# International Organizations and Trade

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Research Summaries

International Trade and Organizations

Pol Antràs*

The three central primitives of international trade theory are consumer preferences, factor endowments, and the production technologies that allow firms to transform factors of production into consumer goods. A limitation of traditional trade theory, however, is that the specification of technology treats the mapping between factors of production and final goods as a black box. In practice, the decisions of agents in organizations determine this mapping. Recently, international trade economists have incorporated insights from the field of Organizational Economics into their theories, thereby shedding new light on the mapping between factors of production and consumer goods. This research agenda is important for at least three reasons. First, it provides an explanation for phenomena that standard trade theory is unable to explain (such as the boundaries and hierarchical structure of multinational firms, or the determinants of intrafirm trade). Second, this literature illustrates how considering the endogenous response of organizations to changes in the economic environment (such as falling trade costs, declining communication costs, or improvements in contract enforcement) can dramatically affect or even overturn some predictions of standard models. Third, this line of models leads to a revision of key aspects of the design of efficient international trade agreements.

What follows is a brief account of some of my own contributions to the literature on international trade and organizations. In my joint survey article with Esteban Rossi-Hansberg, I unveil two systematic patterns in the intrafirm component of U.S. trade and show that an incomplete-contracting version of the Helpman and Krugman (1985) framework can successfully explain them. More specifically, I start out by demonstrating the existence of 1) a positive cross-industry correlation between capital intensity and the share of intrafirm imports in total U.S. imports, and 2) a positive cross-country correlation between an exporting country’s relative capital abundance and the share of intrafirm trade. The theoretical model establishes that these correlations can easily be rationalized in a world in which property rights are allocated in an efficient manner across producers worldwide. The key partial equilibrium result in the paper is that vertical integra-

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tion of foreign suppliers is optimal only when the elasticity of output (or sales) with respect to the final-good producer’s noncontractible investments is large relative to the elasticity of output (or sales) with respect to the supplier’s noncontractible investments. Because the noncontractible investments carried out by final-good producers are generally more capital-intensive than those undertaken by supplying firms (see the paper for evidence), the rationale for integration by supplying firms (see the paper for evidence), the rationale for integration by supplying firms is more contractible investments carried out by final-good producers. Why do firms appear to be so much more efficient in certain countries than in others? In joint work with Daron Acemoglu and Elhanan Helpman,8 we show that the quality of contractual institutions may play an important role in shaping cross-country income differences through its effect on the technology adoption decisions of firms. By exploring the endogenous determination of the equilibrium mapping between factors of production and final goods, we are able to show that the effect of contractual frictions on productivity is more pronounced when there is greater complementarity among the intermediate inputs used in production. We show that this differential effect has important consequences for industrial structure and for understanding variation in comparative advantage across countries. Our framework also has clear implications for how firms react to variation in contractual environments in shaping their global sourcing strategies.

Contractual Frictions and the International Organization of Production

Contractual frictions are not only crucial in determining the optimal allocation of control within organizations, but also affect other important decisions of firms. By exploring the endogenous determination of the equilibrium mapping between factors of production and final goods, we are able to show that the effect of contractual frictions on productivity is more pronounced when there is greater complementarity among the intermediate inputs used in production. We show that this differential effect has important consequences for industrial structure and for understanding variation in comparative advantage across countries. Our framework also has clear implications for how firms react to variation in contractual environments in shaping their global sourcing strategies.

Financial Frictions and the International Organization of Production

The bulk of the literature on offshoring and FDI generally ignores the financial side of these transactions. Mihir Desai, C. Fritz Foley,9 and I study how FDI flows and patterns of multinational firm activity are jointly determined in a world with frictions in financial contracting. In our joint work, we develop a model in which multinational firm activity does not arise to avoid risk of technological expropriation by local partners, but rather because of the demands of external funders who require the participation of multinational firms to ensure value maximization by local entrepreneurs. The main novel predictions of the model are that weak investor protection increases the attractiveness of deploying technology abroad through FDI rather than arm’s length technology transfers, and it increases the share of activity abroad that is financed by capital (FDI) flows from the multinational parent. We test the predictions of the model using detailed firm-level data on U.S. outbound FDI and find support for the empirical relevance of our theory. Consistent with the model, we find that these effects of weak investor protection are most pronounced for technologically advanced firms.

Empirical evidence suggests that cross-country variation in investor protection not only affects the geography of FDI flows and multinational activity, but also shapes the pattern of international trade across countries. In joint work, Ricardo Caballero and I10 revisit the robustness of one of the classical results in neoclassical trade theory to the introduction of heterogeneity in investor protection across countries. In particular, we find that the mere introduction of heterogeneous financial frictions in the Heckscher-Ohlin model overturns the classical substitutability between trade and capital mobility in the standard model. More precisely, we find that in less financially developed economies, trade and capital mobility are complements, in the sense that trade integration increases the return to capital and thus the incentives for capital to flow to the South. An important implication of our framework is that increased protectionism can aggravate the so-called “global imbalances” around the world.

Knowledge and the International Organization of Production

Another important friction in the international fragmentation of production is related to the costly communication of information between members of cross-border production teams. Luis Garicano, Esteban Rossi-Hansberg, and...
I\textsuperscript{11} develop models of international offshoring in economies in which agents have heterogeneous abilities and sort into teams competitively. In these models, an important role of the organizational structure of firms is to facilitate efficient communication of knowledge within teams. Our models illustrate how the quantity, quality, and effects of international offshoring are related to the distribution of skills in the population and to the state of communication technologies. They also shed light on the role of country-management skills (that is, middle management) in bringing about the emergence of international offshoring. In particular, we show that by shielding top management in the source country from routine problems faced by host country workers, the presence of middle managers improves the efficiency of the transmission of knowledge across countries.

**Implications for Trade Policy**

Although the bulk of the papers discussed above focus on positive issues, they also bear on important policy questions. A potentially fruitful avenue of research concerns the role of trade policy in a world where firms make organizational decisions under incomplete contracts. Robert Staiger and I provide a first attempt in this direction.\textsuperscript{12} We study the implications of the fact that, in transactions involving significant lock-in effects (perhaps because of ex-ante customization of goods, or search frictions), prices tend to be negotiated bilaterally and are not fully disciplined by market-clearing conditions, as in traditional theory. In the paper, we show that trade policy changes in local prices can have spillover effects in other countries, even when they hold constant international (untaxed) prices, thus leading to predictions quite distinct from those of the traditional terms-of-trade theory of trade agreements. As a consequence, we argue that the growing prevalence of offshoring and service trade (which are often associated with lock-in effects) is likely to make it increasingly difficult for governments to rely on traditional GATT/WTO concepts and rules (such as market access, reciprocity, and non-discrimination) to help them solve their trade-related problems.

In recent work,\textsuperscript{13} Arnaud Costinot and I explore the implications of search frictions and bilaterally negotiated prices for the worldwide distribution of the gains from international trade. Our models illustrate the potentially crucial role of intermediaries in bringing to life the gains from international exchange, but they also suggest that active policies might ensure that the margins charged by these middlemen allow the potential benefits from international integration to materialize. Although caps on foreign intermediaries’ margins (for example, “fair” prices) can be welfare improving in certain scenarios, we show that they typically reduce the benefits of international trade.

**Next Steps: Dynamics**

Combining trade theories with organizational theories sheds new light on international trade phenomena and has sparked empirical and normative work attempting to better understand these facts. Nevertheless, much remains to be done. For instance, most of the work in this area is static in nature. In dynamic environments, organizations might be able to adjust to contractual or financial frictions in subtle ways that are not captured by the available frameworks. An important branch of organizational economics is concerned with these dynamic effects, but these developments thus far have only had a small impact in the trade and organizations field.


The recent financial crisis has shown that financial frictions, such as asset bubbles and liquidity spirals, have important consequences, not only for the financial sector but also more generally for the macroeconomy. This forces economists to reevaluate firmly held beliefs about market efficiency, the appropriate regulation of financial markets, and approaches to macroeconomic policymaking. The subsequent paragraphs summarize my ongoing research in these domains.

Asset Price Bubbles

Under the efficient market hypothesis, bubbles burst before they even have a chance to emerge. Hence, an asset's market price should correctly reflect its underlying fundamental value. However, bubbles historically have emerged as investors were willing to hold assets, even when their prices exceeded their fundamental value—they hoped to sell these assets at an even higher price to some other investor in the future. In a setting in which a single investor alone cannot bring down a bubble, it can be rational for an individual to ride the bubble. In other words, the uncertainty of not knowing when other investors will start trading against the bubble makes each individual rational investor anxious about whether he can afford to be out of (or short) the market until the bubble finally bursts. Consequently, each investor is reluctant to lean against the bubble and might even prefer to ride it. Thus price corrections only occur with delay, and often abruptly.¹ My empirical research with Stefan Nagel studies hedge funds’ holdings of technology stocks during the internet bubble, and it confirms that even sophisticated investors were riding the bubble rather than leaning against it.

The second important message of this line of research is that small, fundamentally unimportant news can trigger large price swings. Such information can serve as a synchronization device that triggers the attack on a bubble. This explains why most large asset price movements are not associated with important news announcements.² It also suggests that communication by central bankers and regulators is a very important policy tool.

Credit Bubbles and Liquidity Spirals

One important lesson from the current crisis is that credit bubbles, like the recent housing bubble or the stock market bubble in the 1920s, can be much more detrimental than the bubbles that are not financed with debt, such as the internet bubble. The reason is that during the bursting of a credit bubble, amplification effects exacerbate initial shocks and impair the financial system.

The bubble-riding hypothesis also provides a different view of risk measures. Even though risk seems to be tamed while the bubble is inflating, risk and imbalances are building up below the surface, and volatility suddenly spikes when the bubble bursts. This is in contrast to the efficient market view, which asserts that contemporaneous risk measures appropriately capture current risk exposure.

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References


Bubbles, Liquidity, and the Macroeconomy

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