STEG Virtual Course on
"Key Concepts in Macro Development"

Thursday 8 April 2021

Supplemental lecture: Migration and risk

Mushfiq Mobarak (Yale)

Presentation Slides

Video

Q: Since informal insurance networks involve unrealized or not-contracted transfers, and these are hard to observe, can you talk a little about how informal risk sharing is estimated empirically?

A: I think Mushfiq might discuss this in part in his paper on migration and risk-sharing, but there are several approaches, all with some limitations. Some examples include: (a) observing the extent to which the flows of transfers depend on income realizations (i.e. is the person with a negative shock the one receiving the transfer?), and (b) observing the extent to which income and consumption correlate (with the idea being that lower correlation reflects greater risk-sharing), and (c) showing whether the past history of transfers affects future transfers (measuring the extent to which subsequent transfers therefore have a "repayment" aspect to them)

A: Townsend (1994)'s classic paper emphasized that risk-sharing regressions (correlation between individual consumption and aggregate consumption, absence of correlation with own income) are indirect measures, but not distinguishing between self-insuring (borrowing/saving), formal insurance, informal insurance… Still, we might want to distinguish how this occurs, so surveys will often ask about informal borrowing, lending, transfers, gifts, savings.

A: I think you can see a concrete example in table 4 here: https://spinup-000d1a-wp-offload-media.s3.amazonaws.com/faculty/wp-content/uploads/sites/45/2021/04/MS27221manuscript-published.pdf.

Q: When we are at risk, we can choose insurance, such as savings or diversified income, and we can also choose immigration. Is there any literature on when to choose insurance and when to choose immigration?

A: Typically, formal insurance is not very prevalent in low income countries, e.g., very little formal insurance markets, little government insurance, weather insurance is a relatively new introduction. So the biggest type of insurance is informal insurance. Melanie Morten, who

will teach spatial models in a couple weeks, has great work on the relationship between informal insurance and migration.

Q: Does Mushfiq see a mapping between forms of migration & the nature of the risk? So short-term individual migration we can see as just consumption smoothing for a bad year, which as a farmer say I probably expect to have every few years (i.e.. they 'know' the distribution) versus permanent/family migration in response to a severe shock (unknown unknown- I have no clue about the distribution of earthquakes, floods. etc).

A: Really interesting also to think about how shifts in the distribution of bad outcomes may be moving with climate change. You might try to rely on diversification or other measures if you think that there is a bad shock this year. But if your assessment is that the distribution of weather shocks is becoming less and less favourable over time, you might eventually choose to migrate.

A: It's a good question, I think you're right to think that for different sorts of risk, people will have different estimates of their relative frequency, and also differences in their degree of uncertainty about them, and in both cases, these beliefs are updating over time.

An important consequence is that people's decisions over what is optimal will reflect both the expected return to various activities, but also the uncertainty about the return. Seasonal migration is likely to be useful in response to known seasonal rainfall variation, but less valuable perhaps in response ex ante to something like earthquakes, where it's less predictable when this risk will occur. Agree with Doug that in the context of climate change (and therefore floods) your long-run beliefs might evolve over time, and so even if you don't migrate in response following one flood, as more and more floods occur you might conclude that the long-run riskiness of staying in the village is too high.

A: Just to clarify - is part of your question also on risk vs. ambiguity aversion? That the distribution of returns to remaining vs. migrating may be unknown, and that this will have different effects than "known" risks to migrating?

A: Thanks both- yes, the context of climate change is really interesting for this (and something I'm trying to work on for my own research)- it seems unlikely to me (this is pure opinion) that the sort of smooth updating story may not hold, people's view is fairly sticky so I don't change my risk perception until I see a large negative event- in other words I overweight large negative shocks & underweight (or don't weight at all small negative shocks)

I think so- maybe reframing, is our model for short-term migration (where maybe expected utility maximization does quite well) distinct from how we should be modelling permanent migration where we might expect loss minimization, or more of these kinds of decision theory type issues (incl. ambiguity aversion) to offer a better explanation?

Q: For developing countries there is low adoption of technology due to brain drain to developed countries. Thus the old folks continue using old methods.

A: Partly true, Francis. But if you think about it, there isn't a lot of brain drain from farmers in rural areas... And there is low technology adoption even among the young who stay behind.

It *could* be that these are people who aren't very skilled. But it might also be that some of the technologies that we promote aren't especially well suited to the contexts that many people face. Or, as Mushfiq says, people may just view these technologies as risky, and they can't afford to take risks that might leave them worse off.

Q: The low technology adoption, may because of "none of my friends adopt this technology, so I reject the technology".

A: There is certainly a literature that suggests that people learn about the effectiveness of new technologies by seeing how well these technologies work for their friends and neighbours. Quite a bit of literature looks at these network effects in technology adoption; the previous lecture by Lauren Falcao Bergquist mentioned some of the strategies that have been explored for disseminating improved technologies through social networks. But clearly there is a negative side, in which people might choose *not* to adopt a new technology because someone they knew had a bad experience with the technology... So you're right that this might affect people's perceptions of the quality of the technology or the riskiness of the technology.

A: Another nice example of this is a paper that Mushfiq has, looking at how demand for toilets depends on demand from others in the community:

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3328509.

Q: Non use of insurance systems may also come from distrust and incomprehension of insurance systems because of bad governance and fraud. Street people do not understand the benefit to get into it when the usually see people frauded by insurance companies.

A: This is a great point, too. Lauren Falcao Bergquist talked the other day about 'basis risk,' which is the problem that you might have a bad shock and not get a payout... This could simply reflect the fact that index insurance is always susceptible to the reality that losses don't necessarily correlate perfectly with the index. But there's another effect here: people may feel particularly upset about being defrauded. The lack of payout is the same, whether the cause is fraud or a poor index... But being defrauded feels particularly bad. So it's not unrealistic to think that people might be discouraged from taking up insurance by hearing about occasional cases of fraud -- even if those are not quantitatively very common. (And of course, this effect will be even stronger if fraud is widespread!)

A: You might be interested in this https://www.rfilc.org/wp-content/uploads/2020/12/Its-a-matter-of-faith-the-role-of-trust-in-agricultural-insurance.pdf.

Q: Exactly Doug! And that happens everywhere in the world but specially in poor countries like mine (Madagascar)

A: In some purely rational sense, the failure of the insurance due to fraud is not so different from any other reason why the insurance might not pay out. But there is a psychological / behavioural reason why this may be particularly undermining of the market for insurance.

Conversely, though, there does seem to be some evidence that there is more takeup of insurance where people see insurers paying out to cover losses... So that positive effect can apply, too.

Q: Do people of Rangpur belong to socially disadvantaged communities? Can we say that people do not migrate (despite there being large gains) because of a fear of being discriminated against?

A: It's certainly possible that concern of discrimination is a barrier, and I think it's hard in practice to separate choosing not to migrate because you're concerned, you'll be discriminated against.

Two things to note though are that (a) the fact that the incentive induced migration suggested for many people that the cash or credit was enough to change their incentives (even if there was discrimination), and (b) there were already relatively high rates of migration among low income individuals in these communities (the question isn't "why is there zero migration", it's just "why isn't migration higher") suggesting that there are many for whom possible discrimination wasn't a binding constraint.

Q: Can Mushfiq give the reference to the paper on Bangladeshi migration in the garments sector please?

A: One paper Mushfiq has worked in related to entry into the garment sector by women is this paper:

https://www.sciencedirect.com/science/article/abs/pii/S0304387815000085?casa_token=pwjsNWcvfDAAAAAA:ClAj6BLLH8T8kIeCIRqpwDO9jJEmO0vlLvQ3C_yqcOvvdhGcp8Y1pyEdSfmDitoiY1sVj9s

(though note it's not specifically tied to migration, I'm less sure of work examining the link between migration and garment sector entry)

Q: Did you also look at the effect migration on investments? If Yes, what kind of things do they invest in, agricultural related versus non-agricultural related investments. I ask this because it appears income increase for migrants.

A: I think you're asking a great question. In this context, these individuals are generally laborers who work on other people's farms, they don't own their own land. So these individuals wouldn't necessarily invest in agriculture with the migration income gains. It would be interesting to see however whether this would change in a context (like much of sub-Saharan Africa) where seasonal migrants are also people who own land

Q: There is need for investment in these technology through pilot project and subsidized farm inputs.

A: What's a little tricky is that we often don't know (as Mushfiq pointed out) whether the technologies are actually *good*. We often know that the technologies work well under fairly ideal conditions. (I'm thinking of agricultural technologies that perform well in experiment

stations or on large farms that are well connected to markets.) The same technology might not actually work so well on a small farm on bad land in a remote area. It's also true that it's very hard for researchers to know whether a technology is *profitable* as associated to increasing output. That's because frequently the key input is family labour. (Think of a family farm, for example.) What is the 'price' of family labour? In theory, we care about the opportunity cost of people's time, but we don't really observe this in most cases.

So it turns out to be very hard to calculate whether a technology is actually profitable...

And if it's *not* actually profitable, then encouraging farmers to use it might actually make them worse off. :(So it's tricky!!

A: This is a huge issue in ag. If you'll excuse an anecdote- I talked to farmers in Ghana who would regularly apply seed way more than an agronomist would tell you to. So the plants compete for resources & your overall yield, hence profit is lower. But, that only holds if you have decent seed. If you don't trust your seed will germinate every year, it makes complete sense to overseed since you minimize your risk of a catastrophic loss. So it's not just profitability, it's knowledge of risk and issues of trust in technology. It doesn't matter if you're better in expectation over ten years if you're hungry this year. It's definitely tricky!

Q: Are there any good data sources on the firms side that Mushfiq has made good experience with to assess how easily migrants get employed?

A: I think Mushfiq and co-authors have actually attempted to collect some data in this context.

One thing to note though is that it might ne easier to observe how easily migrants get employed by looking at the potential employee side (since you can measure the share who did and didn't get a job). In contrast, if you survey employers, you'll see who they hire, but the question of "what share of people that were interested in a job did you choose not to hire" might be a bit harder for them to answer.

Mushfiq's data on the employee side, about their job finding rate, is discussed in the paper he's discussing now. I believe his data is also publicly available online.

Q: A single crossing condition implies that we're trying to match the fact that migration/tech adoption is monotonic in income. Is that a fact empirically? My impression from looking at several data sets is that this relationship is often non-monotonic (often U-shaped).

A: I think this simple model is just trying to explain what happens for the bottom half of the inverse-U, where as income increases migration increases at relatively low levels of income.

A: You're almost certainly right Remy, that there are contexts in which this relationship is non-monotonic, and therefore for which this model is not appropriate. I agree with Corey that this model is probably most appropriate when considered "locally" on a low-income population, rather than when considering the whole distribution of individuals in Northern Bangladesh.

A: Cool, I like the interpretation that we're looking here at a local area in the distribution, versus the broader non-linear response function. Thanks!

A: Adding a bit more context, here is some evidence that the income-migration relationship is inverse-U shaped for *international* migration. I'm actually not sure if there is evidence of inverse-U shaped relationships between *internal* rural-urban migration and income? The only thing I'm sure of is that internal R-U migration is positively selected on average. https://www.econstor.eu/bitstream/10419/106535/1/dp8592.pdf

Q: Was migration rates similarly low in developed countries when they were at a comparable level of development as today's developing countries? More generally, what can we learn about migration from the historical experiences of developed countries?

A: I think there are two things to say about this. One is that for permanent migration, there does seem to be an interesting relationship, where for at least at low levels of income, migration is increasing in income. One such example is here:

https://www.cgdev.org/publication/emigration-life-cycle-how-development-shapes-emigration-poor-countries

Second, I think the question of how seasonal migration has changed over time in developed countries is really hard to answer empirically. Part of this is because seasonal migration is generally hard to measure (since if someone moves for just a month, you might not capture it), whereas permanent migration is generally easier to observe.

A: Great question. Rural-urban migration (or you could just call it urbanization) is arguably one of the most general dimensions of structural transformation. I think it's fair to say that similar processes unfolded historically in today's rich countries. An interesting question, though, is whether these movements have always been voluntary. In some places, it took place with people pushed off the land (as in the widely studied history of enclosures in England). The movements often are accompanied by social disruption -- or sometimes seem to be caused by social disruption (e.g., the post Civil War migration in the United States of formerly enslaved Black people from the rural south to the cities of the North). So these large-scale movements of people are not always easy or frictionless.

Q: Sure the other problem is pandemic. Like in Kenya farmer are suffering due to Locust invasion

A: Agreed, and an important challenge is that many ways we might deal with risk are limited by the pandemic. For example, if Nairobi is in lockdown, it might not be possible to migrate to the city to deal with the consequences of the locust invasion.

Q: Thank you for your very interesting presentation; very much appreciated.

Point 1 of your "programme evaluation results" appears to show no difference between the control group and those who received information. Did you find an explanation for this; the result appears to suggest that the information was useless.

A: That's exactly right, the treatment effect on the information was basically zero. It seems therefore that the binding constraint was not that people didn't know the general wage or types of jobs available to migrants.