

## HARMONIZATION AND CONVERGENCE OF CANADIAN AND U.S. GRAINS AND OILSEEDS POLICIES: 1985-1996

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### INTRODUCTION

The United States and Canada share the longest common border and largest bilateral trading relationship in the world. Recent trading agreements — CUSTA, NAFTA and GATT — hold the promise of further enhancing trade by encouraging elimination of many remaining trade barriers. However, one cause for concern about the effectiveness of these trade agreements has been the frequency of Canadian-U.S. trade disputes over bilateral wheat and barley trade arrangements and trade flows. To some extent, these disputes have arisen because of differences in the domestic and trade policies implemented by the two countries although other political factors have also clearly been important causes of disagreements involving bilateral grains and oilseed trade relationships.

This paper examines changes in U.S. and Canadian grains and oilseeds programs over the period 1985 to 1996 and provides assessments of whether or not different aspects of the two countries' domestic and trade grains and oilseeds have converged towards harmonization since implementation of the Canadian-U.S. Free Trade Agreement in 1989. It should be noted, however, that many of the changes in each countries' agricultural policies discussed in this study cannot be attributed to that agreement. Rather, many adjustments that have taken place since 1988 reflect government responses to budgetary pressures, commitments under international trade agreements, changes in the relative political importance of rural and urban voters, and other factors.

Canada has export-orientated grains and oilseeds sectors in which world markets have played a large role in determining grain prices, which in turn has affected how much grain is produced, consumed and exported. Both sectors have also been the recipient of many government programs designed primarily to enhance and stabilize farm income particularly during periods of low prices. As in Canada, the U.S. small grains, feed grains and oil seeds sectors (wheat, barley, oats, corn, soybeans and other oilseeds) are fundamentally important components of the country's agricultural sector. Also, as in Canada, although to a considerably lesser degree, exports are an important component of the aggregate demand

facing U.S. producers of these commodities. Further, again as in Canada, over the past sixty years, U.S. producers of most of these commodities have benefited directly or indirectly from a multitude of government programs.

However, in Canada and the United States (as in the European Union and elsewhere) producers of these commodities have encountered apparently substantial changes in government programs that appear to reduce government support for agriculture in general and grain and oilseed producers in particular. Moreover, in the United States, the very recent changes in income support programs implement under the *Federal Agricultural Improvement and Reform (FAIR) Act* of 1996 have also altered the mechanisms by which many U.S. farmers receive subsidies, largely decoupling them from either current price levels or current production decisions. Similarly, in Canada, grains and oilseeds producers have experienced substantial reduction in levels of support derived from income and transportation subsidies over the period 1991-1996.

#### **A GENERAL OVERVIEW OF COMMODITY SPECIFIC SUPPORT LEVELS: PRODUCER SUBSIDY EQUIVALENTS**

Accurate evaluations of the implications of changes in commodity programs require careful economic analysis of the full impacts of these programs on domestic production, consumption and trade, as well as effects on the derived demand for inputs. Aggregate but partial measures of intervention such as *Aggregate Measures of Support* (AMSs) and *Producer Subsidy Equivalents* (PSEs) are only incomplete indicators of the degree to which commodity specific policies in different countries are converging towards harmonization. The potential for these indicators to be misleading is especially large for commodities such as grains and oilseeds whose international prices vary substantially when comparisons are made on a year to year basis. However, they do provide some indication of movements in general levels of aggregate direct and indirect income transfers when computed on an average basis over longer periods of time.

Figures 1, 2 and 3 present average PSEs for the periods 1986-88, 1990-92 and 1993-95 for wheat, other grains and oilseeds respectively. Between 1986-88 and 1993-95, in Canada, the PSEs for each of the three commodity groups declined by about half (from 51 percent to 24 percent for wheat, from 60 to 28 percent for other grains, and from 31 percent to 17 percent for oilseeds). In the United States, over the same period, the PSE for wheat declined by about one third from 54 percent to 36 percent, a smaller proportional decrease from about the same initial level than in Canada. For other grains, the U.S. PSE declined by about half from 42 percent to 20 percent, a similar proportional decrease to that implemented in Canada. For oilseeds, the U.S. PSE remained constant at the relatively low level of about ten percent. U.S. PSE's for wheat and other grains have almost certainly declined substantially from their 1993-95 average levels as a result of the decoupling of income support payments under the 1996 FAIR Act. Similarly, the average wheat, other grains and

oilseeds PSE's reported for Canada over the same period overstate current PSE's because of the elimination in 1995 of Canadian grain transportation subsidies.

The data also indicate that distortionary income support programs for wheat and other grains appear to have been curtailed in both countries and by somewhat similar amounts. For oilseeds, Canadian income transfer programs have been substantially reduced and appear to have converged towards the modest levels of support provided to U.S. oilseeds producers.

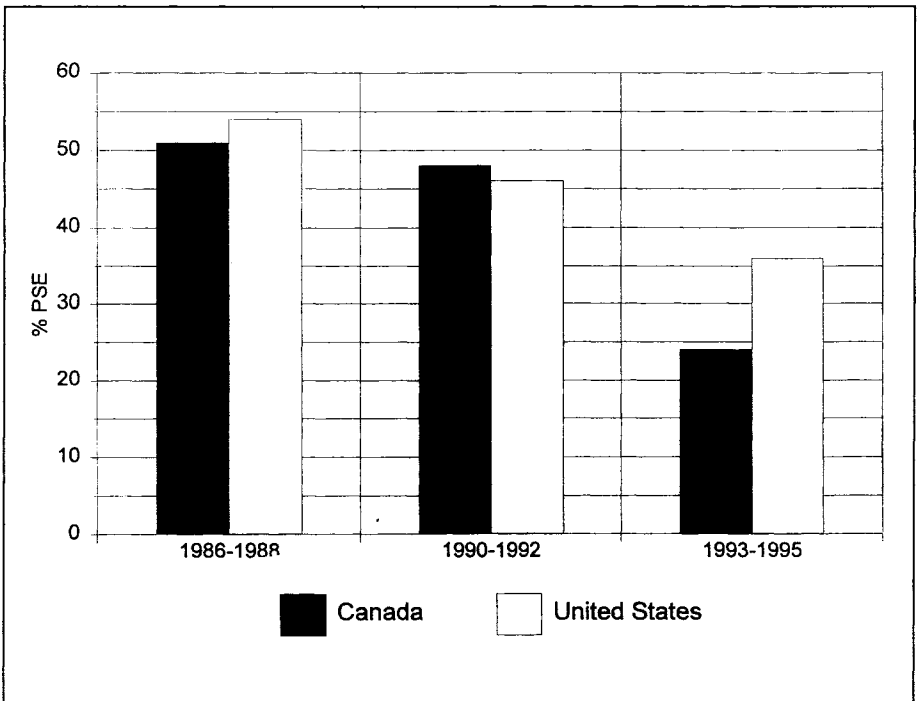
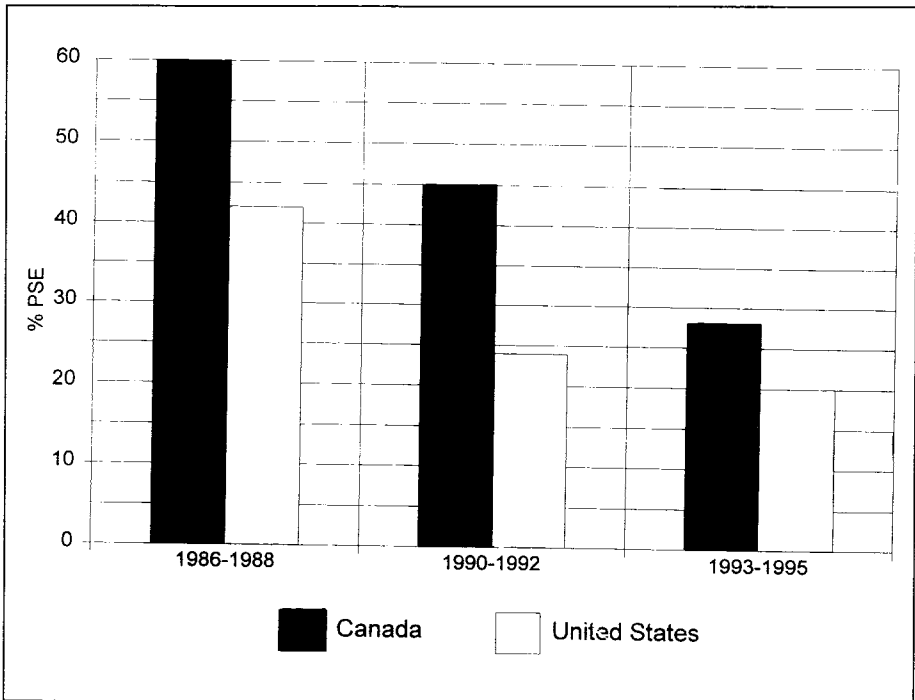


Figure 1. Wheat PSE Levels (OECD Estimates)

**FARM INCOME SUPPORTS**

**Canadian Farm Income Supports**

Farm income support in Canada has been delivered through several different programs. In the last decade alone the federal government operated four different income stabilization programs and made three major *ad hoc* payments to producers. The picture is further complicated by provincial variations in program designs. The only current direct income support program is the Net Income Stabilization Account (NISA). The predecessors to this programs were the Agricultural Stabilization Act (ASA), the Western Grain Stabilization Program (WGSP) and the Gross Revenue Insurance Program (GRIP).



**Figure 2. Other Grains PSE Levels (OECD Estimates)**

The WGSP, introduced in 1976, was designed to stabilize income in the Western Canadian grain sector. Producers and the federal government contributed to a buffer fund that made payments to producers when aggregate cash flow in the grain sector fell below a five year moving average. A second trigger, added in 1982, resulted in payments whenever net cash flow per marketed tonne fell below the previous five year average. When GRIP

replaced WGSP in 1990, the fund had accumulated a large deficit and the income trigger values had fallen to very low levels.

After the dissolution of the WGSP in 1990, the Grains and Oilseeds Farm Safety Net Committee, made up of federal and provincial representatives and farm leaders, was given the task of designing an income stabilization program for the grain sector. In a report released in August 1990, the Committee recommended two new programs; the Gross Revenue Insurance Program (GRIP), and the Net Income Stabilization Account (NISA). A Federal-Provincial agreement for GRIP led to implementation of the safety net program in most provinces in the 1991/92 crop year.

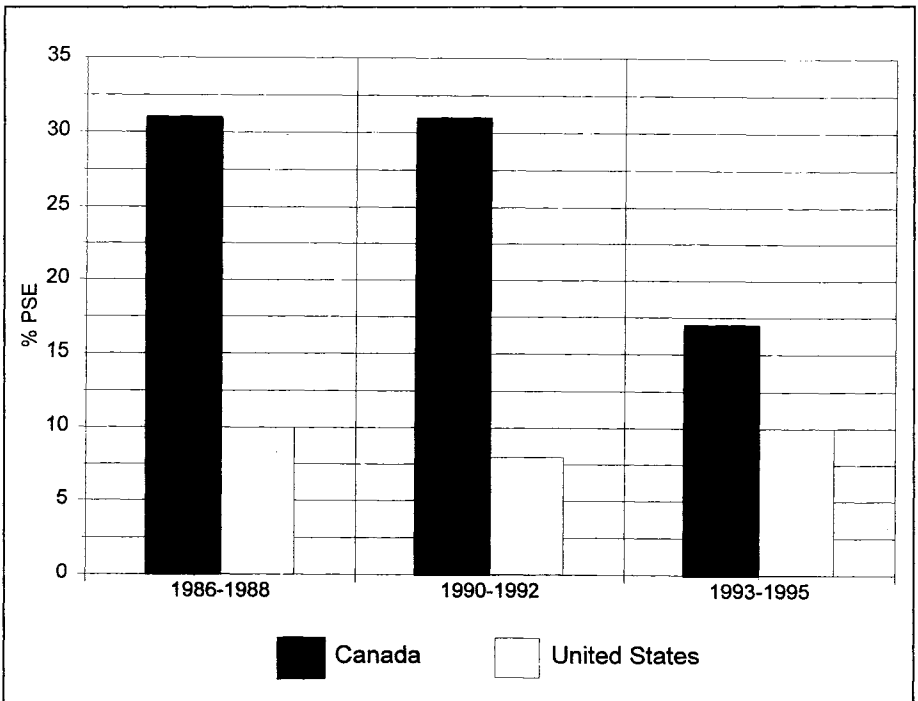


Figure 3. Oilseed PSE Levels (OECD Estimates)

The GRIP guaranteed a minimum gross revenue for producers by giving them the option of insuring a target revenue per acre for virtually any grain or oilseed crop. The insured level of gross revenue was derived by multiplying a producer's long term average yield for each crop by a target price for that crop. In Saskatchewan, the target price for each commodity was equal to 70 percent of a fifteen year indexed moving average price. A crop specific payout was made to a producer when his actual production multiplied by the crop year average market price was less than his guaranteed revenue. The producer paid 33 percent of the premium cost of the program, the federal government 42 percent and each

provincial government 25 percent. Large payouts were made during the 1991/92 crop year but GRIP paid much smaller amounts after 1992/93 as grain prices rose. A lack of political demand for the program combined with more restrictive fiscal situations at both the provincial and federal level resulted in the elimination of the GRIP program for the whole country by 1995/96.

The NISA program was introduced in 1991 under the Farm Income Protection Act. The program allows producer to contribute 2 percent of qualifying grain sales<sup>1</sup> to a NISA account in the producers name. This contribution is matched by two contributions of 1 percent each from the federal and provincial governments. The NISA account earns a subsidized interest rate of prime plus 3 percent. A producer may withdraw funds from the NISA account if either net income falls below \$10,000 (or family income falls below \$20,000) or the current year's gross margin (gross revenue minus cash expenses) falls below the previous five year average. The government contribution of 2 percent is equivalent to an increase of 2 percent in the expected price of all grains. Given the small amount of the subsidy and the general nature the impact on production the impact of NISA is currently very small.

NISA may become more important in the future. Many policy makers view an expanded NISA that includes all agricultural commodities as the only viable future safety Canadian income safety net program. Originally, contributions to the program were expected to increase as GRIP was eliminated but, in the event, partly because of budgetary pressures, additional funds were not forthcoming.

### **U.S. Farm Income Supports**

The 1973 *Agriculture and Consumer Protection Act* established the institutional framework within which U.S. price and income support programs for grains were implemented in the 1980s and 1990s. The key elements of agricultural support policies for major "program" commodities — including wheat, corn, grain sorghum, barley, oats, and rice — introduced by the 1973 legislation were target prices and deficiency payments. The 1973 Act also retained price supports for each crop through nonrecourse loan programs. Under the loan program, farmers could receive nonrecourse loans from the Commodity Credit Corporation (CCC) for all of a crop raised on "eligible" acres (acres on which they were legally allowed to grow that crop), the amount of the loan being equal to the output of the crop multiplied by the loan rate which therefore served as a minimum support price.

The 1973 Act created an income transfer program for grains producers based on the following principles. Farmers of major commodities were provided with base acreages for each program crop and crop-specific payment yields were assigned to these base acres. In any given year, farmers would receive deficiency payments for a particular crop based on the difference, if positive, between the target price and the greater of the national average farm

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<sup>1</sup> Eligible sales are gross grain sales minus grain purchases. Payment from GRIP and Crop Insurance are considered as gross grain sales.

price for the commodity or the loan rate. Producer payments were then established by multiplying the payment rate by the producer's eligible production (eligible program base acreage times program yield).

In contrast, the 1996 FAIR Act creates a much simpler system of transfer payments for U.S. grains producers. While nonrecourse loan programs remain in place, price-based deficiency payments will be replaced by fixed market transition payments over the next seven years (1996-2002). Participating producers receive market transition payments equal to their "payment production" times the payment rate. Each producer's payment production equals 85 percent of the farm's 1996 crop acreage base times the farm's 1995-crop program yield. Farmers may plant any crops they chose on land eligible for production (that is, land whose use is not restricted by commitments under other programs such the Conservation Reserve Program) other than fruits and vegetables.

Several aspects of the structure and historical development agricultural income support programs over the 1973-96 period are of particular interest in evaluating the degree to which the 1996 FAIR Act represents a radical change in U.S. grains policy and a significant movement towards policy harmonization with Canada. The most important in this context is the issue of decoupling of income support payments from actual production decisions.

From the outset, the farm program established in 1973 began to decouple current government income transfers for program commodities from current output levels. Unlike the nonrecourse loan program, under which crop support loans were based on the producer's actual production level, the size of the farmer's deficiency payment was determined by the farm's payment production, not the current year's production level.<sup>2</sup> However, prior to the 1985 Food Security Act, current production decisions could affect deficiency payments by altering both base acres and assigned yields in subsequent years. For example, under the Agriculture and Food Act of 1981, the Secretary of Agriculture was given discretion to set a producer's base, based on the previous year's plantings or an average of the two previous years' planting. Under the 1985 Act, a farm's base acreage was set equal to the simple arithmetic average of the acreage planted or considered planted to the crop in the previous five years. If a producer over planted his base, he was ineligible for payments that year. This change reduced substantially the potential for building base because of the relatively stiff penalty it placed on producers who over planted their base acreage.

Prior to the 1985 Act, a farm's effective payment yield was set equal to the average yield for that county or a higher "proven" yield for the farm based on an Olympic average of the five previous crop years (calculated by dropping the highest and lowest years from the average). This approach allowed income transfers to farmers to increase over time as average crop yields increased in response to improvements in technology and/or farm input decisions. The 1985 Act essentially froze program yields at 1985 levels. Thus, effectively,

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<sup>2</sup> Thus, for example, a producer who suffered a total crop loss would still receive a deficiency payment equal to the farm's base acreage times its program yield multiplied by the per unit deficiency payment rate.

most links at the farm level between current production decisions and current or future deficiency payment income transfers had been severed by 1986. In this context, the 1996 FAIR Act can be viewed as simply completing the decoupling process for deficiency payments and production decisions that began in 1973 by ending the system of base acres that required farmers actually to plant crops in order to receive government transfer payments. The decoupling process embedded in the 1996 Act, while not representing a radical departure from the trend line in U.S. grain policy, does imply a substantial shift towards harmonization between U.S. and Canadian grain programs. The decoupled market transition payments which U.S. grains farmers receive do give them a guarantee income stream that many Canadian grains producers would like to have, but do not provide substantive distortionary incentives to US producers to change their production decisions. Thus they also do not represent a real problem from the perspective of agricultural policy harmonization.

The U.S. soybean and oilseeds income support programs are quite different than the programs for food and feed grains. Under the 1977 Food and Agriculture Act, soybean producers were provided with a mandated nonrecourse loan (guarantee minimum price) program for the first time. Under the 1980 and 1985 Farm Bills, loan rates or minimum support prices were established at 75 percent of the Olympic average of market prices over the previous five years. In 1990, the nonrecourse loan program was extended to the remaining oilseed crops including canola, safflower seed, flaxseed, mustard seed, sunflower seed and sesame seed. In addition a marketing loan program was introduced for soybeans and all other oilseeds. However, there has been no target price/deficiency payment program for oilseeds. The 1996 FAIR Act continues both the nonrecourse loan rate and marketing loan programs for soybeans and other oilseeds. The loan rate for soybean will not be less than \$4.92 per bushel or more than \$5.26 per bushel, but otherwise will equal 85 percent of the five year Olympic average of market prices. Minimum and maximum loan rate prices for other oilseeds were reduced very slightly (by about 3 percent) but otherwise no major changes were made to the loan rate and marketing loan programs for other oilseeds. Thus, in the case of oilseeds, there has been very little change in U.S. oilseeds income and price support programs. However, the levels of support provided to U.S. oilseeds producers under these programs have been modest.

### **Harmonization of Farm Income Support**

The distortionary effects of Canadian and U.S. income support programs for wheat and other grains have been substantially curtailed over the period 1990-1996. Similarly, the distortionary effects of Canadian income support programs for oilseeds have also been reduced towards the relatively modest levels associated with the U.S. oilseeds program. Thus, while income support programs for these commodities have not been harmonized, there has been economic convergence in that producers of these commodities in both countries operate in policy environments that force them to rely more heavily on market signals.



## **LAND RETIREMENT AND ENVIRONMENTAL POLICY**

### **Canadian Land Retirement and Environmental Policy**

Environmental policy has had very limited effects on the grains and oilseed sector in Western Canada. Environmental problems have largely been restricted to soil depletion and the loss of wild life habitat. Many of the soil erosion problems have been diminished by the widespread adoption of zero and minimum tillage practices. Policy has limited cultivation and retired cultivated land into non cultivated uses. The government controls large acres of fragile lands and leases them to producers only for the purposes of livestock grazing. This has restricted the cultivation of land in southwest Saskatchewan and southern Alberta.

The Permanent Cover Program (PCP) which existed in the period 1992-1994, paid producers to take marginal land out of grain production, i.e., land at a high risk of erosion or salinization, and place the land into forage or pasture production. Payments included a \$20/acre preliminary payment, which is intended to offset the cost of seeding the targeted areas, and a final payment (of \$20 or \$50/acre for a 10 or 21 year contract respectively). Payment is made to the farmer once the viability of the permanent crop has been verified and the contract signed. This contract, which includes an easement on the land title, binds the farmer to ensure maintenance of the permanent cover for the specified time. It must be emphasized, this does not mean that the land cannot be put into productive uses. The contract only prohibits the farmer from plowing the permanent cover crop under and planting annual crops. Currently, about one million acres are enrolled in the PCP. The effect of this program on grain is modest given that marginal lands were targeted for the program.

Finally, it should be noted that the North American Waterfowl Management Plan, a joint conservation program between the government and the private sector, has procured wetland and nesting habitat. Under the program about 150 thousand acres of land has been retired permanently from cultivation.

### **U.S. Land Retirement and Environmental Policy**

An important difference between U.S. and Canadian grain and oilseed programs was removed when, under the 1996 FAIR Act, annual acreage reduction programs were eliminated. Grain and oilseed farmers now have almost complete flexibility over crop planting and production decisions. Under previous legislation, to be eligible for deficiency payments a producer had to participate in the annual acreage reduction program. Acreage Reduction Programs (ARP) were implemented to control the costs of deficiency payments and nonrecourse loan outlays by restricting the amount of production eligible for payment and by attempting to keep prices high (and deficiency payment rates low) by taking land out of production. As market prices fell in the early 1980s, government stocks rose, deficiency payments and loan forfeitures increased, and acreage reduction percentages were increased.

In 1986, for example, corn and wheat producers, respectively, had to set aside 25 percent and 30 percent of their base acreage to be eligible for deficiency payments.

By the late 1980s, the role of acreage reduction levels for wheat and feed grains in controlling supplies had diminished considerably. This was due in part to run downs in government inventories associated with the droughts of 1988 and 1989, in part to the decisions of some farmers who chose to place program acreages in the "0-92" program established under the 1985 Act,<sup>3</sup> and, perhaps most importantly, because of enrollment in the Conservation Reserve Program (CRP), a voluntary 10-year paid acreage retirement program initiated by the 1985 Act. By the early 1990s, the CRP, ostensibly an environmental program, had resulted in the long term retirement of over 40 million acres of land, substantially reducing the need for annual acreage reduction programs for wheat and other grains. Thus the abolition of the ARP program under the provisions of the 1996 FAIR Act is likely to have little impact on U.S. farm level production decisions with respect to grains and oilseeds. However, the removal of ARPs from the inventory of U.S. farm programs represents a step towards institutional policy harmonization with Canada with respect to grains and oilseeds.

Restrictive rules governing base acreage calculations under the 1981 and 1985 farm bills also made it much more costly for producers to switch to non-program crops like soybeans and thus represented an important restriction on U.S. grain and oilseed producers' land use choices. Planting less program crop acreage reduced eligible base acreage in subsequent years. Under the 1985 Act, a producer with a 100 acre corn base who chose to plant soybeans on those acres would lose 20 acres of corn base in the subsequent year and ultimately one third of that base unless he left the program to rebuild base. Thus, when soybean prices rose sharply relative to corn prices in the late 1980s, producers were faced with little or no ability to shift production out of corn and into soybeans due to restrictive base provisions.

These problems were mitigated in the 1990 *Food, Agriculture, Conservation and Trade Act* which introduced the concepts of normal flex acres and optional flex acres. Under the 1990 Act, producers could plant any non-program or program crop (other than selected fruits and vegetables) on up to 15 percent of their base acreage ("normal flex acres").<sup>4</sup> In addition, farmers could choose to forego deficiency payments on an additional 10 percent of their base acres in return for the right to plant those acres to other crops ("other flex acres"). Thus, after 1990, program crop producers could choose to reallocate up to 25 percent of their base acres to other crops.

The evidence suggests that the planting flexibility provided by the 1990 Act has never been fully utilized by producers. While it contributed to the 5 percent increase in soybean

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<sup>3</sup> Under the Omnibus Budget Reconciliation Act of 1993, this was changed to 85 percent of the expected deficiency payment rate. Under this program, producers could place base acreage in conserving use and receive 92 percent of their expected deficiency payment.

<sup>4</sup> Under provisions of the Omnibus Budget Reconciliation Act of 1990, passed only weeks after the 1990 Act, normal flex acres were ineligible for deficiency payments.

acreage witnessed since 1990, program compliance data for crop years 1992-95 showed that about 50 percent of corn and wheat normal flex acres and over 90 percent of optional flex acres remained planted to corn and wheat. Moreover, in no state did the planted acres for program food and feed grain crops (or soybeans) rise or fall by more than 15 percent between 1990 and 1995. Thus, it seems unlikely that the removal of all restrictions on planting decisions at the individual farm level will have large effects on total acres planted to individual program crops. Clearly, the planting flexibility generated by the provisions of the 1996 FAIR Act increased the degrees of freedom under which U.S. food and feed grain producers operate. Similarly, some farmers may make radical adjustments in the mix of crops they grow. But in the aggregate, the effects of the 1996 FAIR Act planting flexibility provisions on aggregate supplies of individual crops are likely to be quite modest.<sup>5</sup> Again, in this respect, U.S. income support programs have become relatively more similar to Canadian programs for grain and oil seeds.

The 1996 FAIR Act was noteworthy for some farm programs with which it did not grapple in any thorough manner, including environmental programs. Foremost among these, from the perspective of the food and feed grains sector is, perhaps, the CRP. Both Congress and the Clinton Administration have agreed that the CRP should be extended and the 1996 FAIR Act defines the maximum acreage for the program between 1996 and 2002 as 36.4 million acres. However, the Act does not indicate the precise criteria for program eligibility. These unresolved issues matter. If a high priority were placed on water quality criteria, then land in feed and food grain producing regions currently in the CRP would move back into production. In contrast, if emphasis is placed on soil erodability and wildlife, then higher rents would be paid to keep land in the CRP in grain producing area such as the Northern Plains and the Mid West. In the latter case, grain and oilseed producers would be better off and U.S. production of these commodities would be lower.

Other U.S. environmental policies have included a plethora of programs such as the Sodbuster and Swampbuster programs, the Wetlands Reserve Program (WRP), the Environmental Quality Incentive Program (EQUIP), and the Integrated Farm Management Program, all of which existed prior to 1996. Under the 1996 Act, modest changes have been made to some of these programs and some new initiatives have been implemented, all with relatively modest funding levels (although the EQUIP programs funded at \$1.3 billion to be expended over seven years). None of these programs are explicitly targeted at grains and oil seed producers although all such producers are eligible for benefits under most of the programs.<sup>6</sup>

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<sup>5</sup> Farm choices with respect to planting decisions are affected by relative prices but are also often heavily constrained by agronomic considerations with respect to weather, disease, pest infestations, soil erosion concerns, etc. In general, estimates of acreage supply response price elasticities in unconstrained environments have been quite small.

<sup>6</sup> One obvious practical exception, of course, is the Everglades Agricultural Area program, under which \$200 million is to be allocated for restoration activities in South Florida. Some other programs are also targeted to regions in which grains and soybeans are not major crops.

## **Harmonization in Land Retirement and Environmental Policy**

For the most part, Canada and the United States have environmental policies targeted towards some domestic environmental concerns but these policies have also had farm income enhancement objectives associated with supply controls via land retirement. In the United States, acreage reduction programs were implemented to control budgetary outlays under target price/deficiency programs. These have not been formally abandoned but mainly because the need for them has been obviated by voluntary land retirement under the CRP. There is no obvious trend towards convergence and harmonization for either land retirement programs or agricultural environmental programs between the two countries, except with respect to the abandonment of year-to-year management programs such as ARPs.

## **FARM INPUT SUBSIDIES**

### **Canadian Farm Input Subsidies**

Farm credit in Canada is provided by a mixture of private sector organizations and provincial and federal government agencies. In the grains and oilseeds sector, the Farm Credit Corporation (FCC), a federal government crown agency, has played a significant role. Beginning in the mid-1980s, as a result of budget cutting measures, the FCC has very largely become a commercial entity through which funds are raised on financial markets and lent to producers on a commercial basis. Thus, currently, very little subsidized credit is available to grain and oilseed producers.

Other input subsidies have been limited to provisions of the tax system. Provincial governments have rebated provincial road taxes on the use of farm fuel. These rebates currently remain in place. Investment tax credits established by the federal government for farm machinery in the 1960s were abolished in the late 1980s. Other provisions of the tax system such as capital gains exemptions for farmland continue to provide indirect input subsidies.

### **U.S. Farm Input Subsidies**

Subsidies for farm inputs have generally been indirect in the United States. One important source of subsidies has been the U.S. Farm Credit System and the Farmers Home Administration. During the 1980s, access to subsidized credit was expanded. However, under the 1990 FACT Act and, again under the 1996 FAIR Act, tighter lending restrictions were placed on Farmers Home Administration loans. In addition, under the provisions of the 1996 Farm Credit System Reform Act, the operation of the Farm Credit System is to be the subject of an extensive review.

The tax structure has also provided the agricultural sector with a variety of input subsidies through provisions permitting accelerated depreciation schedules, investment tax credits and expensing of a modest amount investment outlays. However, under the provisions of the 1986 Tax Reform Act the investment tax credit was abolished and depreciation rules adjusted to be less favorable to farms and firms. An additional source of subsidy involves differential tax rates for agricultural land and real estate. In many states within the United States, agricultural land is subject to lower tax rates than land in non-agricultural use.

### **Harmonization of Farm Input Subsidies**

Some degree of convergence has taken place in the United States and Canada with respect to the tax treatment of agricultural inputs. However, the complex nature of each country's tax code makes it very difficult to develop a detailed assessment whether changes to those codes have led to a greater degree of agricultural policy harmonization. Perhaps most significantly, however, neither country has implemented policies that provide explicit targeted subsidies for individual agricultural inputs.

## **AGRICULTURAL RESEARCH AND EXTENSION**

### **Canadian Agricultural Research and Extension**

Research in the grains and oilseeds sector is funded by the private sector, by commodity check off funds and by the government. The largest growth in private research has been for canola where hybrids are becoming commercially viable, and in herbicide resistance. Public research expenditures have remained relatively stable over the past ten years. Much of this funding is now used for grants where private sector funds are matched with public funds for research. Commodity check off funds have increased. The private sector is likely to expand research expenditures as hybridization becomes viable for other crops.

### **U.S. Agricultural Research and Extension**

As in many countries, agricultural research policy in the United States has been complex, partly because of the dual roles of the federal and state government.<sup>7</sup> In general, as Alston and Pardey report (Alston and Pardey, Tables 2-5, p 46 and Tables 2-10, p 57) over

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<sup>7</sup> Alston and Pardey provide an excellent recent historical discussion of U.S. agricultural research policy between the eighteen hundreds and 1995.

the period 1980 to 1993, aggregate public sector agricultural research expenditures have increased in real terms at a rate of about 2.3 percent per year. With respect to agricultural research, there has been some change in the mix of research funding sources, with a slightly increased emphasis on the use of competitive grants processes. In contrast, public funding for extension activities has declined since the mid-1980s, a common trend in many countries. The 1996 FAIR Act did not address agricultural research in any substantive fashion and the likely direction of future U.S. agricultural research policy is not yet determined. The research provisions of the 1990 FACT Act are to be revised in 1997 and at this time there is no clear indication of how federal agricultural research programs are likely to be reformed.

### **Harmonization of Agricultural Research and Extension**

Relative to Canada, Alston and Pardey have pointed out that the United States spends a smaller fraction of the value of agricultural production on publicly and privately funded agricultural research (2.13 percent as opposed to 4.42 percent over the period 1981-85) although aggregate absolute expenditures are much larger. Little has probably been accomplished with respect to convergence and harmonization of research policies in the two countries. However, the distortionary impacts of these programs are difficult to assess.

## **CROP INSURANCE**

### **Canadian Crop Insurance**

In Canada, crop insurance programs vary by province. In 1985, Canadian crop insurance programs offered 70 percent yield protection. At that time the federal government paid half of the premium costs, producers paid half of the premium costs and the provincial governments paid the administrative costs. After significant droughts in the late 1980s created large deficits in the insurance fund, many modifications were made to the program to maintain a client base while repaying the outstanding deficit. More coverage and more options for producers were also provided. It was recently announced that the governments of Canada and Saskatchewan had agreed to pay off much of the outstanding debt. Crop insurance programs in Western Canada have recently amended premium structures. Provincial and federal governments pay eighty percent of the premium costs for basic contracts covering losses in excess of 50 percent of average yields and forty percent of the additional premiums associated with contracts that provide greater coverage against yield losses.

## **U.S. Crop Insurance**

As in Canada, federal crop insurance programs also provide substantial subsidies for grain and oilseed producers, and especially for wheat and barley producers in Western States. As noted above, the 1996 FAIR Act only addressed these programs by removing the requirement, introduced in 1994, that farmers receiving benefits from major government programs purchase catastrophic multiple peril crop insurance contracts. This was a provision widely sought by producers with very small acreages for whom the fixed catastrophic contract fee of \$50 per crop made the insurance contract quite expensive. However, Congress had addressed federal crop insurance subsidies, which averaged over \$2 billion per year for all crops between 1990 and 1993, in the Federal Crop Insurance Reform Act of 1994. Under the provisions of this Act, the Federal Crop Insurance Corporation was given a mandate to achieve substantial reductions in loss ratios and to increase premium rates to accomplish that objective. U.S. crop insurance program subsidies have increased in the 1990s relative to the 1980s (Goodwin and Smith) and the programs have become more complicated.<sup>8</sup>

## **Harmonization of Crop Insurance**

Crop insurance is likely to persist as an increasingly important source of income transfers in both the United States and Canada. A little progress has been achieved with respect to harmonization in relation to these policies. However, it is reasonable to be skeptical about the probability that these programs will converge in the future. This is partly because of the increasingly complex mix of insurance contracts being offered in both the United States and Canada and partly because of increased regionalization of these programs in Canada.

## **TRANSPORTATION POLICY**

### **Canadian Transportation Policy**

The Western Grain Transportation Act (WGTA) was a federal statute that paid railways a subsidy for the movement of grain from prairie positions to terminal positions at the West Coast, the Port of Churchill and for all shipments to Thunder Bay. The 1983

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<sup>8</sup> In particular, a wide array of new insurance product based on either area yields or some measures of expected farm revenues have been introduced by the U.S. Federal Crop Instance Corporation over the past two years, partly in order to meet the requirements of the 1994 Crop Insurance Reform Act and partly as a result of rent seeking activities by private crop insurance companies whose rewards under federal programs are based largely on value of contracts, not the actuarial performance of their books of business.

WGTA legislation allowed for a payment of \$659 million to the railways with some small provisions for inflation and branch line costs. Between 1986/87 and 1992/93 the payment varied between \$721 and \$726 million (Producer Payment Panel, 1994). This payment was reduced to \$560 million in 1994/95 and was then eliminated with a one time lump sum payout in the 1995/96. Producers received a payment of \$1.6 billion dollars based on estimates of land productivity and cropping intensity. For taxation purposes, this payment was treated as a capital grant to producers, somewhat increasing its efficacy.

Producers now pay a regulated freight rate for grain based on a cost formula of the WGTA. This has resulted in an increase in the cost of grain shipment of \$22 per tonne on average. This has lowered the price of grain on the prairies relative to world prices. This probably creates a more favorable environment for the development of a larger livestock sector. In 1999 the regulation of freight rates is up for review. If deregulation takes place producers could pay an additional \$20 to \$30 per tonne in freight costs if freight rates approach trucking rates as they have done in Montana. This would tend to reduce grain output and increase livestock feeding in the region. It would also increase the economic viability of trucking grain to the U.S. Mississippi system.

### **U.S. Transportation Policy**

In the United States, transportation policy generally has not been targeted towards the agricultural sector over the past decade. Clearly, subsidies for the maintenance of transportation networks such as those associated with the work of the army corp of engineers on the Mississippi may have benefited U.S. agricultural producers. However, no substantial changes have taken place in U.S. transportation policy in relation to the U.S. agricultural sector.

### **Harmonization of Transportation Policy**

The substantial shifts in Canadian agricultural transportation policy away from rail freight subsidies and towards a less regulated environment for rail transportation have resulted in smaller differences between the United States and Canada with respect to agricultural transportation policy. It should be noted that differences in fuel and vehicle tax programs may have some effects on the competitiveness of the two countries' agricultural producers in export markets and each other's domestic markets. Future deregulation of the Canadian transportation industry may lead to further harmonization between the two countries' policies.



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## **GRAIN MARKETING AND EXPORT SUBSIDY PROGRAMS**

### **Canadian State Trading, Credit Guarantee and Market Access Programs**

The system of marketing grain in Canada is a subject of some controversy both within Canada and in the United States. With the exception of wheat and barley for human consumption or export, grains in Canada are marketed through the private trade. The grain handling system is owned and operated by the private grain trade and farmer cooperatives. There are no government payments for the construction or the use of grain storage.

The Canadian Wheat Board (CWB) has sole powers to market non-feed wheat originating in the designated region in western Canada for human consumption within Canada and has sole jurisdiction for exports. The CWB also has the sole jurisdiction for barley exports and domestic sales for malting and human consumption purposes produced in the CWB region. The CWB has adopted a mandate of maximizing the return to wheat and barley producers. The CWB pays producers an initial price when grain is delivered, then market the grain, deduct any operating costs of the CWB and then return any revenue surplus to producers in the form of a final payment. The CWB has no mandate to retain revenues from producers or to receive any government subsidies except in the case of pool account deficits.

The CWB is currently at a touchstone for intense debate in Western Canada. Producers have been asked to vote on whether the CWB should maintain its role in barley marketing. Whether or not the CWB retains its monopoly in exporting barley and marketing barley for domestic human consumption, the future of Canadian export programs for wheat and barley is uncertain. If the CWB remains in place, it is very likely that substantial changes will be made in its operating procedures. The federal government has introduced a parliamentary bill which would give the CWB greater flexibility in marketing. Producers would be given direct responsibility for the election of CWB commissioners who would be subject to re-election on a regular basis.

Canadian exports of grain and oilseeds are also eligible for export credit guarantees under the Credit Grains Sales Program. This program allocates each importing country to a risk category which is allocated a global credit ceiling. If credit is provided under this programs, loan conditions must reflect prevailing interest rates and loan periods must not exceed three years.

### **U.S. Export Subsidy, Credit Guarantee and Market Access Programs**

In the United States, targeted agricultural export subsidies for grains and oilseeds are determined under the Export Enhancement Program (EEP). In the late 1980s and early 1990s, annual EEP expenditures amounted to over one billion dollars in several years. In accordance with U.S. obligations under the GATT, under which the maximum permitted funding for export subsidies in 2000 is \$579 million, the 1996 FAIR Act provides

substantially reduced authorizations for EEP subsidies over the period 1996-2002. These annual authorizations range from a low of \$250 million in 1997 to a high of \$579 million in 2000. However, the Secretary of Agriculture has discretionary authority to implement EEP subsidies and did not provide any EEPs for grains or oilseeds in 1996, a year in which grain and oil seed prices were relatively high. In years in which world prices are lower, EEP subsidies are more likely to be implemented. Typically, wheat has been the largest beneficiary of the EEP program, although barley and corn exports have received substantial EEP subsidies over the history of the program. In future low price years for those commodities, the U.S. government is likely to provide EEP export subsidies for those commodities. On balance, then, since 1988, while the institutional structure of the U.S. export subsidy program for grains and oil seeds has not changed, funding levels for targeted export subsidies have been reduced quite substantially and, within the GATT framework, the U.S. agricultural export subsidy policy is likely to be further curtailed after the year 2000.

Food aid programs, operated primarily under Public Law 480 provisions, have also been important for grains, in particular, wheat, and oilseeds. These programs, initiated 1954, were re-authorized under the provisions of the 1996 FAIR Act with assistance levels somewhat in excess of those authorized under the 1990 FACT Act.

Export credit guarantee programs were introduced in the 1980 farm bill (GSM-102) and the 1985 farm bill (GSM-103). The first of these, GSM-102, authorizes the Commodity Credit Corporation to guarantee, for a fee, payments owed to U.S. exporters on deferred-payments sales contracts when the foreign buyer defaults on payment. The second program,, GSM-103 (the Intermediate Export Credit Guarantee Program), guarantees loans for 3 to 7 years. Under the 1996 FAIR Act, these programs have been expanded relative to the levels established under the 1985 and 1990 Acts.

In addition to export subsidy, food aid and export credit guarantee programs, the United States also funds market access programs. Under these programs, funds have been provided to support the work of agricultural commodity marketing organizations such as U.S. Wheat Associates who could demonstrate that they have been harmed by other countries' unfair trading practices. Funded at \$200 million per year under the 1990 FACT Act, the Market Promotion Program was subject to cuts in 1993 under the 1993 Omnibus Budget Reconciliation Act and, again, in 1996 under the 1996 FAIR Act which reduced annual funding for market access programs to \$90 million. The FAIR Act also abolished the Cottonseed and Oilseed Assistance Programs, funded at \$50 million per year under the 1990 FACT Act, which were designed to encourage export sales of those commodities.

### **Harmonization in Export Policy**

To the extent that U.S. export subsidy programs have become subject to GATT disciplines and funding for the U.S. export enhancement program has been reduced, the United States has moved towards a less distortionary set of trade policies for grains and oilseeds. While the removal of freight subsidies has also moved Canada's grains trade policy in a less distortionary direction, Canada's export marketing board policy operated through

the CWB has not changed in recent years. With respect to export credit guarantees, both countries operate roughly comparable programs, although under the GSM-103 program, the United States is able to offer three to seven year lines of credit. These programs have been subject only to relatively modest changes over the past ten years.

## CONCLUSION AND OVERALL ASSESSMENT

Canadian and U.S. farm programs have undergone substantial changes over the period 1988-96. Most of these changes have been generated as responses to budgetary pressures, reductions in the political influence of agricultural lobbies, shifts in grain and oilseed prices and domestic concerns about environmental and other policy objectives. However, the pattern of reduced intervention common to both countries has resulted in considerable economic convergence in the grain and oilseeds programs implemented in the two countries. It is difficult to predict whether this pattern of convergence will continue, although GATT and NAFTA related disciplines clearly constrain both countries from substantially increasing domestic levels of support through conventional agricultural price and income support programs. However, it is conceivable that new transfer programs could be developed via farm income safety net programs such as crop yield and revenue insurance.

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