

The Ties between the World Trade Organization and Preferential Trade Agreements: A Textual Analysis

Todd Allee*, Manfred Elsig** and Andrew Lugg***

ABSTRACT

Although many believe preferential trade agreements (PTAs) are incompatible with the World Trade Organization (WTO), we lack empirical evidence on this topic. In this article, we examine international trade agreements—the source of trade law—and employ two types of text analysis to determine the presence of the WTO in PTAs. Our systematic comparisons of post-Uruguay Round PTAs and relevant WTO agreements reveal a strong, two-part presence of the WTO in PTAs. Nearly all recent PTAs reference the WTO explicitly, often dozens of times across multiple chapters. Likewise, in many of these same PTAs we find that substantial portions of treaty language—sometimes the majority of a chapter—is copied verbatim from a WTO agreement. Moreover, multiple regression analyses reveal that larger countries and those most active in preferential agreement making are actually most likely to include a strong WTO presence in their PTAs. Additionally, the presence of the WTO in PTAs has increased over time. Our study contributes novel and robust empirical evidence to suggest that the ties between the WTO and PTAs are more solid than is realized.

1. INTRODUCTION

Preferential trade agreements (PTAs) have become a universal phenomenon. Every World Trade Organization (WTO) Member has concluded at least one PTA, and many are party to dozens of such agreements. PTAs continue to proliferate, as several hundred agreements have been signed since 1995 alone.¹ We also see a new generation of large and ambitious PTAs, such as the Comprehensive Economic and Trade Agreement (CETA) and the Trans-Pacific Partnership (TPP), which have become highly politicized. While various types of bilateral and plurilateral agreements continue to shape global trade governance and draw the public's attention, the multi-lateral trading system has produced little in the past two decades. It has become

* Associate Professor, Department of Government and Politics, University of Maryland, Maryland, USA

** Professor in International Relations, World Trade Institute, University of Bern, Bern, 3012 Switzerland

*** Doctoral Student, Department of Government and Politics, University of Maryland, Maryland, USA

1 See <www.designoftradeagreements.org> (visited 23 May 2017).

conventional wisdom that WTO negotiations remain deadlocked and that progress can only be made through preferential trade deals.

This preference for PTAs over the WTO suggests that we are moving inexorably away from established multilateral rules. It is often argued that one important advantage of PTAs is that the parties can agree on specific obligations that go beyond WTO rules, thereby establishing selective rules for PTA partners that suit their own interests. This in turn may lead to fragmentation in the rules for international trade, thereby opening the door for forum-shopping between bilateral and multilateral venues.² One of the most scathing criticisms comes from Jagdish Bhagwati, who goes so far as to portray PTAs as ‘termites’ that ‘are eating away at the multilateral trading system relentlessly and progressively’.³ Legal scholars also lament legal inconsistencies and their unfolding negative effects.⁴ One challenge for researchers has been to find direct evidence of fragmentation and its effects, particularly across an ever-larger number of treaties. Some initial research has manually coded selected areas in two dozen PTAs to understand the degree to which PTAs go beyond WTO obligations and how legally enforceable these commitments are.⁵ We offer a complementary approach that employs text-analysis methodologies to examine the entire contents of PTAs.

Therefore, in this article we contribute much needed empirical insights into the ties between the WTO and the newer generation of PTAs. We do so by working with the concept of ‘presence’. More precisely, we utilize various techniques from text analysis to see how, and in what ways, WTO law and WTO obligations have been incorporated into PTA treaties. We focus on two instruments within PTAs by which this might occur: (i) making explicit references to the WTO and various WTO commitments, (ii) incorporating language from WTO agreements directly into PTAs. We are particularly interested in whether the WTO is becoming more or less present in PTAs over time—with the concern being that post-Uruguay Round PTAs may be moving further away from the WTO. We also seek to understand the areas in which WTO ties are strongest and the form those ties take. A final emphasis is on which countries include the greatest WTO presence in their PTAs? To these questions we uncover some important and at times surprising answers, all of which seem to bode well for the future of the multilateral trading system.

Overall we find that the WTO is quite present within many contemporary PTAs. Nearly all PTAs engage the WTO repeatedly, with language referring to the ‘WTO’ or ‘World Trade Organization’, explicit positive references to WTO agreements, and even by copy-and-pasting language directly from relevant WTO agreements.

2 Kai Raustiala, ‘Institutional Proliferation and the International Legal Order’, in Jeffrey Dunoff and Mark Pollack (eds), *Interdisciplinary Perspectives on International Law and International Relations: The State of the Art* (Cambridge: Cambridge University Press, 2013) 293–320; see also on environmental provisions in PTAs and fragmentation, Morin, Pauwelyn and Hollway, this special issue.

3 Jagdish Bhagwati, *Termites in the Trading System: How Preferential Agreements Undermine Free Trade* (Oxford: Oxford University Press, 2008) at xii.

4 Joost Pauwelyn, *Conflict of Norms in Public International Law: How WTO Law relates to Other Rules of International Law* (Cambridge: Cambridge University Press, 2003); Delimatsis Panagiotis, ‘The Fragmentation of International Trade Law’, 45(1) *Journal of World Trade* (2011) 87–116.

5 Henrik Horn, Petros Mavroidis, and André Sapir, ‘Beyond the WTO? An Anatomy of EU and US Preferential Trade Agreements’, 33(11) *World Economy* (2010) 1565–88.

To some this may be unsurprising, but we emphasize that we are the first to show these multiple linkages empirically, and the fact that many PTAs build on existing WTO law is important. The WTO presence we uncover appears to be broad and deep, since the majority of sub-chapters in a PTA evoke the WTO in one or more ways, and the average PTA makes about 25 WTO-related references. Analysis of context language surrounding the references reveals that these references typically connote compatibility and consistency with the WTO. A different form of text analysis further shows that in some cases thousands of words are copied verbatim from various WTO agreements, which comprises half or even three-quarters of the language in some PTA articles, particularly in established areas like antidumping, technical barriers, and general services. One notable finding is that the large and most active WTO Members include the greatest WTO presence in their PTAs, even the most recent ones, suggesting that many of the most prolific PTA signers remain more committed to the multilateral regime than is realized. Indeed, another major finding is that the WTO presence in PTAs has risen considerably since 1995. These findings lead us to conclude that there seems to be more complementarity between PTAs and the WTO than is currently acknowledged in much of the literature, and that the WTO appears poised to remain a focal point in the trading system for the foreseeable future.

II. CONCERNS ABOUT REGIME COMPLEXITY

Many legal scholars have grappled with the existence of potentially conflicting rules and the challenges this poses for international judges who have to interpret the law. They observe a growing fragmentation of international law that leads to important ambiguities, resulting in a 'normative jungle', and generates diverging legal outcomes when different legal dispute settlement pathways are pursued.⁶ This has led to a burgeoning literature on how to deal with conflicts arising from diverging legal obligations.⁷

The international relations (IR) literature also has been concerned with questions of regime overlap and the ensuing and evolving complexity.⁸ An international regime complex has been defined as: 'an array of partially overlapping and nonhierarchical institutions governing a particular issue-area'.⁹ The concept has been studied in different contexts and issue areas—and many different complexes have been identified.¹⁰ Although the move towards greater legalization in IR is portrayed on balance

6 Anja Lindroos, 'Addressing Norm Conflicts in a Fragmented Legal System: The Doctrine of *Lex Specialis*', 74(1) *Nordic Journal of International Law* (2005) 27–66; Martti Koskeniemi, 'Fragmentation of International Law: Difficulties arising from the Diversification and Expansion of International Law', *Report of the Study Group of the International Law Commission* (2006).

7 Pauwelyn, above n 4.

8 Vinod Aggarwal, *Institutional Designs for a Complex World: Bargaining, Linkages and Nesting* (Ithaca: Cornell University Press, 1998).

9 Kai Raustiala and David Victor, 'The Regime Complex for Plant Genetic Resources', 58(2) *International Organization* (2004) 277–309, at 279.

10 Karen Alter and Sophie Meunier, 'The Politics of International Regime Complexity', 7(1) *Perspectives on Politics* (2009) 13–24; Amandine Orsini, Jean-Frédéric Morin and Oran Young, 'Regime Complexes: A Buzz, a Boom, or a Boost for Global Governance?' 19(1) *Global Governance: A Review of Multilateralism and International Organizations* (2013) 27–39.

as a positive development,¹¹ it raises the probability of conflicting international legal obligations. Thus, some have cautioned against having too dense of a web of binding legal obligations.¹²

An important implication of regime complexity is that it could lead, somewhat paradoxically, to the return of power politics. The overriding concern is that a global legal system characterized by multiple, overlapping rules could exacerbate power asymmetries and lead to a return of Hobbesian politics. Benvenisti and Downs, for instance, have observed that: 'a fragmented legal order provides powerful states with much needed flexibility . . . the existence of multiple contesting institutions removes the need for them to commit themselves irrevocably to any given one. This helps them to manage risk, and it increases their already substantial bargaining power'.¹³ Likewise, Drezner suggests that a world consisting of too many institutions can lead to an overall weakening in the sense of legal obligation among states and increase the transaction costs of compliance.¹⁴ The potential also exists for strategic forum-shopping, in which neighbouring regimes and participants might be pitted against each other.¹⁵ Taking this one step further, states could create contradictory rules in different fora to undermine existing commitments made in other agreements.¹⁶

Trade has become a focal point for existing empirical studies of regime overlap and complexity. Scholars of political science and international law have emphasized strategic decisions by states to use one venue over another in dispute settlement and to make concerted efforts to weaken established law, either by opting for contradicting obligations in other venues or by watering down existing obligations that create legal uncertainty.¹⁷ In this article, we emphasize trade institutions as well, and study the PTA–WTO relationship in light of the impressive surge of new PTAs since the 1990s.¹⁸ Our primary interest is to examine the ties between each PTA concluded from 1994 onward and the WTO. We conduct, to our knowledge, the first study that systematically examines a range of potential links between PTAs and the WTO, with the goal of informing the debate about regime complexity and fragmentation.

11 Judith Goldstein et al., 'Introduction: Legalization and World Politics', 54(3) *International Organization* (2000) 401–19.

12 Judith Goldstein and Lisa L. Martin, 'Legalization, Trade Liberalization, and Domestic Politics: A Cautionary Note', 54(3) *International Organization* (2000) 603–32.

13 Eyal Benvenisti and George Downs, 'The Empire's New Clothes: Political Economy and the Fragmentation of International Law', 60(2) *Stanford Law Review* (2007) 595–631, at 627.

14 Daniel Drezner, 'The Power and Peril of International Regime Complexity' 7(1) *Perspectives on Politics* (2009) 65–70, at 66.

15 Drezner *ibid*; Benvenisti and Downs, above n 13.

16 Raustiala and Victor, above n 9, at 301.

17 Marc Busch, 'Overlapping Institutions, Forum Shopping, and Dispute Settlement in International Trade', 61(4) *International Organization* (2007) 735–61; Sergio Puig, 'International Regime Complexity and Economic Law Enforcement' 17(3) *Journal of International Economic Law* (2014) 491–516; Raustiala and Victor, above n 9; Gregory Shaffer and Mark Pollack, 'Hard and Soft Law', in Jeffrey Dunoff and Mark Pollack (eds), *Interdisciplinary Perspectives on International Law and International Relations* (New York: Cambridge University Press, 2013) 197–222.

18 Andreas Dür, Leonardo Baccini and Manfred Elsig, 'The Design of International Trade Agreements: Introducing a New Dataset', 9(3) *The Review of International Organizations* (2014) 353–75.

III. HOW TO IDENTIFY PTA–WTO TIES

Understanding and empirically evaluating the complexity of the trade regime presents a profound empirical challenge. Our approach is to rely on techniques commonly used in text analysis to gain a better understanding of the relationship between PTAs and the WTO. Here we examine 292 trade agreements signed over two decades, which average 18,460 words each and total 5,390,320 words overall. Given this magnitude of written text, automated text analysis is a valuable tool that can be utilized to make a variety of otherwise-difficult and time-consuming PTA–WTO comparisons. One of the chief advantages of text-as-data techniques is that they can substantially reduce the costs—in terms of time and research funds—of analysis and can complement existing analyses conducted by human coders and legal experts.¹⁹

Our empirical strategy is to measure the degree to which the WTO is present within new-generation PTAs, which is defined as all PTAs signed after 1993, once the creation of the WTO was imminent and the details of various Uruguay Round agreements had been made known. We do this in two general ways. First, we look to see whether the WTO is referenced explicitly within a PTA. This can occur across different issue areas, since PTAs address many of the same issues covered by WTO agreements, and can occur varying numbers of times within a PTA. We also follow-up to see what these references are saying and in what context they are made. Secondly, we conduct further text analysis to see whether and how much of the text in a PTA is copied directly from a corresponding WTO agreement. Copying language from a past treaty is an often conjectured but rarely proven occurrence, and would show a direct link between WTO obligations and the content of PTAs. In general, we can think of reasons why these two types of WTO presence—explicit references and text copying—might function as alternative pathways for negotiators' concerns about WTO consistency, but also reasons why they might function as complements. We return to this issue later. But first, we discuss in detail the logic and details of our empirical strategy.

A. First Approach—References in PTAs to the WTO

Our first approach acknowledges and builds upon the fact that within international law, any new treaty can refer to a pre-existing treaty or legal document. There are several reasons to believe that PTAs should reference or otherwise engage the WTO: the multilateral regime has been well established for several decades, most PTA signatories are WTO Members, WTO dispute settlement has clarified many of the regime's rules and obligations, and most trade negotiators are well versed in WTO law. For PTA negotiators, then, evoking the WTO is an omnipresent option. By explicitly referring to established WTO law, PTA drafters show that they are aware of linkages to the WTO, and that they want to outline the relationship of the PTA to the overarching and well-established multilateral regime. As we illustrate affirmatively later, we believe that the majority of references are attempts to create complementarity between states' obligations under the WTO and their PTAs.

The initial way we measure references to the WTO is by utilizing manually coded variables contained in the Design of Trade Agreements, or DESTA, data set on the

19 Justin Grimmer and Brandon M. Stewart, 'The Promise and Pitfalls of Automatic Contents Analysis Methods for Political Texts', 21(3) *Political Analysis* (2013) 267–97.

universe of post-World War II PTAs.²⁰ DESTA presents a collection of variables by issue area, and in nine areas it contains a variable that codes whether the PTA makes an explicit reference to the prevailing WTO agreement in that area, with the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs), the General Agreement on Trade in Services (GATS), and the Agreement on Technical Barriers to Trade (TBT) constituting just a few illustrative examples. Overall, we examine nine such WTO-reference variables from DESTA in a preliminary effort to find out whether PTAs typically engage the WTO and on which issues they do so the most.²¹ These variables code for references to the WTO across general services, public procurement, sanitary and phytosanitary measures (SPS), TBT, antidumping, safeguards, dispute settlement, intellectual property, and investment.²²

A complementary text-as-data method automates the checking for WTO references through computerized or ‘machine’ coding. The organization is similar to the first method, in that each PTA is first disaggregated by issue area. In this case, each PTA is subdivided into 12 areas, which include those DESTA areas noted above together with financial services, telecommunications, and e-commerce. For each of these dozen areas, we parse PTAs at the sentence level to check for explicit textual references to the WTO.²³ Our method counts the number of times a WTO reference occurs in each PTA and in each of the relevant sub-sections specified above. These counts serve as valuable summary measures from which we can begin to assess the scope and distribution of WTO references. For reasons we explore later, we are confident that in the majority of cases, the WTO references we identify indicate closer alignment with the WTO and are not negative references that contradict or undermine multilateral rules.

B. Second Approach—Copying-and-pasting WTO Text into PTAs

Our second approach considers the possibility that PTA negotiators might utilize exactly the same language as is found in specific WTO agreements.²⁴ That is, they might copy-and-paste language verbatim from the WTO. This represents another way that PTA negotiators might ensure that PTAs are consistent with WTO rules. With respect to incorporating WTO language directly, we suspect that most trade negotiators are well informed and thus do this deliberately, to guard against inconsistency and possible fragmentation.²⁵

20 Dür, Baccini and Elsig, above n 18.

21 DESTA also includes an additional variable on subsidies to capture whether a PTA explicitly refers to GATT/WTO agreements on subsidies or countervailing duties. However, we omit this from our comparisons due to the broad nature of this variable.

22 For precise details, see the DESTA codebook <www.designoftradeagreements.org>.

23 We use the R statistical language to read in the text of PTAs, clean and organize PTA text, and then use regular expression patterns to extract WTO references. We standardize the procedure such that we include as references any time a PTA or PTA subsection mentions the words ‘World Trade Organization’, ‘WTO’, ‘General Agreement on Tariffs and Trade’, and the ‘GATT’.

24 For a similar approach in using text-as-data methods for analysing similarities in international investment treaties, see Wolfgang Alschner and Dmitriy Skougarevskiy, ‘Mapping the Universe of International Investment Agreements’, 19(3) *Journal of International Economic Law* (2016) 56–88.

25 By contrast, in related work we uncover evidence that many low-capacity governments copy and paste from others’ PTAs for less strategic, and perhaps less conscious, reasons, see Todd Allee and Manfred

Table 1. Trade issues in newer generation PTAs, with corresponding WTO Agreement

Trade issue	Corresponding WTO Agreement
Financial services	Understanding and Annexes on Financial Services (1995)
General services	GATS (1994)
Telecoms	Telecommunications Reference Paper and Annex (1996)
Safeguards	Agreement on Safeguards (1994)
Anti-dumping	Article VI and Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade (1994)
Intellectual property	Agreement on TRIPS (1994)
Procurement	Agreement on Government Procurement (1994)
TBT	Agreement on TBT (1994)
SPS	Agreement on the Application of SPS Measures (1994)
Dispute settlement	Understanding on Rules and Procedures Governing the Settlement of Disputes (Dispute Settlement Understanding) (1994)
Investment	Agreement on Trade-Related Investment Measures (TRIMs) (1994)

To apply this second method, we once again subdivide the PTAs according to issues—this time identifying 11 important and distinct trade issues on which the WTO has a specific agreement. This captures the fact that each WTO agreement could serve as a template from which text is copied and pasted into the corresponding sections of PTAs.²⁶ In this instance, the proper identification of a specific WTO agreement and its precise contents is paramount because it serves as a template, or baseline, to which the corresponding content of subsequent (post-1993) PTAs is compared. Accordingly, for each English-language PTA, we then extract the PTA text that addresses each of these 11 areas for comparison to each parallel WTO agreement.²⁷ Table 1 lists the 11 issue areas we analyse, along with the corresponding WTO agreements.

Once the appropriate WTO agreements and PTA texts have been identified, we proceed to compare systematically whether WTO language is appropriated directly into each PTA. First, we standardize the texts of all 292 agreements to prepare them

Elsig, ‘Are the Contents of International Treaties Copied-and-Pasted? Evidence from Preferential Trade Agreements’ Paper presented at 8th Annual Conference on the Political Economy of International Organizations, Berlin, 12–14 February 2015.

26 Note that a PTA might not include language on all 11 issues.

27 For most trade issues, and for the overwhelming majority of PTAs, the relevant information is clearly delineated and contained in one (or more) articles in the PTA. Nevertheless, for situations in which the relevant information on a trade topic is spread across articles or found in multiple places in the PTA, we develop a set of detailed coding rules for compiling all of the relevant PTA text on that issue. These coding guidelines are available from the authors upon request.

for analysis.²⁸ To analyse the amount of text in each PTA sub-section that matches language in a corresponding WTO agreement, we utilize an open source program called WCopyfind, which is designed to detect matching sequences of text between documents.²⁹ The program is flexible and allows the user to specify the length of word strings that constitute matches across the documents being compared. This program has been used effectively in several other legal and social science applications.³⁰ It is a particularly good fit for our needs, since it allows us to compare a set of texts (a PTA) to a benchmark text (a WTO agreement) efficiently and systematically. Another advantage is that it requires that matching text appears in the same order across documents, which is appropriate for comparing precise legal language.³¹ Following convention in other studies, we require six consecutive words to constitute a 'match' between WTO text and PTA text. Furthermore, we require the match to be 'perfect'—that is, we do not allow for minor deviations to account for editing—since an exact match is most indicative of direct copy-and-pasting (as opposed to paraphrasing) and constitutes the toughest possible standard for determining possible borrowing of language.

IV. GENERAL FINDINGS FOR THE PRESENCE OF THE WTO IN PTAS

Overall, we find notable support for the general proposition that the WTO is present in modern generation PTAs. As we detail in the following section, PTA negotiators systematically include references to the WTO in PTAs. We also show that these references occur throughout the PTAs, not just in preambles, and that they are made in a context that links the PTA to the WTO more affirmatively. We also present the first systematic evidence that PTA drafters copy-and-paste text verbatim from relevant WTO agreements. Moreover, WTO references and copying from WTO agreements tend to go hand-in-hand.

A. Findings for References to the WTO

As a starting point, we first examine whether post-Uruguay Round PTAs make any reference at all to the WTO, an admittedly low threshold. The answer returned using both manual and machine coding is a clear and consistent yes, and the few anomalies are easy to explain. Note that according to the previously described DESTA codings,

28 We first stripped these texts of idiosyncratic information at the beginning and ends of the texts. We also removed the majority of their annexes, since these are typically tariff schedules and hence do not contain much additional content. Next the text files were read into the R statistical software, where we processed the texts by removing punctuation, and converted the documents to lower case.

29 WCopyfind, <<http://plagiarism.bloomfieldmedia.com/zwordpress/software/wcopyfind/>>; see Louis Bloomfield (2014).

30 Matthew Eshbaugh-Soha, 'Presidential Influence of the News Media: The Case of the Press Conference', 30(4) Political Communication (2013) 548–64; Justin Grimmer, 'A Bayesian Hierarchical Topic Model for Political Texts: Measuring Expressed Agendas in Senate Press Releases', 18(1) Political Analysis (2010) 1–35; Pamela C. Corley, Paul M. Collins and Bryan Calvin, 'Lower Court Influence on US Supreme Court Opinion Content', 73(1) The Journal of Politics (2011) 31–44.

31 Arthur Spirling, 'US Treaty Making with American Indians: Institutional Change and Relative Power, 1784–1911', 56(1) American Journal of Political Science (2012) 84–97. Many text analyses rely on a bag-of-words assumption, which treats each document as a collection of words and then computes similarity metrics based on common word frequencies across documents. This is often inappropriate for precisely worded legal language since the order of words can dramatically change the interpretation.

Table 2. Percentage of newer generation PTAs that reference the WTO in some way

Manually coded (DESTA project)	85.5% (326/361)
Machine coded (English-language PTAs only)	90.0% (262/291)

Table 3. Extent of WTO references in PTAs

	Total number of WTO references in PTAs		
	Median	Average	Maximum
Among all PTAs ($n = 292$)	21	25.4	120
Among PTAs with at least one WTO reference ($n = 265$)	22	28.0	120

which examine whether PTAs reference certain WTO agreements across nine issue areas, more than 85% of PTAs make at least some reference to the WTO across these areas (see Table 2). When we explore PTAs for WTO references using automated text coding, this percentage rises even higher to 90% of PTAs.³² There is a fairly straightforward explanation for the small percentage of PTAs that never reference the WTO: among the 10–15% of PTAs that do not do so, a sizeable majority are PTAs between countries where at least one signatory is not a WTO Member. Thus, it is neither bound by WTO rules and obligations, nor is it necessarily familiar with them.

But among the overwhelming majority of PTAs that do reference the WTO, they tend to include various references scattered throughout the agreements, albeit with some systematic variation across issue areas that we discuss in the next section. To uncover the totals, we next generate counts of the number of times a PTA mentions the WTO by performing automated counts on the post-Uruguay Round, English-language PTAs. These are summarized in Table 3. Across all PTAs, including those that never reference the WTO, the average number of times the WTO is mentioned is just over 25. If we look only at the 91% of PTAs in that sample that reference the WTO at least once, the average climbs to 28 mentions per PTA. Several of the more comprehensive PTAs mention the WTO at least 50 times, with 120 being the highest number of references in any one agreement. Thus references to the WTO in PTAs, which we believe are most-often indicative of closer ties and greater consistency, are quite numerous.

References to the WTO also tend to be broad. Many PTAs reference the parallel WTO agreement across six, seven, eight, or even more issue areas. Sometimes all

32 One difference between the manual and machine-coding approaches is that they rely on slightly different samples, with a lower N for the machine-coding sample, since it is comprised solely of English-language PTAs.

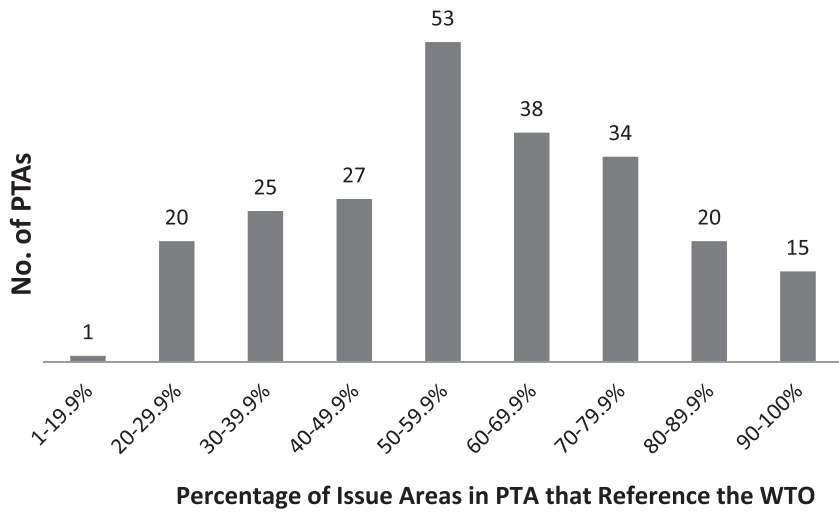


Figure 1. Breadth of WTO references in PTAs

major articles or sections of a PTA will reference the relevant WTO agreement. It is difficult to compare PTAs according to how broadly they mention the WTO, since PTAs vary in terms of the number of articles they contain, including the number that potentially link to a WTO agreement. Therefore, for each PTA, we identify the number of WTO-relevant issues the agreement contains, and measure the percentage of those issue areas in which the WTO is referenced. One might think of this as the ‘breadth’ of each PTA’s references to the WTO. Figure 1 depicts for each PTA the percentage of relevant areas that contain a WTO reference. Most PTAs reference the WTO for the majority of issues where such a reference is possible. The modal category for possible WTO references is the 50–59.9% one, followed by 60–69.9%, and 70–79.9%. A further 35 PTAs reference the WTO in more than four-fifths of the areas for which such a reference is possible.

A related issue is where in the PTAs themselves the references tend to occur. Clustering only at the very beginning (or end) of a PTA might suggest that the references are perfunctory and merely a reporting requirement. By contrast, if references are more broadly distributed across the documents, this suggests that references are more substantive in nature and refer to specific obligations and commitments. Lexical dispersion plots, which graphically depict where certain words or phrases are located in a document, are a convenient way to illustrate the distribution of WTO references at the document level. Figure 2 contains plots for 18 randomly sampled PTAs.³³ Each box represents a different agreement, with the blue marks indicating a WTO reference and the horizontal axis demonstrating where in the document each reference is located. As is apparent, references to the WTO are found at varying locations throughout the text of PTAs. In some cases we do see references concentrated at the beginning and end of agreements, but in general the plots are quite

33 We utilize a reproducible procedure in R to obtain a random sample of 18 PTAs. We then generate the lexical dispersion plots using the qdap package in R. See <<https://cran.r-project.org/web/packages/qdap/index.html>>.

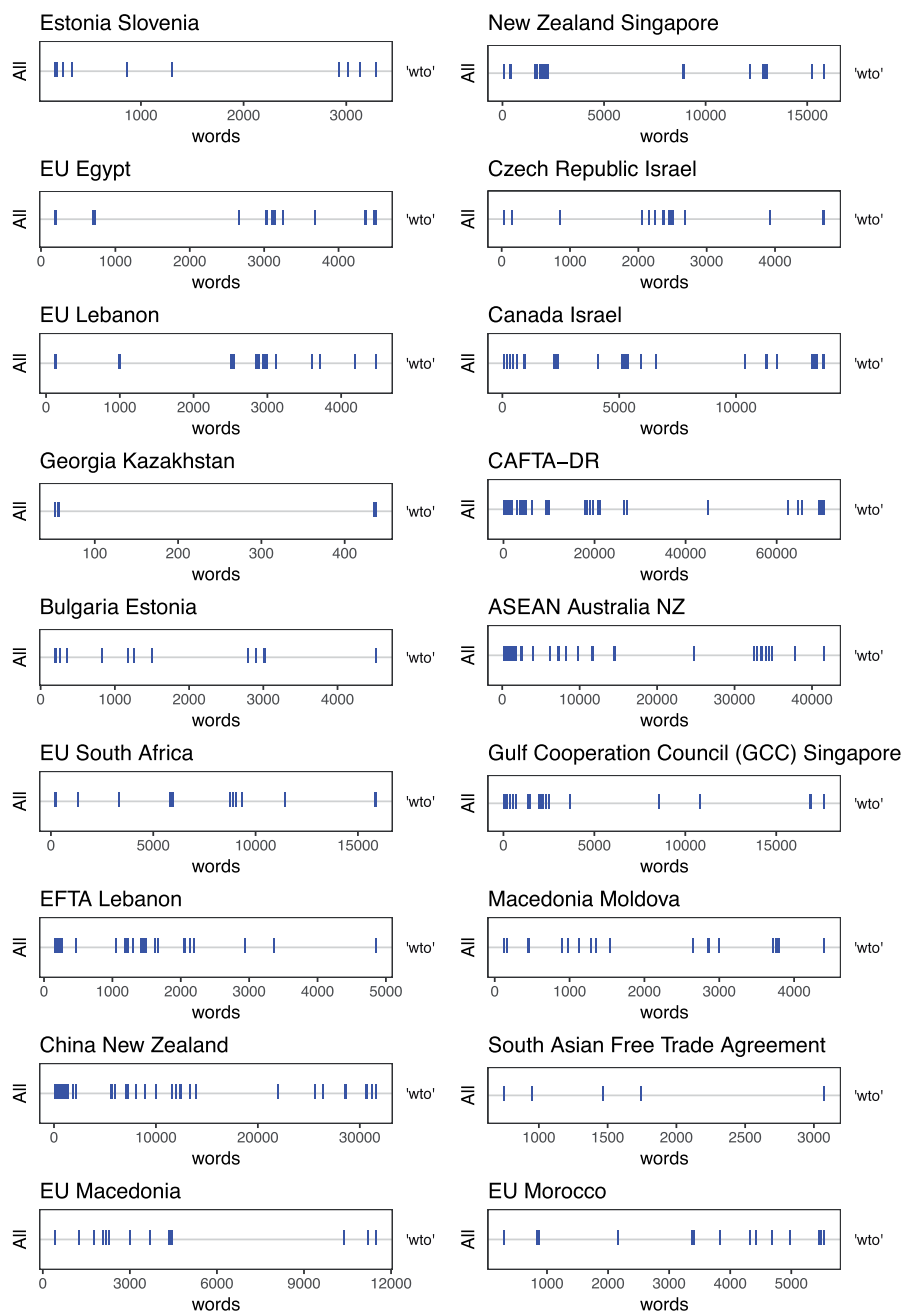


Figure 2. Lexical dispersion plots of WTO references for 18 randomly selected PTAs

heterogeneous, and illustrate that WTO references, regardless of their content, are evoked across many different parts of PTAs.

Next, since simply mentioning the WTO does not in itself provide much information about the nature of the references, we use a text procedure called ‘extracting key

Table 4. Key words in context surrounding WTO and GATT references

Agreement	Year	Pre-keyword context	Keyword	Post-keyword context
Japan Malaysia	2005	in annex 1a to the	wto	agreement as may be amended
Albania Bosnia Herzegovina	2003	be in accordance with the	wto	agreement on the application of
Chile EFTA	2003	dispute settlement proceedings under the	wto	agreement against another party or
India Singapore	2005	of the gatt and the	wto	agreement on implementation of article
Tunisia Turkey	2004	conditions laid down by the	wto	gatt and any other relevant
India Korea	2009	articles xx and xxi of	gatt	and its interpretative notes are
Australia Thailand	2004	xix of gatt and the	wto	safeguards agreement the wto agreement
China Peru	2009	by article xvii of the	gatt	and the understanding on the
Bosnia Herzegovina Croatia	2000	the conditions established under the	gatt	adopt restrictive measures including measures
EFTA Southern African Customs Union (SACU)	2006	both this agreement and the	wto	agreement may be settled in
Panama Taiwan	2003	establishing the world trade organization	wto	as well as other bilateral
Lithuania Poland	1996	under the auspices of the	general agreement on tariffs and trade	and the agreement establishing the
Jordan Singapore	2004	article xxiv of the wto	general agreement on tariffs and trade	hereafter gatt and article v
China New Zealand	2008	which is part of the	wto	agreement article general provisions the
Korea Singapore	2005	any reference to articles in	gatt	or gats includes the interpretative
Panama US	2007	agree article amendment of the	wto	agreement if any provision of
Australia Japan	2014	commerce article xx of the	gatt	is incorporated into and forms

(Continued)

Table 4. (Continued)

Agreement	Year	Pre-keyword context	Keyword	Post-keyword context
India Singapore	2005	creation is consistent with the	wto	agreement on trade related aspects
Costa Rica Singapore	2010	obligations under article xix of	gatt	and the safeguards agreement this
Faroe Isls Pol	1998	international organizations such as the	world trade organization	and the world intellectual property
Moldova Ukraine	2003	trade in compliance with the	wto	principles b promote through the
Australia Korea	2014	notification is provided to the	wto	article dispute settlement neither party
Panama Taiwan	2003	of article vii of the	general agreement on tariffs and trade	including its interpretative notes which
Colombia Peru EC	2012	duty in accordance with the	wto	understanding on rules and procedures
Colombia EFTA	2008	and article v of the	wto	general agreement on trade in
Hong Kong New Zeal	2010	for panellists established under the	wto	dispute settlement understanding the date
Japan Malaysia	2005	the marrakesh agreement establishing the	world trade organization	done at marrakesh april as
Japan Peru	2011	disciplines are adopted by the	wto	members the parties shall review
Croatia Turkey	2002	shall be governed by the	wto	agreement on technical barriers to
Romania Serbia	2003	of the agreement establishing the	wto	especially the understanding on the
Korea Peru	2011	that article xx g of	gatt	shall apply to measures related
Central American	2004	article xx g of the	gatt	applies to measures relating to
Free Trade Agreement (CAFTA)				
Japan Mexico	2004	in annex 1a to the	wto	agreement as may be amended
China New Zealand	2008	pursuant to article xix of	gatt	and the safeguards agreement and
Chile Japan	2007	in annex 1a to the	wto	agreement the term state

Note: This sample of 35 references was randomly generated from our data set of 7515 references. Entries include the five words preceeding and following each reference.

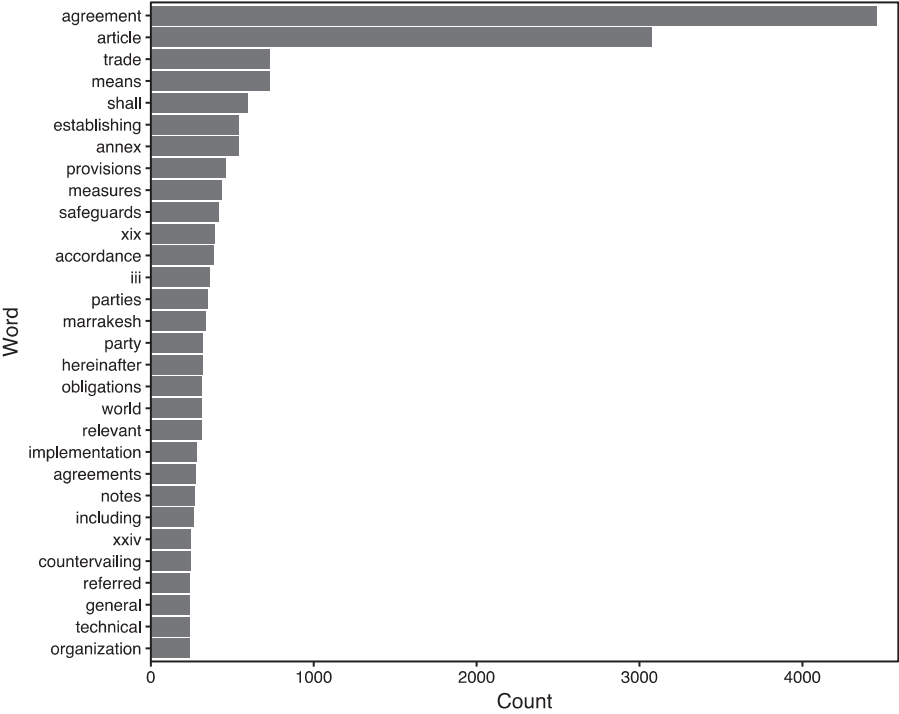


Figure 3. Top 30 context words surrounding GATT/WTO references

words in context’ to gain a better appreciation of whether they indicate compatibility with the multilateral trade regime. This technique allows us to efficiently evaluate on a large scale the context in which each of the 7515 discrete GATT/WTO references in our data set is made. After some steps to prepare the complete texts of all 292 PTAs,³⁴ we create a data set of the ten ‘context words’ (five preceding, five following) surrounding each of the multilateral references we have identified.

Since we cannot present all 7500 entries, for illustrative purposes we once again draw a reproducible random sample, which we present in [Table 4](#). Each of the thirty-five rows represents an agreement, the reference, and the five pre- and post-reference context words. Seemingly all of the most evident patterns indicate positive relationships between the PTA in question and the GATT/WTO regime. Most notably, we see many examples of words and phrases that positively tie the PTA parties to a WTO agreement or obligation. Examples in [Table 4](#) include words or phrases such as ‘compliance’, ‘consistent’, ‘shall’, ‘is incorporated into’, and ‘in accordance with’.

Going further, we generate systematic counts of the most common context words, 30 of which we summarize in [Figure 3](#). Among the most frequent likewise are terms

34 To complete this step we read all 292 PTAs separately into the R programming environment. We then clean the texts to remove all punctuation, remove numbers, convert to lowercase, and remove symbols. We then organize into a data frame. From here we use the *quanteda* package in R to extract keywords in context. This procedure allows us to specify the references—we use standardized versions of ‘WTO’ and ‘GATT’ references—and then extract the five words preceding and the five words following each of the 7515 references.

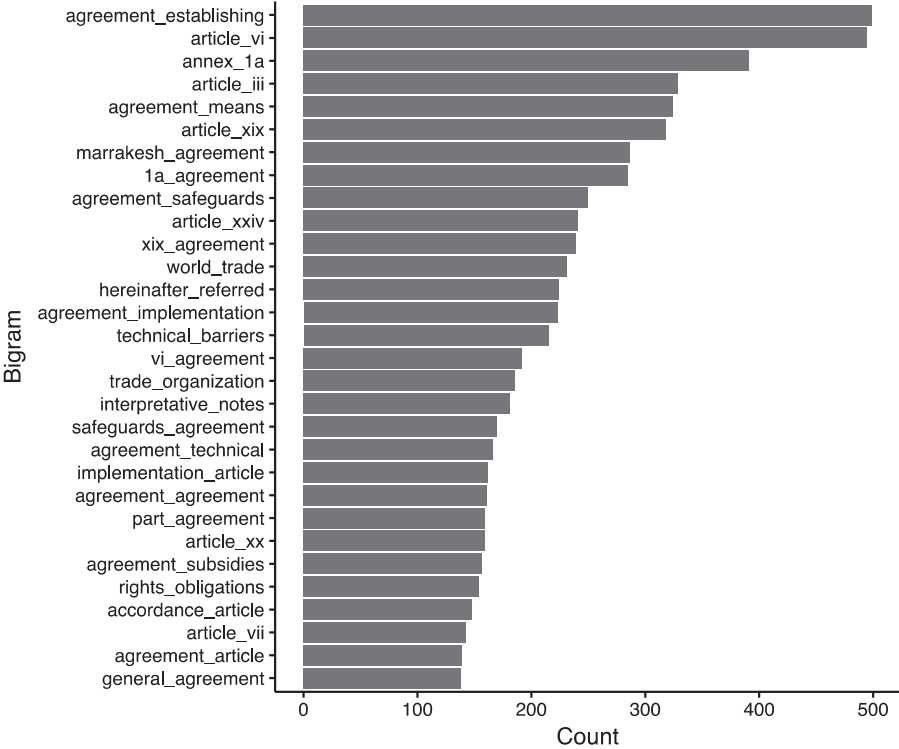


Figure 4. Top 30 context bi-grams surrounding GATT/WTO references

such as ‘means’, ‘shall’, ‘accordance’, ‘obligations’, and ‘relevant’.³⁵ This further corroborates that the examples presented in Table 4, such as the phrase ‘be in accordance with the WTO agreement on the application of from the Albania–Bosnia Herzegovina PTA are commonplace. We also note that ‘agreement’ is the most common context word by far, since it is used to connote that the PTA is ‘in agreement’ with the WTO and also refers to specific WTO agreements (i.e. Marrakesh, XIX, XXIV, Safeguards).

We also perform a similar procedure in which we analyse two-word sequences, or bigrams, of the WTO references, which we present in Figure 4. This provides another, slightly different, vantage point for examining the WTO references we identify. Once again, we find that positive phrases like ‘agreement means’, ‘rights obligations’, and ‘accordance article’ are commonly included in PTAs along with other phrases referring to specific WTO or GATT agreements, articles, and provisions.³⁶ Taken

35 To generate the word count data we create an additional data set from the context -word data described above. We treat each reference as a discrete document, clean the references of common stopwords, and then generate a term document matrix, which conveniently summarizes the number of times words occur across the different references. We then use this term document matrix to summarize the most common words that occur in our collection of references.

36 Normally the phrases would be ‘rights and obligations’ and ‘accordance with article’, but since we removed stopwords before we created the word counts the bigrams become ‘rights obligations’ and ‘accordance article’.

together these three methods of systematically evaluating the context of the references we uncover give us confidence that the majority of such references indicate an affirmative presence for the WTO in many of the PTAs we analyse.

B. Findings for Copying and Pasting of WTO Text

Next, we turn to the findings for our other indicator of WTO presence in PTAs—the amount of text taken from a parallel WTO agreement and inserted directly into the text of the PTAs. This is a logical next step to follow the earlier analyses of the context of WTO references. Once again, we find a significant presence for the WTO in PTAs—this time in the form of its agreement language. This copy-pasting may be unsurprising to many, but we emphasize that copying large amounts PTA contents directly from a WTO agreement is in some respects surprising. PTAs are by definition efforts by selected parties to seemingly move in a new trade policy direction. We therefore might expect their contents to be uniquely crafted by their two or more members. But instead, we find that sizeable portions of PTAs are drawn directly from pre-existing WTO agreements. As [Table 5](#) shows, some sections of PTAs borrow the majority of their text verbatim from a parallel WTO agreement. Hundreds more copy-and-paste smaller, but still sizeable, portions of their text from WTO documents. This is valuable and previously elusive ‘smoking gun’ evidence that some treaties are indeed copied from earlier ones—and that in our cases the WTO is serving as the template for a corresponding PTA article.³⁷

The final two columns in [Table 5](#), which illustrate the most rampant copy-and-pasting of WTO text, are revealing. Looking at the maximum values shows us that for six different issue areas, which correspond to six different WTO agreements, there is a PTA that copies the majority of its language in that area from the corresponding WTO agreement. That is, half, or even three-quarters of a multi-page PTA section is lifted directly from a relevant WTO agreement. Our methodology, which requires exactly matching text and a significant number of words to constitute copying, ensures that these numbers are valid, and are likely to be somewhat conservative. The amounts of text that are being copied and pasted are large, too. [Table 5](#) shows that thousands of words are sometimes copied, with one PTA taking more than 6000 words of its procurement section directly from the WTO Agreement on Public Procurement. We find these numbers striking, and believe they illustrate an underappreciated avenue through which PTAs maintain consistency with the WTO and avoid possible fragmentation.

Even beyond the examples at the high end of the distribution, we find hundreds of PTAs that incorporate considerable amounts of language from a WTO agreement in their various sub-sections. More than 200 PTA chapters copy-paste a quarter or more of their agreement language directly from the parallel WTO agreement. Across eight different issue areas, at least 10 PTAs copy at least this amount, and often more. Looking solely at the chapters on services in PTAs, for instance, we see that 69 PTAs copy 25% or more of their language—more than 1000 words each—from the WTO’s GATS.

37 We do not test, however, which parts of WTO treaty texts themselves develop from earlier PTAs.

Table 5. Percentage of text in PTAs that is copied and pasted from WTO Agreements

Trade issue	Average percentage copied across all PTAs (that contain the relevant provision)	Maximum percentage copied by any single PTA	No. of PTAs that copy 25% or more of their text from relevant WTO agreement
General services	23.0	76 (3678 words)	69
Telecom	19.6	63 (1380 words)	16
Anti-dumping	15.6	54 (1374 words)	32
Procurement	11.7	80 (6169 words)	19
TBT	11.3	60 (409 words)	15
SPS	10.7	51 (558 words)	22
Safeguards	10.5	64 (703 words)	29
Intellectual property	10.1	32 (1822 words)	10
Dispute settlement	5.6	40 (1677 words)	10
Financial services	3.5	17 (322 words)	0
Investment	0.3	4 (80 words)	0

V. FINDINGS ACROSS ISSUE AREA FOR THE PRESENCE OF THE WTO IN PTAs.

The preceding discussion of the breadth and location of WTO copy-pasting indicates that the propensity of PTA Members to evoke the WTO will vary from one issue area to the next. Therefore, we next explore variation in WTO references across the core issue areas in PTAs. The summary data are provided in Table 6. The first pattern is that for seven of the nine areas, the majority of PTAs reference the parallel WTO agreement. Across most issues, then, referencing the WTO is relatively standard. The averages presented in Table 3 were likely reduced significantly by ‘investment’, since only 4% of PTAs make reference to the relatively non-prominent WTO Agreement on Trade-Related Investment Measures (TRIMs). In fact, for some issue areas, such as antidumping and general services, referencing the WTO agreement is nearly universal. Overall, in four of the nine issue areas, three-quarters or more of PTAs make one or more references to the WTO. Often multiple references are made within an issue area, which suggests that the PTAs are going beyond a one-time evocation of the applicable WTO agreement. From top to bottom in Table 6, one can see that certain PTAs refer to the WTO seven, eight, or nine times. The maximum for any given issue area is 13 WTO mentions, related to TBTs.

We also observe variation across issue areas in terms of copy-pasting from the WTO—in ways that appear to mirror what we saw for making explicit references to the WTO. In some newer trade areas, we once again witness a pattern where the WTO agreement is the focal point—this time as a source or template for PTA language. Returning back to Table 5, we identify areas like SPS and TBT as those in which the WTO language is copied at a higher rate. Our text-based analyses in this section add telecommunications, and this new area is another where PTA Members

Table 6. Percentage of PTAs that reference the WTO, by issue area

Trade issue	Percentage of PTAs (containing the relevant provision) that reference the WTO	Maximum number of WTO references
Anti-dumping	90.3 (289/320)	8
Services	83.7 (206/246)	3
TBT	74.2 (216/291)	13
SPS	73.0 (216/296)	7
Intellectual property	61.1 (154/252)	4
Safeguards	60.4 (201/333)	9
Procurement	50.7 (109/215)	5
Dispute settlement	38.0 (134/353)	9
Investment	4.4 (11/251)	4

regularly reproduce text verbatim from the WTO—this time from the organization’s 1996 Telecommunications Reference Paper and Annex. At the same time, copy-and-pasting also occurs in the more established areas such as antidumping, where more than 30 PTAs copy a large amount of text from the WTO Agreement on Article VI and its implementation. Finally, another recurring pattern is that the WTO is practically absent from the investment chapters of PTAs. Table 5 shows that virtually no text from the TRIMs agreement is copied into the investment chapters of PTAs.³⁸

In terms of why the WTO is more present in some issue areas than others, we offer a few interpretations. First, PTA negotiators are probably more likely to be deferential to the WTO in areas where the multilateral rules are well established. Anti-dumping (AD) is the best example of this, since it has been included in the regime since the start of the GATT, has been updated twice in major GATT/WTO agreements (Tokyo and Uruguay rounds), and has been widely applied in practice and litigated through the Dispute Settlement Understanding.³⁹ A second, contrasting, pattern is that PTAs might evoke the WTO in newer areas that are less well established, but that the WTO has addressed. Thus, WTO agreements on issues like SPS and TBTs serve as a focal point for PTA negotiators. What is interesting about these areas (trade remedies and standards) is that they are candidates for deeper regulatory cooperation in PTAs. Finally, investment is clearly an outlier at the bottom. We believe this is due to the relative insignificance of TRIMs, coupled with the prominence of alternative institutional arrangements, namely bilateral investment treaties (BITs). In the realm of investment, the WTO is not ‘where the action is’ and thus PTA negotiators have little reason to evoke it.

Although it certainly appears as if the issue-area patterns for making references to the WTO and copying WTO text are parallel, we now investigate this issue more

38 The very low numbers for investment also validate our approach to text matching by showing that the match parameters do not produce false matches or inflate the amount of text overlap.

39 This could also be interpreted as a conflict-avoidance strategy, as trade remedies is the subject area with the most WTO disputes. Thanks to Joost Pauwelyn for pointing this out to us.

Table 7. Complementarity of PTAs referencing the WTO and copying WTO text

Trade issue	Correlation between WTO references and amount of text copied from WTO
Anti-dumping	+0.045
Dispute settlement	+0.522
Intellectual property	+0.134
Investment	+0.525
Procurement	+0.001
Safeguards	+0.559
Services	+0.241
SPS	+0.444
TBT	+0.525

systematically. Recall that we conjectured earlier that for PTA negotiators, WTO referencing, and WTO text copying could serve as alternatives, or as complements. Thus, far they appear to be reinforcing. To verify that this is the case, we systematically compare our empirical indicators for WTO referencing to those for WTO text copying. For each of the issue areas for which we have both types of data, we examine bivariate correlations for whether the relevant chapter in a PTA has a WTO reference and the number of words in the chapter that are copied directly from the parallel WTO agreement. The results are shown in Table 7. Note that the correlations are generally positive, as expected, and not a single one is negative, which is somewhat surprising. Many of the positive correlations are quite large—with four of them over +0.5. Table 7 thus provides more systematic evidence that the two indicators of potential WTO presence—references and text copying—are reinforcing. It appears that PTA negotiators use both in tandem when they want to maintain some consistency with existing WTO rules and obligations.

VI. FINDINGS OVER TIME FOR THE PRESENCE OF THE WTO IN PTAS

One of the most important questions is whether the presence of the WTO in PTAs is increasing or decreasing over time. On the one hand, it could be that agreements relied heavily on the WTO in the mid-to-late 1990s, right after the WTO was established. But since then, they may have begun to depart more and become less tied to WTO obligations and less reliant on WTO language. On the other hand, as the WTO has become more mature in terms of jurisprudence and dealing with issues like remedies, it is possible that governments might rely even more on the WTO as a foundation. To explore these important temporal dynamics, we organize and analyse on an annual basis all of our data on GATT/WTO references and copied-language, to see what temporal trends emerge.

The clear conclusion is that the position of the WTO in PTAs has grown steadily since 1995, and if anything this trend is accelerating. In terms of references to the

GATT and the WTO, the average number of WTO mentions per year has grown multi-fold over the past two decades. Figure 5 shows the increasing number of references per year. In the mid-to-late 1990s, the average PTA mentioned either the GATT and/or WTO only about a dozen times, despite the newness and prominence of the WTO. But by the mid-2010s, new PTAs on average were including more than 50 references to the WTO and more than 75 references total to the GATT or WTO. Figure 5 also shows how WTO mentions are driving this steep increase.

We see a similar pattern with regard to the amount of text copy-pasted from WTO agreements. Figure 6 shows that early agreements, those signed around the time the Uruguay Round was completed, contain on average only about 5% copied text from WTO agreements. By the mid 2000s, however, this figure had climbed above 15%. Thus, it seems that over time PTAs have come to reference the WTO more frequently and also incorporate more directly copied language from specific WTO agreements. We view both of these types of references as potentially complementary to each other, and as we demonstrated above, we have strong reasons to believe that the context of the references are constructed so as to generate complementarity between obligations in the PTAs and extant WTO rules. As such, the evidence marshaled here would imply that PTAs are engaging the WTO more robustly now than at any previous point in time.

VII. WHICH STATES INCLUDE THE GREATEST WTO PRESENCE?

Because sizeable but varying amounts of WTO presence have been uncovered, the question now turns to which PTAs exhibit the largest WTO presence. Put differently, which states are most likely to include ties to the WTO in their PTAs, whether with regard to references to the WTO or the use of actual language from a WTO agreement? We offer some initial, informed conjectures and follow-up with some preliminary multivariate analyses.

A. Conjectures

We consider several possible explanations for the variation in the levels of WTO presence in PTAs, and estimate several multiple regression models to evaluate these explanations. We utilize a multivariate approach in this section because of the need to disentangle the many possible explanations for varying WTO presence from one PTA to the next. We analyse two distinct but related dependent variables for the ‘presence’ of the WTO in PTAs. Our first dependent variable once again counts the total number of times the WTO is referenced in each PTA. Our second dependent variable captures the percentage of PTA text that is copied and pasted verbatim from relevant WTO agreements. To create this measure, we take the average percentage copied across all chapters in the PTA where a parallel WTO agreement exists (refer back to Table 1). From the discussion in the previous section, we know these two outcomes are positively correlated, yet we believe it is useful to consider them separately to identify both consistencies and any minor differences.

The starting point for explaining PTAs with a stronger WTO presence (of either type) is that some countries have a stronger attachment to the WTO. Thus their negotiators will prefer, and include in their PTAs, stronger ties to WTO obligations

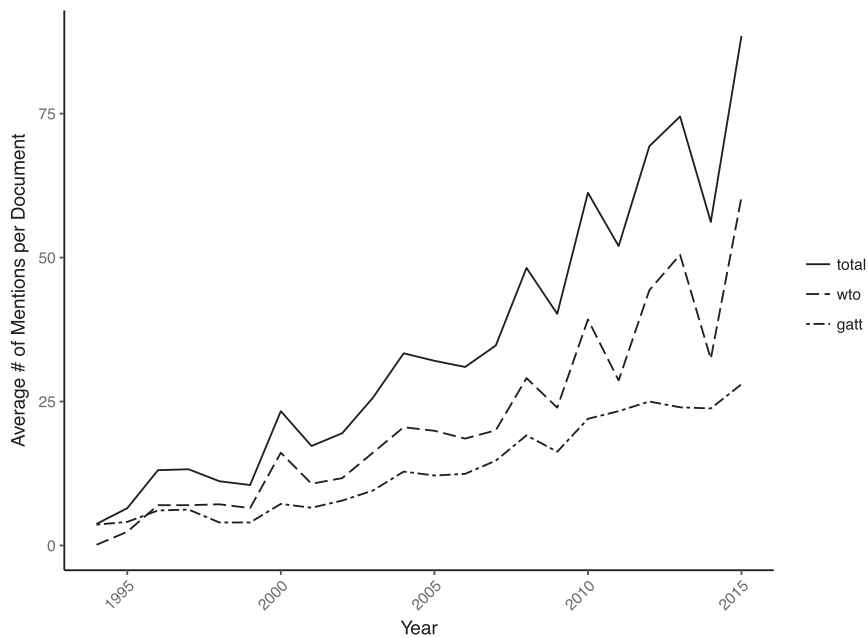


Figure 5. Yearly average GATT/WTO mentions 1994–2015

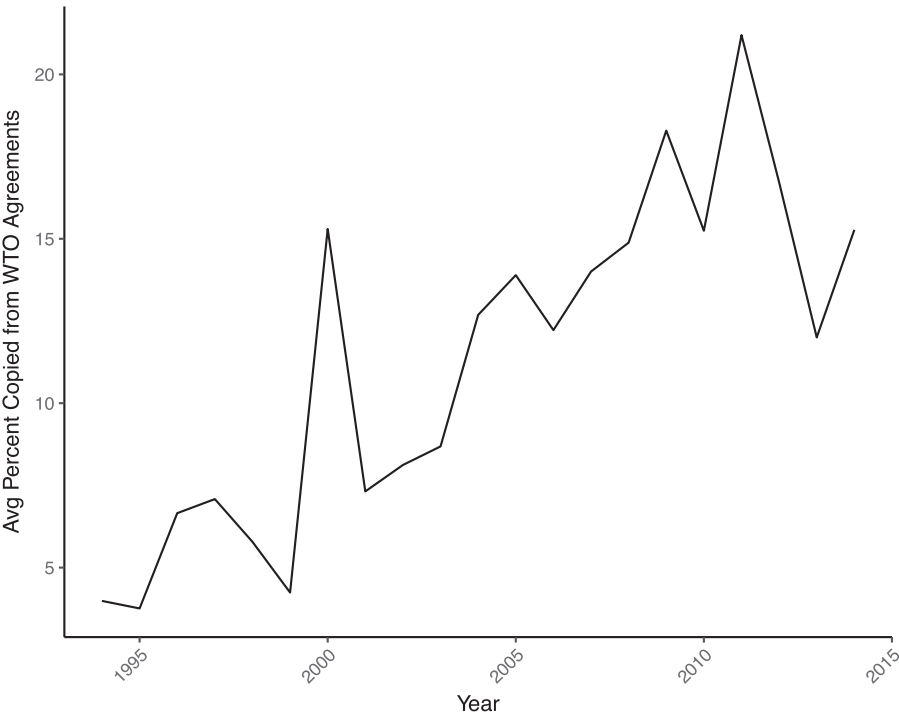


Figure 6. Average copied text across 11 WTO Agreements 1994–2015

that will maintain greater consistency with the established multilateral regime. These countries may have more invested in the WTO, or may have high levels of trust or confidence in the WTO regime. Therefore, we consider five related but distinct indicators of the PTA Members' past experiences with the multilateral trade regime, and include them one at a time in our regression models.

The first two indicators reflect a country's long-term investment in the WTO regime. Countries that have been members of the GATT/WTO regime the longest should have the closest attachment to the organization and the greatest knowledge of its past agreements, including what the obligations entail and how they have been interpreted and applied over time. Therefore, we expect the PTA Members who have been members of the GATT or WTO the longest to include a stronger WTO presence in their PTAs. To create our operational variable for *duration of WTO membership*, we create a count of the number of years since each PTA signatory joined the GATT or WTO. Then, for the sake of consistency, and unless otherwise noted, for this and other similar variables we take the average value among all members of the PTA, whether the PTA is bilateral or plurilateral.⁴⁰ As a second measure of countries' investment in the WTO regime, we look at the amount of resources they devote to WTO-related affairs in Geneva. Governments that have committed numerous staff to multilateral trade affairs have greater sunk costs in the WTO and are expected to have both greater knowledge of the regime and a larger stake in maintaining consistency with it. Therefore, as a second indicator of PTA Members' attachment to the WTO, we collect data on the number of staff stationed in Geneva.⁴¹ The final indicator for this *WTO Mission Size* indicator takes the average value among both (or all) PTA Members.

The next three indicators capture a PTA Member's involvement before the WTO's dispute settlement body, which is perhaps the regime's most notable contribution. We examine behaviour in dispute settlement because it demonstrates a government's legal approach to the existing multilateral system. Governments have many outside, informal, or bilateral options for dealing with trade conflicts, but opting into legal dispute settlement at the WTO (or the GATT, particularly since 1989) demonstrates a firmer commitment to the centrality of the regime. In addition, being involved in legal disputes increases a government's interest in achieving consistency in legal obligations, which they can do in PTAs by making references to WTO law and incorporating WTO texts. The first indicator captures the number of times a country has been a formal complainant in WTO disputes during the last five years.⁴² This *WTO disputes as complainant* variable captures the aforementioned logic directly. A second indicator captures the number of times (in the last five years) a country has decided to join others' WTO disputes as a third party. This *WTO disputes as third-party* indicator is useful because opting into a WTO dispute as a third party is

40 Approximately two-thirds (66%) of the PTAs negotiated during this time period are between two members.

41 Mission size is coded from the GATT and WTO's official blue books, which are yearly telephone books that list since 1982 the names of trade diplomats and chief administrative staff per GATT/WTO member.

42 We look at the year when the dispute (request for consultations) was first filed at the WTO, and start the five-year backwards-lag with the year preceeding the year in which the PTA in question was signed.

purely optional, and reflects strong interest in the regime's workings overall and a more vested interest in trade multilateralism. In particular, states that are less powerful but supportive of the evolving legal system may opt for third-party participation. As previously, we look at third-party participation over the previous five years, and take the average value among the PTA's two or more members. Finally, as a summary measure, we include a variable that reflects *all WTO dispute participation* (complainant, respondent, third party) by a PTA Member during the previous five years.

Building on the previous discussion, we also consider the possibility that some PTA Members might have a stronger general commitment to multilateralism, beyond just trade multilateralism. Therefore, even if they decide to pursue a PTA, they should be more aware of any possible tensions with the WTO and seek to include a stronger WTO presence in the PTA to continue to advance multilateralism. To investigate this possibility, we examine each PTA Member's total number of memberships in inter-governmental organizations (IGOs)—and once again take the average among the PTA membership.⁴³

The strongest counter-logic to the above is that some states have simply abandoned trade multilateralism—and their pursuit of PTAs reflects this. This point of view is reflected in much of the criticism noted at the beginning of the article, which portrays PTAs and the WTO as opposites and competitors. PTAs, as this conventional wisdom goes, are a threat to the WTO regime and are undermining, if not destroying, it. States make an either-or decision, and those that have 'gone the preferential route' should have little interest in maintaining a presence in their PTAs of the WTO, which they have begun to abandon.

Therefore, we create and employ two indicators to capture how some actors pursue bilateralism and plurilateralism more aggressively—and thus should be expected to include weaker WTO presence in PTAs. The first tallies the number of PTAs that each country has signed in the previous five years. This reflects their recent trends towards bilateralism versus multilateralism, yet the window is wide enough to acknowledge that it may take several years to negotiate a PTA. As before, our operational indicator takes the average *number of PTAs signed* (in the last five years) by all members of the agreement in question. Likewise, the signing of more than 3000 BITs since 1960 reflects the dramatic move towards bilateralism in the realm of foreign direct investment (FDI). Although there have been attempts towards multilateral regulation of FDI, including through the WTO, BITs have become the dominant vehicle for governments to specify the terms of global investment. Those states that have been keenest to sign BITs, then, have demonstrated a preference for preferentialism over multilateralism. Thus, they too should be expected to include a weak WTO presence in their PTAs. Once again, we include an indicator of the *number of BITs signed* by PTA Members during the last five years.

We also include several variables that capture the economic characteristics of the PTA Members, which might also affect their propensity to include a strong versus weak WTO presence in their agreement. One such indicator is for the trade

43 Data on IGO membership is taken from the Correlates of War Intergovernmental Organizations (v2.3) data set; Jon C. Pevehouse, Timothy Nordstrom and Kevin Warnke, 'The COW-2 International Organizations Dataset Version 2.0', 21(2) Conflict Management and Peace Science (2004) 101–19.

dependence of PTA Members. We postulate that states that are highly trade dependent overall may be keen to keep a stronger multilateral presence in any PTAs because of their need to maintain widespread access to global markets. In keeping with this logic, we employ data on PTA Members' exports as a percentage of GDP and include the average value of their *trade dependence* in our regressions. We also expect that PTAs among members with greater collective market size might be less dependent on trade multilateralism. Thus, PTAs that carve out greater internal markets should exhibit less of a WTO presence. We look at the *total GDP of all PTA Members*, and in this case take the sum of all PTA Members' annual GDP (in constant US dollars, with a one-year lag).

A final, and particularly interesting, variable that might affect the amount of WTO presence in a PTA is whether the PTA includes a major trading state. On balance, one might think that PTAs being driven by major global players should include less of a WTO presence. As the logic goes, these states are carving out their own path in the face of continued WTO stagnation. They are in competition with one another for greater market access and seemingly to rewrite the future rules for global trade. They are leaving the WTO behind, and thus their PTAs should have fewer references to the WTO and little to no WTO text. Therefore, to test this argument, we include a variable that captures the *GDP of the largest PTA Member* (in constant US dollars, with a one-year lag).

A couple of additional, control-type variables are worth noting. In all models, we include a variable that counts the year (between 1994 and 2014) in which the PTA is signed, to capture any possible time trends. In the first set of estimations, where total references to the WTO is the dependent variable, we also include a control for the total number of words in the PTA, to capture the fact that lengthier agreements should generally include more WTO references.⁴⁴

B. Findings

We now turn to our regression findings for the above conjectures, which are presented in [Tables 7](#) and [8](#) below. The results in [Table 7](#), for the count of the number of WTO references, are arrived at using negative binomial estimation.⁴⁵ The results in [Table 8](#), for the percentage of text copied from the WTO, are generated using ordinary least squares (OLS). In all cases we estimate robust standard errors.⁴⁶ The results across the two tables are striking—in ways both expected and unexpected—and have important policy implications. Owing to space constraints and the preliminary nature of the analyses, we highlight only the most notable findings.

On balance, we find that PTA Members that have some type of closer attachment or past engagement with the WTO are more likely to specify a stronger WTO

44 We do not include this control in the second set of regression results, where the dependent variable is the percentage of text taken from the WTO, which is already somewhat standardized.

45 Negative binomial regression is most appropriate for our count variable given that the conditional variance exceeds the conditional mean (see J. Scott Long, and Jeremy Freese, *Regression Models for Categorical Dependent Variables Using Stata*. (College Station, Texas: Stata Press, 2013). Furthermore, a post-regression likelihood test suggests that the alpha parameter is non-zero.

46 Robust standard errors provide for a more conservative test of our conjectures and guard against a variety of issues including heteroscedasticity and the influence of outliers.

Table 8. Negative binomial estimations of the total number of WTO references in PTAs, 1994–2014

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Duration of WTO membership	0.00746*** (0.00253)				
WTO mission size		0.0185 (0.0144)			
WTO disputes as complainant (last five years)			0.0751* (0.0408)		
WTO disputes as third party (last five years)				−0.00818 (0.0150)	
All WTO dispute participation (last five years)					0.00922 (0.0100)
Total IGO membership	0.0121** (0.00577)	0.0184*** (0.00459)	0.0187*** (0.00427)	0.0215*** (0.00440)	0.0204*** (0.00435)
PTAs signed (last five years)	0.00889 (0.0145)	0.00923 (0.0141)	0.0137 (0.0138)	0.00877 (0.0143)	0.00784 (0.0140)
BITs signed (last five years)	0.00852 (0.00912)	0.00493 (0.00808)	0.00575 (0.00788)	0.00509 (0.00807)	0.00491 (0.00805)
Trade dependence (exports)	0.00851*** (0.00151)	0.00893*** (0.00149)	0.00897*** (0.00149)	0.00907*** (0.00150)	0.00929*** (0.00149)
Total GDP of PTA Members	−7.263e-14*** (1.35e-14)	−7.16e-14*** (1.28e-14)	−7.30e-14*** (1.20e-14)	−8.04e-14*** (1.24e-14)	−7.51e-14*** (1.23e-14)

(Continued)

Table 8. (Continued)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
GDP of largest PTA Member	1.35e-13*** (1.58e-14)	1.17e-13*** (1.94e-14)	1.07e-13*** (1.83e-14)	1.33e-13*** (1.66e-14)	1.19e-13*** (1.88e-14)
Total words in PTA	2.13e-06 (1.79e-06)	2.50e-06 (2.25e-06)	2.36e-06 (1.97e-06)	2.49e-06 (2.33e-06)	2.43e-06 (2.13e-06)
Year	0.0739*** (0.0142)	0.0727*** (0.0138)	0.0800*** (0.0129)	0.0800*** (0.0152)	0.0755*** (0.0139)
Constant	-146.8*** (28.39)	-144.8*** (27.67)	-159.3*** (25.76)	-159.4*** (30.41)	-150.4*** (27.80)
Observations	243	267	267	267	267

Note: Robust standard errors in parentheses, *** $p > 0.01$, ** $p > 0.05$, * $p > 0.10$

presence in their PTAs. In the aggregate, six of the ten coefficient estimates across Tables 8 and 9 are positive and statistically significant at conventional levels. The results are slightly different for the two different WTO-presence dependent variables. Long-time WTO Members seem to include both more WTO references in their PTAs and more WTO text, since the duration of WTO membership variable is positive and statistically significant in both Tables 7 and 8. Countries with larger WTO delegations are much more likely to include WTO agreement text in their PTAs. They also seem more likely to reference the WTO, although this relationship falls just short of conventional statistical significance.

We also find that countries that have participated more frequently in WTO dispute settlement are more likely to include a strong presence of the WTO in their PTAs. Table 9 shows that the PTA Members that are most likely to include WTO text in their PTAs are those that have participated most often in WTO dispute settlement. Both third-party participation and overall participation are strong, positive predictors of WTO text copying. In terms of WTO references in PTAs (Table 8), it is countries that have been most active as litigants (complainants in the last five years) that are more likely to include this type of WTO presence in their PTAs. One interpretation is that third-party participation is a lower-cost form of dispute settlement involvement more accessible to developing countries, which also are the ones most likely to copy PTA text as a shortcut more generally.⁴⁷ Referencing the WTO, however, requires more legal expertise, which may be more common among frequent WTO complainants.

Likewise, we also find that PTA Members with a more multilateral orientation tend to include a strong WTO presence in their PTAs. This is true for references to the WTO and for utilizing text from WTO agreements. In fact, this *IGO membership* variable is positive and statistically significant across eight of the ten models in Tables 8 and 9. Therefore, we see strong overall evidence that PTA signatories that are more globally engaged, at the WTO and elsewhere, embed WTO law into their PTAs. Clearly some actors have a greater stake in the WTO, which appears to carry over into their PTAs. Further investigation is needed to determine whether this is due to greater 'investment in' the WTO, a greater 'affinity' for it, or to one's 'national interest' being well represented within the current WTO regime.

Perhaps the most surprising result is that states that have most aggressively pursued preferentialism (via PTAs and BITs) do not abandon their WTO obligations within the PTAs they sign. If anything, the results suggest the opposite. Although they never reach conventional levels of statistical significance, in Tables 8 and 9 the coefficients of the five-year *PTAs signed* and *BITs signed* variables are almost always positively signed. Regardless, we find the lack of negative, statistically significant relationships to be an important finding. Drawing upon the conventional wisdom, we expected the countries that have been most keen to move towards preferentialism would have less WTO presence in their PTAs. Instead, these countries almost seem more inclined to maintain links to the WTO in their PTAs. Why are they not leaving behind the WTO, even as they pursue preferentialism? We assume from their pronounced activity that these are countries that want to push trade (and investment)

47 See Allee and Elsig, above n 25.

Table 9. OLS estimations of the total amount of WTO Agreements copy-pasted in PTAs, 1994–2014

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Duration of WTO membership	0.116*** (0.0278)				
WTO mission size		0.572*** (0.165)			
WTO disputes as complainant (five years)			0.339 (0.330)		
WTO disputes as third party (five years)				0.651*** (0.203)	
All WTO dispute participation (five years)					0.330** (0.145)
Total IGO membership	−0.0294 (0.0432)	0.0132 (0.0403)	0.0874*** (0.0336)	0.0746** (0.0330)	0.0739** (0.0351)
PTAs signed (five years)	0.224 (0.139)	0.189 (0.132)	0.195 (0.132)	0.105 (0.122)	0.162 (0.126)
BITs signed (five years)	0.0733 (0.0621)	−0.0469 (0.0594)	−0.0426 (0.0601)	−0.0365 (0.0597)	−0.0445 (0.0594)
Trade dependence (exports)	0.0362* (0.0191)	0.0429** (0.0193)	0.0470** (0.0203)	0.0585*** (0.0192)	0.0516*** (0.0199)
Total GDP of PTA Members	−4.61e-13*** (1.46e-13)	−2.60e-13* (1.36e-13)	−4.57e-13 *** (1.32e-13)	−3.47e-13 *** (1.29e-13)	−3.59e-13 *** (1.34e-13)
GDP of largest PTA Member	7.61e-13 *** (1.89e-13)	2.04e-13 (2.14e-13)	5.37e-13 ** (2.15e-13)	4.34e-13 ** (1.77e-13)	2.22e-13 (2.28e-13)

(Continued)

Table 9. (Continued)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Year	0.591*** (0.131)	0.411*** (0.113)	0.579*** (0.116)	0.395*** (0.117)	0.498*** (0.108)
Constant	-1178*** (262.1)	-818.1*** (225.8)	-1157*** (232.2)	-789.5*** (233.4)	-993.7*** (214.7)
Observations	236	260	260	260	260
R ²	0.363	0.340	0.307	0.329	0.320

Notes: Robust standard errors in parentheses. Trade dependence and GDP measures lagged one year., *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

cooperation further. At present, this is simply not possible via the WTO channel, and thus they have looked for willing PTA partners. But in doing so, they continue to show support for trade multilateralism by keeping a strong WTO presence in any PTAs as they negotiate.

Another surprising finding provides additional evidence relevant to this emerging narrative. We find that large countries actually include a stronger, not weaker, WTO presence in their PTAs. In nearly all the models in [Tables 8 and 9](#), the *GDP of the largest PTA Member* variable is positive and statistically significant, often at the 99% level of confidence. Thus, the major trading states continue to maintain strong links to the multilateral regime in their PTAs. We view this as evidence of competitive liberalization, but within the context of the multilateral trading system. Undoubtedly, the largest states are pursuing preferentialism in the form of PTAs, and the search for partners and the move towards mega-regionals has a competitive undercurrent. Yet while doing all of this, the major economies are maintaining strong ties to the WTO within their PTAs, which suggests that they continue to view the multilateral trading rules as an important foundation for their trade cooperation.

We also find strong, robust support for the other economic arguments. Trade-dependent countries do indeed maintain a stronger WTO presence in their PTAs. Across all 10 models in [Tables 8 and 9](#), the variable for export dependence of the PTA Members is positive and statistically significant. Likewise, we find strong support for the idea that PTA market size is inversely related to WTO presence. Across all models, those PTAs with the largest aggregate GDP specify fewer links to the WTO. Thus, the overall economic position of the PTA Members collectively appears to be an important determinant.

Finally, our time trend variable, for the year in which the PTA was signed, is actually positive in all 10 models. This constitutes even further evidence that PTA Members are specifying a greater, not lesser, presence for the WTO over time.

VII. CONCLUSION

Our goal in this article has been to contribute some unique empirical insights into the debates on global regime complexity and fragmentation—with the relationship between PTAs and the WTO being our central focus. We believe we have achieved this goal, using methods that are novel, insightful, and robust. Like many other articles in this volume, we demonstrate the many ways that text analysis, although not without its limitations, can be very useful for empirical legal and social science research. In particular, we view the techniques illustrated here as an efficient means to gain an empirical foothold on the varying extent to which PTAs reference the WTO. However, as has been argued by other scholars, we do not maintain that text-as-data techniques should substitute for rich, domain-specific knowledge, or human coding.⁴⁸ Rather, if used effectively, text-as-data techniques can help to efficiently uncover underappreciated associations in large collections of documents, in our case trade agreements. In doing so, it can complement existing research and help point out new directions of inquiry.

48 See fn. 19; see also Broude, Haftel and Thompson as well as Daku and Pelc, this special issue.

An overarching take-home message from this endeavour is that the growing collection of PTAs maintains multiple ties with the GATT/WTO regime. We examine comprehensively the source of trade law in both the multilateral and preferential context—the actual agreements—and find many linkages, some of which we would argue are significant or surpass what many would have expected *ex ante*. Nearly, all PTAs engage the WTO with explicit references and most do so across the majority of chapters and more than 20 times per agreement. Additionally, preliminary analysis of the words surrounding these WTO references demonstrate that the majority cite-specific obligations and articles and include phrases indicating deference to the regime. Future research should probe variation in these references further; as there are likely several distinct ways a country can reference the WTO, each indicating different levels of commitment. We also uncover a large amount of direct incorporation of WTO legal obligations. More than 200 PTA chapters copy more than half of their text directly from a parallel WTO agreement, which is notable. Overall, our multi-pronged approach to examining WTO ‘presence’ suggests that PTAs are more closely aligned with the WTO than has been shown to date.

We also find that PTAs are including a greater WTO presence over time. Explicit references to the GATT and WTO have increased since 1995, as has the amount of direct incorporation of WTO agreement text. This finding suggests that, despite the lack of progress in multilateral trade negotiations, many countries still take their WTO obligations seriously. Exploring this trend further should be a priority for researchers. We also find that both well established and new issues are those in which WTO presence in PTAs is greater. One possible next step is to explore the both types of issues, particularly the new ones, and to use text-as-data techniques to determine how much convergence exists and how difficult it would be to multilateralize PTA texts back to a WTO-type treaty.

A second general contribution has been to provide an initial exploration of the actors that include the greatest WTO presence in their PTAs. Perhaps most notable is that countries driving the PTA and BIT bandwagons reference the WTO extensively across many of their PTAs. The same is true to an even greater extent for the major economies, *ceteris paribus*. Both of these findings illustrate that major economic players might be more committed to the multilateral trade regime than some commentators have feared. Furthermore, it appears that the multilaterally oriented states that are most experienced with, and that have the greatest vested interest in, the current WTO regime include a stronger WTO presence in their PTAs. All of this suggests that in a world in which trade agreements are being proposed, reassessed, and perhaps abandoned, the WTO remains a focal point, even for those major actors who are most active in pursuing agreements outside the multilateral framework.