

# What Is Considered Development Economics? Commonalities and Differences in University Courses around the Developing World

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## Abstract

We use a combination of surveys of instructors and data from course syllabi to examine how the subject of development economics is taught at the undergraduate and Master's level in over 200 courses in 56 developing countries and the United States. We find there is considerable heterogeneity in what is considered development economics: there is a narrow core of topics (growth theory, poverty and inequality, human capital, and institutions) taught in at least half the classes and large variation in the role of theory versus empirics. Employing clustering techniques, we find four views of development: a theoretical macro-based approach; an empirical micro-based approach; a mixed approach narrowly focused on these common core topics; and an expansive approach covering a much broader range of topics. We find country, course, and instructor characteristics are all associated with these differences in how development economics is conceptualized.

JEL classification: A22, O10, I23

The field of development economics has evolved from a largely theoretic discipline focused on the process of economic transformation in developing countries to a multifaceted field in which there may be no single big idea (Lindauer and Pritchett 2002), but in which there is active debate about the role of macro-versus micro-approaches (e.g., Rodrik 2008; Bardhan 2013), and in which there is now so much data and empirical work that there is debate as to whether there has been enough emphasis on theory (e.g., Mookherjee 2005; Banerjee 2005). Different understandings of what is meant by development economics continue to result in contentious debate about where the greatest value in additional research lies (e.g., Blattman [2017] versus Pritchett [2017]), and therefore in very different policy prescriptions and emphasis, for example, as to whether policymakers should devote more of their efforts and funding to industrial policy and improving the regulatory environment, or, instead, focus more on education and health service delivery to the poor and on how to best design transfer programs.

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Are there different understandings of what is meant by development economics across countries? We examine this question through consideration of differences in what is taught in development economics courses. We collected original data on what is taught as development economics and how it is taught through a combination of surveys of instructors and standardized coding and analysis of course syllabi and examinations.<sup>1</sup> We were able to collect this for 124 undergraduate courses in 46 developing countries and 70 Master's courses in 29 developing countries. We complement this with data from 28 courses in the United States. For each course, we consider both the topic coverage and the relative roles of theory and empirics in what is taught.

We then employ an inductive approach to examine commonalities and differences in what constitutes a course in development economics around the world. We find a relatively narrow core of topics, with only four of the 21 topics enumerated taught in at least half of all courses: theories and models of growth, poverty and inequality, human capital, and institutions. The average pairwise similarity in topic and methodological coverage among courses in developing countries is only 35 percent.

K-means clustering analysis is used to sort the courses into four groups that offer different views of what the focus of development economics should be.<sup>2</sup> The first group of courses are very macro-focused, covering economic growth, trade, and industrial policy from a largely theoretical perspective. Such courses are only found in developing countries in our sample, most commonly in Latin America. The second group of courses are much more micro-based, with more attention to empirics, including randomized experiments and impact evaluation, and more likely to cover the core along with topics like credit and risk, land and labor markets. The majority of top-20 US economics department courses are found in this group, and courses in this group are also taught in a sizeable share of Latin American and South Asian courses. The third group of courses focuses narrowly on the core topics of growth, poverty and inequality, human capital, and institutions and are found in all regions. The last group of courses provides the most expansive coverage of topics, including topics such as rural development and agriculture, the environment, the role of aid, and migration that are not covered to the same extent in the other groups. This group is the most common one for courses in sub-Saharan Africa, East Asia, Europe, and Central Asia.

What explains these differences? We consider the extent to which country, course, and instructor characteristics are associated with these different groupings. The strongest separation comes in distinguishing the second group from the others: it is more likely to be found in richer countries with higher levels of education and lower state involvement in the economy. Master's-level classes in developing countries are also more likely to be in this group. The instructors of group 2 courses are more research active, and they typically use a mix of the empirically-focused book of [Banerjee and Duflo \(2011\)](#), and the theory-based book of [Ray \(1998\)](#). The first group is then separated by being in a developing country and not using any of the most common textbooks, while the fourth group's broad coverage of many topics is associated with use of the textbook of [Todaro and Smith \(2014\)](#).

- 1 We focus on development economics courses. In some countries, the content of other economics classes such as macroeconomics, public finance, and labor economics may include applications of these topics to the home country or developing countries in general. Given the heavy reliance of many undergraduate classes on US-produced textbooks and the emphasis on teaching the principles and methods of each subdiscipline at the introductory level, our sense is that this coverage is rather limited in many countries but does occur more in Latin America, especially in the top economics programs in this region.
- 2 K-means clustering aims to group observations into  $k$  clusters, with each observation assigned to the cluster with the nearest mean. It is an iterative procedure, which begins with  $k$  initial group centers and then assigns each observation to the group with the nearest center, calculates the mean of the observations in each group, and then repeats the process by again reassigning observations. This continues until all observations remain in the same group as the previous iteration.

The next generation of policymakers responsible for implementing key development policies is likely to have their views of what policies they should pursue influenced by what they have been taught. Our analysis shows there is considerable heterogeneity in topic coverage and in the relative roles of theory and empirics in courses around the world, and thus suggests continued debate about where policy and research efforts should be focused.

## I. The Evolution of Development Economics as a Field

Development economics is seen by many to have arisen as a separate field in the 1940s and 1950s with the work of Rosenstein-Rodan, Kuznets, Myrdal, Lewis, and Hirschman (Lewis 1984; Krugman 1994). The focus was on theoretical descriptions of the development process and causes of underdevelopment with debate about the appropriate policies for development planning. The increasing emphasis on formalization of theoretical models and the inability of models at the time to deal with market failures and incomplete markets led to increasing isolation of the field of development economics from the rest of the profession, with Lewis (1984) going so far as to describe development economics as being “in the doldrums.” Alternative theories of underdevelopment, such as dependency theory, also became popular in Latin America during this time.

However, during the 1980s, theoretical developments in mainstream economics that incorporated imperfect competition, coordination failures, endogenous growth and incomplete markets brought development economics closer to the rest of the profession, and a large range of theoretical work took place such as bringing theoretical ideas of asymmetric information and contracting to explain the range of agricultural institutions in developing countries (Mookherjee 2005). Empirical work was still relatively limited, but the increasing availability of data at the macroeconomic level allowed for more description of the development process.

The state of the field at the time of the first *Handbook of Development Economics* published in 1988 was then one dominated by theoretical work on the process of development and the features of markets and institutions in developing countries coupled with descriptive empirical work around the processes associated with the transformation from a poor, rural society to a more diversified, urbanized economy (Chenery and Srinivasan 1988).

The last two decades have seen development economics become increasingly empirical in focus, with first the greater availability of computing power and micro datasets, and then the increasing involvement of researchers in collecting their own data leading to a rapid growth in empirical research. In 2005, this led Mookherjee (2005) to ask whether the pendulum had swung too much away from theory, resulting in an active debate in a symposium (see Kanbur 2005; Banerjee 2005; Bardhan 2005; Basu 2005; Mookherjee 2005). However, empirical work on the topic has continued to dominate research, with Rodrik and Rosenzweig (2010) noting, in the preface to the fifth *Handbook of Development Economics*, that getting cause-and-effect right has become a central focus of research in development, with randomized controlled trials a key part of this.

As well as a change in focus between theory and empirics, the field of development has also evolved in terms of the topics studied. Economic growth and poverty reduction are central aims of development, and there has been a long body of work on how to conceptualize and measure them. Banerjee (2005) notes that many of the topics are familiar ones that were the same topics being debated twenty-five years earlier: education, health, credit, technology, land, and (internal) migration. However, Rodrik and Rosenzweig (2010) also note a broadening of the field in the areas of institutions, governance, and politics; and the fifth volume of the *Handbook* series also includes chapters on topics such as international migration, financial globalization, the environment, and industrial policy. Many of these newer topics

are still considered under-researched relative to traditional topics.<sup>3</sup> Another more recent area of focus also includes the importance of behavioral factors in decision-making (e.g., World Bank 2014), while the important topic of entrepreneurship has been relatively neglected (Naudé 2013).

Different views of what the prime focus of development economics as a field should be are evident in the three most widely used textbooks for teaching development economics at the undergraduate and Master's levels: Todaro and Smith (2014)'s *Economic Development* (first published in 1993 and now in its twelfth edition), Ray (1998)'s *Development Economics*, and Banerjee and Duflo (2011)'s *Poor Economics*. Todaro and Smith (2014) define development economics as "the study of how economies are transformed from stagnation to growth and from low-income to high-income status, and overcome problems of absolute poverty." They have the broadest topic coverage of the three, covering a number of macro-, trade, and environmental issues not discussed in the other books and rely heavily on case studies and stylized facts rather than in-depth study of models or empirical work. Ray (1998) defines development economics as "the study of the economic transformation of developing countries." However, the author takes a more micro- and theory-oriented approach to this study, stating that many economic problems and phenomena observed in developing countries can be traced back to a small set of common internal features of how markets operate in these countries. A final contrasting approach is seen in Banerjee and Duflo (2011), who focus less on what makes *poor countries* different than what makes the *the poor* different. The focus is then on asking concrete, "small" questions and answering them based on rigorous evidence, largely coming from impact evaluations.

## II. Data Collection

We collected data on development economics courses via two sources: an online survey of instructors and collection of course syllabi. Our focus is on undergraduate and Master's level classes taught in developing countries along with a comparison to development economics classes at the undergraduate level in the United States.

### Online survey

Our initial approach was to field an online survey directed at instructors of development economics classes, asking questions on the range of development economics classes offered at their institution, their background, and on the specific development economics courses they teach. The online survey was available in English and French. For the identification of the relevant institutions, we relied on the economics departments listed in the *Index of Economics Departments, Institutes and Research Centers in the World* provided by Research Papers in Economics (RePEc). Whenever RePEc provided a ranking of the top 25 percent institutions in a country, we contacted these institutions. Otherwise, and in cases in which there were only very few teaching departments among the top 25 percent institutions, we contacted all teaching departments listed by RePEc. Nevertheless, a difficulty here was then the identification of the relevant persons to be contacted for the survey. Ideally, we wanted to directly contact the instructors of development economics courses, and so we searched the websites of economics departments for relevant information on classes offered, faculty staff teaching development economics, and their contact details. But many websites of universities in developing countries do not provide the information needed for this purpose or are not working properly, and so we sometimes had to rely on general email addresses or general phone contacts of the economics departments.

Based on this identification, from April to June 2015 we sent out electronic survey invitations to 550 faculty members of economics departments in developing countries. In addition, we advertised the survey on the World Bank's Development Impact Blog and incentivized participation through the possibility

3 <http://blogs.worldbank.org/impactevaluations/what-are-the-under-researched-topics-in-development-according-to-young-faculty> [accessed October 19, 2015].

of winning gift cards for an online retail outlet.<sup>4</sup> With a total of 70 responses, and not all of them complete, the response rate was low (12.7 percent). Low response rates, especially as compared to other survey modes, are common for online surveys (see [Evans and Mathur 2005](#)). Key reasons for the low response rate in our case are likely to be the difficulty in identifying course instructors and their contact details in some countries, and the general difficulty of getting people to pay attention to and respond to online survey requests.

### Collecting Course Syllabi

As a reaction to this low response rate, in June 2015 we modified the data collection and started to ask directly for the syllabi of any development economics courses offered, as well as to search the faculty websites for syllabi which were available online. We then coded the syllabi up in the same categories asked by the online survey on the course content, and a few additional ones.<sup>5</sup> In addition to the information provided by RePEc, we also relied on direct web searches, the blog post, phone calls to different universities, help from staff in World Bank country offices, and help from other contacts in the different regions to access this information. Although we still referred to the survey and provided the link to it when asking for the syllabi, we made clear that the primary interest was the syllabus. We also contacted again those faculties and instructors who already had received survey invitations. An additional 100 survey responses came from respondents using the weblink and included respondents who have been made aware of the survey via the blog post or other sources as well as people we contacted for the syllabus. However, a number of these responses were incomplete and could not be used for the analysis.

Overall, more than 750 faculty members of economics departments in developing countries were contacted, covering all world regions: Latin America and the Caribbean, Sub-Saharan Africa, East Asia and Pacific, Europe and Central Asia, and South Asia. This way we were able to collect 155 development economics syllabi from developing countries and were able to extract information on 39 additional development economics courses offered in developing countries from the survey responses. Overall, this provides information on 124 undergraduate courses in 46 developing countries and 70 Master's courses in 29 developing countries. For the United States, we obtained information on 28 courses, comprising of 12 courses from departments classified in the top-20 economics departments in RePEc's rankings and 16 courses from departments outside the top-20. A list of the universities from which we obtained the information can be found in supplemental appendix SA.1 (available at <https://academic.oup.com/wber>).

Given the difficulties experienced in collecting information on development economics courses, it is important to consider potential sample selection and its consequences for our results and conclusions based on this sample. There are two sources of sample selection. First, our choice of institutions based on RePEc rankings selects from the top quarter of institutions in larger countries, so we miss out on how development economics is conceptualized in less research-active institutions in some countries (from our searches, in many cases it appears not to even be taught at all). Second, selection into which instructors responded to our requests for information. We invested heavily in multiple follow-up requests, phone calls, and other solicitations. Nevertheless, we likely have a bias towards English, French, Portuguese, and Spanish speakers, and had more difficulty collecting information from instructors who could not speak any of these languages. We also believe those who responded are more likely to be in the main-stream of teaching and interest in research. We hypothesize that both sources of selection are likely to make our analysis, if anything, understate the diversity in content and thought as to what constitutes

4 Survey participants who answered the online survey by May 1, 2015 were eligible for a random draw of ten gift cards of the amount of USD 50 each.

5 For the analysis presented here, we only use the categories, which exist in both the online survey and the coding tool for the syllabi.

development economics, and therefore, consider our findings a lower bound on how much variation there is likely to be across the world in what is considered development economics.

### Coding Development Economics Topics

For the analysis of commonalities and differences in what constitutes a course in development economics, we consider both the topic coverage and the relative roles of theory, empirics, and empirical methods in what is taught. Topic categories were chosen based on a review of the contents of the two traditionally most widely used textbooks for teaching development economics at the undergraduate and Master's levels: *Todaro and Smith (2014)'s Economic Development* and *Ray (1998)'s Development Economics*. In addition, we included data analysis, including the use of relevant statistical software and experimental and quasi-experimental methods for impact/policy evaluation as topic categories in the analysis, as they have become increasingly important in development economics research. We piloted the online survey with a couple of instructors of development economics courses to test the adequacy of topic choice and categorization as well as of other questions asked in the survey. The resulting topic categories used in the analysis are listed and delineated in appendix A.1.

On the relative roles of different methodological approaches, we asked the survey respondents what percentage of the class they devote to theory and models, empirical methods, and empirics, including empirical findings and stylized facts. We also coded the syllabi we received accordingly.

### III. Results

This section uses the survey and syllabi data to provide a description of development economics taught in a wide range of countries. We use an inductive approach to assess commonalities and differences in what constitutes a course in development economics. Specifically, based on the variation present in the data, we determine the existence of four groups that offer different views of what is considered as development economics and in which the courses are sorted using k-means clustering. We then examine a set of explanations for the differences which arise, considering country, course, and instructor characteristics.

In order to determine the existence of different concepts of the field of development economics, we performed partition cluster analysis. In particular, we used k-means clustering to first form different numbers of non-overlapping groups within the full sample. These groupings are based on the similarity of topics covered and methodological approaches taken by the courses in our sample, using the Jaccard similarity coefficient. For any pair of development economics courses  $i$  and  $j$ , the Jaccard coefficient gives us the overlap they share in the different topics and methodological coverage when at least one of the two courses covers this topic or methodology:

$$J_{i,j} = \frac{a_{i=1,j=1}}{a_{i=1,j=1} + a_{i=1,j=0} + a_{i=0,j=1}}$$

With  $a_{i=1,j=1}$ : Total number of topics covered in both courses  $i$  and  $j$ ,

$a_{i=1,j=0}$ : Total number of topics covered in course  $i$  but not in course  $j$ , and

$a_{i=0,j=1}$ : Total number of topics not covered in course  $i$  but in course  $j$ .

This approach is carried out for the number of clusters or groups  $k$  varying between one and 15. For example, taking  $k=2$ , the algorithm starts by randomly choosing two observations as starting centers for the two groups. It then takes each observation, calculates the Jaccard distance to each of these two observations, and assigns the observation to the group to which it is closest in distance. Then the mean of the observations assigned to each group is calculated and the process repeated using these means as the new group centers. This continues until observations are no longer reassigned.

To assess the appropriate number of clusters, we then examined how the within-cluster sum of squares (WSS) decreases with increasing numbers of clusters  $k$  and used the elbow criterion to choose a number of clusters after which the gain in reduced within cluster-variation drops notably. This resulted in the choice of four clusters. Figure SA.1 in the supplemental appendix plots the WSS by number of clusters. In addition, we performed a factor analysis on topics covered and methodological approaches taken to confirm the existence of some common underlying factors in the courses. Using the eigenvalue criterion, this likewise shows that four factors are sufficient to summarize the majority of the data, together accounting for over 90 percent of the variation present in the data. We present results of the factor analysis in supplemental appendix SA.2.

Table 1 compares the topics and methodologies covered in our sample across these four groups. It shows the percentage of classes covering each topic category and the average percentages devoted to each of the three methodological approaches, with the topics shown being sorted in descending order by frequency of coverage in the full sample, and methodologies by relative importance given in the full sample.<sup>6</sup> If we define the “core topics” as those topics taught in at least 50 percent of the courses, then we see that this core is a very narrow subset in the full sample, consisting of theories and models of economic growth, poverty and inequality, institutions and corruption, and human capital. We computed Jaccard binary similarity coefficients to further assess the extent to which there exists a development economics “core” of topics. We then computed the average over these pairwise similarity indices within groups. They can be found in the last row of table 1. We see that there is substantial variation in topic coverage among the courses in the full sample, with the average pairwise Jaccard similarity coefficient in topic and methodological coverage being only 35 percent.

Comparing topic coverage and methodological approaches across the four groups, we observe clear differences. The first group of courses takes a strong macroeconomic perspective to development economics, covering a narrow subset of topics (2.3 topics on average), which includes economic growth, trade, and industrial policy. A distinctive feature of courses in this group is also that they approach the subject very theoretically, with a low role given to empirics and stylized facts on average, and no treatment of empirical methods. In contrast, the second group of courses is much more microeconomic and applied, giving more attention to empirical findings and facts as well as randomized experiments and impact evaluations more in general and data analysis. Courses in this group cover an average of eight topics, typically the core topics along with credit and risk, land, and labor markets. The third group of courses has a narrow focus on an average of 4.1 topics, concentrating on the core topics of growth, poverty and inequality, human capital, and institutions. We see the broadest coverage of topics (10.1 topics on average) in the fourth group of courses, which includes topics that are not covered to the same extent in the other groups, such as rural development and agriculture, the environment, the role of aid, and migration.

We next assess how these four development economics concepts differ by regions, as differences in approaches to development might be consistent with some features of the different economies and their historic experience. Panel A of table 2 shows the regional distribution of courses in each of the four groups. Courses from group 1 are only found in developing countries in our sample, most commonly in Latin America. The majority of top-20 U.S. economics department courses are found in group 2. Courses from this group are also taught in a sizeable share of Latin American and South Asian courses but not found in Sub-Saharan Africa. Courses from group 3 are found in all regions. The same is true for group 4, which is the most common one for courses in Sub-Saharan Africa, East Asia, Europe, and Central Asia. A test for equality of group means rejects the null-hypothesis of equality for Latin America, Sub-Saharan Africa, and the top-20 U.S. economics departments.

6 In the online survey and the coding tool, there were two other categories given with the three methodological approaches we consider here. Hence, the values for the relative role of these three approaches do not add up to one.

**Table 1.** Coverage of Different Development Economics Topics and Methodologies

	Full sample	All developing countries	Group			
			1	2	3	4
<b>A. Topics</b>						
Theories and models of economic growth and development	0.77	0.79	0.86	0.53	0.85	0.85
(Measuring) Poverty and inequality	0.63	0.61	0.00	0.60	0.78	0.75
The role of institutions, incl. corruption	0.60	0.56	0.18	0.84	0.47	0.72
Human capital, incl. health and education	0.55	0.52	0.04	0.82	0.36	0.76
Population growth, fertility, demographic transition	0.46	0.44	0.11	0.62	0.24	0.73
International trade and trade policy	0.34	0.37	0.36	0.18	0.19	0.61
Agricultural transformation, rural development	0.31	0.31	0.07	0.22	0.08	0.72
Credit markets	0.31	0.25	0.00	0.89	0.04	0.24
The role of the State	0.30	0.30	0.18	0.13	0.26	0.54
Urbanization, rural-urban migration	0.29	0.30	0.07	0.36	0.13	0.51
The role of aid	0.25	0.24	0.04	0.13	0.06	0.64
Labor markets	0.25	0.27	0.07	0.46	0.08	0.33
Environment and development, incl. climate change	0.23	0.24	0.04	0.09	0.21	0.46
Land markets	0.23	0.22	0.00	0.51	0.04	0.28
Firm growth, industrial development	0.22	0.23	0.21	0.09	0.10	0.46
Macroeconomic management	0.21	0.23	0.07	0.07	0.08	0.52
Risk and insurance	0.19	0.16	0.00	0.55	0.00	0.18
Migration, incl. remittances	0.18	0.18	0.00	0.24	0.04	0.34
Experimental and quasi-experimental methods for impact/policy evaluation	0.15	0.11	0.00	0.36	0.04	0.16
Data analysis incl. the use of relevant statistical software	0.11	0.08	0.00	0.20	0.06	0.15
Entrepreneurship, social entrepreneurship	0.07	0.07	0.00	0.13	0.01	0.10
<b>B. Methodological approach</b>						
Theory and models	0.33	0.35	0.48	0.28	0.34	0.31
Empirics (findings, stylized facts)	0.21	0.20	0.11	0.37	0.16	0.19
Empirical methods	0.09	0.08	0.00	0.13	0.09	0.09
Average number of topics covered	6.64	6.49	2.29	8.00	4.13	10.06
Average Jaccard binary similarity coefficient	0.35	0.35	0.49	0.46	0.46	0.43
Number of observations	222	194	28	55	72	67

Source: Authors' analysis based on course data described in text.

#### IV. Why Do We See These Differences?

We consider several possible explanations for the differences in the way development economics is conceptualized and taught. We then compare differences in means across the four groups and perform multinomial logit regression of course categories on variables proxying for these explanations.

A first potential explanation is that less-developed countries are further behind the technological frontier and so are less likely to be covering topics of current research, empirical methods, and data analysis, which require access to academic journals, the hardware, and statistical software. We use per-capita GNI (in PPP terms) and its log<sup>7</sup> to explore this link. Panel E of table 2 shows courses in group 2 occur in higher income countries.

A second potential explanation for the conceptual differences we observe lies in the differing approach to the role of the state in development in different countries. Courses in countries in which the government plays a more active role in the economy may be more likely to emphasize topics of

7 Data come from the World Development Indicators.



**Table 2.** Mean Differences by Group

	Group				<i>p</i> -value for test of equality of means
	1	2	3	4	
A. Region					
LAC	0.61	0.42	0.36	0.13	0.0000
SSA	0.18	0.00	0.24	0.28	0.0003
MENA	0.00	0.00	0.03	0.04	0.3231
EAP	0.00	0.02	0.04	0.12	0.0316
ECA	0.11	0.04	0.11	0.13	0.3253
SA	0.11	0.24	0.15	0.18	0.4668
Top 20 U.S. economics departments	0.00	0.18	0.01	0.01	0.0000
Non-Top U.S. economics departments	0.00	0.11	0.06	0.09	0.2754
B. Level					
Graduate	0.32	0.33	0.36	0.25	0.5943
C. Use of textbooks					
Ray	0.14	0.69	0.32	0.34	0.0000
Banerjee & Duflo	0.00	0.38	0.07	0.18	0.0000
Todaro & Smith	0.14	0.20	0.29	0.63	0.0000
D. Research involvement of instructor					
Instructor has a google scholar profile	0.35	0.52	0.14	0.22	0.0002
Instructor not listed for course	0.39	0.16	0.32	0.10	0.0016
E. Level of economic development					
Per capita income (PPP)	10,904	24,727	12,401	13,268	0.0000
F. Role of the State in development					
Government Expenditure (percent of GDP)	34.00	32.29	31.68	30.35	0.2384
G. Education level of students					
Mean years of tertiary education of population 15+	0.37	0.77	0.42	0.43	0.0001
Mean years of tertiary education not available	0.07	0.04	0.17	0.13	0.1076
Number of observations	28	55	72	67	

Source: Authors' analysis based on course data described in text.

development planning, like industrial policy, and macro topics. We control for government expenditure as a percentage of GDP to allow for this possibility. Panel F of table 2 shows the more macro-oriented courses in group 1 occur in countries with the highest mean government expenditure, although the difference across groups is not statistically significant.

A third potential explanation is that the different groups we identify reflect differences in the educational level of the students. In panel B of table 2, we see that the null-hypothesis of equality of group means of the level at which the courses are taught cannot be rejected at conventional significance levels, suggesting that differences between Master's level and undergraduate level classes in terms of topics and methodologies in developing countries are not behind the differences in development economics concepts we see. Nevertheless, we control for the average years of tertiary schooling for individuals aged 15 and above as a proxy for schooling achievement in the country.<sup>8</sup> We do see in panel G of table 2 that courses in group 2 occur in countries with much higher tertiary attainment than courses in the other groups.

A final potential explanation might be differences in the background of the instructor and how close they are to the research frontier.<sup>9</sup> As a proxy for whether the course instructor is an active researcher, we

8 This data is taken from the World Bank education statistics and is the Barro-Lee measure. We also attempted to use PISA test scores but they were not available for most of the developing countries in our sample.

9 Ideally it would be useful to correlate the age and place of Ph.D. of these instructors with their course content, but we were unable to collect this information for the majority of our sample.

consider whether they have a Google Scholar profile. The instructor is not listed for a number of classes, which might reflect that it is taught by non-regular faculty who are unlikely to be researchers. We see in panel D of [table 2](#) that courses in group 2 are most likely to have instructors who are research active.

We then examine the correlates of the four conceptual groups by means of the following multinomial logistic regression model:

$$\Pr(Y_i = j) = \frac{\exp(x_i' \beta_j)}{\exp(x_i' \beta_1) + 1 + \exp(x_i' \beta_3) + \exp(x_i' \beta_4)}$$

for  $j = 1, 3, 4$ , and where  $\beta_j$  is a vector of regression coefficients, and  $x_i$  is a vector of the explanatory variables described above.<sup>10</sup>

In the above model, the probability of being in group 2 serves as the base outcome against which we compare the probability of being in any of the other three groups.<sup>11</sup> But any of the four groups can arbitrarily be set as the base outcome. We cluster the standard errors at the country level and report relative risk ratios, which give the probability of courses falling in group  $j$  relative to the base outcome group 2:

$$\frac{\Pr(Y = j)}{\Pr(Y = 2)} = \exp(x_i' \beta_j)$$

[Table 3](#) presents the results as the relative risk ratio for a one-unit increase in the correlate of interest, with group 2 being the base outcome. Specification (1) considers only the characteristics we discussed as potential explanations for the group formation above. We then include further potential correlates, in particular the usage of different textbooks in specification (2), and add the level at which the courses are taught, whether it is taught in a developing country and whether it is taught at one of the top 20 U.S. economics departments in specification (3). We see that higher per capita GNI (PPP) is significantly related to lower likelihoods of being in any of the three groups compared to group 2. With group 2 being the group with the strongest coverage of empirics, and empirical methods for impact/policy evaluation, including data analysis, this provides evidence for the existence of a link between proximity to the technological frontier and emphasis on current research, empirical methods, and data analysis. The fact that the relative risk ratio for group 1, which does not cover any empirical methods at all and scores the lowest on treatment of empirics, for per capita GNI (PPP) is the lowest of all three groups, compared to group 2, further strengthens this conjecture. Furthermore, none of the courses in group 1 are taught in the United States, the only developed country in our sample, as reflected by the enormous risk ratio of group 1 versus group 2 for courses that are taught in developed countries. We show in [table SA.3 of the supplementary appendix](#) that results are robust to the exclusion of courses taught in the United States.

The involvement of the State in a country's development, as measured by government expenditure as a percentage of GDP, is also associated with the differences in the conceptual understanding of development economics we observe in our sample. We see that this is important for the distinction between group 1 and group 3, from group 2. The relative risk ratios suggest that courses taught in countries where the State plays a stronger role in the development process are more likely to be found in groups 1 and 3 as compared to group 2. These two groups focus on a narrower subset of topics than groups 2 and 4, suggesting a more intensive treatment of the topics covered, which include economic growth, the role of the State, trade, and the role of institutions in development.

On the educational level of students, we do not find any statistically significant association between group determination and the mean years of tertiary education in a country, once we control for the

10 Per-capita GNI was unavailable for Argentina and average years of tertiary schooling for a couple of countries in our sample. Hence, we also include controls for no instructor listed as well as per-capita GNI not available and mean years of tertiary education not available.

11 For the base outcome  $J$ ,  $x_i' \beta_j$  is set to zero.

**Table 3. Multinomial Logit Regression Results**

	(1)				(2)				(3)			
	Group (Base outcome: group=2)				Group (Base outcome: group=2)				Group (Base outcome: group=2)			
	1	3	4		1	3	4		1	3	4	
Instructor has google scholar profile	0.6980 (0.4260)	0.1836*** (0.0792)	0.3312** (0.1688)	0.4854 (0.2448)	0.1672*** (0.0878)	0.3197* (0.2067)	0.5876 (0.3007)	0.1716*** (0.0917)	0.3211* (0.2198)			
Instructor not listed for course	3.9510** (2.6626)	1.3801 (0.8976)	0.2881 (0.2268)	4.3116* (3.7138)	1.7184 (1.4435)	0.5333 (0.4428)	4.2327* (3.2799)	1.8727 (1.5343)	0.5961 (0.4829)			
Log per capita income (PPP)	0.4535* (0.2174)	0.5014** (0.1734)	0.4394** (0.1759)	0.3681** (0.1626)	0.5127** (0.1425)	0.5184** (0.1624)	0.3193** (0.1549)	0.4438** (0.1419)	0.4575** (0.1568)			
Government expenditure (percent of GDP)	1.1492*** (0.0386)	1.1117*** (0.0292)	1.0543 (0.0407)	1.1475*** (0.0413)	1.0995*** (0.0305)	1.0433 (0.0374)	1.1489*** (0.0361)	1.1093*** (0.0306)	1.0519 (0.0394)			
Mean years of tertiary education of population 15+	0.3076* (0.2131)	0.4226** (0.1756)	0.6864 (0.5109)	0.6207 (0.4947)	0.5542* (0.1945)	0.7032 (0.4648)	3.4637 (3.2271)	0.5820 (0.5238)	0.2908 (0.3742)			
Textbooks used in course:												
Ray				0.0509*** (0.0417)	0.1814*** (0.1173)	0.2200*** (0.1198)	0.0492*** (0.0431)	0.1859** (0.1287)	0.2449** (0.1423)			
Banerjee & Dufo				0.0000*** (0.0000)	0.2333** (0.1416)	0.5634 (0.2872)	0.0000*** (0.0000)	0.2488** (0.1551)	0.6111 (0.3482)			
Todaro & Smith				0.7556 (0.4109)	1.4280 (0.6153)	5.0375*** (2.0620)	0.7766 (0.4364)	1.3305 (0.6011)	4.5349*** (2.0260)			
Course level= graduate							0.4606* (0.2081)	0.5207* (0.1801)	0.4054** (0.1711)			
Course taught in a developing country							6867702*** (12492000)	1.0257 (1.3109)	0.2712 (0.4873)			
Course taught at top 20 U.S. economics department							1.0694 (0.4322)	0.7725 (0.3231)	0.6500 (0.2064)			
Observations	222	222	222	222	222	222	222	222	222			

Notes: Authors' analysis based on course data described in text.  
 Robust standard errors in parentheses, clustered at the country level. Controls also included for missing per capita income or education.  
 \*\*\* $p < 0.01$ .  
 \*\* $p < 0.05$ .  
 \* $p < 0.1$ .  
 Source: authors' analysis based on course data.

course level. Together the controls proxying for this concept, however, suggest that educational level also plays a role in the design of a development economics course. We find that courses taught at the undergraduate level in developing countries are less likely to be in any of the three groups as compared to group 2. Given that group 2 is the group with the heaviest focus on data analysis, empirical findings, including current research and empirical methods, this suggests that, in addition to the necessary technical requirements and possibly also financial resources, students prerequisites drive the treatment of these topics.

We also see that the instructor's involvement in research is significantly related to the way development economics is conceptualized. We find instructors with a Google Scholar profile are less likely to offer courses that fall into groups 3 and 4, as compared to group 2. Given that group 2 is the closest to the current state of the development economics field as laid out in section 2, with strong focus on microeconomic topics, and empirical methods, especially those relevant for identifying causalities and impact evaluation, we see this as an indication of proximity to the research frontier playing a role in the approach to development economics. We are not able to detect statistically significant relative risk ratios of research involvement for the categorization into group 1 versus group 2, presumably because of the high number of courses which do not have an instructor listed in this group. If this, however, reflects that these courses are taught by non-regular faculty who are unlikely to be researchers, the statistically significant relative risk ratio of about four when the instructor is not listed for the course in the comparison of group 1 versus group 2 courses provides further support to this point.

Textbook use also differs across the groups. We find courses using Ray's *Development Economics* to be less likely to be in any of the 3 groups relative to group 2. This is consistent with the more microeconomic focus of this book, reflected in the treatment of topics such as credit markets, risk, insurance, and labor markets, as well as the book being at a more advanced analytical level and, hence, also in line with the observation that courses in group 2 are more likely to be taught at the graduate level in developing countries. Courses that use Banerjee and Duflo's *Poor Economics* are highly unlikely to be found in group 1, which focuses on very few and among them predominantly macro topics, in contrast to the microeconomic and applied approach of this book that approaches development economics through empirical findings, which are only given little attention in courses found in this group. They are also less likely to be in group 3, which, although focusing more on empirics and empirical methods and less on theoretic concepts and models than group 1, still does not cover the more microeconomic topics on which many impact evaluations have focused. Finally, courses using Todaro and Smith's *Economic Development* are more than four times more likely to be in group 4 versus group 2. This reflects the broad topic coverage in both, courses we find in this group and the textbook, which aims at introducing students to the topic through an exhaustive overview of topics relevant in the discipline. Hence, we observe that the differences in the concept of development economics as seen in the approaches of major textbooks of the discipline and noted in section 2 are also reflected at the course level.

In table SA.4 of the [supplementary appendix](#), we drop group 2 and re-estimate the multinomial logit, using group 3 as the base outcome to better show what distinguishes these other three groups from one another. We see that fewer country-level characteristics are significant in predicting which of the other three groups a course lies in, except that group 1 courses are not taught in the United States. Instead, instructor and textbook are the main factors associated with group: group 1 courses are more likely to be taught by unlisted instructors who do not use Ray or Banerjee and Duflo's books, while group 4 courses are more likely to be taught by a listed instructor who uses Todaro's book. This importance of textbook in determining how development economics is conceptualized differs from the case of introductory and intermediate micro- and macroeconomics, in which [Allgood et al. \(2015\)](#) argue that the choice of textbook is probably inconsequential given the similarity of content.

## V. Conclusions

Our analysis of university courses around the developing world finds a large degree of variation in what is considered development economics. There is a narrow core of topics considered central to the majority of courses, with substantial diversity in topic choice around this. In addition, the emphasis on theory versus empirical content also differs substantially. Our analysis reveals four broad groupings in coverage, which are associated with country, instructor, and course characteristics.

To the extent that this variation in topic and approach reflects either current differences in how development is viewed across countries or influences how future policymakers will conceptualize and understand the key barriers to development success, these results are likely to imply heterogeneity in the demand for different types of development research from policymakers. The results may also cause reflection among instructors of development economics in different countries as to whether their current teaching approach best reflects the topic and methodological coverage needs of their students.

### Appendix A.1: Categorization of Topics

Below we delineate the categories used to determine which topics are covered in the development economics courses we observe based on key concepts and keywords. Rather than being exhaustive, these keywords are meant to characterize and demarcate each topic category. Based on the feedback from instructors who piloted the online survey as well as our own experience in coding the syllabi, the distinction between topics was clear. Moreover, topics were not exclusive, permitting the classification into more than one category. Finally, most of the topic categories considered here can be approached empirically as well as theoretically, and the determination of topic coverage does not distinguish between the way a topic is treated. But we elicited the extent to which courses were based on empirical findings and stylized facts, theory, and empirical methods in a separate module to be able to capture these differences.

#### (Measuring) Poverty and Inequality

Different concepts of poverty (e.g., monetary/income poverty, multidimensional poverty, Sen's capability approach); measures and indices (e.g., human development index, poverty headcount ratio, poverty gap, GINI coefficient, Lorenz curve); inequality, poverty, and growth nexus (e.g., Kuznets' Inverted-U hypothesis), economic characteristics of the developing world and the poor in developing countries.

#### Theories and Models of Economic Growth and Development

For example, Rostow's growth stages, Harrod-Domar model, Lewis model, Fei-Ranis model, Dependency theory, Solow-Swan model, Ramsey model, Endogenous growth models, Big push theory, O-Ring theory, Convergence.

#### Population Growth, Fertility, Demographic Transition

Stylized facts on population growth and fertility; demographic transition; theories (e.g., Malthusian model, Becker's quantity-quality trade-off); measurement (e.g., birth rates, death rates, fertility rates); population policies and programs (e.g., family planning).

#### Human Capital, Incl. Health and Education

Stylized facts on importance of human capital (e.g., education and health) for development; theories and models on income, education, health and nutrition, and productivity (e.g., Mincer equation, macroeconomic and microeconomic consequences of low human capital); returns to education; health measurement and disease burden (e.g., HIV/AIDS, disability adjusted life years), education and health policy and

programs (public health systems, conditional cash transfer programs, HIV testing, distribution of textbooks, bed nets, deworming).

#### **Agricultural Transformation, Rural Development**

Structure of agrarian systems in developing countries; agricultural productivity; agricultural transformation (e.g., green revolution).

#### **Entrepreneurship, Social Entrepreneurship**

Stylized facts on self-employment, micro and small enterprises; constraints to entrepreneurship (e.g., access to credit, business environment); impact of entrepreneurship promotion policies and programs (e.g., microcredit, formalization, business training); social entrepreneurship in developing countries.

#### **Urbanization, Rural-Urban Migration**

Stylized facts on urbanization and rural-urban migration in developing countries; economic theories on rural-urban migration (e.g., Harris-Todaro model, Lewis model).

#### **Environment and Development, Incl. Climate Change**

Global warming and climate change (e.g., scope, mitigation. and adaption strategies); economic growth and the environment (e.g., industrialization and air pollution, congestion, deforestation); consequences of climate change for developing countries and the poor; economic models of environmental issues (e.g., free-rider problems, externalities); national and international environmental policies and strategies.

#### **Migration, incl. Remittances**

Determinants of migration; brain drain; brain gain; diasporas; importance and impact of remittances; migration policies.

#### **The Role of the State**

State-led development models; development planning and development plans; the role of state-development banks.

#### **The Role of Institutions,<sup>12</sup> incl. Corruption**

Institutions as determinants of (economic) development (e.g., property rights, democracy); determinants and impact of corruption; political economy.

#### **Firm Growth, Industrial Development**

Stylized facts on private enterprises in developing countries (e.g., firm size distribution), production functions and practices; firm productivity; technological change and technology adoption; innovation policies; industrial organization.

#### **The Role of Aid**

Actors landscapes (e.g., UN system, NGOs); millennium development goals; rationale for development assistance and cooperation; effects of aid.

12 Following North (1999: 3), institutions are understood here as “rules of the game in a society or, more formally, [...] the humanly devised constraints that shape human interaction.”

### International Trade and Trade Policy

Structure of international trade; theories of international trade (e.g., Ricardian theory of comparative advantage; Heckscher-Ohlin model); trade policy, (e.g., export promotion, import substitution, tariffs, international trade negotiations).

### Macroeconomic Management

Balance of payments; finance and fiscal policy (e.g., exchange rate systems, financial liberalization, taxation); international finance, rationale and causes of international debt, overindebtedness and consequences (e.g., 1980's debt crisis and debt negotiations, global financial crisis); stabilization policies; privatization.

### Land Markets

Ownership, tenancy, and land rental (e.g., sharecropping); land size and productivity.

### Labor Markets

Occupational structure in development countries; labor market models (e.g., permanent labor markets); informal employment and size of the informal sector; child labor; active labor market policies.

### Credit Markets

Characteristics of credit markets in developing countries (e.g., rural credit markets, lack of collateral); theories of informal credit (e.g., lender's monopoly, lender's risk hypothesis, default and fixed-capital loans, default and collateral, default and credit rationing, informational asymmetries and credit rationing, default and enforcement); microfinance (e.g., underlying theory, impact of microcredit).

### Risk and Insurance

Perfect insurance model; market imperfections; moral hazard and adverse selection; risk coping and sharing mechanisms; policies and innovations (i.e., index insurance).

### Data Analysis Incl. the Use of Relevant Statistical Software

Calculation of statistics and indices (GINI coefficient, Lorenz curves, poverty headcount ratios, mortality rates), application of methods for impact/policy evaluation, empirical analysis of development economics problems (e.g., assessing the impact of diseases or institutions on growth); introduction to statistical software programs (e.g., Stata, SPSS).

### Experimental and Quasi-Experimental Methods for Impact/Policy Evaluation

Importance of identification of causal effects and evaluation problem; randomized control trials, quasi-experimental evaluation methods (differences-in-differences, instrumental variables, propensity score matching, regression discontinuity designs); internal and external validity.

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