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ORIGINAL ARTICLE

WTO Subsidy Disciplines

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Abstract
Decades of negotiation to extend the GATT/WTO system to address subsidies have never produced the sort of uniform, scheduled rules that apply to tariffs or even services. Instead, WTO members have developed rules to demarcate permissible and impermissible subsidies. In this paper, I argue that the WTO approach is now hampered by shifts in the share of global trade away from geopolitically aligned, wealthy states and the growth of global supply chains. These pressures were magnified by the accession of China, with its centrality to global trade and recurrent geopolitical tensions with the United States. The challenges in facing cooperation over subsidies suggest limits to the ability for a 'rules based' approach to handle substantial changes in the global trading system.

Keywords: Subsidies; China; notifications

1. Introduction

As indicated in its name, the 1947 General Agreement on Tariffs and Trade began with a political consensus for the 'substantial reduction of tariffs'. Despite focusing on tariffs, the framers of the GATT were aware that other policies, particularly subsidies, could serve a similar protective purpose. While tariff rules have been largely successful, the treatment of subsidies have been a consistent source of legal and political controversy.[1] Decades of negotiations to limit subsidies have never produced the sort of scheduled commitments used in tariffs on goods or the treatment of traded services. Instead, the GATT/WTO system has relied on a rules-based approach designed to disentangle programs with legitimate social goals from protectionist policies.

Changes in the global economic order raised pressure on the GATT/WTO system to reevaluate its rules, including those regarding subsidies. First, pressure arises from the increasing political heterogeneity of the membership, making it difficult or even impossible to draw clear and universal lines between protectionist and non-protectionist policies. As Patrick Low puts it elsewhere in this volume, 'mutually beneficial arrangements need to be made to work within the confines of less than fully compatible approaches to policy'.

Second, and exacerbating the political heterogeneity of the agreement, trade is no longer concentrated in the G-7. The rise in trade share among developing countries call into question past collusive deals over subsidies. This is not just because a wider set of states have acquired access to WTO rulemaking: wealthy governments have engaged in decades of reform to adopt a variety of non-fiscal tools to subsidize domestic industry without falling afoul of WTO obligations. At the same time, a growing number of less developed countries have gained the capacity to adopt programs that involve direct expenditures (Rickard, 2012b). This transition has reversed the typical constituency for reform of subsidy programs.

[1]See, De Remer (2013).

Third, the spread of global supply chains can amplify the effects of subsidization and make monitoring and enforcement of trade deals more difficult. The fact that industry is not cleanly divided between import-competing firms, local exporters, and non-tradables has given governments more of a free hand to implement behind the border measures, including subsidies. Moreover, whatever subsidies are afforded to participants in a supply chain could have an outsized effect on global markets, making it difficult to design effective surveillance systems or enumerate all of the ways governments attempt to influence the decisions of global producers.[2]

These issues are not being ignored by the WTO or its members. Negotiators had reached a deal that would eventually eliminate all export subsidies in agriculture.[3] However, divisions over the details meant that the proposal explicitly ruled out enforcement and it fell with the rest of the Doha negotiations. These failures contrast with historical instances in which the framers of the GATT were able to reach collusive agreements to constrain or authorize subsidies.[4] Despite initial progress on constraining subsidies in manufactured goods, these provisions seem ill equipped for the contemporary situation.

Nowhere is this more evident, and more politically problematic for the current system, than in the case of China. China's accession into the WTO, with its growing share of global trade, marks a major expansion of the GATT/WTO system. However, China's accession also raises each of the above issues as challenges for that system. First, geopolitical tensions with the United States make it is difficult to cut the sort of collusive deals typical in past subsidy agreements. Second, China's history as a non-market economy complicates the standard treatment of subsidies. Finally, as Mavroidis and Sapir argue, there is no avoiding the issue, as China is deeply embedded in global production networks.

2. Subsidy Efficiency and Legitimacy

A central question facing the global trade regime is whether subsidies should be subject to different rules than other policy instruments, or indeed should be constrained at all. In general, governments raise two related objections to foreign subsidies. First, subsidized foreign exports compete with local producers in a way that undercuts protectionist policies and goals. Second, subsidies in foreign markets make it more difficult for domestic-originating exports to remain competitive. This has the effect of undermining market access commitments and can affect competition for third party markets. These export subsidies can produce a mutually destructive subsidy war if left unchecked (Bagwell and Staiger, 2002).

At the same time, governments argue that while certain subsidies are problematic, they also have a form of legitimacy that 'border instruments' such as tariffs or quotas lack. Economically, subsidies are akin to negative taxes, they can be targeted to achieve important social and political goals, often more efficiently than other policies. For instance, subsidies are used to correct regional inequality (e.g., European Commission Objective I programs), promote innovation (e.g., R&D tax credits), and enable social mobility (e.g., via financing educational loans). As a result of these considerations, trade agreements, including the GATT/WTO system have sought to balance constraining subsidies and the autonomy of states. This has meant exchanging commitments to reduce or eliminate the use of export subsidies and to limit the effect of producer subsidies on trade flows.

The balance struck on subsidies into the GATT/WTO has long garnered criticism. Part of the issue is conceptual: the global trade regime is dedicated to the preservation and expansion of global trade. However, subsidies, particularly export subsidies, expand trade volume, and restricting

[2]There is also a question as to whether the largest and most productive firms can use surveillance systems to retrench their market position (Gulotty, 2020).

[3]'World Trade Organization Strikes "Historic" Farming Subsidy Deal', BBC News, 20 December 2015.

[4]See, Goldstein and Gulotty (2021). On occasion, the small set of relevant governments met to mutually disarm in specific commodities and side agreements. Historical antecedents, such as the international sugar convention, adopted in 1864, were followed by similar conventions in wheat, and mark the ability for governments to make deals (Irwin, 2016).

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subsidies may decrease global trade.[5] This has long troubled economic theorists: there is an economic equivalence between tariffs and export taxes (both raise the relative price of local products) and export subsidies are equivalent to negative export taxes (both lower the price of local products). On this logic, governments that wish to raise tariffs ought to welcome foreign export subsidies, as both improve a nations terms of trade (Bagwell and Staiger, 2002, p. 167).

Trade theorists have rationalized government objections to subsidies by reference to imperfect competition. When markets are imperfectly competitive, subsidies can improve a nations terms of trade, shift profits from one country to another, or distort markets to exacerbate monopoly power (Brander and Spencer, 1985). Theoretical work by Ossa (2011) and Mrázová (2011) suggest that governments can use tariffs and subsidies to 'delocate' firms to the home market or shift profits from foreign production locations. Nonetheless, Bagwell et al. (2016) argue that these new forms of beggar-thy-neighbor policy-making, for the most part, reinforce the utility of reciprocity and non-discrimination embedded in the global trade regime.

Even if it is theoretically possible to rationalize restrictions on subsidies, there are several practical concerns in doing so. It may be more difficult to infer protectionist intent of subsidies than other trade policy instruments. Tariffs and quotas can be an effective way to raise revenue and redistribute income, but they are widely acknowledged to be less efficient and more damaging to global cooperation than other forms of taxation.[6] Subsides, however, are treated as the most direct and efficient solution to social and political problems. Here, as with other 'behind the border' policies, the challenge is demarcation, the identification of those subsidies that are economically efficient solutions for government objectives as opposed to efforts to manipulate global competition.

3. Demarcation and Political Economy

For the framers of the GATT, part of the challenge of subsidies was demarcation between advantages brought about naturally and those that were 'artificial and unnatural'. Simon Lester (2011) argues that the goal of this distinction was to target subsidies that aimed to protect domestic industries against foreign competition. Determining the aims of a subsidy policy, however, requires making an inference to the motives of states. Even *ex post* and with full access to the internal deliberations of governments, it is difficult to discern intentions. In the absence of this sort of knowledge, the question is about aligning incentives.

The approach of the General Agreement on Tariffs and Trade includes the chapeau of Article XX reference to disguised protection and the GATT Article XXIII reference to 'nullification or impairment' (Cho, 1998). These provisions aim to help governments focus on just those policies that undermine the value of tariff concessions by allowing governments to withdraw their own markets if their trading partner does not follow through on their market access commitments. Rather than classifying policies as artificial and unnatural or not, this approach allows states to 'breach and pay' (Posner and Sykes, 2011). In theory, such a rule is sufficient to handle a wide variety of behind the border policies by allowing governments flexibility in achieving their policy goals without altering market access (Bagwell and Staiger, 2002).

Alternatively, the rules could require evidence that governments are intending to use subsidies to replace or bolster tariff protection. Unfortunately, evidence for the use of subsidies as a substitute for tariff protection is often indirect. We do find, in general, that subsidies are often targeted at the same groups that receive protection, including narrow, sectoral, and geographic interests (Gawande and Hoekman, 2006; Hoekman, 2006; Naoi, 2009). Studies of individual subsidy programs find that they are targeted sectors in decline. Farm subsidies, such as the European Common Agricultural Policy subsidies were associated with adverse market conditions and

[5]Mavroidis et al. (2010) argues that, as a result, the GATT/WTO subsidy agreement is 'one of the least economics-informed agreements in the WTO'.

[6]Administrative and compliance issues, along with non-tradables, can make it difficult to transition away from tariffs (Keen and Ligthart, 2002).

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farmers in comparative disadvantage sectors (Honma and Hayami, 1986; Olper, 1998). Anderson (1992) found that a contraction in the agriculture sector caused consumers to lower their resistance to protection and concentrated the sector in ways that enhanced lobbying. Perhaps this is why survey evidence shows that protectionist sentiments for agricultural imports were nearly twice as strong compared to other products (Naoi and Kume, 2011)

Another source of indirect evidence examines the constraints on government policy-setting. Political scientists have found that electoral rules are more or less resistant to pressure from special interests. For instance, Park (2007) found that agriculture subsidies are higher when electoral institutions favor narrow economic interests. Similarly, when democracies have majoritarian electoral systems, governments may tend to adopt more distortionary policies than can proportionally representative systems, but it depends, in part, on the distribution of industry across political constituencies (Rickard, 2012a, 2018). While institutions are not destiny, they introduce clear risk factors for distortionary policy making.

While in principle rule-makers could rely on the interaction between political and economic geography to identify cases of distortionary policy making, GATT/WTO subsidy rules generally abstract from the specific politics of its members. Instead, as Low points out in this volume, political differences lead to less universal agreements. Even then, occasionally negotiators may have informally recognized that allowing carve-outs for certain sectors or regions can enhance cooperation. For instance, during the founding negotiations of the 1947 GATT, Great Britain, Canada, and Brazil fought for the elimination of agricultural subsidies, but the US pushed for exemptions to maintain its substantial price support programs at a moment of struggle for the agricultural sector. However, in 1955, after its wartime authority for price controls expired, the US requested and received exemptions to continue import quotas after the crisis had passed.[7] If the rules were designed to account for indirect or institutional evidence of protectionist intent, perhaps this exemption would have been denied.

One area where institutional markers of protectionist intent is used to assist demarcation is in the prohibitions and allowances regarding regionally targeted subsidies. According to the GATT/WTO rules, a domestic subsidy is considered actionable if it is 'specific', and one test for that specificity is if the subsidy is limited to enterprises within a designated geographic region. However, in the now expired part of Annex 2 of the Uruguay Round Agreement on Agriculture, payments made to 'disadvantaged regions' were explicitly excluded from limits on subsidies (more on the 'green light' below).[8] While a region can be politically important, perhaps such targeted subsidies would be unlikely to affect global markets. This is an example of where the GATT/WTO adopted a proxy, here the relative competitiveness of a region, to constrain the trade promoting effects of subsidies.

3.1 Opacity and Politics

Like other behind the border measures, subsidies are opaque, difficult to measure or even define. Unlike the relatively direct administration of a tariff even a prohibitive standard, a subsidy can occur out of the view of foreign nations. It can be difficult to draw a connection between a government action and the frustrated exporter. This makes subsidies an attractive tool of unscrupulous politicians, both in terms of enforcement of international rules as well as holding one's own government accountable (Kono, 2009).

One cause for opacity arises from the politics of subsidization. As Rickard (2012b) argues, subsidies can be used by governments to counteract the effects of globalization, helping avoid layoffs by enabling domestic producers to compete with lower-cost imports. This is more efficient than

[7]Prior to this waiver, US price support fell under defensive policies (Section 104 of the Defense Production Act) allowed in GATT rules.

[8]A disadvantaged region is a clearly designated contiguous geographical area with a definable economic and administrative identity, considered as disadvantaged because of some neutral and objective legal criteria and indicating that the region's difficulties arise out of more than temporary circumstances.

broad-based welfare programs as well as compensation programs that occur after the trade driven displacement occurs. Targeted *ex post* social welfare programs have the disadvantage of allowing layoffs in the first place. Transparent *ex post* programs have the disadvantage of certifying that displacement is driven by trade, drawing attention to the downsides of globalization (Goldstein and Gulotty, 2021). As a result, governments may have incentives to obscure their subsidy programs, even when they are not subject to international rules.

From a practical perspective, these theories highlight the difficulty of identifying protectionist motives. The absence of a clear and objective demarcation between legitimate and illegitimate subsidies has led some analysts to argue that effective subsidy rules would not be worth the effort (Sykes, 2005).

The GATT/WTO rules on subsidies do offer three mechanisms to distinguish distortionary subsidies. The first is to categorize subsidies as more or less distortionary and to explicitly allow funds tied to certain policy goals. This was accomplished in the Uruguay Round with the rules for agricultural subsidies. Domestic support programs fell into one of three categories, the Amber Box, the Blue Box, and the Green Box. Amber Box included subsidies that were tied to prices or production volume. The Blue Box covered subsidies that were tied to a supply control policy and were required to be based on fixed acreage and yield or paid on a maximum of 85% of production (Article 6.5) (Josling, 2010). Green Box subsidies included research and education, so-called extension programs, as well as compensation for compliance with environmental regulations and domestic food assistance programs.

The second mechanism is public notification. GATT Article XVI:1 obliged contracting parties to notify the 'nature and effect' of subsidies that 'operate to increase its exports or decrease its imports'.[9] Upon notification, contracting parties were to engage in good faith discussions regarding the possibility of limiting subsidization. The first test of Article XVI came in 1950, when the contracting parties agreed to a 1 August deadline.

Using declassified documents from the early GATT, it is possible to evaluate the success of this notification system. As of January 1951, 11 contracting parties submitted notifications, displayed in Figure 1. The size of the points indicates the number of products notified, ranging from narrow notifications by Finland (subsidies for grass seed, sheep, and cheese (GATT/CP/58/Add.6)) to more extensive notifications by the United States.

The United Kingdom, the United States, and France all offered substantial notifications, as did the primary agricultural input producing states: Australia, Canada, India, and the Union of South Africa. However, the majority of Contracting Parties either notified that they had no subsidies or did not respond to the call for notification at all. The issues with non-compliance led to a reevaluation of the submission system, including revamping the questionnaire used to report notifications.

Any of these notification systems assume that part of the issue is less purposeful protection and more incidental effects of domestic policymaking. Governments would be willing to publicly acknowledge efficient but trade affecting policies in an effort to limit incidental conflict. An alternative, developed by Josling and Mittenzwei (2013) would be to use information submitted to organizations such as the OECD that do not have, at least at this point, a role in adjudicating legal obligations.

The third tactic taken by the GATT/WTO is to try to constrain the use of retaliatory tariffs. The GATT has, since its founding, allowed governments to unilaterally impose a form of temporary duties on imports affected by unfair trade practices that have demonstrated some negative effect (material injury) for domestic industry. There are two categories, the largest of which are anti-dumping duties, taxes designed to discourage the sale of products at below market rates (less than fair value). When subsidized imports cause material harm, governments may apply countervailing duties. The former are company specific, the latter are country specific,

[9]GATT Article XVI was similar but narrower that the Havana Charter Articles 25 and 26 (Depayre, 2016).

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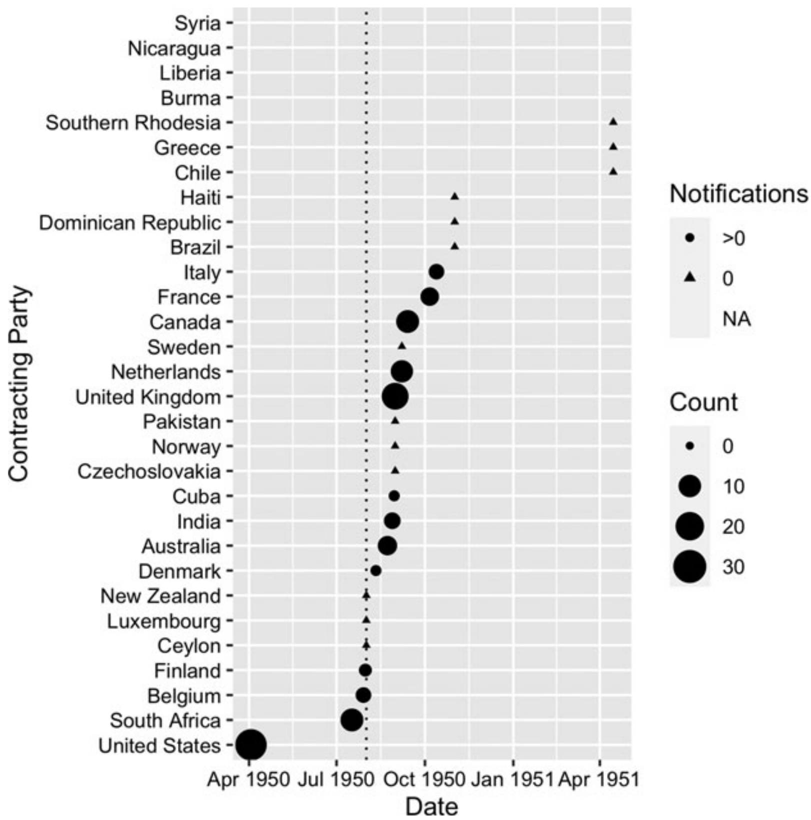

Figure 1. Subsidy notifications following Decision of 2 March 1950 (GATT/CP/50.Add.)

set to offset the value of the subsidy rather than a fair value. These countervailing duties give a legal and limited mechanism for retaliation, hopefully preventing escalation of the commercial dispute.

The first decades of the GATT saw several complaints about the countervailing duties regulations, particularly as interpreted by the United States. For one, the United States was using pre-existing legislation to impose countervailing duties without demonstrating injury first (Krasner, 1979). Second, the United States was increasingly using countervailing duties against Argentina, Brazil, Colombia, and Uruguay. Third, the United States sought to target subsidies on exports to third party markets. The Tokyo Round Subsidies Code and the Subsidies and Countervailing Measures Agreement made progress on these issues, clarifying definitions, banning export subsidies, and providing developing country members special and differential treatment, particularly when it came to agricultural support (Qin, 2004).

4. New Challenges for Subsidy Disciplines

Economic forces and political decisions, particularly declining transportation and communication costs, have allowed production to be located across the globe. As a result, countries that could offer both scale and access to markets gained new opportunities for trade and the GATT/WTO system shifted from a narrow club to a global institution. At the same time, trade is increasingly in the hands of businesses that operate at a global scale. When prices are set by intrafirm bargaining, subsidies and other commercial policies can be even more difficult to trace or quantify. Finally, as Mavroidis and Sapir point out in this volume, foreign investors

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that otherwise would raise an alarm about protectionist policies may prefer to 'bite the bullet' rather than lose investment opportunities.

4.1 Accession Reshapes the GATT/WTO

GATT membership gradually expanded over the course of the twentieth century, but in terms of trade volume, two moments stand out. One is in the Kennedy Round of 1960, and the other is with the final formal accession of China to the WTO in 2002.[10]

The importance of these two events can be visualized by examining the share of trade in and outside of GATT/WTO auspices. The first panel of Figure 2a and b shows a 15% jump in 1960 as well as a 10% rise in trade volume from 2000 to 2002. However, the rise in 1960 was driven both by accession and by a change in the denominator as a wave of governments became newly independent with decolonization.

As Gao describes in this volume, China's accession occurred after decades of negotiation between the China and its trading partners. For its part, the United States held an embargo on China from 1949 to 1971. When diplomatic relations were reopened, China obtained access to US markets at most favored nation rates. This access was subject to annual revaluation by the US president and Congress, which, if not renewed, would cause tariffs on Chinese goods to rise dramatically. Joining the WTO meant gaining a more permanent access to American markets, allowing firms to invest and expand trade, without worrying about the sorts of incidents that, in the past, prevented China's full membership (Handley and Limão, 2017). As seen in Figure 2a and b, this rise in trade occurs prior to accession, as firms in China are reorienting their supply chain to take advantage of new markets (Gulotty and Li, 2020).

China made several commitments regarding subsidies during the accession process. First, as per WTO rules, China committed to phasing out all existing export subsidies and to forgo any future export subsidies for agriculture. Moreover, China agreed to forgo certain benefits afforded to developing countries, a self-declared status that offers 'special and differential treatment' and agreed to set a lower *de minimis* exemption for product-specific subsidies.[11] According to the United States Trade Representative, China's level of subsidies fell well below those minimum amounts: compared to the 1996–1998 base period, China's spending amounted to less than 2% of production.

In addition to these reforms, accession meant that China would be obligated to notify its subsidies. As Gao points out, China's first subsidies notification took place in April 2006, nearly five years behind schedule, and it was years before China notified its hundreds of subnational subsidy programs. Since then, China has been among the most consistent users of the notification process and is one of only 40 member states to have offered enumerated subsidies in each of its semi-annual submissions. As shown in Figure 3, many other members have been inconsistent in their use of the notification process, with most governments notifying that they lack any subsidies to report. Still, member states have voiced concern that even when these notifications are submitted, that they often fail to cover all the relevant programs. For instance, both the United States and the European Union have raised concerns about China's non-notification subsidy programs at the Committee on Subsidies and Countervailing Measures.

These concerns about several of China's subsidy programs have escalated to WTO disputes. For instance, in 2007 the Chinese government began a corn stockpiling program to support

[10]This is the result of both internal reforms and multilateral agreements that predate its formal entry into the WTO. For instance in 1997, China announced it was joining the Information Technology Agreement which cut tariffs on semiconductors (Borrus and Cohen, 1998).

[11]China committed to maintain a maximum subsidy of 8.5% of the total value of production of a basic agricultural product compared with 10% for other developing countries (Huang and Rozelle, 2003). China also agreed to forgo additional exemptions available to it under Article 6.2 of the Agreement on Agriculture, including investment subsidies programs, input subsidies programs, and programs for diversification from narcotic crops in its allowed totals.

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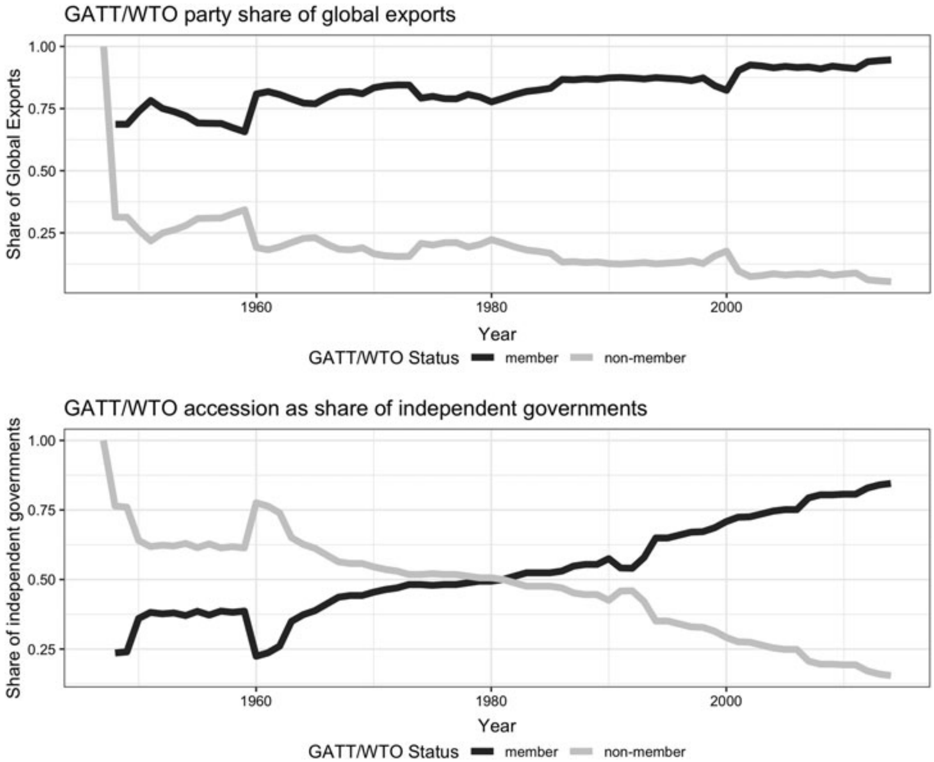

Figure 2. Economic coverage of the GATT/WTO system

domestic farming and to promote food security. As a result of these policies, as well as exploding demand for pork, corn became China's largest grain crop, overtaking rice in 2012 (Wu and Zhang, 2016). One program involved a floor for corn prices, resulting in prices two or three times that in competing markets such as the United States. In December 2016, the Obama Administration requested that the WTO consider whether China's subsidies for corn, rice, and wheat from 2012 to 2015 exceeded its WTO commitments. In this case, the offending measure was removed even prior to a ruling, which is in some ways a mark of success of the dispute settlement system.[12]

This case suggests that WTO disputes, and the prospect of disputes, have had some positive effects on constraining subsidies. For instance, Desai and Hines (2008) found that even the announcement of WTO complaints reduces the profits of subsidized firms. In that study, America firms that relied on subsidies through Foreign Sales Corporations saw a drop in profits after the announcement of a WTO challenge. This effect, along with removal of corn subsidies described above, is consistent with both an economic profit incentive to raise subsidies and a constraining effect of disputes on those benefits. Although many cases brought to the dispute settlement body are narrow, addressing specific subsidy programs on specific products, there can be spill-over effects on similar subsidy programs. For instance, Kucik and Pelc (2016) find that rulings against the Canada Feed in Tariff affected a similar program in India, and that the cases addressing cotton subsidies affected prices for wheat. The extent to which these effects are sufficient to deter subsidization remains an open question.

[12]Panel Report, *China – Domestic Support for Agricultural Producers*, WT/DS511/R, 28 February 2019. The panel found the subsidies for the other products violated China's commitments and authorized retaliation.

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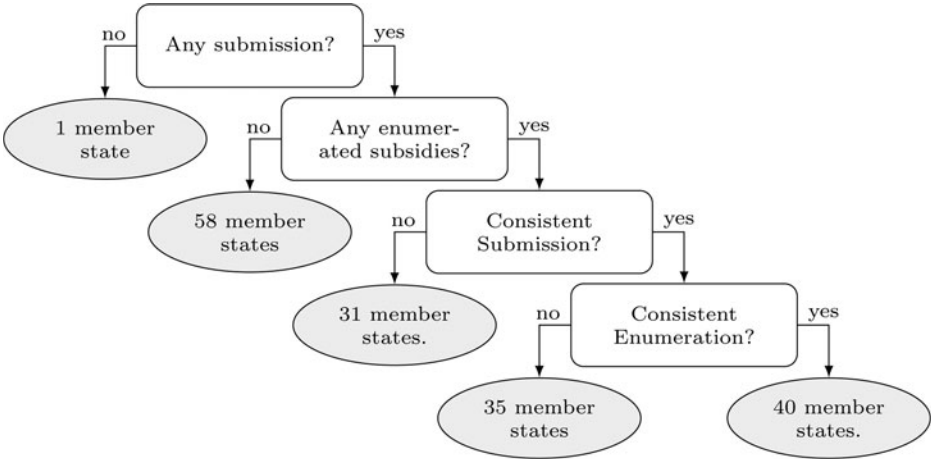

Figure 3. Overall participation in WTO Subsidy notification programs (1995–2020)

4.2 Subsidies and the State Owned Enterprise

A part of the problem is broader than the notification process: the WTO provisions on subsidies do not touch on most issues related to the role of state-owned enterprises or other government involvement in markets. The current interpretations of WTO law suggest subsidy disciplines only target benefits conferred by 'a government or public body', that exercises governmental functions. Bown and Hillman (2019) point out that, as a result, State Owned Enterprises (SOE) are not considered part of nation subsidy programs under WTO rules.

While certainly not the only country with significant state ownership, it is widely understood that Chinese SOEs are important instruments of Chinese foreign policy. Davis et al. (2019) finds that sourcing decisions by SOE are influenced by bilateral political relationships. Even when companies are not explicitly state owned, econometric evidence suggests that the Chinese government also exerts influence on corporate decision-making, at least among the largest firms (Stone et al., 2022).[13]

This problem raises a question of whether it is enough to ensure treatment of products, or whether the WTO needs to recognize different treatments across firms that produce products. For example, during its accession, China agreed to administer tariff rate quotas on 10 commodities including corn, wheat, and rice. A tariff quota would mean that below a certain volume, products would be eligible for lower tariff rates. However, when it came to implementing the quota, the allocation depended on whether the firm was registered as a SOE or not. Non-SOE firms had to apply annually for TRQ certificates that specify the quantity of each cereal grain permitted for importation at the within-quota tariff rate. Xie et al. (2019) finds that this policy acts as an important barrier to the sourcing of imports of non-SOE firms from the global market.

As discussed above, the history of the global trade regime is filled with disputes over subsidies. However, in the past, these problems could be set aside for the benefit of continuing negotiations. The framers of the GATT had large agriculture support programs. Agriculture exporters, particularly Australia, Brazil, Canada, and the United States, were all close allies and market-oriented economies, and gave one another significant leeway. Today, many of these countries have undertaken reforms to limit their direct conflict with WTO principles, for example moving away from financial contributions toward other forms of intervention to advantage local industry (Kono, 2008). While China has engaged in decades of reform, political tensions make what are already a difficult problem

[13]As Gulotty and Li (2020) point out regarding the anticipation of the Trans-Pacific Partnership, even private firms do need not wait for government guidance to react to geopolitical events.

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more challenging. It is not a coincidence that China and Russia were two of the last major economies outside the GATT/WTO system, their incorporation marks a ramping up of the difficulty of negotiations at a moment where market forces have made the task more challenging.

4.3 Subsidies When Production is Global

As we saw above, GATT/WTO rules on subsidies emphasize government prioritization of domestic firms, whether exporters or import competing firms, over foreign producers. The presence of global supply chains in international trade blurs this distinction. Subsidies can be used not only to advantage domestic industry but also to affect the allocation of profits from multinational enterprise.

Unfortunately, in the presence of global production, coordination on globally efficient policies may depend on the political priorities of governments. Whereas simple rules were sufficient to limit beggar-thy-neighbor policies in competitively determined markets, bargaining and global production make it difficult to have universal rules. When production is tied into global supply chains, prices may be set by bargaining between buyers and sellers of intermediate goods and services. This bargaining is subject to holdup problems which can reduce the willingness of participants in a supply chain from investing in trade and complicates the design of agreements (Antràs, 2003; Antràs and Helpman, 2004). For instance, Antràs and Staiger (2012) theorize that governments might efficiently use export subsidies to counteract holdup problems and can thus increase the volume of input trade toward its efficient level. Broad bans would prevent this.

A second consequence of global production is that subsidies may be used to attract foreign investment. For instance, Blanchard (2010) argues that cross-border ownership may reduce incentives to raise tariffs but may produce incentives to subsidize imports to extract rents from foreign investors. However, the issue of ownership has ambiguous consequences for international cooperation beyond tariffs: shared ownership can reduce frictions, or they can introduce new motives for protection. Gulotty and Kronick (2021) finds that the Venezuelan government spent millions subsidizing imports of multinationals. While some privileged firms may receive investment incentives, these resources may further act as a barrier to entry to non-incumbent firms. Subsidies could be used to benefit local firms and the local nodes of global producers but exclude smaller less connected foreign firms.[14]

Even when governments do not intend to, uncertainty over whether firm-specific subsidies are being used to advantage privileged firms can have negative consequences for competition. For instance, Operation Warp Speed, the American program used to promote the manufacture of vaccines for the COVID-19 pandemic, did not disclose details of its priority contracts. In addition to billions in subsidies, the program gave certain firms guaranteed access to inputs, raw materials, and equipment, to produce vaccines and vaccine factories. Bollyky and Bown (2021) suggest that a lack of transparency made it easier to blame the United States government when shortages later arose and made it difficult to coordinate the sort of input subsidization that would expand output.

5. Conclusion

While economic researchers have debated the exact mechanism, no one can doubt that the GATT/WTO presided over a massive expansion of global trade and its members, for the most part, have followed the global trade rules.[15] These rules have emphasized market access commitments, focusing on substantial and successful negotiations on tariffs. To ensure the value of tariff concessions, the GATT/WTO did not attempt to specify all the myriad ways that governments

[14]This motive is akin to what Gulotty and Li (2020) terms entangled mercantilism, where presence of multinationals can encourage the use of regulatory barriers at the expense of unconnected enterprises.

[15]Fear of unraveling is a common refrain across the history of the agreement.

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could interfere with market access. Instead, the global trade rules operate by conditioning the incentives of governments with broader rules.

The challenge is that encouraging the use of more efficient policy tools may be now insufficient to alter state behavior. As Bown points out, the allowances for safeguards agreed to in China's Accession were avoided in favor of antidumping measures. Efforts to update the definitions in the law to address SOEs, global supply chains, and meet the demands of the growing membership, have been unable to overcome institutional inertia.

In general, the 'rules based' approach appears to struggle to handle substantial changes in the global trading system. This is understandable, as the legal texts are designed to meet the economic conditions of the member states that crafted them. The shift of trade share toward non-market economies like China, as well as the growth of global production, have challenged the relevance of a system with rules intent on supporting tariff negotiation protocols. The entry of China into the WTO, with its massive state sector, makes the subsidies issue unavoidable in ways that were glossed over in the past. The fault lies not only in the fact that the GATT/WTO is ill equipped to address non-market economic systems, but also that what once would have been handled by collusive agreement between otherwise aligned governments outside the rules now requires bridging geopolitical divides.

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