

# **Producing Knowledge in South America: The Political Economy of Social Science in Argentina, Colombia and Peru**

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## **Abstract**

*This article explores cross-national variation in funding and institutional support for social science research by analyzing original bibliometric and survey data from Argentina, Colombia, and Peru. We identify three national models of research based on whether foreign, domestic-public, or domestic-private funding prevails: foreign-sponsored, state-sponsored and mixed economy. Each national model has distinct consequences for the human capital profile of researchers and for the knowledge they produce. Although most researchers claim they set their own research agendas autonomously, they also adapt research projects to increase the chances of getting funding.*

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<sup>4</sup> Earlier versions of this paper were presented at the American Political Science Association's Annual Meeting in Washington, DC (2010), the Universidad de San Andres, Buenos Aires; The Graduate Institute, Geneva; and Brown University. In addition to suggestions received from participants in those seminars, we also acknowledge helpful comments on drafts of the paper from Juan Pablo Luna, Andrew Schrank and Guillermo Trejo.

During the last half century, social science has emerged as a truly global enterprise. Fifty years ago, professional social science was institutionalized in just a handful of rich countries. Today, it is present across the world, including in many poor and middle income countries in the Global South, where resources for research are limited. The globalisation of the social sciences raises questions about how international inequalities in research capacity affect the production of knowledge. How does cross-national variation in funding and institutional support for social science influence the content and geographic scope of research? Do domestic resource constraints produce dependence on foreign funding and, if so, do foreign sponsors have the power to set the intellectual agenda? What factors determine who gets access to funding? What strategies do researchers adopt to cope with scarce funding and how do these strategies affect their research?

To address these questions about social science in the contemporary Global South, this article analyzes new bibliometric and survey data on the political economy of research in three middle-income countries in South America: Argentina, Colombia, and Peru. We find that these countries exemplify distinct models for funding social science, with three types of capital—foreign, domestic public, and domestic private—playing different roles. In Peru, foreign funding is dominant, resulting in *foreign-sponsored* social science. Although foreign funding plays a large role in Argentina and Colombia, domestic support for research is also important. However, in Argentina domestic public funding plays the dominant role, resulting in *state-sponsored* social science, whereas in Colombia domestic private and public funding are both significant, resulting in *mixed economy* social science.

This cross-national variation in the role played by each type of capital, in turn, allows us to explore their consequences for (1) *who produces knowledge*, that is, whether getting access to

each kind of capital requires distinct professional credentials and networks; and (2) the *kind of knowledge produced*, that is, whether different types of capital have contrasting effects on both the geographic scope of research and the production of research that explicitly aims to influence public policy. We find that foreign capital is associated with foreign-trained researchers and with *outward-oriented research* that looks beyond the home country, whereas domestic funding is associated with domestically-trained researchers and with *inward-oriented research* focused exclusively on the home country. We also find that although most researchers across the three countries claim they have the autonomy to set their own research agendas, they also say they adapt their research projects to increase their chances of getting funding. Overall, our results show that different national models for funding social science exist in South America, and each of these models, in turn, has a distinct impact on both the human capital profile in the social sciences and the kind of knowledge produced.

The next section proposes a new conceptual framework for analyzing the political economy of research. The framework focuses on the varieties of capital that fund research, and it provides a basis for generating hypotheses about the consequences of each type of capital for who produces knowledge and also for the content of the resulting knowledge. A subsequent section presents our data, highlighting cross-national variation in the role of foreign funding for social science in Argentina, Colombia, and Peru. We find a surprisingly diverse set of external funding sources, which forms a transnational web of professional networks and capital flows. The third and fourth sections present and then test hypotheses about the effects of different types of capital on research by using statistical analysis of bibliometric data. A fifth section uses survey data drawn from 380 researchers in Argentina, Colombia and Peru to provide insight about causal mechanisms, especially the strategies scholars pursue for getting funding, that can

help explain some of the associations found in the statistical analysis. A concluding section summarizes the results and offers suggestions for future work on the political economy of research in the Global South.

## **Knowledge Production in the Global South: A Political Economy Framework**

Research requires money. Without funding either directly to scholars or to the institutions that pay their salaries, research is not possible. Disseminating the results of research through publications, especially books, is costly and also requires money. At the most general level there are four possible sources of funding for research: capital can be foreign or domestic, and, in turn, each of these can be public or private. It is plausible to expect that *access* to each type of capital depends on distinct professional capabilities, credentials, and networks. For example, holding a foreign degree may make it easier to get foreign funding, because researchers can take advantage of personal and institutional relationships forged while studying abroad. Alternatively, a foreign degree may be a proxy for skills that help make connections abroad, such as fluency in foreign languages and the capacity to navigate the administrative and scholarly environments in other countries.<sup>1</sup> The type of capital could also have consequences for the *kind of research* produced, especially whether it focuses inwardly on the home country and whether it aims to influence public policy. As explained in Section IV, where we offer hypotheses about the consequences of each type of capital, domestic public funding and funding from international organizations, for example, can plausibly be expected to promote inward-oriented research that targets domestic policy makers.

With its focus on the contrasting consequences of *varieties of capital* for knowledge production, our conceptual framework extends a longstanding line of research in comparative political economy on how different types of capital affect the developmental fortunes of countries. Cardoso and Faletto (1979) argue that foreign and domestic capital have distinct consequences for economic development in Latin America, with the former promoting “enclaves” that cause stagnation, whereas the latter leads to “nationally-controlled” economies with dynamic possibilities for development.<sup>2</sup> Stallings (1991) explores how the distinction between foreign loan capital and foreign direct investment (FDI) helps explain the divergent fortunes of Latin American and East Asian “developmental states.” Because they relied more on foreign loans than FDI, East Asian countries like South Korea and Taiwan had greater freedom than their Latin American counterparts to invest foreign capital in growth-enhancing ways. Finally, the ongoing “aid debate” focuses on the consequences of foreign aid for economic development (Easterly, Damboso, Alesina and Dollar 2000), exploring how reliance on foreign aid affects the incentives for governments to promote national development (Kono and Montinola 2009) and whether fragmentation among multiple donors and bureaucracies reduces the effectiveness of aid (Easterly 2008).

We build on prior research by harnessing to a new subject, that is, production of scientific knowledge, the insight that different types of capital have distinct consequences. We thus join a growing recent literature that seeks to understand cross-national variation in how the social science profession is organized and funded across developing countries and, in turn, the implications of this variation for knowledge production (Riviera and Salazar 2010, Angel-Urdinola et al. 2010, Ubfal and Maffioli 2011, Altman 2012, Freidenberg and Malamud 2013, Tanaka and Dargent 2015).

## **Data on Social Science Research in South America**

To explore the effects of different kinds of capital on knowledge production we rely on new bibliometric and survey data from Argentina, Colombia, and Peru. The bibliometric component of the data set includes 740 social science books published during the 2000s in Latin America: 292 books published in Argentina between 2000-2008; 280 books published in Colombia between 2000-2008; and 168 books published in Peru between 2000-2006. The sample was created based on the social science books published by the main academic presses in each country during the study period. To identify the main presses in Argentina and Peru we carried out interviews with dozens of local social scientists, whereas in Colombia we relied on data collected by the government's national science agency *Departamento Administrativo de Ciencia, Tecnología e Innovación* (Science, Technology and Innovation Administrative Department-Colciencias). Books published in anthropology, economics, political science, and sociology were coded on 23 variables, including the training and employment institution of the author(s) and the country location and other characteristics of the institutions acknowledged in each book as sources of support. Further details about sampling and coding are reported in the appendix.

Bibliometric data offer several important advantages for studying the political economy of research. First, bibliometric data are drawn from accessible, public sources (i.e., books) and, hence, studies employing this kind of data can be replicated with relative ease. Moreover, in their prefaces and jackets, books typically offer far richer information than articles or working papers about their authors and, crucially, how the research was funded. Like all types of data, however, bibliometric data have limitations. In addition to relying on self-reporting by authors and presses, they provide an indirect means of assessing key issues like the strategies researchers employ to get funding and the motives and agendas of funding institutions. Also,

while books often contain richer information than articles and other kinds of publications about the institutions that supported the research, they are no more likely to report the precise amount of funding received from each source. Still, the information provided in books about their funding sources allows us to determine the kind of capital that made the research possible. Lastly, focusing on books may create a bias against disciplines oriented toward journal articles. To help mitigate potential biases created by different disciplinary publishing norms and incentives, our sample includes books from across the various disciplines that comprise the social sciences.

The bibliometric data are supplemented by data from surveys administered to social scientists in Argentina, Colombia and Peru. The survey data allow us to explore how the professional strategies of researchers, especially with regard to funding, vary across the three countries. The survey data are drawn from 380 respondents, mostly with degrees in anthropology, economics, history, political science, and sociology, although some respondents hold degrees in other disciplines, including law, philosophy, education, linguistics and cultural studies.<sup>3</sup>

As seen in Table 1, the bibliometric data show striking cross-national differences in the roles of foreign and domestic capital in supporting social science research. In all three countries, foreign funding plays an important, yet varied, role. Foreign funding is dominant in Peru, where more than 80% of sampled books rely on external capital.<sup>4</sup> In Argentina and Colombia, by contrast, the role of foreign funding, while important, is less significant. In both cases, domestic sources exclusively fund nearly 40% of the books in the sample.

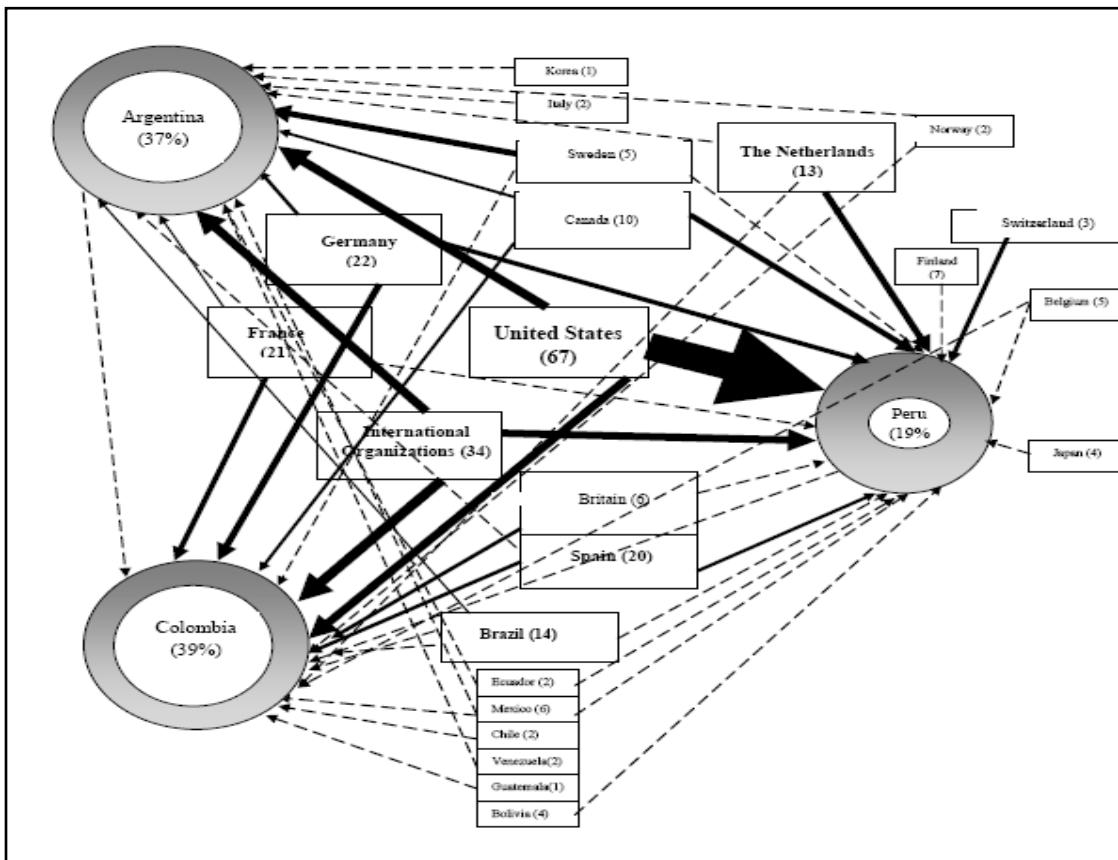
**Table 1. Total Number of Books Funded by Country (%)**

	Argentina		Colombia		Peru	
	Funded by country	Funded exclusively by country	Funded by country	Funded exclusively by country	Funded by country	Funded exclusively by country
	(1)	(2)	(3)	(4)	(5)	(6)
Argentina	<b>53.1</b>	<b>37.3</b>				
Colombia			<b>72.1</b>	<b>39</b>		
Peru					<b>34.5</b>	<b>18.5</b>
United States	12.7	5.8	10.2	1.1	31	17.9
International Organizations	11.6	3.4	14.5	1.4	11.3	3.6
Sweden	8.9	6.2				
Netherlands					7.7	4.2
Switzerland					3	0.6
Germany	2.7	0.7	7.1	0.7		
Canada	2.4	1.0	2.1	0.4	6	2.4
Britain			2.8	0.4		
France	1.7	0.7	6.7	0.7		
Spain			2.8		2.4	0.6
Brazil	1.4	0.3				
Other Countries	2.4	0.3	2.8		12.5	
Other Latin American Countries	1.4	0.0	6	1.1	6	1.1

**Notes.** Some books are funded by more than one country, and thus some columns add to more than 100%. All books with total or partial funding from a country are considered. Funding institutions are coded based on the location of their headquarters. Books that are funded by an equal number of domestic (i.e., Argentine, Colombian or Peruvian) and foreign institutions are coded as funded domestically. **Argentina:** The total number of books is 292. 70 books (24%) do not report funding. *Other Countries* includes Italy, Netherlands, Spain, Norway, and Korea. *Other Latin American Countries* includes Ecuador, Mexico and Venezuela. **Colombia:** The total number of books is 283. *Other Countries* includes Belgium, Netherlands, Sweden, Norway, and Japan. *Other Latin American Countries* includes Argentina, Brazil, Chile, Mexico, Peru, Venezuela and Guatemala. **Peru:** The total number of books is 168. *Other Countries* includes Belgium, Bolivia, Brazil, Britain, Ecuador, Finland, France, Japan, Mexico, and Sweden.

Moreover, as seen in Figure 1, the social science enterprise in each country is connected to foreign funding through a surprisingly complex and diverse web of transnational ties and capital flows. In Peru, the sample of 168 books yields a total of 149 different funding sources, a ratio of nearly one funding source per book. 80.5% of these sources are foreign institutions located across sixteen countries. Similarly, in Colombia, the sample of 283 books yields 265 funding sources, of which 45% are foreign. In Argentina, by contrast, the sample of 292 books yields a smaller number of funding sources (167), of which half are foreign.

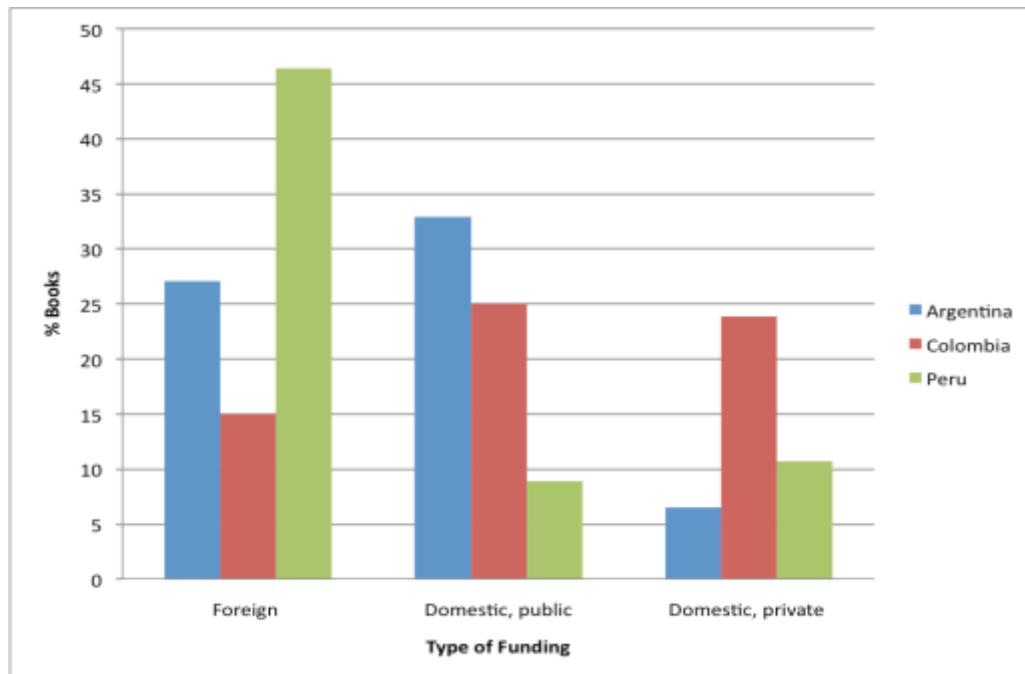
**Figure 1. Complex Dependence: Foreign Funding of Social Science Research in Argentina, Colombia, and Peru**



**Notes.** Based on bibliometric data. Shaded circles represent books that have domestic funding from the country; inner circles represent the percentage of books funded *exclusively* by the country. The width of arrows represents the percentage of books with funding from a specific foreign country. The numbers within each box refer to the number of funding institutions from each country in the dataset.

Although the overall weight of domestic funding in Argentina and Colombia is similar, its composition differs starkly across the two cases. As seen in Figure 2, domestic funding in Argentina comes overwhelmingly from the *public* sector, whereas both the public and private sector provide domestic funding in Colombia in roughly equal proportions.<sup>5</sup> Moreover, the role of the public sector in supporting social science in Argentina and Colombia, though similar in magnitude, differs in important ways with regard to its institutional design.

**Figure 2. Three Political Economies of Research: Funding for Social Science in Argentina, Colombia and Peru**



**Notes.** The figure does not show books reporting no funding, books with equal domestic and foreign funding, or books with equal domestic public and domestic private funding. Hence, the totals for each country do not sum to 100%. As described in the statistical appendix, “equal funding” refers to the number of funding *institutions* of each type (i.e., foreign, domestic public, domestic private), not to the “dollar” amount of funding from these sources, because this information is generally not reported in books and other kinds of publications (e.g., journal articles).

Two key differences stand out. First, the national science agencies in each country are organized and allocate resources according to distinct logics. In Argentina, the *Consejo Nacional de Investigaciones Científicas y Técnicas* (National Scientific and Technical Research Council- CONICET) was modeled on the French system of centralized state sponsorship of scientific research, as exemplified by the *Centre National de la Recherche Scientifique* (French National Centre for Scientific Research- CNRS).<sup>6</sup> CONICET, like the CNRC, offers individuals the possibility of becoming state employees who enjoy publicly funded retirement benefits. Hence, researchers, not research projects, are the targets of public funding. By contrast, Colombia’s *Departamento Administrativo de Ciencia, Tecnología e Innovación* (Science, Technology and Innovation Administrative Department- Colciencias) is modeled on the National Science

Foundation (NSF) of the United States, which mainly funds research *projects*, often proposed by teams of researchers, without offering the possibility for researchers to become state employees. A further important difference between Argentina and Colombia concerns the presence of a second national science agency in Argentina, the *Agencia Nacional de Promoción Científica y Tecnológica* (National Agency for Scientific and Technological Promotion - Agencia). Whereas CONICET and Colciencias were created as part of the statist-developmentalist policies common across Latin America in the 1950 and 1960s, Agencia was founded more recently, in 1996, during a period when neoliberal, market-oriented policies had supplanted the prior statist policies.<sup>7</sup> The resulting presence of *two* large state agencies for funding research, in turn, helps explain the greater role of public domestic funding in Argentina.<sup>8</sup> While Peru also has a national science agency based on the US model, the *Consejo Nacional de Ciencia, Tecnología e Innovación* (National Council for Science, Technology and Innovation - CONCYTEC), it focuses on the hard sciences. Consequently, the influence of public funding on the social sciences in Peru is far weaker than in Argentina and Colombia.<sup>9</sup>

Because of these differences in how social science is funded across the three countries, each exemplifies a distinct political economy of research: *foreign-sponsored* social science in Peru; *state-sponsored* social science in Argentina; and *mixed-economy* social science, where both the domestic public and private sectors play important roles, in Colombia. The following section explores the consequences of these different political economies for who gets funding and for the resulting research outputs.

## Hypotheses about Access to Funding and Research Outputs

### *Access to Resources: Who Gets Funding? (H1-H4)*

We first consider the effects of location of training, that is, where an academic earned her degree, on access to funding. We expect foreign training to make it easier to get foreign funding, both public and private, because it facilitates access to international professional networks and thus to information about potential foreign funders (H1). Moreover, a foreign degree, especially from a widely recognized institution, is a credential that can help make a researcher legible to external funders and thus more likely to gain their support. An important implication of this hypothesis concerns situations where foreign funding is “the only game in town,” as in Peru. Under such conditions, scholars lacking foreign credentials will face high barriers to entry into the market for international funding for research, and knowledge production may therefore become the exclusive preserve of foreign-trained scholars.

While there is good reason to expect foreign training will enhance access to foreign capital, the likely effect of location of training on access to *domestic* capital, both public and private, is indeterminate (H2). On one hand, foreign training may signal greater prestige and standing in the profession, which may make it easier to get domestic funding. Moreover, domestic public funding may also be deployed as an incentive for foreign trained scholars to stay in the country.<sup>10</sup> The easier access to foreign funding that foreign training hypothetically offers may enhance access to domestic funding as well, perhaps because foreign-trained scholars, in contrast to their domestically-trained colleagues, need only seek partial funding from domestic sponsors, or because access to foreign funding provides the resources required to prepare more competitive applications for domestic funding.

Conversely, the very experience of training abroad, while strengthening a scholar's international network, may have the opposite effect on her home network, creating a disadvantage in competing against domestically-trained colleagues for domestic resources. Moreover, foreign-trained scholars may face a nationalistic bias that makes it harder to get domestic funding, especially from public sources. Finally, the location of training can have an indirect effect on access to funding by generating a segmented market where foreign-trained scholars, because they have access to foreign funding, which may be of greater magnitude and paid out in "hard" foreign currency, may choose to devote little effort to seeking domestic funding in the first place. The resulting reduction in competition for domestic funding, in turn, could make it easier for scholars without foreign training to access these resources.

Another aspect of access to funding concerns whether scholars obtain resources individually or through collaboration. In settings like Peru, where foreign capital prevails, we expect scholars lacking foreign credentials, and thus potentially facing strong resource disadvantages, will be dependent on their foreign-trained colleagues. To get resources, domestically-trained scholars may need to affiliate with foreign-trained colleagues. H3 thus predicts that collaboration linking scholars with and without foreign training increases access to foreign funding.<sup>11</sup>

Access to domestic funding, in turn, will be mediated by the institutional setting, especially the type of national science agency. The researcher-oriented model, like Argentina's Conicet, may promote greater freedom for researchers to work individually, because they can support their projects with their state salaries and thus face weak financial incentives to form research teams. By contrast, the model of funding research projects instead of researchers, exemplified by Colombia's Colciencias and Argentina's Agencia, likely drives scholars to

collaborate in teams. We therefore expect collaborative projects to be more likely to get funding from agencies modelled on the US system than from agencies modelled on the French system (H4).

#### *Research Outputs: What Kind of Knowledge is Produced? (H5-H7)*

We next consider the effects of the type of capital on research outputs. We focus on two aspects with important implications for the impact of research both within and beyond the academic community: first, *geographic scope*, that is, whether a study is inward-oriented, focusing on just the home country where the scholar(s) is based, or, alternatively, is outward-oriented, focusing on foreign countries;<sup>12</sup> and, second, *policy targeting*, that is, whether a study explicitly aims to influence public policy.

#### Geographic Scope

Focusing on just the home country may limit the impact of research by making it harder to reach a broad, international audience. Limited international visibility, in turn, makes research less likely to be tested outside the home country, thereby weakening external validity. Still, an adequate supply of scientific knowledge about the home country is clearly a necessary, if not sufficient, condition both for effective domestic policy and for a capable, informed citizenry. Research focusing on the home country may thus command attention among non-academic domestic audiences.

We expect foreign funding to have an indeterminate effect on the scope of research (H5). On one hand, foreigners may prefer to fund scholars to do research on their own countries, thus taking advantage of the deeper knowledge and easier access to local data that scholars often

enjoy when working on their home country. According to this logic, for example, foreigners do not fund Argentines to study Peru; they fund Peruvians to study Peru. On the other hand, foreign funding could foster outward-oriented research that looks beyond the home country. This may occur due to the priorities of foreign organizations or because the kinds of scholars most likely to get foreign funding, those with foreign training, may have a more “cosmopolitan” outlook that makes them more prone to do research that does not focus just on the home country. Foreign funding may also promote outward-oriented research by providing incentives for scholars in the Global South to form cross-national coalitions around collaborative projects.

Domestic capital, both public and private, will likely be associated with inward-oriented research (H6), and we expect this effect to be stronger for public funds. In the face of scarce domestic resources, government agencies in low and middle-income countries may find it especially difficult to justify spending public money on studies of foreign countries. Still, this expected effect may be mitigated if there is significant funding from another source, say foreigners, which covers much of the demand for resources to produce inward-oriented research about the home country. In this case, domestic resources could be freed to fund outward-oriented research.

### Policy Targeting

H7 proposes that domestic capital will be directed more than foreign capital toward funding policy-targeted research, operationalized as book publications that include explicit recommendations for policy makers. Public domestic capital may tend to support research on issues of public interest, both because officials may value the input of this research on policy-making issues and because it may be easier to justify drawing on state funds to support research

with public relevance.<sup>13</sup> Likewise, private domestic capital should also support policy-relevant research, because private associations and organizations will seek to promote research oriented toward their interests and agendas.

## **Results of the Bibliometric Analysis**

To test these seven hypotheses about the relationships among the different types of capital, access to funding, and the production of knowledge, we carry out a statistical analysis of the bibliometric data using linear regression models. We estimate regressions for all hypotheses including country fixed effects and an indicator of collaboration, that is, whether a book is single authored or co-authored, as control variables for each main independent variable.

### *Location of Training and Access to Funding (H1-H4)*

To test our hypotheses about location of training and access to different types of funding, we estimate separate regressions where the main dependent variable is a categorical variable for foreign funding, with 1 signifying no foreign funding and 5 signifying all foreign funding, or a dummy variable indicating the presence of each type of funding, that is, foreign, domestic public, domestic private.<sup>14</sup> The main independent variable is whether the highest degree held by the author was earned outside her home country.

We find that, as predicted in H1, foreign training is associated with foreign funding. The coefficient for the variable *foreign training* is positive and statistically significant, even when controlling for the nationality of the author (see first column in Table 2).<sup>15</sup>

**Table 2. Location of Training and Type of Funding**

	Foreign Funding (1-5)		Domestic Public Funding (1-0)		Domestic Private Funding (1-0)	
	All Domestic Public	National Science Agency	Public University	All Domestic Private	Domestic Private Universities	
	(1)	(2)	(3)	(4)	(5)	(6)
Foreign Training (1-0)	0.333** (0.147)	-0.101** (0.04)	-0.062** (0.031)	-0.052* (0.028)	0.009 (0.036)	-0.008 (0.029)
Level of Education (1-4; 1=PhD)	-0.226** (0.095)	0.105*** (0.023)	0.040** (0.018)	0.038** (0.016)	-0.007 (0.021)	0.008 (0.017)
Single Author (1-0)	-0.19 (0.121)	-0.068** (0.032)	-0.047* (0.024)	0.026 (0.022)	0.032 (0.03)	0.036 (0.025)
Foreign Author (1-0)	0.608*** (0.196)	-0.132*** (0.049)	-0.029 (0.035)	-0.041 (0.028)	0.093* (0.054)	0.075 (0.048)
Argentina	-1.061*** (0.18)	0.320*** (0.037)	0.205*** (0.023)	0.163*** (0.031)	-0.125*** (0.042)	-0.184*** (0.033)
Colombia	-1.639*** (0.161)	0.406*** (0.035)	0.181*** (0.02)	-0.018 (0.021)	0.174*** (0.044)	0.158*** (0.04)
N	730	899	899	899	899	899
R-squared	0.156	0.122	0.055	0.093	0.096	0.162

**Notes.** Robust standard errors in parentheses. \*\* significant at 5%; \*\*\* significant at 1%.

We also assess the relationship between foreign training and access to *domestic* capital. The second column of Table 2 presents results when the dependent variable is a dummy indicating the presence of domestic public funding. We find that foreign training has a negative relationship with domestic public funding, even when controlling for the nationality of the author, thus disconfirming our expectation of an indeterminate effect (H2). An author with foreign training is about 10% less likely to have public funding than one trained in the home country. This correlation remains robust when we disaggregate domestic public funding into support from national science agencies and from public universities, although the effect is smaller and less significant when we estimate regressions for each type of institution separately

(Table 2, columns three and four). We find no consistent or statistically significant relationship between foreign training and domestic private funding (Table 2, Columns five and six).

We expect that scholars in the Global South who collaborate with peers in the North will be more likely to get foreign funding (H3). The results in Table 3, where the dependent variable is the categorical variable *foreign funding*, do not support this hypothesis. The coefficient for North-South collaboration lacks statistical significance, and the negative sign suggests that North-South collaboration may surprisingly *reduce* access to foreign funding.<sup>16</sup> By contrast, collaboration among scholars based in the same country has a statistically significant negative relationship to foreign funding. The size of this effect is large, even when we control for the nationality of the author.

**Table 3. Collaboration and Foreign Funding for Social Science Research**

	Foreign Funding (1-5)	
	(1)	(2)
Domestic Collaboration	-1.024*** (0.299)	-0.937*** (0.327)
North-South Collaboration	-0.447 (0.334)	-0.412 (0.345)
Foreign Training (1-0)		-0.061 (0.211)
Level of Education (1-4)	-0.054 (0.135)	-0.091 (0.139)
Foreign Author (1-0)		0.243 (0.280)
Argentina	-1.712*** (0.237)	-1.742*** (0.243)
Colombia	-2.266*** (0.200)	-2.328*** (0.207)
N	361	351
R-squared	0.250	0.251

**Notes.** Robust standard errors in parentheses: \*\* significant at 5%; \*\*\* significant at 1%.

As seen in Table 4, the results regarding collaboration and funding from national science agencies suggest a clear difference between the US and French models of state funding for social science, thus supporting H4. Here the dependent variable is a dummy indicating the presence of funding from each of the national science foundations, Agencia and CONICET in Argentina, Colciencias in Colombia, and CONCYTEC in Peru. The US model, as seen in the results for Agencia and Colciencias in Columns 1 and 3, is associated with collaborative work, as indicated by the negative and significant coefficient of the variable *single author*, which suggests these agencies are more likely to fund research by teams. By contrast, the French model, as seen in the results for CONICET in Column 2 seems more focused on funding individuals, as indicated by

the positive and significant coefficient for single authors. Our results for CONCYTEC are not statistically significant.<sup>17</sup>

**Table 4. Collaboration and Funding from National Science Agencies**

	Domestic Public Funding (1-0)			
	Agencia (Argentina) (1)	CONICET (Argentina) (2)	Colciencias (Colombia) (3)	CONCYTEC (Peru) (4)
Foreign Training (1-0)	0.049 (0.042)	-0.067 (0.044)	-0.083* (0.046)	-0.028 (0.030)
Level of Education (1-4)	0.023 (0.022)	0.049** (0.024)	0.031 (0.029)	0.008 (0.010)
Single Author (1-0)	-0.060* (0.033)	0.126*** (0.040)	-0.143*** (0.037)	0.023 (0.016)
Foreign Author (1-0)	-0.095* (0.055)	-0.092 (0.059)	0.004 (0.067)	0.027 (0.032)
N	353	353	392	154
R-squared	0.021	0.047	0.040	0.026

**Notes.** Robust standard errors in parentheses. \*\* significant at 5%; \*\*\* significant at 1%.

#### *Research Outputs: Geographic Scope and Policy Targeting (H5-H7)*

We hypothesize that different types of capital influence not only who has access to funding but also the resulting research, specifically its geographic scope and propensity to offer explicit policy recommendations. To test whether types of capital are, in fact, associated with inward-oriented research or, alternatively, with outward-oriented research, Table 5 presents results from regressions where the main dependent variable is a dummy that codes outward-oriented research as 1, and the main independent variable is the type of funding.

The first column of Table 5 shows that, instead of the hypothesized indeterminate relationship (H5), there is actually a positive and significant association between foreign funding and outward-oriented research.<sup>18</sup> We also find that domestic public capital is associated with an inward focus, confirming our hypothesis (H6). We also disaggregate domestic public capital by institutions and estimate separate models for national science agencies and public universities.

As seen in Column 4, the relationship between national science agencies and outward-oriented research is negative, although not statistically significant. By contrast, as seen in Column 3, the relationship between funding from public universities and outward-oriented research is both negative and statistically significant. This result suggests that the inward focus of research funded by domestic public capital is driven not by national science agencies but by public universities, because the coefficient for public universities is nearly twice the size of the coefficient for all domestic public funding.

We further disaggregate the effects of national science agencies on geographic scope according to whether they follow the US or French institutional models (Models 5 through 8 in Table 5). We find further evidence in support of the hypothesis that domestic public capital promotes research focused on the home country (H6), as there is a significant and negative relationship between funding from CONICET and outward-oriented research. This result also suggests that the French model of funding researchers instead of research projects promotes inward-oriented studies. Still, we find no evidence to support the converse proposition, namely, that the US model of funding research projects provides stronger incentives for outward-oriented studies. As seen in Columns 5 and 7, the relationship between funding from the two US-style science agencies, Agencia and Colciencias, and the scope of research is both indeterminate and insignificant. Finally, Model 9 in Table 5 tests the relationship between domestic private funding and the scope of research. Although this relationship is positive, it is not statistically significant.<sup>19</sup>

**Table 5. Type of Funding and Geographic Scope of Research**

	Geographic Scope of Research (Outward-Oriented = 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Edited (1-0)	0.312*** (-0.034)	0.288*** (-0.028)	0.284*** (-0.028)	0.285*** (-0.029)	0.307*** (-0.048)	0.309*** (-0.047)	0.330*** (-0.046)	0.149*** (-0.053)	0.283*** (-0.029)
Foreign author (1-0)	0.224*** (-0.059)	0.298*** (-0.047)	0.298*** (-0.047)	0.303*** (-0.047)	0.468*** (-0.096)	0.442*** (-0.097)	0.284** (-0.083)	0.216*** (-0.073)	0.302*** (-0.047)
Single author (1-0)	0.009 (-0.034)	-0.019 (-0.027)	-0.013 (-0.027)	-0.018 (-0.027)	-0.009 (-0.047)	0.022 (-0.047)	-0.065 (-0.041)	0.08 (-0.054)	-0.018 (-0.027)
Argentina	0.267*** (-0.047)	0.282*** (-0.034)	0.279*** (-0.033)	0.265*** (-0.035)					0.262*** (-0.033)
Colombia	0.257*** (-0.045)	0.238*** (-0.033)	0.207*** (-0.031)	0.216*** (-0.032)					0.205** (-0.032)
Foreign training (1-0)	0.080* (-0.042)								
Academic degree (1-4)	-0.051* (-0.026)								
Foreign funding (1-5)	0.037*** (-0.011)								
Domestic public funding (1-5)		-0.065** (-0.028)							
Public university (1-0)			0.117*** (-0.038)						
National science agency (1-0)				-0.025 (-0.037)					
Agencia (1-0)					-0.037 (-0.074)				
CONICET (1-0)						-0.253*** (-0.047)			
Colciencias (1-0)							-0.086 (-0.052)		
CONCYTEC (1-0)								-0.247* (-0.14)	
Domestic private (1-0)									0.027 (-0.031)
N	680	978	978	978	369	369	415	194	978
R-squared	0.202	0.187	0.189	0.182	0.16	0.196	0.205	0.117	0.183

**Notes.** Robust standard errors in parentheses: \*\* significant at 5%; \*\*\* significant at 1%.

Table 6 presents results of statistical tests of the hypothesis that domestic funding—both public and private—promotes policy-targeted research (H7).<sup>20</sup> Column 1 shows that, contrary to expectations, domestic public funding is *not* correlated with work offering explicit policy recommendations, as indicated by the negative and statistically insignificant coefficient. Funding both from national science agencies (Column 2) and public universities (Column 3) is negatively

associated with policy recommendations, although only the former reaches statistical significance. Turning to domestic private funding, Column 4 shows a positive and statistically significant relationship between this type of capital and policy recommendations. Moreover, this relationship does not seem driven by funding from private universities, which has a negative and statistically relationship with policy recommendations (Column 5).<sup>21</sup>

**Table 6. Domestic Funding and Policy-Targeted Research**

	Policy Recommendations (1-0)				
	All Domestic Public Funding (1)	National Science Agencies (2)	Public Universities (3)	All Domestic Private (4)	Private Universities (5)
Domestic Public Funding (1-0)	-0.008 (-0.021)				
National Science Agency (1-0)		-0.072*** (-0.021)			
Domestic Private (1-0)				0.068** (-0.031)	
Domestic Private University (1-0)					-0.139*** (-0.03)
Public Universities (1-0)			-0.014 (-0.027)		
Single Author (1-0)	-0.047** (-0.022)	-0.050** (-0.022)	-0.046** (-0.022)	-0.049** (-0.022)	-0.041* (-0.022)
Edited (1-0)	-0.050** (-0.021)	-0.047** (-0.022)	-0.050** (-0.022)	-0.057** (-0.022)	-0.034 (-0.022)
Foreign Author (1-0)	-0.074** (-0.03)	-0.077** (-0.03)	-0.074** (-0.03)	-0.079*** (-0.03)	-0.059* (-0.03)
Argentina	-0.107*** (-0.021)	-0.105*** (-0.021)	-0.104*** (-0.022)	-0.086*** (-0.024)	-0.151*** (-0.025)
N	837	837	837	837	837
R-squared	0.044	0.053	0.044	0.053	0.066

**Note.** Robust standard errors in parentheses: \*\* significant at 5%; \*\*\* significant at 1%.

Together, the results of our statistical analysis suggest that each of the three types of capital has distinct consequences both for who gets funding and also for the resulting research.

*Foreign funding* is associated with foreign-trained researchers and with outward-oriented studies that encompass countries beyond the home of the researcher. *Domestic public funding*, by contrast, is associated with domestically-trained researchers and with work focused on the home country. Regarding access to funding and the geographic scope of research, foreign capital and domestic public capital are thus essentially mirror images of each other. Moreover, when we disaggregate domestic public funding, separating support from universities and also from US and French-style national science agencies, we find that the relationship between domestic public funding and inward-oriented research is driven not by US-style national science agencies but by French-style agencies and public universities. Lastly, *domestic private capital*, while it has no statistically significant association with either the training location of its recipients or the geographic scope of their research, is the only kind that has a statistically significant and positive relationship with research that aims explicitly to influence public policy.

### **Strategies of Researchers for Getting Funding**

To provide insight into how researchers handle the challenge of getting funding for their research and whether their funding strategies, in turn, affect their research, we supplement the bibliometric data with information from surveys we conducted with social scientists in Argentina, Colombia and Peru.

We asked respondents about three facets of the research process: (1) whether the availability of funding influences their selection of research projects; (2) whether, after choosing a research project, they modify it to increase their chances of getting funding; and (3) whether funding agencies impose conditions on research projects.

The survey results show that most researchers do not regard funding as having a strong impact on the *selection* of research projects, as can be seen in the variables *interest* and *autonomy* in Table 8. In all three countries, most respondents report that they “almost never” or “never” work on projects they are not interested in just because funding is available. Moreover, the majority of respondents say they “always” or “almost always” choose their own research project and then seek funding for it. This perception of autonomy is strongest among the Argentines, with 87.2% saying they “always” or “almost always” choose their own projects, whereas only two-thirds of Colombians (66.2%) and Peruvians (63%) hold this view. By contrast, across all three countries a striking proportion of respondents – 40% in Argentina, 58% in Colombia, and 53% in Peru – say they sometimes adapt their research projects to increase funding opportunities (see the variable *adaptation* in Table 9).

**Table 8: Researchers’ Perceptions of the Impact of Funding on the Research Agenda (as a percentage of total respondents)**

		Always	Almost Always	Sometimes	Almost Never	Never
<b>Interest<sup>1</sup></b>	Argentina	0.8	0.8	10.9	27.6	59.8
	Colombia	2.7	4.1	20.3	33.8	39.2
	Peru	2.1	4.2	10.4	47.9	35.4
<b>Autonomy<sup>2</sup></b>	Argentina	42.6	44.6	8.3	2.9	1.7
	Colombia	25.7	40.5	25.7	4.1	4.1
	Peru	13	50	23.9	6.5	6.5
<b>Adaptation<sup>3</sup></b>	Argentina	4.1	10.7	24.8	31	29.3
	Colombia	1.4	24.7	31.5	19.2	23.3
	Peru	4.1	16.3	32.7	22.4	24.5

**Notes.** Respondents were asked the following question (translated from Spanish by authors): Regarding the following statement, select the option that best reflects your personal experience: (1) “I work on research projects that I am not very interested in, but have funding” (2) I select my research projects and then funding for them (3) I adapt my research projects in order to increase the likelihood of obtaining funding for them.”

Most respondents say they choose their projects autonomously and then seek funding, yet most also report that they adapt their projects to get funding. Among respondents who report “always” or “almost always” choosing their own project and then seeking funding, 25% and 50%

respectively also acknowledge that at least sometimes they adapt their projects to increase funding opportunities. This suggests that researchers follow a two-step process: first, they autonomously define a project and then they adjust it to align with the perceived interests of funders.

It is not clear from the survey results whether funding organizations actively try to shape research. On one hand, as seen in Table 9, most respondents – 70.6% in Argentina, 59% in Colombia, and 62.8% in Peru – report “almost never” or “never” getting comments or suggestions from funding organizations on their successful applications. By this measure, funding organizations appear to adopt a laissez-faire posture much of the time. Still, more than half of respondents in Colombia (63%) and Peru (52.4%) also report that the resources they get are conditioned at least sometimes, whereas a majority (61.9%) of Argentine respondents say conditions are “almost never” or “never” attached to funding.

**Table 9: Researchers’ Perceptions of the Influence of Funding Organizations (as a percentage of total respondents)**

		Always	Almost Always	Sometimes	Almost Never	Never
<b>Suggestions<sup>*1</sup></b>	Argentina	7.3		22	38.7	31.9
	Colombia	13.1		27.9	26.2	32.8
	Peru	16.3		20.9	39.5	23.3
<b>Conditionality<sup>2</sup></b>	Argentina	11.6	14.4	12.1	17.7	44.2
	Colombia	15.4	13.8	33.8	20	16.9
	Peru	16.7	21.4	14.3	26.2	21.4

**Notes:** (\*)The responses for this question are “a lot,” “regularly,” “rarely” and “never.” Respondents were asked the following questions (translated from Spanish by authors): (1) “How frequently do you receive comments or suggestions from funding agencies that sponsor your research?” (2) Regarding the following statement, please select the option that best reflects your personal experience: “The funding agencies that sponsor my research place conditionalities on the resources I receive.”

Together, the survey data show that scholars in Colombia, Peru and especially Argentina see themselves as autonomous in defining their research agendas. Yet they also recognize their autonomy is limited by the need to obtain funding and by the agendas of the organizations that can provide it.<sup>22</sup>

## **Conclusion: Synthesis and Questions for Future Research on the Political Economy of Knowledge Production**

This article explores cross-national variation in how social science research is funded. Across countries located in the same region and with similar levels of economic development, such as Colombia and Peru,<sup>23</sup> we find striking differences in the role of foreign, domestic public, and domestic private capital in funding research. These cross-national differences, in turn, have consequences for knowledge production, affecting both *who produces research*, that is the professional credentials and networks required to gain access to funding, as well as the *kind of knowledge produced*, for example, whether or not research is outward-oriented in its geographic scope and aims to influence public policy.

In situations of what we call *foreign-sponsored* social science, as seen in Peru, both public and private domestic funding are minimal, making foreign funding the “only game in town.” Our results suggest that under such conditions of foreign sponsorship, which likely exist in many lower and even lower-middle income countries across the Global South, researchers will require foreign training to get funding for their work. This, in turn, could pose high barriers to entry for domestically-trained researchers. Moreover, because foreign funding is associated with outward-oriented research that focuses on foreign countries, dependence on foreign funding may produce an undersupply of knowledge about the home country.

Yet foreign-sponsored social science is not the only option. As seen in Argentina and Colombia, domestic capital, both public and private, can play a significant role supporting social science research. In Argentina, public domestic funding has the dominant role, resulting in *state-sponsored* social science. State sponsorship in Argentina helps generate and sustain a strong

national sector of domestically-trained and domestically-funded researchers, an outcome that seems very difficult to achieve in situations of foreign-sponsored social science. The national sector in Argentina relies heavily on domestic public funding to support its research, and this type of funding, in turn, has a strong association with inward-oriented research that focuses on the home country.<sup>24</sup> Hence, in addition to providing opportunities for local ideas and innovations, state-sponsored social science seems likely to produce a large supply of knowledge about the home country, something we would not expect to find in countries where social science is foreign sponsored. Still, the state-sponsored model may be prone to the politicization of research and even partisan meddling in knowledge production. These risks may be exacerbated by the centralization of funding for research: the benefit of coordinated production of knowledge may be offset by threats to academic freedom arising from the concentration of funding in the hands of a hegemonic government agency. A further limitation of the state-sponsored model concerns the small role played by domestic private capital. Because we find that domestic private capital is the only type of capital with a strong and positive relationship to policy-targeted research, its weak role in state-sponsored frameworks could lead to an undersupply of research aiming to influence public policy.

Based on our results, it may be tempting to conclude that the *mixed economy* model, as exemplified by Colombia, works best, because it combines all three types of funding and thus draws on the strengths of each. We resist this temptation for several reasons. First, despite the strong presence of domestic public funding, Colombia lacks the robust national sector found in Argentina. This is evident in the composition of the human capital dedicated to social science research in Argentina, Colombia and Peru. Although the share of foreign researchers in Colombia (9%) is low and comparable to that in Argentina (5.3%), the share of domestically-

trained researchers is notably smaller in the former (39.5%) than in the latter (57.8%).<sup>25</sup> Moreover, factors besides funding for research, such as the amount of domestic infrastructure for doctoral training, which is far larger in Argentina than Colombia, may have a more important impact on the human capital profile of the knowledge production sector.<sup>26</sup>

Our findings about the effects of different types of funding on knowledge production raise several challenges for future work on the political economy of social science research. One issue involves scale. Argentina, Colombia, and, to a lesser degree, Peru, are “medium-sized” knowledge producers in the context of Latin America.<sup>27</sup> What role do the three varieties of capital explored here, that is, foreign, domestic public, and domestic private, play in countries with larger research sectors, like Mexico and Brazil, and in countries with smaller ones, like Bolivia, Uruguay, or Costa Rica? What other models of social science besides foreign-sponsored, state-sponsored, and mixed are possible, and what are their respective strengths and weaknesses? *Private-sponsored* social science, where domestic private capital plays the dominant role, would seem an obvious further option meriting consideration.

Another issue for future research concerns interactions and “system effects” among different types of capital. For example, would the strong and positive relationship we find between domestic public capital and inward-oriented research be attenuated if a large enough amount of funding were available from other sources, either domestic private or foreign, to satisfy the demand for knowledge about the home country? In this case, perhaps domestic public resources would be freed up to fund outward-oriented research.

In addition to further testing of our findings about the consequences of different kinds of funding for knowledge production, another key task involves collecting more and better data about social science in the Global South, including ways to assess in a rigorous manner the

quality and impact of research. We have analyzed bibliometric data generated through content analysis of hundreds of publications in three countries. Other kinds of data that shed light on the motives and selection criteria of funding institutions, for example interviews with their staffs and analyses of documents from their archives, would strengthen our understanding of the political economy of knowledge production. Likewise, in-depth studies of specific funding agencies and programs, which may be able to include both funded *and* unfunded proposals, thus mitigating problems of bias introduced when only observing funded and published books, would also be desirable.<sup>28</sup>

This article shows some of the consequences for knowledge production of different ways of organizing and funding social science. An important related matter concerns the prior question of what causes this variation in the first place. Given their closely similar levels of economic development, why is the role of foreign funding so much greater in Peru than in Colombia? Why is the role of private domestic capital so small in Argentina? More generally, what drives cross-national variation both in dependence on foreign funding and in domestic public and private sector support for social science? Answers to questions such as these will provide a better understanding of the options faced by policymakers and other key stakeholders who seek to strengthen the production of knowledge in the Global South.

## **Appendix**

### **Bibliometric Sample**

*Argentina:* The data set consists of 292 books published between 2000 and 2008. Based on interviews with Argentine social scientists, we determined that the six most important social science publishers in Argentina are: Centro de Estudios de Estado y Sociedad (CEDES); Editorial de la Universidad de Buenos Aires (EUDEBA); Prometeo Libros; Siglo XXI; Universidad Nacional de Quilmes; and Consejo Latinoamericano de Ciencias Sociales (CLACSO). Books published by these six organizations between 2000-2008 in anthropology, economics, political science, and sociology were coded on 23 variables. The data set does not include all social science books published in Argentina during 2000-2008, nor does it include all books published by these six institutions during this period. Still, the data set encompasses a large sample of the output of the major social science presses in Argentina. Because books often have multiple publishers, and because the six publishers distribute books published by smaller presses, the data set also includes books published by the following presses: Ediciones al Margen; Ediciones CICCUS; Editorial Altamira; Editorial Sudamericana; Editorial de la Universidad de Salta; and Editorial Universitaria de la Universidad Nacional del Nordeste.

*Colombia:* The data set consists of 280 books published in Colombia between 2000 and 2008. To establish the percentages of books published by different presses, we used a database from Colciencias<sup>5</sup> based on information submitted by every university or educational organization on all types of publications produced by their faculty. We found 30,827 titles of books and chapters in books that were the products of research by scholars from all disciplines (natural science and social science) between 2000 and 2008. We excluded book chapters and included only books on social science by looking at the titles of the books, eliminating those that were obviously not on social science topics, for example: *Pediatric Orthopedics*, *Clinical Engineering in Colombia*, or *Stratigraphical and Sedimentological Constraints in Western Colombia: Implications for the Evolution of the Caribbean Plate*. When the title did not offer substantive information about the content of the book (e.g. *The Jaguar Agony*, or *La Fleur Du Café*) we looked for more information about the book on the Internet and in the Colciencias database. The final number of books published in social science from 2000 to 2008 was 3,691.

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<sup>5</sup> No comparable database was available for Argentina or Peru.

We categorized the books by publisher and found that 986 (26%) did not report the publisher. From those books that did report the publisher, we concluded that Universidad Nacional, Pontificia Universidad Javeriana, Universidad del Externado, Universidad de los Andes, Universidad de Antioquia and Universidad del Valle were the leading publishers of social science in Colombia (see Table 1). Although our sample does not match perfectly the distribution in the Colciencias database, we used this distribution as a guide to determine the proportion of books included in our sample from each of the main university presses. Moreover, we included in our sample books from several organizations that are not universities, and thus are not included in the Colciencias database, yet are conventionally seen as playing an agenda setting role in the social sciences in Colombia, such as Fedesarrollo and Centro de Investigacion y Educacion Popular (CINEP).

*Peru:* The data set consists of 168 books published between 2000-2006. Based on interviews with Peruvian social scientists, we determined that the five most important social science publishers in Peru are: Centro de Estudios de Promoción y Desarrollo (DESCO); Instituto de Estudios Peruanos (IEP); Pontificia Universidad Católica del Perú (PUCP); Universidad del Pacífico; and Universidad Nacional Mayor de San Marcos (UNMSM). All books published in anthropology, economics, political science, and sociology were coded on 18 variables. The data set does not include all social science books published in Peru during 2000-2006, nor does it include all books published by these five institutions during this period. Still, the data set encompasses a large sample of the output of the major social science presses in Peru.

### Coding of Variables

*Foreign Funding:* This is a categorical variable that takes the value of 1 when the book is funded exclusively by domestic organizations; 2 when it is funded mostly by domestic organizations; 3 when it is funded by an equal number of domestic and foreign organizations; 4 when it is funded mostly by foreign organizations; and 5 when it is funded exclusively by foreign organizations. The variable is based on a measure of the number of funding *institutions* of each type (i.e., foreign, domestic public, domestic private) associated with each book. We do not measure the actual amount of funding from each of these sources because this information is not generally reported in the books.

*Foreign Training:* This is a dummy variable that takes the value of 1 when the author of the book obtained her highest degree outside her country of origin and 0 otherwise.

*Level of Education:* This variable takes the value of 4 when the highest educational level of the book's author is high school, 3 when it is college, 2 when it is Master and 1 when it is PhD.

*Single Author:* This is a dummy variable that takes the value of 1 when the book is authored by a single person and 0 otherwise.

*Foreign Author:* This is a dummy variable that takes the value of 1 when the author is a foreign person and 0 otherwise.

*Domestic Public Funding:* This is a dummy variable that takes the value of 1 when the book has funding from any domestic public source and 0 otherwise.

*National Science Foundation:* This is a dummy variable that takes the value of 1 when the book has funding from a National Science Foundation and 0 otherwise.

*Domestic Private:* This is a dummy variable that takes the value of 1 when the book has funding from any domestic private source and 0 otherwise

*Domestic Private Universities:* This is a dummy variable that takes the value of 1 when the book has funding from a domestic private university and 0 otherwise.

*Agencia:* This is a dummy variable that takes the value of 1 when the book has funding from *Agencia Nacional de Promoción Científica y Tecnológica* (National Agency for Scientific and Technological Promotion - Agencia) and 0 otherwise.

*CONICET:* This is a dummy variable that takes the value of 1 when the book has funding from *Consejo Nacional de Investigaciones Científicas y Técnicas* (National Scientific and Technical Research Council- CONICET) and 0 otherwise.

*Colciencias:* This is a dummy variable that takes the value of 1 when the book has funding from *Departamento Administrativo de Ciencia, Tecnología e Innovación* (Science, Technology and Innovation Administrative Department- Colciencias) and 0 otherwise.

*CONCYTEC:* This is a dummy variable that takes the value of 1 when the book has funding from the *Consejo Nacional de Ciencia, Tecnología e Innovación* (National Council for Science, Technology and Innovation - CONCYTEC) and 0 otherwise.

*Domestic Collaboration:* This is a dummy variable that takes the value of 1 when all the authors of the book have affiliations with domestic organizations (exclusively or partially) and 0 otherwise.

*North-South Collaboration:* This is a dummy variable that takes the value of 1 when some authors have affiliations with organizations in the Global North and others have affiliations in the Global South. It takes the value of 0 otherwise.

*Public Universities:* This is a dummy variable that takes the value of 1 when the book has funding from a domestic public university and 0 otherwise.

*Geographical Scope of Research:* This is a dummy variable that takes the value of 1 when the book focuses on multiple countries, either including or excluding the home country (that is, Argentina, Colombia or Peru, depending on the case) and 0 when the book focuses only on the home country.

*Policy Targeting:* This variable takes the value of 1 if the book contains explicit recommendations aiming to shape public policy and 0 otherwise.

### **Top Funding Institutions in Argentina, Colombia and Peru**

Tables 1-3 below list the top funding institutions by country based on our bibliometric database.

**Table 1. Top Funding Institutions in Argentina**

Institution	Country	% of Books Funded
Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET)	Argentina	17
Agencia Nacional de Promoción Científica y Tecnológica (ANPCyT)	Argentina	9
Universidad de Buenos Aires Ciencia y Tecnología (UBACyT)	Argentina	9
Universidad Nacional de Quilmes	Argentina	4
Fundación Antorchas	Argentina	4
Universidad de Buenos Aires	Argentina	4
Universidad Nacional de la Plata	Argentina	4
Fundación OSDE	Argentina	3
Secretaría de Ciencia y Tecnología (Ministerio de Educación)	Argentina	2
Universidad Nacional de General Sarmiento	Argentina	2
Gobierno de la Ciudad Autónoma de Buenos Aires	Argentina	1
Ministerio de Educación, Argentina	Argentina	1
Consejo Latinoamericano de Ciencias Sociales - CLACSO	IO	3
UN-PNUD	IO	2
UNESCO	IO	2
Banco Interamericano de Desarrollo	IO	1
Comparative Research Programme on Poverty - CROP	IO	1
Fondo de Población de las Naciones Unidas	IO	1
Agencia Sueca para el Desarrollo Internacional - ASDI	Sweden	9
FORD Foundation	United States	5
Centro Internacional de Investigaciones para el Desarrollo (IDRC)	Canada	2
Fundación Konrad Adenauer	Germany	2
Social Science Research Council (SSRC)	United States	2
Rockefeller Foundation	United States	1
Agencia Noruega de Cooperación para el Desarrollo (NORAD)	Norway	1
Guggenheim Foundation	United States	1
No funding acknowledged	*	24

**Notes.** International organization (IO).

**Table 2. Top Funding Institutions in Colombia**

Institution	Country	% of Books Funded
Universidad Nacional de Colombia	Colombia	24
No funding acknowledged	*	19
Instituto Colombiano para el Desarrollo de la Ciencias y la Tecnología	Colombia	12
Universidad de los Andes	Colombia	9
Pontificia Universidad Javeriana	Colombia	9
Universidad del Rosario	Colombia	7
Fundación Konrad Adenauer	Germany	4
Universidad Externado de Colombia	Colombia	5
Banco de la República	Colombia	3
Universidad de Antioquia	Colombia	3
Centro de Investigación y Documentación Sobre America Latina	France	3
FORD Foundation	United States	3
Banco Interamericano de Desarrollo	IO	3
Alto Comisionado de las Naciones Unidas Para los Refugiados	IO	2
USAID	United States	2
Instituto Francés de Estudios Andinos	France	2
Instituto Colombiano de Antropología e Historia	Colombia	2
Centro de Investigación y Educación Popular	Colombia	2
Instituto Colombiano para la Educación en el Exterior	Colombia	1
Fundación Social	Colombia	1
Universidad del Valle	Colombia	1
Universidad del Norte	Colombia	1
Ministerio de Cultura de Colombia	Colombia	1
Instituto para la Investigación y la Preservación del Patrimonio Cultural y Natural del Valle del Cauca	Colombia	1
Fundación Tropenbos - Colombia	Colombia	1
Fundación para la Educación Superior y el Desarrollo	Colombia	1
Corporación Observatorio del caribe Colombiano	Colombia	1
Asociación Nacional de Instituciones Financieras	Colombia	1
Fundación Friedrich Ebert Stiftung en Colombia	Germany	1
Universidad de Cadiz	Spain	1
Organización Internacional para las Migraciones (OIM)	IO	1
Embajada de los Estados Unidos	United States	1
Consejo Británico	Britain	1
UN-PNUD	IO	1
Novib (Oxfam Netherland)	Netherland	1
London School of Economics	Britain	1
Centro Internacional de Investigaciones para el Desarrollo (IDRC)	Canada	1

**Notes.** International organization (IO).

**Table 3. Top Funding Institutions in Peru**

Institution	Country	% of Books Funded
Ford Foundation	United States	12
Universidad Católica	Peru	12
Universidad de San Marcos	Peru	11
Rockefeller Foundation	United States	5
Cordaid	The Netherlands	4
International Development Research Center (IDRC)	Canada	4
Universidad del Pacífico	Peru	4
IEP	Peru	2
Inter-American Foundation (IAF)	United States	2
The Japan Center for Area Studies	Japan	2
The John D. and Catherine T. MacArthur Foundation	United States	2
MISEREOR: German Catholic Bishops' Organization for Development Cooperation	Germany	2
Social Science Research Council (SSRC)	United States	2
US Agency for International Development (USAID)	United States	2
US Department of Education Fulbright-Hays Doctoral Dissertation Fellowship	United States	2

**Table 4. Human Capital for Social Science Research in Argentina, Colombia, and Peru (%)**

Nationality				
	National	Foreign		
Argentina	94.3	5.3		
Colombia	90	9		
Peru	77.6	22.3		
Place of Training				
	Domestic Degree	Foreign Degree		
Argentina	57.8	42.1		
Colombia	39.5	60.4		
Peru	38.3	61.6		
Highest Degree				
	Phd	Master		
Argentina	49.5	21.8		
Colombia	45.8	36.3		
Peru	56.4	22.2		
Disciplinary Training				
	Political Science	Sociology	Economics	Anthropology
Argentina	9.7	23.9	14.7	5.2
Colombia	19.5	10.2	21.7	7.7
Peru	6.9	25.7	23.5	23.1
Gender				
	Female	Male		
Argentina	37.8	61.5		
Colombia	33.1	65.5		
Peru	24.1	75.8		

**Notes.** For Argentina there are a total of 292 books and 452 authors; for Colombia there are a total of 280 books and 473 authors; for Peru there are a total of 168 books and 257 authors for all books. Percentages are based on the number of authors with available information for each variable.

**Table 5. PhDs in Social Science (per 100.000 habitants)**

	PhDs	Total Population	PhDs per 100.000 habitants
<b>Argentina</b>	161	39105347	0.41
<b>Brazil</b>	890	188158438	0.47
<b>Chile</b>	34	16467256	0.20
<b>Colombia</b>	28	43704486	0.06
<b>Mexico</b>	689	104221361	0.66
<b>United States</b>	8576	298363000	2.87

**Notes.** Data for 2006. Data for Peru are not available. Source: Red de Indicadores de Ciencia y Tecnología.

**Table 6. Researchers by Employment Sector (as a percentage of total employment)**

		2000	2001	2002	2003	2004	2005	2006	2007
<b>Argentina</b>	Government	24.1	24.8	25.6	25.0	26.4	28.7	28.8	29.9
	Enterprises	9.7	9.4	8.9	8.9	10.0	9.6	9.2	8.6
	Higher Education	64.6	64.0	63.8	64.0	61.3	59.6	60.2	59.6
	Non-profit organizations	1.6	1.8	1.7	2.1	2.4	2.1	1.8	1.9
<b>Colombia</b>	Government	2.1	2.2	2.2	1.9	1.7	1.6	1.5	1.3
	Enterprises	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	Higher Education	85.8	85.9	86.0	86.5	87.0	87.9	88.6	89.5
	Non-profit organizations	11.5	11.4	11.2	10.9	10.7	9.9	9.4	8.6
<b>Peru</b>	Government	-	-	-	-	13.9	-	-	-
	Enterprises	-	-	-	-	45.8	-	-	-
	Higher Education	-	-	-	-	40.2	-	-	-
	Non-profit organizations	-	-	-	-	0.1	-	-	-

**Source:** Red de Indicadores de Ciencia y Tecnología. “17. Researchers by Employment Sector” in *Comparative Indicators* (accessed 08/20/2010).

**Table 7. Expenditure in Science and Technology (as a percentage of GDP).**

	2000	2001	2002	2003	2004	2005	2006	2007
<b>Argentina</b>	0.94%	0.90%	0.83%	0.87%	0.93%	0.99%	1.07%	0.12%
<b>Colombia</b>	0.43%	0.40%	0.43%	0.50%	0.55%	0.62%	0.57%	0.56%
<b>Peru</b>	1.41%	1.55%	1.51%	1.25%	-	-	-	-

**Notes.** Includes Science and Technology Activities (STA) and Research and Development activities (R&D). Source: Red de Indicadores de Ciencia y Tecnología. “5. Expenditure on S&T as a percentage of GDP” in *Comparative Indicators* (accessed 08/20/2010).

**Table 8. Expenditure in Science and Technology by Funding Source (as a percentage).**

			2000	2001	2002	2003	2004	2005	2006	2007
Argentina	STA	Government	70.8	73.2	70.4	66.3	61.0	64.3	66.5	68.2
		Enterprises	23.4	21.8	24.2	28.0	33.1	31.4	29.3	28.4
		Higher Education	2.0	2.0	1.8	1.3	2.1	1.4	1.4	1.3
		Non-profit organizations	2.0	1.7	2.5	2.7	2.1	2.0	2.0	1.4
		Foreign	1.8	1.2	1.2	1.6	1.6	0.9	0.8	0.7
	R&D	Government	70.7	74.3	70.2	68.9	64.5	65.3	66.9	67.6
		Enterprises	23.3	20.8	24.3	26.3	30.7	31.0	29.4	29.3
		Higher Education	2.5	2.4	2.3	1.3	2.0	1.4	1.4	1.4
		Non-profit organizations	1.9	1.3	1.9	2.2	1.7	1.5	1.6	1.1
		Foreign	1.6	1.2	1.2	1.4	1.1	0.8	0.8	0.6
Colombia	STA	Government	29.6	19.8	38.6	34.4	38.5	48.6	39.9	39.9
		Enterprises	49.3	56.0	36.2	39.6	40.2	35.8	42.0	42.6
		Higher Education	18.0	20.5	19.6	18.5	16.5	10.7	10.9	11.7
		Non-profit organizations	1.1	1.5	2.0	2.7	2.6	2.5	4.0	3.8
		Foreign	2.0	2.1	3.5	4.8	2.2	2.4	3.1	2.0
	R&D	Government	23.3	21.5	22.5	26.2	31.0	37.8	38.5	37.7
		Enterprises	29.8	30.9	29.1	25.3	26.2	27.2	28.0	27.2
		Higher Education	42.2	42.5	39.3	37.4	36.7	27.1	24.9	25.6
		Non-profit organizations	0.6	1.0	1.9	1.6	1.8	2.4	4.2	5.4
		Foreign	4.1	4.0	7.2	9.4	4.3	5.5	4.4	4.1

**Notes.** Includes Science and Technology Activities (STA) and Research and Development activities (R&D). Data for Peru are not available. Source: Red de Indicadores de Ciencia y Tecnología. “9. Expenditure on R&D by Funding Source” in *Comparative Indicators* (accessed 08/20/2010).

**Table 9. Differential Impact of Foreign Public/Foreign Private Funding**

	Foreign Public (1-0)	Foreign Private (1-0)	Geographic Scope (Outward- Oriented=1)	Geographic Scope (Outward- Oriented=1)	Policy	Policy
Foreign Public (1-0)			0.111*		-0.027	
			(-0.05)		(-0.03)	
Foreign Private (1-0)				-0.082		0.086
				(-0.06)		(-0.05)
Foreign Degree (1-0)	0.155*** (-0.04)	-0.132 (-0.08)	0.137* (-0.06)	0.182* (-0.08)	0.029 (-0.04)	0.04 (-0.06)
Academic Degree (1-4, 1=PhD)	0.016 (-0.03)	0.029 (-0.05)	0.069* -0.03	0.084 -0.04	0.008 -0.02	0.074 -0.04
Nationality (Foreign=1)	-0.007* (0)	0.08 (-0.08)	0.020*** (0)	0.13 (-0.08)	0.026*** (0)	0.001 (-0.07)
Single Author	0.019 (-0.04)	-0.044 (-0.06)	0.006 (-0.04)	0.043 (-0.05)	-0.027 (-0.03)	-0.063 (-0.05)
Argentina	-0.042 (-0.08)	-0.270*** (-0.07)	0.139 (-0.08)	0.187** (-0.07)	-0.088** (-0.03)	-0.014 (-0.05)
Colombia	-0.161* (-0.08)	-0.076 (-0.07)	0.133 (-0.07)	0.149* (-0.06)	0 (.)	0 (.)
Edited			0.328*** (-0.05)	0.402*** (-0.06)	-0.022 (-0.03)	-0.072 (-0.05)
Foreign Public (1-0)			0.111* (-0.05)		-0.027 (-0.03)	
Foreign Private (1-0)				-0.082 (-0.06)		0.086 (-0.05)
<b>Constant</b>	0.187 (-0.1)	0.753*** (-0.16)	-0.215* (-0.215)	-0.359* (-0.17)	0.1 (0.1)	-0.014 (-0014)

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<sup>1</sup> See Dezelay and Garth (2002).

<sup>2</sup> See the essays in Heller, Rueschemeyer and Snyder (2009) on the relevance of Cardoso and Faletto (1979) for understanding contemporary globalization.

<sup>3</sup> In Argentina, a questionnaire was distributed electronically across the entire country in August 2008 via a list-serve of the *Consejo Nacional de Investigaciones Científicas y Técnicas (National Scientific and Technical Research Council- CONICET)* consisting of approximately 1200 researchers. 253 completed surveys were received, for a response rate of 22%. In Colombia, the questionnaire was distributed in July 2008 to social scientists affiliated with the following universities in Bogota: Pontificia Universidad Javeriana; Universidad Externado de Colombia; Universidad Nacional de Colombia; Universidad de Los Andes; and Universidad del Rosario. 75 completed surveys were received. In Peru, questionnaires were distributed in July 2007 to all the approximately 200 social scientists affiliated with five leading universities and think-tanks in Lima: Centro de Estudios de Promoción y Desarrollo (DESCO); Instituto de Estudios Peruanos (IEP); Pontificia Universidad Católica del Perú (PUCP); Universidad del Pacífico; and Universidad Nacional Mayor de San Marcos (UNMSM). 52 completed surveys were received, for a response rate of 26%.

<sup>4</sup> For a more detailed analysis of foreign funding and social science in Peru that draws on some of the bibliometric and survey data analyzed here, see Bay, Perla and Snyder (2015).

<sup>5</sup> The role of private domestic funding in Argentina is even weaker than in Peru. Data compiled by the *Red de Indicadores de Ciencia y Tecnología* (Network of Science and Technology Indicators - RICYT), which includes the natural sciences in addition to the social sciences and uses sources and measures quite different from ours, suggest patterns of funding in Argentina and Colombia similar to the ones revealed by our data (data from Peru are not

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available in this RICYT data set). See Appendix, Table 8. These convergent patterns across different data sets increase our confidence in the validity of our findings.

<sup>6</sup> See Conicet (2006), p. 42.

<sup>7</sup> One explanation for the presence of two national science agencies in Argentina involves the intent of the government of Carlos Menem (1989-1999) to reduce government spending and undercut CONICET by replacing it with Agencia, which would follow the supposedly more efficient “American Model” of funding research projects instead of researchers. This initiative failed, and CONICET continued to exist in parallel alongside the new agency. Thus, an attempt to reduce the role of the state in funding social science ironically led to its expansion. See: Interviews with Argentine academics.

<sup>8</sup> See Appendix Tables 1-3, which list the top funding institutions in Argentina, Colombia and Peru, for cross-national data on the magnitude of the roles played by the different national science agencies.

<sup>9</sup> Only 2 (1.2%) of the 168 books from Peru in our sample report receiving support from CONCYTEC.

<sup>10</sup> One example of this practice is CONICET’s “Becas Reinscripción,” a two-year scholarship for young post-doctorates with the objective of repatriating foreign-trained Argentine scholars. Retrieved August 19th, 2010 from: <http://www.conicet.gov.ar/webfiles/2010/07/Basesactualizadas15-7-10REINS.pdf>. Another example is Colombia’s COLFUTURO, a joint public-private initiative created in 1991 aimed at repatriating foreign educated Colombians by forgiving a large share of their student loans if they return home. Retrieved August 24th, 2010 from: <http://www.colfuturo.org/>

<sup>11</sup> See Ubfal and Maffioli (2011) for a study of how government funding for research in Argentina affects collaboration, including foreign-domestic collaboration.

<sup>12</sup> We use the term *outward-oriented*, rather than *comparative*, because (1) comparative studies are not necessarily cross-national, they may employ subnational comparisons in a single country (Snyder 2001); and (2) cross-national studies are not necessarily comparative. Indeed, much of the outward-oriented research in our data consists of edited volumes that tend to offer “parallel” studies of a common theme across multiple countries, without making what are conventionally considered comparisons across the cases.

<sup>13</sup> For an example of the political opposition that can be faced, even in a rich country, by public officials who fund research lacking perceived public relevance, see the recent efforts by some members of the US Congress to cut funding for the NSF’s political science program. See: Sides, John. (2015) Why Congress should not cut funding to the social sciences. June 10. Blog. Retrieved July 26th, 2016 from: <https://www.washingtonpost.com/blogs/monkey-cage/wp/2015/06/10/why-congress-should-not-cut-funding-to-the-social-sciences/>

<sup>14</sup> Coding details for each variable are provided in the Appendix.

<sup>15</sup> We also analyze private and public foreign funding separately and find that the signs remain positive, although the coefficients are not significant for private funding. See Appendix Table 9.

<sup>16</sup> As noted, we only have information on the number of funding sources for each book in our data set, not the actual *amounts* received from each source. So, it may be the case that North-South collaboration, while associated with a reduction in the *number of foreign funding sources*, may actually produce *more foreign funding*, but from a smaller number of sources. Perhaps northern collaborators have strong ties to and credibility with particular sources, which results in larger contributions from one or two funders instead of smaller contributions from many foreign donors.

<sup>17</sup> This likely reflects the fact that CONCYTEC devotes most of its resources toward supporting the hard sciences, not the social sciences.

<sup>18</sup> The table only shows the full model. Yet this relationship is significant across different model specifications, including one that controls for foreign training. The result also persists for foreign public funding, but the sign changes. We find no statistical significance for private foreign funding.

<sup>19</sup> We also tested this relationship focusing just on domestic private universities, and it produced the same result.

<sup>20</sup> We omit Peru in this section because the bibliometric dataset does not include information on policy targeting for books published in Peru.

<sup>21</sup> We also consider the effect of foreign funding on policy recommendations and find a positive, though not statistically significant, relationship, only when private foreign funding is considered separately.

<sup>22</sup> See Chernhya, Sierra and Snyder (2012) for a more extensive analysis of these survey data.

<sup>23</sup> In 2010, GDP per capita was \$5,056 in Peru, \$6,251 in Colombia, and \$11,199 in Argentina. See: World Bank, National Accounts Data. Retrieved July 26th, 2016 from: <http://data.worldbank.org/indicator/NY.GDP.PCAP.CD>

<sup>24</sup> Indeed, the national sector of researchers likely relies not only on domestic public funding for research, but also on domestic public *employment*. See Table 6 in the Appendix, which highlights the large average share (25%) of researchers employed by the public sector in Argentina, compared to the far smaller share (2%) employed by the

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public sector in Colombia. This difference probably reflects the larger role of public universities in Argentina than in Colombia.

<sup>25</sup> See Table 4 in the Appendix.

<sup>26</sup> See Tables 4 and 5 in the Appendix for comparative data on doctoral training in Argentina and Colombia.

<sup>27</sup> Argentina, which has a larger knowledge production sector in terms of several measures, is perhaps best regarded as a “medium-large” case. The role of state sponsorship is notable among the large and medium-large Latin America cases, that is, Brazil, Mexico and Argentina.

<sup>28</sup> See Ubfal and Maffioli (2011). However, getting data about which research proposals receive funding and which do not requires a level of access that may be difficult to achieve across more than a small number of funding sources. It may therefore be hard to scale up this kind of research to the national and, especially, cross-national level. Moreover, even studies that mitigate selection bias by considering proposals that receive funding together with those that did not, still face potential problems of bias, because they can observe neither proposals by researchers who considered applying for the funding yet did not, nor the set of projects by researchers who did not even consider applying.