



US Agricultural Policy Beyond 2018: Implications for the World Trade Organization

Vincent H. Smith



International Centre for Trade
and Sustainable Development

Issue Paper

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CONTENTS

FIGURES AND TABLES	iv
ABBREVIATIONS	v
FOREWORD	vi
EXECUTIVE SUMMARY	vii
1. INTRODUCTION	1
2. AGRICULTURAL SUBSIDIES AND PRICE SUPPORT PROGRAMMES IN THE CONTEXT OF THE US FEDERAL BUDGET	3
3. THE FINANCIAL STATE OF THE US AGRICULTURAL SECTOR	5
4. US AGRICULTURAL SUBSIDIES IN THE NEXT FARM BILL	9
5. THE US MARGIN PROTECTION PROGRAM FOR DAIRY	16
6. CONCLUSION	18
REFERENCES	19

FIGURES AND TABLES

- Figure 1. Total USDA spending in fiscal year 2017
- Figure 2. Index of prices paid to producers: 2010-2017
- Figure 3: Net cash income and net farmer income: 1960-2017
- Figure 4. Debt to asset and debt service ratios for the agricultural sector: 1960 -2017
- Figure 5. Crop insurance subsidies: actual and Congressional Budget Office projections: 2016-2022
- Figure 6. Agricultural risk coverage and price loss coverage subsidies: actual and CBO projections 2016-2022
- Figure 7. Projected corn market prices and PLC reference prices: 2016-2022
- Figure 8. Projected soybean market prices and PLC reference prices: 2016-2022
- Figure 9. Projected wheat market prices and PLC reference prices: 2016-2022
- Table 1. PLC and ARC subsidy payments (2016-2018)

ABBREVIATIONS

AMS	Aggregate Measurement of Support
ARC	Agricultural Risk Coverage
CBO	Congressional Budget Office
CCP	Countercyclical Payments Program
DPP	Direct Payments Program
MPP	Margin Protection Program
PLC	Price Loss Coverage
SCM	Subsidies and Countervailing Measures
STAX	Stacked Income Protection Plan
USDA	United States Department of Agriculture
WTO	World Trade Organization

FOREWORD

Farm policy in the US and other major economies can have significant implications not just for producers, consumers, and other market actors domestically, but also at the international level. In particular, trade-distorting support for the farm sector can affect the global allocation of scarce resources, the competitiveness of market actors in different world regions, and can have significant implications for food price volatility and the proper functioning of food commodity markets. In particular, poor producers in developing countries can be especially vulnerable to the effects of trade-distorting support on markets of importance to them, including the implications of sudden shocks.

In 2015, world leaders met at the United Nations and agreed to take action to end hunger and all forms of malnutrition by 2030, as part of the Sustainable Development Goals (SDGs). SDG 2.B specifies that countries will “correct and prevent trade restrictions and distortions in world agricultural markets,” as a “means of implementation” for achieving the broader goal. In addition, SDG 2.C commits governments to “adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility.”

At the World Trade Organization, progress in talks on trade-distorting agricultural domestic support remains a priority topic for most members, despite the inability of the trade body’s members to agree to consensus outcomes or a roadmap for future work at the organisation’s ministerial conference in Buenos Aires, Argentina, in December 2017. Nonetheless, negotiations on the issue are continuing, on the basis of Article XX of the WTO’s Agreement on Agriculture, and the instructions from trade ministers at past ministerial conferences, such as that held in 2015 in Nairobi, Kenya.

One of the obstacles to achieving progress in negotiations at the WTO is a lack of understanding in national capitals and in Geneva concerning the underlying policy objectives other countries are seeking to pursue, and also the nature of the instruments which they are using to do so. While delays in submitting domestic support notifications to the WTO have contributed to this problem, many trade officials also find it hard to access accurate current information regarding farm policy goals and instruments, and in relating this information back to the existing framework of WTO rules.

At the same time, domestic policy makers and constituencies are often unaware of or unable to articulate the connections between various farm policy options and their implications for global trade. During talks on the final shape of the 2014 US Agriculture Act, policymakers were concerned to ensure that new legislation was in conformity with the outcome of the US-Brazil cotton dispute; however, beyond this, there was little discussion about the implications of various farm policy options for distortions to trade and markets, and most new programmes were eventually reported to the WTO as trade-distorting “amber box” support.

This paper, by Professor Vincent H. Smith, therefore seeks to provide international trade negotiators, capital-based policymakers in various countries, and other policy actors with an impartial, evidence-based analysis of the likely implications of the new US Farm Bill for global food and agriculture trade and markets, with a view to informing discussions on how various scenarios could affect products and value chains of importance to developing countries. As such, we believe it represents a valuable contribution to the ongoing debate in this area.



Ricardo Meléndez-Ortiz
Chief Executive, ICTSD

EXECUTIVE SUMMARY

A new farm bill is being developed in the United States. The central question addressed in this paper is whether the domestic agricultural support policies likely to be implemented in a new farm bill may have potential implications for the ability of the United States to meet its Aggregate Measurement of Support (AMS) commitments under the current World Trade Organization (WTO) agreements, as well as for the extent to which US farm policies might distort trade and markets.

The current legislation, the 2014 farm bill, reauthorized several major subsidy programmes such as the federal crop insurance programme (currently involving annual average subsidies of about \$8 billion) and the long-standing price support programme for major row crops known as the loan rate programme. The 2014 legislation also introduced two relatively new direct subsidy programmes, Price Loss Coverage (PLC) and Agricultural Risk Coverage (ARC), as replacements for the Direct Payments Program (DPP).

A new 2018/19 farm bill is being debated by the US Congress that is likely to determine the structure of major US farm subsidy programmes from 2019 to 2023. The House and Senate have developed their own versions of that legislation. When it comes to farm subsidy programmes, the differences between the two proposals are very modest.

Notwithstanding the relatively healthy financial condition of the US agricultural sector, neither of the farm bills proposed by the House and the Senate do anything to reduce the scope of US farm subsidy programmes that fall into the WTO amber box. No substantive changes have been proposed for the federal crop insurance programme which is projected to involve subsidies in the range of \$7 to \$8 billion annually, or the PLC and ARC programmes, which together will likely cost the US government well over \$5 billion.

Payments under the federal crop insurance, PLC and ARC are all amber box outlays. However, subsidy spending under these programmes is unlikely to cause the US to violate its annual current WTO AMS commitments to keep domestic supports for the agricultural sector below \$19.1 billion. However, spending on these programmes is heavily concentrated among three commodities—corn, soybeans and wheat. Thus domestic support outlays for these commodities through the US agricultural insurance, PLC and ARC programmes could have the potential to create issues in trade disputes with other countries under the WTO Subsidies and Countervailing Measures (SCM) Agreement.

Two other recent changes in US domestic support programmes introduced in March 2018, and also included in the House and Senate farm bill proposals, also have potential SCM agreement implications. The first is the extension of PLC/ARC programme subsidies to producers of seed cotton, which in effect means almost all cotton produced in the United States will now again become eligible for amber box subsidies. The second is a substantive increase in the subsidies provided to dairy farmers through the Margin Protection Program for Dairy. These amber box subsidies, on average, are likely to be relatively small, less than one percent of revenues from the sales of dairy products, but infrequently have the potential to be more substantial.

1. INTRODUCTION

Congress has largely determined the structure of US agricultural policy through periodic major legislative initiatives known as farm bills, of which the first was the 1933 Agricultural Adjustment Act. Since the late 1940s when the scope of subsidies and other forms of domestic support for the agricultural sector were substantially expanded, many farm bill programmes have become subject to sunset provisions. As a result, the US Congress revisits agricultural policy legislation every four to six years and, through a new farm bill, makes modest or substantive changes to and reauthorizes many programmes, terminates others, and introduces new initiatives. A new farm bill is being developed in the United States. The question of interest in this study is whether the domestic agricultural support policies likely to be implemented in a new farm bill may have potential implications for the ability of the United States to meet its Aggregate Measurement of Support (AMS) commitments under the current World Trade Organization (WTO) agreements. A closely related issue is whether the proposed policies will create issues with respect to the WTO Agreement on Subsidies and Countervailing Measures (SCM), especially in relation to potential disputes involving claims of serious prejudice associated with commodity specific subsidy programme impacts on agricultural producers in other WTO member countries.

The current legislation, the 2014 farm bill, reauthorized several major subsidy programmes such as the federal crop insurance programme (currently involving annual average subsidies of about \$8 billion) and the long standing price support programme for major row crops known as the loan rate programme. The 2014 legislation also introduced two relatively new direct subsidy programmes, Price Loss Coverage (PLC) and Agricultural Risk Coverage (ARC), as replacements for the Direct Payments Program (DPP). The DPP, a relatively decoupled \$5 billion a year subsidy initiative, was terminated immediately for all crops other than cotton (for which DPP payments ended in 2016).

The DPP used a “checks in the letter box” approach in which payments were based on historical, not current, production for seventeen crops, including corn, cotton, soybeans, wheat, barley, grain sorghum and a wide range of oilseed crops such as canola, rapeseed, and sunflower seed. However, PLC and ARC were put forward as alternatives to the DPP in 2014, because DPP subsidies had widely become viewed as welfare payments unrelated to agricultural production, a pattern mirrored to some extent in European Community countries with respect to the single farm payment programme. Effectively, from a political perspective, the DPP had become unsustainable (Smith, Glauber, Goodwin, and Sumner 2017).

In the 2014 farm bill, commodities that would receive PLC and ARC subsidies included all crops previously eligible for DPP subsidies with the exception of cotton. Cotton was excluded because of the terms of the 2012 WTO cotton dispute settlement agreement between Brazil and the United States. Subsequently, in April 2018, after an extensive lobbying campaign by cotton growers, seed cotton became eligible for the PLC/ARC programme in what appears to be a transparent violation of the Brazil-US WTO dispute settlement agreement. The PLC/ARC programme falls into the WTO amber box category of subsidy programmes because payments are determined by current year market prices and yields. In 2014, US legislators argued that the new PLC and ARC subsidy programmes were cost savings measures that on average would involve about \$3.7 billion in subsidy payments (Smith, Glauber, Goodwin, and Sumner 2017). In fact, these programmes have distributed annual subsidies well in excess of the \$5 billion paid out under the discontinued DPP. The PLC/ARC and other farm bill programmes are currently being considered by Congress for renewal, modification, and with respect to some programmes—especially green box conservation initiatives—rationalisation or termination.

The farm bill process is labyrinthine. Two congressional committees—the House Agricultural Committee and the Senate Agricultural Committee—independently draft new farm bill legislation. Each chamber then debates, amends and eventually votes on their own agricultural committee’s bill. Differences between the two bills are then resolved by a conference committee, whose members are appointed from each chamber’s agricultural committee. The “conferenced” legislation is then submitted for final approval by each chamber. At the time of writing, the House and Senate had approved separate farm bills, but the conference committee had not completed its work. In principle, new farm bill legislation was to have been authorised on or before September 30 2018 as many subsidy, conservation, foreign aid, trade, and rural development programmes authorised under the 2014 farm bill were scheduled to sunset on that date. However, Congress had not authorised a new farm bill by then, and

may not authorise new farm bill legislation for some time.

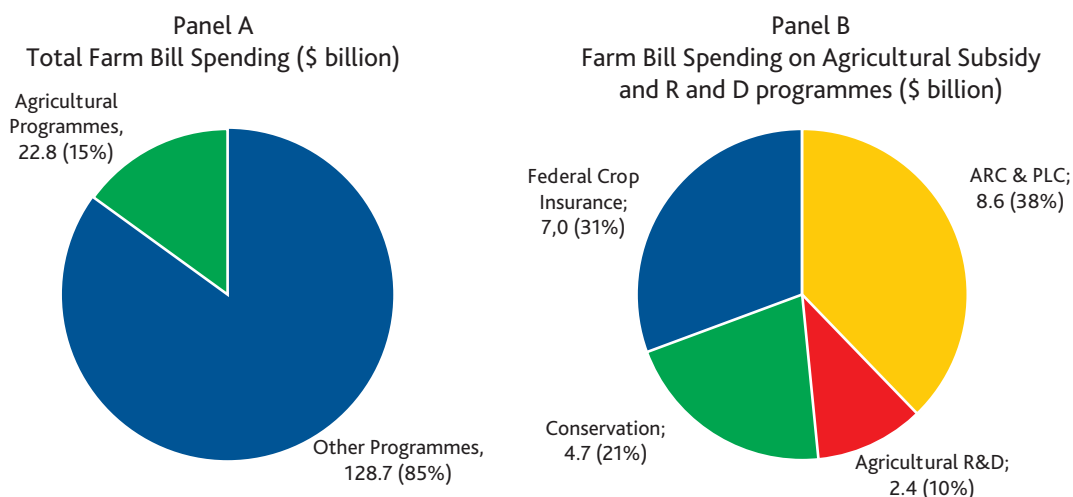
Nevertheless, the likely parameters of US farm subsidy programmes over the next four to six years seem relatively well defined because, when it comes to farm subsidies, price support programmes, conservation, food aid, and agricultural trade initiatives, the house and senate bills are very similar in many respects. Thus, the focus of this paper is on the global and international trade implications of the farm subsidy and price support programmes that form the core of income transfers to farmer directly from the government or through policies that distort market prices for commodities such as maize, soybeans, wheat, rice, cotton, milk and sugar. These programmes include PLC/ARC and the federal crop insurance programme and a recently expanded programme for dairy products called the Margin Protection Program for Dairy.

2. AGRICULTURAL SUBSIDIES AND PRICE SUPPORT PROGRAMMES IN THE CONTEXT OF THE US FEDERAL BUDGET

In the United States, direct government spending on agricultural subsidy and conservation programmes, while substantial in the context of spending by other countries on farm programmes, represents a small fraction of total federal government spending. For example, in 2017 the US federal government spent a total of \$3.75 trillion on all programmes (defence, health care, social security and other anti-poverty programmes, etc.) of which approximately \$20 billion, only about 0.5 percent of the total, was spent on agricultural domestic support, conservation and other subsidy payments for farm programmes. Nevertheless, as in many other countries, legislators in

the United States also provide domestic supports that increase farm incomes through programmes that do not involve government spending. In the United States, the US sugar programme and marketing orders for fluid milk restrict supplies and raise market prices for those products. For example, estimates of the impact of the US sugar programme on revenues for farmers raising sugar cane and sugar beets fall into the \$3 to \$4 billion range. Further, through the import and domestic production controls used to restrict supplies, over the past three decades on average US sugar prices have been more than fifty percent higher than world prices (Beghin and Elobeid 2017).

Figure 1. Total USDA spending in fiscal year 2017



Source: USDA Fiscal 2017 Budget Book.

Figure 1 shows the overall structure of planned spending on US federal farm programmes through United States Department of Agriculture (USDA) programmes in the 2018 fiscal year, providing a useful overview of the focus of those programmes. Panel A of figure 1 shows that the overwhelming majority of the USDA budget, 85 percent of the total of \$151.5 billion for the 2018 fiscal year, is allocated to nutrition, administration, rural development, data collection, and other programmes that are not focused on payments to the agricultural sector or agricultural research and development.

Only 15 percent of the 2018 USDA budget, \$22.6 billion, supports agricultural sector initiatives. However, as noted above, several programmes that provide domestic supports to US producers of agricultural commodities do not involve government subsidies. These include tariff and domestic supply control programmes that benefit US sugar producers by increasing the prices they receive for sugar cane and sugar beets and, at the same time, lowering world prices for those commodities. Similarly, marketing orders restrict the supply of fluid milk, as well as some fruits and other commodities, in many US markets, raising

prices and incomes for US producers of those commodities (Sumner 2018). The implicit subsidies embedded in these programmes are clearly domestic supports that are amber box benefits. However, while the data presented in Panel B of figure 1 do not include those implicit subsidies, the US government does include estimates of those benefits in the annual AMS measures it submits to the WTO (Glauber and Sumner 2017).

Spending on federal crop insurance and ARC and PLC subsidies are amber box payments, determined by current year prices and yields for the crops for which such payments are available. Subsidies under those programmes, totalling an estimated \$15.6 billion, represent 69 percent of all government spending on programmes targeted for the agricultural sector in the 2018 fiscal year. Under those programmes, payments are heavily concentrated on three commodities - corn, soybeans, and wheat. Producers of those three commodities receive just under 70 percent of all crop insurance, ARC and PLC payments,

with corn receiving the largest share of such payments (Bekkerman, Belasco, and Smith 2018). Producers of rice and peanuts also receive substantial crop insurance and PLC payments and cotton producers obtain substantial benefits from the federal crop insurance programme. Producers of all other crops receive less than ten percent of total crop insurance, ARC and PLC subsidies (Bekkerman, Belasco, and Smith, and 2018).

For the 2018 fiscal year, conservation programme subsidy spending was \$4.7 billion (21 percent of total agricultural programme spending) and expenditures on agricultural research and development were \$2.4 billion (10 percent of agricultural sector programme spending). These are largely green box programmes and not reported as part of US AMS outlays. While conservation subsidies have become a substantial component of US government payments to farm businesses, agricultural R&D spending has become a modest, almost trivial component of the total USDA budget (1.6 percent).

3. THE FINANCIAL STATE OF THE US AGRICULTURAL SECTOR

During discussions of new farm bill initiatives, congressional advocates for farm subsidies (typically the chairs and other leading members of the House and Senate agricultural committees) often argue that the US farm economy is facing serious financial difficulties. The current farm bill debate is no different from previous farm bill debates in that respect. In 2017, in attempting to frame the economic situation of the agricultural sector for the 2018 farm bill debate, Congressman Conaway, then chair of the House Agricultural Committee, argued that “America’s farmers and ranchers are facing very difficult times right now... There is real potential here for a crisis in rural America.”¹ To support his case, the legislator pointed out that commodity prices and net incomes from farming activities (the difference between sector wide total revenues and estimated total costs) had fallen substantially between 2013 and 2017.

Whether or not US farmers are facing a severe financial crisis that might justify current or expanded domestic supports is a potentially important issue in the context of current US World Trade Organization (WTO) domestic subsidy commitments with respect to Aggregate Measurement of Support (currently capped at about \$19.1 billion). Expanded domestic supports, which some US agricultural interest groups have been seeking (especially for cotton and dairy) are also a concern with respect to the potential for injury and serious prejudice for the agricultural sectors of other countries under the WTO Subsidies and Countervailing Measure (SCM) Agreement. The purpose in this section, therefore, is to examine the current state of the US agricultural sector and provide insights into whether or not many US farm businesses face a serious financial crisis.

As is the case in most countries, the US agricultural sector is complex. Farm businesses produce hundreds of different crop and livestock commodities. Moreover, with respect to any given crop, producers raise many different varieties and sub-categories of product (for example, organic corn, GMO corn, and sweet corn). Similarly, within any general livestock category, farms manage a wide range of breeds and use different production practices (for example, organic and non-organic practices) that provide overtly similar products with sometimes subtly different end use characteristics. Given these complexities, it is only with caution that an assessment of the US agricultural sector’s overall financial condition should be made because, within the sector, farms with different mixes of crop and livestock production activities may experience very different shifts in prices and incomes over time. For example, as reported by USDA Economic Research Service, among producers of different commodities, between 2016 and 2017 net cash income was forecast to increase by 13.3 percent for wheat, 31.1 percent for cotton, 2.8 percent for corn, and 42.2 percent for dairy, but decline by 14.8 percent for specialty crops (fruits, nuts, etc.).²

Nevertheless, an assessment of the overall financial condition of the sector is useful. Prices have important impacts on US agricultural sector revenues. Therefore, whether current sector wide prices are about average, relatively high or relatively low serves as a useful starting point. Data on the indexes of prices paid to farmers for crops and livestock over the period 2010 to 2017 are presented in Figure 2.³ Crop prices increased by about 35 percent over the period 2010 to 2013 (the index of crop prices increased from 83 to 112) while

1 Congressman K. Michael Conaway, 2017. “Opening Statement before the US House of Representatives Committee on Agriculture: Rural Economic Outlook: Setting the Stage for the Next Farm Bill,” February 15.

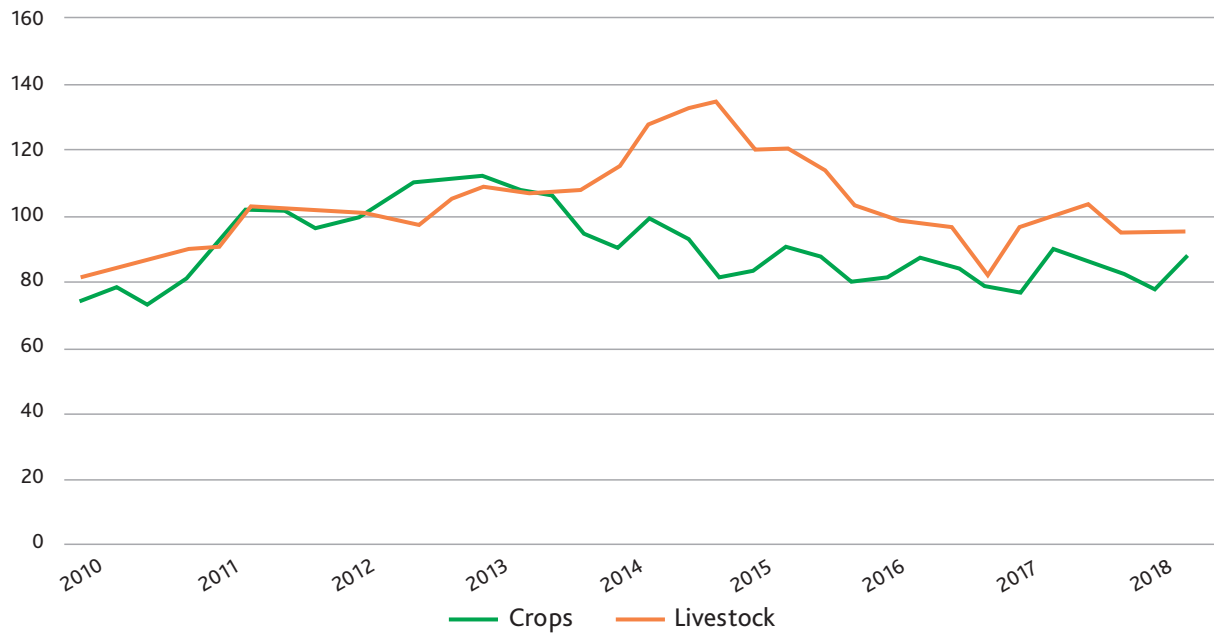
2 Economic Research Service, “Net Cash Farm Income for U.S. Farm Businesses Forecast up in 2017,” 2017, <https://www.ers.usda.gov/topics/farm-economy/farm-sector-income-finances/farm-business-income/>.

3 The indexes, reported by the USDA National Agricultural Statistical Service (NASS), are based on data collected by NASS on the prices and production of individual commodities.

livestock prices increased by over 60 percent between 2010 and 2014 (the index of livestock prices increased from 81 to 133). Given that 2010 was a year in which agricultural prices

were relatively high,⁴ agricultural producers in the United States enjoyed prices well above their long run expected levels between 2010 and 2014.

Figure 2. Index of prices paid to producers: 2010-2017 (2011=100)



Source: USDA Economic Research Service

Subsequently, between 2013 and 2018 crop prices declined relatively sharply from their 2014 peak. However, in 2017, on average crop prices remained close to and mainly somewhat above their 2010 levels. Similarly, while livestock prices dropped sharply from their peak levels in 2014, in 2017 they were well above their average levels in 2010 (in 2017, the index for livestock prices was close to or in excess of 100, almost 25 percent higher than its 2010 value of 81). Thus, it seems difficult to make the case that exceptionally low commodity prices are causing the US agricultural sector as a whole to experience severe financial hardship.

Agricultural commodity prices affect sector wide revenues from market sales. Net revenues, farm business profits and farm household incomes are also affected by input prices and costs. Two measures of annual sector wide net incomes (revenues

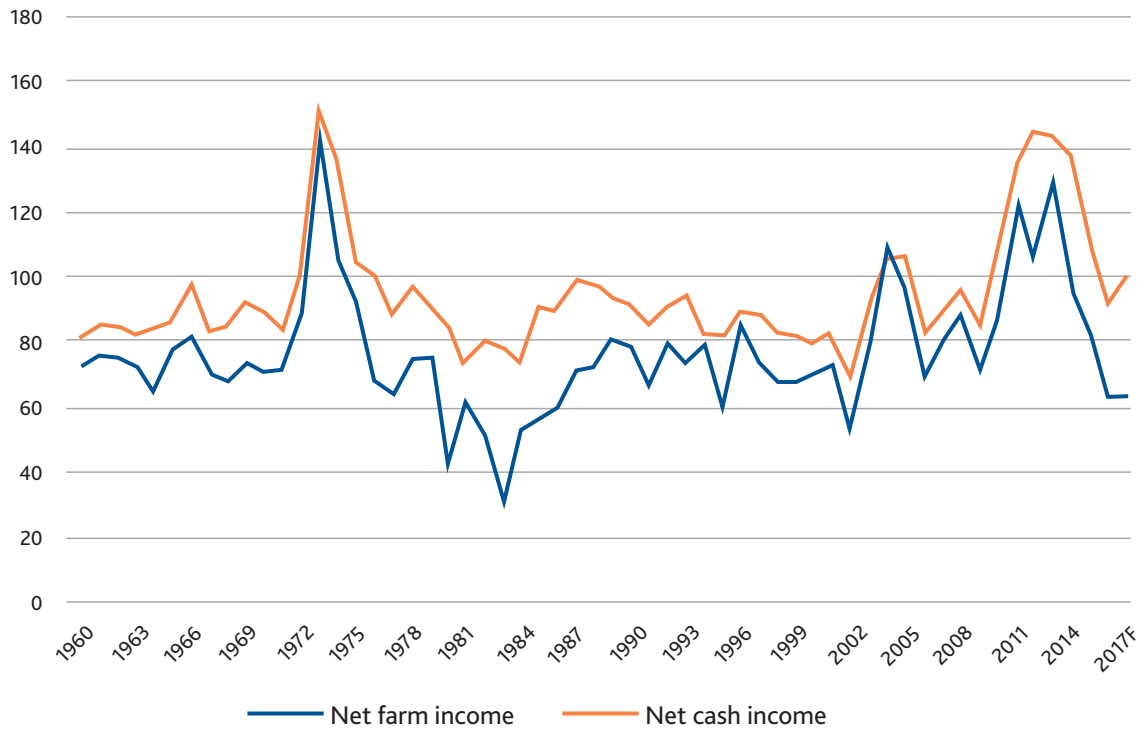
less costs) from farming are shown in Figure 3 for the period 1960 to 2017, where each measure is adjusted for inflation effects so that values for every year are reported in 2017 dollars. Net farm income is a measure developed by the USDA National Agricultural Statistical Service (NASS) for inclusion in the US national income accounts that shows the net value added to annual US gross domestic product by the agricultural sector. Thus, the measure accounts for non-cash transactions such as inventory adjustments, estimated capital replacement (depreciation), on farm consumption of commodities produced on the farm and rent expenses. Net cash income, a cash flow measure, is the difference between cash receipts paid to farmers from all sources (market sales, government subsidies, etc.) and cash expenditures. Thus, this measure shows the funds available to service debt, purchase equipment, and provide returns to invested capital and farm owner labour

⁴ For example, in 2010, as discussed by Wright (2014), corn, soybean and wheat prices were benefitting from the “corn for ethanol” demand stimulus created by the US Renewable Fuels Mandates established by Congress in 2007.

allocated to the farm's operations. Thus, net cash income more accurately reflects the financial resources available to a farm business from its annual operations than net farm income and as illustrated in Figure 3, net cash income is generally substantially

higher than net farm income. At the sector wide level, both net cash income and net farm income are relatively volatile, but over the long run their average values have remained surprisingly stable (there is little or no trend evident in the data reported in figure).

Figure 3. Net cash income and net farmer income: 1960-2017 (US\$ billion, 2017)



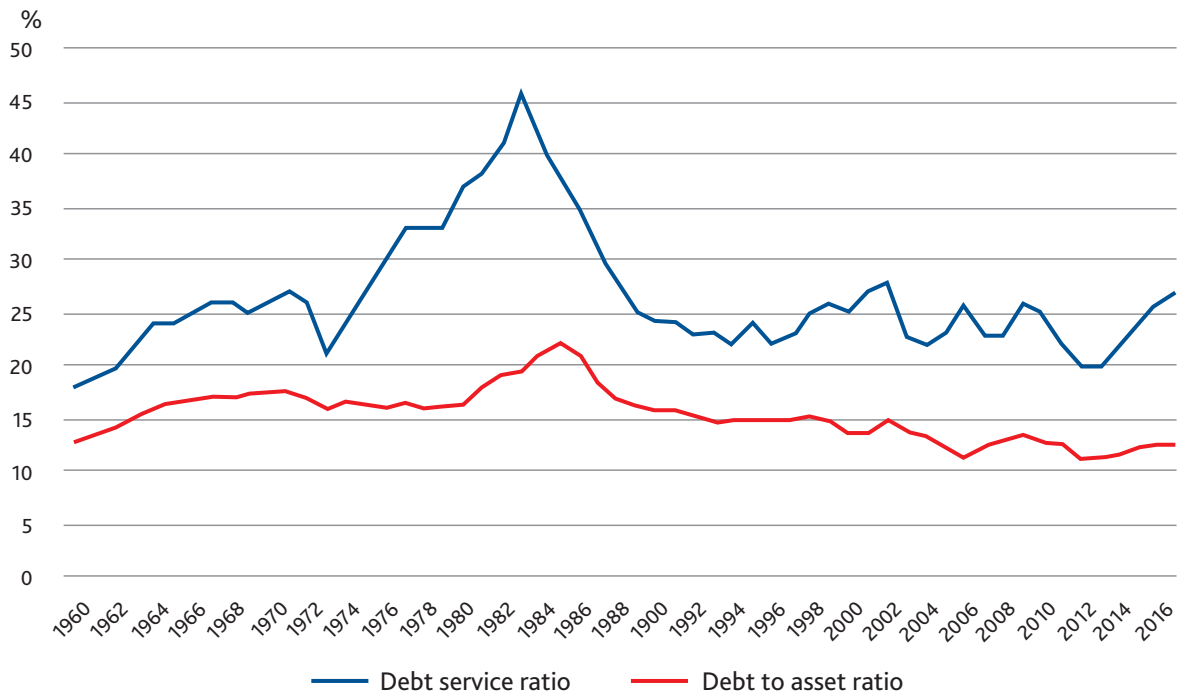
Source: USDA Economic Research Service

Figure 4 shows that between 2011 and 2017, both net cash income and net farm income declined substantially. Net cash income decreased by 42 percent from \$142 billion in 2011 to an estimated \$100 billion in 2017 and net farm income declined by 51 percent from \$130 billion in 2013 to \$64 billion in 2017. However, net cash income was higher in 2017 than over the period 2003 to 2006, which immediately preceded the global agricultural commodity price boom that began in 2007 and lasted until 2013. Further, net cash income in 2017 was well above its long run average over the period 1990 to 2006.

Examining key financial indicators for a sector such as debt-to-asset and debt service ratios is a standard approach to assessing an industry's financial viability and its capacity for handling short-term fluctuations in revenues and net returns. The debt service ratio is the share of revenues from production

required to service debt (interest plus repayments of principle); the debt to asset ratio is simply the ratio of total debt to total assets. Figure 4 shows information in these two sector wide financial indicators for the period 1960 to 2017. The 2017 debt service ratio, at 26 percent, was higher than in 2012, when sector revenues peaked and the debt service ratio was at a forty-year record low at 20 percent, but below its long run average. The sector-wide 2017 debt-to-asset ratio was 12.7 percent, and USDA estimates that in 2018 it had declined slightly to 12.5 percent, close to the 2012 sector-wide record low of 11.5 percent and well below the sector's forty-year long run average. The current values of these indicators are consistent with the view that the US agricultural sector is financially stable and most farm businesses are in relatively strong financial positions to cope with the year-to-year fluctuations in prices and incomes that are endemic in agricultural markets.

Figure 4. Debt to asset and debt service ratios for the agricultural sector: 1960 -2017



Source: USDA Economic Research Service

In summary, the financial state of the US agricultural sector is relatively healthy. While measures of sector wide net incomes are below their near record peaks in 2012 and 2013, financial indicators such as the sector wide debt-to-asset and debt service ratios are at average or well below average levels, indicating that most farm businesses have the financial capacity to manage year

to year fluctuations in commodity prices and farm incomes. Further, current estimates of bankruptcy rates in the US agricultural sector are exceptionally low, at 0.02 percent or only 2 in every 10,000 farms,⁵ much lower by orders of magnitude than for any other sector of the US economy and, in terms of sales and other metrics, much lower than for comparable small and medium sized US businesses.

5 See comments by Anna Katchova, Professor of Agricultural Economics, Ohio State University on March 23 2017. <https://www.agriculture.com/news/business/farm-bankruptcy-rates-are-sure-to-rise-says-analyst>

4. US AGRICULTURAL SUBSIDIES IN THE NEXT FARM BILL

Despite the financial health of the US farm sector and the current substantial US federal budget deficit, the House and Senate have separately proposed new farm bill legislation that makes few changes to the subsidy programmes that provide farmers with most of the subsidies they receive.⁶ As discussed above, those include the federal crop insurance programme and the PLC/ARC programme. These programmes provide subsidies that fall into the WTO amber box category and are reported as such by the USDA, although as Glauber and Sumner (2017) point out, the bulk of the PLC/ARC and federal crop insurance subsidy payments have been notified by the United States to the WTO as *de minimis* outlays.

The US Federal Crop Insurance Program

The US federal crop insurance programme pays an average of 62 percent of the total premiums charged for the policies farm businesses purchase (Smith, Glauber and Goodwin, 2017). By law, those total premiums are required to be actuarially fair (that is, premium rates should be set to ensure that total premiums cover expected payments for losses). The federal government also pays substantial additional subsidies to crop insurance companies for operations and administration costs (about \$1.4 million a year). As a result, on average the federal government pays over 70 percent of the commercial cost of the crop insurance policies that farmers buy.⁷ These subsidies are unambiguously linked to current production decisions as farmers are free to insure all of the area they plant to a crop and, moreover, because the government bears more risk than the private insurance companies who deliver coverage, additional subsidies are made

available to farmers when programme wide losses are large.

The subsidies paid to farmers under the US federal crop insurance programme increase the average net revenues farmers obtain from planting the individual crops covered by the programme and reduce the risk associated with growing the crop. Thus, the US crop insurance programme encourages increased production of over 150 covered crops, in part by bringing pasture and grazing land into crop production. The effect is to expand exports for crops like corn, wheat and soybeans where domestic production far exceeds domestic consumption, and to reduce import demand for other commodities such as fruits and vegetables where domestic production is insufficient to meet domestic consumption. Thus, the programme is likely to be a relevant issue in any disputes concerning serious prejudice in the context of SCM agreement disputes as well as in the context of US AMS commitments.

Figure 5 shows actual and projected crop insurance subsidies for the period 2016 to 2022, as reported by the US Congressional Budget Office (CBO). These estimates of crop insurance programme subsidies range from between \$7 billion to \$7.6 billion. However, were prices for the most heavily insured crops (corn, soybeans and wheat) to return to the near record levels that occurred between 2007 and 2013, annual crop insurance subsidies would increase to between \$9.5 and \$11 billion because, effectively, the subsidies are closely related to crop prices. As discussed above, the United States now reports these subsidies as product-specific amber box payments, but also for the most part as *de minimis* outlays, as over 150 different crops are covered, total crop revenues from market sales generally are

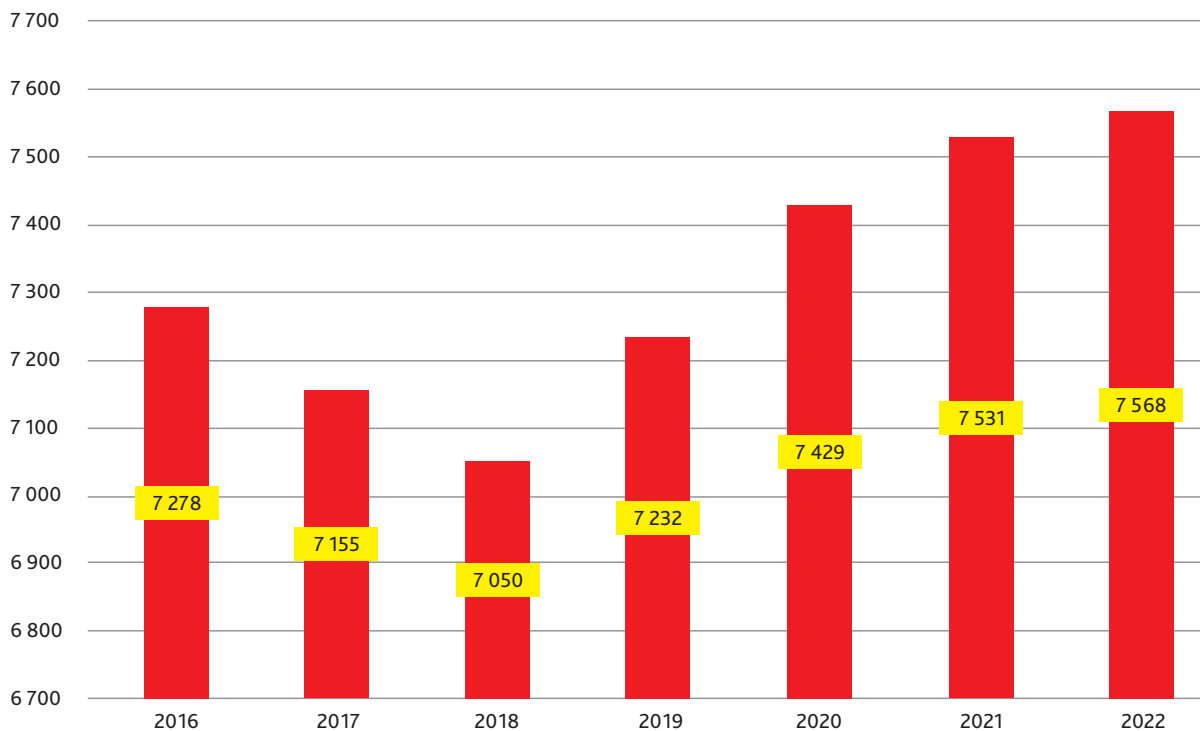
6 Details of the Senate and House 2018 farm bill proposals are available at the senate agricultural committee's home page at <https://www.agriculture.senate.gov/imo/media/doc/Agriculture%20Improvement%20Act%20of%202018.pdf> and the House Agricultural Committee's home page at https://agriculture.house.gov/uploadedfiles/agriculture_and_nutrition_act_of_2018.pdf.

7 For a recent detailed assessment of the US federal crop insurance program see Smith, Glauber, and Goodwin (2017).

close to or exceed \$200 billion annually. Thus, crop insurance subsidies on average fall below the current *de minimis* criterion of 5 percent of the value of production and such is the case for most crops. However, in WTO dispute cases for a specific crop such as corn or cotton brought forward under the SCM agreement, the crop specific crop insurance subsidies are

likely to be viewed as production distorting, regardless of whether in the context of AMS notifications they are viewed as *de minimis* subsidies. Further, when viewed in isolation from the effects of similar subsidies for other crops, the impacts of such subsidies on the production of the crop of interest are likely to be estimated as substantial.⁸

Figure 5. Crop insurance subsidies: actual and Congressional Budget Office projections: 2016-2022 (\$ million)



Source: Congressional Budget Office April 2018 Baseline for Farm Programs.

The Price Loss Coverage/Agricultural Risk Coverage Program

The PLC/ARC subsidy programme also falls into the WTO amber box category. As discussed above, in 2014 legislators on the House and Senate agricultural committees argued that payments under these programmes would average about \$3.7 billion annually. Those claims were based on estimates made by the US CBO. However, the CBO was required to use forecasts of prices for agricultural commodities like wheat, corn and soybeans over the period 2014 to 2023 that, even at the time, seemed overly optimistic, as pointed

out by Smith (Smith, 2014) and others (Smith, Glauber, Goodwin, and Sumner, 2017). Lower prices for corn, wheat and other commodities such as peanuts resulted in much higher subsidy payments under these programmes than predicted by CBO. The actual PLC and ARC subsidy payments for crops raised in any given year occur in the subsequent fiscal year (for example, subsidies for losses under the PLC programme in 2015 were paid in 2016). Outlays for PLC and ARC payments for crops raised in 2015 and 2016 that occurred in 2016 and 2017, and estimated 2018 outlays for crops raised in 2017, as reported by the USDA Commodity Credit Corporation, are as follows:

⁸ See, for example, the analysis by Goodwin and Smith (2003) of crop insurance subsidies on corn and soybean production in four Mid-Western states.

Table 1. PLC and ARC subsidy payments (2016-2018)

Fiscal Year	PLC Subsidy Payments (\$ billions)	ARC Subsidy Payments (\$ billions)	Total PLC and ARC Subsidy Payments (\$ billions)
2016	\$4.408	\$0.782	\$5.190
2017	\$7.779	\$0.587	\$8.366
2018	\$5.872	\$2.503	\$8.375

These subsidy payments, averaging \$7.3 billion a year between 2016 and 2018, are approximately double the PLC and ARC payments CBO forecasted would occur in early 2014, just prior to passage of the 2014 farm bill. In 2014, for each eligible crop, a farmer had to choose whether to enrol each eligible crop in the PLC or ARC programme for the duration of the 2014 farm bill as specified in the legislation (until September 30 2018). However, almost all farms could enrol one eligible crop in PLC and another in ARC, according to their assessment of the potential benefits associated with each programme for each crop.

The PLC programme delivers subsidies to producers of an eligible crop (for example, corn, wheat, soybeans, rice or peanuts) when the annual average market price for the crop received by US producers falls below the crop's reference price, as established by the 2014 farm bill. In recent years, these reference prices have been much higher than the market prices for several crops. For example, the reference price for wheat is \$5.50 per bushel but the marketing year average price for wheat was \$4.89 in 2016, \$3.89 in 2017, and is projected by the USDA Farm Service Agency to be \$4.72 in 2018. Similarly, the reference price for peanuts is \$0.2675 per pound but the relevant marketing year average prices for peanuts were \$0.193 in 2016, \$0.1970 in 2018 and are projected to be \$0.2325 in 2018. In both cases, substantial PLC subsidies were available to wheat and peanut producers who signed up for the PLC programme because market prices were substantially lower than the reference

price (about 27 percent of eligible wheat land and effectively 100 percent of eligible peanut area was signed into the PLC).

The ARC programme delivers payment to producer when, on a per acre basis, estimated revenues in the county in which a farm is located fall below expected county-wide revenues per acre.⁹ In the ARC program, expected revenues are calculated as the five-year historical Olympic average of per acre yields multiplied by the five-year historical Olympic average of market prices, using the most recent five years of data. However, if market prices fall below the reference price for the crop, then the reference price is used in calculating the Olympic average. For some crops like corn, for which prices were exceptionally high prior to 2014, the ARC programme offered the promise of substantial subsidy payments over the period covered by the 2014 farm bill (2014-2018). For other crops, like peanuts, for which from the outset reference prices were likely to exceed market prices, PLC was preferred.

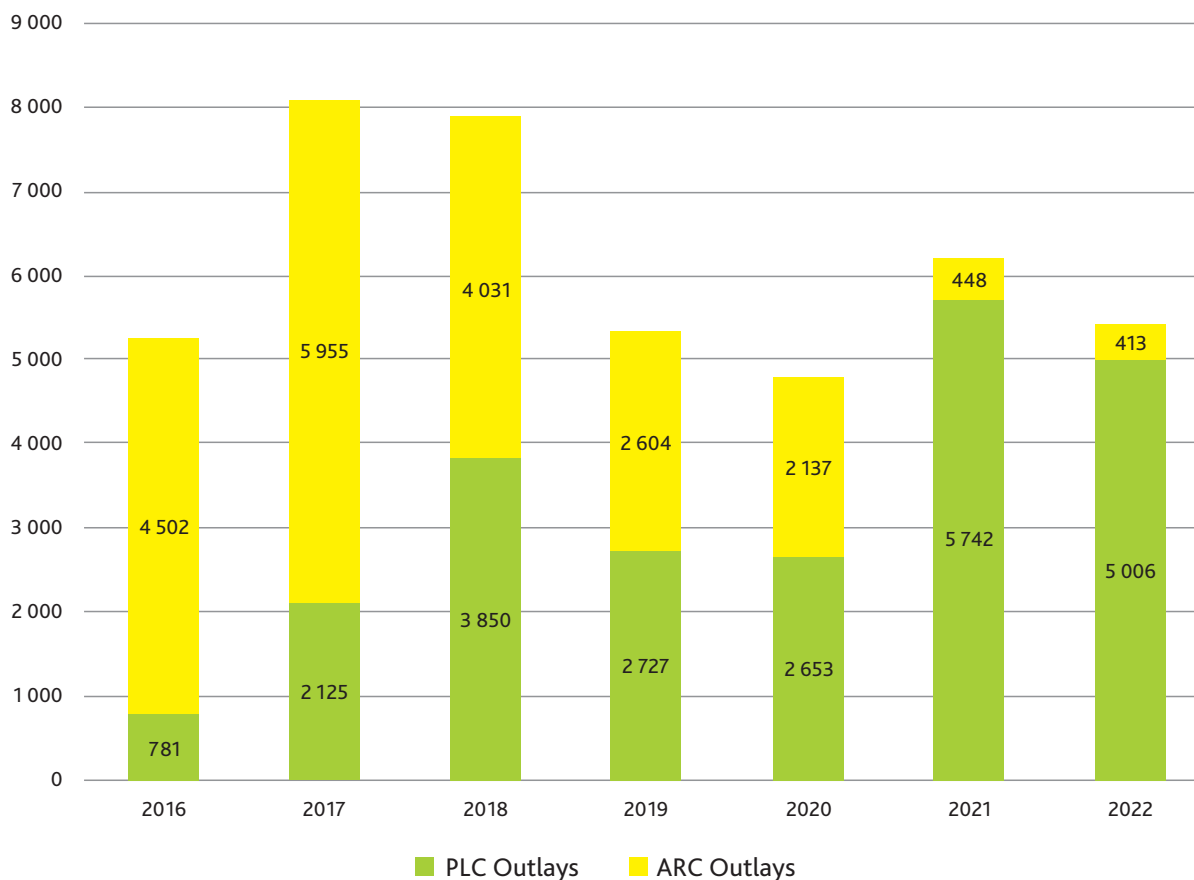
Neither of the alternative versions of a new farm bill passed by the House and the Senate make any changes to the ARC and PLC programmes, other than permitting farm businesses to alter their choice of ARC or PLC for each crop at the beginning of the four-year period to be covered by the new legislation (2019 to 2022). Thus, a farm will be able to shift a crop like corn from the ARC programme to the PLC programme if the management believes PLC programme subsidies will be higher than ARC payments over the duration of the new farm bill.

⁹ A version of ARC based on farm yields is available to farmers, but almost no farm beyond a small area in Montana has chosen to utilise that version of the programme.

Figure 6 reports actual and projected US government expenditures on PLC and ARC over the period 2016-2022 (CBO, 2018). They range from a low of \$4.8 billion (projected for 2020) to \$8 billion (in 2017). The major driving force behind changes in outlays from one year to the next for any crop is the annual average market price for the crop. Payments

under the PLC programme are entirely determined by the difference between the crop's legislatively determined reference price and the annual average market price, as reported by USDA. Payments under the ARC programme are also linked to the crop's market price as well as current year average crop yields.

Figure 6. Agricultural risk coverage and price loss coverage subsidies: actual and CBO projections 2016-2022 (\$ million)

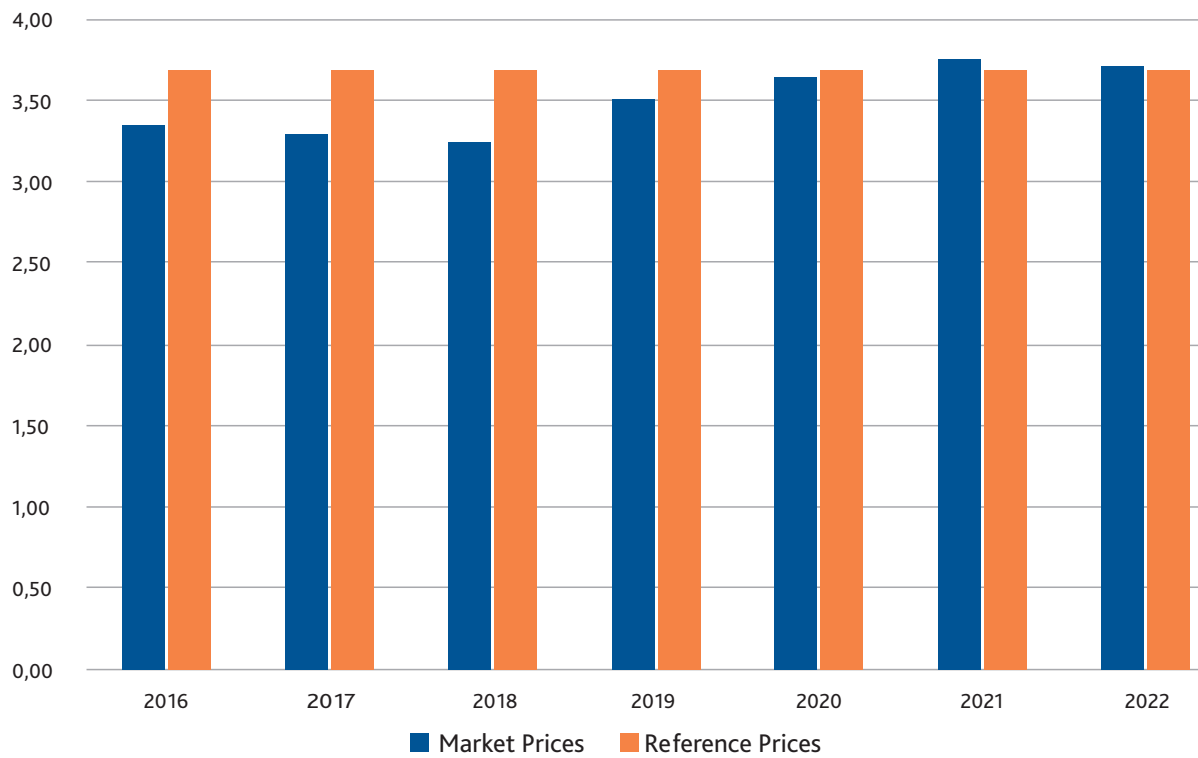


Source: Congressional Budget Office April 2018 Baseline for Farm Programs.

Figures 7, 8 and 9 show the reference prices and the actual and CBO projected market prices for the three crops—corn, soybeans and wheat—that receive most of the ARC and PLC payments over the period 2016 to 2022. For corn, the reference price exceeds the market prices in all years but 2021 and 2022, and the two prices are close to one another in those years. For soybeans, when the CBO made its projection in April 2018, projected market

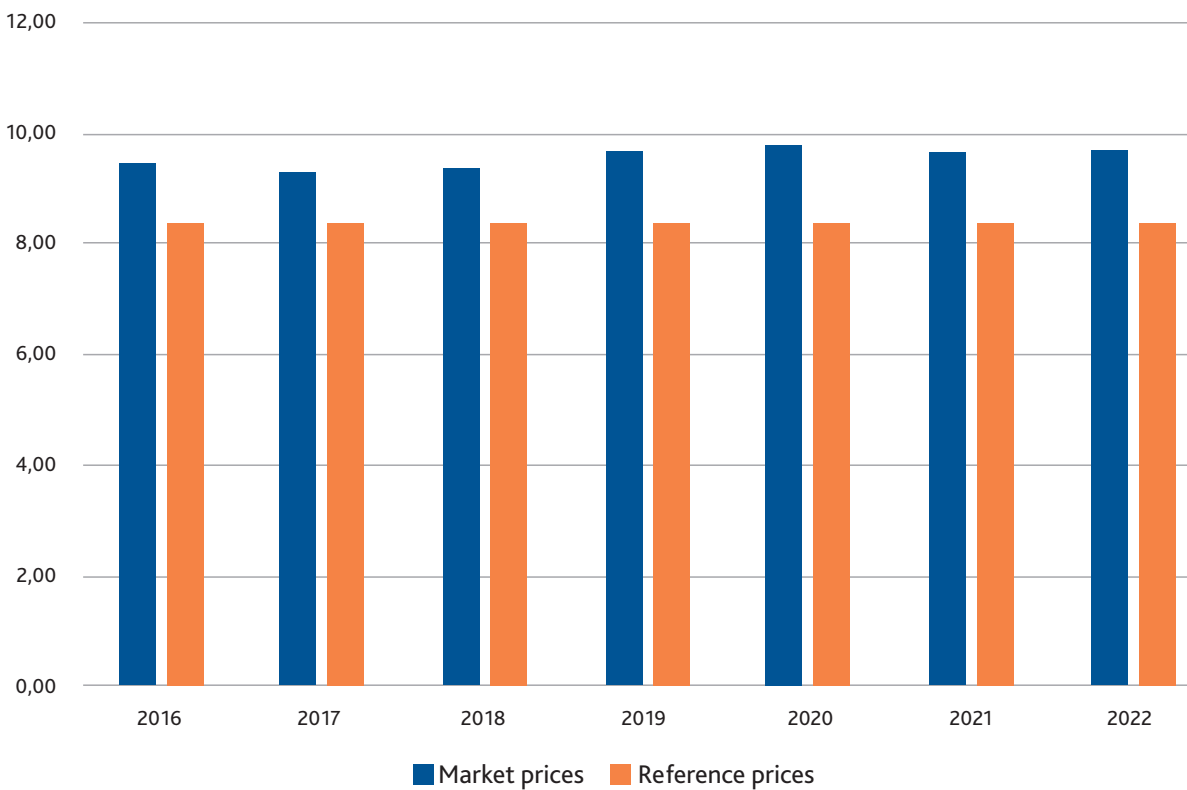
prices exceeded the reference price in all years. In November, 2018, when prices lay in the range of \$8.70, soybean prices were well below their average over the previous five years and lower than predicted by the CBO in April of that year. Nevertheless, they are still expected to remain above the soybean reference price. In contrast, for wheat (figure 9), market prices are projected to be well below the wheat reference price in all years.

Figure 7. Projected corn market prices and PLC reference prices: 2016-2022 (\$ per bushel)



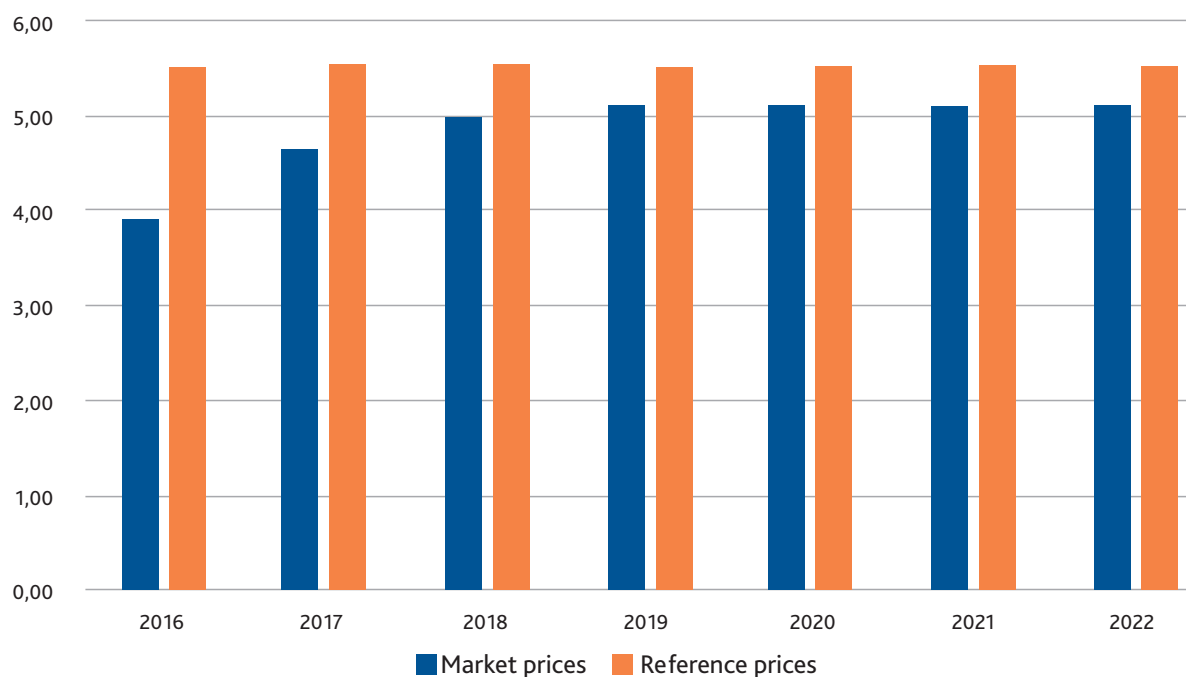
Source: Congressional Budget Office April 2018 Baseline for Farm Programs.

Figure 8. Projected soybean market prices and PLC reference prices: 2016-2022 (\$ per bushel)



Source: Congressional Budget Office April 2018 Baseline for Farm Programs.

Figure 9. Projected wheat market prices and PLC reference prices: 2016-2022 (\$ per bushel)



Source: Congressional Budget Office April 2018 Baseline for Farm Programs.

One important issue for the PLC/ARC programme concerns what is called base updating. Under ARC and PLC, total payments to a farm are based on the farm's historical production of the crop. The new legislation is likely to permit farms to update their production bases using the most recent five years of production information. This issue is especially significant for PLC. The amount a farm receives under PLC is determined by its historical average production of a crop. For most farms this is measured by the farm's average production of the crop over the five year period 2009-2014. Yields for many crops have increased since that period and allowing "base updating"—using a more recent five year period—is likely to increase the production on which PLC subsidies are paid.

Goodwin (2018) has pointed out that almost all farms producing corn, as well as other commodities like wheat, are expected to switch their crop from the ARC to the PLC programme when new farm bill legislation is authorised because the PLC programme is expected to be more lucrative. Thus, base updating could lead to substantial increases in PLC/ARC farm subsidy payments. Moreover,

permitting base updating also provides farmers with incentives to take account of ARC/PLC subsidies in their current land allocation and production decisions. Base updating, therefore, ties crop production outcomes to ARC/PLC payments, even though any given year's subsidy outlays are based on a farm's yield and planting histories for an eligible crop in prior years rather than the current year.

In the context of current US WTO commitments, as shown above, government spending on the PLC/ARC programme is substantial (for example, exceeding \$8 billion in 2017 and expected to average more than \$5 billion year over the period 2019-2022). Nevertheless, it seems unlikely that, even when PLC/ARC payments are combined with crop insurance subsidies, total AMS outlays under US agricultural subsidy programmes, as notified to the WTO, will exceed current US AMS limits. However, PLC/ARC payments to US farmers are likely to be viewed as problematic in disputes about the impacts of US domestic supports for agricultural commodities under the SCM agreement. At a minimum, the practice of permitting farms to update the

production bases on which these subsidies are paid whenever a new farm bill is passed does provide incentives for farms to alter current production practices and, as discussed above, the amber box designation for PLC/ARC makes it clear that such payments are linked to current prices and yields.

Cotton in the ARC/PLC program

When the PLC/ARC programme was introduced in 2014, cotton was intentionally excluded from the list of commodities eligible for PLC/ARC subsidies. The reason was straightforward. In 2012, on a bilateral basis the United States and Brazil agreed to resolve their WTO dispute case. In return for ending or substantially moderating several US amber box policies that created incentives for cotton production, cotton would not be eligible for direct subsidies through programmes such as PLC and ARC. Cotton producers could still receive crop insurance subsidies, and subsidies provided by a new (in 2014) additional insurance programme called the Stacked Income Protection Plan (called STAX for short) would not be problematic for the agreement. The STAX programme, based on shortfalls in per acre revenues at the county level, is heavily subsidised at 80 percent of the total premium for coverage, but only for a limited amount of losses.

Participation in the STAX programme turned out to be modest, partly as a result of relatively strong prices for cotton over the period 2015-2017. Almost immediately after passage of the 2014 farm bill cotton producers began to lobby for a new programme, in particular to obtain access to the PLC/ARC programme. This effort was successful, and in March 2018 the US Congress authorised PLC/ARC payments for seed cotton under an omnibus spending

bill.¹⁰ That programme is included in both the proposed Senate and House 2018 farm bills.

Approximately 10 million acres of cotton are likely to be enrolled in the seed cotton programme because any crop planted to upland cotton produces both cotton lint and seed cotton (Congressional Budget Office 2018). Most seed cotton acreage is likely to be enrolled in the PLC programme because the reference price of 36.7 cents per pound is relatively high compared to the market value of seed cotton. Glauber (2018), for example, estimates that cotton growers enrolled in the PLC would have received payments in 33 of the 37 crop production years between 1980 and 2016 had the programme been available to them during that period. Further, 27 percent of the time (10 years) average PLC payments would have exceeded \$140 per acre, and total payments to cotton growers would have been as much \$1.5 billion 22 percent of the time (8 years).

The new PLC payments for cotton seed are likely to be offset to a considerable extent by reductions in ARC and PLC payments for other crops, because many of the acres that will now receive such payments were eligible for and received ARC and PLC subsidies for crops such as corn, soybeans and wheat between 2014 and 2018 (Glauber 2018). Thus, the new seed cotton programme is unlikely to create problems for the United States with respect to current AMS commitments. However, in the context of SCM disputes, such payments are likely to be more problematic. Further, in this context, the new seed cotton programme appears to represent a clear break in the terms of the agreement through which Brazil and the United States resolved the WTO dispute over cotton originally filed by Brazil in 2004.¹¹

¹⁰ The omnibus budget bill is called the *2018 Budget Reconciliation Act*.

¹¹ For a detailed discussion of the new cotton seed PLC/ARC initiative see Glauber (2018).

5. THE US MARGIN PROTECTION PROGRAM FOR DAIRY

The 2014 farm bill introduces a new programme for US milk producers called the Margin Protection Program (MPP) for Dairy (see Sumner (2018) for a detailed discussion of this policy initiative). The programme provides payments when the difference between the estimated per hundred-weight¹² price of milk and the estimated feed cost associated with producing that milk falls below an insured “margin” value. Participation in this programme is voluntary and for almost all farms involves a \$100 administration fee. Farmers receive payment on up to 90 percent of their highest annual level of milk production during 2011, 2012 and 2013 with annual adjustments to reflect increases in annual total US milk production.¹³ The programme is an amber box initiative because subsidy payments are based on current monthly prices, including the price of milk and the price of major sources of feed such as corn. If they sign up for the programme, farmers receive coverage for a four dollar margin; that is, if the margin falls below \$4 they receive a payment equal to the difference between \$4 and the estimated margin on all eligible production. Higher levels of margin coverage can be obtained for a premium which increases with the size of the margin for which protection is acquired.

As Sumner (2018) points out, between 2014 and 2017 participation in the new programme was modest, especially beyond the \$4 level of coverage for which farmers paid no premiums. He points out that in 2015, while 55 percent of all US dairy farms enrolled in the programme, only 31 percent of all farms purchased buy up coverage. Thus, overall, 55 percent of operations enrolled and 31 percent paid a premium. In 2015, about 81 percent of production enrolled and about 33 percent

enrolled at higher than the minimum. By 2017, while most milk producers enrolled, almost all US dairy farmers enrolled at the minimum \$4.00 per hundredweight (cwt) coverage and paid no premiums.¹⁴

The March 2018 Omnibus budget act made substantive changes to the MPP. First, while all dairies could continue to obtain coverage at the four-dollar margin for all eligible milk production at no premium, they could now obtain free coverage for up to a five-dollar margin on the first five million pounds of milk production. Second, for higher levels of margin coverage, premiums charged to producers were slashed by 75 percent or more on the first five million pounds of covered production. Second, the period over which margins would be calculated was reduced from a two month period to a one month period, substantially increasing the likelihood of pay-outs. The US CBO’s April 2018 estimates of the subsidies to be paid out under the new MPP for dairy are relatively modest, at about \$265 million a year, but substantially higher than the payments made over the period 2015 to 2017 (in 2016 MPP payments were approximately \$100 million and in 2015 approximately zero). However, a year in which corn and soybean prices were high and milk prices low could result in substantially larger outlays.

The changes introduced to the MPP for dairy in March 2018 are embedded in both the House and Senate proposed farm bills, as discussed above. The WTO implications of the new programme are as follows. Subsidies paid out under the programme fall into the amber box category. If the CBO’s forecasts are correct, it seems unlikely that the new programme would cause the United States to violate its

¹² A hundred weight is 100 pounds, or approximately 45.6 kilograms.

¹³ The range of coverage is from 25 percent to 90 percent of eligible production. For more details, see the USDA Farm Service Agency Fact Sheet (April 2018), “Margin Protection for Dairy” available at <https://www.fsa.usda.gov/programs-and-services/Dairy-MPP/index>.

¹⁴ These data are available from the USDA Farm Service agency at <https://www.fsa.usda.gov/programs-and-services/Dairy-MPP/index>.

current AMS commitments. Further, even if dairy MPP subsidies were substantial in any given year because of high feed prices for corn and soybeans, those high feed prices would imply offsetting reductions in subsidy outlays under the other major programmes for those crops (the PLC/ARC and federal crop insurance programs). As with PLC/ARC and the federal crop insurance programme, a more relevant issue is whether the dairy MPP would be problematic in WTO disputes involving the SCM agreement. However, if spending on the MPP programme is modest relative to the total value of milk production in the United States

at the farm gate (in the \$35 to \$40 billion range) then it would be difficult to claim that, by itself, the restructured MPP would have a substantial effect on US dairy production. This is because the CBO estimates of the annual value of the MPP subsidies (about \$265 million) is less than one percent of the total value of milk production. Were annual MPP subsidies to exceed \$1 billion, they would represent about three percent of total milk sales; if they exceeded \$2 billion then they would represent about 6 percent of dairy farm revenues. However, most studies suggests that payments at those levels would be infrequent.¹⁵

¹⁵ See, for example, Mark, Burdine, Cessna, and Dohlman (2016).

6. CONCLUSION

Notwithstanding the relatively healthy financial condition of the US agricultural sector, neither of the farm bills proposed by the House and the Senate do anything to reduce the scope of US farm subsidy programmes that fall into the WTO amber box. No substantive changes have been proposed for the federal crop insurance programme. Farm businesses will continue to receive very generous subsidies that on average will continue to cover 62 percent of the total premiums for their crop insurance policies. Also, as is currently the case, there will be no cap on the amount of crop insurance subsidies an individual farm can receive and farms will be able to insure every acre they plant to a crop, directly linking premium subsidies to farms' production decisions. The government will also give crop insurance companies that sell and service farmers' policies substantial additional subsidies to cover many of the operations and administrative expenses that they incur.

The PLC/ARC programme for major commodities such as corn, wheat and soybeans will also be continued, apparently with no adjustments to reference prices that could reduce the amount of subsidies being paid out under the two programmes and no other changes in how PLC and ARC are operated. In addition, cotton producers will be guaranteed access to the PLC/ARC programme for seed cotton for the duration of the new legislation, creating a clear-cut cause for concern with respect to a potential violation by the US of the agreement with Brazil that resolved the WTO cotton

dispute. Further, any new farm bill legislation is likely to permit farm business to increase the amount of production on which PLC and ARC subsidies would be paid. Finally, the quasi-insurance margin protection programme for milk producers will be more heavily subsidised than it was over the period 2014 to 2017.

Thus, several major amber box US farm subsidy programmes will be retained and at the margin expanded. In addition, as discussed above, other forms of domestic support (including import tariffs, production limits, and marketing orders) for sugar, milk and some other commodities will also be continued. Finally, at this point, it is unclear whether the current US administration will actually provide an additional \$12 or \$13 billion in further domestic support subsidies for US agricultural producers in 2018 to compensate them for "losses" incurred as a result of a tariff trade war. Nor is it clear how such subsidies would be distributed (which crops would receive support and through what programs), although it seems almost certain that all such outlays would be amber box payments because there would be a direct link between those subsidies and current market prices. However, the willingness of both Congress and the current US administration to continue to expand amber box subsidies and other amber box forms of domestic support is of concern in the broad context of the current WTO agreement and future multilateral negotiations whose objective is to correct and prevent restrictions and distortions in international trade.

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