Structural Transformation and Economic Growth (STEG)

STEG CEPR

STEG Virtual Course on "Key Concepts in Macro Development"

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Lecture 12: Applications to Development

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Presentation Slides

Video

Q: Is it possible to pin down the cost relative to a specific factor (like administrative hurdles) from a gravity model ?

A: Good question. David is speaking to this now. Basically, if you're willing to impose enough structure on the gravity model, you might be able to do this within the context of a model.

Alternatively, the gravity models are used to get more general measures of trade costs. And there is a literature where people take the gravity estimates and then regress them on a bunch of things, but that seems a bit problematic to interpret in a causal sense.

Maybe the point is that, to use David's terms, if you want a 'direct measure' of the importance of a specific factor or element, there are other ways to go about it... The papers that he has mentioned have done this using other approaches. So you can measure directly the travel costs of traders, or administrative time burdens, or bribes, or tariffs...

Q: Which institutional factors may explain the low level of intra-regional trade among SSA countries?

A: Just to clarify, do you mean across regions within countries? Or across countries within SSA?

For within-country frictions, I think of poor roads (especially seasonal problems with flooding and roads washing out), but also checkpoints/bribes, low-quality vehicle stock that leads to breakdowns, etc... there are problems with the unevenness of seasonal flows that lead to high transport costs. For instance, in some seasons, there is little that gets sold from rural areas to urban areas, so if you deliver non-agricultural goods to these locations, you are likely to return with an empty truck... This means that the cost of shipping goods from urban to rural areas is roughly double what it should be. (This is known as the problem of 'empty back-haul'.)

For across country flows, you run into lots of problems at borders. These include formal barriers and also informal corruption-linked barriers. There can be regulations on truck registrations that differ across countries, etc...

Q: how are gravity analysis assuming structural gravity model with spatial features work out the impact of trade integration on welfare

A: If I understand your question correctly, the idea is that you can use these structural gravity models to estimate the magnitude of the spatial frictions, and then you can ask how trade *flows* and prices might change if you reduced the spatial frictions. The ensuing changes in consumption offer a way to think about welfare changes.

But perhaps I haven't understood your question properly?

A: Thank you. Looking for readings to derive and understand the expression of welfare along with codes assuming spatial assumptions added in to structural gravity model.

A: There's a pretty rich literature by now on these gravity models. You might find it useful to take a look at a chapter in the Handbook of International Economics, by Keith Head and Thierry Mayer. The chapter is entitled 'Gravity Equations: Workhorse, Toolkit, and Cookbook'. It might be a good jumping off point for this literature.

For specific literature on gravity models that link agriculture and infrastructure, I don't have a great reference. If you want a really simple (painfully simple) paper that gives some nice links between agriculture and infrastructure, I can suggest you might look at my paper with Richard Rogerson in the Journal of Development Economics -- not really a gravity model, but one that looks at trade costs in a simple framework:

https://www.sciencedirect.com/science/article/abs/pii/S0304387813001508.

You might also look at a cool paper by Obie Porteous:

https://www.google.com/url?q=https%3A%2F%2Fdoi.org%2F10.1016%2Fj.jdeveco.2020.102440&sa=D&sntz=1&usg=AFQjCNG3SzUeGz3P7I3C21PzvAHzC4POeQ

Hope this helps.

Q: Has the literature tried to depart from competitive behavior in the input market? Why assume that oligopolistic trades buy at factor cost? If they are big enough to import (say due to productivity), wouldn't they be able to exercise a certain degree of market power and this will confound the estimation of the trade cost?

A: In this particular paper, I think the idea was that traders are buying in urban markets that are pretty competitive, but then they are selling in rural markets that are less competitive. The same trader is oligopolistic in selling to a village in remote Ethiopia, but s/he faces a much more competitive market in Addis Ababa.

The same logic would operate in reverse if you were looking at traders who were *buying* in the rural areas and selling to the urban market. They would be oligopolistic as buyers but competitive as sellers.

I'm not aware of papers that do the same thing that David and Dave did but focusing on the other direction of trade. The problem is precisely that it's much harder, for agricultural goods, to pin down a specific area of origin, and so spatial differences in prices are much harder to interpret as transport costs and markups.