



Subsidies and Market Access

Towards an Inventory of Corporate Subsidies by China, the European Union and the United States

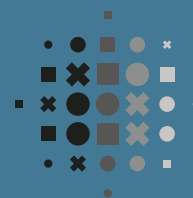
The 28th Global Trade Alert Report

by Simon J. Evenett and Johannes Fritz



GLOBAL
TRADE
ALERT

hinrich foundation
advancing sustainable global trade



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Subsidies and Market Access: Towards an Inventory of Corporate Subsidies by China, the European Union and the United States

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FOREWORD BY THE HINRICH FOUNDATION

Global trade has long withstood the distorting effects of subsidy regimes. Yet, until today, documentation of the expansive reach of subsidy schemes has been insufficient. This 28th report of the Global Trade Alert is startling for its matter-of-fact revelations. Export incentives provided by the governments of China, the European Union, and the United States are found in more than a quarter of the world's trade routes. Goods exposed to subsidies from the EU and the US alone – not yet counting China – amount to 28% of global goods. An astonishing 84% of goods imports into China were in products where local rivals receive subsidies.

The data makes clear that subsidies pervade global trade. And with every passing year of inaction, subsidies gather strength. In the last decade, the number of subsidies has more than tripled. Governments advocate for free trade in public, but their revealed preference for subsidy schemes tells a conflicting story.

And although politics typically inform criticism of subsidy regimes, in practice subsidisation is apolitical: It is common in both market and non-market economies.

At the Hinrich Foundation, we are guided by the concept of mutual benefit in trade and investment. We are guided by the belief, proven through history, that sustained trust and reciprocity leads to lasting and sustainable trade.

Subsidies impede reciprocity. Subsidies impair trust between trade partners and in the global trading system.

Public scepticism in trade is the logical consequence of subsidy regimes quick to justify even more awards.

In this important report – the first comprehensive inventory of the world's three largest subsidy regimes – authors Simon J. Evenett and Johannes Fritz call for renewed cooperation by trading nations on the issue of subsidies. Such talks are indeed urgently needed. The deliberations can start by commissioning similar studies that lay out global subsidies and their impact in more detail. Subsequent research is likely to reveal a more alarming prognosis, one that would hopefully prompt governments and multilateral bodies to revise current rules and regulations.

After all, while this report focuses on the corporate subsidies awarded by the three economic superpowers, many more countries actively mete out thousands of subsidies, all of which distort economic competition – and bilateral and regional cooperation.

Again, the damage inflicted by subsidies is not merely economic. Subsidies perpetuate an unsustainable cycle of mimicry and retaliation. According to the report, a set of subsidies by one economy is typically followed six months later by 'copycat' subsidies from another economy. If the objective is to find 'balance', the opposite results. The challenge to reverse the deficit of trust caused by subsidies is significant. For the sake of sustainability in trade, we must rise to the challenge.

EXECUTIVE SUMMARY

Subsidies are a major source of controversy in the world trading system. The number of subsidy-related trade disputes has increased sharply since 2010, as have investigations launched into subsidised imports. The European Union, Japan, and the United States have taken exception to a Chinese development model that they view as riddled with “non-market practices”, of which subsidies are a leading example. China bristles at having its subsidies singled out, arguing that it is not alone. Yet, at present there is no work programme at the WTO on the trade-related aspects of subsidies in general; no serious attempts to find common ground are underway.

Worse, governments face a conundrum. They are mindful that foreign subsidies can erode the market access won in previously negotiated multilateral and regional trade agreements. As far as market access impairment is concerned, state support for exporters is as relevant as subsidies awarded to import-competing local firms. By reducing the benefits of trade deals, foreign subsidies diminish public support for globalisation and give populists a stick with which to attack open trade. On this view, further international trade cooperation—including the elaboration of new trade rules that discipline trading partners’ subsidies—has appeal.

Yet, evidently, governments want to retain subsidies to tackle pressing national and global concerns, such as the COVID-19 pandemic response, decarbonisation, and the clean energy transition. What one government regards as a good subsidy and a legitimate exercise of national sovereignty can be viewed more negatively by trading partners. Doubts that a particular subsidy is the most effective means to attain certain public policy objectives can add to a trading partner’s suspicions. The implications of widespread subsidisation for a jurisdiction’s public finances and on recipient firm performance imply that there may be domestic constituencies that are also critical of extant national subsidy policies.

Recriminations have been exacerbated by a lack of comparable and reliable information on subsidy schemes and awards. In an effort to remedy this, we assembled an inventory of 18,137 corporate subsidies awarded by China, the EU, and the USA since November 2008. Many types of government subsidy—including welfare state payments to individuals, transfers between different levels of government, and those with no commercial dimension such as of foreign aid—were not included in our inventory.

To obtain the most comprehensive coverage of corporate subsidies possible, we included subsidies that a jurisdiction exempted from state aid rules as well as those subsidies that appear to be subject to no competition law-related discipline. In short, just because a jurisdiction prefers not to treat a state transfer of financial resources as a subsidy cuts no ice here. Throughout, we consistently employed a definition of subsidies that experts in the fields of trade and competition law and policy will recognise.

We do not claim that every subsidy awarded by China, the European Union, and the United States has been documented here. After all, some subsidies may be hidden and none of the jurisdictions examined here are as transparent about their subsidy payments as they might like to think they are. Still, we know of no database of corporate subsidy schemes and awards by these three jurisdictions that has greater coverage.

Our study should not be read as implying that China, the European Union, and the United States are the only jurisdictions that award subsidies to organisations engaged in business; the Global Trade Alert database currently contains a total of 5,977 subsidy policy changes and awards implemented by other nations. Later we will decide whether to expand our inventory to include other jurisdictions.

Given the widely acknowledged concerns about the accuracy, completeness, and timeliness of government notifications on subsidies to the WTO, we relied almost exclusively on sources of subsidy information collected from official government sources within China, the European Union, and the United States. Less than 0.3% of the 18,137 entries in our inventory of corporate subsidies were documented using information that did not come directly from a government source or from a legal obligation on companies to report subsidies received from government.

Each trading power contributed at least 5,000 entries to our inventory of corporate subsidies. We used that inventory to assess, in an even-handed manner, the scale of national and cross-border commerce affected by these trading powers’ subventions, individually and together. We provide detailed breakdowns of the types of subsidy policy instruments used, when those interventions came into force, whether conditions of competition in domestic and/or foreign markets are implicated, and whether sub-national, national, or supranational public bodies were responsible.

Where evidence allows, we identified the products and sectors that received each subsidy and, using automated routines based on the finest-grained global trade data available, identified affected trade partners and estimated the goods trade covered by subsidy policy interventions. We also examined whether subsidy awards by one of the three jurisdictions examined here were followed soon after by subsidy awards or by import restrictions in the same products by another trading power: a necessary condition for potential tit-for-tat dynamics.

In this manner, we can assess whether since the Global Financial Crisis the autonomous exercise of subsidy policy by China, the European Union, and the United States involved trivial shares of world trade. If so, the case could be made that the adverse cross-border spillovers created by autonomous subsidy policy are likely to be limited, that the tension between subsidy policy and market access is more apparent than real, and that existing multilateral rules suffice. Other factual findings would appear to have markedly different implications for the reform of national subsidy policy and for greater inter-governmental cooperation on subsidies.

Analysis of our inventory of corporate subsidies revealed the following headline findings:

- Subsidy awards by China, the European Union, and the United States are not confined to crisis years (specifically, those associated with the COVID-19 pandemic and the Global Financial Crisis). These three jurisdictions made a total of 2,488 subsidy awards and policy changes during 2008–2010, 3,754 such changes during 2020 and 2021, and 11,861 subsidy changes and awards during the intervening years (2011–2019).
- Less than 1.05% of the subsidy policy changes recorded in our inventory involved the elimination of subsidies, termination of a subsidy scheme, or reduction in subsidy payments.
- Subsidy awards by China, the European Union, and the United States are not confined to agriculture. While 2,171 subsidy changes and awards were in the agricultural sector, a total of 4,564 involved the transfer of state resources to service sector firms, and another 10,814 were received by corporates in manufacturing sectors. (Of the subsidies to service sector firms, 578 involved financial service sector firms. This implies that our inventory is not dominated by bailouts of banks and insurance companies, a feature of financial crises and their wake.)
- National governments are not solely responsible for subsidies awarded by China, the European Union, and the United States. A total of 677 subsidy awards and policy changes were implemented by sub-

national government bodies, and a total of 3,446 subsidy changes were made by supranational bodies, in particular by the European Investment Bank.

- A total of 14,104 subsidy policy changes and awards in our inventory were firm-specific, implying that thousands of entries in the inventory were not.
- Since the European Union and the United States were together responsible for 12,629 entries in our inventory of corporate subsidies, claims that extensive resort to subsidies is found only in state-dominated economic development models should be discounted. Resort to extensive subsidisation is also a common feature of policy in more market-based systems of economic governance.
- The commercial interests of a total of 209 customs territories (that the United Nations collects trade data on) have been affected by the subsidy policy changes documented in our inventory. Since November 2008, eighty-two customs territories saw their commercial interests adversely affected more than 1,000 times by Chinese, European Union, and United States subsidy awards to import-competing firms. This is the first finding concerning the global fallout from the state largesse awarded by these three trading powers since the start of the Global Financial Crisis.
- The risk of far-reaching impairment to goods market access cannot be ruled out. Such was the frequency of subsidy awards to import-competing firms in the decade before the COVID-19 pandemic and the range of products sold by those firms that:
 - In 2019, 84.0% of goods imports into China were in products where subsidies had been received by local rivals.
 - In 2019, 85.3% of extra-EU goods imports were in products where subsidies had been awarded to local rivals.
 - In 2019, 66.4% of goods imports into the United States were in products where subsidies had been awarded to local rivals.
- In 2019, before the COVID-19 pandemic hit, 62% of global goods trade was in products and on trade routes where subsidised American, Chinese, and European firms compete. Bearing in mind that our inventory is unlikely to capture every subsidy change since November 2008, the latter statistics almost certainly understate the scale of market access at risk from corporate subsidy intervention by these three trading powers. The subsidies awarded by each of the trading powers implicate significant shares of world goods trade:

- Excluding subsidies awarded by China from the calculation reveals that the global goods exposure to the subsidies of the European Union and the United States is still 28.1%.
- Excluding subsidies awarded by the European Union from the calculation reveals that the global goods exposure to the subsidies of China and the United States is still 47.5%.
- Excluding subsidies awarded by the United States from the calculation reveals that the global goods exposure to the subsidies of China and the European Union is still 57.0%.
- As measured by their respective shares of world trade, exporters of non-agricultural goods face subsidised foreign rivals as often as exports of agricultural products. Any presumption that subsidy-distorted trade is confined to agricultural goods should be set aside.
- State-provided export incentives by China, the European Union, and the United States were found in trade routes covering 25.3% of the total value of world goods trade in 2019. In addition, their subsidies to import-competing firms in 2019 affect the conditions of competition of 37.6% of world goods trade. Any rethink of subsidy policy ought not be confined to subsidies that affect conditions of competition in markets at home.
- Tit-for-tat subsidy dynamics cannot be ruled out in the years before the COVID-19 pandemic. Each of the three trading powers considered here followed new subsidy interventions by the other two with additional subsidies of their own in the same products more often than was the case of import tariff increases (a benchmark). Within six months of China introducing a subsidy in a product line, 58% of the time the EU awarded a subsidy in the same line of business. Forty-eight percent of Chinese subsidy actions were followed within six months by a subsidy in the same line of business by the United States. Within six months, China responded to new EU subsidies 56% of the time and new American subsidies 42% of the time. If the evidence presented in this report is anything to go by, the EU and the USA reacted more quickly and more often to each other's subsidies than to China's.

Given that trillions of US dollars of trade are involved, and the growing discord between governments over subsidy matters, the time is ripe for deliberation about the nexus between subsidies, market access, and the potential for enhanced international cooperation. Launching formal negotiations at this time would be premature—instead, evidence-informed policy dialogue should commence

in 2022. This dialogue should be inclusive and give due consideration to the interests and viewpoints of the authorities at every level of economic development. At the beginning, such dialogue need not be under the auspices of any international organisation if that proves to be too controversial.

Deliberation on the global reach of subsidies and what to do about them should be largely technocratic in nature. Officials from economic, finance, and trade ministries ought to be involved. Competition agencies may be able to contribute as well, in particular from those jurisdictions that have codified state aid regimes. Even if the appetite for enhanced international cooperation does not materialise, this policy dialogue will afford governments the opportunity to review their own subsidy regimes in light of the experience of trading partners.

As we outline in Chapter Nine of this report, this policy dialogue should have the following six goals:

- 1 Scale the subsidy conundrum now and in the future by establishing how much of the different types of international commerce are affected by subsidies. It is understood that the threat of foreign subsidies to the commercial interests of WTO members may differ markedly. Such differences would be explored, in particular between countries at different levels of development.
- 2 Based on evidence and logic, identify the policy objectives where particular subsidy interventions are necessary and where they are not. This will involve testing different types of subsidy instruments against each other as well as against other forms of policy intervention to see which have the desired impact and which are less trade-distortive. There is an opportunity here to learn from the extensive resort to subsidisation witnessed over the past decade. The development of norms concerning the design of better practice subsidies should be based in part on such evidence.
- 3 Explore the pros and cons of different rationales for potential multilateral rules on subsidies and then assess whether current WTO rules on subsidies are fit for purpose. This would include considering whether the types of unilateral measures that governments can take legitimately against foreign subsidies need to be revised.
- 4 Identify and explore complementarities between the trade cooperation on subsidies and other societal imperatives, such as reducing fossil fuel subsidies.
- 5 Capitalise on 25 years of improvements in the transparency of national subsidy regimes to develop proposals for meaningful global transparency

mechanisms on the trade-related aspects of subsidies.

- 6 Formulate a plan to take forward cooperation between governments on the trade-related aspects of subsidisation.

CHAPTER 1

INTRODUCTION

At the core of the conundrum regarding the appropriate rules for subsidies in the world trading system lies two legitimate government imperatives. On the one hand, governments have sought to secure and enhance the benefits of international economic interdependence by signing binding trade agreements. Since 1947, no less than nine multilateral trade rounds have been negotiated, and eight concluded.

Moreover, since 1995 the rate at which regional trade agreements have been concluded has accelerated. So much so that, according to the World Trade Organization (WTO), a total of 350 such agreements are currently in force.¹ Given the considerable effort and political capital sunk into negotiating, legislating, and implementing these trade accords, it should come as no surprise that governments are wary of actions by trading partners that erode hard-won market access gains.

On the other hand, an integral part of the policies undertaken by many governments in pursuit of legitimate objectives entirely unrelated to trade often involve granting subsidies to firms. Those subsidies can take many forms. Unless restricted, they can be implemented by any level of government, public body, or even a private body entrusted with this task, and they can be targeted, potentially even being firm-specific.

Governments could also deploy subsidies with the intent of affecting cross-border commerce resorting to, among others, direct payments for exporting, more lenient treatment of profits earned from exports, lower prices charged by state bodies to firms engaging in exports, and fiscal and other disincentives to source from abroad, and the like. Seen from the objective of fostering a less distorted world trading system, implementation of the latter subsidies is widely regarded as a retrograde step. Hence, in international trade policy circles, a distinction has arisen between “good” and “bad” subsidies.

Is the game worth the candle?

The conundrum comes more clearly into view when attempts are made to translate this distinction into practice—specifically, when constructing a coherent set

of general multilateral trade rules for subsidies that has a solid foundation in economic logic. Having critically assessed the current WTO Agreement on Subsidies and Countervailing Measures (ASCM) as well as the European Union’s regulation of state aid, some prominent analysts are very sceptical that there is a case for general subsidies rules beyond those necessary to secure previously negotiated market access commitments (Sykes 2010, 2015).

Others have demonstrated, theoretically at least, that certain multilateral trade rules on subsidies might constrain governments’ pursuit of legitimate non-trade objectives and that, in turn, such rules might erode support for trade agreements (Bagwell & Staiger, 2006, 2009). Moreover, such are the difficulties in translating the conceptual distinction between good and bad subsidies into practice that Sykes (2010, 2015) invoked the saying: “The game is probably not worth the candle”. On this view, there is no need for a future WTO work programme on subsidies. Indeed, in the conclusion of one of his papers, Sykes opines, “one must at least acknowledge the possibility that the *laissez-faire* approach to subsidies in the US federal system is superior” (Sykes 2010).

It is worth reflecting on this choice of saying. Commonly understood, it refers to a card game at night where the stakes are smaller than the cost of the candle needed to play. In part, this is an empirical statement and, in the present context, refers to the scale of trade-related harm created by subsidies and the costs and benefits of any potential rules to address such harm. Our contention is that this cost-benefit assessment has never been carried out in a comprehensive and systematic manner, and it is worth reflecting on why.

A critical building block of any such analysis is a neutral inventory of subsidies awarded by governments. To the best of our knowledge, no such inventory exists. Experts have long remarked on the limited evidence upon which to ground technocratic discussions on subsidies and on the pros and cons of new or reformed trade rules on subsidies (Lamy 2006, Horlick & Clarke 2016, Hoekman & Nelson 2020). If governments rarely resorted to subsidies that affect the competitive position of recipients in

1 This statistic was taken from the following WTO website: <http://rtais.wto.org/UI/PublicMaintainRTAHome.aspx>

internationally contestable markets, then maybe the doubters have a point.

This report's contribution

In preparing this report, we have documented 18,137 subsidies implemented since November 2008 by the world's three largest trading powers: China, the European Union (EU),² and the United States of America (USA). We did so to better inform assessments at the jurisdiction level of the form and quantum of subsidisation and the extent of cross-border trade in goods implicated. The sectoral incidence of subsidies might also reveal where cross-border commerce and investment flows are more likely to be affected.³

We do not claim that every subsidy ever awarded by public bodies in these jurisdictions has been recorded. We do claim that this inventory of subsidies is the largest available and that policy-relevant insights can be gleaned from it. That there are likely to be undocumented subsidies by these three trading powers implies that this report's findings understate the potential market access exposure to subsidies.

The purpose of this report is to provide fresh evidence on the scale of subsidies potentially relevant to the world trading system, drawing upon a factual inventory of subsidies awarded by China, the EU, and the USA. In so doing, we seek to inform policymakers, trade diplomats, and analysts as to whether there is enough at stake to invest in the candle of deliberation. Since our goal is largely to put the facts on the table, the associated findings may also prompt further analysis by researchers. This report is certainly not the last word on the matter.

Why focus on China, the EU, and the USA? In addition to accounting for a large share of world exports and imports, together these three jurisdictions are respondents to just under 60% of all subsidy-related disputes brought to the WTO since its creation in 1995. Together, these three jurisdictions account for significant shares of most trading partners' access to foreign markets: any impairment to such market access and to other commercial stakes by these three jurisdictions' subsidies ought to be of interest to trade policymakers.

Furthermore, given the repeated criticism by American and European policymakers of Chinese subsidies, a

comparison between all three jurisdictions' subsidy outcomes may also be telling. Lastly, given there are limits to the resources available for documenting subsidies, focus is a practical necessity.

Our focus on China, the EU, and the USA should not read as implying that other nations do not confer subsidies upon firms. The Global Trade Alert's monitoring of subsidies has revealed that Argentina, Australia, Brazil, Canada, India, Japan, Russia, Saudi Arabia, South Korea, Switzerland, and Turkey frequently award subsidies.⁴

A distinctive feature of this report is that it relies on national sources of information to document subsidies. The improvements in "transparency" in domestic public governance have resulted in many public bodies putting online caches of information on subsidies conferred. We have capitalised upon that trend. This is not to imply that the information made available by governments is exactly what is needed for trade policy purposes. For example, considerable lengths were taken, where appropriate, to assign product and sector codes to every subsidy recorded.

Some governments also mandate that firms must, under pain of sanctions, report on the subsidies they have received from public bodies. We have exploited this feature too, especially in relation to China (and to a lesser degree the UK and the USA). Our view is that officially mandated declarations on subsidies, backed up by sanctions for non-compliance, yields information that can augment that published directly by public bodies.

As a result, in constructing our inventory of American, Chinese, and EU subsidies, we made little or no resort to the notifications of governments made to the WTO. The value of such notifications is impaired by the failure of some governments to make subsidy notifications at all, by failures to notify in a timely manner, by omissions of subsidy regimes in notifications, and by the failure to provide information on individual subsidy awards. That subsidy notifications have become a contested matter among WTO members is another reason to doubt that available notifications can provide an accepted, neutral guide to the extent of subsidisation by governments.

In light of the foregoing considerations, perhaps one contribution of this report is to demonstrate that a significant amount of accurate information can be

² The United Kingdom (UK) was a member of the EU until 31 January 2020. A limited transition period was agreed between the UK and the EU and expired on 31 December 2020, following which the UK sets its trade and subsidy policies autonomously. Given the UK was a member of the EU for almost all of timeframe considered in this study (November 2008–October 2021), for present purposes evidence on UK subsidies was combined with those of remaining members of the EU. Therefore, any references to the EU28 in what follows implies that statistics on UK subsidies were included.

³ For example, it would be useful to know whether sectors that have been deemed by some to have excess capacity tend to receive subsidies more often than other sectors.

⁴ Each of these nations has made more than 200 policy interventions involving subsidies since November 2008.

assembled directly from national sources.⁵ While it would be desirable that WTO notification obligations were fully complied with—and we would certainly support steps taken to bring that about—the availability of credible national information on subsidies has the following important implication: deficiencies in current notification practice by WTO members need not hold back evidence-based deliberation on the nexus between subsidies and market access. It is not inconceivable that, so long as the trend towards greater transparency at the national level continues, the dependence of trade policymakers on information provided through the WTO notification process can diminish over time at little or no cost to the quality of deliberation.

One deeper question raised by this study is: In the context of subsidies, what constitutes meaningful transparency from the trade policy perspective? Much of the information available on subsidies in the EU and the USA is provided so as to enhance the accountability of public finances or as part of competition law enforcement. That information was not made available to serve trade policy ends and, consequently, we went to considerable lengths to make it so. An important question, then, is can these domestic transparency mechanisms be tweaked in a way that serves the purposes of the world trading system?

In short, to invoke another saying, can we kill two birds with one stone?

Organisation of this report

To further motivate why subsidies should be taken seriously by trade policymakers, the next chapter advances the argument that subsidies have become a greater source of controversy among WTO members over the past decade and that, if anything, they will become more so in the future. Following that are two chapters that discuss the definition of subsidies and explain why domestic subsidies can be a concern for trading partners.

Having laid out these contextual, definitional, and conceptual matters relating to the subsidy-market access nexus, Chapters 5 to 8 are empirical in nature. The fifth chapter summarises the worldwide reach of American, Chinese, and EU subsidies. The following three chapters examine, in turn, the subsidies implemented by these three trading powers.

The ninth chapter draws out implications for further deliberations on the nexus between subsidies and market access. The final chapter describes developments in the GTA database in general (not only relating to subsidies) since our 27th report was published in June 2021.

5 We take the view that it is the responsibility of a government to publish accurate information on subsidies, whether offline or online. Moreover, we proceed on the assumption that when firms report the recipient of subsidies that the sanctions for failing to do so properly are sufficient so as to make the reported information valuable to a certain degree.

CHAPTER 2

SUBSIDIES AS A GROWING SOURCE OF TRADE TENSIONS

Drawing upon evidence, including precedent cases of disagreements over subsidy matters between governments, in this chapter we advance the argument that subsidies are a growing source of trade tensions. While some high-profile tensions have been bilateral in nature, such as the China-US trade war, which definitely had a subsidy-related element, in fact many frictions have played out at the WTO, highlighting the centrality of this multilateral forum in subsidy-related matters.

Growing controversy over subsidies over the past decade

Subsidies—in particular, export subsidies for agricultural products—have long been a source of contention between governments. What is distinctive about the past decade, however, is that subsidies affecting trade in industrial goods have been a flashpoint as well.

While the repeated accusations concerning “unfair” subsidisation by US trading partners levelled by Mr Donald Trump drew a lot of attention, not least when the USA essentially revoked China’s Most Favoured Nation tariff treatment and China retaliated, there is other evidence that subsidy policy is contested more often.

The first evidence we marshal relates to the unilateral action that governments have taken against imports thought to have benefited from subsidisation. Figure 1 plots the total number of countervailing duty investigations initiated since the turn of the century. It is evident that since the Global Financial Crisis there has been a trend increase in the number of investigations initiated per year. On average, just under one investigation per week was launched in the three most recent years for which complete data are available (2018–2020).

The second piece of evidence is that since 2010 the number of subsidy-related disputes taken to the WTO has increased. Figure 2 shows the number of new subsidy cases brought each year since the WTO was created in 1995 that refer to the Agreement on Subsidies and Countervailing Measures (ASCM). A five-year moving average smooths out the annual fluctuations. That average reveals that

the years 2009 to 2011 marked a turning point, with the number of disputes rising steadily since the onset of the Global Financial Crisis.

Figure 3 shows how often each nation’s subsidy regimes have been the subject of a WTO dispute. US subsidy and countervailing duty practices have been contested 43 times. The comparable numbers for China and the EU are 19 and 22, respectively. No other WTO members come close on this metric (Canada is a distant fourth at 11 cases). Subsidy cases are becoming more frequent and often implicate the largest trading powers.

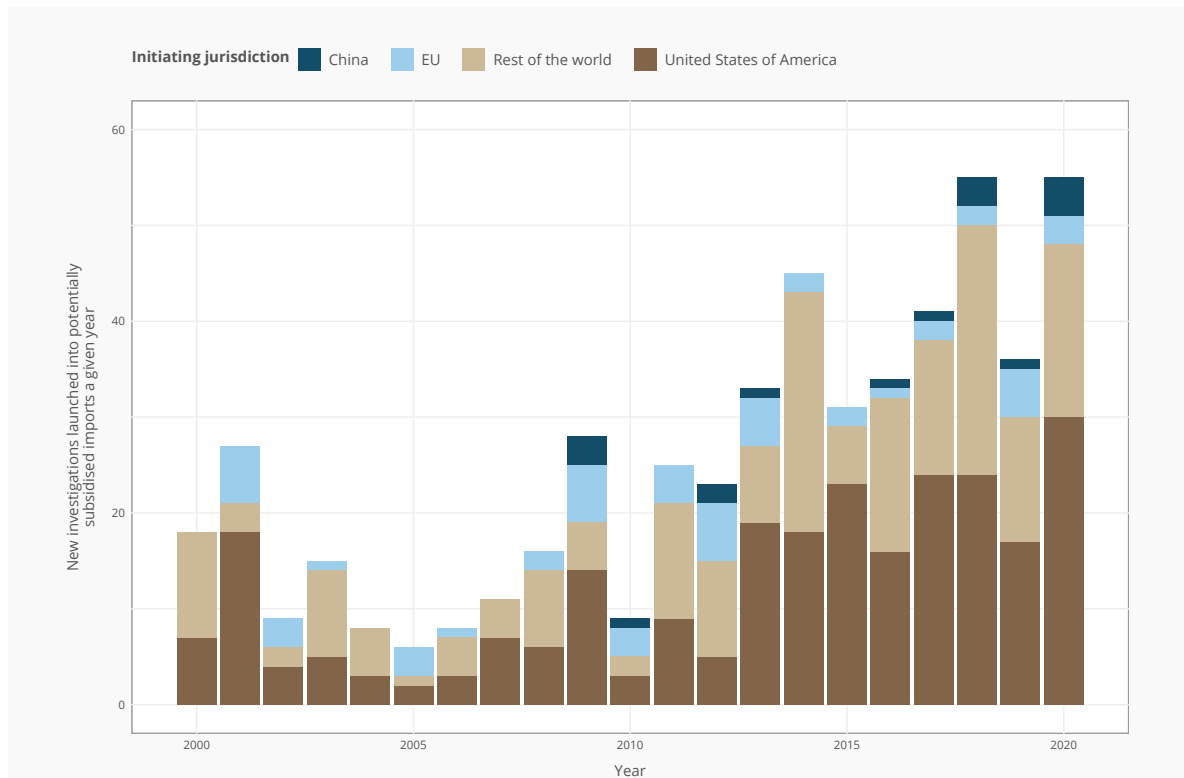
The third set of evidence comes from systematic counts in leading media outlets of trade-related mentions of subsidies. Using the *Factiva* database, we counted the number of times each year the word subsidies (and related words, like subsidy) were found in newspaper articles that also mentioned either China, excess capacity, farm, industrial policy, overcapacity, or trade. The annual counts for each of these six searches are reported in Figure 4. The results are informative and may well bear out certain impressions about the salience of subsidy-related trade matters held by those who actively follow trade policy.

Articles mentioning both subsidies and trade and subsidies and China have increased in frequency over the past twenty years, in particular since 2017. In 2020, over 54,000 newspaper articles mentioned subsidies and trade. Mentions of trade and China exceeded 50,000 that year too. Interestingly, newspaper mentions of subsidies and farms or farmers have never dipped below 10,000 in any year since 2010 and have risen by at least 20% since 2017.

In contrast, mentions of subsidies and excess capacity or overcapacity fell sharply in 2019 and 2020. Mentions of industrial policy and subsidy also fell in 2020. The latter three, however, accounted for a much smaller share of newspaper mentions than the former three. It would seem that media coverage of selected subsidy-related matters has increased (China and farming) and articles mentioning both subsidies and trade have increased progressively over time.

FIGURE 1

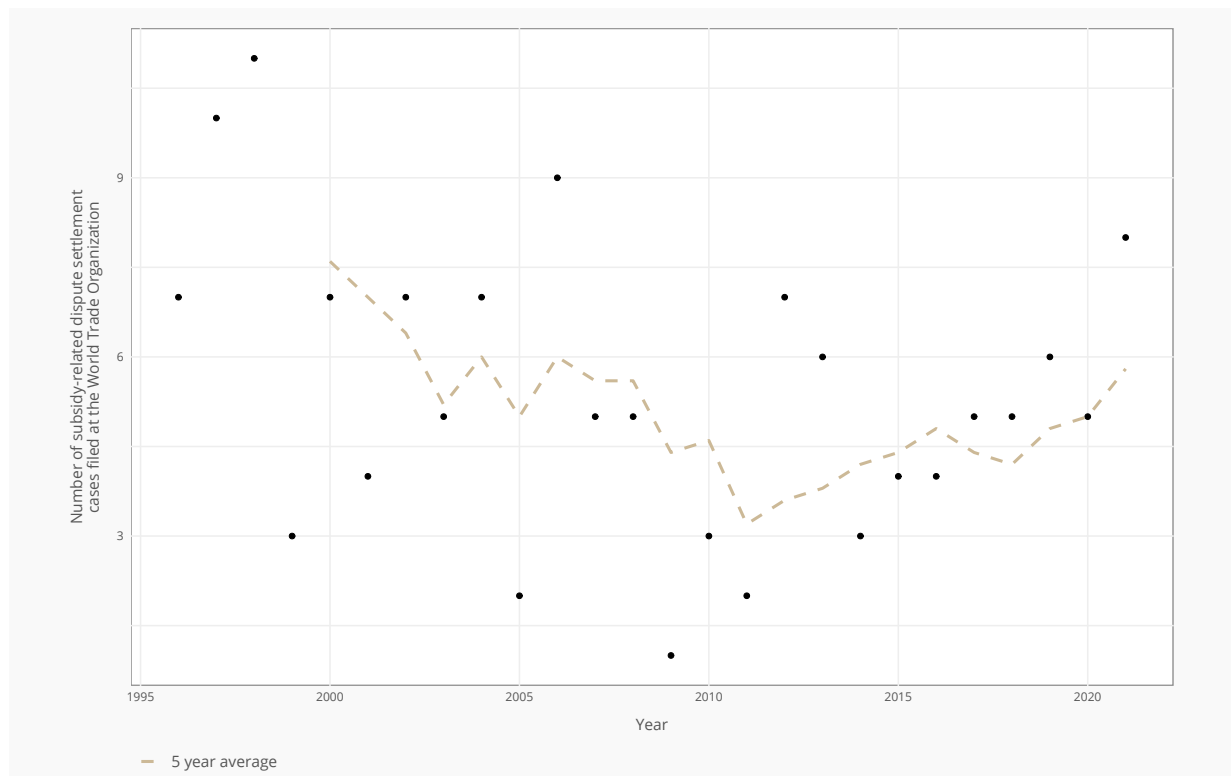
The rising total number of countervailing duty investigations worldwide



Source: World Trade Organization.

FIGURE 2

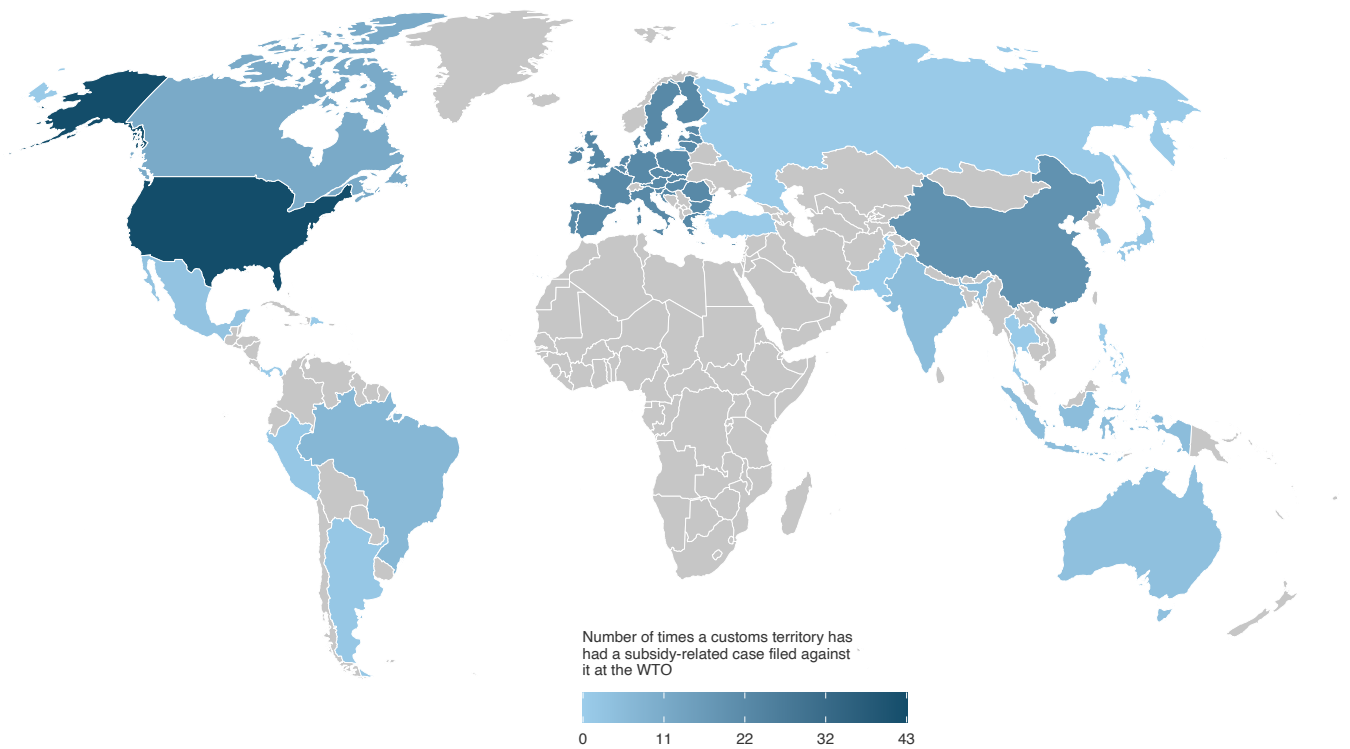
The Global Financial Crisis was the turning point for subsidy-related disputes at the WTO



Source: World Trade Organization.

FIGURE 3

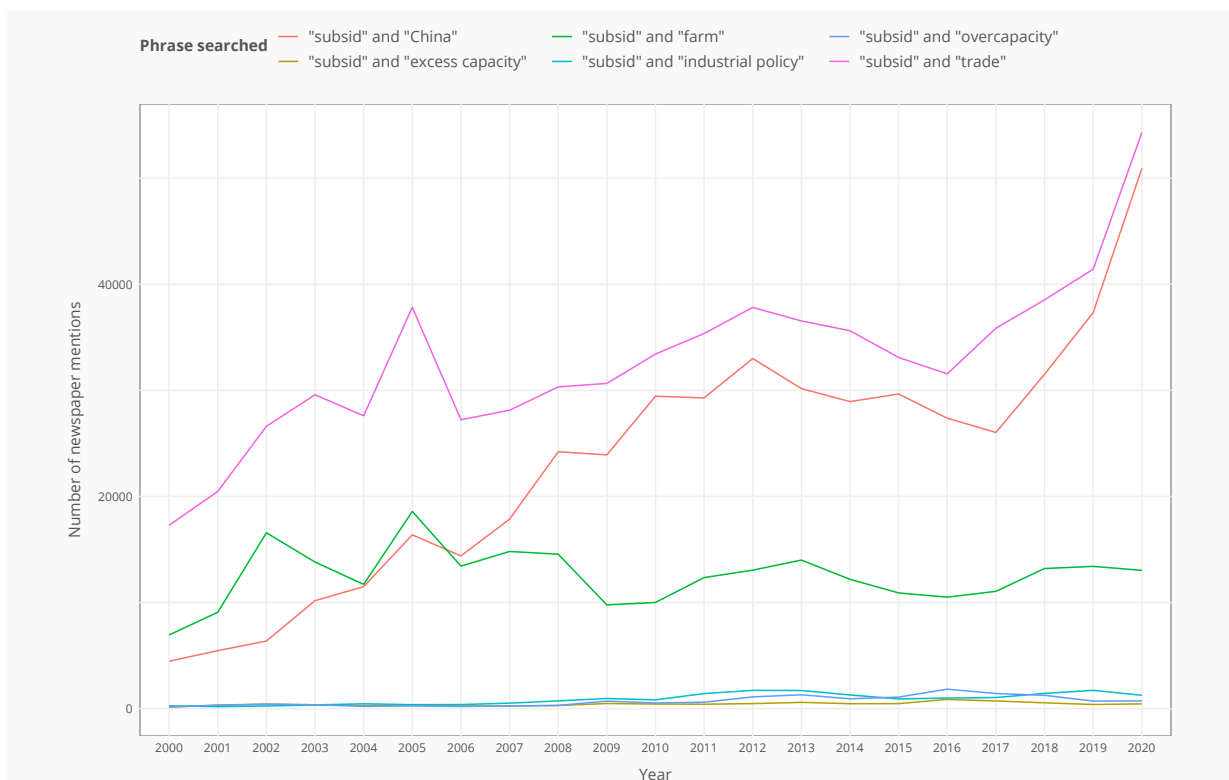
China, the European Union and the United States are most frequently accused of breaking WTO subsidy rules



Source: Assembled from WTO dispute settlement cases involving the ASCM.

FIGURE 4

Media mentions pairing trade and subsidies and those pairing subsidies and China exceed those relating to agricultural subsidies and subsidies and overcapacity



Source: Factiva database.

Can these impressions be supported by hard data on subsidy outlays? Specifically, is there any evidence to suggest that the value of subsidies conferred by governments on firms has increased over time? Remarkably, despite decades of national income accounting and careful attention paid by public finances, this important question cannot be answered satisfactorily.

The International Monetary Fund (IMF) does publish⁶ some data on subsidies paid by local and central governments. We attempted to collect data since the year 2000 on the total value of subsidies paid by the governments of the G20 members. Wherever we could, we only counted subsidies paid to firms (thereby excluding welfare state payments to individuals or payments to other levels of government).

One hurdle we faced is that no information is available in this IMF source for China or India for any year. Moreover, the data available for six other G20 members was not available for some years (see the note at the bottom of Figure 5). Nevertheless, we report the total amounts of subsidies paid from the years 2000 to 2019 in Figure 5.⁷ Before the COVID-19 pandemic in 2020, there was already

a discernible upward trend in the total nominal value of subsidy payments by G20 members.

For the past decade, the total value of such subsidies exceeded \$400 billion. Bearing in mind China's and India's subsidies are not included in this total, the overall level of subsidisation of firms will be higher. Such (imperfect) evidence supports the contention that subsidies are growing. And it seems that the media and trading partners have picked up on rising subsidies.

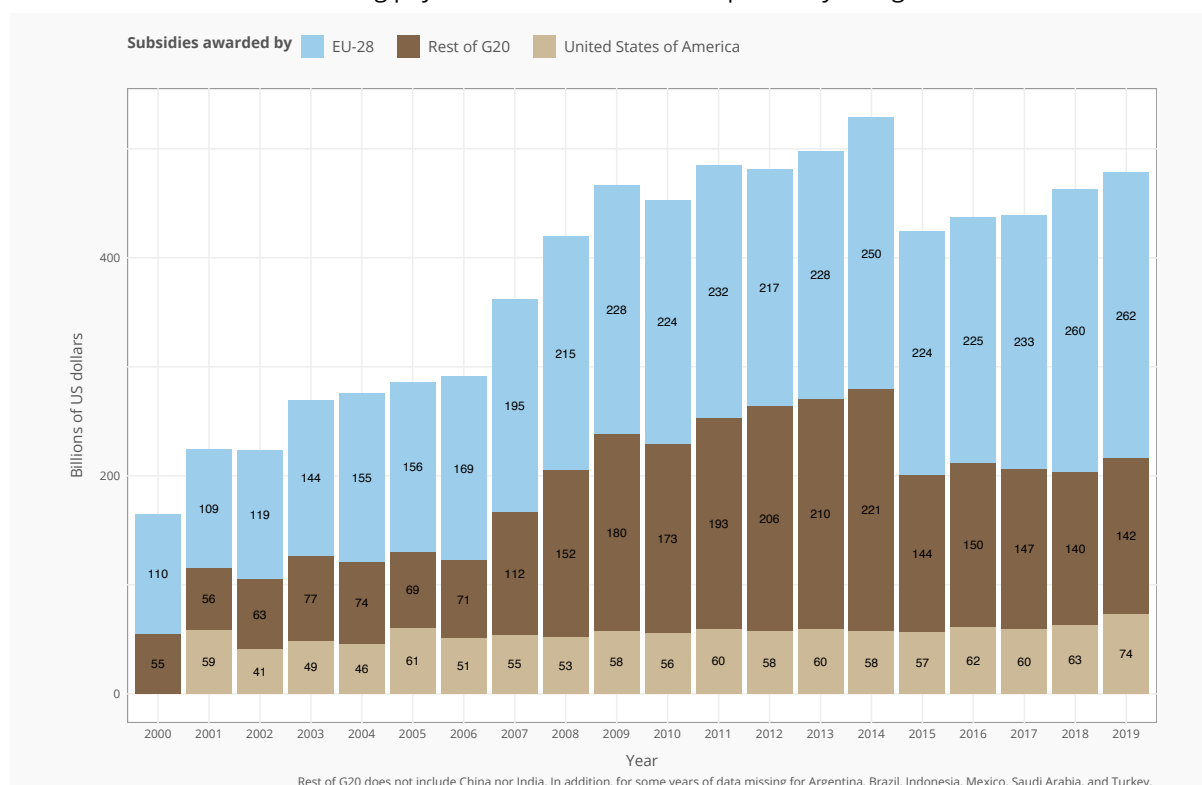
Looking forward, however, subsidies are associated with three factors likely to amplify trade tensions. We now outline each in turn.

Three reasons why subsidies will gain in salience

There are three grounds for believing that domestic policy choices in the years ahead will result in greater resort to subsidies, thereby ensuring that subsidies remain near the top of the agendas of trade policymakers. While it is possible to read the following material and worry about the potential greater trade tensions, an alternative

FIGURE 5

IMF records rising payments of subsidies to companies by G20 governments



Source: International Monetary Fund.

⁶ See the IMF's Government Finance Statistics database available at <https://data.imf.org/?sk=3C005430-5FDC-4A07-9474-64D64F1FB3DC>.

⁷ We omitted data from 2020 on two grounds. First, the IMF has not yet reported on the subsidies paid by many G20 members in 2020. Second, we did not want our calculations to be affected by COVID-19-related subsidy payments to firms.

perspective to seeing the glass as half empty is to argue that the very potential for such tensions provides the incentive for governments to develop new international understandings on the appropriate use of subsidy policy.

Subsidies, non-market practices, and national development strategies

The first reason relates to the continuing frictions between WTO members over the role that subsidies are playing in national development strategies. Ever since the Global Financial Crisis, the impression gained hold that state-led capitalism has generated better macroeconomic performance than market-driven forms of capitalism. Subsidies and other so-called non-market practices are, in the view of some, central to the performance of the former, in particular to China (Wu 2016). Those that regard the use of subsidies in this manner as illegitimate are likely to conclude that the growth of state-led capitalist economies has come at the expense of trading partners.

An attempt was made in the middle of the previous decade to link domestic subsidies to the development of excess capacity and the harm to trading partners. This stratagem was pursued first in the steel sector and then in the aluminium sector. So successful were the advocates of this that the G20 governments were persuaded to establish a sector-specific forum on excess capacity for the steel sector. Our 22nd report examined in detail both the economic logic and evidence linking subsidies to excess capacity and the harm done to trading partners and found the arguments deficient in numerous material respects (Evenett & Fritz 2018). We refer readers to that report for further details.

Having made little progress with a sector-specific approach, the EU, Japan, and the USA developed a “trilateral” process to develop a common position towards “third countries” that pursued “non-market-oriented practices”. Industrial subsidies (taken to be subsidies to manufacturers) were an agenda item at meetings of this trilateral group, often combined with state-owned enterprises. After their first meeting, in the margins of the 11th Ministerial Conference of the WTO, the European Commissioner for Trade; the Minister of Economy, Industry, and Trade of Japan; and the US Trade Representative declared:

“We shared the view that severe excess capacity in key sectors exacerbated by government-financed and supported capacity expansion, unfair competitive conditions caused by large market-distorting subsidies and state-owned enterprises, forced technology transfer, and

local content requirements and preferences are serious concerns for the proper functioning of international trade, the creation of innovative technologies and the sustainable growth of the global economy.”⁸

Subsequently, officials identified certain types of subsidies of particular concern, as this 26 September 2018 trilateral declaration reveals:

“The Ministers recognized the progress of their work, and the continued need to deepen their shared understanding, on the basis for strengthening rules on industrial subsidies and State Owned Enterprises, including how to develop effective rules to address market-distorting behaviour of state enterprises and confront particularly harmful subsidy practices such as: state-owned bank lending incompatible with a company's creditworthiness, including due to implicit government guarantees; government or government-controlled investment fund equity investment on non-commercial terms; non-commercial debt-to-equity swaps; preferential input pricing, including dual pricing; subsidies to an ailing enterprise without a credible restructuring plan; and subsidies leading to or maintaining overcapacity.”⁹

Matters did not end there. By January 2020, the trilateral group's most senior officials issued a critique of the existing ACSM and advocated adding four types of subsidies to those prohibited by multilateral trade rules. Furthermore, for certain other subsidies they called for the burden of proof to be reversed. Specifically, they argued:

“Certain other types of subsidies have such a harmful effect so as to justify a reversal of the burden of proof so that the subsidizing Member must demonstrate that there are no serious negative trade or capacity effects and that there is effective transparency about the subsidy in question. Subsidies having been discussed in this category include but are not limited to: excessively large subsidies; subsidies that prop up uncompetitive firms and prevent their exit from the market; subsidies creating massive manufacturing capacity, without private commercial participation; and subsidies that lower input prices domestically in comparison to prices of the same goods when destined for export. If such subsidy is found to exist and the absence of serious negative effect cannot be demonstrated, the subsidizing Member must withdraw the subsidy in question immediately.”¹⁰

The trilateral group sought to expand support for their proposals by engaging with other WTO members. In this regard, it is noteworthy that industrial subsidies were mentioned in the 28 May 2021 declaration of G7 trade

8 Source: <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2017/december/joint-statement-United-States>.

9 Source: https://ec.europa.eu/commission/presscorner/detail/en/STATEMENT_18_5915. It is revealing that while overcapacity is mentioned, it is more prominent in the December 2017 declaration.

10 Source: https://trade.ec.europa.eu/doclib/docs/2020/january/tradoc_158567.pdf.

ministers. Such subsidies were linked to non-market practices and excess capacity. The G7 ministers called for “the start of negotiations to develop stronger international rules on market-distorting industrial subsidies and trade-distorting actions by state enterprises”.¹¹

As to the evidential base on subsidies and the non-market practices, the G7 ministers observed:

“We note that the evidence base is negatively affected by the opaqueness of market-distorting policies and practices. Deeper and more thorough evidence and transparency will improve global understanding of the problem and build pressure on all nations to play by the rules. To this effect and to maintain momentum, we commit to devoting necessary resources to conduct the needed technical work in this area including considering further ways in which transparency can be strengthened and where improvements can be made.”

To the best of our knowledge, it is not evident that resources have been so committed, nor that any inventory or analysis has been published. Nevertheless, this statement amounts to recognition that transparency has a role in supporting policy dialogue and inter-governmental cooperation.

As part of its proposals to reform the WTO overall, China has advocated reform of the ACSM. Specifically, China supports the reintroduction of the lapsed category of non-actionable subsidies as well as an expansion of the types of subsidy that fall within that set. Furthermore, China has sought to widen the discussion to include reform of provisions relating to the so-called trade remedy laws, arguing, “We should curb the misuse and abuse of trade remedies, eliminate discriminatory rules and practices, and give consideration to the special situations of developing Members and SMEs as well as public interests.”¹²

Evidently, there is some distance between the positions of the world’s largest trading economies. As convergence between the national development models is unlikely, subsidies are likely to remain contentious. Furthermore, as China’s technological catch up threatens US primacy, if anything subsidies are likely to become a bigger source of friction.

Subsidies as part of the state response to the COVID-19 pandemic

Although COVID-19 was ostensibly a public health threat, the manner in which governments and the private sector reacted created significant shocks to the demand and supply sides of national economies. Attempts to

limit infections from abroad also curtailed international trade, investment, and travel. To cushion the economic pain, many governments offered a range of subsidies to individuals, firms, and other levels of government.

Our 26th report summarised the factual record as of October 2020 concerning the trade-related public policy response to the COVID-19 pandemic (Evenett & Fritz 2020a). Those responses varied considerably across economies; however, resorting to conferring subsidies on firms was a step common to many governments. We are now in a position to provide an update on policy intervention recorded as of 15 October 2021. Since 1 January 2020, governments worldwide had taken 7,579 policy steps that implicate the commercial interests of trading partners. Only 1,082 of those steps resulted in better treatment of foreign exporters, investors, workers, or owners of intellectual property.

Of the 6,497 policy interventions that favoured one or more domestic commercial interests, no fewer than 5,040 were different types of subsidy. That is, three-quarters of the favouritism towards domestic firms witnessed from 1 January 2020 and documented by 15 October 2021 took the form of some kind of subsidy likely to have implications for international commerce. These totals do not include subsidies paid directly to employed or unemployed workers, other welfare state payments, subsidies paid to firms that were instructed to shut down on public health grounds,¹³ and subsidies paid to sub-national or other levels of government.

Inevitably, during crises such as these, the concern is expressed by trading partners that the bailouts of domestic firms are too generous. Here, the concern is that a bailout is less about addressing the temporary liquidity problems of a company and more about positioning a firm in an advantageous manner so that they can gain market share when the economic recovery unfolds. In essence, the contention is that the pandemic has been used as a smokescreen for beggar-thy-neighbour forms of industrial policy.

The imperative of scaling up the production of COVID-19 vaccines and mobilising the resources to do so is another way in which multilateral trade rules on subsidies could be implicated by the COVID-19 pandemic. Bown and Bolyky (2021) advocate negotiating a COVID-19 Vaccine Investment and Trade Agreement (CVITA). Drawing upon US experience, which is said to have involved the state coordinating steps along the entire COVID-19 vaccine supply chain including awarding subsidies to the private

11 Source: <https://www.g7uk.org/g7-trade-ministers-communiqué/>

12 WTO document WT/GC/W/773

13 Specifically, we have in mind here subsidies paid to firms to pay their employees while commercial activity was suspended due to government diktat.

sector, Bown and Bollyky recommended the following step as part of a five-part package:

“the investment component of the agreement must create a framework to subsidize the full vaccine manufacturing supply chain and especially coordinate expansion of input production capacity, including for bioreactors, bags, cellular materials, vials, stoppers, syringes, and other ancillary supplies.”

Taking this forward would require agreement to permit sector-specific subsidies, possibly for a limited time, which might otherwise have been challenged at the WTO or become the subject of anti-subsidy investigations.¹⁴ Whether some WTO members would regard the negotiation of a CVITA as creating an unwelcome precedent that waters down existing multilateral trade rules on subsidies remains to be seen.

Going forward, government approaches towards unwinding subsidies to firms could become a source of tension between nations. The desire to improve their public finances could provide the impetus for reining in subsidy schemes for businesses. However, there will likely be the concern, witnessed before in discussions at the Organisation for Economic Co-operation and Development (OECD) on the unwinding of steel sector subsidies, that as some governments reduce subsidies faster than others, the former's firms lose market share to rivals operating in the latter.

In an era where sustained multilateral trade cooperation was the norm, some type of coordinated phase-down in subsidies might have been possible. While still a prospect, even a potentially desirable one, the likelihood of a cooperative solution being adopted at this juncture seems remote. Public disagreement is the more likely outcome.

Finally, such has been the scale of the liquidity and other support provided to business during the pandemic that current and former central bankers and other senior macroeconomic policymakers have worried about both the longer-term harm to the public finances as well as the potential for a wave of corporate insolvencies or the creation of a new tranche of zombie firms.¹⁵

Thus, in December 2020 the Group of 30 called for a scaling back of state support to the private sector; cutting off firms with economically unviable business models; and offering differentiated support to firms based on whether they are liquidity constrained, threatened with insolvency, or face market failures (Group of 30). Essentially, this is a

call for greater selectivity in the provision of state support which, if taken forward, might raise concerns of both trading partners and active competition agencies.

In sum, while state support is almost inevitable during economic crises, the manner with which it is introduced and withdrawn can result in trade tensions between governments. It is not evident that the general economic support measures (as they are often referred to at the WTO) undertaken since the onset of the COVID-19 pandemic have been designed in a manner that limits the fallout for trading partners; likewise, any policy steps taken during the unwinding of corporate support. We should not be surprised if some trading partners are vexed by the resulting adverse cross-border spillovers.

Subsidies and decarbonisation initiatives

Recognising the multiple threats to humankind from climate change, many governments have made public commitments relating to the decarbonisation of their economies. This enormous and necessary transition could, if managed poorly, become a significant source of trade tensions.

This is not a hypothetical consideration, as policy measures taken to promote the transition to clean energy have already generated trade disputes. Perhaps the most prominent of the earlier disputes was a case brought by the EU against Canada relating to the Province of Ontario's Feed-In-Tariff (FIT) regime for renewable energy producers. The EU alleged that the scheme favoured equipment producers from that province and that the price support associated with the FIT constituted a subsidy (Cosbey & Mavroidis 2014).

Similar concerns have been raised about other nations' FITs. Rather than specifically require local sourcing of parts and equipment, and potentially staff, some governments have offered local content premia (LCP). That is, they offer to pay more per unit for electricity produced to those firms that choose to source more locally. The case of LCP highlights the fact that a subsidy can be conferred through government procurement policy, even though the word subsidy need never be mentioned explicitly.

Often the motivation for introducing LCP and local content requirements in renewable energy is to create commercial opportunities for national producers of related parts and equipment. Therefore, such policies amount to a selective industrial policy and draw the ire of trading partners where the competitive established suppliers of such parts

¹⁴ Although why a government would want to impose tariffs on imported COVID-19 vaccines or vaccine ingredients is unclear. This possibility is only mentioned because, as the Global Trade Alert's monitoring of trade policies affecting essential goods has documented, some governments have been resorting to more restrictions on imported food and medical goods this year.

¹⁵ While there are a number of definitions of a zombie firm, the central idea is that these firms do not generate enough profits from their current operations to cover their interest payments. A growing literature has demonstrated the long-term growth impairment in economies and sectors where zombie firms are prevalent.

and equipment are located. Unless ways are found to encourage the transition to cleaner energy that do not involve either subsidies or local content requirements then further trade tensions are almost inevitable.

Another feature of decarbonisation likely to result in potential trade tensions concerns steps to raise the price of carbon dioxide (CO₂) emissions. This plays out in two ways. First, in the absence of a common global price for carbon, jurisdictions that raise the price of CO₂ emissions internally may induce migration of production abroad (resulting in so-called carbon leakage). The attendant loss of jobs and tax revenues, as well as the harm done to affected local communities, are outcomes that certain policymakers may wish to avoid.

One “solution” in those jurisdictions where CO₂ permits are traded by private firms is to offer companies in high energy-using sectors free or discounted permits. These permits confer a commercial advantage on the recipient firm which, as a tradeable asset, can be sold to raise funds for the firm. Regardless of whether or not a state aid regime treats these permits as a subsidy, in the absence of an international understanding on these matters, that is how trading partners may view them.

Another concern relates to measures that have raised the price of CO₂-intensive products and activities to individuals. Such measures are not always accepted by voters, forcing governments to rethink their approach to promoting decarbonisation.¹⁶ Should governments switch from imposing taxes on consumers to selective subsidies to producers to encourage the adoption of climate-

friendly technologies, then again this may trigger the ire of trading partners.

Suppose further that the tax on consumer behaviour may be the economically optimal measure to take. Should such a tax be politically infeasible, then governments may adopt a second or third best selective subsidy. This outcome may be more likely if the government fears the ire of its voters more than that of foreign governments.

For all of these reasons, the global imperative of decarbonisation has the potential to induce subsidy-related trade tensions in the years to come. And this is without contemplating the acrimony that might follow the imposition of carbon-based import taxes on non-subsidy related grounds.¹⁷

Concluding remarks

In an era of rising geopolitical tensions, governments seeking to chart a path towards post-COVID recovery, and the growing pursuit of decarbonisation, the potential for subsidy-related trade tensions cannot be understated. Indeed, it would be remarkable, given the paucity of inter-governmental trade cooperation witnessed over the past decade, that the confluence of these three trends did not result in subsidy-induced clashes between trading partners. Yet, as noted earlier, the increased likelihood of trade tensions may encourage enough forward-looking policymakers to see the wisdom of initiating policy dialogue concerning the cross-border consequences of subsidies deployed for ostensibly non-trade purposes. In short, trade tensions associated with subsidies are not inevitable.

¹⁶ Developments in recent years in France and Switzerland bear out this concern.

¹⁷ Or to give these border measures their official title in the EU: Carbon Border Adjustment Mechanism. If the taxes collected through such a mechanism were distributed to firms in a selective manner, then a further subsidy dimension could arise.

CHAPTER 3

WHAT IS A CORPORATE SUBSIDY?

Public authorities—be they sub-national, national, or supranational—take many actions that affect business. The central question addressed in this chapter is: Which of those steps are deemed subsidies? Without a notion of what constitutes a subsidy, it is impossible to assemble an inventory of subsidy intervention in a consistent manner, let alone assess current and potential trade rules relating to subventions from the state.

This is not academic hair-splitting. Governments confer advantages on business in many different ways, and they do not all share the same characteristics. For example, some government policies treat all firms in all sectors in their jurisdiction equally, while other measures target certain lines of business. Which characteristics are relevant to a discussion of subsidies?

Subsidies share four characteristics

The four common elements of a subsidy are¹⁸:

- 1 A subsidy involves an action or a commitment to action by a public body under stated circumstances.
- 2 A subsidy must involve the actual or potential outlay of a public body's resources.
- 3 A subsidy must confer an advantage on a firm.
- 4 The subsidy must be selective in some meaningful respect.

All four elements must be present for a state act to be deemed a subsidy. What follows are comments on each element, some of which have implications for the types of policy intervention that fall within the *scope* of an inventory of subsidies.

The first element listed above implicates the state, broadly conceived. Actions by towns, cities, and other sub-national authorities are in scope, as are steps taken by supranational bodies such as the European Commission

and the European Investment Bank. Actions by public agencies, even those independent of government departments, can also be in scope. The lines get blurred, however, when consideration turns to state-owned enterprises and to state-linked enterprises. Examples can be constructed where the latter two take actions which are and which are not subsidies. Arguably, much depends on the degree of state influence over the subsidy-granting party, and experience suggests that that influence can manifest itself in many ways.¹⁹

Note the first element also covers situations where a public body promises to act in some future contingency. For that reason, state-provided loan guarantees and crop insurance meet this criterion for a subsidy. Matters are less clear, however, when any promised action is implicit. Governments running deposit insurance schemes for bank account holders may not promise to bail out banks (in addition to any account holders), but banks act as if the state is expected to do so. Banks may have sound reasons to expect such bailouts, based on state behaviour during prior economic crises.²⁰

The second element requires the deployment of state resources but does not specify the form of those resources. This is an important feature of the definition of a subsidy. This approach avoids the obvious danger of any form-specific definition of subsidies, namely, circumvention by substitution of a form of state resources deemed a subsidy with another form of state resources deemed otherwise.

When a state forgoes payment from a firm—perhaps because a tax break is granted or a transfer of land is not paid for—this policy intervention falls within scope. The flow of the resources in question, therefore, need not be from the state to the firm.

The case of currency devaluations is worth further comment. In this definition, these state acts are not

18 The following discussion was influenced by WTO (2006), Sykes (2010), and Verouden and Werner (2017).

19 Including ways that are difficult for third parties to observe.

20 Perhaps it is for this reason that some banking analysts, banking regulatory bodies, and central bankers refer to the “subsidy” conferred on deposit-taking institutions from deposit insurance.

subsidies as they do not involve transfers of state resources. Hence, under this approach, currency devaluations and depreciations fall outside the scope of an inventory of subsidies.²¹

Some policy interventions that affect business do not involve the transfer of resources from the state. A curb on exports, a production ceiling imposed by the state, and a regulatory requirement that states a firm must meet certain standards (and is not compensated by the state for doing so) are all state acts that do not involve the transfer of resources from the state and, thus, are not subsidies per this definition.

The third element requires that an economic or commercial advantage not available in the ordinary course of business be conferred on a firm (taken to be an organisation engaged in commercial activity).²² Note that the firm enjoying the commercial benefit need not be the direct recipient of the subsidy. A subsidy paid to buyers may exactly offset their additional expenditures on the good the state favours, so there is no financial benefit to the recipient. However, the suppliers of the favoured goods enjoy an increase in demand for their product.

Establishing, as in the last example, a change in demand between adjacent steps in a value chain seems clear enough. But how should one treat knock-on effects from a subsidy further up and down value chains? After how many steps along the chain are the effects of subsidy *de minimis*, if at all?²³

Moreover, untied development assistance that involves a transfer of resources from one government to another government is out of scope, and it is far from clear how

to identify the beneficiary firm in the aid-receiving nation, if any.²⁴

The fourth element excludes transfers of state resources that treat every actual or potential firm beneficiary in an identical way in manner, in law, and in fact.²⁵ A subsidy can be selective in many respects.²⁶ The state can seek to transfer resources to firms that operate in a certain geographic region, to firms of a particular size, to firms with owners from certain society groups or other distinct ownership or governance characteristics, to firms in certain lines of business, to firms selling into or buying from certain markets, or even to a single firm.²⁷ Other forms of state favouritism are possible as well.²⁸

While the examples in the previous paragraph are clear, reality can introduce perhaps unanticipated complications. A subsidy scheme that benefited 1% of a nation's firms appears on the face of it to be selective. But so does a subsidy scheme that benefits 99%. But at what point does a scheme that is available to almost every firm approximate a non-selective subsidy?²⁹

The example in the last paragraph, and the earlier references to cases where classification of a state act as a subsidy might be ambiguous, has the following implication: while a principles-based definition of a subsidy has advantages over a form-based one, that former is not without its drawbacks. It beggars belief that a principles-based approach could unquestionably classify every conceivable current and future form of state intervention. That being so, the absence of the perfect should not lead to a rejection of the very good.

21 Currency devaluations and depreciations may fail other of the four requirements as well. Economic theory provides another reason for not classifying currency devaluations and depreciations solely as subsidies. It has been shown that a currency devaluation of a given percentage is equivalent to the combined effect of imposing both an export subsidy and an import tariff of the same magnitude.

22 Damien Neven, one of the reviewers of the first draft of this report, observed that it is logically possible for a subsidy to confer an advantage or benefit on a recipient firm without imposing a negative external effect on rival firms. For the purposes of assembling an inventory of subsidies, it is too resource intensive to conduct a subsidy-by-subsidy assessment of whether there is a harmful external effect. However, if a data-driven objective filter were to become available, then this could be used to screen out those subsidies which no adverse external effect exists. In the context of a trade dispute between governments, the existence of this logical possibility might, in principle, provide grounds for a defense by the government that awarded the subsidy.

23 An economic analysis of this matter would surely involve contrasting the with-subsidy scenario with a no-subsidy counterfactual. For the purposes of assembling an inventory of corporate subsidies, however, perhaps an implication of the discussion in the main text is to tag subsidies in sectors that are known to have elaborate supply chains.

24 Tied aid is a different matter. Much depends on the nature of the tie in determining whether the aid is a subsidy or involves a sourcing requirement from the donor nation.

25 The delivery of national infrastructure services on the same terms to all firms could be an example of the use of state resources that is beneficial to firms that is not specific. Transfers of state resources associated with the construction of such infrastructure may be a very different matter.

26 The notion of selectivity developed here is strict. Gary Horlick, a reviewer of the first draft of this report, observed that if all of the producers of a particular good in a nation are located in a specific geographic region, then a subsidy scheme where eligibility for state support depends on locating production facilities in that region is, in effect, not selective. This raises the question of whether a more elaborate definition of selectivity could be developed in a manner that can be implemented at low cost.

27 On these grounds, the state acting to exempt a single firm from paying import duties meets the specificity requirement.

28 In comments on the first draft of this report, Patrick Low noticed a possible tension between selectivity and a national treatment requirement. Suppose a government opens a competition for a single grant. The competition is open to all foreign as well as domestic firms. Suppose, ultimately, the grant is awarded to a domestic firm. The award is selective but has national treatment been violated? There may have been *de facto* discrimination against foreign applicants for the grant but no *de jure* discrimination.

29 Sykes (2010) contains an example along these lines.

Implications of the four-part definition for the construction of an inventory on subsidies

Given this four-part definition of a subsidy, there are eight remarks to be made in this regard. First, the intent or policy objective of a public body plays no role in determining whether a policy intervention is a subsidy. This is advantageous, as true and stated intent can differ and the former may be unobservable. When assembling an inventory, it is best to avoid this quagmire.

Second, the type of economic activity is not specified. Thus, the definition of a subsidy is not confined to the transfer of resources to firms that produce goods. The definition can be applied to service sectors as well. Service sector subsidies should be part of any inventory.

Third, nothing in the four-part definition excludes subsidies that might affect investment decisions, corporate decisions to undertake research and development, and firm decisions to enter and to exit markets. An inventory could include these subsidies as well.

Fourth, nothing in the definition requires that the markets in which the beneficiary firm operates are confined to the borders of the subsidy-granting jurisdiction. Thus, state-provided incentives to export are not excluded. The affected market may lie outside the jurisdiction implementing the subsidy.

Fifth, nothing in the definition requires that the beneficiary firm is owned by nationals of the subsidising jurisdiction, nor that the beneficiary firm is located within that jurisdiction. State transfers of resources to foreign firms and to firms with operations abroad³⁰ are, therefore, within scope.

Sixth, the definition is silent on whether a subsidy refers to a single transfer of resources or to a public scheme that could involve multiple transfers of resources, potentially to different beneficiary firms in different locations and on different dates. If the goal is to assemble an inventory that documents subsidies over time and across geography, then collecting information on each transfer of state resources is preferable to documenting a single scheme.³¹ In addition, the implementation of a subsidy regime may involve the distinct decisions to remove or withdraw some state resources and other decisions to grant resources. Ideally, all of these decisions should be captured in an inventory.

Seventh, by examining in isolation individual transfers of state resources or a single scheme to do so, no account is taken of other policy interventions that may benefit or harm a beneficiary firm. Suppose for the sake of argument that it were possible to take account of the latter, essentially that a “net” subsidy assessment would be possible for each beneficiary firm. It may be the case that the subsidies received by a firm exactly offset other financial burdens imposed by the state. In which case, some contend, in what sense is the firm subsidised? And, if the beneficiary firm has no cost advantage on net, then what can a trading partner object to?³²

This clever argument has little practical importance. An immediate objection is how to accurately and comprehensively identify the relevant set of regulatory and other government interventions that must be considered in such a calculation. Furthermore, given the challenges faced by competition agencies and adjudicating bodies such as the WTO in quantifying the *gross* impact of a subsidy, expecting them to accurately gauge the *net* impact—which would take into account all manner of regulations and other services supplied by the state—is scarcely credible.

Overall, for the purpose³³ of collecting information to assemble a neutral inventory of subsidy schemes and awards, it is better to stick to a gross assessment of a subsidy and recognise it for what it is not: it is not an overall assessment of the impact of government policy on the competitive position of a company.

An eighth observation is that the four-part definition of a subsidy does not make reference to general economic conditions. Therefore, the application of this definition to *identify* subsidies should not change during economic crises or other societal emergencies, such as a pandemic.

Bringing in the international dimension

The four-part definition outlined above could be applied to a nation whose economy engaged in no international commerce with other nations. How can one bring in the international dimension? Fortunately, both the classic notion of discrimination in international trade as well as the EU’s state aid regime provide some guidance.

Article 107(1) of the Treaty on the Functioning of the European Union (TFEU) states that:

30 In principle, a government could offer a subsidy to the foreign subsidiary of a national firm. In recent years the Global Trade Alert team has documented a growing number of such subsidies.

31 This is not to say that collecting information on particular schemes is of no interest.

32 In principle, this argument can be reformulated in the presence of any non-cost advantages to a firm, such as revenue increases.

33 One of our reviewers, Gary Horlick, argued that in litigating actual cases, however, a net assessment of the impact of government policy on the competitive position of a firm may be a relevant consideration.

“Save as otherwise provided in the Treaties, any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, in so far as it affects trade between Member States, be incompatible with the internal market.”³⁴

This article requires that cross-border commerce between EU member states be affected for state aid to be deemed incompatible with the internal market. The requirement should be read in light of the preceding remark that the aid can not only distort but threaten to distort competition, thereby widening the circumstances under which cross-border trade is affected.

According to Verouden and Werner (2017), the conditions for a subsidy to have an effect on trade “are in most cases considered to be fulfilled if the measure is selective in terms of granting a commercial advantage”. Assessing whether the granting of aid confers a selective advantage is done by reference to a counterfactual scenario, namely, the market situation that arises in the absence of such aid.³⁵

Verouden and Werner (2017) argue that assessments of trade effects in case law reveal that they have been undertaken in “a rather broad manner”. It is not necessary to demonstrate that trade has been affected, only that it is liable to be affected. In this regard, Verouden and Werner note that state aid that strengthens a local firm in such a way as to deter the entry of a foreign firm would be deemed as affecting trade between the member states. Effects on cross-border investment, therefore, are within scope.

Moreover, they observe that “where State aid strengthens the position of a company as compared with other companies active in intra-Community trade, the latter must be regarded as affected by the aid”. The strengthening can take different forms: lower marginal costs, lower fixed costs, lower interest rates, better access to credit, etc. Importantly, this assessment is one that can be conducted before the state aid is implemented.

With respect to the scope of economic activity implicated, note that Article 107(1) does not confine itself to cross-border trade in goods. State financial support to firms in service sectors also falls within scope.

It is appropriate to note that Article 107(2) identifies three uses of state resources that shall be considered

compatible with the internal market, of which “aid to make good the damage caused by natural disasters or exceptional occurrences” is perhaps most germane to this report. Arguably, a pandemic is an exceptional occurrence.

Article 107(3) identifies four further uses of state resources that can be considered compatible with the internal market as well as a catch all provision: “such other categories of aid as may be specified by decision of the Council on a proposal from the Commission”. The latter opens the door for the creation of exceptions to the EU state aid regime, an option that the EU has availed itself of from time to time.

How should exceptions be treated when assembling an inventory of subsidies? If the purpose of the inventory is to reveal the totality of the subsidies awarded by a jurisdiction, then even though a government may regard a transfer of state resources to the private sector as falling outside the scope of its subsidy regime, the goal of comprehensive coverage requires inclusion of the transfer in the inventory. Moreover, a trading partner may not share the subsidising government’s priorities or the latter’s rationale for an exception to the subsidy regime, and so the former may, therefore, be interested in the transfer as well.

Inclusion of a particular subsidy in an inventory, even though it is exempted from the state aid regime of a jurisdiction, does not preclude either (a) adding a comment in the description of the subsidy or a tag in the inventory that indicates the exemption or (b) users sorting through the inventory and disregarding subsidies where legal exemptions apply.

The research principle of not throwing away information that is potentially relevant to analysts and other users also militates in favour of including information on state aid that is formally exempted from the state aid regime of a jurisdiction. The desire to create a neutral and trusted inventory requires that this “no exceptions” rule be applied even-handedly across jurisdictions.

In preparing our inventory of American, Chinese, and European Union subsidies, the Global Trade Alert team applied its seven tests for determining whether a state act should be included in its general database of policy intervention that implicates cross-border commerce (see Box 1).³⁶ Failure on any of these tests is grounds for rejecting a state act for inclusion in the Global Trade Alert database and therefore in our inventory of corporate subsidies.

34 Source: <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:12008E107>.

35 In situations where the state aid has yet to be granted, then the current market circumstances may reveal the baseline against which the impact of the aid can be assessed.

36 For further information on the manner in which information on state acts is processed by the Global Trade Alert team, see the GTA Handbook (Evenett & Fritz 2020b), available towards the bottom right-hand side of this URL: https://www.globaltradealert.org/data_extraction. For a longer account of the rationale of the methodology adopted by the Global Trade Alert, see the third and fourth sections of Evenett (2019).

Box 1: The seven filters applied by the Global Trade Alert team.

Only if a government measure passes the following seven tests will it be included in the Global Trade Alert database and also in the inventory of subsidies assembled for this report:

1. The state decision is *unilateral*. This is taken to mean that the decision is not part of the initial formation of a regional trade agreement, accession to the World Trade Organization, or any other reciprocal agreement involving another customs territory.
2. The state decision affects the *relative treatment* of some or all domestic commercial interests vis-à-vis their foreign rivals. For the purposes of assembling this inventory of subsidies, any transfer of resources that is selective is deemed to have altered the relative treatment of some commercial interests.
 - a. Measures that alter relative treatment in favour of domestic firms are often referred to as harmful to foreign commercial interests.
 - b. Measures that improve the relative treatment of foreign firms are often referred to as liberalising.³⁷
3. The state decision involves a *meaningful change* in public policy liable to influence international commerce. In the context of assembling information on subsidies this amounts to excluding certain *de minimis* subsidies³⁸:
 - a. Where there is evidence that the state transfer of resources involved is less than US\$10 million, such transfers are excluded.³⁹ This threshold⁴⁰ applies irrespective of the form of state transfer with the following exception.
 - b. Where the stated beneficiaries of public aid are small- and medium-sized beneficiaries, if the total value of a scheme resulting in such transfers is less than US\$100 million, then the scheme is excluded.^{41,42}
4. The state decision must involve *credible action*, taken here to mean that there is a very high likelihood that the decision will be implemented. In the context of subsidies, the credible action standard can be met if a scheme is established, even if it does ultimately award subsidies (perhaps because the scheme is an insurance scheme that transfers state resources when certain, specified circumstances occur).
 - a. On these grounds, the Global Trade Alert team has a strong preference for documenting using official sources' statements of action with explicit implementation dates.
 - b. A state decision—including a subsidy—may be included in the Global Trade Alert database before it comes into force, in particular if the date the decision comes into force has been announced. Reports on state decisions are updated if, in fact, it does not come into effect. State decisions that do not come into effect do not contribute towards the counts of subsidies or trade coverage estimates presented in this report.
5. The state decision does not refer to an *uncontested higher motive*. There are four grounds upon which the Global Trade Alert will exclude a state decision here, none of which are relevant for assembling an inventory of subsidies.⁴³
6. The state decision follows the *one announcement, one entry* rule. A state decision or act may involve multiple policy interventions. Each of the latter should be reported separately under the same state act.⁴⁴
7. The state decision must be announced within the *Global Trade Alert reporting period*. This amounts to the requirement that the meaningful change in policy must have been announced on or after 1 November 2008. This has the following implications for assembling an inventory of subsidies:
 - a. Our inventory is best thought of as tracking the changes in subsidies conferred by American, Chinese, and European public bodies since 1 November 2008.⁴⁵
 - b. For time-limited subsidy schemes that were implemented before 1 November 2008, then a state decision taken after 1 November 2008 to extend the scheme can be included.
 - c. For time-limited subsidy schemes that were implemented before 1 November 2008, then a state decision taken after 1 November 2008 to terminate a subsidy early can be included.

37 The Global Trade Alert also colour codes entries in its database of policy intervention. Liberalising measures in the sense mentioned here are always coded green. Almost every harmful measure is coded red. Only those harmful measures where there is some doubt about the quality of the supporting documentation are coded amber. Only one percent of the cases of harmful American, Chinese, and European subsidies assembled in our inventory were coded amber.

38 One risk of adopting a *de minimis* rule of this type is that governments that deliberately create a large number of subsidy schemes with small total transfers of resources may evade detection. One member of the GTA team involved in collecting subsidy information for this report mentioned that this concern applies more to the second of the *de minimis* rules outlined in point 3 of Box 1.

39 This assessment is made using exchange rates that prevail at the time of the relevant policy announcement.

40 The Global Trade Alert team records information on the total financial value associated with a subsidy scheme. Therefore, should users wish to apply a higher threshold then it is possible to filter the database accordingly.

41 This assessment is made using exchange rates that prevail at the time of the relevant policy announcement.

42 The higher *de minimis* limit here is justified on the grounds that the amount of money received by each beneficiary is likely to be very small if a US\$10 million limit had been set.

43 The four grounds are that the state decision is (a) a technical barrier to trade, (b) a sanitary or phytosanitary measure, (c) a sanction authorised by the United Nations' Security Council, and (d) pursuant to obligations under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

44 A state act may involve several policy interventions. The total number of state acts, therefore, is less than the total number of policy interventions recorded in the Global Trade Alert database. One reason for grouping policy interventions in this manner is that it allows users, should they wish, to interpret or assess the announced steps together.

45 As will be evident in the discussion in the next chapter, this feature of our inventory is particularly valuable given the argument made by some that only unanticipated subsidy changes are relevant when considering impairments to previous agreement improvements in market access.

As far as assessing state aid is concerned, the first four filters employed by the Global Trade Alert are particularly relevant. The first of the four characteristics of a subsidy outlined earlier is covered by the unilateral act requirement (see Box 1). The second characteristic is assessed under the credible action requirement. De minimis subsidies are excluded under the meaningful change requirement. The third and fourth characteristics are assessed as part of the Relative Treatment Test. The Global Trade Alert team checks that there are grounds for determining that the state aid confers some commercial benefit to a firm as well as altering the competitive conditions in a market that is internationally contestable or potentially internationally contestable.⁴⁶

To facilitate analysis, each of the subsidy policy interventions in the Global Trade Alert is assigned (or tagged) to one of the following categories:

- 1 Capital injection and equity stakes (including bailouts)
- 2 Export subsidy
- 3 Financial assistance in a foreign market
- 4 Financial grant
- 5 Import incentive
- 6 In-kind grant
- 7 Interest payment subsidy
- 8 Loan guarantee
- 9 Other export incentive
- 10 Price stabilisation measure
- 11 Production subsidy
- 12 State aid, not elsewhere specified
- 13 State loan
- 14 Tax-based export incentive
- 15 Tax or social insurance relief
- 16 State provided or supported trade finance

So as to align with the United Nations MAST system for classifying non-tariff measures, we note that items 1, 3–8, 10–13, and 15 on the above list relate largely to domestic subsidies and are covered by Chapter L of the MAST system. Items 2, 9, 14 and 16 on the above list relate to export-related incentives and fall under Chapter P.

The fourth type of policy intervention in the list above, namely “financial assistance in a foreign market,” applies to non-export-related state assistance and falls under chapter L, even though the implementation of

such subsidies is likely to influence market conditions outside of the implementing jurisdiction. For this reason, in the empirical chapters that follow it is appropriate to distinguish between Chapter L subsidies that affect markets within and outside the implementing jurisdiction. The former are referred to as “inward” subsidies and the latter as “outward subsidies”. By construction, all Chapter P subsidies are outward.

The sixteen types of subsidy intervention listed above map fairly straightforwardly into four of the five types of subsidy transfer mechanisms that the OECD has identified in a 2019 study of the semiconductor sector (OECD 2019). Specifically, a mapping could be developed between our list and the following four types of subsidy: “direct transfer of funds”, “tax revenue forgone”, “other government revenue forgone”, and “transfer risk to government”. The “induced transfer” group of subsidies includes commercial advantages conveyed by the actions of public bodies, including state-owned enterprises, to other firms. Those actions include regulatory forbearance, provision of below-cost or below market price inputs, and below market interest rates offered by state-owned banks, among other state acts. Of the latter type, there may be an overlap with our subsidy categories “interest rate subsidy”, “state loan”, and “state aid, not elsewhere specified”.⁴⁷

Again, in line with the existing practice of the Global Trade Alert, the products and sectors directly implicated by a subsidy are identified where evidence permits. So as to permit cross-country comparability, the six-digit United Nations Harmonized System of product codes are used for this purpose.⁴⁸ We use the three-digit codes of version 2.1 of the United Nations CPC system for sectoral classification to tag, where evidence permits, subsidies to economic activities.⁴⁹ In this manner, we can assess the incidence of subsidies at the product- and sectoral-level.

In sum, the longstanding seven-step procedure used by the Global Trade Alert team to assess whether a state intervention should be included in its database can be applied to assess potential subsidy measures. Each announced policy intervention is assessed individually. The consistent application of this seven-step procedure over time and across customs territories results in an inventory of state acts and commitments to state action deemed to be subsidies.⁵⁰

46 The latter requirement in principle opens the door for “extent of the market” considerations to enter.

47 We thank Per Altenberg for encouraging us to explore whether a mapping between our list of subsidy types and the five “transfer mechanisms” identified in OECD (2019).

48 Some jurisdictions, such as the European Union and the United States, employ more disaggregated or fine-grained product coding systems. Unfortunately, the codes (a number) assigned to each product are not necessarily the same, complicating cross-country comparisons.

49 Where a subsidy affects almost every sector of the economy then it is tagged “horizontal” in the inventory. Note that a subsidy deemed horizontal on these grounds may still be targeted in some other respect (such as only benefiting small- and medium-sized enterprises).

50 In this regard, it is worth noting that each proposed entry in the Global Trade Alert database is reviewed by a senior member of the team (who was not involved in drafting the entry in the first place) before publication. Extensive efforts are taken to train the Global Trade Alert team members in the seven-step procedure. Records are kept of the specific challenges associated with documenting and assessing many different types of policy intervention.

CHAPTER 4

WHICH CORPORATE SUBSIDIES MATTER FOR THE WORLD TRADING SYSTEM?

Fundamentally, the complex web of commercial interdependencies that has developed between national economies determine which subsidies matter for trade policy deliberation. A review of the literature on the nexus between subsidies and the world trading system reveals there are three distinct but related ways of framing an answer to the question posed in the title of this chapter. Each has different implications for both policy deliberation on subsidies and, were they to be taken forward as the basis for evidence collection on subsidies, for assembling an inventory of corporate subsidies relevant to the world trading system. The purpose of this chapter is to outline and contrast these three perspectives.

A logic is required to guide potential policy deliberation between governments on corporate subsidies, market access, and the world trading system. Each logic described in this chapter has been developed, with varying degrees of technical sophistication, in the academic literature.⁵¹ As will become evident, this is both their strength and weakness. Strength because the key assumptions and lines of causation are often spelt out. Weakness in that the application of these arguments to contemporary policymaking and circumstances may not be as compelling as the authors of these perspectives might like to think.

It is conceivable that the subsidies that matter for the world trading system are those that create benefits for trading partners. However, much of the discussion about the consequences of autonomous national subsidy policies focuses on their capacity to damage the commercial interests of other nations. Consequently, analysts and officials are well advised to insist on a well-specified and evidenced *theory of harm* that sheds light

on the *mechanism* by which one government's subsidy decisions adversely affect a trading partner or partners. In what follows, we associate with each of the three ways of framing this matter potential theories of harm.

Focus on cross-border spillovers and theories of harm is useful, because international cooperation on corporate subsidies, including, but not limited to, new multilateral trade rules on subsidies and on the actions that governments can take against foreign subsidies ought to remedy, partially at least, the adverse consequences of unilateral subsidy policy choices. This point is more important that it may initially appear. The motivation for international cooperation on subsidies is not to seek a blanket, outright prohibition of the resort to subsidies by governments. It is not the next chapter in a neoliberal crusade against the nation state. Indeed, careful consideration of the theories of harm may reveal there are a range of subsidies that pose little or no harm to trading partners' interests—and even if some do, it is for governments to decide whether there should be an international norm allowing such subsidies (perhaps on the grounds that some other purpose is served by them).

Subsidies erode previously negotiated market access

One reason why domestic subsidy decisions attract the attention of foreign trade policy officials is because the former can erode the market access benefits negotiated in binding trade deals by the latter. On this view, subsidies only matter to the extent that access to foreign markets has been determined by prior commercial diplomacy.

51 Since the audience for this report is not confined to the economic theorists of international trade, the exposition in this chapter is informal in nature. As will become evident, we do not confine ourselves to those perspectives on the nexus between subsidies and the world trading system for which there are full-fledged microeconomic theoretic foundations. Such foundations have only been provided for a subset of the subsidy types available to governments, for a subset of the cross-border links relevant to contemporary commerce, and for a subset of the objectives that governments may have. In short, economic theory has a long way to go before it alone provides an exhaustive foundation for practical policy deliberation on subsidies in the world trading system.

The argument proceeds as follows.⁵² Given that trade agreements inevitably involve the redistribution of income internally,⁵³ governments expend capital negotiating and legislating them. To the extent that a nation's exporters are an integral part of the constituency supporting a trade agreement, then it is not in the interests of a government to see the benefits to those exporters eroded after the agreement comes into effect by the introduction of new foreign subsidies. Moreover, it is not in the interest of such a government to allow the expectation of subsidy-induced erosion of market access benefits to gain hold.

To the extent that import-competing commercial interests oppose a trade agreement, that opposition is likely to be even greater if local firms expect that foreign subsidies will further intensify competition in their home market once the trade agreement comes into effect. On this view, blunting the opposition of import-competing firms may require including provisions in a trade agreement to restrict foreign subsidies that affect conditions of competition in home markets. In addition, provisions permitting action imported goods benefiting from foreign subsidies could be included.

These two arguments point to three possible theories of harm. First, after a trade deal comes into effect, a trading partner may award subsidies to import-competing local firms that strengthen their competitive position against commercial rivals located in other signatories to the trade agreement. The latter lose export sales, export sales opportunities, and possibly market share.

Second, after a trade deal comes into effect, should one party to that deal offer financial incentives to export goods covered by the agreement, then the import-competing firms in the other parties that are in the same lines of business may lose more domestic sales and market share than they anticipated.

Third, suppose a trade deal comes into effect between two nations. Bilateral market access improves, potentially at the expense of exports from a third nation. If the third nation decides to subsidise their exporters, then conditions of competition in the markets of the nations that signed the trade deal may move in a way that the signatories' exporters do not gain as much as they thought they would.

At least as far as the first two theories of harm are concerned, Sykes (2010, 2015) has argued that the appropriate remedy is to invoke the nullification and impairment provisions of a trade agreement, assuming

they exist. On this view, preserving negotiated market access does not require distinct subsidy-related provisions in a trade agreement.

Bagwell and Staiger (2006) took the argument further. Suppose that a subsidy is the optimal policy response to a pressing societal problem (such as encouraging the use of a particular form of clean energy technology). Under these circumstances, the consequences of including in a trade agreement a general prohibition on subsidies would be to erode societal support for that deal. This would seem to provide a case against introducing subsidy rules. In fact, as some have noted, if such "good" subsidies can be identified, then this calls for differentiated treatment of subsidies, as opposed to no subsidy rules.

In the spirit of the earlier arguments, what happens if a "good" subsidy is introduced after a trade deal was signed? Or, put differently, consider the case when a subsidy intervention that was not anticipated at the time the trade deal was signed is introduced afterwards, perhaps many years afterwards. The argument that such "good" subsidies be allowed essentially calls on the trading partners that are signatories to the deal to acquiesce to diminished market access. The governments of those trading partners may not accept this outcome, in particular if they do not share the objective being pursued by the government that implemented the subsidy in the first place. One potential solution here is that the implementing government offers some market access compensation to the harmed signatories to the trade deal.

A variant on the above arguments relates not to trade or investment agreements but on the promises that foreign investors *believe* were made to them. Suppose a government seeking to attract foreign direct investment offers generous terms to foreign firms. Suppose subsequently that the same government launches a significant industrial policy push that involves supporting local firms with subsidies. The competitive position of the latter will be strengthened at the expense of the local subsidiaries of the foreign firms. If enough foreign firms conclude that their access to the local market has been impaired, then they may raise concerns about the host government's industrial policy and subsidies with their home governments. Public disagreement between governments may follow. Consequently, arguments linking subsidies and market access need not be confined to cross-border trade in goods.

52 Although this argument is developed in terms of trade in goods, variants can be constructed for certain provisions in trade agreements covering trade in services and for bilateral investment treaties.

53 Sensibly designed binding trade agreements should create income too.

Copycat behaviour that leads to subsidy races or wars

A second way of framing the matter makes no reference to trade agreements or to market access commitments (real or imagined). Instead, the focus is on the factors that trump domestic policymaking on subsidies in practice. As such, the associated argument—often referred to as the commitment rationale for binding international trade obligations⁵⁴—is grounded in the political economy theory of policy formation.⁵⁵

Suppose that there is no constitutional or other impediment to a government awarding subsidies. Furthermore, suppose that in a given sector, despite any misgivings it may have a government cannot resist corporate (and possibly other societal) pressure to award subsidies when *either* of the following circumstances come to pass:

- domestic producers in the sector in question are facing dire commercial straits
- a foreign government awards significant subsidies to their local firms in that sector

In the absence of a credible commitment to eschew *both* initiating subsidies and retaliation, whenever a sector in a country falls upon hard times then it will trigger subsidies from the government of that country. Furthermore, other governments will engage in “copycat” behaviour and offer subsidies to their producers in the sector in question (Hufbauer and Erb 1984). This may give the appearance of a subsidy race within a sector, much like one domino toppling then causing other dominoes to fall.

On the face of it, this argument may be more plausible if the initiating government that awards the first subsidy oversees an economy that accounts for a significant share of total global sales of the products in question. The outcome is that subsidies are awarded in a given sector by numerous jurisdictions, outlays that each government would prefer not to make. Depending on how the subsidies are structured, lower profit margins or excess capacity amongst other outcomes can result.

A variant on this argument concerns fiscal incentives to export. Possibly following mercantilist logic, many governments appear to privilege exports over imports. Indeed, some countries have pursued export-led growth or, when facing economic downturns, seek to generate an export-led recovery. Such governments find it difficult to resist requests from exporters for financial incentives with a narrative that links such largesse to additional

foreign sales. Non-subsidising governments come under pressure from their exporters to respond in kind, lest the latter lose overseas sales, market share, and profits. Under these circumstances, multiple governments may find it impossible to unilaterally commit not to subsidise exports (Brander and Spencer 1985).

The double commitment problem outlined here could provide one building block in the argument for an inter-governmental accord to ban subsidies and to develop dispute mechanisms that shift the domestic policy calculus against awarding subsidies in the first place. If the double commitment problem cannot be dispensed with entirely, then governments may still find it in their interests to limit the duration of subsidies and institute some process for phasing them out.

A final observation is that this argument only applies in sectors where the double commitment problem applies in enough jurisdictions where copycat behaviour would implicate a sizeable share of global sectoral production and trade. Otherwise, the double commitment problem accounts, at best, for localised bilateral or regional trade tensions over subsidies.

Subsidies create cross-border spillovers that harm trading partners

The third approach focuses on the cross-border spillovers created by the award of subsidies (a recent statement of this view can be found in Hoekman and Nelson 2020). Since there are many different types of subsidies that can affect outcomes in factor as well as product markets and in markets at home and abroad, then it should come as no surprise that the attendant cross-border spillovers can take many forms. Central to the existence of a spillover is that market outcomes are affected at the time the subsidy is implemented or are expected to alter in the future.

The next building block in the argument is whether a foreign government “cares” about the cross-border spillover. Crucially, what matters here are the preferences or objectives of a government. As Hoekman and Nelson (2020) point out, there are at least five ways by which a subsidy by an initiating government can attract the attention of the government of a trading partner. We paraphrase them as follows:

- 1 The subsidy threatens the trading partner’s current or future potential standard of living.⁵⁶
- 2 The subsidy shifts the distribution of income between societal groups within the trading partner.

54 Formal expositions of this theory as it relates to tariff formation can be found in Maggi and Rodriguez-Clare (1998, 2007).

55 This is in contrast to deriving the implications for policy choice of a government adopting an economic welfare maximising perspective.

56 This statement may be too informal for some. Economists might prefer to frame this in terms of the trading partner’s aggregate welfare.

- 3 The subsidy alters the domestic political clout of certain constituencies within the trading partner.
- 4 The subsidy affects the distribution of income between the initiating jurisdiction and affected trading partners.
- 5 The subsidy degrades the relative international influence or power of the trading partner, perhaps because it affects its technological, military, or other primacy.

To be clear, some of these spillovers are commercial, some are more aggregate economic in nature, others relate to geo-political or geo-economic position, and yet others relate to domestic political dynamics. Under these circumstances, a wide range of theories of harm are possible. Moreover, the relevance of any one theory of harm is likely to be context-specific.

That so many different types of spillover are possible implies that the true concerns of governments about a particular trading partner's subsidies need not be aligned. This may have implications for the ease of mustering collective action and for the form it could take. Furthermore, when considering the merits of collective action, surely governments will consider if any adverse spillover can be blunted effectively by unilateral action (such as raising tariffs on imported goods produced by firms that have received subsidies or, in the case of foreign direct investment, by reviewing procedures for foreign corporate plans in this respect).

In sum, while harmful cross-border spillovers may account in part for international discord over subsidies, without further specificity it is unclear what conclusions can be drawn about the appropriate or likely collective response.

Implications for differentiating among subsidies: Good subsidies—good for whom?

Many assessments of subsidies and global commerce start, as we did earlier in this report, from the position that there may be circumstances where the best solution to a societal problem for a national government is to implement some type of subsidy intervention. What are the implications of the above perspectives for this position?

Surely one implication is that what may be an optimal subsidy to one government need not be seen that way by

other governments.⁵⁷ One government's optimal subsidy may still erode the previously agreed market access of another. The spillover perspective opens the door to the possibility that one government's assessment that a subsidy is optimal ("good") is not viewed that way by a rival government. Indeed, once one appreciates that the spillovers created by a subsidy can be viewed by trading partners in five different ways, then the notion that a subsidy is good for the implementing nation loses much of its force.

But what of solutions? As noted earlier, from the perspective of preserving market access, one potential option is that a government determined to implement a subsidy should offer compensation of some form to harmed trading partners. Likewise, from the spillover perspective, the prospect of bundling the objectionable subsidy intervention with another action that benefits trading partners has, on the face of it, some logical appeal. However, compensation or bundling of any form would almost certainly need to be reconciled with the Most Favoured Nation requirement, and this may, from the perspective of the initiating government, be too costly.

Another line of argument concerns the practical relevance of the "good subsidy". Demonstrating as a theoretical matter that a subsidy is optimal from the perspective of the implementing government does not give a "pass" to a subsidy proposal made by a government that claims it is the best way to solve a particular societal problem. We must not make the mistake of assuming, because a precise theoretical case can be constructed that a certain subsidy or class of subsidies are unobjectionable under certain circumstances, that the preconditions for such a conclusion are met for the government subsidy schemes that exist in practice. This point may seem elementary but seems have been lost in some writing.

As noted in the last chapter, subsidies take many forms, and they may generate different levels of concern among trading partners. This raises the possibility that, for a given societal problem, neutral parties—such as technocratic experts at international organisations—develop guidelines for what is the optimal subsidy instrument or what subsidy instruments are close to optimal but encroach the least on market access.

For example, if the goal is to encourage adoption of a particular clean energy technology, then a subsidy to buyers⁵⁸ that is deliberately designed not to differentiate across producers according to nationality may be a

57 However, if governments share the view that a certain type of policy intervention is the optimal one then the second aspect of the double commitment problem—being unable to resist emulating another government's subsidy—may facilitate the spread of the "good" subsidy. So not every factor identified earlier in this chapter stands in the way of the uncontroversial adoption of beneficial subsidies.

58 We deliberately refer to a buyer subsidy here rather than a consumption subsidy, the latter being often associated with purchases by individuals. For some societal problems, governments may wish to influence the decisions of corporate buyers.

preferable alternative to subsidising specific producers.⁵⁹ More generally, technocratic analysis could identify under what circumstances specific subsidies to producers are really the optimal approach, the idea being that from a trade policy perspective it is the latter type of subsidies that are likely to induce discord among governments.

In sum, before getting tied up in knots over how to reconcile good trade relations in an interdependent world with “good subsidies”, it would be worth establishing for the most pressing common societal problems whether specific corporate subsidies are absolutely necessary and which, if any, forms of such subsidies have the least adverse implications for trading partners.

Implications for constructing an inventory of subsidies

Suppose, for the purpose of argument, that one wanted to assemble an inventory of subsidies relevant to the world trading system based on each of these three perspectives. Would that be possible? What problems would be encountered? It turns out that, on reflection, translating each of these three perspectives into an inventory introduces significant complications. In turn, this calls into question the practical utility of each perspective—even if our conceptual understanding of the nexus between subsidies and the world trading system is advanced by each of them (which it is, in our view).

A strict market access perspective, for example, implies that the subsidies that matter are those that (a) were implemented after a trade deal came into force or were not anticipated at the time the trade deal was struck and (b) are in lines of business where the parties to a trade deal made market access commitments. Given that there are multilateral trade obligations (that largely came into effect in 1995) and 350 regional trade agreements in force, taking this approach seriously adds significantly to the burden of assembling an inventory.

As far as exploring the potential for greater multilateral cooperation on subsidies is concerned, surely there is the practical concern that the market access bargain struck at the end of the Uruguay Round may not be viewed as the

best lens to examine such matters at this time. Since the market access perspective is, by design, wedded to prior trade agreements, it is in part a hostage to history. Had the Doha Round been completed, which incorporated a new understanding between governments concerning expectations of market access, then the first perspective considered in this chapter would arguably have greater contemporary relevance.

To properly take account of the considerations raised by the double commitment perspective, one would have to identify, based on evidence, those sectors in each economy where the government is unable to resist demands for subsidies. Since the political and other factors likely to underpin the double commitment problem almost certainly change over time, then faithfully implementing this perspective adds to the information required.

Given the five different types of cross-border spillover identified in the last section, each of which reflects a government preference, then without reliable information on the latter it is difficult to identify which subsidies matter. Again, those preferences may be contingent on other factors and may change over time. All of this complicates assembling an inventory of subsidies that faithfully implements the cross-border spillover approach.

In light of these considerations, in our thinking about how best to construct a relevant inventory of corporate subsidies we returned to the opening remark in this chapter. Cross-border links between markets—interdependence or, if preferred, international market integration—are a necessary condition for all three of these perspectives to have any bite. Therefore, we concluded that the most promising approach would be to collect as much information as possible on the corporate subsidies awarded by China, the EU, and the USA, to identify which sectors and which products (where relevant) were implicated, and to use available data on cross-border commercial flows to identify which trading partners’ interests could be affected by the award of a subsidy by a government. Users of our inventory are free to apply whatever filters they believe follow from their preferred conceptual understanding of which corporate subsidies are relevant to the world trading system.

⁵⁹ Implicit in this approach is that the implementing government focus on tackling the societal challenge at hand (here the adoption of a new technology) and not seek secondary benefits to local firms. It is fashionable in some jurisdictions to argue that local supply chain development should be a payoff from subsidies deployed in (say) the green transition. Again, the question should be asked: What is the best way to promote supply chain development? Seeking knock-on benefits from subsidies that have a different purpose is unlikely to be answer to this latter question. In short, any proposal to try to kill two birds with one stone should, at a minimum, be subject to scrutiny.

CHAPTER 5

THE GLOBAL REACH OF THE CORPORATE SUBSIDIES OF CHINA, THE EU, AND THE USA

Our data collection effort resulted in documenting information on 18,137 corporate subsidy schemes and awards implemented since November 2008 by China, the EU, and the USA.⁶⁰ The purpose of this chapter is two-fold: to present summary statistics relating to this inventory of corporate subsidies and, more importantly, to provide evidence of the likely global reach of these subsidy interventions. Such evidence will advance the proposition that the corporate subsidies of the world's big trading powers have frequently affected the commercial interests of trading partners and now cover non-trivial shares of world goods trade.

Resort to subsidies: November 2008–October 2021

We distinguish between subsidies that directly affect conditions of competition in domestic markets from those implicating competitive outcomes in markets abroad⁶¹ and present summary statistics on each (see Tables 1 and 2, respectively). Since November 2008, China, the EU, and the USA have together been responsible for implementing 14,227 subsidies that affect domestic conditions of competition (so-called “inward” subsidies) and 3,910 subsidies that affect foreign markets (so-called “outward” subsidies).

With respect to subsidies affecting domestic conditions of competition, over 5,000 such subsidies were documented for both China and the EU. In contrast, a total of 3,501 subsidies of this type were documented for the USA. Irrespective of jurisdiction, over 98.7% of all such

subsidies benefited locally based commercial interests at the expense of some foreign rivals.⁶²

Over 90% of American and Chinese subsidies recorded benefited specific, often identified, firms—whereas the EU implemented more schemes that offered state largesse to multiple firms (and in some cases across more than one sector of economic activity). As to the level of government implementing subsidies, the EU stands out as having 64% of its subsidies awarded by supranational bodies (in particular by the European Investment Bank). Meanwhile, sub-national governments in the USA are responsible for a larger share of subsidies awarded than in the other two jurisdictions.

The three jurisdictions differ in the allocation of subsidies across the primary, secondary, and tertiary sectors of their economies.⁶³ As the final three columns of Table 1 reveal, China directed three-quarters of its subsidy intervention towards its manufacturing sectors. The EU and the USA spread their subsidies more evenly across agriculture, manufacturing, and the service sectors. Over 35% of American subsidies awarded since November 2008 that affect conditions of competition within its borders implicated its service sectors. Overall, 26% of all corporate subsidies recorded in these three jurisdictions affected domestic conditions of competition in their service sectors.

With respect to state incentives offered to exporters and to firms investing or acquiring corporate assets abroad, Table 2 reveals that the USA was responsible for 2,641 of them and China for just 62 subsidy interventions.⁶⁴

60 Of that total, only 32 subsidy interventions were documented using non-official sources or from sources where firms were not compelled by state law to report information.

61 Therefore, we identify for each subsidy scheme or award the market which is directly affected. To keep matters manageable we do not consider whether a subsidy affecting a domestic market also indirectly creates a competitive advantage in foreign markets (by dint, for example, of falling incremental production costs). Readers convinced that such multi-market effects are critical have another reason to regard the trade coverage estimates reported in this chapter as underestimates of the true state of affairs.

62 The statistics in this and the following two paragraphs were extracted from Table 1. These statistics are based on counts of policy intervention.

63 Only where the affected sector could be credibly identified was a subsidy tagged accordingly.

64 The statistics in this and the following three paragraphs were extracted from Table 2. These statistics are based on counts of policy intervention.

TABLE 1

Summary statistics on subsidy awards and subsidy policy changes implicating import-competing firms

Implementing jurisdiction	Number of implemented subsidy awards and subsidy policy changes	Percentage of harmful subsidy awards and subsidy policy changes	Percentage of firm-specific subsidy changes	Percentage of horizontal subsidy changes	Percentage of national subsidy changes	Percentage of supranational subsidy changes	Percentage of subnational subsidy changes	Percentage of subsidy changes affecting agriculture	Percentage of subsidy changes affecting manufacturing	Percentage of subsidy changes affecting services
China	5446	99.23	95.01	0.81	98.51	0.00	1.49	15.20	76.46	21.52
EU28	5280	97.78	37.37	29.81	33.88	64.53	1.59	14.09	44.75	24.02
USA	3501	99.60	91.09	0.29	85.58	0.00	14.42	13.51	51.61	37.59
Total	14227	98.78	72.65	11.44	71.34	23.95	4.71	14.37	58.58	26.40

Note: A harmful subsidy award or scheme is taken to be one that favours a domestic commercial interest or interests over that of rivals based abroad and involves either the introduction of a subsidy or more generous subsidies. Such subsidies impair the ability of foreign rivals to compete with the beneficiary or beneficiaries of the subsidy.

TABLE 2

Summary statistics on subsidy awards and subsidy policy changes implicating the overseas commercial activities of firms

Implementing jurisdiction	Number of implemented subsidy awards and subsidy policy changes	Percentage of harmful subsidy awards and subsidy policy changes	Percentage of firm-specific subsidy changes	Percentage of horizontal subsidy changes	Percentage of national subsidy changes subsidy	Percentage of supranational subsidy changes	Percentage of subnational subsidy changes	Percentage of subsidy changes affecting agriculture	Percentage of subsidy changes affecting manufacturing	Percentage of subsidy changes affecting services
China	62	96.77	20.97	8.06	95.16	0.00	4.84	20.97	45.16	40.32
EU28	1387	99.06	94.45	3.17	97.19	2.81	0.00	1.44	84.21	29.99
USA	2461	99.92	99.35	19.67	99.84	0.00	0.16	11.30	58.43	14.91
Total	3910	99.57	96.37	13.63	98.82	1.00	0.18	7.95	67.37	20.66

Note: A harmful subsidy award or scheme is taken to be one that favours a domestic commercial interest or interests over that of rivals based abroad and involves either the introduction of a subsidy or more generous subsidies. Such subsidies impair the ability of foreign rivals to compete with the beneficiary or beneficiaries of the subsidy.

Before drawing conclusions, recall that this refers only the number of such interventions—as will become clear later in this chapter, the evidence on the quantum of goods trade affected will paint a different picture.

Almost all “outward” subsidies favoured a national commercial interest over some foreign rivals. Less than 0.5% of the 3,884 recorded subsidies affecting third markets involved the reduction or scrapping of state largesse. Almost all of this class of subsidy were awarded by national governments (which in the context of the EU means the member states as opposed to supranational institutions) but 4.8% of Chinese “outward” subsidies were awarded by sub-national governments.

Less than 21% of Chinese support for commercial operations abroad named specific firms: a further indication that the Chinese approach is largely scheme-based initiatives open to potentially many firms. By contrast, over 80% of American and European outward subsidies name specific firms, often, but not always, involving some form of trade finance (itself an evolving category of state largesse).

Where it was possible to identify the sector beneficiaries operated in, the evidence suggests that American and European support for outward commercial activity was concentrated in the manufacturing sector. A number of Chinese incentives relate to outward service sector commercial activity.

Sectors experiencing subsidy intervention most often

Table 3 identifies the 15 economic sectors that saw the most American, Chinese, and European subsidies awarded since November 2008.⁶⁵ Twelve of these sectors witnessed over 1,000 different types of government subventions. All saw more than 931 subsidies awarded. In every one of these sectors, over 88% of the subsidies favoured local commercial interests. Manufacturing dominates the list of the top 15 sectors.

The mix between subsidies affecting domestic versus foreign markets varies across these 15 sectors. The transport equipment and special-purpose machinery sectors stand out for their low fraction of subsidies affecting competition in markets at home: less than two-thirds of subsidies in these sectors directly implicate domestic markets. In the case of every other sector, the fraction is greater than seven-tenths. In the case of office

equipment and computers less than 5% of recorded subsidy support by China, the EU and the USA related to exports and acquisitions of overseas foreign assets.

To gauge the share of sectoral goods trade affected by these subsidies before the COVID-19 pandemic, we report, in the final four columns of Table 3, estimates⁶⁶ of the share of global sectoral trade that were in markets implicated by the subsidies implemented by China, the EU, and the USA still in force in 2019. Given that some of the subsidies implicate foreign markets, the computed shares may exceed the total size of the domestic markets of these three jurisdictions.

The shares of global sectoral trade covered varies considerably across the 15 sectors listed in Table 3, ranging from 46% (for basic metals) to over 83% (for radio, telecommunications, and communication equipment sector). Such was the frequent resort to subsidisation in the electrical energy and transport equipment sectors that many trade routes were affected by ten or more subsidies that were in effect in 2019.

Number of spillovers created by American, Chinese, and European subsidies in effect before the pandemic

Trading partners can be affected by American, Chinese, and European subsidies in three ways:

- The former’s exporters are harmed when these three jurisdictions subsidise import-competing firms.
- The former’s exporters to third markets are harmed when exporters from these three jurisdictions receive export incentives.
- The former’s buyers at home benefit when these three large trading powers offer export incentives.

To identify the harmful and beneficial spillovers created by the American, Chinese, and European subsidy interventions in effect during 2019, using available goods⁶⁷ trade data for that year, we identified *for each product* covered by a given subsidy the identities of all of the trading partners harmed and all of the importing nations where buyers benefited. We repeated this exercise for every subsidy awarded by China, the EU, and the USA that was in effect in 2019 (so our calculations were not affected by the onset of the COVID-19 pandemic.)

We can then sum up the number of positive and negative spillovers in goods trade experienced by each trading

65 The statistics in this and the following three paragraphs were extracted from Table 3. The statistics presented in columns 3–7 of that table are based on counts of policy intervention. The statistics presented in the final four columns of Table 3 relate to sectoral trade coverage estimates.

66 Based on the six-digit HS product classification.

67 To the extent that subsidies to service sector firms create negative cross-border spillovers for trading partners, then the totals presented below understate the true scale of the potential harm done to commercial interests.

TABLE 3

The 15 sectors most often implicated by subsidy policy changes and awards in China, the European Union, and the United States

Affected sector code	Affected sector name	Number of subsidy interventions recorded in the inventory	Number of subsidies to import-competing firms	Percentage of all subsidies that were awarded to import competing firms	Number of harmful subsidies	Percentage of harmful subsidies	Percentage of sectoral trade covered by subsidies	Percentage of sectoral trade covered by 1-9 harmful subsidies	Percentage of sectoral trade covered by 10-24 harmful subsidies	Percentage of sectoral trade covered by 25 or more harmful subsidies
49	Transport equipment	2425	1490	61.44	2414	99.55	66.99	36.90	16.31	13.79
44	Special-purpose machinery	1863	1173	62.96	1852	99.41	68.54	65.78	1.64	1.12
17	Electricity, steam & gas	1562	1464	93.73	1556	99.62	72.28	11.67	11.91	48.69
46	Electrical machinery & apparatus	1502	1225	81.56	1493	99.40	78.36	73.64	3.28	1.44
43	General-purpose machinery	1486	1009	67.90	1480	99.60	78.28	77.85	0.31	0.12
34	Basic chemicals	1439	1234	85.75	1431	99.44	58.66	58.57	0.09	0.00
35	Pharmaceuticals & toiletries, man-made fibres & paint	1424	1265	88.83	1421	99.79	70.09	65.20	4.51	0.39
01	Agriculture & horticulture products	1262	1039	82.33	1144	90.65	59.62	41.97	13.14	4.50
41	Basic metals	1179	1114	94.49	1171	99.32	46.53	44.92	1.59	0.02
45	Office, accounting & computing machinery	1140	1106	97.02	1136	99.65	61.64	56.60	2.26	2.78
47	Radio, television & communication equipment & apparatus	1134	1011	89.15	1132	99.82	83.46	73.86	6.74	2.86
23	Bakery, grain mill & starch products	1001	740	73.93	994	99.30	72.92	53.69	12.92	6.31
42	Fabricated metal products, except machinery & equipment	973	810	83.25	968	99.49	65.45	64.95	0.00	0.50
48	Medical appliances, precision & optical instruments, watches & clocks	937	831	88.69	926	98.83	75.78	75.30	0.24	0.24
21	Meat, fish, fruits, vegetables, oils & fats	931	706	75.83	827	88.83	62.41	42.32	14.10	5.99

Note: A harmful subsidy award or scheme is taken to be one that favours a domestic commercial interest or interests over that of rivals based abroad and involves either the introduction of a subsidy or more generous subsidies. Such subsidies impair the ability of foreign rivals to compete with the beneficiary or beneficiaries of the subsidy.

Source: Global Trade Alert.

nation. Consequently, if, for example, South Korea exports a product to China and China has awarded 12 subsidies to local firms that manufacture that product, then this counts as 12 potential hits to South Korean exports of that good. The reason for adding up the spillovers at the product level is that individual subsidy awards and schemes differ markedly in terms of the number of products they cover, and this should be taken into account.

We start with the subsidies that China, the EU, and the USA gave to home firms selling into domestic markets in 2019. This type of subsidy can reduce the access of trading partners to these three jurisdictions' markets. Figure 6 shows the total number of times each nation's products faced subsidy awards to import-competing firms in one of these three trading powers (a form of negative spillover). As a result of exporting so many different products within the EU, to China, and to the USA, following the method above we calculate that Germany suffered 56,078 hits to its export potential during 2019.⁶⁸

A total of 32 economies faced at least 10,000 negative product-level spillovers from the subsidies in effect in 2019 that were awarded by China, the EU, and the USA. A further

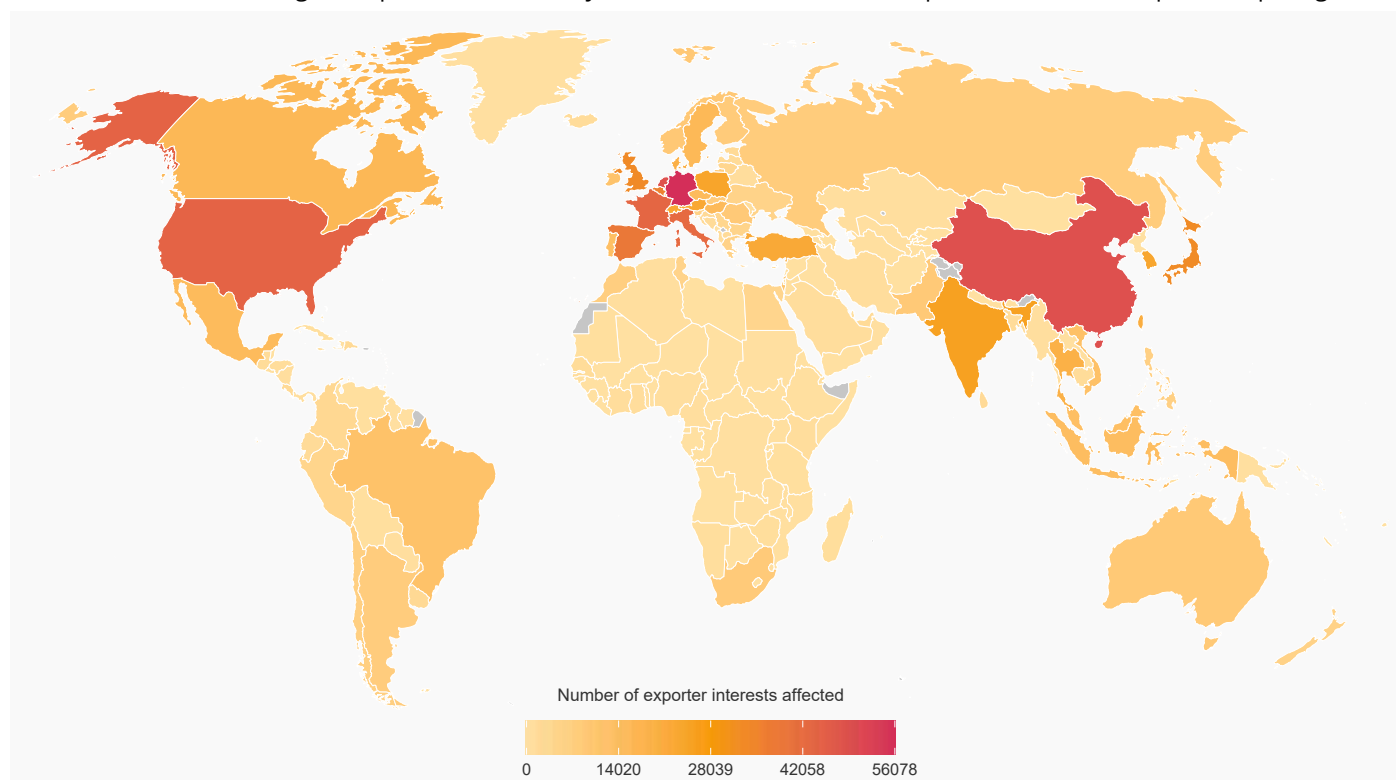
18 economies faced between 5,000 and 10,000 negative spillovers when exporting to these three markets. Such totals are only possible if multiple subsidies have been awarded in certain lines of business or many products were covered by American, Chinese, and EU subsidies to import-competing firms, or both. Each threatens to reduce foreign market access.

Any notion that these three jurisdictions' subsidies to local farmers and manufacturers are concentrated in a few products or harm a few trading partners can be set to one side. The level of good market interdependence these days is such that repeated subsidisation by big trading jurisdictions will create large numbers of negative commercial spillovers for rival producers around the world.

The negative spillovers created by American, Chinese, and European subsidies to import-competing firms pale in comparison to those created by state incentives provided by these jurisdictions to their exporters. Figure 7 reports the total number of negative spillovers created for each trading nation by American, Chinese, and European export incentives.

FIGURE 6

Global distribution of negative spillovers created by American, Chinese, and European subsidies to import competing firms

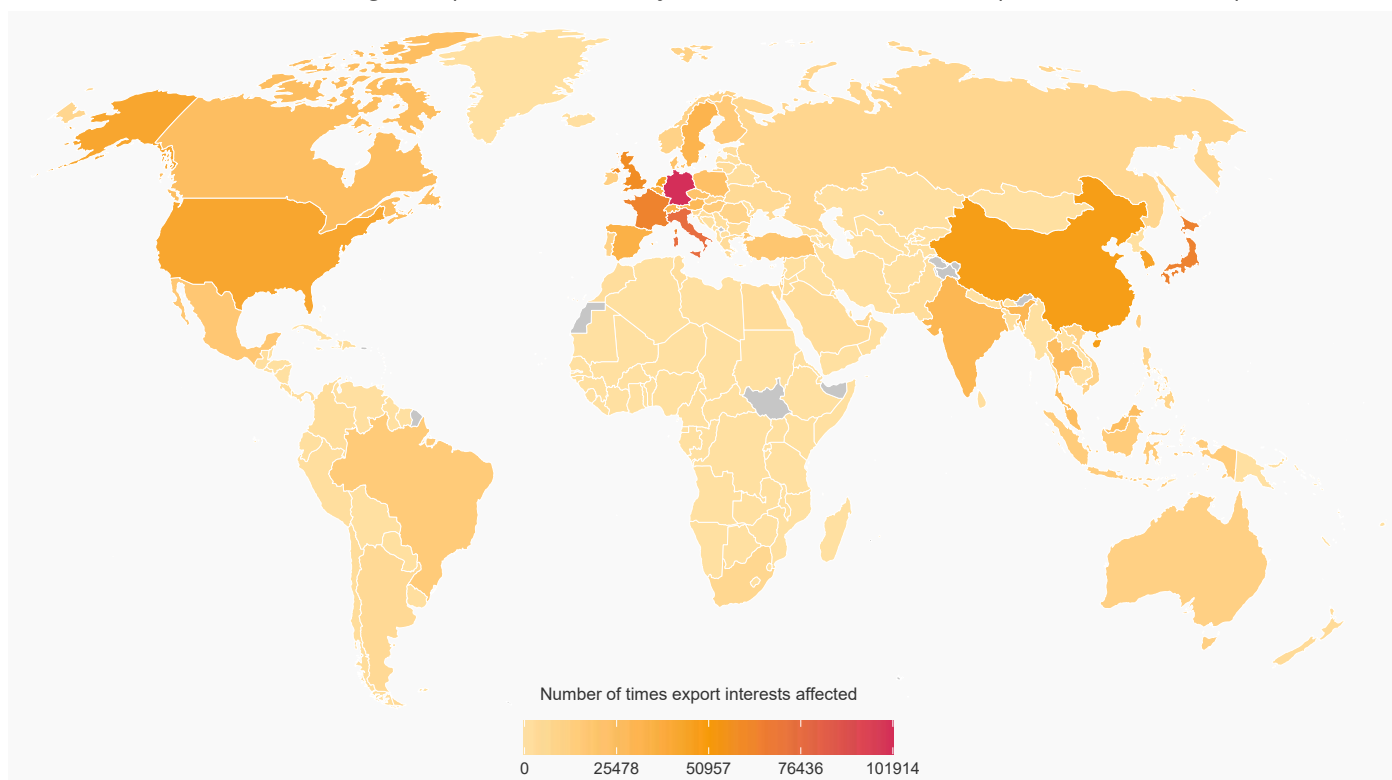


Source: Assembled using the subsidy inventory prepared for this study and the UN COMTRADE database.

⁶⁸ In the most fine-grained global trade data available (which we use) there are just over 5,000 different types of product (at the six-digit level of disaggregation in the United Nations Harmonized System for product classification).

FIGURE 7

Global distribution of negative spillovers created by American, Chinese, and European incentives to exporters



Source: Assembled using the subsidy inventory prepared for this study and the UN COMTRADE database.

A total of 33 economies faced over 10,000 negative spillovers from state-provided export incentives in effect during 2019.

A further 33 economies faced between 1,000 and 9,000 negative spillovers. The product composition and global spread of the exports of five nations (Germany, France, Italy, the UK, and Japan) is such that they face over 50,000 negative spillovers from these export incentives. China comes in just under the 50,000 threshold.

The reason for the larger totals in the case of export incentives is that, in a world with over 200 trading jurisdictions, the number of markets where the conditions of competition could be affected by export subsidies and the like can far exceed the single national market affected by a subsidy to import-competing firms. Each affected national market counts towards the totals reported above.

To balance the discussion, it is important to appreciate that export incentives can create benefits for buyers that source from abroad. Those gains arise as subsidised foreign firms can cut their prices and other, unsubsidised firms may go some way to match these price reductions. Given the American, Chinese, and European export incentives in place in 2019, it is possible to calculate the number of positive spillovers generated for buyers.

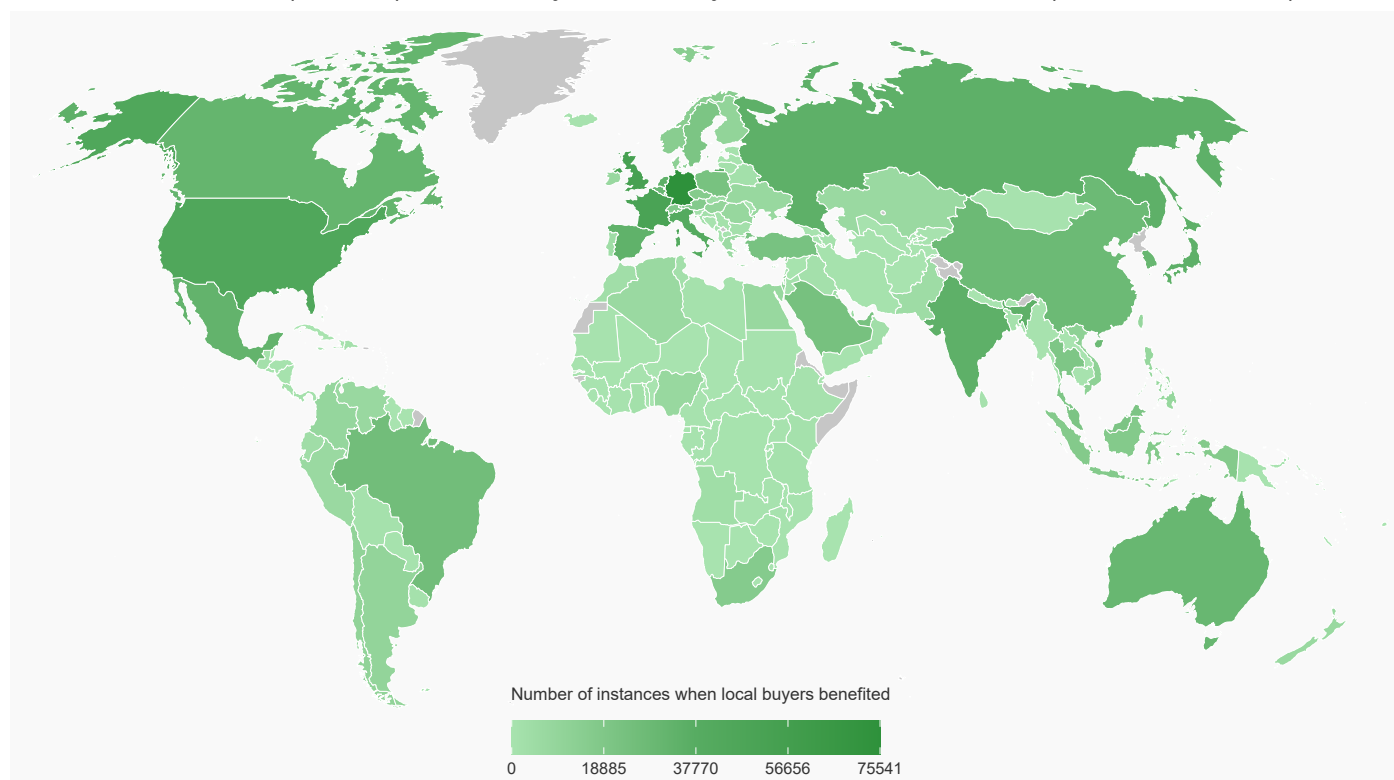
The totals for each trading economy are represented graphically in the map in Figure 8.

While the number of positive spillovers created by these three jurisdictions' export incentives in 2019 is smaller than the number of negative spillovers created (which can be seen by comparing Figures 7 and 8), the former are still numerous. Buyers in a total of 38 jurisdictions potentially benefited over 10,000 times. Those jurisdictions included many of the G20 economies as well as Vietnam and five other developing countries outside the G20. Another 50 jurisdictions (at a range of levels of per capita income) likely benefited between 1,000 and 10,000 times from the export largesse offered by China, the EU, and the USA.

In sum, once one matches the product coverage of subsidy interventions with the underlying data on global trade flows, it is possible to trace out the international trade routes likely affected. This enabled us to gauge the frequency with which cross-border spillovers and market access threats have arisen due to subsidies awards by China, the EU, and the USA. As the total reported above reveal, once one takes account of the thousands of subsidies awarded by these jurisdictions, then there is little reason to believe that the world trading system has been unaffected.

FIGURE 8

Global distribution of positive spillovers to buyers created by American, Chinese, and European incentives to exporters



Source: Assembled using the subsidy inventory prepared for this study and the UN COMTRADE database.

Scale of global goods trade covered by American, Chinese, and European subsidies from 2009 to 2020

Another way of examining the global reach of subsidies is to calculate, for each year, the shares of *world* goods trade affected by the subsidies of the three large trading powers. This calculation can be undertaken for subsidies that affect conditions of competition in markets at home and those that affect conditions of competition abroad.⁶⁹ Again, using the finest grain trade data available, standard trade coverage calculations were performed to estimate the share of world goods trade covered by subsidy awards and subsidy schemes introduced by China, the EU and the USA. So as to focus on market access threats these calculations only took into account subsidy policy changes that increased subsidy payments or introduced them in the first place.⁷⁰ Figure 9 plots the shares of trade covered for the years 2009 to 2020 by each of the three major trading powers, allowing for cross-jurisdictional and intertemporal comparisons.

As the blue lines in Figure 9 show, the total shares of world goods trade affected by each trading power's subsidies have grown over time. These shares have been rising progressively since 2009. They rise in 2020 (sharply in the case of the United States) but the exposure of world trade to American, Chinese, and European subsidies was established before the COVID-19 pandemic.

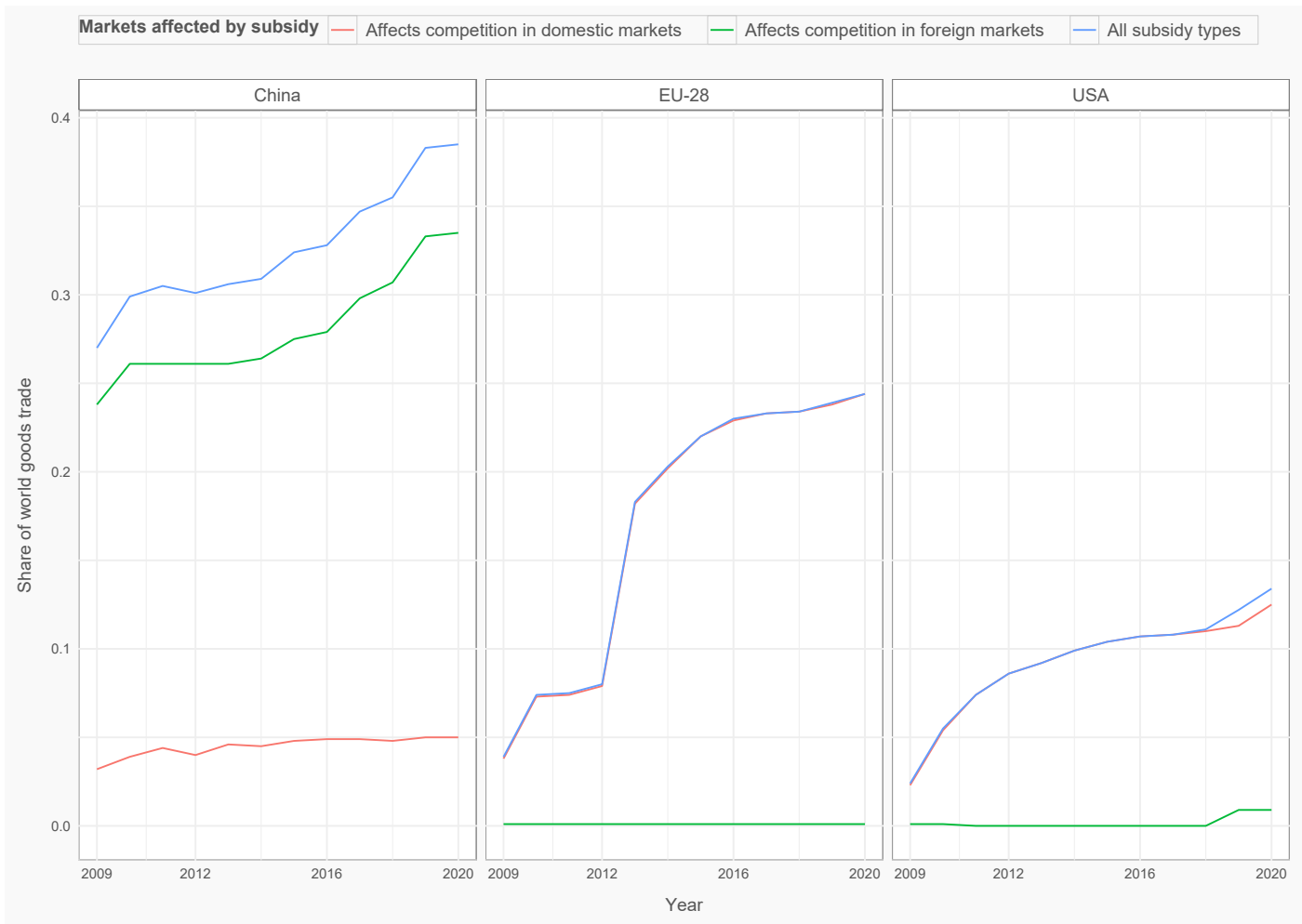
There are differences among these three large trading powers into terms of the overall percentage of world goods trade implicated their subsidy regimes. Such is China's extensive resort to subsidies that by 2020 we estimate that 38.5% of world goods exports were in markets where either import-competing Chinese firms received subsidies or Chinese exporters received greater inducements to export. The corresponding percentages for the EU and the USA are 24.4% and 13.4%, respectively. Given that world merchandise trade exceeded \$19 trillion in 2019, percentages of this magnitude imply trillions of dollars of exports in products and trade routes where American, Chinese, and European subsidies have been awarded.

⁶⁹ In computed the trade covered by state-provided export incentives we excluded subsidy awards that were firm-specific. Therefore, these particular trade coverage estimates are based on subsidy schemes in effect in a given year that may benefit many beneficiary companies. Excluding firm-specific subsidies from these trade coverage calculations will understate the percentage of world goods trade covered. This is another example of how our conservative estimation methodology understates the scale of the subsidy problem in world trade.

⁷⁰ Recall that less than 1.05% of entries in our inventory of corporate subsidies involved subsidy reductions or subsidy elimination.

FIGURE 9

World goods trade in products and trade routes implicated by American, Chinese, and European subsidies, by subsidy type and implementing jurisdiction



Comparing across the three panels in Figure 9, it is evident that American and European state-provided export incentives cover less goods trade than the subsidies awarded to local firms. The opposite is the case for China. Indeed, as can be seen by comparing the red lines in each panel, the shares of world goods trade at risk from American and European subsidies in their respective home markets are larger than that at risk from Chinese subsidies to its locally based firms.

Given certain longstanding concerns about the generosity of subsidies paid in agriculture, in Figure 10 we report the estimates of the share of world trade that are covered by subsidies in that sector. The upper panels reveal the import coverage of agricultural subsidies. Significant shares of global exports of foods and the like confront subsidised European Union local farmers and food processors. The American and Chinese shares are rising over time as well, suggesting that subsidy-related market access threats to foreign farmers are becoming a common feature of the commercial policy regimes of these three trading powers.

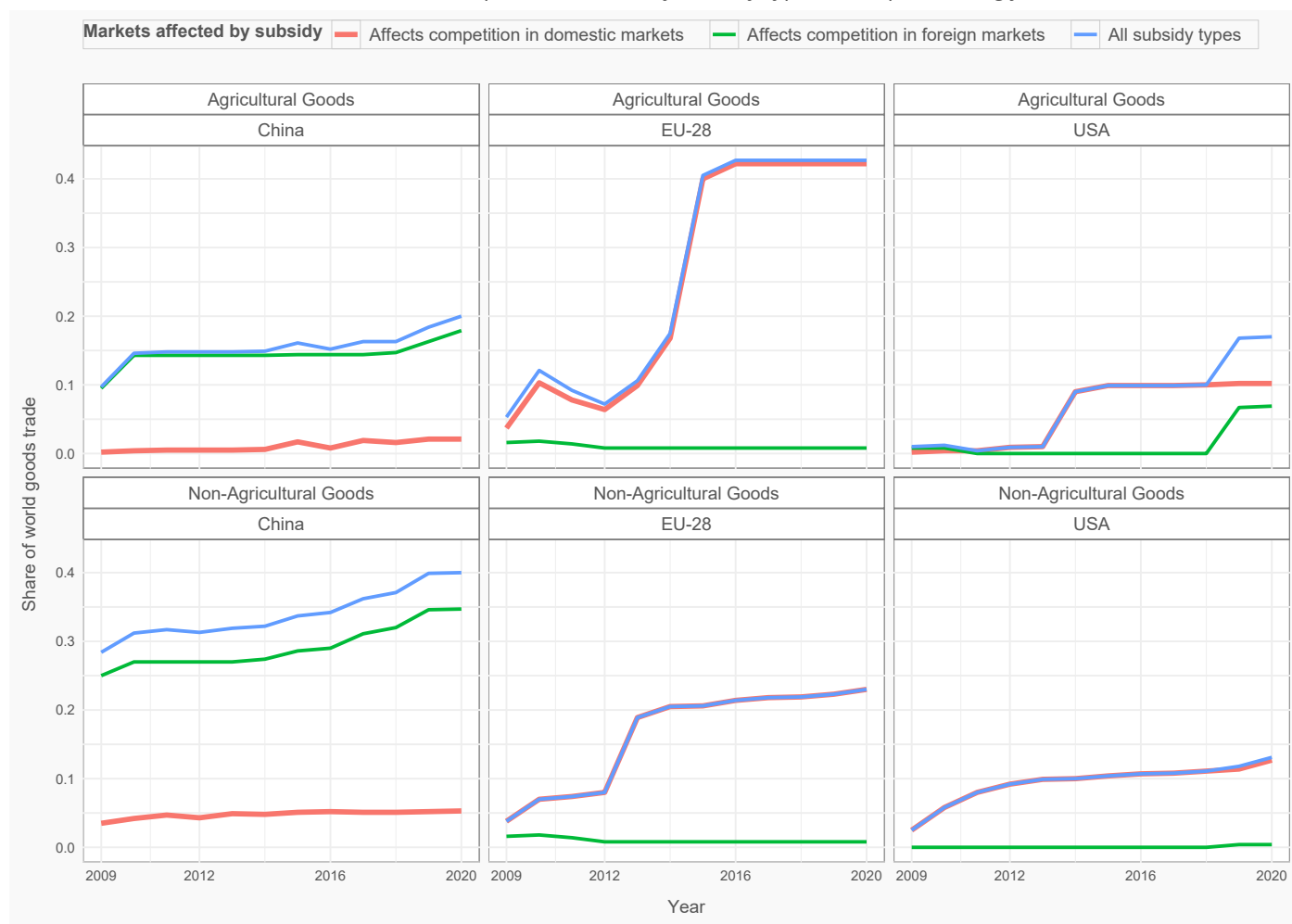
With respect to non-agricultural goods, the market access threat faced to exporters worldwide from the subsidies of the United States is, at least in terms of trade covered, smaller than for China and the European Union.

As measured by the share of world goods trade covered, the threat posed to market access for manufactured goods is also growing over time (see the lower panel of Figure 10). Nearly 40% of manufactured goods traded worldwide in 2020 are in products and markets where inducements to export facing Chinese firms have become more generous. For the European Union and the United States the comparable figures are 23% and 12.7%, respectively. Therefore, each of these trading powers has contributed towards the growing subsidy-related risks to non-agricultural market access.

The cumulative effect of thousands of largely under-the-radar screen subsidies has taken its toll on the competitive conditions faced by those firms seeking to sell into the markets worldwide. For sure, differences exist across

FIGURE 10

World goods trade in agricultural and non-agricultural products and trade routes implicated by American, Chinese, and European subsidies, by subsidy type and implementing jurisdiction



agriculture and manufactured goods and between these three jurisdictions but, seen in terms of both market access threats and cross-border negative spillovers, the overall picture is one of deterioration over time.

In fact, matters are probably worse as tit-for-tat beggar-thy-neighbour dynamics may have developed between the major trading powers. A necessary condition for an emerging tit-for-tat dynamic is that one major trading nation's subsidy decisions induce trading partners to *subsequently* implement their own subsidies or to erect import barriers *in the same lines of business*.

We estimated the share of Chinese subsidy decisions that were followed by such reactions from the EU or the United States over the subsequent 6, 12, and 24 months (see Table 4). From November 2008 until December 2019,⁷¹ within six months of China introducing a subsidy

in a product line,⁷² more than half of the time (58%) a public body in the EU awarded a subsidy in the same line of business. In the United States, 42% of Chinese subsidy actions were followed by a subsidy in the same line of business within a six-month time frame.

Similar findings arise when the EU and the USA introduce subsidies. If anything, on the basis of the evidence presented in Table 4, the United States and the European Union tend to react to each other's subsidy moves by introducing new subsidies of their own more often than they react to China's subsidy actions.

Furthermore, over the same six-month time frame, in response to a Chinese subsidy the EU also introduced import barriers on the same lines of business 28% of the time. The comparable percentage in the United States was higher (35%).

71 Again, notice the following findings are not influenced by policy decisions taken once the COVID-19 pandemic hit.

72 Taken to be a six-digit product category in the UN Harmonized System.

TABLE 4

Potential Tit for Tat behaviour: estimates of the proportion of discriminatory subsidy changes by the implementing jurisdiction that were followed by a policy change, by time horizon

Initial implementing jurisdiction	Form of subsequent policy intervention	Responding jurisdiction								
		China			EU-28			USA		
		Within 6 months	Within 12 months	Within 24 months	Within 6 months	Within 12 months	Within 24 months	Within 6 months	Within 12 months	Within 24 months
China	Introduce new subsidy	–	–	–	0.58	0.67	0.71	0.48	0.56	0.63
China	Introduce import curb	–	–	–	0.28	0.52	0.62	0.35	0.54	0.65
EU-28	Introduce new subsidy	0.56	0.83	0.89	–	–	–	0.71	0.79	0.87
EU-28	Introduce import curb	0.38	0.52	0.63	–	–	–	0.36	0.50	0.65
USA	Introduce new subsidy	0.42	0.62	0.73	0.76	0.84	0.90	–	–	–
USA	Introduce import curb	0.28	0.38	0.52	0.29	0.46	0.84	–	–	–

Source: *Global Trade Alert*.

Moreover, the propensity of the European Union and the United States to react to each other's subsidies with import restrictions is similar to the formers' propensity to raise barriers in response to Chinese subsidies. Still, irrespective of the source of the subsidy or the respondent, the propensity for import curbs to be imposed in the same lines of business tends to rise sharply over time.

In sum, the system-wide threat that subsidies posed to foreign market access is three-fold: from the original subsidy being awarded to an import-competing firms and from trading partners that react by either awarding subsidies of their own or by erecting import barriers in lines of business where subsidisation abroad has occurred.

Concluding remarks

This chapter combined two types of evidence: our extensive inventory of American, Chinese, and European

corporate subsidy awards and publicly available global data on cross-border trade in goods. Such is the frequency of the former and the degree of international market integration revealed by the latter that, when combined, they support the conclusion that the subsidies of these three largest trading jurisdictions are on a scale likely to have generated system-wide consequences.

Economies at all stages of development, trading different mixes of products, and no matter how distant from the poles of the world economy, would face different market conditions if these three jurisdictions were to reform their subsidy policies. To demonstrate this we have prepared an Annex of the exposure of each customs territory's exports to American, Chinese, and European subsidies awarded to their import-competing firms. That Annex can be found after the references section of this report.⁷³

73 Given that economies which export tiny amounts of trade tend to have unusual trade patterns, we excluded customs territories with annual exports below \$10 million from this Annex.

CHAPTER 6

EVIDENCE ON CORPORATE SUBSIDIES RECEIVED IN CHINA

Our inventory contains information on 5,508 subsidies received by commercial firms operating within China between November 2008 and October 2021 that met the seven tests described earlier for the inclusion of a policy intervention in the Global Trade Alert database.⁷⁴ Where evidence allows and where needed, information on the names of any corporate beneficiaries, the products those beneficiaries sell, and the sectors in which they operate was collected and added to the record of the relevant subsidy intervention. Such information is one point of differentiation between our inventory and most subsidy notifications to the World Trade Organization.

The purpose of this chapter is two-fold: first, to describe the frequency, origin, and timing of Chinese subsidy intervention between November 2008 and October 2021 and, second, to report evidence on the scale of Chinese goods imports covered by subsidies paid to firms operating in China that operate in markets potentially subject to international competition (from either foreign exporters or local subsidiaries of foreign multinationals). The latter will provide an indication of the goods market access at stake in general and for different trading partners. Our goal here is to lay out the factual base in a neutral manner.

We are not aware of any other publicly available inventory of Chinese subsidy interventions that contains more information than ours. There may well be subsidies—in particular, those issued by Chinese sub-national bodies or development banks—that we have not been able to document to date. Consequently, the evidence presented here should be regarded as a lower bound on the frequency and extent of subsidisation. One consequence is that the estimates of goods market access at stake almost certainly understate the true situation.

Lastly, care is also taken to distinguish between those subsidy interventions that predate the COVID-19 pandemic and those undertaken since the start of 2020.

This distinction is important so as to establish whether there was a subsidy build-up before governments responded to the economic fallout of the pandemic; that is, whether the observed pattern of subsidies was more than a recent crisis-era response.

Frequency and sources of subsidy intervention, November 2008–October 2021

Figure 11 plots the number of new subsidy policy changes recorded each year in our inventory. The total number of policy changes rises from 148 in 2009 (the first complete year covered by our inventory) to 724 in 2020. This represents a 389% increase over a 12-year period. Three phases can be discerned from this figure: a growth in the annual number of subsidies received from 2009 to 2016, a plateau between 2017 and 2019, and then a step increase in 2020 (of 11% over the 2019 total).⁷⁵

Information on subsidy policy changes and awards in China comes from two sources: detailed statements obtained from official government websites and from the legally mandated submissions of companies listed on Chinese stock exchanges. The latter falls under a Chinese regulation titled “Regulations for Information Disclosure and Reporting of Companies Offering Securities to the Public No. 15 - General Provisions on Financial Reporting”. An explanatory note was issued in 2015 describing the subsidy-related information that Chinese companies listed on stock exchanges or intending to list on stock exchanges shall disclose.⁷⁶ Information on the total amounts of subsidies declared was extracted from the Win.d database, which systematically collects information declared by publicly listed Chinese companies.

The growth in the total value of subsidies declared by publicly listed Chinese firms is shown in Figure 12. In 2009,

74 Given our focus on subsidy policy changes, information on subsidies in place before November 2008 do not influence the statistics presented in this chapter.

75 These totals include subsidy policy changes that reduce or eliminate subsidies as well as decisions to increase or introduce subsidies—hence Figure 11 reveals the frequency of subsidy policy changes overall.

76 That explanatory note can be found here: http://www.csrc.gov.cn/pub/newsite/flb/flfg/bmgf/xxpljsgg/201510/t20151012_284965.html.

FIGURE 11

From 2009 to 2016 the number of newly recorded Chinese subsidies increased steadily each year

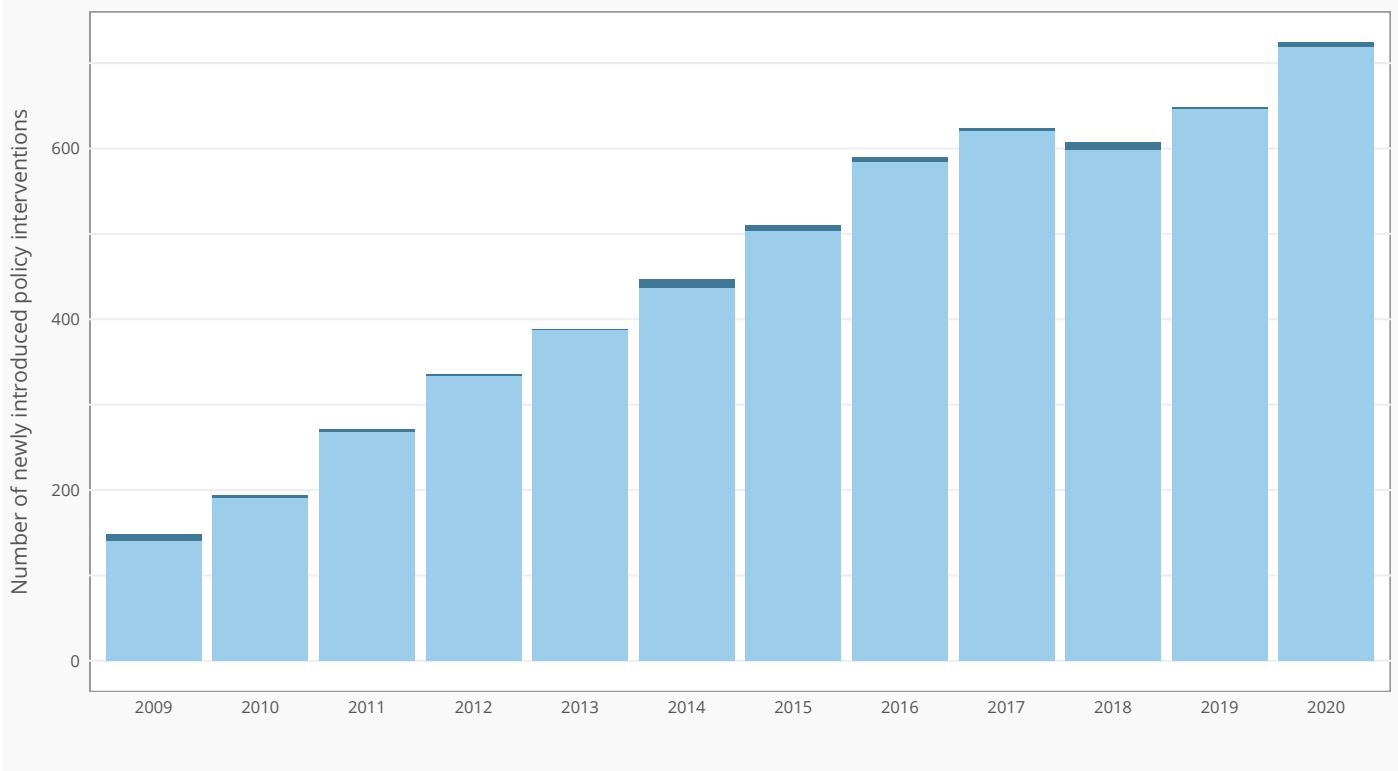
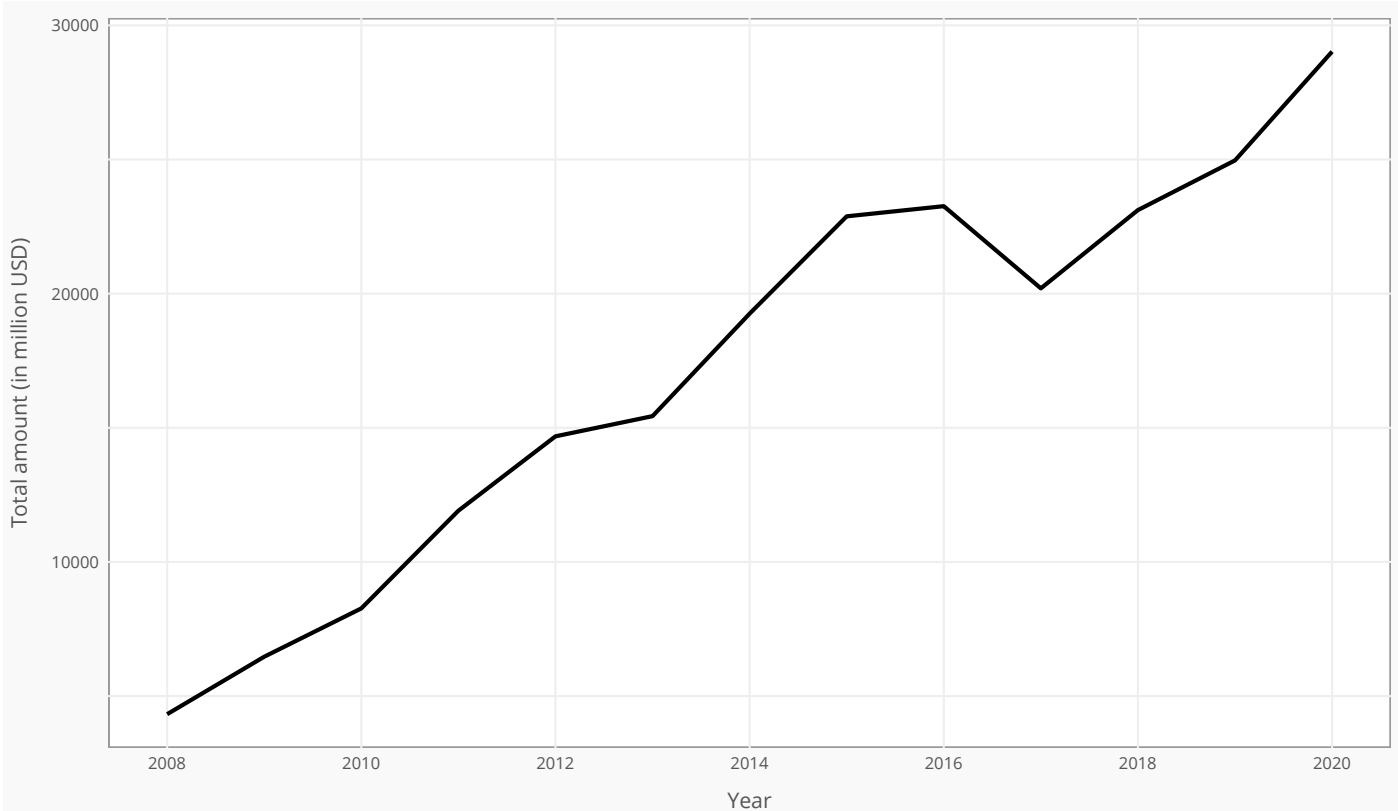


FIGURE 12

Chinese publicly listed companies record every larger annual subsidy receipts



Source: Win.d database.

firms listed on Chinese stock markets reported subsidies equivalent to US\$6.5 billion. By 2020, the total reported subsidies had reached US\$29 billion. This implies that, in nominal terms, the cumulative average growth rate is 14.6% per annum.

The breakdown of the subsidy receipt of Chinese publicly listed companies by type of firm is presented in Table 5. In 2020, subsidies received by “central” state-owned enterprises totalled US\$6.2 billion. “Local” state-owned enterprises reported receiving US\$7.1 billion, and private companies reported receiving even more, US\$11.9 billion. Such is the growth in the subsidies to the latter that the cumulative average growth rate of the total value of subsidies received by the Chinese private sector since 2009 is 22.9% per annum.

Table 6 provides summary statistics on the information sources used to assemble our inventory of Chinese subsidy changes. A total of 5,119 instances of subsidy receipt were identified from publicly listed companies; all such information was firm-specific, in that the beneficiary firm was specifically identified.

In contrast, most of the information on subsidies gleaned from government statements relates to changes in schemes of subsidies; only one-sixth was firm-specific

in the sense mentioned directly above. Over a third of subsidies recorded from Chinese government statements involved subsidies that had clearly defined inception and completion dates; that is, the subsidy was of finite duration.

The ten sectors that received subsidies most often which likely to affected conditions of competition within China between November 2008 and October 2021 are identified in Table 7. In each such sector, more than 611 subsidies have been recorded. The sectoral shares of Chinese imports covered by subsidies to local firms exceeds three-fifths in each case. Almost every subsidy recorded named a beneficiary firm (was firm-specific).

Imports covered by subsidies awarded between November 2008 and October 2021

For those subsidies where it was possible to credibly identify the product category sold by the subsidy recipient or recipients then, for subsidies to import-competing goods producers, it is possible to estimate, using the finest grained United Nations trade data available,⁷⁷ the share of Chinese imports covered by subsidies recorded in our inventory.

TABLE 5

Acknowledged subsidy receipt by Chinese publicly-listed firms, by year and type of company, current million USD

Year	Central state-owned enterprise	Collective enterprises	Foreign companies	Local state-owned enterprise	Other enterprise	Private enterprise	Public enterprise	Total amount
2008	1336	31	45	1595	85	962	271	4325
2009	2640	38	77	1960	29	1231	491	6466
2010	2731	121	120	2557	48	2005	686	8268
2011	3719	76	153	3653	62	2982	1264	11909
2012	5089	52	208	4357	73	3770	1131	14681
2013	4517	64	238	4892	93	4326	1304	15434
2014	6918	65	323	5308	104	5289	1250	19254
2015	7296	106	483	6670	112	6553	1662	22882
2016	6268	152	608	6810	236	7410	1778	23261
2017	4905	121	526	5439	138	7185	1883	20197
2018	4911	155	632	6329	138	8689	2260	23115
2019	5526	201	632	5994	140	9822	2652	24967
2020	6190	189	735	7111	165	11894	2737	29021

Source: Compiled from Win.d database.

77 Specifically, we use the product codes at the six-digit level of disaggregation found in the United Nations Harmonized System. While some jurisdictions report import flows using more fine-grained product classifications, beyond the six-digit level there is no international obligation on governments to use the same product codes or to classify products identically. The absence of the latter two frustrates cross-country comparisons of import coverage, leaving analysts seeking to do so with little choice but to use the six-digit level of product codes.

TABLE 6

Summary statistics concerning sources of information about Chinese subsidy awards and subsidy policy changes

	Subsidy awards and changes in subsidy schemes by government bodies	Subsidy receipt acknowledged by publicly listed firms
Number of recorded subsidy policy changes affecting conditions of competition in foreign markets, increases or introduction of subvention	66	0
Number of recorded subsidy policy changes affecting conditions of competition in foreign markets, reductions or elimination of subvention	2	0
Number of recorded subsidy policy changes to import-competing firms, increases or introduction of subvention	339	5119
Number of recorded subsidy policy changes to import-competing firms, reductions or elimination of subvention	42	0
Percentage of recorded subsidy policy changes implemented during 2020 or 2021	10	13
Percentage of recorded subsidy policy inventions that are firm-specific	15.37	100
Percentage of time-limited subsidies (with implementation & revocation dates)	35.63	100
Total number of subsidy policy changes recorded in the inventory	449	5119

*Source: Global Trade Alert.***TABLE 7**

The ten sectors receiving the most Chinese subsidy awards and benefiting most often from subsidy policy changes

Affected sector code	Affected sector name	Total number of subsidy awards and policy changes recorded	Sectoral imports as a percentage of total national goods imports in 2019	Percentage of recorded subsidies that are firm-specific	Percentage of sectoral imports in 2019 covered by subsidies to import-competing firms
49	Transport equipment	913	5.17	95.73	62.15
45	Office, accounting & computing machinery	903	2.67	97.34	97.21
46	Electrical machinery & apparatus	885	3.62	95.71	94.52
41	Basic metals	875	5.67	96.34	73.77
35	Pharmaceuticals & toiletries, man-made fibres & paint	836	3.16	97.25	88.66
44	Special-purpose machinery	813	4.05	94.71	91.95
34	Basic chemicals	755	7.11	97.09	82.21
43	General-purpose machinery	687	3.38	96.51	80.02
47	Radio, television & communication equipment & apparatus	674	23.54	95.10	92.47
37	Glass products, ceramics, cement & stones	611	0.64	96.40	66.88

Source: Global Trade Alert.

As our inventory includes subsidy changes since November 2008,⁷⁸ by construction the import shares covered are zero at the start of that month. This should be borne in mind as the reported import shares do not claim to cover subsidies that were in effect before November 2008. If anything, the import shares reported here reveal the extent to which imports face competition from *new* subventions to local firms.⁷⁹ Whether those shares rise, stabilise, or fall over time is of interest.

For the years 2009 to 2020, the shares of Chinese goods imports in products where import-competing firms have been subsidised are reported in Figure 13. The height of each annual bar reveals the total import share “covered” by such subsidies.⁸⁰ A breakdown is also provided. The latter reveals in a given year what share of Chinese

imports competed in product lines where 1–5 subsidies have been awarded to local firms, 6–9 subsidies were so awarded, 10–24 subsidies were granted, and over 25 distinct subventions were recorded in our inventory.

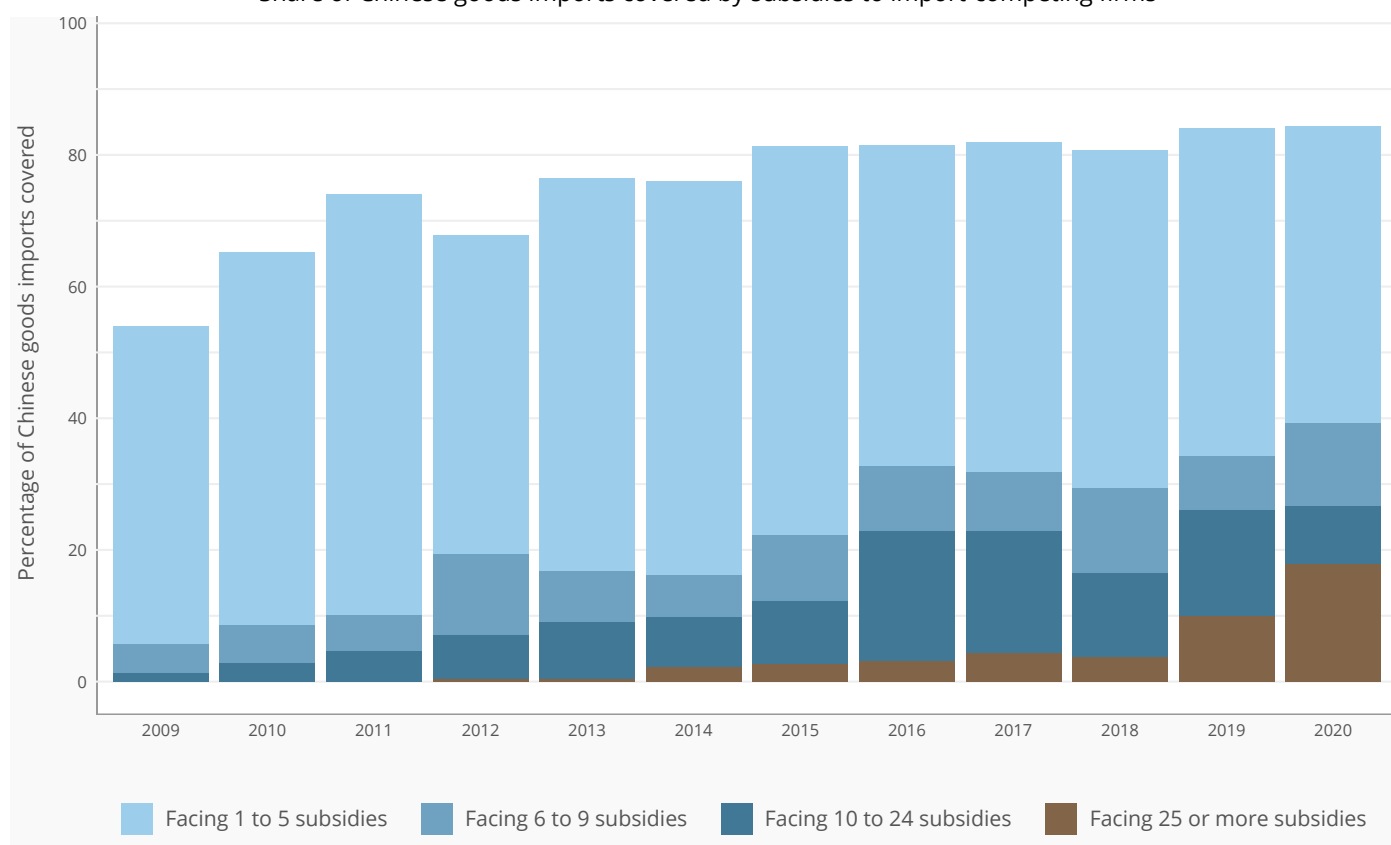
Over time, then, the overall import share facing subsidised local competition may change, as can the shares in products where the frequency of subsidisation differs. This figure, therefore, can reveal whether any build up over time of subsidies to import-competing firms is concentrated in a certain set of product lines or whether the number of product lines facing more frequent subsidisation is growing over time.

The biggest jump in the Chinese import coverage share occurs in 2009. Recall that, by construction, the share was

78 This month was the starting point for the monitoring of policy intervention by the Global Trade Alert term. November 2008 was chosen as the start date

FIGURE 13

Share of Chinese goods imports covered by subsidies to import-competing firms



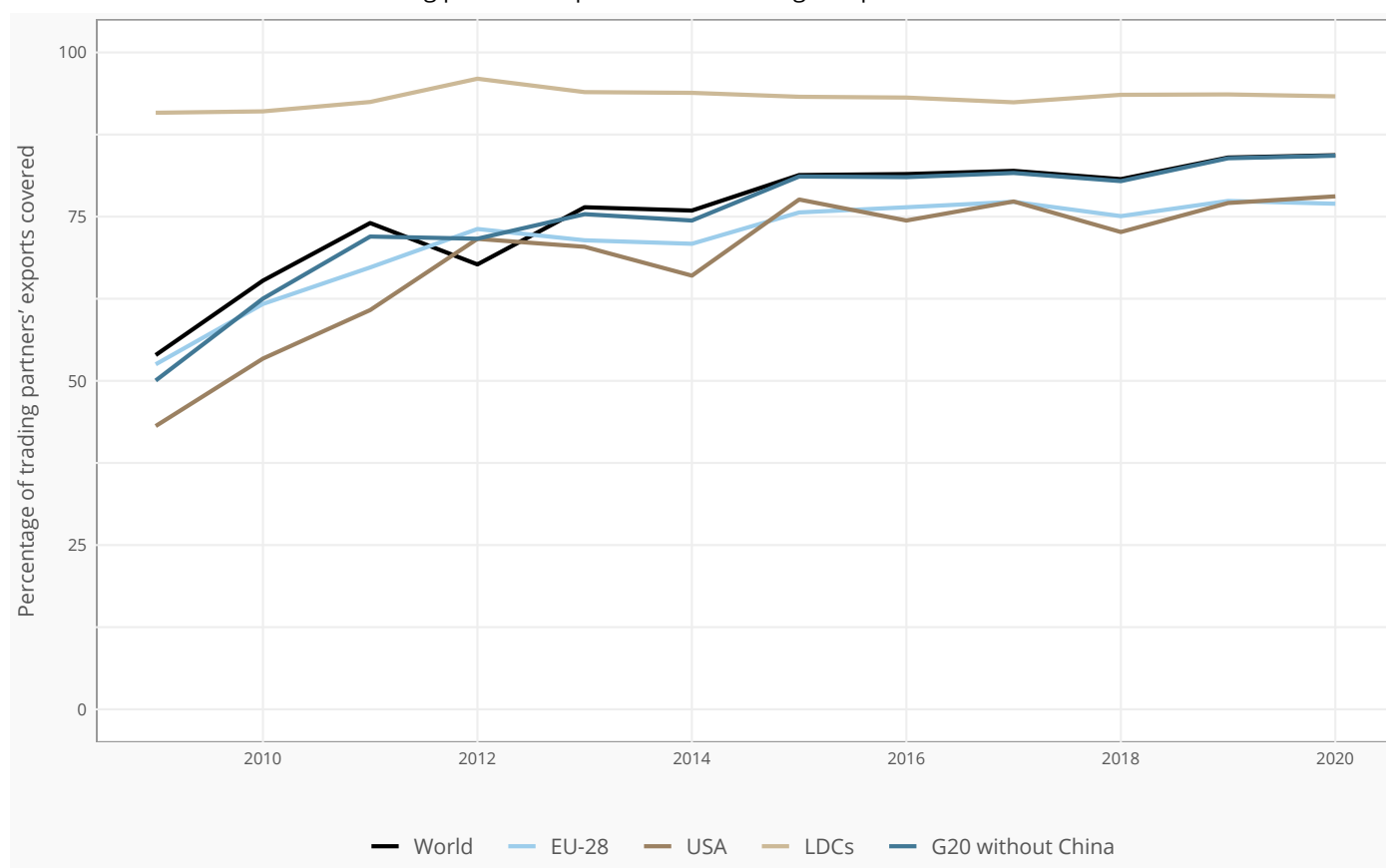
because in that month the G20 leaders declared publicly that they would eschew protectionism for the duration of the Global Financial Crisis.

79 Greater subsidisation to local firms may reduce imports, which may reduce the reported import shares. To avoid this endogeneity problem, we use the pattern of world trade flows during the years 2005–2007 to construct weights upon which the import coverage shares are calculated.

80 These import coverage estimates are duration adjusted. Specifically, the imports covered by a particular subsidy in a given year are weighted by the number of days that subsidy was in effect during that year. The later in the year a subsidy was granted the lower the weight attached and the smaller the contribution to the import coverage share. These duration adjustments take account of the introduction and expiry dates of subsidy measures. As some subsidies or subsidy schemes lapse, it is possible that the computed import share falls.

FIGURE 14

Share of selected trading partners' exports to China facing competition from subsidised local firms



zero in November 2008. During 2009, 53.9% of Chinese imports were in product lines where at least one Chinese firm had received a subsidy. That percentage rose progressively to 74% in 2011 and has climbed more slowly ever since. Before the COVID-19 pandemic hit, we estimate that 84% of Chinese goods imports were in product lines where local producers had been subsidised. That percentage rises to 84.3% in 2020. The policy response to the pandemic raised the import share in product lines where 25 or more subsidies have been awarded sharply to 17% of total Chinese goods imports.

It is also possible to calculate the share of different trading partners' exports that are in products where subsidies to Chinese firms have been recorded. Specifically, Figure 14 reports the export shares covered by Chinese subsidies from the EU, the remainder of the G20, the Least Developed Countries (LDCs), and the United States. With the exception of the LDCs, by and large, the export exposures of the other trading partners follow the general

pattern observed in Figure 13 (and represented by the "world" line in Figure 14). If anything, the export exposure of the EU and the USA to the Chinese subsidies is lower than the world average.

The exposure of LDC exports to Chinese subsidies is consistently greater than for other Chinese trading partners. In every year from 2009 to 2020, over 90% of LDC exports were in product lines where subsidies to rival Chinese producers have been recorded. From 2018, more than 93% of LDC exports to China competed against subsidised import-competing firms.

To put these subsidy-related import coverage percentages into perspective, consider the following. In 2020, our duration-adjusted import coverage estimate is 93.3% for all Chinese policies in effect that year that crimp imports. The import coverage estimate for the same year for all non-subsidy-related Chinese policies recorded in the Global Trade Alert database is 75.8%.⁸¹

⁸¹ Both of the percentages reported in this paragraph were very similar to their values in 2019, the year before COVID-19 pandemic policy response came into effect.

CHAPTER 7

EVIDENCE ON CORPORATE SUBSIDIES AWARDED BY THE EUROPEAN UNION

Our inventory contains information on 6,671 subsidies awarded by public bodies in the European Union between November 2008 and October 2021 that met the seven tests described earlier for the inclusion of a policy intervention in the Global Trade Alert database.⁸² Where evidence allows and where needed, information on the names of any corporate beneficiaries, the products those beneficiaries sell, and the sectors in which they operate was collected and added to the record of the relevant subsidy intervention. Such information is one point of differentiation between our inventory and most subsidy notifications to the World Trade Organization.

The purpose of this chapter is two-fold: first, to describe the frequency, origin, and timing of EU subsidy intervention between November 2008 and October 2021 and, second, to report evidence on the scale of goods imports from outside the EU covered by subsidies paid to firms operating inside the EU in markets potentially subject to international competition (from either foreign exporters or local subsidiaries of foreign multinationals). The latter will provide an indication of the goods market access at stake in general and for different trading partners. Our goal here is to lay out the factual base in a neutral manner.

We are not aware of any other publicly available inventory of EU subsidy interventions that contains more information than ours. There may well be subsidies—in particular, those issued by EU member states that have not been notified to the European Commission or where notifications are incomplete—that we have not been able to document to date. Consequently, the evidence presented here should be regarded as a lower bound on the frequency and extent of subsidisation. One consequence is that the estimates of goods market access at stake almost certainly understate the true situation.

Lastly, care is also taken to distinguish between those subsidy interventions that predate the COVID-19 pandemic and those undertaken since the start of 2020. This distinction is important so as to establish whether there was a subsidy build-up before governments responded to the economic fallout of the pandemic; that is, whether the observed pattern of subsidies was more than a recent crisis-era response.

Frequency and sources of subsidy intervention, November 2008–October 2021

The total number of subsidy awards and policy changes by public bodies in the European Union has varied over time (see Figure 15). Between 2015 and 2019, in the years before the COVID-19 pandemic, just over 500 subsidy changes were introduced each year. The total jumped to 874 in 2020. Another crisis year (2009) also saw a higher total of subsidy policy changes introduced (567). A fifth of EU subsidy changes involve financial support for the activities of European firms outside their home market.⁸³

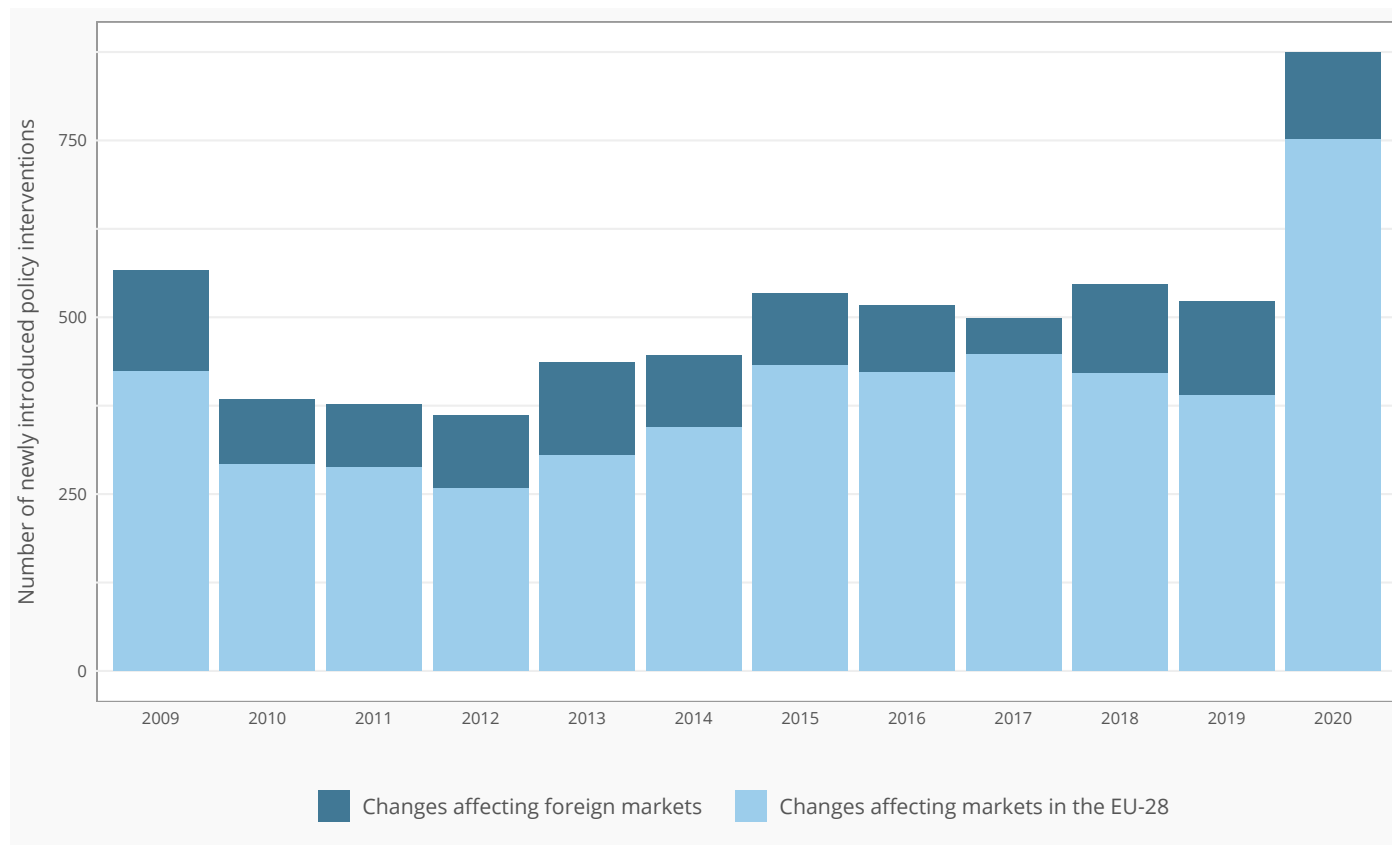
Subsidy awards and policy changes in the EU can be undertaken by sub-national, national, and supranational bodies. Table 8 reveals that the total number of subsidy awards and policy changes by sub-national and national bodies (3,258) was approximately equal to those implemented at the supranational level (3,459). The different types of subsidy introduced by the European Investment Bank account for much of the latter. Approximately the same shares of subsidies issued by supranational bodies and other bodies in the EU involve specifically identified beneficiary firms (“firm-specific”).

82 Given our focus on subsidy policy changes, information on subsidies in place before November 2008 do not influence the statistics presented in this chapter.

83 These totals include subsidy policy changes that reduce or eliminate subsidies as well as decisions to increase or introduce subsidies—hence Figure 15 reveals the frequency of subsidy policy changes overall.

FIGURE 15

Approximately 500 new subsidy awards or policy changes were recorded in the European Union before the COVID-19 pandemic

**TABLE 8**

Summary statistics on sources of information on EU subsidy awards and subsidy policy changes

	Subsidy awards and changes in subsidy schemes by sub-national and national government bodies	Subsidy awards and changes in subsidy schemes by supranational bodies
Number of recorded subsidy policy changes affecting conditions of competition in foreign markets, increases or introduction of subvention	1371	28
Number of recorded subsidy policy changes affecting conditions of competition in foreign markets, reductions or elimination of subvention	1	13
Number of recorded subsidy policy changes to import-competing firms, increases or introduction of subvention	1873	3314
Number of recorded subsidy policy changes to import-competing firms, reductions or elimination of subvention	13	104
Percentage of recorded subsidy policy changes implemented during 2020 or 2021	29	11
Percentage of recorded subsidy policy inventions that are firm-specific	52.76	45.48
Percentage of time-limited subsidies (with implementation & revocation dates)	39.59	5.64
Total number of subsidy policy changes recorded in the inventory	3258	3459

Source: Global Trade Alert.

While relatively few subsidy policy changes in the European Union involve subsidy reductions or removals, the proportion implemented at the supranational level (in this case, by the European Commission as part of the common commercial policy) is larger than that resulting from actions by the EU member states.

The percentage of subsidy awards and policy changes undertaken in 2020 was higher for the sub-national and national government subsidies than for those at the supranational level (29% versus 11%). Another difference is that the former (39.6%) introduced more time-limited subsidy interventions than the latter (5%). In absolute numbers and in proportional terms, EU supranational bodies introduce fewer subsidies that affect conditions of competition outside the Single Market than public bodies in the member states.

A comparison of the total number of subsidies awarded by public bodies in the EU member states can be found in Figure 16, which includes central government ministries,

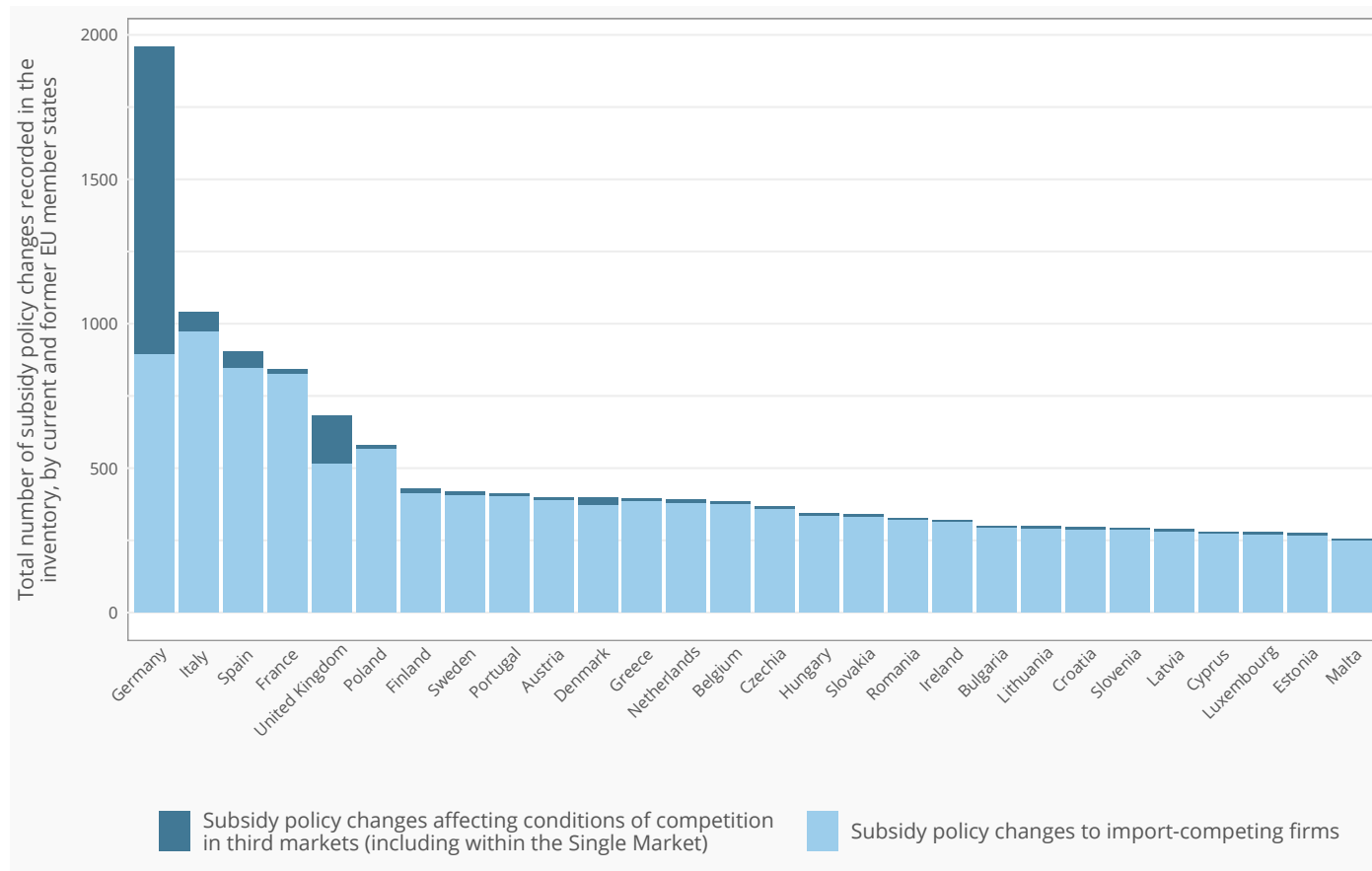
national level agencies (such as export promotion agencies), and sub-national governments and related agencies.

Germany was most active, introducing in total 1,959 changes to subsidy policy schemes or subsidy awards from November 2008 to October 2021. Germany was followed by Italy (1,039 subsidies), Spain (906 subsidies), France (843 subsidies), and the United Kingdom (681 subsidies).⁸⁴ A total of 1,577 subsidy schemes and awards introduced by the EU member states sought to influence conditions of competition in export markets (including some inside the Single Market).

The ten sectors that, from November 2008 to October 2021, most often received EU subsidies are listed in Table 9. Each of these 10 sectors witnessed over 300 subsidy awards since November 2009. Five of these sectors are in the agriculture, food, or beverage sectors. For the subsidies in the agricultural sectors, few subsidy records identify particular firms as beneficiaries, largely

FIGURE 16

Total number of subsidy awards and new subsidy schemes introduced by each EU member state, November 2008-October 2021



⁸⁴ Recall, as discussed earlier in this report, the United Kingdom was included in the European Union for the purposes of our evidence collection and analysis. This was justified on the grounds that the UK was a member of the EU for almost all of the time period under investigation here (November 2008 to October 2021).

TABLE 9

The ten sectors receiving the most subsidy awards from EU public bodies and benefiting most often from subsidy policy changes

Affected sector code	Affected sector name	Total number of subsidy awards and policy changes recorded	Sectoral imports as a percentage of total national goods imports in 2019	Percentage of recorded subsidies that are firm-specific	Percentage of sectoral imports in 2019 covered by subsidies to import-competing firms
17	Electricity, steam & gas	663	0.16	65.91	99.24
21	Meat, fish, fruits, vegetables, oils & fats	479	3.25	4.80	80.71
01	Agriculture & horticulture products	451	0.00	4.21	90.55
23	Bakery, grain mill & starch products	402	0.79	12.19	86.37
34	Basic chemicals	387	4.15	18.86	81.15
49	Transport equipment	380	7.45	53.16	90.02
22	Dairy & egg products	379	0.04	4.49	75.13
24	Beverages	348	0.29	3.45	90.28
35	Pharmaceuticals & toiletries, man-made fibres & paint	313	6.47	51.76	89.31
39	Wastes or scraps	313	0.66	3.51	75.00

Source: Global Trade Alert.

reflecting the fact that these subsidy interventions are schemes where multiple firms are potentially eligible. The percentage of sectoral imports covered for these agricultural goods ranged from 64% to 97%.⁸⁵

The electricity generation sector in this top ten list of sectors. This sector stands out: it received subsidies most often from November 2008 to October 2021 (663). Just under two-thirds of subsidies awarded in that sector were firm-specific. Almost all cross-border imports in electricity were covered by these subsidies.

Imports covered by subsidies awarded between November 2008 and October 2021

For those subsidies where it was possible to credibly identify the product category sold by the subsidy recipient

or recipients then, for subsidies to import-competing goods producers, it is possible to estimate, using the finest grained United Nations trade data available⁸⁶, the share of EU imports from outside the Single Market covered by the subsidies recorded in our inventory.

As our inventory includes subsidy changes since November 2008,⁸⁷ by construction the import shares covered are zero at the start of that month. This should be borne in mind as the reported import shares do not claim to cover subsidies that were in effect before November 2008. If anything, the import shares reported here reveal the extent to which imports face competition from new subventions to local firms.⁸⁸ Whether those shares rise, stabilise, or fall over time is of interest.

For the years 2009 to 2020, the shares of extra-EU goods imports in products where import-competing firms have been subsidised are reported in Figure 17.⁸⁹ The height of

⁸⁵ To put these percentages into perspective, note that in 2020 we estimate that 80.3% of extra-EU exports of all agricultural goods to the European Union face subsidised rivals inside the Single Market. Agricultural subsidies introduced since 2013 have seen that percentage rise considerably (recall, subsidies awarded before November 2008 are not factored into these import coverage estimates).

⁸⁶ Specifically, we use the product codes at the six-digit level of disaggregation found in the United Nations Harmonized System. While some jurisdictions report import flows using more fine-grained product classifications, beyond the six-digit level there is no international obligation on governments to use the same product codes or to classify products identically. The absence of the latter two frustrates cross-country comparisons of import coverage, leaving analysts seeking to do so with little choice but to use the six-digit level of product codes.

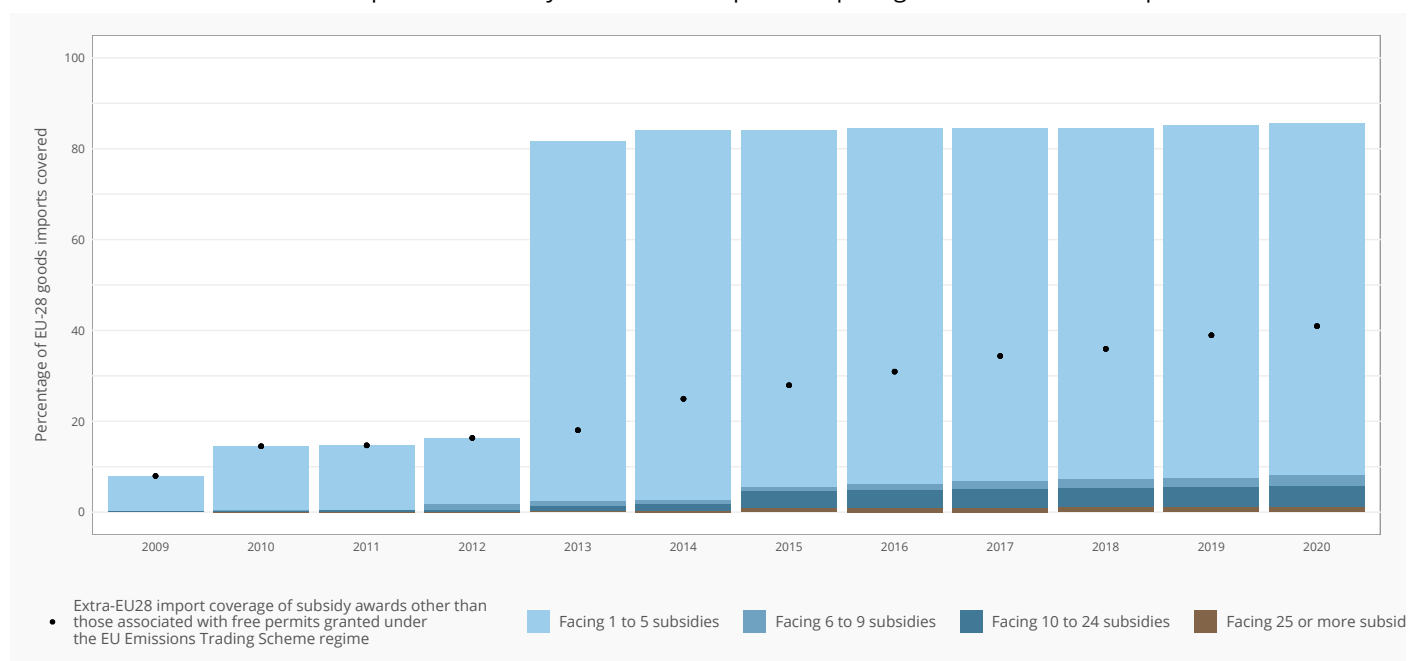
⁸⁷ This month was the starting point for the monitoring of policy intervention by the Global Trade Alert term. November 2008 was chosen as the start date because in that month the G20 leaders declared publicly that they would eschew protectionism for the duration of the Global Financial Crisis.

⁸⁸ Greater subsidisation to local firms may reduce imports, which may reduce the reported import shares. To avoid this endogeneity problem, we use the pattern of world trade flows during the years 2005–2007 to construct weights upon which the import coverage shares are calculated.

⁸⁹ These import coverage estimates are duration adjusted. Specifically, the imports covered by a particular subsidy in a given year are weighted by the number of days that subsidy was in effect during that year. The later in the year a subsidy was granted the lower the weight attached and the smaller the contribution to the import coverage share. These duration adjustments take account of the introduction and expiry dates of subsidy measures. As some subsidies or subsidy schemes lapse, it is possible that the computed import share falls.

FIGURE 17

Share of extra-EU imports covered by subsidies to import-competing firms inside the European Union



each annual bar reveals the total import share “covered” by such subsidies. A breakdown is also provided. The latter reveals in a given year what share of extra-EU imports competed in product lines where 1–5 subsidies have been awarded to local firms, 6–9 subsidies were so awarded, 10–24 subsidies were granted, and over 25 distinct subventions were recorded in our inventory.

Over time, then, the overall import share facing subsidised local competition may change as can the shares in products where the frequency of subsidisation differs. This figure, therefore, can reveal whether any build up over time of subsidies to import-competing firms is concentrated in a certain set of product lines or whether the number of product lines facing more frequent subsidisation is growing over time.

As Figure 17 shows, by 2019, before the COVID-19 pandemic began, the percentage of extra-EU imports competing against subsidised European rivals had risen to 85.3%. The introduction of a new scheme for selectively awarding free CO2 emissions permits to commercial operators in 2013 resulted in a sharp jump in the import coverage estimate.⁹⁰⁹¹ Detailed research revealed that this

scheme offers free permits to producers of goods that together account for 4,208 HS product codes.

The scheme introduced in 2013 lapsed in 2014 and was followed by a new scheme covering the years 2015–2020. The latter scheme offered free permits to producers in 4,132 HS codes. A new Emissions Trading Scheme (ETS) introduced from 2021 on covers much fewer products, 1,789 HS codes. To isolate the impact of the EU free permits scheme on import coverage calculations, in Figure 17 we report (with black dots) the import coverage estimates when all EU subsidies affecting conditions at competition at home except the free ETS permits are included. We estimate that in 2019, even without the free ETS permits, 38.9% of extra-EU imports faced subsidised local rivals.

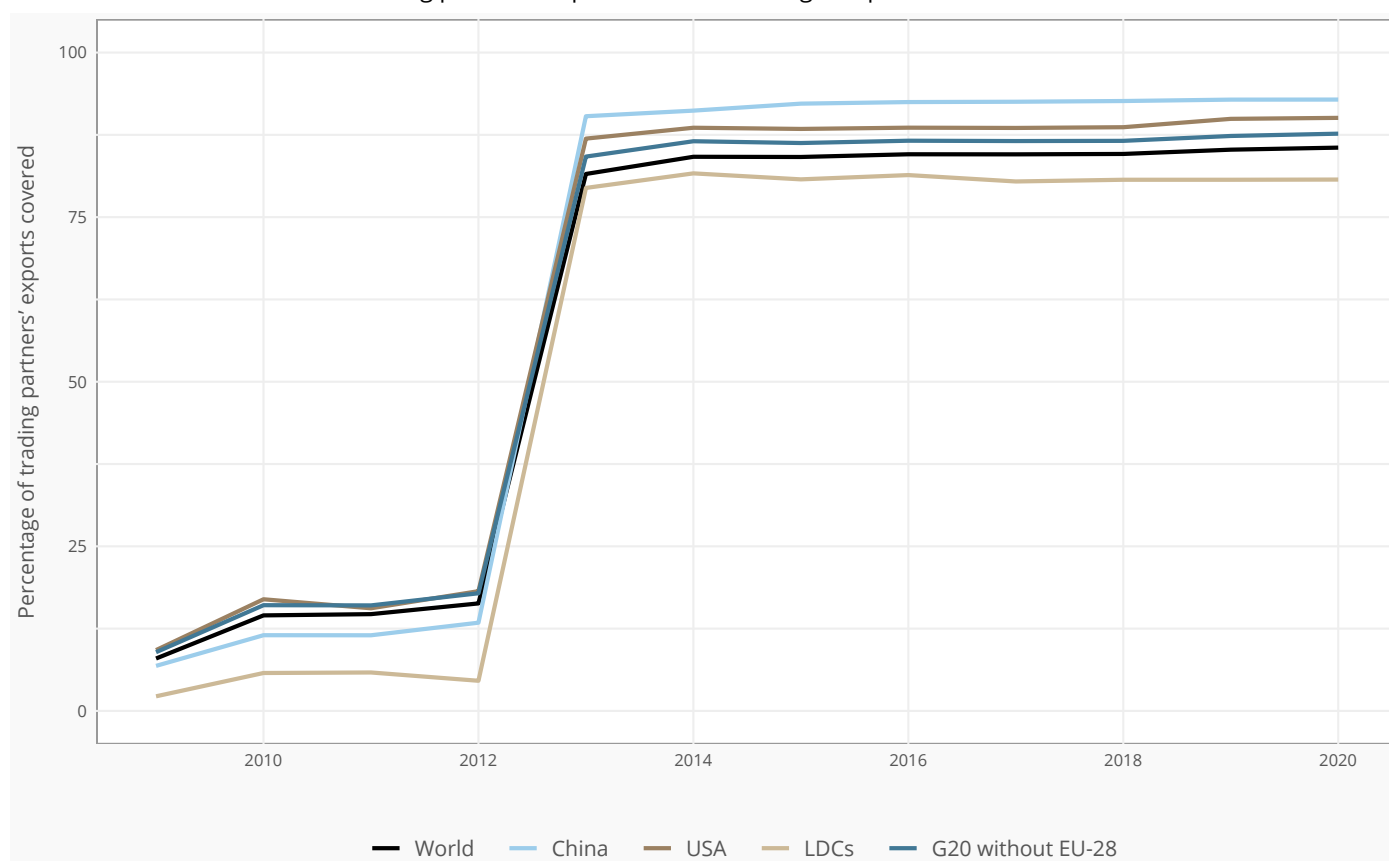
When the free trading permits issued by the EU for its Emissions Trading Scheme are included in the calculations, the consequences of pandemic-era subsidisation are difficult to discern (compare the bars in Figure 17 for 2019 and 2020). However, once those free trading permits are stripped out of the calculation, then the percentage of extra-EU imports covered by subsidies rises from 38.9% in 2019 to 40.9% in 2020.

90 In a Commission Decision (2013/448/EU) dated 5 September 2013, the treatment of these firm-specific free emissions permits under EU state aid law was addressed in the following statement: “The Commission considers that the allocation of allowances free of charge to installations covered by the EU ETS on the basis of Union-wide harmonised rules does not confer a selective economic advantage to undertakings with the potential to distort competition and affect intra-Union trade” (paragraph 29 of the preamble). It would have been unnecessary to include this statement if it were evident that firm-specific free emissions permits did not fall foul of EU state aid legislation.

91 We note, without further comment, that for the purposes of enforcing US countervailing duty law, the US Department of Commerce determined that such free emissions permits constitute a subsidy. See, for example, the following determination in May 2020: <https://enforcement.trade.gov/frn/summary/germany/2020-11206-1.pdf>.

FIGURE 18

Share of selected trading partners' exports to the EU facing competition from subsidised local firms



It is also possible to calculate the share of different trading partners' exports that are in products where subsidies to EU firms have been recorded. Specifically, Figure 18 reports the export shares covered by EU subsidies from China, the remainder of the G20, the Least Developed Countries (LDCs), and the United States. By and large, the export exposures of these trading partners follow the general pattern observed in Figure 17 (and represented by the "world" line in Figure 18).

However, from 2013 the export exposure of the USA to EU subsidies exceeded the world average by at least four percentage points. Chinese export exposure to EU subsidies also exceeded the world average. In contrast, LDC export exposure to subsidised European rivals inside the Single Market was consistently three percentage points or more below the world average.

To put these import coverage percentages into perspective, consider the following. In 2020, our duration-adjusted import coverage estimate for all EU policies in effect that year that crimp extra-EU imports is 64.1%. The import coverage estimate for the same year for all non-

subsidy-related EU policies recorded in the Global Trade Alert database that implicate imports from outside the EU is 28.9%.⁹²

Finally, under some circumstances the EU State Aid regime allows subsidies that can distort trade within the Internal Market. With our inventory and intra-EU trade data it is possible to calculate the percentage of intra-EU trade that is exposed to subsidised rivals in destination markets within the EU. Recall that, by construction, our import coverage percentages are zero at the start of November 2008. We estimate that, such was the subsidy response to the early stages of the Global Financial Crisis, that in 2009 10.1% of intra-EU trade faced a newly subsidised European rival. By 2019, before the COVID-19 pandemic, that percentage had risen to 43.5%. Such was the product coverage of subsidies to EU firms that were in effect in 2020 that the percentage of intra-EU trade covered was 45.6%.

⁹² Both of the percentages reported in this paragraph were very similar to their values in 2019, the year before COVID-19 pandemic policy response came into effect.

CHAPTER 8

EVIDENCE ON CORPORATE SUBSIDIES AWARDED BY THE UNITED STATES

Our inventory contains information on 5,962 subsidies awarded by public bodies in the United States between November 2008 and October 2021 that met the seven tests described earlier for the inclusion of a policy intervention in the Global Trade Alert database.⁹³ Where evidence allows and where needed, information on the names of any corporate beneficiaries, the products those beneficiaries sell, and the sectors in which they operate was collected and added to the record of the relevant subsidy intervention. Such information is one point of differentiation between our inventory and most subsidy notifications to the World Trade Organization.

The purpose of this chapter is two-fold: first, to describe the frequency, origin, and timing of American subsidy intervention between November 2008 and October 2021 and, second, to report evidence on the scale of American goods imports covered by subsidies paid to firms operating inside its borders in markets potentially subject to international competition (from either foreign exporters or local subsidiaries of foreign multinationals). The latter will provide an indication of the goods market access at stake in general and for different trading partners. Our goal here is to lay out the factual base in a neutral manner.

We are not aware of any other publicly available inventory of American subsidy interventions that contains more information than ours. There may well be subsidies—in particular, those awarded by US cities and states—that we have not been able to document to date. Consequently, the evidence presented here should be regarded as a lower bound on the frequency and extent of subsidisation. One consequence is that the estimates of goods market access at stake almost certainly understate the true situation.

Lastly, care is also taken to distinguish between those subsidy interventions that predate the COVID-19

pandemic and those undertaken since the start of 2020. This distinction is important so as to establish whether there was a subsidy build-up before governments responded to the economic fallout of the pandemic; that is, whether the observed pattern of subsidies was more than a recent crisis-era response.

Frequency and sources of subsidy intervention, November 2008–October 2021

The records of US subsidy awards and policy changes in our inventory imply there are three distinct phases since 2009. Based on the total number of subsidy policy changes observed, the years 2009–2014 can be distinguished from the following five years (2015–2019) and from 2020. As Figure 19 shows, on average there were 490 subsidy changes each year from 2009 to 2014. The average number of subsidy changes between 2015 and 2019 fell to 254 per annum. A total of 1,099 subsidy awards and policy changes took place during 2020, representing a quadrupling over the five years before the onset of the COVID-19 pandemic.⁹⁴

Just under 55% of all subsidy awards and policy changes witnessed from November 2008 to October 2021 involve steps that alter the competitive position of firms operating in markets inside the United States. Thus, 45% of American subsidy interventions in our inventory relate to export support or to financing the operations of beneficiary companies in other countries.

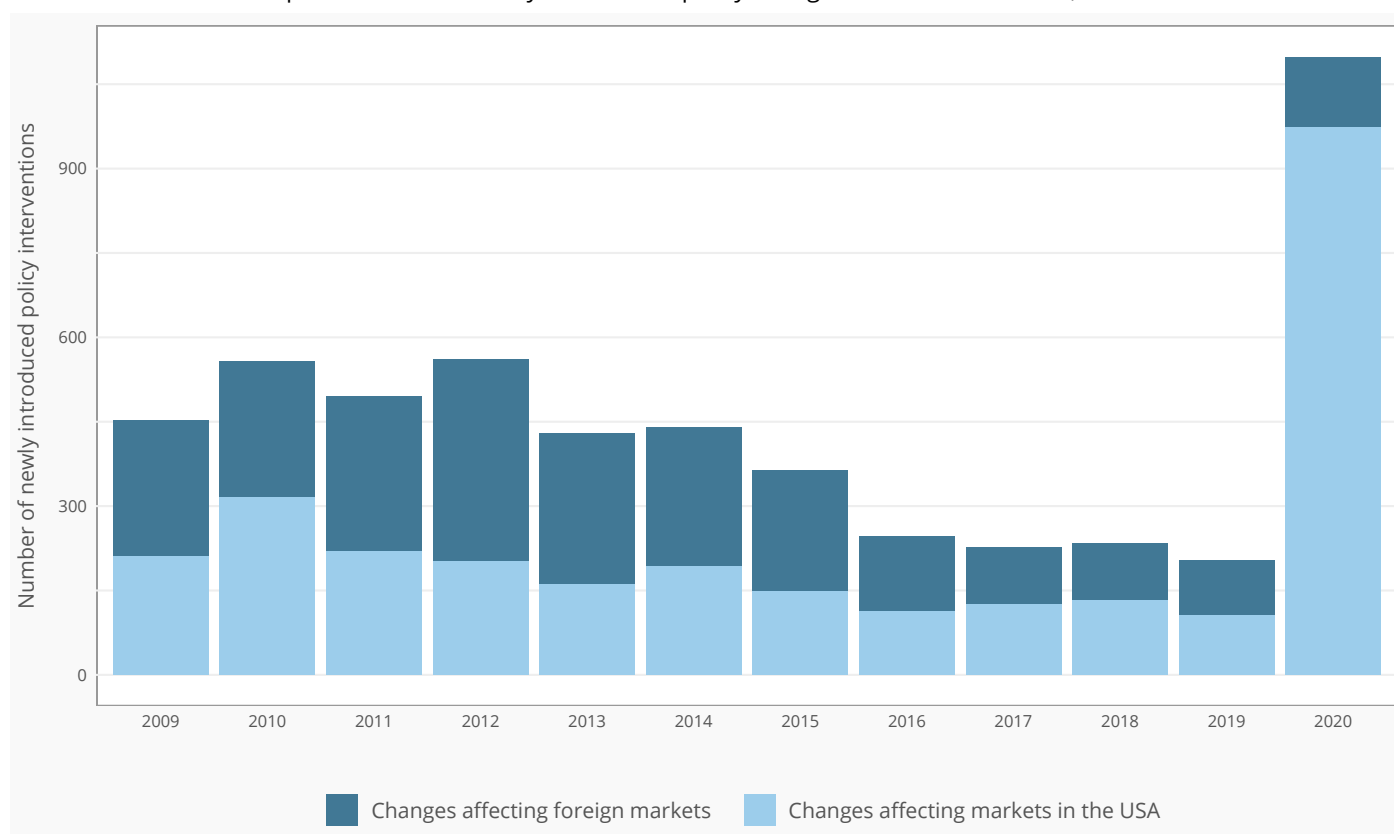
Information on subsidy policy changes undertaken by sub-national governments in the United States—essentially, the cities and states and associated public bodies—are compared to Federal government interventions in Table 10. Our inventory includes 518 subsidy awards or

93 Given our focus on subsidy policy changes, information on subsidies in place before November 2008 do not influence the statistics presented in this chapter.

94 These totals include subsidy policy changes that reduce or eliminate subsidies as well as decisions to increase or introduce subsidies—hence Figure 19 reveals the frequency of subsidy policy changes overall.

FIGURE 19

Three phases of new subsidy awards and policy changes in the United States, 2009-2020

**TABLE 10**

Summary statistics on U.S. subnational and Federal government sources of information on subsidy awards

	Subsidies policy changes and awards by US federal government bodies	Subsidies awarded by subnational governments
Number of recorded subsidy policy changes affecting conditions of competition in foreign markets, increases or introduction of subvention	2459	4
Number of recorded subsidy policy changes affecting conditions of competition in foreign markets, reductions or elimination of subvention	2	0
Number of recorded subsidy policy changes to import-competing firms, increases or introduction of subvention	2994	509
Number of recorded subsidy policy changes to import-competing firms, reductions or elimination of subvention	9	5
Percentage of recorded subsidy policy changes implemented during 2020 or 2021	29	7
Percentage of recorded subsidy policy inventions that are firm-specific	95.28	83.98
Percentage of time-limited subsidies (with implementation & revocation dates)	6.31	14.48
Total number of subsidy policy changes recorded in the inventory	5464	518

Source: Global Trade Alert.

policy changes undertaken by sub-national governments from November 2008 to October 2021.⁹⁵ The comparable total for the US Federal government is more than ten times larger (5,464).⁹⁶

Unlike the Federal government, sub-national bodies in the USA introduce few subsidy initiatives that seek to influence outcomes in foreign markets (Table 10). Proportionally more of the sub-national subsidy initiatives are time limited. A larger percentage of Federal government subsidy interventions took place during 2020 when compared to sub-national decisionmakers (29% versus 7%). Nearly five-sixths of subsidy developments at both levels of government specified the name of the beneficiary firm or firms (“firm specific” subsidies).

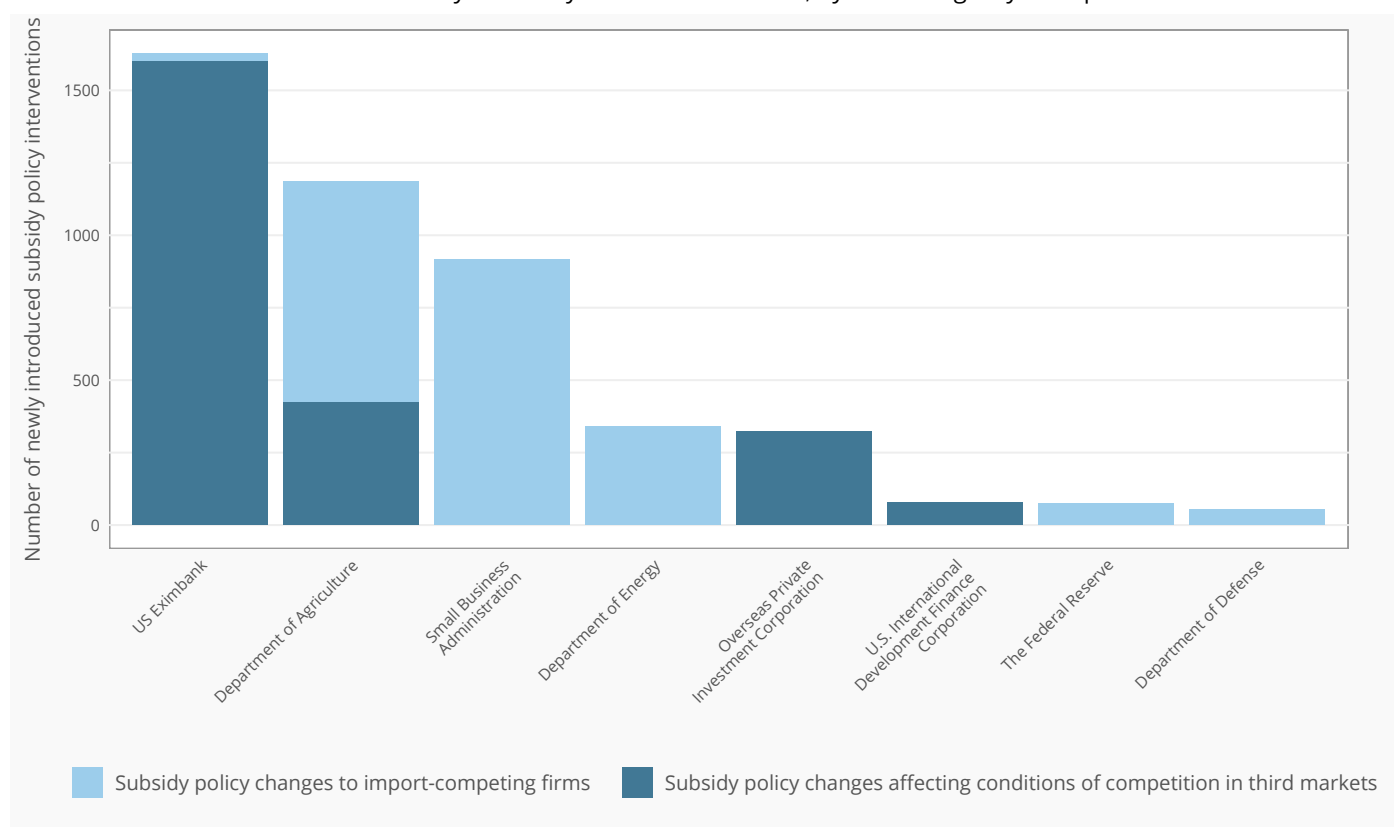
Given the large fraction of American subsidy policy developments in our inventory that refer to the US Federal

government, a breakdown of the federal departments and agencies may be of interest (see Figure 20). Three such federal bodies account for 81% of the entries in the inventory of US subsidy measures: the Export-Import Bank of the United States, the Department of Agriculture, and the Small Business Administration. These public bodies account for 1,627, 1,185, and 917 entries in the inventory, respectively.

The ten sectors implicated most often by subsidy awards and policy changes from November 2008 to October 2021 are listed in Table 11. The sectors cover a range of lines of business in agriculture, manufacturing, and services. Even the tradeable goods sectors in this list represent small percentages of overall US goods imports in 2019. Other than subsidy policy changes in two agricultural sectors, very high percentages of subsidy measures benefit specific firms.

FIGURE 20

Entries in the subsidy inventory of the United States, by Federal agency or department



⁹⁵ Given the limited compliance of US cities and states with the requirements to report tax breaks (per US Governmental Accounting Standards Board statement no. 77), under-reporting of subsidies by US sub-national public bodies is likely.

⁹⁶ Lack of information on the recipients of US Federal tax expenditures limits the coverage of central government subsidies. The latest US Treasury report on tax expenditures makes reference to three commerce-related tax expenditures: “Reduced tax rate on active income of controlled foreign corporations”, “Deduction for foreign-derived intangible income derived from a trade or business within the United States”, and “Interest Charge Domestic International Sales Corporations (IC-DISCs)” (Treasury 2021 page 4). The US Treasury forecasts that during the years 2020–2029 the total value of these three tax expenditures are \$480 billion, \$96.8 billion, and \$16.8 billion, respectively (see page 22). In passing, it is worth noting that many US states also have DISC rules as part of their state profit taxation legislation.

TABLE 11

Ten sectors receiving the most American subsidy awards and benefiting most often from subsidy policy changes

Affected sector code	Affected sector name	Total number of subsidy awards and policy changes recorded	Sectoral imports as a percentage of total national goods imports in 2019	Percentage of recorded subsidies that are firm-specific	Percentage of sectoral imports in 2019 covered by subsidies to import-competing firms
17	Electricity, steam & gas	583	0.08	99.14	100.00
01	Agriculture & horticulture products	402	0.00	53.48	78.64
39	Wastes or scraps	263	0.31	97.72	50.39
26	Yarn & woven textile fabrics	242	0.12	99.17	30.41
63	Accommodation, food & beverage services	202	0.00	99.01	0.00
49	Transport equipment	186	13.43	97.31	96.01
23	Bakery, grain mill & starch products	178	1.28	58.43	96.24
85	Personal support services	163	0.00	97.55	0.00
96	Recreational, cultural & sporting services	135	0.00	77.78	0.00
93	Human health & social care services	132	0.00	98.48	0.00

Source: Global Trade Alert.

Imports covered by subsidies awarded between November 2008 and October 2021

For those subsidies where it was possible to credibly identify the product category sold by the subsidy recipient or recipients then, for subsidies to import-competing goods producers, it is possible to estimate, using the finest grained United Nations trade data available,⁹⁷ the share of American imports covered by subsidies recorded in our inventory.

As our inventory includes subsidy changes since November 2008,⁹⁸ by construction the import shares covered are zero at the start of that month. This should be borne in mind as the reported import shares do not claim to cover subsidies that were in effect before November 2008. If anything, the import shares reported here reveal the extent to which imports face competition from *new*

subventions to local firms.⁹⁹ Whether those shares rise, stabilise, or fall over time is of interest.

For the years 2009 to 2020, the shares of American goods imports in products where import-competing firms have been subsidised are reported in Figure 21.¹⁰⁰ The height of each annual bar reveals the total import share “covered” by such subsidies. A breakdown is also provided. The latter reveals in a given year what share of American imports competed in product lines where 1–5 subsidies have been awarded to local firms, 6–9 subsidies were so awarded, 10–24 subsidies were granted, and over 25 distinct subventions were recorded in our inventory.

Over time, then, the overall import share facing subsidised local competition may change as can the shares in products where the frequency of subsidisation differs. This figure, therefore, can reveal whether any build up over time of subsidies to import-competing firms is concentrated

97 Specifically, we use the product codes at the six-digit level of disaggregation found in the United Nations Harmonized System. While some jurisdictions report import flows using more fine-grained product classifications, beyond the six-digit level there is no international obligation on governments to use the same product codes or to classify products identically. The absence of the latter two frustrates cross-country comparisons of import coverage, leaving analysts seeking to do so with little choice but to use the six-digit level of product codes.

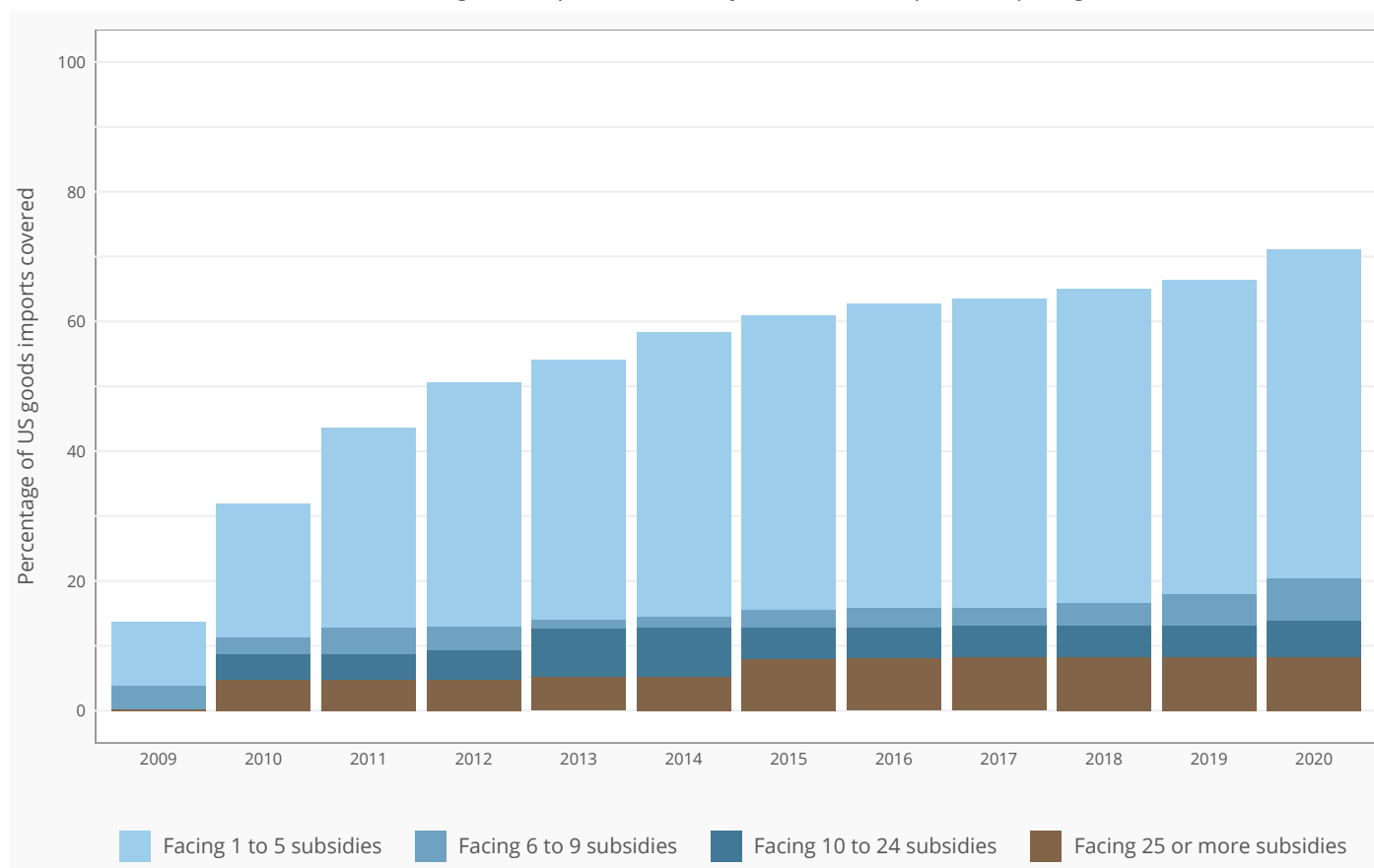
98 This month was the starting point for the monitoring of policy intervention by the Global Trade Alert term. November 2008 was chosen as the start date because in that month the G20 leaders declared publicly that they would eschew protectionism for the duration of the Global Financial Crisis.

99 Greater subsidisation to local firms may reduce imports, which may reduce the reported import shares. To avoid this endogeneity problem, we use the pattern of world trade flows during the years 2005–2007 to construct weights upon which the import coverage shares are calculated.

100 These import coverage estimates are duration adjusted. Specifically, the imports covered by a particular subsidy in a given year are weighted by the number of days that subsidy was in effect during that year. The later in the year a subsidy was granted the lower the weight attached and the smaller the contribution to the import coverage share. These duration adjustments take account of the introduction and expiry dates of subsidy measures. As some subsidies or subsidy schemes lapse, it is possible that the computed import share falls.

FIGURE 21

Share of American goods imports covered by subsidies to import-competing firms



in a certain set of product lines or whether the number of product lines facing more frequent subsidisation is growing over time.

The changing frequency over time in new subsidy initiatives identified earlier in Figure 19 carries over to the import coverage estimate reported in Figure 21. By 2009, 13.2% of US imports were covered by subsidies to import-competing firms that had been implemented since November 2008. Comparable duration-adjusted percentages for 2015 and 2019 were 61% and 66.4%, respectively, indicating a significant expansion in import coverage between 2009 and 2015 and slower growth from 2015 to 2019. By 2020, 71.2% of US goods imports faced one or more subsidised local rivals.

The cumulative build-up of subsidies is also evidenced by the percentage of US goods imports in lines of business where 25 or more subsidies have been awarded by American public bodies (see the brown segment of the bars in Figure 21). From 2014 on, at least 7.5% of US goods imports fell into this category. Before the COVID-19 era subsidies, already 17.9% of US imports were in products

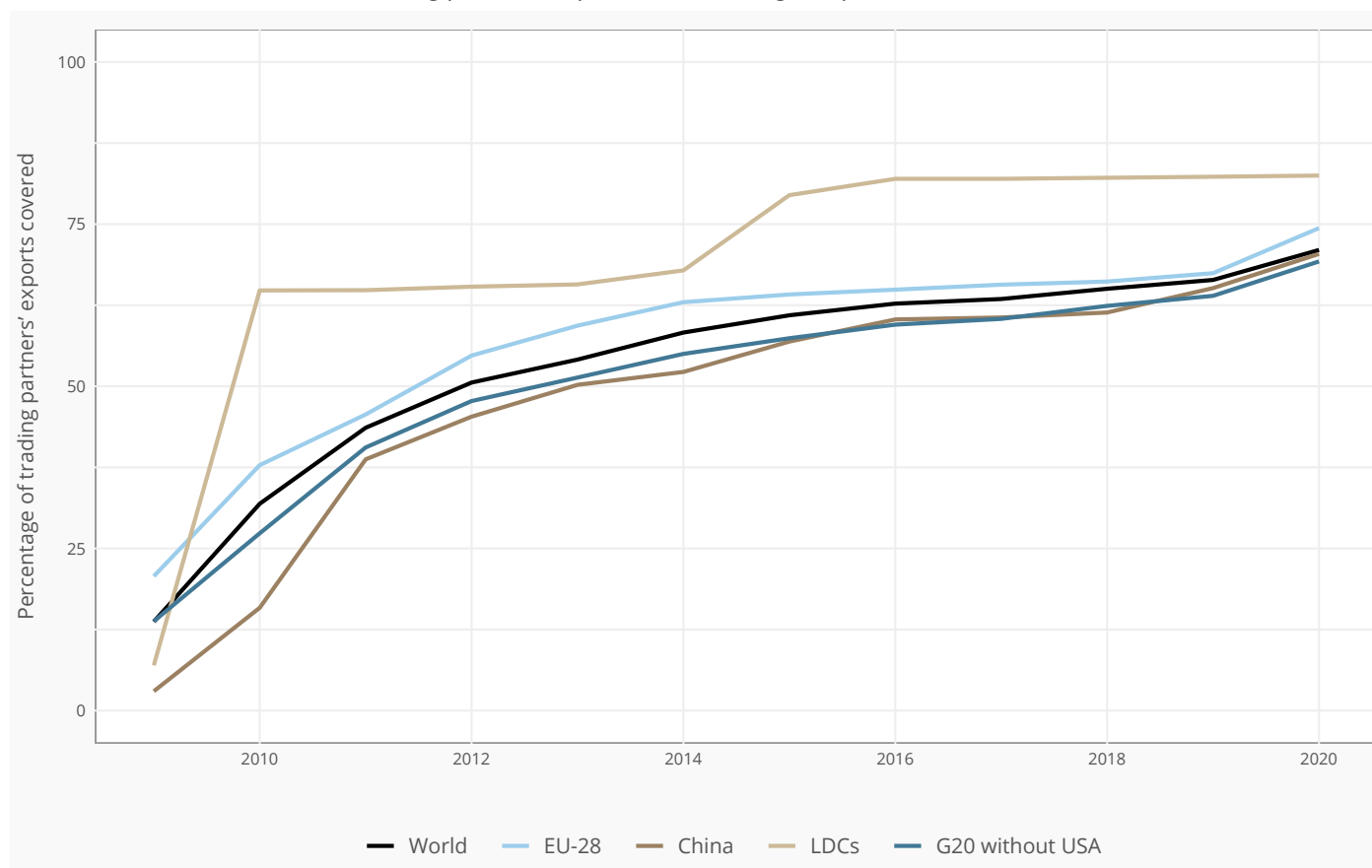
where six or more subsidies had been awarded to import-competing firms.

It is also possible to calculate the share of different trading partners' exports that are in products where subsidies to American firms have been recorded. Specifically, Figure 22 reports the export shares covered by US subsidies from China, the EU, the remainder of the G20, and the Least Developed Countries (LDCs). With the exception of the LDCs, the export exposures of these trading partners follow the general pattern observed in Figure 21 (and represented by the "world" line in Figure 22). From 2010, more than 60% of LDC exports to the United States competed against subsidised import-competing firms. That percentage plateaued through to 2010 and jumped in 2015 to 79.5%. By 2020, LDC export exposure to subsidised US import-competing firms had risen to 82.5%.

To put these import coverage percentages into perspective, consider the following. In 2020, our duration-adjusted import coverage estimate for all American policies in effect that year that crimp imports is 81.1%. The import

FIGURE 22

Share of selected trading partners' exports to USA facing competition from subsidised local firms



coverage estimate for the same year for all non-subsidy-related American policies recorded in the Global Trade Alert database is 37.9%.¹⁰¹

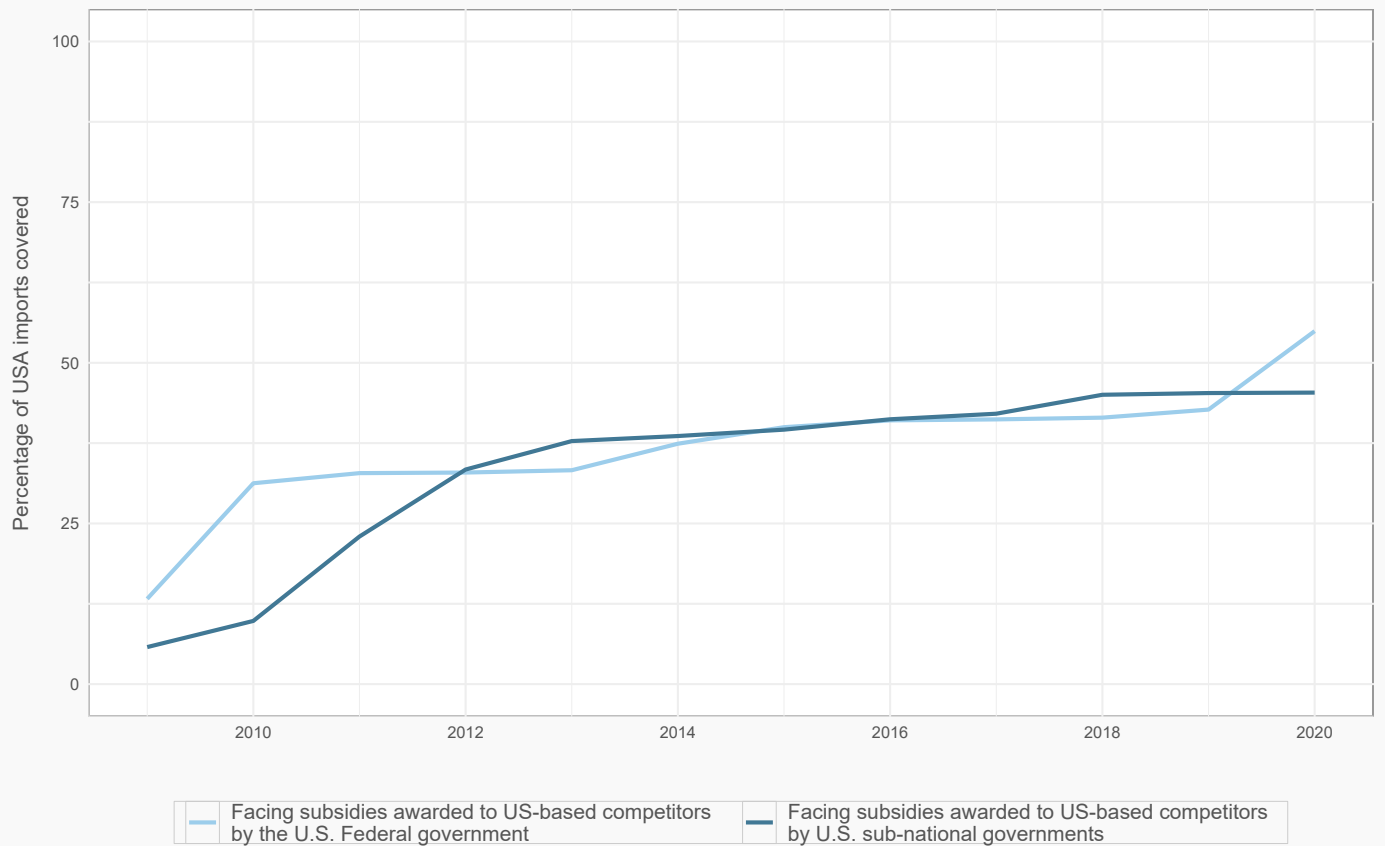
Finally, as it is possible to differentiate between subsidies implicating US imports implemented by sub-national governments and by the central government, then aggregate import coverage estimates were prepared for both levels of government. Figure 23 reveals that during economic crises, expansions in US Federal government support cover more US imports than subsidies offered by the US states.

However, a sustained build up in the latter meant that by 2012 the import coverage attributed to US sub-national subsidies was in line with that of the Federal government (approximately 31%). From 2012 to 2019, the percentages of imports covered by both Federal and sub-national government subsidies rose in tandem. By 2019, the subsidies awarded by US cities and states were to firms whose commercial operations covered 45.3% of total US goods imports, 2.5 percentage points larger than the comparable coverage statistic for the US Federal government. Figure 23 reveals that that ordering was reversed when due account is taken of the COVID-19 pandemic response in 2020.

¹⁰¹ Both of the percentages reported in this paragraph differ from their values in 2019, the year before COVID-19 pandemic policy response came into effect. The former percentage took the value of 76.6% in 2019; the latter value 32.4%.

FIGURE 23

Share of American imports covered by sub-national and Federal government subsidies to import-competing firms



CHAPTER 9

THE GAME IS WORTH THE CANDLE: ADVANCE DELIBERATIONS ON CORPORATE SUBSIDIES

This report addresses a conundrum facing policymakers that is becoming more acute over time. Many policymakers regard subsidies as a useful part of the policy toolkit necessary to tackle a growing number of societal problems.

Yet, in an interdependent world, those same subsidies can induce recriminations between governments that can undermine the very desire to cooperate in trade policy and in other areas, such as climate change. Worse, trade tensions that spin out of control create uncertainty, which in turn chills investment.

While this conundrum is recognised by many, at present there is no attempt to update the global trade rulebook for subsidies agreed in 1993. Nor is there broad-based deliberation that could lay the groundwork for a future understanding between governments.

In the meantime, there are growing recriminations between governments over subsidies including:

- Increased unilateral action taken by governments against imports produced by firms that are alleged to have received subsidies (recall the findings in Figure 1).
- A trend increase in the number of new subsidy-related disputes brought by governments to the WTO since 2010 (recall Figure 2).
- Accusations that subsidies led to the development of overcapacity in certain sectors of the world economy (in particular, steel and aluminium).
- Trenchant criticism by American and European policymakers of the so-called non-market practices of China and other state-led capitalist economies.

- The creation of the trilateral process involving the EU, Japan, and the USA to advance proposals for subsidy and other reforms at the WTO.
- Set piece clashes between the American and Chinese ambassadors at the WTO General Council over subsidies, national development strategies, and the principles underpinning the multilateral trading system.
- Evidence consistent with greater tit-for-tat retaliatory dynamics in subsidies than in import tariffs (at least between China, the European Union, and the United States).

Taken together—plus the finding that in 2019 two-thirds of world goods trade was in products and along trade routes where subsidised American, Chinese, and European firms sell—we are drawn to the conclusion that the status quo is a recipe for an increasingly distorted world trading system.¹⁰² Indeed, one might ask how much more global goods trade and how much more recrimination between nations need occur before concluding that the game is worth the candle?

The use of the word “game” here is definitely a misnomer. What we have in mind here is the serious business of systematic deliberation about the nexus between subsidies, market access, and the potential for enhanced international cooperation. Such deliberation would largely be technocratic in nature and would draw upon evidence, encourage further data collection and analysis, and facilitate the identification of alternative cooperative options.

¹⁰² Although this report has put the subsidies of China, the EU, and the USA under the spotlight, it is worth bearing in mind that other nations subsidise producers within their jurisdictions as well. Taking all of the subsidies in the Global Trade Alert database together, we estimate that in 2019 no less than 78% of global goods trade involved products and trade routes implicated by subsidies. The share of world goods trade covered by the subsidies of nations other than China, the EU, and the USA is 54%. The latter two estimates, plus the one in the main text concerning the global trade coverage of American, Chinese, and European subsidies, implies that there is considerable overlap in the products and trade routes covered by different countries' subsidies.

Clearly, such deliberation should involve officials and not just from trade ministries. Subsidies can have public finance implications, and the withdraw of corporate support in the months and years ahead should be of interest to officials in finance and economic ministries as well.¹⁰³ Deliberation would also benefit from the expertise of independent analysts and from the international organisations that have documented and estimated the impact of subsidies.

In light of the findings presented in this report, we recommend that deliberation be organised around the following five themes.

Ascertaining the scale of the challenge now and in the future

The objective here should be to understand the existing global landscape on subsidies in an even-handed manner, letting the evidence reveal the forms and prevalence of subsidisation and the public bodies taking subsidy measures now and in the future. So as to make progress, it may make sense to start by examining the subsidy regimes of jurisdictions whose national incomes exceed a certain size.¹⁰⁴

That landscape should cover a wider range of subsidies than those currently notified to the WTO. By and large, existing multilateral trade disciplines relate to domestic and export subsidies for industrial goods and agricultural products. Our inventory has shown that other types of subsidies implicate 21st century international commerce. First, a quarter of the subsidies that we have recorded implicate domestic conditions of competition in service sectors. A fifth of the subsidies offered by China, the EU, and the USA that seek to influence conditions of competition in overseas markets also implicate the service sector.

Second, it appears that numerous sub-national and national governments go to considerable lengths to lure foreign direct investment with subsidies. A comprehensive landscape on subsidies should not be confined to state-provided incentives that can affect cross-border trade in goods and services. Subsidies affecting every form of cross-border supply should fall within scope.

A third consideration relates to state-provided export incentives. While in principle these are covered by WTO rules on goods trade, the reality—at least in trade in non-agricultural goods—is that many types of state-induced export incentives have largely escaped scrutiny. Tax-

based export incentives are a case in point. “Innovation” by export promotion agencies over the past decade suggests that a fresh look at their subsidy awards is in order. It appears the notion of trade finance has been stretched.

There is a deeper point here that deliberation will need to address: developing a workable definition of subsidies. One trap to avoid is confining the discussion to a pre-specified list of policy instruments. Given the temptation to substitute policy instruments that come under scrutiny with those subsidies that do not, it is better to head off this cat-and-mouse game by developing a definition based on the observable characteristics of subsidies (recall the four dimensions to the definition of a subsidy described in Chapter 3 of this report).

Another important dimension of the landscape relates to the levels of government and associated public bodies under consideration. Evidently, supranational agencies influence the shaping and execution of subsidy policies in the European Union. Given the tendency over the past decade to create common EU-wide funds implemented at the supranational level, it should not be surprising that the subsidisation by supranational public bodies attracts the interest of trading partners.

Likewise, sub-national governments appear to play a significant role in granting subsidies in the United States. Subsidies to sub-national state-owned enterprises in China were found in this report to be significant as well. Some have also contended that subsidies awarded by sub-national governments in China may well implicate trade flows. European nations have active sub-national governments as well, such as the German Lander. Similar considerations apply in other jurisdictions (e.g. Canadian provinces, Australian states, etc.)

A practical consideration is that information needed about subsidy schemes and subsidy awards may be uneven. Resources should be devoted to assembling information on subsidies, ideally from public sources but, if that is not made available by governments, from other sources. Where comprehensive data are not available about a public body's subsidy interventions, then this fact should be shared in the deliberation process.

The understanding developed of the global landscape of subsidies should not be static. Inevitably, it will have to be updated as governments unwind corporate support introduced as a result of the COVID-19 pandemic and as they implement plans to decarbonise their economies.

103 Deliberation should not become shadow negotiations. Indeed, the inclusion of officials from economic and finance ministries in the deliberative processes should reduce the likelihood that the intended technocratic process is subverted.

104 As cross-border commerce is potentially affected by subsidies, a trade-based threshold may not make sense. A government that deploys considerable subsidies to substitute imports with domestic production may fall below a trade-based threshold.

In sum, a comprehensive understanding of the landscape of subsidies should include all of the state-provided inducements that affect different forms of commerce, modes of supply, and types of inducement after taking a stand as to what constitutes a subsidy in the first place. The scoping out of the subsidy landscape should be both contemporary as well as examining the emergent trends in subsidisation associated with decarbonisation policies and COVID-19 pandemic response and recovery.

Effectiveness of subsidies and alternative policy interventions

A comprehensive inventory of subsidy schemes and awards of potential relevance to the world trading system will almost certainly reveal that *different* types of subsidies have been used to target the *same* stated objective. Those subsidy interventions are unlikely to be equally effective or have the same implications for cross-border commerce (in qualitative or quantitative terms).

The objective of deliberation in this respect should be learn the *degree* to which there are tensions between the effectiveness of a subsidy in meeting a nationally specified objective and the cross-border harm that the subsidy creates. Insights into this matter would reveal the circumstances where the conundrum mentioned at the start of this chapter is acute. Put differently, just because a conundrum exists in principle does not mean it exists in practice—and evidence is needed to take this discussion forward. Here is where technocratic expertise inside and outside the relevant international organisations can contribute by analysing the consequences of different subsidy interventions.¹⁰⁵

Any government that publicly states that the subsidies it deploys to attain a certain specified objective are efficient or create little fallout for cross-border commerce would be expected to back that up with evidence assembled by third parties and to make relevant data available so that other analysts can replicate the findings. In the spirit of conducting an evidence-driven and technocratic deliberation process, statements about the consequences of subsidies that are not supported with evidence in this manner would be heavily discounted.

Confidence building and meaningful transparency on the trade-related aspects of subsidies

One factor that has contributed to the acrimony over subsidies in trade policy circles in recent years is the lack

of comprehensive, accurate, and up-to-date information on state subsidy schemes and awards. The absence of high-quality information on subsidy policy in trading partners may have been exploited tactically by interested parties, both in the private and public sectors. The deliberation process we envisage should involve reflection on alternative—and potentially complementary—approaches to encouraging meaningful transparency on subsidies.

It is well known that the current arrangements at the WTO relating to subsidy notification are not fit for purpose (although fairness requires acknowledging that there are fewer problems in respect of subsidies in the agricultural sector). More than half of WTO members routinely fail to make subsidy notifications and, of those that do, many do so with considerable delay. Criticisms about the incompleteness of certain submissions have been made by some WTO members. Moreover, such was the paucity of information provided by many G20 members to the WTO secretariat about their general economic support measures (many of which are subsidies) that information on such policy intervention was dropped from the half-yearly monitoring reports on G20 trade measures.

In addition, not all of the notifications on subsidies made include information on the relevant products and sectors of economic activity affected (with relevant United Nations product and sectoral codes provided) and other information necessary to generate comparable entries in a central inventory of subsidies that supports deliberation in trade policy circles. As the research for this report shows, such an inventory can be assembled in a methodical manner, and intelligent aggregation across subsidy interventions allows for scaling the cross-border range of subsidies.

While we haven't given up on WTO members improving the frequency and quality of subsidy notifications,¹⁰⁶ another avenue should be explored. Given the pervasive trend over the past 25 years to improve the transparency of governance arrangements and policy decisions domestically, a development that is not confined to the more competitive democracies, deliberation should explore the extent to which international transparency on subsidies can piggyback on more ambitious domestic transparency regimes.

Exploring the potential complementarities between domestic transparency mechanisms and those developed at regional and global levels should be a priority. It would be helpful to identify the minimum standards that the

¹⁰⁵ As well as informing inter-governmental deliberation, such findings could also shape unilateral subsidy policy decisions of public bodies.

¹⁰⁶ And discussions on that matter should continue at the WTO. The deliberation process we have in mind need not duplicate such discussion.

former should meet in order to facilitate transparency at the global level.

As the research for this report showed, even the jurisdictions that pride themselves on the transparency of their current arrangements for subsidies typically do not include all of the information necessary to support discussions of the cross-border consequences of such policies. This problem has a readily available administrative solution. There are other considerations to be explored as well, such as cost.

Thought should also be given to the manner in which subsidy-related information is compiled at the WTO and made publicly available. In addition to creating a queryable database of subsidies that is updated as information becomes available from national depositories of subsidy awards, that database should be linked to those on cross-border trade flows. In this manner, the total value of trade potentially covered by a subsidy could be estimated and the identification of trading partners conceivably affected would be possible.

Overall, the goal should be to identify ways in which confidence can be built among WTO members on subsidy policy by capitalising on the developments in domestic transparency witnessed in many nations and in information technology that allows for the creation of comprehensive databases of subsidies that can be linked to other databases on cross-border commercial transactions.

Alternative approaches to differentiating among subsidies

In addition to differentiating among subsidies according to empirical evidence of their effects, deliberation would benefit from understanding how different legal regimes treat subsidies that are likely to distort conditions of competition in the pursuit of some non-economic objective, such as the adoption of “cleaner” energy technologies. Those legal regimes would include the subsidy-related aspects of national competition or antitrust law and the regimes codified in regional trade agreements and, where relevant, other inter-governmental agreements.

A taxonomy of different approaches would be developed which, in turn, would facilitate systematic comparison of the relative merits of each class of legal regime. Deliberation here should not be confined to existing governmental practice—the taxonomy could stimulate ideas as alternative approaches that properly and effectively differentiate between the wide range of subsidies available to public bodies.

Consideration of national and regional legal regimes concerning subsidy control also invite comparisons with the existing set of multilateral trade rules. This comparison should not be undertaken with an eye to declaring which legal approach is “best”. Rather, the goal should be to lay out alternative approaches that could support deliberation on enhanced multilateral cooperation on subsidies. (It may well be the case that a well-prepared comparison could also inform reforms of national subsidy control regimes.)

Finding common ground on the purpose of international cooperation on subsidies

Reflection is needed as to the very purpose of international cooperation on subsidies. Ideally, that purpose should be defined in terms of outcomes to be encouraged or avoided—and not in terms of broader development models pursued. Ultimately, the goal here is to identify the different types of problem that broad-based inter-governmental cooperation could address.

As the discussion in Chapter 4 made plain, there is no single view on why a nation's subsidies generate concerns among trading partners. Is it because such subsidies undercut prior market access commitments? Is it because subsidy races and other copycat behaviour are costly, unwelcome, and yet, in many circumstances, inevitable? Or is because of other cross-border knock-on effects of subsidies, of which there are at least five types?

The logic, the empirical relevance, the practicality, and the degree of interest in each of these perspectives needs amplification in the deliberative process envisaged here. The implications of each perspective for the types of subsidies that governments can implement without raising the hackles of trading partners should be explored too.

However, deliberation should not be confined to these three perspectives. Alternative means of framing the discussion on purpose should be considered as well. In recent years, the concept of Competitive Neutrality has been used in competition law circles and might provide a logic for enhanced international cooperation on subsidy policy. So might the objective of cooperation that renders subsidy awards and subsidy policymaking more transparent to trading partners.

A by-product of reflection on the underlying purpose or purposes of enhanced cooperation on subsidies is likely to involve an assessment of the strengths and weaknesses on existing multilateral rules on subsidies and related matters.

Formulate a proposal for WTO members to take forward cooperation on the trade-related aspects of subsidises

Ultimately, consideration of the five themes described above would inform the preparation of a proposal to develop future cooperation between WTO members on subsidy matters. That proposal could include different options reflecting, perhaps, different levels of ambition and different ways of making progress over the near to medium term.

At this stage, other contextual factors matter. It is worth reflecting on whether any proposed initiative could contribute to, or benefit from, other high-profile inter-governmental campaigns and associated objectives. For

example, what, if any, relationship could be developed between enhanced cooperation on the trade-related aspects of subsidies and the stated desire of many governments to reduce fossil fuel subsidies?

Another way of framing this matter is to explore the coherence between enhanced cooperation on trade-related subsidies and other imperatives. In this regard, the concerns raised in recent months that state support for the agricultural sector is forecasted to rise sharply in the medium term would appear germane.¹⁰⁷ Developments in national industrial policies—some of which appear to be linked to geopolitical rivalry—are another, probably unavoidable, conditioning factor. Such considerations may influence the definition of the scenarios for enhanced inter-governmental cooperation on the commerce-related aspects of subsidies.

¹⁰⁷ In a report published in September 2021, the Food and Agricultural Organization of the United Nations, the United Nations Development Programme, and the United Nations Environment Programme reported that the total value of financial support to producers in the agricultural sector had reach \$540 billion. The report also observed that “Under a continuation of current trends, this support could reach almost USD 1.8 trillion in 2030” (FAO, UNDP, & UNEP 2021).

CHAPTER 10

WHAT'S NEW IN THE GLOBAL TRADE ALERT DATABASE?

In preparing this report and the associated inventory of corporate subsidies there were no fundamental changes in the objectives, standards, and methodology employed by the Global Trade Alert team. That methodology—including the seven tests for inclusion of a report in our database which were described earlier—are explained in Evenett and Fritz (2020b) (the so-called GTA Handbook). Readers and users of our data are referred to that document for a full account of our approach to collecting, enriching, evaluating, and processing information on public policy changes that may have implications for cross-border commercial flows.

Although the focus of this report was on the subsidies awarded to firms by public authorities in China, the European Union, and the United States, our regular monitoring of commerce-related policy intervention continued. In total, information on 1,659 distinct policy interventions that affect relative treatment of domestic commercial interests vis-à-vis their commercial rivals other than the subsidies awarded by these three trading powers was submitted for consideration for publication since 1 January 2021.

Much of the information collected on subsidies for this report was obtained from official inventories of subsidies awarded by national, sub-national, and supranational government bodies. The latter inventories varied considerably in how much information was provided, ultimately in how “structured” the information was.

For each information source on subsidies, our data forensics, monitoring, and technology teams had to work closely together to extract relevant information, augment it where key pieces of information were missing, and ensure that the resulting entries met the demanding standards for inclusion in the Global Trade Alert database. Close coordination was essential throughout each stage in the evidence collection process.

Considerable process innovation ensued, and the lessons learned will be applied to gather more information on other relevant public policy information that is available

in structured or semi-structured form by governments. As argued in the Introduction of this report, the revolution in transparency in many jurisdictions over the past 25 years in their willingness to making public information on public policy changes implies that those interested in policy developments implicating the world trading system are not dependent solely on the notifications of WTO member governments. This is not to imply that governments make information available to their domestic populations on every relevant state act. Rather, that there is now significantly more information that can be captured and made available for deliberations on world trade.

However, it became clear during the evidence collection process for this report that there is a distinction between governments making public information on subsidy awards and meaningful transparency of subsidy information. The former is a necessary condition for the latter. The latter requires that subsidy information be accessible, accurate, queryable, comparable, and complete. Completeness also involves including information on relevant internationally accepted product and sectoral codes. The standard of meaningful transparency was rarely met, even in those jurisdictions that claim to be transparent about their subsidy policies.

As a result of the information collection this year, the size of the GTA database exceeded 40,000 entries on commerce-relevant policy intervention for the first time. The combination of trade policy expertise and coding talent is in large part responsible for the fact that our database has doubled in size since the beginning of 2019.

To put this progress in perspective, consider the following: The WTO's Trade Monitoring database, which was also established at the start of the Global Financial Crisis, now contains 10,373 entries.¹⁰⁸ Moreover, the United Nations' TRAINS database of non-tariff measures now contains 40,208 entries of public policy interventions implemented since 1 November 2008 (that is, over the same reporting period as the Global Trade Alert). The TRAINS total includes a large number of reports on Technical Barriers to Trade

108 See <https://tmdb.wto.org/en> (statistic reported as of 15 October 2021).

and Sanitary and Phytosanitary Standards, which are not covered in the Global Trade Alert database. Conversely, import tariff changes are covered in our database but not in the TRAINS database.

WHAT IS THE GLOBAL TRADE ALERT AND THE ST. GALLEN ENDOWMENT FOR PROSPERITY THROUGH TRADE?

The Global Trade Alert (GTA) is an independent monitor of commercial policy choice by public sector bodies that was launched in June 2009. Such monitoring enhances the transparency of the world trading system, which is a global public good. The necessity of independent monitoring has grown over time as some governments have put undue pressure on the official monitors of trade and investment policy choice. On other occasions, governments have refused to supply accurate information to official monitors in a timely manner.

Although the Global Trade Alert was established in June 2009, its monitoring of government commercial policy choice goes back to November 2008. In the latter month, G20 leaders declared that they would eschew protectionism and that they had learned the lessons from misguided international economic policy responses to the Great Depression in the 1930s. In several years that followed, this “no protectionism pledge” was renewed and restated. One purpose, then, of the GTA was to provide an independent assessment of whether governments had stuck to their promises.

Another (medium- to longer-term) purpose of the GTA was to fill a significant gap in the data on non-tariff measures undertaken by governments. This lacuna has frustrated widespread assessment of the impact of non-tariff measures, comparisons across alternative policy instruments, the development of evidence-based proposals for new trade rules on non-tariff measures, and deliberation on these typically less transparent policy instruments. It is heartening that, as of October 2021, approximately 2,680 entries in Google Scholar make reference to the Global Trade Alert and its findings.

The Global Trade Alert team also undertakes analysis of the data that it collects. This is the 28th report of the Global Trade Alert, and prior reports have focused on pretty much every major topic debated within the world trading system over the past decade. The team has also prepared studies other than reports. All of this analysis

and thought leadership is available at this URL: <https://www.globaltradealert.org/reports>.

The Global Trade Alert was originally located within the Swiss Institute for International Economics and Applied Economic Research at the University of St. Gallen, Switzerland. The GTA was also a project of the Centre for Economic Policy Research (CEPR), the leading network of economics researchers in Europe. In January 2021, the GTA was moved institutionally into the St. Gallen Endowment for Prosperity Through Trade. That foundation is formally outside of the University of St. Gallen’s legal structure, but it remains firmly within the university’s “ecosystem”.

The University of St. Gallen, the Max Schmidheiny Foundation of the University of St. Gallen, and Simon J. Evenett founded the St. Gallen Endowment in November 2020. One goal in creating the foundation was to put the Global Trade Alert on a solid financial footing over the medium to longer term. Another was to allow the core competencies of the Global Trade Alert—specifically, the synergies that arise from combining trade policy talent with coding and other technological expertise—to be applied to other monitoring initiatives related to cross-border commerce. To that end, the Digital Policy Alert was launched in April 2021 and has already recorded 1,403 policy developments associated with 849 distinct regulatory or policy initiatives undertaken by the G20 nations (plus Switzerland) and implicating the digital economy. The Digital Policy Alert’s policy activity monitor is being supplemented by detailed mappings of relevant policy interventions, again with the goal of raising the quality of analysis and deliberation on this area critical to the future of social, cultural, and economic development.

The statutes of the St. Gallen Endowment (which are available upon request) require the Foundation’s staff and its Board members to take steps to preserve the organisation’s independence. The management of the St. Gallen Endowment have adopted the following Statement of Purpose, which sheds further light on the purpose and theory of change advanced by the Foundation:

“What gets measured gets managed” is Peter Drucker’s famous dictum for making progress. Because we want globalisation to be better managed for the benefit of all, we will reconceive how government policy is measured, democratise access to that information so that more effective policies can be identified, and advance policy initiatives so that international commerce is a stronger engine of human progress in the decades to come.

By combining policy expertise with ever more novel ways to acquire, enrich, and analyse information, we

have become the trusted, impartial source for many who need to know what governments are really doing to global commerce. As well as nurturing a pioneering team capable of adapting quickly to our unsettled world, we engage with individuals and organisations that respect our independence and share our core objectives and values, including ensuring that the millennium-old human imperative to trade remains a force for good as societies tackle the pressing challenges of the 21st century.

ACKNOWLEDGEMENTS

The St. Gallen Endowment for Prosperity Through Trade was delighted to join forces again with the Hinrich Foundation to brainstorm and jointly disseminate this report. Special thanks are due to Merle Hinrich, Kathryn Dioth, and Dini Djalal, not least for the valuable feedback at the conception and review stage of this report. This report was written by Simon J. Evenett and Johannes Fritz, who take final responsibility for its contents.

The Global Trade Alert has benefited over the years from the advice of many experts from academia, think tanks, business, and government. In the case of this report, Professor Gary Horlick, Dr. Patrick Low, and Professor Damien Neven provided valuable comments on the first draft.

The successful preparation of this report required contributions from all of the operational teams in the Global Trade Alert (Data Forensics, Monitoring, Outreach, and Technology). The processing and evaluation of each potential structured and semi-structured source of information on corporate subsidies required extensive collaboration between the teams. Consequently, this section of acknowledgements is more extensive than usual.

Dr. Piotr Lukaszuk led the Data Forensics team until his resignation at the end of September 2021. Piotr was instrumental in assessing and processing the substantive content of each source of information on corporate subsidies, a task which combined technical knowledge about subsidies with a pragmatic understanding of what coding can deliver. Piotr also played a vital project management role during the evidence collection phase of this report. We take this opportunity to acknowledge and thank him for this significant contribution to the information collection effort that resulted in the inventory of corporate subsidies assembled for this report.

Piotr was a member of the Global Trade Alert team for seven years and became a highly respected colleague. He also took the time to bring forward younger analysts. We wish him the best of luck in his future endeavours.

Apolline Duclaux, Varinia Gonzalez, Silvan Hofer, Aurel Rochell, and Robin Scherrer were also members of the Data Forensics team that made valuable contributions to the information collection and processing upon which the findings of this report are based. Fernando Martin Espejo joined the team in September 2021 and went the extra mile providing data-related and coding support during the preparation of this report.

The six members of the Technology team need to be recognised as well, not least for their role in acquiring information on thousands of American, Chinese, and European Union corporate subsidies. Patrick Buess led this team, which also included Andrey Bernatsky, Cristian Bucurenciu, Liubomyr Gavryliv, Myroslav Kravets, and Kamran Nejad-Sattary. We are grateful for their considerable efforts and problem-solving prowess.

The Monitoring team, jointly lead in the run up to the preparation of this report by Ana Elena Sancho and Josse Jakobsen, provided important jurisdiction-specific and cross-cutting expertise that proved invaluable in accurately documenting corporate subsidies in a manner that is consistent with our longstanding standards and methodology. Other members of the Monitoring team that contributed to the data collected for this report include Fandi Achmad, Fiamma Angeles Bonelli, Hannes Berggren, Callum Campbell, Alya Gharara, Halit Harput, Pia Höring, Chintan Jadwani, Lucas Miaihles, Maria Moreno Sancho, Anvar Rahmetov, Claudio Vidal, and Carlee Wright.

In addition to his responsibilities as Chief Executive Officer of the St. Gallen Endowment and in taking forward the Digital Policy Alert initiative, Dr. Johannes Fritz provided overall strategic guidance for the evidence collection exercise necessary to assemble the inventory of corporate subsidies that underpins this report. Johannes also provided critical technical support to the Data Forensics and Technology teams, once again demonstrating the wide range of competencies that he brings to the St. Gallen Endowment. Johannes is also a co-author of this report.

Jason Weall copy-edited the draft chapters of this report and provided useful expositional advice. Once again, Anil Shamdasani effortlessly weaved together the different elements of this report into the professional document that is before you. Josse Jakobsen developed and executed the dissemination campaign associated with this report with the assistance of Pia Höring. A number of innovations were introduced in this respect, which they can take credit for, one of which was to produce videos based on interviews with leading international trade and development experts. Those videos were produced by Jon Mark Walls, to whom we are also grateful.

Simon J. Evenett

Founder, St. Gallen Endowment for Prosperity Through Trade.

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Market access risk from corporate subsidies in 2019, estimates for each exporting jurisdiction

Importing jurisdiction	China			EU-28			USA		
Exporting jurisdiction	Total number of subsidy awards to Chinese import-competing firms that are faced by rivals seeking to ship from the exporting jurisdiction	Total value of bilateral good exports at risk in 2019 (millions of USD).	Share of Bilateral good exports at risk in 2019 (millions of USD)	Total number of subsidy awards to import-competing firms in the European Union that are faced by rivals seeking to ship from the exporting jurisdiction	Total value of bilateral good exports at risk in 2019 (millions of USD).	Share of Bilateral good exports at risk in 2019 (millions of USD)	Total number of subsidy awards to American import-competing firms that are faced by rivals seeking to ship from the exporting jurisdiction	Total value of bilateral good exports at risk in 2019 (millions of USD).	Share of Bilateral good exports at risk in 2019 (millions of USD)
Afghanistan	6	20	0.91	69	12	0.28	3	-	0.31
Albania	10	92	0.97	197	1275	0.71	8	44	0.78
Argentina	268	5746	0.91	396	7025	0.88	474	2129	0.75
Armenia	10	174	0.91	32	185	0.4	5	-	-
Australia	558	80165	0.91	484	8771	0.47	300	6171	0.66
Azerbaijan	10	741	0.99	101	11280	0.99	14	-	-
Barbados	1	-	0.06	65	13	0.62	13	26	0.64
Belarus	221	505	0.93	180	2294	0.5	29	203	0.52
Belize	1	-	-	64	105	0.83	10	26	0.55
Benin	5	44	0.8	44	-	-	4	-	-
Bolivia (Plurinational State of)	22	-	-	128	587	0.81	65	132	0.28
Bosnia and Herzegovina	227	-	0.21	302	2408	0.59	23	-	0.17
Botswana	3	14	1	35	111	0.11	1	-	-
Brazil	441	61491	0.97	687	28793	0.76	603	19638	0.66
Brunei Darussalam	20	277	0.68	1	-	-	6	-	-
Burkina Faso	7	94	1	65	50	0.2	4	-	1
Burundi	5	11	1	56	26	0.89	4	-	0.52
Cambodia	295	845	0.64	120	5605	0.75	64	1090	0.29
Canada	569	11837	0.69	748	28039	0.77	852	153982	0.49
Cape Verde	0	-	-	44	67	0.69	0	-	-
Chile	82	21986	0.98	327	6911	0.93	199	4670	0.5
China	0	-	-	1008	433260	0.92	842	358123	0.64
Colombia	232	4496	0.99	207	4071	0.79	92	10176	0.84

Importing jurisdiction	China			EU-28			USA		
Exporting jurisdiction	Total number of Chinese import-competing firms that are faced by rivals seeking to ship from the exporting jurisdiction	Total value of bilateral good exports at risk in 2019 (millions of USD).	Share of Bilateral good exports at risk in 2019 (millions of USD)	Total number of subsidy awards to import-competing firms in the European Union that are faced by rivals seeking to ship from the exporting jurisdiction	Total value of bilateral good exports at risk in 2019 (millions of USD).	Share of Bilateral good exports at risk in 2019 (millions of USD)	Total number of subsidy awards to American import-competing firms that are faced by rivals seeking to ship from the exporting jurisdiction	Total value of bilateral good exports at risk in 2019 (millions of USD).	Share of Bilateral good exports at risk in 2019 (millions of USD)
Comoros	0	-	-	22	22	1	3	-	1
Congo	14	3272	0.98	85	853	0.67	28	175	0.97
Costa Rica	252	597	0.79	166	3224	0.93	59	2968	0.61
Côte D'Ivoire	11	263	0.72	127	4220	0.82	29	614	0.81
Democratic Republic of the Congo	23	5678	1	108	587	0.78	19	-	0.19
Ecuador	31	1868	0.94	147	3185	0.95	73	6354	0.95
Egypt	70	1608	0.89	428	7363	0.74	350	1641	0.67
El Salvador	12	-	-	110	130	0.76	31	653	0.27
Eswatini	1	27	1	133	69	0.85	7	-	1
EU-28	660	202121	0.82	-	-	-	894	314298	0.68
Fiji	5	15	0.68	59	24	0.65	6	259	0.97
Gambia (Republic of The)	2	11	0.59	25	-	0.26	0	-	-
Georgia	26	45	1	136	440	0.7	20	166	0.9
Ghana	15	2643	0.94	140	2435	0.81	27	645	0.93
Guatemala	17	146	0.79	151	679	0.66	31	2444	0.65
Guyana	7	31	0.74	72	152	0.62	23	75	0.31
Honduras	41	36	0.96	129	1046	0.87	16	2272	0.47
Hong Kong	509	243463	0.82	506	19189	0.69	417	21105	0.54
Iceland	32	108	0.9	187	2707	0.77	19	217	0.62
India	541	14288	0.77	772	42644	0.83	693	29686	0.54
Indonesia	570	21988	0.79	424	13172	0.8	610	10184	0.58
Israel	490	3621	0.84	505	9163	0.59	314	5409	0.34
Jamaica	7	10	0.29	111	469	0.93	31	411	0.71
Japan	600	112001	0.88	816	78656	0.88	774	99817	0.75
Jordan	21	-	-	123	153	0.59	16	559	0.32
Kazakhstan	101	7102	0.91	157	22284	0.92	38	1302	0.92
Kenya	13	140	0.84	144	1364	0.9	14	408	0.71

Importing jurisdiction	China			EU-28			USA		
Exporting jurisdiction	Total number of Chinese import-competing firms that are faced by rivals seeking to ship from the exporting jurisdiction	Total value of bilateral good exports at risk in 2019 (millions of USD).	Share of Bilateral good exports at risk in 2019 (millions of USD)	Total number of subsidy awards to import-competing firms in the European Union that are faced by rivals seeking to ship from the exporting jurisdiction	Total value of bilateral good exports at risk in 2019 (millions of USD).	Share of Bilateral good exports at risk in 2019 (millions of USD)	Total number of subsidy awards to American import-competing firms that are faced by rivals seeking to ship from the exporting jurisdiction	Total value of bilateral good exports at risk in 2019 (millions of USD).	Share of Bilateral good exports at risk in 2019 (millions of USD)
Kuwait	28	14798	0.96	37	1843	0.63	25	1958	0.99
Kyrgyzstan	23	29	0.64	53	11	0.02	4	-	0.37
Lao	78	1483	0.92	90	117	0.48	14	13	0.1
Macau	31	31	0.59	39	20	0.24	6	-	0.23
Madagascar	23	100	0.5	113	863	0.82	7	558	0.63
Malawi	2	-	0.06	120	384	0.99	5	56	1
Malaysia	592	57663	0.91	509	21283	0.69	383	31949	0.82
Mauritania	11	855	1	105	699	0.91	8	-	-
Mauritius	18	28	1	130	682	0.82	42	195	0.63
Mexico	551	12753	0.92	604	25263	0.84	367	217296	0.64
Mongolia	57	6062	0.96	46	20	0.26	17	-	-
Montenegro	11	-	0.18	42	114	0.69	0	-	-
Morocco	264	649	0.97	412	16917	0.88	32	1259	0.84
Mozambique	16	471	0.73	133	1607	0.77	5	26	0.24
Myanmar	277	3020	0.54	110	896	0.23	6	37	0.05
Namibia	15	477	0.96	131	911	0.74	2	-	-
New Zealand	394	9302	0.85	331	3018	0.85	295	3017	0.81
Nicaragua	35	99	0.98	125	284	0.7	22	1982	0.55
Nigeria	50	1708	0.93	178	23655	0.96	48	5618	0.99
North Macedonia	253	24	0.63	278	4063	0.69	16	261	0.77
Norway	499	3067	0.92	716	68635	0.89	339	5429	0.81
Pakistan	217	1831	0.86	191	7471	0.89	368	1767	0.47
Palestine	0	-	-	12	10	0.78	4	-	1
Paraguay	5	26	0.7	122	618	0.86	55	83	0.76
Peru	63	14960	0.98	214	6467	0.93	61	3997	0.5
Philippines	485	19683	0.96	363	7246	0.71	316	8226	0.66
Qatar	56	9087	1	71	4843	0.7	36	1485	0.97
Republic of Korea	615	187912	0.92	579	48371	0.82	551	51050	0.69
Republic of Moldova	18	20	0.84	176	1141	0.59	10	16	0.44

Importing jurisdiction	China			EU-28			USA		
Exporting jurisdiction	Total number of Chinese import-competing firms that are faced by rivals seeking to ship from the exporting jurisdiction	Total value of bilateral good exports at risk in 2019 (millions of USD).	Share of Bilateral good exports at risk in 2019 (millions of USD)	Total number of subsidy awards to import-competing firms in the European Union that are faced by rivals seeking to ship from the exporting jurisdiction	Total value of bilateral good exports at risk in 2019 (millions of USD).	Share of Bilateral good exports at risk in 2019 (millions of USD)	Total number of subsidy awards to American import-competing firms that are faced by rivals seeking to ship from the exporting jurisdiction	Total value of bilateral good exports at risk in 2019 (millions of USD).	Share of Bilateral good exports at risk in 2019 (millions of USD)
Russian Federation	471	52423	0.9	746	125071	0.78	219	17673	0.84
Rwanda	4	38	1	61	28	0.61	4	29	0.47
Saudi Arabia	94	44863	0.98	149	24299	0.76	196	23939	0.98
Senegal	9	54	0.43	162	359	0.7	12	34	0.29
Serbia	261	-	-	473	6871	0.61	64	111	0.42
Seychelles	0	-	-	96	280	0.92	4	-	-
Singapore	532	29354	0.89	439	15343	0.68	241	15087	0.65
South Africa	398	23275	0.92	515	24567	0.85	367	3360	0.4
Sri Lanka	237	254	0.84	176	2572	0.78	34	1263	0.47
Switzerland	536	25980	0.89	1160	112991	0.92	592	24909	0.7
Thailand	574	35577	0.8	576	21050	0.83	673	23442	0.73
Togo	8	17	0.12	114	31	0.22	7	-	0.13
Tunisia	286	133	0.89	397	10149	0.88	50	447	0.76
Turkey	416	2315	0.65	798	72578	0.84	483	4775	0.48
Ukraine	312	1727	0.67	381	15518	0.77	104	1119	0.86
United Arab Emirates	162	15707	0.97	263	4633	0.43	374	3385	0.78
United States of America	649	120708	0.78	1154	292241	0.88	0	-	-
Uruguay	192	2098	0.82	218	1496	0.8	79	352	0.76
Uzbekistan	46	2285	0.99	77	50	0.38	38	-	0.56
Viet Nam	573	45008	0.83	403	40432	0.82	115	28604	0.56
Yemen	15	716	1	31	13	0.12	13	-	1
Zambia	24	4065	0.98	101	183	0.49	3	-	-
Zimbabwe	13	345	0.39	136	222	0.62	6	72	0.98

HOLDING THEIR FEET TO THE FIRE: THE TRACK RECORD OF EACH G20 MEMBER

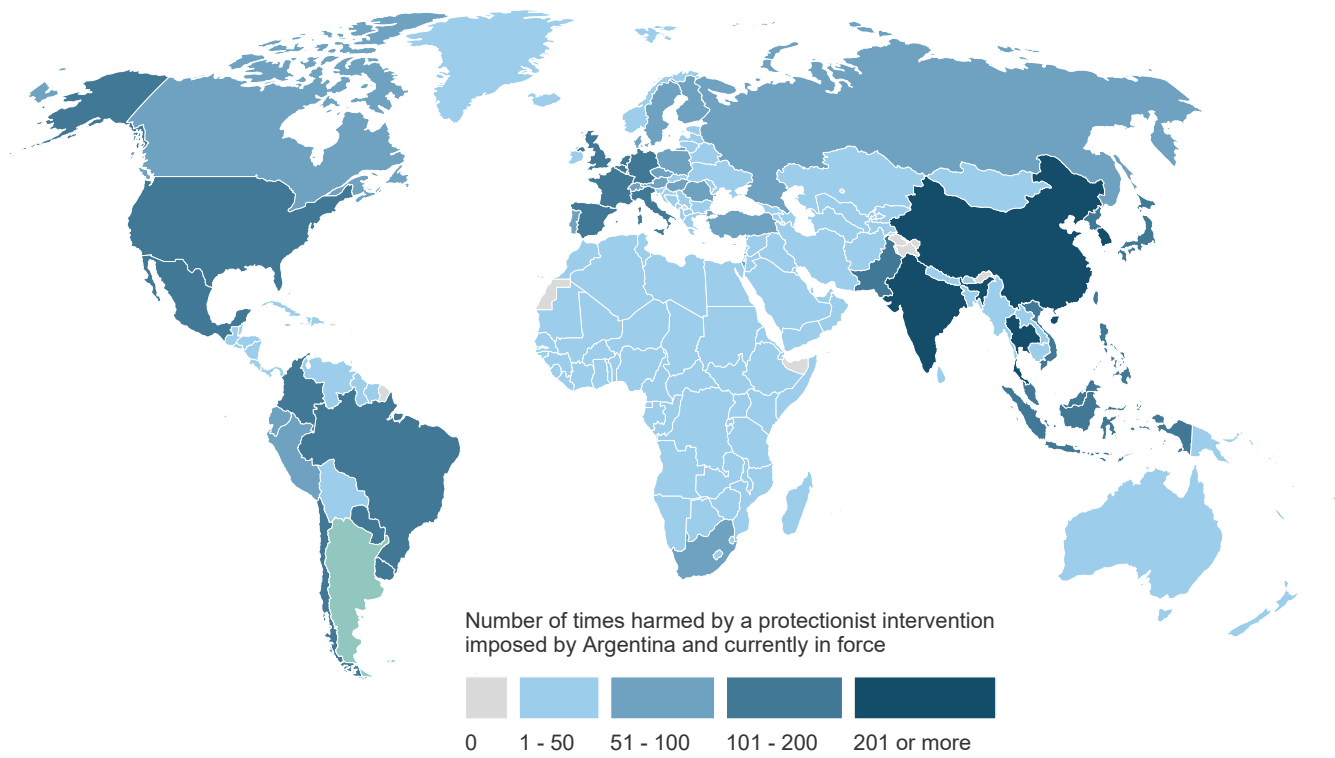
ARGENTINA

What is at stake for Argentina's goods exporters?

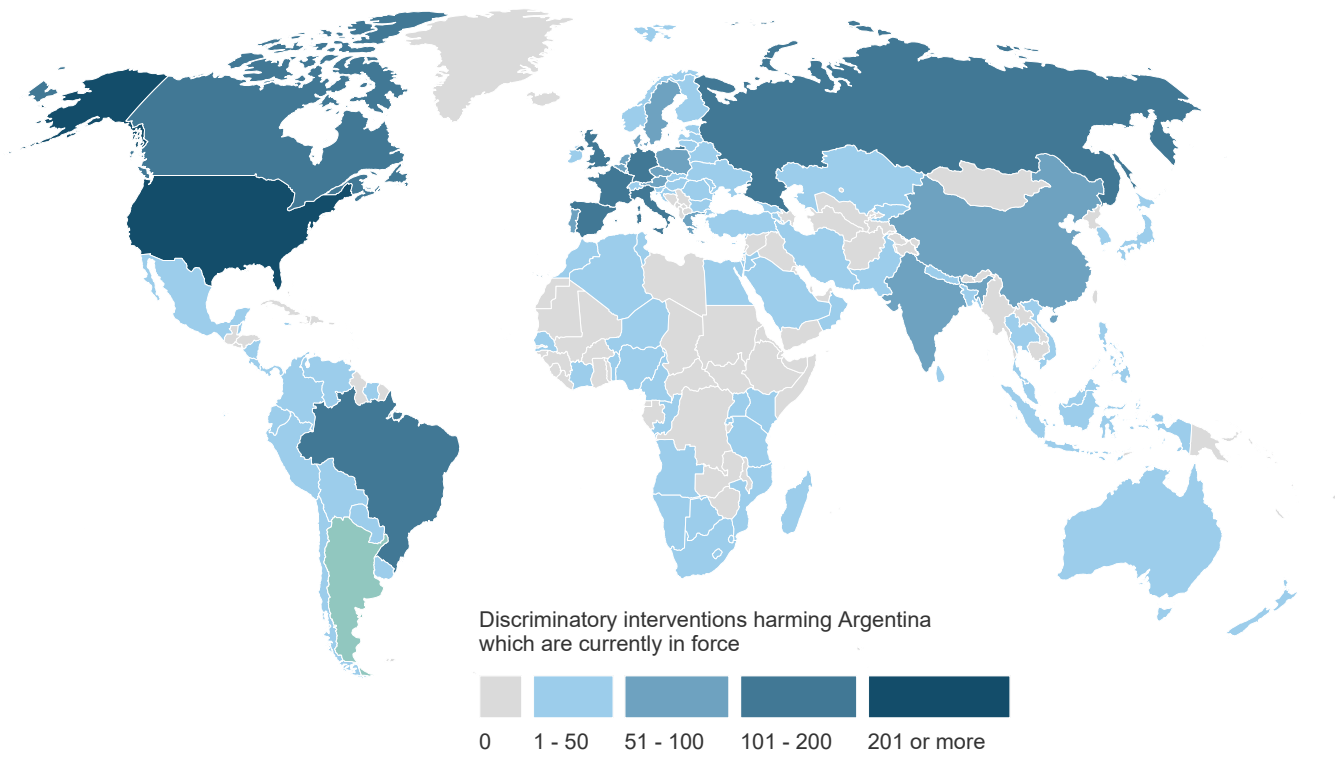
UN MAST chapter	Foreign discriminatory policy instrument	Percentage of this G20 member's exports at risk due to ...												
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	All instruments	29.16	51.99	63.23	70.57	74.70	77.54	78.13	80.43	81.54	80.11	81.12	81.13	80.28
D	Contingent trade-protective measures	0.30	0.35	0.36	0.07	0.30	0.44	0.44	0.57	0.61	0.84	0.85	0.88	0.87
E	Non-automatic licensing, quotas etc.	1.08	1.52	5.41	11.44	11.27	11.86	12.27	14.62	15.24	15.57	15.48	15.55	15.55
F	Price-control measures, including additional taxes and charges	0.17	0.17	1.21	3.57	0.41	3.46	4.62	5.19	5.19	6.60	6.73	6.73	6.73
G	Finance measures	0.32	1.38	1.72	1.72	1.72	1.72	1.73	1.74	1.74	1.74	1.74	1.74	1.74
I	Trade-related investment measures	0.26	0.54	1.01	3.11	2.42	4.43	6.80	5.94	4.98	2.54	2.45	2.42	2.44
L	Subsidies (excl. export subsidies)	7.82	12.93	13.33	13.66	21.39	31.16	38.69	34.60	41.37	41.56	42.28	42.33	40.72
M	Government procurement restrictions	0.27	0.30	0.27	0.78	1.85	2.58	2.82	1.39	1.50	1.64	1.89	1.75	1.75
P	Export-related measures (incl. subsidies)	18.31	39.48	53.00	57.25	59.63	63.82	64.93	68.25	72.07	71.95	75.22	75.25	73.14
	Tariff measures	3.61	5.14	6.25	17.92	19.75	20.03	20.49	21.00	22.53	21.72	22.72	24.16	25.00
	Instrument unclear	0.05	0.10	0.10	0.39	0.39	0.57	1.23	1.41	1.47	1.51	1.54	1.54	1.54

Note: This table presents estimates of the percentage of a nation's exports that face different harmful policy interventions in their export markets. Only those harmful interventions implemented after November 2008 count towards these totals—therefore, the estimates indicate the exposure of national exports to crisis-era policy intervention that favours domestic commercial interests. The trade data used in the estimation is taken from UN Comtrade and at the six-digit level of the Harmonised System product classification. For each product exported by a nation, the foreign markets accounted for in this estimate are those where bilateral exports exceeded \$1 million for the given product. De minimis trade flows are therefore excluded. To limit endogeneity problems (that is, the harmful policy interventions affecting the total value of exports observed) pre-crisis shares of world trade are employed in these calculations. The pre-crisis shares are computed as the mean weight for the years 2005-7. The calculations also take into account when a harmful policy intervention comes into force and, where relevant, lapses. When an intervention lasts for only part of a year, the trade flow is discounted by the fraction of the year the harmful measure is not in force.

COUNTRIES HARMED BY ARGENTINA'S DISCRIMINATORY INTERVENTIONS

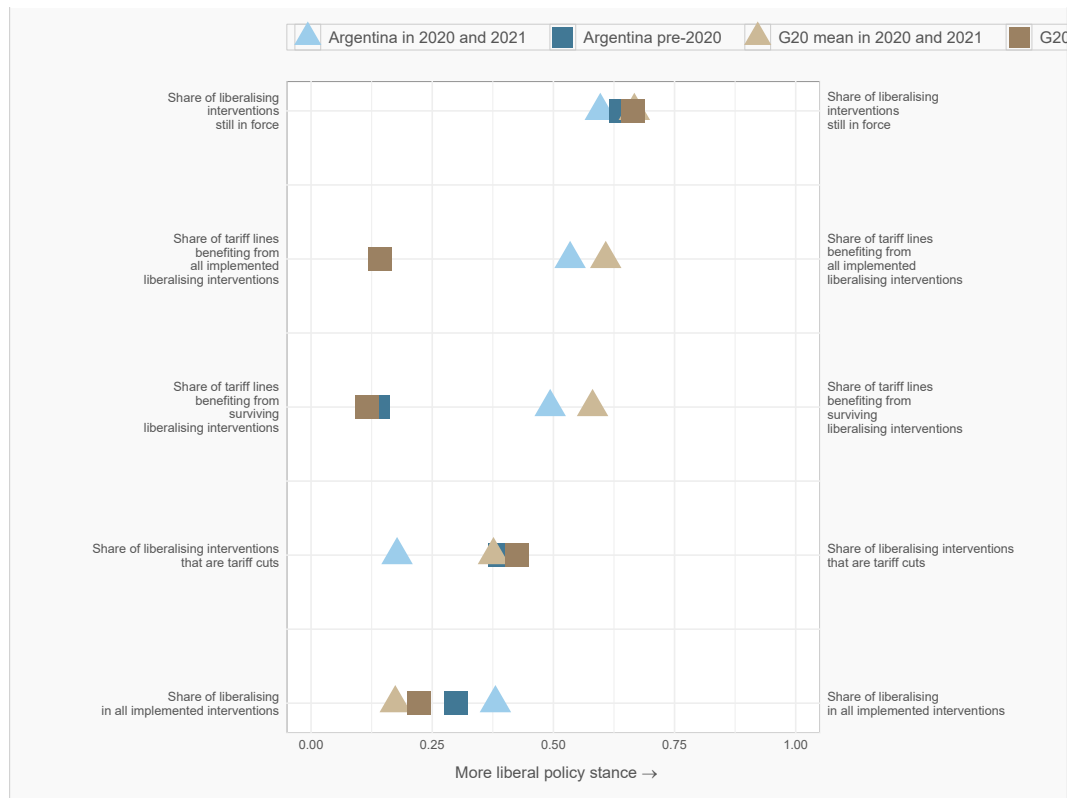


DISCRIMINATORY INTERVENTIONS HARMING ARGENTINA'S INTERESTS



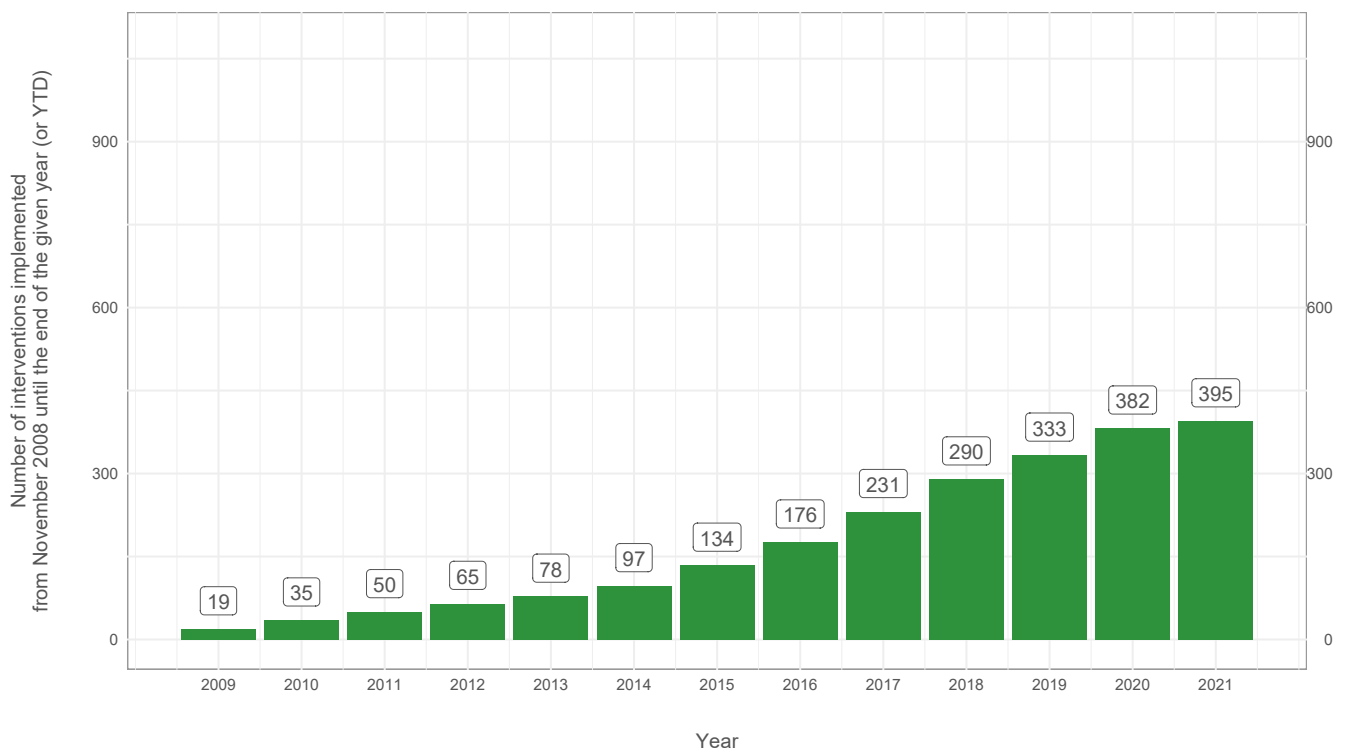
ARGENTINA

Track record of liberalisation



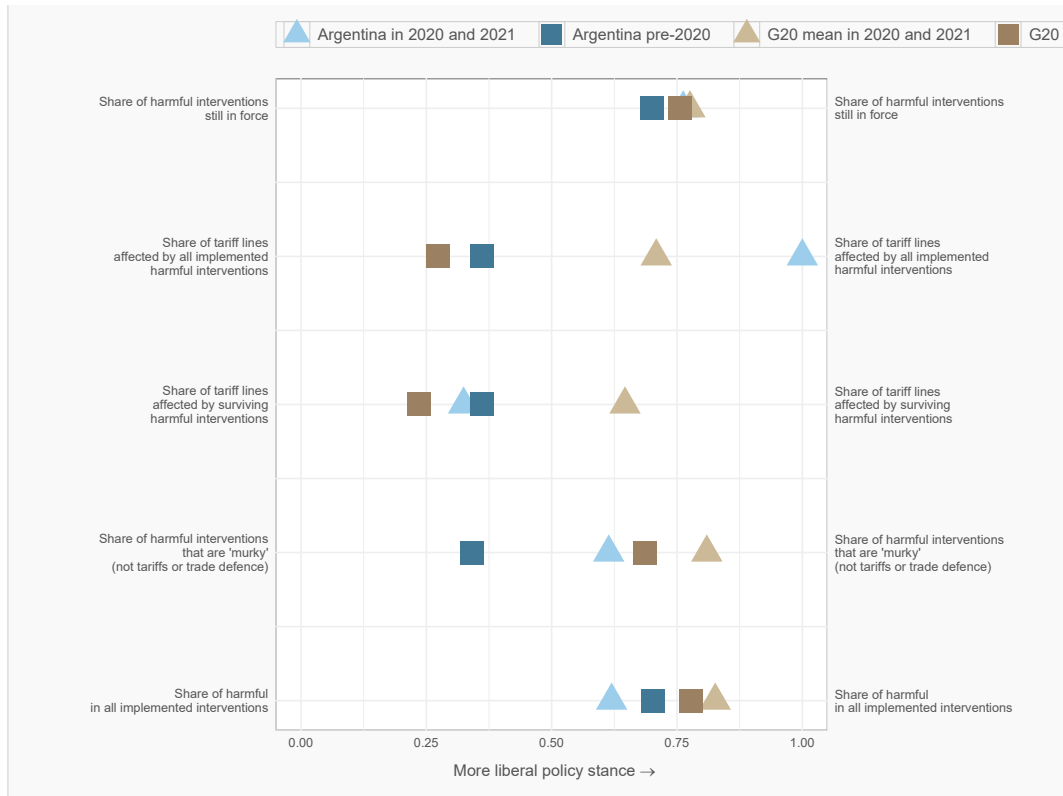
ARGENTINA

Number of liberalising interventions imposed since November 2008



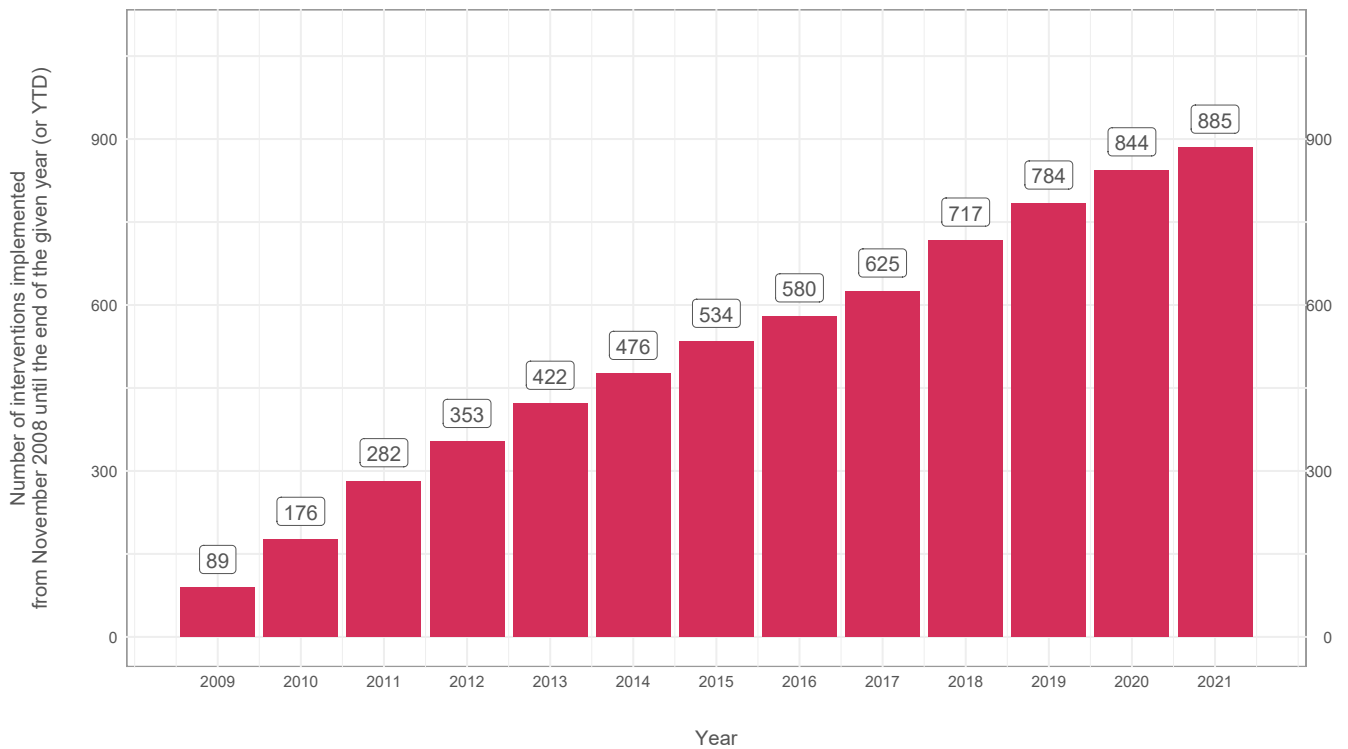
ARGENTINA

Track record of protectionism



ARGENTINA

Number of discriminatory interventions imposed since November 2008



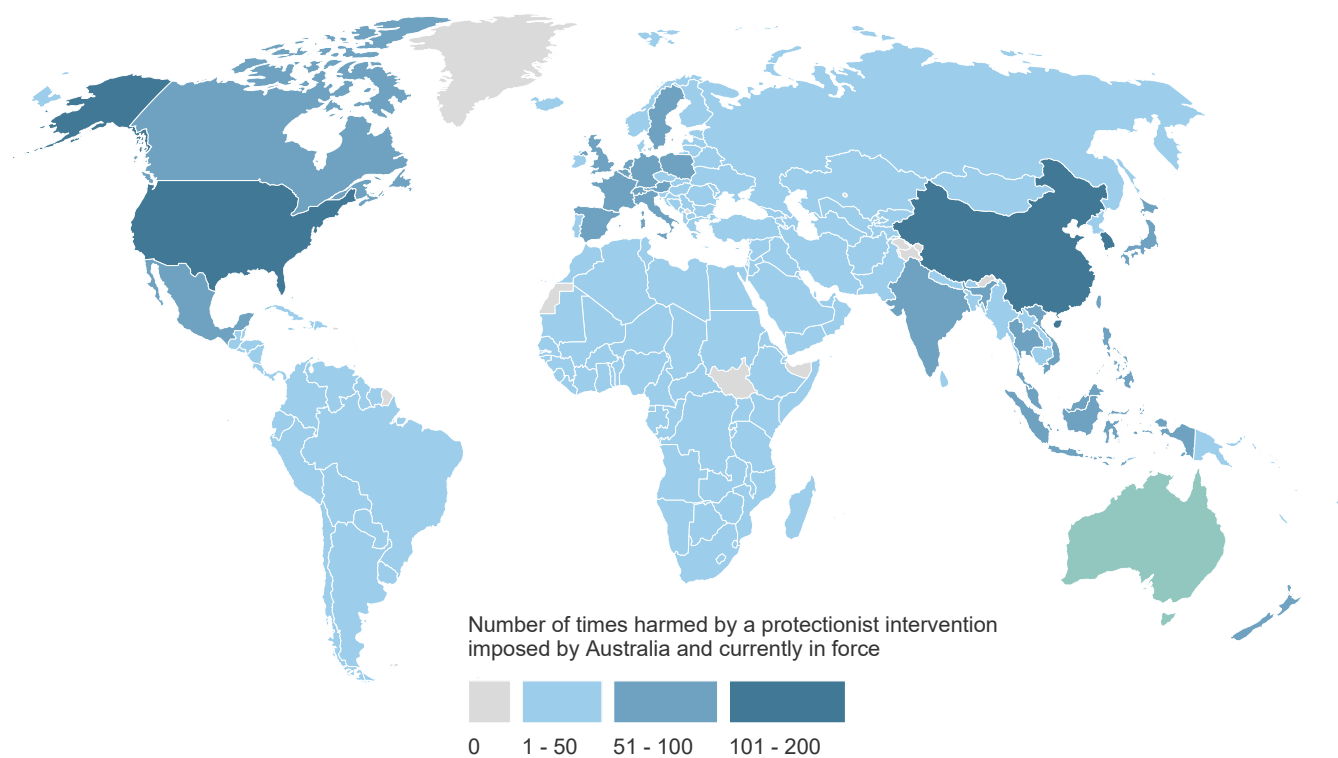
AUSTRALIA

What is at stake for Australia's goods exporters?

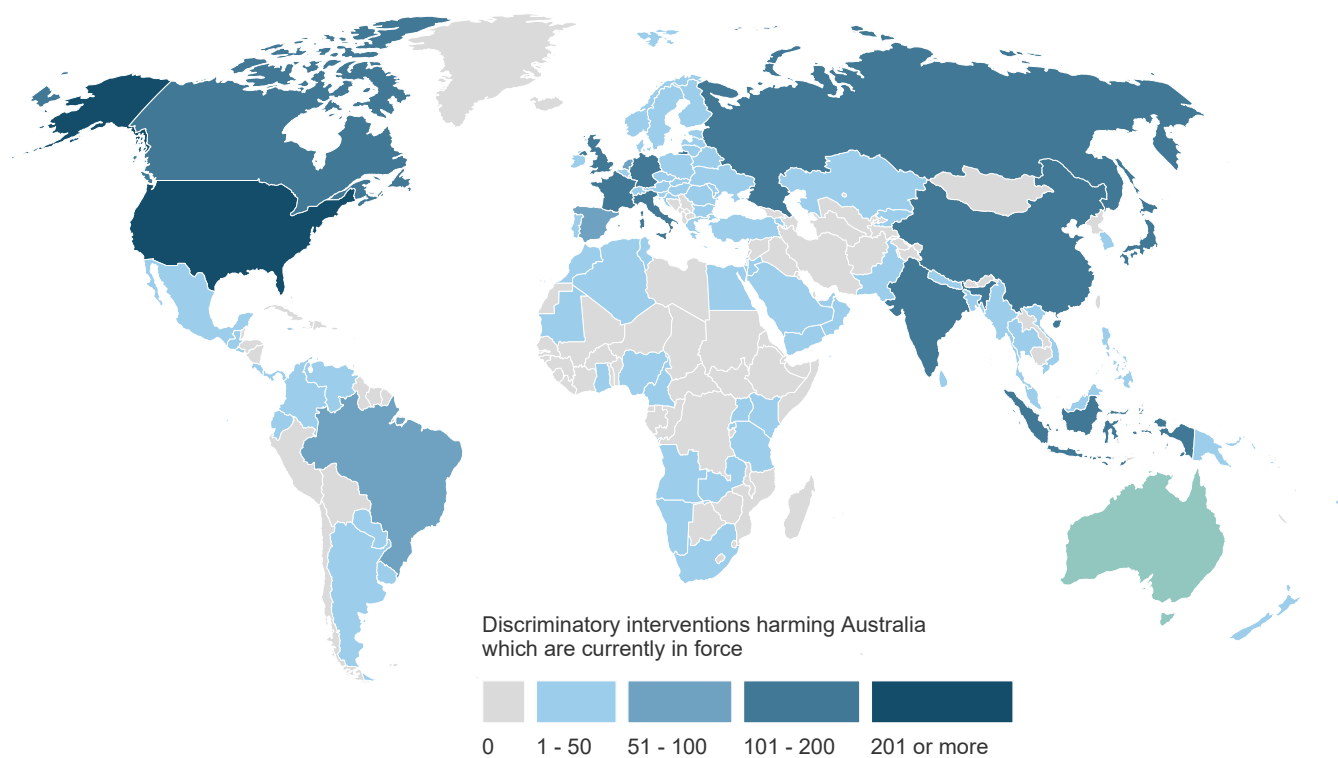
UN MAST chapter	Foreign discriminatory policy instrument	Percentage of this G20 member's exports at risk due to ...												
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	All instruments	27.82	35.34	41.16	46.56	53.22	61.11	63.04	65.07	65.97	68.91	72.20	72.59	72.83
D	Contingent trade-protective measures	0.04	0.02	0.02	0.03	0.05	0.08	0.12	0.32	0.42	0.46	0.48	0.54	0.59
E	Non-automatic licensing, quotas etc.	2.16	8.01	12.37	13.49	14.55	14.64	15.06	15.30	15.50	15.95	16.13	17.08	17.09
F	Price-control measures, including additional taxes and charges	9.06	9.06	9.10	9.13	9.12	10.09	11.05	11.05	11.05	14.59	14.96	15.07	14.17
G	Finance measures	0.06	0.30	0.69	0.69	0.69	0.69	1.07	1.19	1.19	1.19	1.19	1.19	1.19
I	Trade-related investment measures	0.00	0.01	0.02	0.03	0.03	0.21	0.26	0.27	0.28	0.28	0.17	0.06	0.09
L	Subsidies (excl. export subsidies)	3.61	5.08	14.40	15.42	22.42	25.30	25.82	26.29	26.81	26.67	27.27	27.50	19.68
M	Government procurement restrictions	0.58	0.90	0.70	0.82	0.92	1.04	1.11	1.12	1.26	1.83	2.76	2.39	2.40
P	Export-related measures (incl. subsidies)	15.93	25.87	30.01	33.58	35.51	38.15	40.76	45.15	47.08	50.70	54.94	55.32	54.93
	Tariff measures	3.42	4.62	5.02	10.72	12.18	13.57	14.25	14.44	15.88	16.58	16.60	17.29	17.73
	Instrument unclear	0.20	0.39	0.40	0.96	2.42	3.16	1.26	1.21	1.59	2.46	2.60	2.62	2.80

Note: This table presents estimates of the percentage of a nation's exports that face different harmful policy interventions in their export markets. Only those harmful interventions implemented after November 2008 count towards these totals—therefore, the estimates indicate the exposure of national exports to crisis-era policy intervention that favours domestic commercial interests. The trade data used in the estimation is taken from UN Comtrade and at the six-digit level of the Harmonised System product classification. For each product exported by a nation, the foreign markets accounted for in this estimate are those where bilateral exports exceeded \$1 million for the given product. De minimis trade flows are therefore excluded. To limit endogeneity problems (that is, the harmful policy interventions affecting the total value of exports observed) pre-crisis shares of world trade are employed in these calculations. The pre-crisis shares are computed as the mean weight for the years 2005-7. The calculations also take into account when a harmful policy intervention comes into force and, where relevant, lapses. When an intervention lasts for only part of a year, the trade flow is discounted by the fraction of the year the harmful measure is not in force.

COUNTRIES HARMED BY AUSTRALIA'S DISCRIMINATORY INTERVENTIONS

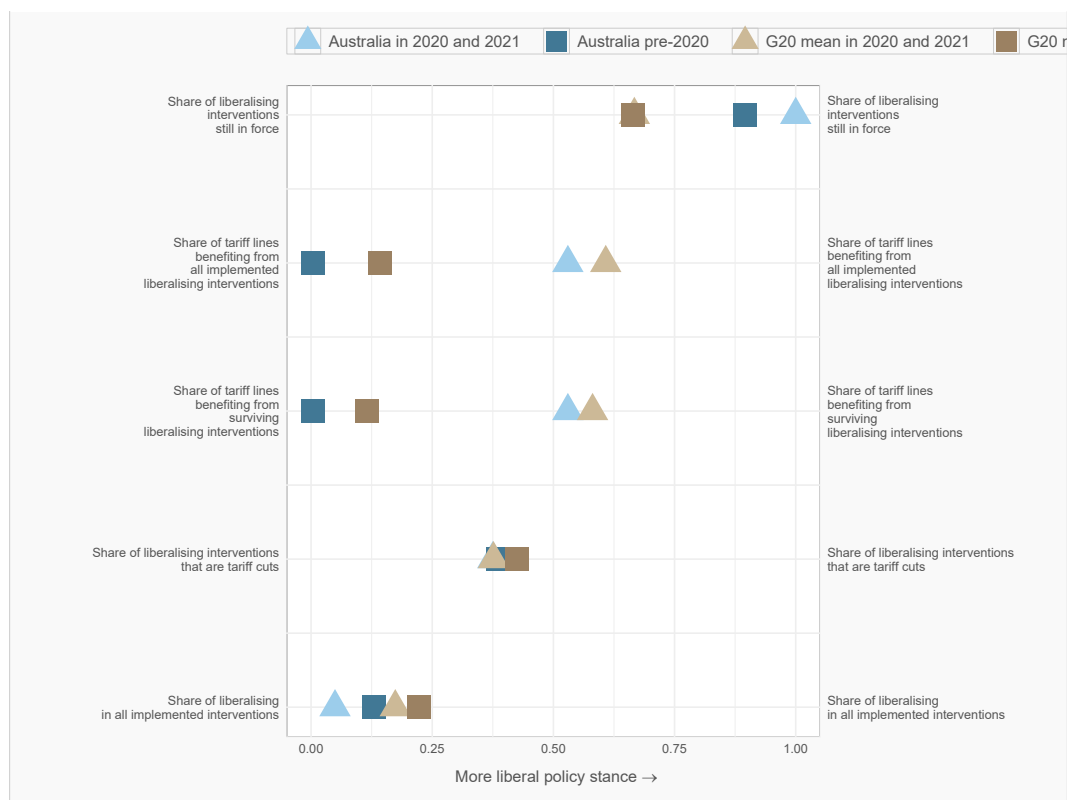


DISCRIMINATORY INTERVENTIONS HARMING AUSTRALIA'S INTERESTS



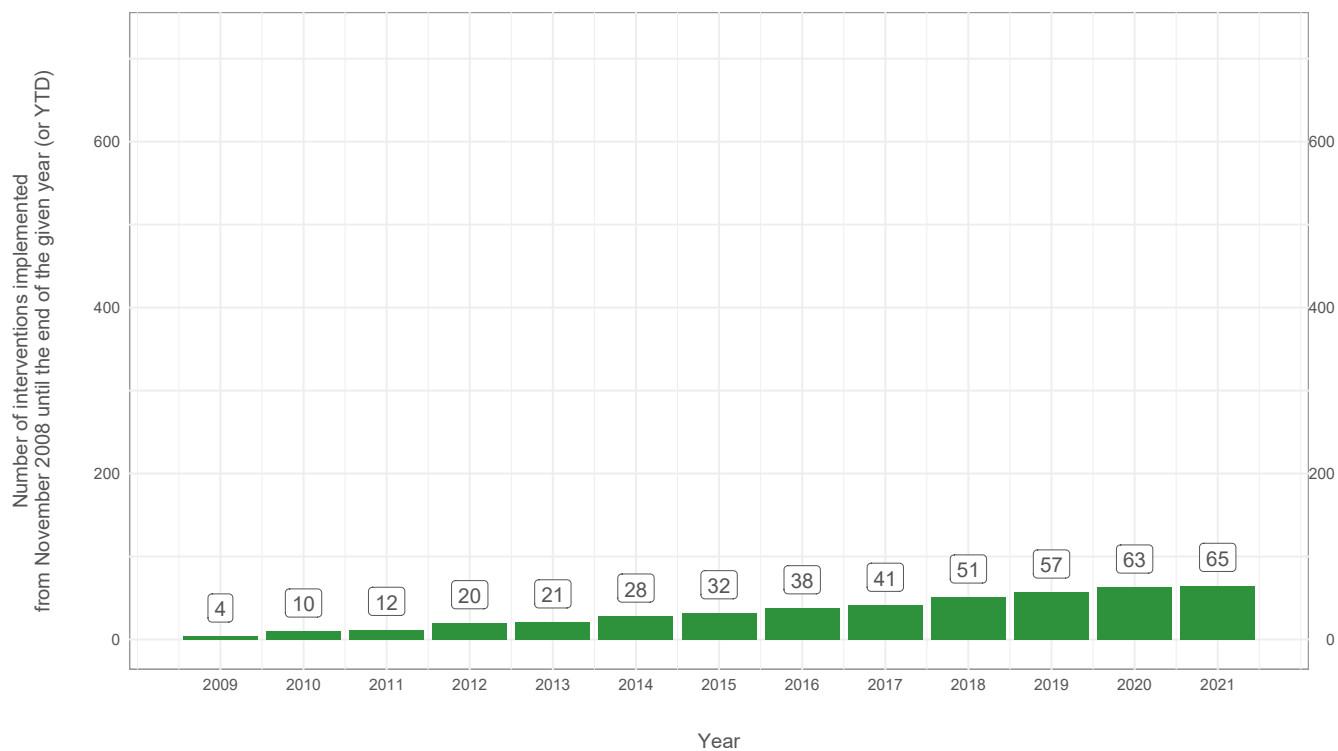
AUSTRALIA

Track record of liberalisation



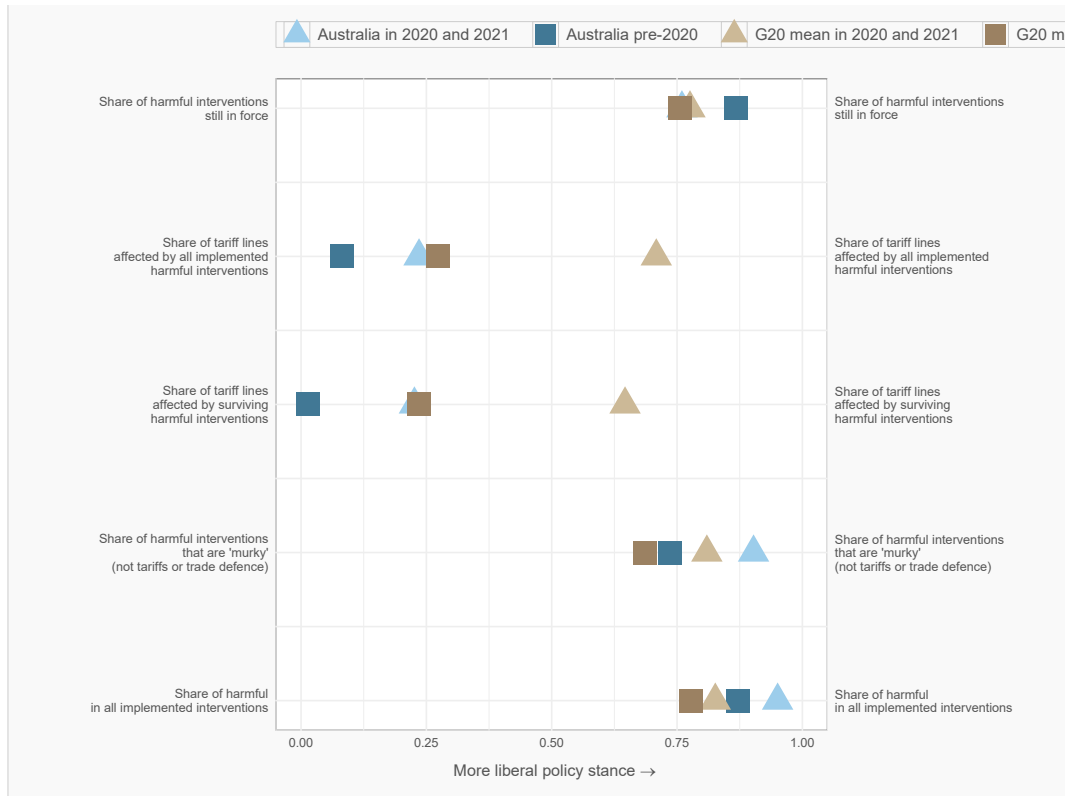
AUSTRALIA

Number of liberalising interventions imposed since November 2008



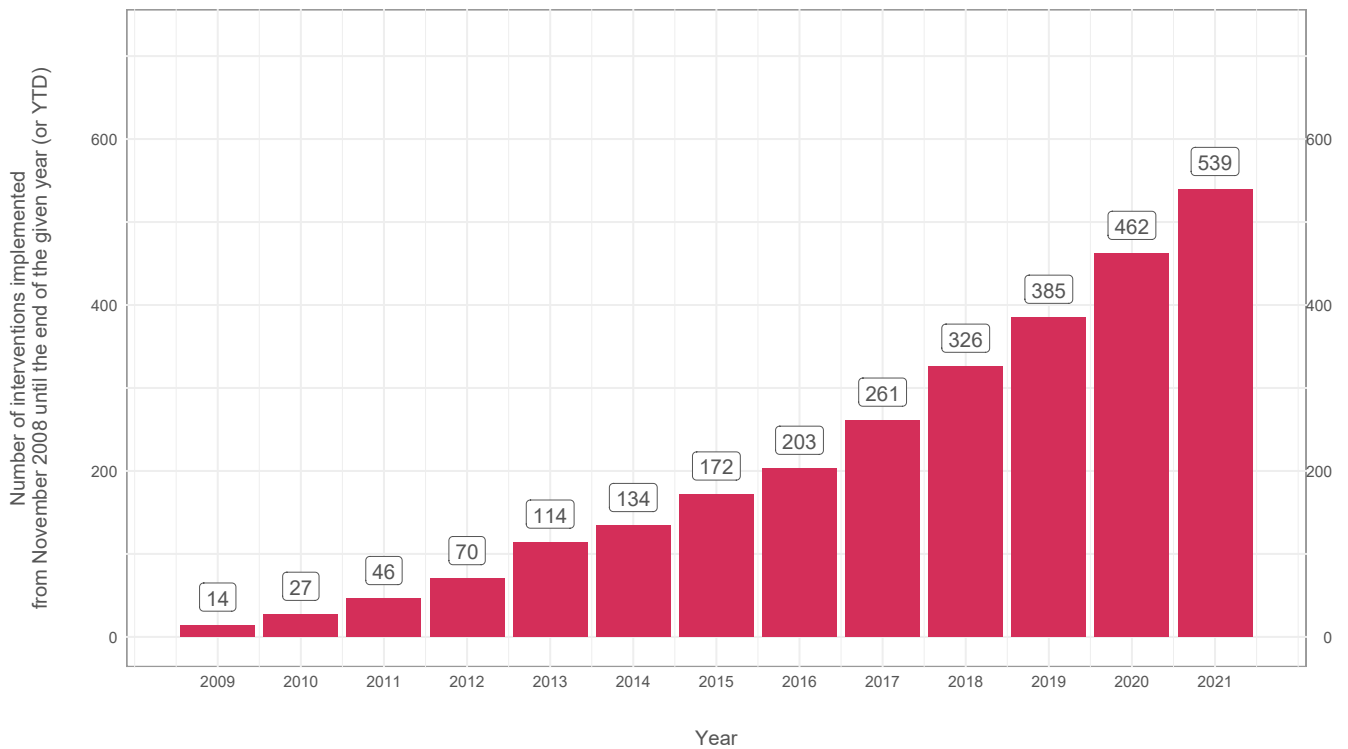
AUSTRALIA

Track record of protectionism



AUSTRALIA

Number of discriminatory interventions imposed since November 2008



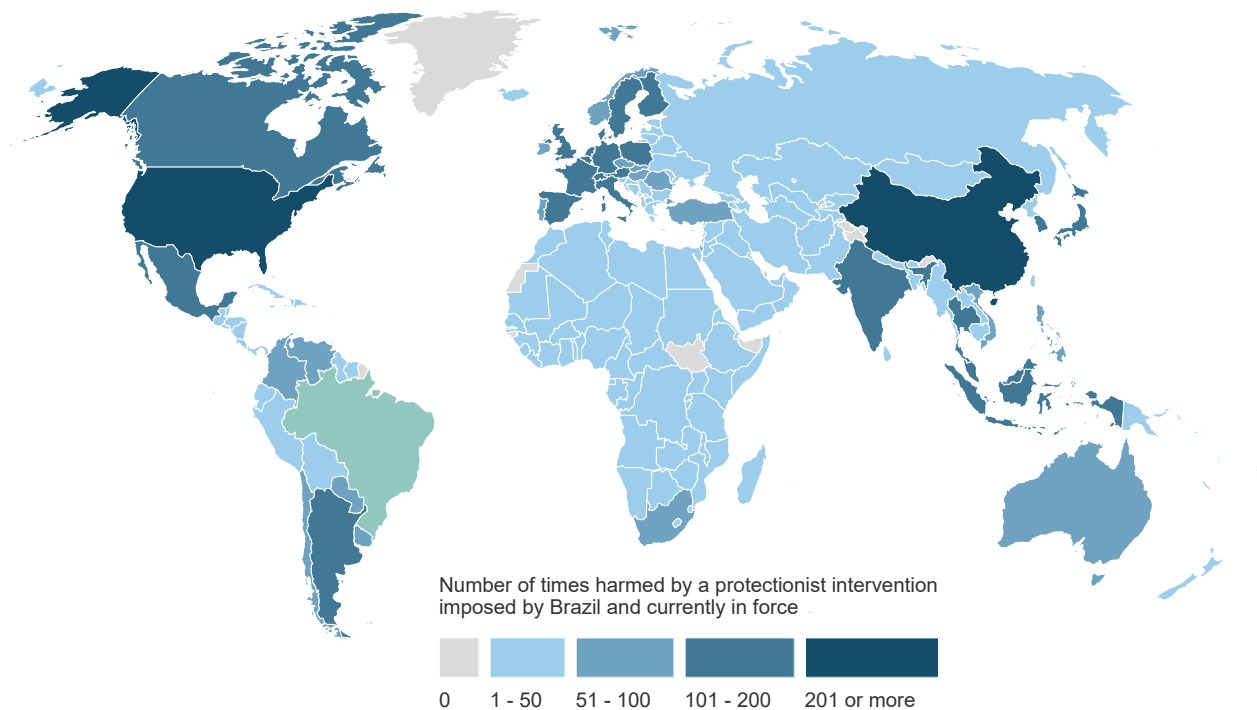
BRAZIL

What is at stake for Brazil's goods exporters?

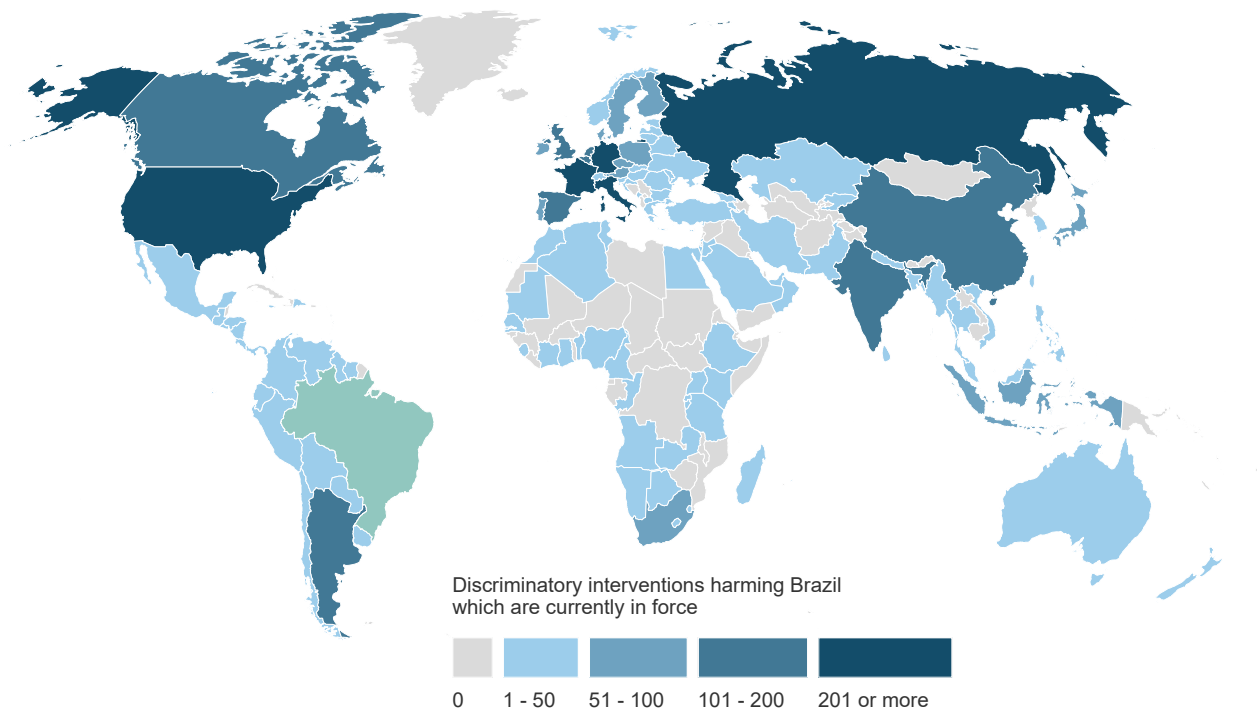
UN MAST chapter	Foreign discriminatory policy instrument	Percentage of this G20 member's exports at risk due to ...												
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	All instruments	39.92	54.73	57.39	65.32	74.98	77.79	78.03	77.92	79.74	81.47	82.78	84.67	82.49
D	Contingent trade-protective measures	0.04	0.09	0.17	0.26	0.25	0.25	0.23	0.71	0.90	1.78	2.18	1.80	1.66
E	Non-automatic licensing, quotas etc.	2.43	6.83	12.59	18.22	19.74	19.92	19.20	16.35	17.35	17.45	17.50	19.57	19.69
F	Price-control measures, including additional taxes and charges	4.70	4.72	4.74	4.75	4.75	4.76	4.76	4.76	4.76	5.16	5.20	12.17	12.17
G	Finance measures	0.39	1.48	1.57	1.57	1.57	1.57	1.61	1.63	1.63	1.63	1.63	1.63	1.63
I	Trade-related investment measures	0.52	1.09	2.02	2.49	2.50	2.57	3.50	4.18	4.19	4.29	4.16	4.14	4.26
L	Subsidies (excl. export subsidies)	6.24	16.37	20.29	21.57	35.91	43.52	46.13	44.94	47.55	47.86	48.51	49.68	42.98
M	Government procurement restrictions	2.71	2.73	2.27	3.53	4.95	5.99	6.71	7.04	7.49	7.56	7.89	7.93	7.94
P	Export-related measures (incl. subsidies)	28.52	40.47	44.85	48.23	53.69	53.72	57.25	61.64	63.81	66.57	71.81	72.39	68.37
	Tariff measures	2.77	3.58	4.63	10.90	11.70	12.61	13.67	14.43	16.69	17.66	18.75	19.58	19.58
	Instrument unclear	0.02	1.30	1.44	1.48	3.81	4.48	6.08	6.25	5.99	5.56	5.63	5.63	5.64

Note: This table presents estimates of the percentage of a nation's exports that face different harmful policy interventions in their export markets. Only those harmful interventions implemented after November 2008 count towards these totals -therefore, the estimates indicate the exposure of national exports to crisis-era policy intervention that favours domestic commercial interests. The trade data used in the estimation is taken from UN Comtrade and at the six-digit level of the Harmonised System product classification. For each product exported by a nation, the foreign markets accounted for in this estimate are those where bilateral exports exceeded \$1 million for the given product. De minimis trade flows are therefore excluded. To limit endogeneity problems (that is, the harmful policy interventions affecting the total value of exports observed) pre-crisis shares of world trade are employed in these calculations. The pre-crisis shares are computed as the mean weight for the years 2005-7. The calculations also take into account when a harmful policy intervention comes into force and, where relevant, lapses. When an intervention lasts for only part of a year, the trade flow is discounted by the fraction of the year the harmful measure is not in force.

COUNTRIES HARMED BY BRAZIL'S DISCRIMINATORY INTERVENTIONS



DISCRIMINATORY INTERVENTIONS HARMING BRAZIL'S INTERESTS



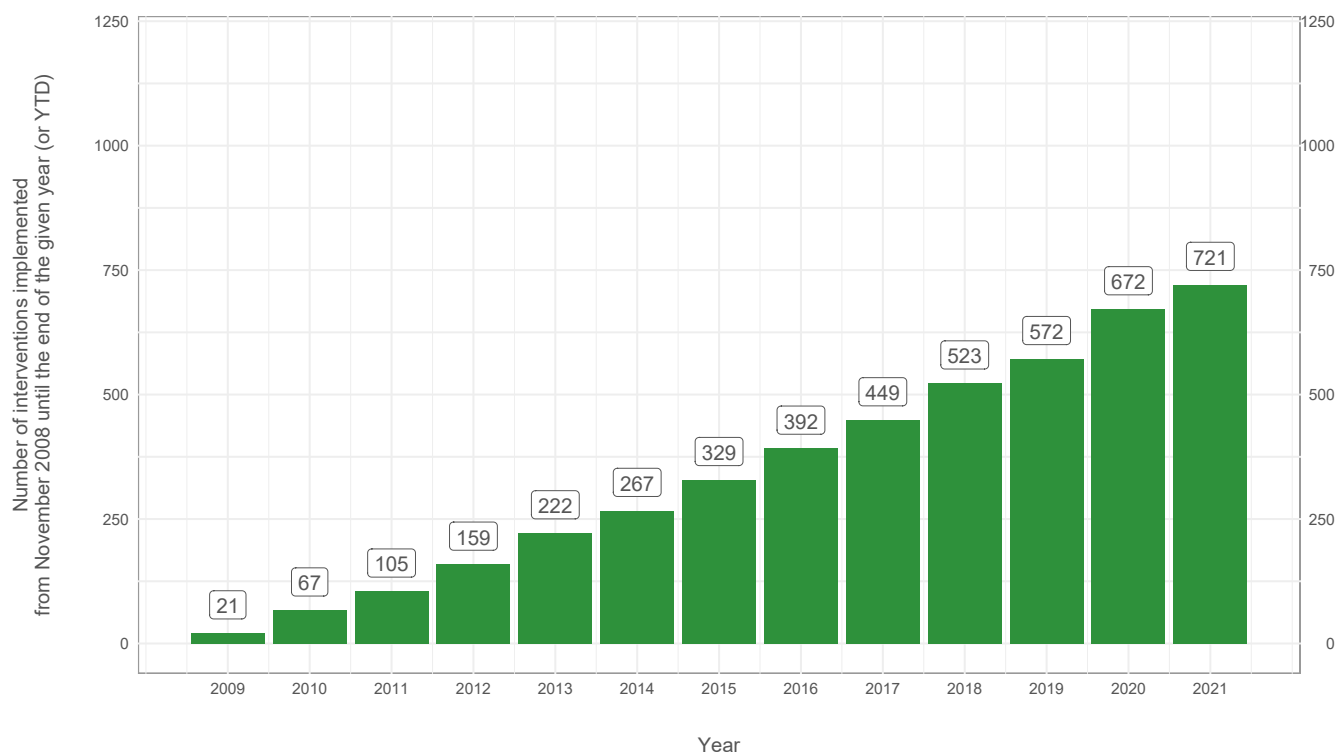
BRAZIL

Track record of liberalisation



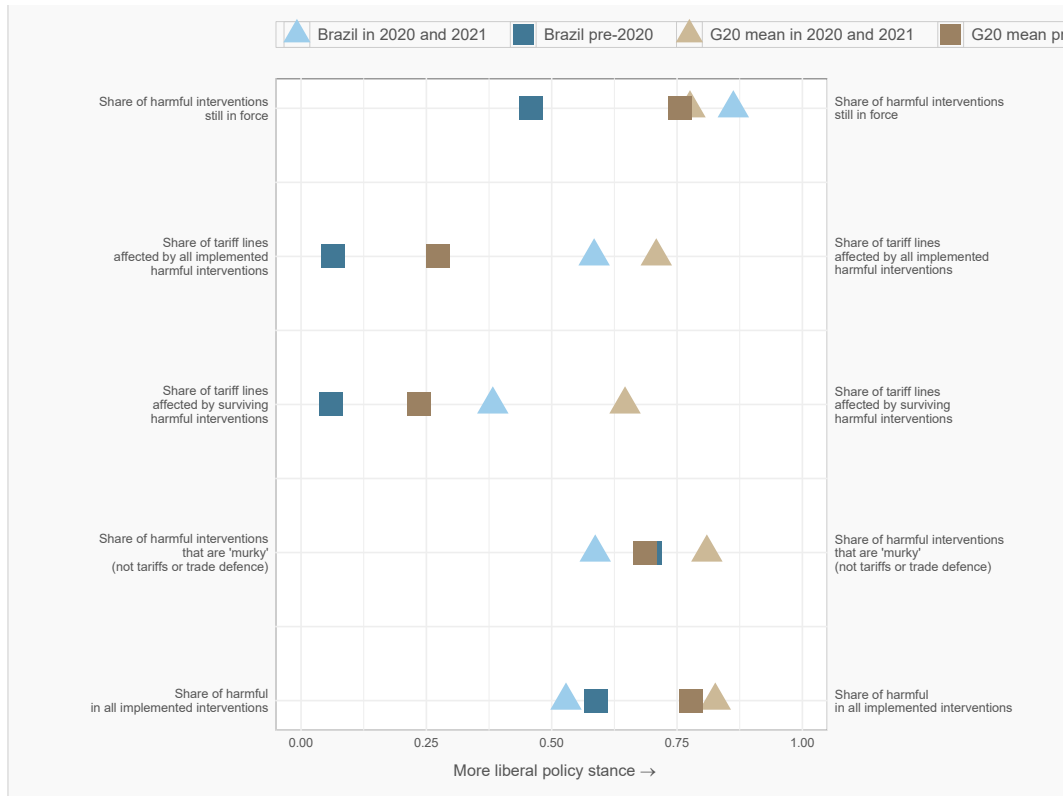
BRAZIL

Number of liberalising interventions imposed since November 2008



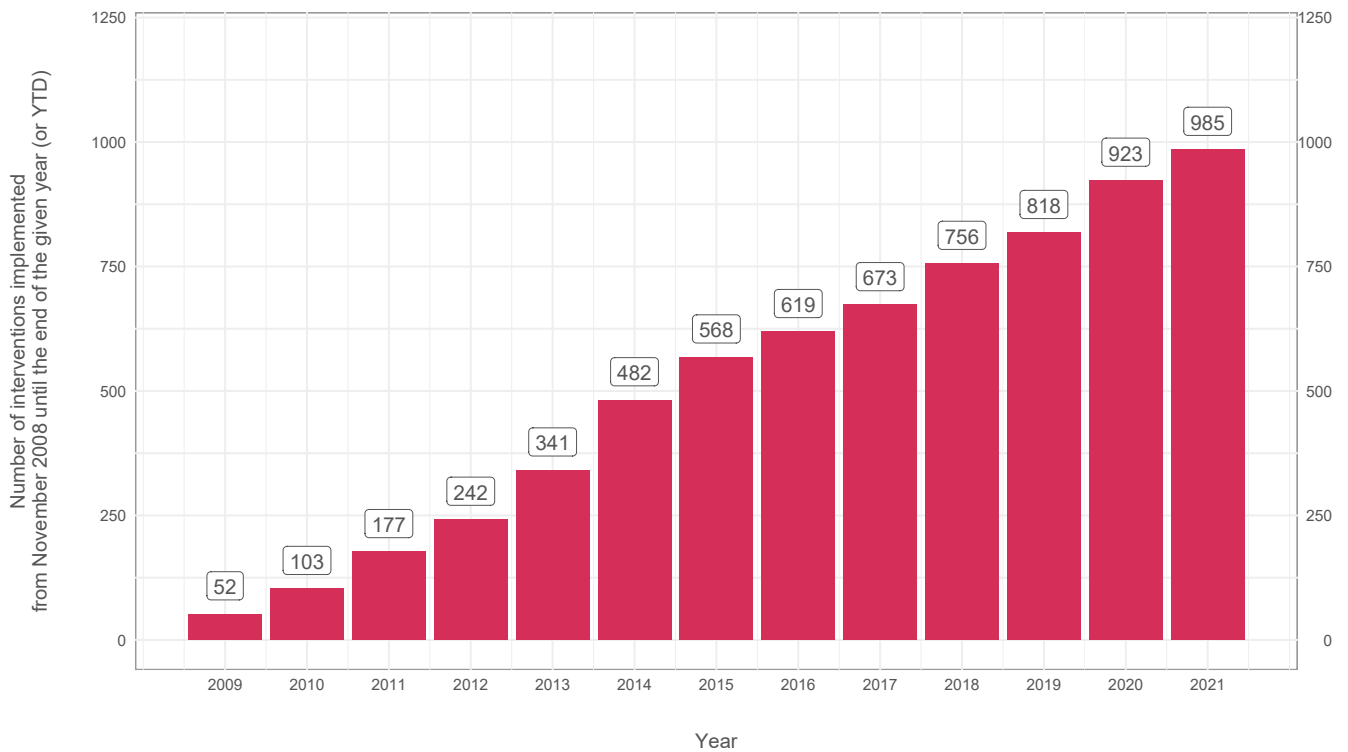
BRAZIL

Track record of protectionism



BRAZIL

Number of discriminatory interventions imposed since November 2008



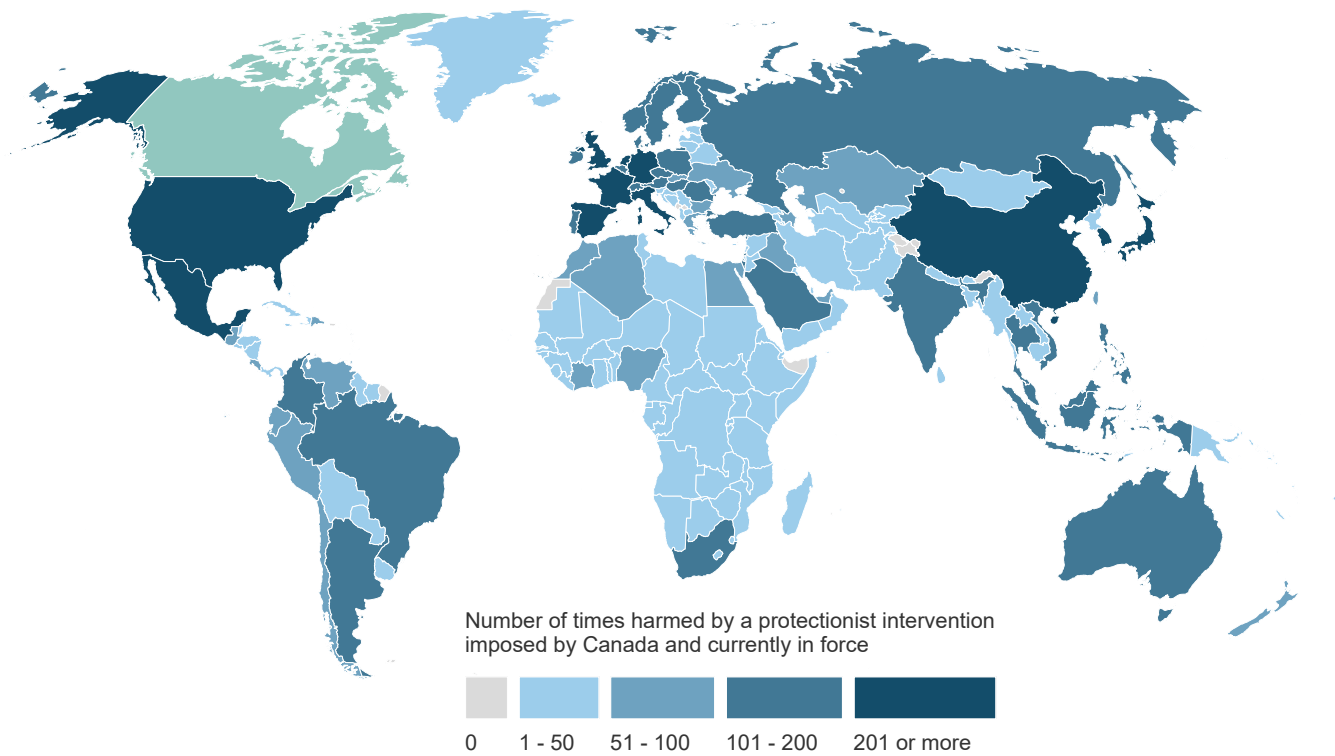
CANADA

What is at stake for Canada's goods exporters?

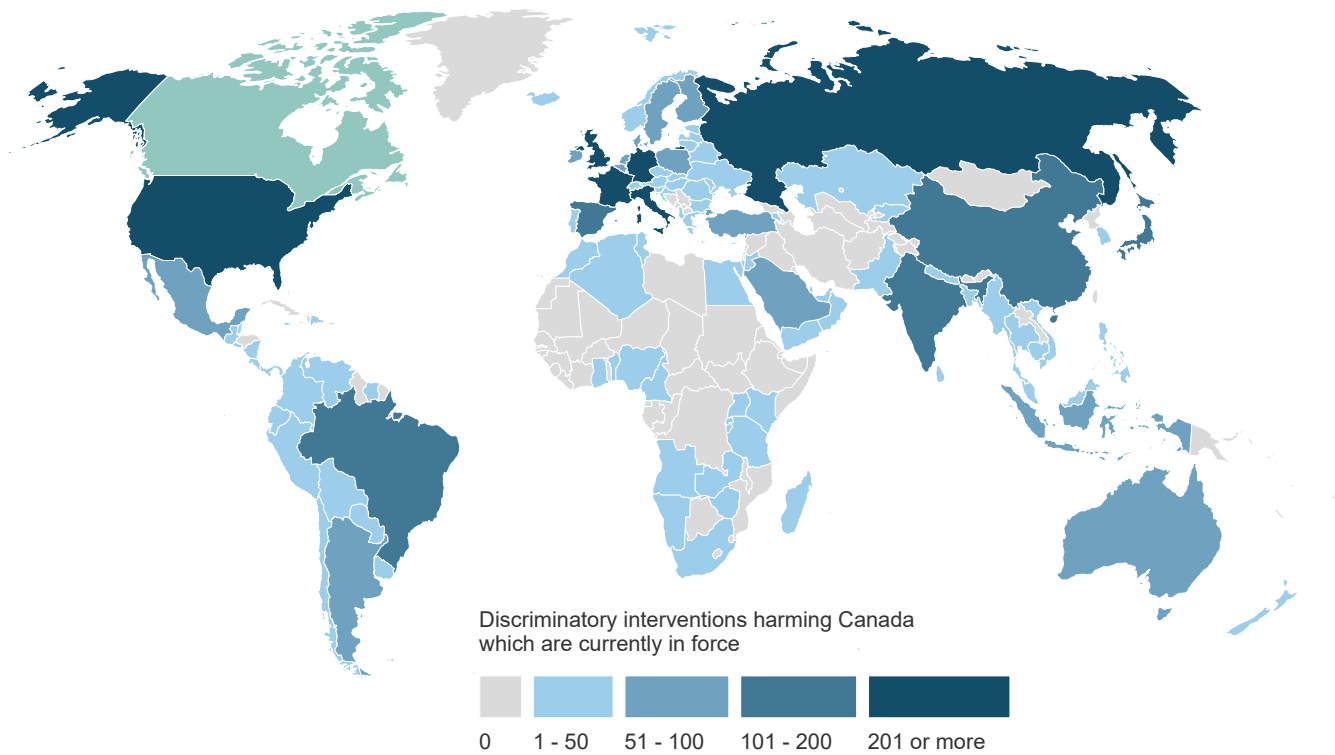
UN MAST chapter	Foreign discriminatory policy instrument	Percentage of this G20 member's exports at risk due to ...												
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	All instruments	38.60	50.99	56.52	67.35	73.13	75.20	83.26	85.95	87.68	88.54	88.85	89.09	89.72
D	Contingent trade-protective measures	0.11	0.12	0.13	0.13	0.13	0.14	0.44	2.07	3.48	4.42	4.53	4.49	4.69
E	Non-automatic licensing, quotas etc.	0.18	0.33	0.66	0.72	0.95	0.98	1.09	1.19	2.42	3.17	3.28	3.33	4.05
F	Price-control measures, including additional taxes and charges	0.31	0.31	0.33	0.34	0.34	0.42	0.56	0.65	0.66	0.88	0.90	0.94	0.94
G	Finance measures	0.03	0.09	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I	Trade-related investment measures	0.14	0.30	0.10	0.10	0.11	0.11	0.36	0.78	1.32	1.33	1.33	1.33	1.76
L	Subsidies (excl. export subsidies)	12.98	18.00	22.85	32.15	40.24	44.53	45.18	47.42	48.99	52.22	52.90	57.97	60.35
M	Government procurement restrictions	2.19	2.62	2.90	3.18	3.23	3.64	4.25	4.25	4.76	5.37	6.56	7.12	6.76
P	Export-related measures (incl. subsidies)	25.13	33.98	44.81	57.20	58.54	48.25	55.51	57.20	60.15	60.80	60.39	62.92	69.61
	Tariff measures	0.43	0.73	0.85	1.80	2.09	1.96	2.19	2.60	4.35	7.20	8.85	10.00	10.11
	Instrument unclear	0.01	0.14	0.03	0.13	1.10	1.67	1.93	2.34	2.62	2.99	2.99	3.03	3.01

Note: This table presents estimates of the percentage of a nation's exports that face different harmful policy interventions in their export markets. Only those harmful interventions implemented after November 2008 count towards these totals -therefore, the estimates indicate the exposure of national exports to crisis-era policy intervention that favours domestic commercial interests. The trade data used in the estimation is taken from UN Comtrade and at the six-digit level of the Harmonised System product classification. For each product exported by a nation, the foreign markets accounted for in this estimate are those where bilateral exports exceeded \$1 million for the given product. De minimis trade flows are therefore excluded. To limit endogeneity problems (that is, the harmful policy interventions affecting the total value of exports observed) pre-crisis shares of world trade are employed in these calculations. The pre-crisis shares are computed as the mean weight for the years 2005-7. The calculations also take into account when a harmful policy intervention comes into force and, where relevant, lapses. When an intervention lasts for only part of a year, the trade flow is discounted by the fraction of the year the harmful measure is not in force.

COUNTRIES HARMED BY CANADA'S DISCRIMINATORY INTERVENTIONS

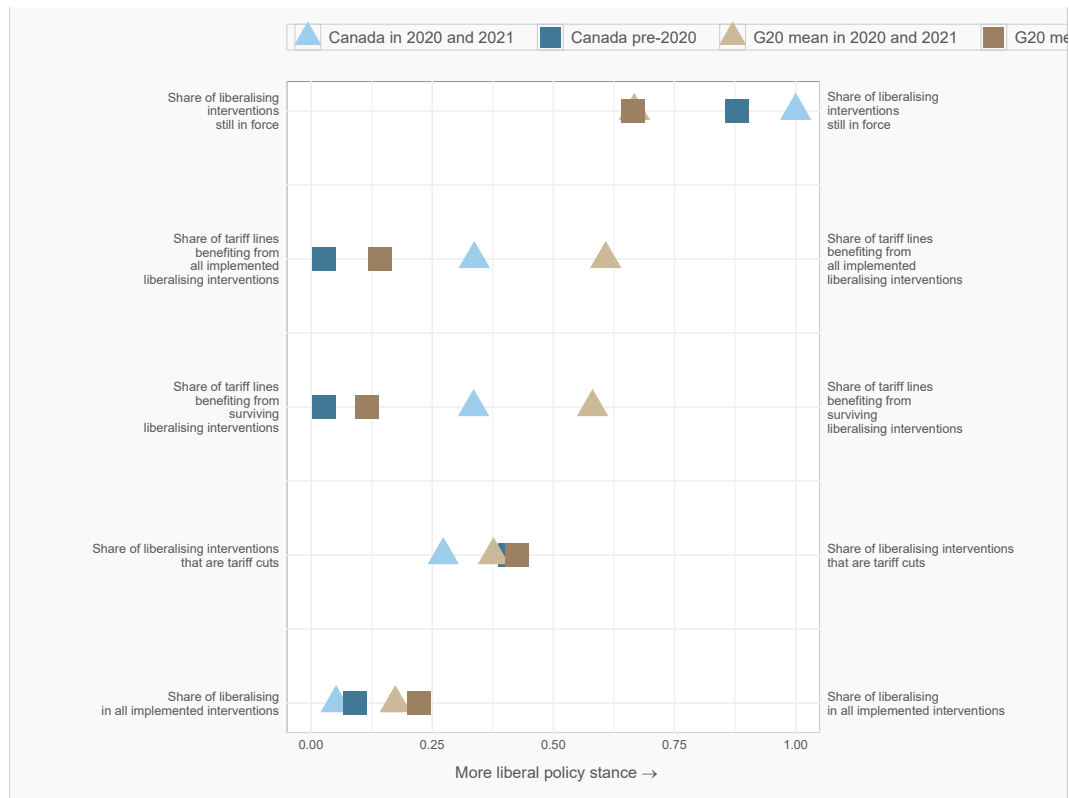


DISCRIMINATORY INTERVENTIONS HARMING CANADA'S INTERESTS



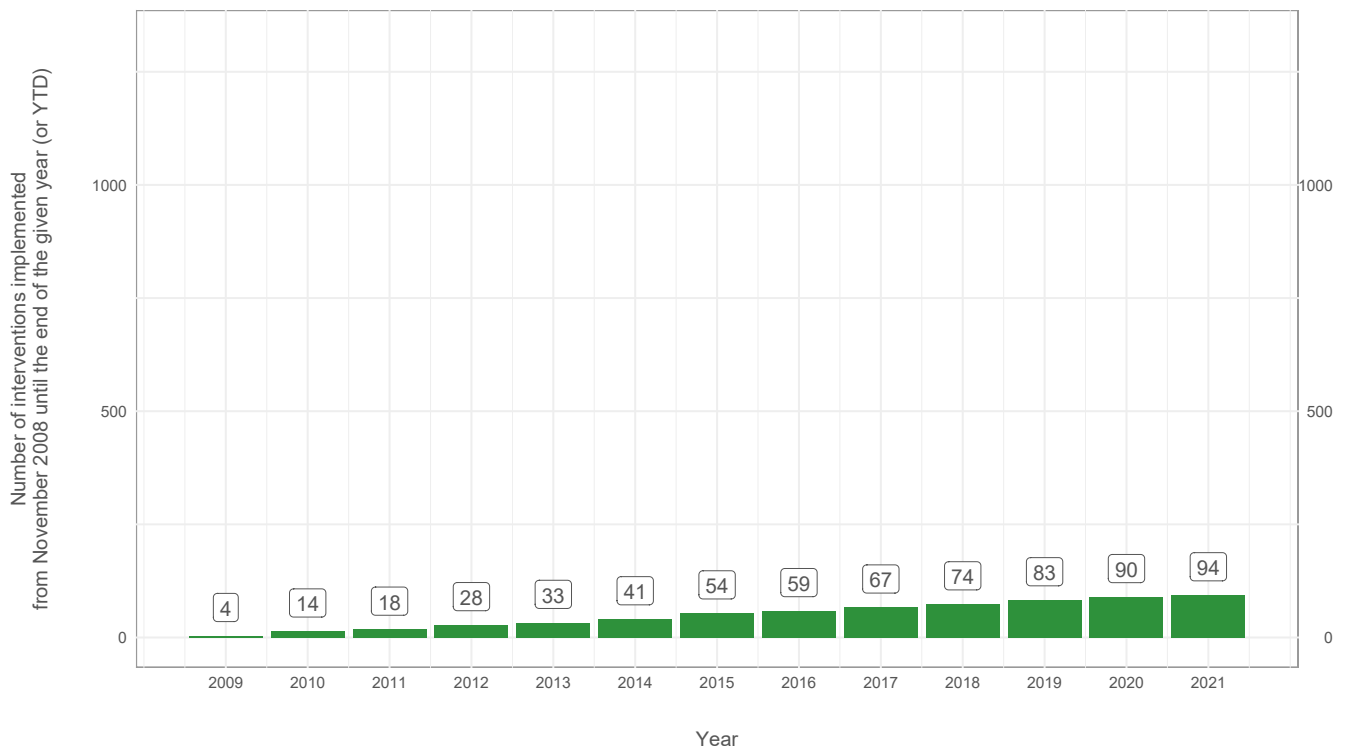
CANADA

Track record of liberalisation



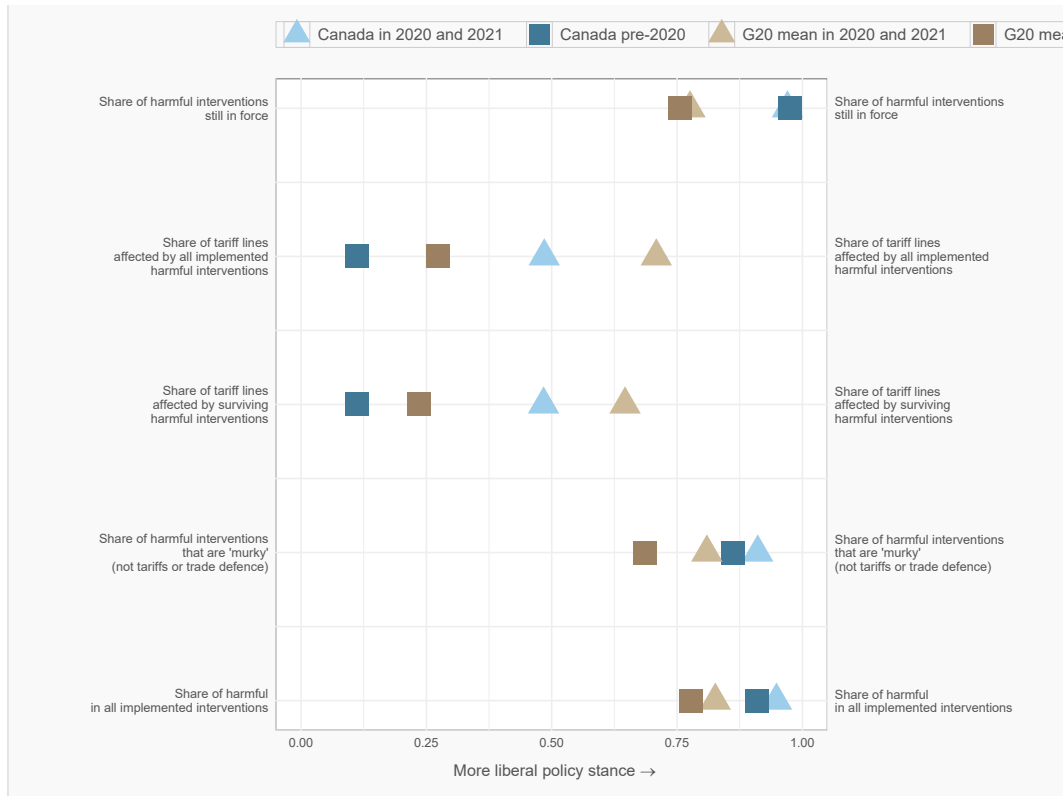
CANADA

Number of liberalising interventions imposed since November 2008



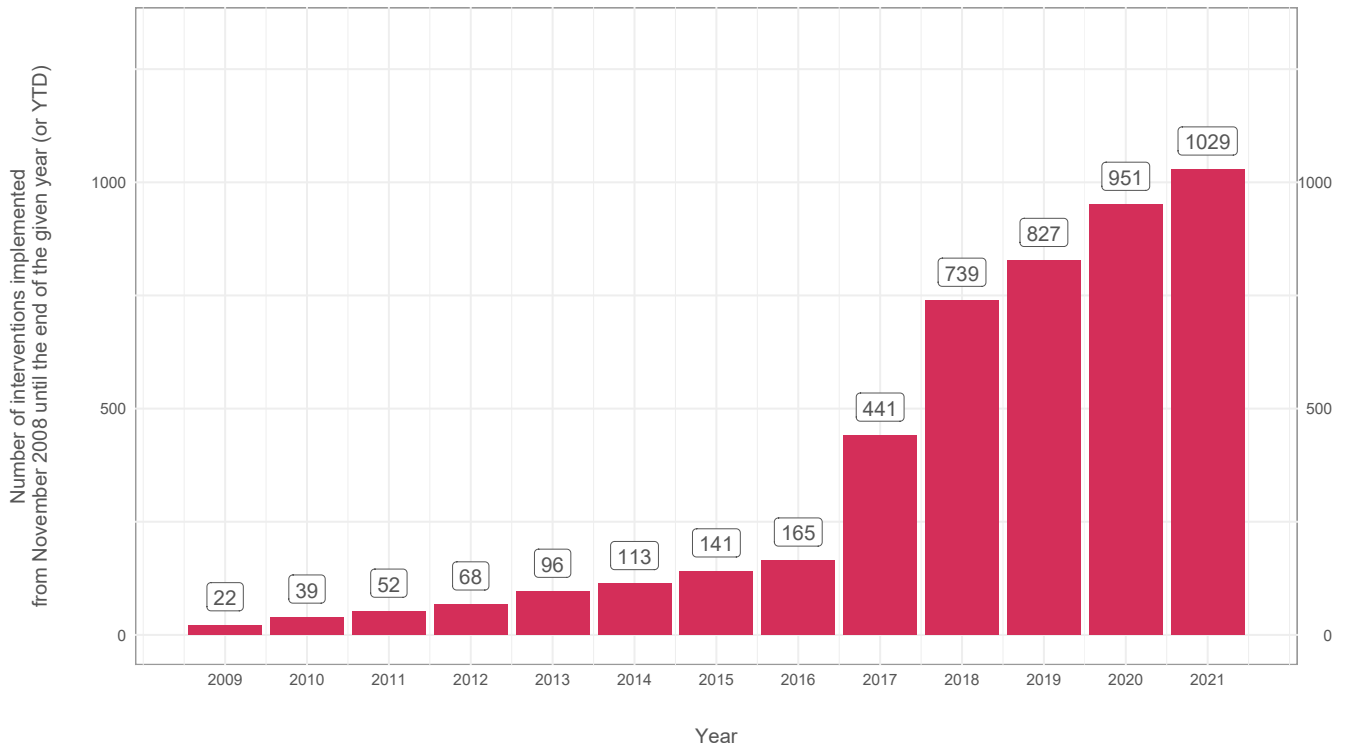
CANADA

Track record of protectionism



CANADA

Number of discriminatory interventions imposed since November 2008



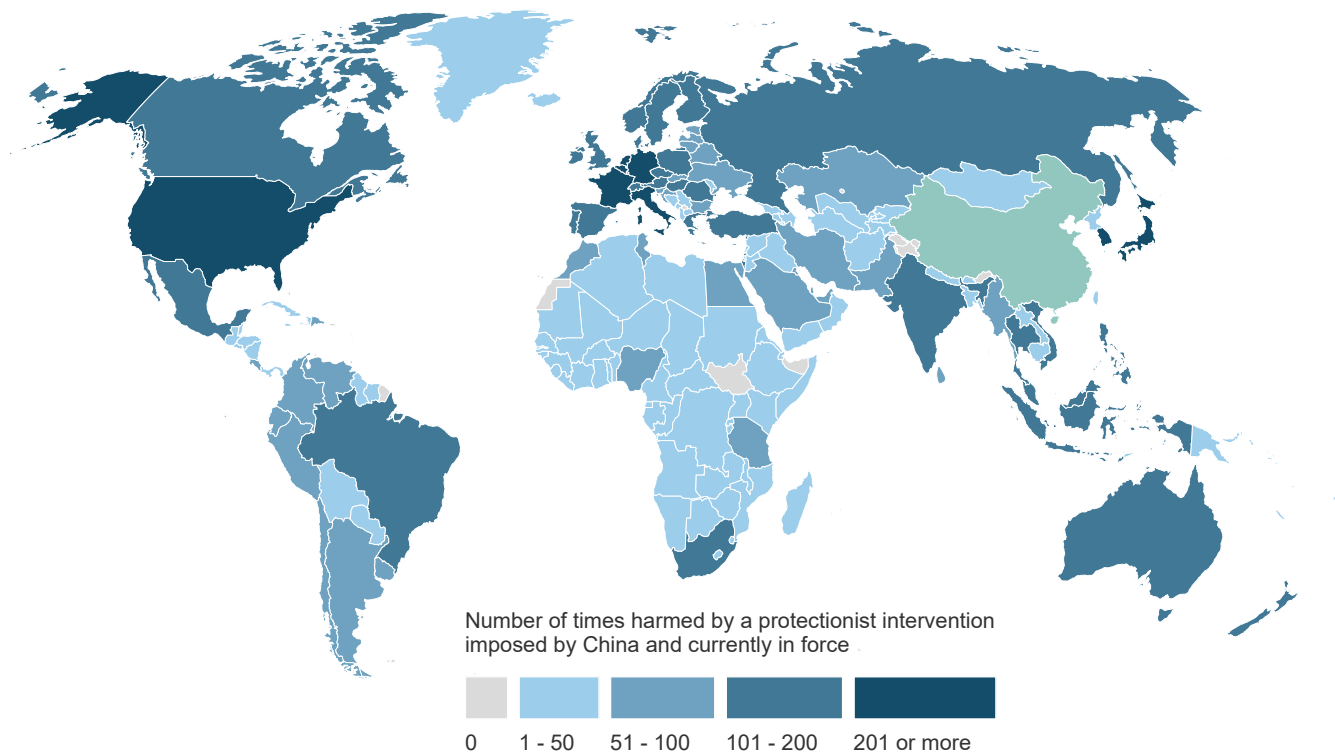
CHINA

What is at stake for China's goods exporters?

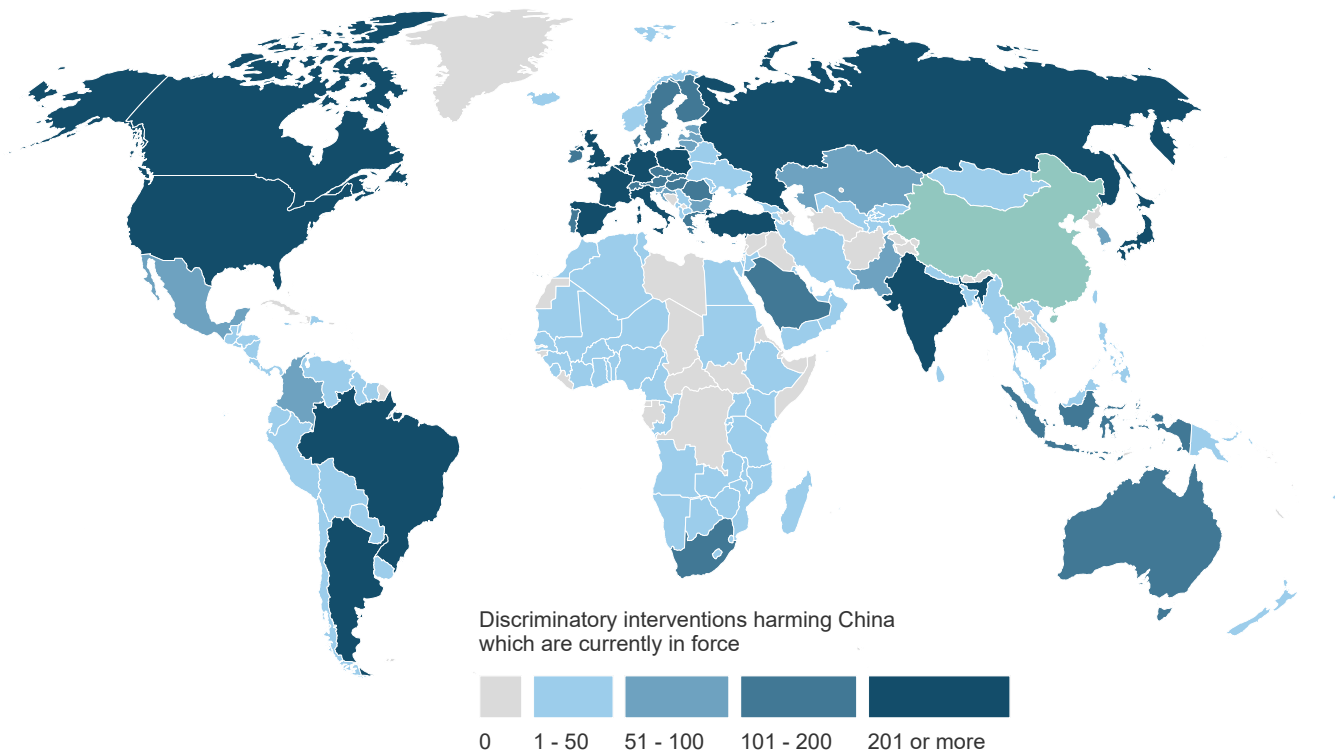
UN MAST chapter	Foreign discriminatory policy instrument	Percentage of this G20 member's exports at risk due to ...												
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	All instruments	19.26	39.24	57.10	63.10	75.96	77.69	76.60	78.91	80.20	81.56	82.69	83.76	81.87
D	Contingent trade-protective measures	0.57	1.67	2.59	2.79	3.07	3.43	3.63	3.97	4.33	4.73	5.15	5.47	5.58
E	Non-automatic licensing, quotas etc.	0.28	0.25	0.42	0.52	0.71	0.69	0.92	1.20	1.52	1.56	1.85	2.21	2.44
F	Price-control measures, including additional taxes and charges	0.04	0.07	0.13	0.16	0.17	0.29	0.40	0.43	0.43	1.00	1.10	1.68	1.70
G	Finance measures	0.28	0.61	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.02	1.02	1.02
I	Trade-related investment measures	0.04	0.18	0.21	0.24	0.26	0.29	0.48	0.67	0.79	0.81	0.80	0.85	1.43
L	Subsidies (excl. export subsidies)	2.68	7.58	13.93	16.50	37.04	38.24	39.80	41.15	41.41	42.22	43.47	45.23	36.58
M	Government procurement restrictions	0.83	0.87	1.20	1.57	3.67	4.83	5.25	5.20	5.36	5.42	5.57	5.66	5.81
P	Export-related measures (incl. subsidies)	14.13	30.55	46.56	54.48	60.76	61.60	54.90	62.37	65.01	66.69	66.96	67.22	58.43
	Tariff measures	1.61	2.12	3.03	4.32	5.11	25.34	24.02	25.43	28.56	32.96	39.37	47.13	47.34
	Instrument unclear	0.15	0.34	0.39	0.41	0.55	0.94	1.02	1.09	1.08	1.16	1.27	1.27	1.27

Note: This table presents estimates of the percentage of a nation's exports that face different harmful policy interventions in their export markets. Only those harmful interventions implemented after November 2008 count towards these totals -therefore, the estimates indicate the exposure of national exports to crisis-era policy intervention that favours domestic commercial interests. The trade data used in the estimation is taken from UN Comtrade and at the six-digit level of the Harmonised System product classification. For each product exported by a nation, the foreign markets accounted for in this estimate are those where bilateral exports exceeded \$1 million for the given product. De minimis trade flows are therefore excluded. To limit endogeneity problems (that is, the harmful policy interventions affecting the total value of exports observed) pre-crisis shares of world trade are employed in these calculations. The pre-crisis shares are computed as the mean weight for the years 2005-7. The calculations also take into account when a harmful policy intervention comes into force and, where relevant, lapses. When an intervention lasts for only part of a year, the trade flow is discounted by the fraction of the year the harmful measure is not in force.

COUNTRIES HARMED BY CHINA'S DISCRIMINATORY INTERVENTIONS

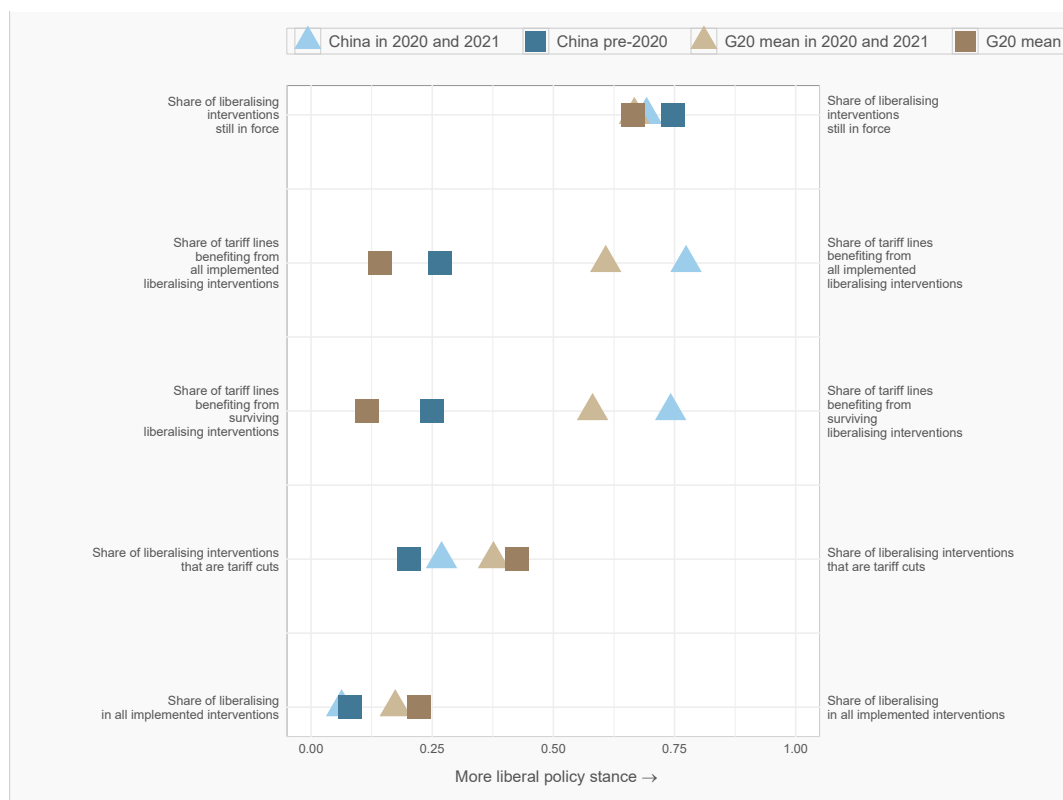


DISCRIMINATORY INTERVENTIONS HARMING CHINA'S INTERESTS



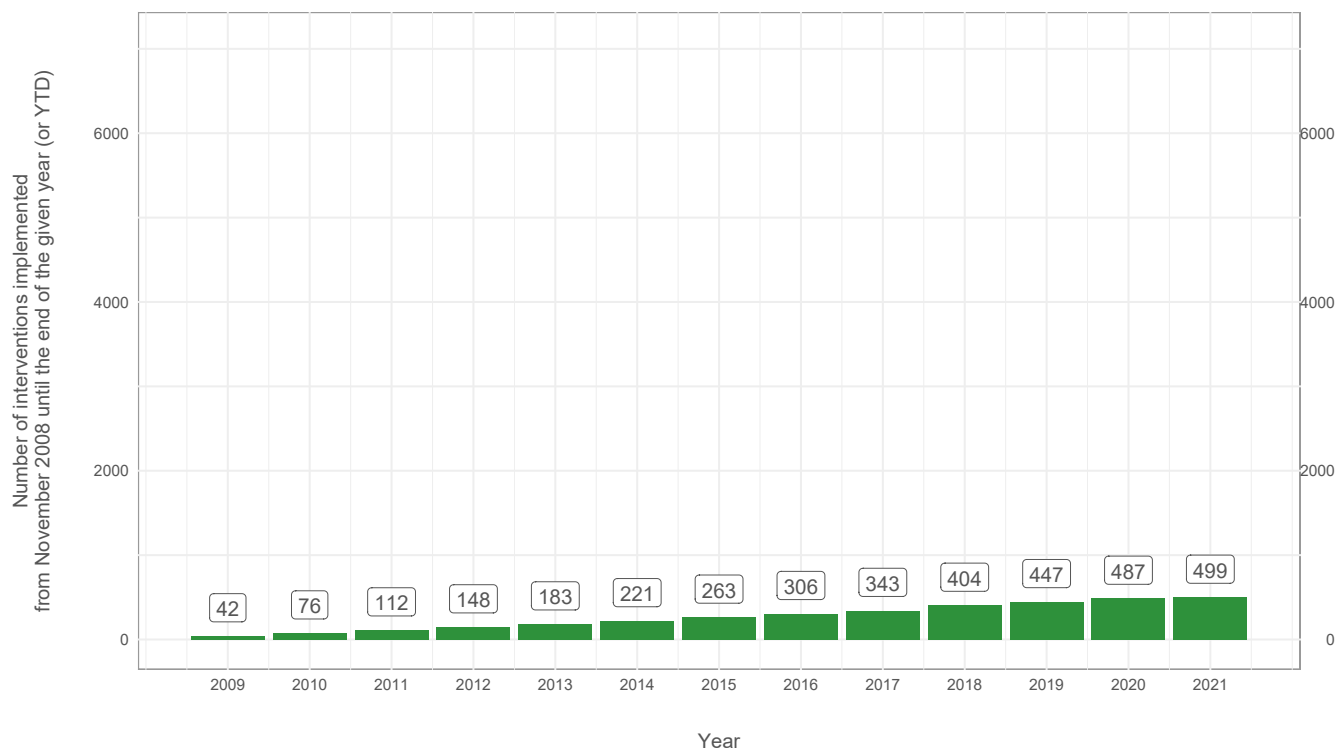
CHINA

Track record of liberalisation



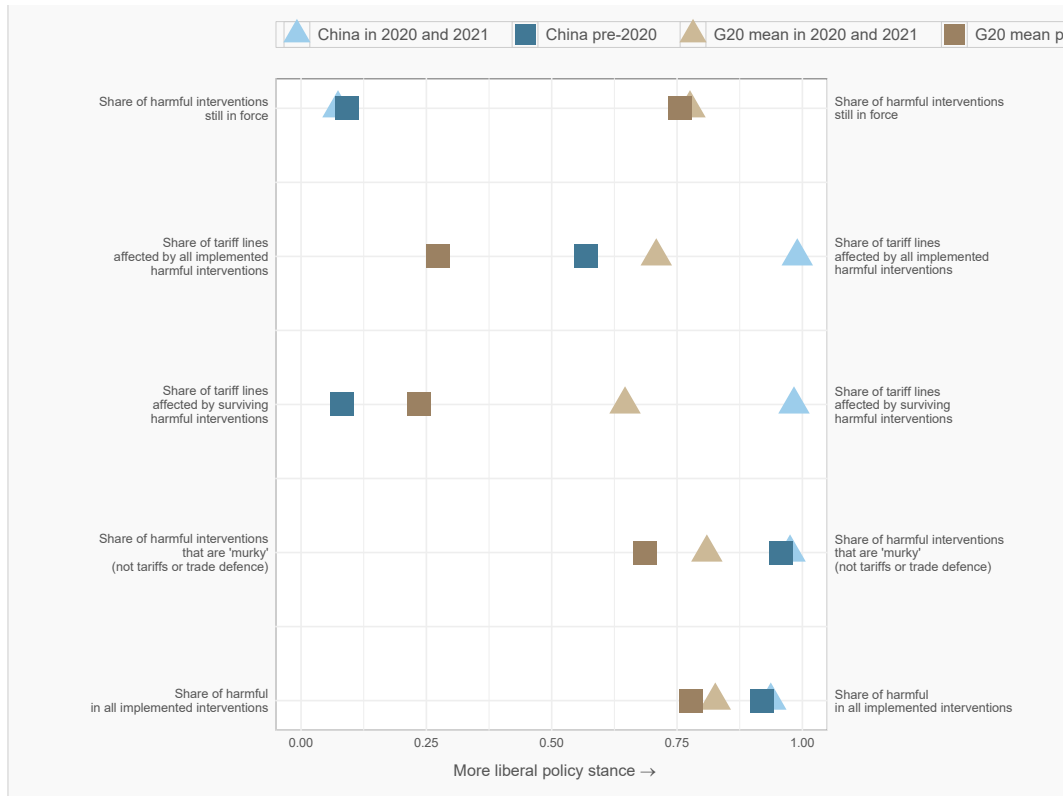
CHINA

Number of liberalising interventions imposed since November 2008



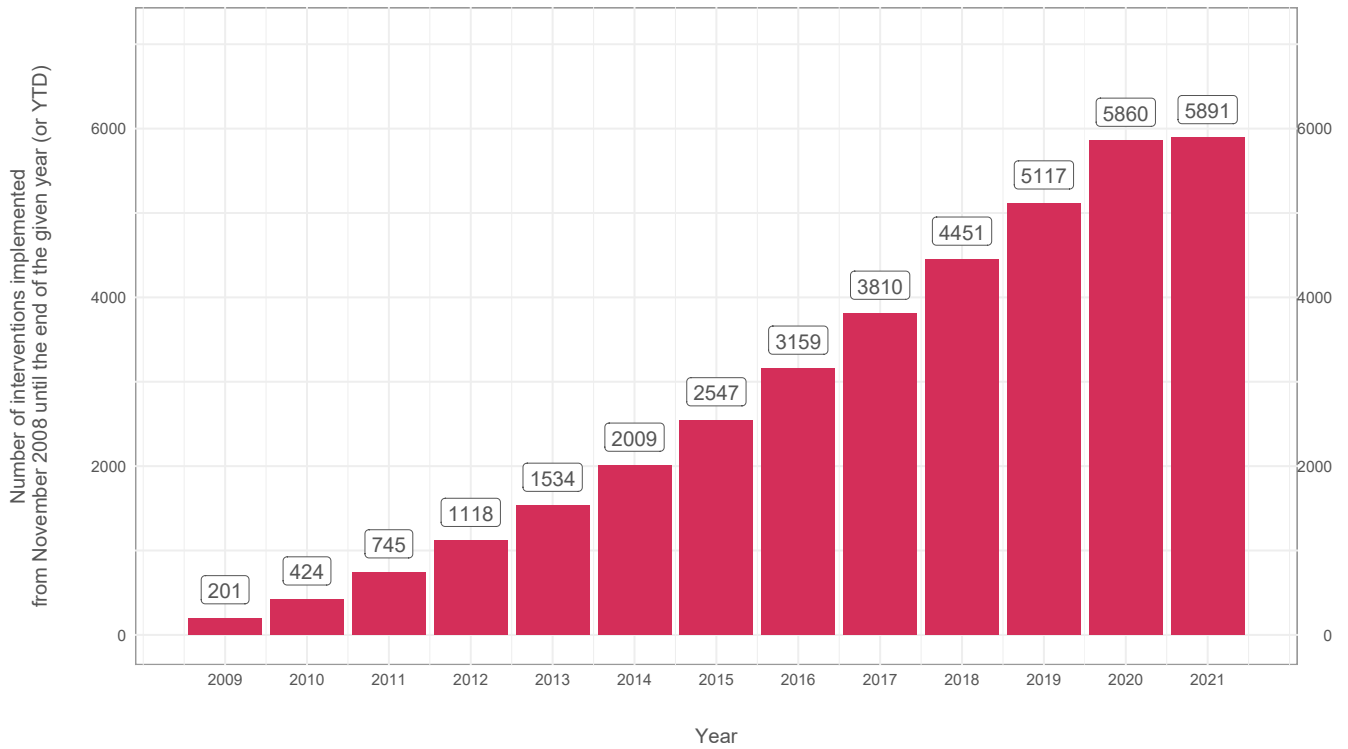
CHINA

Track record of protectionism



CHINA

Number of discriminatory interventions imposed since November 2008



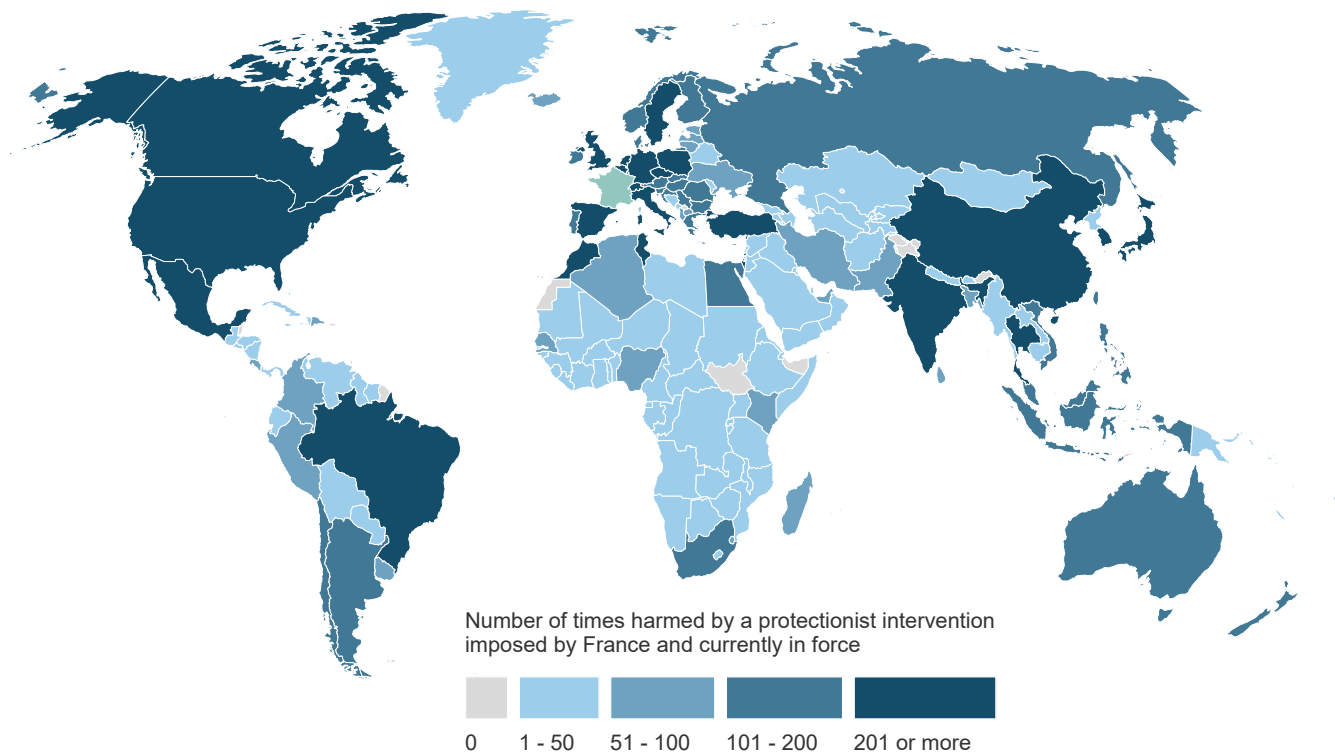
FRANCE

What is at stake for France's goods exporters?

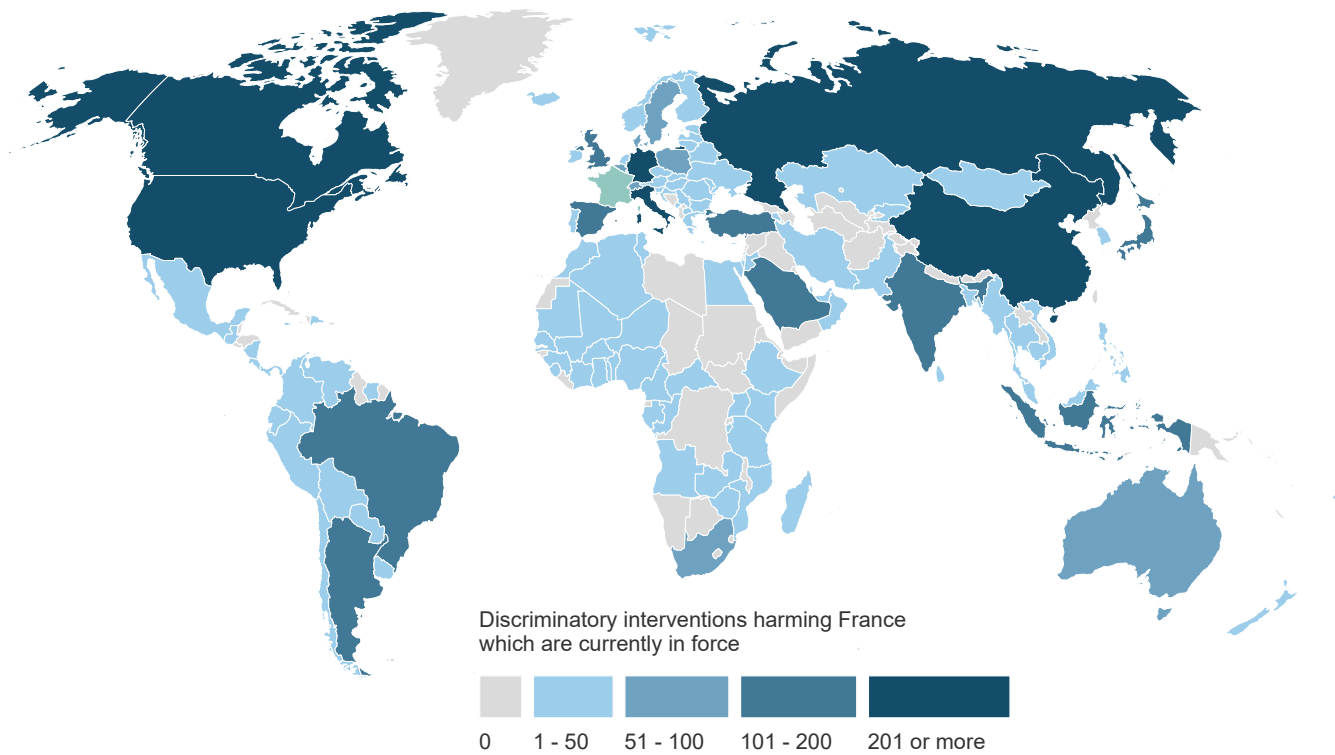
UN MAST chapter	Foreign discriminatory policy instrument	Percentage of this G20 member's exports at risk due to ...												
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	All instruments	42.52	61.19	66.60	69.91	72.33	75.03	79.37	80.83	81.59	82.08	83.68	84.07	82.90
D	Contingent trade-protective measures	0.01	0.03	0.03	0.04	0.07	0.17	0.16	0.26	0.28	0.32	0.39	0.41	0.46
E	Non-automatic licensing, quotas etc.	0.10	0.17	1.12	1.24	1.35	1.52	1.60	1.58	2.03	2.65	2.67	2.66	2.89
F	Price-control measures, including additional taxes and charges	0.01	0.02	0.06	0.08	0.29	0.82	0.97	1.05	1.09	1.25	1.27	1.40	1.41
G	Finance measures	0.17	0.24	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
I	Trade-related investment measures	0.11	0.17	0.20	0.22	0.25	0.34	0.48	0.77	1.32	1.26	1.27	1.19	1.33
L	Subsidies (excl. export subsidies)	9.29	21.04	21.36	23.31	24.52	28.02	35.13	37.67	38.37	38.91	39.67	41.73	40.57
M	Government procurement restrictions	0.34	0.43	0.31	0.49	0.63	0.83	1.10	1.23	1.29	1.39	1.62	2.11	1.65
P	Export-related measures (incl. subsidies)	35.16	50.90	60.05	64.35	67.04	68.12	67.40	68.61	69.74	70.35	73.31	73.87	73.38
	Tariff measures	1.27	1.61	1.94	2.41	2.97	2.82	3.05	3.59	4.32	4.78	5.56	6.59	6.94
	Instrument unclear	0.15	0.28	0.31	0.33	0.95	1.25	1.36	1.43	1.52	1.64	1.60	1.58	1.58

Note: This table presents estimates of the percentage of a nation's exports that face different harmful policy interventions in their export markets. Only those harmful interventions implemented after November 2008 count towards these totals -therefore, the estimates indicate the exposure of national exports to crisis-era policy intervention that favours domestic commercial interests. The trade data used in the estimation is taken from UN Comtrade and at the six-digit level of the Harmonised System product classification. For each product exported by a nation, the foreign markets accounted for in this estimate are those where bilateral exports exceeded \$1 million for the given product. De minimis trade flows are therefore excluded. To limit endogeneity problems (that is, the harmful policy interventions affecting the total value of exports observed) pre-crisis shares of world trade are employed in these calculations. The pre-crisis shares are computed as the mean weight for the years 2005-7. The calculations also take into account when a harmful policy intervention comes into force and, where relevant, lapses. When an intervention lasts for only part of a year, the trade flow is discounted by the fraction of the year the harmful measure is not in force.

COUNTRIES HARMED BY FRANCE'S DISCRIMINATORY INTERVENTIONS



DISCRIMINATORY INTERVENTIONS HARMING FRANCE'S INTERESTS



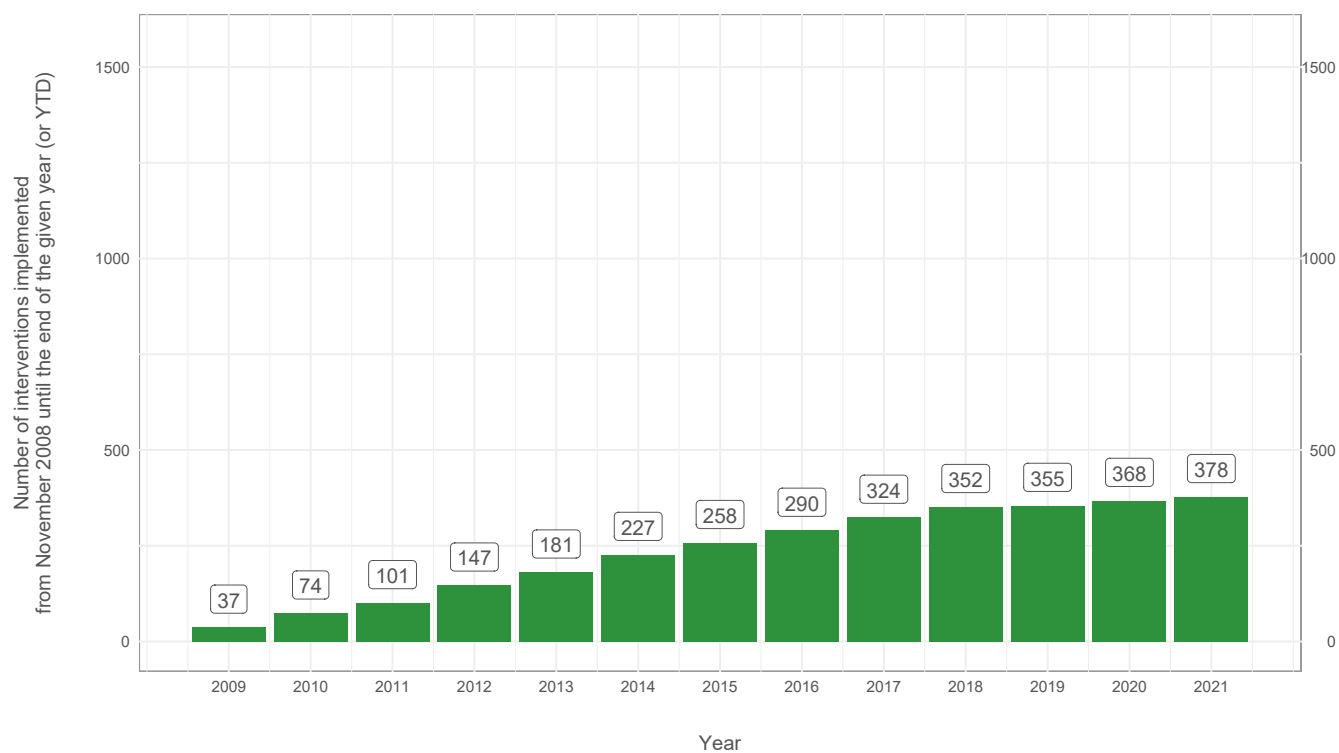
FRANCE

Track record of liberalisation



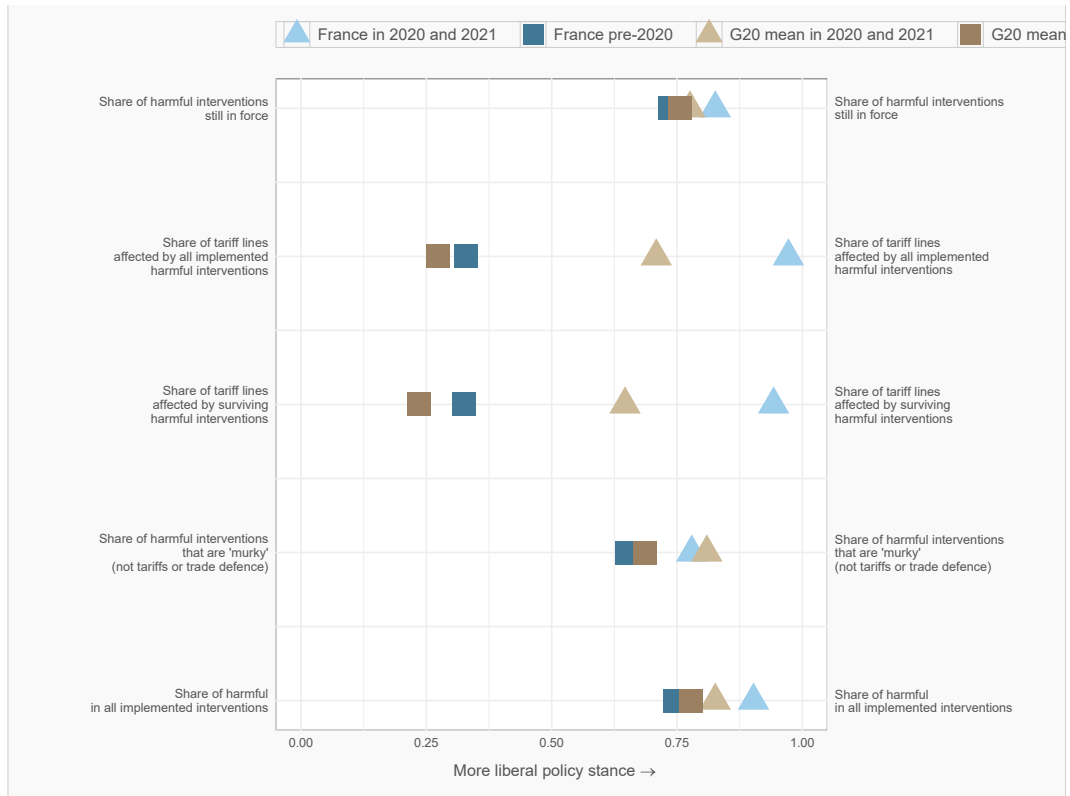
FRANCE

Number of liberalising interventions imposed since November 2008



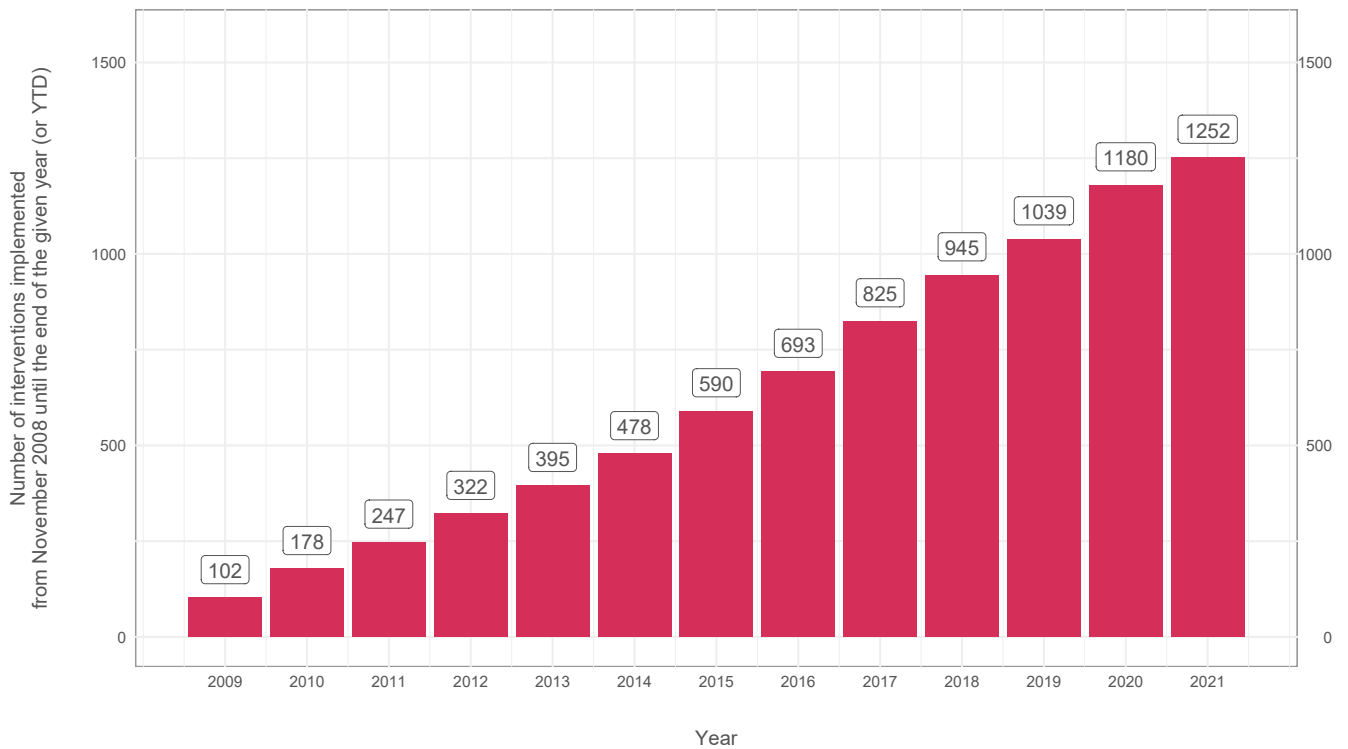
FRANCE

Track record of protectionism



FRANCE

Number of discriminatory interventions imposed since November 2008



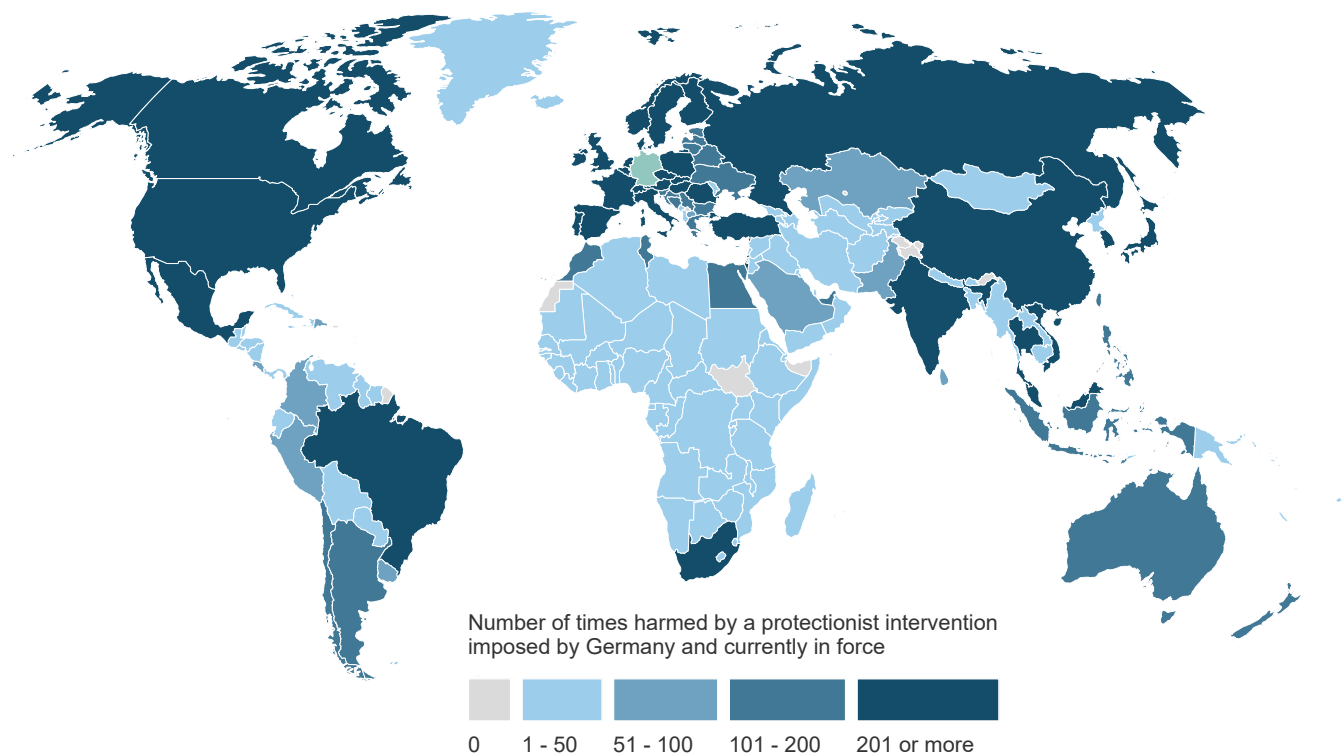
GERMANY

What is at stake for Germany's goods exporters?

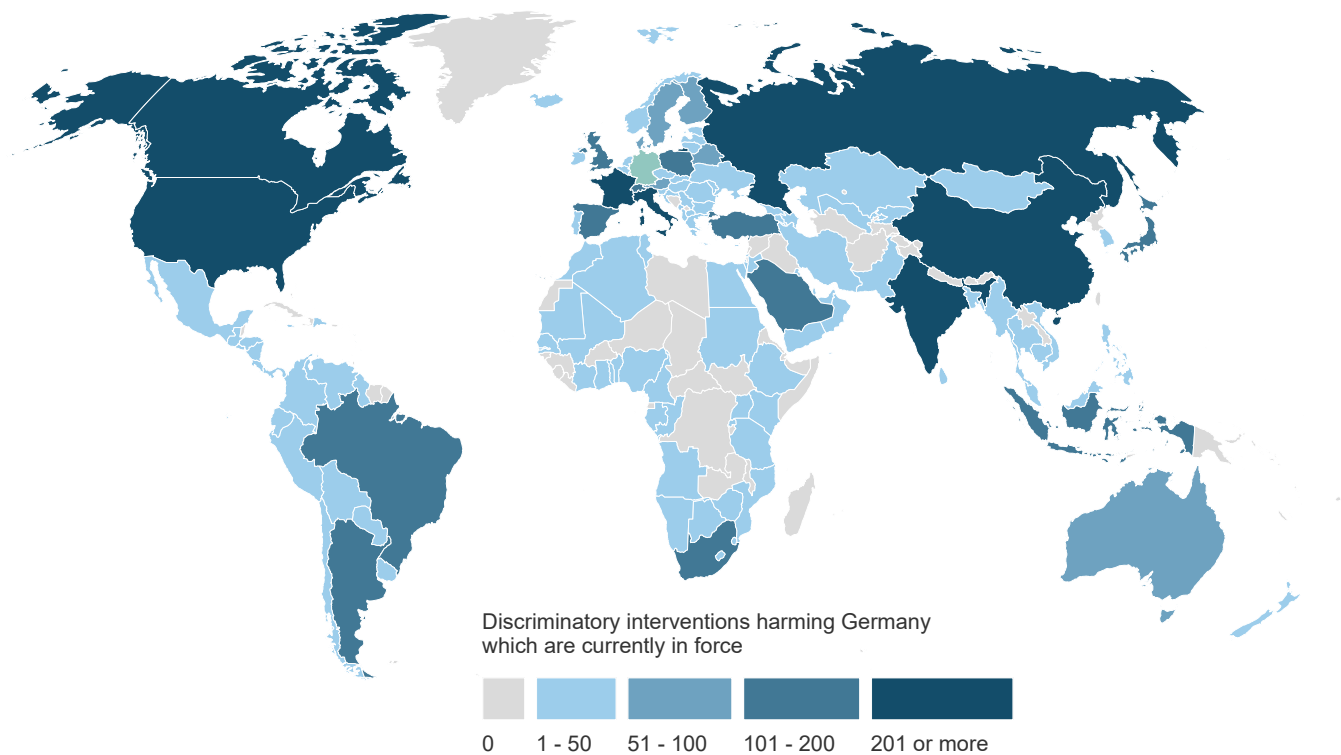
UN MAST chapter	Foreign discriminatory policy instrument	Percentage of this G20 member's exports at risk due to ...												
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	All instruments	47.43	60.95	66.21	68.82	70.96	73.10	75.58	77.18	78.50	79.39	81.24	81.64	80.20
D	Contingent trade-protective measures	0.04	0.08	0.09	0.13	0.21	0.22	0.24	0.32	0.33	0.41	0.47	0.54	0.59
E	Non-automatic licensing, quotas etc.	0.23	0.37	1.57	1.66	2.06	1.76	1.83	1.83	2.13	2.53	2.58	2.63	2.71
F	Price-control measures, including additional taxes and charges	0.01	0.05	0.07	0.11	0.14	0.28	0.44	0.54	0.83	1.21	1.25	1.43	1.44
G	Finance measures	0.20	0.26	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
I	Trade-related investment measures	0.25	1.61	1.81	1.84	1.88	1.93	2.16	2.34	2.42	2.36	2.39	2.39	2.60
L	Subsidies (excl. export subsidies)	14.24	22.06	21.72	22.93	24.43	27.36	31.31	33.85	35.04	36.10	37.53	39.81	37.24
M	Government procurement restrictions	0.33	0.54	0.54	0.81	0.90	1.33	1.76	1.85	1.92	1.97	2.06	2.47	2.59
P	Export-related measures (incl. subsidies)	35.78	49.17	59.51	63.89	66.09	65.88	66.67	68.84	70.87	72.17	74.10	74.48	71.76
	Tariff measures	1.03	1.43	1.55	2.61	3.35	2.92	3.12	3.64	4.60	4.95	5.63	5.99	6.30
	Instrument unclear	0.05	0.24	0.32	0.34	0.48	0.57	0.78	0.80	0.94	1.03	1.00	0.98	1.01

Note: This table presents estimates of the percentage of a nation's exports that face different harmful policy interventions in their export markets. Only those harmful interventions implemented after November 2008 count towards these totals -therefore, the estimates indicate the exposure of national exports to crisis-era policy intervention that favours domestic commercial interests. The trade data used in the estimation is taken from UN Comtrade and at the six-digit level of the Harmonised System product classification. For each product exported by a nation, the foreign markets accounted for in this estimate are those where bilateral exports exceeded \$1 million for the given product. De minimis trade flows are therefore excluded. To limit endogeneity problems (that is, the harmful policy interventions affecting the total value of exports observed) pre-crisis shares of world trade are employed in these calculations. The pre-crisis shares are computed as the mean weight for the years 2005-7. The calculations also take into account when a harmful policy intervention comes into force and, where relevant, lapses. When an intervention lasts for only part of a year, the trade flow is discounted by the fraction of the year the harmful measure is not in force.

COUNTRIES HARMED BY GERMANY'S DISCRIMINATORY INTERVENTIONS

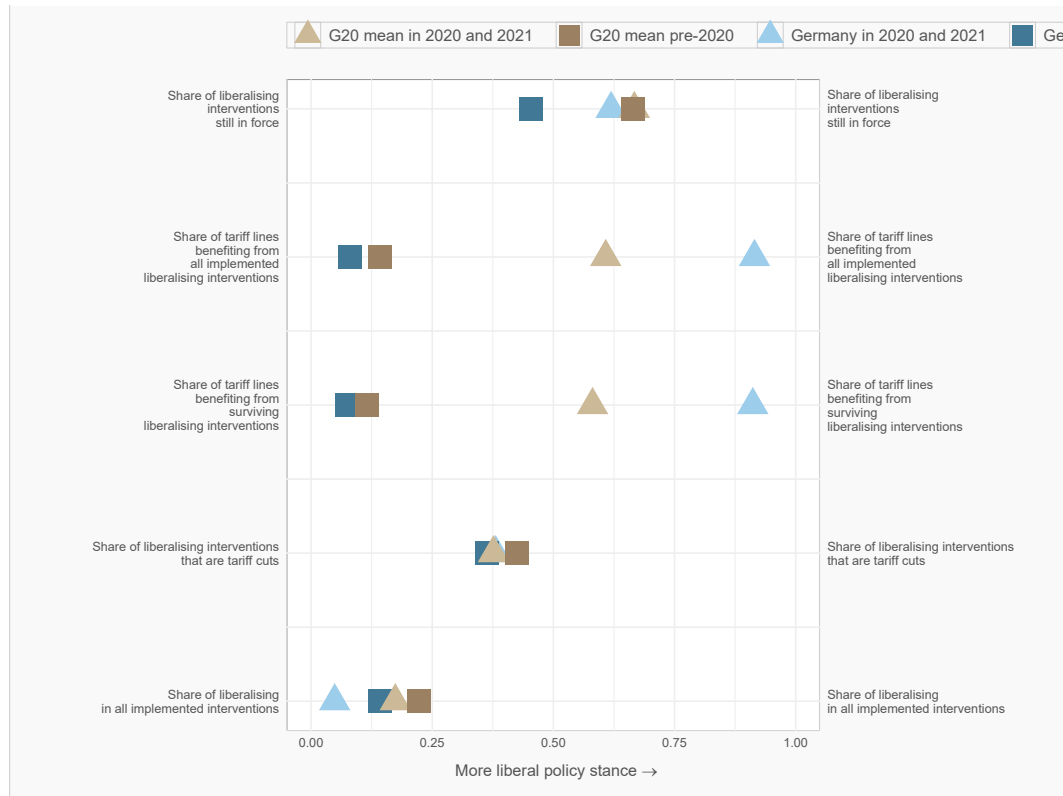


DISCRIMINATORY INTERVENTIONS HARMING GERMANY'S INTERESTS



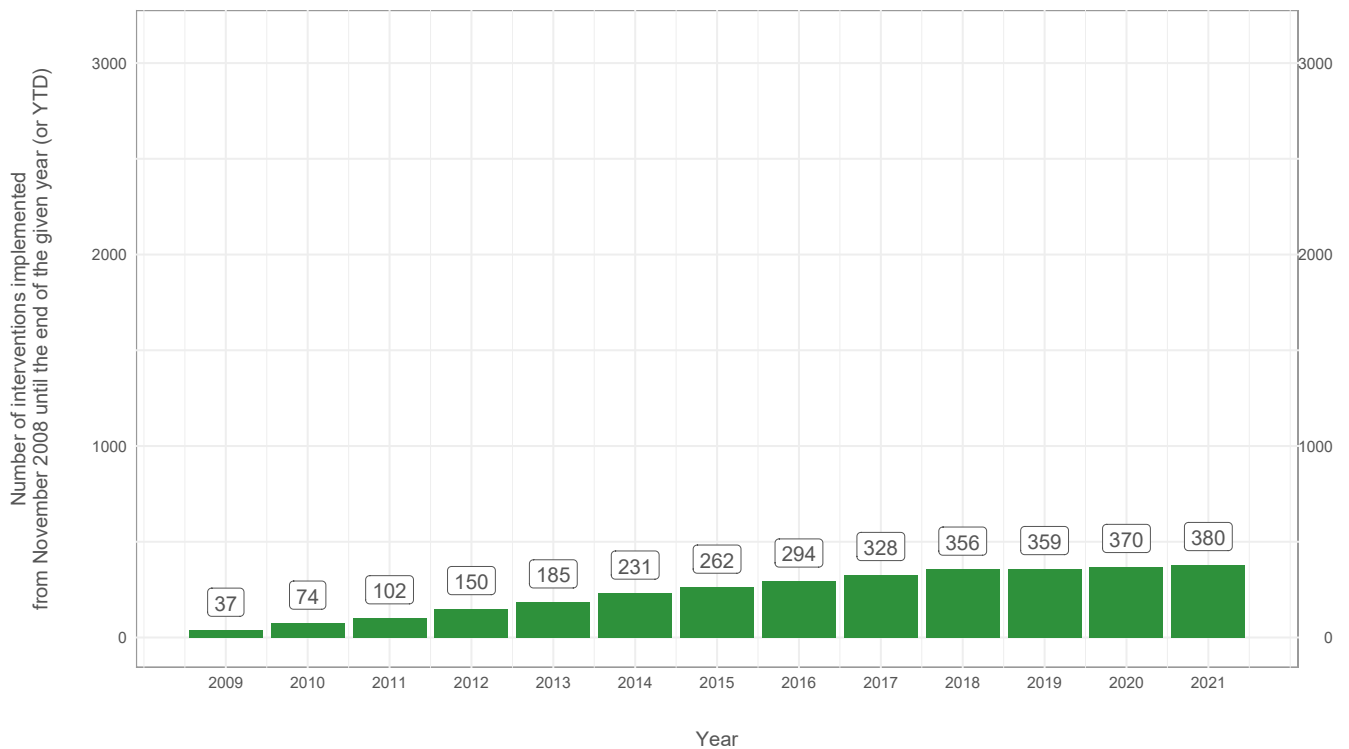
GERMANY

Track record of liberalisation



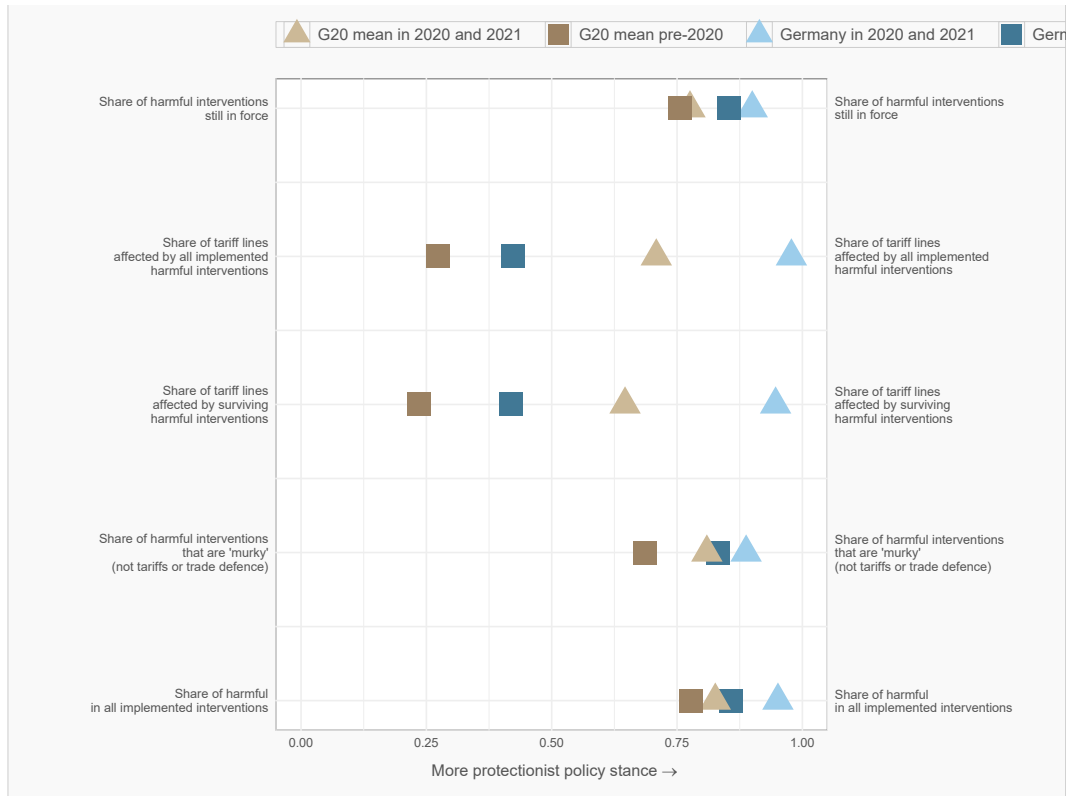
GERMANY

Number of liberalising interventions imposed since November 2008



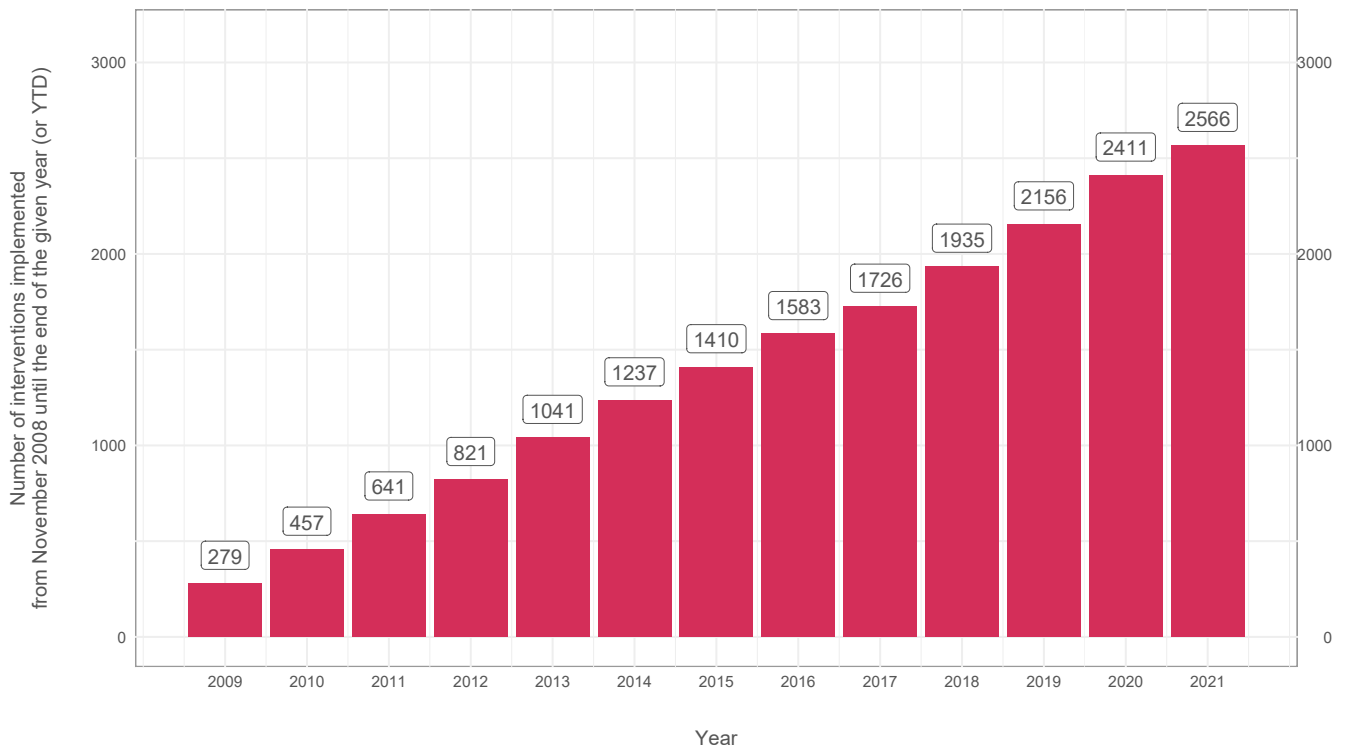
GERMANY

Track record of protectionism



GERMANY

Number of discriminatory interventions imposed since November 2008



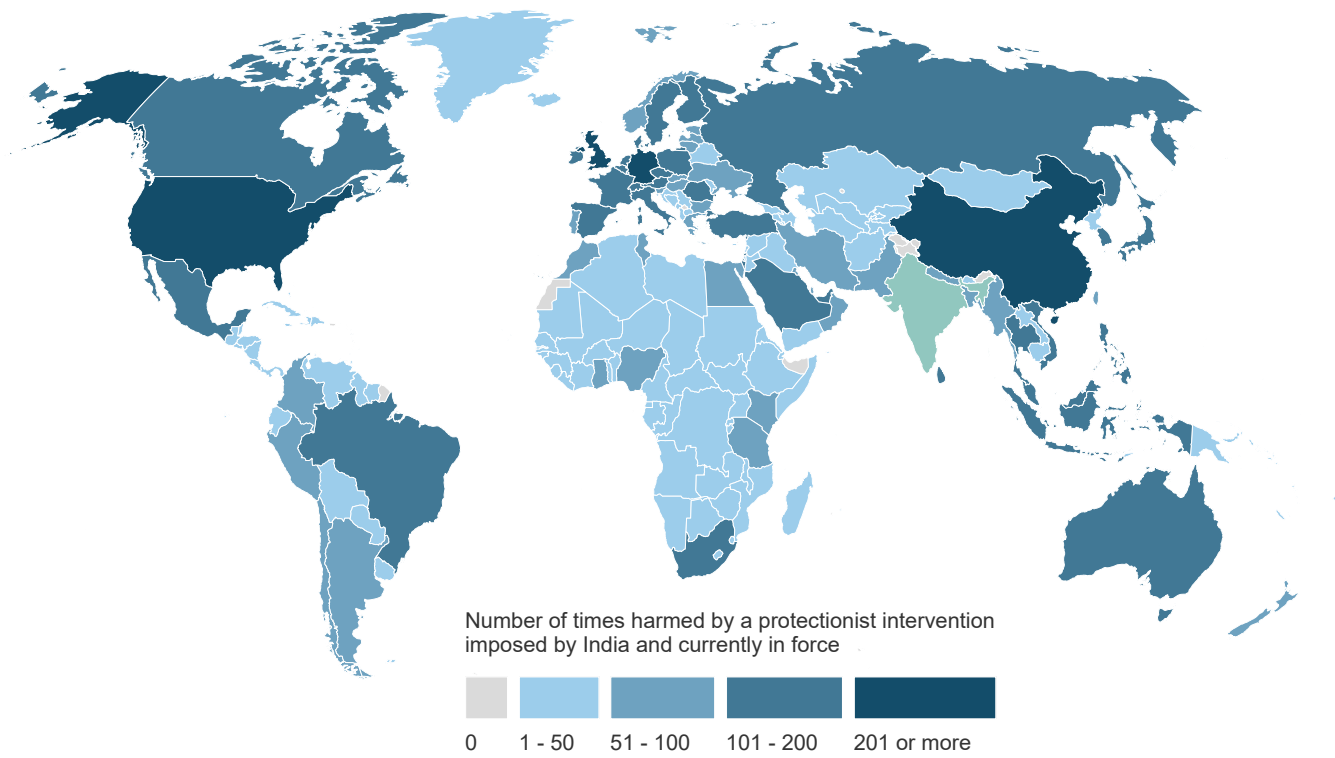
INDIA

What is at stake for India's goods exporters?

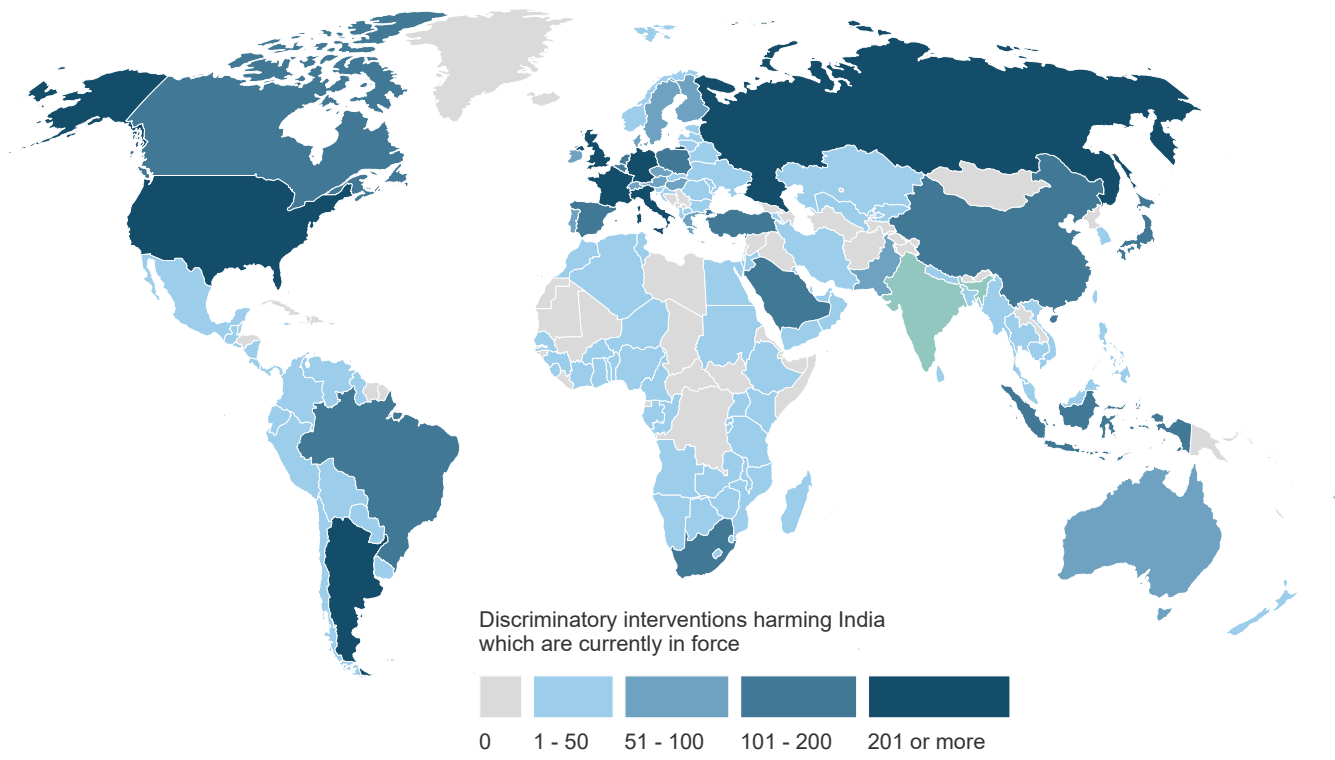
UN MAST chapter	Foreign discriminatory policy instrument	Percentage of this G20 member's exports at risk due to ...												
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	All instruments	39.93	48.68	59.31	55.32	62.82	67.01	77.28	77.95	78.63	79.20	79.81	79.92	79.24
D	Contingent trade-protective measures	0.16	0.23	0.62	0.81	0.83	1.00	1.04	1.61	1.77	2.47	3.05	3.05	3.21
E	Non-automatic licensing, quotas etc.	0.14	4.18	6.06	7.64	7.18	7.49	7.83	8.73	9.94	10.21	10.07	9.99	9.61
F	Price-control measures, including additional taxes and charges	5.35	5.37	5.37	5.37	5.37	5.53	5.59	5.62	5.62	5.64	5.67	5.77	5.86
G	Finance measures	0.60	0.89	1.28	1.28	1.36	1.28	1.31	1.31	1.31	1.36	1.48	1.48	1.48
I	Trade-related investment measures	0.04	0.17	0.14	0.15	0.18	0.42	1.02	0.61	0.42	0.34	0.33	0.33	0.38
L	Subsidies (excl. export subsidies)	2.74	6.53	12.27	14.21	30.45	32.77	35.13	35.95	35.59	35.93	36.94	38.03	22.42
M	Government procurement restrictions	1.10	1.22	1.32	1.65	1.76	1.92	2.28	2.47	2.39	2.43	2.60	2.64	2.71
P	Export-related measures (incl. subsidies)	33.51	42.52	53.59	48.00	52.54	57.27	69.22	70.13	71.57	72.52	73.28	73.41	73.30
	Tariff measures	1.48	2.12	2.89	5.57	6.25	24.52	12.86	15.66	17.24	18.70	23.19	21.85	22.66
	Instrument unclear	0.10	0.26	0.17	0.20	0.25	0.43	0.55	0.72	0.82	0.88	0.94	0.94	0.92

Note: This table presents estimates of the percentage of a nation's exports that face different harmful policy interventions in their export markets. Only those harmful interventions implemented after November 2008 count towards these totals—therefore, the estimates indicate the exposure of national exports to crisis-era policy intervention that favours domestic commercial interests. The trade data used in the estimation is taken from UN Comtrade and at the six-digit level of the Harmonised System product classification. For each product exported by a nation, the foreign markets accounted for in this estimate are those where bilateral exports exceeded \$1 million for the given product. De minimis trade flows are therefore excluded. To limit endogeneity problems (that is, the harmful policy interventions affecting the total value of exports observed) pre-crisis shares of world trade are employed in these calculations. The pre-crisis shares are computed as the mean weight for the years 2005-7. The calculations also take into account when a harmful policy intervention comes into force and, where relevant, lapses. When an intervention lasts for only part of a year, the trade flow is discounted by the fraction of the year the harmful measure is not in force.

COUNTRIES HARMED BY INDIA'S DISCRIMINATORY INTERVENTIONS

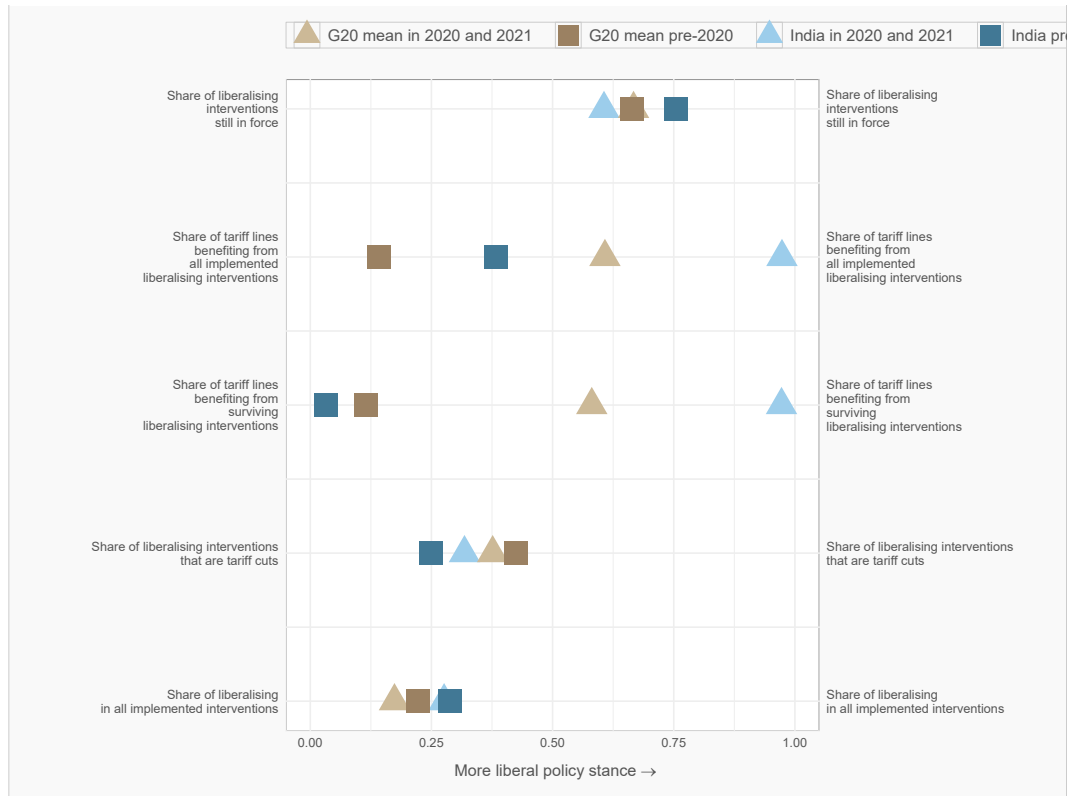


DISCRIMINATORY INTERVENTIONS HARMING INDIA'S INTERESTS



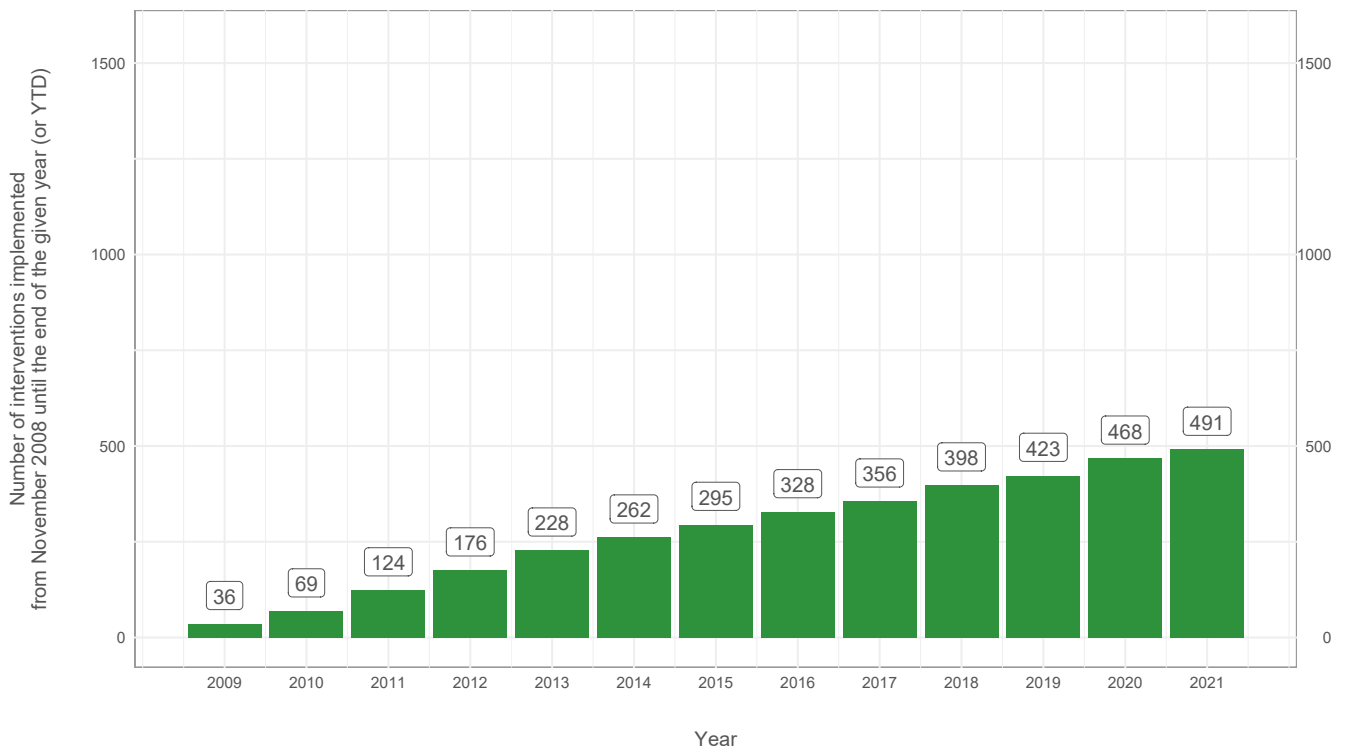
INDIA

Track record of liberalisation



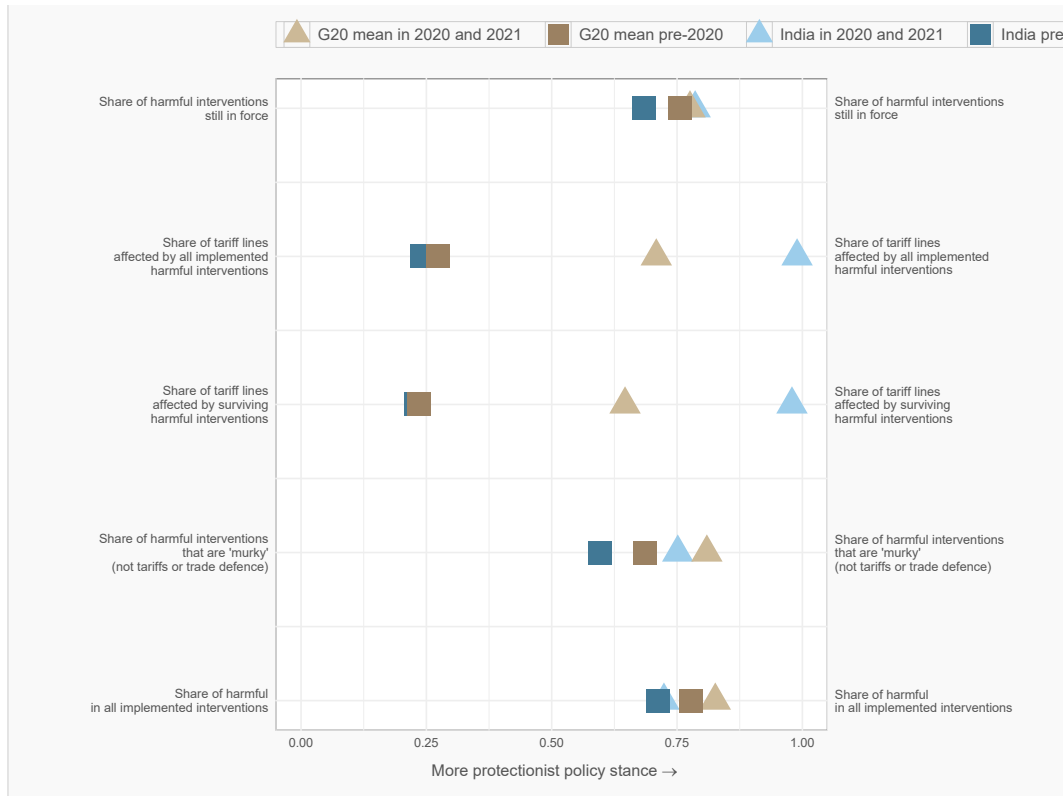
INDIA

Number of liberalising interventions imposed since November 2008



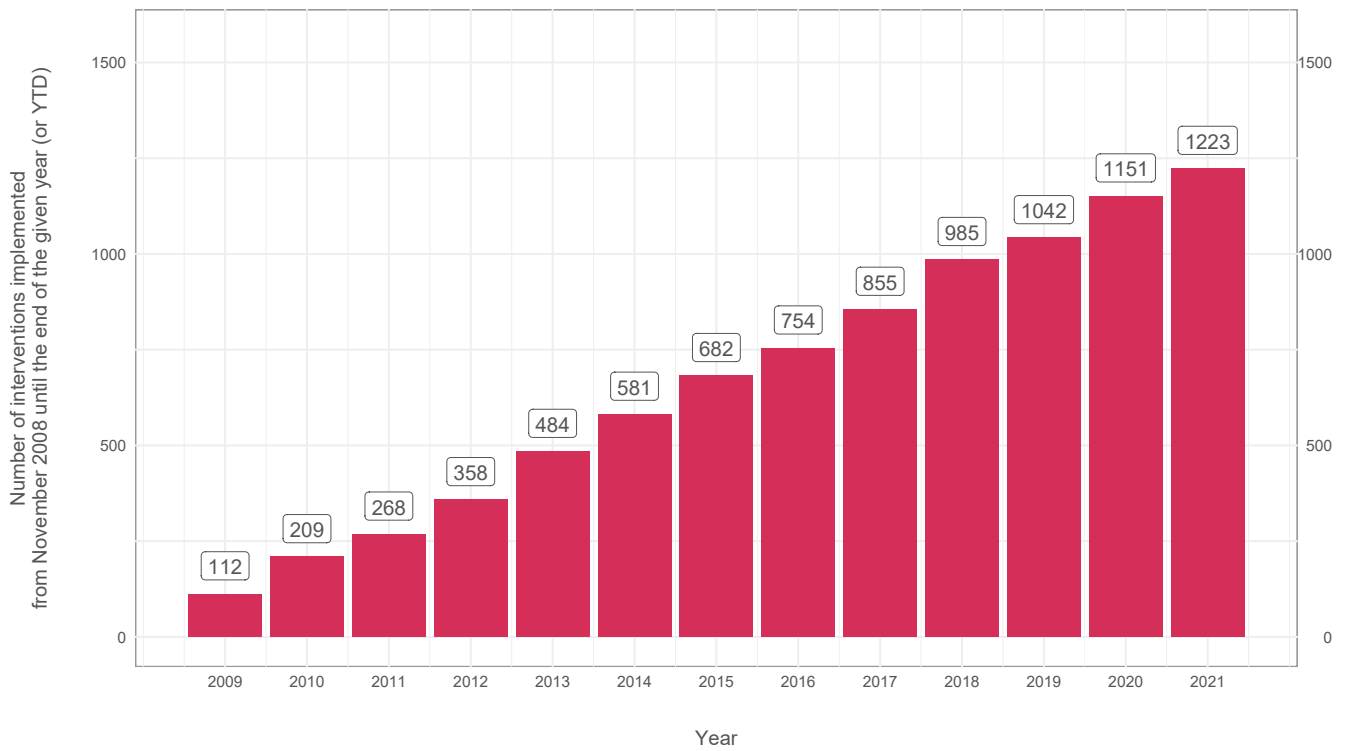
INDIA

Track record of protectionism



INDIA

Number of discriminatory interventions imposed since November 2008



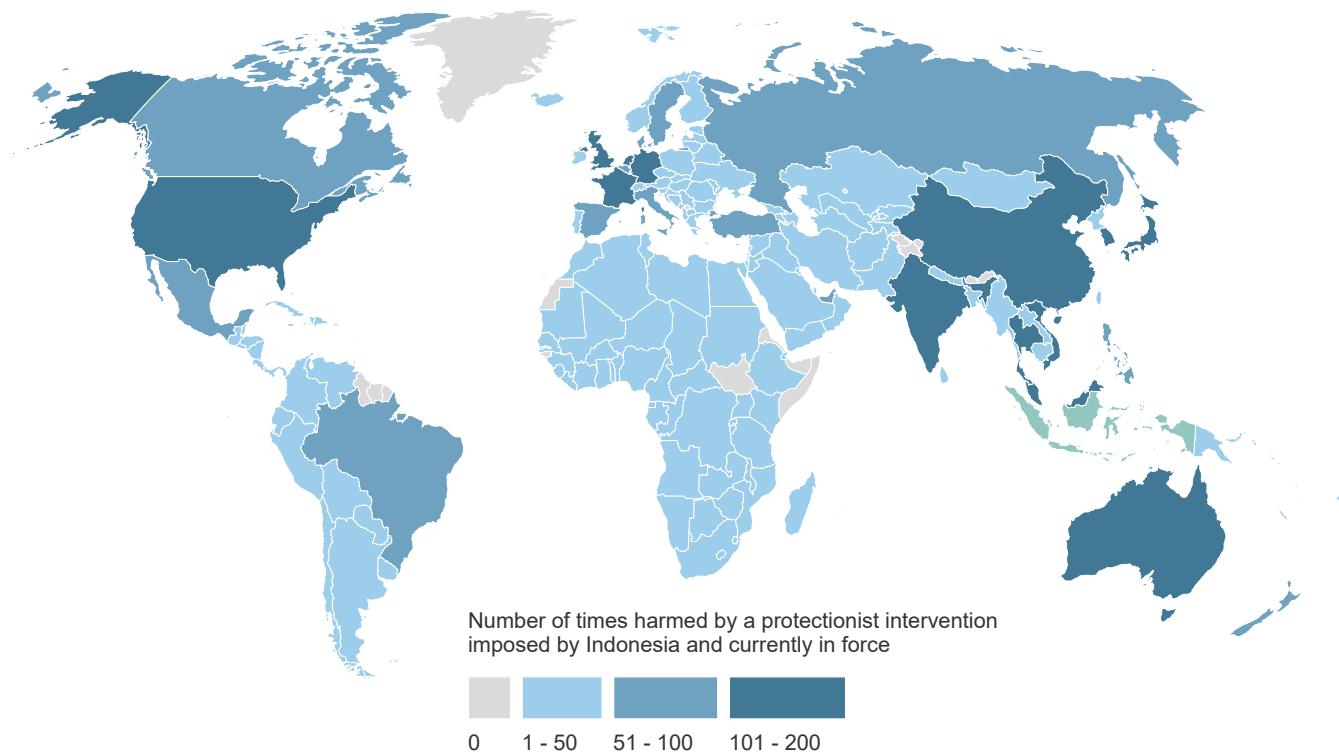
INDONESIA

What is at stake for Indonesia's goods exporters?

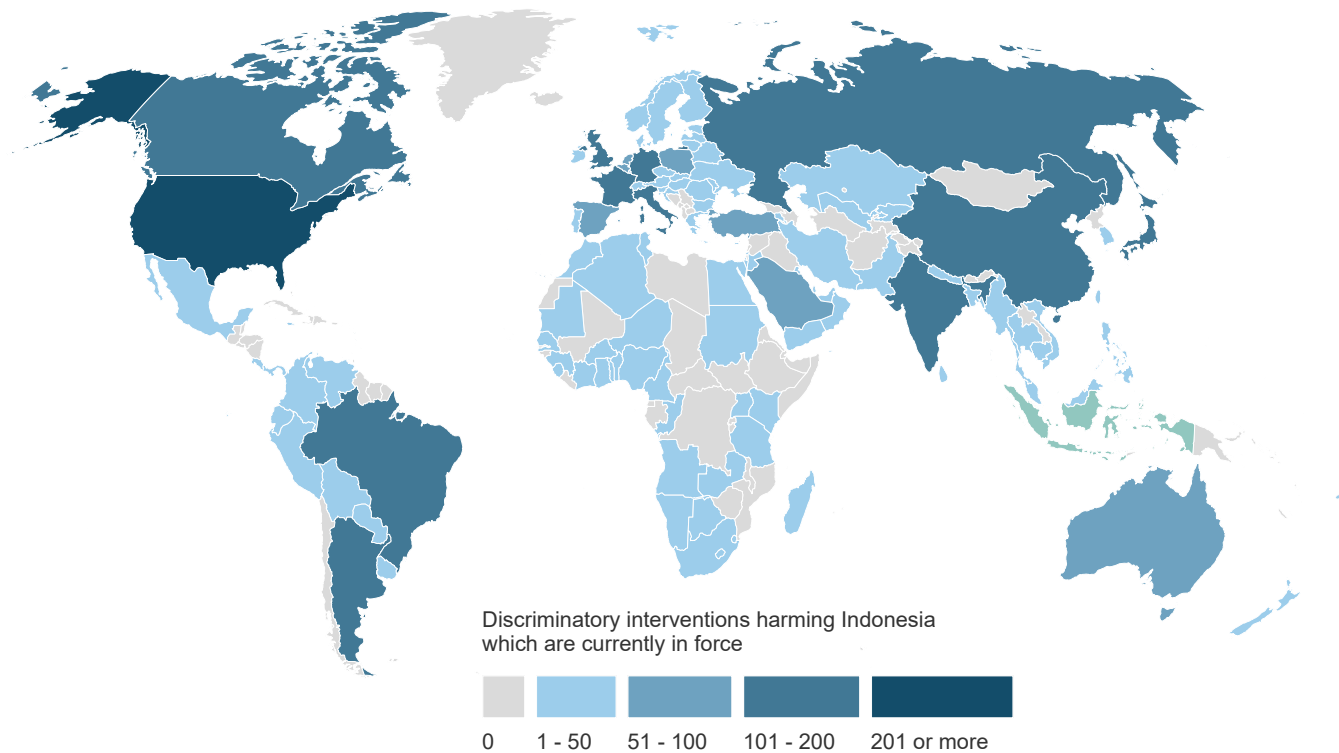
UN MAST chapter	Foreign discriminatory policy instrument	Percentage of this G20 member's exports at risk due to ...												
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	All instruments	41.86	48.81	52.45	55.49	61.88	68.57	68.03	69.37	70.25	72.01	75.13	75.31	78.13
D	Contingent trade-protective measures	0.18	0.30	0.34	0.40	0.46	0.48	0.50	0.55	0.60	1.26	1.30	1.33	1.96
E	Non-automatic licensing, quotas etc.	1.19	0.99	3.00	3.41	3.18	3.22	3.60	4.67	4.80	4.82	4.84	5.09	5.14
F	Price-control measures, including additional taxes and charges	1.20	1.20	1.26	1.30	1.30	2.02	2.53	2.54	2.54	5.05	5.32	5.43	5.38
G	Finance measures	0.06	0.31	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
I	Trade-related investment measures	0.00	0.03	0.03	0.03	0.04	0.12	0.15	0.21	0.24	0.24	0.23	0.24	0.26
L	Subsidies (excl. export subsidies)	4.93	7.12	9.03	9.22	20.37	22.19	24.39	25.24	25.32	25.63	26.58	26.34	18.79
M	Government procurement restrictions	0.32	1.70	1.67	1.85	1.99	2.06	2.27	2.27	2.31	2.36	2.64	2.60	2.64
P	Export-related measures (incl. subsidies)	32.94	39.23	42.46	44.72	49.16	56.97	56.47	57.54	58.43	60.79	64.28	64.63	67.80
	Tariff measures	3.66	4.92	5.70	7.64	8.32	17.81	11.27	13.21	16.13	16.01	16.89	16.60	16.71
	Instrument unclear	0.01	0.21	0.05	0.05	0.19	0.32	0.47	0.85	1.13	1.20	1.21	1.21	1.26

Note: This table presents estimates of the percentage of a nation's exports that face different harmful policy interventions in their export markets. Only those harmful interventions implemented after November 2008 count towards these totals -therefore, the estimates indicate the exposure of national exports to crisis-era policy intervention that favours domestic commercial interests. The trade data used in the estimation is taken from UN Comtrade and at the six-digit level of the Harmonised System product classification. For each product exported by a nation, the foreign markets accounted for in this estimate are those where bilateral exports exceeded \$1 million for the given product. De minimis trade flows are therefore excluded. To limit endogeneity problems (that is, the harmful policy interventions affecting the total value of exports observed) pre-crisis shares of world trade are employed in these calculations. The pre-crisis shares are computed as the mean weight for the years 2005-7. The calculations also take into account when a harmful policy intervention comes into force and, where relevant, lapses. When an intervention lasts for only part of a year, the trade flow is discounted by the fraction of the year the harmful measure is not in force.

COUNTRIES HARMED BY INDONESIA'S DISCRIMINATORY INTERVENTIONS

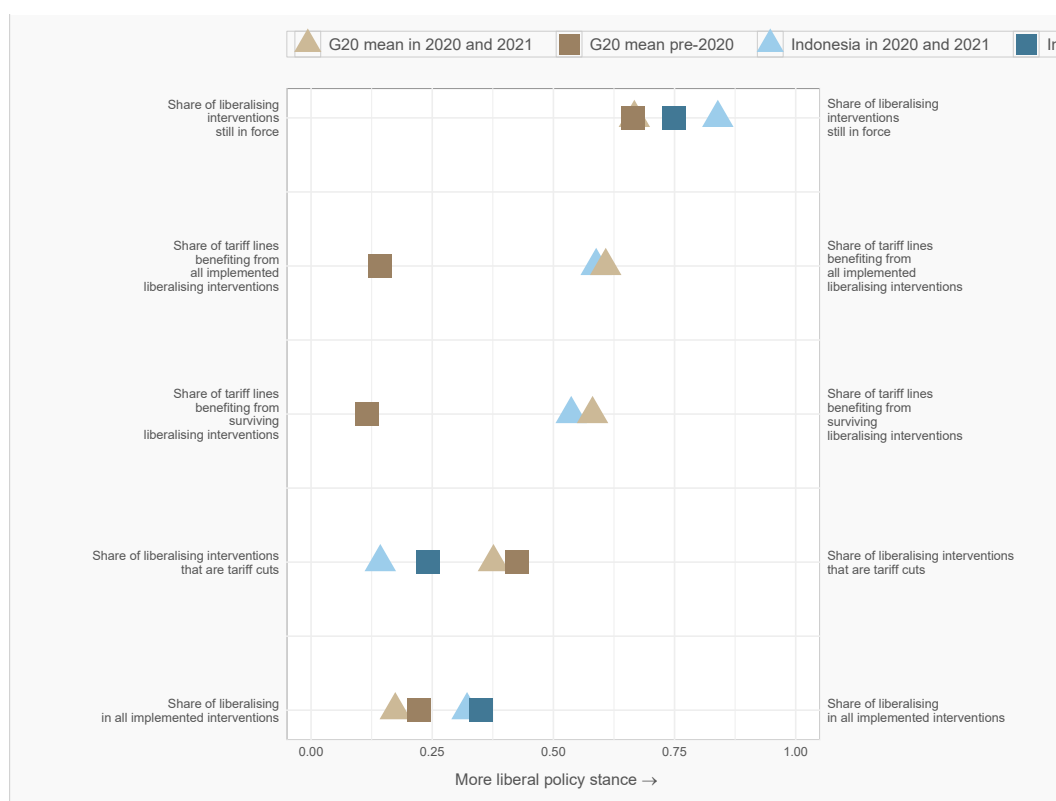


DISCRIMINATORY INTERVENTIONS HARMING INDONESIA'S INTERESTS



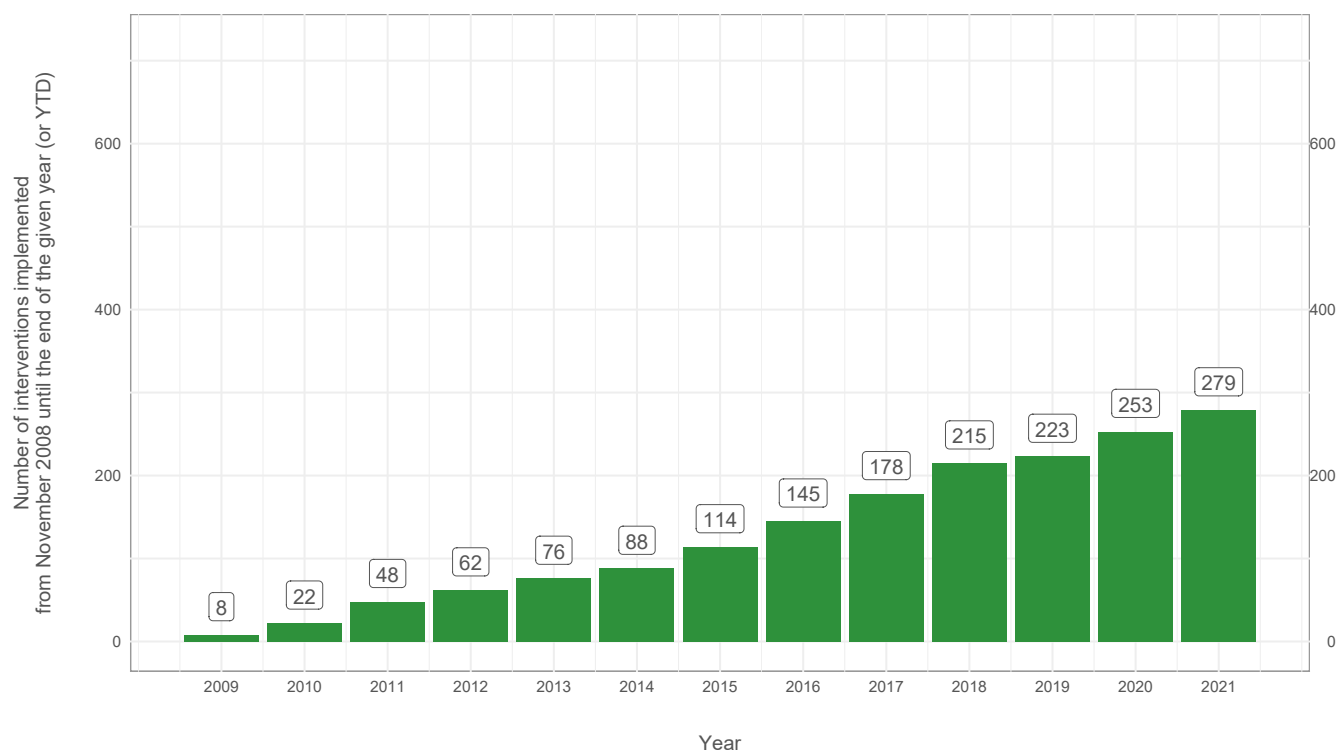
INDONESIA

Track record of liberalisation



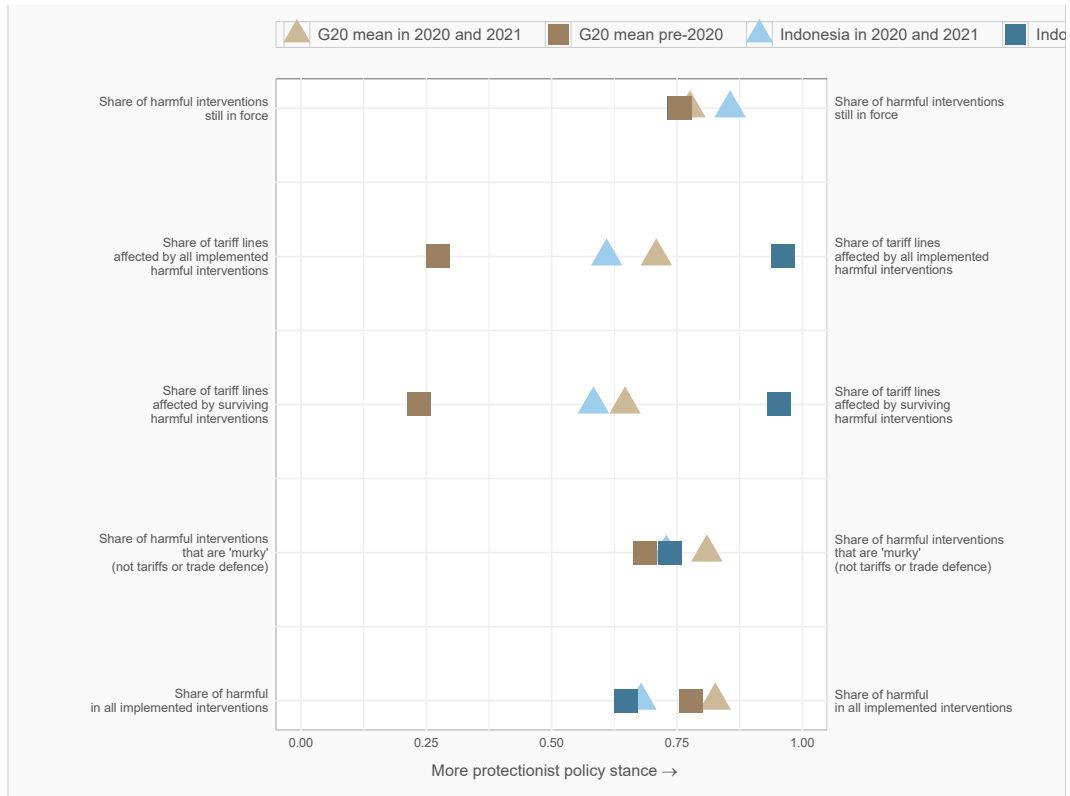
INDONESIA

Number of liberalising interventions imposed since November 2008



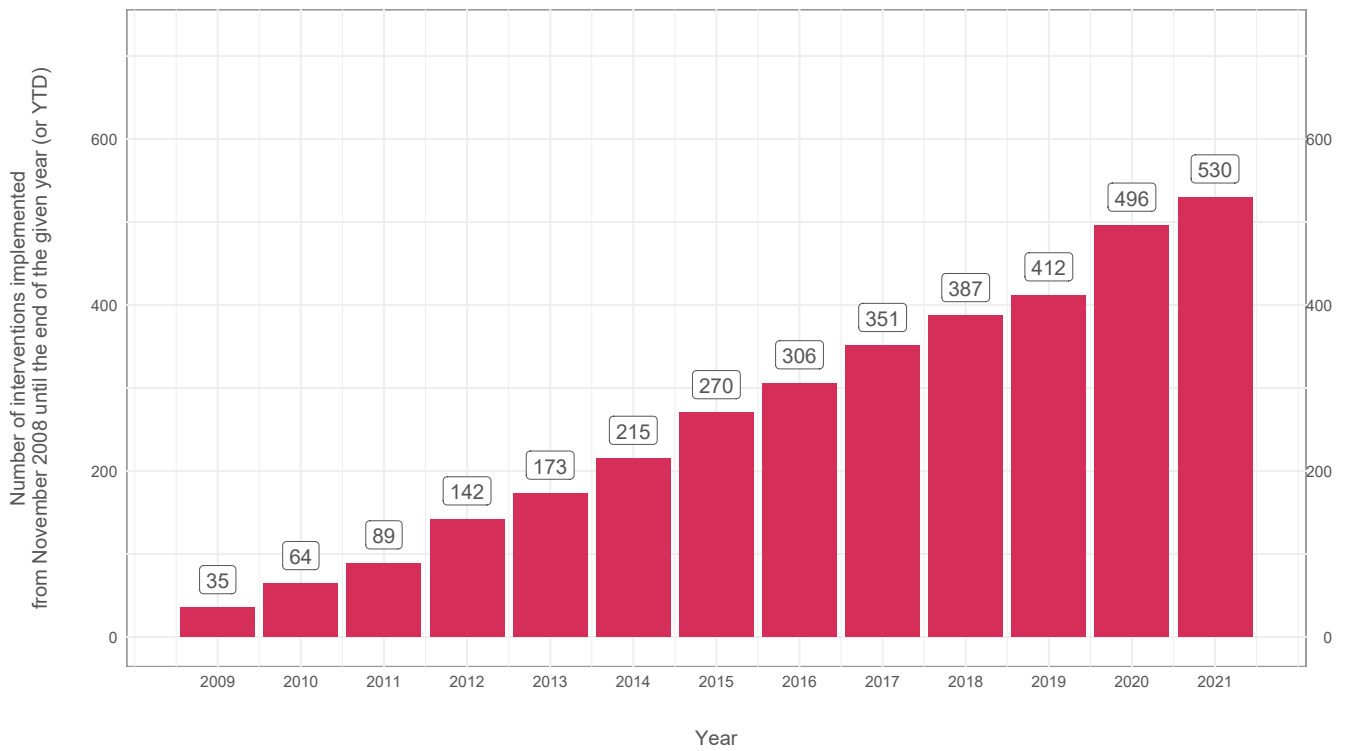
INDONESIA

Track record of protectionism



INDONESIA

Number of discriminatory interventions imposed since November 2008



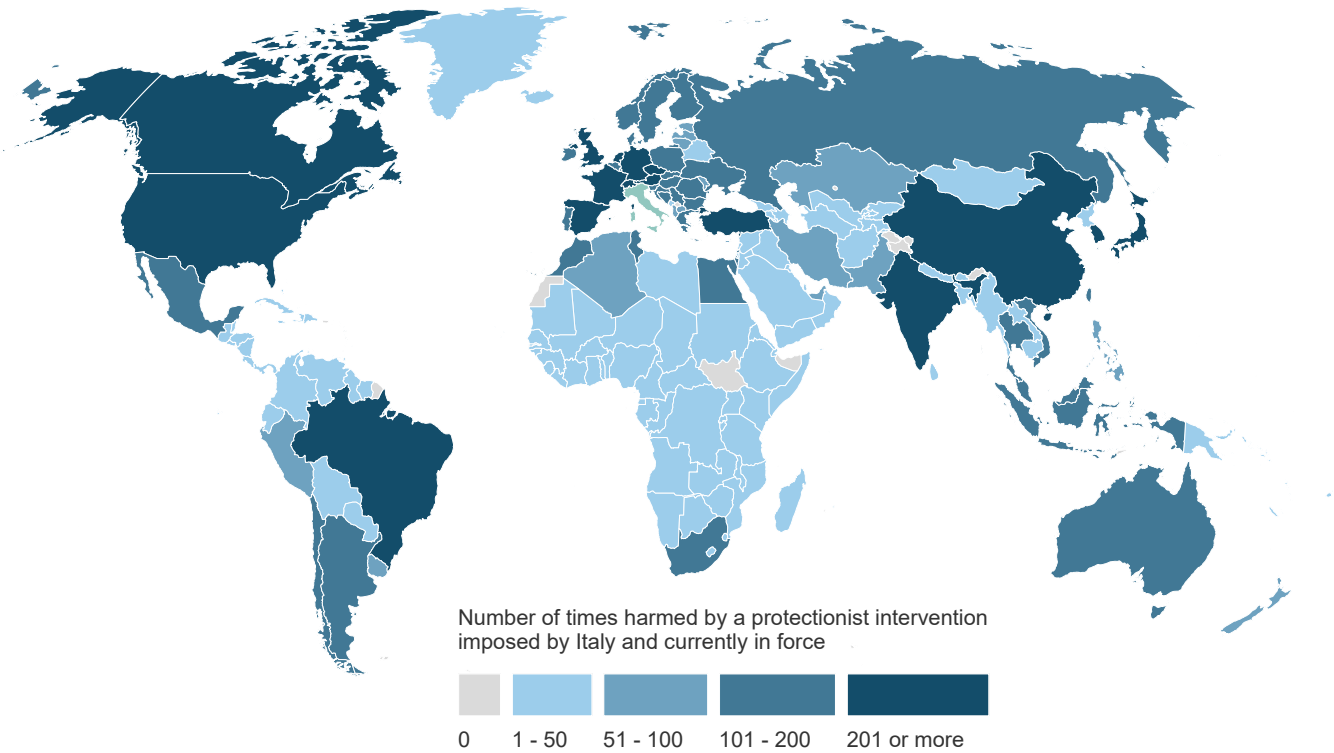
ITALY

What is at stake for Italy's goods exporters?

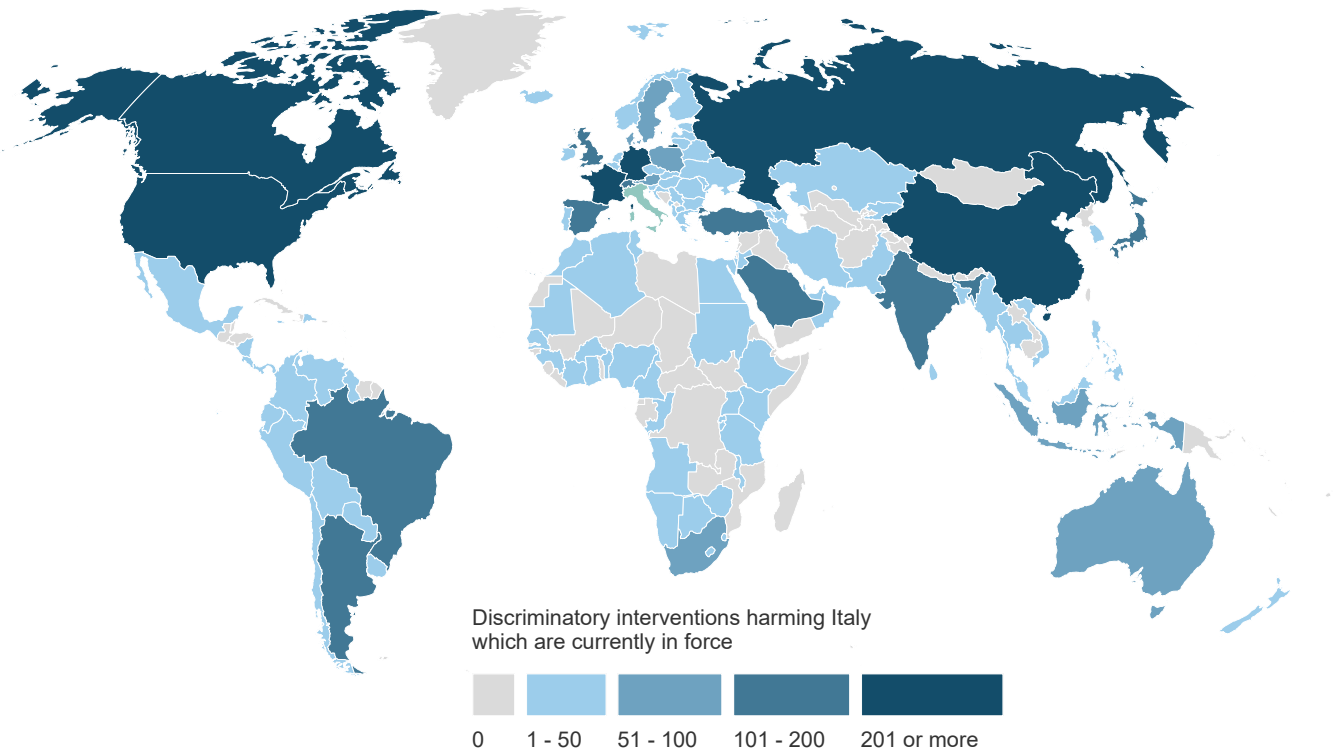
UN MAST chapter	Foreign discriminatory policy instrument	Percentage of this G20 member's exports at risk due to ...												
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	All instruments	51.12	64.96	68.13	70.70	72.85	74.93	76.73	78.55	79.74	80.48	82.25	82.37	80.50
D	Contingent trade-protective measures	0.03	0.05	0.07	0.11	0.14	0.19	0.18	0.29	0.32	0.37	0.48	0.57	0.65
E	Non-automatic licensing, quotas etc.	0.20	0.22	0.63	0.75	0.80	0.83	1.09	1.09	1.36	1.64	1.68	1.72	1.72
F	Price-control measures, including additional taxes and charges	0.00	0.03	0.12	0.19	0.19	0.21	0.35	0.41	0.43	0.77	0.81	0.96	0.97
G	Finance measures	0.24	0.35	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
I	Trade-related investment measures	0.03	0.75	0.91	0.93	0.96	1.07	1.20	1.30	1.36	1.33	1.30	1.29	1.43
L	Subsidies (excl. export subsidies)	6.85	14.65	15.05	16.28	17.85	21.77	26.38	29.35	30.95	32.08	33.54	35.47	32.54
M	Government procurement restrictions	0.37	0.42	0.40	0.68	0.76	1.27	1.71	1.80	1.96	2.12	2.36	2.40	2.49
P	Export-related measures (incl. subsidies)	46.28	58.60	64.07	67.25	69.49	69.96	70.29	72.78	74.02	74.81	76.63	76.77	74.18
	Tariff measures	0.86	1.30	1.41	2.29	2.88	2.68	2.96	3.33	4.06	4.55	5.67	6.74	7.04
	Instrument unclear	0.07	0.14	0.16	0.17	0.26	0.30	0.47	0.61	0.71	0.80	0.81	0.81	0.82

Note: This table presents estimates of the percentage of a nation's exports that face different harmful policy interventions in their export markets. Only those harmful interventions implemented after November 2008 count towards these totals—therefore, the estimates indicate the exposure of national exports to crisis-era policy intervention that favours domestic commercial interests. The trade data used in the estimation is taken from UN Comtrade and at the six-digit level of the Harmonised System product classification. For each product exported by a nation, the foreign markets accounted for in this estimate are those where bilateral exports exceeded \$1 million for the given product. De minimis trade flows are therefore excluded. To limit endogeneity problems (that is, the harmful policy interventions affecting the total value of exports observed) pre-crisis shares of world trade are employed in these calculations. The pre-crisis shares are computed as the mean weight for the years 2005-7. The calculations also take into account when a harmful policy intervention comes into force and, where relevant, lapses. When an intervention lasts for only part of a year, the trade flow is discounted by the fraction of the year the harmful measure is not in force.

COUNTRIES HARMED BY ITALY'S DISCRIMINATORY INTERVENTIONS

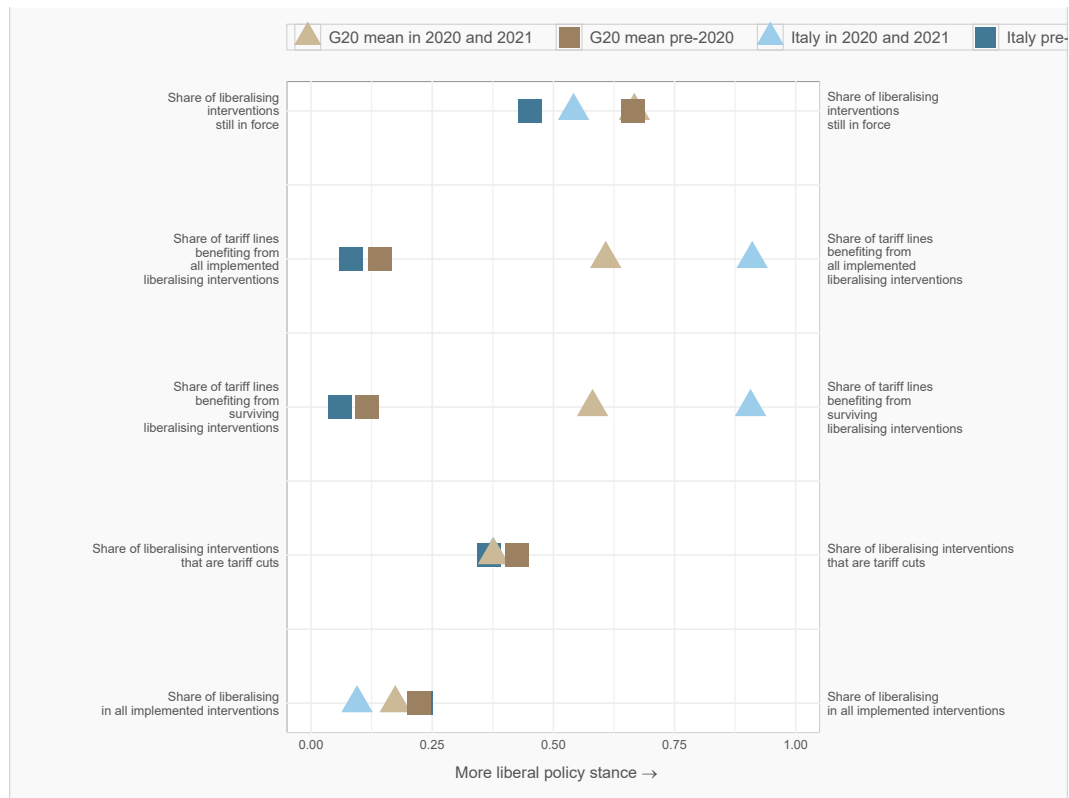


DISCRIMINATORY INTERVENTIONS HARMING ITALY'S INTERESTS



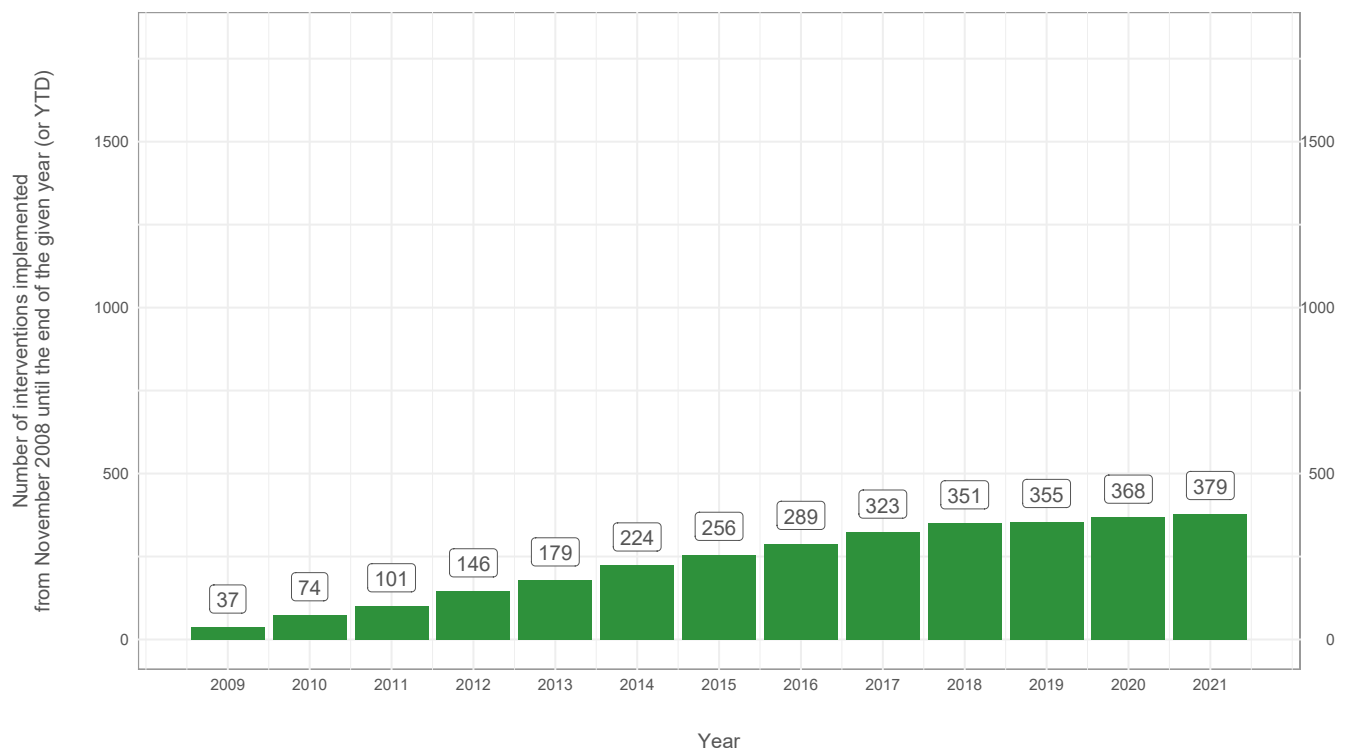
ITALY

Track record of liberalisation



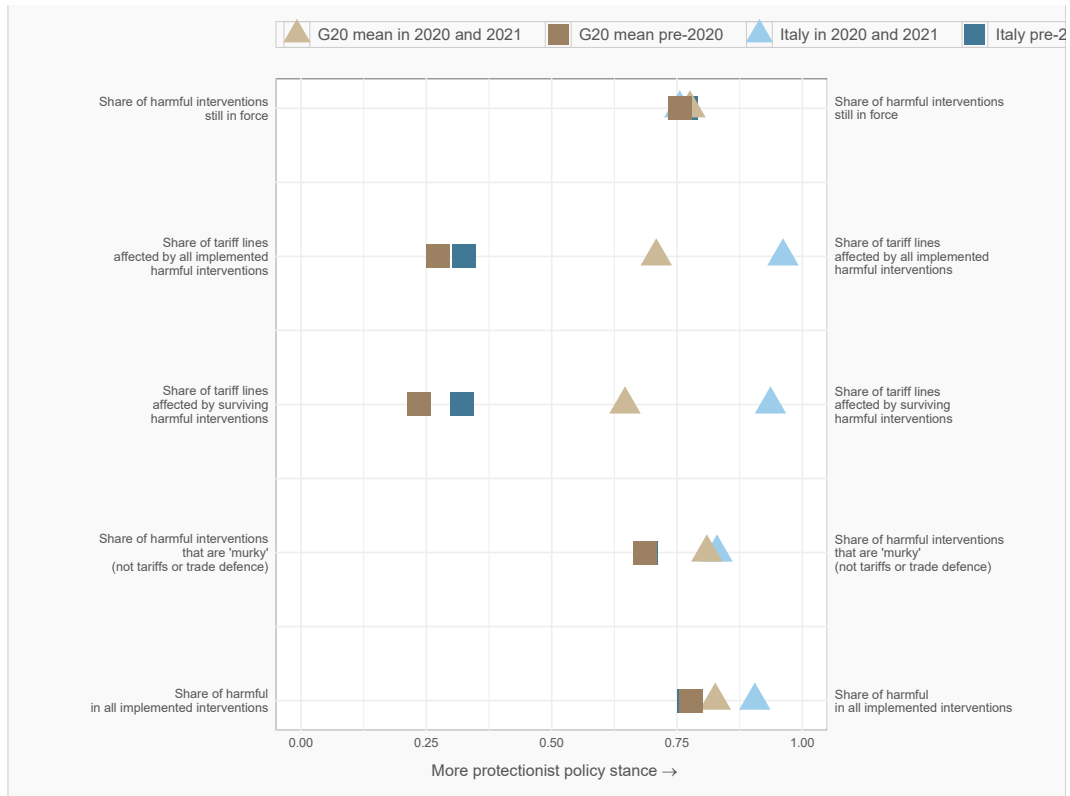
ITALY

Number of liberalising interventions imposed since November 2008



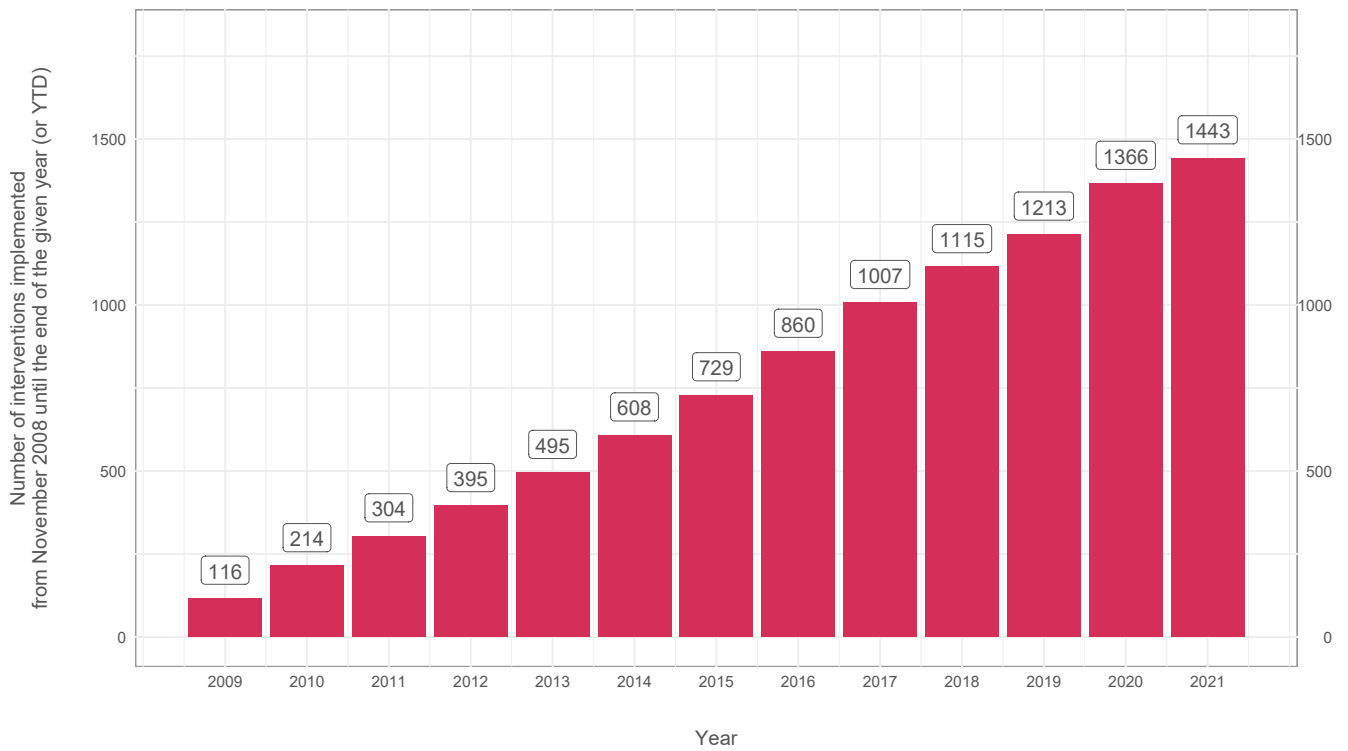
ITALY

Track record of protectionism



ITALY

Number of discriminatory interventions imposed since November 2008



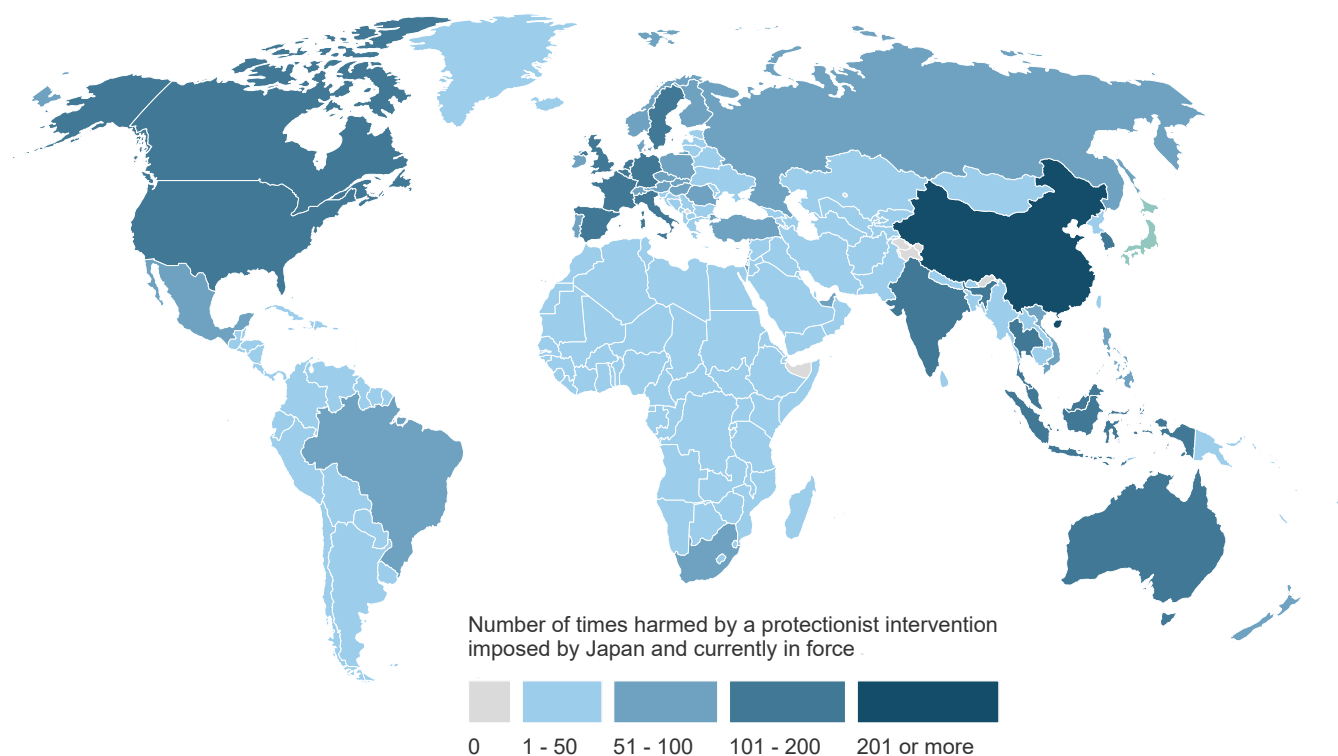
JAPAN

What is at stake for Japan's goods exporters?

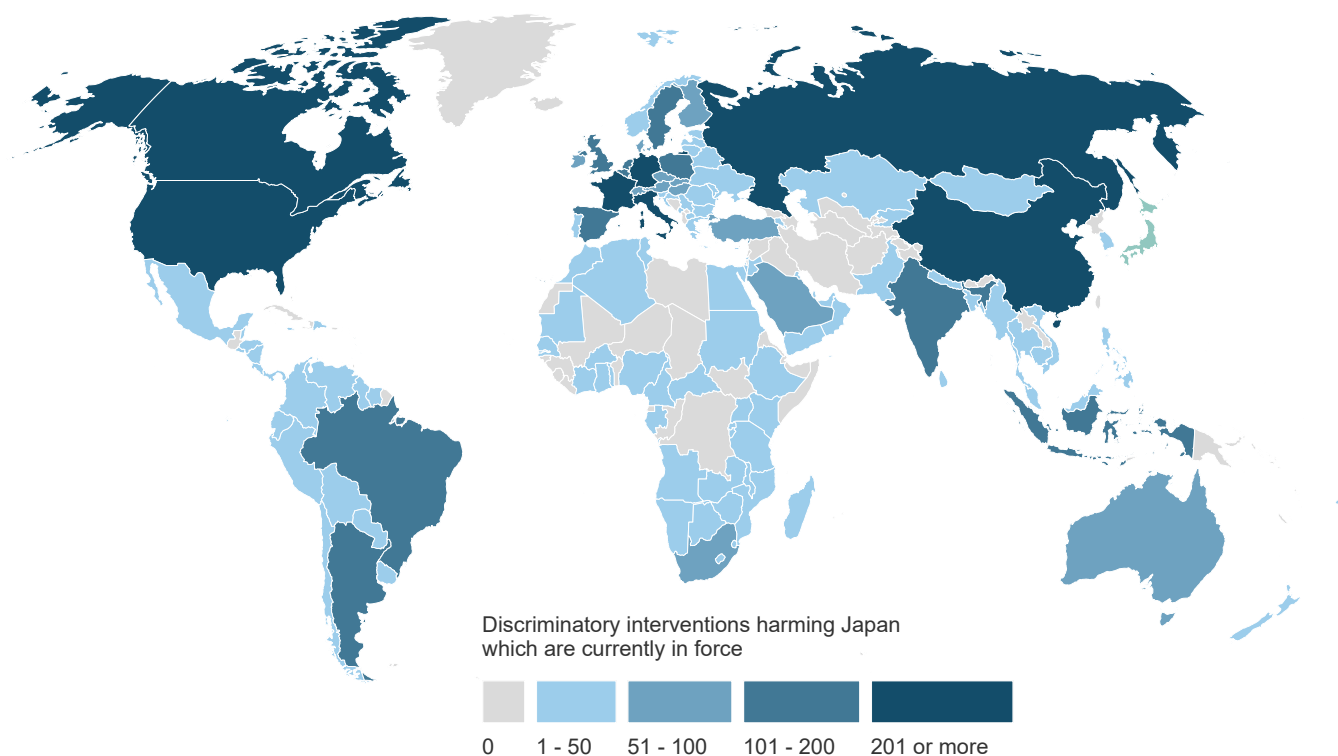
UN MAST chapter	Foreign discriminatory policy instrument	Percentage of this G20 member's exports at risk due to ...												
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	All instruments	62.05	77.14	83.38	86.40	89.33	90.11	90.47	90.84	91.35	91.70	92.63	92.87	90.53
D	Contingent trade-protective measures	0.15	0.32	0.60	0.96	1.11	1.18	1.16	1.39	1.45	1.61	1.72	1.74	1.78
E	Non-automatic licensing, quotas etc.	0.83	1.38	4.52	4.88	6.94	5.41	6.29	6.61	6.98	7.23	7.33	7.86	8.48
F	Price-control measures, including additional taxes and charges	0.04	0.06	0.08	0.10	0.09	0.46	0.93	1.05	1.33	1.65	1.72	1.89	2.02
G	Finance measures	0.17	0.46	0.83	0.83	0.84	0.83	0.83	0.83	0.83	0.84	0.86	0.86	0.86
I	Trade-related investment measures	0.76	1.53	1.47	1.55	1.57	1.60	2.07	2.32	2.23	2.20	2.12	1.99	2.47
L	Subsidies (excl. export subsidies)	21.19	30.32	34.73	36.88	47.49	48.08	49.33	50.46	50.41	50.52	52.03	53.41	40.10
M	Government procurement restrictions	0.47	1.47	1.75	1.99	2.07	2.49	3.56	3.57	3.64	3.68	3.71	3.82	3.81
P	Export-related measures (incl. subsidies)	43.57	60.06	71.00	77.91	80.12	78.04	77.87	78.71	81.81	83.43	84.59	84.76	83.63
	Tariff measures	3.86	5.33	6.36	11.13	14.39	11.99	13.26	17.16	22.19	22.49	23.10	23.01	23.75
	Instrument unclear	0.27	0.95	1.37	1.41	1.48	1.94	1.92	1.80	1.93	2.31	2.38	2.38	2.48

Note: This table presents estimates of the percentage of a nation's exports that face different harmful policy interventions in their export markets. Only those harmful interventions implemented after November 2008 count towards these totals -therefore, the estimates indicate the exposure of national exports to crisis-era policy intervention that favours domestic commercial interests. The trade data used in the estimation is taken from UN Comtrade and at the six-digit level of the Harmonised System product classification. For each product exported by a nation, the foreign markets accounted for in this estimate are those where bilateral exports exceeded \$1 million for the given product. De minimis trade flows are therefore excluded. To limit endogeneity problems (that is, the harmful policy interventions affecting the total value of exports observed) pre-crisis shares of world trade are employed in these calculations. The pre-crisis shares are computed as the mean weight for the years 2005-7. The calculations also take into account when a harmful policy intervention comes into force and, where relevant, lapses. When an intervention lasts for only part of a year, the trade flow is discounted by the fraction of the year the harmful measure is not in force.

COUNTRIES HARMED BY JAPAN'S DISCRIMINATORY INTERVENTIONS

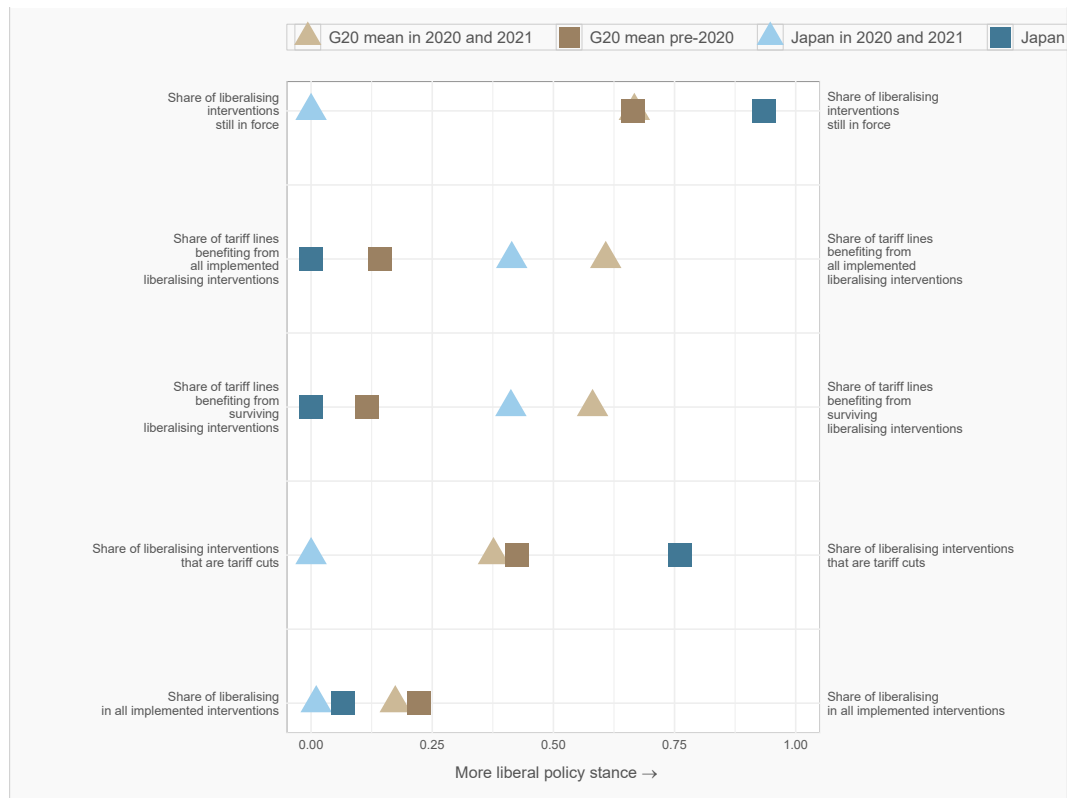


DISCRIMINATORY INTERVENTIONS HARMING JAPAN'S INTERESTS



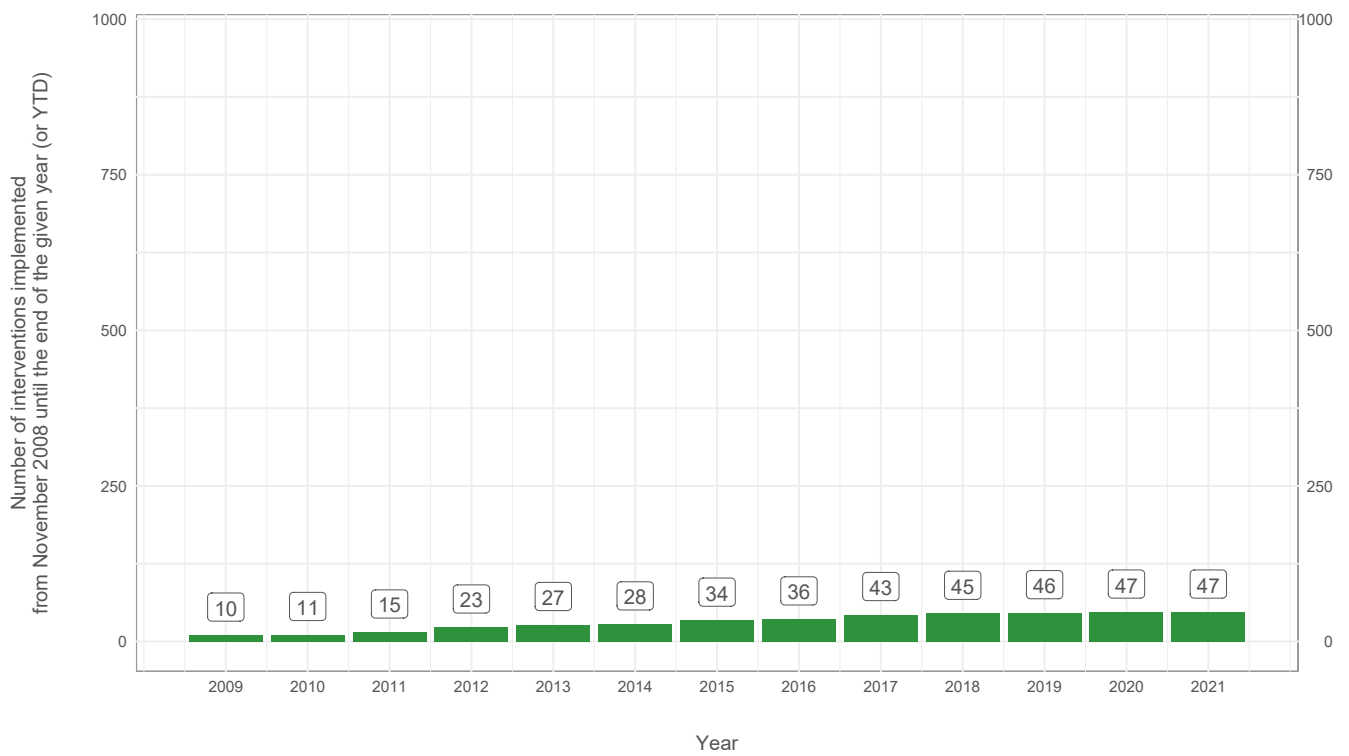
JAPAN

Track record of liberalisation



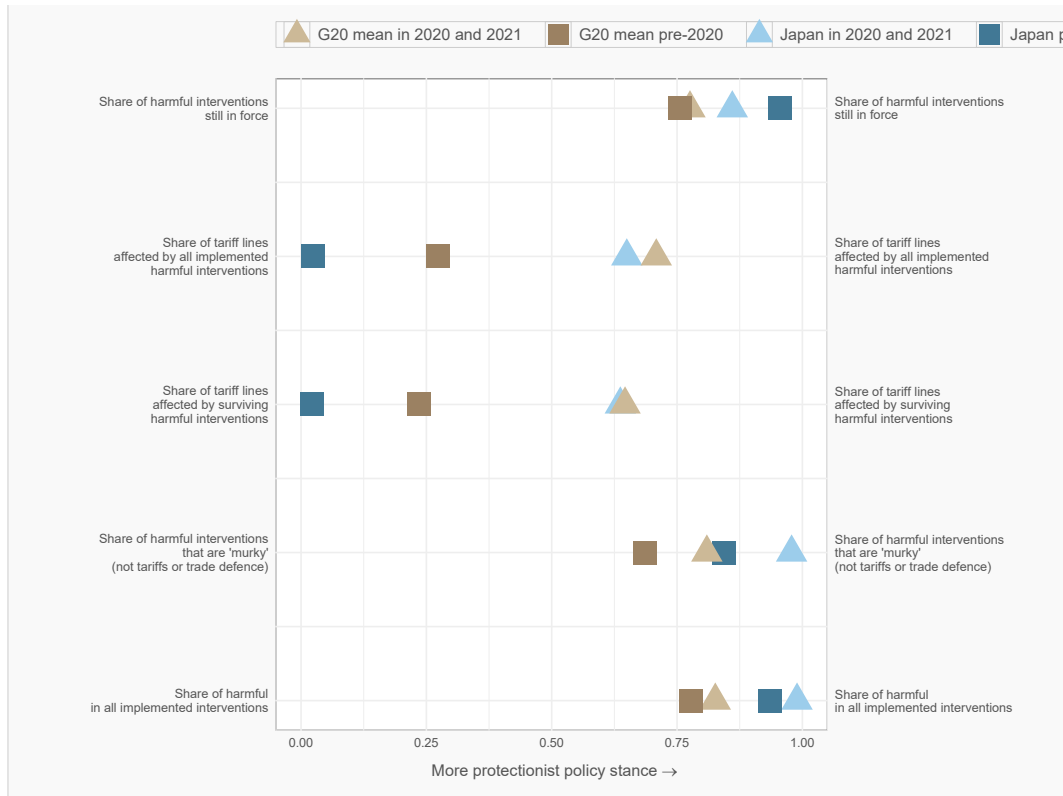
JAPAN

Number of liberalising interventions imposed since November 2008



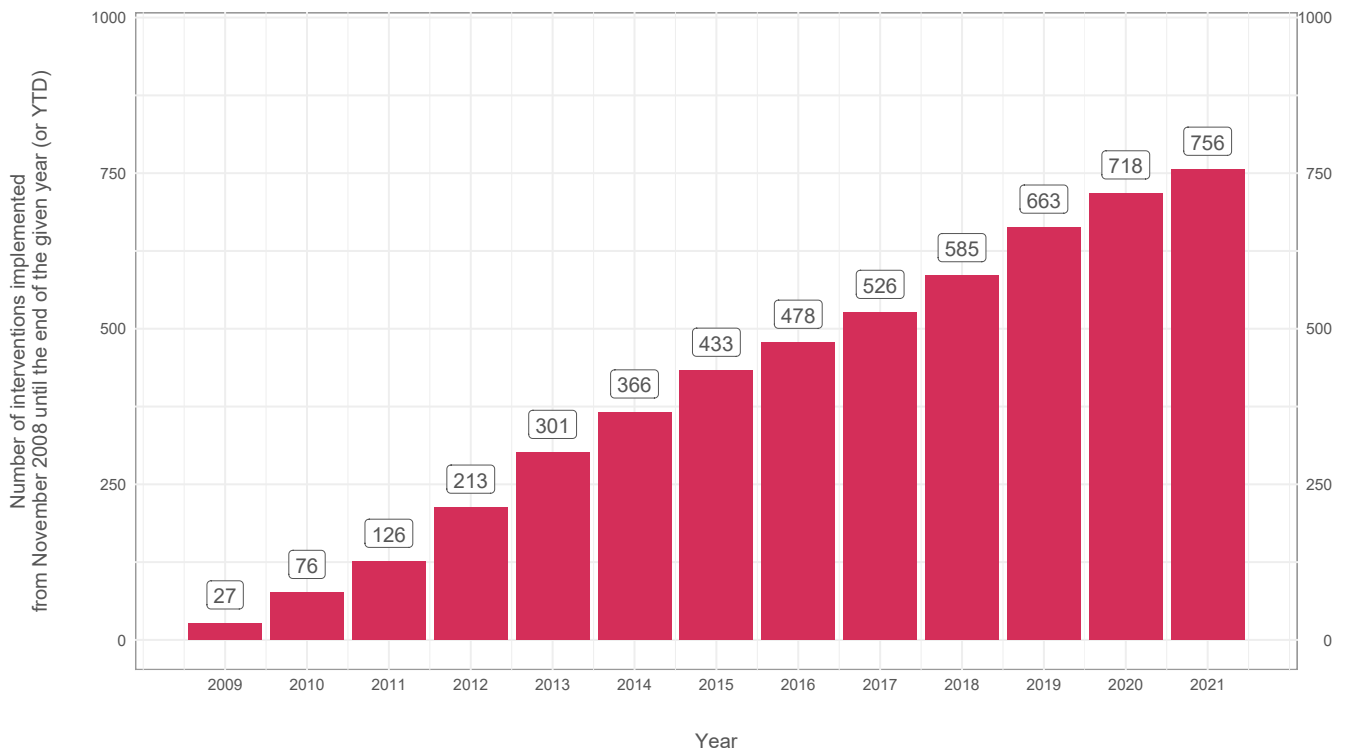
JAPAN

Track record of protectionism



JAPAN

Number of discriminatory interventions imposed since November 2008



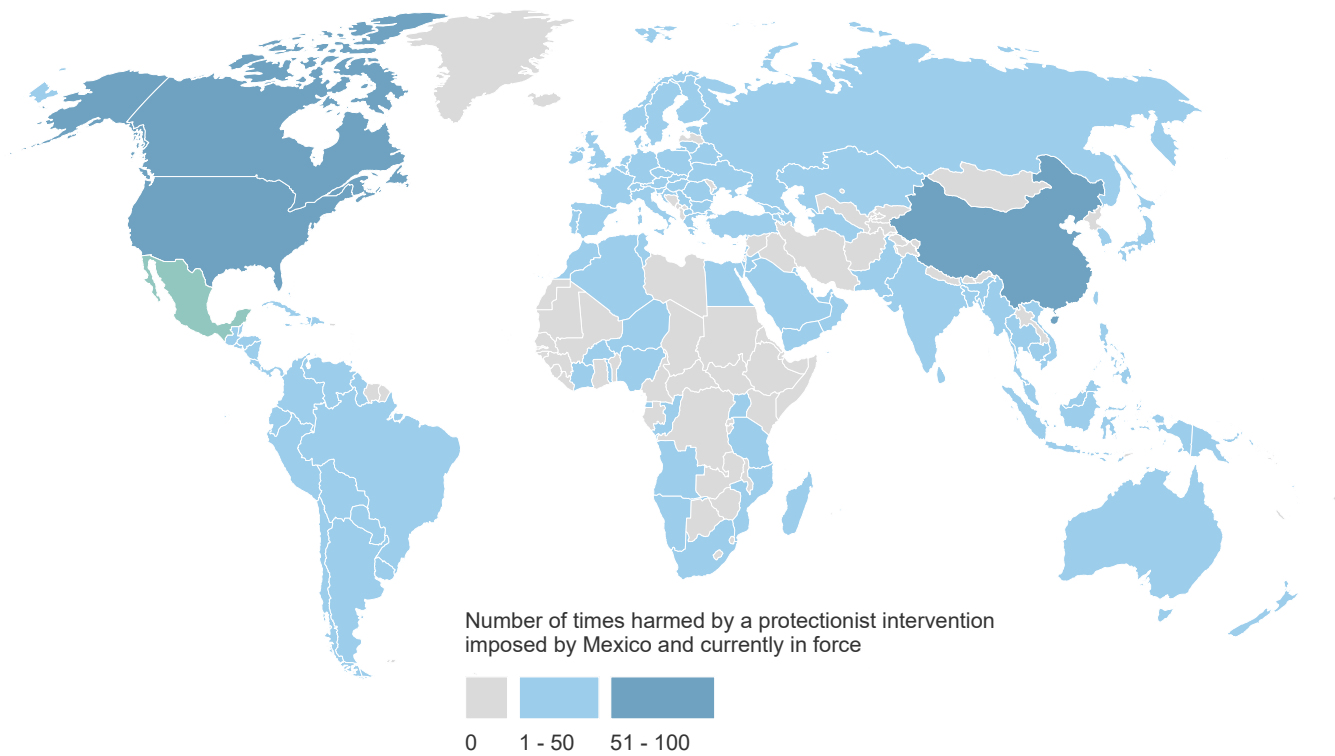
MEXICO

What is at stake for Mexico's goods exporters?

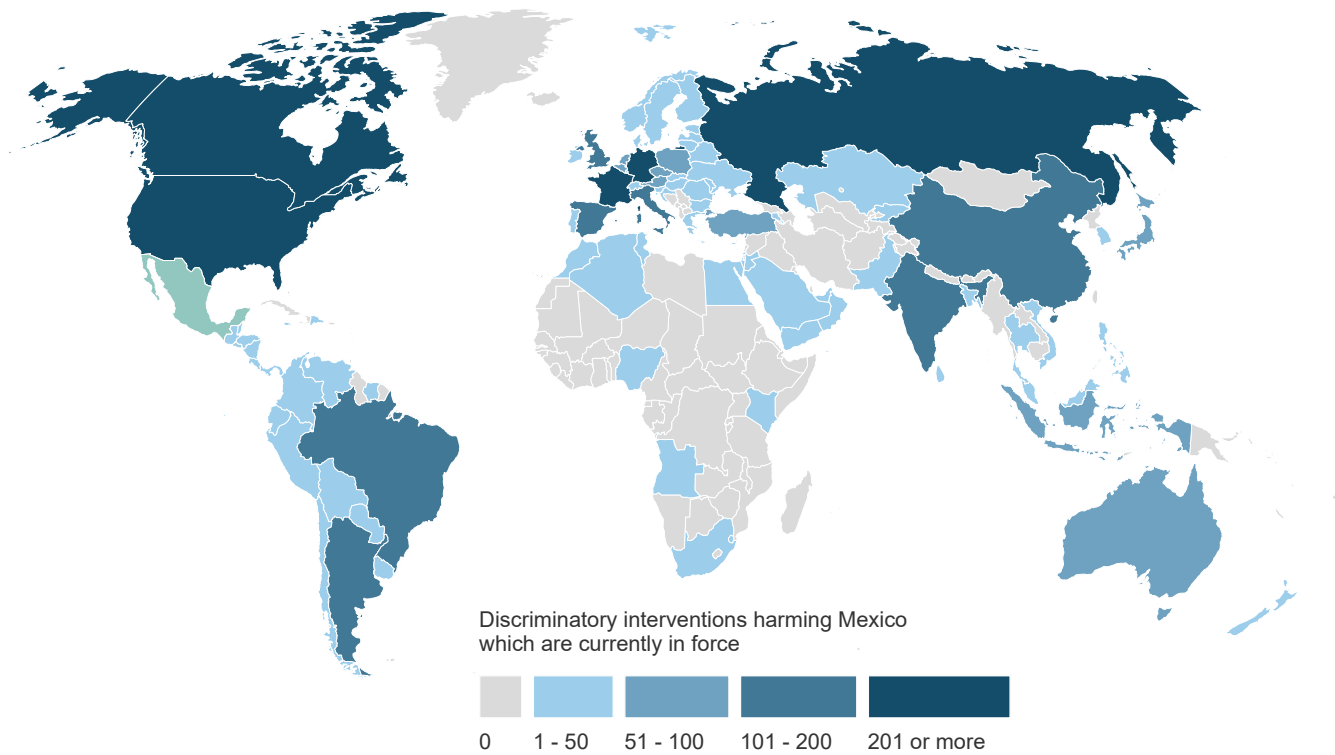
UN MAST chapter	Foreign discriminatory policy instrument	Percentage of this G20 member's exports at risk due to ...												
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	All instruments	59.79	69.96	73.43	75.62	78.30	80.34	92.64	92.93	93.97	95.00	95.45	95.60	95.30
D	Contingent trade-protective measures	0.00	0.33	0.51	0.56	0.96	1.12	1.19	1.92	2.08	2.49	2.42	2.68	2.86
E	Non-automatic licensing, quotas etc.	0.11	0.23	0.59	0.81	0.91	0.98	0.99	0.95	1.74	1.89	1.87	2.02	2.10
F	Price-control measures, including additional taxes and charges	0.11	0.11	0.16	0.26	0.14	0.27	0.33	0.40	0.42	0.58	0.60	0.96	0.96
G	Finance measures	0.02	0.41	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
I	Trade-related investment measures	0.05	0.35	0.46	0.58	0.56	0.61	0.67	0.72	0.72	0.66	0.66	0.66	1.79
L	Subsidies (excl. export subsidies)	9.08	13.94	27.75	33.05	37.53	42.28	44.84	46.05	47.04	51.36	52.48	56.29	59.37
M	Government procurement restrictions	1.81	2.13	2.54	3.04	3.22	3.88	6.58	6.55	7.35	8.80	10.35	8.69	8.55
P	Export-related measures (incl. subsidies)	49.88	57.27	65.84	73.43	74.40	71.14	81.77	82.12	86.06	89.31	90.34	90.45	90.07
	Tariff measures	0.19	0.31	0.41	1.37	1.84	1.86	2.07	2.85	4.63	6.55	7.62	8.85	9.10
	Instrument unclear	0.00	0.13	0.08	0.09	0.31	0.66	0.67	0.77	0.88	0.94	0.96	0.96	0.96

Note: This table presents estimates of the percentage of a nation's exports that face different harmful policy interventions in their export markets. Only those harmful interventions implemented after November 2008 count towards these totals -therefore, the estimates indicate the exposure of national exports to crisis-era policy intervention that favours domestic commercial interests. The trade data used in the estimation is taken from UN Comtrade and at the six-digit level of the Harmonised System product classification. For each product exported by a nation, the foreign markets accounted for in this estimate are those where bilateral exports exceeded \$1 million for the given product. De minimis trade flows are therefore excluded. To limit endogeneity problems (that is, the harmful policy interventions affecting the total value of exports observed) pre-crisis shares of world trade are employed in these calculations. The pre-crisis shares are computed as the mean weight for the years 2005-7. The calculations also take into account when a harmful policy intervention comes into force and, where relevant, lapses. When an intervention lasts for only part of a year, the trade flow is discounted by the fraction of the year the harmful measure is not in force.

COUNTRIES HARMED BY MEXICO'S DISCRIMINATORY INTERVENTIONS



DISCRIMINATORY INTERVENTIONS HARMING MEXICO'S INTERESTS



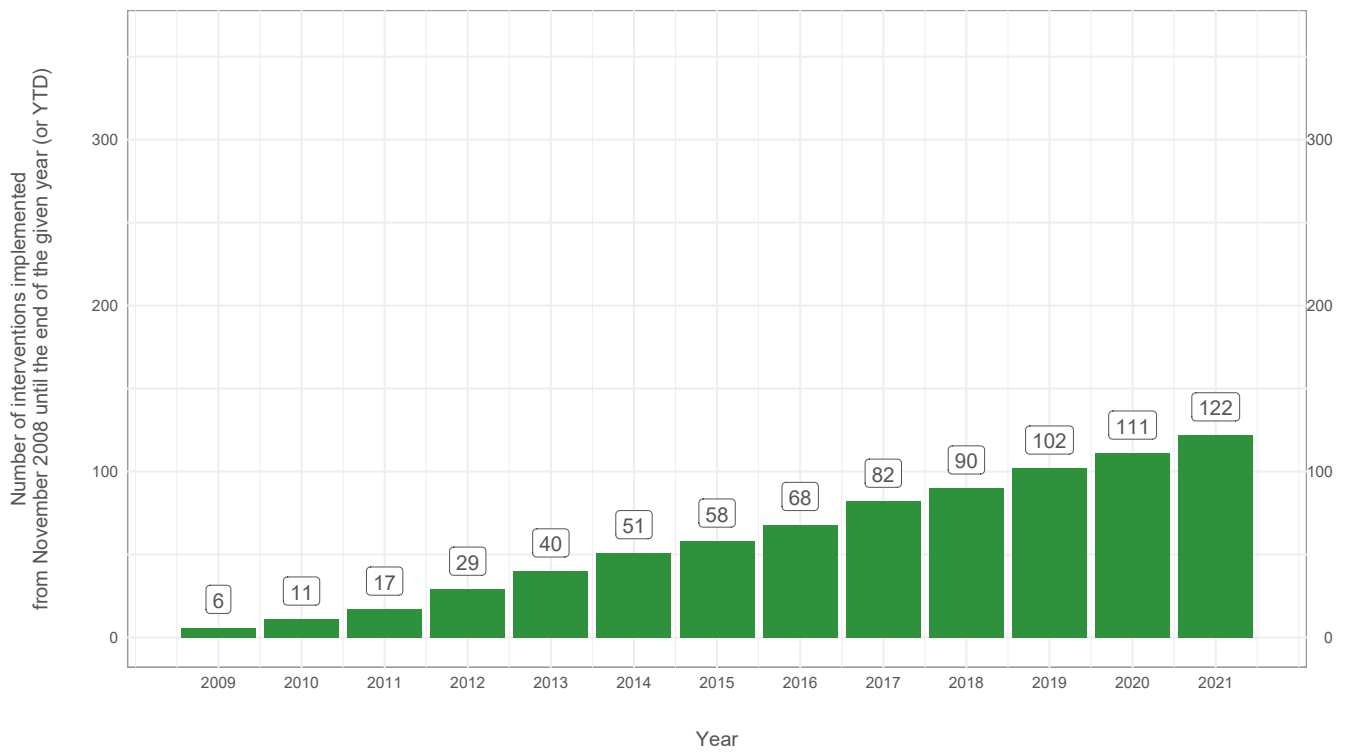
MEXICO

Track record of liberalisation



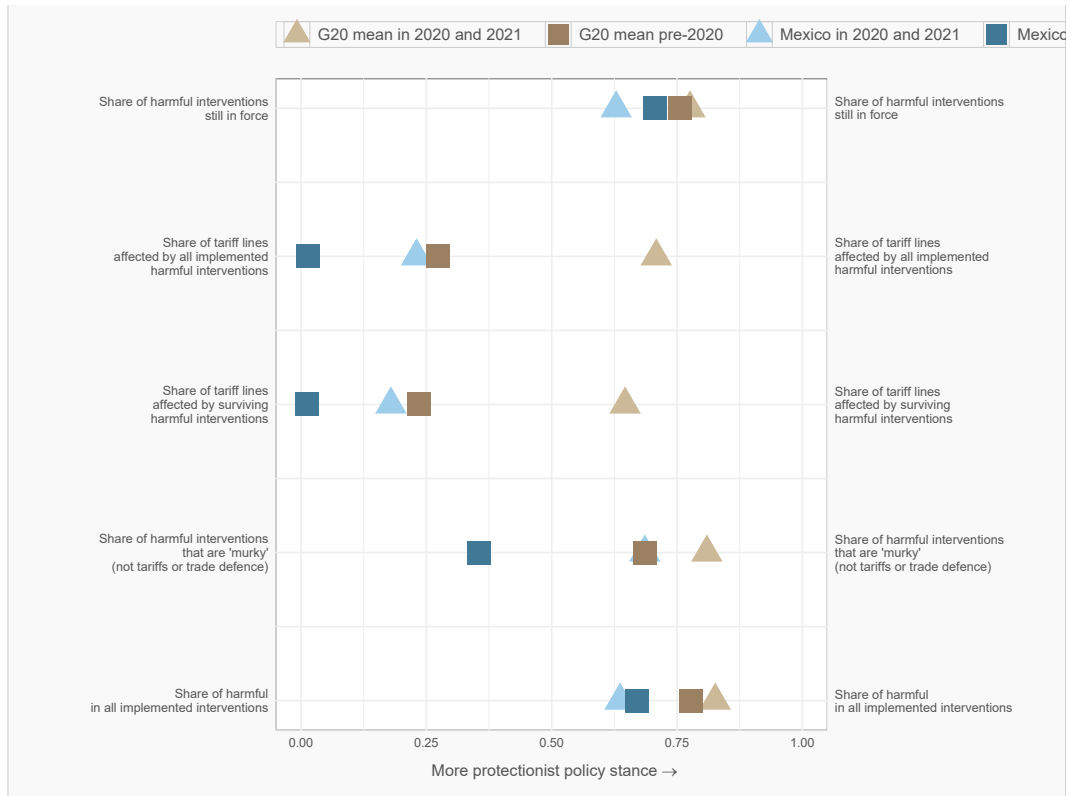
MEXICO

Number of liberalising interventions imposed since November 2008



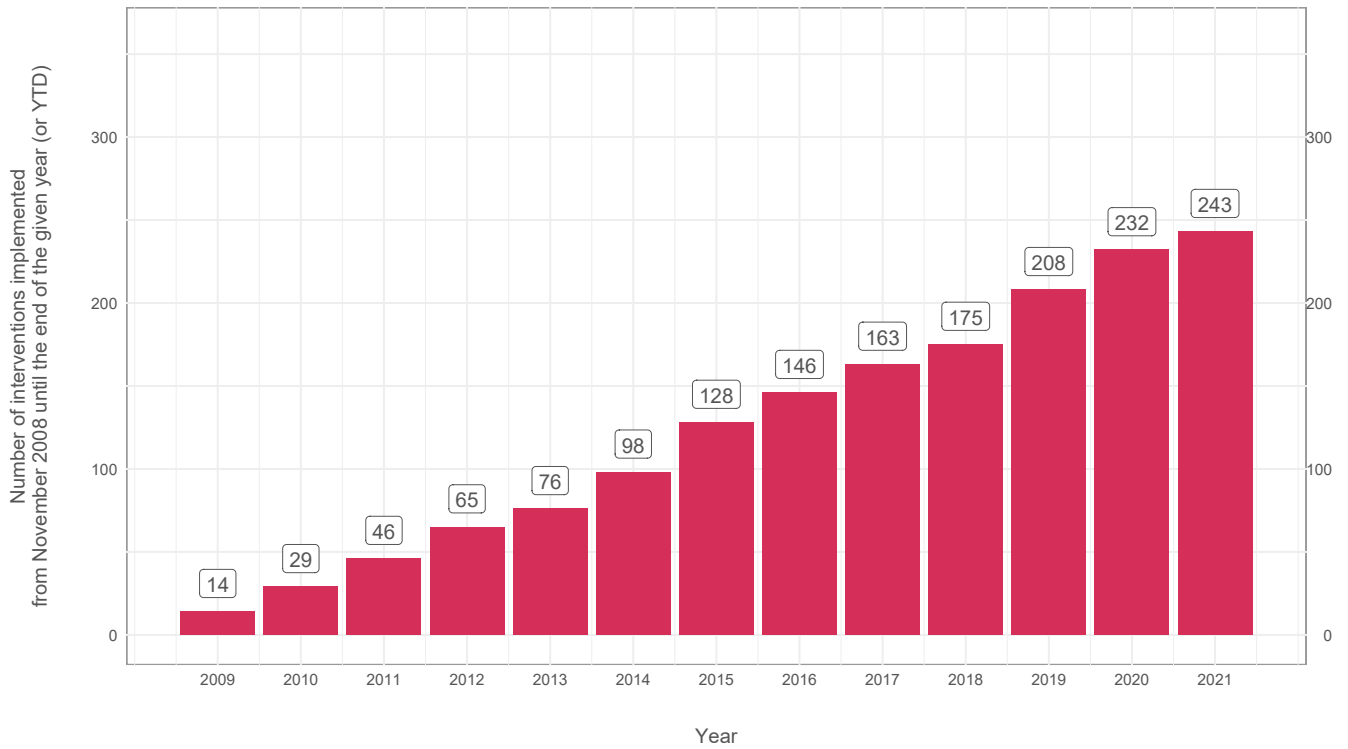
MEXICO

Track record of protectionism



MEXICO

Number of discriminatory interventions imposed since November 2008



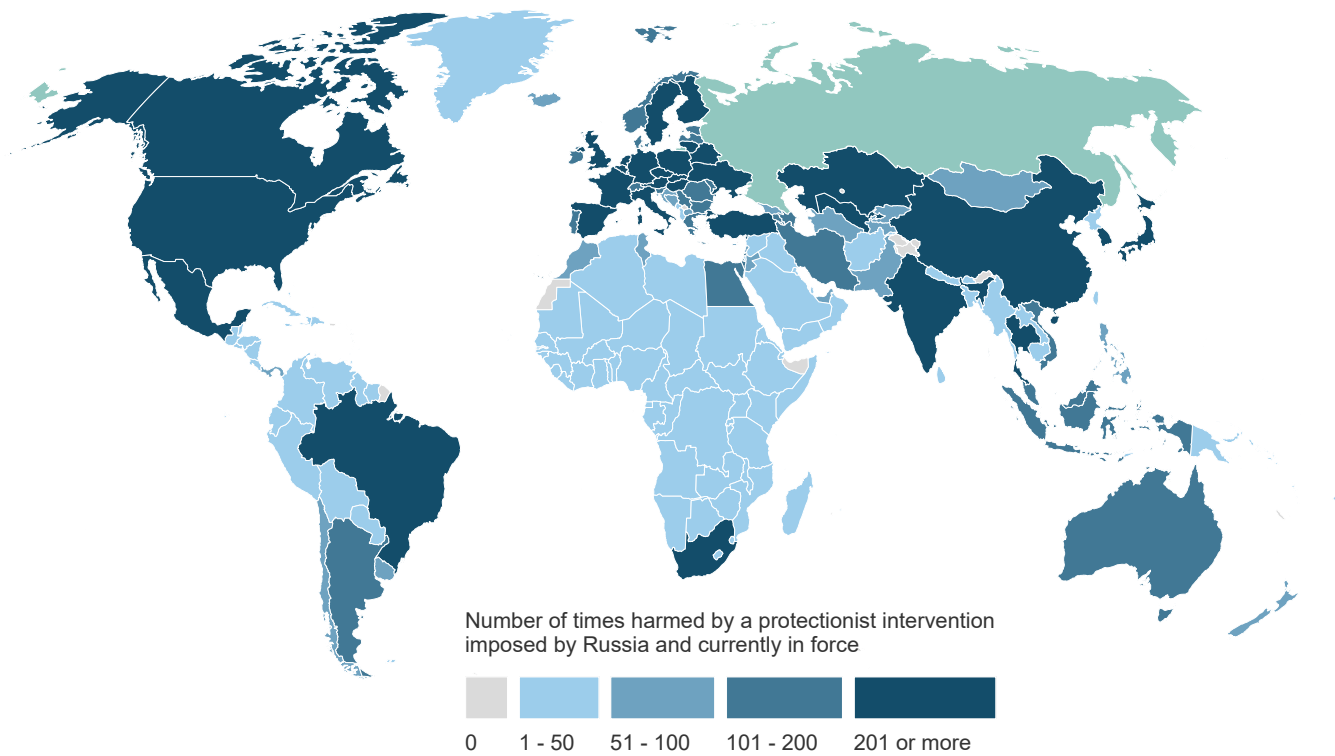
RUSSIA

What is at stake for Russia's goods exporters?

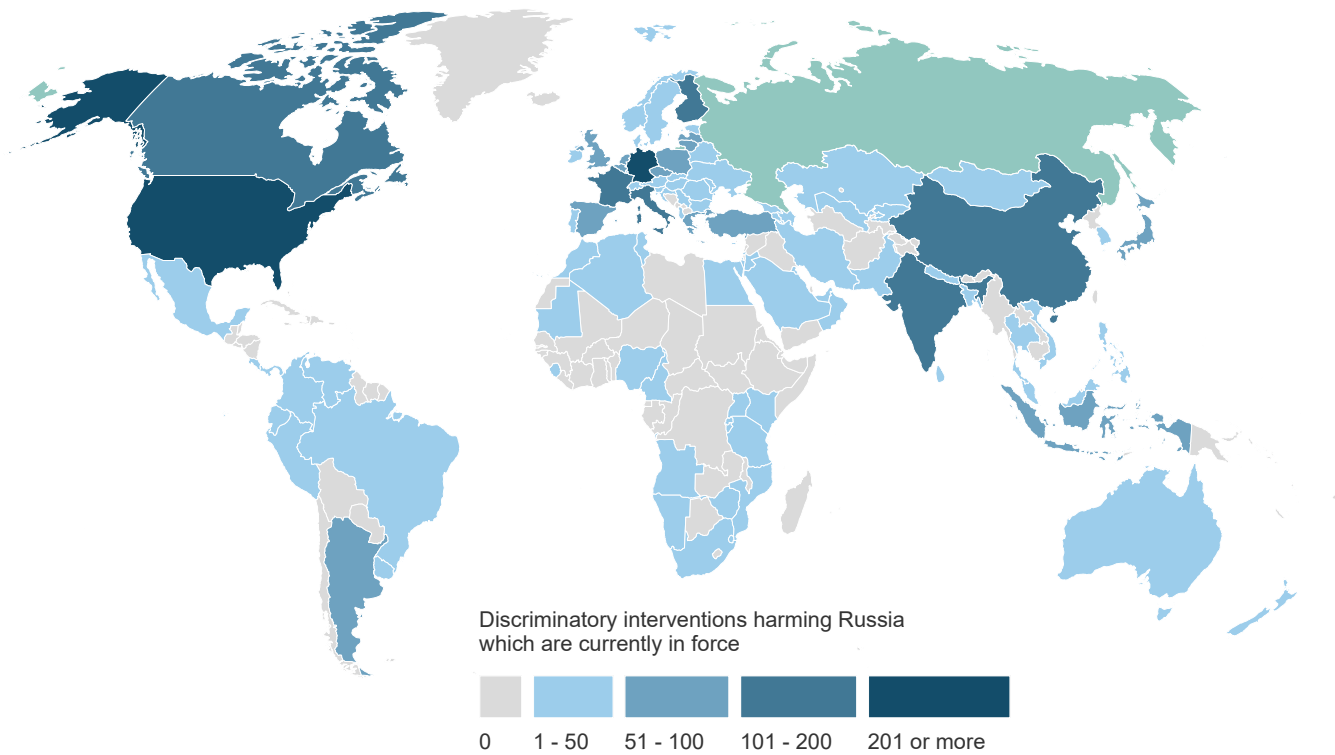
UN MAST chapter	Foreign discriminatory policy instrument	Percentage of this G20 member's exports at risk due to ...												
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	All instruments	15.42	29.04	37.65	41.49	76.64	76.71	78.66	76.91	78.55	79.39	79.12	79.73	78.38
D	Contingent trade-protective measures	0.03	0.15	0.18	0.51	0.69	0.78	0.85	1.10	1.25	2.28	3.17	2.65	2.31
E	Non-automatic licensing, quotas etc.	0.43	0.14	3.77	4.03	4.76	4.64	4.68	5.15	5.71	5.82	5.85	8.50	9.17
F	Price-control measures, including additional taxes and charges	0.22	0.22	0.23	0.24	0.25	1.02	1.21	1.49	1.49	2.02	2.08	2.17	2.14
G	Finance measures	2.80	3.19	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30
I	Trade-related investment measures	0.02	1.02	1.01	1.00	1.10	1.21	1.23	1.21	1.21	1.21	1.26	1.27	1.27
L	Subsidies (excl. export subsidies)	5.31	14.86	16.56	14.62	52.40	53.09	52.74	54.32	54.29	54.49	56.14	57.62	53.90
M	Government procurement restrictions	0.51	0.72	0.83	0.84	0.87	0.88	0.93	1.00	1.13	1.17	1.16	1.11	1.15
P	Export-related measures (incl. subsidies)	5.40	11.51	22.09	26.22	28.75	27.48	29.94	30.84	45.30	51.78	49.83	50.07	47.83
	Tariff measures	2.08	3.05	3.23	4.10	6.12	9.69	14.40	12.36	12.93	13.25	13.52	13.55	13.58
	Instrument unclear	0.00	0.06	0.00	0.08	0.19	2.21	3.57	3.68	3.82	3.76	3.84	3.84	3.84

Note: This table presents estimates of the percentage of a nation's exports that face different harmful policy interventions in their export markets. Only those harmful interventions implemented after November 2008 count towards these totals -therefore, the estimates indicate the exposure of national exports to crisis-era policy intervention that favours domestic commercial interests. The trade data used in the estimation is taken from UN Comtrade and at the six-digit level of the Harmonised System product classification. For each product exported by a nation, the foreign markets accounted for in this estimate are those where bilateral exports exceeded \$1 million for the given product. De minimis trade flows are therefore excluded. To limit endogeneity problems (that is, the harmful policy interventions affecting the total value of exports observed) pre-crisis shares of world trade are employed in these calculations. The pre-crisis shares are computed as the mean weight for the years 2005-7. The calculations also take into account when a harmful policy intervention comes into force and, where relevant, lapses. When an intervention lasts for only part of a year, the trade flow is discounted by the fraction of the year the harmful measure is not in force.

COUNTRIES HARMED BY RUSSIA'S DISCRIMINATORY INTERVENTIONS

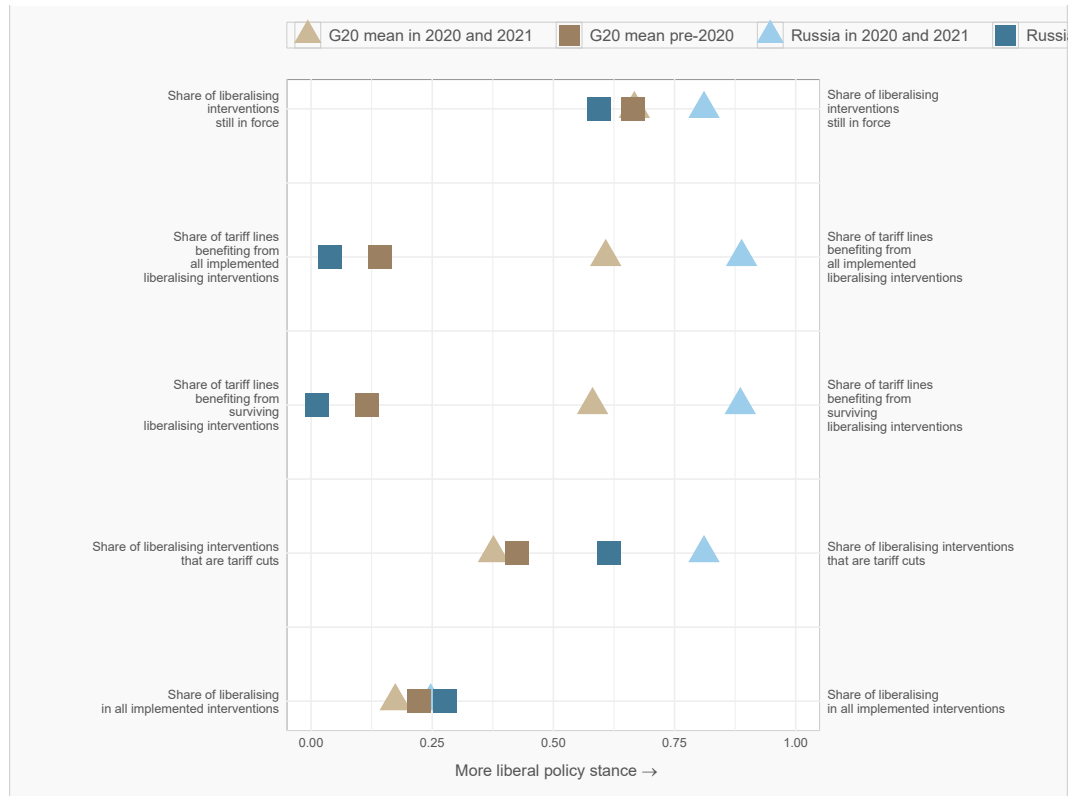


DISCRIMINATORY INTERVENTIONS HARMING RUSSIA'S INTERESTS



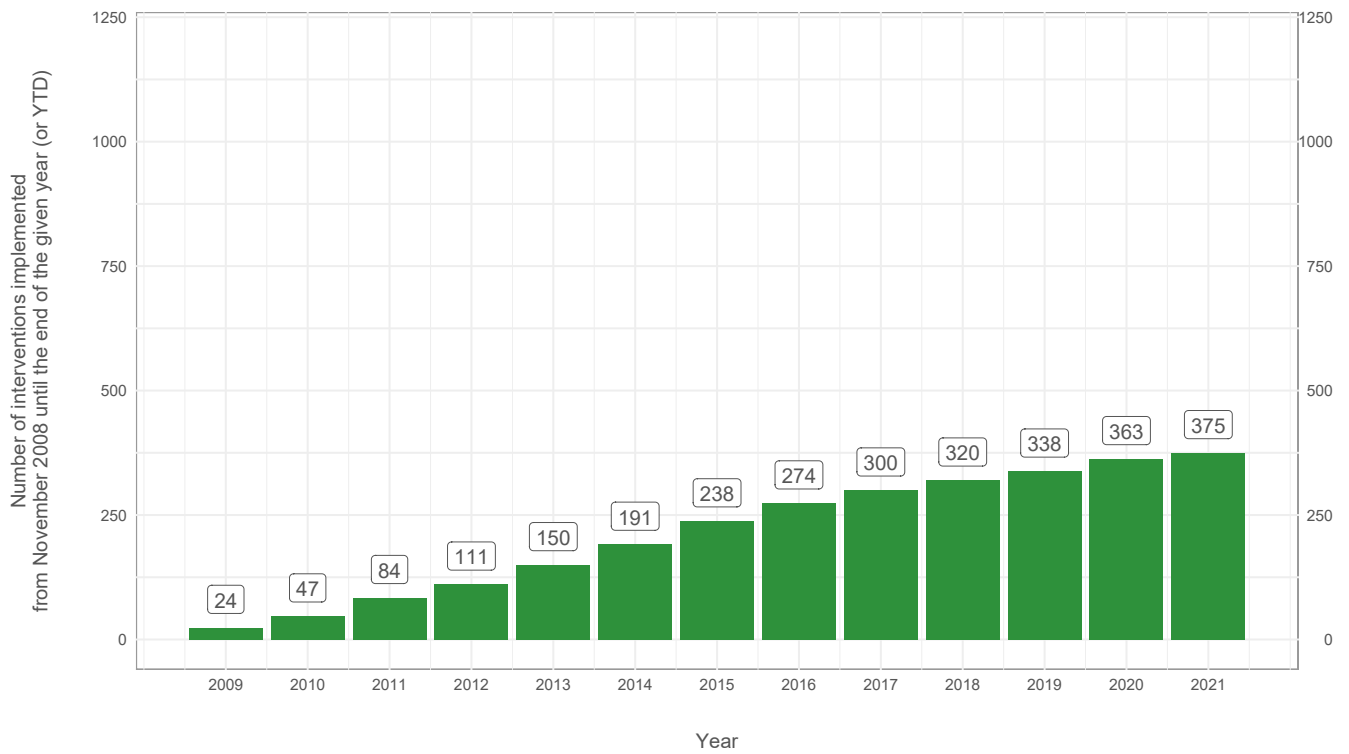
RUSSIA

Track record of liberalisation



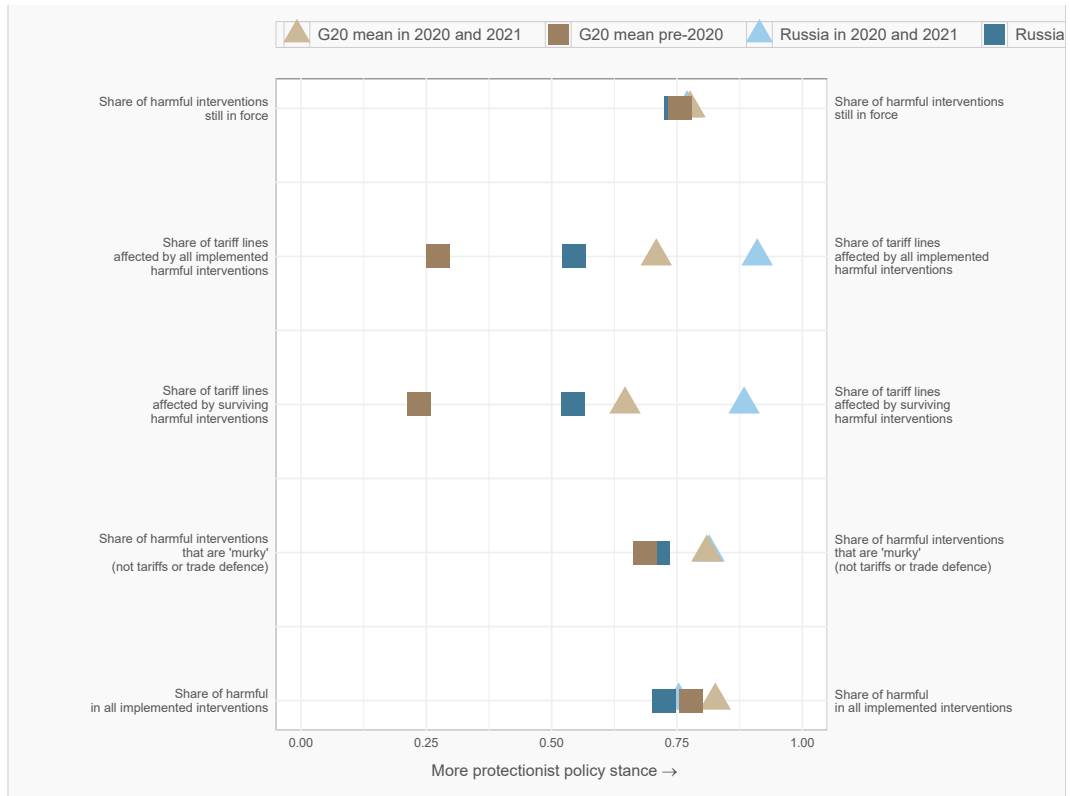
RUSSIA

Number of liberalising interventions imposed since November 2008



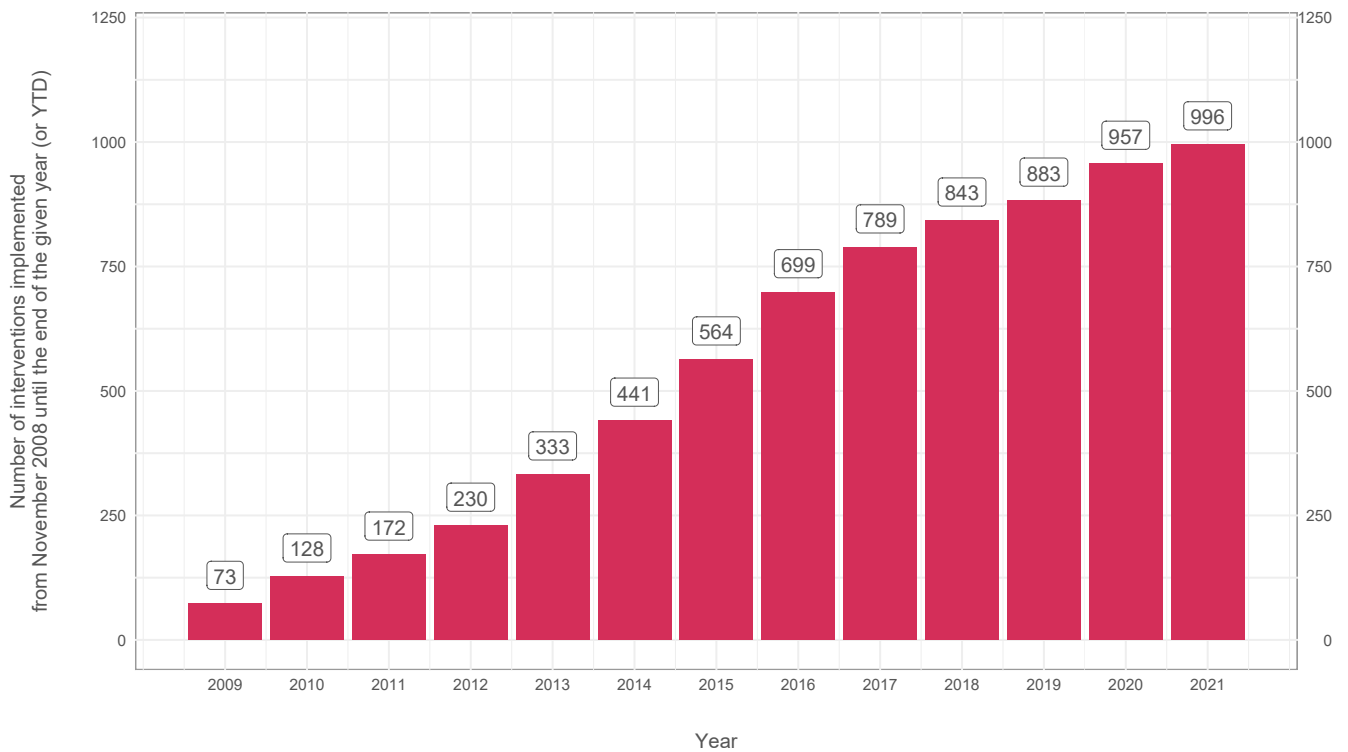
RUSSIA

Track record of protectionism



RUSSIA

Number of discriminatory interventions imposed since November 2008



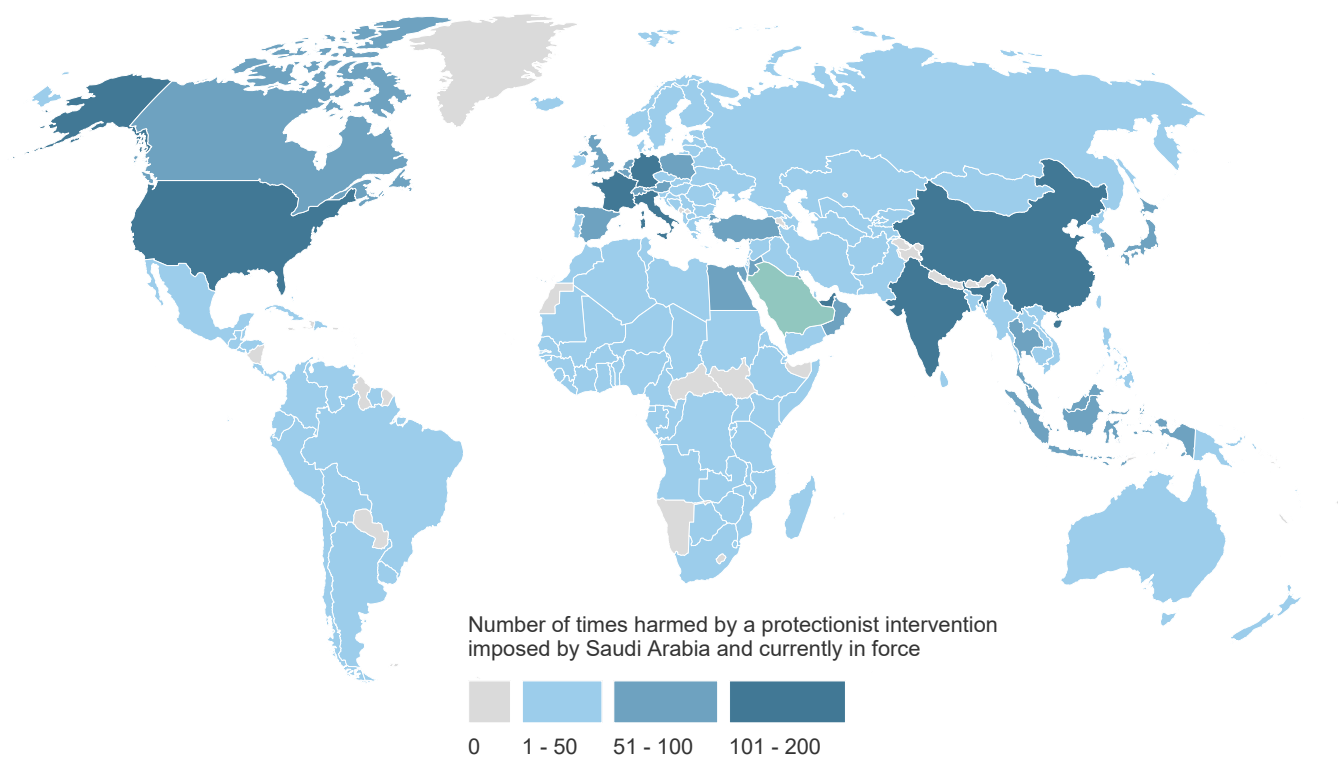
SAUDI ARABIA

What is at stake for Saudi Arabia's goods exporters?

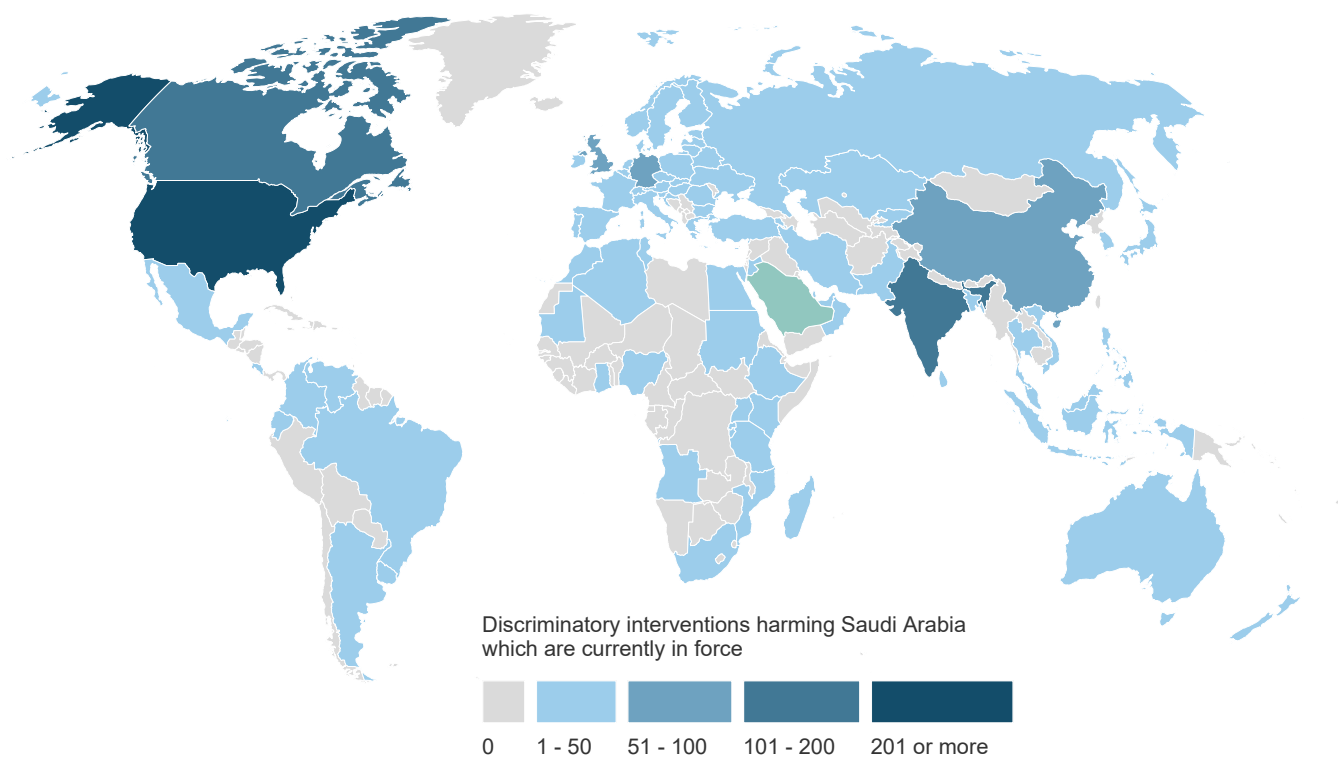
UN MAST chapter	Foreign discriminatory policy instrument	Percentage of this G20 member's exports at risk due to ...												
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	All instruments	20.38	49.36	55.43	57.19	69.36	71.63	73.32	74.14	74.44	74.00	74.01	74.07	91.26
D	Contingent trade-protective measures	0.01	0.04	0.08	0.10	0.08	0.08	0.05	0.00	0.00	0.00	0.00	0.02	0.10
E	Non-automatic licensing, quotas etc.	4.54	0.04	5.97	6.73	6.02	6.04	7.31	7.87	7.96	8.16	8.73	8.86	8.39
F	Price-control measures, including additional taxes and charges	0.07	0.07	0.16	0.28	0.28	0.40	0.41	0.41	0.41	4.86	5.29	5.29	5.03
G	Finance measures	0.05	0.07	0.10	0.10	0.10	0.10	1.17	1.53	1.53	1.53	1.53	1.53	1.53
I	Trade-related investment measures	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.01	0.00	0.00	0.00	0.00	0.00
L	Subsidies (excl. export subsidies)	8.29	25.10	27.41	22.41	41.25	41.55	41.74	41.81	42.36	42.69	42.72	43.26	36.92
M	Government procurement restrictions	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
P	Export-related measures (incl. subsidies)	3.84	15.15	19.83	21.83	23.04	23.25	46.74	48.35	53.93	54.28	54.30	54.27	53.32
	Tariff measures	8.32	9.93	10.21	10.85	11.34	12.98	15.22	17.05	19.07	23.17	23.17	24.22	24.94
	Instrument unclear	0.00	0.00	0.00	0.00	0.04	0.87	0.89	0.89	0.89	1.36	2.34	2.34	2.34

Note: This table presents estimates of the percentage of a nation's exports that face different harmful policy interventions in their export markets. Only those harmful interventions implemented after November 2008 count towards these totals -therefore, the estimates indicate the exposure of national exports to crisis-era policy intervention that favours domestic commercial interests. The trade data used in the estimation is taken from UN Comtrade and at the six-digit level of the Harmonised System product classification. For each product exported by a nation, the foreign markets accounted for in this estimate are those where bilateral exports exceeded \$1 million for the given product. De minimis trade flows are therefore excluded. To limit endogeneity problems (that is, the harmful policy interventions affecting the total value of exports observed) pre-crisis shares of world trade are employed in these calculations. The pre-crisis shares are computed as the mean weight for the years 2005-7. The calculations also take into account when a harmful policy intervention comes into force and, where relevant, lapses. When an intervention lasts for only part of a year, the trade flow is discounted by the fraction of the year the harmful measure is not in force.

COUNTRIES HARMED BY SAUDI ARABIA'S DISCRIMINATORY INTERVENTIONS



DISCRIMINATORY INTERVENTIONS HARMING SAUDI ARABIA'S INTERESTS



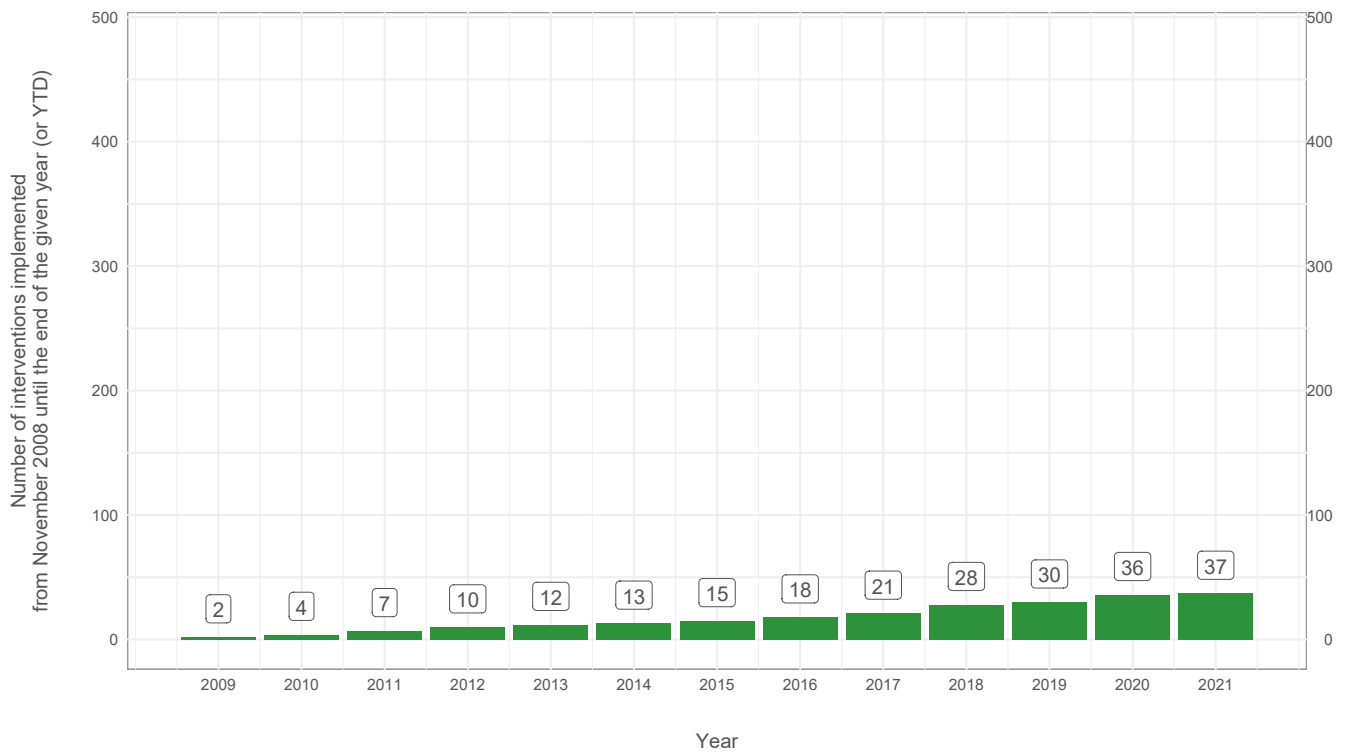
SAUDI ARABIA

Track record of liberalisation



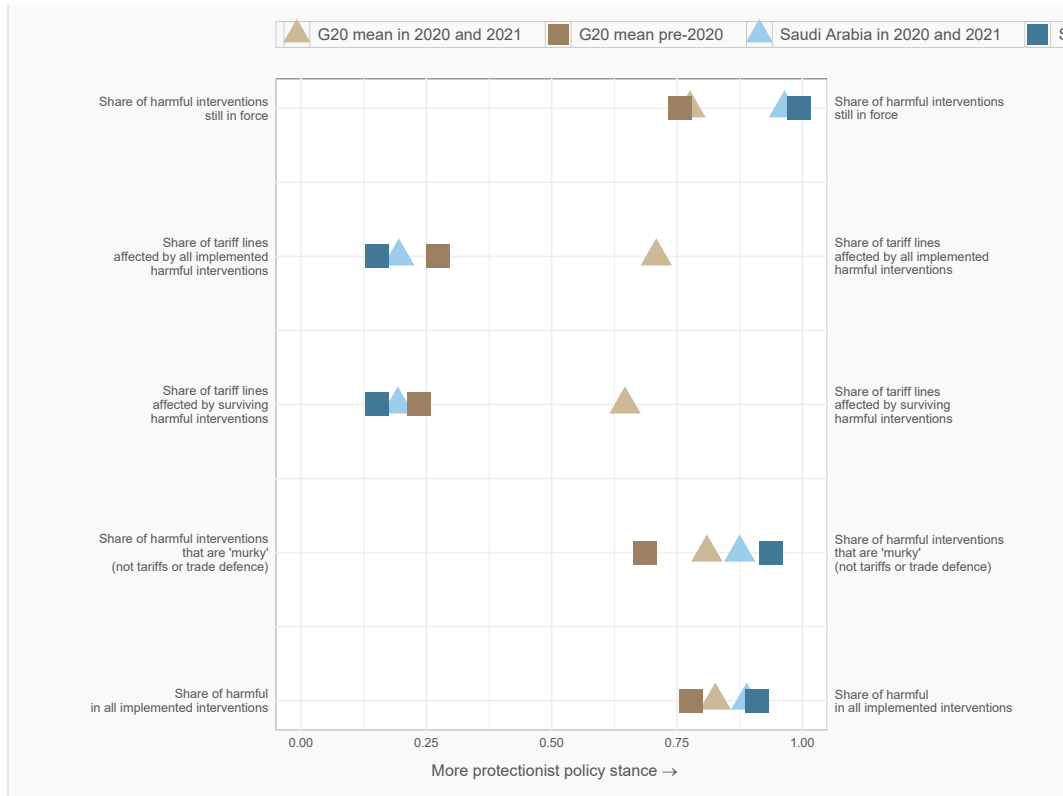
SAUDI ARABIA

Number of liberalising interventions imposed since November 2008



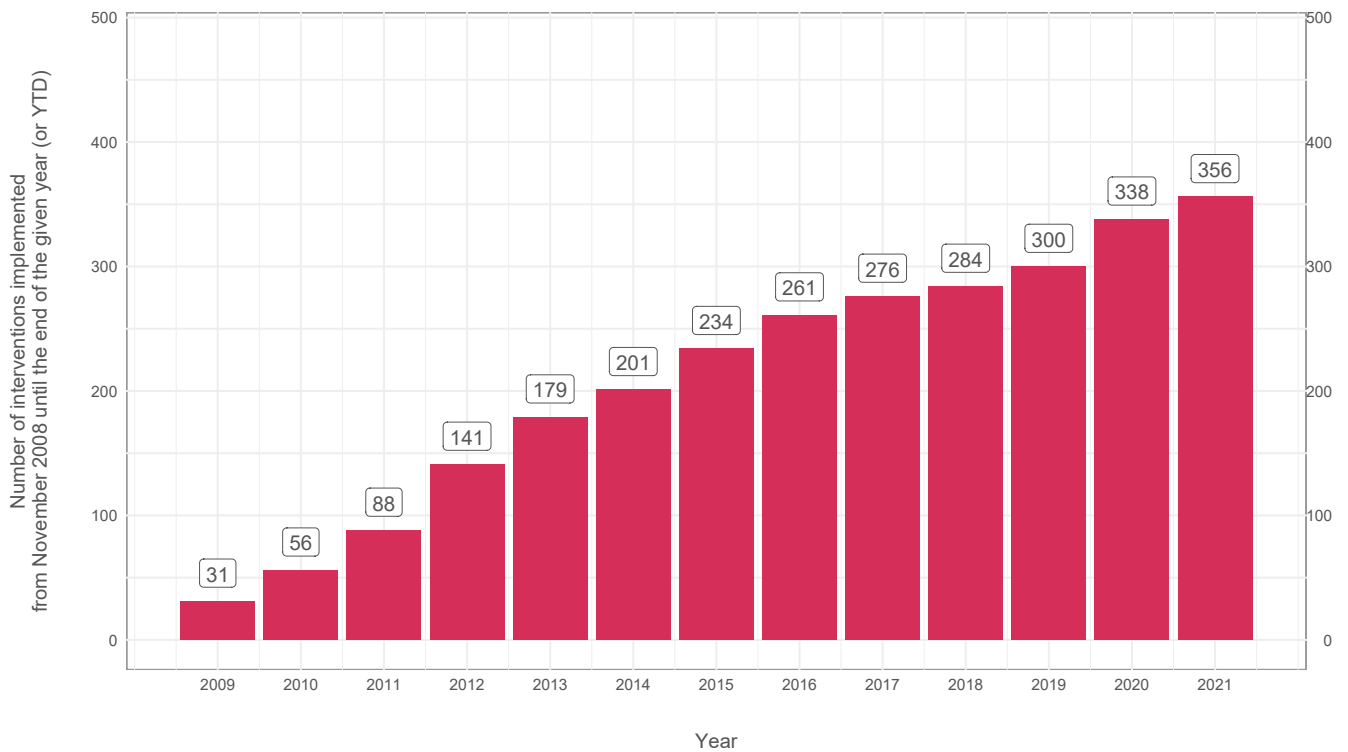
SAUDI ARABIA

Track record of protectionism



SAUDI ARABIA

Number of discriminatory interventions imposed since November 2008



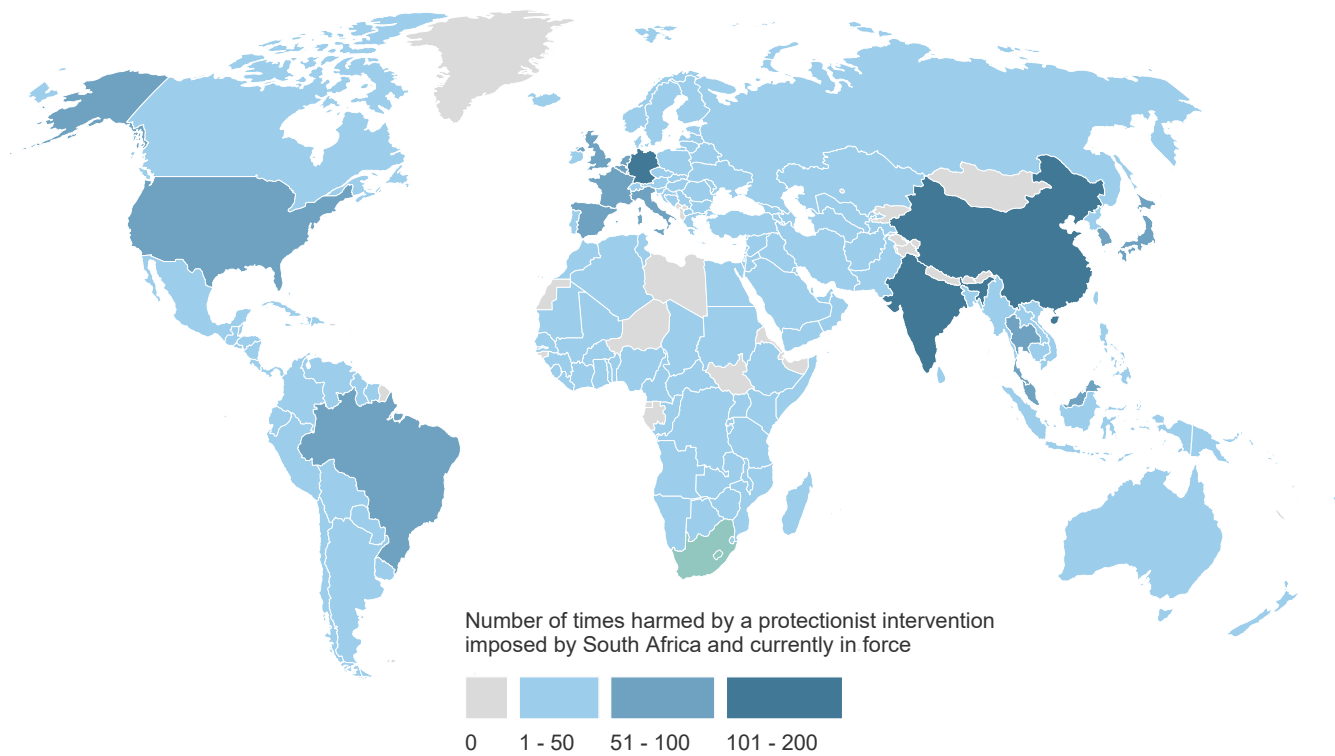
SOUTH AFRICA

What is at stake for South Africa's goods exporters?

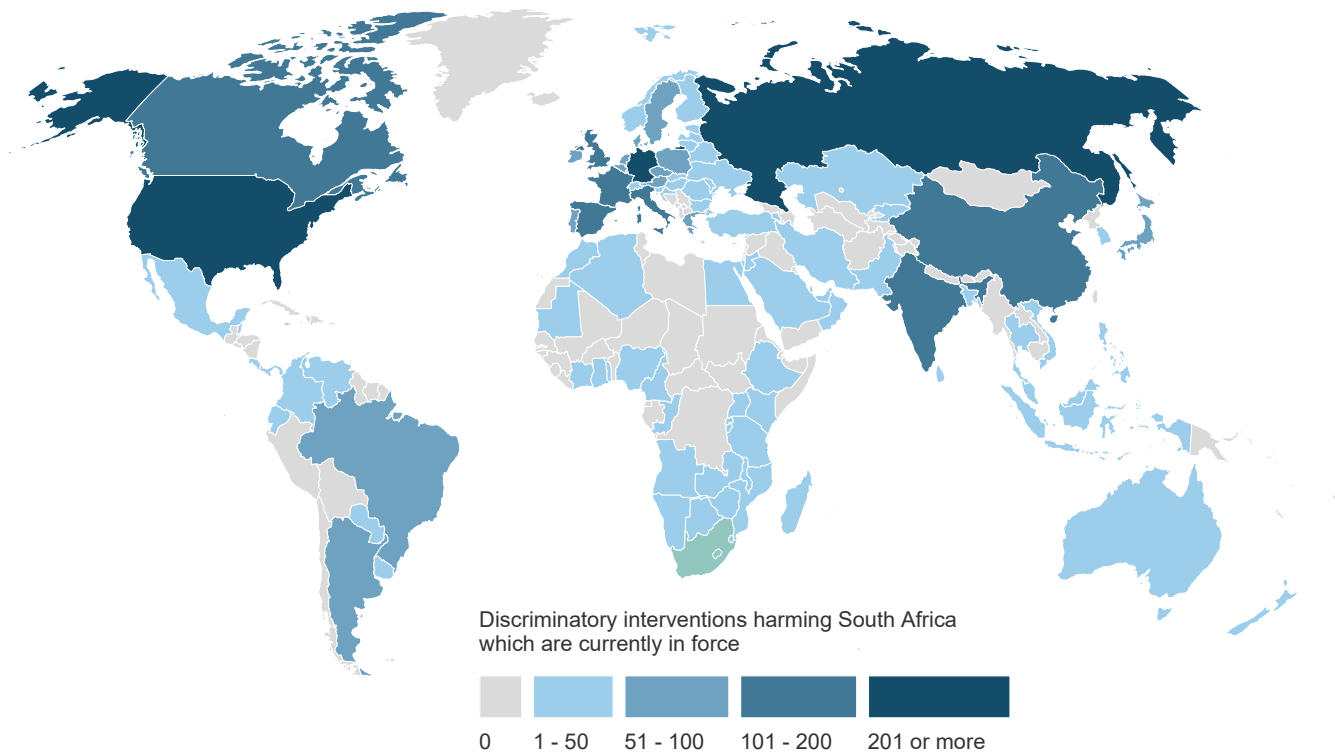
UN MAST chapter	Foreign discriminatory policy instrument	Percentage of this G20 member's exports at risk due to ...												
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	All instruments	30.32	37.40	47.41	51.38	64.68	61.57	58.10	60.27	62.02	62.49	62.72	63.92	64.70
D	Contingent trade-protective measures	0.03	0.05	0.06	0.06	0.06	0.11	0.13	0.53	0.63	1.02	1.26	1.03	1.27
E	Non-automatic licensing, quotas etc.	0.62	1.95	3.98	4.61	4.79	5.27	5.01	5.61	6.01	6.25	6.24	7.63	7.72
F	Price-control measures, including additional taxes and charges	2.12	2.12	2.15	2.22	2.22	2.23	2.25	2.25	2.25	4.87	5.12	5.17	3.65
G	Finance measures	0.44	0.47	0.52	0.52	0.52	0.52	0.53	0.53	0.53	0.53	0.53	0.53	0.53
I	Trade-related investment measures	0.00	0.12	0.16	0.16	0.20	0.26	0.28	0.30	0.32	0.31	0.29	0.26	0.28
L	Subsidies (excl. export subsidies)	6.82	8.55	9.72	11.81	36.43	36.75	33.34	34.21	34.59	34.58	36.29	37.50	35.65
M	Government procurement restrictions	0.90	0.86	1.06	1.15	1.20	1.29	1.45	1.52	1.50	1.58	1.68	1.67	1.70
P	Export-related measures (incl. subsidies)	19.80	25.90	37.28	41.54	43.60	36.92	34.90	39.19	43.03	44.80	45.11	45.23	40.43
	Tariff measures	1.77	5.12	6.56	8.47	10.18	10.47	11.29	11.90	12.47	13.97	14.36	14.34	14.67
	Instrument unclear	0.05	0.70	0.69	0.70	1.78	2.66	0.32	0.44	1.09	2.39	2.42	2.42	2.43

Note: This table presents estimates of the percentage of a nation's exports that face different harmful policy interventions in their export markets. Only those harmful interventions implemented after November 2008 count towards these totals—therefore, the estimates indicate the exposure of national exports to crisis-era policy intervention that favours domestic commercial interests. The trade data used in the estimation is taken from UN Comtrade and at the six-digit level of the Harmonised System product classification. For each product exported by a nation, the foreign markets accounted for in this estimate are those where bilateral exports exceeded \$1 million for the given product. De minimis trade flows are therefore excluded. To limit endogeneity problems (that is, the harmful policy interventions affecting the total value of exports observed) pre-crisis shares of world trade are employed in these calculations. The pre-crisis shares are computed as the mean weight for the years 2005-7. The calculations also take into account when a harmful policy intervention comes into force and, where relevant, lapses. When an intervention lasts for only part of a year, the trade flow is discounted by the fraction of the year the harmful measure is not in force.

COUNTRIES HARMED BY SOUTH AFRICA'S DISCRIMINATORY INTERVENTIONS

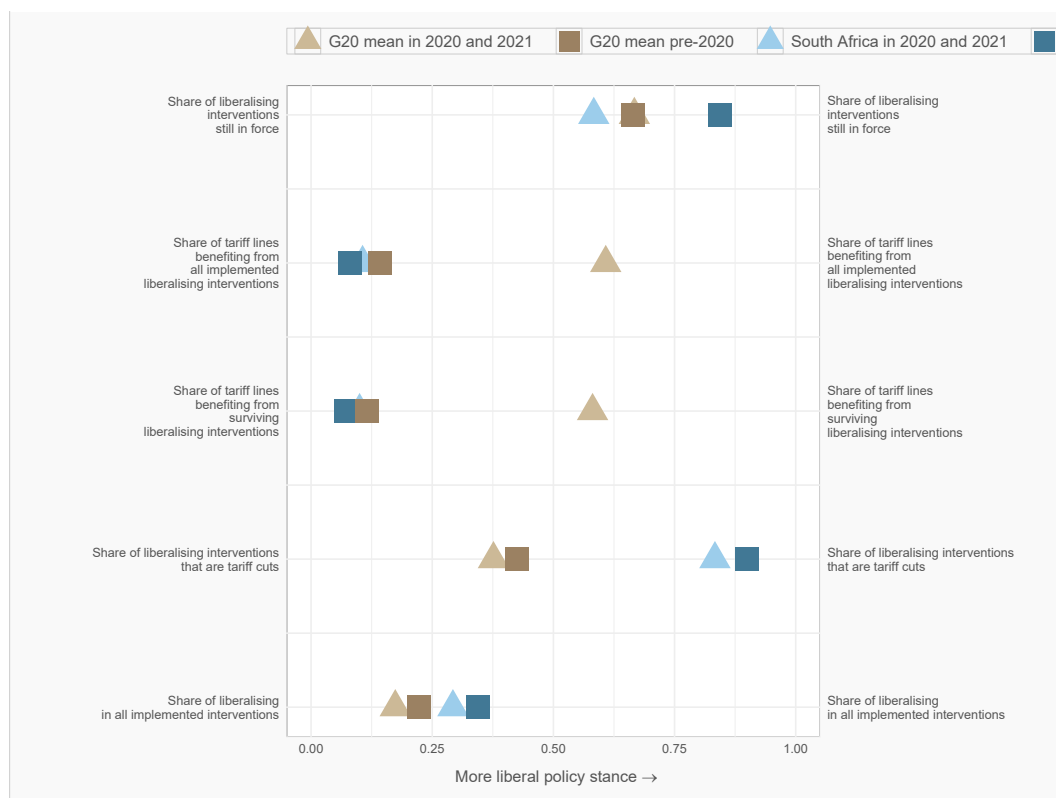


DISCRIMINATORY INTERVENTIONS HARMING SOUTH AFRICA'S INTERESTS



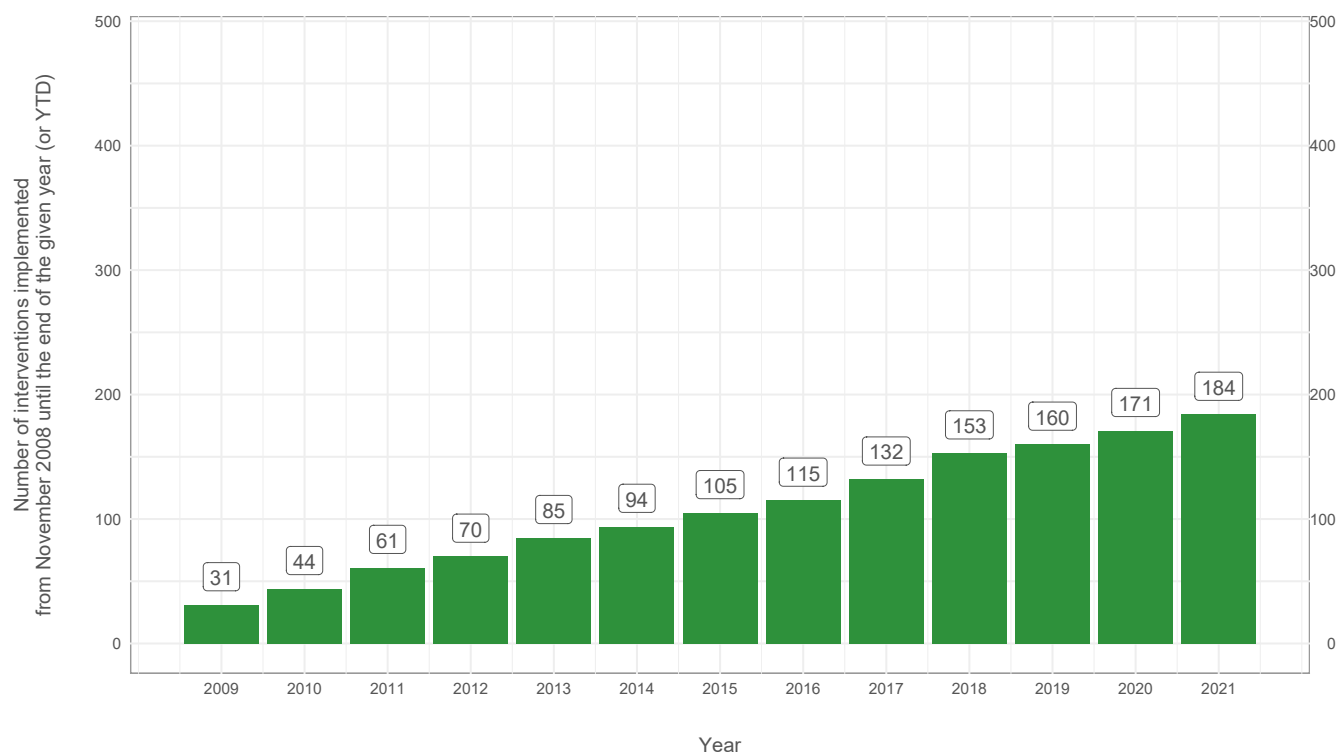
SOUTH AFRICA

Track record of liberalisation



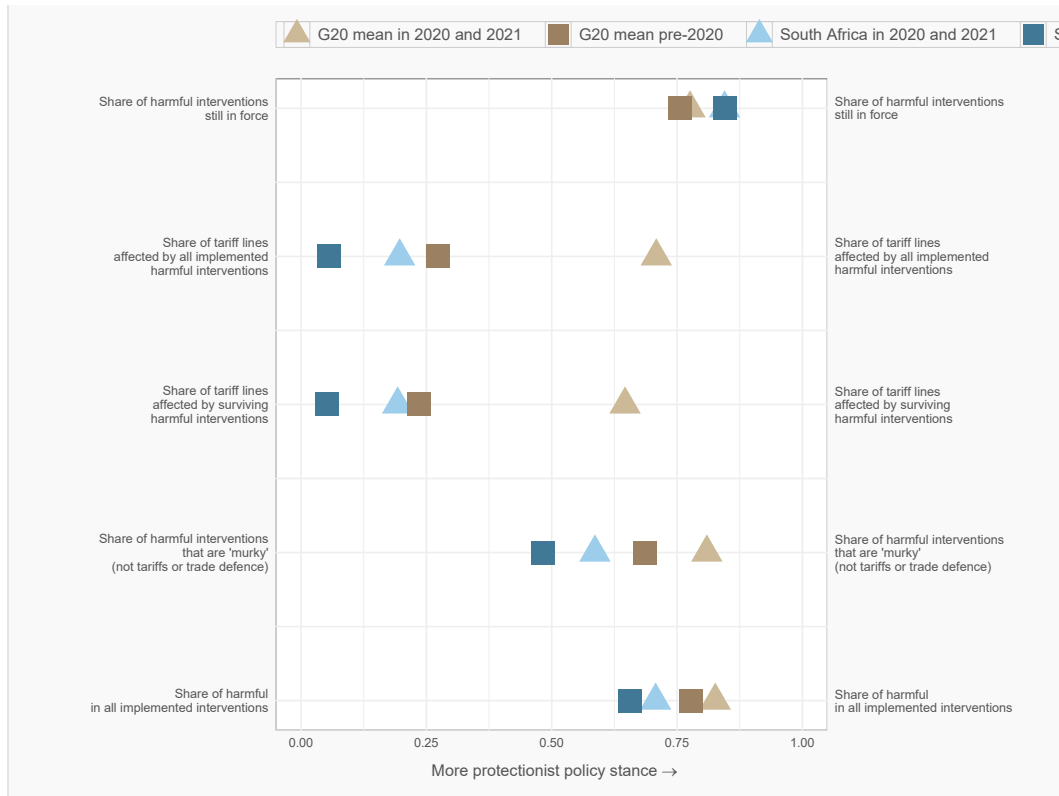
SOUTH AFRICA

Number of liberalising interventions imposed since November 2008



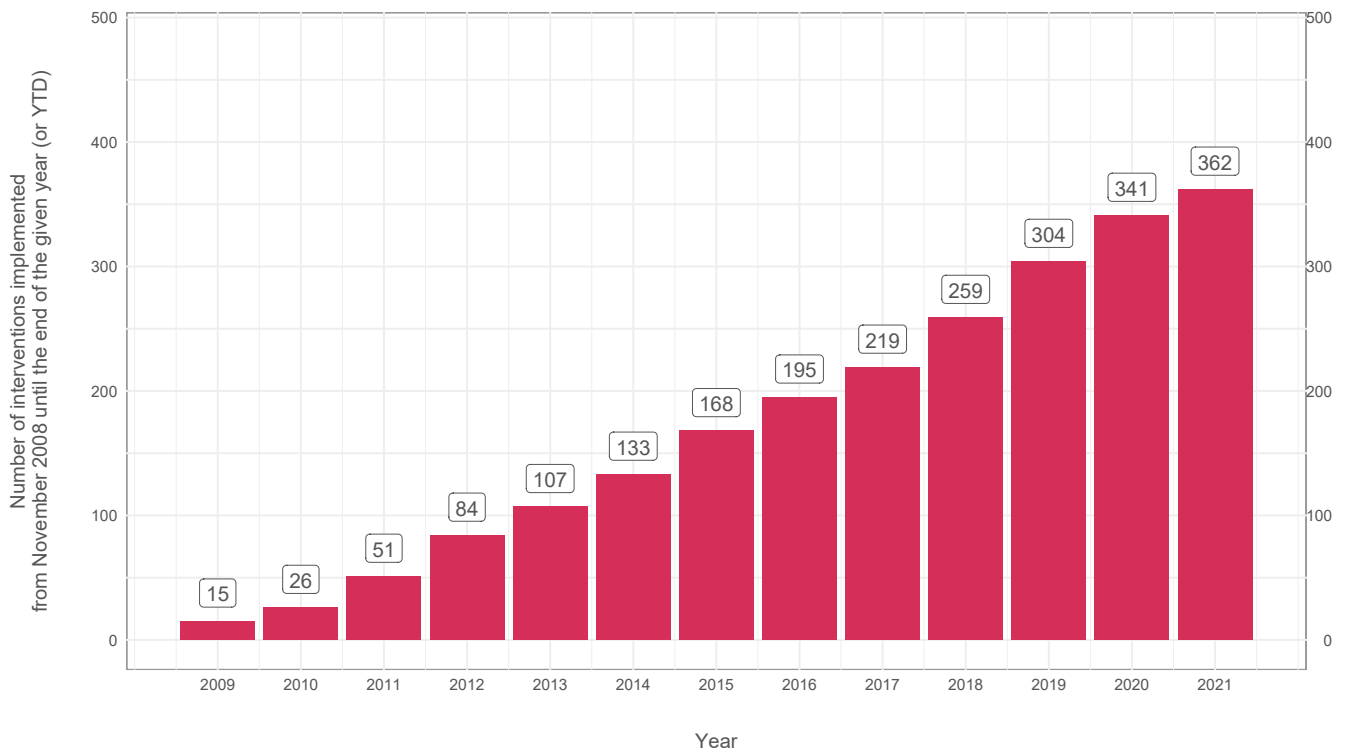
SOUTH AFRICA

Track record of protectionism



SOUTH AFRICA

Number of discriminatory interventions imposed since November 2008



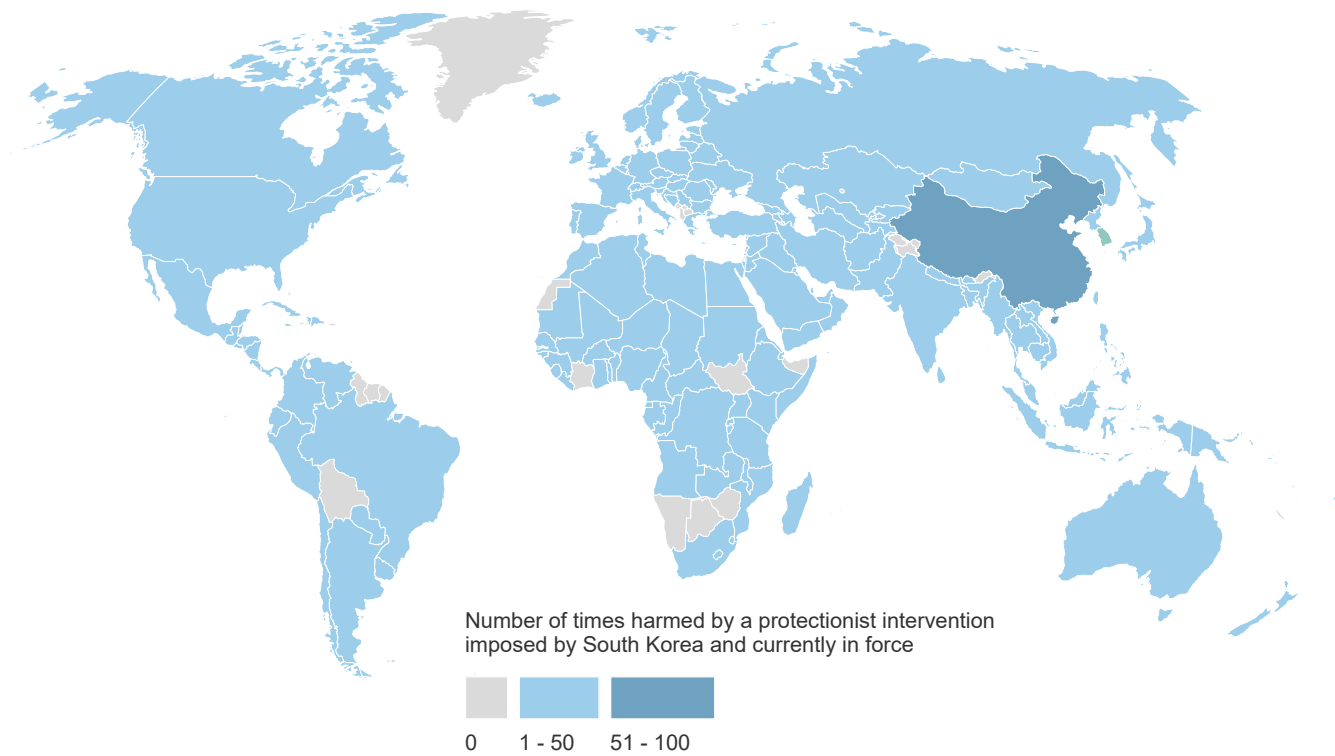
SOUTH KOREA

What is at stake for South Korea's goods exporters?

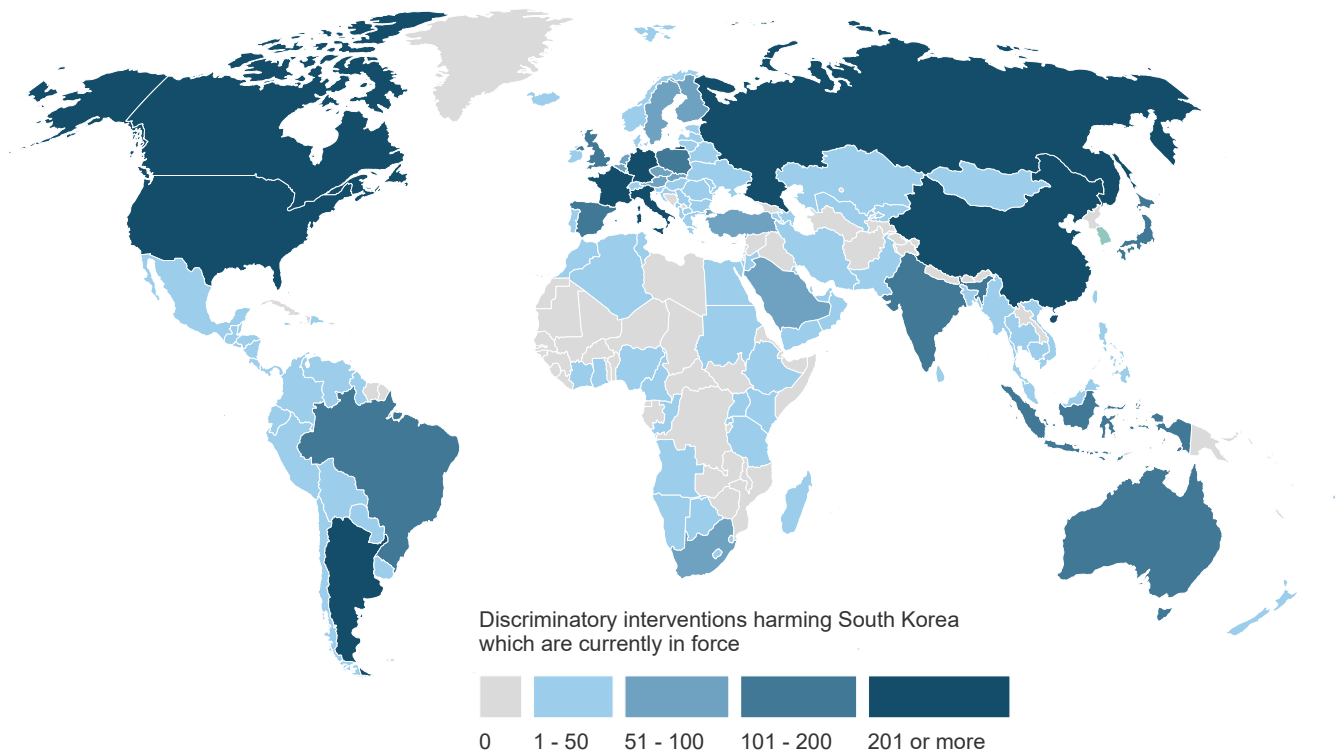
UN MAST chapter	Foreign discriminatory policy instrument	Percentage of this G20 member's exports at risk due to ...												
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	All instruments	62.85	81.52	85.61	88.29	90.93	91.25	91.37	92.00	92.62	92.87	93.47	93.72	92.11
D	Contingent trade-protective measures	0.25	1.21	1.32	1.61	1.84	1.89	1.87	2.25	2.47	3.09	3.53	3.69	3.72
E	Non-automatic licensing, quotas etc.	0.51	0.92	5.09	5.32	5.60	5.85	6.79	7.62	7.99	8.15	8.27	8.37	9.81
F	Price-control measures, including additional taxes and charges	0.06	0.13	0.14	0.12	0.08	1.53	1.97	2.04	2.24	3.05	3.28	3.72	3.67
G	Finance measures	0.19	0.66	1.37	1.37	1.37	1.37	1.38	1.38	1.38	1.38	1.38	1.38	1.38
I	Trade-related investment measures	0.38	0.78	0.94	1.03	1.04	1.09	1.49	1.69	1.75	1.82	1.79	1.65	2.31
L	Subsidies (excl. export subsidies)	23.76	34.54	38.74	41.58	51.76	52.11	53.88	54.80	53.99	55.72	56.72	57.66	42.56
M	Government procurement restrictions	0.85	2.19	2.33	2.48	2.79	3.24	3.70	3.71	3.93	4.01	3.94	4.13	4.37
P	Export-related measures (incl. subsidies)	45.77	66.79	75.82	81.90	84.92	84.91	84.32	84.98	86.20	86.87	87.55	87.60	86.85
	Tariff measures	4.46	10.21	10.95	13.67	18.47	14.97	15.20	18.98	27.63	28.17	29.45	28.67	29.29
	Instrument unclear	0.12	0.56	0.80	0.84	0.76	0.82	0.85	0.96	0.96	1.42	1.58	1.58	1.61

Note: This table presents estimates of the percentage of a nation's exports that face different harmful policy interventions in their export markets. Only those harmful interventions implemented after November 2008 count towards these totals—therefore, the estimates indicate the exposure of national exports to crisis-era policy intervention that favours domestic commercial interests. The trade data used in the estimation is taken from UN Comtrade and at the six-digit level of the Harmonised System product classification. For each product exported by a nation, the foreign markets accounted for in this estimate are those where bilateral exports exceeded \$1 million for the given product. De minimis trade flows are therefore excluded. To limit endogeneity problems (that is, the harmful policy interventions affecting the total value of exports observed) pre-crisis shares of world trade are employed in these calculations. The pre-crisis shares are computed as the mean weight for the years 2005-7. The calculations also take into account when a harmful policy intervention comes into force and, where relevant, lapses. When an intervention lasts for only part of a year, the trade flow is discounted by the fraction of the year the harmful measure is not in force.

COUNTRIES HARMED BY SOUTH KOREA'S DISCRIMINATORY INTERVENTIONS



DISCRIMINATORY INTERVENTIONS HARMING SOUTH KOREA'S INTERESTS



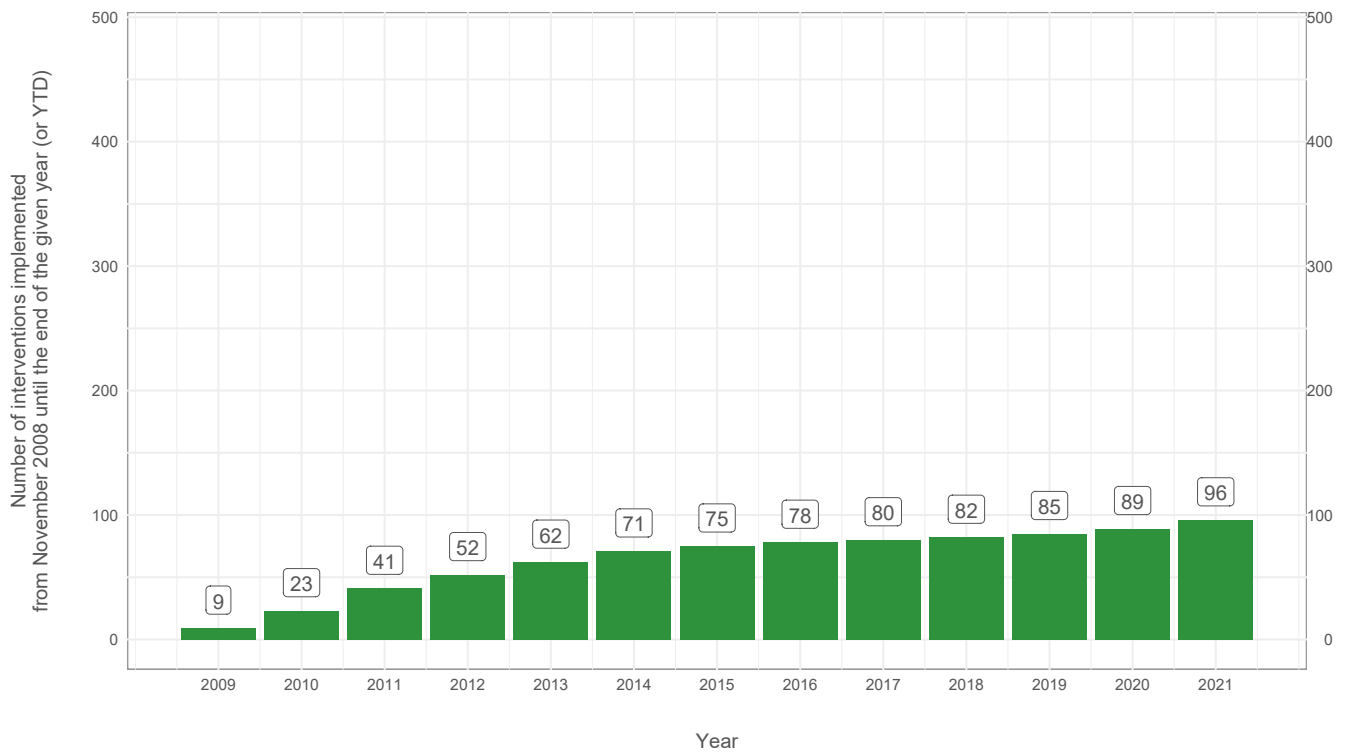
SOUTH KOREA

Track record of liberalisation



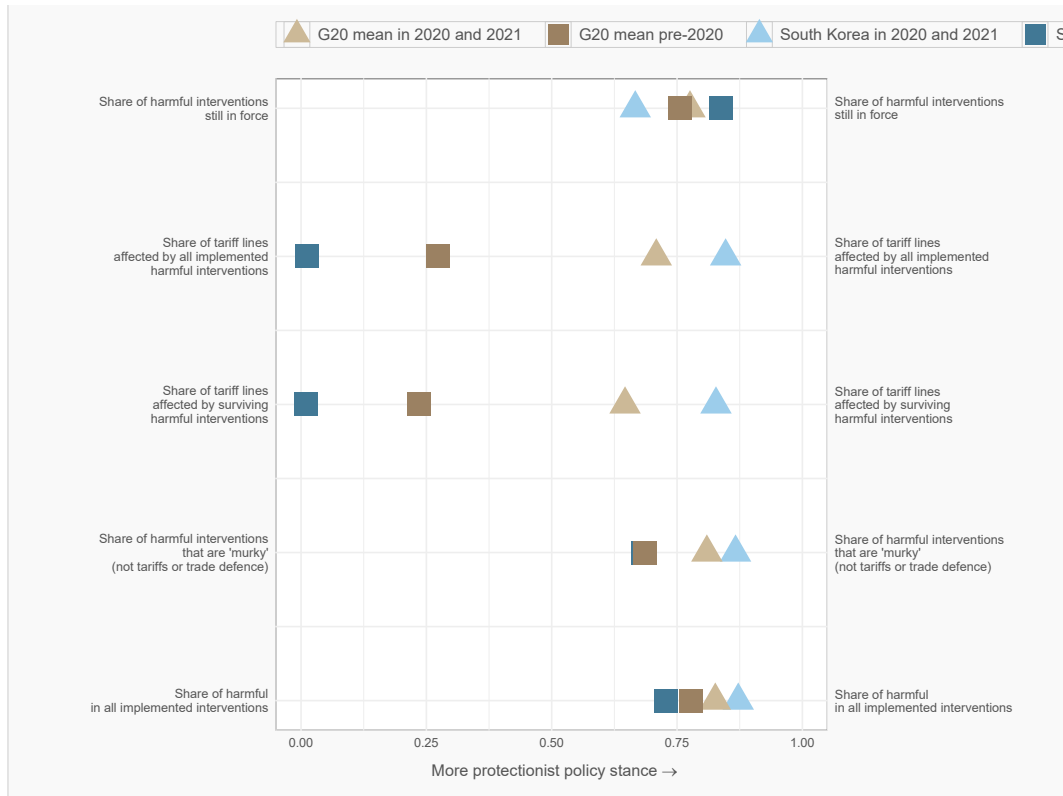
SOUTH KOREA

Number of liberalising interventions imposed since November 2008



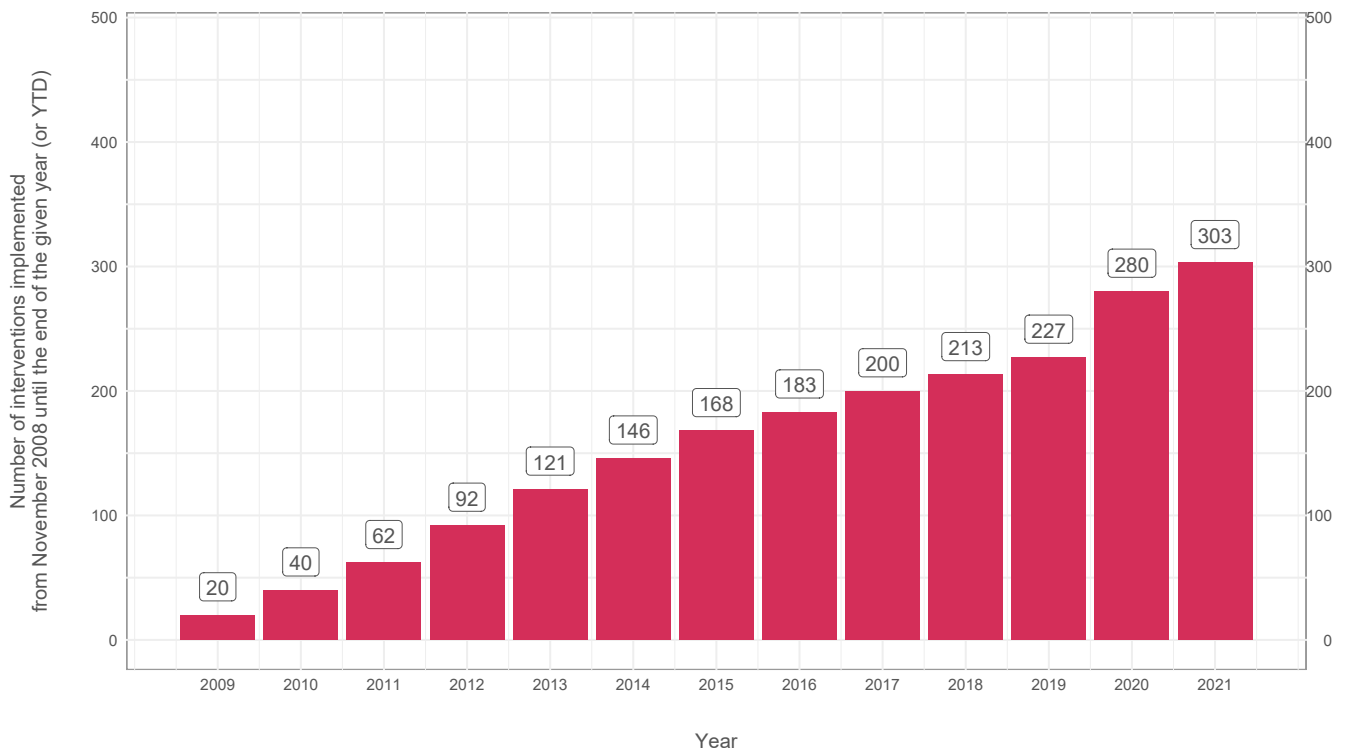
SOUTH KOREA

Track record of protectionism



SOUTH KOREA

Number of discriminatory interventions imposed since November 2008



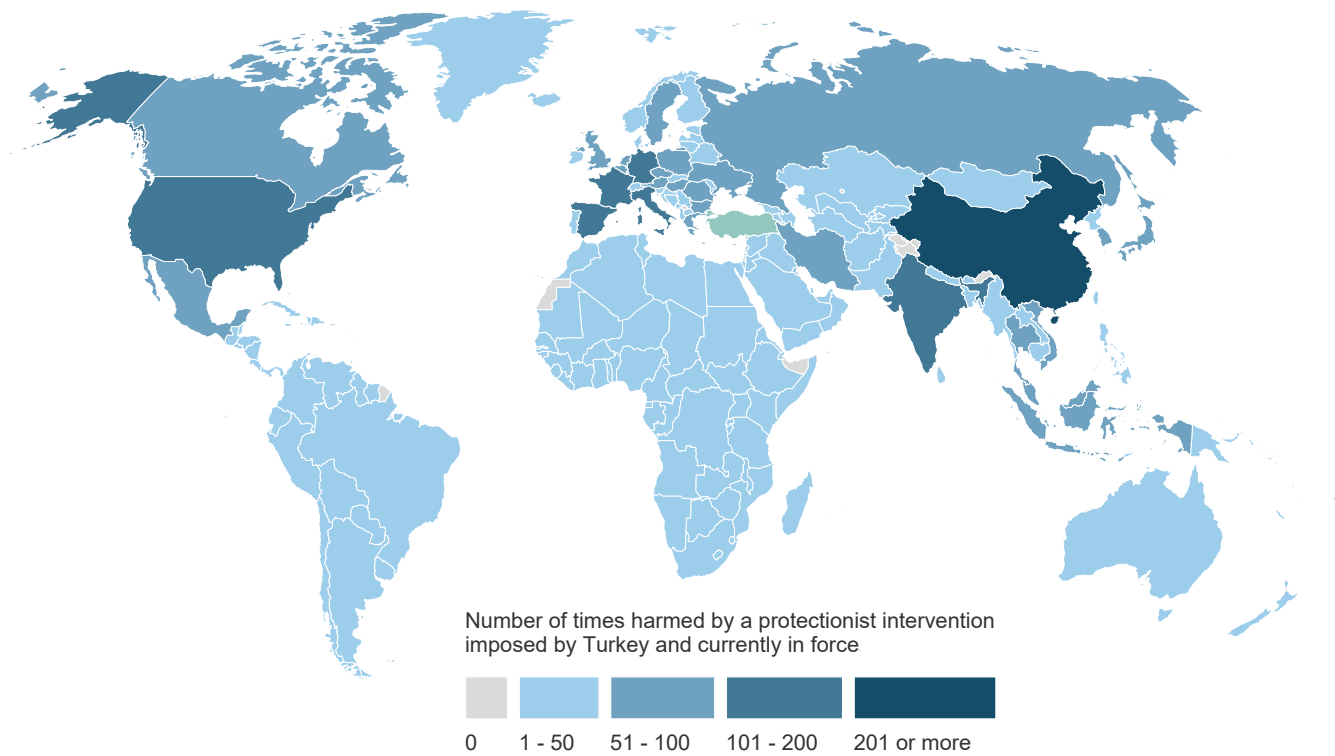
TURKEY

What is at stake for Turkey's goods exporters?

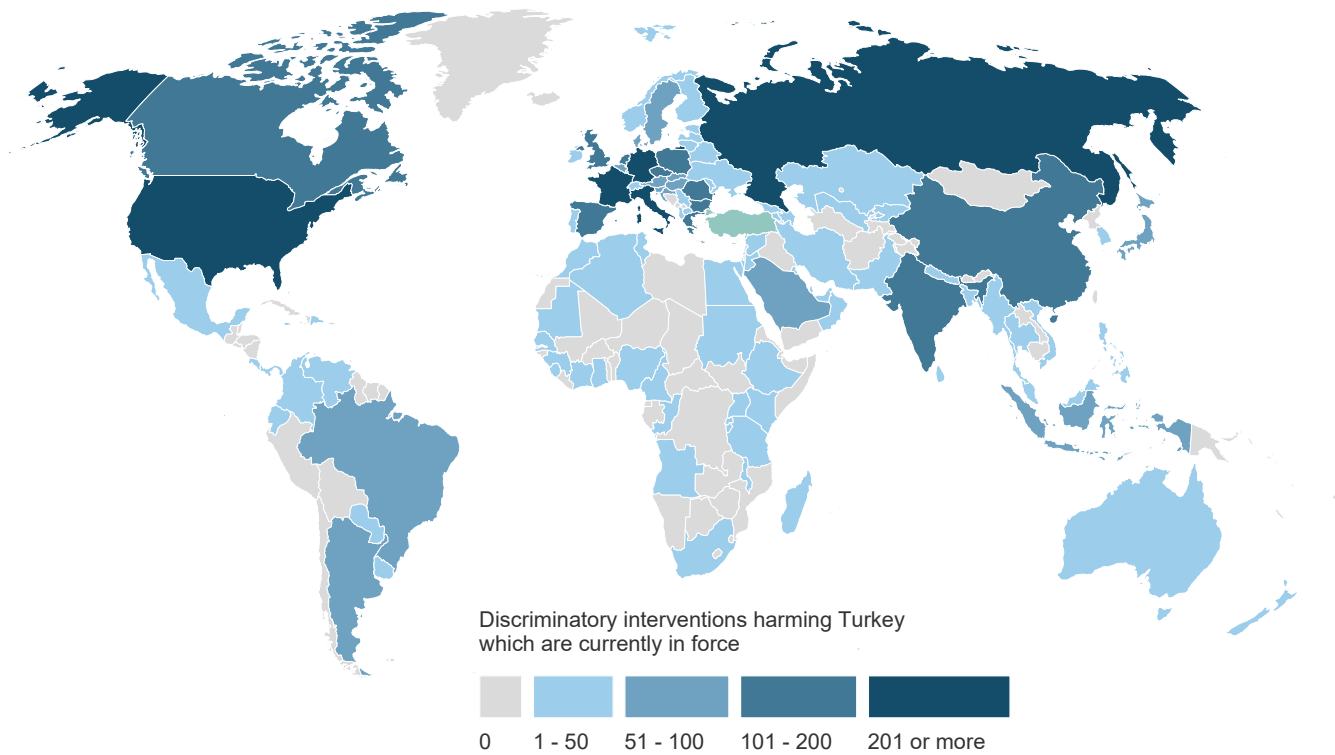
UN MAST chapter	Foreign discriminatory policy instrument	Percentage of this G20 member's exports at risk due to ...												
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	All instruments	57.49	68.75	73.45	76.10	83.51	85.25	85.33	86.02	86.51	86.92	87.79	87.94	85.71
D	Contingent trade-protective measures	0.08	0.02	0.11	0.13	0.26	0.68	0.87	1.00	1.07	2.86	4.88	4.44	4.19
E	Non-automatic licensing, quotas etc.	0.07	0.17	0.72	0.93	0.96	1.00	1.22	2.81	4.27	4.44	4.44	3.65	3.22
F	Price-control measures, including additional taxes and charges	0.43	0.46	0.46	0.47	0.47	0.57	0.60	0.61	0.61	1.00	1.04	1.06	1.06
G	Finance measures	0.53	0.50	0.51	0.51	0.51	0.51	0.72	0.79	0.79	0.79	0.79	0.79	0.79
I	Trade-related investment measures	0.48	2.14	2.37	2.37	2.39	2.42	2.51	2.52	2.53	2.50	2.50	2.57	2.63
L	Subsidies (excl. export subsidies)	11.82	18.76	18.82	20.00	60.63	64.38	65.70	66.48	66.67	67.33	68.36	69.06	44.49
M	Government procurement restrictions	0.94	1.38	1.38	1.46	1.53	2.02	2.54	2.76	2.86	2.89	2.91	3.34	3.44
P	Export-related measures (incl. subsidies)	48.38	59.90	67.19	69.35	71.57	71.97	71.16	73.01	73.69	74.47	75.88	76.04	74.45
	Tariff measures	1.31	2.06	2.58	3.90	4.64	4.65	8.06	8.57	9.36	11.62	13.66	14.51	14.65
	Instrument unclear	0.00	0.46	0.66	0.70	0.71	0.75	0.81	0.90	0.92	1.08	1.31	1.31	1.30

Note: This table presents estimates of the percentage of a nation's exports that face different harmful policy interventions in their export markets. Only those harmful interventions implemented after November 2008 count towards these totals -therefore, the estimates indicate the exposure of national exports to crisis-era policy intervention that favours domestic commercial interests. The trade data used in the estimation is taken from UN Comtrade and at the six-digit level of the Harmonised System product classification. For each product exported by a nation, the foreign markets accounted for in this estimate are those where bilateral exports exceeded \$1 million for the given product. De minimis trade flows are therefore excluded. To limit endogeneity problems (that is, the harmful policy interventions affecting the total value of exports observed) pre-crisis shares of world trade are employed in these calculations. The pre-crisis shares are computed as the mean weight for the years 2005-7. The calculations also take into account when a harmful policy intervention comes into force and, where relevant, lapses. When an intervention lasts for only part of a year, the trade flow is discounted by the fraction of the year the harmful measure is not in force.

COUNTRIES HARMED BY TURKEY'S DISCRIMINATORY INTERVENTIONS

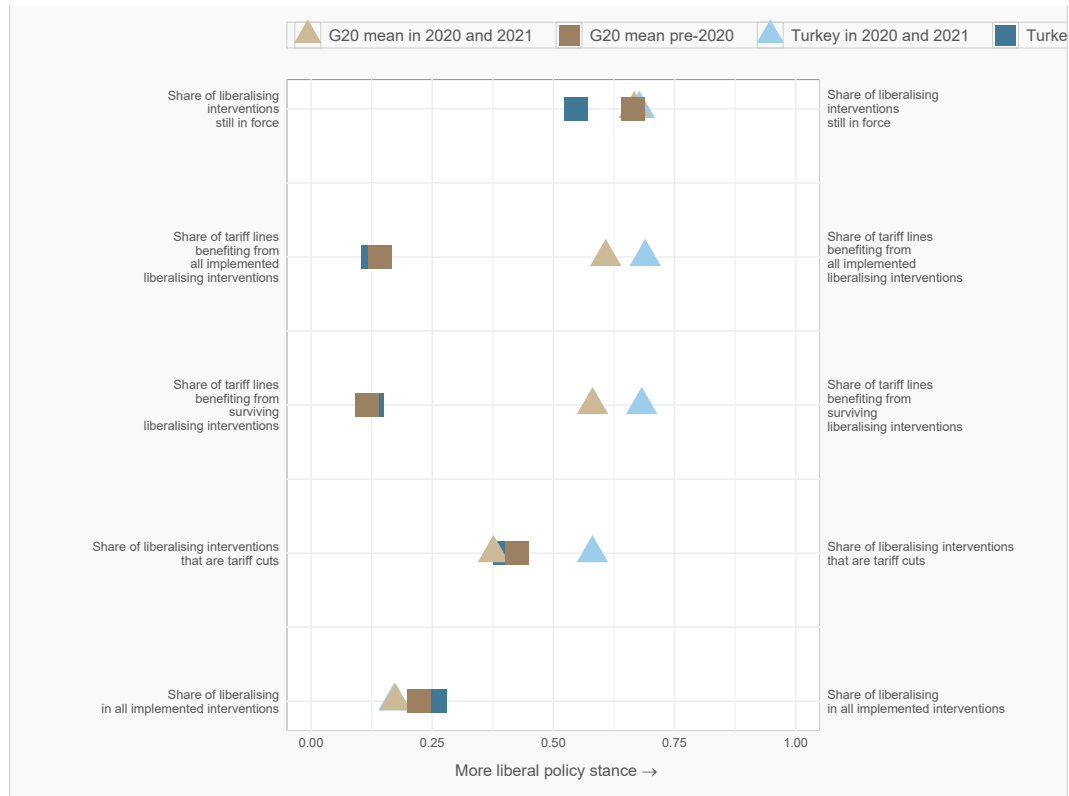


DISCRIMINATORY INTERVENTIONS HARMING TURKEY'S INTERESTS



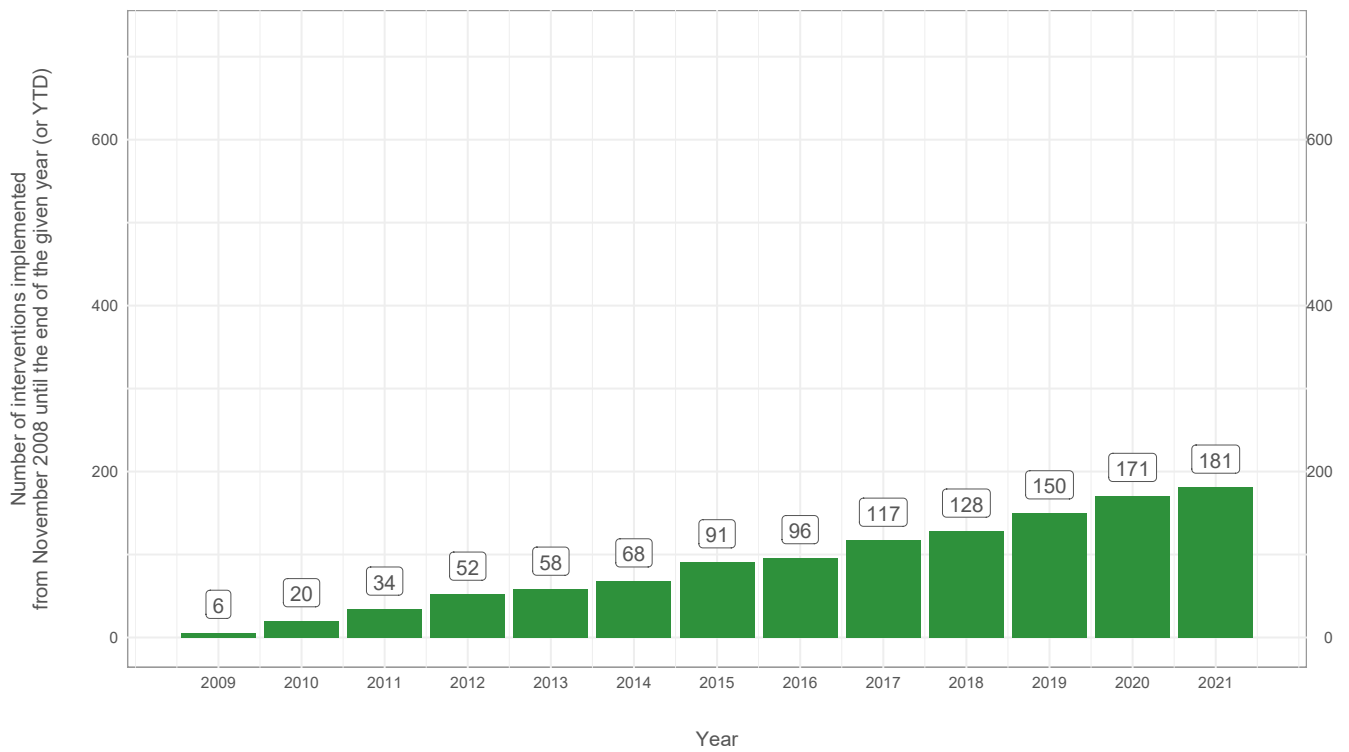
TURKEY

Track record of liberalisation



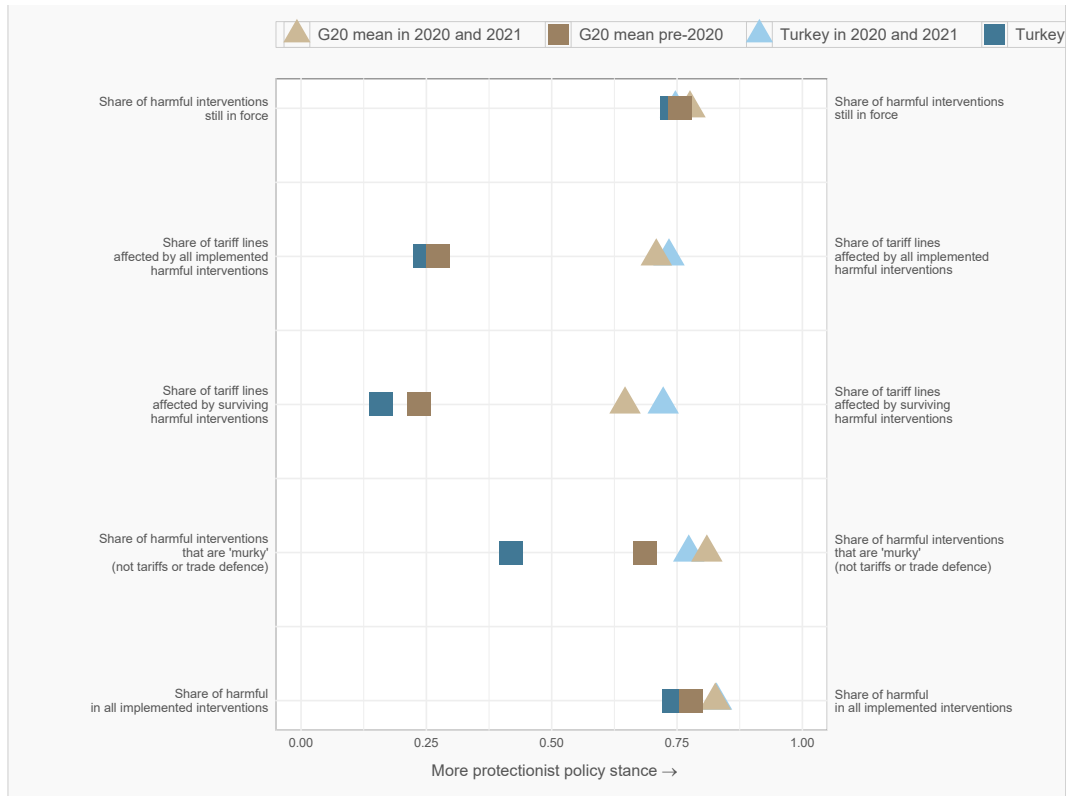
TURKEY

Number of liberalising interventions imposed since November 2008



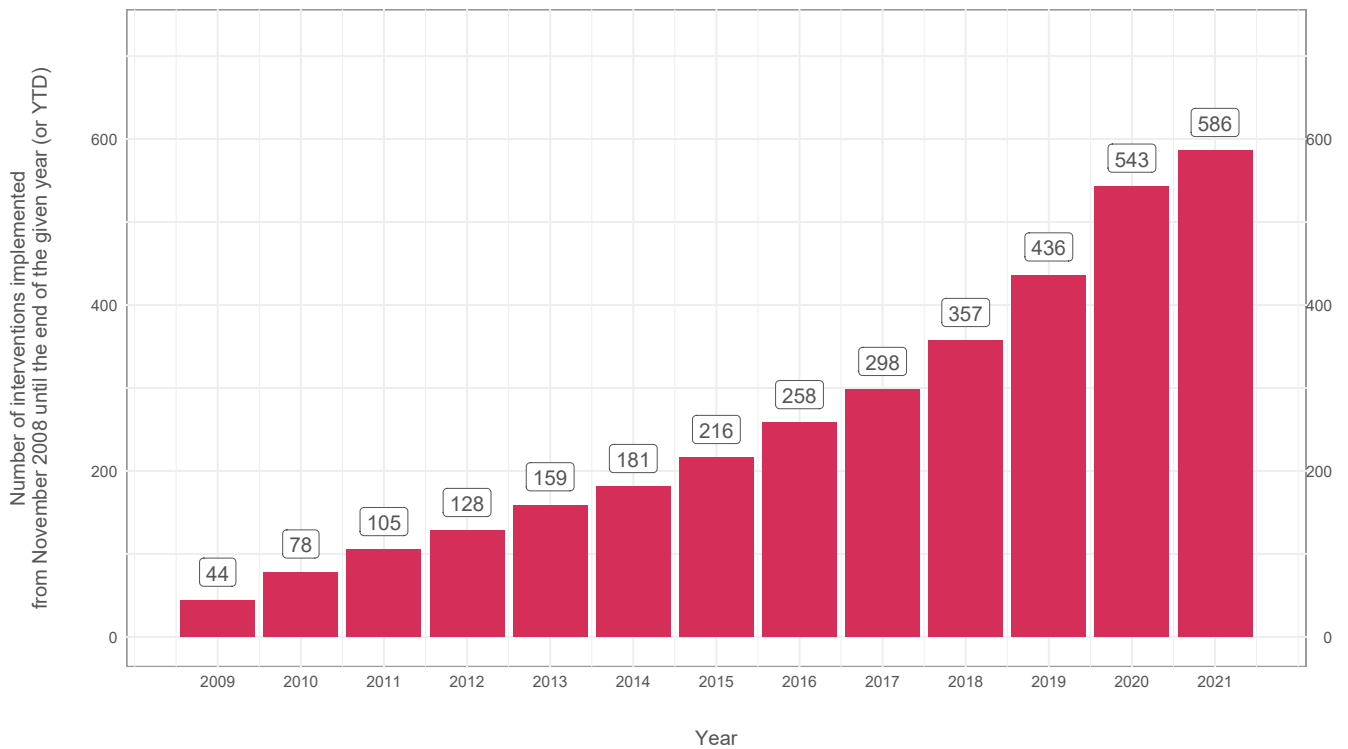
TURKEY

Track record of protectionism



TURKEY

Number of discriminatory interventions imposed since November 2008



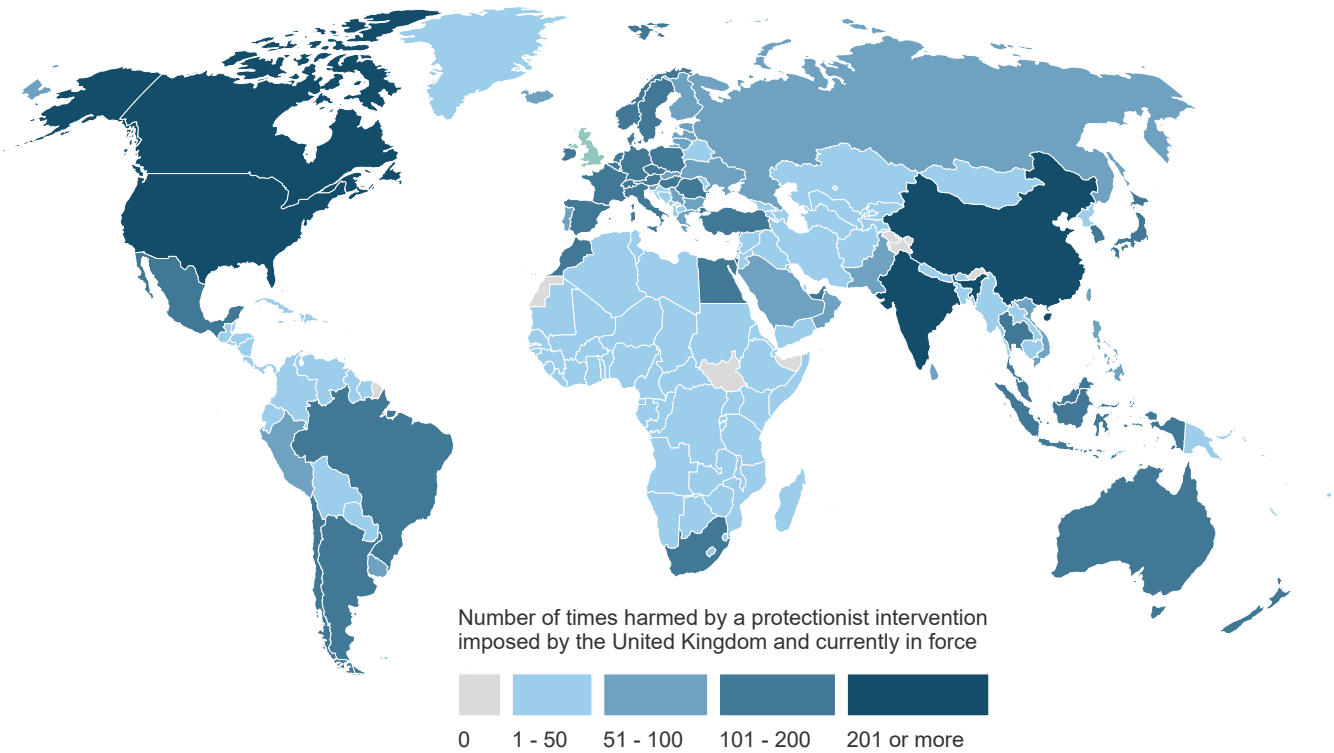
UNITED KINGDOM

What is at stake for the United Kingdom's goods exporters?

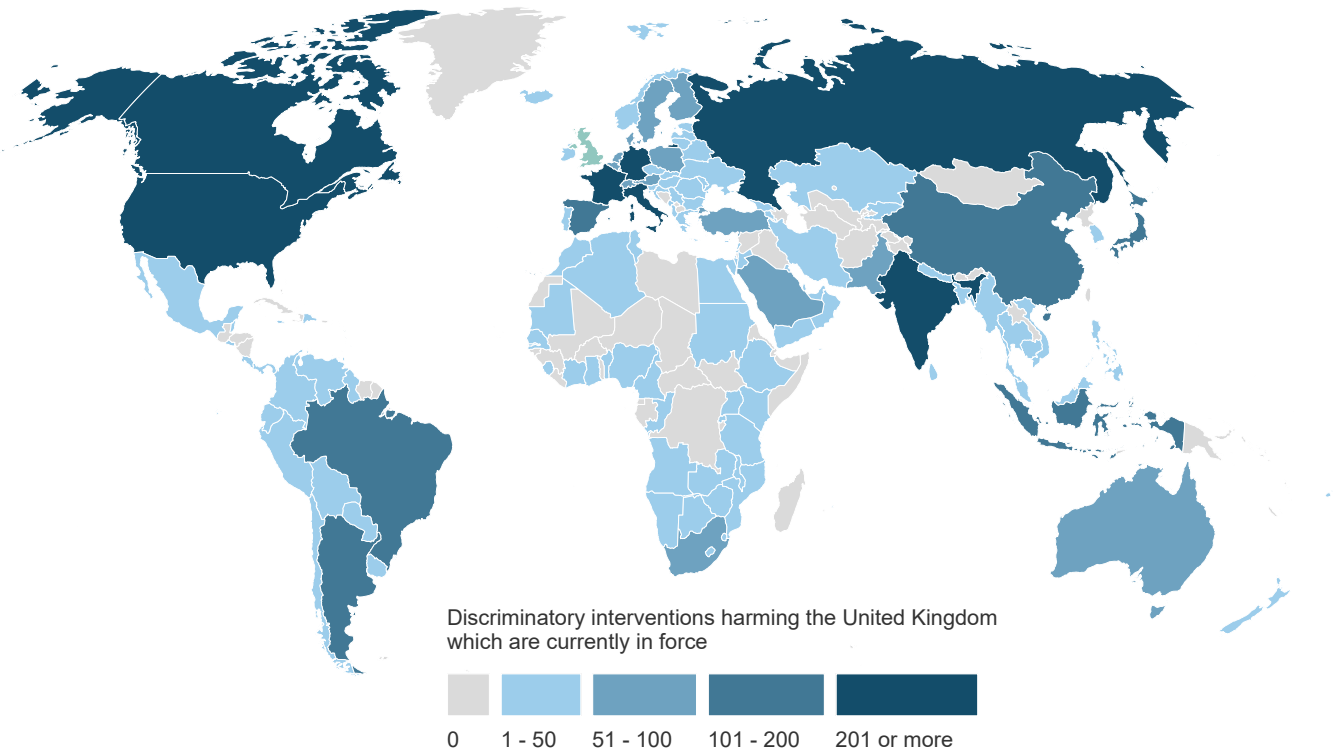
UN MAST chapter	Foreign discriminatory policy instrument	Percentage of this G20 member's exports at risk due to ...												
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	All instruments	40.88	56.16	63.29	67.70	70.75	73.16	75.63	77.16	80.81	81.57	82.85	83.27	83.11
D	Contingent trade-protective measures	0.01	0.02	0.07	0.12	0.14	0.15	0.16	0.21	0.23	0.28	0.32	0.37	0.40
E	Non-automatic licensing, quotas etc.	0.09	0.17	0.48	0.56	0.66	0.68	0.85	0.82	1.48	2.37	2.40	3.39	4.03
F	Price-control measures, including additional taxes and charges	0.01	0.04	0.06	0.08	0.07	0.09	0.17	0.22	0.33	1.10	1.19	1.28	1.23
G	Finance measures	0.40	0.46	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
I	Trade-related investment measures	0.33	1.17	1.29	1.31	1.31	1.33	1.42	1.49	1.51	1.50	1.53	1.55	1.68
L	Subsidies (excl. export subsidies)	7.16	16.28	19.55	21.77	23.42	28.35	30.95	33.14	36.79	37.99	39.53	42.83	41.10
M	Government procurement restrictions	0.36	0.70	0.78	0.99	1.06	1.27	1.67	1.71	1.73	1.77	1.91	2.61	2.21
P	Export-related measures (incl. subsidies)	33.83	46.43	56.27	62.21	65.24	63.99	66.29	68.17	72.32	73.95	74.83	75.29	75.02
	Tariff measures	1.32	1.61	1.72	2.59	3.21	3.17	3.36	3.73	4.38	4.65	5.13	5.68	5.85
	Instrument unclear	0.02	0.29	0.41	0.42	0.50	1.79	2.06	2.14	2.25	2.39	2.39	2.39	2.41

Note: This table presents estimates of the percentage of a nation's exports that face different harmful policy interventions in their export markets. Only those harmful interventions implemented after November 2008 count towards these totals—therefore, the estimates indicate the exposure of national exports to crisis-era policy intervention that favours domestic commercial interests. The trade data used in the estimation is taken from UN Comtrade and at the six-digit level of the Harmonised System product classification. For each product exported by a nation, the foreign markets accounted for in this estimate are those where bilateral exports exceeded \$1 million for the given product. De minimis trade flows are therefore excluded. To limit endogeneity problems (that is, the harmful policy interventions affecting the total value of exports observed) pre-crisis shares of world trade are employed in these calculations. The pre-crisis shares are computed as the mean weight for the years 2005-7. The calculations also take into account when a harmful policy intervention comes into force and, where relevant, lapses. When an intervention lasts for only part of a year, the trade flow is discounted by the fraction of the year the harmful measure is not in force.

COUNTRIES HARMED BY THE UK'S DISCRIMINATORY INTERVENTIONS

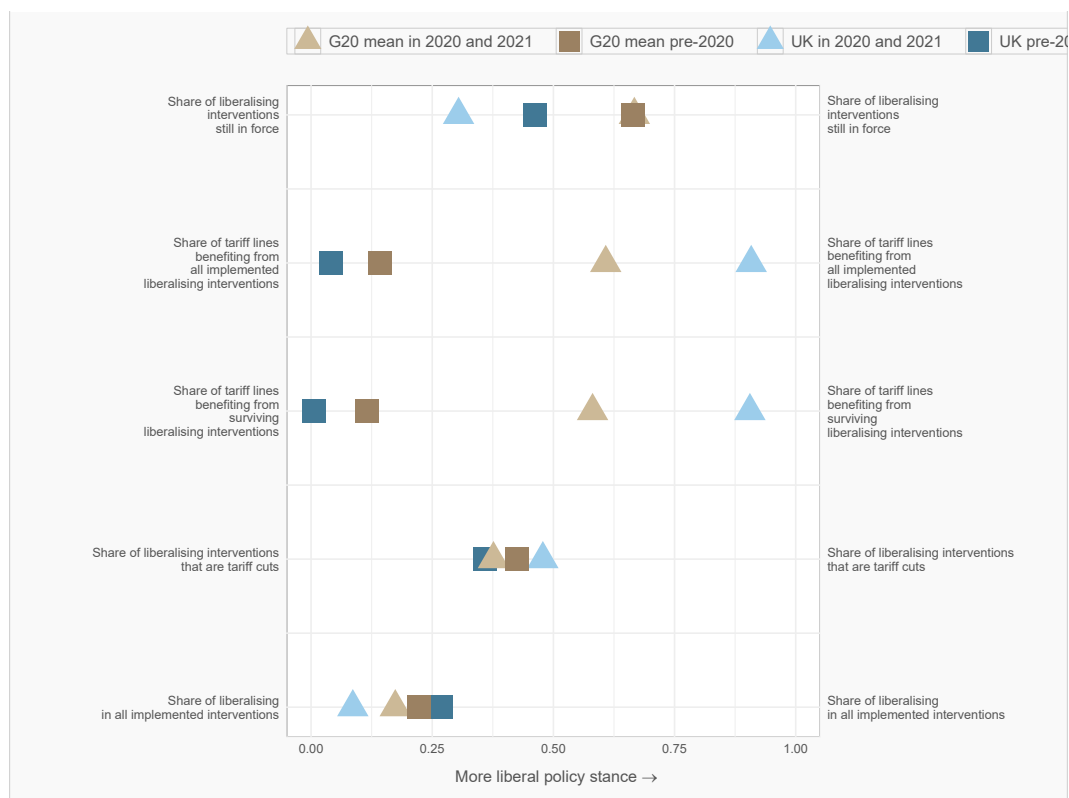


DISCRIMINATORY INTERVENTIONS HARMING THE UK'S INTERESTS



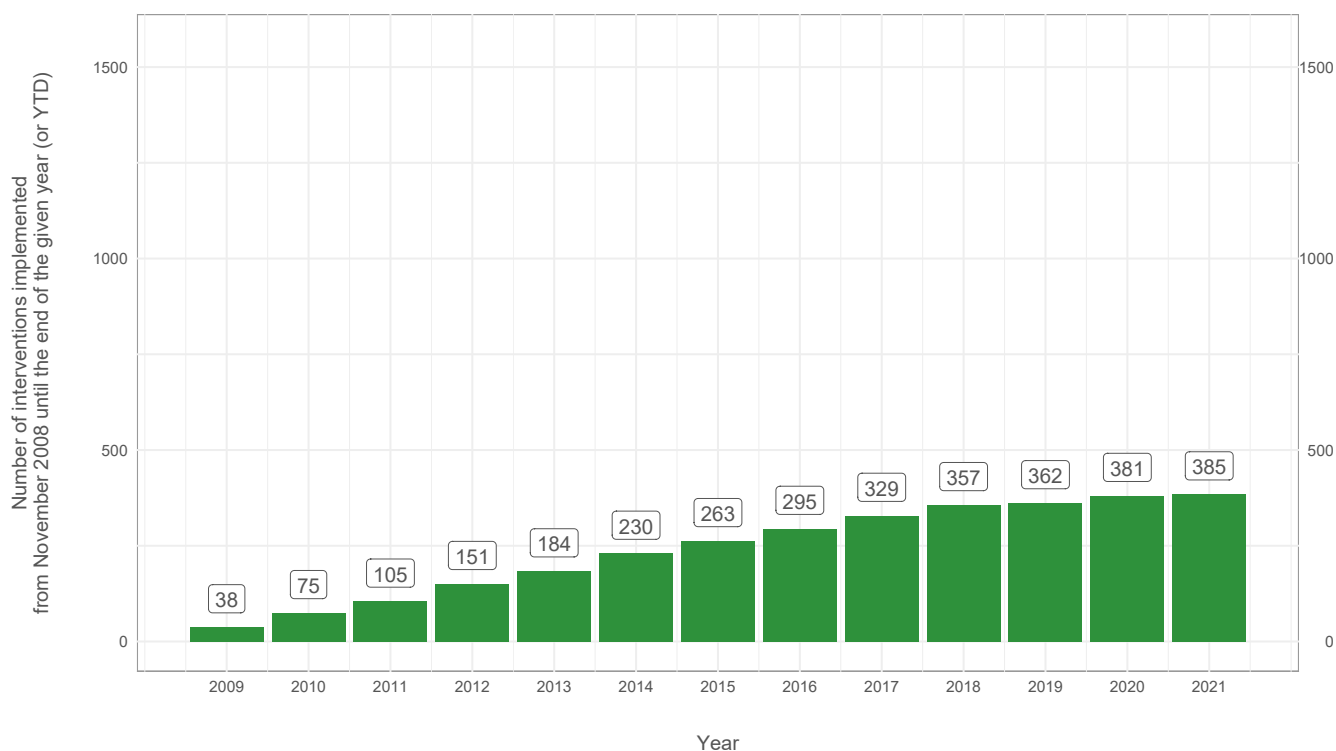
UNITED KINGDOM

Track record of liberalisation



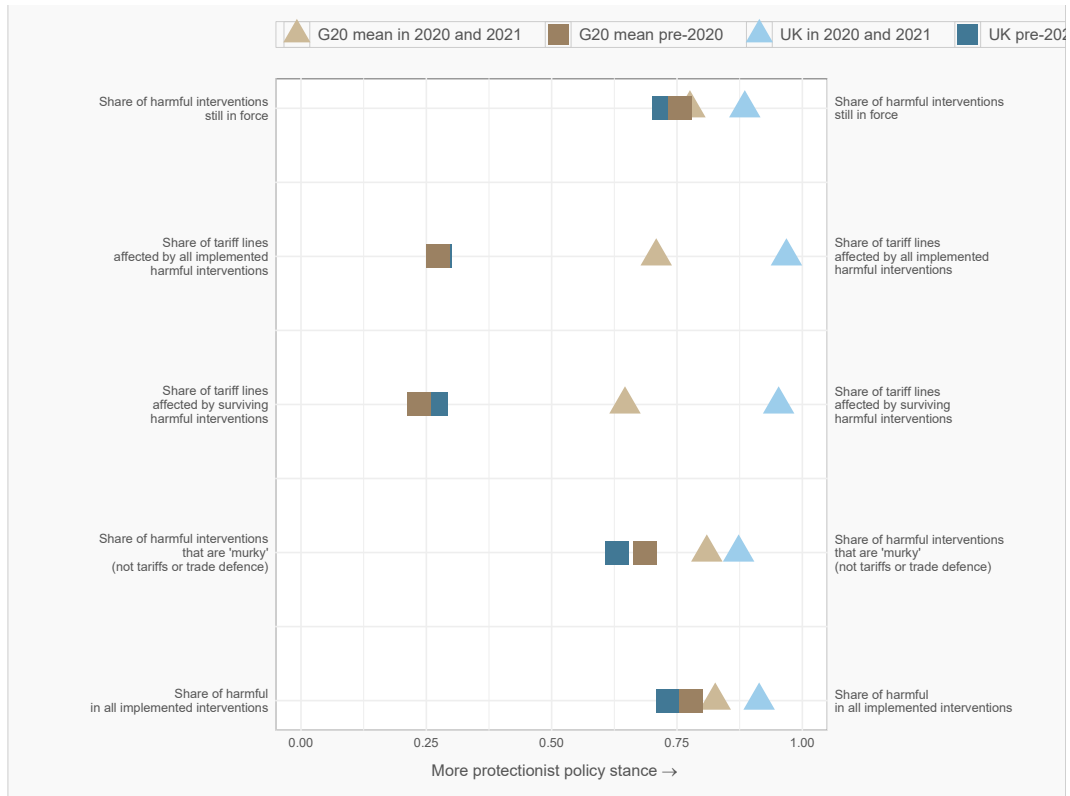
UNITED KINGDOM

Number of liberalising interventions imposed since November 2008



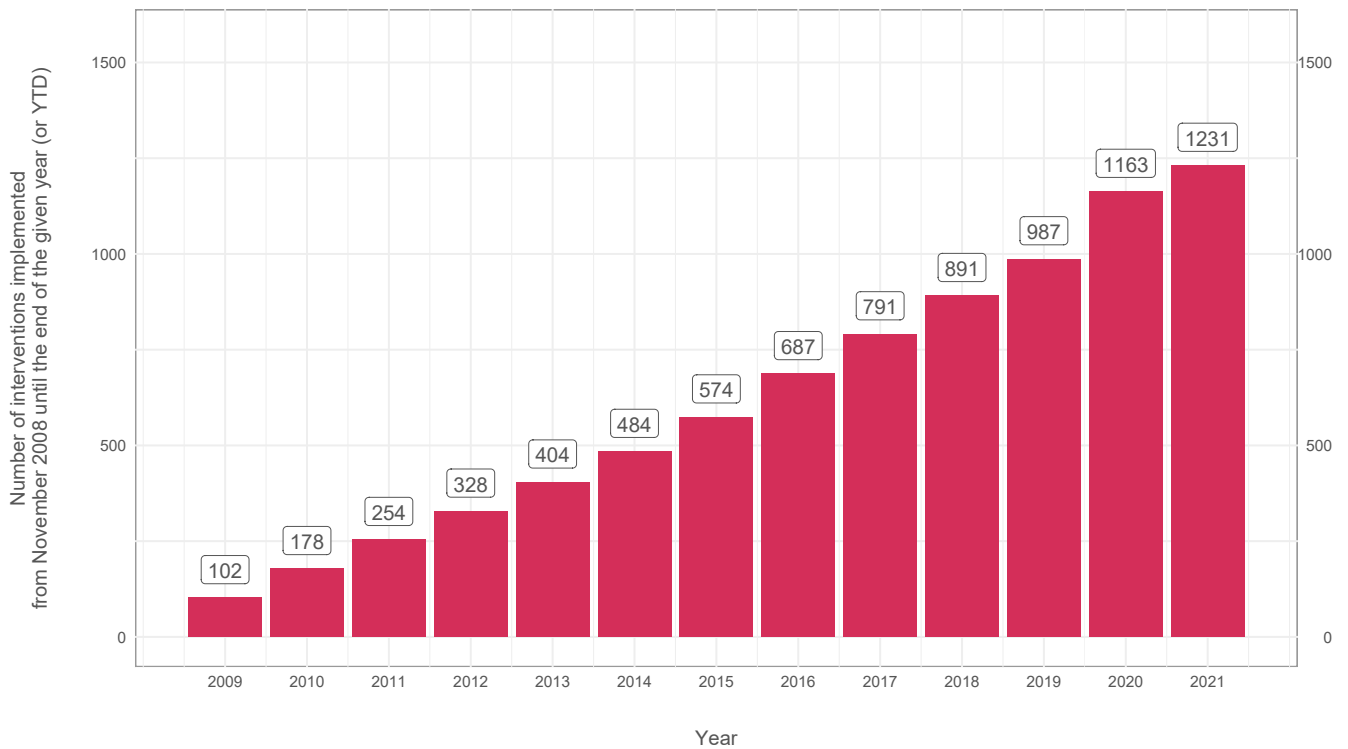
UNITED KINGDOM

Track record of protectionism



UNITED KINGDOM

Number of discriminatory interventions imposed since November 2008



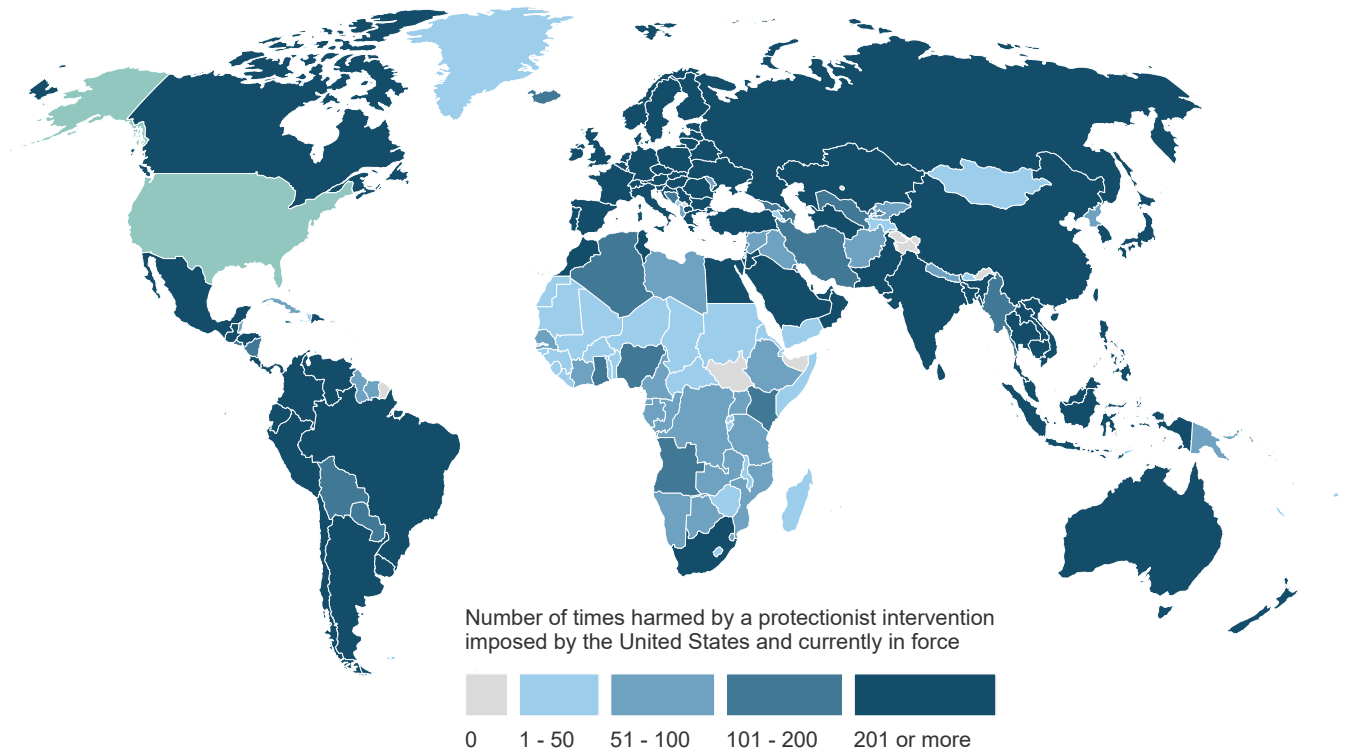
UNITED STATES

What is at stake for the United States' goods exporters?

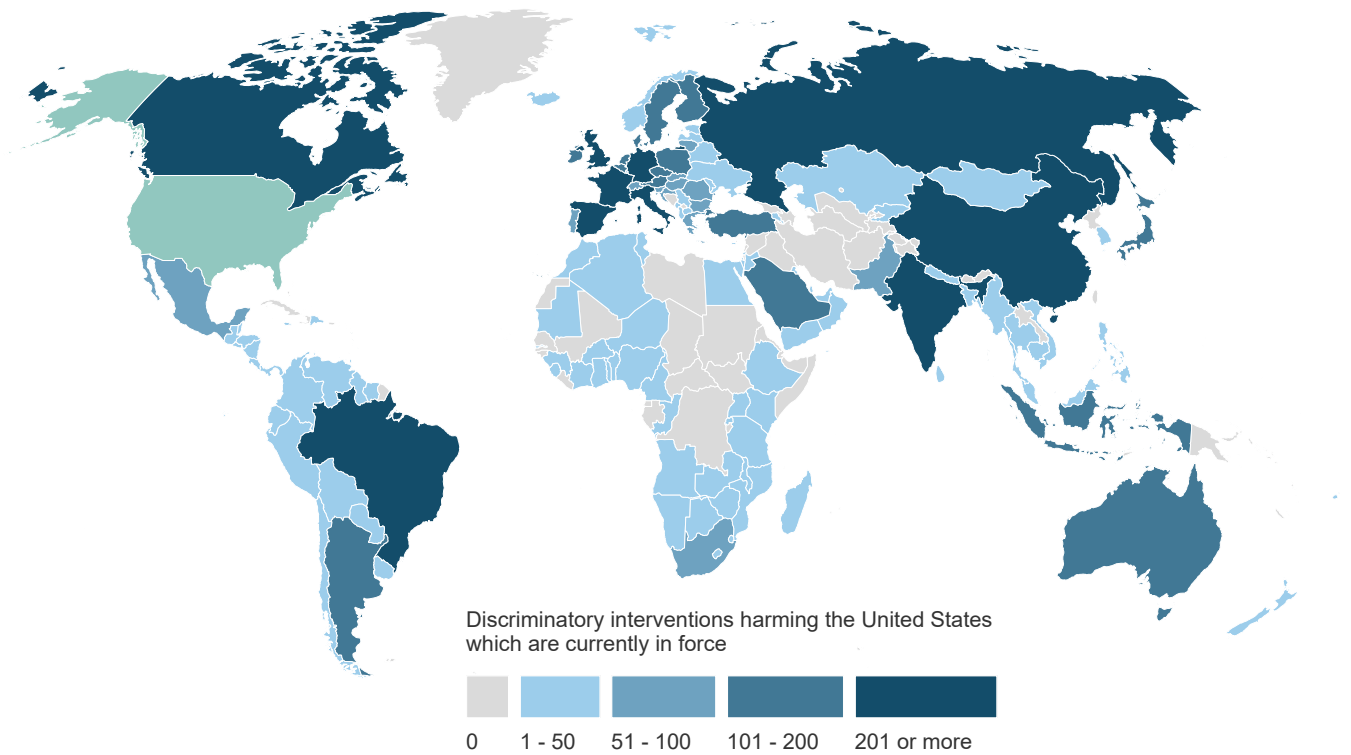
UN MAST chapter	Foreign discriminatory policy instrument	Percentage of this G20 member's exports at risk due to ...												
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	All instruments	44.05	54.60	61.24	66.86	74.11	76.69	78.08	79.20	81.12	82.94	84.71	85.10	83.07
D	Contingent trade-protective measures	0.30	0.43	0.49	0.60	0.66	0.63	0.64	0.69	0.80	1.34	1.55	1.75	1.74
E	Non-automatic licensing, quotas etc.	0.41	0.84	1.86	2.48	3.67	3.45	5.06	5.20	5.35	5.49	5.49	5.84	5.99
F	Price-control measures, including additional taxes and charges	0.08	0.10	0.14	0.20	0.33	0.66	0.89	1.03	1.11	1.52	1.59	2.10	2.11
G	Finance measures	0.34	1.03	1.10	1.10	1.10	1.10	1.11	1.11	1.11	1.11	1.11	1.11	1.11
I	Trade-related investment measures	0.36	0.77	0.46	0.49	0.50	0.57	1.26	1.61	1.17	1.09	1.09	1.10	1.17
L	Subsidies (excl. export subsidies)	7.20	10.56	10.55	12.09	29.84	31.04	34.07	34.85	36.06	36.97	38.96	39.72	31.96
M	Government procurement restrictions	0.08	0.35	0.35	0.57	0.85	1.37	1.94	1.82	1.83	1.96	2.00	2.10	2.21
P	Export-related measures (incl. subsidies)	36.54	45.05	52.52	58.47	61.33	63.00	63.03	65.44	67.89	69.30	71.67	72.33	70.42
	Tariff measures	3.15	4.17	4.90	6.52	8.36	8.10	9.88	11.59	16.68	18.81	20.42	21.37	22.84
	Instrument unclear	0.10	0.24	0.32	0.42	0.57	1.53	1.88	1.94	1.95	2.40	2.75	2.75	2.81

Note: This table presents estimates of the percentage of a nation's exports that face different harmful policy interventions in their export markets. Only those harmful interventions implemented after November 2008 count towards these totals -therefore, the estimates indicate the exposure of national exports to crisis-era policy intervention that favours domestic commercial interests. The trade data used in the estimation is taken from UN Comtrade and at the six-digit level of the Harmonised System product classification. For each product exported by a nation, the foreign markets accounted for in this estimate are those where bilateral exports exceeded \$1 million for the given product. De minimis trade flows are therefore excluded. To limit endogeneity problems (that is, the harmful policy interventions affecting the total value of exports observed) pre-crisis shares of world trade are employed in these calculations. The pre-crisis shares are computed as the mean weight for the years 2005-7. The calculations also take into account when a harmful policy intervention comes into force and, where relevant, lapses. When an intervention lasts for only part of a year, the trade flow is discounted by the fraction of the year the harmful measure is not in force.

COUNTRIES HARMED BY THE US' DISCRIMINATORY INTERVENTIONS

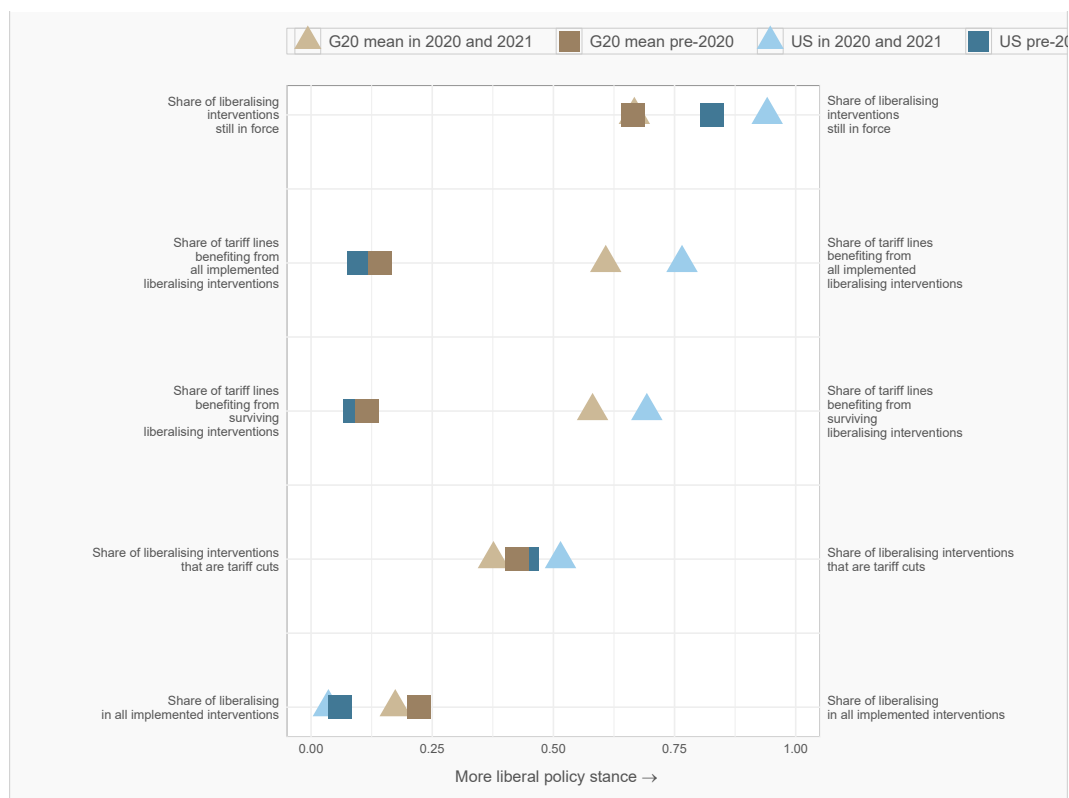


DISCRIMINATORY INTERVENTIONS HARMING THE US' INTERESTS



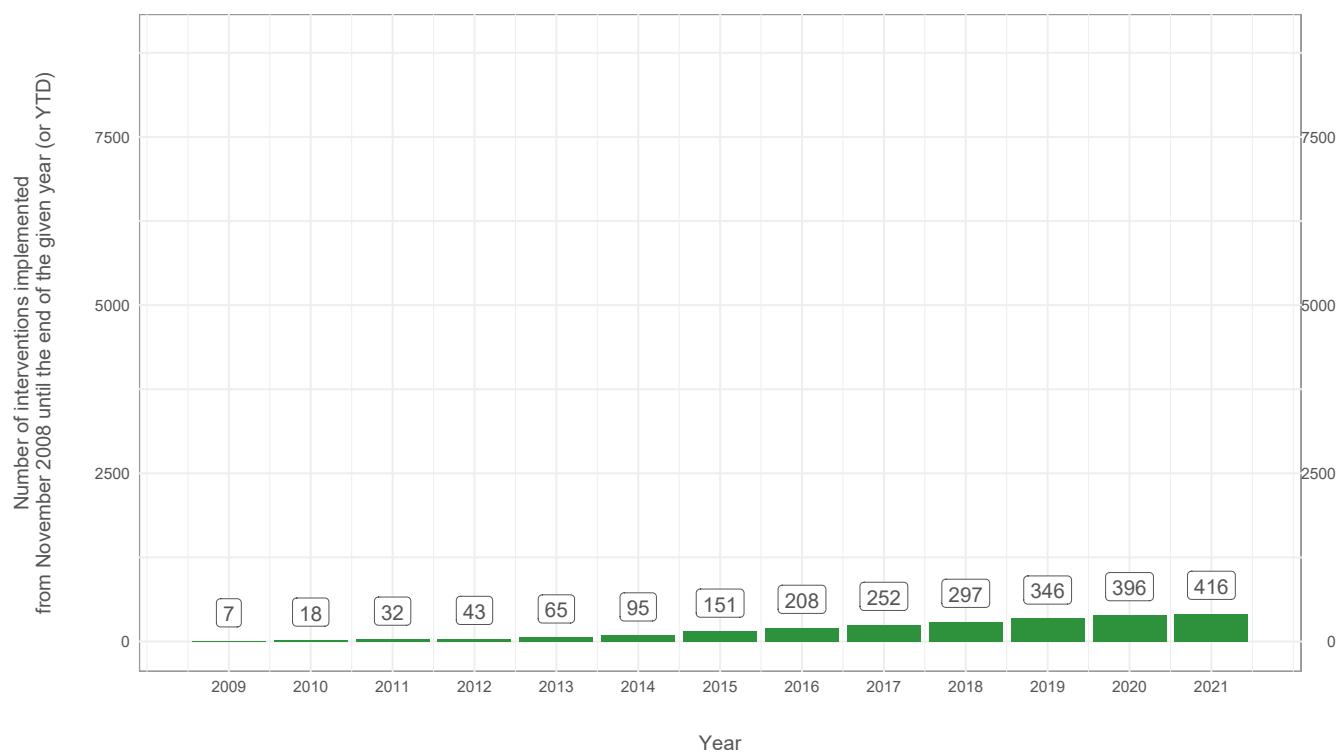
UNITED STATES

Track record of liberalisation



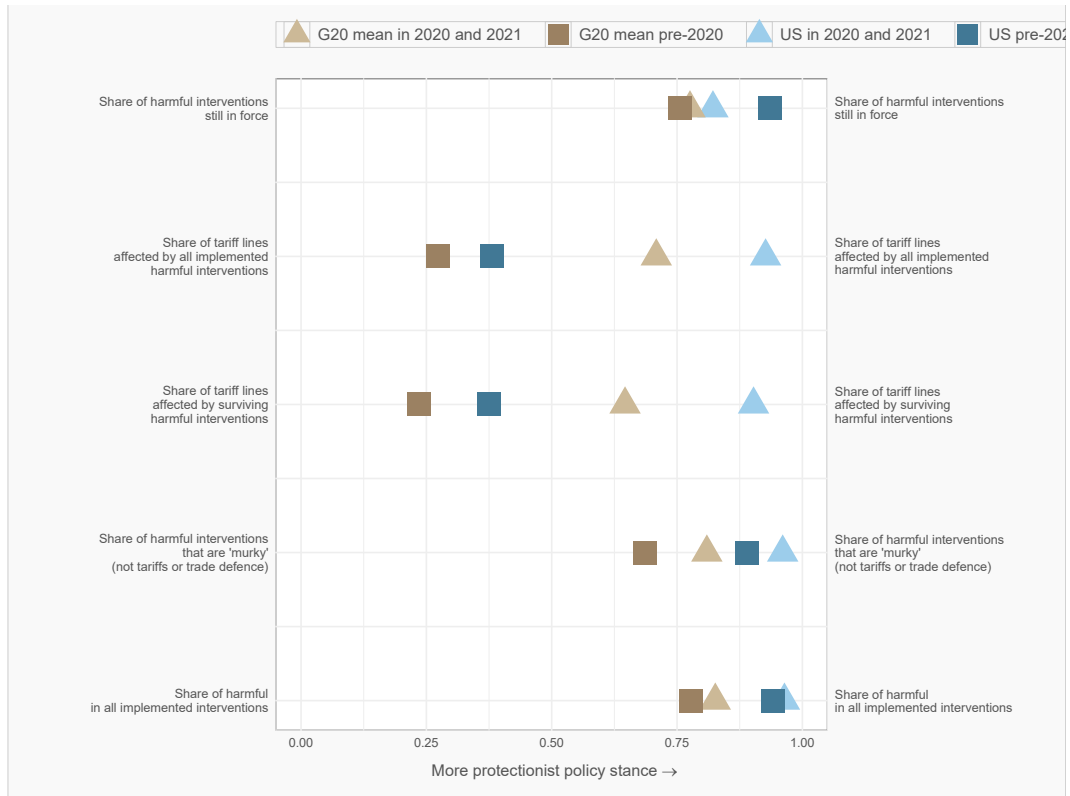
UNITED STATES

Number of liberalising interventions imposed since November 2008



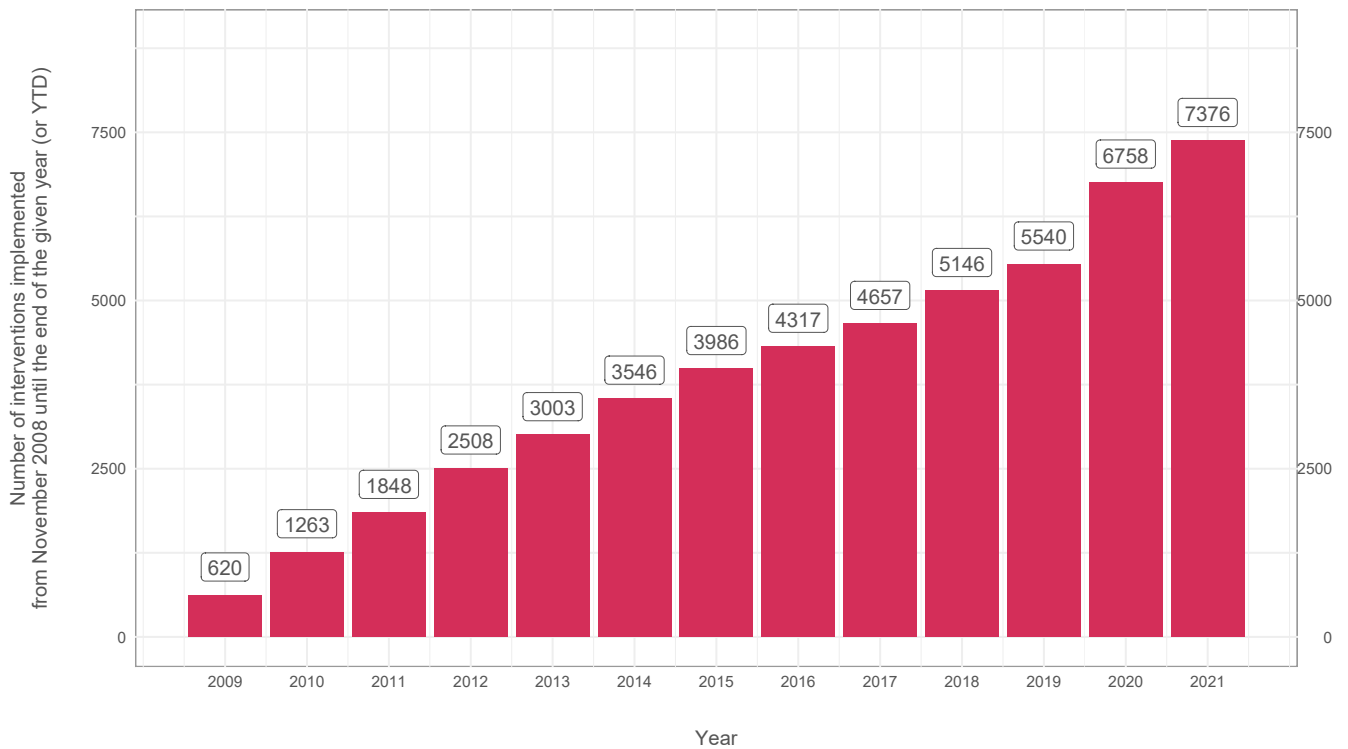
UNITED STATES

Track record of protectionism



UNITED STATES

Number of discriminatory interventions imposed since November 2008



Corporate subsidies are a major source of controversy in the world trading system. The number of subsidy-related trade disputes has increased sharply since 2010, as have investigations launched into subsidised imports. Yet, at present there is no work programme at the WTO on the trade-related aspects of subsidies in general; no serious attempts to find common ground.

Worse, governments face a conundrum. They are mindful that foreign subsidies can erode the market access won in previously negotiated multilateral and regional trade agreements. Yet, evidently, governments want to retain subsidies to tackle pressing national and global concerns, such as the COVID-19 pandemic response, decarbonisation, and the clean energy transition. What one government regards as a good subsidy and a legitimate exercise of national sovereignty can be viewed more negatively by trading partners.

Recriminations have been exacerbated by a lack of comparable and reliable information on subsidy schemes and awards. In an effort to remedy this, in preparing this report we assembled an inventory of 18,137 corporate subsidies awarded by China, the EU, and the USA since November 2008. Each of these trading power contributed at least 5,000 entries to our inventory of corporate subsidies.

We used that inventory to assess, in an even-handed manner, the scale of national and cross-border commerce affected by these trading powers' subventions, individually and together. We provide detailed breakdowns of the types of subsidy policy instruments used, when those interventions came into force, whether conditions of competition in domestic and/or foreign markets are implicated, and whether sub-national, national, or supra-national public bodies were responsible. This report, therefore, substantially adds to the factual base on corporate subsidies.

We then demonstrate that the cumulative effect of thousands of largely under-the-radar screen corporate subsidies has taken its toll on the competitive conditions faced by foreign exporters seeking to sell into the markets of China, the European Union, and the United States, and in third markets. For sure, differences exist across agriculture and manufactured goods and between these three jurisdictions but, seen in terms of market access threats or cross-border negative spillovers, the overall picture is one of deterioration over time in the conditions of competition facing foreign suppliers.

Given that trillions of US dollars of trade are involved, and the growing discord between governments over subsidy matters, we conclude that the time is ripe for deliberation about the nexus between subsidies, market access, and the potential for enhanced international cooperation. We describe six specific goals of this needed policy dialogue on the trade-related aspects of corporate subsidies.

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