

Abstract

Does state-ownership limit the liberalizing effects of the WTO? We examine the case of China, which is not only the largest exporting state but also lends active support to SOEs that could distort global trade. Using data on import purchases disaggregated by ownership from 1993 to 2012, we analyze how WTO entry affects the commercial orientation of state-owned and private imports. We demonstrate that after WTO entry, tariff cuts have a larger effect on private compared to SOE trade. We then show that state-ownership alone does not block the WTO's liberalizing effects. For most industries, SOEs and private firms are alike in their commercial orientation. However, where strategic goods targeted by industrial policy hold a large share of bilateral trade, lowering tariffs has no impact on SOE trade. These findings highlight the tensions between state-led economic models and global trade law premised upon market principles.

1 Introduction

Could the WTO transform state-planning into a market-based economy? China's WTO entry in 2001 was accompanied by strong expectations of liberalization among governments and scholars (Clinton 2000; Lardy 2004). Partners expected that WTO membership would support economic reforms as part of a transition toward a market-oriented economy. Few share this optimism today. One study contrasts the "worldwide euphoria when China entered the WTO" with "dysphoria that is gaining pace across the industrialized world" (Mavroidis and Sapir 2021, p. 7). A key complaint is the continued significance of state-owned enterprises (SOEs) in China's economy and the perception that these firms engage in unfair trade. The United States government declared in 2017 that the WTO had "proven to be ineffective in securing China's embrace of an open, market-oriented trade regime" (United States Trade Representative 2017). Unilateral tariffs on Chinese imports levied in 2018 under a Republican president have been upheld by his Democratic successor. Trade officials point to distortions arising from China's "model of state-directed economics" (Shea 2018). Scholarship also emphasizes the growing role of the state in China's economy (Naughton and Tsai 2015; Lardy 2019). Legal scholars contend that Chinese state capitalism counters the liberal understanding central to the trade regime (Wu 2016; Mavroidis and Sapir 2021). These developments raise the question of whether international economic rules can promote convergence of economic models or support cooperation between countries of different economic structures. The postwar trade regime has been credited with promoting a wide expansion of trade, but further research is necessary about the limits of liberalization - and the sources of these limits.

We take on the question of when and how the WTO led China to liberalize imports. By looking at state control through the prism of state ownership and industrial policy, we explain a pattern of partial opening. To the extent that WTO entry has been blamed for letting China export to WTO members without opening its own markets, we offer a correction. Lowering Chinese tariffs at WTO entry did increase imports, including trade by SOEs. However, state

guidance over SOE importing behavior in strategic goods blocked liberalization in ways that were not fully anticipated by members. To solve the “China problem” wracking the trade system, negotiators will have to address the longstanding challenge of statist industrial policy rather than casting the blame entirely on state ownership of firms.

We focus on the ability of the WTO to liberalize trade conducted by SOEs. Examining the case of China, we bring new evidence to evaluate whether WTO entry can increase the commercial orientation of SOE trade flows. SOEs make up an increasingly important component of the global economy. These firms are not only consequential in size, comprising almost a quarter of Fortune 500 companies in 2014 (PricewaterhouseCoopers 2015), they have also become influential global actors engaged in sectors that are internationally traded and contested. Apart from China, many other large emerging economies retain significant state-ownership; the eight countries with the largest shares of SOEs in their economies make up a fifth of world trade (Kowalski, Büge, Sztajerowska et al. 2013).¹ Concerns over the WTO’s ability to govern SOE trade therefore extend beyond the Chinese case.

Does state-ownership conflict with trade liberalization? One perspective places the ownership question as the fundamental problem contradicting free trade rules. By nature, SOEs hold non-market objectives ranging from national security to the pursuit of development. This suggests that only the elimination of state-ownership could resolve tensions in the WTO. Another perspective contends that SOEs aggregate capital through state support but otherwise can conduct themselves as commercial actors. This latter view underlies trade rules today. The WTO does not prohibit SOEs, but admonishes that SOEs must operate on the basis of commercial considerations without discriminating against other enterprises or imposing measures that would nullify tariff concessions.² These rules, designed when SOEs consisted of Amtrak or the Australian and Canadian wheat boards, now confront new SOEs that represent major trade players.

¹China, Malaysia, Indonesia, India, Russia, Brazil, Saudi Arabia and the United Arab Emirates.

²Article XVII of GATT 1994.

In principle, there are two channels through which WTO membership could discipline SOE trading behavior. The first is a price effect, where tariff cuts incentivize all firms, including SOEs, to switch to cheaper imports. The second is an institutional effect, where the WTO prohibition on discrimination places SOE trade on a level playing field with private firms. To the extent these forces succeed, SOE and private trade should be indistinguishable in their responses to price signals. Despite the practical and theoretical significance of this issue, there has been little scholarship about the effect of the WTO on SOE trade.

We argue that the combination of industrial policy and state ownership blocks the liberalizing effects of WTO membership. Governments join the trade regime to expose all firms, including SOEs, to stronger market signals. Simultaneously, they use SOEs to shield strategic sectors from import competition. These strategic sectors reflect the government’s desire to promote development and defend national security. They span numerous industries, including high-tech and defense, economic ‘life-line’ industries such as telecommunications, as well as sectors important to basic food and raw material security. SOEs therefore face competing pressures to improve their market orientation and uphold state priorities. In a bifurcated response, SOEs respond to WTO entry similarly to private firms when importing ordinary (or “non-strategic”) goods, but behave differently when importing strategic products that compete with domestic sectors targeted by industrial policy. This introduces heterogeneity in the WTO’s effectiveness in shifting different types of import flows toward market behavior. While private trade behaves on commercial terms in all types of products regardless of strategic status, WTO entry only shifts SOE trade toward a commercial orientation for non-strategic products.

We focus on China as a critical case. China’s entry into the WTO in 2001 was a turning point in the world trading system. Not only is China now the world’s largest exporting state, it represents a different economic model with SOEs active throughout the economy. From 2001 to 2019, the number of Chinese SOEs among the Fortune 500 grew from ten to 89, and their total revenue at \$6.39 trillion now exceeds the GDP of either Japan or Germany.³

³Firms listed at <https://fortune.com/global500/2019/search/> accessed 1 June 2020.

The trading behavior of Chinese SOEs could therefore impact the international economy systemically. Friction over China’s economic governance has emerged across multiple fronts as the United States has imposed tariffs and joined other countries to bring legal cases to the WTO that affect global SOE regulation.⁴ Regional economic initiatives display a heightened focus on SOEs, driven implicitly by concerns over Chinese state-owned firms.⁵

Recent scholarship and public discourse on China’s WTO entry spotlights the impact of surging exports from China. While important, a focus on exports ignores the core WTO concessions made by China in its accession protocol to lower import tariffs and simplify licensing procedures, among other domestic reforms. These commitments indirectly contributed to China’s export competitiveness but were more directly aimed at opening up China’s domestic market. A full evaluation of the WTO’s impact therefore lies in whether WTO members gained access to the Chinese market. This requires an analysis of imports.

We investigate the effects of WTO membership on import purchases by China’s state-owned and private firms from 1993 to 2012. Using a dataset of bilateral trade disaggregated by ownership status, we compare the impact of tariff rates on purchasing decisions before and after China’s 2001 WTO entry. We evaluate our argument about industrial policy by testing whether the responsiveness of imports to tariff cuts varies by both ownership and strategic sectors. We validate the main findings using product-level data for the 2003-2008 period. This finer-grained analysis allows us to leverage the varying degrees of strategic value across products and account for domestic sectoral adjustments to tariff liberalization.

In contrast to the academic and public commentary that blames Chinese state capitalism for closing its markets and lowering its compliance with WTO rules, we find surprising evidence of liberalization in SOE trade. Where the share of strategic products in imports is low, there is no statistical difference between the commercial orientation displayed by SOE

⁴See for example the WTO dispute on China’s anti-dumping and countervailing duties involving the definition of a “public body”.

⁵See for example the chapter on SOEs in the Comprehensive and Progressive Agreement on Trans-Pacific Partnership, and emerging EU regulations on foreign SOEs.

and private import flows: in both types of trade, lower tariffs in the WTO period brought an increase in imports. The interaction between ownership and industrial policy, however, limits SOE liberalization. We find that as the share of strategic products in bilateral imports increases, the tariff-responsiveness of SOE import flows declines. In contrast, private imports remain responsive to lower tariffs regardless of the share of strategic products. State ownership alone, therefore, does not blunt the liberalizing effects of the WTO. Rather it is when the state combines the levers of state ownership with industrial policy, that WTO liberalization is blocked.

Our study makes several contributions to scholarship on international trade and political economy. First, this research brings new insights into state ownership and the effectiveness of trade rules. A large body of research has investigated the trade-creating potential of WTO membership at the aggregate level (e.g. [Gowa and Kim 2004](#); [Rose 2004](#); [Goldstein, Rivers, and Tomz 2007b](#); [Allee and Scalera 2012](#); [Carnegie 2014](#)). Some point to variation in WTO compliance by type of government ([Mansfield, Milner, and Rosendorff 2000](#); [Peritz 2020](#)). We add a new dimension by giving attention to variation within countries and investigating the ability of the WTO to liberalize the trading behavior of SOEs. By explaining how industrial policy combines with state ownership to blunt the liberalization of state-owned trade, we show that sectoral characteristics moderate the effectiveness of WTO rules ([Davis and Shirato 2007](#); [Johns and Pelc 2018](#)). Finally, our research builds on research about using non-tariff barriers to substitute for protection by tariffs. Democracies have been shown to erode the impact of tariff liberalization through opaque regulation ([Kono 2006](#)). Our research reveals that economies with a large share of state ownership can deploy SOE purchasing behavior to shield strategic industries from import competition. Our findings highlight an important channel through which China challenges the functioning of the WTO, and hold implications for the global regulation of SOEs across a wide range of economies.

Section [2](#) discusses how the WTO exerts pressures for liberalization, and section [3](#) presents our argument about how state ownership and industrial policy interact to moderate the

impact of the WTO. We introduce our data on trade flows disaggregated by firm ownership and measurement of industrial policy in section 4 and present our analysis in section 5.

2 The WTO’s Liberalizing Effect on Chinese SOEs

WTO rules aspire to enforce a level playing field that will facilitate cooperation between countries with different economic structures. Supporting research shows that the WTO generates trade gains through membership (Goldstein, Rivers, and Tomz 2007a; Chang and Lee 2011) and rule enforcement (Bechtel and Sattler 2015; Chaudoin, Kucik, and Pelc 2016). Related research examines when these gains vary by country characteristics. For example, regime type might affect the likelihood of trade between country pairs (Mansfield, Milner, and Rosendorff 2000) as well as their overall propensity to trade (Aidt and Gassebner 2010). Other studies, such as Gowa and Kim (2004), examine how state power shapes the distribution of trade gains. Notably, research suggests that WTO trade gains would be greater for countries such as China, given that a rigorous accession process subjected its policies to close scrutiny and led to more requirements for liberalization (Allee and Scalera 2012). In the same vein, Carnegie (2014) finds that the WTO facilitates cooperation by solving a hold-up problem that is more acute between dissimilar pairs. These gains should accrue to countries such as China, given the large political and economic differences between it and developed market economies. Yet the emergence of the US-China “trade war” as well as broader frictions between China and western market economies would suggest that there are limits to the liberalizing gains from China’s WTO membership.

We investigate state ownership as one potential barrier to WTO liberalization. Specifically, we focus on the WTO’s ability to discipline the trading behavior of SOEs, a topic that remains relatively under-researched. Scholarship on the WTO’s effects on China’s international behavior has tended to focus on the state’s conduct within WTO bodies (Li 2012). Analysis of the WTO’s impact on sub-state actors such as SOEs has primarily been from the legal and economics perspectives (Mavroidis and Sapir 2021), while political science research

has predominantly focused on SOE activity in outward investment (Norris 2016; Stone, Wang, and Yu 2021).

A broader set of literature investigates the effects of WTO rules on Chinese domestic economic governance, with mixed conclusions. Some, such as Qin (2004), point to the commitments in China's accession protocol that went beyond the obligations of existing WTO members. In meeting these demands, government and private sector stakeholders engaged with international economic law in a way that embedded transnational law as a new construct in Chinese economic policy (Shaffer and Gao 2020). Others, such as Levy (2017) and Wu (2016), argue that these terms were not strong enough to alter the entrenched form of state-led capitalism in China. Scholars further suggest the WTO's domestic effects might vary based on sectoral characteristics (Hsueh 2011; Harwit 2001) as well as bureaucratic structure (Tan 2020). Yet less is known about what these dynamics might mean for the international trading behavior of SOEs, despite the substantial impact of WTO entry on the rules and incentives facing these firms.

Even after two decades of reforms, China's accession negotiations in the 1990s confronted a state that relied heavily on administrative intervention and which supported a large state-owned sector. China's pre-WTO trading system was split between a liberalized export promotion regime dominated by foreign firms invested in special economic zones, and an insulated import substitution regime dominated by SOEs. The authority to trade was controlled by a licensing scheme that allocated trading rights to SOEs. Even as this system was expanded, it protected SOEs from competition and assured that their trading decisions were influenced by administrative guidance rather than price signals since the licenses restricted their trading to specific products and regions (Naughton 1999). With WTO entry, China pledged to liberalize trading rights to *all* firms, thereby extending the ability to trade to many private firms for the first time and offering SOEs more autonomy over their trading decisions.

WTO rules are ownership-neutral insofar as they apply equally to all actors engaged in trade. SOEs are regulated through GATT Article XVII on State Trading (and indirectly

through the agreement on Subsidies and Countervailing Measures (SCM)). Article XVII, which governs both state-owned and private enterprises granted exclusive trading rights, specifies that (a) SOEs granted state trading rights act in a non-discriminatory manner in their trade-related purchases or sales; and (b) that they “make any such purchases or sales solely in accordance with commercial considerations.”⁶ In its accession protocol, China reserved state trading rights for a subset of goods and commodities.⁷ Nevertheless, state trading in these products would also be governed by Article XVII as well as by commitments in China’s accession protocol that its SOEs must act on a commercial basis free from government interference. Specifically, China agreed to (a) phase out subsidies to certain loss-making SOEs; (b) subject SOE subsidies to WTO disciplines as laid out in the SCM agreement; (c) ensure that SOEs operate only on commercial considerations; (d) *not* influence the commercial decisions of SOEs; and (e) to notify the WTO on the pricing and purchasing behavior of SOEs (Levy 2017; Qin 2004). Due partly to a lack of precision in the accession protocol, these commitments have not been actively used by WTO members to discipline China’s SOE policies. (Levy 2017).⁸ When challenged in WTO disputes, ambiguity over the definition of public bodies contributed to decisions that many members find unsatisfactory (Mavroidis and Sapir 2021).

Our paper investigates whether WTO entry shifts the trading behavior of private and state-owned firms toward a more commercial basis. The WTO does not mandate a fixed level of market share or trade balance. Instead, its market-oriented rules operate under an assumption that lowering tariffs will alter firm behavior by shifting prices. Therefore the most direct evidence of a “WTO effect” to promote the commercial orientation of private/SOE trade would appear in the form of imports increasing in response to tariff reductions.⁹ How-

⁶The legal provisions have been clarified through WTO case law (Mastromatteo 2017).

⁷Wheat, corn, rice, soybean oil, palm and other vegetable oils, sugar, tobacco, crude oil, processed oil, chemical fertilizer and cotton.

⁸For legal analysis of China’s SOEs in the WTO, see Mavroidis and Janow (2017).

⁹We define commercial orientation here in that firms are sensitive to price changes and respond to maximize profits. The *legal* interpretation of commercial orientation may well deviate from this layman’s definition. Indeed, WTO dispute settlement rulings have adopted a broad interpretation of what constitutes commercial

ever, government intervention through industrial policy might nullify any tariff impact of WTO accession. In that case, we would observe a lack of response in trade flows to tariff reductions, suggesting that firms are responding to government – rather than market – signals.

3 Explaining Patterns of State-led Liberalization

Our theory of state-led liberalization explains how SOE trading behavior fits into government efforts to direct and contain market competition within an era of trade expansion. Current scholarship points to the Chinese government’s dualistic goals. On one hand, the Chinese leadership sought to use external pressure as a credible commitment to advance market reform. Lowering trade barriers would enhance market efficiency by weeding out uncompetitive firms. On the other hand, the state simultaneously sought to promote strategic sectors important to national security and industrial upgrading by imposing domestic re-regulation and restrictions on foreign investment (Hsueh 2011; Pearson 2015).

These dual goals are part of a more general problem confronted by many governments to pursue market rationality emphasizing efficiency, and plan rationality emphasizing effectiveness. Where Johnson (1982, p. 21) in his classic formulation of the developmental state contrasts the trade-offs between the two approaches as pursued by the United States and Japan, states hope to maximize growth and pursue policy goals. The challenge is how to balance the tensions between letting markets rule versus guiding firm behavior. This governance dilemma permeates China’s bureaucracy, where the government seeks to improve efficiency by managing for results based on outcomes while also aligning behavior with political priorities (Mei and Pearson 2017). When it comes to governing the state sector, the “core goal of moulding SOEs that are both market competitive and obedient to the Party has remained consistent” across different leaderships (Leutert and Eaton 2021, p. 215). China’s deepening external engagement brings a new international dimension to this bureaucratic dilemma.
orientation (Mastromatteo 2017).

WTO entry locked in the transformation of the Chinese economy by expanding the role of the private sector. But China's tariff commitments posed a challenge to its dualistic strategy since all sectors, including strategic ones, would be exposed to more price competition as cheaper imports became available. By refocusing its SOE trade policy to restrict import competition in strategic products, China opted for limited liberalization. The ambiguity over the definition of "commercial considerations" in GATT Article XVII permits a wide range of behavior, creating gaps akin to the escape clauses and other mechanisms designed to provide flexibility in trade rules (Rosendorff and Milner 2001). Simultaneously, internal incentives to discipline SOEs and external demands by other member states set bounds on the breadth of government control, allowing SOEs to enjoy trade gains in goods not targeted by industrial policy. If the government placed restrictions on all aspects of SOE importing behavior, it would not reap any efficiency gains - either for the state-owned sector or for the broader economy. Governance of SOE trade must meet a Goldilocks principle of liberalization - not too much and not too little.

Official policy developments signaled these competing goals. Premier Zhu Rongji noted in 1999 that "(WTO) concessions might bring about a very huge impact ... on some state-owned enterprises ... (but) the competition arising from such impact will also promote a more rapid and more healthy development of China's national economy" (The White House 1999). This reflected the leadership's desire to use WTO entry to advance politically difficult domestic reforms (Pearson 2001). That same year, however, the government reasserted the role of SOEs as vehicles for industrial policy by affirming state ownership as the "principal component" of the economy (CCP Central Committee 1999). In December 2001, the same month of China's WTO accession, China announced a policy to foster 50 large, internationally competitive SOEs, emphasizing that it was "an important strategy to cope with the impacts brought about by the country's accession to the WTO" (Fu 2001).

We argue that the government adopts a bifurcated strategy in SOE trade policy in order to calibrate which domestic sectors are more exposed to import competition. Tariff liberal-

ization induces firms to take advantage of cheaper imports. The government can blunt the impact of this competitive channel on strategic industries by directing SOE purchasing behavior away from imports of goods that compete directly with these prized sectors. It achieves this through multiple tools, often disproportionately focused on the state-owned sector where the government can more readily influence decisions. While industrial policies apply to both private firms and SOEs, Party-appointed executives, preferential licensing, direct subsidies, indirect taxes and preferential credit offer multiple points of leverage to influence SOE decisions and enforce industrial policies (e.g. [Hsieh and Song 2015](#)). At the same time, it allows the full force of trade liberalization to operate in SOE imports of non-strategic products, spurring SOEs to behave like profit maximizing firms in shifting to cheaper imports. These dualistic policies determine when SOEs follow commercial incentives or ignore market signals in their international trade.

While tariff cuts are transparent and easily observable, their economic impact can be eroded through the substitution of opaque regulation. Democracies, for example, engage in “optimal obfuscation” by using product standards to replace protection lost from tariff cuts ([Kono 2006](#)). Similarly, SOE purchasing behavior provides a non-transparent lever for governments to achieve their policy goals under liberalized conditions. Countries with a large share of state ownership can therefore deploy SOE trade as a non-tariff barrier to shield strategic sectors from import competition. In this way, industrial policy paired with state ownership manages liberalization. Therefore, we expect that:

1. WTO entry strengthens the commercial behavior of private firms. Following WTO entry, lower (higher) tariff levels will increase (reduce) private imports.
2. The degree to which WTO entry shifts SOEs towards a commercial orientation depends on industrial policy. Following WTO entry, lower (higher) tariff levels will increase (reduce) SOE imports only when the share of strategic products in bilateral imports is low. As the share of strategic imports increases, the relationship between tariff levels and SOE imports weakens.

		Time Period	
		Pre-WTO	WTO
Type of Import Flow	SOE	No commercial response to tariffs	Commercial behavior <i>only</i> in non-strategic imports
	Private	No commercial response to tariffs	Commercial behavior in <i>all</i> types of imports

Figure 1: Predicted responsiveness of SOE and private imports to changes in tariff levels, comparing how the share of strategic goods conditions commercial behavior.

Figure 1 summarizes the predicted outcomes implied by our two hypotheses, in terms of the expected tariff responsiveness of SOE and private imports before and after WTO entry.

4 Data for Testing Firm Ownership Impact on Trade

Our main outcomes of interest are the import purchases of China’s state-owned and private sectors. Bilateral trade data on the annual value of Chinese imports by partner country and ownership status were obtained from the General Administration of Customs¹⁰ We exclude the trade flows of the foreign and joint venture sectors because (as explained in section 2) these enterprises operated under a separate and already highly liberalized trade regime in China’s pre-WTO period. Most analysis of Chinese trade combines SOE, private, and MNC trade.

¹⁰The data were purchased from Customs Info, a government-owned company licensed to distribute official customs data. Following the official classification, SOE imports are defined as purchases made by enterprises where the government owns 50% or more of the equity. While the data do not allow us to distinguish between central versus subnational SOEs, we indirectly assess the potential influence of these differences in a product-level analysis in section 5.

Our innovation is to focus on only domestic firms while differentiating between ownership. The data is available from 1993 to 2012, allowing us to compare import patterns before and after China’s 2001 WTO entry.

This structure of our data (partner import flows disaggregated by ownership type) allows us to account for external factors that might also distort SOE trade. For example, SOEs might serve not just as instruments of industrial policy, but also as agents in China’s economic statecraft (Davis, Fuchs, and Johnson 2017). We are therefore able to control for the possibility that SOE trade flows might be politicized by China’s bilateral trading relationships. Our focus on bilateral imports by ownership also mitigates other concerns. Since efforts within China to counteract liberalization through either exchange rate intervention or domestic import-competing firm price adjustment would apply across trade partners and affect import decisions by SOE and private firms equally, they are unlikely to bias our findings.

Figure 2 shows the average value of SOE and private imports measured at the bilateral level across China’s trade partners from 1993 to 2012. The impact of WTO entry, which liberalized trading rights to all firms – including domestic private firms – is readily evident. While private trade is negligible in pre-WTO years, imports expanded rapidly after 2001. In contrast, the impact of WTO entry on SOE imports is less discernible from this inspection of average trends. Although there is no noticeable shift in 2001, SOE imports steadily increase and remain higher than those of private firms at the end of our period of analysis.

The tariff liberalization that accompanied China’s WTO entry provides an important test of whether or not WTO membership has shifted SOE trading behavior toward greater commercial orientation. China’s accession negotiations were focused on reducing its import tariffs. Few changes were made to WTO member tariffs on Chinese exports, which were already low.¹¹ Figure 3 shows the average change in China’s MFN import tariffs over time, with a distinct drop in the years following 2001. While tariffs were declining in the 1990s,

¹¹Nearly all WTO members including the US applied MFN tariffs to Chinese exports. The key change with accession was to guarantee this access.

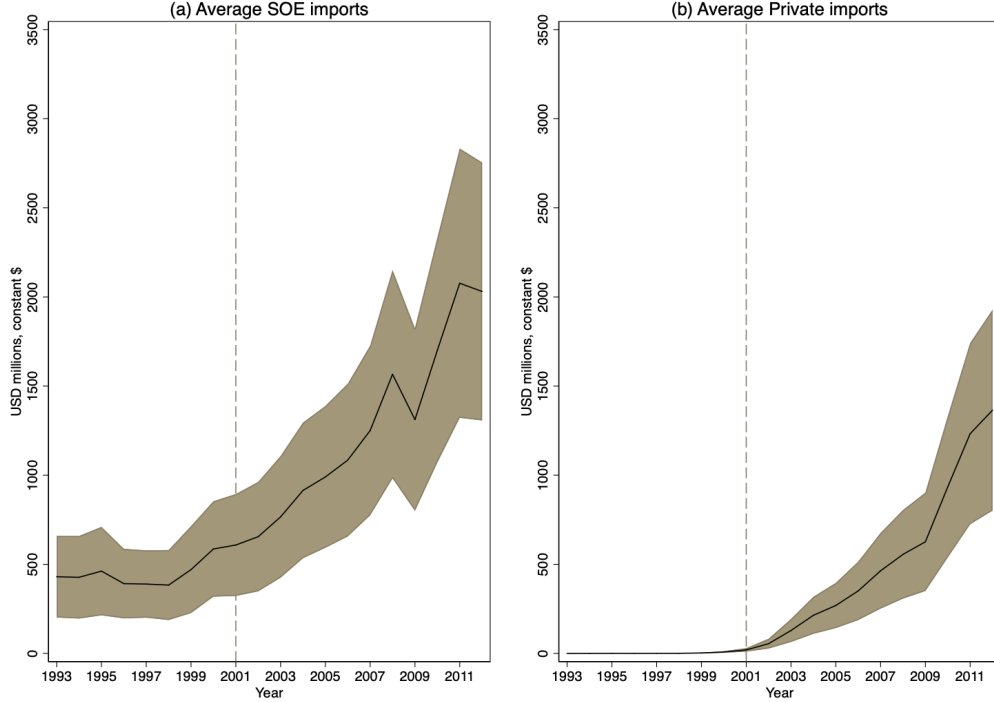


Figure 2: Comparing the impact of WTO entry on bilateral SOE versus private imports, 1993-2012) Shaded area indicates 95% confidence intervals. Vertical line indicates entry into the WTO in 2001.

these early reductions took place in the context of a dualistic trading regime described in section 2. Foreign firms enjoyed low tariff rates in a liberalized regime while domestic firms (primarily SOEs) operated under administrative guidance that supervised tariffs. Only with WTO entry would all firms come under a common set of international rules guiding behavior.

The distribution of tariff cuts across industries were largely shaped by US-China leadership dynamics rather than domestic industry interests. Existing research finds no relationship between the size of China's WTO tariff cuts and industry characteristics (Tan 2020). This relationship is largely due to the power dynamics of China's WTO accession: in the 1990s, a bottom-up consultative process in China greatly impeded negotiations. Progress was made only in 1999 onward through a top-down approach, where China's new Premier overrode domestic industry pressures to push forward domestic reforms (Pearson 2001). Moreover,

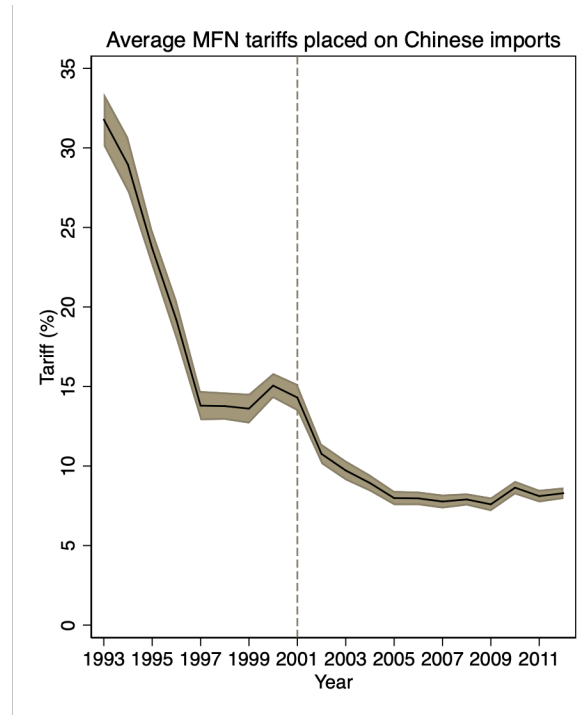


Figure 3: Over-time change in MFN import tariffs
 Shaded area indicates 95% confidence intervals. Vertical line indicates 2001 WTO entry.

the decision to admit China into the WTO lay with existing members. The terms of entry therefore reflected the interests of powerful countries such as the US and Europe, rather than domestic Chinese interest groups. This is more generally true as well – [Pelc \(2011\)](#) explains that under the asymmetric bargaining conditions of WTO accession, the entrance terms are driven by the export interests of the members rather than the applicant.

We examine the impact of tariff cuts on SOE and private sector trading behavior in China’s imports from other countries. As our main explanatory variable, we use the weighted average of bilateral MFN tariffs imposed by China on its imports from each of its trading partners. For each bilateral trading relationship, the product-level tariff was first multiplied by the value of that product’s share of overall imports on an annual basis. Each trade-weighted product-level tariff was then summed to produce an average weighted tariff value by year and trading partner.¹² Our analysis focuses on import responses to tariff cuts, comparing

¹²Tariff and import data were obtained from www.wits.worldbank.org. The weighted average tariff measure

SOE and private trade flows before and after WTO entry. We examine the aggregate response of private and SOE imports to bilateral tariff cuts in the main analysis, rather than firm-level dynamics, as we are not focused on the distributional question of which firms benefit or lose from tariff liberalization (on which a rich literature already exists). As a robustness check, product-level analysis in Section 5 includes industry controls to account for domestic adjustments to tariff cuts.

Measuring Industrial Policy

We assess the response of Chinese private and SOE trade to economic liberalization in the context of strategic industrial policy. Contrary to conventional wisdom, state ownership is not synonymous with industrial policy. The distribution of SOE trade ranges across both strategic and non-strategic products. This variation allows us to test whether the responsiveness of imports to tariff cuts depends on the share of strategic products in bilateral trade flows.¹³ We define such “strategic trade” based on the Chinese government’s desire to promote high-tech industries such as aviation and automobiles while also defending national security interests. These include armaments, economic ‘life-line’ industries such as telecommunications, coal and power generation as well as the security of basic food and raw materials such as grain and oil.

In order to measure the presence of strategic products in dyadic trade flows, we rely on Chinese policy documents specifying such strategic industries. First, products reserved for state trading are listed by HS code in China’s accession protocol.¹⁴ Second, the government has specified several strategic sectors over which the state needed to maintain “absolute gives more weight to tariff cuts for products that comprise a larger share of a given import relationship. It therefore captures different information compared to a simple average tariff measure, which by construction gives greater weight to outlier values.

¹³We focus on the share of strategic trade rather than absolute values as we are interested in the composition of import flows.

¹⁴The ownership status of firms assigned state trading rights varies over time and industry. As of 2020, only 55% of the state-trading firms are registered as SOEs.

control”: Armaments, power generation and distribution, petrochemicals and oil, telecommunications, coal and public transportation. Additionally, nine “pillar” industries have been identified, in which “backbone” enterprises would maintain controlling power: Equipment manufacturing, automotive, electronic information, construction, steel, non-ferrous metals, chemicals, surveying and design, and high-tech industries. These are sectors where the state desires strong SOEs, but allows private sector participation. Our definition of strategic industries therefore includes goods for which state trading rights have been reserved and those identified as important for national interest.¹⁵ We then generate dyadic country-year measures of the share of strategic products in China’s imports with each of its trading partners. The unit of analysis is therefore the country-year dyad (and not product-level trade flows). Examining national industrial policies and Five-Year Plans from 1989, 1991, 1994, 1996, 2001, 2005, 2006 and 2011, we find that the industries which the Chinese government has designated as strategic has stayed fairly consistent over time. This coding of strategic industries is similar to the approach taken in [Huang, Li, Ma et al. \(2017\)](#).¹⁶

The share of strategic products in China’s imports has remained relatively steady when averaged across trading partners. The average strategic trade share from 1993 to 2012 is 0.45 with a standard deviation of 0.37. The maximum value is .52 (in 1998) and the minimum is 0.36 (in 2001). Yet across partners there have been larger changes in strategic trade import trends. Figure 4 shows variation across select countries in the share of strategic trade in imports. The share of strategic goods in China’s imports from Nigeria increased sharply

¹⁵HS codes for these strategic industries were identified by searching for products containing words related to each industry on <https://www.foreign-trade.com/reference/hscod.htm>

¹⁶For example, a 1994 policy listed very similar industries as requiring state support: transport, telecommunications, construction, electronics, machine-building, petrochemicals, automobile, energy (including oil and petroleum) and power generation ([State Council 1994](#)). High-tech industries such as biotechnology and pharmaceuticals have been emphasized as a priority as far back as 1989. We adopt a time-invariant definition of the industries constituting strategic trade because the strategic trade variable is interacted with the time-varying tariff variable in some of the specifications. A time-invariant definition allows for a clearer identification of whether changes in trade flows are being driven by changes in tariff levels or in industrial policy. (The measure of strategic trade is time-invariant, but the share of strategic trade in bilateral trade is time-varying.)

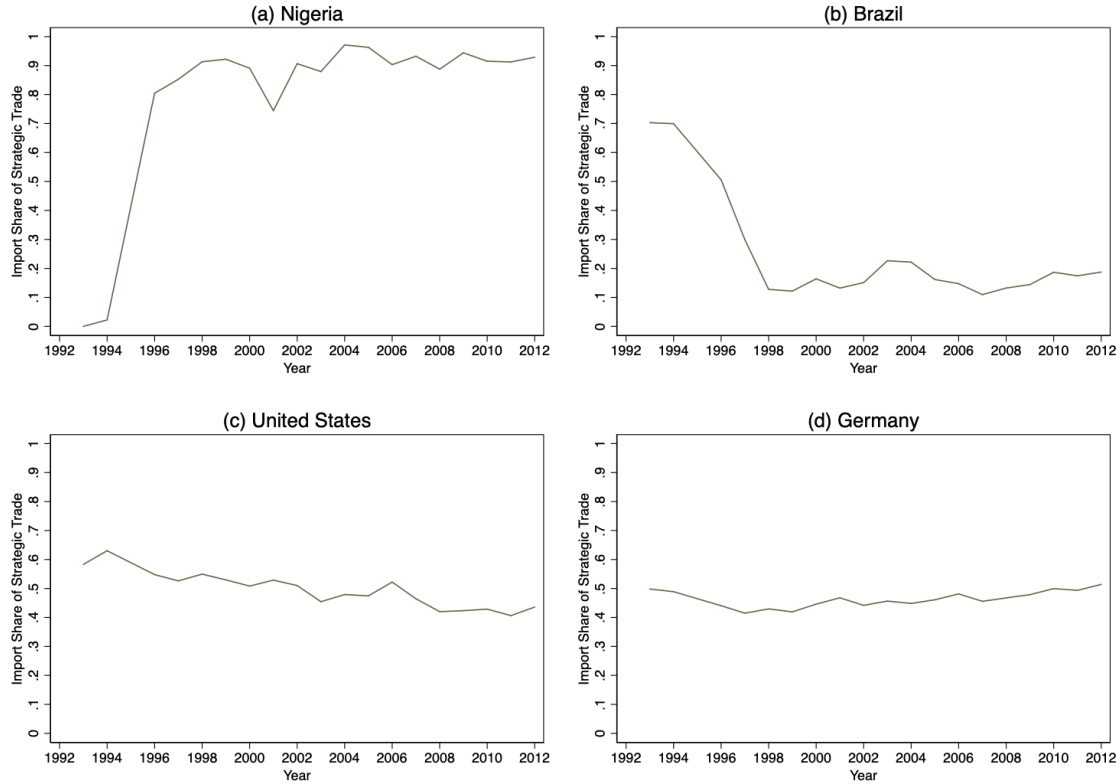


Figure 4: Cross-country trends in strategic import shares

in the mid to late 1990s from a low level and since then has stayed fairly constant at high levels. In contrast, the share of strategic trade in imports from the United States has steadily declined and that of Brazil has fallen substantially.

The share of SOE imports varies across strategic and non-strategic products, as well as over time. Examining product-level data that is available from 2003-2012, we find that SOE import shares have fallen across all industries. For state-controlled monopolies such as tobacco, these shares have declined by only small amounts, from 99% in 2003 to 94% in 2012. In other strategic industries such as aviation, the decline has been more substantial, from 73% in 2003 to 49% in 2012. Even in some non-strategic goods, SOE imports remain significant. For example, SOE import shares in furniture and bedding declined from 48% in 2003 to 17% in 2012. Our main analysis examines national dyadic trade flows before and

after WTO entry, while a later analysis hones in on product-level trade from 2003-2008.

Model Specification

In order to focus our analysis on the conditional effect of strategic trade share on imports, we include country fixed effects for China's trade partners. This means we hold China as the importer fixed, and leverage within-country variation in strategic trade share by its trade partners. There are potential endogeneity concerns with the strategic trade variable, as the dominance of SOE imports of goods from a particular industry is not randomly assigned. However, our data is structured as bilateral trade flows, thereby mitigating endogeneity issues as the share of strategic imports in a particular trading relationship is more likely to be driven by partner factor endowments and shifts in global demand and supply exogenous to the underlying political and economic conditions that drive the distribution of SOE imports across industries. One may also be concerned that tariff policies vary for strategic industries, but we find that there is no statistically significant difference between the size of the average WTO tariff cut imposed on strategic versus non-strategic industries.¹⁷

We employ the basic gravity model commonly used in trade literature to test our hypotheses regarding private versus SOE trade responses to changes in tariff levels. Seemingly unrelated estimations are used to model private and SOE imports.¹⁸ This specification allows us to test whether the coefficients on our key explanatory variables differ between SOE and private trade (see [Davis, Fuchs, and Johnson \(2017\)](#) for a similar approach). WTO entry brought multi-dimensional changes to China's economic and trading system, ranging from the elimination of non-trade barriers such as quotas and licensing to the strengthen-

¹⁷The size of the average WTO tariff cut was calculated as the difference between average tariff levels in 2001 less average tariff levels in 2012, the end of our period of analysis. Strategic industries experienced an average 5.4% reduction relative to a 6% average tariff cut in non-strategic industries. The difference is not statistically significant in a comparison of means test (p-value = 0.48).

¹⁸Since [Zellner \(1962\)](#), the seemingly unrelated regressions estimator has been applied to estimate two equations where responses are expected to be correlated. We use seemingly unrelated estimations, which employ a similar approach but allow for standard errors to be clustered.

ing of the rule of law and disclosure of economic information. Given the extensive nature of WTO-related reforms, we assess differences in private and SOE trading behavior in the pre-WTO and WTO periods by employing sub-sample analysis, splitting the data into pre-WTO (1993-2001, number of partner countries=150) and WTO years (2002-2012, number of partner countries=157). In our baseline model, we estimate a system of equations as follows:

$$imports_{SOE,it} = \beta_0 + \beta_1 tariff_{it} + \beta_2' X_{it} + \eta_i + \tau_t + \epsilon_{it} \quad (1)$$

$$imports_{private,it} = \tilde{\beta}_0 + \tilde{\beta}_1 tariff_{it} + \tilde{\beta}_2' X_{it} + \tilde{\eta}_i + \tilde{\tau}_t + \tilde{\epsilon}_{it} \quad (2)$$

where i represents a partner country and t a year in the 1993-2012 period. X represents the following vector of control variables: a partner country's (logged) GDP and (logged) population using data from the World Development Indicators, which measures a country's economic and potential market size respectively; a Polity2 variable from the Polity IV Project that measures the country's level of democracy; and a UN ideal point distance variable that measures the foreign policy distance between China and its partner countries based on their voting record in the UN General Assembly roll call votes (Bailey, Strezhnev, and Voeten 2017), which has been used to evaluate the effects of political relations on SOE versus private trade (Davis, Fuchs, and Johnson 2017). Since the regressors for the two equations are identical, our specification is the same as an ordinary least squares estimation. The seemingly unrelated estimations combine the results from the two equations to test for differences in the coefficients across models. In our case, this allows to assess if the coefficients on the tariff variable differ significantly between SOE and private imports.

Building on the baseline specification of model 1, we then incorporate industrial policy in two additional specifications. Model 2 adds the share of strategic products in overall imports from a country as a covariate, while model 3 adds an interaction term between tariffs and

the strategic import share variable¹⁹ All specifications include partner country fixed effects (η_i) and year fixed effects (τ_t), with standard errors clustered by country.²⁰

A comparison of the estimation results from the pre-WTO and WTO subsamples provides us with an indication of whether or not WTO entry had the effect to shift SOE and private import flows toward a commercial orientation. We use z-tests to evaluate if the differences in regression coefficients between the pre-WTO and WTO periods are statistically significant. We estimate a product-level analysis for a shorter time period in the WTO years (2003-2008) to validate our findings at a more granular level.

5 Empirical Analysis of Chinese Imports Before and After WTO Entry

Tables 1 and 2 present the results for Chinese private and SOE imports in the pre-WTO period (1993-2001) and WTO period (2002-2012) respectively. Column (1) shows the results for the baseline analysis with tariffs as the main explanatory variable. Column (2) adds the share of strategic products in bilateral imports as an explanatory variable, and column (3) adds an interaction term between tariffs and the import share of strategic products.²¹

We find an inconsistent relationship between tariffs and imports in the pre-WTO period when trade was heavily influenced by administrative guidance. SOE imports have a negative relationship with tariffs in the first model, but the result is not robust to including the strategic trade variable. Private imports exhibit little correlation with tariffs in the first two models, and the positive coefficient for the weighted MFN tariff measure in model 3 indicates that private imports increased with *higher* tariff levels. Prior to WTO accession, only a handful of private firms held trading rights, and these appear to have followed administrative

¹⁹We use a subset analysis rather than including a WTO dummy because we test our main hypothesis using the interaction term between tariffs and strategic import share in model 3. Using a WTO dummy would require a triple interaction term, which would make the interpretation of results more difficult.

²⁰Summary statistics of the explanatory and control variables can be found in the appendix table A1.

²¹Full regression output is at appendix table A2.

Table 1: Sub-Sample analysis of Imports: Pre-WTO period

	(1)	(2)	(3)
SOE			
Weighted MFN Tariff	-0.056** (0.028)	-0.043 (0.028)	-0.042 (0.041)
Import Share of Strategic Trade		1.638*** (0.547)	1.681* (0.964)
Weighted MFN Tariff \times Import Share of Strategic Trade			-0.003 (0.065)
Controls	✓	✓	✓
Private			
Weighted MFN Tariff	0.010 (0.024)	0.028 (0.028)	0.098*** (0.030)
Import Share of Strategic Trade		1.430* (0.864)	3.456*** (1.038)
Weighted MFN Tariff \times Import Share of Strategic Trade			-0.157*** (0.040)
Controls	✓	✓	✓
N	1181	1057	1057
Wald test p-value (Tariffs)	0.034	0.031	0.003
Wald test p-value (Strategic Trade)		0.847	0.198

Note: Results of seemingly unrelated estimations of logged SOE and private imports from 1993-2001, including country and year fixed effects and standard errors clustered by country. * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$

guidance over profit maximization.

Table 2 reveals a stark difference in the trading behavior of private and SOE imports in the WTO period. We find a strong negative relationship between tariffs and private imports, where lower tariffs are associated with higher private imports in columns (1) to (3). As for SOE imports, it appears initially in columns (1) and (2) that SOE import flows are not sensitive to tariffs in the WTO period. However, column (3) shows that once we take the interactive effects of strategic trade into account, that SOE imports *do* respond in a commercial manner to tariffs levels. It further shows that the sensitivity of SOE imports to changes in tariff levels is conditional on the presence of trade in strategic products. When the share of strategic imports in a bilateral trading relationship is zero, SOE imports exhibit a commercial orientation in that they are higher at lower tariffs levels, similar to private imports.²²

²²Indeed, the Wald p-value for the comparison of the *Tariff* coefficient for SOE and private trade moves from being highly significant in columns (1) and (2) to insignificant in column (3).

Table 2: Sub-Sample analysis of Imports: WTO period

	(1)	(2)	(3)
SOE			
Weighted MFN Tariff	0.000 (0.017)	-0.016 (0.014)	-0.182*** (0.047)
Import Share of Strategic Trade		2.660*** (0.763)	1.274 (0.806)
Weighted MFN Tariff \times Import Share of Strategic Trade			0.214*** (0.055)
Controls	✓	✓	✓
Private			
Weighted MFN Tariff	-0.073*** (0.023)	-0.075*** (0.023)	-0.184*** (0.070)
Import Share of Strategic Trade		0.418 (0.700)	-0.484 (0.854)
Weighted MFN Tariff \times Import Share of Strategic Trade			0.140 (0.087)
Controls	✓	✓	✓
N	1650	1650	1650
Wald test p-value (Tariffs)	0.001	0.006	0.984
Wald test p-value (Strategic Trade)		0.004	0.076

Note: Results of seemingly unrelated estimations of logged SOE and private imports from 2002-2012, including country and year fixed effects and standard errors clustered by country. * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$

Figure 5 summarizes the average marginal effects of the interaction term for private and SOE imports in the pre-WTO and WTO periods. The top right-hand figure shows that the more that SOE imports contain products in strategic sectors, the less they respond commercially to tariffs. Where strategic trade comprises about 70% or more of bilateral imports, these import flows fail to exhibit any responsiveness to tariff cuts. These non-commercially oriented flows represent about 32% of China's total imports over our period of analysis. In contrast, the WTO period is associated with a negative relationship between tariffs and private imports regardless of the share of strategic products in imports. The pattern matches our expectation for the government to apply market disciplines on SOE imports of non-strategic goods even as it exerts guidance over SOE imports of strategic goods to shield sectors targeted by industrial policy.

Our argument contends that the relationship between tariff levels and imports changed after entry into the WTO, as seen from the different findings for the two periods. Table 3 presents the results of z-tests on the coefficients of the tariff and strategic import share

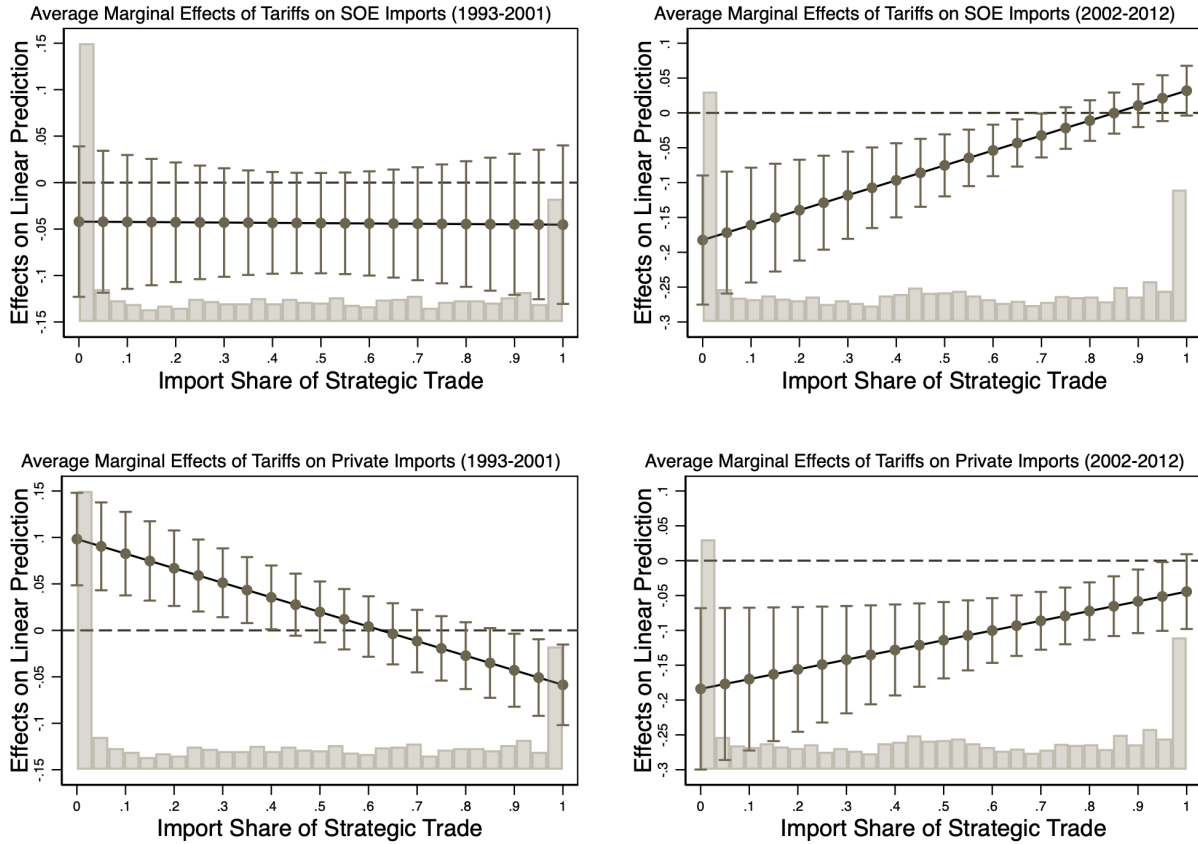


Figure 5: Marginal Effects of Tariffs as Import Share of Strategic Trade Increases. Bars show 95% confidence intervals. Histograms show distribution of the strategic trade variable.

variables in column (3) across the pre-WTO and WTO analyses. This assesses whether the differences in import trends between the two periods are statistically significant. The table shows a significant difference in the relationship between tariffs and imports after WTO entry for both private imports and SOE imports. The difference in the interactive relationship between tariffs and strategic trade is also significant for both private and SOE imports.

Product-Level Analysis

Important literature examines how WTO functions affect product-level trade flows (Bown and Reynolds 2015; Peritz 2020). Building on this literature, we test if our argument holds up using product-level data from 2003-2008. The product-level data allows us to leverage

Table 3: Testing pre-WTO and WTO differences

Coefficient	Z-Score	P-Value
SOE: Tariff	2.236	0.013
SOE: Strategic Trade	0.323	0.373
SOE: Tariff*Strategic Trade	-2.560	0.005
Private: Tariff	3.684	0.000
Private: Strategic Trade	2.932	0.002
Private: Tariff*Strategic Trade	-3.084	0.001

Results of significance tests comparing the coefficients estimated in the pre- and post-WTO entry subsamples, from column 3 of tables [1](#) and [2](#)

variation in the strategic importance of imports from different sectors and product groups. This analysis enables a closer assessment of the interactive effects between firm ownership and targeted industrial policy in shaping WTO liberalization. While the time period assessed lies in the WTO period, the tariff cuts that China negotiated were introduced across a number of years from 2001 onward. Our data therefore still captures the most important period of WTO-induced change where tariffs were being systematically liberalized according to China’s accession schedule^{[23](#)} This data is comprised of country-dyad ownership-specific import flows (as with the dataset utilized in the main analysis), but it is further disaggregated into product-level imports at the HS 4-digit level. We assess whether the same heterogeneity in SOE importing behavior shows up at the product level in two ways. First, we test if SOE import patterns in low value-added raw materials varies from those in high value-added final consumer goods. Second, we examine variation in SOE import flows within specific strategic industries targeted by industrial policy.

We expect industrial policies to prioritize higher value-added products. We test this proposition by splitting the product-level data into two sub-samples according to UNCTAD’s stage-of-production classification: low value-added raw material imports that are easily substitutable; and high value-added final consumer goods. We add the following controls for industry characteristics: the sectoral share of total output; the SOE share of sectoral output;

²³Based on checks with China Customs, detailed product-level classification is not available prior to 2003. This does not affect the higher-level data used in our analysis, which is accurate and matches Comtrade data. China’s imports data has been found to be reliable and consistent with mirror statistics from partner countries.

and the subsidy share of sectoral output.²⁴ These measures take into account both industry market conditions and government intervention that could affect firm incentives. All regressions include year, country and product fixed effects, with standard errors clustered by country. As with the main analysis, our explanatory variable of interest is the interaction term between tariffs and the share of strategic trade.

We find that for consumer goods, the interaction term is positive and significant for SOE imports ($p < 0.01$) and not private imports. This result resonates with our main finding that the tariff-responsiveness of SOE imports is attenuated by the presence of strategic products, while that for private imports is not. Substantively, a one percentage point reduction in tariffs on consumer goods is associated with a 15.3% increase in imports if the product is non-strategic, while the magnitude of the tariff response is almost halved if the product is strategic (8%). In contrast for raw materials, the interaction terms for both SOE and private imports are not statistically significant (full results are at appendix table B1). The evidence highlights the focus of industrial policy in distorting SOE import flows in goods of greater strategic value - such as consumer products. This analysis reinforces our argument that it is the combination of state-ownership and industrial policy that blunts the liberalizing effects of the WTO.

Next, we explore whether state targeting occurs *within* strategic industries if policy goals make some products more important to protect. We select cases from two ends of the spectrum of industries covered by Chinese industrial policy. At one end are the commodities reserved for state trading due to concerns ranging from food security to taxation, and at the other end lie industries deemed strategic for their technology content and national security implications.²⁵ The model specification is similar to the country-level analysis, except that we use a linear year trend rather than year fixed effects, due to the fact that the data is more sparse at the product level.²⁶ We additionally control for industry output share, SOE share of industry output and subsidy share of industry output. Given that we subset to

²⁴Industry control variables were generated from a firm-level dataset from the National Bureau of Statistics.

²⁵The list of products analyzed is shown in appendix table B5.

²⁶Results are robust to the exclusion of the linear year trend.

strategic products, there is no need for an interaction term with strategic industry and our key explanatory variable is the tariff itself.

Conditioning on state ownership, how does state trading as one form of industrial policy moderate the impact of tariffs on import flows? We examine trading flows in the tobacco industry, a state-controlled monopoly. The industry’s national value derives from the government’s reliance on tobacco taxes as a source of revenue, and the importance of supporting agricultural incomes. As a result, trade in tobacco products is highly dominated by SOEs and there are almost zero private imports over our period of analysis. Focusing on these SOE imports, we compare patterns among different tobacco products: China reserved its state-trading rights over cigarettes, cigars and tobacco leaf in its WTO accession protocol, but these reservations did not extend to other inputs such as cigarette paper and filters. Figure 6 shows the tariff coefficient estimates for SOE imports of these two groups of products: while import flows in state-traded tobacco are insensitive to changes in tariff levels, both SOE imports for freely-traded cigarette paper and filters are sensitive to tariffs.²⁷ Even in an industry entirely dominated by state-ownership, SOE importing behavior is not uniform. State trading insulates tobacco from commercial pressures, while SOEs engaged in trading cigarette paper adjust their sourcing to expand imports as tariffs decline.

Next we examine the automotive sector to assess the pattern for high-tech industries. This sector’s strategic importance dates back to the Mao era and continued into China’s reform period, with automotive development stressed as a national priority in the Eighth Five-Year Plan (FYP) (1991-1995). The industry was given “pillar” status in a 1994 State Council policy, and priority placed on developing a set of highly capable SOE groups. The focus on SOEs continued into the WTO period, with the 2006 11th FYP emphasizing the need to raise the competitiveness of automotive SOEs. We hypothesize that the state places higher strategic importance on finished passenger vehicles relative to intermediate goods such

²⁷E.g. while tariffs on state-traded tobacco fell from 16% in 2003 to 10% in 2004, imports for this product actually fell by about 10.4%. In contrast, tariffs on freely-traded cigarette paper fell from 20% in 2003 to 13.8% in 2004, and these cuts were met by a 10.2% increase in imports.

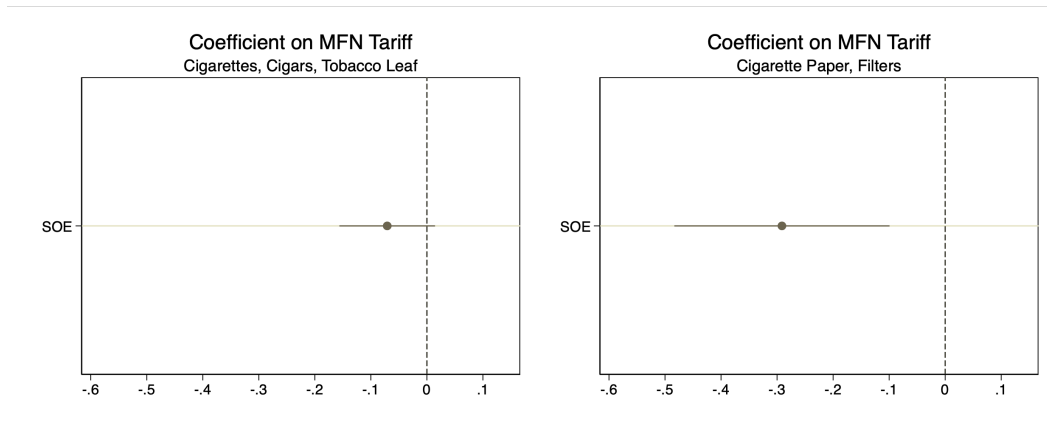


Figure 6: Comparing Tariff Responses in State-Traded Tobacco Imports versus Imports of Non-Strategic Tobacco Inputs.

Dots show coefficients for the estimated effect of the weighted MFN tariff on SOE imports for the subsample of data on state-traded imports (cigarettes, cigars and tobacco leaf) versus imports for the subsample of data on non-strategic inputs (cigarette paper, filters). Bars show 95% confidence intervals.

as automotive parts. Indeed, official policy restricts foreign investment in passenger vehicles to joint ventures with Chinese SOEs, while no such restriction is placed on automotive parts (State Planning Commission 1997)²⁸. Our findings, summarized in Figure 7, show that SOE imports are not sensitive to tariffs for finished motor vehicles but sensitive for intermediate auto parts, while the private sector is tariff-sensitive for both products.²⁹

Finally we examine shipping as an industry considered strategic for its national defense importance. The development of China’s shipbuilding capabilities has been a national priority since the 1950s as emphasized in the First Five-Year Plan (1953-57) and has remained “a mainstay of the socialist economy” into the post-Mao reform years (quoted in Moore (2002) p. 186). Shipping industry development has continued to be emphasized in China’s WTO era, as seen in the 2006 11th FYP. Here, we compare the tariff responses in highly strategic shipping products with potential military dual use applications, such as cruise and cargo

²⁸A WTO case (DS342) tackled Chinese policies aimed at preventing tariff evasion through the import of auto parts to substitute for complete vehicles .

²⁹We exclude automotive engines from the analysis as this product is a highly strategic input. The values of SOE and private imports of passenger vehicles are about equal during our period of analysis. The overall value of passenger vehicle imports is about 48% of the combined value of passenger vehicle and auto parts imports.

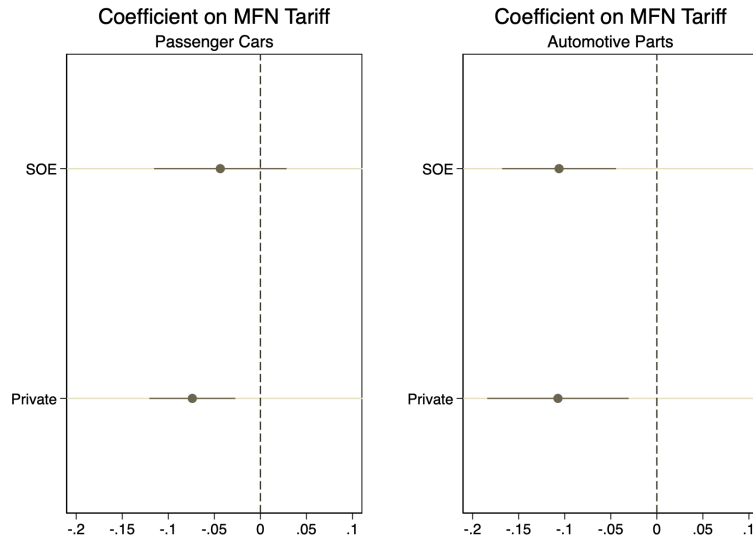


Figure 7: Comparing Tariff Responses in Final versus Intermediate Product Imports in Automotives.

Dots show coefficients on tariff variable for SOE and private imports of passenger cars (left panel) versus imports of automotive parts (right panel). Bars show 95% confidence intervals.

ships, to tariff responses in low-end shipping products such as tugs and row boats. As with the automotive industry, we find (as shown in Figure 8) that SOE imports are insensitive to tariff levels for cruise ships and cargo ships but sensitive to tariffs for tugs and row boats. In contrast, private imports are sensitive to tariff levels for both products.³⁰

This section leverages variation within different strategic industries to test our hypotheses while controlling for industry characteristics. Consistent with the main analysis, we find that SOE trading behavior diverges along strategic value considerations while private sector imports are sensitive to tariff cuts regardless of the strategic importance of a product. This reduces the likelihood that our findings are skewed by domestic market adjustments such as shifts in industry competitiveness induced by tariff cuts on downstream or upstream products.

In some cases, state ownership of firms in China is held subnationally. We can assess whether this distinction matters in the product analysis because the three industries examined vary greatly in the share of central versus subnationally-owned SOEs. About 80% of tobacco

³⁰Full regression output for these analyses are in appendix tables B2 to B4.

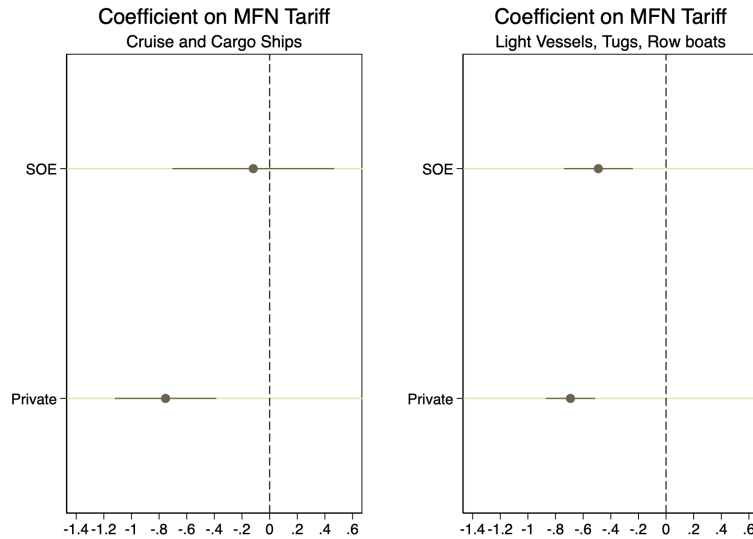


Figure 8: Comparing Tariff Responses in Strategic versus Non-Strategic Imports in Shipping. Dots show coefficients on tariff variable for SOE and Private imports of cruise and cargo ships (left panel) versus imports of light vessels, tugs and rowboats (right panel). Bars show 95% confidence intervals.

SOEs are centrally owned in our period of analysis, while the central share of SOEs in automobiles is about 20%. The share of central SOEs in shipping lies at around 50%. Despite differences in the form of state ownership, our findings show the same pattern of sensitivity to tariff changes in non-strategic rather than strategic products. While not a conclusive test, this suggests that strategic state intervention operates through both local and central government levels.

Robustness Checks

We use placebo tests to assess the alternative explanation that domestic SOE reforms in the mid-1990s drove the shift towards commercial behavior, rather than WTO entry in 2001. To do this, we repeat our main analysis while varying the cut-off year for splitting the sample. While the main analysis divided the sample into pre-treatment (1993-2001) and treatment years (2002-2012) using 2001 as the cut-off, the placebo tests run through all alternative cut-off years (e.g. using 1997 as the cut-off to create an alternate ‘treatment’ sample for 1998-2012). If SOE reform drove commercial orientation, tariffs would have a significant

effect for sub-samples that move forward the cut-off year to include the late 1990s. Appendix figure [C1](#) shows that the tariff coefficient estimate shifts only in WTO years (2001-2012 and later). This underscores that WTO entry, rather than earlier SOE reforms, are more likely to have driven SOE trade toward commercial behavior.

We explore the sensitivity of our results to particular trading partners to assure that the results are not driven by the disproportionate influence of a major economy such as the US, or customs territories such as Hong Kong. We re-estimate all of the models on a sample that sequentially drops each of the major exporters to China across different geographies: US, Germany, Japan, Hong Kong, Australia, Brazil and all EU members. The results are consistent with the full sample (see appendix table [D1](#) for non-U.S. results). Due to the unique politics surrounding OPEC countries and oil trade, we estimate the same models on a sample omitting major oil exporters (see appendix table [E1](#)).³¹ Our conclusions remain consistent, which provides assurance that the findings are not driven by any single large economy or the special nature of oil dependence.

Another analytical concern is that the interactive effect between tariffs and the strategic import share might be driven by the high share of country-year observations for which the share of strategic trade in imports is zero. As another robustness check, we re-run the imports analysis by controlling for observations where the import share of strategic trade is zero (adding a dummy variable that takes the value 1 if the share of strategic imports is zero). The results can be found in appendix table [F1](#), showing that the results are not affected by the skewed distribution of strategic imports.

We use weighted tariffs so that tariff cuts for a product with a greater share of overall imports are weighted more than similar cuts for a product that is hardly traded. In order to address any endogeneity concerns, we re-run the analysis using unweighted effectively applied tariffs. The results, shown in appendix table [G1](#), offer assurance that the main findings are

³¹Oil exporters are measured as those countries whose gross oil export revenues are larger than 10% of GDP ([Colgan 2010](#)).

not being driven by tariff weighting.

6 Conclusion and Implications

China's WTO entry tested the promise of international rules to integrate diverse economies. While contemporary debates suggest that state-led models are incompatible with the global trading system, our analysis shows that Chinese firms adopted greater commercial orientation after WTO entry. Private firms are highly responsive to WTO tariff reductions. In contrast, the WTO's impact on SOE trading behavior is more nuanced as these firms face the state's dualistic goals. Where the government sought external pressure to expand market liberalization, even SOEs show sensitivity to tariff movements. But the state limited liberalization by guiding SOE trade on non-commercial terms to shield a narrower set of strategic industries from import competition. Our findings bring a broader perspective to policy suggestions that China's WTO entry was a mistake. Our analysis highlights that in the counterfactual scenario where China had not joined the WTO, the liberalizing gains for China's private sector trade, as well as for a portion of SOE trade, would likely have been lost.

The WTO's market discipline confronted the countervailing force of industrial policy. Using a dataset of trade flows disaggregated by ownership status, our analysis demonstrates how tariff levels interact with the share of strategic products in bilateral trade. When imports from a trading partner largely comprise non-strategic products, SOE imports decline with higher tariffs and increase with lower tariffs, consistent with profit-maximization. This market orientation lessens with the share of strategic products in imports. As a conduit for industrial policy, SOEs facilitate "getting prices wrong" in pursuit of non-market objectives ranging from national security to industrial promotion.

China's mobilization of SOEs on behalf of industrial policy eroded the expected liberalization from WTO accession. China gained certainty for its trade from the constant threat of political hold-up and transformed into a major trading state (Carnegie 2014), but members have found it difficult to restrain Chinese policies given the wide latitude allowed by WTO

rules on subsidies and competition (Mavroidis and Sapir 2021). This gap accounts for the discontent with China as a challenge to the system.

These findings contribute to understanding the ability of the WTO to integrate vastly different economies and regulate SOEs, which have become increasingly important global actors. Our analysis offers new insights into how and why WTO membership can encourage commercial behavior in SOEs – and the limits of such liberalization. Our study further adds to literature on how sectoral characteristics affect WTO functions. Existing research emphasizes that WTO enforcement is affected by factors such as the velocity of an industry’s business environment (Davis and Shirato 2007) or barriers to collective action (Johns and Pelc 2018). We highlight the bifurcated nature of SOE trade: the strategic status of traded goods affects whether SOEs behave as profit-maximizers or agents of state policy. Finally, we expand on studies examining the non-tariff barriers that different societies adopt to substitute for protection lost through tariff liberalization. While democracies use opaque domestic regulations such as product standards (Kono 2006), economies with a large share of state ownership (spanning regime types) can direct SOE purchasing behavior as a form of protectionism.

Our study raises important implications for debates around the future of global trade governance. Trade policies have always tried to balance liberalization and protection. From one perspective, Chinese state capitalism resembles embedded liberalism, compromising between market reform and flexibility to pursue social goals. Where the United States and Europe carved out exceptions in the trade regime for textiles and agriculture and use safeguards to shelter influential industries, China’s WTO-era policies strengthen the market orientation of its SOEs while retaining the use of SOE purchasing power to shield strategic industries from import competition. This places Chinese SOE trade within a broader continuum of industrial policy strategies, where governments pursue goals not restricted to market efficiency. In this regard, China resembles governments like Japan and Korea in pursuing a mixed strategy of liberalization and protection to manage global markets.

Our conclusions about state ownership and the WTO apply beyond China. Like China, managed economies can control SOE trade to narrow the effect of liberalization. Initial evidence suggests that other emerging economies with a significant share of state ownership, such as Vietnam and Malaysia, have pursued similar strategies. Some analysis indicates that Vietnam's WTO entry had a positive impact on SOE productivity (Le, Pieri, and Zaninotto 2019). However, research also notes that industrial policy has blunted the WTO's liberalizing impact on Vietnam's state sector (Vu-Thanh 2017). Malaysia reduced tariffs and changed its industrial policies to comply with WTO rules, yet also established new measures to support national champion firms (Natsuda and Thoburn 2014). Future research could examine SOE trade in other emerging economies to more broadly test the effectiveness of the WTO.

The multilateral trading system allows state trading enterprises to engage in trade, so long as they abide by the principle of non-discrimination and operate on a commercial basis. Recent trade agreements such as the CPTPP retain the emphasis on SOE commercial behavior (Cimino-Isaacs 2016). Alongside concern with state intervention in the economy, states support the possibility for SOEs to operate within a liberal trade regime. Nor have they given up industrial policy goals. This combination turns SOEs into an important buffer between markets and domestic priorities for many emerging economies. To the extent that SOEs respond to market incentives at the behest of their masters, trade negotiations should hone in on industrial policy rather than state ownership. For example, negotiating efforts could focus on strengthening subsidy rules, which affect the range of measures that governments can adopt to alter the purchasing behavior of SOEs. States could also clarify the treatment of SOEs within the Government Procurement Agreement, which would reduce the amount of state discretion over SOE activities in procurement markets. Improvements to the clarity and enforceability of WTO rules on state trading and definitions of state ownership could narrow the scope for non-commercial behavior. These strengthened measures, applied to all WTO members, could improve the sustainability of the multilateral trading order - and the operation of state-owned firms within it.

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A Descriptive Statistics

Table A1: Summary Statistics of Variables used in Tables 1 and 2

	obs	mean	sd	min	max
Weighted MFN Tariff	3661	9.936	11.162	0.000	91.857
Import Share of Strategic Trade	3514	0.452	0.366	0.000	1.000
(log) Political relations (UNGA)	3657	-0.668	1.292	-10.289	1.478
(log) GDP	3728	23.377	2.395	16.679	30.235
(log) Population	4038	15.206	2.237	9.121	20.936
Polity	3186	13.268	6.554	0.000	20.000

Table A2: Analysis of Imports in pre-WTO and WTO periods

	Pre-WTO Period		WTO Period	
SOE				
Weighted MFN Tariff	-0.056** (0.028)	-0.043 (0.028)	-0.042 (0.041)	0.000 (0.017)
(log) Political relations (UNGA)	-0.150* (0.083)	-0.160* (0.095)	-0.160* (0.097)	-0.248*** (0.082)
(log) GDP	1.331 (1.715)	-0.363 (1.583)	-0.364 (1.581)	-0.760 (1.237)
(log) Population	9.183*** (3.356)	9.493*** (3.544)	9.526*** (3.357)	5.665** (2.246)
Polity	-0.085 (0.058)	-0.054 (0.062)	-0.054 (0.062)	-0.053 (0.104)
Import Share of Strategic Trade		1.638*** (0.547)	1.681* (0.964)	2.660*** (0.763)
Weighted MFN Tariff \times Import Share of Strategic Trade			-0.003 (0.065)	0.214*** (0.055)
Private				
Weighted MFN Tariff	0.010 (0.024)	0.028 (0.028)	0.098*** (0.030)	-0.073*** (0.023)
(log) Political relations (UNGA)	0.132 (0.297)	0.012 (0.294)	-0.003 (0.290)	-0.133 (0.118)
(log) GDP	4.051 (2.811)	3.659 (2.937)	3.626 (2.745)	1.835 (1.470)
(log) Population	-10.789 (8.223)	-13.047 (8.247)	-11.454 (8.092)	4.340 (3.208)
Polity	-0.006 (0.113)	0.016 (0.119)	0.026 (0.119)	0.030 (0.058)
Import Share of Strategic Trade		1.430* (0.864)	3.456*** (1.038)	0.418 (0.700)
Weighted MFN Tariff \times Import Share of Strategic Trade			-0.157*** (0.040)	0.140 (0.087)
Number of observations	1181	1057	1057	1650
Wald test p-value (Tariffs)	0.034	0.031	0.003	0.001
Wald test p-value (Strategic Trade)		0.847	0.198	0.004

* p < 0.1 ** p < 0.05 *** p < 0.001

B Product-Level Analysis

Table B1: Product-level Analysis of Consumer Goods and Raw Materials

	Consumer Goods			Raw Materials		
	(1)	(2)	(3)	(4)	(5)	(6)
SOE						
Weighted MFN Tariff	-0.126*** (0.011)	-0.126*** (0.011)	-0.142*** (0.010)	-0.112*** (0.019)	-0.112*** (0.019)	-0.129*** (0.015)
(log) Political relations (UNGA)	0.028 (0.029)	0.028 (0.029)	0.027 (0.028)	0.052 (0.093)	0.052 (0.093)	0.050 (0.094)
(log) GDP	-1.448*** (0.441)	-1.449*** (0.441)	-1.512*** (0.435)	-1.089 (0.975)	-1.093 (0.975)	-1.065 (0.984)
(log) Population	1.416*** (0.352)	1.415*** (0.351)	1.431*** (0.348)	3.618*** (0.731)	3.620*** (0.732)	3.659*** (0.724)
Polity	-0.001 (0.012)	-0.001 (0.012)	-0.001 (0.012)	0.005 (0.025)	0.005 (0.025)	0.004 (0.024)
Sector Share of Total Output (%)	0.302*** (0.112)	0.301*** (0.111)	0.305*** (0.111)	0.702 (0.480)	0.702 (0.480)	0.719 (0.478)
SOE share of Sectoral Output (%)	-0.004 (0.003)	-0.004 (0.003)	-0.004 (0.003)	-0.024** (0.009)	-0.024** (0.009)	-0.025*** (0.010)
Subsidy share of Sectoral Output (%)	-0.067 (0.051)	-0.067 (0.051)	-0.060 (0.052)	-0.051 (0.073)	-0.051 (0.074)	-0.052 (0.072)
Import Share of Strategic Trade	0.285 (0.268)	0.285 (0.268)	-0.032 (0.294)	-0.110 (0.928)	-0.110 (0.928)	-0.208 (0.950)
Weighted MFN Tariff × Import Share of Strategic Trade			0.065*** (0.014)			0.049 (0.044)
Private						
Weighted MFN Tariff	-0.129*** (0.011)	-0.129*** (0.011)	-0.132*** (0.011)	-0.130*** (0.018)	-0.129*** (0.018)	-0.143*** (0.017)
(log) Political relations (UNGA)	0.007 (0.039)	0.007 (0.039)	0.008 (0.039)	0.074 (0.087)	0.078 (0.089)	0.075 (0.089)
(log) GDP	-2.336*** (0.646)	-2.344*** (0.646)	-2.352*** (0.647)	-0.707 (1.028)	-0.710 (1.028)	-0.682 (1.019)
(log) Population	-0.124 (0.608)	-0.128 (0.611)	-0.134 (0.613)	1.901** (0.965)	1.805* (0.955)	1.784* (0.954)
Polity	0.018** (0.008)	0.018** (0.008)	0.018** (0.008)	0.034 (0.035)	0.034 (0.035)	0.035 (0.035)
Sector Share of Total Output (%)	-0.121 (0.113)	-0.122 (0.113)	-0.127 (0.112)	0.239 (0.284)	0.237 (0.283)	0.240 (0.284)
SOE share of Sectoral Output (%)	0.007* (0.004)	0.007* (0.004)	0.007* (0.004)	0.027* (0.017)	0.027* (0.017)	0.027 (0.017)
Subsidy share of Sectoral Output (%)	-0.168** (0.070)	-0.169** (0.070)	-0.167** (0.070)	-0.220** (0.093)	-0.220** (0.093)	-0.224** (0.094)
Import Share of Strategic Trade	0.371 (0.337)	0.371 (0.337)	0.270 (0.352)	-1.498*** (0.560)	-1.498*** (0.560)	-1.591*** (0.602)
Weighted MFN Tariff × Import Share of Strategic Trade			0.022 (0.016)			0.045 (0.046)
Number of observations	65462	65462	65462	6925	6925	6925
Wald test p-value (Tariffs)	0.748	0.742	0.144	0.224	0.227	0.404
Wald test p-value (Strategic Trade)		0.786	0.332	0.112	0.112	0.116

* p < 0.1 ** p < 0.05 *** p < 0.001

Table B2: Imports of Cigars, Cigarettes and Tobacco Leaf state-traded vs Filters and Cigarette Paper

	Cigarettes, Cigars, Tobacco	Cigarette Paper, Filters
Weighted MFN Tariff	-0.071 (0.044)	-0.291*** (0.098)
(log) Political relations (UNGA)	0.294 (0.188)	0.544 (0.428)
(log) GDP	0.019 (2.476)	4.593 (4.055)
(log) Population	22.860*** (7.444)	-11.262 (15.079)
Polity	-0.116 (0.087)	-0.037 (0.054)
Sector Share of Total Output (%)	-0.488 (1.147)	1.109 (2.086)
SOE share of Sectoral Output (%)	0.001 (0.025)	0.037* (0.020)
Subsidy share of Sectoral Output (%)	-0.037 (0.454)	-8.352** (3.379)
Number of observations	382	382
Wald test p-value (Tariffs)		0.053

* p < 0.1 ** p < 0.05 *** p < 0.001

Note: Table shows results of seemingly unrelated estimates of logged SOE import flows from 2003 to 2008 for subsamples of different tobacco industry products, with country fixed effects and a linear year trend, and with standard errors clustered by country.

Table B3: Imports of Passenger Cars vs Automotive Parts

	Passenger Cars		Auto Parts	
	SOE	Private	SOE	Private
Weighted MFN Tariff	-0.044 (0.037)	-0.074*** (0.024)	-0.106*** (0.032)	-0.107*** (0.039)
(log) Political relations (UNGA)	0.737 (0.858)	-0.241 (2.035)	-0.018 (0.107)	-0.228 (0.160)
(log) GDP	2.470 (7.927)	-13.981 (9.654)	0.329 (2.983)	-2.141 (3.220)
(log) Population	-25.479 (34.161)	24.643 (26.191)	-4.587** (2.249)	-2.025 (1.586)
Polity	0.235*** (0.072)	0.184 (0.407)	0.048 (0.044)	0.058 (0.048)
Sector Share of Total Output (%)	0.250 (0.773)	-1.207 (1.039)	4.417*** (0.518)	4.150*** (0.799)
SOE share of Sectoral Output (%)	0.042 (0.054)	-0.061 (0.059)	-0.280*** (0.040)	-0.348*** (0.051)
Subsidy share of Sectoral Output (%)	-1.084 (1.797)	-0.688 (2.034)	-5.248*** (1.960)	0.499 (1.459)
Number of observations	160	160	482	482
Wald test p-value (Tariffs)		0.262		0.981

* p < 0.1 ** p < 0.05 *** p < 0.001

Note: Table shows results of seemingly unrelated estimates of logged SOE and private import flows from 2003 to 2008 for subsamples of passenger car and automotive parts imports, with country fixed effects and a linear year trend, and with standard errors clustered by country.

Table B4: Imports of Cruise and Cargo Ships vs Light Vessels, Tugs, Row Boats

	Cruise & Cargo Ships		Row Boats, Tugs, Light Vessels	
	SOE	Private	SOE	Private
Weighted MFN Tariff	-0.118 (0.299)	-0.753*** (0.187)	-0.490*** (0.127)	-0.692*** (0.091)
(log) Political relations (UNGA)	-1.768 (2.397)	-0.961 (3.845)	1.743*** (0.629)	-0.739** (0.334)
(log) GDP	-7.717 (6.666)	-47.177*** (17.897)	5.542 (7.155)	-13.349 (12.043)
(log) Population	1.445 (18.313)	49.590 (40.750)	10.053 (12.224)	-17.317 (18.769)
Polity	-0.070 (0.046)	-0.256 (0.338)	0.151* (0.089)	0.304* (0.171)
Sector Share of Total Output (%)	-10.601*** (3.293)	-2.343 (6.634)	12.442*** (1.863)	14.274*** (1.783)
SOE share of Sectoral Output (%)	0.044* (0.024)	0.026 (0.044)	-0.002 (0.015)	-0.055*** (0.013)
Subsidy share of Sectoral Output (%)	1.350*** (0.447)	-2.877 (1.827)	0.907* (0.502)	1.822*** (0.620)
Number of observations	125	125	185	185
Wald test p-value (Tariffs)		0.016		0.152

* p < 0.1 ** p < 0.05 *** p < 0.001

Note: Table shows results of seemingly unrelated estimates of logged SOE and private import flows from 2003 to 2008 for subsamples of cargo / cruise ship and light vessels/tugs/row boat imports, with country fixed effects and a linear year trend, and with standard errors clustered by country.

Table B5: List of Products Tested in Tables B2 to B4

HS Code	Table B2: Cigarettes, Cigars, Tobacco (Reserved for State Trading)
2401	Tobacco, unmanufactured; tobacco refuse
2402	Cigars, cheroots, cigarillos and cigarettes; of tobacco or of tobacco substitutes
2403	Manufactured tobacco and manufactured tobacco substitutes n.e.c; homogenised or reconstituted tobacco; tobacco extracts and essences
	Table B2: Cigarette Paper, Filters
4813	Cigarette paper, whether or not cut to size or in the form of booklets or tubes
5601	Wadding of textile materials and articles thereof; textile fibres, not exceeding 5 mm in length (flock), textile dust and mill neps
5502	Artificial filament tow
	Table B3: Passenger Cars
8703	Motor cars and other motor vehicles; principally designed for the transport of persons (other than those of heading no. 8702), including station wagons and racing cars
	Table B3: Auto Parts
8707	Bodies; (including cabs) for the motor vehicles of heading no. 8701 to 8705
8708	Motor vehicles; parts and accessories, of heading no. 8701 to 8705

Table B5 continued

	Table B4: Cruise and Cargo Ships
8901	Cruise ships, excursion boats, ferry-boats, cargo ships, barges and similar vessels for the transport of persons or goods
8906	Vessels; other, including warships and lifeboats, other than rowing boats
	Table B4: Row Boats, Tugs, Light Vessels
8903	Yachts and other vessels; for pleasure or sports, rowing boats and canoes
8904	Tugs and pusher craft
8905	Light-vessels, fire-floats, dredgers, floating cranes, other vessels; the navigability of which is subsidiary to main function; floating docks, floating, submersible drilling, production platforms
8907	Boats, floating structures, other (for e.g. rafts, tanks, coffer-dams, landing stages, buoys and beacons)

C Placebo Tests

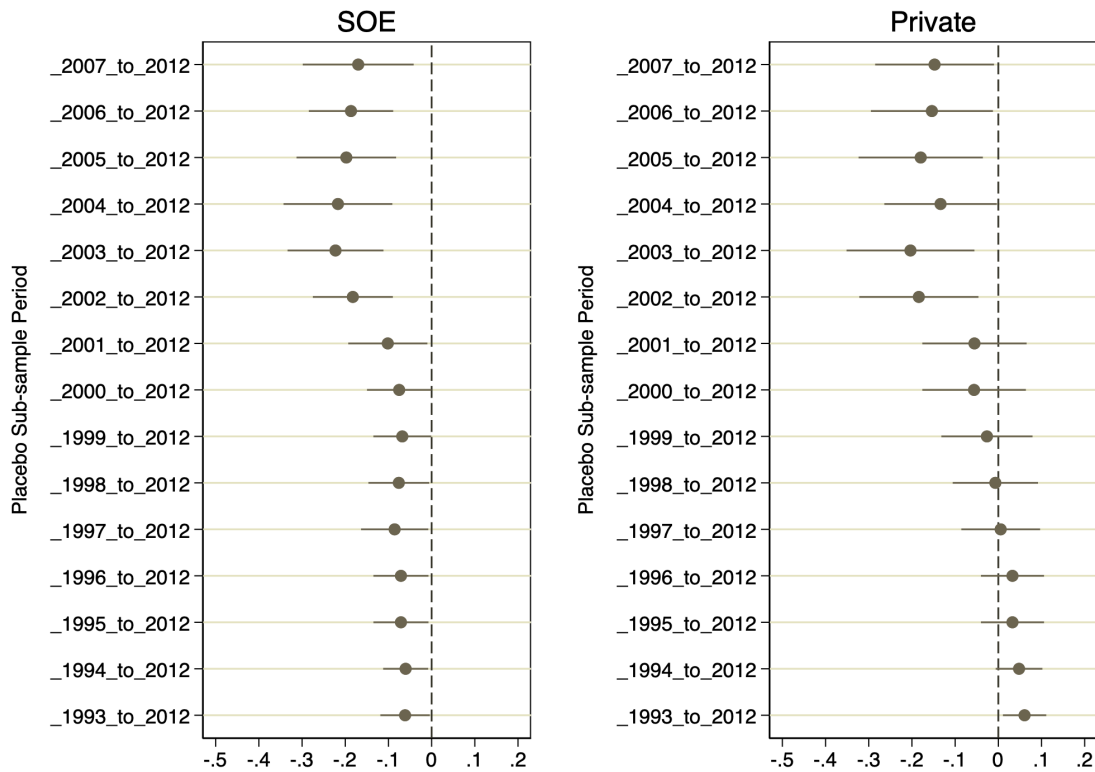


Figure C1: Coefficient estimates of MFN tariff, across different placebo treatment periods

D Dropping Major Economies - USA

Table D1: United States Dropped: Analysis of Imports in pre-WTO and WTO periods

	Pre-WTO Period			WTO Period		
	(1)	(2)	(3)	(4)	(5)	(6)
SOE						
Weighted MFN Tariff	-0.056** (0.028)	-0.043 (0.028)	-0.042 (0.041)	0.000 (0.017)	-0.016 (0.014)	-0.182*** (0.047)
(log) Political relations (UNGA)	-0.150* (0.084)	-0.160* (0.096)	-0.160* (0.097)	-0.248*** (0.082)	-0.242*** (0.075)	-0.215*** (0.072)
(log) GDP	1.332 (1.715)	-0.362 (1.583)	-0.362 (1.581)	-0.797 (1.243)	-1.609 (1.222)	-1.675 (1.215)
(log) Population	9.181*** (3.354)	9.491*** (3.543)	9.524*** (3.356)	5.663** (2.243)	5.852** (2.292)	6.410*** (2.437)
Polity	-0.085 (0.058)	-0.054 (0.062)	-0.054 (0.062)	-0.053 (0.104)	-0.070 (0.111)	-0.091 (0.107)
Import Share of Strategic Trade		1.639*** (0.547)	1.680* (0.964)		2.660*** (0.763)	1.275 (0.806)
Weighted MFN Tariff \times Import Share of Strategic Trade			-0.003 (0.065)			0.214*** (0.055)
Private						
Weighted MFN Tariff	0.010 (0.024)	0.028 (0.028)	0.099*** (0.030)	-0.073*** (0.023)	-0.075*** (0.023)	-0.184*** (0.070)
(log) Political relations (UNGA)	0.140 (0.298)	0.019 (0.295)	0.004 (0.291)	-0.133 (0.118)	-0.132 (0.118)	-0.115 (0.120)
(log) GDP	4.095 (2.803)	3.705 (2.933)	3.676 (2.741)	1.784 (1.478)	1.657 (1.533)	1.614 (1.537)
(log) Population	-10.901 (8.237)	-13.164 (8.261)	-11.571 (8.105)	4.337 (3.203)	4.367 (3.210)	4.729 (3.306)
Polity	-0.007 (0.113)	0.015 (0.119)	0.024 (0.119)	0.030 (0.058)	0.028 (0.056)	0.014 (0.057)
Import Share of Strategic Trade		1.434* (0.865)	3.471*** (1.039)		0.416 (0.700)	-0.485 (0.854)
Weighted MFN Tariff \times Import Share of Strategic Trade			-0.158*** (0.040)			0.139 (0.087)
Number of observations	1172	1049	1049	1639	1639	1639
Wald test p-value (Tariffs)	0.034	0.031	0.003	0.001	0.006	0.986
Wald test p-value (Strategic Trade)		0.850	0.195		0.004	0.076

* p < 0.1 ** p < 0.05 *** p < 0.001

E Dropping Oil States

Table E1: Oil States dropped: Analysis of Imports in pre-WTO and WTO periods

	Pre-WTO Period			WTO Period		
	(1)	(2)	(3)	(4)	(5)	(6)
SOE						
Weighted MFN Tariff	-0.054* (0.029)	-0.047 (0.029)	-0.054 (0.044)	0.013 (0.019)	-0.006 (0.016)	-0.174*** (0.049)
(log) Political relations (UNGA)	-0.078 (0.102)	-0.089 (0.111)	-0.088 (0.111)	-0.186** (0.092)	-0.194** (0.084)	-0.164** (0.080)
(log) GDP	-1.028 (2.032)	-1.591 (2.252)	-1.615 (2.261)	-0.582 (1.156)	-1.515 (1.165)	-1.535 (1.182)
(log) Population	10.535** (4.293)	10.981** (4.516)	10.748** (4.194)	13.324*** (3.859)	13.488*** (3.839)	14.713*** (3.939)
Polity	-0.090 (0.064)	-0.059 (0.072)	-0.059 (0.073)	0.040 (0.058)	0.032 (0.047)	-0.000 (0.051)
Import Share of Strategic Trade		1.147* (0.658)	0.912 (1.125)		2.954*** (0.854)	1.521* (0.900)
Weighted MFN Tariff \times Import Share of Strategic Trade			0.016 (0.069)			0.217*** (0.058)
Private						
Weighted MFN Tariff	0.015 (0.025)	0.031 (0.029)	0.101*** (0.031)	-0.071*** (0.025)	-0.077*** (0.025)	-0.183** (0.074)
(log) Political relations (UNGA)	0.431 (0.306)	0.233 (0.296)	0.225 (0.289)	-0.107 (0.135)	-0.110 (0.131)	-0.091 (0.134)
(log) GDP	2.817 (3.360)	2.494 (3.434)	2.717 (3.332)	-0.428 (1.636)	-0.719 (1.657)	-0.731 (1.654)
(log) Population	-14.965 (9.246)	-16.065* (9.139)	-13.873 (8.975)	15.095*** (4.890)	15.146*** (4.899)	15.913*** (4.888)
Polity	-0.079 (0.129)	-0.048 (0.136)	-0.040 (0.137)	-0.030 (0.069)	-0.032 (0.067)	-0.053 (0.067)
Import Share of Strategic Trade		1.481 (1.017)	3.695*** (1.209)		0.919 (0.753)	0.021 (0.868)
Weighted MFN Tariff \times Import Share of Strategic Trade			-0.152*** (0.042)			0.136 (0.089)
Number of observations	949	851	851	1337	1337	1337
Wald test p-value (Tariffs)	0.035	0.023	0.001	0.000	0.002	0.915
Wald test p-value (Strategic Trade)		0.792	0.073		0.019	0.166

* p < 0.1 ** p < 0.05 *** p < 0.001

F Controlling for Observations with Zero Strategic Trade Share

Table F1: Controlling for Zero Strategic Trade: Analysis of Imports in pre-WTO and WTO periods

	Pre-WTO Period		WTO Period	
	(1)	(2)	(3)	(4)
SOE				
Weighted MFN Tariff	-0.044 (0.027)	-0.043 (0.041)	-0.014 (0.014)	-0.175*** (0.045)
Import Share of Strategic Trade	1.173** (0.589)	1.200 (0.990)	2.267*** (0.811)	0.967 (0.854)
Zero strategic imports	-0.933* (0.477)	-0.932* (0.476)	-1.778*** (0.650)	-1.633*** (0.619)
(log) Political relations (UNGA)	-0.161* (0.097)	-0.161 (0.099)	-0.230*** (0.072)	-0.205*** (0.069)
(log) GDP	-0.516 (1.574)	-0.516 (1.572)	-1.254 (1.193)	-1.342 (1.189)
(log) Population	9.502*** (3.474)	9.523*** (3.280)	5.536*** (2.139)	6.098*** (2.289)
Polity	-0.052 (0.061)	-0.052 (0.062)	-0.080 (0.115)	-0.100 (0.111)
Weighted MFN Tariff × Import Share of Strategic Trade		-0.002 (0.064)		0.206*** (0.053)
Private				
Weighted MFN Tariff	0.027 (0.028)	0.097*** (0.030)	-0.074*** (0.024)	-0.173** (0.069)
Import Share of Strategic Trade	0.859 (1.012)	2.894** (1.162)	-0.122 (0.701)	-0.928 (0.876)
Zero strategic imports	-1.145* (0.689)	-1.090 (0.663)	-2.443*** (0.914)	-2.353*** (0.898)
(log) Political relations (UNGA)	0.011 (0.294)	-0.004 (0.290)	-0.116 (0.108)	-0.101 (0.110)
(log) GDP	3.471 (2.885)	3.448 (2.696)	2.146 (1.409)	2.091 (1.422)
(log) Population	-13.036 (8.232)	-11.457 (8.074)	3.932 (3.022)	4.281 (3.112)
Polity	0.019 (0.116)	0.028 (0.117)	0.013 (0.056)	0.001 (0.057)
Weighted MFN Tariff × Import Share of Strategic Trade		-0.156*** (0.040)		0.128 (0.085)
Number of observations	1057	1057	1650	1650
Wald test p-value (Tariffs)	0.032	0.003	0.008	0.980
Wald test p-value (Strategic Trade)	0.797	0.266	0.004	0.062

* p < 0.1 ** p < 0.05 *** p < 0.001

G Using Unweighted Effectively Applied Tariffs

Table G1: Unweighted Tariffs: Analysis of Imports in pre-WTO and WTO periods

	Pre-WTO Period			WTO Period		
	(1)	(2)	(3)	(4)	(5)	(6)
SOE						
Average Effectively Applied Tariff	-0.089* (0.047)	-0.063 (0.047)	-0.066 (0.058)	-0.071 (0.054)	-0.069 (0.048)	-0.198** (0.089)
(log) Political relations (UNGA)	-0.165* (0.086)	-0.170* (0.097)	-0.168* (0.099)	-0.241*** (0.087)	-0.237*** (0.081)	-0.234*** (0.081)
(log) GDP	0.963 (1.860)	-0.688 (1.675)	-0.671 (1.679)	-0.927 (1.274)	-1.864 (1.295)	-1.665 (1.218)
(log) Population	8.703** (3.464)	9.207** (3.630)	9.114*** (3.423)	4.970** (2.038)	5.360** (2.159)	5.456** (2.175)
Polity	-0.085 (0.061)	-0.052 (0.063)	-0.053 (0.063)	-0.033 (0.100)	-0.059 (0.109)	-0.062 (0.103)
Import Share of Strategic Trade		1.672*** (0.510)	1.511 (1.252)		2.782*** (0.821)	0.855 (1.270)
Average Effectively Applied Tariff \times Import Share of Strategic Trade			0.010 (0.070)			0.252** (0.109)
Private						
Average Effectively Applied Tariff	0.005 (0.030)	0.022 (0.031)	0.072** (0.030)	-0.176*** (0.064)	-0.176*** (0.064)	-0.184* (0.103)
(log) Political relations (UNGA)	0.131 (0.297)	0.013 (0.293)	-0.016 (0.288)	-0.168 (0.132)	-0.168 (0.133)	-0.168 (0.133)
(log) GDP	4.074 (2.795)	3.837 (2.938)	3.592 (2.780)	1.541 (1.553)	1.563 (1.605)	1.575 (1.579)
(log) Population	-10.648 (8.207)	-12.685 (8.245)	-11.319 (8.109)	3.575 (2.964)	3.566 (2.955)	3.572 (2.966)
Polity	-0.007 (0.113)	0.012 (0.119)	0.018 (0.118)	0.017 (0.061)	0.017 (0.061)	0.017 (0.060)
Import Share of Strategic Trade		1.295 (0.859)	3.675*** (1.174)		-0.066 (0.699)	-0.182 (1.402)
Average Effectively Applied Tariff \times Import Share of Strategic Trade			-0.146*** (0.055)			0.015 (0.148)
Number of observations	1181	1057	1057	1509	1509	1509
Wald test p-value (Tariffs)	0.052	0.074	0.024	0.181	0.146	0.910
Wald test p-value (Strategic Trade)		0.718	0.195		0.000	0.478

* p < 0.1 ** p < 0.05 *** p < 0.001