Subsidies, Trade, and International Cooperation

Prepared by staff of IMF, OECD, World Bank, and WTO

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Glossary

AoA	Agreement on Agriculture (WTO)
AB	Appellate Body (WTO)
AD	Anti-dumping
ADB	Asian Development Bank
AMS	Aggregate Measure of Support (WTO)
APEC	Asia Pacific Economic Cooperation Forum
BCA	Border carbon adjustment
BEPS	Base-erosion profit shifting
CAI	Comprehensive Agreement on Investment (China-EU)
CIT	Corporate income tax
CPC	Central Product Classification
CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
CVD	Countervailing Duty
EU	European Union
FAO	Food and Agriculture Organization
FBT	Final Bound Total
FDI	Foreign Direct Investment
FSE	Fisheries Support Estimate
FTA	Free Trade Agreement
G-20	Group of 20
GATS	General Agreement on Trade in Services (WTO)
GATT	General Agreement on Tariffs and Trade (WTO)
GDP	Gross Domestic Product
GFR	Gross Farm Receipts
GTA	Global Trade Alert
IDB	Inter-American Development Bank
IEA	International Energy Agency
IFPRI	International Food Policy Research Institute
IMF	International Monetary Fund
IT	Information Technology
LIC	Low-income country
MAST	Multi-Agency Support Team
MC-12	WTO 12th Ministerial Conference
MFN	Most Favored Nation
MNE	Multi-National Enterprise
MPS	Market price support
NTM	Non-Tariff Measure
OECD	Organization for Economic Cooperation and Development
PTA	Preferential Trade Agreement
R&D	Research and Development
SCM	Agreement on Subsidies and Countervailing Measures (WTO)
SDGs	Sustainable Development Goals (UN)
SOE	State-Owned Enterprise
UNCTAD	United Nations Conference on Trade and Development
WBG	World Bank Group
WEF	World Economic Forum
WTO	World Trade Organization

Executive Summary

Dealing constructively with subsidies in global commerce is central to G20 leaders' goal of reforming and strengthening the multilateral trading system. The growing use of distortive subsidies alters trade and investment flows, detracts from the value of tariff bindings and other market access commitments, and undercuts public support for open trade. Sharp differences over subsidies are contributing to global trade tensions that are harming growth and living standards.

There are good reasons why this issue, which has challenged policymakers for decades, should be addressed now. Among them: distinguishing 'good' and 'bad' subsidies is analytically and politically fraught, while the unilateral responses available to trading partners (such as "trade defense" measures) are a limited deterrent. The renewed drive toward industrial policies to promote "strategic" sectors may distort international competition, especially against smaller, fiscally constrained developing countries. With the frequency and complexity of distortive subsidies increasing, even as the need grows for active policies to address climate, health, food, and other emergencies, subsidies and the subsidies debate have brought significant discord to the trading system. The issue demands global attention and cooperation.

Subsidies are common in all sectors, used by countries at all stages of development, take many forms, and affect all countries. Despite important gaps in our information about subsidies, the broad landscape is clear. Most merchandise trade occurs in products and markets in which at least one subsidized firm operates. National and sub-national entities provide subsidies through—to name a few forms—direct grants, tax incentives, and favorable terms for financing, energy, land, or other inputs. Many subsidies are explicitly aimed at the important task of correcting market failures and may do this well. Many others, however, are designed in ways that do little to advance their stated objective, or do so at high domestic cost or with harmful effects on the global commons and on other countries, notably the poorest and most vulnerable countries. International cooperation can reduce the overall use of subsidies and improve their design.

Existing international rules provide a strong basis for regulating subsidies. International subsidy disciplines were progressively strengthened, notably in 1995 with the WTO Agreement on Subsidies and Countervailing Measures and the WTO Agreement on Agriculture, although the agenda to negotiate detailed subsidy rules for services has been largely set aside. Many major countries also adhere to the disciplines of the OECD Export Credit Arrangement. Some recent free trade agreements have also gone beyond WTO rules, containing, for instance, provisions disciplining the behavior of state-owned enterprises and more extensive lists of prohibited subsidies.

Still, both longstanding and recently-exposed gaps remain in these international rules. Extensive trade-distorting domestic farm subsidies are still allowed in many cases, and WTO members have yet to agree special disciplines for harmful fisheries subsidies that contribute to overfishing. The recognition of gaps is shaped by such developments as the emergence of global value chains; digital markets and related network concentration effects; the global importance of economies in which the state plays a central role, and of international SOEs; the urgent challenge of climate change; and the recognition that well-crafted subsidies can be an important part of the public response to economic and health emergencies. These developments make the issue of subsidies in the trading system both more complex and more urgent. Investment incentives are widespread, often at sub-national levels where they can be hard to monitor. Much of this debate occurs in the context of the industrial sector. This paper does not advocate particular outcomes. However, international cooperation that delivers improved subsidy disciplines, improves business certainty, and reduces trade frictions would be superior to unilateral actions and should be expected to reduce their use.

In many of these areas, better information, more extensive objective analysis, and regular dialogue can help governments accelerate reform of their own subsidies and expedite negotiations toward improved international disciplines. Careful, high-quality economic analysis is needed to understand not only how well current subsidy programs meet domestic policy objectives, and at what cost, but also how they spill over onto international markets and how they interact with international policy goals, like climate mitigation. That effort must improve the information available on existing subsidy programs and their effects, especially on trading partners. It should feed into a structured inter-governmental dialogue, informed by analysis, and lead to a more common perspective on the appropriate roles of subsidies that, in turn, facilitates the development of updated norms and standards. Improved transparency and analysis, more robust inter-governmental consultation, and strengthened international rules can be expected to reduce the use of harmful subsidies and to improve their design—leading to better outcomes with fewer negative effects at home or abroad.

The international organizations (IOs) authoring this report can strengthen their individual and joint work to support governments in this endeavor. While the brunt of this work lies with finance ministries, trade ministries, and sectoral and specialized agencies of national governments, international organizations have key roles to play. The four authoring institutions are examining ways to help, individually and jointly, such as by collecting, organizing, and sharing data, coordinating analytical work agendas to develop methodologies to assess the cross-border effects of different forms of subsidies, and supporting inter-governmental dialogues. This will involve reaching out to and working with other international institutions as well.

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I. Introduction

Governments need to cooperate more on subsidies. This is for several reasons. Extensive subsidies influence production and trade. Important new issues have arisen, including the role of subsidies in addressing climate change, in global value chains, in the digital transformation, and in economic and health emergencies. New forms of government support have gained importance. Despite much effort, subsidy practices often remain opaque. Disagreements over subsidies are a major source of tension in some key bilateral relationships, and existing multilateral subsidy disciplines are criticized in some quarters as being of limited effectiveness; calls to reform them have been voiced. Unilateral policy responses have not deterred foreign subsidy practices and, while providing relief to some domestic industries, they may disadvantage other domestic industries that compete internationally. While these issues may seem ripe for multilateral solutions, ironically, sharp differences over subsidy practices contribute to broader trade tensions that can have significant macroeconomic costs.[1] They are also a key factor impeding discussions on these and other potential areas of trade reform.

This paper seeks to highlight the potential benefits of closer cooperation and considers some areas where this might be pursued constructively. To be clear, although there is an important role for strengthened formal rules, these are not the only focus here. The information and analysis in the early parts of the paper suggest that other forms of cooperation are also important and practical. These include actions that could be pursued through individual or joint work of staff of the institutions collaborating on this paper (hereafter, “the authoring institutions”), as well as other actions that could be pursued by the international community, whether by governments or other international organizations. This paper aims to begin a discussion within the international community on how to develop and implement such an agenda.

The scope of the paper is selective, rather than comprehensive. No general or easy definition of subsidies exists—different definitions are used in different contexts. These may range from a narrow consideration of certain budgetary outlays by a government only to broad definitions that may include all sorts of government policies that influence market conditions. For the purposes of this study, we do not adhere to any specific definition. Rather, we refer to "subsidies" loosely as a transfer from the government (including indirectly) to an entity that is "unrequited," i.e., without an equivalent contribution in return.

The specific interest here is in subsidies with possibly harmful international effects. In particular, the focus is on those with the potential to distort (i) international trade or investment, including by eroding the value of existing tariff bindings or other market access commitments, or (ii) the “global commons,” such as by promoting production that is harmful to the international environment. A subsidy may be “good” or “bad,” or some combination of both, depending on its policy objective(s), design, and impact; many subsidies motivated (or at least rationalized) by legitimate policy objectives may in fact do little to address those objectives, or do so at unnecessarily high cost or with significant negative international spillovers.

The paper builds on past work to review key issues and call for a number of actions (Box 1). It looks at existing forms of cooperation in this area, including the legal obligations governments have undertaken in the WTO and various regional agreements. It also looks at the vigorous debate among several major countries, seeking to put that debate into context, before exploring additional actions that could help to address concerns in a constructive way. To do this, however, requires a good sense of the landscape of subsidies in contemporary international trade and investment and of the economic considerations around that landscape. It is here that we turn first.

[1] IMF (2019) estimated that US-China trade tensions would reduce the level of global GDP in 2020 by 0.8 percent.

Box 1. Selected Recent International Reports Relating to Subsidies

Noting that COVID-19 caused severe stress for tourism industries in the region and around the world, the Asian Development Bank's *Asian Economic Integration Report* (ADB, 2021) examined measures to support tourism in selected ADB developing members. It draws positive lessons to help governments maintain critical levels of tourism infrastructure and to facilitate a rapid rebound in a sector that is key to many economies.

Global Trade Alert set out to inventory subsidies of the "major players"—China, the EU, and the United States (Evenett and Fritz, 2021). It finds that in 2019, more than three-fifths of global goods trade was in products and on trade routes in which one or more subsidized Chinese, EU, or U.S. firms compete. When a major player introduces a new subsidy, the others usually respond within six months with their own subsidy.

The 2021 FAO, UNDP, and UNEP report, *A Multi-Billion-Dollar Opportunity: Repurposing Agricultural Support to Transform Food Systems,* finds that some forms of support to agricultural producers are distortive and socially and environmentally harmful. It sets out a six-step guide for repurposing the provision of public goods and services for agriculture.

The World Resources Institute 2021 report, *Repurposing Agriculture Subsidies to Restore Farmland and Grow Rural Prosperity,* likewise argues that public agricultural subsidies failed to achieve their stated objectives but that smart agricultural subsidies can restore degraded land and rural economies.

IMF (2020) advises governments on raising efficiency and managing other challenges related to SOEs—frequent recipients or providers of subsidies. It calls for global principles for multinational SOEs, noting that SOEs account for 20 percent of assets of the world's largest 2,000 firms. Some IMF Article IV country reports have called for specific reforms of farm subsidies or industrial subsidies.

As part of its ongoing work on agricultural support, OECD (2021a) provides country-comparable data and information and analyzes whether current support is helping to meet the triple challenge facing food systems (food security and nutrition, environmental sustainability, and livelihoods). OECD (2019a) and OECD (2019b) examine support received by the largest firms in the aluminum and semiconductor value chains; these reports shed light in particular on support provided through the financial system; current work also explores the environmental harm that can arise from subsidies.

The case for international cooperation on subsidy disciplines was previously reviewed in WTO (2006), which also examined existing WTO subsidy disciplines. A recent World Trade Report (WTO, 2020) showed that international cooperation can shape the pursuit of digital development more effectively, while minimizing cross-border spillovers from national policies. WTO Trade Policy Reviews have triggered extensive discussions of subsidy policies in individual WTO members.

Noting the growing role of the state in the context of COVID-19 and climate change, WEF (2021) calls for international cooperation to tackle these global challenges and to address cross-border spillovers from state intervention. It outlines the current state of play and proposes ways forward across subsidies, state ownership and control, government procurement, investment screening, and trade remedies.

II. Subsidies: Design, Rationales, and Impact

Design and Rationales

Subsidies take many forms. These include direct government expenditures, tax incentives (such as tax credits or reduced tax rates), equity infusions, soft loans, government provision of goods and services and procurement on favorable terms, and price supports.[2] The actions may be taken at the supranational, national, regional, or local levels, either directly by government or by another entity under government influence (such as through a state-owned enterprise).[3] Policies such as trade restrictions, local content requirements, capital controls, or

[2] Legal definitions in different contexts are discussed in Section IV and may vary from the description here.

[3] Various types of subsidies were classified in 2017 by the Multi-Agency Support Team (MAST), established by UNCTAD. Based on work measuring government support across a range of sectors, and consistent with the MAST classification, the OECD has developed a taxonomy of government support measures, set out in Annex C.

exchange rate policy can also provide support but are not the focus of this study.[4] Equally, regulatory actions can have effects similar to those of some subsidies, but they raise additional issues and are not frequently part of the debate over subsidy practices.[5]

Subsidies have a variety of motivations. Some are intended to address market failures stemming from inter alia environmental externalities, other externalities, or (domestic or foreign) policy measures. Like many border measures, some subsidies lack a clear economic rationale; go beyond what is necessary to achieve that rationale or have outlasted it; and may be mainly a response to lobbying or political pressure.[6]

There are sound economic rationales for some subsidies. Firms tend to underinvest in research and development (R&D) because the private rate of return to R&D is less than the social return; this can justify subsidies to basic R&D (IMF, 2021). Environmentally friendly goods and services have social welfare benefits beyond their private benefits, and subsidies that raise their consumption can improve social welfare. Similarly, well-designed programs that pay farmers to set aside land may preserve natural ecosystems. Informational asymmetries can provide another argument for subsidies. If banks find it too costly to assess the creditworthiness of small borrowers (perhaps because of inadequate individual credit rating services), there may be a case to subsidize credit to small borrowers (or the provision of credit rating services). In some situations, subsidies can help exploit economies of scale, driving down unit costs. The latter is an example of how some subsidies with a domestic economic motivation may also be contentious internationally.

Finally, subsidies can be an important part of social safety nets for the poor, income redistribution policies, or broad-based (non-firm-specific) employment policies. Consumer subsidy schemes for widely consumed goods such as bread, rice, sugar, heating oil, and gasoline fall into this category. These take a wide variety of forms, including vouchers, in-kind provision, and provision by government shops. Employment subsidies may be paid to firms.[7] Given the focus of this report on international markets and global public goods, these types of subsidies are not dealt with further here.

Economic analysis can clarify the effects of a subsidy. Based on the design of a subsidy and other factors, economic analysis can shine a light on how well a subsidy achieves its stated objective and its fiscal costs. Such an analysis can also assess its effects on the functioning of markets, domestic and foreign industries, domestic and foreign workers, consumers and welfare, the environment, and international trade and investment. In many instances improved subsidy design could achieve better outcomes with fewer negative effects at home or abroad.

While governments should cooperate to discourage subsidies and subsidy designs that significantly distort trade or investment, they seek to maintain enough flexibility to address market failures and legitimate public policy objectives. Existing multilateral subsidy rules are structured in part with this in mind (Section IV). These market failures can take several forms. Well-designed subsidies might be appropriate to address certain environmental concerns;[8] indeed, certain subsidies could be a critical component of a domestic

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[4] For example, export restrictions can reduce input prices for domestic producers, while import restrictions can benefit domestic producers by raising the internal market price. OECD (2021a) estimates this “market price support” in agriculture at $272 billion a year over 2018-20.

[5] While the issue of subsidies is especially important to the global trading system today, the challenges are not new. Eminent legal scholar John Jackson (1969) wrote: “From its inception GATT has been concerned with subsidies, but there has been great difficulty in obtaining a consensus for any common approach to the problem….” This reflected the difficulty in distinguishing justifiable policies from those “that constitute a dangerous and improper attempt to export one’s own problems…” and a view that subsidies are “a preferable means of protection, as compared with tariffs….” Worrisome dynamics were already recognized a half century ago: Jackson described a “tendency for one subsidy to invite counter subsidies by other nations so as to protect their own export markets.”

[6] Hufbauer and Jung (2021) examine the debate over the use of subsidies and various forms of industrial policy in the United States from 1970-2020.

[7] See also IMF, WB, and WTO (2017).

[8] Market failure arguments can work in the other direction as well: Governments might be too quick to provide, e.g., fossil fuel subsidies if they fail to take into account the resulting global environmental harm.

carbon pricing system and an alternative to trade actions like border carbon adjustments (BCAs)—particularly until better data on the carbon embodied in traded goods are available and governments develop common perspectives on how to apply those data to BCAs. A well-designed subsidy can overcome the under-provision of R&D or infrastructure that sometimes occurs. In narrow circumstances, well-designed subsidies can be an optimal response to overcome a lack of competition or to complement intellectual property rights to encourage innovation. Where financial distortions contribute to underdevelopment of new industries, particularly in some low-income regions, well-crafted subsidies may be a more effective response than import restrictions or other approaches. In emergencies, markets may do a poor job of distinguishing liquidity crises from solvency issues. And governments may need to provide subsidies following natural disasters.

How do Subsidies Work?

Because markets are interconnected, a given policy objective may be achieved by paying consumers or producers and may be introduced using various instruments, giving rise to economic benefits at different points in the supply chain. Schwartz and Clemens (1999) note, by way of example, that a scheme designed to provide cheap bread to consumers could take any of the following forms (some of which might not constitute a "subsidy" under certain definitions):

- Give consumers coupons to buy bread; bakeries present the coupons to the government, which pays enough for the coupons to incentivize bread baking;
- Fix the price of bread artificially low and pay bakers to compensate their losses;
- Fix the price of bread artificially low and require commercial banks to provide loans to bakers (with the government presumably absorbing the costs of failed loans);
- Provide a cash subsidy to bakers to buy flour or to flour millers to buy wheat;
- Allow flour mills preferential access to scarce foreign exchange if they use it to buy wheat;
- Restrict exports of wheat, pushing its price down in the domestic market, which in turn could lower the price of bread.

Even assuming all of these would be equally effective ways to provide cheap bread to consumers, they have different immediate effects. Some involve a budgetary cost to the government; others do not. If something goes wrong, the distribution of risks between the government and private actors, or among different classes of private actors, varies depending on the specific measure employed. This includes the case in which the government commits to a subsidy but fails to pay it, transferring risk from the public budget to private balance sheets.

What are the Economic Consequences of Subsidies?

The classic economic case against subsidies is that, in the absence of market failures or externalities, they drive a costly wedge between prices and production costs. The subsidized sector expands by drawing scarce resources away from other sectors, which contract. If prices actually reflect both consumers' true valuation of goods and services and the true costs of providing those goods and services (including environmental and social costs), then any scheme of taxes or subsidies falling on particular goods and services leads to a so-called deadweight loss. In such a case, subsidized (taxed) goods and services are over- (under-) produced relative to the social optimum. When they benefit certain firms over others, they can cause more innovative or efficient firms to contract, or even exit, leading to lower overall productivity.

The costs of subsidy-induced distortions can be substantial, especially when the goods being subsidized are already over-produced because of negative externalities. Estimates of the effects of fossil fuel subsidies, for example, suggest opportunities for governments to better target scarce fiscal resources toward the most vulnerable households without undermining climate efforts (see also Section V).

Regardless of any domestic benefits, subsidies may distort trade and investment and disrupt other economies. In pure economic terms, these changes in trade and investment may raise or lower the welfare of other countries depending, for example, on whether the country is a net importer or net exporter of the subsidized product. The market distortions that subsidies can introduce could also imply that other unsubsidized goods are undersupplied in the global economy. Yet concerns expressed over foreign subsidies are often not focused on net welfare effects but on (i) the possible disruption to domestic production and job dislocations, and (ii) the possible loss of "strategic" industries.[9] Such effects can provoke resistance to economic openness if they are perceived to result from "unfair" policies abroad.

Global supply chains are also changing the impact of subsidies. Subsidies can accumulate along supply chains, where support for upstream inputs or processes can lower input costs for downstream producers (Lane, 2019; OECD, 2019a). Equally, support in upstream industries, such as to build manufacturing capacity, can increase demand for manufacturing equipment (OECD, 2019b). This not only complicates the attribution of benefit to a firm or sector, but it also underscores that subsidies matter not just for a particular sector but for the global trading system. Further, the increased role of multinational enterprises in global value chains raises the possibility that certain government subsidies may be provided transnationally.

Subsidies can interact with each other and with other measures. For example, when a firm receives significant support in the form of tax incentives, its financial position can appear stronger than its performance would warrant. This in turn can make a low-interest loan from a state-owned bank appear to be consistent with the market, even if the low interest rate would not apply based on the performance of the firm absent other support. Subsidies can also combine with other interventions, e.g., export restrictions, to lower input costs for domestic producers in downstream sectors (OECD, 2019a).

Furthermore, subsidies in one country can trigger subsidies in others. For example, in using tax incentives to attract foreign direct investment (FDI), countries may engage in a race to the bottom that hurts all of the subsidizing countries while blunting the intended effect of the subsidy for each one. This points to the importance of cooperation in the tax sphere (Box 2). Subsidies can also lead to competition between sub-central jurisdictions within a country, causing over- and under-investment and raising questions on opportunity costs for public resources.

Support that is necessary (for example, either because of market failures or as a response to a severe crisis) needs to be well targeted, time-limited (preferably with an announced phase-out plan), proportional, transparent, and non-discriminatory. This can help prevent damaging effects on trading partners while preserving the ability of competitive forces to spur innovation and productivity improvements.

[9] In the absence of strong domestic policies, trade and technological changes have sometimes had harsh effects on some groups of workers and on some communities. IMF, WB, and WTO (2017) explore policy actions governments can use to help share the gains from trade and technology more widely.

Box 2. International Tax Reform and Tax Incentives

Recent developments should help address the international tax competition that has contributed to a proliferation of tax incentives. The two-pillar solution agreed by more than 130 jurisdictions within the OECD/G20 Inclusive Framework on BEPS (Inclusive Framework) sets limits on tax competition. In particular, Pillar Two seeks to put a floor under competition on corporate income tax (CIT) by introducing a global minimum effective corporate tax rate. Both pillars should also reduce the impact of certain CIT incentives for multi-national enterprises (MNEs). The structural changes embedded in the two-pillar solution could therefore have substantial effects on investment and economic output, both through its direct effects on the effective tax rates of MNEs, and indirectly through its impacts on the relocation of MNE investment and on profit-shifting incentives.

The effective design of tax incentives will remain important and non-tax instruments may become more relevant. Governments are still able to draw upon a wide range of tax instruments (such as non-CIT tax incentives) and non-tax instruments (such as other types of subsidies), which may take on even more importance in countries with enough fiscal space. The use of such instruments would, however, remain subject to subsidy-related rules in the WTO and other international contexts (e.g., EU State Aid rules and FTAs).

Earlier work identifies lessons to improve the effectiveness and efficiency of tax incentives often used by low-income countries (LICs) to encourage investment. The 2015 Report by the IMF, OECD, UN, and WBG and the subsequent Platform for Collaboration on Tax (PCT) initiative suggest good practices for the design of incentives to encourage investment when there is a legitimate case to use them; they also set out the importance of transparency and good governance in their implementation, and they provide tools to support a rigorous cost-benefit analysis of tax incentives (IMF, OECD, UN, and WBG, 2015).[1] These lessons are relevant for developed countries as well.

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[1] PCT toolkits and reports can be accessed online.

New Issues

Global economic challenges are prompting new debates about the role of subsidies. Key challenges include:

- Climate change. A net-zero economy needs large investments, and there is debate about whether the urgency and severity of climate change imply a greater role for subsidies. Some argue for greater tolerance for short-term market distortions, while others see these distortions as undermining longer-term solutions. Still others argue that it is possible to design subsidies that encourage innovation and economies of scale by including performance metrics or sunset clauses that promote market competition in the future. In addition to whether, and what, new subsidies may be needed, there is a growing recognition that many existing subsidies have environmentally harmful consequences and should be removed or reformed.

- Digitalization. Debates about the structure of digital markets—including economies of scale, industry concentration, and network effects—raise issues about the role of subsidies in promoting competition. Because of the general purpose nature of digital technologies, subsidies to digital innovation tend to generate big cross-sectoral spillovers at home and abroad. At the same time, targeting R&D subsidies to specific market failures can be especially challenging in fast-paced technology markets with high private returns to R&D. Perceived links to national security raise issues of strategic competition or support for national supply.

- Emergency support. Subsidies needed in a severe crisis should be carefully designed to avoid supporting insolvent firms or harming competitors. How emergency support is designed affects how easily it can be unwound, as circumstances permit, to prevent long-term distortions.

- Resilient global supply chains. COVID-19 drew attention to the need to ensure the supply of essential goods but also to wider issues of concentration in supply chains. Governments are increasingly active in seeking, and in some cases subsidizing, alternative sources of supply and production for key inputs.

- Changing role of the state. All of the above challenges add to existing debates about the co-existence of different economic models in a single rules-based international system. This is especially important as SOEs become more internationally active and in the wider context of trade and investment among countries with different economic systems.

Together, these trends suggest that new efforts to understand the positive, negative, and ambiguous aspects of subsidies would make an important contribution to domestic and international policy debates about subsidies. New demands for public investment and greater roles for the state demand a better understanding of how public resources can be directed in ways that contribute to global public goods from which all can benefit while minimizing the distortions to global markets and harm to others. An important first step is to understand the current extent and nature of subsidies in the global economy. That is the subject of the next section.

III. Global Landscape of Subsidy Measures

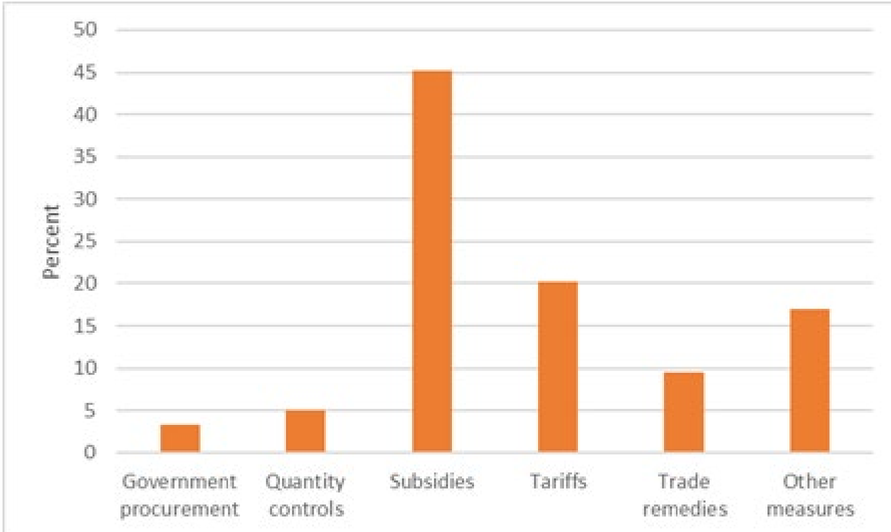
Our understanding of subsidies remains uneven and incomplete. There are important gaps in our knowledge of subsidy practices; while information for some sectors is relatively developed, in others it remains at an earlier stage. At the global level, we have a better picture of the number of subsidy measures than of their relative size or importance, but numerical counts can be misleading—for example, when one country reports many small subsidy measures, while another reports only one (very large) aggregate program. The picture is also affected by the uneven transparency of subsidy measures across sectors and countries. Drawing on the available information, this section sets out what we know—and don't know—about the use of subsidies.

How Much Do We Know About the Use of Subsidies?

Despite this lack of information, we can discern several important patterns in the global landscape of subsidies. Subsidies were the most frequent form of intervention after the financial crisis of 2008, surpassing measures such as tariffs and other non-tariff measures. The Global Trade Alert, which compiles information on trade-related measures, reports that during 2009–21 nearly half of recorded interventions were subsidies (Figure 1).[10] (Note that this refers to a simple count of measures, not to the value of production or trade affected.) The GTA also finds that most recorded subsidy programs are implemented by the largest trading economies that have the potential to influence global markets. Collectively, the top trading regions of China, the EU, and the United States account for over half of the number of global subsidy measures.

[10] Data from the Global Trade Alert Database, accessed July 2021 (https://www.globaltradealert.org/data_extraction).

Figure 1. Interventions by Type of Measure, 2009–21



Source: Calculations from the GTA.

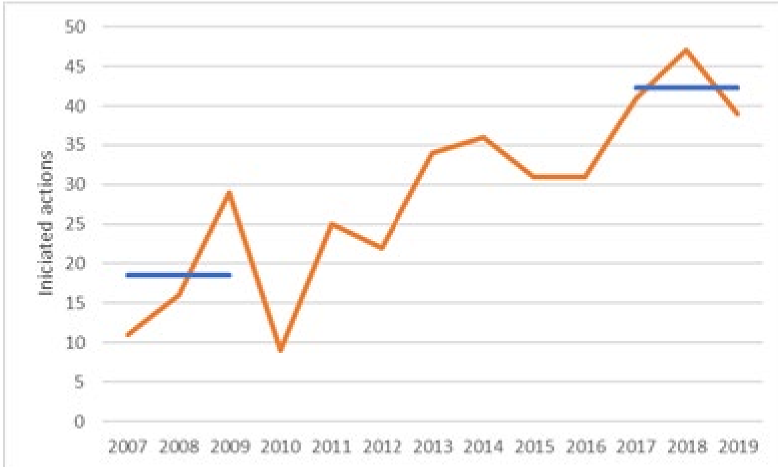
The number of countervailing duty (CVD) investigations into alleged foreign subsidies has increased sharply (Figure 2). This could reflect an increased number of trade-distorting subsidies by foreign partners and efforts by import-competing domestic industries and their national authorities to offset the impact of those subsidies on the domestic industry.[11] Alternatively, it could reflect more aggressive pursuit of import relief by import-competing industries or other factors.[12] According to the World Bank's Temporary Trade Barriers Database, since 2009 exports from China have been the main subject of CVD investigations. Iron and steel products account for more than seven of every 10 products affected by countervailing measures. From 1995-2020, the United States (46 percent), the EU (14 percent) and Canada (12 percent) initiated the largest numbers of CVD investigations; they account for about 85 percent of applied countervailing duties in recent years. Since 2017, however, China and, especially, Brazil, India, and Turkey, have become more active in initiating antidumping (AD) and CVD actions. [13]

[11] CVDs can be pursued unilaterally by WTO members against "actionable" foreign subsidies that materially affect a domestic industry through imports (Section IV). While CVDs can be effective in reducing the impact of foreign subsidies on the domestic industry, like other forms of import duties they can raise input costs for downstream domestic industries, possibly affecting their international competitiveness.

[12] For example, during this period some members began to pursue CVD investigations on imports from partners that they consider "non-market economies," while those members had previously pursued only antidumping or safeguard investigations on imports from such partners.

[13] Note that while such "trade defense" measures provide relief to a domestic industry from the impact of foreign subsidies on the domestic market, they do not provide relief from the impact of the subsidies in other markets to which domestic firms might export. "Remedies" for those effects can only be pursued through dispute settlement (such as at the WTO); this has been relatively infrequent.

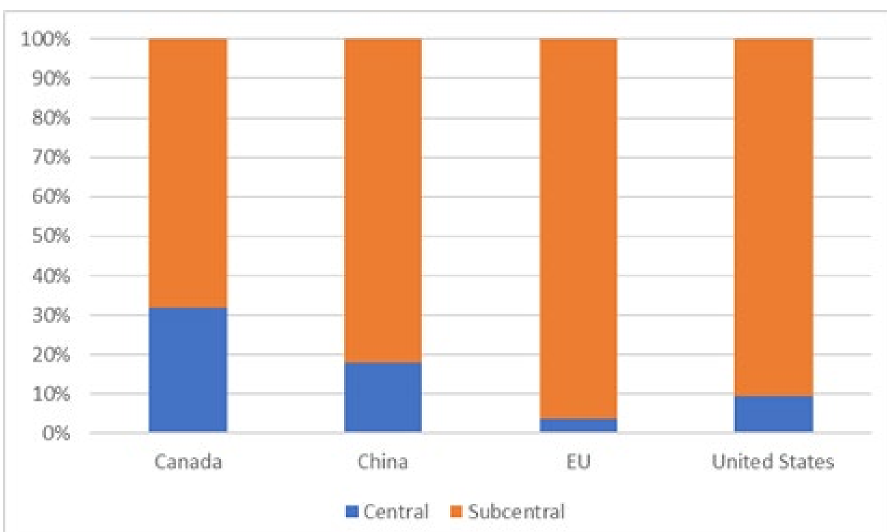
Figure 2. Initiated Countervailing Investigations Per Year, 2007–19



Source: WB Temporary Trade Barriers Database and WTO.

Most subsidies appear to be provided by sub-central government entities, although separate data on the value of production affected are not available. Official notifications to the WTO show extensive subcentral subsidy programs. Of those reporting subcentral subsidies, information for 2018 shows that Australia, Canada, China, the EU, India, and the United States reported the largest shares of subsidy programs at the subcentral level (EU data refer to programs at the EU level as well as to incentives by a range of individual member states, some of which are provided at subnational level).[14] A large number of the reported subsidies by these economies were provided at the sub-central level, for example, by U.S. states or Chinese provinces (Figure 3). This highlights the need for better information on government interventions, especially subsidies, at the central level but also at subcentral levels.

Figure 3. Share of Central and Subcentral Programs, by Top Reporters 2018



Source: Member notifications to the WTO.

[14] In this section the EU and its member States are counted as a single entity and thus “subcentral” in this context refers to measures enacted at the national or sub-national level in EU member States.

Most of the recorded subsidy programs are in the largest trading economies of China, the EU, and the United States. According to the GTA, the top 10 countries also account for over half of all global subsidy measures.[15] Among the top five most frequent users, nearly 90 percent of the total number of subsidies consist of financial grants; subsidized trade financing; state loans, guarantees, or subsidized interest payments; and tax incentives. However, the kinds of subsidies used most frequently by other countries seem to vary considerably.

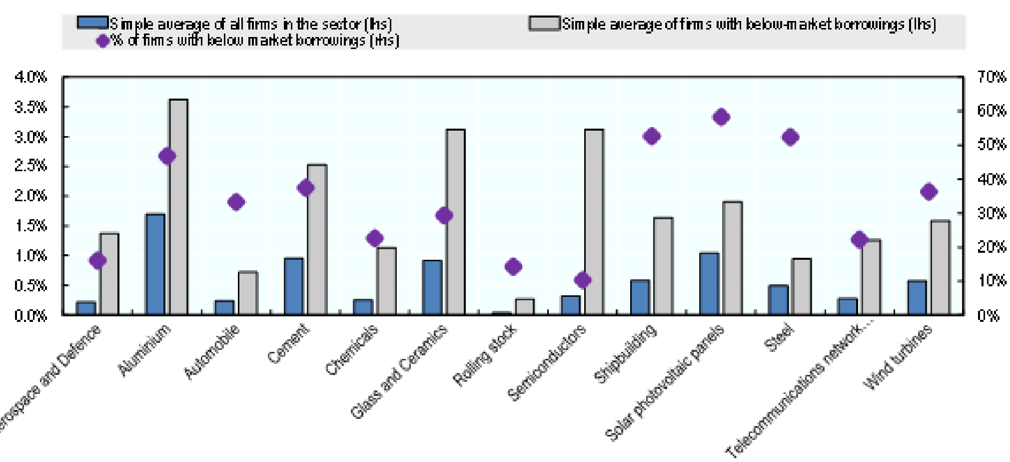
Below-market finance is an important source of subsidies in industrial sectors. This covers support through the financial system, whether in the form of debt provided on below-market terms (e.g., preferential interest rates and government loan guarantees) or in the form of below-market equity funding (e.g., government equity infusions that are provided on non-market terms, or government shareholders tolerating lower equity returns than private investors would demand). In both cases, this support serves to lower companies' cost of capital, thereby helping them invest more than they would otherwise or allowing them to tolerate heavier losses (Box 3).

Box 3. Prevalence of Below Market Financing

Below-market finance is especially common in heavy industries where the build-up of capacity appears to exceed the level that would be justified by market conditions, according to an analysis of large manufacturing firms in 13 sectors (OECD, 2021a). This analysis examined the support received by the largest firms in these sectors; the firm sample in each sector generally covers around two-thirds of global sales and the many countries in which these firms operate. Around half of firms examined by the OECD in aluminum, solar photovoltaic panels, shipbuilding, and steel seem to have benefitted from below-market borrowings over the period 2005–19 (Box Figure). In relative terms, below-market borrowings average about 3 to 4 percent of recipient firms' revenue in sectors such as aluminum, cement, glass and ceramics, and semiconductors. In contrast, below-market equity returns were more prevalent in high-tech sectors that rely on intangible assets and equity financing. This is particularly the case for semiconductors, where the creation of government investment funds has increased government ownership of semiconductor assets (OECD, 2019b), but also in aerospace and defense. Below-market finance is also most directly associated with investment in manufacturing capacity as it lowers companies' funding costs.

Box Figure: Heavy industries tend to benefit more from below-market borrowings

(Average below-market borrowings, % of revenue)



Source: OECD (2021b).

Note: Blue bars count below-market borrowings as zero for companies that exceeded the benchmark (i.e., companies that paid more interest than the benchmark). These firms are dropped altogether when calculating the grey bars. The calculations are based on firm-level data, with coverage ranging from 25 to 75 percent of global sales, output, or capacity, depending on the sector.

[15] While GTA has a global scope, the project gives particular attention to G20 countries.

Within the industrial sector, subsidies appear across a range of industries. Electrical energy and motor vehicles are the two industries most commonly observed in the Global Trade Alert data for 2009–2021, but no particular product dominates, and few product categories account for more than 1 percent of recorded subsidies. At the aggregate Central Product Classification (CPC) two-digit level, the highest frequency of subsidies is in the transport equipment sector; this includes motor vehicles, aircraft, ships, and railway locomotives and rolling stock. Another sector with relatively high frequency of subsidies is special-purpose machinery, which includes mining machinery, agricultural machinery, and machine tools. Cheap energy inputs are significant in energy intensive sectors such as aluminum (OECD, 2019a), while many industrial producers receive considerable amounts in government grants (OECD, 2021a).

Government support to agriculture is significant and well-documented.[16] Over 2018–20, public budgets provided $447 billion a year in support to agriculture;[17] some three-fifths of this ($268 billion) went directly to producers and the rest to general services or consumers (OECD, 2021b). About a quarter of the direct budgetary support to producers consisted of payments based on outputs or the unconstrained use of variable inputs—among the most distorting forms of support. Some 0.3 percent of total budgetary support was linked clearly to environmental public goods. Some $102 billion a year went to general services to the sector, such as infrastructure, biosecurity and R&D and innovation; of this, only $26 billion was spent on R&D and innovation (OECD, 2021b).

Budgetary support to agriculture in absolute terms is concentrated among a few economies, but the picture is different as a percentage of gross farm receipts, and the extent of distortionary support varies. In absolute terms, the EU (with the UK), China, the US and India account for $376 billion of the total $447 billion per year. Across all countries, budgetary support corresponds to 11.4 percent of average gross farm receipts (GFR) over 2018-20, ranging from 30 to 40 percent in Iceland, Norway, and Switzerland to less than 3 percent in Argentina, Colombia, Costa Rica, New Zealand, South Africa, and Ukraine. Several large economies, including the EU, India, and the United States, provide significant support, corresponding to between 18 percent and 24 percent of GFR. Potentially most distorting support represents 30 to 50 percent of support in six economies; less distorting support accounts for more than half of budgetary support in nine economies; and nine economies devote more than 50 percent of budgetary support to innovation, biosecurity, and infrastructure (OECD, 2021c) (Annex D).

Data gaps and weaknesses

A major message of this paper is that information on subsidies overall remains weak. With the exception of agriculture, most data available for a broad scope of countries and sectors refer to counts and have important shortcomings. First, the data greatly rely on information available directly from the authorities or indirectly from other sources, but the degree of transparency and consistency can inhibit direct comparisons. Furthermore, for some sources of information, such as the Global Trade Alert database, collection refers to a period of time (post 2009) and may not reflect some legacy programs related to subsidies implemented earlier. More importantly, as noted above, descriptions based on counts do not capture the magnitude or economic importance of the subsidy programs, and a higher count does not necessarily imply relatively more distortive policies or higher levels of subsidies. In addition, the counts themselves may be affected by the fact that some forms of subsidies (e.g., subsidized input pricing, subsidies provided through SOEs or other intermediaries) may be inherently very difficult to identify, and thus to count, and by the relative transparency of economies.

[16] The OECD measures support to agriculture for 54 economies through its Producer Support Estimate (PSE), covering around three quarters of the global agricultural value added, and support to fisheries through its Fisheries Support Estimate (FSE) databases. The International Organizations Consortium for Measuring the Policy Environment for Agriculture—a joint effort across IDB, IFPRI, FAO, OECD and the WBG—provides consistent information for 88 countries globally, representing over 90 percent of the global value of agricultural production.

[17] Total support to the sector was $720 billion a year, but this also includes $272 billion in market price support (MPS), which is a measure of the actual transfers to agricultural producers through price policies. The OECD methodology to calculate support to agriculture differs from that used in the WTO.

Progress is being made to develop comprehensive data on fisheries subsidies, but information remains scarce on some types of support and for some countries. Globally, fisheries subsidies are estimated to be around $35 billion annually (Sumaila and others, 2019). This estimate includes both non sector-specific subsidies and support to ocean conservation more generally, such as support for Marine Protected Areas. More detailed and focused information is available for the 39 economies reporting to the OECD FSE database (oe.cd/fse). During 2016–18, these countries together spent $9.4 billion a year on support to fisheries. Of this, $4.8 billion was direct support to fishers and companies in the fishing sector and $4.6 billion was support that benefits the sector more generally, such as support for infrastructure or fisheries management. Some $3.2 billion was spent annually on polices that reduce the cost of inputs. Support to fuel accounted for 25 percent of total support to the sector. Measures that help fishers operate their businesses more sustainably, effectively and profitably, or that provide direct income support that does not incentivize unsustainable fishing, currently account for less than a third of spending to reduce the cost of inputs ($1 billion) (OECD, 2020).

Unlike in agriculture, evidence on the scope and scale of government support in industrial sectors remains relatively scarce. One reason for this lack of transparency is the insufficient information disclosed by governments, both in the context of national budgetary processes and in WTO notifications. The share of WTO members that provide subsidy notifications to the SCM Committee decreased from 75 to 35 percent between 1995 and 2021.[18] In addition, there is an ongoing debate regarding the completeness and accuracy of members' notifications due to un-notified subsidies. The complexity of industrial support further obscures the true amount of support being provided. From this lack of information follows a lack of analysis—more work is needed to fully understand whether subsidies in these areas help attain their objectives, cost, and spillovers on international markets and the global commons.

Insights into the magnitude of industrial subsidies can nevertheless be gained from studies of selected sectors. Over 2014–18, 306 large firms in 13 industrial sectors received (conservatively) government grants and tax concessions worth $48 billion and $108 billion, respectively. Additionally, the same firms also borrowed more than $66 billion on below-market terms (OECD, 2021a). A representative sample of large semiconductor firms received $7 billion in budgetary support (e.g., grants and tax concessions) and more than $800 million in below-market borrowings per year (OECD, 2019b). Aluminum firms benefitted from budgetary support and subsidized intermediate inputs, including energy, worth $2.5 billion, and from below-market borrowings of at least $8 billion per year (OECD, 2019a).

Many subsidy programs are related to services, although comprehensive data on their nature and extent are lacking. Service sectors including financial, transport, construction, professional, and telecom services accounted for about 15 percent of instances of subsidies in the period 2009–2021, according to the GTA database. This is roughly similar in numbers to recorded subsidy measures for agricultural and minerals combined in the same database.[19] WTO Trade Policy Reviews and entries in GATS schedules suggest that services subsidies are concentrated in tourism, transport, financial services, audiovisual services, and telecoms and other ICT services (WTO, 2015; Poretti, 2009).

For services trade, foreign sales through the establishment of a commercial presence abroad (or mode 3) are of major importance and likely affected by investment incentives. Investment incentive programs are often designed in a horizontal (cross-sectoral) manner to raise the overall attractiveness of an economy. But governments also implement targeted incentives that are more limited in scope. These include sector-specific incentives directed toward firms operating in service industries, with information technology (IT), business services, and tourism ranking among the most frequent beneficiaries (UNCTAD, 2014).

[18] As of 13 December 2021, 106 WTO members have not yet made their 2021 new and full subsidy notifications for which the deadline was 30 June 2021 (see also Box 5 regarding notifications of agricultural support to the WTO).

[19] These counts do not measure the depth of the intervention nor their economic effects. According to the recent GTA report focusing on subsidies in China, the EU, and the United States, about 26 percent of collected measures refer to subsidies to services, while 14 percent refer to agriculture (Evenett and Fritz, 2021, table 1).

Subsidies provided by or to SOEs appear to be important, although Information on them can be difficult to compile. While many SOEs operate commercially without public support, industrial firms in which governments are large equity investors benefit relatively more from all kinds of support (OECD, 2021a).[20] Industrial firms that are at least 25 percent owned by governments receive relatively more government grants and below-market loans (OECD, 2021a). SOEs can also be providers of support, as where state banks provide below-market lending or state utilities provide below-cost gas and electricity (OECD, 2019a). The role of government ownership in support is also complicated by a lack of transparency: Government equity infusions can also involve a corporate entity acting as an intermediary, giving a government subsidy the appearance of a commercial transaction between two independent parties (OECD, 2019b).

Fossil fuel subsidies are significant. The OECD and IEA estimate that government support for the production and consumption of fossil fuels across major economies totaled $351 billion in 2020, down 29 percent from 2019, as a drop in global activity and record-low oil prices meant governments spent less subsidizing energy costs for end-users. The transport sector alone saw a 15 percent drop in support due to the slump in fuel use during the pandemic. Petroleum saw the steepest drop, with support down 19 percent in 2020. On the production side, the data show a 5 percent rise in direct support for the production of fossil fuels across 50 advanced and emerging economies, some of this resulting from large government bailouts of state oil and electricity companies. Without policy changes, the value of consumption subsidies can be expected to rise with energy prices and the level of economic activity.

A better understanding of the complexity of subsidy measures and their size could facilitate and expedite discussions to strengthen rules. Improving international disciplines can limit the negative spillovers from subsidies without unduly restraining their use for legitimate policy objectives. Such a discussion can start from the solid basis laid by existing multilateral rules, notably those at the WTO, which have found wide agreement and have proven effective in dealing with a range of subsidy practices over the years. In the next two sections, we provide an overview of existing multilateral rules before reviewing current initiatives to develop further disciplines and seek other forms of collaboration, including on enhancing transparency, analysis, and dialogue.

IV. Existing Multilateral Rules

This section focuses on WTO rules applicable to subsidies that affect trade in goods and services. As we will see below, the rules for trade in goods are set out mainly in the WTO Agreement on Subsidies and Countervailing Measures (SCM Agreement) and the WTO Agreement on Agriculture (AoA).[21] Subsidies affecting trade in services are subject to the WTO Agreement on Trade in Services (GATS), where disciplines are less well developed. The section also discusses disciplines on the provision of export credits under the OECD Export Credit Arrangement and refers to a number of free trade agreements (FTAs) and bilateral investment treaties (BITs) that go beyond WTO rules and contain provisions disciplining the behavior of SOEs and subsidies (Box 4).

A. Subsidy Disciplines under the SCM Agreement

The SCM Agreement provides a substantive basis for regulating subsidies. It addresses many issues that had arisen over the decades preceding its entry into force in 1995 by developing definitions; introducing new concepts and enhanced transparency provisions (Box 5); elaborating subsidies disciplines; and establishing methodologies and substantive and procedural rules for both unilateral “remedies” (i.e., countervailing measures) and multilateral “remedies” (i.e., use of WTO dispute settlement). The rules of the SCM Agreement

[20] As documented in recent WB Public Expenditure Reviews, quasi-fiscal activities pursued in support of SOEs in energy, transport, and water sectors can be significant, and untargeted subsidies implemented under these broad-based schemes are typically regressive and significantly distortive.

[21] Efforts to amend the SCM Agreement and the AoA (under the WTO Doha Development Round) led to the 2015 Nairobi Ministerial Decision on Export Competition (see below) but no other changes. Negotiations related to the AoA are ongoing.

apply to all WTO members, with some special provisions for developing and, in particular, least-developed members (Annex A).

Box 4. Subsidy-Related Provisions in Bilateral and Regional Trade Agreements

A number of bilateral and regional trade agreements go beyond the WTO rules and contain provisions disciplining SOEs and subsidies to insolvent firms.[1] Some of these agreements contain detailed definitions of SOEs,[2] while some others even extend the prohibited subsidies category. For instance, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) requires that SOEs act in accordance with commercial considerations and that governments refrain from providing non-commercial assistance to them, such as debt forgiveness or loan guarantees. Similarly, the Agreement between the United States, Mexico, and Canada (USMCA) adopts SOE-subsidy disciplines that go significantly beyond the SCM Agreement, prohibiting financing to insolvent or uncreditworthy SOEs. Many of those preferential trade agreements also contain additional transparency requirements with respect to SOEs and monopolies.

In addition, some agreements regulate the activities of SOEs. While the WTO disciplines only cover trade in goods, the CPTPP and some other agreements extend the subsidy-related rules to services as well and apply to investment as well as trade. For example, the provisions could apply to assistance provided by a government to (i) an SOE operating in its domestic market, if that assistance harms a foreign firm operating in the market; and (ii) an SOE operating in a foreign market, if that assistance harms a foreign firm operating in that market. Under EU state aid rules, use of state resources by providing, for example, grants; interest and tax relief; goods and services on preferential terms; or holding all or part of a company is deemed to be illegal if such interventions lead to a selective advantage for a firm or an activity in a way to distort or threaten to distort competition affecting trade between EU member states (Jozepa 2021). The EU state-aid rules have a unique approach as the operation of SOEs in the EU is regulated under an integrated state-aid and competition-law regime that is applicable to all firms (Hoekman and Nelson 2020).

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[1] According to Rubin and Wang (2020), 77 percent of the 283 PTAs they examined include provisions on SOEs.

[2] For example, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) disciplines on non-commercial assistance apply with respect to SOEs that engage in commercial activity and in which the state holds a majority of the share capital, controls a majority of voting rights, or holds the power to appoint a majority of the Board of Directors. Also see the United States– Singapore Free Trade Agreement (Article 12.8); EU–Japan Economic Partnership Agreement (Article 13.1(h)); and USMCA (Article 22.1). While it does not refer to SOEs, the China–EU Comprehensive Agreement on Investment (CAI) provides the concept of "covered entities" in which one of the parties directly or indirectly owns the majority of shared capital, controls the voting rights, and holds the power to appoint a majority of members of the board of directors. The concept of covered entities also encompasses any entity—public or private—granted the right as the sole supplier or purchaser of a good or service in a relevant domestic market (Section II, Article 3bis.1). The CAI has not been ratified and is not in force.

The SCM Agreement defines a subsidy as a financial contribution by a government or public body or any form of income or price support that "confers a benefit" on the recipient. To be subject to its disciplines, a subsidy must also be “specific” to an enterprise, an industry, or a group of enterprises or industries. The subsidy definition is causing some tension among WTO members regarding, for example, what constitutes a “public body” or whether a particular financial contribution (e.g., terms of a loan or equity injection) benefitted the recipient.[22] Both issues have arisen more frequently in economies with more extensive state intervention.

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[22] The need for counterfactuals to understand whether a benefit exists poses methodological challenges (Mavroidis (2016), section 3.3.2). This is an example of where economic analysis could play a greater role (Section VII).

Box 5. Transparency and Surveillance of Subsidies

The SCM Agreement requires WTO members to notify information about subsidies they provide. Members must regularly notify all specific subsidies and all other subsidies "which operate directly or indirectly to increase exports of any product from, or to reduce imports of any product into, the territory of the member granting or maintaining the subsidies." Compliance with these obligations remains low (WTO, 2021a). Reasons include a lack of institutional capacities; members' concerns they will be targeted by their trading partners in potential disputes; and disagreement on whether a program should be considered a subsidy (Li and Tu, 2020).

In addition, the AoA requires WTO members to provide information about the domestic support and the export subsidies they provide. Members must notify the domestic support they have provided on an annual basis (LDCs must notify every other year). In addition, any new domestic support measure, or modification of an existing measure, for which exemption from reduction is claimed must be notified promptly; this notification must contain details of the new or modified measure and its conformity with the agreed criteria as set out either in Article 6 or in Annex 2. Members must also provide information on agricultural export subsidies and measures with equivalent effect, including export credits, on an annual basis. Compliance with notification requirements is low and should be improved.[1]

[1] Of the five agricultural notification requirements, domestic support notifications have the highest number of outstanding ("yet to be received") notifications, and hence lowest compliance, with 34 percent (888 notifications) for the period 1995-2019. The compliance rates in that regard vary greatly. There are 25 members with 100 percent compliance, while 28 members have a compliance rate of zero percent (WTO document G/AG/GEN/86/Rev. 43), September 2021).

The SCM Agreement has two categories of specific subsidies: prohibited and actionable. (A third category of non-actionable subsidies expired in 1999.) Prohibited subsidies are irrebuttably presumed to distort trade and can thus be subject to countermeasures ("remedies"). For actionable subsidies, adverse trade effects—serious prejudice,[23] injury to the industry of an importing member, or nullification or impairment of multilaterally negotiated benefits—must be demonstrated for remedies to apply. Before the respective provisions expired, however, certain types of specific subsidies for R&D, regional assistance, and environmental adaptations were non-actionable.

"Remedies" in respect of both prohibited and other actionable subsidies may be availed either through multilateral dispute settlement or countervailing duties (CVDs). For multilateral challenges through dispute settlement, the complaining member must demonstrate either that the measure is a prohibited subsidy, in which case the subsidy must be withdrawn,[24] or that the measure is an actionable subsidy that has caused adverse trade effects, in which case the subsidy must be withdrawn or its adverse effects removed. To apply countervailing measures, the importing member must demonstrate that the imports in question are subsidized and are causing injury to its domestic industry. Noting the procedural difficulties of investigations as well as limited and prospective effects of CVDs, some analysts argue that unilateral remedies are ineffective, especially in dismantling the production capacity that has been created through subsidization. It is also argued that imposing CVDs simply pushes the subsidized goods into other markets, distorting the prices there (Bown and Hillman, 2019). More generally, because they are intended to address the trade effects of subsidized imports, CVDs offer no remedy to a domestic industry suffering injury from lower world prices caused by subsidies, as opposed to the impact of subsidized imports.

[23] Serious prejudice may arise where a subsidy has one of the following effects: import displacement or impediment in either the subsidizing-country or third-country markets; significant price undercutting, significant price suppression, price depression or lost sales in any market; or an increase in the world market share of the subsidizing member in a particular primary product or commodity.

[24] Some analysts argue that since prohibited subsidies are subject to a clearer and faster remedy (withdrawal of the subsidy), the list of prohibited subsidies could be expanded to deal with subsidies that are deemed more trade- distortive, such as those leading to excess capacity in certain sectors (Bown and Hillman, 2019). Similarly, the Trilateral Initiative of the EU, Japan, and the United States proposes amending the SCM Agreement to treat some of the identified forms of distortive supports as prohibited subsidies and reversing the burden of proof on adverse trade effects in respect to other such supports.

The SCM Agreement provides some flexibility for developing members. In particular, (i) LDC members as defined by the United Nations; and (ii) a group of named other developing members with GNP per capita below $1,000 a year are exempted from the export subsidy prohibition until they cross the threshold criterion. Previous flexibilities on the provision of subsidies contingent on use of domestic goods or import-substitution subsidies have expired, so that all WTO members are subject to the prohibition of subsidies of this type.

B. Subsidy Disciplines under the Agreement on Agriculture

The AoA identifies and disciplines two categories of domestic support, according to their potential to distort trade.[25] These are: (i) support that must have no, or at most minimal, trade-distorting effects or effects on production ("Green Box" support), which is allowed without limit (Annex B); and (ii) other support, measured in terms of the "Aggregate Measurement of Support" (AMS). Most of the AMS is commonly labelled "Amber Box" support, so that its use is constrained and subject to reduction commitment.

All WTO members are allowed certain "de minimis" amounts of distortionary support, while some are allowed additional amounts. The de minimis amounts apply to support for each product (i.e., "product-specific") and to "non-product-specific" support to agriculture as a whole. The amount, expressed relative to domestic production, is 5 percent for developed members and (with exceptions)[26] 10 percent for developing members.[27] Currently, 32 members (counting the EU as one)[28] are allowed additional amounts of support up to their "final bound total" (FBT) AMS limits. For these members, the country specific FBT AMS limits—which were originally based on historical levels of support prior to the Uruguay Round negotiations or their accession to the WTO—are expressed in monetary values in the lists of members' commitments ("schedules") and are subject to reduction commitments listed therein. The additional amounts for these members have been criticized for allowing trade-distorting support above the de minimis.[29]

Two other categories of support are excluded from the Current Total AMS calculations. These are: (i) development programs (Article 6.2), and (ii) direct payments under production-limiting programs (i.e., Blue Box; Article 6.5). The support allowed without any limit (i.e., Green Box, Blue Box and Article 6.2 support) is exempt from reduction commitments. While Green Box support is expected to have at most minimal effect on trade or production, concerns have been raised about the increasing amounts of support provided in this category, particularly through direct payments.[30] In addition, the 2013 Ministerial Decision on Public Stockholding for Food Security Purposes shields from challenge, on an interim basis, developing members' public stockholding programs for food security involving food purchases at administered prices, subject to transparency and certain other conditions. A decision in 2015 encouraged members to make all concerted efforts to agree on a permanent solution and to continue holding negotiations in this regard in an accelerated timeframe.

The 2015 Nairobi Ministerial Decision on Export Competition further narrowed the use of agricultural export subsidies. The AoA authorizes the use of export subsidies for agricultural products, subject to product-specific limits that were reduced over time and with certain narrow exceptions. In 2015, members agreed to

[25] Agricultural subsidies fall within the scope of certain disciplines of the SCM Agreement, subject to the provisions of the AoA.

[26] These exceptions concern China and Kazakhstan (8.5 percent), and Chinese Taipei and South Africa (5 percent).

[27] As the value of agricultural production has increased considerably since the entry into force of the Agreement on Agriculture, the amount of trade-distorting support that can be provided under this provision has increased accordingly. This is why the *de minimis* provision has been one of the elements at the heart of agricultural negotiations for many years. In addition, the *de minimis* provision also allows members with bigger agriculture sectors to fit larger amounts of AMS under their de minimis limits (Brink and Orden, 2020).

[28] Argentina, Australia, Brazil, Canada, Colombia, Costa Rica, European Union, Iceland, Israel, Japan, Jordan, Korea, Republic of, Mexico, Moldova, Montenegro, Morocco, New Zealand, North Macedonia, Norway, Papua New Guinea, Russia, Saudi Arabia, South Africa, Switzerland – Liechtenstein, Chinese Taipei, Tajikistan, Thailand, Tunisia, Ukraine, the United States, Venezuela, and Vietnam.

[29] For more on this additional "flexibility," see Brink and Orden (2020).

[30] On the potential impact of different Green Box measures, see Meléndez-Ortiz, Bellman and Hepburn (2009). Calls to revise Annex 2 have also been made in light of policy changes to address challenges such as climate change and have led to suggestions that public goods (general services and environmental payments) and income support payments be treated separately (Tangermann, 2016).

phase out export subsidies for agricultural products according to different timelines and to put in place specific disciplines on export credits;[31] export credit guarantees and insurance programs; international food aid; and agricultural exporting State Trading Enterprises. Regarding export credits, the Nairobi Ministerial Decision also set a maximum repayment term of 18 months, with possible extension for exports to least developed and net food-importing developing-country members.

C. Subsidy Rules in the General Agreement on Trade in Services (GATS)

With respect to services, insofar as subsidies are "measures affecting trade in services" they are subject to the GATS. General GATS obligations such as nondiscrimination among trading partners ("MFN treatment") and certain transparency obligations apply to subsidies affecting trade in services. In sectors included in a member's GATS schedule of commitments, the obligation not to discriminate against foreign services and service providers ("national treatment") also applies to subsidy measures that affect trade in services, subject to the conditions and qualifications that the member has inscribed in its schedule.[32] However, aside from these non-discrimination obligations, the GATS does not contain disciplines on trade-distortive subsidies or disciplines that restrain the level of subsidies that members may grant (no "prohibited" or "actionable" subsidies).

Nearly 30 years after the GATS brought services into the multilateral trading system, the negotiations mandated under GATS Article XV remain unfinished. The focus of the negotiating mandate in GATS Article XV:1 (Box 6) is to develop the "necessary" multilateral disciplines to avoid the "trade-distortive effects" that certain services subsidies may have. The negotiations are also to address the appropriateness of countervailing procedures. The second paragraph of GATS Article XV stipulates that any member that considers itself to be adversely affected by a subsidy of another member may request consultations with the member in question.

Box 6. GATS Article XV on Subsidies

Members recognize that, in certain circumstances, subsidies may have distortive effects on trade in services. Members shall enter into negotiations with a view to developing the necessary multilateral disciplines to avoid such trade-distortive effects. The negotiations shall also address the appropriateness of countervailing procedures. Such negotiations shall recognize the role of subsidies in relation to the development programs of developing countries and take into account the needs of members, particularly developing country members, for flexibility in this area. For the purpose of such negotiations, members shall exchange information concerning all subsidies related to trade in services that they provide to their domestic service suppliers.

Any member which considers that it is adversely affected by a subsidy of another member may request consultations with that member on such matters. Such requests shall be accorded sympathetic consideration.

WTO members may undertake additional obligations regarding non-discriminatory subsidies through "additional commitments" under GATS Article XVIII. The Reference Paper on Basic Telecommunication Services, which several members have scheduled as an additional commitment, contains an obligation aiming

[31] As notified by WTO members, the level of applied export subsidies has regularly decreased from $3.8 billion in 2003 to less than $100 million in 2019 (based on notifications received until 30 June 2021). In February 2022, out of the 16 members (Australia, Brazil, Canada, Colombia, EU, Iceland, Indonesia, Israel, Mexico, Norway, South Africa, Switzerland, Turkey, the United States, Uruguay, and Venezuela) with export-subsidy reduction commitments in their schedules at the time of the adoption of the Decision, 15 members had circulated their revised schedules, and 13 of these revised schedules had been certified.

[32] Many WTO members have inscribed broad, horizontal, or sector-specific, subsidy related national treatment limitations in their schedules – e.g., to reserve subsidies to their domestic service suppliers only (WTO, 2004). Nevertheless, *discriminatory* subsidies would likely primarily have to be addressed through negotiations on specific commitments under future negotiating rounds under GATS Article XIX ("Negotiations of Specific Commitments").

to prevent anti-competitive cross-subsidization. GATS Article VIII on Monopolies and Exclusive Suppliers and GATS Article IX on Business Practices also hold some relevance in a subsidy context by drawing attention to the role of government ownership and regulation in generating effects similar to trade-distorting subsidies (Sauvé and Soprana, 2018a).

Services subsidies have been on the agenda of the WTO Working Party on GATS Rules since 1996, but the process has stalled. This lack of negotiating interest may have several causes. Subsidies are widely used to ensure the provision of essential services and maintain viable public service sectors, to attract FDI, or to foster R&D (Geloso-Grosso, 2008). Second, discussions on possible disciplines on trade-distortive non-discriminatory subsidies under the GATS occurred in a context where directly trade-impeding barriers remain very high, such as quantitative market access restrictions, economic needs tests, and discriminatory barriers. It is notable that disciplines on subsidies related to goods trade only began to take hold as direct barriers to goods trade came down. Finally, identifying trade-distortive subsidies based on their actual impact on services trade flows has proved challenging in the past, including due to services trade's four different modes of supply.[33]

D. OECD Export Credit Provisions

The OECD Working Party on Export Credits and Credit Guarantees (ECG) negotiates, implements, and monitors multilateral disciplines on officially supported export credits.[34] The ECG collects and maintains information on official export credits. Members report up-to-date information on their export credit programs and products; all export-credit transactions provided with a repayment term of two years or more; and the financial outcomes of their export-credit activities (annual cash flow reports). The ECG also promotes coherence between national export credit policies, broader policies on environmental and social due diligence processes, anti-bribery measures, sustainable lending practices, and other government-wide objectives.[35]

Financial disciplines under the OECD Arrangement on Officially Supported Export Credits seek to ensure that competition among exporters is based on quality and price rather than on the quality of government financing. The Arrangement is a non-legally binding agreement among its Participants that stipulates the most favorable financial terms and conditions for officially supported export credits with a repayment period of two years or more.[36] The Arrangement disciplines are based on three pillars: comprehensive rules on the financial terms and conditions for export credits that seek to be market-reflective; confidence-building measures achieved through transaction-level transparency; and the ability of its Participants to amend the rules as markets change.[37]

Support provided according to the Arrangement can benefit from a "safe haven" under WTO rules. Under the WTO ASCM, official export credit support that is provided by a Participant or non-Participant according to the terms and conditions of the Arrangement will not be considered a prohibited subsidy.

[33] For a more comprehensive discussion of the many factors contributing to the lack of progress in the negotiations, see Sauvé and Soprana, 2018b.

[34] This includes all OECD members except Chile, Costa Rica, and Iceland. There is no official figure of the total volume of export credits, and estimates vary. There is also no definition of an official export credit, with many non-Arrangement programs providing equivalent financing support but not formally called "official export credits."

[35] The ECG has developed three OECD Recommendations related to bribery, social and environmental due diligence, and sustainable lending. These are the Recommendation of the Council on Bribery and Officially Supported Export Credits; Recommendation of the Council on Common Approaches for Officially Supported Export Credits and Environmental and Social Due Diligence; and Recommendation on Sustainable Lending Practices and Officially Supported Exports Credits. Recommendations are non-binding but strongly adhered to.

[36] Participants are Australia, Canada, the European Union, Japan, Korea, New Zealand, Norway, Switzerland, Turkey, the United Kingdom, and the United States. In addition, Brazil is a Participant to the Aircraft Sector Understanding, a stand-alone agreement contained within the Arrangement that governs official export credits for aircraft. The Arrangement is not a formal OECD instrument, but operates under the auspices of the OECD. The Arrangement does not apply to official export credits with a repayment term of less than two years, which have been excluded because of the potential administrative burden and because there is a private market for such credits.

[37] Dawar (2020) examines the implementation of transparency and other provisions of the Arrangement.

To support efforts to address climate change, Participants to the OECD Arrangement have agreed to end support for unabated coal-fired power plants.[38] The ban came into effect on November 1, 2021. Discussions are also now focused on how government financing can incentivize climate-friendly projects while discouraging climate-unfriendly projects. Governments are currently under pressure to cease export financing for fossil-fuel related infrastructure while doing more for renewables and other green business.

V. The International Policy Debate

Discussions on new and improved rules to discipline subsidies are important to addressing trade tensions and building a stronger multilateral trading system.[39] Current debates are occurring at different speeds, with varying membership and differences in ambition and urgency. These include subsidies to fisheries, agriculture, and industry, with a specific focus on certain areas such as subsidy notification requirements at the WTO, SOEs, or export credit practices and competition policy instruments developed by the OECD. Sectoral discussions, e.g., on fossil-fuel subsidies or steel, also take place in other inter-governmental fora, notably the G7 and G20.

In light of the serious threat to global fish stocks and the role of fisheries subsidies in that regard, there is a particular sense of urgency to conclude a WTO agreement soon. Begun in 2001, WTO work on fisheries subsidy disciplines accelerated with the adoption of the UN Sustainable Development Goals (SDGs) in 2015 and the negotiating mandate agreed at the 11th WTO Ministerial Conference (MC11) in 2017. FAO estimates that 34 percent of global stocks are overfished, compared with 10 percent in 1974, with potentially devastating effects, particularly on those poor who depend on fishing for their livelihood. State funding that keeps unprofitable fishing fleets at sea or contributes to new capacity is part of the problem. Based on the mandate from MC11 and UN SDG Target 14.6, WTO negotiations aim to eliminate subsidies for illegal, unreported, and unregulated fishing and to prohibit certain forms of fisheries subsidies that contribute to overcapacity and overfishing. Important progress has been made, but differences remain, including on the appropriate balance among various flexibilities for continued subsidization and who should be allowed to have access to such exceptions, and on what basis.

Another area of longstanding concern at the WTO relates to subsidies in agriculture. While the Uruguay Round Agreement on Agriculture (AoA) was a significant achievement in bringing agriculture under the rules-based trading system, agricultural markets nonetheless remained highly distorted, and further negotiations to reduce support and protection in agriculture began as early as 2000. Despite important steps like the 2015 Ministerial Decision on Export Competition (described in Section IV.C), many concerns remain. These include how the various "boxes" characterizing (and partially limiting) different types of support have worked in practice. Subsidies feature prominently in ongoing WTO negotiations for possible decisions at MC12, notably in relation to domestic support, including cotton-specific domestic support and public stockholding policies for food-security purposes. In addition to food security, the sustainability of agricultural production is an increasingly important consideration (Gautam and others, 2022). Despite the longstanding mandate to establish a “fair and market-oriented agricultural trading system” while taking into account such non-trade concerns as food security and the environment, agreement on most issues remains elusive. This includes efforts to establish concrete modalities for the reduction of domestic support entitlements.

In the context of WTO reform discussions, where much of the current policy debate on industrial subsidies occurs, some advanced economies consider that the ASCM inadequately captures certain subsidy practices and should be updated. The EU-Japan-U.S. “Trilateral” has called for new disciplines on subsidies they consider to contribute to “overcapacity,” on implicit government guarantees, and on lending on

[38] The ban will apply to officially supported export credits and tied aid for: new coal-fired power plants without operational carbon capture, utilization, and storage (CCUS) facilities; and existing coal-fired power plants, unless the purpose of the equipment supplied is pollution or CO_2 abatement and such equipment does not extend the useful lifetime or capacity of the plant, or unless it is for retrofitting to install CCUS.

[39] Effective, timely dispute settlement is also important to how current and future rules impact subsidy policies.

non-commercial terms. Canada has called for addressing what it sees as a “distortion of competitive conditions” resulting from certain industrial subsidies and the “market-distorting effects of SOEs.” Several of these WTO members have proposed strengthening the relevant rules by, among other things, reviving disciplines (allowed to lapse at the end of 1999) that would establish a presumption of harm from certain types of subsidies as well as expanding the list of prohibited subsidies (Section IV.A).

Other countries have also argued that WTO subsidy rules should be revised. For instance, India and other members propose reinstating and expanding a list of “non-actionable” subsidies, curbing what they consider to be the “misuse and abuse” of trade remedies, and “rectifying” rules on agriculture that they argue have allowed developed countries to maintain high subsidies, including to the detriment of developing countries. In November 2021, China stated that it is open to negotiations on industrial subsidies and SOEs that include the re-introduction of a non-actionable (“green box”) category for industrial subsidies, stressing also what it sees as the need for negotiations to reduce domestic farm subsidies and to tighten the use of antidumping and countervailing duties (AD-CVD).[40]

Transparency and notification requirements are other key aspects of the debate at the WTO. Many WTO members have raised concern about what they consider poor and deteriorating compliance with WTO subsidy notification requirements and have advocated for improvements. The EU identified “a lack of comprehensive information on subsidies” provided by WTO members as “one of the biggest shortcomings in the application of the current system.”[41] Proposals by the EU, Japan, the United States and others would aim to (i) make the WTO better able to monitor members’ activities; (ii) create sanctions to encourage members to comply with notification requirements; (iii) expand technical assistance to developing-country members that lack capacity to make adequate notifications; and (iv) encourage members to make counter-notifications to fill gaps. In contrast, many other members have called for actions to build capacity rather than punitive measures, emphasizing that some developing members struggle to comply with existing obligations.

Fossil-fuel subsidies are also an important area of debate. Several international fora, including the G20, G7, and APEC, have called for the phaseout of fossil-fuel subsidies that are inefficient and encourage wasteful consumption, but they also have sought to balance these efforts with the needs and conditions of developing countries.[42] In December 2021, some 45 WTO members initiated a plurilateral initiative on fossil-fuel subsidies.[43] Yet the difficulty of balancing the differing needs and circumstances of diverse members is a key reason why defining an “inefficiency criterion” for reforming fossil-fuel subsidies has been elusive (OECD and IEA 2019).

Export-credits are another area of debate. The competitive landscape has expanded as Participants to the OECD Export Credit Arrangement are joined by non-participants (including major emerging market economies) as important providers of support. Moreover, to compete for business, Participants increasingly employ financing programs outside of the Arrangement disciplines—such as “untied” export credits and investment credits. Efforts in the China-US led International Working Group to negotiate financing rules applicable to all major providers of official export credits made limited progress and have now been suspended. Although provisions of the WTO SCM apply to the official export-credit practices of all WTO members, specialized arrangements that promote timely information sharing and establish specific norms for export-credit practices can be much more effective than relying on WTO rules alone.

Efforts are underway to modernize the OECD Export-Credit Arrangement; to ensure that the rules remain relevant; that important transparency disciplines apply; and that Participants do not evade the

[40] See Bloomberg News, "China Is Open to Talks on Industrial Subsidies, Xi Says," November 4, 2021. Also see China's Proposal on WTO Reform in WTO document WT/GC/W/773, May 13, 2019.

[41] European Commission concept paper on "WTO Modernisation: Introduction to Future EU Proposals," available at https://trade.ec.europa.eu/doclib/docs/2018/september/tradoc_157331.pdf, visited 14 January 2022.

[42] See WTO “Fossil Fuel Subsidies Reform Ministerial Statement,” December 2017, WTO document WT/MIN(17)/54.

[43] “Ministerial Statement on Fossil Fuel Subsidies,” December 2021, WTO document WT/MIN(21)/9.

rules to compete with non-Participants. While there are also concerns about the need to avoid government financing crowding out the private market, modernized rules are seen as essential to avoid a race to the bottom by governments competing for business using unregulated financing.

There has also been considerable debate over the existence and root causes of overcapacity in certain industrial sectors. The adverse trade effects of subsidies leading to overcapacity were raised and discussed in the G20 and WTO SCM Committee in 2016. Since then, several members have regularly expressed concerns in the WTO and other international fora about the negative impacts on their economies of such subsidies in a range of industries. These concerns have led to the establishment of a number of intergovernmental fora to address overcapacity, in particular the OECD Global Forum on Steel Excess Capacity and the earlier Governments/Authorities Meeting on Semiconductors. The former, established in 2016, sought to address "root causes" of overcapacity in the global steel industry rather than addressing its "effects" through trade-defense measures and other unilateral actions.

Competition policy can offer tools to promote competitive neutrality between firms, including SOEs. The OECD Recommendation on Competitive Neutrality (OECD 2021d) calls for Adherents not to discriminate between SOEs and private competitors or between different private enterprises. Competitive neutrality means avoiding offering undue advantages that distort competition and selectively benefit some firms over others (such as favorable tax treatment, or below-market loans and guarantees). According to the OECD Recommendation, where a public policy objective requires such support, competition distortions should be minimized, and the support should be transparent, proportionate, and subject to periodic review. Additionally, the legal framework (e.g., competition and bankruptcy rules) and its enforcement should also not discriminate between firms. Ultimately, open and competitive global markets are underpinned by open and competitive domestic markets and vice-versa.

Successful international cooperation on subsidy related issues, while challenging to achieve, has the potential to offer significant benefits. Efforts at the WTO to update or clarify rules and improve transparency and notification practices could pave the way to durably eliminate distortions that undermine evenhanded competition. These efforts could also reduce the use of trade remedies and other unilateral actions that have contributed to global trade tensions.[44] If successful, such efforts may also eliminate the rationale for the pursuit of unilateral responses. Greater cooperation on fossil-fuel subsidies has the potential to bring significant environmental and health benefits; for example, IMF economists estimate that introducing efficient fossil-fuel pricing in 2015 would have lowered global carbon emissions by 28 percent and fossil-fuel air pollution deaths by 46 percent (Coady and others, 2019). And successful cooperation on the provision of export credits could guarantee sustainable financing practices while promoting evenhanded competition and minimizing debt sustainability issues. Section VI elaborates on these and other areas where greater international cooperation around subsidy practices seems to be warranted.

VI. Priorities for Action

There are compelling reasons to strengthen cooperation on subsidy practices. Some subsidies distort trade and investment, disrupt foreign markets, and feed a sense that international competition is not evenhanded. New subsidies may undermine the benefits of past tariff and market-access negotiations. Other subsidies harm the environment. When they consider cooperation to be insufficient, some governments are responding with more aggressive unilateral actions to limit the disruption and harm to directly affected domestic industries. But these actions have only limited influence on foreign subsidy practices and have unintended consequences for other domestic industries.

Cooperation must recognize that some subsidies are appropriate. Carefully designed subsidies can address market failures (e.g., under-provision of basic R&D), promote competition in a concentrated industry, or

[44] Mavroidis and Sapir (2021) build a case for durably resolving major trade tensions through multilateral approaches.

advance economic development and other public-policy goals. But these rationales may also be misused, and even if the policy objective is clear, the design of the subsidy may fail to advance that objective or cause unnecessary harm to others. This points to a role for economic analysis.

International cooperation should aim to address negative spillovers from subsidies while accommodating their role in delivering essential public services and addressing market failures. To this end, governments and IOs can enhance information on subsidies; use economic tools to better understand the impacts of particular subsidies and types of subsidies and identify alternatives; employ and build on existing consultation mechanisms to encourage improved subsidy practices; and work toward strengthened international norms and legal commitments regarding subsidies that distort international markets or degrade the global commons.

The IOs can help through a more active role in transparency, analysis, and consultation around subsidy practices. These roles would be consistent with existing mandates. For example:

- The IMF has specialized fiscal expertise and provides technical assistance and policy advice to members, including on tax and expenditure issues. Its surveillance focuses on policies that significantly influence the present or prospective balance of payments or domestic stability of a given country. It also extends to policies with spillovers that might significantly influence the effective operation of the international monetary system.

- The OECD measures and analyzes the impact and effective design of government support across agriculture, fisheries, fossil fuels, and industrial sectors. It provides a policy forum for governments and other state bodies (such as competition authorities) to exchange good practices in government support and in implementing reforms. With multidisciplinary expertise and connections to multiple parts of government through its committee structure, the OECD analyzes policies targeting multiple goals; facilitates intra-governmental dialogue; and develops norms and standards in related areas, such as SOEs and competition policy.

- The World Bank produces research and analysis and engages with a multitude of government bodies (ministries of economy, finance, and trade, competition authorities, and other line ministries) in client countries in support of their development challenges. In particular, reforms of industrial policy (including subsidy, SOE, and trade reform) can be a key area for sustainable economic growth. The World Bank has specialized expertise in fiscal measures, trade and competitiveness, sector management, and the environment, among other areas.

- Besides being a forum for negotiating and administering rules on subsidies and resolving subsidy related disputes, the WTO performs the following functions: It collects subsidy notifications; promotes dialogue, both formally (in committees) and in informal fora; reviews subsidy programs and information in its periodic Trade Policy Reviews of individual WTO members; and surveys general economic support measures, among others, in the context of the trade monitoring reports of the entire WTO membership (and of G20 members in particular).

A. Transparency and Analysis

Moving Forward on Transparency

Improving transparency is a fundamental first step in addressing subsidies. Filling important gaps in knowledge on the landscape of subsidies requires efforts by governments toward greater transparency and disclosure at the national level and through international fora. WTO members are exploring ways to better incentivize and support reporting and notifications; support and capacity building are critical for countries requiring assistance. Like that on other fiscal and economic policies, information on subsidies is important to many IOs; efforts need not be left to the WTO alone.

Transparency will be particularly important in areas where information remains scarce. While some important progress has been made, more can be done to measure support to fisheries and improve agricultural-support notifications to the WTO. More can also be done to develop the information base on existing subsidies in industrial sectors and to understand their prevalence, objectives, and impacts across sectors and the economy. Services are at a much earlier stage; work is needed to understand the form subsidies take, the sectors where they might be prevalent, and how they affect international competition through both trade and investment. In each of these three broad areas, special efforts are needed to improve our knowledge of subsidies at sub-national levels and for services and industrial sectors, including those provided through SOEs.

The IOs can do more, individually and collectively, to identify and measure subsidies. The IOs in this report all invest in collecting information on subsidies. Efficiency and coherence require building on these efforts and working jointly to better share existing information, identify gaps, and fill those gaps. IOs could better coordinate to establish informal data collection priorities (e.g., sub-national; services; industrial) and coordinate data collection.

Timely information sharing should focus on easy access to the needed information. The goal could be to develop, with input from governments, a common subsidies platform on which information from all participating institutions could be made available in a clear and coherent format. This could be extended to collaboration with UNCTAD and other IOs involved in related data collection. Collaboration could also include industry associations, academic actors, and entities such as the GTA (including to build on the existing "count" of subsidy programs with other types of information important for analysis and policy guidance).

To help to move forward on transparency, the authoring IOs intend to enhance coordination among themselves and with other relevant institutions. This effort would take stock of current knowledge and practices, identify gaps, exchange information, explore options for and promote data collection and dissemination, and be guided by governments on priorities for future efforts. As an important first step, a workshop with all relevant stakeholders could be held in a timely manner that would also seek to identify pilot areas for collaboration, explore data-collection challenges, and help further refine participants' perspectives on what a more systematic and analytical database should look like.

Moving Forward on Analysis

Understanding impacts will be critical to subsidy reform. Much more should be done to understand the effectiveness of subsidies in meeting their stated goals; the spillovers on other countries and on trade and investment; and the costs (and opportunity costs) and the benefits for the domestic economy of the subsidizing country (including distributional impacts). Analysis can help guide reform by building a stronger, shared understanding of issues around subsidies. These include ways to re-orient subsidies toward investments in public goods and to ensure that those affected by change receive assistance, for instance through wider social safety nets.

Transparency and analysis can lead directly to better policy. Transparency about the nature and scale of subsidies enables evidence-based analysis of their effects, and it both motivates reforms and informs their design. This has been the case in agriculture, where better data and information about the impact of current policies have helped bring about the shift to less-distorting forms of support, notably in the European Union (Annex D). While more remains to be done on reform of agricultural subsidies, more granular information and understanding of current policies are essential. With subsidies growing across sectors, from commodities to semiconductors, transparency to enable the analysis that informs policy is critical.

More analysis is urgently needed to inform the design of subsidies to meet key challenges. Key examples are:

- The role of subsidies in development. In what ways are lower-income countries more prone to the sorts of market failures that can be effectively addressed by subsidies? And how does the design of the existing subsidies in middle-income and advanced economies affect development opportunities?

- Environmental challenges. Addressing climate change requires greater effort to understand the environmental impacts of existing subsidies across all sectors and the priorities for reform. Equally important will be the design of any new subsidies to support the transition to net-zero carbon emissions (e.g., to minimize spillovers).
- The digital transformation. This requires new attention to R&D and competition, taking into account past experience with industrial policy. How can subsidies for R&D best be designed? Under what conditions can subsidies effectively promote competition in monopolistic or highly concentrated industries, and can governments correctly identify when such conditions are present? What are the implications of significant new subsidies aimed at creating domestic industries and production capacity, for example in semiconductors? What are the implications of such subsidies for international trade and investment and for the global commons?
- SOEs and the role of the state. The operation of SOEs in economies in which the state plays a central role requires more analysis of the provision and effects (and possibly increased international spillovers) of subsidies to/through SOEs. These take the form of, inter alia, below-market financing, equity infusions in failed or non-commercial enterprises, and provision of inputs at below-market prices.
- Emergency support. Support in emergencies and disasters is critical but needs careful design. How can governments design effective emergency support in a way that minimizes harmful effects on others? How can we ensure that emergency support does not become an ongoing source of distortions in domestic and global markets (OECD 2021e)?

To advance the analysis of subsidies, IOs intend to cooperate to bring greater efficiency and coherence to subsidy related, policy relevant analysis, within their existing mandates. Those IOs that provide fiscal surveillance, policy advice, or technical assistance could take more account of the competition and trade-related concerns arising from subsidy practices and work with governments to advise that trade spillovers are taken into account in policy decisions and the design of subsidy programs. Both in building information and in supporting policy dialogues, particular attention could be given to the new or intensified subsidy programs that might undermine reasonable expectations about negotiated market-access outcomes. To this end, IOs can enhance coherence of their data collection and dissemination efforts, collaborate on analysis, and utilize and perhaps build on existing consultation mechanisms to engage governments.

Closer collaboration among IOs (building from those authoring this paper) could identify areas for, and carry out, joint analysis on particular types or areas of subsidies. It is hoped that by developing a body of high-quality, balanced work, these efforts could underpin common perspectives on thinking about subsidies (Hoekman, Nelson, and Wolfe, 2020). The analysis would be shared with and regularly presented to the membership of participating institutions.

B. Moving Forward on Consultation and Dialogue

Multiple approaches are needed to address subsidies. Building on enhanced information and analysis on subsidies, governments have a range of options for moving forward, from employing and building on existing consultation mechanisms to encourage improvements in subsidy practices, to working toward strengthened international norms and legal commitments regarding subsidies that distort international markets or degrade the global commons (discussed below).

Dialogue among governments can support reform. Subsidies can be hard to remove, and undertaking difficult domestic reforms can be easier when others are also reforming. Governments can learn from others' reform experiences, subsidy designs, and alternative policy approaches to achieve objectives. Inter-governmental dialogue can also promote reform by demonstrating good practices, exerting peer pressure, and providing others with the opportunity to outline negative spillovers on their economies.

The IOs can enable more effective dialogue among governments by developing better information and making available high-quality, targeted, and unbiased analysis. This will help to ensure that dialogue remains anchored in analysis and evidence. IOs can also support dialogue across and within countries by holding a mirror up to governments on their existing policies, highlighting their true costs and impacts. This can be particularly important for subsidies, where lobbying and rent-seeking over time can obscure the true nature of who pays and who benefits from subsidy policies.

IOs have a number of existing fora and mechanisms for formal or informal government discussions on which to build. IOs can also use their existing formats or new formats to enable such dialogue. For example, IOs could build on their existing fora and develop possible mechanisms for formal or informal joint government discussions on particular classes of subsidies, supported by IO analysis (Box 7).

Box 7. Existing IO Mechanisms for Government Discussions

Among its key functions, the WTO serves as a forum for governments to discuss and try to sort out trade-related problems. Transparency and the need for improved rules to address certain types of subsidies have long been on the agenda of various WTO bodies, such as the General Council, the Committee on Subsidies and Countervailing Measures (SCM Committee), and the Committee on Agriculture (CoA). For instance, concerns over the timeliness and completeness of notifications and ways to improve subsidies transparency have long been on the agenda of the regular meetings of the SCM Committee, which has also had discussions on subsidies and overcapacity. In addition, the WTO organizes technical assistance activities at both the national and regional levels, often with a specific focus on notification obligations. In collaboration with the requesting members, individualized technical assistance that also addresses subsidy analysis and design may be provided to meet needs of developing members with capacity constraints.

The IMF provides policy advice through its regular surveillance mechanisms. These include multilateral surveillance (e.g., the World Economic Outlook, which explores thematic issues from a multilateral perspective) and bilateral surveillance (e.g., Article IV consultations with individual members, which cover both bilateral and multilateral surveillance). Outreach around these vehicles can promote dialogue and in some cases could be organized and pursued jointly with other IOs. When requested, the IMF can also provide detailed technical assistance to members in specific areas of its expertise, including tax exemptions, fiscal expenditure (which could include subsidy design) and employment and social policies that governments can use to address the impact on workers and communities of disruptions to product markets.

The World Bank’s country, regional, and global engagements provide financing, advice, and research on reforms that promote an open, transparent, and rule-based global trading system that acts as a key engine of economic growth and poverty reduction. It provides data, analysis, and advocacy to remove distortions (such as subsidies) that can have detrimental effects internally (such as in hampering domestic competition), on other trading partners (especially in developing countries), on the global economy, or on the environment. Likewise, it supports client countries in the implementation of such reform agendas, drawing from best international practices and analyses.

Through its Committee structure, the OECD has an ongoing dialogue with member governments on issues related to subsidy design, impacts, and options for reform. Non-OECD member countries also participate in committee meetings, and regular Global Forums are held with participation from a wide range of countries and other stakeholders. Through these bodies, the OECD engages in policy dialogue on the design and reform of subsidies, across agri-food, industrials, fossil fuels and fisheries, as well as on SOEs and competition policy more widely. Specific country studies and technical assistance provide more tailored analysis and recommendations for interested countries. The OECD also convenes discussions on global rules on export credits, and the Global Forum on Tax Cooperation, which includes over 150 jurisdictions and also negotiates relevant rules, such as on a global corporate minimum tax.

IOs can also play an important role in advocating for reform of subsidies. In dialogue with governments bilaterally or as part of collective fora, IOs can make the case for reform, notably in the context of fiscal constraints and alternative uses for public finances. IOs can also play a role in creating the enabling environment for reform by making the wider public case on the failure of existing programs to achieve their stated objectives. For example, an important part of building public support for reform of agricultural subsidies is showing where that support is ineffective in ensuring food security, inequitable in that it benefits the largest farmers most, and potentially harmful to the environment (OECD 2021b).

C. Rules and Norms

Strengthened rules and norms should be developed as rapidly as possible. Some prominent issues today were not foreseen in the early 1990s: huge environmental externalities (e.g., climate change), the growth of services trade and the digital economy, the international presence of SOEs, and the potential for national and international health or economic emergencies. Seen in this light, the interest in rule changes is not surprising. In those areas where governments can already make progress, the calls in this paper for data and analysis should not delay the pursuit of more elaborated rules.

Improved transparency, analysis, and consultation around subsidies can improve the application of existing rules and norms and inform their further development. Regarding existing rules and norms, a better understanding of economic conditions and economic relationships might shed light on, for instance, whether a particular subsidy program is "specific" within the meaning of the ASCM. Facilitating recourse by dispute panels to outside expertise in specific instances could tap into that economic role. Outside the legal processes, economic analysis could promote a subsidies-focused structured dialogue to shed light on the effective application of existing rules and norms in the context of current policies. One possibility might be to introduce further information and analysis, as discussed in Section VI.A, into existing exercises, such as WTO monitoring or IMF bilateral, regional, and multilateral surveillance, and to deepen existing dialogues under relevant OECD bodies. A further possibility could be facilitating individual members' access to confidential outside economic expertise, such as was envisioned with the Permanent Group of Experts (mentioned below).

A better understanding of the objectives and effects of various types of subsidies will further the development of rules and norms. Fact-based dialogue among governments—drawing on high-quality impartial inputs that elucidate the effects of particular subsidies on trade and investment and identifying subsidy designs that reduce negative international spillovers—will lay the critical groundwork for improved or expanded international rules.

This paper's analysis underscores a need for clear, effective, balanced rules and norms as part of a broader system of international cooperation on subsidies. There are areas where international rules and norms can be clarified, expanded, or strengthened. Discussions start from a sound basis of existing rules in the WTO for agriculture and industrial subsidies (Sections IV.A and IV.B) and as supplemented in key areas like the OECD Export Credit Arrangement (Section IV.D). In the nearly 30 years since the WTO SCM and AoA were negotiated, the global economy has seen profound changes and WTO membership has become nearly universal, clearly warranting a fresh look at possible needs for updated disciplines.

IOs can also contribute with norms, standards and cooperative mechanisms, including drawing on other policy communities. This could include a closer look at the use of both "hard law" and "soft law" and perhaps mechanisms to bring objective, expert views to bear (Horlick and Clarke, 2015; Shaffer, Wolfe, and Le, 2015).[45] IOs can also draw on their multidisciplinary expertise, as, for example, in the OECD Recommendation on Competitive Neutrality (OECD 2021d) (Section V) and the OECD Guidelines on Corporate Governance of State-Owned Enterprises (OECD 2021f), which provide concrete advice on managing state-owned companies. Some such mechanisms can start plurilaterally with the aim of being multilateralized (Hoekman and Sapir, 2021).

[45] WTO members made a step in this direction when they envisioned a Permanent Group of Experts (PGE) (Agreement on Subsidies and Countervailing Measures, Article 24). The PGE was to be available to any WTO member to give confidential advisory opinions on proposed or existing subsidies, and it could be asked to help a dispute panel dealing with subsidy issues.

VII. Final Remarks

Broad-based cooperation on subsidies is needed to bring greater transparency, openness, and predictability to global trade. Subsidies appear to be widespread, growing, and often poorly targeted at their intended policy objectives. Beyond raising economic efficiency concerns, this situation is spurring the use of unilateral trade defense measures, eroding public support for open trade, and contributing to severe trade tensions that impede progress on other global trade priorities. Governments should work expeditiously to clarify and strengthen international disciplines around subsidies while recognizing the important roles that well-designed subsidies can play in some circumstances. To complement and support this work, more effort is needed to draw up an agenda to improve our understanding of current subsidy programs and their implications for trading partners and the global commons. This paper aims to begin a discussion within the international community on how to develop and implement such an agenda.

Annex A. The Scope of the SCM Agreement: Definition of Subsidy and Specificity

WTO rules on subsidies are set out in the GATT (1994) and more specifically in the WTO Agreements on Subsidies and Countervailing Measures (SCM Agreement) and Agriculture (AoA), which are relevant for trade in goods. When the GATT entered into force in 1947, its references to subsidies and their potential trade impacts were limited and lacked operational detail. Even at that time, however, the importance of disciplining subsidies to secure the value of agreed tariff concessions was understood by the contracting parties, hence the inclusion of Articles VI and XVI in the GATT. In particular, a member can undermine its market access commitments by providing subsidies to import-competing industries. In addition, subsidies given by one government to firms exporting to third economies can divert trade toward those exporters and away from those from economies that had relied on negotiated market access to the third economy market. As such consequences increased over time, GATT Contracting Parties increasingly strengthened the disciplines on subsidies, first through the addition of an export subsidy provision in GATT Article XVI, then through the plurilateral Tokyo Round Subsidies Code, and finally in the Uruguay Round. In this respect, the negotiation of the SCM Agreement and the AoA, both of which are part of the WTO "Single Undertaking" and therefore binding for all WTO members, was a major step.

Article 1 of the SCM Agreement contains a detailed definition of a subsidy and is therefore essential for the functioning of the Agreement. The first element in the Article 1 definition of a subsidy in the sense of the SCM Agreement is "a financial contribution by a government or any public body within the territory of a member." Article 1 provides a closed list of what constitute "financial contributions": (i) direct transfer of funds (e.g. grants, loans and equity infusions) including potential direct transfer of funds or liabilities (e.g., loan guarantees); (ii) government revenue otherwise due that is foregone or not collected (e.g., tax credits or reduced tax rates); (iii) government provision of goods or services other than general infrastructure, or government purchases of goods; and (iv) government payments to a funding mechanism, or entrustment or direction of private entities by the government to carry out one or more of the type functions illustrated under (i) to (iii). Because the list in Article 1 is closed, only the listed types of financial contributions can potentially give rise to subsidies covered by the SCM Agreement. Identification of financial contributions, and thus subsidies, in some situations can be challenging due to the variety of mechanisms and measures that can be used by governments to provide support to businesses, industries and sectors. In addition to financial contributions by a government, Article 1 refers to any form of income or price support in the sense of Article XVI of GATT 1994, i.e., support which operates directly or indirectly to increase exports of any product from, or reduce imports into, a member's territory, as potentially giving rise to a subsidy.

One condition for a financial contribution to give rise to a subsidy within the meaning of SCM Article 1 is that the financial contribution must come from a government or any "public body." Determining if a given entity is a "public body," however, is not a straightforward exercise in practice, especially in respect of SOEs, as illustrated by various WTO disputes. In particular, the Appellate Body (AB) held that for an entity to be a public body it must possess, exercise, or be vested with governmental authority. The AB thus held that ownership and/or control of an entity by a government is not sufficient to determine that the entity is a public body, implying that not all SOEs could be considered as public bodies in the sense of Article 1 of the SCM Agreement.[1] This finding has caused some ongoing tensions among members, in particular between members that have a mixed economic structure with substantial state involvement and some others that consider the approach put forward by the AB to have made it complicated to identify a public body in the context of SOEs, thus potentially excluding subsidies that may be provided by those entities to other domestic firms.

[1] The Appellate Body Report in *US - Anti-Dumping and Countervailing Duties (China),* WT/DS379/AB/R, paras. 317 – 318.

Some economies consider SOEs as an essential element of their development strategies, especially where there is direct involvement of the state in the operation of the economy. It is argued, however, that where SOEs engage in commercial activities and benefit from state support through subsidies (such as below-market financing and preferential access to production inputs and energy) there is a serious potential to distort competition. It is also argued that SOEs can be used to indirectly subsidize downstream industries in both domestic and export markets through below-market pricing for their goods and services (Hoekman and Sapir, 2021). In this regard the lack of specific SOE-related disciplines under the SCM Agreement, including the absence of an agreed definition, is triggering discussions not only on the alleged distortions caused by SOEs but also about the lack of transparency of their operations and their trade impacts (Hoekman and Wolfe 2021).

According to Article 1, a subsidy is deemed to exist where, in addition to constituting a financial contribution by a government or income or price support, a measure also confers a benefit. For a benefit in the sense of this provision to exist, the financial contribution in question has to be provided on terms that are more advantageous than those that would have been available on the market to the recipient of the financial contribution. Therefore, government measures that constitute financial contributions but that do not improve on the market conditions available to the recipient are excluded from the applicability of the SCM Agreement.[2]

In order to be subject to the disciplines of the SCM Agreement, a subsidy must also be "specific" as defined by Article 2. Most notably, a subsidy is to be considered "specific" if access to it is explicitly limited to an enterprise or industry or group of enterprises or group of industries ("certain enterprises").[3] If eligibility for a subsidy is based on objective criteria and neutral conditions, which are economic in nature and horizontal in application, such as size of enterprise, and if eligibility for the subsidy is automatic, specificity does not exist. Article 2 of the SCM Agreement acknowledges, however, that a subsidy program may appear to be non-specific according to these principles, while in fact being specific in the way it is implemented. Article 2 illustrates some of the factors to be examined in the latter regard, such as the use of a subsidy program by a limited number of certain enterprises or the manner in which discretion has been exercised by the granting authority in making the awards.

Two types of subsidies are prohibited by the SCM Agreement: (i) export subsidies, and (ii) subsidies contingent on use of domestic goods or import substitution subsidies. Export subsidies are those that are contingent, in law or in fact, whether solely or as one of several conditions, on export performance.[4] Establishing whether subsidies are contingent in fact on export performance is not a straightforward exercise in practice. This is in contrast with subsidies that are contingent in law on export performance, where normally the contingency is explicit in the relevant legislation such that no detailed factual analysis of the law as applied is required. Determination of "in fact" export contingency, however, is considerably more difficult as also shown by a significant number of WTO disputes relating to export subsidies. In particular, it is necessary to look at the facts surrounding the granting of the subsidy to ascertain the extent to which exportation, or anticipation of exportation, figured in the granting authority's decision to provide the subsidy. There also have been a number of disputes relating to import substitution subsidies. Issues that have arisen include whether "in fact" contingency also applies to such subsidies, and how the relevant provisions of the SCM Agreement relate to the national treatment provisions of the GATT 1994, including Articles III:4 and III:8(b).

The SCM Agreement recognizes that subsidies may play an important role in the economic development of developing members. For this reason, the Agreement provides extensive “special and differential treatment” provisions, especially with respect to export subsidies. Under these provisions, developing members referred to in Annex VII of the Agreement are exempted from the export subsidy prohibition until they cross the threshold

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[2] In the *Canada–Aircraft* dispute it was found that for a benefit to exist, a financial contribution had to make the recipient “better off” and that the appropriate basis for comparison was the marketplace. See WT/DS70/AB/R, para. 157.

[3] Pursuant to Article 2.3 of the SCM Agreement, all prohibited subsidies under Article 3 - i.e. subsidies contingent on export performance or on the use of domestic over imported goods - are deemed to be specific.

[4] An illustrative list of certain export subsidies is contained in Annex 1 to the SCM Agreement.

criteria. The members referred to in Annex VII are: (i) Least-Developed-Country (LDC) members as defined by the United Nations; and (ii) a group of other developing members with GNP per capita below USD1,000 per annum.[5] A number of members remain covered by Annex VII although some have graduated from its coverage. All WTO members are subject to the prohibition of import substitution subsidies.

[5] In the Doha Ministerial Conference, Ministers decided that the listed members in Annex VII would remain exempt from the export subsidy prohibition until their GNP per capita reaches USD1,000 calculated in constant 1990 US dollars for three consecutive years. In addition, if the GNP of a listed member that had already surpassed that threshold fell back below USD1,000, that member would be re-included to the list. See WTO document WT/MIN(01)/17, para 10.4.

Annex B. Support Measures Allowed without Limit under the Agreement on Agriculture

As noted in Section IV.B, under the WTO AoA some categories of support are allowed without any limit. These categories are considered non-trade distorting or minimally trade or production distorting ("Green Box"), are provided under production-limiting programs (the "Blue Box" or Article 6.5 support) or for development purposes (Article 6.2 support), and are therefore exempt from "reduction commitments." While the first two categories of support are available to all WTO members, Article 6.2 support can only be provided by developing country members.[1]

"Green Box" support covers two broad categories: government general service programs and direct payments. These measures must respect general criteria as well as criteria for specific types of measures.[2] Generally, they must be provided through publicly funded government programs (including when a government forgoes revenue). They must not involve transfers from consumers, and they must not have the effect of supporting prices for producers. Special treatment is provided to developing country members regarding governmental stockholding programs for food security purposes and subsidized food prices for urban and rural poor. Furthermore, the Bali Ministerial Decision on General Services (WT/MIN(13)/37) expanded the list of general services by adding several programs considered to be particularly important for developing countries for rural development, food security and poverty alleviation. These programs are related to land reform and rural livelihoods and all are given a clearer "green light" to continue.

Under production limiting programs ("Blue Box"), all members may provide payments without limit (and exempt from "reduction commitments") if they are made on fixed areas and yields, or on a fixed number of livestock. The payments also qualify if they are made on 85 percent or less of production in a defined base period. While the Green Box covers decoupled payments and the Amber Box covers payments that have a direct link to current production, Blue Box direct payments fall somewhat in between in terms of their potential to distort trade: The actual payments do not relate directly to current production, while production is limited overall.

The AoA also provides policy space specifically for developing country members to support agriculture as part of their development programs. Article 6.2 allows without any limit direct or indirect assistance designed to encourage agricultural and rural development, including investment subsidies generally available to agriculture, agricultural input subsidies generally made available to low-income or resource-poor producers, and support to producers to encourage diversification away from illicit narcotic crops.

[1] China is an exception. It undertook to forego the use of Article 6.2 as part of its accession to the WTO.

[2] The only dispute that has addressed the Green Box is *United States — Subsidies on Upland cotton* (DS267), where the issue of support to a specific commodity in the context of the expired Peace Clause (Article 13 of the AoA) was considered. It was concluded that as the measures in question related to the type of production, they were not Green Box measures conforming fully to paragraph 6(b) of Annex 2 to the AoA.

Annex C. Indicative OECD Matrix of Support Measures, with Illustrative Examples

			Statutory or Formal Incidence (to whom and what a transfer is first given)							
			Production							**Consumption**
			A: Output returns	**B: Enterprise income**	**C: Cost of intermediate inputs**	**Costs of Value-Adding Factors**				
						D: Labour	**E: Land, nat'l res.**	**F: Capital**	**G: Knowledge**	**H: Unit cost of consumption**
Transfer Mechanism (how a transfer is created)	**1: Direct transfer of funds**		Output bounty or deficiency payment	Operating grant	Input-price subsidy	Wage subsidy	Capital grant linked to land acquisition	Grant tied to acquisition of assets, including foreign ones	Government R&D	Unit subsidy
	2: Tax revenue foregone		Production tax credit	Reduced rate of income tax	Reduced excise tax on input	Reduced social charges (payroll tax)	Prop. tax reduction / exemption	Investment tax credit	Tax credit for private R&D	VAT or excise-tax concession
	3: Other government revenue foregone			Waiving of administrative fees or charges	Under-pricing of a government good or service		Under-pricing of access to gov't land or natural resources	Debt forgiveness or restructuring	Gov't transfer of intel. prop. rights	Under-pricing of access to a natural resource harvested by final consumer
	4: Transfer of risk to government		Government buffer stock	Third-party liability limit for producers		Assumption of occup'l. health and accident liabilities	Credit guarantee linked to acquisition of land	Loan guar.; non-market-based debt-equity swap and equity injection		Price-triggered subsidy
	5: Induced transfers		Tariff or export subsidy; local-content req's; discrim. gov't procurement.	Monopoly concession	Monopsony concession; export restriction; dual pricing	Wage control	Land-use control	Credit control (sector-specific)	Deviations from standard IPR rules	Regulated price; cross subsidy
		-- Including advantages via state enterprises			Below-cost electricity by state-owned utility			Below-mkt loan by state-owned bank		

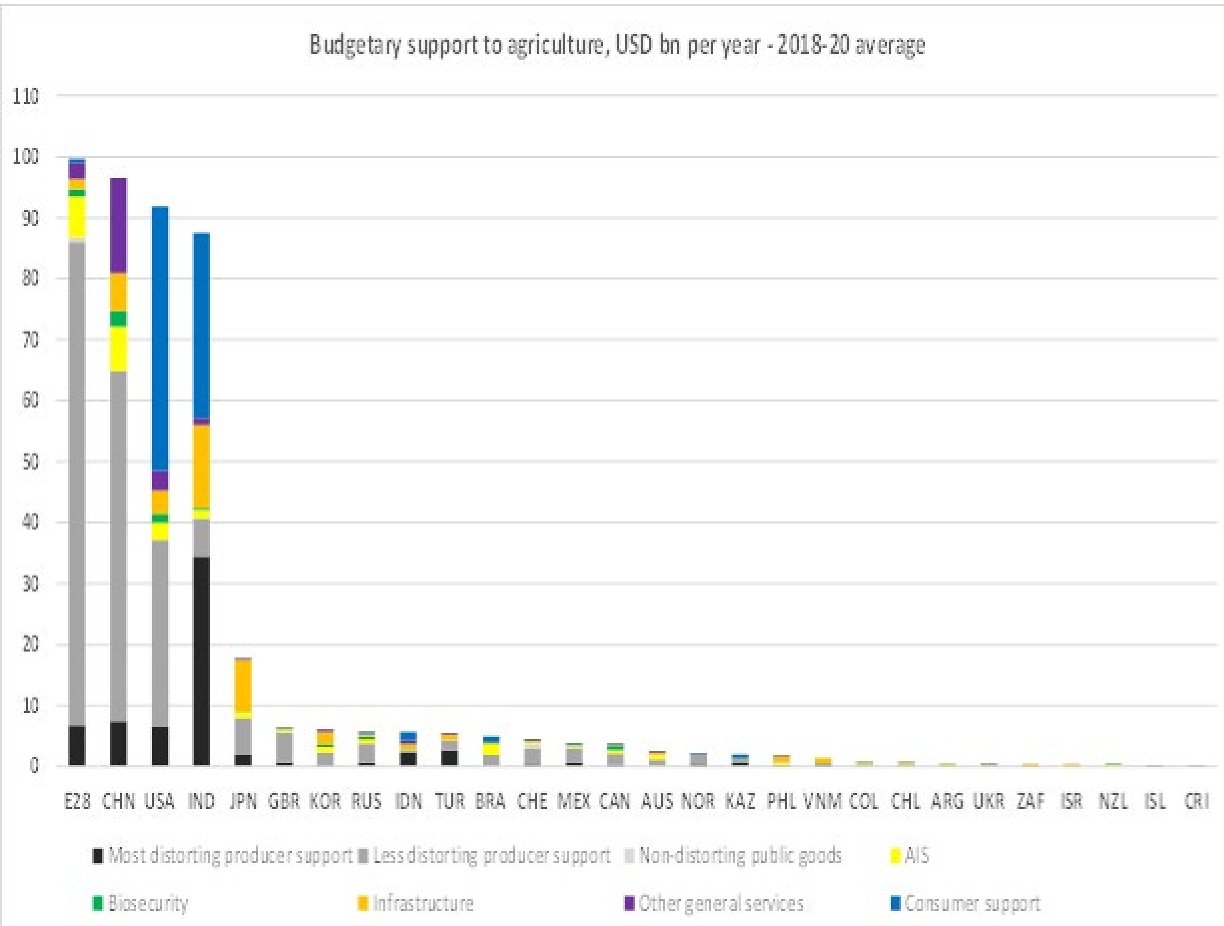
Note: This matrix is a work in progress and may be refined in the future. Some measures may fall under a number of categories (e.g. debt-equity conversions may involve elements of both risk transfers and revenue foregone).

GP = Government procurement.

Annex D. Budgetary Support to Agriculture

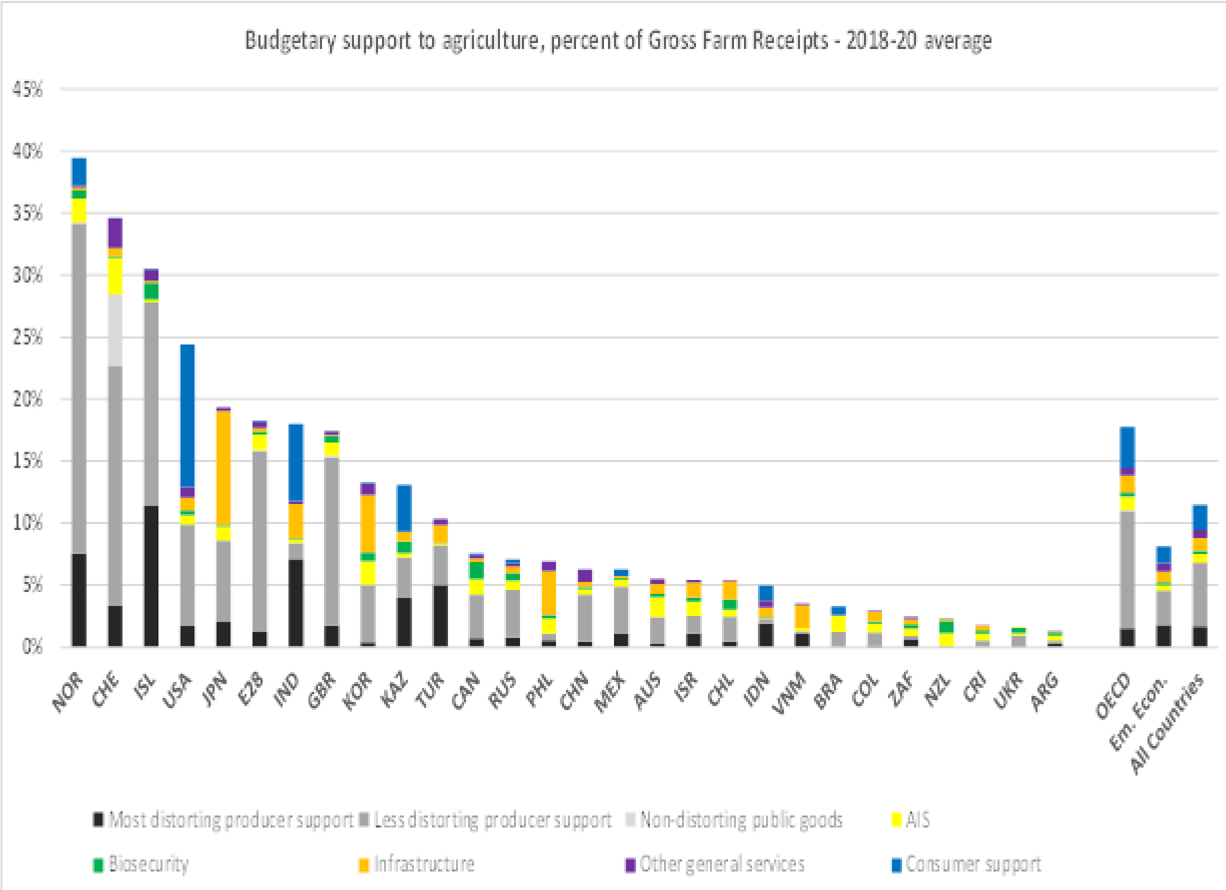
Budgetary support to agriculture remains significant at $447 billion a year over 2018-20 across the 54 economies measured by the OECD Agriculture Monitoring and Evaluation report. The main subsidizers vary, depending on whether support is measured in absolute numbers or as a percentage of Gross Farm Receipts (GFR). In absolute terms, the EU (with the UK) and China, the US and India account for USD 376 billion of the USD 447 billion per year (Figure D1).

Figure D1. Budgetary Support to Agriculture in Absolute Terms is Concentrated



Across all countries, budgetary support corresponds to 11.4 percent of average GFR over 2018-20. This encompasses a wide range -- from 30 to 40 percent of GFR in Iceland, Switzerland and Norway, to less than 3 percent in Colombia, South Africa, New Zealand, Costa Rica, Ukraine and Argentina (Figure D2). Several large economies, including the US, the EU, and India, provide significant support, corresponding to between 18 and 24 percent of GFR.

Figure D2: Budgetary Support to Agriculture as a Percentage of Gross Farm Receipts



Annex E. Selected International Data and Information Sources on Subsidies

Institution	Database/ Report	Sector(s)	Period	No. of countries	Notes	Link
Authoring institutions						
IMF	Government Finance Statistics	No sectoral info.	1987-2020	175	Budgetary information of government expenses on subsidies.	https://data.imf.org/regular.aspx?key=60991457
IMF	Coady and others (2019)	Oil, gas, coal, elect.	2015	191	Estimates by 7 regional aggregations and 30 selected countries.	https://www.imf.org/external/np/fad/subsidies
OECD	Inventory Support Measures for Fossil Fuels	Oil, electricity, gas and coal	2010-2019	50	Gov't measures that benefit fossil fuel v. alternatives; identifies and quantifies some 1,300 measures in 50 OECD countries and selected partner economies. Methodology: https://www.oecd.org/fossil-fuels/	https://doi.org/10.1787/env-data-en
OECD	Fisheries support estimates	Fisheries	2010-2018	41	Measures (1) support for services to sector; (2) direct support to individuals and companies in the sector; and (3) payments made by the fisheries sector.	https://doi.org/10.1787/c37fb5ce-en
OECD	Agricultural support estimates: Reference tables	Agriculture	1986-2020	54	Support to producers individually (PSE, both price and budgetary support), by implem. criteria; support to producers jointly (GSSE) across var. categories; support to consumers (CSE); total support to sector (TSE).	https://doi.org/10.1787/538bf42b-en
OECD	The semiconductor value chain	Semi-conductor industry	2014-2018	N.A.	Government grants, income-tax concessions, below-market borrowings, and below-market equity to selected industry firms.	https://doi.org/10.1787/8fe4491d-en.
OECD	The aluminum value chain	Aluminum industry	2013-2017	N.A.	Covers government grants, income-tax concessions, and below-market borrowings to selected industry firms.	https://doi.org/10.1787/c82911ab-en
OECD	Renewable energy feed-in tariffs	Solar, wind, hydro, geo-thermal, others	2000-2019	70	Support policies for renewable electricity capacity typically in the form of long-term contracts with a guaranteed price; mean feed-in tariff per kWh.	https://doi.org/10.1787/f68de84b-en
OECD	Policy & market developments	Ship-building	From 2015	9	Covers 15 categories of support measures in 9 large shipbuilding economies that are not members of OECD Council Working Party on Shipbuilding (WP6).	https://doi.org/10.1787/5872e0cf-en
OECD	Below-market finance	Thirteen manufacturing sectors	2005-2019	N.A.	Covers 306 manufacturers and the following measures: gov't. grants, income-tax concessions, below-market borrowings, and below-market equity.	https://doi.org/10.1787/a1a5aa8a-en
WB	Temporary Trade Barriers Database	Various	1985-2019	51	Trade remedy actions by type (antidumping and countervailing measures) by imposing country and target country and product; resulting duty rates applied.	https://www.worldbank.org/en/data/interactive/2021/03/02/temporary-trade-barriers-database

WTO	Statistics on countervailing actions	Various	From 1995	Varies	Countervailing actions (initiation of investigations and imposition of measures) by exporter, reporting member, and sector.	https://www.wto.org/english/tratop_e/scm_e/scm_e.htm
WTO	Notifications under the SCM Agreement	Various	From 1995	Varies	Inventory of gov't subsidies; objective, type of measure, beneficiary, and monetary amounts.	https://www.wto.org/english/tratop_e/scm_e/scm_e.htm
WTO	Notifications under AoA.	Agriculture	From 1995	Varies	Domestic support and export subsidies; value and market price support using WTO methodology.	https://www.wto.org/english/tratop_e/agric_e/ag_work_e.htm#more
WTO	Subsidy measures under DSU	Various	From 1995	Varies	Formal disputes concerning subsidies.	https://www.wto.org/english/tratop_e/dispu_e/dispu_agreements_index_e.htm
WTO	Trade Monitoring Reports	Various	From 2009	Varies	Support Measures are listed in Annex 4. COVID-19 support measures communicated by members are available online.	https://tmdb.wto.org/en/reports https://www.wto.org/english/tratop_e/covid19_e/trade_related_support_measures_e.htm
WTO/GATT	Trade Policy Reviews (TPR)	Various	From 1989	158	Subsidy information collected in the review process may be available in TPR documents. Review periods vary depending on their share in global trade.	https://www.wto.org/english/tratop_e/tpr_e/tpr_e.htm
Other institutions						
CEP	Global Tax Expenditures Database	Various	1990-2020	101	Revenue forgone estimates from tax expenditures, by tax base, tax expenditure type, objective, beneficiaries; monetary value and share of GDP.	https://gted.net
GTA	Global Trade Alert Database	Various	2009-2021	190	Inventory of policy interventions, including subsidies; type of measure, implementing jurisdiction, affected flow and sector.	https://www.globaltradealert.org/data_extraction
IEA	World Energy Outlook	Oil, electricity, gas and coal	2010-2020	42	Estimates of subsidies in coal, oil, gas, and electricity, predominantly in non-OECD countries; monetary amounts.	https://www.iea.org/search/policies?q=SUBSIDIES
IRENA	Taylor (2020)	Several renewal energy sources	2017	199	Estimates of subsidies in biofuels, biomass, CSP, hydro/geothermal, wind, solar; six regional groupings; monetary amounts.	https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Apr/IRENA_Energy_subsidies_2020.pdf

Source: Compiled by authors.
Note: Inclusion in this table does not imply endorsement by the authoring institutions.

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