



Counting the Costs of Agricultural Dumping

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By Sophia Murphy and Karen Hansen-Kuhn

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Agricultural “dumping”—the practice of exporting commodities at prices below the cost of production—can be devastating for farmers in importing countries, especially in low-income countries with little power to defend their markets. It is unfair competition for producers in other exporting countries. And by encouraging overproduction, it traps producers in the country that is the source of dumping in a never-ending need for higher yields, bigger farms or both. After five decades of consistently falling prices (interrupted by occasional brief periods of higher and volatile prices), agricultural commodity prices increased sharply in 2007. Prices then fell only to rise again in 2011 before returning, in 2013, to the earlier pattern of low prices and dumping that is harmful to farmers, whether in richer or poorer countries. With so many losers, why does dumping persist?

Introduction: What is dumping and why does it matter?

The United States is an international agricultural powerhouse. It is the third largest producer of agricultural commodities globally, after China and India, and the world’s largest agricultural exporter. Its agribusinesses dominate world markets. Yet, in several of the agricultural commodities in which the U.S. is a major supplier to world markets, the prices at the point of export from U.S. ports are less than the cost of producing the crop. According to IATP’s calculations, in 2015, U.S. wheat was exported at 32 percent less than the cost of production, soybeans at 10 percent less, corn at 12 percent less and rice at 2 percent less. This paper documents this phenomenon, termed dumping in the General Agreement on Tariffs and Trade (GATT), and its consequences.

Dumping matters for at least three reasons. First, it undermines the economic viability of competing farmers, whether the farmers are growing crops for their domestic markets in importing countries, or selling their crops to traders for export in competition with U.S. production. This is especially a problem for largely agricultural developing countries that rely on agriculture for economic stability. Dumping has generated significant tension in international trade negotiations as a result.

Second, dumping is a threat to U.S. producers who sell their product in markets that are controlled by a just a handful of agricultural commodity trading corporations (four corporations control an estimated 75-90 percent of grain traded globally,¹ while it’s often the case in many markets within the U.S. that just one or two firms are present). As this paper documents, the prices farmers get for their crops, on average, are often less than their average cost of production. The gap lessened, and even disappeared briefly, while commodity prices were higher after the 2007-2008 food price crisis. But prices are now down again, the lowest they have been since 2002. Net farm income in the U.S. is down by 50 percent since 2013.² U.S. commodity farmers are reliant on off-farm income as well as government payments (in the form of both production and income support) to stay in business. The economic consequences of a system that reinforces dumping are felt by U.S. commodity growers

and their families, their hired workers and by the rural communities they live in—communities that are deprived of capital that should support vibrant economic life.

Third, dumping creates an economic environment that undermines the realization of environmental objectives. Care of the natural resource base, including soil health, water quality and the ecological diversity of farmland, are all squeezed, not just because commodity markets externalize environmental costs, but also because sustainable use is priced out by increasingly concentrated competition. The result is a vicious circle of policies that harm family farmers, the environment and local economies in both the U.S. and the countries receiving agribusiness’ exports from the U.S.

Dumping is the logical result of U.S. agriculture and trade policies that encourage overproduction, using export markets as an escape valve for falling prices and revenues. Agricultural commodity dumping has not gone unnoticed in trade circles; it has been the subject of ongoing controversies at the World Trade Organization (WTO), for example, particularly among developing country governments whose farmers complain about the flood of cheap imports. The problem persists in large part because the WTO diagnosis has focused on just one of several complex causes: government subsidies, both export and domestic subsidies. This focus has left other potentially more important factors, such as the oligopolistic market power of international grain traders and global overproduction, unaddressed.

It is not uncommon for short-term price discrepancies to exist between domestic and export markets. No market is perfect and commodity markets are rife with market failures and imperfections. Dumping is different. The numbers presented in this report are not recording short-term price discrepancies. Rather, they describe a systematic problem of dumped U.S. agricultural commodities in world markets, a phenomenon IATP has tracked for over twenty years.

Dumping destabilizes markets. Dumping is unpredictable. Dumping has destroyed agriculture and related industries in developing countries—one of the best documented recent examples is Haiti’s domestic rice sector, which was buried

in imported rice.³ Some governments, with the encouragement of agricultural economists, have been inclined to overlook dumping because it provides cheap food imports for consumers; they reason that countries can invest their domestic resources in other sectors if they have a cheap food supply. This strategy, however, imposes significant costs on both exporters and importers. It undermines domestic agricultural production in importing countries, which is an important source of poverty-reducing growth. Dumping destroys rural livelihoods and diminishes opportunities to build local infrastructure through local trade. Relying on dumped agricultural production makes low income countries that import the majority of their food vulnerable to price spikes. When prices on international markets rise sharply, poor and vulnerable countries can find themselves without a reliable supplier, as Liberia learned the hard way in the 2007-2008 food price crisis. When the government was unable to pay higher prices for an already contracted shipment of wheat, the trading company broke the contract, returned the money and left Liberia without the wheat the government was relying on to protect access to food in the country. The persistence of over-production and dumping leaves farmers in the U.S. unable to make a living from the market and reliant on both government transfers and off-farm income to keep the household financially viable.

Dumping and U.S. Farm Programs

The U.S. government does not acknowledge that the export dumping by U.S. agribusinesses of agricultural commodities is a problem. Despite a series of reforms enacted through its periodic farm legislation since the signing of the Uruguay Round of trade agreements in 1994 (renewed in 1996, 2002, 2008 and 2014, and known generically as the Farm Bill), the U.S. government has not addressed the root causes of dumping. These root causes include domestic support programs, which are part of the structure that makes dumping possible. They also include the oligopolistic market power of the handful of commodity traders that dominate international grain markets. Concentrated market power in agriculture is a problem that has prompted Congressional hearings and nation-wide listening tours. It is an old problem—one that in the past has prompted legislative and regulatory action. But no such measures have been forthcoming in the latest wave of consolidation. Instead, the market failures have been left unchallenged. In the wake of the Second World War, U.S. farm programs provided a check on commodity trader power through price floors and stock-holding programs. Over several decades, agribusiness successfully lobbied to erode those programs in succeeding Farm Bills until they effectively ended with the 1996 Farm Bill, known as “Freedom to Farm.”

The 1996 Farm Bill shifted public policy from commodity price floors (designed to ensure farmers a fair price in the marketplace) to farm income support, satisfying a long-standing demand from commodity traders that the government should not interfere to raise prices. With floor prices, grain traders had to match the government floor. With the end of such policies, traders could use their market power to pay less for commodities, leaving the government to make up the shortfall in income that farmers then faced.

The 1996 Farm Bill encouraged farmers to greatly expand production and exports by eliminating limits on production and urging U.S. farmers to “feed a hungry world.” The government, and the multinational grain companies, proposed export markets as a way to keep prices buoyant as domestic demand stayed flat and production increased. Temporarily higher prices for some commodities (particularly corn) made the 1996 Farm Bill possible politically, yet price trends quickly returned to their longstanding downward trend. Political protests by farmers then led the U.S. government to adopt a patchwork of emergency measures to prevent a rapid exodus of farmers. The patchwork was codified in the 2002 Farm Bill, at which point the U.S. government introduced countercyclical payments, albeit at levels much below production costs (countercyclical because payments rose as prices fell, to counter the market signal). Corn and other commodity prices also rose after 2007 due to new biofuels targets, as well as speculation on commodity markets and other factors that temporarily drove prices higher. Reforms continued with the 2008 legislation, adding to the mix of production and income linked measures that conformed to WTO rules but that did not curb the countercyclical effect of supporting production during low prices.

The 2014 Farm Bill introduced some significant changes in the way farm programs work. Direct Payments based on historic land acreage, Countercyclical Payments (which were price-based) and the Average Revenue Election Payments (ACRE), which was based on farm incomes rather than prices, were all phased out. In their place, the government established two insurance programs: the Price Loss Coverage (PLC) program and the Agricultural Risk Coverage (ARC) program. The PLC program is price-based, providing a payment when national season-average farmgate prices fall below fixed reference prices. ARC is income based; the program pays out when county average or individual farm-level revenues per acre (producers choose which when they enroll) falls below 86 percent of a benchmark that moves according to a five-year Olympic average⁴ of national prices and county or farm yields. Grain and oilseed producers (including peanut growers) can choose which program to enroll in, but once acres are enrolled in the PLC, farmers cannot move them out until the expiration of the Farm Bill in 2018.⁵

Dumping in an era of volatility and multilateral uncertainty

IATP's dumping calculation compares production prices and export prices looking for discrepancies. The common-sense assumption is that—at least on average and most of the time—the export price should be higher than the production price to allow for the cost of transportation and some profit for the handler. Yet, IATP has consistently found that for four crops tracked—rice, wheat, corn and soybeans—dumping is a persistent feature of U.S. agricultural commodity exports. The sharp rise in food prices in 2008 and 2011 created the illusion that the problem had been resolved. Over the last few years, however, persistently low prices have returned, as has dumping.

The controversy around support to U.S. agriculture has played out internationally in debates on the right rules for agriculture at the WTO. The Uruguay Round Agreement on Agriculture (AoA) created a framework for agricultural trade rules in 1994. Since then, further changes to agriculture rules have proved impossible. While the AoA ended the exemptions that had kept agriculture mostly out of the multilateral system of trade rules, it simultaneously granted special status to agricultural goods, subjecting them to different—and less stringent—rules than those applied to other goods. Governments that relied on trade-distorting domestic support could continue their programs, though with some constraints and with the explicit expectation (written into the agreement) that further reductions in trade-distorting support would be made five years from the coming into force of the agreement (which was 2000). That timeline was optimistic. Twenty years later, after coming close to agreement in July 2008, WTO member states seem further apart than ever on what the WTO agriculture negotiating agenda should be.

Farmers in the U.S. and the EU are still big producers for international agricultural commodity markets, and the U.S. and EU are big importers as well. The four biggest agricultural commodity traders—ADM, Bunge, Cargill and Louis Dreyfus—continue to dominate international commodity markets.⁶ And while more countries are exporting more agricultural commodities than ever before, the production of most agricultural commodities for export remains heavily concentrated in no more than a half-dozen countries (a list that varies by commodity).

For all the continuity, international agricultural commodity trade has changed in the last 20 years. Since the WTO was established in 1995, more food is grown, more food is traded internationally and more countries are involved in growing and trading commodities.⁷ There are more people in the world, in large part because more people are living longer lives. Significantly, from an international trade perspective, there has been a big shift in what people eat and where their food

comes from as tens of millions of people have adapted and diversified their diets, eating relatively less food staples such as rice, and relatively more meat, fresh produce and processed foods. At the same time, strong population growth in some of the world's poorest regions has kept demand for the three primary sources of calories worldwide (rice, corn and wheat) buoyant. Asia has overtaken Europe as the largest food-importing region. Meeting this demand has exacerbated unsustainable use of freshwater and topsoil and encouraged deforestation, while urbanization and climate change are shifting the geography of agricultural production and making output less predictable.

The U.S. continues to be an agricultural production and trade superpower, exporting some 20 percent of its sizeable harvest. Yet the country is no longer the world price setter in temperate commodity markets such as wheat, soy and corn. Other exporting countries are capturing an increasing share of the growing market.

Method

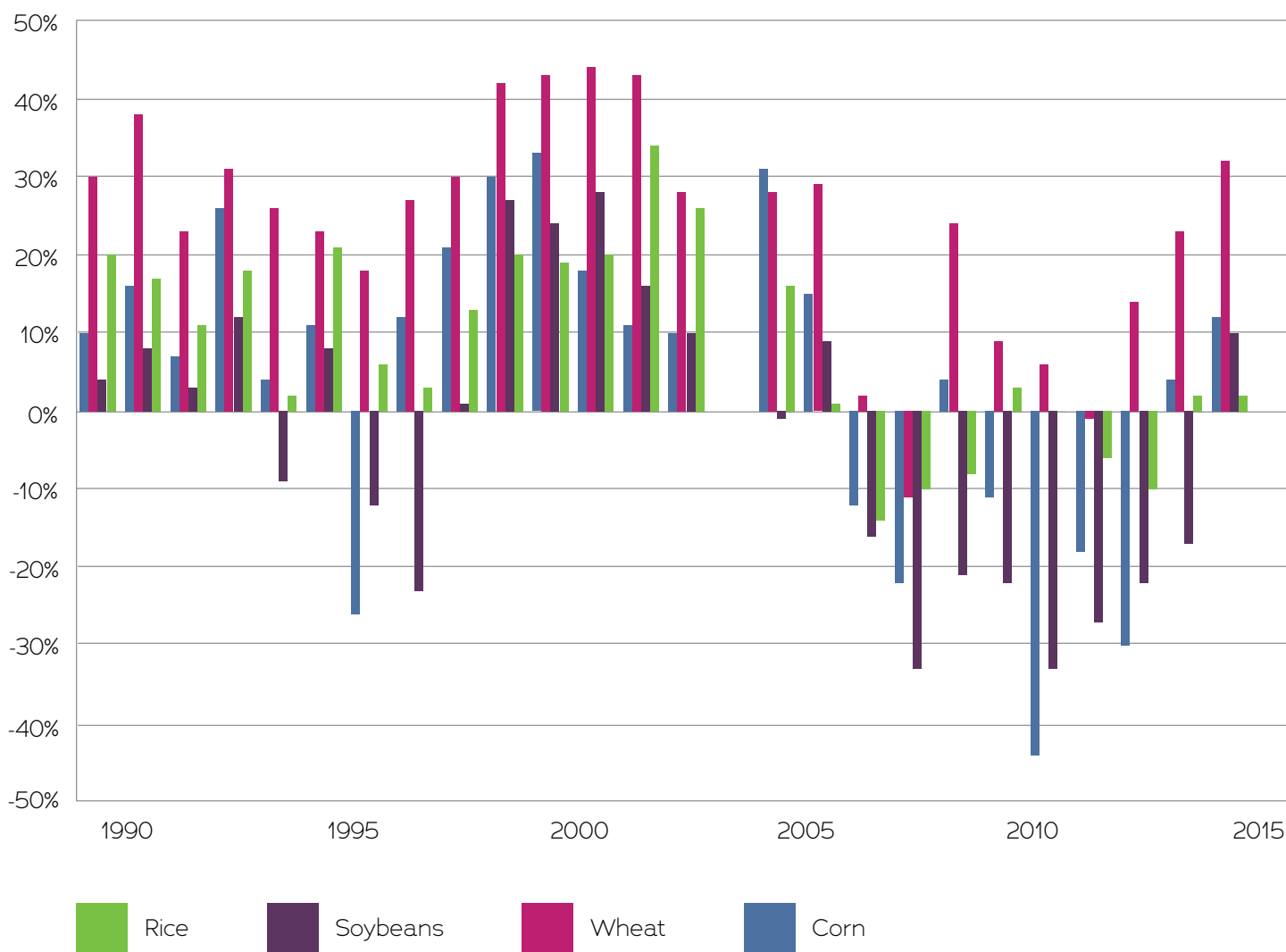
IATP has calculated the extent of U.S. dumping of wheat, soybeans, corn, rice and cotton periodically since the 1990s. (The last comprehensive report was published ahead of the Hong Kong WTO Ministerial Conference in 2005.)⁸ IATP uses the definition of dumping established in the GATT for markets in which the market price may not reflect “normal value” (for example, because of the presence of significant public subsidies). In such cases, normal value must be constructed:

the “constructed value” of the product, which is calculated on the basis of the cost of production, plus selling, general, and administrative expenses, and profits. (from Article VI of GATT 1994)

Using data from the U.S. Department of Agriculture (USDA) and the Organization for Economic Cooperation and Development (OECD), IATP calculates dumping by comparing production costs and export prices, looking at each commodity separately. The 2005 analysis revealed a consistent pattern of dumping for all five commodities over the period from 1990 to 2003. In 2003 (the last year of data on which those calculations were based) dumping rates for those goods ranged from 10 to 28 percent below the cost of production. These levels are clearly high enough to create unfair competition for farmers in other countries selling to traders for export, as well as for farmers selling in the local markets of importing countries.

In our new calculations of dumping rates, we relied on the same methodology as in the 2003 and 2005 analyses, adding the costs of production to government support allocated for those crops and estimating transportation costs to arrive at

Graph 1: Dumping rates for major U.S. commodities



an approximation of the full cost of production, which we then compared to export prices. In most cases, we could use the same data sources as before to compare the trends in prices in the past to trends arising since the food price spikes and volatility that began in 2007.

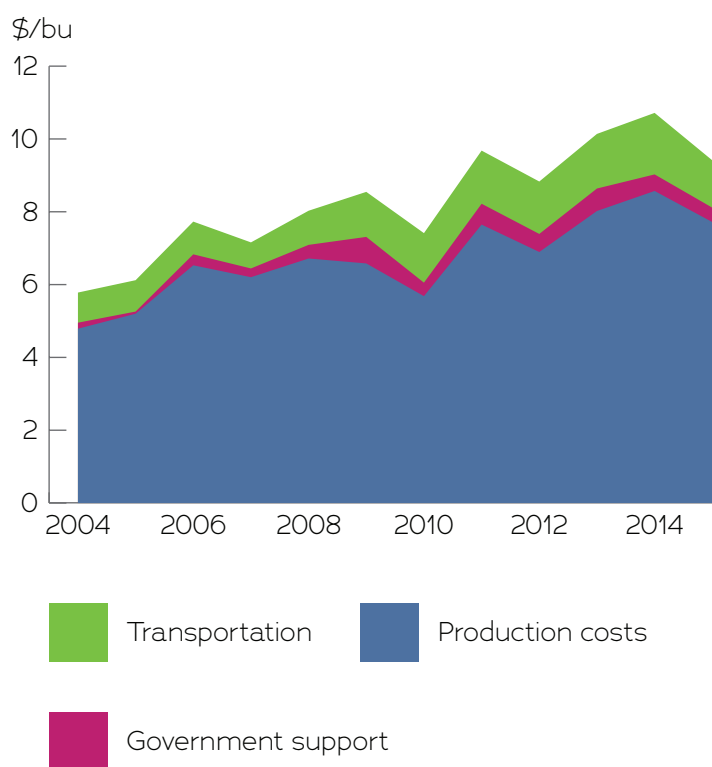
We used official data reported by the U.S. government to draw a picture of the extent of dumping of those crops. The cost of production is drawn from USDA Economic Research Service tables on commodity costs and returns. Those tables include operating costs such as seeds and fertilizer, as well as allocated overhead costs. While these tables do not list profits (which are usually included in dumping calculations for other kinds of goods), they do include the opportunity costs of land and labor, i.e., what those resources could have earned if they had been put to other uses, which in economic terms is like profits. To those costs, we added the cost of government support to produce those crops, as reported to the OECD Producer and

Consumer Support Estimates Database, which includes the subsidy portions of crop insurance, revenue insurance and credit allocated to each crop.

Estimates of processing and transportation costs as the commodity goes from field to port are more difficult to arrive at, both because the crops are grown at and distributed to diverse places, and because most of the information on freight and related costs is proprietary data that is not publicly available. Nonetheless, since it is a real part of the total cost, we estimated transportation based on the difference between the price paid at a typical site of production for that crop and the price paid at the port of export.

We used the yearly average of weekly prices paid in Kansas (wheat), Iowa (soybean), Illinois (corn) and Arkansas (rice) and the Freight On Board price at Gulf coast ports, as reported in the USDA Agriculture Marketing Service Transportation

Graph 2: Total costs of wheat



Analysis Table 2: Market Update: U.S. Origins to Export Position Price Spreads, and the USDA Economic Research Service, Rice Yearbook. We recognize that these are rough estimates of the real transportation and handling costs.

Graph 1 illustrates the results of those estimates. The dumping rates from 1990 to 2003 are based on IATP’s earlier calculations. With some exceptions, they show a consistent pattern of dumping. Adding in the new calculations from 2005 to 2015, we see a return to the patterns of the past. As prices fell in the wake of the food price crisis and the price spike following the 2011-2012 drought in the U.S., rates of dumping increased. Three of the four commodities studied returned to dumping in 2014, and all of them did in 2015, when we see a return to U.S. dumping in export markets for wheat (32 percent in 2015), soybeans (10 percent), corn (12 percent) and rice (2 percent).

Another way to understand these figures is that despite the pause in dumping during the price shocks of 2007-2008 and 2011, all the factors that led to dumping persisted, allowing dumping to return with overproduction and lower international market prices. Current projections for continued overproduction of agricultural commodities and low prices point to a return to dumping for the foreseeable future.

Box: What about cotton?

Dumping also undermines the ability of exporters in developing countries to compete in global markets. U.S. dumping of cotton has been the subject of formal WTO complaints by Brazil, a countervailing duty ruling by Turkey, as well as ongoing pressure by several African countries demanding changes in WTO rules to address the problem. In 2004, the Dispute Settlement Body of the WTO found in favor of Brazil, ruling that government subsidies gave U.S. producers an unfair advantage and suppressed the world market price, which damaged Brazil cotton farmer interests. After multiple appeals the WTO upheld the original ruling, and in 2009, the U.S. agreed to pay Brazil compensation and to revise its cotton program.⁹ Those changes still fail to address the very real problems confronting African cotton farmers, most of whom are smallholder farmers from some of the world’s poorest countries and depend heavily on export markets. While global prices are affected by changing production and consumption patterns in China and other countries, there is little doubt that U.S. policies continue to contribute to artificially low global prices.

IATP’s earlier calculations showed persistent levels of dumping of cotton, ranging from 16 percent in 1996 to a whopping 65 percent in 2002. Unlike the other calculations presented in this paper, the same sources of information as we used in the earlier periods are not available. Still, based on USDA information on the cost of production, and International Monetary Fund data on the global prices of cotton, the evidence of dumping persists:

	Cost Production ¹	Export Price ²	% Dumping
2005	0.67	0.56	16%
2006	0.81	0.59	27%
2007	0.73	0.73	0%
2008	1.08	0.61	44%
2009	1.11	0.78	30%
2010	0.94	1.64	-75%
2011	1.51	1.00	34%
2012	1.21	0.88	27%
2013	1.38	0.91	35%
2014	1.22	0.71	42%
2015	0.92	0.71	23%

1. USDA Commodity Costs and Returns: Cotton. May 1, 2017 update

2. USDA Cotton and Wool Yearbook, Table 13--Index of selected cotton price quotation offerings, c/f Far Eastern, monthly, 2003/04-present. A Index.

While much of the international debate on dumping in agriculture, particularly at the WTO, has focused on the role of government subsidies, the issue in the U.S. context is more complex. Graph 2 illustrates the relative sizes of production costs, subsidies and transportation costs for wheat. Even with the changes in the 2014 Farm Bill, the relative size of

subsidies remains fairly constant. The picture is similar for corn and soybeans. In the case of rice, transportation costs are relatively higher, but the pattern is the same. The issue is not only the amount of the subsidies but also the incentive they create to produce certain crops that then require larger markets and the lack of any policy tools to ensure a fair price from the marketplace. That imperative in turn drives U.S. trade policy, not only at the WTO but in bilateral and plurilateral trade accords as well.

How have farmers fared under this system?

The fact that U.S. farm goods can continue to be sold at prices below the cost of production, especially given the small relative share of subsidies under the Farm Bill, seems counterintuitive. Examining the USDA's Costs of Production for wheat (not counting government support or transportation costs), to take one example, illustrates the full range of costs. In a year of low prices, a farmer will not fully recover expenses such as the cost of his or her own labor (opportunity cost of unpaid labor) or the implied costs of land. "Capital recovery of machinery and equipment" will in most cases mean paying back loans on those purchases, or planning to replace equipment that wears out. A farmer might absorb some of those losses in the short term, but a business cannot run at a perpetual loss. To cover the revenue shortfall, farm families are pushed to seek off-farm work. Often, they are looking for health insurance, too, as the cost of health care is another major issue for farmers and their families.¹⁰ Lots of parties make money from agriculture, including, in some years, farmers. Many years, however, farmers work at a loss. Agribusiness makes money much more consistently. When we look at the cost of production and the movement to port and export, there are profits and losses at various stages along the supply chain but much of it is hidden behind proprietary contracts and vertically integrated supply chains. IATP argues that the system is structured in a way that allows, even encourages, farmers to operate at a loss, which maximizes profits further downstream for agribusiness and leaves the public covering the farmers' losses.

The farmer will forgo profit and maintain production for a long time. This is a long-observed fact of agriculture that is different than other sectors. There are different reasons for this behavior, many of them related to the lag that results from holding illiquid assets (land and machinery) and growing a commodity that cannot be produced "just in time." It is expensive and slow to change production on a farm, and, unless high prices are checked, they tend to stimulate an over-reaction by farmers, resulting in far more production than is warranted by demand. As a result, prices are volatile in the short-term and then quickly trend back to lower prices, with high prices an exception not a norm.¹¹ The land is an asset

that farmers borrow against when he or she has no capital to invest. Farmers work for themselves and can decide to do without when profits are down. Many farms in the U.S., in fact, depend on a web of income that includes government payments and the earnings of members of the household who work off-farm as well. Rented land has become a much more common feature of U.S. agriculture, as some land owners choose to hold on to their land title but allow neighbors to realize economies of scale (and run the risks of planting a crop) by working the land. The motivations for working a farm include personal, cultural and social factors that are poorly captured by micro-economic cost benefit analysis; farms tend to be family businesses, and the investment includes family and community ties and knowledge of a specific geography and micro-climate. As a result, changes happen in the long-run and are slow to emerge.

Over the last few decades, the pattern of production in U.S. agriculture has moved in two opposing directions: towards larger and very large farms and towards a new generation of micro farms that meet emerging urban demand for more locally grown produce. Volatile prices contribute to that polarization, as mid-sized farmers are compelled to either sell their land to bigger farms or to buy up their neighbors' land. Bigger farms are better able to absorb risks. U.S. census data shows a marked drop in the number of mid-sized farms (those with sales between \$25,000 and \$100,000); an increase in the number of very small farms, many of which produce meat, fruits and vegetables for local markets; and an increase in the number of very large farms. While the growth in more sustainable local production is a welcome development, the absorption of medium-sized, family-owned and operated farms by bigger operators undermines what has been the basis of rural economies across the country.

The current Farm Bill programs respond to price drops, but they are not designed to resolve them. Indeed, they are often accompanied by rhetoric that suggests the payments are intended to ease a transition out of farming and to reduce the number of farmers in total. They compensate farmers to some degree for the catastrophic drop in farm prices, even as costs have continued to rise. Farm incomes have plummeted for the last three years,¹² and the level of farm debt to income is the highest it has been since the 1980s.¹³ Since the payments under the ARC and PLC insurance programs are based on a five-year Olympic average (i.e., discounting the highest and lowest prices) for each crop, continued low prices means that the payments will continue to plummet as well. The answer has been to encourage exports to compensate for low prices, but that response has proved facile and has not resolved farmers' underlying lack of market power.

The U.S. imperative to rely on export markets has had negative impacts on farmers in developing countries. Under the North American Free Trade Agreement (NAFTA), for example, corn exports to Mexico increased more than 400 percent in the first few years of the agreement, disrupting local markets in Mexico. Based on Mexican Census data, Tim Wise estimates that more than two million Mexicans left agriculture in the wake of NAFTA's flood of imports, or as many as one quarter of the farming population.¹⁴ Even when dumping rates decreased during the period of high prices, existing

public support programs for agriculture in Mexico, as in the U.S., tended to support the largest farmers and agribusiness interests, rather than the smaller producers who had been the backbones of their rural economies.¹⁵ The integration of supply chains under NAFTA that has resulted both from the trade deal and from each country's agricultural policies has undermined smaller producers and rural economies on both sides of the border.

Chart 2: U.S. Wheat production costs and returns per planted acre, excluding government payments, 2009-2015¹

Item	2010	2011	2012	2013	2014	2015
Operating costs:						
Seed	11.07	13.39	15.33	16.06	15.82	15.08
Fertilizer ²	32.56	44.32	46.08	46.15	43.52	40.12
Chemicals	13.78	13.49	14.16	14.22	14.86	14.37
Custom operations	9.42	9.96	10.13	10.59	10.86	11.10
Fuel, lube, and electricity	15.36	19.71	19.42	19.38	19.17	12.42
Repairs	19.90	20.33	20.93	21.07	21.44	21.48
Other variable expenses	0.59	0.63	0.59	0.62	0.62	0.65
Interest on operating inputs	0.10	0.06	0.08	0.06	0.04	0.10
Total, operating costs	102.78	121.89	126.72	128.15	126.33	115.32
Allocated overhead:						
Hired labor	2.04	2.10	2.13	2.18	2.20	2.27
Opportunity cost of unpaid labor	15.98	16.36	16.93	17.39	17.58	18.19
Capital recovery of machinery and equipment	73.31	77.37	81.21	82.96	86.50	88.64
Opportunity cost of land (rental rate)	46.83	52.65	57.58	63.70	65.06	66.00
Taxes and insurance	6.01	6.36	6.42	6.47	7.31	7.76
General farm overhead	10.45	10.84	11.01	11.18	11.30	11.28
Total, allocated overhead	154.62	165.68	175.28	183.88	189.95	194.14
Total, costs listed	257.40	287.57	302.00	312.03	316.28	309.46

1. Developed from survey base year, 2009.

2. Commercial fertilizer, soil conditioner, and manure.

Source: USDA ERS Cost of Production: Wheat. Compiled by ERS using Agricultural Resource Management Survey data and other sources.

Who benefits from dumping?

The benefits of export-oriented agriculture tend to accrue to the largest actors, particularly the agribusinesses most directly involved in international markets. While farmers' planting decisions are locked in seasonally or even longer, agribusinesses are set up to react to changes in markets at lightning speed. Those companies profit when prices rise or when they fall, as long as they are successfully predicting the direction of change. Many of the risks inherent in agricultural production, whether from erratic climatic conditions or unstable markets, fall on the farmers. Limiting production is not really an option if prices fall, as no individual farm is in a position to affect the market. This means farmers must increase production in the hopes that higher volume can compensate for lower prices; leaving land fallow and equipment in the barn is to see value leach away. Futures contracts are valuable but have grown increasingly expensive as a result of deregulation, and prices are affected in the short-run by pressures that are not strongly linked to the supply and demand for physical commodity. New phenomena, such as computer driven high frequency trading, have amplified price swings; the effects of these new trading technologies are still not well understood. Grain traders have better risk management strategies, including access to global markets and vastly more information on market conditions. If the U.S. soy harvest fails, they can source from Brazil or Argentina; if demand in China dips, they can look for customers in Malaysia instead. As importantly, grain traders are in the business of adding value to primary commodities, whether they are fattening animals with soy or turning corn into ethanol. Cheap grain then becomes an input and the companies are happy to keep those prices low. The structure of those supply chains, as well as the rules that govern them, favor actors with global reach and lack effective mechanisms to reduce production to cope with low prices that do not result in forcing farmers from their land.

Deregulation of financial and commodity markets in the early 2000s enabled a rise in speculation on commodity markets and undermined price formation based on market fundamentals.¹⁶ While the Dodd-Frank financial reforms that followed the 2008 financial crisis included important reforms designed to rein in financial speculation, that legislation has been weakened by legal and congressional challenges. President Trump's administration is committed to further deregulation.

Corporate concentration in nearly every sector of agricultural inputs, production, processing and distribution has increased substantially over the last 20 years, including vertical consolidation within supply chains.¹⁷ Exports of cheap corn to Mexico, to cite just one example, have led to the expansion of cattle production in that country. Those animals are then brought back across the border for processing, with the

resulting meat sold in the U.S. or exported back to Mexico at low prices. Along the way, and despite the expanded market, small and medium scale farmers and ranchers have lost bargaining power and revenue.

The 21st century challenges: Food security and rising volatility

After five decades of consistently falling prices (interrupted by occasional brief periods of higher and more volatile prices), agricultural commodity prices increased in recent years, as well as becoming much more volatile. The price climb started in 2004, and at first the changes were small and slow. Then, in 2007, prices rose sharply, peaking in 2008. Riots occurred over food prices in 35 countries. Prices then fell only to rise again in 2010 and 2012, while volatility persisted.

In the last two years, steadily expanding output has again reduced the prices of many agricultural commodities in international markets. But underlying conditions lead some experts to conclude that higher and more volatile prices are likely to persist in the medium term, despite lower prices in the short term as the natural outcome of increased production in response to higher prices.¹⁸ It may be that prices eventually settle around a higher average price point due to the rise in weather-related natural disasters, less predictable rainfall and temperature changes. Even if that turns out to be the case, higher price uncertainty disrupts markets and reduces farmers' economic viability. Diminishing productivity gains, meanwhile, concern agronomists, especially under the erratic weather patterns developing with climate change. At the same time, governments of large trading countries, including the U.S., have eliminated their use of publicly held grain reserves. This has had contradictory effects: some of them stabilizing, because the markets are not undermined by the possibility of a government using the stock to meet a short-term political imperative at the expense of market conditions; and others destabilizing, because without stocks to calm markets when production falls short, volatility rises. Importers understandably panic when their food supply is threatened, and their policy choices in that panic often worsen the short-term price instability. Freshwater shortages, soil depletion, biological diversity loss and the increased incidence of certain natural disasters, such as droughts and flooding,¹⁹ add to expert expectation that medium-term food prices will be more unpredictable than they were before 2004, especially in some of the world's most food insecure regions around the tropics, where climate change effects are predicted to be the most pronounced.

The extent of the dumping IATP had been measuring diminished during the periods of much higher commodity prices in 2007-2008 and 2011. Despite rising costs of production,

for a time, most agricultural commodity prices rose faster and higher. In the short term, rising demand for biofuels (encouraged by government mandates in the U.S., many EU countries and some developing countries as well), poorly regulated speculation on financial and commodity futures markets and erratic weather conditions conspired to increase prices dramatically. Governments faced enormous political pressure to act quickly. A range of policies came up for review: public investment in agriculture, private investment in land, price stabilization measures and social safety nets were all popular. At the same time, longer-term problems underlay the shifts in prices: long-term productivity gains had slowed, while essential inputs, especially freshwater, were under threat in some regions. Demand had not been able to keep up with supply as it had in the first decades of the Green Revolution yet governments had grown careless of where their food supplies were sourced.

Over the last few years, supply has started to climb again. There are few supply management policies in place to curb production and many commodity prices are again depressed in international markets. But the long-shifts in the underlying conditions for supply and demand listed above have contributed to a changed awareness of how important food security is and the vulnerability of a food system that relies on a few global producers and exporters. While the food price crisis refocused attention on the vulnerabilities of globally interdependent food systems and the need for better risk management, the current resumption of low prices and dumping underscore the need for comprehensive solutions that allow farmers to plan their production at fair and reasonably predictable prices. Most governments acknowledge that their food security rests on both local production and trade. It is essential that trade be governed by fair and transparent rules and protected from dumping.

Conclusion

Dumping can be devastating for farmers in importing countries, especially in low-income countries with little power to defend their markets. It is also unfair to producers in other exporting countries. The underlying issues of dumping include failed agricultural policies in the U.S. that actively encourage overproduction and fail to limit market concentration, as well as the failure of WTO rules to protect its members from the effects of dumping and other U.S. policy failures.

While many in the U.S. would agree on the need for a better Farm Bill that ensures consumer get healthier food produced more sustainably, there is not yet sufficient consensus around programs to pay farmers fair prices for their production or to rein in oligopolistic markets. In any case, those measures will only succeed if there is also renewed attention to programs

to manage supplies to address climate catastrophes and other supply and price shocks rather than simply seeking to export as much as possible for as long as possible.

The return to dumping of U.S. commodities by agribusiness at a time when the U.S. government is challenging other countries' agricultural programs (as the U.S. has challenged China at the WTO) is hypocritical and clouds the possibility for a successful outcome to debate at the WTO on necessary reforms. IATP's findings underline the need for a new approach to global trade rules—an approach that respects the obligation of governments to protect food security at home, that respects the complex relationship of food systems to economic development and that respects the importance of accountability in domestic politics in rich and poor countries alike. It is time for strong, clear rules that value more equitable returns to food production and distribution within the supply chain, as well as stable and predictable food prices.

APPENDIX: DUMPING CALCULATIONS

Table 1: Wheat

Year	Farmer Production Costs (US\$/Bu)	Govt Support Costs (US\$/Bu)	Transportation and Handling (US\$/Bu)	Full Cost (\$/Bu)	Export Price (\$/Bu)	Percent of Export Dumping
2005	5.20	0.06	0.86	6.12	4.40	28%
2006	6.53	0.30	0.90	7.73	5.52	29%
2007	6.20	0.24	0.72	7.16	7.03	2%
2008	6.72	0.37	0.94	8.03	8.88	-11%
2009	6.58	0.73	1.24	8.55	6.51	24%
2010	5.68	0.37	1.36	7.41	6.72	9%
2011	7.65	0.57	1.46	9.68	9.07	6%
2012	6.89	0.50	1.44	8.83	8.96	-1%
2013	8.02	0.61	1.50	10.14	8.76	14%
2014	8.57	0.45	1.69	10.72	8.31	23%
2015	7.71	0.39	1.30	9.41	6.40	32%

Table 2: Soybeans

Year	Farmer Production Costs (US\$/Bu)	Govt Support Costs (US\$/Bu)	Transportation and Handling (US\$/Bu)	Full Cost (\$/Bu)	Export Price (\$/Bu)	Percent of Export Dumping
2005	5.68	-0.03	0.84	6.48	6.56	-1%
2006	6.05	-0.02	1.02	7.04	6.43	9%
2007	6.60	0.06	0.97	7.63	8.82	-16%
2008	7.78	0.50	1.14	9.69	12.85	-33%
2009	7.62	0.36	1.09	9.07	10.95	-21%
2010	7.75	0.32	1.10	9.17	11.14	-22%
2011	8.71	0.52	1.14	10.36	13.79	-33%
2012	10.42	0.51	1.21	12.14	15.41	-27%
2013	10.87	0.46	0.95	12.28	14.94	-22%
2014	9.94	0.36	1.25	11.54	13.55	-17%
2015	9.90	0.33	1.20	11.41	10.24	10%

Table 3: Corn

Year	Farmer Production Costs (US\$/Bu)	Govt Support Costs (US\$/Bu)	Transportation and Handling (US\$/Bu)	Full Cost (\$/Bu)	Export Price (\$/Bu)	Percent of Export Dumping
2005	2.60	0.40	0.60	3.60	2.50	31%
2006	2.97	0.01	0.70	3.68	3.12	15%
2007	3.10	-0.02	0.65	3.74	4.19	-12%
2008	3.68	0.18	0.82	4.67	5.69	-22%
2009	3.53	0.17	0.66	4.36	4.19	4%
2010	3.46	0.14	0.67	4.27	4.76	-11%
2011	4.20	0.24	0.71	5.14	7.40	-44%
2012	5.54	0.26	0.61	6.41	7.57	-18%
2013	4.34	0.22	0.55	5.10	6.65	-30%
2014	4.06	0.16	0.93	5.14	4.92	4%
2015	4.04	0.17	0.71	4.92	4.33	12%

Table 4: Rice

Year	Farmer Production Costs (US\$/Cwt)	Govt Support Costs (US\$/Cwt)	Transportation and Handling (US\$/Cwt)	Full Cost (\$/Cwt)	Export Price (\$/Cwt)	Percent of Export Dumping
2005	9.91	0.50	9.25	19.66	16.52	16%
2006	9.46	0.09	10.05	19.60	19.48	1%
2007	9.47	0.04	9.49	19.00	21.59	-14%
2008	11.47	0.14	21.50	33.12	36.50	-10%
2009	11.11	0.22	14.51	25.84	27.91	-8%
2010	11.79	0.25	15.25	27.29	26.55	3%
2011	13.13	0.30	15.88	29.31	29.28	0%
2012	12.59	0.24	12.86	25.69	27.16	-6%
2013	12.25	0.24	14.47	26.96	29.67	-10%
2014	12.36	0.28	17.1	29.74	29.1	2%
2015	11.99	0.24	13.69	25.89	25.29	2%

Notes on calculations: The government support cost and the cost of transportation and handling are added to the farmer production cost to calculate the full cost of production. The percent of export dumping is the difference between the full cost of production and the export price, divided by the full cost of production.

Sources: Farmer production costs are from USDA Commodity Costs and Returns, <https://www.ers.usda.gov/data-products/commodity-costs-and-returns.aspx>. Government Support Costs are from OECD Producer Support Estimates Database, <http://www.oecd.org/tad/agricultural-policies/producerandconsumersupportestimatesdatabase.htm>. Transportation and export prices are based on information in USDA Agricultural Marketing Services Grain Transportation Report Datasets. For wheat, corn and soy, we used Table 2: Market Update: U.S. Origins to Export Position Price Spreads. For rice we used Rice Yearbook, Table 17: Milled rice: Average price, f.o.b. mills, at selected U.S. milling center.

Endnotes

1. Murphy, S, Burch, D, & Clapp, J. (2012). *Cereal Secrets*. Oxford: Oxfam.
2. <https://fas.org/sgp/crs/misc/R40152.pdf>. "U.S. Farm Income Outlook for 2017" Randy Schnepf, February 14, 2017, Congressional Research Service. 7-5700. Washington, D.C. and <https://www.ers.usda.gov/data-products/chart-gallery/gallery/chart-detail/?chartId=76952>
3. *Agricultural Import Surges In Developing Countries: Analytical Framework And Insights From Case Studies*, eds Manitra A. Rakotoarisoa, Ramesh P. Sharma & David Hallam. UN FAO. Rome, 2011
4. In this case, the Olympic average is based on the most recent five years of price information; the highest and lowest prices are discarded, and the remaining three years of data are used to create an average price.
5. http://www.fsa.usda.gov/programs-and-services/arcplc_program/index
6. Murphy, S, Burch, D, & Clapp, J. (2012). *Cereal Secrets*. Oxford: Oxfam
7. *The State of Agricultural Commodity Markets 2015-16*. Rome: FAO
8. Sophia Murphy, Ben Lilliston and Mary Beth Lake, "WTO Agreement on Agriculture: A Decade of Dumping" Institute for Agriculture and Trade Policy, December 2005. Some information, such as the OECD Producer and Support Estimates, were calculated slightly differently than they are today, but the data is sufficiently similar to show the persistent pattern.
9. Emelie Peine, U.S. subsidizes Brazilian cotton to protect Monsanto's profits, April 8, 2011. <http://www.iatp.org/blog/201104/us-subsidizes-brazilian-cotton-to-protect-monsantos-profits>
10. <https://www.ers.usda.gov/data-products/chart-gallery/gallery/chart-detail/?chartId=58426>
11. Levins, R. A., & Cochrane, W. W. (1996). The Treadmill Revisited. *Land Economics*, 72(4), 550–553.
12. Randy Schnepf, U.S. Farm Income Outlook for 2017, Congressional Research Service. <https://fas.org/sgp/crs/misc/R40152.pdf>
13. Jeff Wilson and Megan Durisin, "Betting the Farm and Losing: Banks Seek Collateral for Debts," Bloomberg, November 13, 2016. <https://www.bloomberg.com/news/articles/2016-11-13/betting-the-farm-and-losing-banks-seek-collateral-as-debts-rise>
14. Timothy Wise, "Reforming NAFTA's Agricultural Provisions," in *The Future of North American Trade Policy: Lessons from NAFTA*, The Pardee Center, 2009, p. 35.
15. Jonathan Fox and Libby Haight, eds, *Subsidizing Inequality: Mexican Corn Policy since NAFTA*, Woodrow Wilson Center for International Scholars, 2010.
16. Daviron, B., Dembele, N. N., Murphy, S., & Rashid, S. (2011). *Price volatility and food security*. Rome: HLPE / UN Committee on World Food Security.
17. "Consolidation in the food and agriculture system", W Heffernan, M Hendrickson, R Gronski - Report to the National Farmers Union, 1999; W Heffernan and M Hendrickson (2002) "Concentration Of Agricultural Markets"; Hendrickson, M, Wilkinson, J, Heffernan, WD. and Gronski, R, "The Global Food System and Nodes of Power" (August 2, 2008). Available at SSRN: <https://ssrn.com/abstract=1337273> or <http://dx.doi.org/10.2139/ssrn.1337273>.
18. Ibid.
19. Over 90 percent of natural disasters are now weather related, rather than caused by earthquakes or other geological phenomena (UN disaster report 2015)