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**Identifying the Real Winners from
U.S. Agricultural Policies**

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Identifying the Real Winners from U.S. Agricultural Policies

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Abstract

In this paper, we argue that advocates for new U.S. agricultural trade policies should consider refocusing their campaigns on the corporate livestock sector rather than farmers. There is little evidence that farmers as a group are reaping significant gains from current U.S. agricultural subsidy programs, even though they are the direct recipients. Low prices and high costs have left farmers with stagnant or declining net farm incomes. Furthermore, there is little conclusive evidence that the removal of U.S. subsidy payments would significantly reduce production or raise prices, though there is significant disagreement on this point. There is wider agreement that U.S. farm policies contribute significantly to depressed prices for agricultural commodities. Among the beneficiaries of those low prices are the consumers of U.S. grains and oilseeds, notably the concentrated animal feeding operations that now dominate the U.S. livestock industry. These industrial operations get feed that is generally sold at below farmers' costs of production.

We raise two questions for future research, and provide tentative answers. First, would U.S. policies that ensure higher feed prices reduce the incentives toward concentrated feeding operations and tip the economic balance back toward diversified family farmers? Initial research suggests that the economic benefits of current policies to corporate livestock operators are significant and that their reform could contribute to structural change in the farm sector in favor of family farmers. Second, since subsidies to feed are not now treated as highly disciplined input subsidies for livestock operations under World Trade Organization rules, would a more accurate accounting bring U.S. subsidies above the maximum levels allowed in the prevailing Agreement on Agriculture? We present initial calculations that suggest such an accounting change would put the United States over its limit for 2000 and nearly over for 2001.

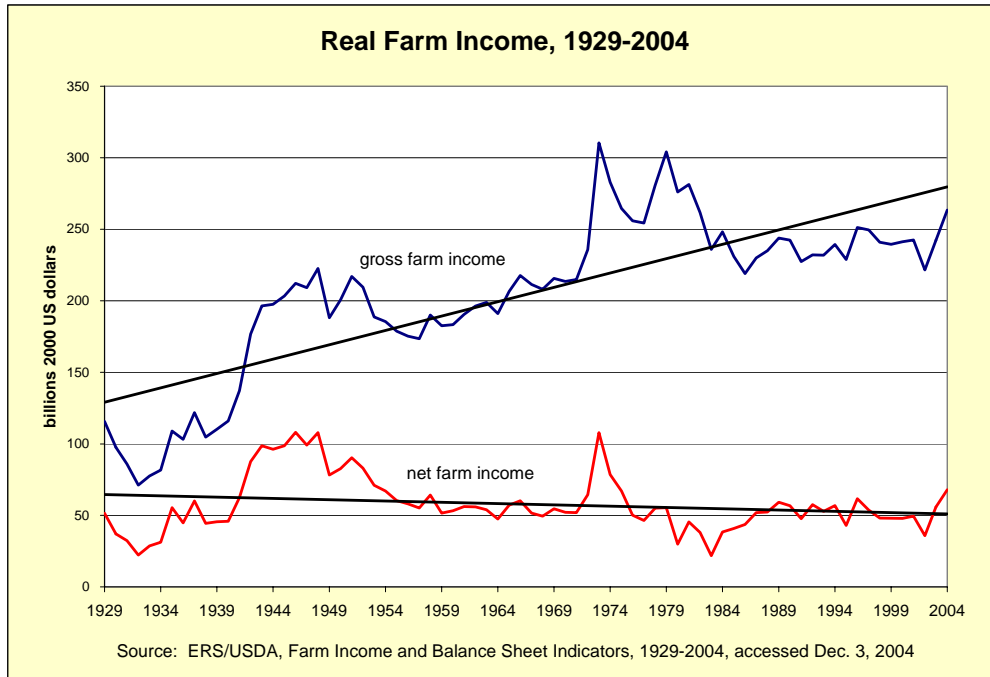
Introduction

In this paper, we argue that advocates for new U.S. agricultural trade policies should consider refocusing their attention on the corporate livestock sector rather than farmers. The doubling of farm program costs since the 1996 Farm Bill has generated calls for the elimination of farm subsidies. Farmers are presented as relatively wealthy business people getting taxpayer money that encourages overproduction (see, for example, Environmental Working Group 2004; Gardner 2005). Still, there is little

¹ The author would like to thank Muriel Calo and Elanor Starmer for invaluable assistance with this research. He also appreciated helpful comments on earlier drafts from George Naylor, Steve Suppan, Molly Anderson, Jacques Berthelot, and Dennis Olson.

evidence that farmers as a group are reaping significant gains from current U.S. agricultural subsidy payments, even though they are the direct recipients (Wise 2005). As Figure 1 shows, low prices and high costs have left farmers with stagnant or declining net farm incomes.

Figure 1.



There is little conclusive evidence that the removal of U.S. subsidy payments would significantly reduce production or raise prices, though there is significant disagreement on this point. While the prevailing view is that eliminating U.S. farm subsidies would reduce overproduction and raise prices (see, for example, Sumner 2005), comprehensive economic modeling suggests that this would be true only to a very limited extent for most crops, cotton and rice being the most notable exceptions (Ray, de la Torre Ugarte et al. 2003; Wise 2004). Still, even though there is little agreement about whether farm subsidies are the cause or effect of low farm prices, there is wide agreement that U.S. farm policy – be it farm subsidies or the absence of effective supply management policies – contributes significantly to lowering prices for agricultural commodities.

Industrial Livestock: Indirect Beneficiaries

Among the beneficiaries of low farm prices are the consumers of U.S. grains and oilseeds, the industries that depend on agriculture for their raw materials. Among the most significant consumers of U.S. farm products are the concentrated animal feeding operations that now dominate the U.S. livestock industry. Soybeans and corn are two of the most heavily subsidized crops in U.S. commodity programs. Around 55-65% of corn

and 45-50% of soybeans, the two principal sources for U.S. feed, go to the domestic livestock industry.² Other feed grains include oats, barley, sorghum, and some types of wheat. Feed costs account for 60-64% of poultry and egg costs, some 17% of beef cattle costs,³ and about 47% of hog production costs.⁴ Livestock and meat now account for roughly the same value in U.S. agricultural production as all crop production combined, and the share continues to rise. Meat is also an increasingly important export. In 2001, the United States exported 9% of its beef, 8% of its pork, 18% of its broiler chicken meat, and 9% of its turkey meat.⁵

Unlike most crop farming, most livestock operations are highly concentrated, vertically integrated corporate enterprises owned by some of the largest agribusiness companies in the world. In contrast to the farming sector, which, though highly concentrated in terms of landholding and production, remains largely in the hands of family-based operators, the largest livestock producers are U.S. agribusinesses, such as Cargill, ConAgra, Tyson, and Smithfield. They overwhelmingly operate concentrated animal feeding operations, or CAFOs, better known as factory farms.

Factory farms have been widely criticized for their environmental impacts, low wages, and dangerous workplaces, in addition to animal welfare concerns. Their emergence is largely blamed for the demise of the diversified family farm, which used to produce not just commodities like corn, soybeans, and other bulk crops but also farm-raised livestock.

Table 1.
Selected Agri-food CR4 Concentration Ratios, 2004

| | |
|------------------------|-----------------------|
| Beef Packers | 84% |
| Pork Packers | 64% |
| Pork Production | 49% |
| Broiler Production | 56% |
| Turkey Production | 51% |
| Animal Feed Processing | 34% |
| Flour Milling | 63% |
| Soybean Crushing | 71% (top three firms) |

Source: Hendrickson and Heffernan (2005)

The animals are not the only ones concentrated in factory farming. Ownership is concentrated in very few corporate hands, presenting an industry dominated by a

² Corn and soybeans account for 83-91% of the ingredients in most feed grains. USDA, Feed Grains Data Delivery System, <http://www.ers.usda.gov/db/feedgrains/default.asp?ERSTab=0>

³ In US, feed costs as % of total costs are: 17% for cattle; 60-64% poultry and eggs (ERS, Livestock Dairy and Poultry Outlook <http://usda.mannlib.cornell.edu/reports/erssor/livestock/ldp-mbb/2002/ldp-m102f.pdf>);

⁴ For hog production feed costs represented 47% of total costs in industrial farrow-to-finish operations in 1998 (McBride and Key 2003). Other estimates put the share of feed costs for pork at 65% (Tarter 2001).

⁵ USDA, Red Meat and Poultry Forecasts, 2004, <http://www.ers.usda.gov/publications/ldp/LDPTables.htm>.

relatively small number of very large transnational corporations with oligopoly market power in the international food system. Concentration ratios – the market share controlled by the top four producers, presented as a “CR4” percentage – are high across the board, often over 50% (see Table 1). (Markets are considered concentrated if the share exceeds 20%, and very highly concentrated if it approaches or exceeds 50%.)

The corporations that dominate the industrial livestock sector in the United States are among the chief beneficiaries of low U.S. feed prices. Remarkably little research has been done on the extent of these benefits. A broad literature review revealed not a single academic article in the peer-reviewed agricultural economics literature that analyzed the benefits to livestock operations of low feed prices.⁶

There is a need for such research. Some farmer advocacy organizations have argued that the real beneficiaries of price-depressing U.S. agricultural policies are the agribusiness interests that supply inputs to the farm sector and that consume its outputs.⁷ The input suppliers include seed companies (e.g. Monsanto), chemical companies (e.g. Dow), and equipment manufacturers (e.g. John Deere). Subsidy programs inject cash into the farm economy and encourage high levels of row-crop production in lieu of extensive livestock production. This increases the demand for inputs to crop production. Meanwhile, to the extent input suppliers hold monopoly positions, either in the industry as a whole or in a local area, they can use their market power to capture an inordinate share of the farm dollar through pricing policies.

On the other end of the value chain are the agribusiness consumers that use grain and other bulk commodities as inputs into their vertically integrated industries. Cheap grain prices lower their operating costs. This in turn makes their products more competitive globally, increasing their shares of a rapidly globalizing agri-food market. At the end of the chain are the supermarkets, which are currently undergoing a rapid wave of concentration led by, but not limited to, Wal-Mart (Vorley 2003; Hendrickson and Heffernan 2005).

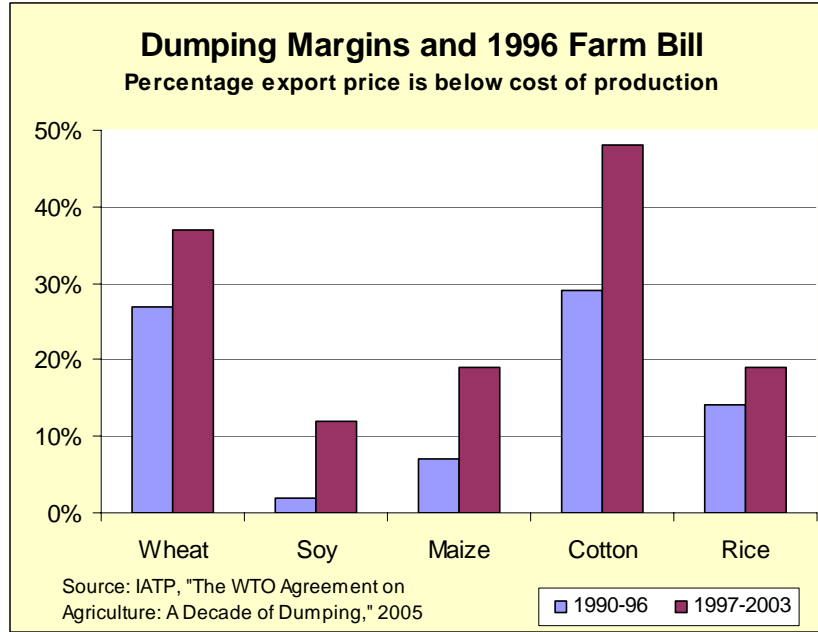
The principal buyers for farmers of corn, soybeans and other feed grains are livestock companies or the feed companies that supply them. These are largely pork, poultry, beef, and dairy operations. How much they benefit from low prices has gone largely undocumented to date. The Institute for Agriculture and Trade Policy (IATP) calculates its dumping margins on the basis of farmers’ average costs of production, as calculated by USDA. Those numbers are not a direct measure of the discount on feed prices from U.S. policies, but they give some indication of the extent to which prices are

⁶ (On livestock benefits, see, for example, Adams and Young 1998; Skaggs and Falk 1998; Ishmael 1999; Halverson 2000; Congressional Press Release 2001; Tarter 2001; Desquilbet and Guyomard 2002; Holtslander 2002; Lexington Herald-Leader 2002; Berthelot 2004).

⁷ See, for example, analysis from the National Family Farm Coalition and the Institute for Agriculture and Trade Policy.

below costs. As Figure 2 shows, the dumping margins for soybeans and maize (corn), after the 1996 Farm Bill, are 12% and 19% respectively (Murphy, Lilliston et al. 2005).⁸

Figure 2.



Those figures suggest that agribusiness livestock operators are getting a discount of about 15% on their most important operating cost. If that total expense represents 50-65% of operating costs for poultry and hog producers, then their overall costs could be as much as 7-10% higher if these corporations bought feed grain at a price closer to its cost of production.

This price differential could have great import for the structure of the farm sector. Diversified family farmers are hurt in several ways by cheap-grain policies. First, they receive depressed prices for their bulk commodities. Second, and less well understood, when they feed their own livestock with a mixture of their own grains, they are in effect paying full cost for that feed, while corporate buyers are getting it below cost. Third, diversified operations, which use hay, pasture, and other grains for feed in addition to corn and soybeans, tend to be more labor intensive and more vulnerable to price competition. Finally, industrial livestock operations drive down the price of livestock, further squeezing diversified farmers out of animal production and into bulk row crops. This in turn contributes to the price problem by increasing supply.

Again, little rigorous academic research has been done on the subject, but CAFOs often operate on tight margins; their cost advantages over diversified family farmers'

⁸ Calculations based solely on USDA figures for costs of production and returns from sales suggest slightly lower margins, not surprising since they exclude transportation and handling costs. For corn, costs exceeded market returns nationally by 10.8% in 2004, while for soybeans the comparable margin was 8.7% (Sumner 2005).

livestock operations are not always large. It remains to be seen whether raising the prices of feed grain would tip the balance back toward the family farmer, but it could. This would be an important area for future research.

Whether or not bringing feed costs closer to their costs of production would affect the structure of the farm sector –away from CAFOs and toward diversified family farms – it would undoubtedly represent a shift toward family farmers. If such reforms were made in combination with other key livestock-related reforms being demanded by family farmers – e.g. Packer Ban on livestock ownership, Captive Supply controls, and excluding CAFOs from payments under the environmental cleanup program, EQIP – and farm groups won full funding and implementation of the Conservation Security Program, family farmers might begin to reverse their downward economic slide (NFFC 2005).

Trade Implications: Feed Subsidies as Input Subsidies

The livestock issue has an important trade aspect as well. Within the WTO agriculture regime, input subsidies are considered one of the more trade-distorting forms of support. They are included in the Amber Box and subject to restrictions. To the extent that they reduce the price of exports, they can be considered export subsidies, subject to immediate termination. The United States notifies some grain subsidies – emergency payments, marketing loan gains, and other price- or production-based programs – to the WTO as production-distorting, and therefore subject to limits under the Uruguay Round Agreement on Agriculture (URAA), based on the Aggregate Measure of Support (AMS). Decoupled payments – known as direct payments and production flexibility contracts – are treated as non-distorting and therefore are allowed under the agreement’s Green Box.

Remarkably, subsidies to feed grains are not considered input subsidies despite the fact that more than half of corn and soybeans is used as an input for livestock. To the extent that feed subsidies reduce the costs and prices of exported meats, they could also be considered export subsidies and subject to more stringent limits. It could be argued – and perhaps litigated – that subsidies to feed be treated as input subsidies, and that the portion that gets exported in meat be treated as an export subsidy. The stakes are high for the EU and the United States.⁹

The WTO ruling in favor of Brazil in the cotton dispute addresses just this issue of subsidy definition. The panel refused to accept the U.S. government’s notification of its subsidy programs to different boxes. The United States was found to have exceeded its allowable subsidy levels in significant part because the panel ruled that several types of subsidies notified as minimally trade-distorting (Blue or Green box) had in fact

⁹ Jacques Berthelot of the French NGO Solidarite has written extensively on this subject. Several of his papers, in French and English, can be found at: <http://solidarite.asso.fr/actions/Agriculture.htm>. Much of this paper’s analysis draws on this work, most notably “Why the EU’s blue subsidies are coupled and subject to reduction commitments.”

depressed prices with a prejudicial impact on the Brazilian cotton sector. Specifically, the panel found that for the period 1999-2002:

- Direct payments on cotton, amounting to \$617 million, are not “minimally-trade distorting,” so they should be reclassified as trade-distorting domestic support. These should join the \$2.2 billion in Marketing Loan Gains and Counter-cyclical Payments in the Amber Box, putting the United States over its allowed limit (1992 levels).
- Export credits totaling \$1.6 billion for cotton and other commodities, which the United States did not notify to the WTO, should have been notified and classified as export subsidies, which are slated for elimination.
- So-called Step 2 subsidies, which paid U.S. textile manufacturers \$400 million to use U.S. cotton, were notified as Amber Box subsidies when they should have been considered export subsidies and slated for elimination.

The implications of the ruling go well beyond cotton. The categorization of developed country subsidies has been left largely to the countries themselves to decide. There has been much criticism of the United States and European Union for cheating on their reduction commitments by failing to notify the WTO of payments in a timely manner, by omitting some payments from such notifications, and by misclassifying payments. The United States and European Union could be much more vulnerable to demands for reduction if the WTO insisted on greater consistency and transparency in their notifications. The United States stands perilously close to allowable subsidy limits under the existing agreement, so much so that the U.S. government currently is seeking to shift the categorization of some of its subsidies from the Amber to the Green or Blue boxes to avoid mandated reductions.

There has been no litigation to date on feed subsidies as input subsidies, although feed comes from the most heavily subsidized commodities.¹⁰ The OECD, for its part, has been clear in its characterizations of input subsidies as trade-distorting and of feed as an input for livestock production:

Input subsidies are typically explicit or implicit payments reducing the price paid by farmers for variable inputs (for example, fertilisers, feed, seeds, energy, water, transportation, insurance), which are provided to farmers through policy instruments, including interest concessions, tax rebates and budgetary transfers to input industries to provide lower input prices paid by farmers¹¹.

Jacques Berthelot suggests that tariff-free U.S. exports of subsidized feed grain to the EU in the 1960s led to the growth of industrial livestock production there and

¹⁰ About 60% of EU cereals are fed to animals, and corn and soybeans account for 83-91% of the ingredients in most processed feeds. USDA, Feed Grains Data Delivery System, <http://www.ers.usda.gov/db/feedgrains/default.asp?ERSTab=0>

¹¹ OECD, *Methodology for the measurement of support and use in policy evaluation*, 2002.

subsequent policies by the EU to drive down domestic feed grain prices to competitive levels. In the 1990s, the EU cut support prices for cereals by 45%, leading to a steep drop in feed costs and a sharp rise in poultry production and exports. This has made direct export subsidies less necessary (Berthelot 2004).

These policies lead quite directly to dumping. From 1995-2001, EU poultry exports to ACP countries rose from 81,000 tonnes to 215,000 tonnes. According to one report, EU poultry exports to Cameroon increased over 2000% from 1996-2003. Cameroon's local poultry production dropped 37% and 110,000 jobs in the sector were lost in 2003 alone (Farmers' World Network 2003; Nforgang and De Mol 2004).

Counting Feed Subsidies as Input Subsidies

This is not an arcane accounting exercise. Berthelot (2004) has calculated that if feed grains were counted as input subsidies, the European Union would have under-notified its Amber Box payments from 1995-6 to 2000-1 by 54 billion Euros, or an average of 9 billion Euros per year. For 2003 the additional amount would be 11 billion Euros, which would count against the EU's limit under the negotiated Aggregate Measure of Support (AMS) of 67 billion Euros.¹² The EU still has some room for manoeuvre under the AMS limit, but much less if feed grain subsidies were counted.

For the United States, counting feed grain subsidies as input subsidies could put the United States over its AMS limit of \$19.9 billion. For 2000, the United States notified an AMS of \$16.8 billion to the WTO. Reclassifying the percentage of grains—barley, corn, oats, sorghum, and wheat—and soybeans that goes to feed as Amber Box subsidies for that year would shift the contents of the Amber Box significantly. Subsidies not currently included in the Amber Box, such as production flexibility contracts (PFCs), and subsidies no longer eligible for classification as non-product-specific support, such as market loss assistance, would move into the product-specific AMS for livestock. According to our initial calculations, this addition would add \$3.7 billion to the total AMS – \$1.8 billion in reclassified PFCs and \$1.9 billion in reclassified non-product specific subsidies. That would put the U.S. AMS at \$20.6 billion, \$.6 billion over the \$19.9 billion limit.

For 2001, the U.S. AMS would increase \$3.4 billion – \$1.4 billion from PFC reclassification, \$2.0 billion from non-product specific subsidy reclassification – but

¹² This AMS figure is from 2001/2002, the last year notified to the WTO. WTO, Committee on Agriculture, Notification. G/AG/N/EEC/51, Nov. 4, 2004.

because the notification was only \$14.6 billion that year, it would rise to \$18 billion, approaching but staying below the AMS ceiling.¹³

Some researchers argue that other subsidies besides feed are under-notified to the WTO and that their inclusion in the notification would increase the United States' AMS level even further. Jacques Berthelot, for example, argues that production flexibility contracts (or, after 2002, direct payments and counter-cyclical payments) and insurance subsidies should be included in U.S. calculations for product-specific support, and that subsidies for farm loans, irrigation, and agricultural fuel should be included in the non-product-specific notification. Adding these amounts to the current notification would raise the total AMS significantly higher than in our calculations (Berthelot 2005).

Conclusion

Debates over U.S. agricultural policies have tended to focus heavily on subsidy payments to farmers. It may be that the most important issue isn't subsidies, and the most important beneficiaries of U.S. policies are not farmers. Industrial livestock operations are among the most important beneficiaries of agricultural policies that depress the prices for feed. With feed costs as the most important operating cost in industrial livestock operations, the benefits are significant.

This paper poses two research questions that require further attention. First is the need to assess the extent to which U.S. feed is being provided to industrial livestock operations at prices below farmers' costs of production. To the extent prices are below costs, there is the related need to assess what the structural impacts on the sector would be if prices more accurately reflected costs. The initial research presented here suggests that the impacts of higher prices could be significant, making diversified family farms more competitive relative to industrial livestock operations.

Second, we assess the trade implications of treating subsidies to feed as input subsidies, which are more strongly disciplined under the current Agreement on Agriculture. An initial set of calculations suggests that this change could put the United States over its allowed subsidy limits under the agreement. A more detailed analysis would be needed to assess whether current WTO disciplines would indeed justify

¹³ Author's calculations based on available data. Using PFC payments (Economic Research Service 1996) and percentages of grain and soy used for feed (OECD 2004; Baker 2005), we calculated the additional product-specific support that would be added for subsidized feed inputs to livestock products. Our calculations estimated that an additional \$1.8 billion in 2000 and \$1.4 billion in 2001 would be added to the product-specific AMS. Using the subsidies for grains and soybeans currently included in non-product-specific (NPS) support (EWG 2005) and the percentages of these products used for feed, we calculated the amount that would move from NPS to product-specific categories for livestock products once feed was reclassified as a subsidized input. We determined that an additional \$1.9 billion in 2000 and \$2 billion in 2001 would be added to product-specific support for livestock products, bringing the total AMS up from \$16.8 billion to \$20.5 billion in 2000, and from \$14.6 billion to \$18.1 billion in 2001 (WTO 2004).

separate treatment for feed subsidies and to confirm the implications of such a change in the categorization of U.S. subsidies.

Agribusiness interests are largely left out of the debates over U.S. agricultural and trade policies. Payments mainly go to farmers, and the WTO negotiations focus principally on disciplining such payments and reducing other forms of agricultural support and protection. Yet the transnational corporations that dominate the agri-food sector are among the most important beneficiaries of policies that lead to low commodity prices by encouraging overproduction.

It is important to identify the real winners from U.S. agricultural policies. A closer examination of the benefits to industrial livestock operations would be a good place to start.

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REFERENCES

- Adams, G. and L. M. Young (1998). Structural Developments in the US Grains Subsector. In: "Economic Harmonization in the Canadian/U.S./Mexican Grain-Livestock Subsector". Proceedings of the Fourth Agricultural and Food Policy Systems Information Workshop., Winnipeg, Canada, Friesen Printers.
- Baker, A., and Edward Allen (2005). Feed Situation and Outlook Yearbook. USDA. Washington, DC, US Government Printing Office.
- Berthelot, J. (2004). Why the blue box subsidies are coupled, Solidarité.
- Berthelot, J. (2005). The King is Naked: The Impossible US Promise to Slash its Agricultural Supports, Solidarité.
- Congressional Press Release (2001). Livestock Leaders Back Cheap Grain Policy. IATP Ag Observatory. IATP.
- Desquilbet, M. and H. Guyomard (2002). "Taxes and Subsidies in Vertically Related Markets." American Journal of Agricultural Economics **84**(4): pp. 1033-41.
- Economic Research Service, U. D. o. A. (1996). 1996 FAIR Act Frames US Farm Policy for Seven Years. USDA. Washington, DC, US Government Printing Office.
- Agricultural Outlook.**
- Environmental Working Group (2004). Farm Subsidy Database, Environmental Working Group. **2004.**
- EWG (2005). Farm Subsidy Database, Environmental Working Group.
- Farmers' World Network (2003). Fowl Deeds? The Impact of the WTO on Chicken Farmers in Gambia. London, Farmers' World Network.
- Gardner, B. L. (2005). "The Little Guys Are O.K." New York Times. New York.
- Halverson, M. (2000). The price we pay for corporate hogs, IATP.
- Hendrickson, M. and W. Heffernan (2005). Concentration of Agricultural Markets. Columbia, MO, Department of Rural Sociology, University of Missouri: 4.
- Holtslander, C. (2002). Living in a sea of cheap grain: the corporate takeover of Saskatchewan's hog production policy. Saskatchewan Notes, the Canadian Centre for Policy Alternatives. **1.**
- Ishmael, W. (1999). Cheap grain offers opportunity. BEEF magazine online.
- Lexington Herald-Leader (2002). The Real Price of Chicken. Lexington Herald-Leader.
- McBride, W. D. and N. Key (2003). Economic and Structural Relationships in U.S. Hog Production. Washington, Agricultural Economic Report No. AER818: 60.
- Murphy, S., B. Lilliston, et al. (2005). WTO Agreement on Agriculture: A Decade of Dumping. Minneapolis, Institute for Agriculture and Trade Policy.
- NFFC (2005). A Family Farmer Policy Agenda, National Family Farm Coalition. **2005.**
- Nforgang, C. and D. De Mol (2004). Venu principalement d'Europe et vendu en portions, le poulet congelé plume l'élevage africain. Ouest-France. Paris, Ouest-France.
- OECD (2004). "Agricultural Policies in OECD Countries: Monitoring and Evaluation."
- Ray, D., D. de la Torre Ugarte, et al. (2003). Rethinking US Agricultural Policy: Changing Course to Secure Farmer Livelihoods Worldwide. Knoxville, Tenn., Agricultural Policy Analysis Center, University of Tennessee: 59.
- Skaggs, R. K. and C. L. Falk (1998). "Market and Welfare Effects of Livestock Feed Subsidies in Southeastern New Mexico." Journal of Agricultural and Resource Economics **23**(2): pp. 545-57.

- Sumner, D. A. (2005). *Boxed In: Conflicts between U.S. Farm Policies and WTO Obligations*. Washington, Cato Institute: Trade Policy Analysis No. 32: 31.
- Tarter, S. (2001). National Pork Producers Council's President Upsets Grain Producers. Journal Star.
- Vorley, B. (2003). *Food, Inc.: Corporate concentration from farmer to consumer*. London, UK Food Group: 89.
- Wise, T. A. (2004). *The Paradox of Agricultural Subsidies: Measurement Issues, Agricultural Dumping, and Policy Reform*. Medford, Mass., Global Development and Environment Institute: 32.
- Wise, T. A. (2005). "Understanding the Farm Problem: Six Common Errors in Presenting Farm Statistics." GDAE Working Paper(05-02).
- WTO (2004). *Notification- United States- Domestic Support*, World Trade Organization, Committee on Agriculture.

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