

The Role of Theory in Development Economics

Maitreesh Ghatak

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Introduction

- ▶ Theory gives us alternative causal mechanisms as to how x affects y
- ▶ Papers that are theory-focused (relatively rare at present) highlight surprising effects and subtle mechanisms
- ▶ But a good theory paper should also give conditions for which the “surprise” effect does not hold
- ▶ A theory of non-profits is also a theory of for-profits!
- ▶ Theory has to be falsifiable - or it is just tautologically true
- ▶ The key is to identify deeper parameters whose range tell us which part of the map we are in, and that in turn tells us if what to expect if we do x
- ▶ Of course, we may have the wrong map - the role of falsification

Some general conceptual points on the role of Theory

- ▶ Theory is our a priori view of how things work in a given context
- ▶ Formally, any theory is a cause-effect statement: "If p then q"
- ▶ Here p includes some conditions, and q some outcome of interest
- ▶ May or may not be true (falsifiable) -- needs to be tested

Key Features of “Good” Theory

- ▶ Non-trivial (if it is too obvious, like if the cost of some activity goes up, people do less of it, then stating that verbally is enough). Should not follow directly from the assumptions.
- ▶ Relevant (can always cook up some very clever effect but the question is, does it help us understand some real world phenomenon well?).
- ▶ Non-contrived - does it follow with a minimal set of sensible and intuitive assumptions, or are there too many moving pieces and/or odd assumptions
- ▶ Robust - all theories depend on assumptions, and if you change them, the result changes. But a good theory should be robust to minor changes in assumptions.

Clarify if Your Model is ...

- ▶ Static or dynamic
- ▶ Time horizon - short run, medium run, long run
- ▶ Representative agent or heterogeneous agent
- ▶ Partial equilibrium, market equilibrium, or general equilibrium

Examples

- ❑ General example
 - ❑ The soil is wet because it rained
 - ❑ Could be a leaked pipe instead
- ❑ Economic examples:
 - ❑ Theory of supply-demand
 - ❑ Theory of compensating differentials
 - ❑ Slutsky equation - how does price change affect demand
 - ❑ Theory of arbitrage - law of one price
 - ❑ Theory of comparative advantage in trade
 - ❑ Theory of poverty traps vs convergence

Where does empirics come in?

- ▶ A theory by design is internally consistent (or logically correct)
- ▶ Medical science tells how the human body works & how some diseases happen
- ▶ But may not be relevant/correct in a given context
- ▶ This were empirics come in
- ▶ To test the implications of a given theory
- ▶ To find out which theory (mechanism) is relevant in a given context

Example 1 - Unemployment

- ▶ For example, if there is unemployment wages should fall to clear the market.
- ▶ If it does not, then the theory is falsified.
- ▶ Creates the ground for developing better theory (qualify p)
- ▶ For example, minimum wages, search unemployment, efficiency wages etc

Example 2 - Famines

- ▶ Obvious theory - supply shock
- ▶ But then prices should be high in a market economy
- ▶ Effective demand problem - so prices are not giving the right signal (Sen)
- ▶ Could also be hoarding - expectation of future inflation
- ▶ In non-market economy, could be supply shock or procurement problem
- ▶ Great Chinese famine - areas that had higher production suffered more due to faulty procurement

What is the role of theory in a primarily empirical paper?

- ▶ If the theory part is not the major part, still state clearly what your theory implies about the mechanism that your regression identifies
- ▶ What theory tells in terms of the validity of your instruments or, for a RCT, what the randomized variation corresponds to, in terms of the theory
- ▶ Effects one would expect, and if one way (say, positive) how can you confirm that this is what your theory says in terms of the parameter range for this effect
- ▶ What counterfactual analysis you are doing (if any)
- ▶ How do you do the welfare (cost-benefit) analysis

Medical science analogy

- ▶ Exactly as in medical science - theory gives you a first hunch as to what has happened, empirics are diagnostic tests which may confirm/disprove/modify the original hunch, and policy is the treatment
- ▶ Theory without empirics is storytelling
- ▶ Empirics without theory is mere description

Induction vs Deduction

- ▶ It would be a waste of time to study all the cases where price went up when supply went down
- ▶ But suppose in one study price went up and supply went down and in another study the opposite happened - anomalies, puzzles
- ▶ Without a theoretical framework, we cannot reconcile the two
- ▶ The former could be because of hoarding, the latter could be an upward sloping supply curve

Three key roles of theory - 1

- ▶ **Theory helps us design appropriate empirical tests & experiments**
- ▶ Without a theory it is not clear what to look for, i.e., what kind of data to collect
- ▶ By asking right questions: what are the causes and what are the consequences or symptoms
- ▶ E.g., may be poverty is caused by behavioural problems (e.g., the poor are present-biased or have limited cognitive capacity due to poor health and lack of education)

Three key roles of theory - 1 (contd)

- ▶ Then we need to design tests that can confirm this, e.g., offering different savings products
- ▶ If this is confirmed, then we need to ask what savings products will help the poor overcome these
- ▶ Then we need to ask why were these products not offered in the market to start with
- ▶ This will push us towards understanding institutional failures (market/government)
- ▶ Knowing this, we can design better products, or, fix the right institutional failure

Three key roles of theory - 2

- ▶ **Theory allows us to do counterfactual analysis**
- ▶ What happened is one of infinitely many possibilities
- ▶ External validity would require many, many experiments
- ▶ A theoretical framework allows us to generate alternative hypothetical scenarios
- ▶ Otherwise, you get very simple "did programme X and Y happened" type analysis
- ▶ This may be very solid in terms of "identification" but issues remain of
 - ▶ External validity
 - ▶ What alternative programmes could have done

Three key roles of theory - 3

- ▶ **Theory Allows us to do Welfare Analysis**
- ▶ Suppose you find programme X (say, AIDS awareness) causes outcome Y (use of contraception)
- ▶ Once we know this, can we assume that this programme will be implemented?
- ▶ For that we need to do social cost-benefit analysis
- ▶ But that requires a normative framework where the cost of funds, the benefit to the target group, are all taken into account
- ▶

How to Structure a Research Paper

The background of the slide is white with abstract green geometric shapes on the right side. These shapes include overlapping triangles and polygons in various shades of green, from light lime to dark forest green. A thin, light gray line runs diagonally across the lower right portion of the slide.

1. Pitching the Motivation for the Paper

- ▶ **What** is the research question
- ▶ **Why** should we care - relevance/importance to *field* **and** *real world*
- ▶ **How** do you answer the question and whether your contribution is primarily empirical, methodological, or theoretical

2. Pitching the Contribution of the Paper

- ▶ **Bottom line?** State succinctly what are your key findings and why they are intellectually interesting
- ▶ **What's new?** What is the value added relative to the literature
- ▶ **Take away?** What are the insights that we can take from this study that will enrich our understanding of the broad topic beyond the specifics of the particular exercise?

3. Presenting theory

- ▶ State your assumptions and details of the environment
 - ▶ Preferences, technology, information, and contracting assumptions
- ▶ Ideally, have a slide with all the notation
- ▶ Propositions should not be algebraic jumbles - just a “if p then q” type statement using economic terms and minimal math (parameter conditions)
- ▶ No details of the proof needed except for the key equations and perhaps some figures
- ▶ Clear statement of intuition and indication what parameter values determine which case to expect or which effect to dominate
- ▶ Highlight what is non-trivial in your results
- ▶ Make connection with research question in terms of what to expect in data

4. Presenting Empirics

- ▶ Explain the data-set in detail
 - ▶ Make it clear whether it is panel, repeated cross-section, experimental etc
 - ▶ Give summary stats of the key variables
 - ▶ Nudge the reader to any interesting variations in these variables that you seek to explain, or any correlations

4. Presenting Empirics

- ▶ Describe the key regression equation formally & connect it to the theory as to what sign you are expecting on the key variable
- ▶ Discuss your identification strategy
- ▶ Spend enough time on the key findings - only if you can convince the reader that this is interesting he/she will read the various extensions or robustness checks

General Points

- ▶ Be careful in citing the relevant literature
- ▶ Of the set of authors whose work you cite in the introduction, at least one will be a referee with a high probability (usually the less famous co-author!)
- ▶ In how you cite, be fair and correct - don't strategically overpraise or non-strategically be too negative
- ▶ In the end, you are trying to create a coalition of the willing from the editor and the positive referees