Economics Bulletin

Volume 45, Issue 1

Global sourcing patterns, domestic institutions, and commercial arbitration environments

Se Mi Park
University of Maryland, Baltimore County

Abstract

This paper empirically examines how the quality of national arbitration institutions affects global sourcing patterns of intermediate inputs. Higher-quality arbitration institutions provide better enforcement of an arbitral award and easier access to commercial arbitration. I find that global sourcing shrinks when transactions are more dependent on relationships between traders. This negative impact is better mitigated when each source and destination country's arbitration institutions are of higher quality.

I thank Tanya Primiani at the World Bank Group for sharing the underlying survey questions and responses for the Arbitrating Commercial Disputes indicators. No funding was received for conducting this study. I have no relevant financial or non-financial interests to disclose.
Citation: Se Mi Park, (2025) "Global sourcing patterns, domestic institutions, and commercial arbitration environments", *Economics Bulletin*, Volume 45, Issue 1, pages 495-506
Contact: Se Mi Park - smpark@umbc.edu.
Submitted: March 01, 2025. **Published:** March 30, 2025.

1 Introduction

As a private procedure for resolving disputes, arbitration is popularly used by firms. A survey from the School of International Arbitration at Queen Mary University of London (2008) shows that 88% of the survey respondents had used international arbitration.[1] This popularity is rooted in the fact that arbitration provides a binding and final resolution with the issuance of an arbitral award while it allows firms to keep their disputes from being revealed to the public. Parties are permitted to choose an arbitrator who determines an arbitral award using her expertise in the technical matter involved in their dispute. As long as a respondent voluntarily pays the award, a claimant can recover a financial loss incurred by the respondent's breach of contract.

Since an arbitral award is not always voluntarily paid by a respondent, how much a claimant collects from a resulting arbitral award depends on how well local institutions—including laws and policies—of both claimant's and respondent's countries support the enforcement of an arbitral award. As Park (2024) documents with some legal cases, a claimant can confirm an award made in international arbitration and confiscate the respondent's assets when her country's institutions support the confirmation of the award (Atkins et al., 2015). A respondent's local court can nullify an arbitral award made in favor of a foreign claimant unless the respondent's domestic institutions constrain such a court's behavior. The institutions of the countries involved in a dispute also regulate how flexibly arbitrations can proceed. For example, some countries' institutions allow parties to choose the seat of arbitration and applicable procedural rules. Some countries have online arbitration platforms, allowing parties to resolve their disputes virtually. As arbitration processes are more easily adapted to parties' situations, arbitration becomes a more accessible option for them to resolve a dispute.

This paper looks at domestic institutions that govern commercial arbitration proceedings that hinge on a contract made by parties engaged in a dispute. Such institutions are referred to as arbitration institutions, henceforth. The quality of arbitration institutions is considered to be higher when they provide a more arbitration-friendly environment seeking better enforcement of an arbitral award and easier access to arbitration. This paper relates the quality of arbitration institutions to global sourcing patterns of intermediate inputs characterized by the industry they belong to in terms of relationship-specificity, indicating to what degree firms' transactions are subject to their own relationship within an industry. Since the institutions in both traders' countries shape the effectiveness of arbitration proceedings regardless of who reneges on a contract, both source and destination countries' qualities of arbitration institutions are expected to affect a firm's decision on whether to engage in global sourcing. Taking this into consideration, I examine how relationship-specificity affects global sourcing and how this impact varies by each source and destination country's quality of arbitration institutions.

The analysis is based on the trade flows of intermediate inputs in the 2010 World Input-Output Database (WIOD). To measure the quality of arbitration institutions, I use the World Bank Group's 2010 Arbitrating Commercial Disputes (ACD) indicators developed with legal experts' responses to the survey questions that exclusively cover commercial arbitration. These indicators measure how well a country's institutions support the enforcement of an arbitral award. They also measure how well a country's institutions guarantee easy access to arbitration by creating a flexible and effective arbitration environment. To measure industry-specific relationship-specificity, I use

[1] This global survey was conducted with 82 online respondents and 47 interviewees.

Rauch's (1999) classification on internationally traded goods. As in Nunn (2007), if an input is neither traded on an organized exchange nor reference priced, the input is considered to require a relationship-specific transaction. As relationship-specificity rises, an input is more subject to firms' breach of contract due to a lower possibility of finding another trading partner through an organized, thick market, raising transaction uncertainty.

The empirical results—derived from observations within 14 manufacturing industries and 22 source and destination countries—show that higher relationship-specificity tends to decrease global sourcing. This finding implies that firms are more hesitant to engage in global sourcing as they encounter fewer outside options to recover a financial loss when their contract is not honored. While taking into account various factors that can affect global sourcing patterns, including different factor intensities other than relationship-specificity and different types of domestic institutions other than arbitration institutions, I find that this negative effect of relationship-specificity is mitigated better as each source and destination country's quality of arbitration institutions rises. That is, institutions of all countries involved in a trade determine how well transaction risk is reduced, which is in line with Berkowitz et al. (2006) and Park (2024). To the best of my knowledge, this result is the first to empirically show the importance of establishing high-quality arbitration institutions in facilitating global sourcing.

As Park (2024) points out, institutions have rarely been discussed in sourcing framework that takes the property rights approach, in which an investment is typically assumed to be non-verifiable (Grossman and Hart, 1986; Hart and Moore, 1990; Antràs, 2003; Antràs and Helpman, 2004; Antràs and Chor, 2013; Schwarz and Suedekum, 2014; Alfaro et al., 2019). Since this assumption implies non-contractibility, the property rights approach leaves no room for studying contract-enforcing institutions. This paper fills this gap by accounting for the fact that an investment value can be verified by an arbitrator who has an expertise in the technical matter related to a dispute, and that higher-quality arbitration institutions provide firms with easier access to arbitration and better enforcement of an arbitral award. When firms expect that they would be able to use arbitration more easily when a dispute occurs and that they would have to pay more of a resulting arbitral award when they renege on a contract, they are more likely to fulfill their contractual obligations. The better contract enforcement means lower transaction uncertainty, thereby attracting firms to global sourcing. Exploiting country-level variation in the quality of arbitration institutions, I provide the novel empirical finding that in global sourcing, higher-quality arbitration institutions better mitigate trade uncertainty stemming from relationship-specific transactions.

This paper complements empirical research on arbitration-related policies and international transactions, including Myburgh and Paniagua (2016) and Gil-Pareja et al. (2020). Whereas the literature typically focuses on a specific policy such as whether a country ratified the Convention on the Recognition and Enforcement of Foreign Arbitral Awards (New York Convention), this paper looks at a set of domestic rules governing commercial arbitration proceedings. Whether a country is a member of the New York Convention is a part of these rules. While controlling for trading countries' other types of institutions that support contract enforcement, this paper shows that domestic arbitration rules collectively mitigate international transaction risk. Furthermore, while borrowing the view of institutions as a mitigator of transaction risk from the studies of institutional comparative advantage (Berkowitz et al., 2006; Levchenko, 2007; Nunn, 2007; Costinot, 2009; Park, 2021, 2023), this paper takes into account heterogeneous degrees of transaction risk between industries. The transaction risk is represented by relationship-specificity, which originates from Williamson's (1975,1979) concept of transaction-specific investments.

This paper builds on Park's (2024) theoretical examination of how a commercial arbitration regime affects a firm's sourcing mode decision between domestic and global. While she defines the quality of arbitration institutions based on the enforceability of an arbitral award, this paper considers not only the award enforceability but also the accessibility of arbitration, which is in accordance with what constitutes the ACD indicators. Despite the different definitions of the arbitration institutional quality, both papers demonstrate that the uncertainty of international trade arising from relationship-specific transactions is mitigated by source and destination countries' high-quality arbitration institutions.

The remainder of this paper is as follows. Section 2 specifies estimation equations. Section 3 describes data and measures, and Section 4 discusses results. Section 5 concludes.

2 Empirical Specification

I first examine how relationship-specificity affects global sourcing by using the following estimation equation:

$$lnM_{ij}^{z} = \delta_0 + \delta_1\theta^{z} + \delta_2 r^{z} + \delta_3 s^{z} + \delta_4 k^{z} + \delta_5 d^{z} + \gamma_{ij} + u_{ij}^{z}, \tag{1}$$

where superscript z denotes an input industry, and subscripts i and j ($i \neq j$) denote a source and destination country, respectively. Variable M_{ij}^{z} indexes global sourcing, measuring the value of input z's trade flows from i to j. Variable θ^{z} is a main variable, indicating the relationship-specificity of input z. Variables r^{z}, s^{z}, k^{z}, and d^{z} denote the intensities of raw materials, skilled labor, capital, and dependence on external finance, respectively. Variable γ_{ij} indexes the fixed effects of country pairs as a permutation, capturing not only characteristics shared between trading partners but also heterogeneous importer and exporter features.

Then, I estimate how the effect of relationship-specificity on global sourcing depends on the qualities of arbitration institutions of countries involved using the following equation:

$$lnM_{ij}^{z} = \beta_0 + \beta_1\theta^{z} lnARB_j + \beta_2\theta^{z} lnARB_i + CONTROLS + \gamma_{ij} + \gamma^{z} + \varepsilon_{ij}^{z}, \tag{2}$$

where $lnARB_j$ is a key variable, denoting the natural log of country j's quality of arbitration institutions. A set of control variables, $CONTROLS$, has the following three types of i-z and j-z level interaction terms: i) the interaction terms of θ^{z} and other country-specific variables (comprising the natural logs of rule of law, informal institutions, skilled labor, capital abundance, GDP, population, and financial development); ii) the interaction terms of $lnARB$ and other industry-specific variables (comprising r^{z}, s^{z}, k^{z}, and d^{z}); and iii) the interaction terms of factor intensities and their corresponding factor abundances (such as s^{z} multiplied by the natural log of skilled labor abundance). Variable γ^{z} indexes industry fixed effects.

Table 1 presents the definitions of the variables used for empirical analysis. In each of the regressions expressed in equations (1) and (2), the standard errors are clustered at the country-pair level as a combination, not a permutation.

Table 1: Variable definition

Variable	Definition
$ln\, M_{ij}^{z}$	Ln country j's sourcing of intermediate input z from country i
θ^{z}	Relationship-specificity of industry z
r^{z}	Raw material intensity of industry z
s^{z}	Skilled labor intensity of industry z
k^{z}	Capital intensity of industry z
d^{z}	Dependence on external finance of industry z
$lnARB_{j}$	Ln quality of arbitration institutions of country j
$lnROL_{j}$	Ln rule of law of country j
$lnINF_{j}$	Ln informal institutions of country j
$lnHC_{j}$	Ln skilled labor of country j
lnK_{j}	Ln capital per worker of country j
$lnGDP_{j}$	Ln real GDP of country j
$lnPOP_{j}$	Ln population of country j
$lnFD_{j}$	Ln financial development of country j
$lnLAND_{j}$	Ln land per labor force of country j

3 Data and Measures

This section discusses data sources and measures for the main variables. For the other variables, see Online Appendix A.

3.1 Trade of Intermediate Inputs

Data on trade flows of intermediate inputs are from the 2010 World Input-Output Database (WIOD), constructed by Timmer et al. (2015). I look at the flows of intermediate inputs, not the flows of goods traded for a final use. The dataset covers 35 industries and 40 countries.

3.2 Quality of Arbitration Institutions

The measure of the quality of arbitration institutions is based on the Arbitrating Commercial Disputes (ACD) indicators of the World Bank Group (2010), which exclusively cover commercial arbitration. Developed based on the survey responses from legal experts such as law professors and commercial lawyers, the ACD indicators measure how favorably local laws and practices act toward commercial arbitration proceedings. The ACD indicators consist of the following three indexes: the index of the strength of laws, the index of the ease of arbitration process, and the index of the extent of judicial assistance. Online Appendix Table A.1 lists the underlying survey questions for each of these indexes, which are from the World Bank Group.

An example of a question used to develop the strength of laws index asks whether a country enacted a specific statute on commercial arbitration. When the answer is "Yes," this index rises. An example of a question used to develop the ease of arbitration process index asks whether parties are

Table 2: Quality of arbitration institutions

Country	Quality	Country	Quality
Austria	87.37	Japan	79.65
Brazil	62.58	Mexico	72.15
Bulgaria	75.44	Poland	78.08
Canada	89.54	Romania	84.41
China	77.07	Russia	74.76
Czech Republic	83.89	Slovakia	89.07
France	90.21	South Korea	82.32
Greece	77.37	Spain	82.93
India	69.85	Turkey	75.97
Indonesia	72.82	UK	94.00
Ireland	83.42	USA	80.70

allowed to freely choose arbitrators' professional qualifications, nationality, and gender. When the answer is "Yes," this index rises. An example of a question used to develop the extent of judicial assistance index asks whether the recognition or enforcement of a foreign arbitral award may be denied by a local court. When the answer is "No," this index rises.

To measure the quality of arbitration institutions, I average the three indexes. Table 2 shows this quality for each of the 22 countries used for empirical analysis.

3.3 Relationship-Specificity

Table 3: Relationship-specificity

ISIC	ISIC description	θ^z	ISIC	ISIC description	θ^z
29	Machinery, not elsewhere classified	0.99	25	Rubber and plastics	0.64
34t35	Transport equipment	0.98	20	Wood and products of wood and cork	0.59
30t33	Electrical and optical equipment	0.95	21t22	Pulp, paper, printing and publishing	0.54
19	Leather, leather products and footweat	0.92	27t28	Basic metals and fabricated metal	0.50
36t37	Mfg., not elsewhere classified; recycling	0.89	24	Chemicals and chemical products	0.30
26	Other non-metallic mineral	0.83	23	Coke, refined petroleum and nuclear fuel	0.23
17t18	Textiles and textile products	0.72	15t16	Food, beverages and tobacco	0.23

Relationship-specificity for industry z, θ^z, is measured based on the commodity classification in Rauch (1999). I use the 2007 version of Rauch's liberal classification, which minimizes the number of commodities classified as differentiated. Following Nunn (2007), if an input is neither traded on organized exchanges nor reference priced, the input is considered an input for which a relationship-specific transaction is required.

Rauch's data are organized by the 4-digit Standard International Trade Classification (SITC) revision 2, and the WIOD is listed in the 1-2-digit International Standard Industrial Classification (ISIC) revision 3. To link the two datasets, I construct a mapping between the SITC revision 2 and ISIC revision 3 codes using the concordance between SITC revision 2 and SITC revision 3, given

by the United Nations Statistics Division, and the concordance between SITC revision 3 and ISIC revision 3, given by Eurostat.

Based on this mapping, relationship-specificity is calculated as the number of SITC codes representing the industries for which a relationship-specific transaction is required divided by the total number of SITC codes for each 1-2-digit ISIC revision 3 industry code. Table 3 shows relationship-specificity for the 14 manufacturing industries used for empirical analysis.

4 Results

Table 4: Factor intensity and global sourcing

Dependent variable is lnM^z_{ij}									
θ^z	r^z	s^z	k^z	d^z	i-j FE	N of i	N of j	Clusters	Obs	R-sq
-2.371***	-2.542***	5.461***	0.441***	2.836***	Y	40	40	780	21,526	0.728
(0.059)	(0.143)	(0.302)	(0.047)	(0.090)						
-2.369***	-2.279***	7.924***	0.682***	2.377***	Y	22	22	231	6,425	0.656
(0.112)	(0.184)	(0.494)	(0.083)	(0.145)						

Notes: See Table 1 for variable definition. Cluster-robust standard errors are in parentheses. Estimates for a constant and fixed effects are not reported. ***, **, and * indicate the estimates that are significant at the levels of 1%, 5%, and 10%, respectively.

Table 4 shows the estimation result derived based on equation (1). With 40 countries existing in the WIOD, the estimated coefficient on θ^z is negative and statistically significant. With the restricted data comprising 22 countries for which the data on arbitration institutional quality are available, the estimate remains similar and is still statistically significant. A higher relationship-specificity means that trading firms face a higher risk of breach of contract. This is because as their transaction is more locked into their own relationship, they have fewer opportunities to recover a financial loss in case contractual duties are not fulfilled. Thus, as relationship-specificity rises, firms are less likely to engage in trade ex-ante, captured by the negative estimates for θ^z.

The estimated coefficient on r^z is also negative, meaning that global sourcing tends to fall as raw materials are more intensively used for input industries. Conversely, the estimated coefficients on s^z, k^z, and d^z are positive, meaning that global sourcing tends to rise as skilled labor, capital, and external finance are more intensively used for input industries. Particularly, the estimated coefficient on s^z is the greatest, implying that a lower price for skilled labor in another country is an important incentive for firms to use global sourcing.

Table 5 presents the estimates for equation (2), derived using all control variables. Recall that the subscripts i and j denote a source and destination country, respectively. Let us start with the main estimates, reported in the "Main" section of the table. In column (1), the estimates for $\theta^z lnARB_i$ and $\theta^z lnARB_j$ are positive and statistically significant, meaning that a firm's reluctance to engage in international trade arising from relationship-specific transactions is better mitigated by source and destination countries' higher-quality arbitration institutions. Column (2) shows that the estimate for $\theta^z lnARB_i lnARB_j$ is positive and statistically significant, implying that a country-pair's higher-quality arbitration institutions, as a whole, more effectively reduce such reluctance.

Table 5: Quality of arbitration institutions and global sourcing

Variable		Dependent variable is lnM_{ij}^{z}			
		(1)	(2)	(3)	(4)
A. Main	$\theta^z lnARB_j$	5.517***		4.740***	
		(1.590)		(0.973)	
	$\theta^z lnARB_i$	4.770***			4.052***
		(1.475)			(1.103)
	$\theta^z lnARB_i\, lnARB_j$		1.159***		
			(0.273)		
B. Control group I	$\theta^z lnROL_j$	1.315*	1.375*	1.167**	
		(0.745)	(0.731)	(0.452)	
	$\theta^z lnROL_i$	5.913***	5.871***		5.746***
		(0.813)	(0.799)		(0.585)
	$\theta^z lnINF_j$	-0.850	-0.775	0.638	
		(0.964)	(0.941)	(0.705)	
	$\theta^z lnINF_i$	3.504***	3.447***		3.823***
		(0.986)	(0.985)		(0.681)
	$\theta^z lnHC_j$	0.189	0.193	-0.779	
		(1.395)	(1.396)	(0.978)	
	$\theta^z lnHC_i$	1.247	1.243		1.151
		(1.248)	(1.249)		(0.884)
	$\theta^z lnK_j$	-0.955**	-0.944**	-0.745***	
		(0.451)	(0.449)	(0.273)	
	$\theta^z lnK_i$	2.019***	2.011***		1.645***
		(0.413)	(0.414)		(0.288)
	$\theta^z lnGDP_j$	1.190*	1.186*	0.906**	
		(0.682)	(0.681)	(0.419)	
	$\theta^z lnGDP_i$	-3.429***	-3.426***		-3.178***
		(0.710)	(0.711)		(0.506)
	$\theta^z lnPOP_j$	-1.042	-1.040	-0.745*	
		(0.687)	(0.685)	(0.424)	
	$\theta^z lnPOP_i$	3.921***	3.920***		3.575***
		(0.699)	(0.699)		(0.500)
	$\theta^z lnFD_j$	-0.730**	-0.743**	-0.722***	
		(0.293)	(0.293)	(0.179)	
	$\theta^z lnFD_i$	-2.213***	-2.203***		-2.052***
		(0.242)	(0.243)		(0.172)
C. Control group II	$r^z lnARB_j$	-0.487	-0.740	1.295	
		(1.869)	(1.779)	(1.352)	
	$r^z lnARB_i$	2.672	2.852		2.757**
		(1.758)	(1.758)		(1.338)
	$s^z lnARB_j$	-4.968	-4.502	-7.783**	

		(5.123)	(5.063)	(3.134)	
	$s^z lnARB_i$	-34.370***	-34.696***		-32.540***
		(5.785)	(5.694)		(3.999)
	$k^z lnARB_j$	-2.066*	-2.090*	-2.023***	
		(1.136)	(1.132)	(0.627)	
	$k^z lnARB_i$	0.268	0.285		-0.067
		(1.328)	(1.335)		(0.935)
	$d^z lnARB_j$	-3.962**	-4.062***	-3.855***	
		(1.537)	(1.534)	(1.077)	
	$d^z lnARB_i$	11.322***	11.392***		8.952***
		(1.567)	(1.574)		(1.040)
D. Control group III	$r^z lnLAND_j$	0.021	0.021	0.013	
		(0.126)	(0.126)	(0.087)	
	$r^z lnLAND_i$	0.945***	0.945***		1.053***
		(0.132)	(0.132)		(0.100)
	$s^z lnHC_j$	4.092	3.966	4.462**	
		(3.105)	(3.100)	(1.942)	
	$s^z lnHC_i$	21.588***	21.677***		20.816***
		(3.106)	(3.090)		(2.068)
	$k^z lnK_j$	0.255*	0.257*	0.223**	
		(0.144)	(0.144)	(0.091)	
	$k^z lnK_i$	-0.178	-0.179		-0.088
		(0.132)	(0.132)		(0.093)
	$d^z lnFD_j$	0.110	0.109	0.169	
		(0.182)	(0.181)	(0.110)	
	$d^z lnFD_i$	0.448**	0.449**		0.672***
		(0.173)	(0.173)		(0.120)
i-*j* FEs		Y	Y	Y	Y
z FEs		Y	Y	N	N
i-*z* FEs		N	N	Y	N
j-*z* FEs		N	N	N	Y
N of *i*		22	22	40	22
N of *j*		22	22	22	40
Observations		6,425	6,425	11,852	11,911
N of clusters		231	231	627	627
R-squared		0.782	0.782	0.891	0.833

Notes: See Table 1 for variable definition. Cluster-robust standard errors are in parentheses. Estimates for a constant and fixed effects are not reported. ***, **, and * indicate the estimates that are significant at the levels of 1%, 5%, and 10%, respectively.

To employ more variation in trade flows, in column (3), I focus on examining how a destination country's arbitration institutional quality affects global sourcing by including source country-industry pair fixed effects. This approach allows for utilizing variation in trade flows from all 40 source countries existing in the WIOD to the 22 destination countries whose arbitration data are available. The sign of the estimated coefficient on $\theta^z lnARB_j$ remains the same with statistical significance. Similarly, when including destination country-industry pair fixed effects in column (4) to utilize variation in trade flows from the 22 source countries whose arbitration data are available to the 40 destination countries existing in the WIOD, the sign of estimated coefficients on $\theta^z lnARB_i$ remains the same with statistical significance.

The estimation controls for the possibility that other country-level characteristics—rule of law and informal institutions, human and physical capital abundances, national income, population, and financial development—are related to the arbitration institutional quality and affect trade performance. Associated control variables are as follows: $\theta^z lnROL$, $\theta^z lnINF$, $\theta^z lnHC$, $\theta^z lnK$, $\theta^z lnGDP$, $\theta^z lnPOP$, and $\theta^z lnFD$. The estimates for these control variables are reported in the "Control group I" section of the table. The result shows the positive and statistically significant estimates for the interaction term of relationship-specificity and each source and destination country's rule of law that measures its ability to enforce contract enforcement and protect property rights. This implies that each trading country's stronger rule of law better mitigates trade uncertainty arising from relationship-specific transactions. The result also shows the positive and statistically significant estimates for the interaction term of relationship-specificity and a source country's informal institutions that measure its domestic culture's contribution to contract enforcement. Regarding trade in relation to national income and population, the import performance of countries with a higher GDP and a lower population tends to be less affected by greater transaction uncertainty, implied by the positive estimates for $\theta^z lnGDP_j$ and the negative estimates for $\theta^z lnPOP_j$. These countries also tend to be less abundant in physical capital, implied by the negative estimates for $\theta^z lnK_j$. On the contrary, the export performance of countries with a lower GDP and a higher population tends to be less affected by greater transaction uncertainty, implied by the negative estimates for $\theta^z lnGDP_i$ and the positive estimates for $\theta^z lnPOP_i$. These countries also tend to be more abundant in physical capital, implied by the positive estimates for $\theta^z lnK_i$.

Next, the estimation controls for the possibility that other industry-level characteristics—intensities of raw materials, skilled labor, capital, and external finance—are related to relationship-specificity and affect trade performance. Associated control variables are as follows: $r^z lnARB$, $s^z lnARB$, $k^z lnARB$, and $d^z lnARB$. The estimates for these control variables are reported in the "Control group II" section of the table. Of the controls, the estimates for $s^z lnARB_i$ are negative, and their absolute values are the highest. The negative estimates imply that countries with lower-quality arbitration institutions tend to export more skill-intensive inputs. Additionally, countries with higher-quality arbitration institutions tend to export more finance-intensive inputs, implied by the positive estimates for $d^z lnARB_i$. Regarding importers' arbitration institutions, countries with lower-quality arbitration institutions tend to import more capital- and finance-intensive inputs, implied by the negative estimates for $k^z lnARB_j$ and $d^z lnARB_j$.

Lastly, the estimation controls for the possibility that the trade patterns determined by a country's abundance in a factor (other than institutions) and an industry's intense use of the factor (other than relationship-specificity) are related to the trade patterns determined by a country's quality of arbitration institutions and an industry's relationship-specificity. Associated control variables are as follows: $r^z lnLAND$, $s^z lnHC$, $k^z lnK$, and $d^z lnFD$. The estimates for these control variables are

reported in the "Control group III" section of the table. The result shows that except physical capital, a source country's abundance in a factor positively affects trade performance of the industries that intensively use the factor. In particular, the interaction of skill intensity and a source country's skill abundance has the greatest impact on the determination of trade patterns. For a destination country, the estimates for $k^z lnK_j$ and $s^z lnHC_j$ are positive and statistically significant in column (3) where more observations are employed for estimation. This result implies that countries that are abundant in capital and skilled labor tend to import more capital- and skill-intensive inputs, respectively.

5 Conclusion

Commercial arbitration has received little attention in the trade literature despite its popularity as a dispute resolution mechanism. In particular, a set of domestic rules governing commercial arbitration proceedings has rarely been a focus of economic research. This paper pays attention to this overlooked topic based on the fact that domestic institutions determine the enforceability of an arbitral award and the accessibility of arbitration, which in turn shapes contract enforceability. This paper also pays attention to relationship-specific transactions that leave firms few outside options to recover a financial loss in case a contract is not honored, reflecting transaction uncertainty. With these two main concerns, this paper empirically examines how the quality of arbitration institutions affects trade patterns of intermediate inputs when industries have different levels of dependence on relationship-specific transactions.

Results show that a higher level of relationship-specificity reduces global sourcing, reflecting firms' greater reluctance to engage in international trade involving higher transaction uncertainty. This impact decreases when each source and destination country's quality of arbitration institutions is higher. That is, transaction uncertainty is better attenuated as each trading country's arbitration institutions offer better enforcement of an arbitral award and easier access to arbitration. This finding sheds light on the significance of establishing effective domestic arbitration institutions in inducing greater contract enforcement and facilitating international transactions.

References

Alfaro, Laura, Davin Chor, Pol Antràs, and Paola Conconi (2019) "Internalizing Global Value Chains: A Firm-Level Analysis," *Journal of Political Economy*, 127 (2), 508–559.

Antràs, Pol (2003) "Firms, Contracts, And Trade Structure," *Quarterly Journal of Economics*, 118 (4), 1375–1418.

Antràs, Pol and Davin Chor (2013) "Organizing the Global Value Chain," *Econometrica*, 81 (6), 2127–2204.

Antràs, Pol and Elhanan Helpman (2004) "Global Sourcing," *Journal of Political Economy*, 112 (3), 552–580.

Atkins, Alden L., Adrianne L. Goins, and Ralph C. Mayrell (2015) "New York Curtails Seizure of Foreign Assets to Satisfy Awards," *Arbitration: The International Journal of Arbitration, Mediation and Dispute Management*, 81 (3), 228–233.

Berkowitz, Daniel, Johannes Moenius, and Katharina Pistor (2006) "Trade, Law, and Product Complexity," *Review of Economics and Statistics*, 88 (2), 363–373.

Costinot, Arnaud (2009) "On the Origins of Comparative Advantage," *Journal of International Economics*, 77 (2), 255–264.

Gil-Pareja, Salvador, Rafael Llorca-Vivero, and Jordi Paniagua (2020) "Trade law and trade flows," *The World Economy*, 43 (3), 681–704.

Grossman, Sanford J and Oliver D Hart (1986) "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration," *Journal of Political Economy*, 94 (4).

Hart, Oliver and John Moore (1990) "Property Rights and the Nature of the Firm," *Journal of Political Economy*, 98 (6), 1119–1158.

Levchenko, Andrei A. (2007) "Institutional Quality and International Trade," *Review of Economic Studies*, 74 (3), 791–819.

Myburgh, Andrew and Jordi Paniagua (2016) "Does International Commercial Arbitration Promote Foreign Direct Investment?" *Journal of Law and Economics*, 59 (3), 597–627.

Nunn, Nathan (2007) "Relationship-Specificity, Incomplete Contracts, and the Pattern of Trade," *Quarterly Journal of Economics*, 122 (2), 569–600.

Park, Se Mi (2021) "The interrelation between formal and informal institutions through international trade," *Review of International Economics*, 29 (5), 1358–1381.

——— (2023) "Domestic formal and informal institutions: their substitutability and comparative advantage," *Review of World Economics*, 159 (4), 853–886.

——— (2024) "Commercial Arbitration Regime and Sourcing Decision," *International Review of Law and Economics*, 78, 106195.

Rauch, James E. (1999) "Networks versus Markets in International Trade," *Journal of International Economics*, 48 (1), 7–35.

School of International Arbitration at Queen Mary University of London (2008) "International arbitration: Corporate attitudes and practices 2008."

Schwarz, Christian and Jens Suedekum (2014) "Global Sourcing of Complex Production Processes," *Journal of International Economics*, 93 (1), 123–139.

Timmer, Marcel P, Erik Dietzenbacher, Bart Los, Robert Stehrer, and Gaaitzen J Vries (2015) "An Illustrated User Guide to the World Input–Output Database: the Case of Global Automotive Production," *Review of International Economics*, 23 (3), 575–605.

Williamson, Oliver E. (1975) *Markets and Hierarchies: Analysis and Antitrust Implications*: New York: Free Press.

——— (1979) "Transaction-Cost Economics: The Governance of Contractual Relations," *Journal of Law and Economics*, 22 (2), 233–261.

World Bank Group (2010) "Investing across borders 2010: indicators of foreign direct investment regulation in 87 economies," Working Paper 64371.