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Facts About Canadian Farm Income

Prepared By
Larry Martin
Cher Brethour
Kate Stiefelmeyer



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Facts About Canadian Farm Incomes

Larry Martin, Cher Brethour, and Kate Stiefelmeyer¹

Some most questionable information has been distributed by the press and others regarding Canadian farm incomes over the past few weeks. This has led to misunderstanding of the situation, rather than enlightenment. Moreover, it has spawned some rather narrow, oversimplified, and short-sighted solutions to the farm income problem. The senior author of this report has been around agriculture for more than thirty years and the farm income problem has cycled several times during that period. Therefore, it is not likely to go away as a result of simple, short-sighted and narrow solutions. Hopefully, this short analysis will at least clarify what's happening and introduce a clear statement of the trade offs and dilemmas faced by governments and farmers in dealing with the problem.

Our objectives in this paper are, first, to show the pattern of net and gross farm incomes during the past several years in Canada. By so doing, we intend to indicate that every farm is not the same; i.e., the situation is not the same for livestock, horticultural, and cash grain enterprises. Some farms specialize in one or another of these, some have combinations. Therefore, there is no such thing as the farm income situation. We will show that the income problem is primarily focussed on the grain industry. Our intent is to then illustrate the major cause of that problem. This, in turn, will lead to a fairly clear illustration of the dilemma that faces farmers and policy-makers as they try to figure out what to do.

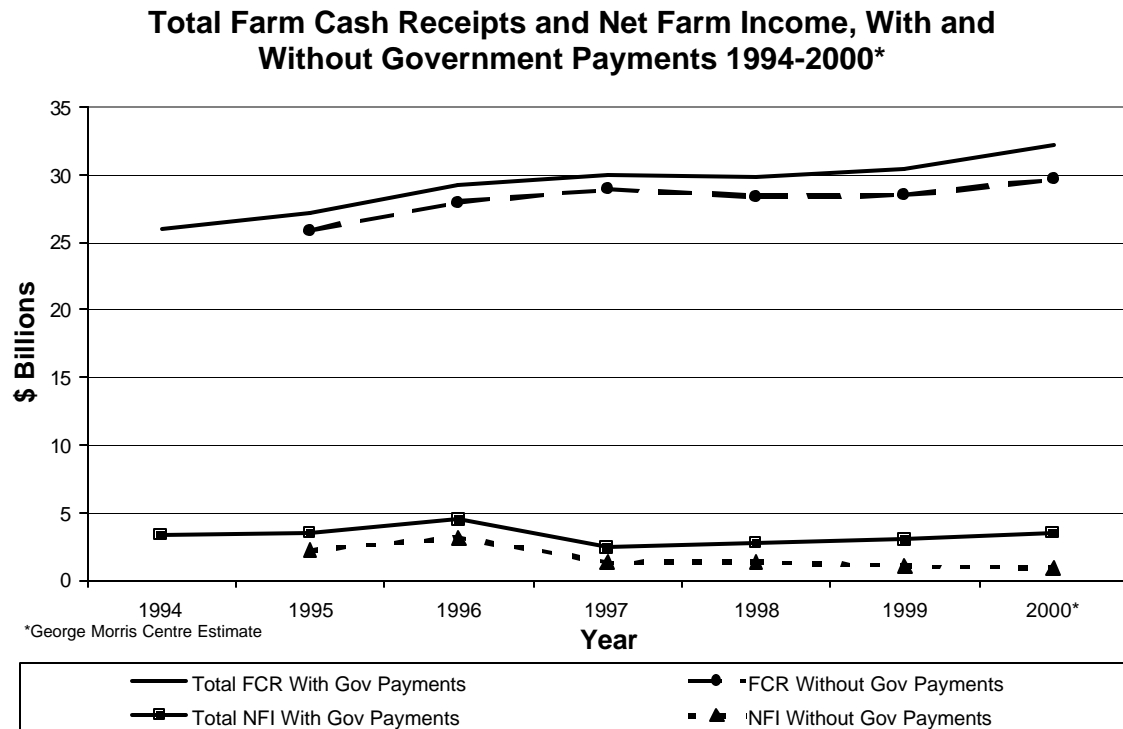
Overall Farm Incomes

Statistics Canada provides fairly detailed information on farm incomes, and it will be the basis for this discussion. One thing that needs to be clarified from the start is the difference between gross and net farm income. (In major news coverage in the past few weeks, the Canadian Broadcasting Corporation seemed not to grasp this difference). **Gross farm income** is the total amount of income that is received from farming. It's also referred to as cash receipts. **Net farm income** is what is left over from gross farm income after expenses are paid.

¹The authors are CEO, Research Associate, and Research Assistant at the George Morris Centre.

Figure 1 shows gross and net farm income from 1994 - 2000. Statistics Canada has reported final data through 1999 and the first three quarters of 2000. Therefore, the data in this figure include our forecasts of the final estimates for 2000. Also note that from 1995 onward, we show gross and net, both with and without direct government payments included².

Figure 1



Source: CANSIM Matrix 3571

From 1995 - 2000, gross farm income increased from roughly \$27 billion to \$32 billion, when direct government payments are included. It increased by about \$4 billion (from \$25.5 bil to \$29.5 bil), even without direct government payments. So, when one looks only at gross income data, one is tempted to ask, *What's the problem?*

The problem becomes a little clearer when one looks at net farm income. After peaking, at almost \$3.5 billion in 1996 (before direct government payments), it declined steadily and is little less than \$900 million in 2000.

So, these data mean the following in light of some of the things that have been reported in the past two weeks:

\$ While gross farm income is at or near a record level, net farm income is

²Direct government payments are payments made directly to farmers from federal or provincial governments for income assistance.

- not and it is getting close to zero without direct government support.
- \$ This means that costs rose faster over the past several years than did revenue.
- \$ Direct government payments represent considerably less than 10% of **gross farm income**, not the 75% reported by the CBC (it was about 75% of **net farm income** in 2000).

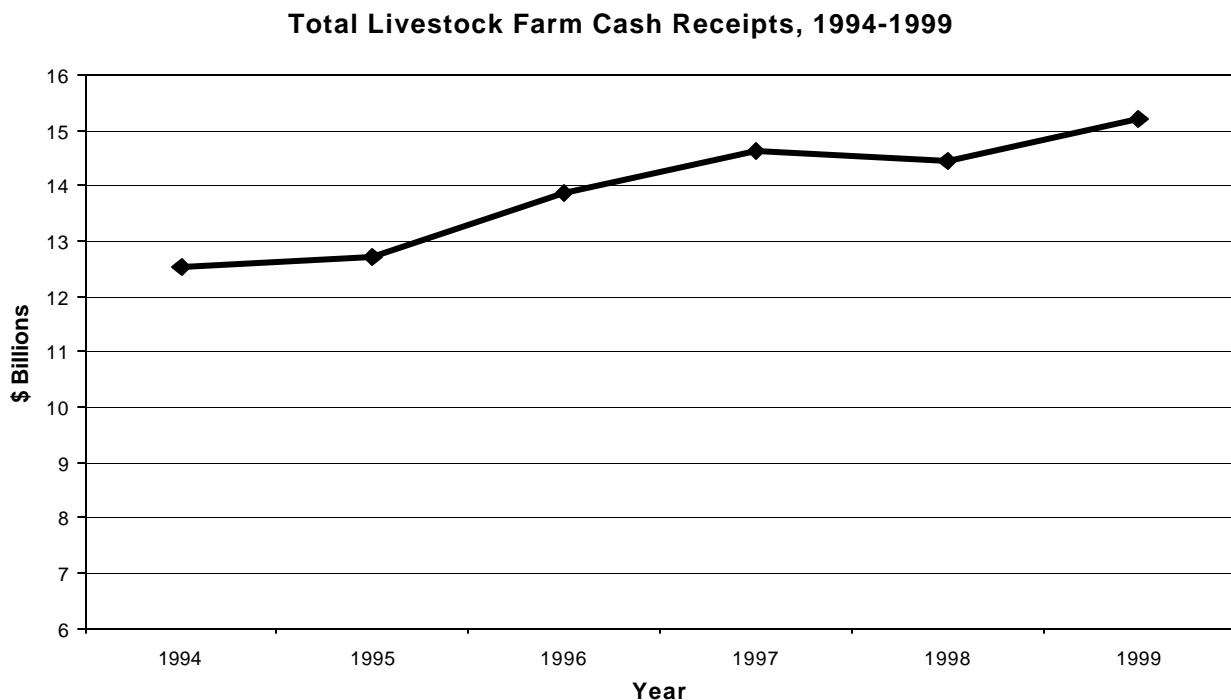
But this still does not describe the situation in sufficient detail to understand what's happening.

Income by Major Enterprise

In this section, we show the trends in gross farm receipts from livestock, horticultural products and field crops. Field crops, in turn, are sub-divided into oilseeds (canola, soybeans, etc) and grains (corn, wheat, barley, etc.). These data also come from Statistics Canada and are used to calculate gross farm income, as reported above. Unfortunately, they only show **gross** receipts for each of the categories of farm products. The data are not reported in a way that allows calculation of net income from each category of crops. However, if one thinks about the trends, it is reasonably easy to infer which of the commodity groups have had the most problem with net farm income.

Figure 2 shows gross revenue from livestock sales between 1994 and 1999. While the 2000 data are not in, it is quite clear that these receipts were up again for 2000. The data indicate that gross revenue from livestock sales increased from about \$12.5 billion to \$15.5 billion over the period.

Figure 2



Source: CANSIM Matrix 3571

Figure 3 shows gross revenue from sales of horticultural products. This includes everything from sugar beets to potatoes to other vegetables, and all fruits. The data show an upward trend through 1999 from about \$1.8 bil to \$2.5 bil. That trend continued in 2000.

Figure 3

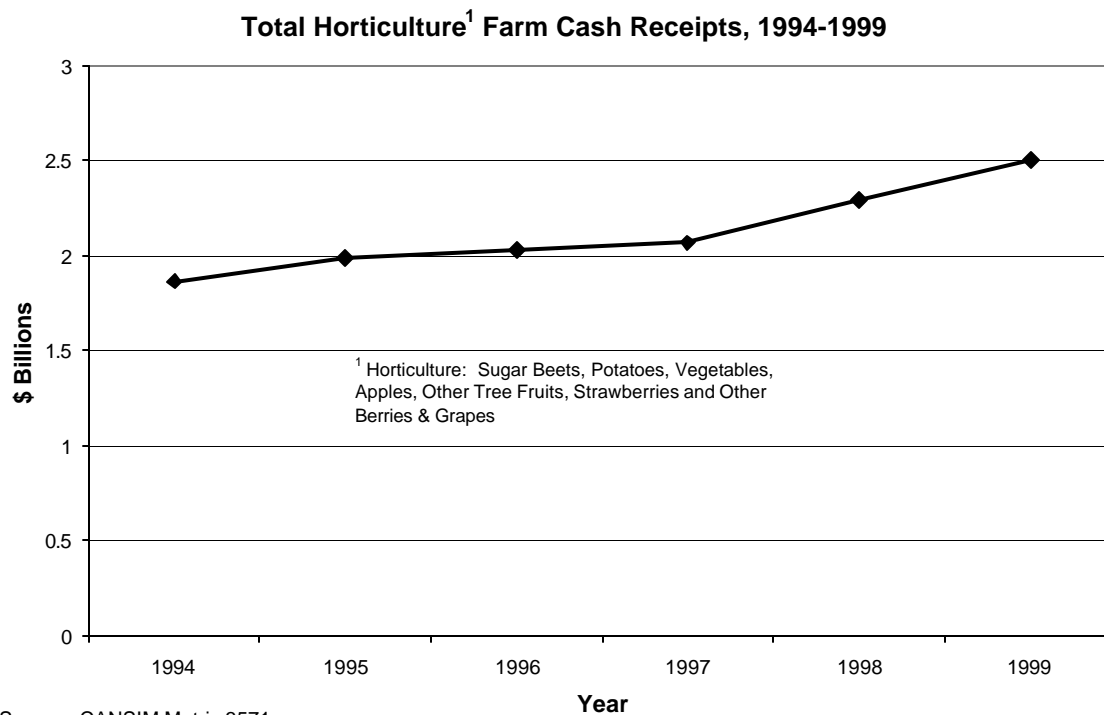
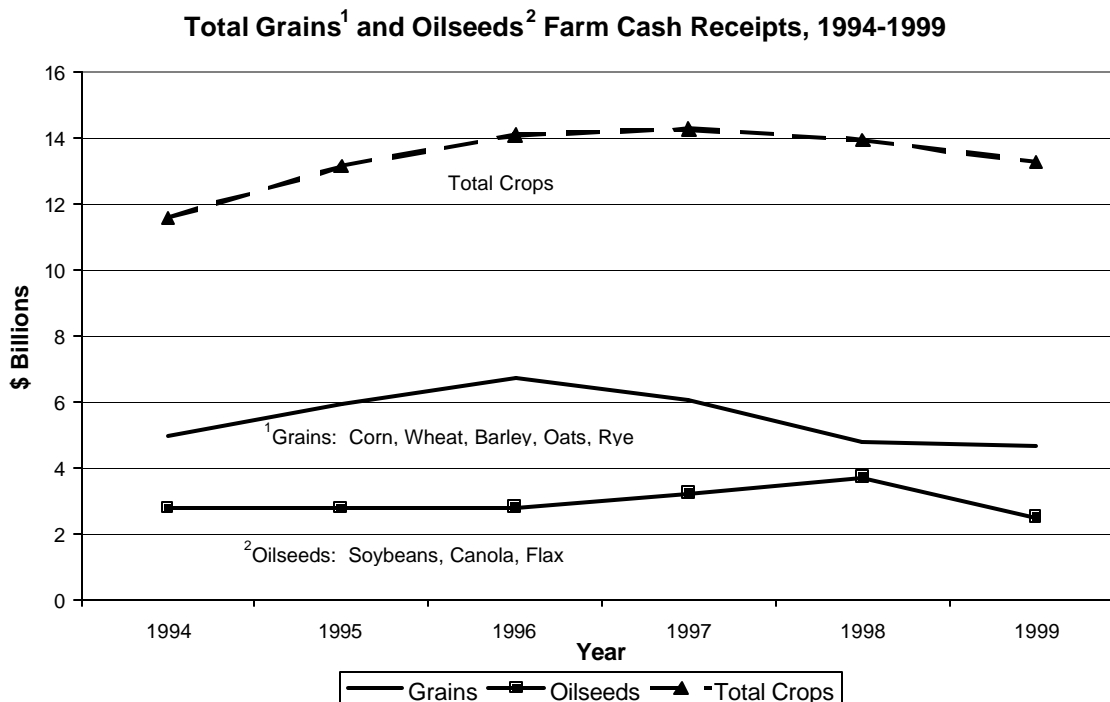


Figure 4 shows gross revenue from grains and oilseeds beginning in 1994. In this case, we can see that farm receipts increased for grains through 1996, then fell rapidly. We anticipate that the final numbers for 2000 will be slightly lower for grains than they were in 1999. Similarly, receipts for oilseeds increased through 1998, then dropped substantially. Again, we expect that these will be down further in 2000. This means that, by 2000, gross farm income from these two categories was as low or lower than in 1994, unlike livestock and horticultural products.

Figure 4



Source: CANSIM Matrix 3571

Now what about the net income (i.e., after expense) performance of each of these categories? As indicated above, Statistics Canada does not report the data in such a way that these are easily calculated. However, some common sense would lead us to the following points:

- \$ Livestock eat grain: feed is the major cost of raising livestock. Since livestock receipts were increasing and grain prices were decreasing, it follows that livestock net income should have been increasing over the period.
- \$ Both horticultural products and grains and oilseeds require similar kinds of input. They require land, labour, fertilizer, seed (or seed stock), crop protection products and machinery. Of course, each one requires these products in different intensities. However, the complement of inputs is similar. Most of these inputs were rising in cost during the period from 1994 through 2000.
- \$ Following from the above, one would expect, since horticultural gross incomes continued to rise, that net income probably also rose somewhat during the period.
- \$ On the other hand, since gross revenue from cash grain was declining, it follows that these are the products for which net profits declined.

From the foregoing we conclude that there is not really a farm income problem. Rather there is a grain and oilseed income problem. This problem is intensified in a few regions where either excess (Southwestern Manitoba) rainfall or too little (Southern Alberta) rainfall limited crop

yields. This is not to say that there are not short term problems among other products. Clearly, in late 1998 and early 1999, hog producers had a major short term income problem because of some of the lowest real (adjusted for inflation) prices for hogs in history. However, overall during the past half decade or so, the livestock industry has enjoyed relative financial health.

Hopefully, the foregoing can help focus the analysis and discussion on:

- \$ What's the cause of the problem?
- \$ What, if anything, should be done about it?

We turn now to the first of these two questions.

What's the Source of the Grain and Oilseed Income Problem?

While there are several causes of this problem, we believe one is central. Interestingly it is not, as reported by one analyst, that we have too many farmers for market conditions³. It is, rather, that there are too many dollars of subsidies being paid to US producers, and being paid in a way that is totally market distorting for grains and oilseeds³.

The US farm subsidy program has a number of components. We will discuss three. One is a loan rate program that is used for feed grains and wheat. Feed grains include corn and barley. The second component is the soybean program. The third is a set of emergency payments. In our view, the soybean program, which was first introduced in the 1996 Farm Act, is the fundamental problem that contributes to chronic over production of both oilseeds (soybeans) and grains in the US. Because the US is such a dominant player in world commodity markets, this drives down prices for Canadian farmers.

Let us explain how these programs work.

- \$ **Feed grains and wheat.** For feed grains and wheat, US farmers can obtain a non-recourse loan from the federal government before, during or after seeding time. The amount of the loan is determined by a loan rate and the farmer's acreage and yield history. The loan rate is a price per bushel at which farmers can borrow money from the government in the spring before seeding. If the market price after they produce their products is above the loan rate, they can sell their grain and pay back the loan without interest. If it is at or lower than the loan rate, their loans do not have to be paid back at the loan rate. What makes this program rather interesting is that, in general, when the market price falls below the loan rate, corn or wheat moves into storage and is removed from the market. Therefore, the loan rate becomes a floor price, under which the market

³The focus here is on the US. The European Union is also in the subsidy business. Its subsidies are even more complex. This discussion illustrates what we believe to be a major problem, and the EU simply prolongs and exacerbates it.

rarely falls. The price in the United States, is also essentially the price in Canada, adjusted for exchange rate. This is because Canadian production is relatively small and, therefore, has relatively little impact on US and world prices. Currently, the loan rate for corn is \$1.86/bu and the loan rate for wheat is about \$2.50/bu.

- \$ **The soybean program.** The soybean program works very differently than the feed grain and wheat programs. It has what is called a **loan deficiency payment**. In this case, farmers can also borrow money at the loan rate but there is no storage program that removes the product from the market to maintain it at or near the loan rate. Rather, the market finds its own level and then farmers get a deficiency payment equal to the difference between the market price and the loan rate when the market price is lower.
- \$ **The emergency payment program** makes additional payments based on net farm income. Unlike those discussed above, their pay outs are not based on the price level of any given product.. Thus they likely have little effect on what or how much farmers produce. Therefore, we do not deal with it further in this presentation.

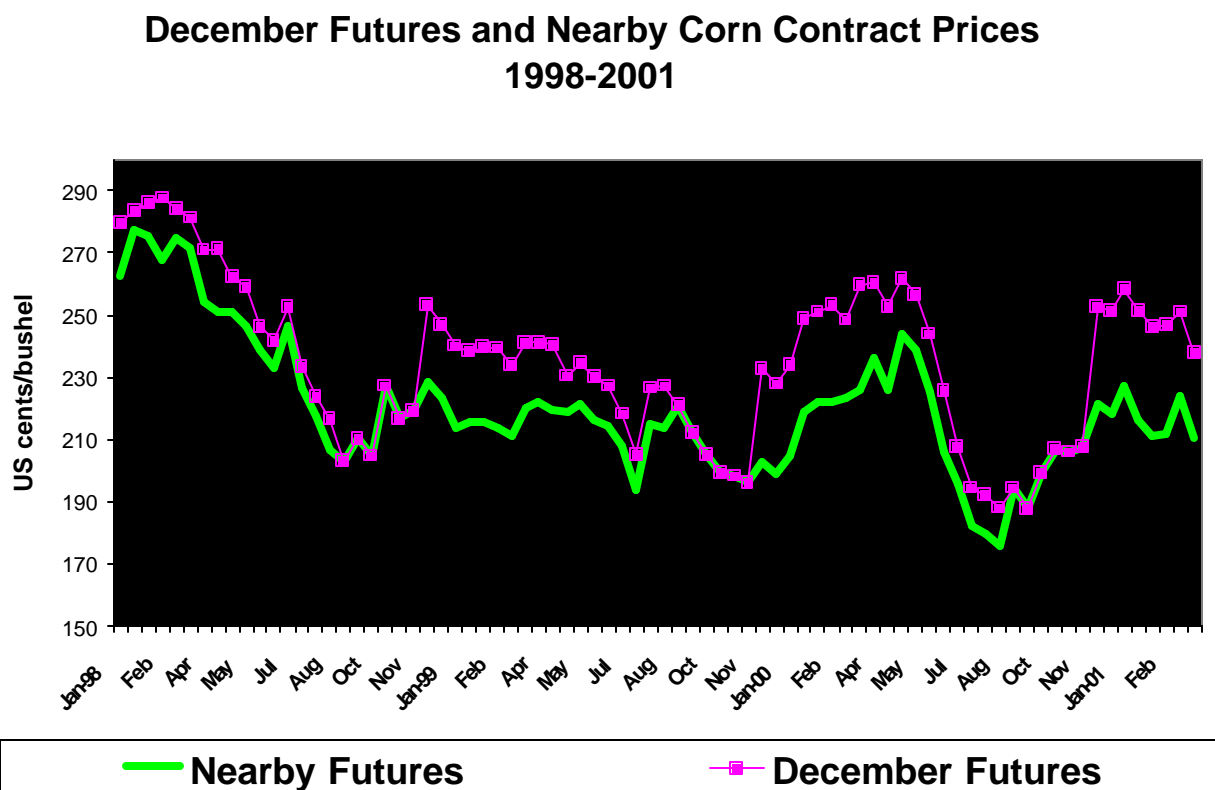
The fundamental problem created by these programs results from the level of support in the soybean program, and from the interaction between the soybean and feed grains/wheat programs. The soybean **loan rate** is set at \$5.26/ bushel. This is higher than production cost for many US growers. Therefore, it is an incentive for them to produce. As a result of increased production from the subsidy, actual market prices at harvest time for the past two crop years have been lower than the loan rate.

US farmers have the alternative of producing soybeans, corn, wheat or other commodities, or to not grow anything on some acres⁴. Crop rotations require a combination of grains and oilseeds be grown, but they still have tremendous flexibility. The support level for soybeans is so rich that there is fear each year that producers will want to produce as many of them as possible at the expense of corn. Therefore, each winter or spring before planting time, there is concern that the market needs to **buy** corn acres from soybeans. In the winters of 1998/99 and 1999/2000, there were concerns (often promulgated by the USDA or other US government agencies) about the possibility of drought the following summer. During the current winter, the big issue is high natural gas prices, which may affect the price of nitrogen fertilizer. (Corn production requires nitrogen, soybean production does not). Therefore, the concern is that even without the distorting impact of the soybean program, higher nitrogen costs would favour soybean production.

⁴The focus below is on the relationship between soybeans and corn. The same arguments hold for wheat, but the relationship is likely not as strong because wheat and soybeans are not as close substitutes on some soils as are corn and soybeans.

Each year there is an element of legitimacy about these factors, despite the fact that droughts in January rarely affect the next summer's crop. This is where the interaction sets in: ie the need to buy back corn acres from the soybean subsidy is manifested by distortions in corn price relationships. Figure 5 shows the price relationships that occurred each year since the 1998 crop year for the nearby and December futures contracts at Chicago for corn. We use December because it is the first new crop contract. For example, in April of 1999, the May futures price at that time is a forecast of the price of corn the next month (May, 1999) that was harvested the previous fall (1998) and is now in storage. The December futures price in April is a forecast of the price of corn the following fall, after the 1999 crop is harvested.

Figure 5



The key to understanding the distortion is that in normal, i.e., non-subsidised times, the December futures contract in a given year is expected to be **discounted** to the nearby contract, not at a premium. A premium normally means that there is fear of a shortage of the product and the futures market gets bid higher to encourage corn to be stored into the new crop year. In normal times, since there will be a new harvest before December, the market does not encourage people to store old crop corn into the new crop year. For example, in January we would normally expect the March futures contract (the nearby at that time) to be at a higher price than the contract for the following December. This more normal behaviour is evident in three of the four years **before** the 1996 Farm Act as is clear from the graph in the Appendix.

Now notice in Figure 5 that each year between roughly December and May, the December futures contract was at a premium, in fact a very substantial premium, to the nearby contract⁵. Each year both the nearby and the December rose sometime either in or just after December and that the December tended to go to the \$2.50 - \$2.60 area. Generally, \$2.60/bu is a price that makes growing corn attractive relative to soybeans, when soybeans will be no less than \$5.26. When December corn gets to this area, US farmers' expectations are raised and/or they enter into forward contracts at this price, ensuring that they plant more corn.

Our assessment is that the driving force is the soybean subsidy. By overpricing soybeans, the corn market must be distorted for a period of time to ensure that corn continues to be produced even though it is quite clear that too much is being produced. (US inventories of corn and soybeans rose each year of the three that have been completed in Figure 5, and are expected to again this year). The eventual result is that both the corn and the soybean prices are driven down at harvest time.

Obviously, it is too soon to tell whether the pattern will repeat itself again this year, but to date it looks familiar.

The bottom line is that the soybean program causes more soybeans to be produced than should be. It causes the corn market to over react, so too much corn is produced. So, what the US has done is essentially stabilize the US corn market in a range between \$2 and \$2.35 as a result of these programs. Too much is produced and there is little opportunity for prices to rise above this range. The only factors that can possibly break the cycle are a real weather disaster or a continuation of the build up of surpluses to a point where the US government can no longer stand the cost. Then the policy will lurch in another direction, just as it did in the 1996 farm bill, which created the current problem. So, once again, farmers are at the mercy of the elements and government policy whims.

Canadian farmers are not eligible for US farm programs. They cannot obtain US \$5.26/bu from the government for soybeans. They have to make their decision based on the market price. They do have the opportunity to respond to movements in the US corn market by forward contracting or hedging. In fact, we recommended to our subscribers⁶ in December 2000 that they should contract their corn for next fall delivery at roughly C\$3.50/bu (the then Canadian equivalent of US\$2.60, adjusted for local basis). This is not a wonderful price, but it is substantially better than the Canadian equivalent of \$2.00. However, not many farmers do this and they end up selling their corn for the cash price at or shortly after harvest. As can be seen from the graph, these are much lower prices than the forward contract prices.

Implications for Canadian Farm Management Decisions and for Canadian Farm Policy

⁵In our data, the nearby is March until the end of February, May until the end of April, July until the end of June and September until the end of August

⁶The George Morris Centre publishes the Canadian Commodity Review⁸, a bi-weekly market letter that analyses market trends for 12 commodities and discusses marketing and purchasing strategies.. For a free issue contact Cher at 519-822-3929 extension 207. As part of the strategy mentioned above, we had earlier suggested that corn producers buy Call options as a hedge against the possibility that the fertilizer threat would be real.

The US program changed, particularly to include the loan deficiency payment for soybeans, as a result of the 1996 Farm Act. This act was passed at a time of record high grain prices and almost record high soybean prices. The combination of record high prices in 1996 for grains and the soybean support price at a level above reasonable cost of production was then the cause, since 1998, of the cheap food policy that has ensued. If it were not for the subsidies and the reaction to them in the corn market, then acreage would be taken out of soybean and corn production because market prices would be able to fall to discourage that production. However, with the artificial support program, there is no incentive for US producers to reduce their acreage of soybeans and, therefore of corn⁷.

So, putting the first two parts of this paper together, the problem for Canadian farmers and policy makers is that the farm income problem is focussed in the grains and oilseeds area and it is a problem that is not of the making of Canadian farmers. It is made largely in Washington. We haven't talked about the European Union's subsidies here, but they are also a contributor to the problem. There are some things a Canadian farmer can do in response to the situation.

- \$ With this repeating pattern of December corn futures prices going to substantial premiums over the nearbys in December - April, farmers in Canada can act to take advantage of the temporary increases. In each of the past two crop years, we advised our subscribers in Canadian Commodity Review⁸ to make those decisions at or near the highest prices of the year. At the same time, as indicated earlier, we made recommendations to take advantage of the situation should prices rise even higher in case there is a real, instead of a contrived problem with weather or fertilizer. The alternatives for soybeans are less clear because the actual market available to Canadian farmers seldom exceeds the government market available to US farmers.
- \$ Beyond this, a number of grain and oilseed farmers have found ways to add value through identity preservation (IP) programs. These are helpful and can add significant income, although they also add cost. In general, IP programs include a premium over the commodity price. So long as the US and EU subsidies continue, the value of IP programs to farmers therefore remain limited by the underlying commodity price.
- \$ Another thing that farmers can do is to diversify into different products. This is very clearly happening in western Canada where a number of former grain producers are investing in livestock production and/or moving into specialty crops. Again, these decisions can clearly enhance incomes. Of course, the problem with this is that if many people expand production of other products because of the US and EU subsidies for grain and

⁷ Again, this argument has been made in terms of corn. It also applies to wheat, although the substitution relationship is not necessarily quite as close for wheat and soybeans as it is for corn and soybeans. Both corn and wheat prices are quite low, and at harvest time, hover around their loan rates.

oilseeds, then they will eventually drive prices down for those products also. Therefore, the effects of the US subsidy program for soybeans and feed grains will eventually spread out to other products.

Canada's government faces a number of dilemmas in developing a policy response. There are at least the following elements.

- \$ The problem is caused by foreign programs and is not the fault of Canadian farmers. From an equity and fairness perspective, society must decide if it has a responsibility to protect farmers by matching US subsidies. Some would argue they should be matched on a per capita basis.
- \$ Canada has an ongoing farm safety net program, called NISA (Net Income Stabilization Account). With this program, federal and provincial governments contribute, with the farmer, to a farmer's account and which provides tax advantages for the farmer's contribution when incomes are good, and provides a fund to draw on when incomes are poor. NISA accounts are not being drawn down much.
- \$ In addition, there is a multitude of part time farms in Canada, and they are included in the data from Statistics Canada. Therefore, there is a tremendous range of profit performances in the country. This means that, while the income problem is focussed primarily on the grain and oilseed industry, it does not mean that all grain and oilseed producers have a problem. So, who should government target, and how does one ensure equity? Should the government target those grain and oilseed producers who have a problem and not those who don't? Many would argue that this would reward people for poor performance and/or penalize those who do well.
- \$ A few farmers argue the last point very specifically - ie that government payments help intensify the net income problem in the long run. Under this argument, farmer >x= works hard to be efficient and keep costs down. Farmer >y= has higher costs. If government makes a payment, both get it, and now farmer >y= has additional funds to bid higher for crop land to rent for next year. Therefore, farmer >x= has also to bid higher. The result is that both pass on their government money to someone else as higher costs. So, at the limit, all a payment does is lead to increased costs and no assistance with net income.
- \$ This leads to the broader issue that payments from government eventually get capitalized into costs. As a result of high subsidies in the US, and lower ones in Canada, there is considerable evidence that land costs are lower in Canada. Therefore, in the long run, Canada has a cost advantage. And Canadian farmers have the additional advantage that they learn to adjust when Amarket@ conditions change, as in this case where the subsidy gives the US an advantage in oilseed production.
- \$ The problem with the foregoing argument is obvious. If one can't survive the short run because there is too little cash flow to keep you afloat, the

long run will never come. Moreover, making adjustments usually means committing large amounts of capital. If one does so and then the policy wind changes in Washington, then it's possible to adjust from one bad situation created by the old bad policy to a new one created by the next bad policy.

So this describes the dilemma. Fundamentally, Canadian governments are blessed by no better foresight than individuals when it comes to anticipating how to adjust. Any policy decision sends a signal to adjust in some way, and can result in a cure as bad as the disease. We believe the underlying issues require careful consideration of Canada's alternatives. Knee jerk reactions such as, "Canada has too many farmers for market conditions" are not useful because they fail to address the cause of the problem.

What is really needed is a vision of what Canadian agriculture can do to achieve success despite the vagaries of US commodity policy, and then to develop policy instruments that will assist in realizing that vision. Ad hoc policies developed to respond to immediate needs are likely just a little mortar on one crack of the dyke that will cause another to open up later. Or another way to think about it is to find policy instruments that give immunity from the disease rather than treating its symptoms.

Appendix 1

