

Value Chains: Toward a Marriage of Development and Industrial Organization?

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Introduction

I want to start with what I view as the goal of development: Whereas many development economists focus on raising levels (e.g., of income), I often view the reduction of risk and uncertainty as one of the main goals of development policy.

In that sense, I view the transition from people living off of subsistence agriculture to having a steady paycheck—whether in the context of manufacturing or services jobs—as the chief objective of development (cf. WDR 2013, 2019).

Introduction

Collier (2008):

“The first giant that must be slain is the ... love affair with peasant agriculture. With the near-total urbanization of these classes in both the US and Europe, rural simplicity has acquired a strange allure. Peasant life is prized as organic in both its literal and its metaphoric sense ... In its literal sense, organic agricultural production is now a premium product, a luxury brand. ... In its metaphoric sense, it represents the antithesis of the large, hierarchical, pressured organizations in which the middle classes now work ... Peasants, like pandas, are to be preserved. **But distressingly, peasants, like pandas, show little inclination to reproduce themselves. Given the chance, peasants seek local wage jobs, and their offspring head to the cities. This is because at low-income levels, rural bliss is precarious, isolated, and tedious.**”

Introduction

So for me, what matters is both the “steady paycheck” part (which reduces risk and uncertainty, with all the costs that they entail), but also the fact that work itself is dignified—it is an intrinsic good.*

So that is where my interest in value chains—and the development of industries per se—comes from: Because value chains and industries lead to people working regular jobs, with steady paychecks, which leads both to dignified, fulfilling lives, but also to the types of investment that those less risky, more certain lives enable.

* This is not to say that agricultural work is *not* dignified!

Introduction

If you are a “young” development economist—if you got your PhD after roughly, say, 2010—as a child of the Credibility Revolution, you may not know where we came from as a field.

Bardhan and Udry (1999):

The classical economists of the 17th, 18th, and early 19th centuries were all development economists, as they were usually writing about a developing country (in many cases, Britain) going through a process of industrial transformation.

Introduction

Modern development economics was born in the wake of World War II with the Marshall plan for European reconstruction, in which the US gave about \$130 billion (2017 value) to Western European countries.

This led to the creation of the International Bank for Reconstruction and Development—i.e., the World Bank.

Introduction

Early modern development economics focused on “big push”-type policies and the development of the industrial sector (Rosenstein-Rodan 1943, Mandelbaum 1945, Nurkse 1966).

Bardhan and Udry (1999), once again:

Much of this early postwar literature originated in a clear perception of the limited usefulness ... of orthodox economics, particularly in its standard Walrasian form with CRS, pure competition, perfect information, insignificant transaction costs and externalities, supposed institution neutrality, price-sensitive adjustments that unambiguously clear markets, and so on.

Introduction

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 - 3.2 The experimental phase (2005-today)

Introduction

There was also a long period of time from about 1970 until the early to mid-2000s during which development was seen as a fringe field of economics (Leijonhufvud 1973).

Since then, the field's status has been established, and development has moved from the fringe toward the very center of the discipline (e.g., John Bates Clark medal to Esther Duflo in 2010 and to Dave Donaldson in 2017).

Introduction

Søren Kierkegaard: “Once you label me you negate me.”



Be that as it may, people label themselves. And we are now at a point where few economists label themselves as development (and *only* development) economists anymore.

Introduction

Most of us are development-and- x economists, where x can be just about any field: agricultural, environmental, health, labor, etc. economics.



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Introduction



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Introduction

But in my view, there is one glaring exception to the above rule: I cannot think of anyone who would describe themselves as development-and-IO economists. So for this keynote, I'd like to do a few things:

1. Speculate as to why that is so,
2. Argue that this represents a tremendous opportunity for young development economists, and
3. Argue that this is especially interesting when it comes to food and agricultural markets—agricultural value chains, specifically.

Outline

Before proceeding with the work, here is a quote from Bellemare and Bloem (2018) as a sort of roadmap for this talk:

¹⁶ The field of development economics has changed considerably over the last 20 years, to the point where few economists are only-development economists anymore. Most development economists nowadays do x and development, where x can be agricultural economics, health economics, labor economics, law and economics, population studies, etc. One of the few fields that has been left alone by development economists is that of industrial organization (IO), most likely because the (structural) empirical methods of IO economists are often viewed with suspicion by mainstream (i.e., reduced-form) development economists. But since the first markets to modernize in developing countries tend to be food markets—as incomes rise, the demand for food both takes off and changes radically (Bennett, 1941)—we believe the next few decades will see an explosion of development-and-IO studies. Good examples of the kind of work we have in mind are Atkin et al. (2018) and Macchiavello and Morjaria (2011).

Lack of Data

First, an obvious dearth of data has constrained empirical IO studies in developing countries.

Since IO is about the structure of industries and the behavior of firms and consumers in those industries, in order to do IO in a developing-country context, one would need to have access to high-quality data on those firms and consumers, ideally for more than one industry.

Lack of Data

Though those kinds of data are routinely available for rich countries, the data available to development economists typically come in two varieties: (i) small experimental data sets, and (ii) larger household surveys.

Neither of these things allow doing market- or industry-level empirical work!

But things are changing. From the Nielsen Company: “We track consumer behavior for more than 250,000 households in 25 countries,” and “[w]ith presence in more than 100 countries, [we] collects sales information from more than 900,000 stores within our worldwide retail network.”

Reduced-Form vs. Structural

Second, in our 2018 article, Jeff Bloem and I speculated that IO had been left alone by development economists because the methods of empirical IO economists tend to be viewed with suspicion by development economists.

Indeed, whereas empirical IO tends to rely on observational data and on structural econometric methods, development economists tend to rely on experimental or quasi experimental data, and we almost always rely on reduced-form methods.

Reduced-Form vs. Structural

Here, things have changed and are still changing. On the one hand, development economists have figured out that experimental data aren't strictly needed for the identification of causal relationships. When done well, IV, DID, RDD, synthetic control, etc. can all yield causal identification.

On the other hand, development economists are also starting to accept the fact that there is often a trade-off between external validity and internal validity, and if we are to study market-level phenomena, we cannot hold research designs to RCT standards.

“Complete” Markets vs. Market Failures

Third, a conversation with an IO colleague made me realize that while IO economists tend to look at reasonably well-behaved markets, development economists tend to look at situations characterized by market failures.

Stiglitz (1989):

A study of least developed countries is to economics what the study of pathology is to medicine: by understanding what happens when things do not work well, we gain insight into how they work when they do function as designed. The difference is that in economics, pathology is the rule: less than a quarter of mankind lives in the developed economies.

“Complete” Markets vs. Market Failures

Carrying the analogy further, then, it would seem as though IO is the study of high-level sports medicine!

That said, IO does not exclusively look at perfect Walrasian economies, as it often look at departures from perfect competition (e.g., strategic behavior, scale economies, transaction costs, and information frictions), and those areas of overlap between development and IO might be the right place to start.

Opportunity

The state of affairs just described represents an opportunity for young development economists.

This is especially so given that in many cases, developing countries represent the perfect setting to witness the birth of industries. When focusing on developed countries, it is often the case that we have to take industries as given—and as having existed for decades.

So a lot of hypotheses about the birth and early stages of industrialization—which one can only look at using historical accounts or on the basis of case studies in developed—countries are likely to be testable using data from developing countries.

Toward a Marriage of Development and IO

To be fair, some people have already started working at the intersection of development and IO.

I asked an undergraduate RA to provide me with a count of all articles that listed both L and O *JEL* codes published in top five, top general, and development journals for the period 1999-2018.

Here are the patterns that emerge.

Trend in All Journals

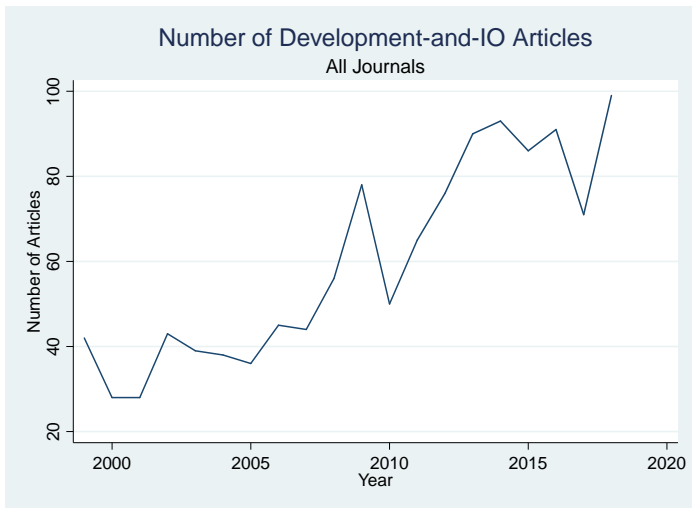


Figure: Sources: AER, QJE, JPE, ECTA, REStud, REStat, AEJ: Applied, EJ, JDE, EDCC, WBER, WBRO, WD, JDS, and JAE.

Trend in Top Five Journals

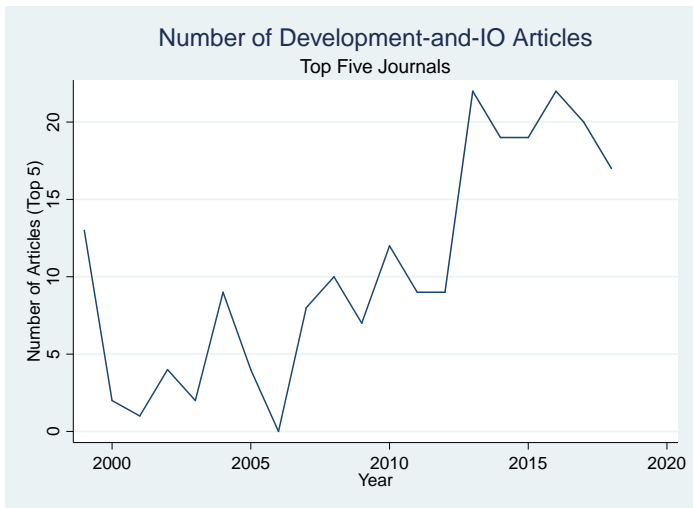


Figure: Sources: AER, QJE, JPE, ECTA, and REStud.

Trend in Top General Journals

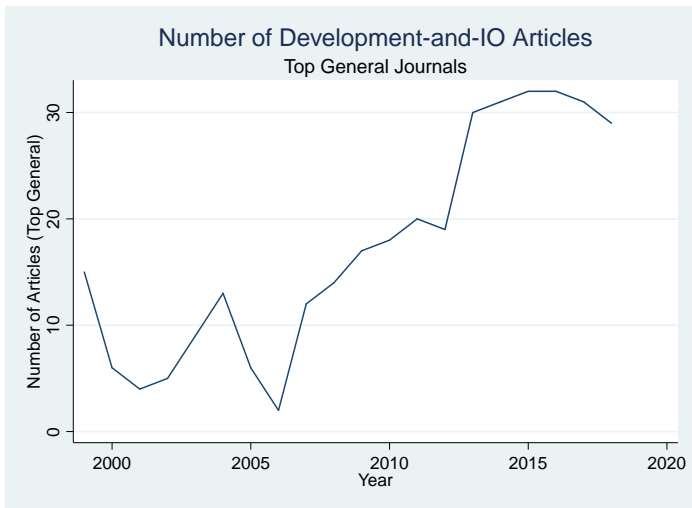


Figure: Sources: AER, QJE, JPE, ECTA, REStud, REStat, AEJ: Applied, and EJ.

Trend in Development Journals

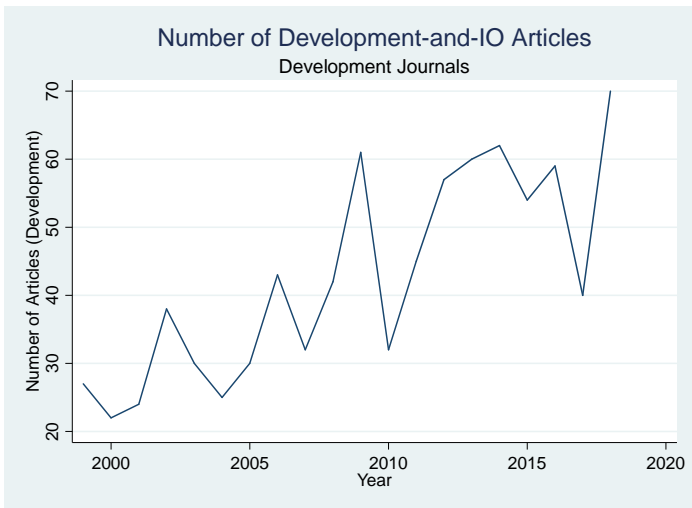


Figure: Sources: JDE, EDCC, WBER, WBRO, WD, JDS, and JAE.

Trend in Development Economics Journals

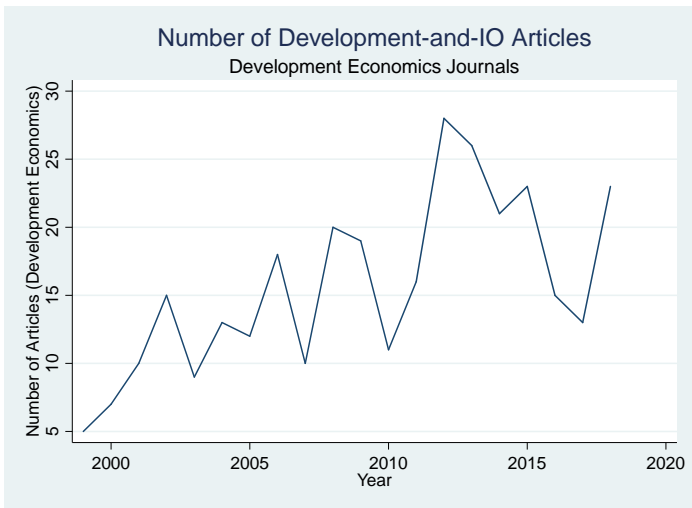


Figure: Sources: JDE, EDCC, WBER, WBRO, and JAE.

Restricted Cubic Spline for All Journals

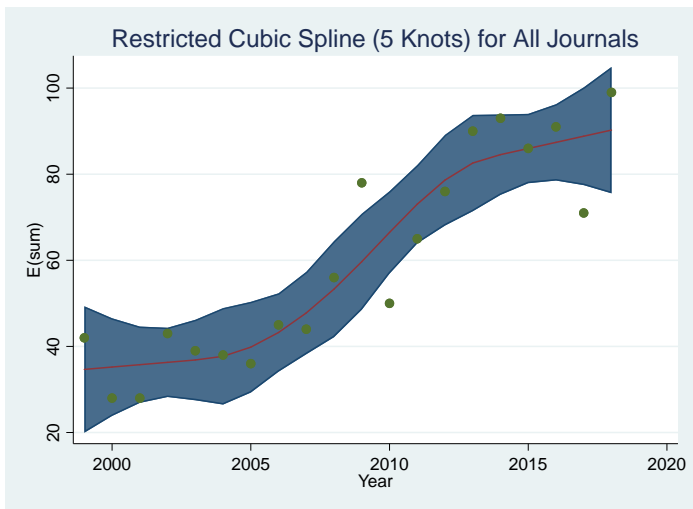


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Toward a Marriage of Development and IO

So it looks as though the time is ripe for the marriage of development and IO (or that it might in fact already be occurring).

For the remainder of this talk, I would like to talk about what I see as the most important area of opportunity for that marriage to be consummated, viz. value chains.

In particular, I see agricultural value chains as a golden opportunity to work at the intersection of development and IO.

Opportunity: Agricultural Value Chains

Why agricultural value chains? Because of a few stylized facts:

1. Maslow's hierarchy of needs,
2. Engel's law and, to a lesser extent
3. Bennett's law.

Opportunity: Agricultural Value Chains

This isn't to say that there are no markets other than food markets that allow doing development and IO, but because:

1. Everyone has to eat (Maslow),
2. The demand for food increases as people get wealthier (Engel),
3. People demand higher-quality, more differentiated goods as they get wealthier (Bennett), and
4. There are available high-quality data sets looking at both sides of food markets.

Agricultural value chains should realistically be the first we look at in developing countries—and maybe not just in developing countries...

Opportunity: Agricultural Value Chains

ECONOMETRICA
JOURNAL OF THE ECONOMETRIC SOCIETY

Measuring Market Power in the Ready-to-Eat Cereal Industry

Aviv Nevo

First published: 12 December 2003 | <https://doi.org/10.1111/1468-0262.00194> | Cited by: 472

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TOOLS



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Opportunity: Agricultural Value Chains

Moreover, agricultural value chains are interesting because, just looking at the list of topics covered in the various chapters of the *Handbook of Industrial Organization*, volumes 1 to 3, they allow studying the following phenomena as the nature of food production and consumption changes along with levels of development:

- ▶ The technological determinants of firm and industry structure
- ▶ The theory of the firm—and the theory of the farm
- ▶ Vertical integration
- ▶ Oligopoly behavior
- ▶ Cartels and collusion
- ▶ Horizontal mergers

Opportunity: Agricultural Value Chains

- ▶ Antitrust policy
- ▶ Price discrimination
- ▶ Product differentiation
- ▶ Imperfect information in both input and output markets
- ▶ Innovation and R&D
- ▶ Market power

Opportunity: Agricultural Value Chains

- ▶ Market structure
- ▶ IO and international trade
- ▶ Political economy of regulation
- ▶ Design of regulatory mechanisms and institutions
- ▶ Health, safety, and environmental regulation

Opportunity: Methodology

There's also an opportunity in terms of expanding the methods of quantitative economics to allow studying entire value chains.

In the context of agricultural value chains, we know how to analyze dyadic links in the notional chain encompassing farms, traders, processors, retailers, and consumers. The whole literature on contract farming, for instance, focuses on the first link.

But when the time comes to analyze whole value chains, most economists are at a loss.

Opportunity: Methodology

One can think of several approaches, from least to most computationally intensive:

1. Case studies,
2. Network mapping,
3. Statistical analysis of networks,
4. Structural econometrics.

The list is not exhaustive.

Opportunities

The bottom line is this: The study of value chains offers

- ▶ A chance to study the process of economic development, and see whether current-day development trajectories correspond to older (e.g., OECD countries) trajectories
- ▶ An opportunity to say something (if not many things) of value to development policy (e.g., industrial policy, job creation), and
- ▶ A chance to develop new economic methodologies.

Summary and Concluding Remarks

In this keynote, after giving a brief overview of where we came from as a field, I have explained why we haven't really seen people describe themselves as development-and-IO economists up until now.

I have then argued that this represents a golden opportunity for development economists.

I have then argued that agricultural and food markets—agricultural value chains—are the ideal place to start working at that intersection.

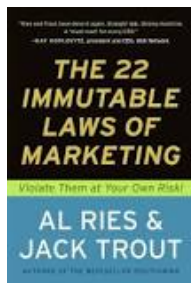
Summary and Concluding Remarks

That perspective is informed by 12 years of research in this area, viz. contract farming.

This is an area where the scope of research remains rather limited. As we have argued in Bellemare and Bloem (2018), most studies focus on contract farming—the move away from subsistence agriculture, and the first step toward vertical integration—but the focus is often on old research question (e.g., Does participation in contract farming increase incomes?)

Summary and Concluding Remarks

Ultimately, and as I often tell my graduate students, I believe it is better to write the first paper on a new topic than it is to write the best paper on another, older topic.



Law 1: (Law of Leadership) Being first in the market is better than having a better product.

Summary and Concluding Remarks

I have listed a number of areas of research that remain wide open for enterprising young researchers.

Even from a methodological standpoint, I believe there are interesting advances to be made (e.g., statistical analysis of network data).