into school at such large numbers that they actually compensated for the loss.

So I just want to point out that the bottom line is that it's not at all clear that the departure of a skilled person from a developing country equals the loss of 1.00 persons from a developing country. The loss could be less than one. It could even in extreme settings be zero for the simple reason that people respond to incentives, and what I want to leave you with is that skilled immigration can tend to create skills, and it's something that should be pondered I think by people seeking to limit the movement of skilled workers in the name of development. Thanks.