Chapter 1

Introduction

The research in this volume aims to understand the impacts of international trade on policies and economic outcomes of highly interdependent countries and the role of institutions in shaping them. It comes at a critical time: the unprecedented wave of international economic integration since the 1990s was abruptly interrupted by a collapse in commerce and fears of a trade war in 2008–2009.¹ Moreover, the recent backlash against trade agreements by two of its traditional supporters threatens a wave of disintegration. The United Kingdom (U.K.) has voted to exit the European Union, and the United States (U.S.) is renegotiating and possibly abandoning some of its trade commitments.²

There is a myriad of interconnected facets to this latest wave of globalization with at least one unifying feature: policies have international and domestic externalities that can be addressed via agreements. I use this feature to organize the research into four parts.

Part I: International Externalities and the Role of International Trade Agreements

Part I examines how a country's trade barriers impose an externality on foreign exporters and provides an essential role for trade

¹Carballo, Jeronimo, Kyle Handley and Nuno Limão. 2018. *"Economic and Policy Uncertainty: Export Dynamics and the Value of Agreements."* NBER working paper.

²Handley, Kyle and Nuno Limão. 2017. "Trade under T.R.U.M.P. policies," *Economics and Policy in the Age of Trump*, CEPR, ed. Chad Bown, 141–152.

agreements. Mill (1884) argued that a country can improve its welfare by unilaterally using a small tariff.³ This requires the country to have import market power, so its demand reduction improves its terms-of-trade. However, this is an international zero-sum game — the importers' improvement comes at the expense of the exporter, who is likely to retaliate, thus leaving both worse off. This simple insight underlies leading modern theories of reciprocal trade agreements, which have assumed that (i) countries have market power and (ii) they exert it in the absence of such agreements.⁴ Both of these assumptions have been strongly questioned by many economists who more readily attribute protection to political economy incentives. But there was little econometric evidence either way until I conducted the research with Christian Broda and David Weinstein, which is presented in Chapter 2.

An importers' market power is determined by the responsiveness of its terms-of-trade to changes in its import demand, which is determined by the elasticity of foreign export supply. So, the first contribution in Chapter 2 are those elasticities for more than 800 goods in each of the 15 countries. We find that even small countries have market power, mostly in differentiated products rather than commodities. To determine if countries exploit this market power, we then analyze their tariff rates prior to entry in the World Trade Organization (WTO) and find that they are higher in products where a country has more market power. The effect is economically large and at least as important as a variable that can capture the influence of domestic special interests on trade protection.

The canonical trade models have not focused on the uncertainty motive for agreements, despite the importance that international institutions attribute to this role. The predecessor of the

³Mill, J.S. 1844. *Essays on some Unsettled Questions of Political Economy*. London: Parker.

⁴See Bagwell, K. and R.W. Staiger, 1999, "An Economic Theory of GATT," *American Economic Review*, 89, 215–248; and Grossman, G. and E. Helpman, 1995, "Trade Wars and Trade talks," *Journal of Political Economy*, 103, 675–708.

WTO was created in response to the 1930s trade war to help prevent a re-occurrence, and many regional agreements claim as a central objective to “ensure a predictable environment for business planning and investment”. In Chapter 3, Giovanni Maggi and I show that international agreements that focus on reducing policy uncertainty are more likely to generate welfare gains for economies that are more specialized and less responsive to price changes. We also develop a “sufficient statistic” to quantify the gains from these agreements and show that they are relatively higher when trade costs are low and economies become very open. This provides one explanation for the recent proliferation in regional agreements — as trade costs unrelated to policy fell, countries became more open and vulnerable to foreign policy uncertainty, and thus sought agreements to reduce it.

The idea that aggregate economic uncertainty can have powerful impacts on economic activity was already noted by Keynes, and recent evidence indicates that aggregate uncertainty shocks can have negative effects on aggregate activity via firm-level investments. Until recently, research in this area has focused on uncertainty from purely economic shocks. However, policy uncertainty (about future taxes, regulatory reforms, etc.) is thought to be just as important, and, until recently, there was scarce evidence about how to measure it and identify its causal impacts. The research in Chapters 4 and 5 analyze these issues in the context of trade policy uncertainty (TPU). The trade setting is interesting both in its own right and because it provides a rich source of data and quasi-experiments. First, we can observe the “sales” taxes (tariffs) that firms face in different export markets as well as the counterfactual worst-case tariffs, which allow us to measure TPU. Second, we can also observe some investment outcomes by product and destination, which provide a rich source of variation that helps address identification issues. Third, there have been a substantial number of trade reforms, which provide a variety of settings in which to explore whether and how governments affect TPU.

In Chapter 4, Kyle Handley and I incorporate TPU in a trade model where firms decide whether to make irreversible investments

to enter new markets. We show that investment and entry into export markets are reduced by TPU and that credible international agreements can reduce this uncertainty. We derive a theory-based measure of TPU and apply it to examine the entry of a developing country, Portugal, to the European Community in 1986. Employing newly available firm-level data on market entry and sales we find that (i) the accession removed Portuguese exporters' uncertainty about future European Community trade policies, and (ii) this accounted for a substantial fraction of the subsequent export growth. These results have broader implications for other agreements and, in particular, for the current debate on Brexit, since one of the possible scenarios is that the U.K. retains some preferential access to the European Union, but the uncertainty of eventual withdrawal or prospect of barriers if a trade war breaks out may considerably dampen trade between them.

In Chapter 5, we address the role of the WTO in reducing TPU. We examine the role of WTO accession in reducing TPU faced by China and how it has impacted its global integration. The WTO accession coincided with a Chinese export boom, which was particularly large towards the U.S., even though only a few of the U.S.-applied trade policies changed at that time. Our hypothesis is that this boom was fueled by a reduction in TPU. Specifically, China's WTO accession led the U.S. to end its annual threat to impose prohibitively high tariffs on Chinese imports. We estimate that the removal of this source of TPU increased Chinese exports to the U.S. by about 22%. The resulting price effects imply a considerable real income gain for U.S. consumers. This is a benefit that is frequently overlooked in the China syndrome debate that has fueled the recent backlash against trade agreements.

Part II: Domestic Externalities and the Role of International Trade Agreements

Trade policy is frequently used for redistribution within countries, either towards particular industries or factory owners that lobby the government. Certain political economy determinants of trade

policy may motivate countries to commit to policy restrictions via trade agreements. This commitment motive for agreements is present if *ex ante* restrictions can improve *ex post* outcomes. For example, the current government may have different preferences from a future one, or commitment to a policy today may affect the allocation of factors and help a government address a time consistency problem.⁵ Redistributive policies impose obvious domestic externalities since some groups will bear a cost. The questions then become what is the more efficient redistribution policy and whether trade agreements play any role in the choice of that policy and its magnitude.

The leading political economy models explain trade policy in a small economy as a way to redistribute income across agents, but they fail to explain why governments would ever *choose* to use certain trade policy instruments when other policies could achieve the same at lower cost. This policy choice question in the presence of political pressures also arises in other fields of economics and is an important puzzle in political economy. In Chapter 7, with Allan Drazen, I address this issue in the context of bargaining between a politician who seeks “payments” from domestic special interest groups in exchange for a redistribution policy, e.g., a production subsidy. We show that, in an initial stage, the politician has an incentive to restrict the use of efficient redistribution policies in order to subsequently extract higher payments from the special interest group.

One important policy commitment mechanism that is often used is trade agreements, which restrict tariffs, but not necessarily other trade instruments that are relatively costlier to use for redistribution. Thus in Chapter 6, with Patricia Tovar, we extend the model in Chapter 7 to address the choice between different trade

⁵See, for example, Staiger, Robert and Guido Tabellini. 1987. “Discretionary trade policy and excessive protection,” *American Economic Review*, 77(5), 823–837; and Maggi, Giovanni and Andres Rodriguez-Clare. 1998. “The value of trade agreements in the presence of political pressures,” *Journal of Political Economy*, 106(3), 574–601.

policies. We show that governments are more likely to constrain tariffs via international agreements in industries that have more bargaining power, even when they know that lobbies in that industry will be able to pursue and obtain redistribution via less efficient non-tariff barriers. We find empirical support for this model, and thus for the commitment motive for trade agreements.

Trade policy can and is used not only to redistribute towards special interest groups but also to ameliorate income inequality. In Chapter 8, Arvind Panagarya and I argue that a government's concern for inequality is an important determinant of trade policy in many economies. Although trade policy is not the first-best instrument to reduce inequality, it is often supported for that purpose in opinion polls. Moreover, import protection is often higher in sectors with a large share of low-skill, low-wage workers, which strongly suggests that many governments take inequality into account when setting trade policy. We then show that this motive generates a systematic anti-trade bias, i.e., it generates trade protection rather than liberalization. Therefore, in the ongoing debates of the impact of trade liberalization on income inequality, more attention needs to be devoted to address reverse causality.

Part III: Externalities and Linkage of Cooperation Across Policies

To understand the impact of agreements, we must understand not only their motives but also their policy scope, membership, and how their rules are enforced. The appropriate scope and enforcement tools in the WTO have been under scrutiny since its inception in 1995, and more recently by countries such as the U.S. The WTO contains a dispute settlement system but has no power to enforce any of its rulings. Therefore, commitments in the WTO are only credible if its individual members have the incentive and ability to enforce them. Prior to the WTO, this enforcement relied mainly on the threat of a few large countries to raise tariffs on goods of a violating country. Two important expansions in this period led me

to examine whether alternative agreement designs could enforce more cooperation.

The first change was the expansion of the policy scope in trade agreements. In the context of multilateral agreements, this expansion has occurred since the creation of the GATT. However, the largest expansion in scope was the inclusion of intellectual property rights protection in the WTO. The so-called TRIPS agreement may have increased the incentives for firms to expand trade and foreign direct investment (FDI) with developing countries. However, the threat of the U.S. using tariffs to enforce royalty payments by Indian firms was extremely controversial; as were subsequent attempts to enforce cooperation in environmental and labor issues in the WTO.

Many economists opposed this scope expansion in the WTO, arguing that linking cooperation across issues would reduce cooperation in trade policy, which is also not the first-best policy to target non-trade issues. However, there was little understanding of the impact of issue linkage on enforcement. I address this issue in Chapter 9, where I model the WTO as a self-enforcing agreement in the presence of cross-border externalities in two issues. I show under what conditions linking cooperation in the policies can increase cooperation in both (e.g., stronger environmental standards and lower tariffs) or in one at the expense of the other.

This expansion in policy scope is even more widespread in preferential trade agreements.⁶ We require a framework to understand this, given the tremendous proliferation of these agreements, which have been the primary source of trade policy liberalization in the last 25 years. In Chapter 8, I provide a framework to analyze the effects of such agreements, where large countries provide market access to small ones in return for cooperation on various policies with international externalities, including intellectual property, environmental, labor, and security policies.

⁶Limão, Nuno. 2016. "Preferential Trade Agreements", *Handbook of Commercial Policy*, eds. Kyle Bagwell and Robert Staiger, Elsevier.

A second important change in the world trading system since the early 1990s has been the expansion and change in the composition of WTO membership. Specifically, the increased importance of developing countries in world trade and in the WTO, where they now account for more than two-thirds of the membership. This shift reflects the growth of these economies and their unilateral liberalizations. However, several of these countries are still individually small and thus have a limited ability to bilaterally extract and enforce trade concessions from larger developed economies — even though they would be able to do so as a group. Some developing countries have thus proposed to extend the agreement to allow for financial compensation mechanisms. In Chapter 11, Kamal Saggi and I argue that the canonical two-country model of trade agreements must be augmented to capture this new, more fragmented, trade order. We show that redesigning the WTO to include certain financial enforcement instruments is preferable to the current arrangement from both an efficiency and equity perspective. In Chapter 12, we show that such arrangements are much less valuable in a setting where countries are similar, which may help us understand why they were not adopted by the initial set of more homogeneous members.

Part IV: Policy Externalities Across Agreements: Multilateral vs. Preferential Liberalization

Countries choose both the scope of agreements and also whether to pursue them multilaterally through the WTO or only with a preferential subset of countries. Since the creation of the WTO, there has been no successful major multilateral trade negotiation; the Doha Round was launched in 2001 and is yet to be concluded. However, countries have continued to liberalize through preferential trade agreements (PTAs), as is evident from the large increase in their numbers and bilateral trade. The fraction of country pairs in the WTO that also belong to PTAs increased by a factor of 10 in that period, and in 2010 they accounted for over 50% of trade between WTO members (Limão, 2016). This raises the

question of how preferential and multilateral agreements and policies interact.

A similar question about the externalities across agreements arose in the early 1990s when PTAs started to propagate at the same time that there was a stalling of the Uruguay Round, which lead to the WTO only years later. While, on average, PTAs have increased trade between members, there is a concern that they harm non-members and hinder liberalization via the WTO. The latter systematic risk was modeled by several leading theorists in the field who sought to determine whether regional agreements affect the incentive for aggregate multilateral liberalization, i.e., the likelihood for a WTO trade round. Unfortunately, we cannot test such theories econometrically as there have been very few multilateral trade rounds.

The framework I developed in Chapter 8 suggested a new approach to test the externalities across agreements. It predicts that PTAs affect multilateral incentives differentially across goods. In Chapter 13, I test for these differential incentives using detailed multilateral tariff data for the U.S. I find that the U.S. kept multilateral tariffs higher on goods it imported under PTAs. In Chapter 14, with Baybars Karacavaoli, we find similar evidence for goods that the European Union imports duty free from other PTAs.

In Chapter 15, with Marcelo Olarreaga, we quantify one of the externalities that PTAs impose on multilateral liberalization for non-members. We combine the estimates from Chapter 13 with data for up to 5,000 goods in each of the 170 countries and provide the first estimates of the welfare effects of PTAs due to lost multilateral liberalization. We also evaluate a rule designed to avoid the negative effects of PTAs on future multilateral liberalization, and find it would increase the welfare gains from a future WTO round by 10%.

I hope this collection informs and inspires others to continue to improve our knowledge of these vital economic issues.