

How do Trade Distortions Affect Markets for Farm Goods?

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Key findings

- Five sectors capture around 75 percent of the total absolute value of single commodity support: rice, maize, beef, pork and dairy.
- Rice support in particular is high compared to support to other products, both in absolute terms and as a share of farm incomes.
- Wheat and poultry support is also relatively significant, but has fluctuated over time.

1. Introduction

Trade negotiators at the World Trade Organization (WTO) are currently exploring options for addressing agricultural domestic support, as part of preparations for the trade body's eleventh ministerial conference, to be held in Buenos Aires in December 2017. This information note looks at how global markets for key agricultural products are affected by trade distortions arising from government policies, drawing on a longer ICTSD paper by Jared Greenville (2017).

The analysis draws in particular on the Producer Support Estimate (PSE) database of the Organisation for Economic Co-operation and Development (OECD)—which differs from the Aggregate Measurement of Support (AMS) used to measure agricultural subsidies in the WTO.

Box 1: Comparing the OECD's PSE and the WTO's AMS

The OECD's PSE measures the total subsidy provided to farmers, either in the form of support from taxpayers (through direct or indirect payments from the government), or in the form of support from consumers (in the form of higher prices resulting from tariffs and other forms of protection at the border). The PSE measures the "gross transfer," i.e. the monetary transfer without tax or other contributions having been deducted. It is a measure of the "current" value of transfers from consumers and taxpayers, and is designed to monitor progress towards agricultural policy reform.

In the WTO, the AMS has a narrower policy coverage and includes only domestic policies deemed to have the greatest production and trade effects (classified as "amber box.") Unlike the PSE, it excludes trade policies covered under the WTO market access and export substitution disciplines; production-limiting policies (blue box); those policies deemed to cause no more than minimal trade distortion (green box); and certain trade-distorting policies when the

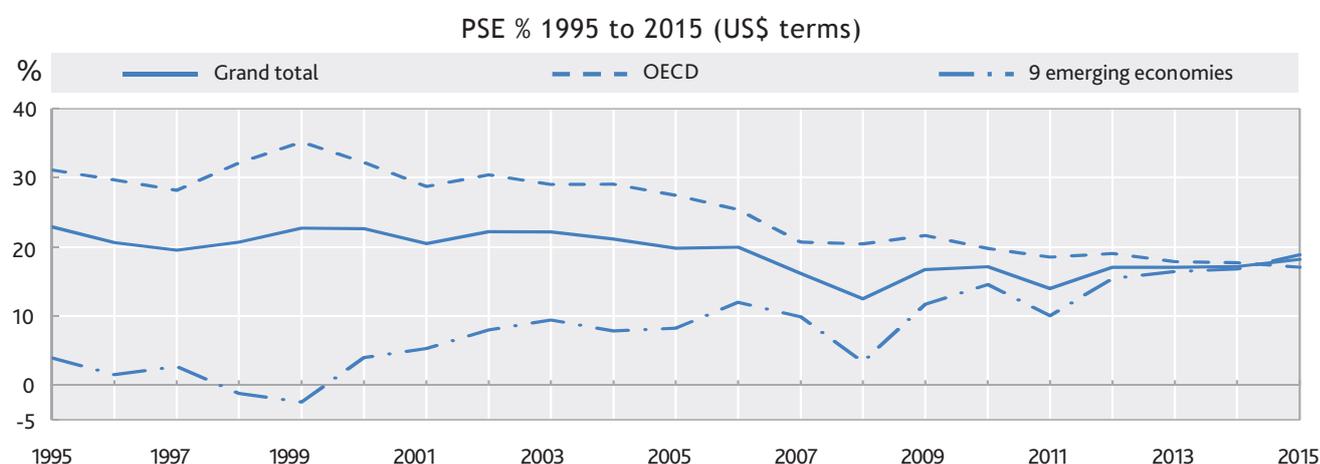


level of domestic support is smaller than a specified *de minimis* level. The AMS also excludes some input and investment subsidies provided by developing countries. The WTO indicator is designed to determine and monitor reduction commitments under the trade body's Agreement on Agriculture.

2. Domestic Support in the Aggregate: Compositional Shifts and Convergence

Overall measures of support, as captured by the OECD PSE, point to a fall in the level of government support as a share of gross farm income in the countries covered. Figure 1 shows how average PSE support levels across OECD countries fell from 32 percent of gross farm income in 2000 to 17 percent in 2014. However, absolute support levels have been increasing, with a convergence in the use of producer policies by developed OECD countries and those in some large agricultural producing developing countries—in particular, those that directly support individual farmers through measures that provide market price support or payments related to inputs and outputs.

Figure 1: Trends in PSE: OECD and emerging economies



Source: Author estimates based on OECD, *Agricultural Policy Monitoring and Evaluation* (2015)

In recent years, effective transfers to individual farmers by larger developing countries have been increasing, driven by development and rising incomes, and, for some, a push towards achieving self-sufficiency (such as in China and Indonesia). In 1995, the nine developing countries for which OECD collects PSE data represented 5 percent of total measured support, but over 51 percent by 2015. However, in developed countries, total nominal support has remained relatively constant.²

The composition of support provided to agricultural producers has also changed alongside the aggregate level of support. Overall, OECD countries still dominate high rates of support, particularly Switzerland, Iceland, Norway, Korea, and Japan. However, in many OECD countries, the share of the PSE made up of the most distortionary type of policies has fallen since 2000. This is most notable for the European Union where in 2014, 68 percent of support was “decoupled” (payments that had been delinked from production), compared to 35 percent in 2000. In some emerging countries, notably Indonesia and China, the growth in PSE has been driven by increased use of policies that have the most distortionary impact on trade—including market price support, output-based payments, and input subsidies. Other countries, such as Brazil, show both a falling PSE and a shift towards decoupled support.³ The change in the composition of support has also been driven by changing policy objectives.

1 The OECD defines market price support as “an indicator of the annual monetary value of gross transfers from consumers and taxpayers to agricultural producers arising from policy measures creating a gap between domestic producer prices and reference prices of a specific agricultural commodity measured at the farm-gate level.”

2 Countries covered are Brazil, China, Colombia, Indonesia, Kazakhstan, Russian Federation, South Africa, Ukraine, Vietnam. (India is not included).

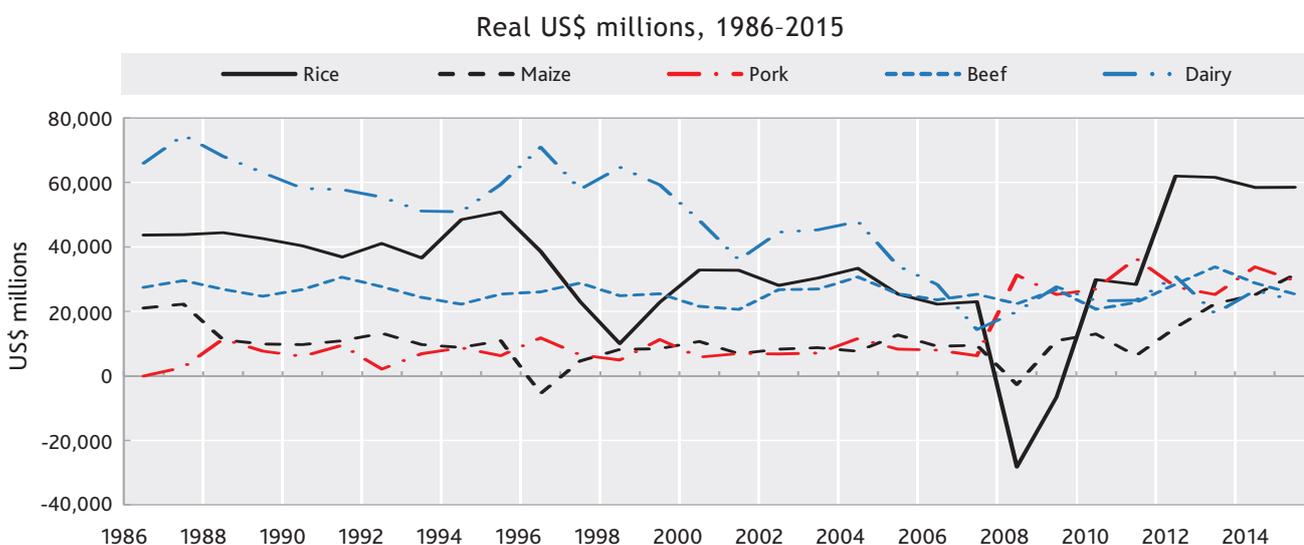
3 The OECD defines decoupled payments as “budgetary payments paid to eligible recipients which are not linked to current production of specific commodities or livestock numbers or the use of specific factors of production.”

3. Support to Particular Commodities is Concentrated and Has Been Maintained

While there have been changes in the aggregate PSE, there appears to have been significantly less change in the support directed towards specific commodities. Where PSE support is targeted towards particular types of producers, it is captured by the OECD’s Single Commodity Transfer measure, which collects all government support that can be attributable to the production of particular commodities.

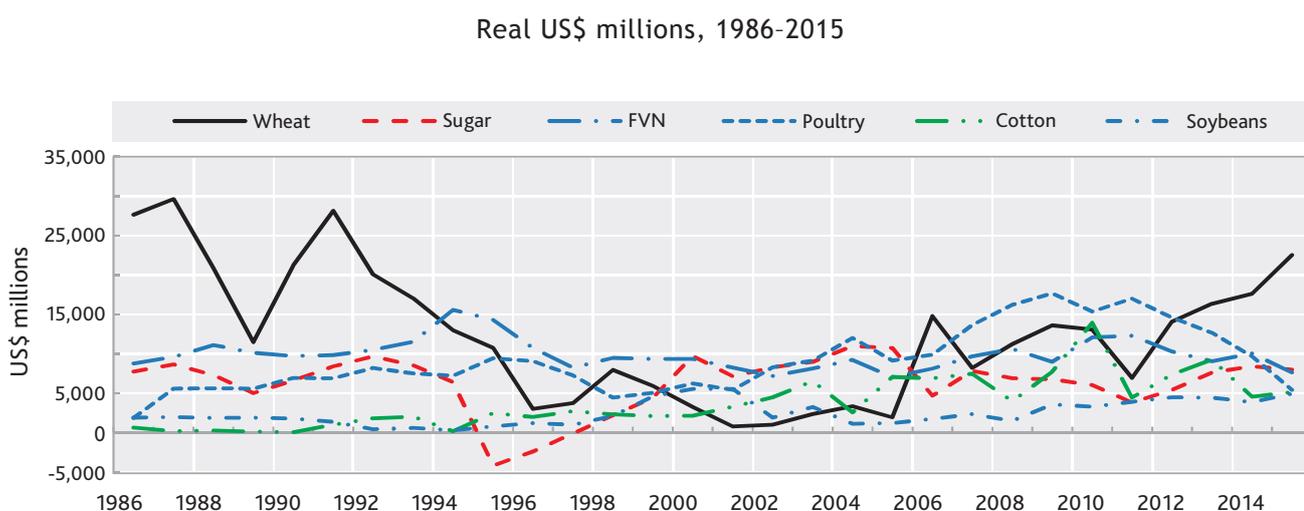
Overall, 5 sectors capture 75 percent of total single commodity support: rice, maize, beef, pork, and dairy. Absolute levels of support provided to single commodities have been relatively flat over time, with recent increases for rice, wheat, and pork since the mid-2000s (Figures 2 and 3). Wheat and poultry support is also significant, but has fluctuated over time, and rice support is particularly high. However, commodity-specific support has accounted for a falling share of gross farm income, representing 39 percent in 1986 but only 20 percent in 2015. This has been partly driven by rising international prices and lower market price support levels. Support in these sectors nonetheless remains high relative to the value of production.

Figure 2: Top five supported single commodities in countries covered by the OECD PSE database



Notes: Real value calculated by deflating values in USD by the US GDP deflator.
Source: Author estimates based on OECD, Agricultural Policy Monitoring and Evaluation (2016)

Figure 3: Remaining supported commodities in countries covered by the OECD PSE database



Notes: FVN (fruits, vegetables, and nuts) represents the combined support for various individually supported crops within this broader categorisation.
Source: Author estimates based on OECD, Agricultural Policy Monitoring and Evaluation (2016)

Other data on commodity-specific support point to similar trends, complementing the OECD’s PSE data. The World Bank’s Nominal Rate of Assistance (NRA) database identifies the same commodities as benefitting from government support, using data on the extent to which government policies have raised gross returns to farmers above the levels at which they would be otherwise. The same data set also show declining levels of output subsidies up until the food price spikes of 2007/08, after which support is seen to increase.

3.1 Who is Supporting What?

For a number of commodities, it is noticeable that a significant amount of the absolute support provided comes from major agricultural producing and trading nations (Figure 4). A number of large OECD members account for significant shares, particularly the US and the EU in beef and dairy, and Japan and Korea in rice. Support to agriculture is above average in the top 20 trading nations: because this group of countries accounts for around 70 percent of total agro-food exports and imports, the impact of distortions on trade could be significant (Figure 5).

Figure 4: Relative support by country by product

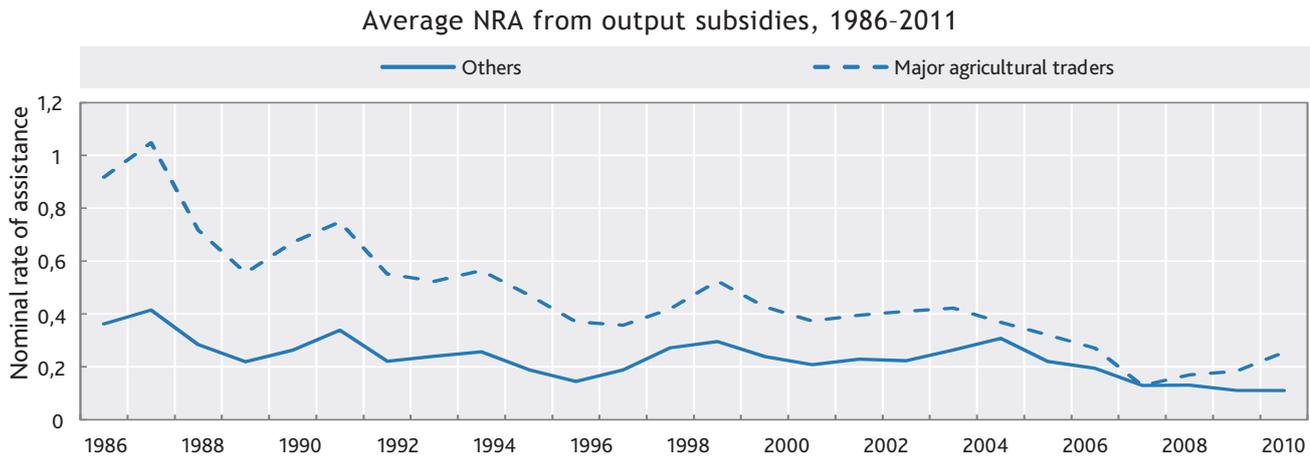


Source: Author estimates based on OECD, Agricultural Policy Monitoring and Evaluation (2016)

China plays a significant role in the total level of support that is provided for rice, maize, and pork. China is the world’s largest agricultural producer and providing even low levels of support to a large number of producers can amount to a significant absolute value of support. However, policy choices also play an important role: relative levels of support for rice and maize are around 30 percent of gross farm receipts in those sectors.

Figure 4 shows that the sugar industry also benefits from comparatively high levels of relative support in a number of countries. In contrast, cotton support is provided predominately by China, the US, and Turkey. This data helps to contextualise the figures on absolute levels. In particular, although China provides high levels of absolute support, it is not the highest when looking at relative levels. OECD countries provide the highest levels of relative support for several commodities.

Figure 5: Major agro-food traders provide higher levels of domestic support



Source: Author estimates based on World Bank, *Distortions to Agricultural Incentives* (2012); Anderson and Valenzuela, *Estimates of Distortions to Agricultural Incentives: 1955- 2011* (2013); Anderson and Nelgen, *Updated Database of National and Global Distortions to Agricultural Incentives: 1955 to 2011* (2013)

3.2 How Has Agricultural Support Evolved?

The composition of support has changed over time for the five main supported commodities (rice, maize, pork, beef, and dairy), along with wheat and sugar. Four main types of changes can be identified (in real terms):

1. Falling levels of support across both market price support and other categories;
2. Rising levels of market price support but falling levels of other support;
3. Stable support across both market price support and other categories; and
4. Falling market price support but rising levels of support provided under other categories.

Real support levels for beef, dairy, and wheat have all fallen over the past 20 years, mainly due to lower levels of market price support since the 1990s (although support for wheat has increased since 2010).

Maize and pork have seen a shift towards market price support, driven by changes in the policy stances of the major supporting countries, notably China and the US. Increased market price support for pork is due to policies in China, Japan, and Russia.

For rice, countries have provided a relatively stable mix of market price support and other support types. However, in the main supporting countries, market price support levels have actually increased over this period.

Since 1986, market price support for sugar has fallen, but support in other forms has increased. In particular, there has been an increase in the use of variable input and area payments over the period. However, in relative terms, this form of support is minor compared with market price support (as is also the case across all commodities).

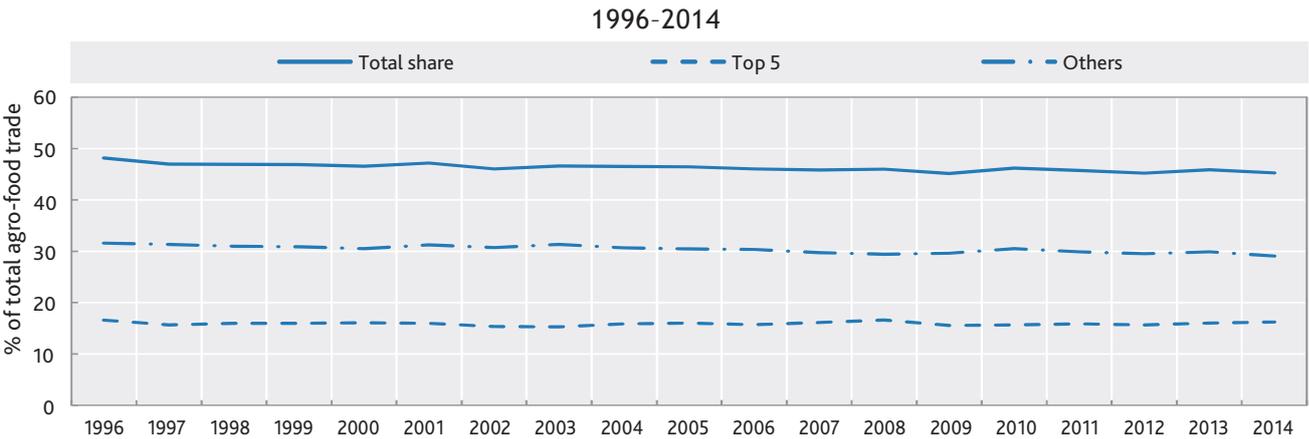
Although levels of product-specific support to beef, dairy, and wheat are falling, these decreases are not necessarily accompanied by actual falls in domestic support to the sector as a whole. Nevertheless, the forms of general support payments used have been generally less distorting than those provided under payments directed at specific commodities.

4. Is Domestic Support Affecting Agro-Food Trade?

Linking the supported commodities to levels of trade reveals that many of these commodities are heavily traded. The top 11 supported commodities also account for 50 percent of total agro-food trade by value—and the top 5 supported commodities alone account for 15 percent (Figure 6).

Overall, the importance of supported commodities in total agro-food trade suggests that the domestic support policies in use by a number of agricultural producing countries could be having a significant impact on world trade and the value created from agricultural activities.

Figure 6: Share of supported commodity trade in total trade



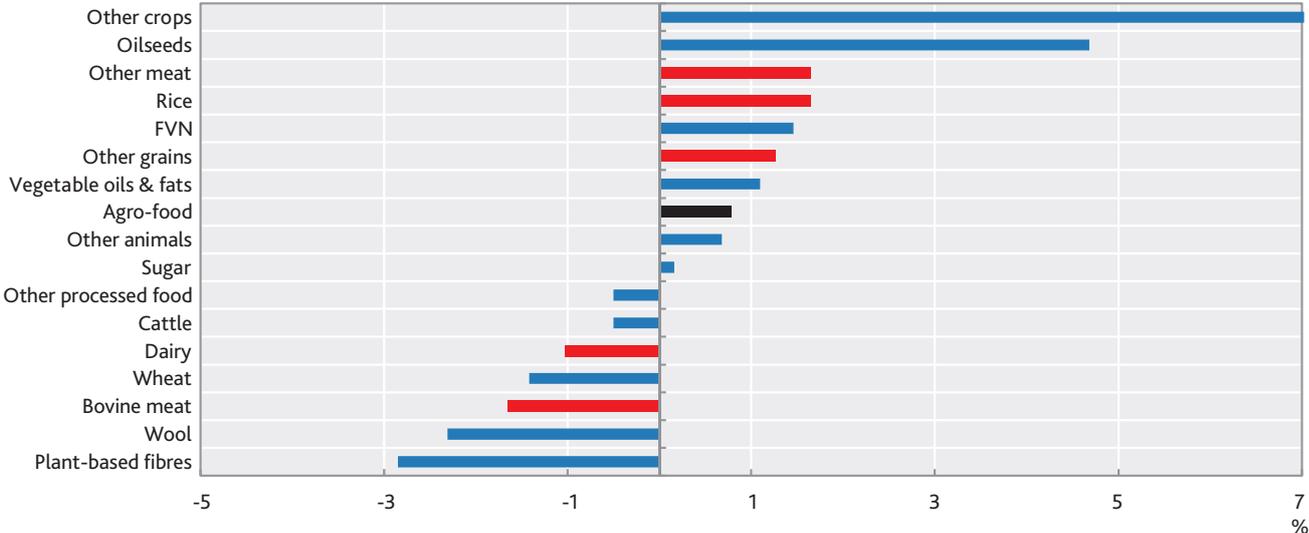
Source: Author estimates based on World Bank, World Integrated Trade Solution (2016)

4.1 What Might Happen If Domestic Support Was Removed?

The way in which domestic support is likely to affect trade flows is complex. Support to inputs can decrease costs and make domestic production cheaper, allowing it to displace imports. However, interventions in factor markets (land, labour, and capital) will potentially decrease production of other less protected agricultural activities. Alternatively, support may partly offset the factor market effects created by market access barriers in other agricultural sectors. Furthermore, effects on prices can influence other agricultural activities, as many farm goods are used as inputs for other agro-food products. These influences will have ambiguous impacts on trade depending on the nature of support provided, its targeting, and how countries that use domestic support interact with international markets.

The analysis on removing domestic support suggests that current domestic support policies are negatively affecting trade in agro-food products (Figure 7). If current domestic support policies were to be removed or restructured so as not to be market distorting, world trade in all agro-food products would increase. But for the five most supported commodities, changes in trade volumes are mixed: while meat trade would increase overall, trade in beef would fall and pork and poultry trade would expand. Grain trade would increase (grains, rice, and maize), and dairy trade volumes would fall. The increases are driven by a reallocation of production, as countries which did not provide support increase their output of commodities which had previously been supported elsewhere. The decreases occur as changes in relative prices mean that production increases are directed towards other commodities.

Figure 7: Removing domestic support is generally trade promoting
 % change in trade volumes, 2011 base

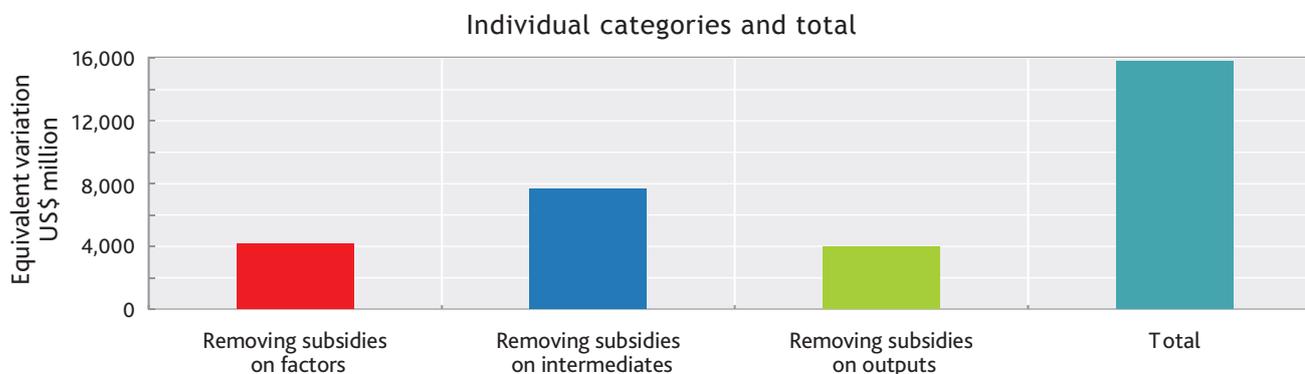


Notes: Sectors shown in red represent those which receive the highest levels of SCTs as captured in the OECD PSE database. The paddy rice, sugar cane and beet, and raw milk sectors are excluded as limited trade is observed in these sectors.
 Source: Author estimates from Hertel et al., Global Trade Analysis: Modeling and Applications, GTAP version 9.2 (1997)

The influence of removing support related to factors of production has the most complex effect on trade volumes. This is due to the interplay between the factor markets and changes in relative returns from price changes when support is removed.

Globally, moving away from distorting forms of domestic support improves welfare (Figure 8). This is due to the removal of intermediate input-related subsidies, followed by the removal of subsidies on factor inputs.

Figure 8: Contribution to global welfare changes from subsidy removal



Source: Author estimates from Hertel et al., *Global Trade Analysis: Modeling and Applications*, GTAP version 9.2 (1997)

Beyond the influence on trade and welfare, domestic support is also likely to negatively influence the development and benefits of agro-food global value chains. Past studies of value chains have found that their development has increased opportunities for economic activity due to new market access and gains in competitiveness from the use of more efficiently produced inputs, along with potential productivity gains resulting from spillovers in the value chain. With increased economic activity, and possible flow-on effects on productivity, value chain participation has increased domestic value addition and job creation within economies.

Removing support can have longer-term benefits in future demand growth. The rising demand levels for products such as meat and dairy (and imbalances between supply and demand) suggest that distortions in these markets, if they were to continue, would have even greater negative effects on welfare in the future.

5. What Can Be Done to Reduce Trade-Distorting Domestic Support?

The analysis of domestic support indicates that government support in factor markets and directed towards output has influenced global markets and global welfare. Past trends for some commodities show that, in some countries, policies have begun to shift away from such measures, in particular direct output subsidies (support linked directly to agricultural production). The agreement reached at the WTO's tenth ministerial conference in 2015 to prohibit the use of export subsidies should help reduce the impact such subsidies have on international markets as this decision essentially caps the use of output subsidies. Therefore, the impact of output subsidies is limited to the displacement of imports.

The flat-to-creeping levels of support in these categories suggest that tightening the controls on them is a priority for multilateral negotiations. Even reducing current allowable limits on the use of distorting domestic support is likely to be beneficial in offsetting the potential for future increases to occur.

Domestic support policies need to be able to reduce or limit the negative effects of market failures effectively but, at the same time, avoid becoming direct output subsidies themselves. In this light, the maintenance of some flexibility within the disciplined policy is desirable. Further, for policymakers, removing distortions in this area can have direct distributional effects on households that need to be addressed.

Beyond domestic support, the results indicate that the policies in use elsewhere in the sector and the economy are also important. Efforts should also be focused on other areas of the reform agenda, as the movement of resources to other distorted areas that occur with the reductions in domestic support can limit or undo some of the benefits.

5.1 The Type of Support Provided Remains Important

It is important to note that domestic support provided in a non-distortionary manner and which focuses on the provision of public goods has the potential to improve welfare. Both general services support to the sector and R&D expenditure, in particular, have positive influences. Further, ensuring the sector can contribute to climate change mitigation and adaptation efforts will be important in ensuring productivity growth and meeting demand from a growing population.

5.2 Market Access Remains a Critical Ingredient

Recent OECD analysis indicates that together, domestic support and market access restrictions continue to create significant distortions to world markets. The results show that both domestic support and market access policies play a role in influencing agro-food trade and welfare. In particular, removal of domestic support and trade barriers promotes global welfare, production, and trade. More uniform action enhances these gains significantly.

6. Conclusion

Progress in multilateral agricultural trade negotiations has proven to be difficult, with mixed outcomes achieved since the Doha round at the WTO began in 2001. However, the recent 2015 agreement on the removal of agricultural export subsidies, as well as other measures related to special safeguards and public stockholding for food security, has kindled hope that further agreement on domestic support and market access might be achievable in the near future. Negotiators and policymakers can usefully examine patterns of agricultural domestic support and their implications for distortions on global markets, so as to move towards agreed policy frameworks that are effective in correcting and preventing these distortions.

Reference

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