The Risk of Murky Trade Protectionism in an Interconnected and Uncertain Global Economy

El riesgo del proteccionismo comercial turbio en una economía global interconectada e incierta

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ABSTRACT

This paper is neither about free trade nor protectionism. It is about the point where the two may converge. One distinctive aspect of rising protectionism over the last decade is that it is occurring against a backdrop of increased global interconnectivity. Over the past three decades, countries around the world have become more integrated through preferential trade agreements (PTAs) and global value chains (GVCs), while simultaneously erecting new trade barriers. What explains these contradictory trajectories? The literature on the political economy of trade protectionism readily shows that PTAs promote trade interdependences; it also offers compelling arguments about the circumstances under which governments are prompted to protect their economies. However, we have little evidence on how these two trajectories are occurring at once. This paper offers new evidence that institutional mechanisms like PTAs, which for decades have fueled the diffusion of trade liberalization, can also become channels for the spread of less-transparent protectionism (e.g., Non–Tariff Measures).

Keywords: trade policy – protectionism – uncertainty – interdependence – Global Economy.

RESUMEN

Este artículo no trata sobre el libre comercio ni sobre el proteccionismo. Se trata del punto donde los dos pueden converger. Un aspecto distintivo del aumento del proteccionismo durante la última década es que se produce en un contexto de mayor interconectividad global. Durante las últimas tres décadas, los países de todo el mundo se han integrado más a través de acuerdos comerciales preferenciales (ACP) y cadenas de valor globales (CVG), al mismo tiempo que han erigido nuevas barreras comerciales. ¿Qué explica estas trayectorias contradictorias? La literatura sobre la economía política del proteccionismo comercial muestra fácilmente que los ACP promueven las interdependencias comerciales; también ofrece argumentos convincentes sobre las circunstancias en las que los gobiernos se ven obligados a proteger sus economías. Sin embargo, tenemos poca evidencia de cómo estas dos trayectorias ocurren a la vez. Este artículo ofrece nueva evidencia de que los mecanismos institucionales como los ACP, que durante décadas han impulsado la difusión de la liberalización comercial, también pueden convertirse en canales para la propagación de proteccionismo menos transparente (por ejemplo, medidas no arancelarias).

Palabras clave: política comercial – proteccionismo – incertidumbre – interdependencia – economía global.

1.- Introduction

Much of the 20th century literature on trade liberalization focused on the role of trade dependence and on bilateral and multilateral trade agreements in fostering trade openness. In recent years, the World Trade Organization (WTO) has been urging its members "to resist protectionism and get trade moving again" (WTO, 2016 para. 1). However, recent data on trade policy choices suggest new protectionist measures continue to be adopted. Most obvious is the "U.S.-China Trade War," declared by the U.S. in March 2018 and followed up four months later by the imposition of hefty tariffs on a long list of Chinese products (Bown & Kolb, 2019)[1]. Recent academic work on trade protectionism has concentrated on these kinds of bilateral trade conflicts, largely overlooking an explosion of less visible protectionist measures in the past decade[2].

This paper develops and tests theory that explains the drivers of protectionist retaliation over the past decade. New "murky protectionism" has arisen in a context of high trade interdependence and significant embeddedness in bilateral and multi-lateral trade agreements [3]. This suggests that new theory is necessary to explain why trade-dependent, institutionally embedded states are adopting protectionist measures at all, and why they are engaging the specific types of murky protectionism that we observe. This question is vital to debates about international political economy and trade policy from a theoretical and policy perspective. We have now entered an era in which major trade policy choices and related tensions are erupting faster than the generation of theories to explain them. This study of trade policy trends since 2009 to the present promises to put the Sino-American tariff war in perspective and situate it as part of a deeper and longer pattern of 21st-century protectionism (Evenett,

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1   This paper is part of a broader study conducted from the University of Southern California and Universidad Católica del Uruguay. An expanded version of this paper will be published as a book: Albertoni, N. (2023) Trade Protectionism in an Uncertain and Interconnected Global Economy. New York, US: Routledge.

2   For more information about economic uncertainty during the time of "U.S.-China Trade War", see Ahir, Bloom, and Furceri (2018, 2020) and during COVID-19 pandemic, Altig et al. (2020).

3   For more details on the term "murky protectionism", see Baldwin & Evenett (2009). To define these new measures that go beyond the traditional import tariff, Baldwin & Evenett (2009, p. 4) clarify "murky protectionism" as policies that "are not direct violations of WTO obligations; they are abuses of legitimate discretion which are used to discriminate against foreign goods, companies, workers and investors. Examples include abuses of health and safety regulations, and clauses in stimulus packages that confine spending to domestic producers".

2019)[4]. Hence, the main goal of this paper is to increase our understanding of the rise in interdependent protectionism in the last decade.

One distinctive aspect of this rising protectionism is that it is occurring against a backdrop of intense globalization. Paradoxically, through preferential trade agreements (PTAs) and global value chains (GVCs), countries around the globe are becoming more interconnected even as they erect new trade barriers toward each other[5]. This trend starkly contrasts with past patterns of protectionist escalation. The contemporary literature argues that the more interconnected countries are, the less protectionist they are likely to become (Baldwin, 2012; Lamy, 2013; Gawande et al., 2015; Jensen et al., 2015). However, these same studies

have barely spoken to this newer contradictory phenomenon where protectionism and trade liberalization are occurring simultaneously (Ahir et al., 2018).

This paper is motivated by this contradiction. I hypothesize that protectionist trends over the last decade reveal a possible downside of PTAs and GVCs. Why are protectionist measures emerging in a context of high and increasing interdependence? Preliminary evidence suggests that institutional mechanisms like PTAs, which for decades have fueled the diffusion of trade liberalization, can also become channels for the spread of protectionism in the form of less observable non-tariff measures[6].

I suggest that the rise of less visible protectionist measures (Evenett, 2019) has important policy implications. First, by showing that the developing world has indeed responded to protectionism by relying on NTMs and less transparent tools, we can capture a pattern of backsliding on trade policy reform in many countries. As Baldwin (1970) argued long ago in Non-tariff distortions of international

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4   The COVID-19 pandemic has hampered the flow of global trade, an extraordinary circumstance that makes for a natural experiment on how drastically slowed trade can affect the global economy and developing countries in particular. In a June 2020 report about the effects of COVID-19 on trade, the WTO suggested that the collapse in trade now could be far bigger than that which occurred in response to the 2008 GFC. See WTO (2020a) Trade falls steeply in first half of 2020, https://www.wto.org/english/news_e/pres20_e/pr858_e.htm; and Martin Wolf (2020) The dangerous war on supply chains. Financial Times (June 23, 2020).

5   For a more detailed analysis on the debate about globalization and protectionism, see Maswood (2021), where he makes the case that protectionism was behind the rapid spread of GVCs.

6   It is important to highlight that although PTAs and GVCs are instruments that creates interdependencies, the way they create that interdependency is very different. One is more legal (PTA) and the other one is more economic (GVC). Hence, the effects should be expected to occur in very different ways. For instance, effects of GVCs may be more dynamics than PTAs.

trade, a decrease in tariff measures over the last decades is most likely offset by NTMs; this practice has accelerated at an alarming pace since the GFC.

As the literature and the real world have shown, in a context of crisis and uncertainty, governments face social and business pressures to cushion their economies from harsh external blows (see, e.g., Baldwin 1989). Under such circumstances, "the likelihood of 'copycat' behavior arises, especially with respect to discriminatory measures that go against the spirit, if may be not the law, of international trade norms" (Evenett, 2019, p. 13). My theoretical intuition is that PTAs—and to some extent GVCs too—create trade dependencies, which under conditions of high economic uncertainty, can increase defensive trade mechanisms between partner countries.

In the case of GVCs, the goal of this paper is to introduce a preliminary analysis on their potential effects on trade protectionism, since it is still very challenging to precisely measure GVCs (Gaulier et al., 2019). As I elaborate further in this paper, GVCs refer to a mode of international production sharing, where production is broken into separate activities and tasks are carried out in different countries[7]. Hence, given their complex structure, there

is considerable debate about how to properly measure GVCs (Hummels et al., 2001; Gaulier et al., 2019)[8].

The share of intermediate goods traded between two countries is normally used as a proxy measure for their participation in a GVC. Intermediate goods are those that fall between raw materials, services inputs, and finished goods. They are, in other words, parts and components or semifinished goods (World Bank, 2020). Gaulier et al. (2019) show that in the last decade, "the share of intermediate goods in world trade in nominal terms is fairly well correlated to various GVC indicators based on international input-output matrices" (p. 1). Hence, I use the exchange of intermediate goods as the best approximation to measure the potential "GVC interconnection" between two countries (Escaith et al., 2010; De Backer & Miroudot, 2014).

Keeping this in mind, I compile a novel dataset that captures how global trade has been further slowed by the rise of protectionist policy interventions over the past decade. The significance of this paper is the empirical documentation of a possible damage that closed markets and trade nationalism

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7   This is the reason why this paper does not elaborate in detail the expected results on GVCs and potential causal mechanisms.

8   Authors such as Dür, A., et. al. (2020), Osgood, I. (2018), have done an important work on how GVC integration has created new alliances within and across countries lobbying for openness and against protectionism.

can inflict on the global economy and on developing countries themselves.

I show that although the proliferation of PTAs may have changed the way that countries trade among themselves (Baldwin, 2012; Gawande et al., 2015), these institutions have not prevented the increased reliance on non-tariff measures (NTMs). I also explore whether the same mechanisms may occur where potential GVC linkages exist. The paper begins with a brief historical review that contextualizes the current trade juncture. A following section reviews the political economy literature on trade, with an emphasis on those works that helped to shape my hypotheses. A third section presents my research design, model, and results. I conclude with a summary of my findings and reflect on the path forward for future research on this subject.

Since the launching of the General Agreement on Tariffs and Trade (GATT) treaty in 1947, the global economy has experienced four major recessions, in 1975, 1982, 1991, and 2009. The COVID pandemic has generated a fifth recession, however, it is too soon to speak to this phenomenon. To date, as Kose et al. (2020, p. 3) note, "the 2009 GFC global recession, set off by the global financial crisis, was by far the deepest and most synchronized of the four recessions"[9]. With the failure to create an International Trade Organization in 1948, the GATT sufficed as the multilateral trade forum until 1995 when the WTO was founded, and the GATT was incorporated into it. Ironically, it was at this same time that countries formally started to negotiate trade agreements among themselves. For example, as of 1972, just 12 regional trade agreements had been notified to the GATT; by the end of the 1990s, this number had increased to 81[10]. Since then, the number of PTAs has grown consistently, a trend defined in the literature as a "new wave of regionalism" (Mansfield & Milner, 1999, p. 589).

The 2009 recession was the first to occur after countries had created a widespread network of preferential trade agreements and global value chains, the latter becoming a main locus of production[11]. The Great Recession

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9   It is important to highlight that, as different authors suggest (e.g., Evenett, 2019; Wise, C., Elliott Armijo, & Katada, 2015; Reinhart and Rogoff, 2009), we are still trying to understand the consequences of the 2009 crisis.

10   WTO, Regional Trade Agreements, <https://www.wto.org/english/tratop_e/region_e/region_e.htm>.

11   The International Monetary Fund (IMF) defines a global recession as "a decline in annual per capita real world GDP (PPP weighted), backed up by a decline or worsening for one or more of the following macroeconomic indicators: Industrial production, trade, capital flows, oil consumption, unemployment rate, per capita investment, and per capita consumption" (See Davis, 2009, par. 2).

triggered high levels of economic uncertainty and motivated governments rely on PTAs to hedge against further risks in a more interconnected world. From a trade policy perspective, the different debates about the real consequences of the 2009 recession are still underway. As Reinhart and Rogoff (2009, p. 1) claim, it was a different kind of recession because "the essence of the this-time-is-different syndrome is simple. It is rooted in the firmly held belief that financial crises are things that happen to other people in other countries at other times; crises do not happen to us, here and now. We are doing things better, we are smarter, we have learned from past mistakes. The old rules of valuation no longer apply". Following Reinhart and Rogoff (2009), we would also expect that the ways in which countries were affected by and responded to protectionism and recession following the GFC also shifted. Could it be that countries are protecting their markets in "smarter ways" because they may "have learned from past mistakes"?

A full understating of current patterns of international trade requires a broader conception of trade restrictions. As Evenett (2019, p. 6) states, "an up-to-date definition of protectionism would refer to all government acts that actually discriminate in favor of local commercial interests over one or more foreign rivals whatever the form of international commerce or the form of policy instrument used". Following Evenett's (2019) approach, an accurate assessment of recent trade protectionism requires a new method of measurement, which will be explained below.

This paper takes the rise of protectionism in the last decades as a fait accompli. As Witt (2019) and several others have pointed out, trade protectionism has growth even before the GFC and has never recovered since, impacting in stopped trade growth since then. As such, my focus is not to prove the existence of this phenomenon but to delineate and identify the factors that have driven and perpetuated it. In 2017 (before the start of the U.S.-China trade war), the WTO secretariat lamented that "G20 economies may have opted in favor of implementing less traditional and transparent measures to curtail trade, the secretariat may have had more difficulties in gaining access to the relevant information and/or G20 economies implemented fewer such measures during this particular review period" (WTOa, 2017, p. 6).

Theory Development

The Logic Behind Protectionist retaliation and the role of PTAs and GVCs

Under Bretton Woods, the world saw sustained trade liberalization for half a century. However, since the completion of the Uruguay Round in 1994 and the incorporation of the General Agreement on Tariffs and Trade (GATT) into a newly created World Trade Organization (WTO) in 1995, the world has experienced a rapid proliferation of PTAs, which have radically changed the internal logic of the global trading system. PTAs, for instance, have transformed the ways in which countries trade among themselves (Egger et al., 2011) and how they implemented liberalizing policies with closer trading partners (Cieślik & Hagemejer, 2011). In a similar way, GVCs have overhauled the ways in which countries and their large multinational corporations produce internationally. The ways these institutional trade and production mechanisms have also become channels for the spread of protectionism are subtle and enshrouded in high levels of economic uncertainty. This book is motivated precisely by this contradiction. I hypothesize that protectionist trends over the last decade reveal a possible downside to the proliferation of PTAs and GVCs, as these have become the institutional locus for less observable, non–tariff measures. In other words, economic interdependence in the context of high economic uncertainty can devolve into a spiral of protectionism because "many governments simultaneously face pressure to reflate national economies and defend national commercial interests" (Evenett, 2019, p. 26).

In other words, PTAs and GCVs have increased countries' interconnectivity and bilateral trade flows (Gereffi, 2014; Baccini & Dür, 2012). At the same time, the last decade has been marked by countries' economic and trade uncertainty and resort to trade protectionism (Ahir et al., 2018). The WTO has mostly concentrated on the regulation of tariff measures while domestic trade policy has increasingly emerged in less observable non-tariff measures ("trade policy substitution") (Beverelli et al., 2019; Grundke and Moser, 2019; Evenett, 2019). For decades, the mechanisms that have fueled the diffusion of trade liberalization under the WTO (PTAs and GVCs), can also become channels for protectionism (based on less observable non–tariff or murkier measures). I argue that countries have changed the way they respond to protectionism, which impacts both countries' bilateral relations.

Insights from the Recent Literature

Goldberg and Pavcnik (2016, p. 1) provocatively ask, "does trade policy still matter?" They note that over the last two decades, international trade research has shifted its focus from trade policy to other forms of trade friction. They also challenge this idea by examining a large body of evidence and conclude that:

> The perception that trade policy is no longer relevant arises to a large extent from the inability to precisely measure the various forms of non-tariff barriers that have replaced tariffs as the primary tools of trade policy. Better measurement is thus an essential prerequisite of policy-relevant research in the future. Despite measurement challenges and scant evidence on the impact of actual policy changes, existing evidence when properly interpreted points to large effects of trade policy on economically relevant outcomes, especially when trade policy interacts with other developments, e.g., technological change (p. 10).

Another key theme in the literature has been to discern how the proliferation of protectionist policies since 2008 has affected key economic sectors. To elaborate on this point, Yi (2009, p. 2) argues that a "massive reorientation of trade flows towards multiple-step supply chains" has played an important role in spurring protectionist dynamics. Bems et al. (2009, para. 4) are even more specific:

> Vertical specialization transmission mechanism is subtle…growing vertical specialization implies that more cross-border transactions occur between separate stages of the production process. If the elasticity of substitution across stages is very low, then shocks to production in one country could be transmitted forcefully to other stages undertaken elsewhere…if demand shocks are concentrated on goods that are vertically specialized, then trade is highly sensitive to changes in demand.

At the same time, Bems et al. (2009, para. 2) assert that "while all these channels seem plausible and many analysts have asserted that they have played an important role in the trade collapse, there has been, to date, little evidence supporting the notion". Gawande et al. (2015), using trade policy data for seven large emerging market countries (Argentina, Brazil, China, India, Mexico, South Africa, and Turkey), find that participation in global value chains is "a powerful economic factor determining trade policy responses" (p. 102). And yet, Blanchard et al. (2016) dispute this claim. They show that GVCs have increased the share of firms that rely on international supply and lobby for international trade openness. My theoretical intuition is that PTAs—and to

some extent GVCs—create trade dependencies, which under conditions of high economic uncertainty can spill over into defensive trade mechanisms between partner countries.

On the effect that PTAs can have with regard to trade policy, the literature on the political economy of PTAs has been concentrated mostly on why countries negotiate and sign PTAs (Baldwin, 1993; Chase, 2003; Manger, 2009; Baccini & Dür, 2012). More recently, the focus has been on the effect PTAs have on signatory countries in terms of trade flows (Baier & Bergstrand, 2007) and other areas of political concern, such as their ability to reduce bilateral conflict between PTA members (Hafner-Burton, 2005; Mansfield et al., 2008; Mansfield & Reinhardt, 2008). Some more recent studies report contradictory findings. For instance, Kono (2007), in investigating the effect of PTAs in 30 countries from 1988 to 1998, found that they have "important but contradictory conditional effects: they promote multilateral liberalization when members' intra- and extra-FTA comparative advantages are similar but impede such liberalization when these comparative advantages are different. FTAs can thus, depending on the circumstances, either help or hinder broader trade liberalization" (p. 165). Nevertheless, most of the studies on this topic have concentrated more on the positive aspects of PTAs (Limão, 2016). For example, according to Young (2017), PTAs

can foster various levels of integration, including "deep" integration.

Another area of political concern is whether PTAs can reduce bilateral conflict between PTA members (Hafner-Burton, 2005; Mansfield et al., 2008; Mansfield & Reinhardt, 2008). On the role played by interdependence, academic studies to date have generally concentrated on the positives of interdependence (through PTAs or GVCs). This argument goes back to the international political economy (IPE) and peace research agendas, both of which state that increased economic and political interdependence reduces the likelihood of conflict between countries (Copeland, 1996). Although realist theorists like Waltz (2000, p. 14) insist that interdependences "multiplies the occasion for conflict" neither side in this IPE debate has sufficiently considered how interdependence can create and encourage channels of protectionism. But, only a few authors have studied rising protectionism in the context of heightened interdependence (Blanchard et al., 2016; Bems et al., 2009; Yi, 2009, Manger, 2009). I concur with Yi (2009)—one of the few to take up this challenge—who argues that "massive reorientation of trade flows towards multiple-step supply chains" has played an important role in current protectionist dynamics (p. 2).

Governments generally pursue policies that maximize their support

from influential political groups. Evenett (2019, p. 26) reminds us that "many governments simultaneously face pressure to reflate national economies and defend national commercial interests." Studies have shown that uncertainty exacerbates this scenario, leading one country in a group of two or more trading nations to impose a gradually rising tariff on the others (Baldwin & Evenett, 2009). Eventually, this added cost on imported goods induces retaliation from the other nations. This retaliation can encourage either liberalization or a protectionism, with market characteristics acting as the deciding factor. At the same time, the very threat of retaliation may play a key role in triggering trade liberalization (Gould & Woodbridge, 1998).

Hypotheses, Model and Data

In Table 1, I present my hypotheses concerning the dynamic of rising in interdependent protectionism in the last decade. The first set of hypotheses concerns how countries respond to protectionism and the effect of PTAs and GVCs on such responses.

First, I hypothesize that, when a country is adversely affected by another country's protectionist measures, it will systematically respond to that country with retaliatory protectionist measures. Hence, in Hypothesis 1, I test whether an increase in import restrictions by country B on country A at time $t-1$ has a positive effect on import

restrictions by A on B at time t. However, at least theoretically, the existence of PTAs between two countries reduces the possibilities of protectionist escalation. In other words, a PTA—*ceteris paribus*—lowers the probability and severity of bilateral protectionist dynamics. In line with the literature on trade interdependence, we would expect that the more interconnected countries are, the less protectionist they are likely to become (e.g., Baldwin, 2012; Gawande et al., 2015; Rodrik, 2009; Jensen et al., 2015; Lamy, 2013). Hence, in Hypothesis 2, I posit that PTAs and GVCs are negatively correlated with protectionist responses. In Hypothesis 3, I test the extent to which GVCs decrease the likelihood of a protectionist response.

HYPOTHESIS 1: Countries will retaliate against those nations that initially target them with a protectionist measure (Direct Retaliation).

HYPOTHESIS 2: Preferential Trade Agreements (PTAs) are negatively correlated with protectionist responses (Conditional Effect of PTAs).

HYPOTHESIS 3: Global Value Chains (GVCs) are negatively correlated with protectionist responses (Conditional Effect of GVCs).

A second group of hypotheses tests how trade policy responses vary when they are divided between tariff and non-tariff measures. In Hypotheses 4 and 5, I posit that countries connected by PTAs or GVCs will retaliate more with less transparent non-tariff measures. Thus, PTAs and GVCs are negatively correlated with protectionist tariff responses (Hypothesis 4), while positively correlated with non-tariff responses (Hypothesis 5).

HYPOTHESIS 4: Preferential Trade Agreements (PTAs) are positively correlated with protectionist non-tariff responses and negatively correlated with tariff responses (Conditional Effect of PTAs).

HYPOTHESIS 5: Global Value Chains (GVCs) are positively correlated with protectionist non-tariff responses and negatively correlated with tariff responses (Conditional Effect of GVCs).

I test these expectations via large-n quantitative analysis using directed dyad-year data at the state and industry level. Ultimately, I compiled two datasets, one based on new data and another where I have merged this new data with existing data, as discussed below. The main dataset used for my models derives from Global Trade Alert (GTA), which provides information on state-to-state—dyad-year—interventions undertaken since 2008 that are most likely to affect foreign trade. This includes "state interventions affecting trade in goods and services, foreign investment and labor force migration".[12] GTA was launched in 2009 when it was "feared that the global financial crisis would lead governments to adopt widespread 1930s-style beggar-thy-neighbor policies" (Evenett & Fritz, 2020, p. 1). Since it was launched, many studies have relied on GTA data (Evenett et al., 2011; Evenett et al., 2011; Boffa & Olarreaga, 2012; Henn & McDonald, 2014; Georgiadis & Gräb, 2016; Evenett, 2019). It is relevant to note that GTA documents both trade liberalization and protectionist measures, which lets us measure both sides of trade policy mechanisms and offers control variables to test the real weight of both types of measures when we consider them as explanatory variables.

To test my hypotheses, I use a lagged model, as it does not assume contemporaneous influence; rather, influence is lagged so that a focal country is influenced by its trading partners' network after those trading partners have implemented protectionist policies that affect the focal country. Hence, what the lagged influence model considers is the time that the focal country may take (e.g., quarters within one year) before it decides to retaliate.

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12 Global Trade Alert, https://www.globaltradealert.org/.

First, to test my hypotheses concerning the likelihood of responses (Hypothesis 1), the conditional effects of PTAs and GVCs in that response (Hypothesis 2, Hypothesis 3), and the difference between the likelihood of tariff and NTMs responses (Hypothesis 4, Hypothesis 5), the models can be stated as:

$$Y_{\text{AB}_{\text{all}},t} = \alpha + \beta_1 Y_{\text{BA}_{\text{all}},t-1} + \beta_2 PTA_{\text{AB},t-1} + \beta_2 GVC_{\text{AB},t-1} + \beta_5 X_{\text{AB},t-1} + \varepsilon_{\text{AB},t-1} \quad\quad (1)$$

$$Y_{\text{AB}_{\text{Tariff}},t} = \alpha + \beta_1 Y_{\text{BA}_{\text{all}},t-1} + \beta_2 PTA_{\text{AB},t-1} + \beta_2 GVC_{\text{AB},t-1} + \beta_5 X_{\text{AB},t-1} + \varepsilon_{\text{AB},t-1} \quad\quad (2)$$

$$Y_{\text{AB}_{\text{NTM}},t} = \alpha + \beta_1 Y_{\text{BA}_{\text{all}},t-1} + \beta_2 PTA_{\text{AB},t-1} + \beta_2 GVC_{\text{AB},t-1} + \beta_5 X_{\text{AB},t-1} + \varepsilon_{\text{AB},t-1} \quad\quad (3)$$

The main difference between these is the dependent variable. $Y_{AB\text{all}},t$ represents all protectionist restrictions by country A on country B at time t, which is measured by the share of bilateral trade affected by protectionist measures in a given year. $Y_{AB\text{tariff}},t$ represents protectionist tariff restrictions by country A on country B at time t, and $Y_{AB\text{NTM}},t$ represents protectionist non-tariff restrictions by country A on country B at time t. For the three equations, $Y_{BA\text{all}},t\text{-}1$ represents the protectionist restrictions by country B on country A at time $t\text{-}1$; PTA_{AB},t represents the number of trade agreements in place between A and B; and GVC_{AB},t represents whether trade between A and B is interconnected through a global value chain. X_{AB},t are control variables consisting of political and economic data regarding A and B such as population weighted distance, normally used for gravity models. The share of trade positively affected is shown by liberalizing measures by B on A in time $t\text{-}1$, bilateral investment treaty between A and B, relative economic difference (*B's GDPpc/A's GDPpc*), common colonizer, common official language, among others control measures; whereby α is the intercept and ε is an error term.

Based on GTA, in order to measure the dependent variable, the following possible outcomes are used:

DV1: All protectionist measures by A on B in time t—the share of bilateral trade affected (Hypothesis 1, Hypothesis 2, and Hypothesis 3);

DV2a & DV2b: Number of Transparent and Non-Transparent protectionist measures directed by A toward B in time t—continuous variable (Hypothesis 4 and Hypothesis 5);

DV3a & DV3b: Proportion of Transparent and Non-Transparent

protectionist measures in total measures directed by *A* toward *B* in time *t*—percentage (Hypothesis 4 and Hypothesis 5).

The measure of PTAs is based on Dür et al. (2014), which contains bilateral data on PTAs from 1948 to 2018 for 203 countries. PTAs have expanded in number and have diversified in content. Around 40 PTAs had been negotiated by the 1990s; 303 had been negotiated as of January 2020[13]. Following the World Bank's definition, Dür et al. (2014) provide a more general description of international trade agreements as "all the agreements that have the potential to liberalize trade" (p. 1)[14]. This definition is used in this paper, as it is one of the most widely used definitions in the literature (Hofmann et al., 2019; Ruta, 2017). As said, when referring to a PTA, this includes free trade agreements, customs unions, or partial free trade agreements, which can take bilateral (two countries), plurilateral (many countries), plurilateral with a third country (e.g., EU-Australia Trade Agreement), or region-region (e.g., EU-Mercosur Trade Agreement) forms. The diversity of PTA classifications complicates the inherent meaning of PTA, since a PTA could be one of many trade agreements. As

mentioned above, as of June 2020, 303 PTAs that had been formally notified to the WTO. Of these, 94% are flexible integration agreements (e.g., Free Trade Agreements or Partial Scope Agreements), and the remaining 6% are considered to be deep integration agreements (e.g., Customs Union).

The measure of GVCs is based on the combination of Global Trade Alert data and BACI-CEPII trade data, which contains estimates of the composition of trade between countries. I use the share of intermediate goods between two countries as a proxy for embeddedness in GVCs.

For each pair of countries *A* and *B*—exporter and importer—the data includes the product, HS 2012 code, with an estimate of how much that product accounts for total exports from exporter *A* to importer *B*[15]. As mentioned, the classification by Broad Economic Categories (BEC, para. 1) is also used, which provides "a means for international trade statistics to be analyzed by broad economic categories such as food, industrial supplies, capital equipment, consumer durables and

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13 TO, Regional Trade Agreements, <https://www.wto.org/english/tratop_e/region_e/region_e.htm>

14 For other studies on why the term PTA is preferred , see, for instance, Hofmann et al. (2019) and Ruta (2017).

15 The raw data is publicly available at <http://www.cepii.fr>. BACI-CEPII uses HS 2002 version, so I merged it with the equivalent code in HS 2012 version (4 digits). See: UN Statistics Division, Correlation and Conversion Tables Used in UN Comtrade, <https://unstats.un.org/unsd/trade/classifications/correspondence-tables.asp>.

consumer non-durables"[16]. Hence, the main variable obtained from *BA-CI-CEPII* trade data is a percentage that estimates the proportion that a certain product contributes to total exports from country *A* to country *B*. Then, combining this percentage with the data provided by GTA, we can obtain which product is affected by each protectionist measure implemented from *A* to *B* and the percentage of trade affected between *A* and *B*[17]. Finally, to avoid endogeneity issues, these shares of intermediate goods are calculated using pre-crisis, 2005-2007, trade values.

The control variables include trade liberalizing measures which are the share of exports positively affected by liberalizing measures and the Bilateral Investment Treaties (BITs) between *A* and *B*[18]; from the IPE Data Resource, the Relative Economic Difference—*B's log GDPpc / A's log GDPpc*[19]. Data are additionally drawn from the GeoDist Database CEPII, which uses the population-weighted distance that is typically used in gravity models, common colonizer, and common official language[20]. See in appendix (Table A1) the summary statistics of all the variables considered for this analysis.

Results

The first set of hypotheses presented in this paper predict that, in general terms, when a country is adversely affected by another country's protectionist measures, it will systematically respond to that country by adopting its own protectionist measures in return (Hypothesis 1). However, the existence of PTAs (Hypothesis 2) and GVCs (Hypothesis 3) decrease the likelihood of protectionist responses.

Table 1 shows that, holding all other variables constant, a one-decimal-point increase in the share of bilateral trade affected by import restrictions by *B* on *A* in time *t-1* results

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16   UN Statistics Division, Classification by Broad Economic Categories, < https://uns-tats.un.org/unsd/tradekb/knowledge-base/50089/classification-by-broad-econo-mic-categories-rev4>.

17   Based on these new measures, further studies can apply this to the share of trade between A and B of total trade of A, to get a "back-of-the-envelope" calculation for the income effects of retaliation. This will be further discussed in this paper.

18   UNCTAD (2018) International Investment Agreements Database, <http://investmen-tpolicyhub.unctad.org/IIA/IiasByCoun-try#iiaInnerMenu>. For more details on BITs as a control variable see: Neumayer & Spess (2005); Graham & Tucker (2017); Graham (2019).

19   The International Political Economy Data Resource (IPE) compiles data from 89 IPE data sources into a single dataset (Graham & Tucker, 2017). See <https://doi.org/10.7910/DVN/X093TV>

20   Mayer, T. & Zignago, S. (2011) Notes on CEPII's distance measures: the GeoDist Database CEPII Working Paper 2011-25, http://www.cepii.fr/CEPII/en/bdd_modele/presentation.asp?id=6.

in a 0.043 (4.3%) import restriction increase by *A* on *B* in time t (Model 1). This positive correlation is statistically significant even when controlling for other bilateral characteristics such as liberalizing measures by *B* on *A* in time *t-1*, a bilateral investment treaty between *A* and *B*, population-weighted distance—the gravity model—the relative economic difference, *B's* log GDPpc / *A's* log GDPpc, common colonizer, and common official language (Model 2), and when including countries *A* and *B* fixed effect and time fixed effect (Model 3). These results support Hypothesis 1, which states that countries will retaliate against nations that initially target them with a protectionist measure, which is known as *Direct Retaliation.*

Table 1 – DV1a: All Protectionist Measures by A on B in Time t
DV1a: Share of bilateral trade affected (log)

	DV1a: Share of bilateral trade affected (log)		
			Model 3
	Model 1	**Model 2**	*A&B fixed effect and time fixed effect*
All protectionist measures by *B* on *A* in time *t-1* (Share of bilateral trade affected) (log)	0.043*** (0.011)	0.070*** (0.010)	0.020** (0.010)
Trade agreements between *A* and *B*	0.094*** (0.012)	-0.110*** (0.010)	-0.050*** (0.010)
% of intermediate goods in total trade between A and B (GVC proxy variable)	-0.604*** (0.040)	-0.090* (0.040)	-0.070 (0.040)
CONTROL VARIABLES	NO	YES	YES
Constant	0.200*** (0.001)	-0.390*** (0.01)	9.670*** (0.344)
R2	0.01	0.06	0.39
Adj. R2	0.01	0.06	0.39
Num. obs.	53831	50077	50077

***p < 0,001, **p < 0,01, *p < 0,05*

Second, Table 2 shows that the existence of a PTA between *A* and *B* is negatively correlated with protectionist responses. In other words, if a PTA exists, retaliation is weaker strong than would otherwise be the case. Something similar happens when a GVC exists between *A* and *B*. This negative correlation for both variables is statistically significant even when controlling for other bilateral characteristics. Countries *A* and *B* and year fixed effects were controlled for because some countries may implement more import restrictions than the average of countries simply to trade more than others, which is the case with the U.S. and China. Other countries may be targeted with additional protectionist measures related to political concerns and pressures, like the economic sanctions imposed on countries such as Iran and Cuba.

When controlling for fixed effects, GVCs do not seem to be as strong as PTAs in restraining protectionist dynamics. This may be signaling that GVCs are highly concentrated in a few central countries. Many countries do not play a relevant role in GVCs. Some of them do not have much potential for forging GVC ties, as is the case with Argentina. Others, though, have important GVC ties, such as Mexico. This second set of results supports Hypothesis 2, which suggests that PTAs are negatively correlated with

protectionist responses, known as the *Conditional Effect of PTAs.*

The second set of hypotheses concentrates on the relationship between tariffs and NTMs within the institutional context of PTAs and GVCs. Hypotheses 4 and 5 predict that countries with high trade interdependence—with PTAs and GVCs—retaliate more with non-tariff measures than with tariff measures. For this set of hypotheses, two different dependent variables were considered to verify the robustness of the results. First, is the number of transparent (DV2a) and non-transparent (DV2b) protectionist measures levied by *A* on *B* in time *t*, the continuous variable.

Table 2 also shows that, holding all other variables constant, one unit of increase in the number of import restrictions by *B* on *A* in time *t-1* increases the number of tariff restrictions by *A* on *B* in time *t* by 0.230 (Model 1a). The number of non-tariff restrictions in time t also increases by 0.490 (Model 1b). Second, it shows that when we use an interaction term between having a PTA and being affected by a protectionist measure in t-1, there is a negative relationship with tariff retaliation (Model 2a). This means that when a PTA exists between *A* and *B*, and *B* implements a protectionist measure toward *A*, the latter responds, not with tariff measures (Models 2a and 4a), but rather with non-tariff protectionist measures (Models 2b and 4b). This same

pattern holds with GVCs (Models 3a, 4a, 3b, and 4b). In other words, having a PTA or GVC is negatively correlated with tariff responses, while positively correlated with non-tariff responses (Models 3b and 4b).

These results are consistent with the expectations of Hypotheses 4 and 5: both PTAs and GVCs are negative, statistically significant predictors of tariff responses, but positive, statistically significant predictors of nontariff responses. In the appendix (Table A2), I present a robustness check of the previous results by considering the proportion of transparent and non-transparent protectionist measures in total measures by *A* on *B* in time t as the dependent variable. I find very similar results regarding the effect of GVCs in both Transparent (Model 3a) and Non-Transparent (Model 3b) protectionist measures, even when considering different control variables (Models 4a and 4b). Additionally, I find similar results regarding the effect of PTAs in both Transparent (Model 2a) and Non-Transparent measures (Model 2b).

Table 2 – The Relationship Between Tariff and Non-tariff Measures with PTAs and GVCs (DV2a and DV2b)

	DV2a: Tariff protectionist measures by *A* on *B* in time *t* (number of measures) (log)				DV2b: Non-tariff protectionist measures by *A* on *B* in time *t* (number of measures) (log))			
	Model 1a	Model 2a	Model 3a	Model 4a	Model 1b	Model 2b	Model 3b	Model 4b
Protectionist measures by B on A in time t-1 (number of measures) (log)	0.230*** (0.000)	0.230*** (0.000)	0.230*** (0.000)	0.181*** (0.000)	0.490*** (0.004)	0.486* (0.004)	0.520*** (0.010)	0.500*** (0.010)
Interaction term: Trade agreements * Protect. measures in t-1		-0.041* (0.020)		-0.040* (0.020)		0.130** (0.048)		0.141** (0.050)
Interaction term: % of intermediate goods (GVC) * Protect. measures in t-1			-0.224*** (0.030)	-0.360*** (0.031)			0.010*** (0.001)	0.010*** (0.001)
CONTROL VARIABLES	NO	NO	NO	YES	NO	NO	NO	YES
Constant	0.110*** (0.000)	0.110*** (0.000)	0.113*** (0.002)	-0.482*** (0.024)	0.352*** (0.005)	0.352*** (0.005)	0.360*** (0.005)	3.01*** (0.060)
R2	0.23	0.23	0.24	0.28	0.20	0.20	0.20	0.26
Adj. R2	0.23	0.23	0.24	0.28	0.20	0.20	0.20	0.26
Num. obs.	51872	51872	51872	50441	51872	51872	51872	50441

***p < 0,001, **p < 0,01, *p < 0,05*

Analysis

In a context of high economic uncertainty––like that experienced in the wake of the 2008-09 GFC and the COVID-19 pandemic––countries are more likely to increase protectionism. Moreover, during hard times, countries tend to protect themselves against those countries with which they have the strongest trading relationship[21].

However, when governments implement restrictive trade measures against strong trade partners, this escalates protectionism. While bilateral trade flows are most negatively affected, there can be multiple effects in the sense that this signals a general mood of protectionism.

My quantitative results at the country level show that trade protectionism over the past decade has assumed the followings features. First, in general terms, when a country is adversely affected by a protectionist measure adopted by another country, it will systematically respond to that country by adopting protectionist measures in return. However, the existence of PTAs and GVCs decreases the likelihood of a protectionist response. Second, countries with high trade interdependence via PTAs will retaliate

more with non-tariff measures which are less transparent. The message here is that trade policy makers need to find the optimal balance between giving in to protectionist domestic pressures and mitigating against an upward protectionist spiral with its main trading partners. While striving to maintain some balance many countries appear to have embraced murkier and less transparent trade policy measures.

Let me caution that this quantitative analysis constitutes a tentative first step, meaning that there are limitations to this analysis in its current form. In particular, the main focus of this analysis is on dyadic dynamics rather than triadic ones, though this research could be extended to an analysis of triadic dynamics. In fact, while this paper makes an important contribution by conducting a large-N bilateral analysis of potential retaliatory responses, this may not only be a story of countries A and B, but also country C. Global trade, in other words, is essentially a network in which many factors and countries interact at the same time. Although such a network analysis lies beyond the scope of this paper, it is the next logical step in researching the rise of murky protectionism in the last decade. Further research could also employ relational event approaches, in which systemic effects can be better captured to gain a stronger grasp of how the system is faring as a whole (Butts & Marcum, 2017). That is, an analysis of the whole

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21   Trade interconnectivity normally increases bilateral trade flows between countries with such interconnectivity (PTAs and GVCs) (Urata & Okabe, 2010).

system, may offer a richer explanation than the sum of its parts. A second limitation to this analysis, due to data restrictions, is the relatively short time period under consideration, i.e., the decade since the 2008-09 GFC. To be clear, there is no data available before 2008 at the different levels of analysis used in this paper.

In the context of economic crisis and post-crisis, governments tend to implement more protectionist measures in hopes of redirecting demand toward domestically produced goods. Although the period studied goes up to 2018, other studies have shown that the recovery of global trade after the GFC is still weak compared to the marked acceleration in global trade in the previous two decades prior to the GFC (Wozniak & Galar, 2018). It is thus possible that much of the retaliation captured here is specific to the GFC and inapplicable to other less turbulent economic contexts. As such, it cannot be claimed that the findings of this analysis are generalizable to other economic periods.

Although this large-N analysis helps us understand big-picture trends, there may be specific or unique country characteristics that affect the ways that governments are responding to protectionism, as well as the precise forms of their retaliation. In other words, the quantitative analysis in this paper must be complemented by a more in-depth, robust examination of individual country cases that reach well beyond the analysis offered in this paper.

Conclusions

As this paper showed, trade policy is still very relevant, but we need to more clearly speficy why this is so. In this vein, I have identified new factors such as murky trade policies that are impacting trade relations between countries in the last decade. In doing so, this paper seeks to better understand the past, but also provide a roadmap of sorts for the kinds of commercial policy reforms that will be essential for the successful revival of world markets following the COVID-19 downturn.

This paper was finished during a period of intense flux. In terms of theory expansion, the main contribution of this research is my analysis of how three main variables have interacted with ongoing trade policy dynamics in the last decade and that can continue being studied by further studies. By this, I refer to a plausible political economy "trilemma" between trade protectionism, trade interconnectivity (e.g., PTAs and GVCs), and uncertainty (mostly generated by economic

crises)[22]. Something that can be studied with more details by further studies. More specifically, I have explored how rising trade interconnectivity via PTAs and GVCs can also generate an unexpected increase in non-transparent protectionism, given the context of exceedingly high economic uncertainty. In such times, countries protect themselves from trade partners with which they have strong commercial ties through less observable, non-tariff protectionist measures. These patterns have important implications for the relationship between PTAs and GVCs, as well as for political economy and policy trends overall.

I do not dispute the robustness of existing research indicating a correlation between PTAs, GVCs, and trade openness measured by tariff levels and, to some extent, by the more traditional non-tariff barriers such as antidumping measures. Rather, what is demonstrated in this paper is that trade interconnectivity, generated by PTAs and GVCs in the context of high economic uncertainty, induces governments to substitute transparent trade barriers with less transparent ones. These results are in line with

the "optimal obfuscation" that Kono (2006, p. 369) talks about in a seminal work in which he finds that "democracy leads to lower tariffs, higher core NTBs, and even higher quality NTBs …. [D]emocracy promotes 'optimal obfuscation' that allows politicians to protect their markets while maintaining a veneer of liberalization". Keeping Kono's framework in mind, I suggest that PTAs and GVCs also promote the "optimal obfuscation" that he talks about.

To conclude, the contribution of this paper is threefold: first, it fills a gap in our knowledge about the recent rise of protectionism in the global economy. Second, it identifies a new murky protectionism in the form of opaque and pernicious non-tariff barriers, a topic that has been under-researched and demands attention. A central element of this paper is that it bridges academics and trade policymaking and contributes to the search for commercial policy reforms that will be essential for the successful revival of world markets post-COVID-19. The pandemic, which will perhaps have an unprecedented impact on the global economy and multilateralism, is causing even more uncertainty in international markets (Baker et al., 2020; Albertoni & Wise, 2020; Pinna & Lodi, 2021).

On a final note, this study offers a cautionary tale about trade protectionism in an era of high interconnectivity

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22 This paper puts special attention on two variables of this possible trilemma: trade protectionism and trade interconnectivity. Although, important studies have mentioned how the GFC impacted on economic uncertainty (Ahir, Bloom, & Furceri 2020; Pacces, 2010) further studies can focus more on how uncertainty interacts with trade protectionism and trade interconnectivity.

and economic uncertainty. From a policy perspective, it shows how relevant it is to direct our attention toward the increased need for trade transparency, something that multilateral institutions have acknowledged without promoting consistently in ongoing policy debates. The escalation of trade protectionism during and after a COVID-19 economic recession may be the (unfortunate) catalyst for pushing this topic higher up on the multilateral policy agenda.

References

Ahir, H., Bloom, N., & Furceri, D. (2018). *The World Uncertainty Index*. Retrieved from https://nbloom.people.stanford.edu/research

Ahir, H., Bloom, N., & Furceri, D. (2020). 60 Years of Uncertainty. *Finance & Development, 57*(1), 58–60.

Altig, D., Baker, S., Barrero, J., Bloom, N., Bunn, P., Chen, S., Davis, S., Leather, J., Meyer, B., Mihaylov, E., Mizen, P., Parker, N., Renault, T., Smietanka, P., & Thwaites, G. (2020). Economic uncertainty in the wake of the COVID-19 pandemic. *VoxEU.Org* (24 July 2020). Retrieved from: <https://voxeu.org/article/economic-uncertainty-wake-covid-19-pandemic>.

Albertoni, N., & Wise, C. (2020). International Trade Norms in the Age of Covid-19 Nationalism on the Rise? *Fudan Journal of the Humanities and Social Sciences*, 14(1), 41–66.

Baccini, L., & Dür, A. (2012). The New Regionalism and Policy Interdependence. *British Journal of Political Science*, 42(1), 57–79.

Baier, S. L., & Bergstrand, J. H. (2007). Do Free Trade Agreements Actually Increase Members' International Trade? *Journal of International Economics, 71*(1), 72–95.

Baker, S., Bloom, N., Davis, S., & Terry, S. (2020). COVID-Induced Economic Uncertainty and its Consequences. *VoxEU. Org* (2020, 13 April). https://voxeu.org/article/covid-induced-economic-uncertainty-and-its-consequences

Baldwin, R. (1993). A Domino Theory of Regionalism. *NBER Working Paper Series, No. 4465.* (1993, January 18). https://www.nber.org/papers/w4465

Baldwin, R. (2009a, November 27). The great trade collapse: What caused it and what does it mean? *VoxEU.Org.* (2009, November 27). https://voxeu.org/article/great-trade-collapse-what-caused-it-and-what-does-it-mean

Baldwin, R. (2009b). The Greater Trade Collapse of 2020. *VoxEU.Org* (2009, April 7). https://voxeu.org/article/greater-trade-collapse-2020

Baldwin, R. (2012). WTO 2.0: Global Governance of Supply-Chain Trade. *Centre for Economic Policy Research, Policy Insight No. 64.* https://voxeu.org/article/greater-trade-collapse-2020

Baldwin, R. E. (1970). *Non-tariff distortions of international trade.* Washington, DC: Brookings Institution.

Baldwin, R. E. (1989). *Trade policy in a changing world economy*. Chicago, IL: University of Chicago Press.

Baldwin, R. & Evenett, S. (2009). The collapse of global trade, murky protectionism, and the crisis: Recommendations for the G20. *Centre for Economic Policy Research (CEPR)*.

Barbieri, K. (1996). Economic Interdependence: A Path to Peace or a Source of Interstate Conflict? *Journal of Peace Research, 33*(1), 29–49.

Bellégo, C., & Pape, L.-D. (2019). Dealing with Logs and Zeros in Regression Models. *Political Methods: Quantitative Methods EJournal*, 1(2), 1–16.

Bems, R., Johnson, R., & Yi, K. (2013). The Great Trade Collapse. *Annual Review of Economics, 5*(1), 375–400.

Beverelli, C., Stolzenburg, V., Koopman, R. B., & Neumueller, S. (2019). Domestic Value Chains As Stepping Stones to Global Value Chain Integration. *The World Economy, 42*(5), 1467-1494.

Blanchard, E., Bown, C., & Johnson, R. (2016). Global Supply Chains and Trade Policy. *NBER Working Paper No 21883*. https://doi.org/10.3386/w21883

Boffa, M., & Olarreaga, M. (2012). Protectionism During the Crisis: Tit-for-tat or Chicken-Games? *Economics Letters*, 117(3), 746–749.

Bown, C., & Kolb, M. (2019). Trump's Trade War Timeline: An Up-to-Date Guide. *PIIE*, 2–15.

Butts, C. & Marcum, C. (2017). A Relational Event Approach to Modeling Behavioral Dynamics. In A. Pilny & M. Scott (Eds.), *Group Processes: Data-Driven Computational Approaches* (pp. 51–92). Springer.

Chase, K. A. (2003). Economic Interests and Regional Trading Arrangements: The Case of NAFTA. *International Organization, 57*(1), 137–174.

Cieślik, A., & Hagemejer, J. (2011). The effectiveness of preferential trade liberalization in Central and Eastern Europe. *The International Trade Journal*, 25(5), 516-538.

Copeland, D. C. (1996). Economic Interdependence and War: A Theory of Trade Expectations. *International Security*, 20(4), 5–41.

Curran, L., & Eckhardt, J. (2018). Influencing Trade Policy in a Multi-Level System—Understanding Corporate Political Activity in The Context of Global Value Chains And Regime Complexity. *Business and Politics*, 20(1), 132-164.

Davis, B. (2019, April). What's a Global Recession? *The Wall Street Journal.* https://blogs.wsj.com/economics/2009/04/22/whats-a-global-recession/

De Backer, K., & Miroudot, S. (2014). Mapping Global Value Chains. *OECD Trade Policy Papers*, 15(1), 1–24.

Dür, A., Baccini, L., & Elsig, M. (2014). The Design of International Trade Agreements: Introducing a New Dataset. *The Review of International Organizations*, 9(3), 353–375.

Dür, A., Eckhardt, J., & Poletti, A. (2020). Global value chains, the anti-globalization backlash, and EU trade policy: A research agenda. *Journal of European Public Policy*, 27(6), 944-956.

Eckhardt, J. (2013). EU Unilateral Trade Policy-Making: What Role for

Import-Dependent Firms? *JCMS: Journal of Common Market Studies*, 51(6), 989-1005.

Egger, P., Larch, M., Staub, K. E., & Winkelmann, R. (2011). The Trade Effects of Endogenous Preferential Trade Agreements. *American Economic Journal of Economic Policy*, 3(3), 113-143.

Escaith, H., Lindenberg, N., & Miroudot, S. (2010). Global Value Chains and the Crisis: Reshaping International Trade Elasticity. Global Value Chains in a Post-crisis World: A Development Perspective. *The World Bank.* https://openknowledge.worldbank.org/handle/10986/2509

Evenett, S. (2019). Protectionism, State Discrimination, and International Business Since the Onset of the Global Financial Crisis. *Journal of International Business Policy*, 2(1), 1–28.

Evenett, S., & Fritz, J. (2017). Will Awe Trump Rules? Global Trade Alert 21st Report CEPR. https://www.globaltradealert.org/reports/download/42.

Evenett, S., & Fritz, J. (2018). Brazen Unilateralism: The US-China Tariff War in Perspective. *Global Trade Alert Report* 23. CEPR Press. https://www.globaltradealert.org/reports/45.

Evenett, S., & Fritz, J. (2020). The Global Trade Alert database handbook. Manuscript. https://www.globaltradealert.org/data_extraction.

Evenett, S., Fritz, J., Gerasimenko, D., Nowakowska, M., & Wermelinger, M. (2011). The resort to protectionism during the great recession: Which Factors Mattered? [Working Paper] University

of St Gallen. https://www.alexandria.unisg.ch/publications/89753

Gaulier, G., Sztulman, A., & Ünal, D. (2019). Are Global Value Chains Receding? The Jury is Still Out. Key Findings from the Analysis of Deflated World Trade in Parts and Components. *International Economics*, 161(1), 219-236.

Gawande, K., Hoekman, B., & Cui, Y. (2011, November 10). Determinants of Trade-Policy Responses to the 2008 Financial Crisis. *VOX CERP Policy Portal.* https://voxeu.org/article/determinants-trade-policy-responses-2008-financial-crisis

Gawande, K., Hoekman, B., & Cui, Y. (2015). Global Supply Chains and Trade Policy Responses to the 2008 Crisis. *The World Bank Economic Review*, 29(1), 102–128.

Georgiadis, G., & Gräb, J. (2016). Growth, Real Exchange Rates and Trade Protectionism Since the Financial Crisis. *Review of International Economics*, 24(5), 1050-1080.

Gereffi, G. (2014). Global Value Chains in a Post-Washington Consensus World. *Review of International Political Economy*, 21(1), 9–37.

Gereffi, G. (2018). *Global value chains and development: Redefining the contours of 21st century capitalism*. Cambridge University Press.

Gerring, J., & Cojocaru, L. (2016). Selecting Cases for Intensive Analysis: A Diversity of Goals and Methods. *Sociological Methods & Research*, 45(3), 392–423.

Ghodsi, M., & Stehrer, R. (2016). Non-tariff measures trickling through global value chains. Productivity, non-tariff measures and openness. [Working paper].

Vienna Institute for International Economic Studies, Vienna. https://www.etsg.org/ETSG2016/Papers/281.pdf

Goldberg, P. K., & Pavcnik, N. (2016). The Effects of Trade Policy. In K. Bagwell & R. W. Staiger, *Handbook of Commercial Policy* (Vol. 1, pp. 161–206). Elsevier Press.

Gould, D. M., & Woodbridge, G. L. (1998). The Political Economy of Retaliation, Liberalization and Trade Wars. *European Journal of Political Economy*, 14(1), 115–137.

Graham, B., & Tucker, J. (2017). The International Political Economy Data Resource. *The Review of International Organizations*, 12(1), 1–13.

Graham, B. (2019). *Investing in the homeland: migration, social ties, and foreign firms.* University of Michigan Press.

Grundke, R., & Moser, C. (2019). Hidden Protectionism? Evidence from Non-Tariff Barriers to Trade in the United States. *Journal of International Economics*, 117, 143–157.

Hafner-Burton, E. M. (2005). Trading Human Rights: How Preferential Trade Agreements Influence Government Repression. *International Organization*, 59(3), 593–629.

Henn, C., & McDonald, B. (2014). Crisis Protectionism: The Observed Trade Impact. *IMF Economic Review*, 62(1), 77–118.

Hofmann, C., Osnago, A., & Ruta, M. (2019). The Content of Preferential Trade Agreements. *World Trade Review*, 18(3), 365–398.

Hummels, D., Ishii, J., & Yi, K.-M. (2001). The Nature and Growth of Vertical Specialization in World Trade. *Journal of International Economics*, 54(1), 75–96.

Jensen, J., Quinn, D. P., & Weymouth, S. (2015). The Influence of Firm Global Supply Chains and Foreign Currency Undervaluations on US Trade Disputes. *International Organization*, 69(4), 913–947.

Johnson, R. C. (2017). Measuring Global Value Chains (Working Paper No. 24027; Working Paper Series). National Bureau of Economic Research.

Kee, H. L., Neagu, C., & Nicita, A. (2013). Is Protectionism on the Rise? Assessing National Trade Policies during the Crisis of 2008. *Review of Economics and Statistics*, 95(1), 342–346.

Kono, D. (2006). Optimal Obfuscation: Democracy and Trade Policy Transparency. *The American Political Science Review*, 100(3), 369–384.

Kono, D. (2007). When Do Trade Blocs Block Trade? *International Studies Quarterly*, 51(1), 165–181.

Lamy, P. (2013, December 18). Global Value Chains, Interdependence, and the Future of Trade. *Vox CEPR Policy Portal*. https://voxeu.org/article/global-value-chains-interdependence-and-future-trade.

Limão, N. (2016). Preferential Trade Agreements. In K. Bagwell & R. W. Staiger, (Eds.), *Handbook of Commercial Policy.* (Vol. 1, pp. 279–367). Elsevier Press.

Manger, M. (2009). *Investing in Protection: The Politics of Preferential Trade Agreements Between North and South.* Cambridge University Press.

Mansfield, E., & Milner, H. (1999). The New Wave of Regionalism. *International Organization*, 53(3), 589–627.

Mansfield, E., & Reinhardt, E. (2008). International Institutions and the Volatility of International Trade. *International Organization*, 62(4), 621–652.

Mansfield, E., Milner, H., & Jon, P. (2008). Democracy, Veto Players and the Depth of Regional Integration. *The World Economy*, 31(1), 67–96.

Maswood, S. J. (2021). Origins and Consequences of Economic Globalization: Moving Beyond a Flawed Orthodoxy. *European Journal of International Relations*, 27(2), 428-449.

Neumayer, E., & Spess, L. (2005). Do bilateral Investment Treaties Increase Foreign Direct Investment to Developing Countries? *World Development*, 33(10), 1567-1585.

Osgood, I. (2018). Globalizing the supply chain: Firm and industrial support for US trade agreements. *International Organization*, 72(2), 455-484.

Pacces, A. M. (2010). Uncertainty and the Financial Crisis. *Journal of Financial Transformation*, 29(1), 79-93.

Pinna, A. M., & Lodi, L. (2021). Trade and Global Value Chains at the Time of Covid-19. *The International Spectator*, 1(1), 1–19.

Reinhart, C., & Rogoff, K. (2009). *This time is different: Eight centuries of financial folly.* Princeton University Press.

Ruta, M. (2017). Preferential Trade Agreements and Global Value Chains: Theory, Evidence, and Open Questions. The World Bank Working Paper S8190. http://documents.worldbank.org/curated/en/991871505132824059/Preferential-trade-agreements-and-global-value-chains-theory-evidence-and-open-questions

Urata, S., & Okabe, M. (2010). The Impacts of Free Trade Agreements on Trade Flows: An application of the Gravity Model Approach. *Free Trade Agreements in the Asia Pacific*, 11(1), 195–240.

Waltz, K. (2000). Structural Realism after the Cold War. *International Security*, 25(1), 5–41.

Witt, M.A. (2019). De-globalization: Theories, predictions, and opportunities for international business research. *Journal of International Business Studies*, 50(7), 1053–1077.

Wozniak, P., & Galar, M. (2018, January). Understanding the Weakness in Global Trade. *European Commission, Economic Brief 033*. https://ec.europa.eu/info/sites/info/files/economy-finance/eb033_en_0.pdf

WTO (2016, July 4). Report to the TPRB from the Director-General on Trade-Related Developments. *World Trade Organization*. https://www.wto.org/english/news_e/news16_e/trdev_22jul16_e.htm.

WTO (2017a, November 9). World Trade Organization. Report on G20 Trade Measures. *World Trade Organization.*

WTO (2020a). Trade falls steeply in first half of 2020. WTO Secretariat. https://www.wto.org/english/news_e/pres20_e/pr858_e.htm

WTO (2020b). Trade Set to Plunge as COVID-19 Pandemic Upends Global Economy. WTO Secretariat 20-2749. https://www.wto.org/english/news_e/pres20_e/pr855_e.pdf

Yi, K.-M. (2009). The Collapse of Global Trade: The Role of Vertical Specialisation. In R. Baldwin & S. Evenett (Eds.), The Collapse of Global Trade, Murky

Protectionism, and the Crisis: Recommendations for the G20 (pp. 45-48). CEPR Press.

Young, A. R. (2017) The Politics of Deep Integration. *Cambridge Review of International Affairs*, 30(5-6), 453-463.

APPENDIX

Table A1 – Descriptive Statistics

	VARIABLE NAME	MIN.	MEAN	MAX.
SHARE OF TRADE AFFECTED BY MEASURES	All protectionist measures by A on B in time t (share of bilateral trade affected, log)	0	0.192	0.693
	All protectionist measures by B on A in time t-1 (share of bilateral trade affected, log)	0	0.106	0.693
	Non-transparent (non–tariff) protectionist measures by A on B in time t (share of bilateral trade affected)	0	0.145	0.693
	Transparent (tariff) protectionist measures by A on B in time t (share of bilateral trade affected)	0	0.085	0.693
NO OF ALL PROTECTIONIST MEASURES	No of all protectionist measures by A on B in time t	0	5.43	1661
	No of all protectionist measures by B on A in time t-1	0	4.87	1661
	No of Non-transparent (non–tariff) protectionist measures by A on B in time t	0	5.15	1660
	No of Transparent (tariff) protectionist measures by A on B in time t	0	0.47	74
REGRESSORS OF INTEREST	Preferential trade agreement (PTA) A and B	0	0.006	2
	GVC proxy variable: Percentage of intermediate goods in total trade between A and B	0	0.007	0.57
CONTROLS	Liberalizing measures by B on A in time t-1	0	0.99	79
	Bilateral Investment Treaty between A and B	0	0.004	1
	Population-weighted distance (gravity model)	35	6449	19649
	Relative Economic Difference (B's GDPpc / A's GDPpc)	0.51	0.70	0.94
	Common colonizer	0	0.05	1
	Common official language	0	0.13	1

Note: Given the high concentration in zero values in the main variables of interest, I use log (x+1) transformation, which is widely used among data scientists (Bellégo & Pape, 2019).

Table A2 – The Relationship Between Tariff and NTMs with PTAs and GVCs (DV3a and DV3b)

	DV3a: Proportion of Tariff protectionist measures by A on B in time t (%)				DV3b: Proportion of Non-Tariff protectionist measures by A on B in time t (%)			
	Model 1a	Model 2a	Model 3a	Model 4a	Model 1b	Model 2b	Model 3b	Model 4b
Protectionist measures by B on A in time t-1 (number of measures)	0.053*** (0.001)	0.054*** (0.001)	0.230*** (0.000)	0.100*** (0.000)	0.130*** (0.001)	0.146*** (0.001)	0.154*** (0.002)	0.150*** (0.010)
Interaction term: Trade Agreements (PTAs)* Protect. measures in t-1		-0.041*** (0.012)		-0.002 (0.002)	0.0005* (0.0003)			0.0002 (0.002)
Interaction term: % of intermediate goods (GVC)*Protectionist measures in t-1			-0.074*** (0.020)	-0.001*** (0.000)			0.003*** (0.000)	0.003*** (0.001)
CONTROL VARIABLES	NO	NO	NO	YES	NO	NO	NO	YES
Constant	0.080*** (0.001)	0.078*** (0.001)	0.080*** (0.001)	-0.710*** (0.020)	0.146*** (0.001)	0.144*** (0.001)	0.148*** (0.001)	-0.970*** (0.020)
R2 / Adj. R2	0.05 / 0.05	0.05 / 0.05	0.05 / 0.05	0.05 / 0.05	0.14 / 0.14	0.14 / 0.14	0.14 / 0.14	0.20 / 0.20
Num. obs.	51872	51872	51872	50077	51872	51872	51872	50441

*** $p < 0,001$, ** $p < 0,01$, * $p < 0,05$

Table A2 supplements previous results by considering the proportion of transparent and non-transparent protectionist measures in total measures by A on B in time t as the dependent variable. I find very similar results regarding the effect of GVCs in both transparent (Model 3a) and Non-Transparent (Model 3b) protectionist measures, even when considering different control variables (Models 4a and 4b). Additionally, I find similar results regarding the effect of PTAs in both Transparent (Model 2a) and Non-Transparent (Model 2b). However, this statistical significance diminishes when the control variables are included (Models 4a and 4b). These results are mostly consistent with the expectations of Hypothesis 5: GVCs are negative, statistically significant predictors of tariff responses, while they are positive, statistically significant predictors of nontariff responses.

Table A3 – Examples of NTMs Contemplated Under the UNTAD's MAST Classification and GTA Datasets

Name	Description and examples
Sanitary and phytosanitary measures	Measures that are applied to protect human or animal life from risks arising from: additives, contaminants, toxins or disease-causing organisms in food. A requirement limiting the use of hormones and antibiotics in the production of meat. A sample test on imported oranges to check for the residue level of pesticides.
Technical barriers to trade	Measures referring to technical regulations, and procedures for assessment of conformity with technical regulations and standards. Restrictions on toxins in children's toys. Refrigerators need to carry a label indicating their size, weight and electricity consumption level.

Contingent trade-protective measures	Measures implemented to counteract particular adverse effects of imports in the market of the importing country contingent upon the fulfilment of certain procedural and substantive requirements. Country A imposes an anti-dumping duty on imports of biodiesel products from country B, to offset an injurious dumping by country B found to exist via an investigation. Country A imposes a countervailing duty on imports of semiconductors from country B, to offset the subsidies granted by country B on the production of semiconductors found to exist via an investigation.
Non-automatic licensing, quotas, prohibitions & quantity-control	Control measures generally aimed at restraining the quantity of goods that be imported. Only hotels and restaurants are allowed to import alcoholic drinks. A quota of 100 tons of tuna fish can be imported any time of the year.
Pre-shipment inspection and other formalities	Live animals need to be cleared at a designated customs office for inspection. Requirement that goods must be shipped directly from the country of origin, without stopping at a third country.
Price-control measures	Measures implemented to control or affect the prices of imported goods. A minimum import price is established for fabric and apparel. Imports of fresh blueberries may enter free of duty between 1 January to 31 May, while in other months seasonal duties apply.
Export-related measures	Export-related measures are measures applied by the government of the exporting country on exported goods. Exports of processed sea food products must be inspected for sanitary conditions. Exports of cultural heritage objects -sculptures or other precious works- are prohibited.

Source: UNCTAD, Classification of NTMs, <https://unctad.org/en/Pages/DITC/Trade-Analysis/Non-Tariff-Measures/NTMs-Classification.aspx>.

Trade policy outcomes are the results of various countries' specific trade measures, which can be divided into tariff (taxes on trade) and non-tariff instruments. Import tariff measures are taxes imposed, in percentage terms, on the value of a good. For example, a 10% tariff means that importers must pay 10% of the appraised value of a good to the importing government before selling their product in that government's domain[23]. While tariff measures are easy to identify and define, non-tariff measures (NTMs) are just the opposite. NTMs require more detailed definition and differentiation. The United Nations Conference on Trade and Development (UNTAD) Multi-Agency Support Team (MAST)[24] says "NTMs are policy measures other than ordinary customs tariffs that can potentially have an economic effect on international trade in goods, changing quantities traded, or prices or both. A detailed classification is therefore critical in order to clearly identify and distinguish among the various forms of NTMs"[25].

This definition, which relates to the taxonomy of NTMs, is the one used throughout this paper. I will further complement this definition of NTMs with details found in the Global Trade Alert (GTA) dataset, as measures such as import tariff increases, factors affecting the flow of workers across borders, and factors affecting capital flows are not included in the MAST classification. The International Monetary Fund (IMF) has noted that the GTA database "has the most comprehensive coverage of all types of trade-discriminatory and trade-liberalizing measures, although it begins only in 2008" (IMF, 2016, p. 76). Unlike tariff measures, NTMs are categorized into many different types. All of these in some way affect trade flows from one country to another. Table A3 presents general examples of what we can find under the MAST classification.

To define these new measures that go beyond the traditional import tariff, Baldwin & Evenett (2009, p. 4) clarify "murky protectionism" as policies that "Are not direct violations of WTO obligations; they are abuses of legitimate discretion which are used to discriminate against foreign goods, companies, workers and investors. Examples include abuses of health and safety regulations, and clauses in stimulus packages that confine spending to domestic producers"[26].

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23 OAS SICE, Foreign Trade System Dictionary of Trade Terms, <http://www.sice.oas.org/Dictionary/TNTM_e.asp#TNTM>.

24 More information on the UN MAST Group's classification of non-tariff measures can be found at: < https://unctad.org/en/Pages/DITC/Trade-Analysis/Non-Tariff-Measures/MAST-Group-on-NTMs.aspx>.

25 UNCTAD, Classification of NTMs, <https://unctad.org/en/Pages/DITC/Trade-Analysis/Non-Tariff-Measures/NTMs-Classification.aspx>.

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26 Also see Curran, L., & Eckhardt, J. (2018); Eckhardt, J. (2013).

Considering these definitions of tariff and NTMs, the Global Trade Alert database, a freely available dataset that I will use for the quantitative analysis in this paper, includes the following measures that "discriminate against foreign commercial interests"[27] in their list of trade interventions and categorizes them as transparent (non-murky) or non-transparent[28]. Table 1.5 shows the list of all intervention types considered by the Global Trade Alert database and their level of transparency. As mentioned, this list is based on United Nations' MAST classification of non-tariff measures and supplemented by additional categories not found in MAST (such as import tariff increases, and measures affecting the flow of foreign direct investment)[29].

Table A4 – Interventions and their Level of Transparency

Non-Transparent
Consumption subsidy
Capital injection and equity stakes
Financial assistance in foreign market
Financial grant
Import incentive
In-kind grant
Interest payment subsidy
Loan guarantee
Price stabilization

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26 Global Trade Alert, <https://www.globaltradealert.org/>.

27 In my quantitative analysis this categorization is used as a dummy variable (1 when it is nontransparent, and 0 when it is transparent).

29 For a more detailed analysis of each instrument, see Evenett & Fritz (2017), pp. 37-41.

Production subsidy
State aid
State loan
Tax or social insurance relief
Import ban and licensing requirement
Internal taxation of imports
Local labor, operations and sourcing
Localization incentive
Trade balancing measure
Intellectual property protection
Control on personal and commercial transactions, and investments
Controls on credit operations
Repatriation & surrender requirements
Entry and ownership rule
Financial incentive
Treatment and operations
Competitive devaluation
Trade payment measure
Import-related non-tariff measure
Public procurement access

Public procurement localization and preference margin
Public procurement
Labor market access
Post-migration treatment
Export ban, licensing requirement, subsidy
Export-related non-tariff measure
Foreign customer limit
Tax-based export incentive
Trade finance
Transparent
Import tariff
Sanitary and phytosanitary measure
Technical barrier to trade
Anti-circumvention
Anti-dumping
Anti-subsidy
Import monitoring
Safeguard
Special safeguard
Import quota

Import tariff quota
Instrument unclear
Export quota
Export tariff quota
Export tax

Source: Global Tarde Alert, 2019