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An Analysis of Competitive Advantage Between the United States, Canada, and Australia for Wheat Production



Agricultural Experiment Station
Oregon State University

**AN ANALYSIS OF COMPETITIVE ADVANTAGE
BETWEEN THE UNITED STATES, CANADA,
AND AUSTRALIA FOR WHEAT PRODUCTION**

**Gregory M. Perry
Agricultural and Resource Economics
Oregon State University**

**Clair J. Nixon
Department of Accounting
Texas A&M University**

**Ken Bunnage
Alberta Agriculture
Lethbridge, Alberta**

**Robert Batterham
Department of Agricultural Economics
University of Sydney
Sydney, Australia**

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EXECUTIVE SUMMARY

A great deal of effort has been made to eliminate barriers to trade between countries throughout the world. The GATT negotiations represent perhaps the most well-known example of trade negotiations, although numerous other multilateral agreements have been made between countries throughout the world. The idea behind these negotiations is to reduce or eliminate distortions by government on trade between countries. In agriculture much of the focus has been on eliminating direct subsidies to farmers, in the belief that this approach will eliminate trade distortions.

The principal argument made in this paper is that elimination of traditional government farm subsidies alone will not assure that countries exporting agricultural products will be competing on a "level playing field" in the trade arena. In particular, government tax policy and social programs both influence the level of return a farmer needs to remain in business. Any move by government to lower taxes or raise government social services will have much the same impact on trade competitiveness as an increase in farm program subsidies. Consequently all three areas (taxes, social programs, and farm programs) should be considered when in trade negotiations.

To demonstrate the relative importance of these three areas on farm profitability (and, hence, competitiveness), representative wheat farms in New South Wales, Australia, Alberta, Canada and Montana were analyzed under the 1991 tax policies and social programs of each country. A detailed comparison of the government farm programs, tax policies, and social programs was presented to provide the reader with a better understanding of the results.

The base scenario results suggested Australian farmers have a \$7,000 advantage (or 20% of net cash farm income) in the tax and social program areas over their U.S. counterparts. The Canadian farmer, in turn, had a \$5,500 advantage (or 16% of net cash farm income) over the U.S. farmer. The major factors handicapping the U.S. farmer were high social security taxes and the requirement that he purchase worker's compensation insurance.

Subsequent sensitivity analyses suggested that the tax and social program advantages favored Australia for small and medium-sized farms, with much of the advantage disappearing for large and corporate farms. Canadian farms had a combined tax and social programs package that was preferred to the U.S. regardless of the farm size or business organization. The large corporate U.S. farms came closest to being competitive with their Australian and Canadian counterparts. The results did not change a great deal when North Dakota and Saskatchewan tax policies were substituted for Montana and Alberta. Tax and social programs for children were most generous in Canada and least generous in the United States.

Although the results were limited to a case situation, they do provide evidence of the importance of tax policies and social programs on competitiveness. For small and medium-sized farms, for example, Canadian tax and social program advantages were more important in determining trade competitiveness than government farm program and cost of production advantages favoring the U.S. farmer. Further work is needed to extend the research findings to the aggregate level, as well as other commodities and countries.

AN ANALYSIS OF COMPETITIVE ADVANTAGE BETWEEN THE UNITED STATES, CANADA, AND AUSTRALIA FOR WHEAT PRODUCTION

The purpose of this study is to suggest how tax policy, key social programs, government farm programs, and relative costs of production impact the profitability of wheat farms in the United States, Canada, and Australia. These three countries were selected for analysis because: (1) They represent three of the five major wheat exporting countries in the world (the other two being the European Community and Argentina); (2) all three countries are major exporters to the Asian wheat market, which represents the largest potential future market for wheat exporters; and (3) all three countries operate under similar legal and tax systems. Further, English is the major language spoken in each country, facilitating a comparative analysis.

The focus of this research is at the farm level and, in particular, deals with wheat-fallow farming systems in all three countries. The introductory section provides background and motivation for the study. After the introduction, a detailed comparison of production costs, government farm programs, tax policy, and nongovernment social programs is provided for all three countries. This information is then incorporated into a simulation model to estimate net returns to representative farms in each country. Sensitivity analysis is then used to better understand how government tax and social policies provide competitive advantages in trade.

Introduction

Since the close of World War II a major effort has been made by countries throughout the world to reduce barriers to trade. Greater trade leads to specialization in production of goods based on ones natural comparative advantage. The result is increased overall productivity and greater societal welfare than occurs with complete self-sufficiency.

Of course, specialization brings with it a number of potential problems. Complete dependence on trade for essential goods (such as food and fuel) can jeopardize the recipient nation's national security, leaving it quite vulnerable to blackmail by the supplying country. Elimination of a non-competitive industry can be painful for some segments of a society and may generate a political backlash (if these groups don't want the industry eliminated). In addition, governments may intervene to provide subsidies that offset the natural disadvantages faced by a noncompetitive advantage. Governments may also provide additional support to an industry with a comparative advantage in production and trade, to enhance market share or meet some social goal.

Trade negotiations are designed to reduce or eliminate factors that provide competitive advantage in trade, leaving the marketplace to determine where commodities should be produced. Perhaps the foremost vehicle used to reduce trade barriers is the General Agreement on Tariffs and Trade (GATT). This agreement provides a mechanism for negotiating the removal of trade barriers between countries. Agriculture is one of the

industries provided substantial protection by countries throughout the world. Consequently, agricultural subsidies are among the most discussed topics in virtually every "round" of GATT negotiations. And because most countries seek to maintain some degree of self-sufficiency in agricultural production, these subsidies have been among the hardest to eliminate.

Much of the focus in the GATT trade negotiations has been on direct and indirect subsidies provided by each country to its farmers. A useful tool in measuring relative subsidy levels across different countries is the Producer Subsidy Equivalent (PSE). Table 1 contains PSE and CSE (Consumer Subsidy Equivalents) values for wheat production in the major wheat exporting countries. The PSE values reflect all direct payment subsidies received by farmers (including income support payments, transportation, and other input cost subsidies), as well as the value of services provided to farmers (e.g., extension personnel, research expenditures). The idea is that competitive advantages in trade provided by government will be eliminated when these types of subsidies are eliminated by all countries.

The elimination of these types of subsidies may not eliminate government's influence on trade competitiveness, however. Completely ignored in these trade negotiations has been the influence of tax policy. Yet, there are good reasons why tax policies should be given equal consideration with traditional farm subsidies in trade negotiations. First, taxes represent another form of government interaction with farm businesses and, as such, can have as much influence on trade competitiveness as direct farm subsidies. As an example, farmers who receive substantial subsidies but also pay high taxes may be in the same after-tax financial position as farmers in another country who receive no subsidies, but have much smaller tax obligations. Second, focusing on the PSE as a measure of government intervention may not cause the reduction of subsidies, but may instead cause some governments (who find it desirable to subsidize their farmers) to switch to tax policy as their subsidy vehicle. Including taxes in trade negotiations will ensure they are not used to circumvent trade agreements.

Tax revenues are used to provide a number of other services in addition to agricultural subsidies. Many of these services, however, also contribute to trade competitiveness. Any government program that subsidizes the farmer's standard of living (e.g., government health insurance) or reduce the farmer's total tax burden allows him (or her) to lower the acceptable rate of return, thereby enhancing trade competitiveness. Consequently, government services should also be considered in any comparison of tax burdens between countries.

Other researchers have recognized the importance of tax policy on competitiveness in trade. Sharples (1990) argued that policies to reduce tax burdens on farmers were one of several ways in which government could make commodities more competitive in international markets. A recent study of the U.S. - Canada Free Trade Agreement by researchers at Agriculture Canada also recognizes the importance of tax policy in trade and suggests that more research is needed to quantify the tax burden faced by farmers in both countries (*Growing Together*, 1990).

Table 1. Wheat Producer and Consumer Subsidy Equivalents for Major Wheat Exporting Countries 1982-1987.

Producer Subsidy Equivalents	1982	1983	1984	1985	1985	1987
Argentina	-35	-51	-64	-26	-7	6
Australia	9	4	3	5	15	4
Canada	19	23	32	39	53	51
EC	27	10	4	31	59	55
United States	15	38	28	39	61	63
Consumer Subsidy Equivalents						
Argentina	---	---	---	---	---	---
Australia	---	---	---	---	---	4
Canada	-1	-1	-1	-1	-1	-1
EC	-23	-7	-2	-24	-50	-46
United States	0	0	0	-3	-10	-23

Source: Webb, Lopez, and Penn (1990)

Descriptive Cross Country Comparisons

General Description of Study Areas

Table 2 provides a general overview and specific characteristics of the three representative farms. Typical production practices were identified by talking with farmers, extension agents, and economists in each area. All prices and costs in the paper (unless otherwise indicated) are reported in U.S. dollars using the exchange rates \$1 US = \$1.18 CDN = \$1.27 AUS.

The United States and Canadian farms were placed in adjoining counties (Toole County, Montana and Warner County, Alberta) to minimize differences in soil type, topography, and climate. Spring wheat is the major grain grown in both counties. Durum and Hard Red Spring wheats dominate in Warner County, with Hard Red Spring dominating in Toole County. Severe winters and poor snow cover make winter wheat a riskier crop. Barley is also grown in both counties as part of a wheat-barley rotation, but lower profit margins limit its acreage. Rainfall variability is great and causes farmers to anticipate a crop failure in two or three years out of ten.

In Australia, most wheat farms are part of a substantial livestock operation. The tax treatment of livestock operations is somewhat different than that for grain operations. To facilitate a clear comparison of tax law in each country, the Australian farm was assumed to focus on grain production only.

Costs of Production

Table 3 summarizes production costs for the major inputs used on each study farm. A number of inputs can be purchased on either side of the U.S.- Canadian border for the same price, including seed, farm equipment, tools, and equipment parts. Fertilizer costs are relatively close for the United States and Canada, with Australian farmers paying substantially more. Wholesale prices for diesel in the United States and Canada are approximately the same. All three governments waive a portion of their fuel taxes for farmers, although the higher tax in Australia leaves their fuel costs at a much higher level. The result is a distinct cost disadvantage for Australian wheat farmers. Australia imports most of its petroleum products and uses taxes as a means of reducing consumption.

Most agricultural chemicals are manufactured in the United States; consequently, prices are lowest there. In addition, both Canada and Australia levy duties on importation of chemicals, making their cost somewhat higher. The U.S. - Canada Free Trade Agreement calls for elimination of these duties in Canada.

Labor costs are lowest in the United States, with costs in Canada and Australia being roughly the same. The greater availability of transient labor, with its low overhead costs, contributes to lower U.S. agricultural wages. Higher labor overhead and general living expenses (both influenced by government trade and agricultural policies) were cited as reasons for higher Canadian and Australian wages. A detailed discussion of marketing costs is deferred to the section on government farm programs.

Table 2. Summary of Crop Production Information by Country

United States		Canada	Australia
Location	Toole County Montana	Warner County Alberta	Moree District New South Wales
Crop Mix (acres)			
Spring Wheat	700	400	1500
Durum Wheat	0	470	0
Winter Wheat	50	80	0
Barley	300	100	500
Fallow	1050	1050	0
Total Acres	2100	2100	2000
Crop Yield (bu/ac)			
Spring Wheat	Mean 30.0 Std D 11.0	Mean 30.0 Std D 11.0	Mean 35.9 Std D 19.0
Winter Wheat	Mean 35.0 St D 13.0	Mean 35.0 St D 13.0	----- -----
Barley	Mean 45.0 St D 19.0	Mean 45.0 St D 19.0	Mean 39.9 Std D 19.4
Crop Price (\$US/bu)			
Durum Wheat	----- -----	Mean 4.02 St D 0.75 Vancouver, B.C.	----- -----
Spring Wheat Location	Mean 4.45 St D 0.60 Portland, Oregon	Mean 3.79 St D 0.75 Vancouver, B.C.	Mean 3.78 St D 0.66 New Castle, New South Wales
Winter Wheat Location	Mean 4.34 St D 0.59 Portland, Oregon	Mean 3.79 St D 0.75 Vancouver, B.C.	----- -----
Barley Location	Mean 2.18 St D 0.33 Montana	Mean 1.60 St D 0.38 Lethbridge, Alberta	Mean 3.02 St D 0.67 New Castle, New South Wales
Spring Wheat			
Planting	April	April	May
Harvest	Aug-Sept	Aug-Sept	Nov-Dec

Table 3. Selected Cost of Production Estimates for Wheat in Each Country (1990 \$US)

Item	Unit	US	Canada	Australia
Seed	bushel	4.68	4.68	4.73
Fertilizer	Unit of N	0.152	0.22	0.34
Gasoline	gallon	1.23	1.13	2.42
Diesel	gallon	0.875	.78	1.38
2-4-D	gallon	11.95	13.15	14.35
Marketing Costs (Wheat)				
Storage	bushel/yr.	0.36	0.102	0.096
Shipping to Port	bushel	0.75 (600 miles)	0.24 (720 miles)	0.50 (270 miles)
Handling	bushel	0.0	0.33	0.226
Other Costs	bushel	0.0	0.31	0.075
Interest				
Operating	percent	11.5	15.0	20.0
Equipment	percent	11.25	11.9	12.9
Land	percent	11.25	9.0	20.0
Inflation Rate	percent	4.7	6.0	8.1
Insurance				
Crop	\$100 value	3.45	3.70	6.00
Equipment	\$1000 value	5.00	2.60	10.42
Liability	\$1 million value	783.00	47	85
Labor	Hour Month	5.00 1500	5.50 1600	5.50 1550
Farm Equipment Case-IH				
	4994 tractor	100,000	100,000	146,150
	1660 combine	92,700	92,700	142,200

Both nominal and real open market interest costs in Canada and Australia are higher than rates on similar loans in the United States, but for different reasons. In Canada, high federal deficits necessitate high interest rates to encourage purchases of government bonds. Interest rates are high in Australia because of their reliance on monetary policy. In addition, Australia suffers from a higher inflation rate than the United States and Canada.

Governments in all three countries have provided programs to reduce interest costs to farmers. The most accessible of these programs, until its cancellation in 1990, was the Alberta Farm Credit Stability Program (AFCSP). This program provided up to \$212,500 at a 9 percent annual interest rate to virtually any farmer for purchases of land, equipment, or consolidation of debt. Loan terms were 20 years for land and 10 years for equipment¹. Alberta provided over \$2 billion for this program between 1986 and 1990 (Government of Alberta).

Farmers Home Administration (FmHA) functions as a lender of last resort for farmers in the United States, providing operating and, occasionally, land purchase monies at below market interest rates. The FmHA program continues to be scaled back in size, making it difficult for more than a handful of farmers in each county to annually qualify for loans. In addition, Montana has a small (less than \$250,000/year) interest subsidy program for farmers. Australia's interest subsidy program is about on the same scale as that for Montana.

Crop insurance is subsidized in Canada and the United States. The costs are similar on both sides of the border, but the U.S. program provides greater flexibility for the farmer. The U.S. farmer can select from three different yield guarantee levels (versus two in Canada), three different price elections (only one provided in Canada), and may use historical yields as a basis for calculating insured yield levels (Seubert 1989). Australian crop insurance is provided through private industry and is not subsidized.

Farm equipment can be freely purchased and brought across the U.S. - Canadian border. Consequently, prices are assumed to be the same. In Australia, major items of farm equipment such as tractors and combines are all imported from the United States, Canada, and Japan. Shipping costs and high dealer markups make this imported equipment much more expensive for Australians. Some Australian farmers reduce their equipment costs by travelling to the United States, purchasing their equipment here, and shipping it back to their home country.

In summary, production costs are slightly lower in the United States than Canada, and are substantially less than costs in Australia. High fuel and equipment costs, combined with roughly equivalent labor costs, encourage Australians to focus on agricultural activities that require much land. Consequently, beef and sheep production, and broadacre grain production are the mainstays of Australian agriculture. Inexpensive capital goods (particularly farm equipment) tend to favor crop production over grazing livestock in the United States. Canadian agriculture tends to favor livestock production, primarily because climate and soils

¹AFCSP loans on equipment were generally limited to consolidation of existing debt on several pieces of equipment into one loan.

limit the profitability of grain production. In the study area, however, grain production is generally more profitable than livestock alternatives.

Family Living Expenses

Economists refer to the set of items purchased by an individual or family during a time period as a "basket of goods". Prices of these items vary somewhat between the three subject countries, causing the basket of goods to also vary. The total cost of each basket of goods (referred to here as family living expenses) must be estimated for each country because sales tax on these purchases is an important component of total taxes paid. Ideally, one would identify the basket of goods purchased in each country such the farmer (as a consumer) is indifferent as to which basket he (or she) would prefer. In practice, however, estimating what the basket would be in each country is difficult and very expensive. Even data indicating the typical basket of goods purchased by households in a particular area of the United States or other countries are difficult to obtain.

To address the question of living expenses, estimates of expenditures by category were made for a typical farm family of four living in Toole County, Montana. These expenditures are reported in Table 4, along with associated sales and fuel taxes. The coauthors from Canada and Australia (both of whom have lived in the United States) were asked to estimate what this same basket of goods would cost if purchased in Canada and Australia. The Canadian and Australian estimates are also given in Table 4. A quick comparison reveals that living expenses in Canada and the United States are similar, with Australian expenses being about \$350 higher per month.

Government Farm Programs

The Australian government provides little in the way of government programs for its farmers. By contrast, both Canadian and U.S. governments spend billions of dollars on special programs for agriculture. Consequently, government farm programs substantially impact on the profitability of grain farms in Canada and the United States, although the impact is different in each country.

The U.S. farm program focuses on commodity prices and supply controls. The Commodity Credit Corporation (CCC) loan program provides farmers with a ready cash income at harvest. In addition, the CCC loan acts as a pseudo-price floor, meaning farmers may forfeit grain ownership to the government to satisfy their debt. Each U.S. farmer also receives up to \$50,000 per year in deficiency payments if market prices do not exceed target levels set by Congress. The U.S. government typically requires farmers to forego planting a percentage of their farm acreage base to qualify for most farm program benefits.

The U.S. government also provides other benefits to grain farmers. Barge transportation on some river systems (such as the Columbia) is subsidized. All-risk crop insurance is subsidized heavily. In addition, the U.S. government has at times provided other programs to benefit farmers (e.g., Conservation Reserve Program, disaster payments). The provisions outlined in the 1991 U.S. Farm Bill suggest agriculture will continue to receive fewer and

Table 4. Monthly Living Expenses by Item for US Farmer and Corresponding Expenditures in Canada and Australia

	United States		Canada		Australia	
Item	Cost	Tax	Cost	Tax	Cost	Tax
Housing	0	.00	0	.00	0	.00
Food	350	.00	410	3.00	486	4.00
Utilities	105	.00	102	7.14	65	.00
Family Vehicle						
Payment	469	6.00	488	34.00	474	70.00
Insurance	50	.00	43	.00	40	.00
Fuel	54	21.00	50	75.00	60	87.50
Clothing	150	.00	150	10.50	166	.00
Furniture	150	.00	150	10.50	155	10.00
Entertainment	150	.00	150	10.50	330	.00
Medical		.00				
Insurance	200	.00	63	0.0	38	.00
Out-of-Pocket Costs	40	.00	40	0.0	40	.00
Miscellaneous	100	.00	100	7.00	300	30.00
Total	\$1,818	\$27.00	\$1,746	\$157.00	\$2,154	\$197.50

fewer subsidies from the federal government. The 1991 Toole County target price, for example, has been reduced to \$3.99/bushel and farmers receive deficiency payments on only 80 percent of eligible acreage.

The centerpiece of Canadian farm policy for grains is the Canadian Wheat Board (CWB), which controls the sale of all exported wheat and barley. The Canadian government (through Parliament) sets an initial price at the beginning of the crop production period, generally based on 80 percent of the price the CWB expects to receive for its grain. Supplemental and final payments are made to farmers if the actual price exceeds this initial price level. If final price does not exceed initial price, the Canadian government makes up the difference.

Although (in theory) sales restrictions are in place to discourage overproduction of Canadian wheat and barley, the method of calculating these restrictions is sufficiently flexible to allow most wheat-fallow farming operations the freedom to allocate acreage among any crop. The estimates in Table 3 suggest there are substantial handling and other marketing costs for Canadian wheat. The other costs are imposed by the Canadian Wheat Board to cover their operating expenses.² Handling charges are levied by the Alberta Wheat Pool (Hansen, 1991).

In 1991 the Gross Revenue Insurance Program (GRIP) replaced the Western Grain Stabilization Program as a means of stabilizing farmer's incomes. GRIP is a voluntary income insurance program, with insurance premiums calculated as some portion of target income. Target income is the product of average yield (as calculated for crop insurance) multiplied by 70 percent of long term price. Long term price is a fifteen year average of provincial prices, lagged two years and inflated to current dollars using a producer price index ($0.70 \times \$4.99/\text{bushel}$). As an example, the target price for hard red spring wheat in 1991 is \$3.49/bushel. If target income exceeds actual income (including expected crop yield insurance indemnities), an indemnity is paid to the producer.

The cost of shipping grain to port is subsidized by the Canadian government. As a consequence, the price differential between Warner County and Vancouver is \$0.24/bushel for wheat. By contrast, the price differentials between Toole County and Portland, Oregon are about \$0.75/bushel for wheat.

The Province of Alberta also provides a number of production cost subsidies to their farmers³, aside from the AFCSP. For example, the Alberta Agricultural Development Corporation offers a number of financial programs similar to those administered by FmHA in the United States. The Alberta Farm Fertilizer Price Protection Plan also provides rebates on nitrogen and phosphate costs. In addition, the Permanent Cover Program (like the Conservation Reserve Program in the United States) provides farmers with cash payments to retire highly erodible acreage from production.

²These operating expenses include carrying charges, keeping the St. Lawrence seaway open, and administration costs.

³The value of these subsidies has already been reflected for costs reported in Table 1.

Australian farmers market their grain through the Australian Wheat Board (AWB). Unlike its Canadian counterpart, however, the AWB provides revenues to farmers consistent with revenues from grain sales. A payment is made approximately three weeks after harvest representing about 65 percent of anticipated revenue. An additional 25 percent is received approximately three months later, with the remaining 10 percent received over the next four years. The Australian government provides essentially no direct subsidies to its wheat farmers. An exception was in 1986, when some \$250 million dollars was spent to provide a guaranteed minimum price for wheat. Although 1990-91 wheat price is near 1986 levels, no plans are being made to provide a similar subsidy.

Government Tax Policy

The income tax is the largest source of revenue to federal governments in Australia, Canada, and the United States. Canada and Australia also rely on sales taxes to generate revenue for both state (provincial) and national government, whereas in the United States most sales tax revenues are generated at the state level. Fuel and property taxes are also an important income source for governments in all three countries.

Tax reform has been continuous in all three countries during the past decade. Conservative governments have been dominant during much of this time and changes in taxes have generally reflected a conservative philosophy. Tax rates have generally been lowered and tax brackets reduced in the belief that lower income tax rates will spur productivity. An exception has been in Australia, where taxes have not been reduced as much as in Canada and the United States. Australia has, however, been able to generate budget surpluses during much of the 1980's by cutting some government programs such as those for agriculture.

•Federal Taxes

A comparison of federal tax laws of each country is given in Table 5. Both Canada and Australia provide one tax schedule for individuals and a second for corporations. The United States, by comparison, provides four different schedules for individuals: (a) Married filing jointly, (b) married, filing separately, (c) head of household, and (d) single. Regular U.S. corporations are subject to a separate, progressive tax schedule. The clear incentive provided by a single, progressive tax schedule is to have both husband and wife generate income for the family, thereby having the family's income taxed at an overall lower rate. Income splitting can be easily accomplished in a farming situation by creating a husband-wife partnership for tax purposes, with each spouse sharing equally in any proceeds from the farm⁴. A similar income-splitting husband-wife partnership in the United States would enable each spouse to pay taxes under the married filing separately category, resulting in approximately the same tax federal obligation as would have occurred had they filed their taxes jointly.

⁴The major requirement for partnerships in both Canada and Australia is that both each partner provide labor, financial capital, or assets in proportion to their share of farm income.

Table 5. Federal Tax Rates and Tax Brackets for Australia, Canada, and United States

Federal Income Taxes	Australia	Canada	United States
Individual Rates	4029 or less 0 4030-13,944 21% 13,945-16,274 29% 16,275-27,650 39% 27,651-39,500 47% 39,501 or more 48%	24,466 or less 17% 24,467-48,933 26% 48,934 or more 29%	17,000 or less 15% 17,001-41,075 28% 41,076 or more 31%
Husband and Wife Rates	Same as individual. Up to \$948 deducted from taxable income if spouse not employed.	Same as individual. Up to \$832 tax credit if spouse not employed.	34,000 or less 15% 34,001-82,150 28% 82,151 or more 31%
Corporate Rates	39%	38% rate, reduced to 12% if qualify as small business	52,400 or less 15% 52,401-78,600 25% 78,601-104,750 34% 104,751-351,000 39% 351,001 or more 34%
Surtax	None	For individuals 5% of tax when tax is less than 10,625. 10% of tax if over 10,625. For corporations 7% of tax.	None
Government Retirement (self-employed)	None	4.6% of first \$25,925 of earned income.	12.4% of first \$53,400 or earned income
Medicare (self-employed)	1.25% of taxable income if above \$8161	None	2.9% of first \$125,000 of earned income
Sales Tax	10%-30% tax on wholesale price	7% on retail price	None

Canada and the United States have only three tax rates for individuals, with a top rate of 29 percent in Canada and 31 percent in the United States. Surtaxes are also levied on regular Canadian taxes, resulting in a effective top tax rate of almost 32 percent⁵. Australia has a much more progressive tax system and, at 48 percent, a much higher top rate. Note, however, that the federal government in Australia collects essentially all income tax dollars, whereas both Canada and the United States have substantial state income taxes. Each country has some important distinctions in treatment of corporate taxes. Both Canada and Australia have a flat tax rate for corporations, whereas in the United States corporations are subject to a progressive tax rate system with five different tax brackets. A widely recognized disadvantage of incorporation is double taxation of revenues. Double taxation means the corporation pays tax on its profits and then distributes these profits as taxable dividends. Australia taxes corporations (companies) at a flat 39 percent rate. In Australia, dividend imputation allows the individual to avoid double taxation. For example, if the individual receiving the dividend was in the 47 percent tax bracket, they would receive a 39 percent tax credit on each dollar of dividends received, resulting in an additional tax payment by the individual of eight percent (Miller, 1990).

In Canada, corporations are taxed at a 38 percent flat rate. If the corporation has less than \$170,000 in taxable income, however, it qualifies as a small business and receives a federal tax abatement of 10 percent and a small business deduction of 16 percent, resulting in an effective tax rate of 12 percent.

The United States provides for two different types of corporations, referred to as "S" and "C" corporations. The S corporation is essentially treated like a partnership for tax purposes, so will not be considered in this study. C corporations are subdivided into regular or personal services corporation. Farms typically qualify as regular C corporations. Tax rates for regular C corporations range from 15 percent to 34 percent.

Both Canada and the United States generate tax revenues separately for government retirement programs. In 1991, Canadians pay 4.6 percent of their self-employment income, up to a maximum of \$1,192 (e.g., income above \$25,925 is not subject to this tax). In the United States, self-employment income is taxed at a 12.4 percent rate on the first \$53,400 of income. Salaried and hourly workers pay tax at 50 percent of these rates, with the other 50 percent paid by employers. Australia covers its government retirement program out of general tax revenues.

Australia and the United States levy taxes to pay for indigent and elderly medical care. In Australia, this tax is 1.25 percent of taxable income, if income exceeds \$8,161 (adjusted for number of dependents). The United States levies a 2.9 percent tax on the first \$125,000 of self-employment taxable income. Canada pays for this form of medical care through federal and provincial taxes.

⁵There is a personal exemption phase-out in the U.S. for high income taxpayers which effectively increases the top rate.

Canada and Australia also levy federal sales taxes. Australia's tax is on the wholesale price of goods and is aimed primarily at imported goods. Tax rates are 30 percent on luxury goods (such as sports cars, jewelry, VCRs, etc.), 20 percent on regular goods (such as motor vehicles, computers, alcoholic beverages, etc.), and 10 percent on some household goods (such as furniture, snack foods, water heaters, bathroom fittings, etc.). Food, medical care, books, utilities, and agricultural inputs are exempt from wholesale tax (Australian Taxation Office). Canada implemented its seven percent General Sales Tax (or GST) on January 1, 1991. The tax covers virtually every kind of expenditure in Canada, except regular food and medical care. The GST is refundable on most goods purchased for agricultural production. Estimates of sales taxes in Australia and Canada are given in Table 4.

All three countries levy substantial taxes on fuel purchases. Most of these taxes are waived when the fuel is used in agricultural production. Data on all taxes levied on fuel are difficult to obtain, particularly in Canada and Australia. To estimate taxes for fuel used by households on a pre-tax basis, the monthly household fuel expenditure estimated by the Toole County farmer (see Table 4) was reduced by the federal and state tax amounts (\$0.34/gallon). This cost was then used as a basis for estimating pre-tax fuel costs in Canada and Australia. The difference between what was actually paid for fuel and the pre-tax fuel cost was assumed to represent the fuel tax.

•State and Local Taxes

A summary of state/provincial and local taxation policies is outlined in Table 6. During World War II, Australia's states merged their income taxation system with the federal government. Consequently, no income taxes are levied at the state level. Property taxes (rates) are levied on land and buildings. The revenue is used to cover some local government expenses, but the tax is small compared to property taxes in Canada and the United States.

Montana has no sales tax, so it must depend on income and property taxes to fund government services. State income tax is the major government revenue source in Montana. A single, highly progressive rate schedule is used for all taxpayers, with a larger standard deduction provided for couples filing joint returns. Property taxes are also levied on land, buildings, and farm machinery.

Canadian provincial taxes are generally collected by the federal government and are based on a percentage of federal tax payable. The marginal rates, however, are generally a larger percentage of the federal rates than in the United States. Property taxes are normally levied on land and buildings. A waiver is provided for most farm homes (McKeltine, personal communication). Farmers in Montana are required to pay 10.4 percent of estimated living expenses for worker's compensation insurance, with a minimum of \$1,121/year. Because Canada and Australia provide medical care, disability payments and retraining for the injured farmer, disability insurance is not needed like it is in the United States.

Table 6. State and Local Tax Rates and Tax Brackets for Australia, Canada, and United States

State Income Taxes	Australia	Canada	United States
Individual Rates	None	46.5% of federal tax	1,600 or less 2% 1,601-3,100 3% 3,101-6,300 4% 6,301-9,400 5% 9,401-12,600 6% 12,601-15,700 7% 15,701-22,000 8% 22,001-31,400 9% 31,401-55,000 10% 55,001 or more 11%
Husband and Wife Rates	None	Same as individual	Same as individual
Corporate Rates	None	15% reduced to 6% if qualify as small business	6.75% of taxable income
Surcharge	None	8% of provincial tax over \$2975	None
Property Taxes (per \$100 market value) Farm Land Home Equipment	3.95 3.95 None	7.59 exempt None	6.46 7.69 6.73
Worker's Compensation Insurance	None	Optional	10.4% of normal living expenses

•Special Tax Treatment Items

Table 7 provides a summary of items receiving special tax treatment in all three countries. Australia, Canada, and the United States provide preferential tax treatment for capital gains. In Australia, the purchase price for the capital gain item is indexed upward to the dollar value at time of sale. Consequently, individuals pay tax only on the real capital gain. Canada levies tax on nominal capital gains at 75 percent the regular rate. The United States taxes nominal capital gains at a maximum rate of 28 percent.

Depreciation allowances for tax purposes in all three countries have been modified numerous times during the last decade. Canada and the United States allow only one-half the annual depreciation allowance in the year of acquisition. In Canada, deduction of an allowance for the capital cost of depreciable property (capital cost allowance or CCA) is permitted in lieu of depreciation. Depreciable properties are pooled together in classes on the basis of their similarity in use. Annual capital cost allowances are deducted from the year-end balance of each class at rates that are class specific. In most cases, depreciation rates are applied on a diminishing-balance basis. Taxpayers may also claim less than maximum CCA and even vary the depreciation rate from year to year. There is no stipulated minimum and no requirement that the deduction be related to amounts claimed for financial reporting purposes. The basic depreciation rate is 30 percent of current depreciable basic for motorized farm equipment, 20 percent for non-motorized equipment, and five percent for buildings.

Depreciable assets in the United States are pooled by economic life, with most farm machinery being in the seven-year class. Once a method of depreciation (accelerated versus straight-line) is selected, a change in method is allowable only with approval from the Internal Revenue Service. Farm buildings are placed in a twenty-year class life. United States depreciation schedules also require no deduction for an asset's salvage value, thereby providing for a tax-writeoff of 100 percent of the purchase price. The United States also allows for some or all of the equipment purchase price to be expensed in the year of purchase. Total expensing for all durable assets cannot exceed \$10,000 in a given tax year.

Australian farmers may choose between straight-line and diminishing balance depreciation schedules. Assets are assigned a straight-line (or prime cost) depreciation rate based on their use classification. If a diminishing value pattern is chosen, the rate is 50 percent higher than the straight-line rate. In addition, 20 percent loading rates apply to assets purchased after May 25, 1988. Loading increases the depreciation rates for both prime cost and diminishing value depreciation. For example, a 25 percent prime cost depreciation rate would increase to 30 percent under a 20 percent loading scheme, with the diminishing value rate increasing to 45 percent. Most self-propelled farm equipment purchased in 1991 would be depreciated (with loading and a diminishing value pattern) at a 27 percent rate, with other farm equipment depreciated at 18 percent. Farm buildings are depreciated at 5.4 percent.

Income averaging was eliminated during the 1980's for both Canada and the United States. Australia, however, permits a form of income averaging for primary producers (farmers and ranchers) only. A better description of the Australian approach is tax rate averaging. If averaging is selected, the farmer calculates the average tax rate for farm income earned in the

Table 7. Tax Preference Items and Non-Farm Government Programs in Australia, Canada, and United States

Australia		Canada	United States
Depreciation (current law) Equipment	27% of current depreciable basis for motorized vehicles, 18% for other equipment	30% of current depreciable basis for motorized vehicles, 20% for other equipment	MASCRS depreciation schedule, 5 or 7 year life
Buildings	5.4% of current depreciable basis	5% of current depreciable basis	MACRS depreciation schedule, 20 year life
Capital Gains	Determined as real capital gain, taxed based on income formula	Taxed at 75% of regular income	28% if income is in 31% tax bracket
Income Averaging	Yes, average of average tax rates current plus last four years	Not available	Not available
Income Equalization/ Retirement Fund	Total fund balance limited to \$197,500 per farmer. No penalty for withdrawal. Available to farmers only.	Registered retirement saving plan, deposits limited to \$9350/year/person or 18% of taxable income. No penalty for withdrawal.	KEOGH Account, limited to 25% of earned income or \$30,000. 10% tax penalty plus regular taxes in year of withdrawal. (before 59 1/2 years of age)
Expensing	Not available	Not available	Up to \$10,000 per year in year of acquisition
Investment Tax Credit	Not available	Limited to Eastern Canada provinces	Not available
Child Support Payments	Available for children under 18, based on number of children and ages. Maximum of \$45.7/month/child. Phased out above \$46,500 family taxable income. Tax exempt.	Available for children under 18, based on number of children and age. Maximum of \$41.40/month/child. Must repay 2/3 if taxable income exceeds \$44,000. Subject to tax.	Earned Income Credit, deducted from federal tax obligation. Maximum tax credit of \$1,000 when taxable income is \$7,125-\$11,263. Credit is zero above \$21,232 taxable income. Not influenced by number of children.
Exemptions	None	\$876 tax credit for taxpayer; \$65 each for first two dependents, \$138 for each additional dependant	\$2150 per exemption deducted from taxable income
Deductions	Excessive medical, non-religious charitable contributions deducted from taxable income	50% of CPP taxes, excessive medical, tuition deducted from tax at 17% of value. Charitable contributions deducted at 17% or 29% of value.	State income taxes, medical, charitable contributions deducted from taxable income if total exceeds \$5,700. 50% of self-employment deducted as farm expense. Additional exemption at federal and state level if tax return is joint.

current and previous four years. These rates are then averaged and multiplied by current year's taxable income to obtain tax payable (Douglas, personal communication).

Tax-deferred funds are often used by farmers in all three countries to reduce tax obligations in high income years. The Income Equalization Deposit program in Australia allows farmers to deposit some of their income⁶ in a government-sponsored tax-deferred account. The farmer can withdraw the money at any time with no penalty, but must report the withdrawals as taxable income. Total deposits in this program cannot exceed \$197,500 per person (Tomes, 1991). This program was created in response to the high level of income variability faced by most Australian farmers.

The United States has a number of retirement programs that can be used by self-employed persons. A program commonly used by farmers is the tax-deferred KEOGH plan. Under this plan farmers can annually contribute up to 15 percent of their taxable income (maximum of \$30,000) to a KEOGH account. In theory, KEOGH plans can be used like the Income Equalization Deposit program to stabilize income. In reality, they seldom fill this type of role because the government assesses a 10 percent tax penalty on early withdrawals (before 59 1/2 years of age). When combined with normal taxes assessed on the amount withdrawn, the cost of withdrawal before retirement is generally too high to justify its use for income stabilization purposes. Canada created the Registered Retirement Savings Plan (RRSP) to function much like a KEOGH plan. However, there is no tax penalty on withdrawal, allowing farmers to use the RRSP much like an income stabilization program. Deposits are limited to 18 percent of taxable income, or \$9,350 per year.

All three countries provide special aid to middle and lower income families with children. Family allowance payments are made monthly to families in Australia and Canada based on income level and the number and ages of children. In Australia, regular allowance payments are \$34/month/child for up to three children, then \$45.70/month for each additional child. This program is phased out if a family with one child had a previous year's taxable income exceeding \$50,000. Somewhat higher income levels apply for larger families. Only children under 18 qualify for this benefit. Australia also provides a supplement to the family allowance payment if income for a single child family is \$16,400 or less. The supplement provides \$90/month/child for those under 13 years of age and \$132/month for children aged 13-15. All Australian family allowance payments are tax-free (Social Security, 1990).

Canada's family allowance payments are also limited to children under 18 years of age. Amounts range from \$40.63/month/child for 16-17 year old children to \$22.35/month/child for children under 7 years. Canadians are required to repay two-thirds of their allowance if taxable income exceeds \$43,223. These payments are subject to tax (Good, personal communication). In addition, Canadians receive a child tax credit (above the standard exemption) of \$489/year/child. This credit is phased out as taxable income (for the person claiming the children as dependents) exceeds \$21,000.

⁶The minimum deposit is \$3,950 in any year.

The United States provides an Earned Income Credit (EIC) program to provide for low income families with children. EIC is calculated as a tax credit to federal income tax. The credit is at its maximum (\$953) when earned income is between \$6,800 to \$10,750. The credit is zero for incomes above \$20,264 or below \$0. The EIC is the same regardless of family size. The credit cannot be claimed if a couple file their income taxes separately.

The treatment and value of personal deductions and exemptions is also quite different between countries. In the United States, taxpayers receive a deduction of \$2,150 for each personal exemption and may deduct the cost of itemized deductions (medical expenses, nonbusiness interest and property taxes, state income taxes, and charitable contributions) if they exceed the standard deduction (\$5,700).

Rather than itemizing personal deductions Canadian taxpayers are allowed to deduct 17 percent of medical expenses and tuition directly from federal tax payable. In addition, charitable expenses above \$213 are deducted from taxes at 29 percent of their value. Tax exemptions for children in Canada vary by family size, with more generous benefits given to larger families. Rebates of the GST are provided for lower income families.

Australia generally provides no exemptions for family members besides the spouse rebate, which becomes available when one spouse earns less than \$4,000/year in income (\$3,382 if the couple have no dependent children). The rebate reduces taxable income by a maximum of \$1,200. Limited deductions from taxable income are available for medical expenses or non-religious charities.

Methodology, Data and Assumptions

Modelling Approach

A farm-level simulation model was used to estimate the effects of agricultural policy, costs of production, and tax policy on farm profitability. The farm simulation model was developed at Oregon State University by Perry (unpublished manuscript). The model attempts to replicate the financial behavior of a farm over time, calculating monthly cash flow statements and annual income statements and balance sheets for each year simulated. Crop yields and prices of inputs and outputs can be randomized in a Monte-Carlo framework based on distributions provided by the user. A key part of the model output is the income statement. An example income statement is given in Figure 1. The income statement uses cash variable costs from the cash flow statement in combination with changes in asset values provided on the balance sheet to calculate the change in farm net worth. An abbreviated and slightly modified form of the income statement is used in presenting the simulation results.

The advantage of a simulation approach is the ability to analyze extremely complex situations over time and be able to sort out issues of importance to the decisionmaker. In this setting, tax policy is extremely complex and often contradictory within each country considered in the analysis, making it virtually impossible to determine which country's policies favor farm operators.

Figure 1. Example Income Statement from Farm Management Simulation Model (FAMS)

1991	
CASH FARM INCOME	
Crop Receipts	119392.
Direct Government Payments	0.
Crop Insurance Indemnities	24508.
Direct Government Loans	0.
Less: Repayment of Government Loans	0.
Other Farm Income	0.
Savings Interest	136.
TOTAL CASH RECEIPTS	144035.
CASH FARM EXPENSES	
Per Unit	0.
Materials	4080.
Chemicals	44800.
Fuel	6013.
Labor	0.
Insurance Premiums	16987.
Equipment Repair	10949.
Equipment Lease	0.
Cash Rent	0.
Interest:	
Operating Loan	3144.
Equipment and Livestock	0.
Land and Buildings	2250.
Other	0.
Property Taxes	3947.
Misc. Crop Expenses	1575.
TOTAL CASH EXPENSES	93745.
NET CASH FARM INCOME	50290.
+ Ending crop inventories	0.
+ Change in value of crops in ground	0.
- Economic depreciation	
Equipment	18438.
Long term assets	356.
NET FARM INCOME	31497.
- All federal taxes	4556.
- All government pension	1182.
- State corporate income tax	2094.
NET INCOME AFTER TAXES (NIAT)	23665.
+ Land capital gains	0.
NIAT AND CAPITAL GAINS	23665.
- Net family withdrawals	24612.
+ Change in nonfarm net worth	0.
CHANGE IN TOTAL NET WORTH	-947.

The disadvantage of a simulation approach is the difficulty in providing decisionmaking ability as part of the modelling process. For example, if the barley price is expected to be low over the next few years, the farmer may opt to plant fewer acres of barley. To model this behavior in a simulation model would require a set of rules that determine when to shift away from barley acreage, how much to move into other crops, and identification of what other crops should be planted. Because many thousands of similar decisions are available to a farm operator, the use of decision making rules in this simulation model was generally avoided. A method of reducing the number of decision rules, while maintaining a realistic analysis of a farm situation, is to shorten the simulation period. In this study, therefore, the analytical focus is on the 1991 tax year.

Data and Assumptions

A detailed presentation of the data used in the base scenario for the United States and Australian models are given in the Appendix. The U.S. farm is so similar to its Canadian counterpart that the Canadian data set was not included. Major differences between the data sets for Canada and the U.S. are given in the first seven tables or included in the discussion in this and previous sections. Assumptions specific to a set of analyses are discussed in the Results and Analysis section of the report.

Farmers in both Canada and the United States were assumed to participate in government programs, including the purchase of crop insurance. U.S. target prices and loan rates were consistent with values defined in the 1991 Farm Bill. Set-aside rates of 7.5 percent for barley and 15 percent for wheat reflected 1991 farm program provisions. The 1991 target prices for Canada's GRIP program were based on actual values. The insurance premium for GRIP was 6.0 percent for barley, 7.5 percent for spring wheat, and 9.5 percent for durum wheat.

The farmer was assumed to be married, with two children (ages 16 and 8). Living expenses were treated as normal, long-run expenditures that do not respond to year-to-year fluctuations in income. The exception to this assumption was for charitable expenditures, which represented 2.5 percent of taxable farm income. The 2.5 percent figure is consistent with U.S. Internal Revenue Service averages for itemized charitable contributions (Prentice-Hall, Inc.). Tuition deductions in Canada were assumed zero.

Equipment complements for each farm situation were identified based on actual farming operations in the study areas, supplemented by expert advice of extension agents and specialists. No equipment was replaced in 1991. Functions provided in the *Agricultural Engineers Yearbook* were used to calculate repair costs. Depreciation estimates reflected actual change in market value each year and were made using functions estimated by Cross.

Prices and yields were assumed the major sources of uncertainty and were treated as random variables. Both sets of random variables were assumed to exhibit multivariate, normal distributions. Data for the yield distributions were based on actual farm level yield information. A special effort was made to ensure the price data from each country reflected the same time period (1981-90) and (when possible) the same marketing year. Australian and

Canadian prices were converted to their U.S. dollar equivalent using the exchange rate in effect each year.

Means and standard deviations for Canadian wheat prices were calculated using the CWB wheat prices for 1981-90 time period. Barley prices were calculated using prices registered in the Lethbridge, Alberta feed market. Because the CWB market year (August-July) does not coincide with that used in USDA calculations (June-May), monthly average prices for wheat and barley at Portland, Oregon were averaged for August through July. Australian price was based on the Australian Wheat Board price for the 1981-90 period.

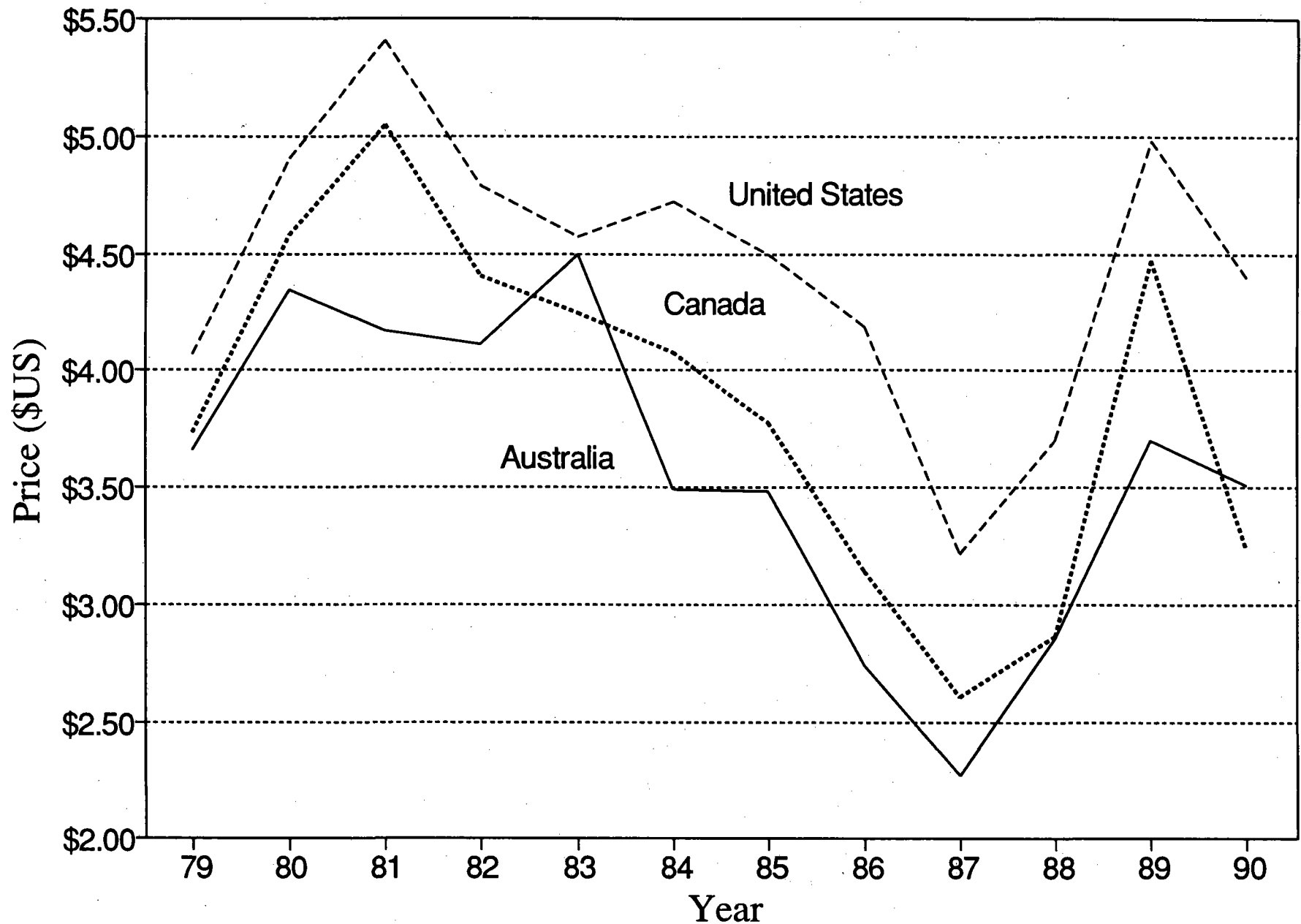
As Figure 2 demonstrates, the Portland price was consistently higher than its Canadian or Australian counterpart. The lower Australian price can be attributed to differences in transportation costs. The difference between U.S. and Canadian prices, however, is larger than the transportation difference between Vancouver and Portland. The CWB price is a pool price for wheat shipped out of Vancouver, B.C. and Thunder Bay, Ontario. One would expect the Thunder Bay price to be considerably lower than that in Vancouver, because of the additional transportation costs from Thunder Bay to the Atlantic Ocean. Consequently, pooling has the effect of subsidizing farmers who ship their grain to Thunder Bay at the expense of those shipping to Vancouver.

Section 179 expensing of \$10,000 was elected by the U.S. farm operator. A MACRS depreciation schedule was used for calculating depreciation in the United States, with declining balance methods used in Canada and Australia. Participation in Canada's RRSP program and Australia's Income Stabilisation Program was based on a breakpoint income level. The assumption was that if taxable income was above this breakpoint income, the farmer would put money in these funds (subject to the rules of each program); if below the breakpoint income, withdrawals would be made. The breakpoint income levels varied from scenario to scenario, but were set so that the expected ending fund balance would be within \$100 of the beginning balance.

Typical grain farms in all three counties contain about 2,000 acres of cropland. In the United States and Canada, half of the acreage is in fallow during any given year. In Australia the land is usually in continuous production. The representative farm size for both Canada and the United States was 2,100 acres, of which 640 acres were currently being purchased. The purchased acreage was financed through Farm Credit Services (FCS) in the United States and the AFCSP in Canada. The Australian farm was 2,000 acres, all of which was being purchased by the farmer. The Australian farm had a much smaller debt load, consistent with the actual farm debt situation in that country. The farmer was assumed to begin the 1991 year with \$10,000 in cash. In the United States this cash was available to pay operating expenses. In Canada, this cash was invested in the RRSP, with the cash invested in the Income Stabilization Program for the Australian scenarios. The farmer's wife was assumed to help on the farm and also generated \$200/month in off-farm income.

Unless otherwise indicated, the analyses are based on the presumption that the farm business was organized as a husband-wife partnership in Australia and Canada and a sole proprietorship in the United States. In the husband-wife scenarios, the husband receives 60

Figure 2. Wheat Price Series for
Australia, Canada, and United States



percent of the farm income. The wife receives the remaining 40 percent, all off-farm income (including child support payments) and claims the children as dependents for tax purposes.

Base Scenario Results and Analysis

The base scenario consists of nine different simulation situations. The first three situations are given in Table 8. Working backwards, situation three is an analysis of the Montana farm as described, being subject to United States, Montana, and Toole County taxes and receiving U.S. social program benefits⁷. The second situation uses the same Montana farm, but subjects it to taxation under the Canadian system and allows the farm family to receive Canadian social program benefits. It is as if the international border were moved south and the Montana farm became subject to taxes and qualified for social program benefits in Warner County, Alberta, but participated in the U.S. government farm program, purchased farm production inputs, and procured family support items in Montana. The first situation is identical to the second, except that Australian tax and social programs are substituted for their Canadian counterparts.

Situations four through six and seven through nine follow this same pattern, except the base farms are located in Alberta and New South Wales. This approach allows the taxation benefits (and costs) to be separated from the farm program benefits for each country. By comparing the situations in Table 8, for example, one can obtain an estimate of comparative advantage between New South Wales, Alberta, and Montana for tax policy and social programs.

In the base analysis of the Montana farm (Table 8), both crop receipts and government payments remained the same under all three scenarios. But other farm income varied somewhat because of differences in interest income. Cash farm expenses were higher in the U.S. scenario because of worker's compensation insurance. Canadian and Australian cash receipts were lower and interest expenses higher because the U.S. farm had \$10,000 cash available for operating expenses, thereby reducing operating loan needs and increasing savings interest. The net effect was an approximate \$1,500 income advantage for the Canadian and Australian scenarios vs. the U.S. scenario.

Total tax payments were highest in the U.S., with \$9,040 in expected federal, state, and local taxes. Canadian taxes were approximately \$1,300 lower, with Australian taxes some \$2,700 lower. The single biggest tax disadvantage for the U.S. farm was pension and medicare payments. Sales and fuel taxes in Australia were higher than the other two countries. Family withdrawals were substantially lower in Australia and Canada because of the family allowance payments and lower health care costs. The "bottom line" measure of tax and social program differences was the change in net worth. A comparison of these measures

⁷To make the subsequent discussion easier to follow, the federal, state, and local taxes and social programs for the Toole County, Montana farm will be referred to as "U.S. taxes", with "Canadian taxes" being used to refer to the same set of tax and social programs for Warner County, Alberta and "Australian taxes" referring to the tax and social programs in Moree District, New South Wales.

Table 8. Comparison of 2,100 Acre Montana Farm Under Alternative Tax Policies and Social Programs

1991 Expected Values	Australian Taxes	Canadian Taxes	U.S. Taxes
Situation Number	1	2	3
Crop Receipts	72,185	72,185	72,185
Government Payments	10,377	10,377	10,377
Other Farm Income	2,219	2,201	2,443
Total Cash Receipts	84,781	84,763	85,005
Cash Farm Expenses	48,683	48,730	50,426
Net Cash Farm Income	36,098	36,033	34,579
Fixed Costs	11,316	11,316	11,316
Net Farm Income	24,782	24,717	23,263
Tax Payments			
Federal	3,180	1,860	1,866
State	0	1,243	1,086
Sales\Fuel	2,055	1,946	324
Pension\Medicare	148	1,995	3,467
Property	912	1,700	2,297
Total	6,295	7,744	9,040
Net Family Withdrawals	16,096	16,942	19,416
Change in Net Worth	2,391	31	-5,193

suggests the Australian tax and social programs provide a \$7,584 advantage over the U.S. farm. Stated in percentage terms, this additional profit was approximately equivalent to a 20 percent increase in net cash farm income for the U.S. farm. The Australian tax and social programs also had a \$2,360 advantage over the Canadian tax policies. The Canadian tax and social programs, in turn, dominated the U.S. tax programs by \$5,223, or 15 percent of net cash farm income.

Although on the surface the comparison presented here seems appropriate, a few caveats are needed. First, fixed costs reported in Table 8 are largely economic depreciation of farm equipment and buildings. Although they are equal in all three scenarios, differences in government tax policy between countries mean that tax depreciation is not the same. Depreciation is lowest (\$3,834) under U.S. taxes because of the accelerated nature of U.S. depreciation schedules. Canadian tax depreciation is somewhat higher (\$4,915) and depreciation under the Australian tax code is substantially higher (\$9,010). Consequently, one reason why Australian and Canadian taxes are lower than they are in the United States is because taxable income is lower in those two countries.

A second point is the treatment of the tax-deferred funds in the model. As was noted previously, deposits and withdrawals were based on a breakpoint income level, with the goal of keeping ending expected fund balances at the same level as the beginning balances. Not included in these calculations, however, was the interest earned on the fund itself. If this additional income were added as other farm income to the income statement and tax depreciation allowances were lowered to United States levels, the change in net worth for Australian taxes would fall by about \$600 (to \$1,779) and that for Canada would rise by \$450 dollars (to \$494). Consequently, these adjustments do not change the relative ranking between countries.

Table 9 contains a summary of the results for the Alberta farm, under Australian, Canadian, and U.S. tax policies and social programs. The rankings among the different tax and social programs was similar to that exhibited in Table 8.

The similarity in size and productive potential of the Alberta and Montana farms permits a comparison of government farm program and production cost advantages that may exist in each country. This type of comparison is appropriate only if tax policy is the same for both farms. For example, comparing the Montana and Alberta farms under Canadian tax policy suggests the Montana farm generates a change in net worth that is \$3,898 above that for the Alberta farm. Similar results are obtained when comparing the two farms under U.S. or Australian tax policy. This comparison suggests: (1) For this farming situation, U.S. farm programs and cost of production advantages provide a return that is about \$3,800 (or about 11 percent of net cash farm income) higher than that for the Canadian farm programs and costs of production, and (2) tax and social programs provide an competitive advantage in trade of about \$5,200 (or about 15 percent) in Canada. From this comparison it can be concluded that, for this particular farm, taxes and social programs play a greater role than government farm programs and costs of production in determining competitive advantage in trade.

Table 10 highlights results comparing tax policy between the three countries for the representative New South Wales farm. This farm was much more profitable than its Alberta

Table 9. Comparison of 2,100 Acre Alberta Farm Under Alternative Tax Policies and Social Programs

1991 Expected Values	Australian Taxes	Canadian Taxes	U.S. Taxes
Crop Receipts	72,162	72,162	72,162
Government Payments	11,337	11,337	11,337
Other Farm Income	1,893	1,887	2,097
Total Cash Receipts	85,392	85,386	85,596
Cash Farm Expenses	53,314	53,371	54,894
Net Cash Farm Income	32,078	32,015	30,702
Fixed Costs	12,069	12,069	12,069
Net Farm Income	20,009	19,946	18,633
Tax Payments			
Federal	2,163	884	1,053
State	0	749	730
Sales\Fuel	2,024	1,892	312
Pension\Medicare	28	860	3,037
Property	912	1,700	2,351
Total	5,127	6,085	7,483
Net Family Withdrawals	16,860	17,728	20,064
Change in Net Worth	-1,978	-3,867	-8,914

Table 10. Comparison of 2,000 Acre New South Wales Farm Under Alternative Tax Policies and Social Programs

1991 Expected Values	Australian Taxes	Canadian Taxes	U.S. Taxes
Crop Receipts	206,891	206,891	206,891
Government Payments	0	0	0
Other Farm Income	12,267	11,903	12,498
Total Cash Receipts	219,158	218,794	219,389
Cash Farm Expenses	95,359	95,694	98,996
Net Cash Farm Income	123,799	123,100	120,393
Fixed Costs	19,751	19,751	19,751
Net Farm Income	104,048	103,349	100,642
Tax Payments			
Federal	33,949	21,861	22,114
State	0	11,125	9,630
Sales/Fuel	4,164	5,471	688
Pension/Medicare	1,208	1,879	7,456
Property	1,873	3,947	4,638
Total	41,194	44,283	44,526
Net Family Withdrawals	31,904	31,157	34,952
Change in Net Worth	30,950	27,909	21,164

and Montana counterpart, resulting in much higher profits and tax payments. Living expenses and sales tax levels reported in Table 11 were used in this analysis. Australian tax and social program advantages remained substantially above those for Canada which, in turn, remained above those for the United States. In percentage terms, however, the advantages provided in Australia and Canada over the United States were less than half that generated for the Montana farm. When differences in tax depreciation and interest on tax-deferred funds were included, the advantage under Australian vs. U.S. taxes was reduced to \$5,318 and the advantage for Canada vs. the United States shrunk to \$2,696. This set of scenarios suggests Australian and Canadian tax policies tend to provide their greatest advantages over U.S. tax policies at low income levels, largely because their tax exemptions and social programs are more generous at this level. The difference between Australian and Canadian tax and social program policies remains roughly the same across all three farms.

Sensitivity Analyses

The results presented in Tables 8-10 are for three typical farms. As such, care is required in making general statements about competitive advantage between the United States, Australia, and Canada. As these base analyses already suggest, differences in farm size could cause the results to differ. Numerous other variables could cause the results to differ, including business organization, debt level, and family size. The following analyses were created to address these concerns.

Alternative Farm Sizes

Two additional farms were created for Montana and Alberta to further investigate the influence of farm size on the base results. The first farm created for both countries contained 960 acres of land and is designated as the "small" farm for discussion purposes. The large farm contained 4,200 acres of farmland.

•Small Farm

In the small farm scenario one spouse was assumed employed full-time off the farm, generating a gross income of \$24,000/year. The farmer remained employed full-time on the farm. A grain-fallow rotation was again followed, with roughly the same crop mix as that given in Table 2. Of the 960 acre farm, the farmer was purchasing 640 acres and renting the remainder. The farmer began the year with \$5,000 in cash, either available as operating capital or invested in a tax-deferred fund similar to the base scenario. Living expenses are unchanged from the base analyses. In summary, farm income was less important to this farm family and family income was also much more stable⁸.

⁸Net family withdrawals were negative in this scenario because family living expenses were less than the combination of off-farm income and family allowance payments. In essence, the off-farm income was being used to offset some of family's income tax obligations.

Table 11. Monthly Living Expenses by Item for US Farm and Corresponding Expenditures in Canada and Australia—Large Farm Scenario

United States			Canada		Australia	
	Cost	Tax	Cost	Tax	Cost	Tax
Housing	0	.00	0	.00	0	.00
Food	400	.00	470	3.30	485	5.00
Utilities	150	.00	153	10.71	93	.00
Family Vehicles						
Payment	723	11.00	753	52.00	762	102.00
Insurance	75	.00	65	.00	60	.00
Fuel	105	40.28	100	150.00	120	175.00
Clothing	225	.00	225	15.75	249	.00
Furniture	225	.00	225	15.75	233	15.00
Entertainment	200	.00	200	14.00	220	.00
Medical						
Insurance	200	.00	63	0.00	38	.00
Out-of-Pocket Costs	40	.00	40	0.00	40	.00
Miscellaneous	200	.00	200	14.00	450	45.00
Total	\$2,543	\$51.28	\$2,494	\$275.51	\$2,750	\$347.00

In this scenario (Table 12) the U.S. farmer had a significantly lower tax burden than the Canadian or Australian farmer. Family allowance payments, lower medical costs and no worker's compensation insurance all contributed to favor Australia and Canada by almost \$4,000⁹, or 25 percent of net cash farm income. Most of the tax benefit for the U.S. farm (relative to previous analyses) was the result of full-time employment of the spouse off the farm, resulting in the employer paying half of the social security tax. Consequently, taxable income was roughly the same as it was under the 2,100 acre farm scenario, but the family's social security taxes were much lower. If these additional pension and medicare taxes were added to both Canadian and U.S. tax scenarios, total U.S. taxes would be approximately \$1,100 higher than in Australia and \$600 higher than in Canada.

Table 13 contains results for the 960 acre Alberta farm under different tax and social programs. The tax results again reflected those exhibited for the Montana farm. Comparison of farm programs and costs of production (Tables 12 and 13) suggests the Montana farm had an approximate \$1,900 change in net worth advantage. As in the base scenario, the Canadian tax and social program advantages outweighed U.S. farm programs and cost of production advantages.

•Large Farm Size

Two large farms were next analyzed for Montana and Alberta. Each farm contained 4,200 acres of tillable land, of which 2,520 was being purchased by the farmer and the remainder was rented under a crop-share arrangement. The wife had no outside employment. Living expenses used are given in Table 11. The crop mix was consistent with that used for the other Alberta and Montana farms.

Results of this large farm analysis for the Montana farm are given in Table 14. The patterns exhibited in the results were consistent with those seen earlier in the New South Wales farm scenario (Table 10). Australia's change in net worth was again highest, followed by Canada and the United States. Adjusting for differences in tax depreciation and tax-deferred interest had little impact on these results. The results in Table 15 also exhibit similar results for the Alberta farm. Differences in government farm programs and costs of production (comparing Tables 14 and 15) suggest a \$10,000 advantage favoring the Montana farm. This difference is greater than the tax advantage between the United States and Canada, suggesting government farm programs and costs of production are more important in determining competitive advantage than tax and social programs for larger farming operations.

Alternative Business Organizations

In the base scenarios it was assumed that farmers operating under Canadian and Australian tax law would prefer to be organized as a husband-wife partnership, whereas a sole

⁹Tax depreciation was nearly identical under both U.S. and Canadian tax law and was approximately \$3,000 higher under Australian tax law. Because these differences (and interest earned on tax-deferred funds) were small, no adjustments were estimated for change in net worth.

Table 12. Comparison of 960 Acre Montana Farm Under Alternative Tax Policies and Social Programs

1991 Expected Values	Australian Taxes	Canadian Taxes	U.S. Taxes
Crop Receipts	33,672	33,672	33,672
Government Payments	4,920	4,920	4,920
Other Farm Income	1,165	1,167	1,302
Total Cash Receipts	39,757	39,759	39,894
Cash Farm Expenses	22,984	22,971	25,080
Net Cash Farm Income	16,773	16,788	14,814
Fixed Costs	6,764	6,764	6,764
Net Farm Income	10,009	10,024	8,050
Tax Payments			
Federal	5,714	2,985	2,248
State	0	1,820	1,166
Sales\Fuel	2,055	1,946	324
Pension\Medicare	284	933	2,808
Property	497	850	1,334
Total	8,550	8,534	7,880
Net Family Withdrawals	-4,867	-4,685	-2,184
Change in Net Worth	6,326	6,148	2,354

Table 13. Comparison of 960 Acre Alberta Farm Under Alternative Tax Policies and Social Programs

1991 Expected Values	Australian Taxes	Canadian Taxes	U.S. Taxes
Crop Receipts	33,836	33,836	33,836
Government Payments	4,985	4,985	4,985
Other Farm Income	862	873	1,007
Total Cash Receipts	39,683	39,694	39,828
Cash Farm Expenses	24,525	24,450	26,530
Net Cash Farm Income	15,158	15,244	13,298
Fixed Costs	7,002	7,002	7,002
Net Farm Income	8,156	8,242	6,296
Tax Payments			
Federal	5,279	2,657	2,075
State	0	1,709	1,020
Sales\Fuel	2,024	1,892	300
Pension\Medicare	284	832	2,522
Property	497	850	1,343
Total	8,084	7,940	7,260
Net Family Withdrawals	-4,102	-3,872	-1,524
Change in Net Worth	4,174	4,174	560

Table 14. Comparison of 4,200 Acre Montana Farm Under Alternative Tax Policies and Social Programs

1991 Expected Values	Australian Taxes	Canadian Taxes	U.S. Taxes
Crop Receipts	163,066	163,066	163,066
Government Payments	21,379	21,379	21,379
Other Farm Income	4,802	4,796	5,053
Total Cash Receipts	189,247	189,241	189,498
Cash Farm Expenses	94,252	94,209	92,687
Net Cash Farm Income	94,995	95,032	92,684
Fixed Costs	18,175	18,175	18,175
Net Farm Income	76,820	76,857	74,512
Tax Payments			
Federal	20,269	12,705	11,456
State	0	6,402	5,231
Sales\Fuel	3,516	3,515	612
Pension\Medicare	867	2,056	7,354
Property	3,255	6,224	7,000
Total	27,907	30,902	31,653
Net Family Withdrawals	26,828	27,899	30,516
Change in Net Worth	22,085	18,056	12,343

Table 15. Comparison of 4,200 Acre Alberta Farm Under Alternative Tax Policies and Social Programs

1991 Expected Values	Australian Taxes	Canadian Taxes	U.S. Taxes
Crop Receipts	163,277	163,277	163,277
Government Payments	22,674	22,674	22,674
Other Farm Income	3,883	3,873	4,124
Total Cash Receipts	189,834	189,824	190,075
Cash Farm Expenses	109,230	109,214	111,619
Net Cash Farm Income	80,604	80,610	78,456
Fixed Costs	18,192	18,192	18,192
Net Farm Income	61,912	62,418	60,264
Tax Payments			
Federal	14,110	8,729	7,975
State	0	4,445	3,730
Sales\Fuel	3,492	3,306	588
Pension\Medicare	682	1,982	6,714
Property	3,255	6,224	7,032
Total	21,539	24,686	26,039
Net Family Withdrawals	27,854	29,106	30,732
Change in Net Worth	12,519	8,126	2,993

proprietorship was the preference in the United States. The analysis reported in Table 16 was conducted to verify that these organizational forms were indeed more profitable from a tax standpoint.

The results support the organizational assumptions made in the base scenario. Using a sole proprietorship in Australia cost the farmer approximately \$2,300 in additional taxes. In Canada, a sole proprietorship was less costly, increasing the farmer's tax burden by about \$1,500. In the United States, a husband-wife partnership only increased taxes by \$400. This last result can be attributed to Montana state taxes, which are structured like the income tax systems in Australia and Canada and discriminate against single income families. The loss of earned income credit was largely responsible for the higher U.S. federal tax obligation.

•Corporate Farms

The effect of incorporation was next considered for the 2,100 and 4,200 acre Montana farms. Corporations are treated as a separate entity for taxation purposes, making a comparison between corporations and other business forms potentially misleading. In the base scenario it was assumed that the farmer was making withdrawals from the business to cover family living expenses and taxes, with remaining profits reinvested in the business. To assure a fair comparison between corporate and noncorporate organizations, it was assumed the farmer was paid a salary by the corporation equivalent to the withdrawals he was making from the farm when a sole proprietor. That is, the salary was equal to net family withdrawals plus federal and state taxes paid by the business for this salary. No other payments were made by the corporation to the farmer. Farm corporations are in fact often structured in this manner, with the corporation paying the farmer a salary to avoid double taxation on dividends. Even in Australia, where some attempt is made to minimize double taxation, a farmer is better off to have the corporation pay him (and his wife) a salary, rather than receiving all income in the form of corporate dividends. In line with the base scenario assumptions, both husband and wife received a salary from the corporation for Australia and Canada, with only the farmer receiving a salary in the United States.

Additional assumptions were needed to deal with income stabilisation programs in Canada and Australia. The income stabilisation fund in Australia, for example, receives contributions or accepts withdrawals only from individuals, not corporations. To assure a stable income for living expenses and tax obligations it was assumed the corporation changed the salary paid to the farmer so as to match the deposits or withdrawals into tax-exempt funds. For example, in an unprofitable year it may be determined that the farmer should withdraw \$5,000 from his tax-exempt fund. The corporation would reduce the farmer's salary by \$5,000 and the fund would be depleted by the same amount.

The results for the 2100 acre Montana farm are reported in Table 17. Incorporation was clearly profitable under the U.S. tax system, reducing the total tax burden by about \$1,700 (or 18 percent of the base scenario tax burden). Over half of this tax savings was in the form of reduced social security taxes, the result of corporate profits being exempt from this tax. The Canadian farm also realized a reduction in taxes. Taxes under the Australian system went up by about 20 percent, a result of the 39 percent tax rate on corporate profits.

Table 16. Comparison of Alternative Organization Structures for 2,100 Acre Montana Farm

1991 Expected Values	Australian Taxes	Canadian Taxes	U.S. Taxes
Organization Type	Sole Proprietor	Sole Proprietor	Husband-Wive Partnership
Crop Receipts	72,185	72,185	72,185
Government Payments	10,377	10,377	10,377
Other Farm Income	2,202	2,185	2,439
Total Cash Receipts	84,764	84,747	85,001
Cash Farm Expense	48,745	48,830	50,435
Net Cash Farm Income	36,019	35,917	34,566
Fixed Costs	11,316	11,316	11,316
Net Farm Income	24,703	24,601	23,250
Tax Payments			
Federal	5,368	2,949	2,443
State	0	1,869	828
Sales	2,055	1,946	324
Government Pension	251	751	3,553
Property	912	1,700	2,297
Total	8,586	9,215	9,445
Net Family Withdrawals	16,096	16,942	19,416
Change in Net Worth	21	-1,556	-5,611

Table 17. Comparison of 2,100 Acre Montana Corporate Farm Under Alternative Tax Policies and Social Programs

1991 Expected Values	Australian Taxes	Canadian Taxes	U.S. Taxes
Crop Receipts	72,185	72,185	72,185
Government Payments	10,377	10,377	10,377
Other Farm Income	2,202	2,501	2,447
Total Cash Receipts	84,764	85,063	85,009
Cash Farm Income	48,748	48,003	50,415
Net Cash Farm Income	36,016	37,060	34,594
Fixed Costs	11,316	11,316	11,316
Net Farm Income	24,700	25,743	23,277
Tax Payments			
Federal Individual	1,929	-223	-55
Federal Corporate	2,665	1,648	1,505
State Individual	0	147	312
State Corporate	0	770	598
Sales\Fuel	2,055	1,946	324
Pension\Medicare	0	706	2,396
Property	912	1,700	2,297
Total	7,561	6,694	7,377
Net Family Withdrawals	16,096	16,942	19,416
Change in Net Worth	1,043	2,107	-3,516

The benefits of incorporation were even more dramatic for the 4,200 acre Montana farm (Table 18). In this case, however, it was the Canadian tax system that provided the greatest tax savings, with a total tax burden that was some \$7,800 (or 25 percent) lower than occurred for the same farm under a husband-wife partnership. The large tax savings in Canada can be attributed to the much lower federal and provincial corporate tax rates.

Tax savings were also large under the U.S. tax system, with a reduction in tax of about \$7,300 (or 23 percent). These tax reductions were again the result of much lower social security taxes. Also important was the lower average personal and federal tax rates, caused by splitting income between the corporation and the individual. Australian taxes were also lower under incorporation, an initially surprising result given the high corporate tax rate. In this case, however, personal income and medicare taxes were substantially lower, reducing the overall average marginal tax rate.

Differences in State and Local Taxes

State/provincial and local taxes both represent a substantial portion of the tax burden for farmers in both Canada and the United States. Yet, the state/provincial tax laws vary greatly in different parts of both countries. In order to determine the impact of varying state/provincial tax laws on the results, the Montana and Alberta farms were analyzed assuming they were located (for tax purposes) in North Dakota and Saskatchewan.

North Dakota imposes a five percent sales tax on nonfood items, an income tax similar to that of Montana, and a property tax on land and homes that is higher than that of Montana. Saskatchewan levies an income tax equal to 50 percent of federal tax plus two percent of taxable income, a sales tax on the same items taxed under the GST, and a relatively small property tax on land.

On the social programs side, Saskatchewan provides a comprehensive health care program at no cost to its citizens, provides family allowance payments that are somewhat lower than those received in Alberta, and provides tax credits to low income families to offset sales tax and child support expenses. North Dakota, on the other hand, does not require that farmers purchase worker's compensation insurance.

Table 19 contains a summary of the comparison between North Dakota and Saskatchewan. The tax burden was some \$500 higher in North Dakota than Montana and about \$850 higher in Saskatchewan than Alberta. Not having to purchase worker's compensation insurance left the North Dakota farmer better off than the Montana farmer. By not buying insurance, however, the North Dakota farmer is open to potentially serious financial consequences should the farmer or an employee be injured.

Although the Saskatchewan farmer paid much higher taxes than his Alberta counterpart, he also saved about \$750 in health insurance costs. As a result, the change in net worth was only about \$200 lower in Saskatchewan than Alberta. Overall, changes in net worth under the Canadian system remained higher than in the United States, with Australia remaining substantially higher than both.

Table 18. Comparison of 4,200 Acre Montana Corporate Farm Under Alternative Tax Policies and Social Programs

1991 Expected Values	Australian Taxes	Canadian Taxes	U.S. Taxes
Crop Receipts	163,066	163,066	163,066
Government Payments	21,379	21,379	21,379
Other Farm Income	4,739	4,848	5,139
Total Cash Receipts	189,184	189,316	189,584
Cash Farm Expenses	94,470	93,976	96,600
Net Cash Farm Income	94,714	95,340	92,984
Fixed Costs	18,175	18,175	18,175
Net Farm Income	76,539	77,165	74,809
Tax Payments			
Federal Individual	6,846	5,310	7,534
Federal Corporate	15,425	2,630	1,938
State Individual	0	2,481	2,182
State Corporate	0	1,610	910
Sales\Fuel	3,516	3,515	612
Pension\Medicare	439	1,296	4,166
Property	3,255	6,224	7,000
Total	29,481	23,066	24,342
Net Family Withdrawals	26,828	27,889	30,516
Change in Net Worth	20,230	26,210	19,951

Table 19. Comparison of 2,100 Acre Montana and Alberta Farms Under North Dakota and Saskatchewan Tax Policies and Social Programs

Montana Farm			Alberta Farm	
North Dakota Taxes		Saskatchewan Taxes	North Dakota Taxes	Saskatchewan Taxes
Crop Receipts	72,185	72,185	72,167	72,162
Gov't Payments	10,377	10,377	11,377	11,337
Other Farm Income	2,467	2,208	2,065	1,885
Total Cash Receipts	85,029	84,770	85,609	85,384
Cash Farm Expenses	48,073	48,721	52,450	53,408
Net Cash Farm Income	36,956	36,049	33,159	31,976
Fixed Costs	11,316	11,316	12,069	12,069
Net Farm Income	25,640	24,733	21,090	19,907
Tax Payments				
Federal	2,218	1,798	1,422	894
State	791	1,590	538	1,048
Sales\Fuel	876	3,010	865	2,983
Pension\Medicare	3,796	1,002	3,404	865
Property	1,864	1,189	1,864	1,189
Total	9,545	8,589	8,093	6,979
Net Family Withdrawals	19,416	16,326	20,195	17,109
Change in Net Worth	-3,321	-182	-7,198	-4,181

Value of Children's Benefits

A number of the tax exemptions and social program benefits in all three countries are geared toward children. Family size, therefore, might be expected to make some difference on the results reported in the base scenario. To better understand this issue, a scenario was developed in which the number of children was increased to four (ages 16, 8, 6, and 4). Because the focus of the analysis was on understanding tax and social program benefits, the family living expenses were held constant for this scenario. An analysis was conducted for the 2,100 acre Montana farm.

The results, which are given in Table 20, suggest Canada provides the most lucrative package of tax exemptions and social programs for children. Increasing the family size by two increased change in net worth under Canadian taxes by about \$2,100, or \$1,050 per child. Australia's change in net worth increased by almost \$1,000, the result of increased family allowance payments. The U.S. family's tax bill fell by about \$650, mostly because of reduced federal income taxes.

No Farm Debt

Debt levels vary a great deal among different farms in the same area. In this analysis all farm debt was eliminated to examine what impact debt has on the base scenario results. The results of this analysis are in Table 21.

Profitability improved substantially as a result of debt elimination. Tax burdens also increased by large amounts, particularly for the Canadian tax scenario. The relative tax changes, however, were similar. Taxes increased the most under the Canadian system (\$3,914) and the least under the Australian system (\$3,117). Rankings between countries remained unchanged.

Social Programs and Retirement Benefits

One factor not considered in these analyses is the future value of retirement benefits. Farmers in the United States, for example, pay a hefty tax that is supposed to go toward their retirement. How large are these benefits compared with those provided in Australia and Canada? In this section a brief overview is provided of the different retirement programs, recognizing that a detailed comparison is well beyond the scope and focus of this study.

Under current provisions of the U.S. Social Security program, maximum benefits (of \$1,462) are obtained if maximum self-employment taxes have been paid over the last five years.¹⁰ In Canada, all residents age 65 and older receive \$292/month in old age security benefits. In addition, they can receive \$490/month from the Canada Pension Plan if their contributions over the last 10 years have been at the maximum (\$25,925) level. In Australia

¹⁰This presumes a single income household. If both spouses have maximum self-employment tax payments, the monthly maximum benefit is \$1,950.

Table 20. Comparison of 2,100 Acre Montana Farm Assuming the Family Contains Four Children

1991 Expected Values	Australian Taxes	Canadian Taxes	U.S. Taxes
Crop Receipts	72,185	72,185	72,185
Government Payments	10,377	10,377	10,377
Other Farm Income	2,226	2,231	2,445
Total Cash Receipts	84,788	84,793	85,007
Cash Farm Expenses	48,659	48,623	50,420
Net Cash Farm Income	36,129	36,170	34,587
Fixed Costs	11,316	11,316	11,316
Net Farm Income	24,813	24,853	23,271
Tax Payments			
Federal	3,206	595	1,360
State	0	1,122	939
Sales\Fuel	2,055	1,946	324
Pension\Medicare	102	999	3,467
Property	912	1,700	2,297
Total	6,275	6,362	8,387
Net Family Withdrawals	15,165	16,337	19,416
Change in Net Worth	3,373	2,154	-4,532

Table 21. Comparison of 2,100 Acre Montana Farm Assuming No Debt for Farm Operator

1991 Expected Values	Australian Taxes	Canadian Taxes	U.S. Taxes
Crop Receipts	72,185	72,185	72,185
Government Payments	10,377	10,377	10,377
Other Farm Income	2,218	2,204	2,403
Total Cash Receipts	84,780	84,766	84,965
	37,590	37,645	39,386
Net Cash Farm Income	47,190	47,121	45,579
Fixed Costs	11,316	11,316	11,316
Net Farm Income	35,874	35,805	34,263
Tax Payments			
Federal	6,084	4,231	3,521
State	0	2,362	1,802
Sales/Fuel	2,055	1,946	324
Pension/Medicare	361	1,419	4,797
Property	912	1,700	2,297
Total	9,412	11,658	12,741
Net Family Withdrawals	16,096	16,942	19,416
Change in Net Worth	10,366	7,205	2,106

the pension for a married couple is \$832/month. This pension amount is not influenced by the quantity of taxes paid in previous years. Retirement benefits in all three countries are reduced as taxable income increases.

For a husband and wife, maximum benefits from federal retirement programs would be \$1,462/month in the United States, \$1,565/month in Canada, and \$832/month in Australia. In addition, health care is provided at minimal cost in Canada and Australia whereas those over 65 in the United States receive only partial support under Medicare.

Summary and Conclusions

The objective of this study was to estimate competitive advantage for case farms in Australia, Canada, and the United States. The particular focus of this analysis was on those factors influencing competitive advantage that have not normally been considered in trade negotiations, including tax policy and government social programs. A representative farm was developed for each country and the tax and social programs of each country were analyzed using these representative farms. Sensitivity analyses were conducted to provide greater insight into the results.

The results suggest that tax and social programs in Australia provide that country's farmers with a competitive advantage in trade, particularly for small and medium-sized farms. The only exception is large, incorporated farms, where U.S. and Canadian tax laws eliminate Australia's advantage. Canadian tax laws and social programs also generally provide competitive advantage to its farmers vis-à-vis the United States. Canadian tax and social program advantages are smallest for large nonincorporated farms, but the greater profitability of incorporated farms suggests this type of farming organization is probably rare in both countries.

Australia's tax laws definitely favor a husband-wife business organization. Corporations in Australia are only desirable from a tax standpoint if the farm is relatively large. Canadian tax law also favors a husband-wife partnership for small operations, but the corporate form is much more desirable for large farms. The corporate form is generally preferred in the United States, particularly for moderate and large scale businesses.

Australian and Canadian tax laws seem most favorably disposed toward self-employed individuals (such as farmers) and large businesses. The Australian tax burden falls much more heavily on moderate income salaried individuals than is the case for the United States and Canada. The U.S. tax law, on the other hand, seems to levy taxes relatively more heavily on the self-employed businessman than Canada and Australia. United States tax law also does not provide the tax breaks for low income persons that are available in the other two countries. Salaried workers seem to fare best in the United States than other countries. Differences in taxes exist between states and provinces, but these differences seem less important than the differences between countries.

There was a clear advantage to farm under U.S. government farm programs and costs of production versus those in Canada. This advantage was particularly apparent for large farming operations. The high costs imposed by the Canadian Wheat Board on the case farm

are largely responsible for the noncompetitiveness of Canadian production costs. In fact, these costs almost completely offset the competitive advantage provided by the Canadian farm programs. Caution must be exercised in generalizing this result, however,. Quite likely farmers in Saskatchewan and Manitoba receive a market price that is above the level they would receive if there was no marketing board.

Canada provides the best set of benefits for families with children. The United States provides the worst set of benefits. The relative rankings given in the base results did not change when farm debt was eliminated.

A number of assumptions have been made which are critical to the analysis. Cost of living estimates were tied to the farm, rather than the government tax and social program scheme. No doubt this is not completely correct because some living expenses are influenced by government policies (e.g., tariffs on imports). Further investigation is needed to determine what effect government policies have on living expenses.

An important assumption under both Australian and Canadian tax policy was managing the tax-exempt funds to maintain an approximately level expected fund balance. This assumption is particularly important for the Australian tax scenarios because the beginning fund balance was so low relative to the limits placed by government on total balance. The Australian farmer can save a great deal in taxes, for example, by allowing the fund to accumulate reserves over time. In addition, a larger fund reserve provides more flexibility in reducing taxes while maintaining a constant fund level.

Further work is needed to compare tax policy in these three countries with that in other major wheat exporting countries, particularly Argentina and the EC. For example, the competitive disadvantage suggested by the PSE in Table 1 for Argentina may not be nearly that large, because most Argentines do not pay any income taxes.

Other commodities should also be analyzed. Livestock enterprises, for example, are treated differently for tax purposes and so should be examined in a future study. Other types of cropping enterprises (such as vegetable production) may differ substantially in their mix of land, capital, and variable input use, generating substantially different results than those presented here.

References

- American Society of Agricultural Engineers. *Agricultural Engineers Year Book*. St. Joseph, MO. 1986.
- Australian Taxation Office. *Sales Tax in Australia*. Pamphlet published in September 1988, Cat. No. 87 1829 7.
- Barichello, R. R. and T. Hazledine. "Canada/US Free Trade in Agriculture and the Food Industry; A View from the Small Country". Invited paper presented at the 1989 Western Agricultural Economic Association Meetings, Coeur d'Alene, Idaho, July 9, 1989.
- Bunnage, Ken. Regional Economist, Alberta Agriculture, Lethbridge, AL., Telephone conversations and personal interviews, December 1989, January 1990, and June 1990.
- Cross, T. *Estimation of Agricultural Machinery and Equipment Depreciation Using Flexible Functional Forms*. Unpublished Ph.D. Dissertation, Oregon State University, Corvallis. June 1991.
- Douglas, R. Special Economist, New South Wales Agriculture and Fisheries, Parkes. Personal interview, December 1, 1990.
- Good, M., Provincial Tax Management Specialist, Alberta Agriculture. Financial and Tax Information memo, dated May 9, 1990.
- Government of Alberta. *Alberta Farm Credit Stability Program*. Pamphlet published in October 1989.
- Growing Together*. A Report to Ministers of Agriculture Task Force on Competitiveness in the Agri-Food Industry, Larry J. Martin (Task Force Chairperson). Working Group Reports, June 1990.
- Hansen, D. Research Assistant, Statistics Branch, Alberta Agriculture. Memorandum, February 27, 1991.
- Kay, R. D. and M. E. Rister. "Effects of Tax Depreciation Policy and Investment Incentives on Optimal Equipment Replacement Decisions: Comment," *American Journal of Agricultural Economics*, 58(1976):355-58.
- Leatham, D. J. and T. G. Baker. "Empirical Estimates of the Effects of Inflation on Salvage Value Cost, and Optimal Replacement of Tractors and Combines," *North Central Journal of Agricultural Economics*, 3(1981):109-17.
- McKeltine, W. Assessor, Warner Municipal District, Warner, Alberta. Telephone conversation, January 1990.
- Miller, V., Regional Manager, Orange New South Wales Office, Australian Taxation Office. personal interview, December 1, 1990.

- Perry, G. "Documentation for FAMS: a Flexible Farm Management Simulation Model."
Unpublished manuscript in possession of the author.
- Prentice-Hall, Inc. *Prentice-Hall Federal Taxes*. Report Bulletin, V67, No. 21. Inglewood Cliffs, N.J. May 1, 1986.
- Reid, D. W. and G. L. Bradford. "On Optimal Replacement of Farm Tractors," *American Journal of Agricultural Economics*, 65(1983):326-31.
- Seubert, R. Salesman, Seubert Insurance Inc., Shelby, Montana. Personal Interview, December 1989.
- Sharples, J. "Cost of Production and Productivity in Analyzing Trade and Competitiveness." *American Journal of Agricultural Economics*. 72(1990):1278-82.
- Shortridge, Jim. Salesman, Shoco Fertilizer Co. Great Falls, MT. Telephone conversation, January 1990.
- Social Security. *Social Security Rates*. A guide to rates of payment from September 1990 to March 1991. Australia. September 1990.
- Tomes, R. *Farm Taxation 1991*. Pamphlet PR 381, published September 1990. Australia.
- U.S. Congress, House. *United States - Canada Free-Trade Agreement*, House Document 100-216, 100th Congress, 2nd Session, 1988.
- U.S. Department of Agriculture, Economic Research Service. *Agriculture in the Uruguay Round: Analyses of Government Support*. Agriculture and Trade Analysis Division, Staff Report AGES 880802. December 1988.
- Webb, A.J., M. Lopez, and R. Penn. *Estimates of Producer and Consumer Subsidy Equivalents*. USDA-ERS Statistical Bulletin No. 803, Washington: Government Printing Office. April 1990.

APPENDIX

DATA SETS FOR MONTANA AND NEW SOUTH WALES FARMS

1 THE FARM MANAGEMENT SIMULATION MODEL
DEVELOPED AT OREGON STATE UNIVERSITY

BY
GREGORY M. PERRY

VERSION 2.0, JUNE 1990

FAMSIM ANALYSIS FOR REPRESENTATIVE TOOLE COUNTY, MONTANA FARM.
BASED ON DATA OBTAINED FROM OF SHELBY, MONTANA.
FARM CONTAINS 2100 ACRES OF LAND, IN SPRING WHEAT,
BARLEY, AND SUMMER FALLOW, WITH A DURUM ACTIVITY THATS NOT ACTIVE

The simulation is for 1 years, with the first year being 1991

The simulation is stochastic, with 25 iterations specified

There are 5 crops included in the model

There are 9 regular variables in the model treated as stochastic. all

others are assumed known with certainty;

Of these stochastic variables, 3 are correlated using one correlation matrix.

A second set of 4 variables are correlated using a second correlation matrix. The two matrices
are assumed independent of one another.

There are 2 ASCS farm units within this operation.

There are 4 long-term assets in the model.

There are 21 pieces of equipment in the complement

Farm is located in the United States for tax purposes.

Section 179 deduction (expensing) is in effect.

Farm is a sole proprietorship for tax purposes

Proven yields are average of previous proven yields.

No attempt will be made to improve projected cash-flow statement if it does not meet criteria for operating loan.

The following information will be printed:

- All input data
- Only the final cash flow, income, and balance sheet statements
- Statistical information on all output variables

*****GENERAL PRODUCTION INFORMATION*****

ACREAGE BY ASCS OR OTHER SUBFARM UNIT

*****ASCS Farm Unit # 1
Name: HOME ACREAGE
Land Status: OWNED

Asset Number: 1.

ACREAGE

CROP NAME	1991
Spring Wheat	220.
Winter Wheat	0.
Fallow	320.
Barley	100.
Durum Wheat	0.

OPTIONAL ACREAGE IDLEMENT PROGRAM

PROGRAM PARTICIPATION BY YEAR

CROP NAME	#1	#2	1991
Spring Wheat			YES
Winter Wheat			YES
Fallow			NO
Barley			YES
Durum Wheat			NO

*****ASCS Farm Unit # 2
Name: GRANDPA'S FARM
Land Status: RENTED

Asset Number: 0.

ACREAGE

CROP NAME	RENTAL ARRANGEMENT	COST	1991
Spring Wheat	SHARE	.00	480.
Winter Wheat	SHARE	.00	50.
Fallow	SHARE	.00	730.
Barley	SHARE	.00	200.
Durum Wheat	SHARE	.00	0.

OPTIONAL ACREAGE IDLEMENT PROGRAM

PROGRAM PARTICIPATION BY YEAR

CROP NAME	#1	#2	1991
Spring Wheat			YES
Winter Wheat			YES
Fallow			NO
Barley			YES
Durum Wheat			NO

DIFFERENCE BETWEEN THE FOLLOWING INTEREST RATES AND THE PRIME RATE

TYPE OF INTEREST	1991
Variable operating	.010

Variable savings -.030
 Variable int. term .010
 Fixed intermed. term .000
 Variable long term .000
 Fixed long term .000
 CCC loan -.030

OFF-FARM INCOME AND MISCELLANEOUS EXPENSES

ITEM	January	February	March	April	May	June	July	August	September	October	November	December
Off-farm income	200.	200.	200.	200.	200.	200.	200.	200.	200.	200.	200.	200.
Miscellaneous exp.	0.	0.	250.	200.	200.	200.	200.	200.	0.	0.	0.	0.
LABOR SUPPLY AND COST												
Family labor (free)	300.	300.	300.	300.	300.	300.	300.	300.	300.	300.	300.	300.
Family labor (paid)	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Full-time hired help	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Family labor salary	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Hired salary per man	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

Hourly labor receives \$ 5.00 per hour
 Farm employs 0. full-time laborers.
 Fuel costs are \$.88/gallon.

***** MARKETING INFORMATION FOR CROPS*****

PROPORTION OF CROP SOLD EACH MONTH OF MARKETING YEAR

CROP	January	February	March	April	May	June	July	August	September	October	November	December
Spring Wheat	.000	.000	.000	.000	.000	.000	.000	.000	.100	.150	.250	.500
Winter Wheat	.000	.000	.000	.000	.000	.000	.000	.000	.100	.150	.250	.500
Fallow	.000	.000	.000	.000	.000	.000	.000	.000	1.000	.000	.000	.000
Barley	.000	.000	.000	.000	.000	.000	.000	.000	.100	.150	.250	.500
Durum Wheat	.000	.000	.000	.000	.000	.000	.000	.000	.100	.150	.250	.500

MONTHLY PRICE INDICES FOR CROPS

CROP	January	February	March	April	May	June	July	August	September	October	November	December
Spring Wheat	1.000	1.010	1.020	1.000	1.000	1.000	1.000	1.000	.960	.970	.980	.990
Winter Wheat	1.000	1.010	1.020	1.000	1.000	1.000	1.000	1.000	.960	.970	.980	.990
Fallow	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Barley	1.000	1.010	1.020	1.000	1.000	1.000	1.000	1.000	.960	.970	.980	.990
Durum Wheat	1.000	1.010	1.020	1.000	1.000	1.000	1.000	1.000	.960	.970	.980	.990

MONTHLY PREMIUM INDICES FOR PIK CERTIFICATES

CROP	January	February	March	April	May	June	July	August	September	October	November	December
Spring Wheat	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Winter Wheat	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Fallow	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Barley	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Durum Wheat	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

PROPORTION OF CROP HARVESTED BY MONTH

CROP	January	February	March	April	May	June	July	August	September	October	November	December
Spring Wheat	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Winter Wheat	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Fallow	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Barley	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Durum Wheat	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROP	BEGINNING STOCKS	EXPECTED PRICE FOR STOCKS	FIRST MARKETING MONTH	LIVESTOCK FEED	STORABLE CROP
Spring Wheat	0.	.000	September	NO	YES
Winter Wheat	0.	.000	September	NO	YES
Fallow	0.	.000	August	NO	YES
Barley	0.	.000	August	NO	YES
Durum Wheat	0.	.000	August	NO	YES

*****EQUIPMENT AND FIELD OPERATIONS*****

BEGINNING EQUIPMENT COMPLEMENT

EQUIPMENT NAME	CODE NO.	PURCHASE PRICE	YEAR NEW	YEAR BOUGHT	INITIAL HOURS	MAXIMUM HOURS	PERCENT USAGE	REP. COST SCALAR	SALVAGE VALUE	DEPRECIATION PERIOD	AMOUNT DEPRECIATED	INSURANCE
32' Chiesel Plw	26.	7600.	1982.	1982.	2500.	300.	1.000	.10	250.	7.	7600.	.47
2 12' JD Drills	36.	10000.	1980.	1962.	2000.	300.	1.000	.15	1000.	7.	9000.	.47
Rodweeters	22.	1000.	1982.	1964.	5000.	300.	1.000	.50	0.	0.	1000.	.47
Rockpicker	70.	6200.	1990.	1990.	100.	300.	1.000	.80	0.	0.	664.	.47
Pickup	60.	8000.	1984.	1984.	50000.	2000.	1.000	.50	0.	0.	8000.	5.00
2 1/2 T Truck	62.	4000.	1978.	1955.	50000.	2000.	.500	.50	400.	7.	3600.	.47
2 1/2 T Truck	62.	4000.	1981.	1956.	50000.	2000.	.500	.50	0.	0.	4000.	.47
2 12' Mel Drill	35.	12000.	1975.	1975.	1500.	350.	1.000	.15	1200.	7.	10800.	.47
20' Ver400 Swath	49.	6000.	1981.	1976.	1000.	300.	1.000	.50	0.	0.	6000.	.47
P/U Mount Spray	54.	500.	1978.	1975.	500.	300.	1.000	3.00	50.	7.	450.	.47
Harrow	28.	500.	1980.	1980.	800.	300.	1.000	1.00	50.	7.	450.	.47
20' Offset Disc	24.	2500.	1988.	1976.	1000.	400.	1.000	.50	0.	0.	1122.	.47
53 GMC 1.5T Trk	63.	2500.	1975.	1953.	30000.	200.	1.000	.50	250.	7.	2250.	.47
Fert Spreader	53.	3500.	1984.	1975.	250.	300.	1.000	1.00	0.	0.	3500.	.47
MM UTS Tractor	1.	1500.	1980.	1956.	7000.	400.	1.000	1.00	0.	0.	1500.	.47
4040 JD Tractor	2.	14000.	1987.	1978.	2500.	400.	1.000	1.00	0.	0.	7998.	.47
850 Ford Tractor	1.	1000.	1988.	1953.	7500.	400.	1.000	1.00	0.	0.	449.	.47
Misc Equipment	71.	8000.	1983.	1965.	4000.	300.	1.000	1.00	0.	0.	8000.	.47
Augers	68.	2000.	1984.	1975.	2000.	300.	1.000	.15	0.	0.	2000.	.47
Steiger Bar III	7.	65000.	1983.	1983.	3200.	400.	1.000	1.00	0.	0.	65000.	.47
JD 7700 Combine	39.	50000.	1978.	1978.	2600.	300.	1.000	1.00	800.	7.	49200.	.65

DEBT INFORMATION ON BEGINNING COMPLEMENT

NAME	FINANCING SOURCE	PAYMENT SCHEDULE	INTEREST RATE	RATE TYPE	PAYMENT	AMOUNT FINANCED	CURRENT PRINCIPAL	TOTAL PAYMENTS	PAYMENTS REMAINING	MONTH PAID
32' Chiesel Plw	Single	Annual	10.50	Fixed	.00	0.	0.	5.	0.	December
2 12' JD Drills	Group		.00		.00	0.	0.	0.	0.	
Rodweeters	Group		.00		.00	0.	0.	0.	0.	
Rockpicker	Single	Annual	10.50	Fixed	1041.98	3900.	3900.	5.	5.	December
Pickup	Single	Annual	10.50	Fixed	.00	0.	0.	5.	0.	December

2 1/2 T Truck	Group		.00		.00	0.	0.	0.	0.	
2 1/2 T Truck	Single	Annual	10.50	Fixed	.00	0.	0.	5.	0.	December
2 12' Mel Drill	Single	Annual	10.50	Fixed	.00	0.	0.	5.	0.	December
20' Ver400 Swath	Group		.00		.00	0.	0.	0.	0.	
P/U Mount Spray	Group		.00		.00	0.	0.	0.	0.	
Harrow	Group		.00		.00	0.	0.	0.	0.	
20' Offset Disc	Single	Annual	10.50	Fixed	347.33	1300.	599.	5.	2.	December
53 GMC 1.5T Trk	Group		.00		.00	0.	0.	0.	0.	
Fert Spreader	Group		.00		.00	0.	0.	0.	0.	
MM UTS Tractor	Group		.00		.00	0.	0.	0.	0.	
4040 JD Tractor	Single	Annual	10.50	Fixed	764.12	2860.	1317.	5.	2.	December
850 Ford Tractor	Group		.00		.00	0.	0.	0.	0.	
Misc Equipment	Group		.00		.00	0.	0.	0.	0.	
Augers	Group		.00		.00	0.	0.	0.	0.	
Steiger Bar III	Single	Annual	10.50	Fixed	.00	0.	0.	5.	0.	January
JD 7700 Combine	Single	Annual	10.50	Fixed	.00	0.	0.	5.	0.	January

OTHER BEGINNING INTERMEDIATE DEBT COMMITMENTS TOTALS 0.

GROUP INTERMEDIATE DEBT INFORMATION IS AS FOLLOWS:

Beginning Principal 0.
Time Period Remaining 5 Years
Interest Rate 10.5 Percent
Rate Type Fixed
Month Paid December

Insurance premiums for farm assets are paid in April

REPLACEMENT INFORMATION FOR EQUIPMENT

EQUIPMENT NAME	HOURS AT TRADEIN	MAXIMUM HOURS	REPLACEMENT COST	AGE WHEN PURCHASED	HOURS WHEN PURCHASED	LEASE COST (\$/MONTH)	FINANCING SOURCE	TYPE OF RATE	PAYMENT SCHEDULE
32' Chiesel Plw	6300.	6300.	20000.	0.	0.	1500.	Private	Fixed	Annual
2 12' JD Drills	2800.	2800.	14000.	3.	400.	2000.	Group	Variable	Annual
Rodweedeers	13000.	13000.	10000.	0.	0.	1000.	Group	Variable	Annual
Rockpicker	9000.	9000.	6000.	0.	0.	800.	Group	Variable	Annual
Pickup	100000.	100000.	12000.	0.	0.	300.	Private	Fixed	Annual
2 1/2 T Truck	200000.	200000.	25000.	0.	0.	800.	Group	Variable	Annual
2 1/2 T Truck	200000.	200000.	25000.	0.	0.	800.	Private	Fixed	Annual
2 12' Mel Drill	2900.	3200.	14000.	3.	400.	2000.	Group	Variable	Annual
20' Ver400 Swath	2500.	2500.	10000.	4.	500.	1800.	Group	Variable	Annual
P/U Mount Spray	9000.	9000.	1000.	0.	0.	100.	Group	Variable	Annual
Harrow	9000.	9000.	8000.	0.	0.	800.	Group	Variable	Annual
20' Offset Disc	9000.	9000.	8000.	8.	800.	1000.	Group	Variable	Annual
53 GMC 1.5T Trk	200000.	200000.	6000.	15.	50000.	800.	Group	Variable	Annual
Fert Spreader	9000.	9000.	3000.	10.	1000.	400.	Group	Variable	Annual
MM UTS Tractor	9000.	9000.	1000.	20.	4000.	100.	Group	Variable	Annual
4040 JD Tractor	7000.	7100.	15000.	10.	2000.	1300.	Private	Fixed	Annual
850 Ford Tractor	9000.	9000.	1000.	20.	5000.	100.	Group	Variable	Annual
Misc Equipment	9000.	9000.	0.	30.	8000.	0.	Group	Variable	Annual
Augers	9000.	9000.	4500.	5.	100.	400.	Group	Variable	Annual
Steiger Bar III	9000.	9000.	89000.	0.	0.	3960.	Private	Fixed	Annual
JD 7700 Combine	3000.	3500.	87000.	0.	0.	5000.	Private	Fixed	Annual

FIELD OPERATIONS FOR EACH CROP

OPERATIONS FOR MORE THAN ONE CROP

OPERATION NAME/ EQUIPMENT USED	TIME PERIOD ACCOMPLISHED	COST /UNIT	MATERIALS COST/ACRE	CHEMICAL COST/AC	FUEL USE (GAL/AC)	FIELD TIME (HRS/ACRE)	LABOR USE (HRS/AC)	PERCENT COSTS PAID BY LANDLORD PER UNIT	MATERIALS	CHEMICALS
Spray Grasshop	JUL 1 - JUL 30	.000	.000	.750	.000	.0000	.0000	.000	.000	.000
No equipment used										
This operation was performed for Spring Wheat Winter Wheat										
Auger to Bins	AUG 15 - SEP 15	.000	.000	.000	.007	.0030	.0030	.000	.000	.000
Augers										
Usage of equipment is based on crop yield										
This operation was performed for Spring Wheat Winter Wheat Barley										
Haul to Market	OCT 1 - DEC 31	.000	.000	.000	.060	.0200	.0200	.333	.333	.333
2 1/2 T Truck										
Miles per acre is 0										
Usage of equipment is based on crop yield										
This operation was performed for Spring Wheat Winter Wheat Barley										

OPERATIONS PERFORMED SPECIFICALLY FOR Spring Wheat

OPERATION NAME/ EQUIPMENT USED	TIME PERIOD ACCOMPLISHED	COST /UNIT	MATERIALS COST/ACRE	CHEMICAL COST/AC	FUEL USE (GAL/AC)	FIELD TIME (HRS/ACRE)	LABOR USE (HRS/AC)	PERCENT COSTS PAID BY LANDLORD PER UNIT	MATERIALS	CHEMICALS
Drill Sp Wheat	APR 1 - APR 30	.000	6.000	.000	.500	.1110	.1110	.000	.000	.000
Steiger Bar III										
2 12' Mel Drill										
Herbicide	MAY 15 - JUN 15	.000	.000	3.500	.100	.0200	.0200	.000	.000	.000
Pickup										
P/U Mount Spray										
Harvest SW	AUG 15 - SEP 15	.000	.000	.000	.020	.0040	.0040	.000	.000	.000

JD 7700 Combine
Usage of equipment is based on crop yield

OPERATION NAME/ EQUIPMENT USED	TIME PERIOD ACCOMPLISHED	COST /UNIT	MATERIALS COST/ACRE	CHEMICAL COST/AC	FUEL USE (GAL/AC)	FIELD TIME (HRS/ACRE)	LABOR USE (HRS/AC)	PERCENT PER UNIT	COSTS PAID BY LANDLORD MATERIALS	CHEMICALS
Haul Sp Wheat 2 1/2 T Truck Miles per acre is .0 Usage of equipment is based on crop yield	AUG 15 - SEP 15	.000	.000	.000	.020	.0100	.0100	.000	.000	.000
Custom Combine JD 7700 Combine Miles per acre is .0 Usage of equipment is based on crop yield	SEP 1 - SEP 31	-.250	.000	.000	.010	.0050	.0050	.000	.000	.000

OPERATIONS PERFORMED SPECIFICALLY FOR Winter Wheat

OPERATION NAME/ EQUIPMENT USED	TIME PERIOD ACCOMPLISHED	COST /UNIT	MATERIALS COST/ACRE	CHEMICAL COST/AC	FUEL USE (GAL/AC)	FIELD TIME (HRS/ACRE)	LABOR USE (HRS/AC)	PERCENT PER UNIT	COSTS PAID BY LANDLORD MATERIALS	CHEMICALS
Drill Wn Wheat Steiger Bar III 2 12' JD Drills	OCT 15 - NOV 15	.000	6.000	.000	.500	.1110	.1110	.000	.000	.000
Herbicide Pickup P/U Mount Spray	MAY 1 - MAY 31	.000	.000	3.500	.100	.0200	.0200	.000	.000	.000
Harvest Wn JD 7700 Combine Usage of equipment is based on crop yield	AUG 1 - AUG 31	.000	.000	.000	.020	.0040	.0040	.000	.000	.000
Haul W Wheat 2 1/2 T Truck Miles per acre is .0 Usage of equipment is based on crop yield	AUG 1 - AUG 31	.000	.000	.000	.020	.0100	.0100	.333	.333	.333

OPERATIONS PERFORMED SPECIFICALLY FOR Fallow

OPERATION NAME/ EQUIPMENT USED	TIME PERIOD ACCOMPLISHED	COST /UNIT	MATERIALS COST/ACRE	CHEMICAL COST/AC	FUEL USE (GAL/AC)	FIELD TIME (HRS/ACRE)	LABOR USE (HRS/AC)	PERCENT PER UNIT	COSTS PAID BY LANDLORD MATERIALS	CHEMICALS
Chiesel Plow Steiger Bar III 32' Chiesel Plw Harrow This operation included on balance sheet under the category "Value of Crops in Ground"	MAY 1 - MAY 15	.000	.000	.000	.800	.0830	.0830	.000	.000	.000
Flow & Rodweed Steiger Bar III 32' Chiesel Plw Rodweebers This operation included on balance sheet under the category "Value of Crops in Ground"	JUN 7 - JUN 21	.000	.000	.000	.800	.0830	.0830	.000	.000	.000
Flow & Rodweed Steiger Bar III 32' Chiesel Plw Rodweebers This operation included on balance sheet under the category "Value of Crops in Ground"	JUL 10 - JUL 25	.000	.000	.000	.800	.0830	.0830	.000	.000	.000
Spray Wild Oats Pickup P/U Mount Spray This operation included on balance sheet under the category "Value of Crops in Ground"	NOV 1 - NOV 31	.000	.000	2.040	.030	.0100	.0100	.000	.000	.000
Flow & Rodweed Steiger Bar III 32' Chiesel Plw Rodweebers This operation included on balance sheet under the category "Value of Crops in Ground"	SEP 20 - OCT 15	.000	.000	.000	.500	.0630	.0630	.000	.000	.000
Pick Rock 4040 JD Tractor Rockpicker This operation included on balance sheet under the category "Value of Crops in Ground"	OCT 15 - OCT 30	.000	.000	.000	.300	.0700	.0700	.000	.000	.000
Disk Fields Steiger Bar III Harrow 20' Offset Disc This operation included on balance sheet under the category "Value of Crops in Ground"	MAR 1 - MAR 31	.000	.000	.000	.000	.0210	.0210	.000	.000	.000

OPERATIONS PERFORMED SPECIFICALLY FOR Barley

OPERATION NAME/ EQUIPMENT USED	TIME PERIOD ACCOMPLISHED	COST /UNIT	MATERIALS COST/ACRE	CHEMICAL COST/AC	FUEL USE (GAL/AC)	FIELD TIME (HRS/ACRE)	LABOR USE (HRS/AC)	PERCENT PER UNIT	COSTS PAID BY LANDLORD MATERIALS	CHEMICALS
Drill Barley Steiger Bar III 2 12' Mel Drill	MAR 20 - APR 15	.000	4.000	.000	.500	.1110	.1110	.000	.000	.000
Herbicide Pickup P/U Mount Spray	MAY 15 - JUN 15	.000	.000	3.500	.100	.0200	.0200	.000	.000	.000
Harvest Barley JD 7700 Combine Usage of equipment is based on crop yield	AUG 1 - AUG 30	.000	.000	.000	.020	.0040	.0040	.000	.000	.000
Haul Barley 2 1/2 T Truck Miles per acre is .0 Usage of equipment is based on crop yield	AUG 1 - AUG 30	.000	.000	.000	.020	.0100	.0100	.333	.333	.333

OPERATIONS PERFORMED SPECIFICALLY FOR Durum Wheat

OPERATION NAME/ EQUIPMENT USED NO SPECIFIC OPERATIONS	TIME PERIOD ACCOMPLISHED	COST /UNIT	MATERIALS COST/ACRE	CHEMICAL COST/AC	FUEL USE (GAL/AC)	FIELD TIME (HRS/ACRE)	LABOR USE (HRS/AC)	PERCENT COSTS PAID BY LANDLORD PER UNIT	COSTS MATERIALS	CHEMICALS
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*****GENERAL FINANCIAL INFORMATION FOR THE FARM*****

BEGINNING SET OF LONG-TERM ASSETS

ASSET DESCRIPTION	CODE NO.	PURCHASE PRICE	MARKET VALUE	YEAR NEW	YEAR PURCHASED	ACRES	DEPRECIABLE LIFE	SALVAGE VALUE	INSURANCE COST (PER \$100 VALUE)
Home Place	1.	130000.	224000.	0.	1988.	640.	0.	0.	.078
INCLUDED WITH THIS LAND ASSET IS:									
House	2.	10000.	15000.	1965.	1980.	0.	0.	0.	.500
8 Grain bins	7.	7000.	10500.	1968.	1980.	0.	20.	2200.	.500
Outbuildings	4.	8000.	11000.	1945.	1980.	0.	20.	1500.	.500

BEGINNING DEBT INFORMATION FOR LONG-TERM ASSETS

ASSET DESCRIPTION	INITIAL PRINCIPAL	CURRENT PRINCIPAL	PAYMENT PERIOD	INTEREST RATE	RATE TYPE	TOTAL PAYMENTS	PAYMENTS REMAINING	MONTH PAID	FINANCING SOURCE
Home Place	100000.	94903.	12722.18	Annual	11.2	Fixed	20.	17.	December
House	0.	0.	.00		.0		0.	0.	
8 Grain bins	0.	0.	.00		.0		0.	0.	
Outbuildings	0.	0.	.00		.0		0.	0.	

OTHER BEGINNING LONG-TERM DEBT COMMITMENTS TOTAL \$ 0.

GROUP LONG-TERM DEBT INFORMATION IS AS FOLLOWS:

Beginning Principal 0.
Time Period Remaining 0. Years
Interest Rate .0 Percent
Rate Type Variable
Month Paid December

MINIMUM CHANGE IN CASH FLOW REQUIRED TO QUALIFY FOR AN OPERATING LOAN

EQUITY RATIO INTERVALS	CHANGE IN CASH FLOW	PREMIUMS ON VARIABLE RATE LOANS
.000 - 1.000	-950000.	.000

Ages of children (in years) are as follows: 16., 8.,

*****GENERAL TAX INFORMATION FOR THE FARM*****

PROPERTY TAX RATES PER THOUSAND DOLLARS ASSESSED VALUE ARE:

Home and buildings 7.690
Farm land 6.460
Equipment and livestock 6.730

MONTHLY LIVING EXPENSES FOR THE FARM FAMILY

Housing	0.	0.
Utilities	105.	60.
Fuel	75.	50.
Food	350.	0.
Medical Insur	200.	0.
Medical Expense	40.	0.
Retirement	0.	0.
Miscellaneous	1075.	25.

PERCENTAGE OF INCOME ALLOCATED TO EACH PERSON FOR TAX PURPOSES

Off-Farm Income	100.
Farm Income	100.
Non-Farm Government	
Payments	100.
Charitable	
Contributions	3.

PREVIOUS YEARS TAX PAYMENTS AND CARRYOVER LOSSES

Govt Pension	2600.
Federal Income	1000.
State Income	700.
Carryover Loss	0.

AVERAGE FEDERAL TAX RATES FOR PREVIOUS YEARS

YEAR T-1	.000
YEAR T-2	.000
YEAR T-3	.000
YEAR T-4	.000

MISCELLANEOUS TAX AND OTHER INFORMATION

Limit on Section 179 expensing is 10000.
 Carryover net operating loss is 0.
 Rate for Workmens Compensation Insurance is 10.40
 Exchange rate from native currency to \$US is .0000
 Previous years personal income for farmer was 0.
 Farmer tax status is married, filing jointly

BALANCE SHEET FOR THE FARM AS OF DECEMBER 31,1990

ASSETS		LIABILITIES	
CURRENT		CURRENT	
Cash on hand	0.	Ending operating loss	0.
Savings	10000.	Accrued taxes:	
Livestock inventories	0.	Federal	0.
Crop inventories	0.	State	0.
Value of crop in ground	12800.	Self-employment	0.
		Accrued rent	0.
		CCC loan	0.
INTERMEDIATE		INTERMEDIATE	
Machinery value	84516.	Principal owed on machinery	5816.
Breeding livestock value	0.	Principal owed on livestock	0.
LONG TERM		LONG TERM	
Land market value	224000.	Farm mortgage	94903.
Farm buildings	15000.		
Home(s)	21500.		
Off-farm investments	0.		
		TOTAL EQUITY	267097.
TOTAL ASSETS	367816.	TOTAL EQUITY + LIABILITIES	367816.

GENERAL FINANCIAL INFORMATION

Current asset-to-liability ratio	*****
Intermediate equity ratio	.9312
Long-term equity ratio	.6357
Overall beginning equity ratio	.7262
Maximum allowable debt ratio	
on any intermediate-term asset	.9000
Maximum allowable debt ratio	
on any long-term asset	.1000

Discount rate used in calculating NPV is .100

*****GENERAL STATISTICAL INFORMATION FOR THE FARM*****

The Distribution For Spring Wheat Yield Is Normal
 Mean =30.0000 Std. Error =11.0000

The Distribution For Winter Wheat Yield Is Normal
 Mean =35.0000 Std. Error =13.0000

The Distribution For Barley Yield Is Normal
 Mean =45.0000 Std. Error =19.0000

The Distribution For Durum Wheat Yield Is Normal
 Mean = .0000 Std. Error = .0000

The Distribution For Spring Wheat Price Is Normal
 Mean = 3.7000 Std. Error = .6000

The Distribution For Winter Wheat Price Is Normal
 Mean = 3.5900 Std. Error = .5900

The Distribution For Barley Price Is Normal
 Mean = 2.1800 Std. Error = .3300

The Distribution For Durum Wheat Price Is Normal
 Mean = .0000 Std. Error = .0000

The Distribution For Prime interest rate Is Normal
 Mean = .1050 Std. Error = .0000

THE FOLLOWING RANDOM VARIABLES ARE TREATED AS DETERMINISTIC IN THE ANALYSIS

VARIABLE NAME	INITIAL VALUE
Fallow Yield	.000
Fallow Price	.000
Fuel inflation	1.000
Chemical inflation	1.000
Material inflation	1.000
Labor inflation	1.000
Repair inflation	1.000
New equipment infl.	1.000
Lease equipment inf.	1.000
Per unit cost inf.	1.000
Misc. cost inflation	1.000
Land inflation	1.000
Building inflation	1.000
CPI	1.000
GNP Deflator	1.000
Nat. net farm income	1.000

SCALERS TO CHANGE MEAN OF RANDOM VARIABLES OVER TIME

VARIABLE	1991
Spring Wheat Yield	1.0000
Winter Wheat Yield	1.0000
Fallow Yield	1.0000
Barley Yield	1.0000
Durum Wheat Yield	.0000
Spring Wheat Price	1.0000
Winter Wheat Price	1.0000
Fallow Price	1.0000
Barley Price	1.0000
Durum Wheat Price	.0000
Prime interest rate	1.0000
Fuel inflation	1.0000
Chemical inflation	1.0000
Material inflation	1.0000
Labor inflation	1.0000
Repair inflation	1.0000
New equipment infl.	1.0000
Lease equipment inf.	1.0000
Per unit cost inf.	1.0000
Misc. cost inflation	1.0000
Land inflation	1.0000
Building inflation	1.0000
CPI	1.0000
GNP Deflator	1.0000
Nat. net farm income	1.0000

SCALERS TO CHANGE VARIANCE OF RANDOM VARIABLES OVER TIME

Spring Wheat Yield	1.0000
Winter Wheat Yield	1.0000
Fallow Yield	1.0000
Barley Yield	1.0000
Durum Wheat Yield	.0000
Spring Wheat Price	1.0000
Winter Wheat Price	1.0000
Fallow Price	1.0000
Barley Price	1.0000
Durum Wheat Price	.0000
Prime interest rate	1.0000
Fuel inflation	1.0000
Chemical inflation	1.0000
Material inflation	1.0000
Labor inflation	1.0000
Repair inflation	1.0000
New equipment infl.	1.0000
Lease equipment inf.	1.0000
Per unit cost inf.	1.0000
Misc. cost inflation	1.0000
Land inflation	1.0000
Building inflation	1.0000
CPI	1.0000
GNP Deflator	1.0000
Nat. net farm income	1.0000

FIRST CORRELATION MATRIX

Spring Wheat Yield	.6570	-.1948	.7283
Winter Wheat Yield	.0000	.5790	.8153
Barley Yield	.0000	.0000	1.0000

SECOND CORRELATION MATRIX

Spring Wheat Price	.1906	.4048	.6539	.6101
Winter Wheat Price	.0000	.3719	.6208	.6901
Barley Price	.0000	.0000	.8047	.5937
Prime interest rate	.0000	.0000	.0000	1.0000

Seed for random number generator is 46798.

TARGET PRICE

CROP NAME	1991
Spring Wheat	3.9600
Winter Wheat	3.9600
Fallow	.0000
Barley	2.3600
Durum Wheat	.0000

FIXED LOAN RATES	
Spring Wheat	2.0000
Winter Wheat	2.0000
Fallow	.0000
Barley	1.3200
Durum Wheat	.0000

REQUIRED ACREAGE IN SET-ASIDE (PERCENT)	
Spring Wheat	15.0000
Winter Wheat	15.0000
Fallow	.0000
Barley	7.5000
Durum Wheat	.0000

OPTIONAL ACREAGE IN PAID DIVERSION (PERCENT)	
Spring Wheat	.0000
Winter Wheat	.0000
Fallow	.0000
Barley	.0000
Durum Wheat	.0000

PAYMENT RATE/ACRE ON PAID DIVERSION	
Spring Wheat	.0000
Winter Wheat	.0000
Fallow	.0000
Barley	.0000
Durum Wheat	.0000

OPTIONAL ACREAGE IN PIK DIVERSION (PERCENT)	
Spring Wheat	.0000
Winter Wheat	.0000
Fallow	.0000
Barley	.0000
Durum Wheat	.0000

PAYMENT RATE/ACRE ON PIK DIVERSION	
Spring Wheat	.0000
Winter Wheat	.0000
Fallow	.0000
Barley	.0000
Durum Wheat	.0000

MAXIMUM REDUCTION IN FORMULA LOAN WHEN CALCULATING ADJUSTED LOAN (PERCENT)	
Spring Wheat	.0000
Winter Wheat	.0000
Fallow	.0000
Barley	.0000
Durum Wheat	.0000

STORAGE COSTS FOR CCC LOANS	
Spring Wheat	.0300
Winter Wheat	.0300
Fallow	.0000
Barley	.0300
Durum Wheat	.0000

MINIMUM LEVELS FOR FORMULA LOANS	
Spring Wheat	.0000
Winter Wheat	.0000
Fallow	.0000
Barley	.0000
Durum Wheat	.0000

MINIMUM REDUCTIONS IN FORMULA LOANS FROM PREVIOUS YEAR (IN PERCENT)	
Spring Wheat	.0000
Winter Wheat	.0000
Fallow	.0000
Barley	.0000
Durum Wheat	.0000

PERCENT OF MEAN HISTORICAL MARKET PRICE
USED TO CALCULATE FLEXIBLE LOANS

Spring Wheat	.0000
Winter Wheat	.0000
Fallow	.0000
Barley	.0000
Durum Wheat	.0000

PERCENT OF BASE ACREAGE ELIGIBLE FOR
DEFICIENCY PAYMENTS

Spring Wheat	80.0000
Winter Wheat	80.0000
Fallow	80.0000
Barley	80.0000
Durum Wheat	.0000

PRODUCTION SLIPPAGE ON IDLED ACREAGE (PERCENT)

Spring Wheat	.0000
Winter Wheat	.0000
Fallow	.0000
Barley	.0000
Durum Wheat	.0000

PER ACRE CONSERVATION RESERVE PAYMENTS BY CROP

Spring Wheat	.0000
Winter Wheat	.0000
Fallow	.0000
Barley	.0000
Durum Wheat	.0000

FIXED MARKETING LOAN -

REPAYMENT LEVEL AS A PERCENT OF NONRECOURSE LOAN

Spring Wheat	.0000
Winter Wheat	.0000
Fallow	.0000
Barley	.0000
Durum Wheat	.0000

VARIABLE MARKETING LOAN -

DIFFERENCE BETWEEN WORLD PRICE AND MARKET PRICE

Spring Wheat	.0000
Winter Wheat	.0000
Fallow	.0000
Barley	.0000
Durum Wheat	.0000

PERCENT OF ADVANCE DEFICIENCY AND FINLEY PAYMENTS
PAID IN PIK CERTIFICATES

Spring Wheat	.0000
Winter Wheat	.0000
Fallow	.0000
Barley	.0000
Durum Wheat	.0000

PERCENT OF REMAINING DEFICIENCY AND FINLEY PAYMENTS
PAID IN PIK CERTIFICATES

Spring Wheat	.0000
Winter Wheat	.0000
Fallow	.0000
Barley	.0000
Durum Wheat	.0000

CROP INSURANCE GUARANTEED YIELD LEVELS (PERCENT)

Spring Wheat	75.0000
Winter Wheat	75.0000
Fallow	.0000
Barley	65.0000
Durum Wheat	.0000

CROP INSURANCE PRICE ELECTION

Spring Wheat	3.4500
Winter Wheat	3.4500
Fallow	.0000
Barley	2.1000
Durum Wheat	.0000

CROP INSURANCE PREMIUM (PER \$100 COVERAGE)

Spring Wheat	6.6000
Winter Wheat	6.7000
Fallow	.0000
Barley	6.0000
Durum Wheat	.0000

GRAMM-RUDMAN PAYMENT REDUCTION LEVELS (PERCENT)

0.

PAYMENT LIMITATIONS:
 Deficiency payment 50000.
 Finley payment 200000.

HISTORICAL YIELDS USED TO CALCULATE PROVEN YIELD

CROP NAME	1990	1989	1988	1987	1986
Spring Wheat	31.40	17.70	36.80	35.50	10.90
Winter Wheat	36.50	18.10	40.20	40.20	16.60
Fallow	.00	.00	.00	.00	.00
Barley	41.00	25.20	54.10	43.20	16.80
Durum Wheat	.00	.00	.00	.00	.00

HISTORICAL PRICES USED TO CALCULATE VARIABLE LOANS

Spring Wheat	.00	.00	.00	.00	.00
Winter Wheat	.00	.00	.00	.00	.00
Fallow	.00	.00	.00	.00	.00
Barley	.00	.00	.00	.00	.00
Durum Wheat	.00	.00	.00	.00	.00

FORMULA LOAN FOR 1990:

Spring Wheat	=	.000
Winter Wheat	=	.000
Fallow	=	.000
Barley	=	.000
Durum Wheat	=	.000

PERCENT OF GROSS REVENUE SUBTRACTED TO PARTICIPATE
 IN GOVERNMENT PROGRAM

Spring Wheat	.0000
Winter Wheat	.0000
Fallow	.0000
Barley	.0000
Durum Wheat	.0000

BUSINESS ACTIVITY	MONTHS IN WHICH THE FOLLOWING TRANSACTIONS ARE PERFORMED			Barley	Durum Wheat
	Spring Wheat	Winter Wheat	Fallow		
Crop placed in loan	October	October	October	October	October
Crop taken out of regular loan	March	March	March	March	March
PIK certificates sold					
CRP payments received					
Marketing loan repaid					
Crop insurance premiums paid	September	September	September	September	September
Crop insurance indemnities pd	September	September	September	September	September

40.0 percent of the deficiency payment is paid in March
 , with the remainder paid in December

CASH FLOW STATEMENT FOR 1991

	January	February	March	April	May	June	July	August	September	October	November	December
CASH AVAILABLE												
Beginning Cash	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	100.	0.
Milk and Livestock Prod	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Crop receipts	0.	0.	0.	0.	0.	0.	0.	0.	4207.	6376.	10736.	21691.
Cull Livestock Sales	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Direct Government Paymt	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Direct Government Loans	0.	0.	0.	0.	0.	0.	0.	0.	0.	18664.	0.	0.
Other Government Paymts	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Miscellaneous Income	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TOTAL AVAILABLE CASH	0.	0.	0.	0.	0.	0.	0.	0.	16209.	20416.	25040.	21691.
CASH REQUIRED												
Per Unit Costs	0.	0.	0.	0.	0.	0.	0.	0.	-1697.	-61.	0.	0.
Feed Costs	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Misc. Livestock Expense	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Material Costs	0.	0.	444.	4235.	0.	0.	0.	0.	0.	0.	0.	0.
Chemical Costs	0.	0.	0.	0.	1676.	1527.	478.	0.	0.	127.	127.	0.
Fuel Costs	0.	0.	49.	333.	777.	773.	735.	515.	408.	858.	330.	305.
Labor Costs	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Insurance Premiums	0.	0.	576.	939.	0.	576.	0.	0.	4382.	0.	0.	576.
Repair Costs	0.	0.	289.	813.	506.	683.	652.	2941.	2881.	663.	135.	5.
Equipment Lease Costs	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Equipment Down Payment	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Land Cash Rent Costs	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Net Cash Withdrawals	1645.	1645.	1645.	1645.	1645.	1645.	1645.	1645.	1645.	1645.	1645.	1645.
Misc. Crop Expenses	0.	0.	250.	200.	200.	200.	200.	200.	0.	0.	0.	0.
Loan payments:												
Intermediate	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2153.
Long-term	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	12722.
Government Loans	0.	0.	0.	0.	0.	0.	0.	0.	0.	3216.	5380.	10800.
Tax payments:												
Federal income	0.	0.	250.	0.	0.	250.	0.	0.	250.	0.	0.	250.
State income	0.	0.	175.	0.	0.	175.	0.	0.	175.	0.	0.	175.
Local property	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2297.	0.
Self-employment	0.	0.	650.	0.	0.	650.	0.	0.	650.	0.	0.	650.
TOTAL REQUIREMENTS	1645.	1645.	4327.	8167.	4804.	6479.	3710.	5300.	8694.	6448.	11982.	29355.
TOTAL AVAILABLE CASH LESS												
TOTAL REQUIREMENTS	-1645.	-1645.	-4327.	-8167.	-4804.	-6479.	-3710.	-5300.	11722.	18592.	-1146.	-7664.
PLUS: Cash from savings	1645.	1645.	4327.	2517.	0.	0.	0.	0.	0.	0.	1146.	2243.
NET CASH POSITION	0.	0.	0.	-5650.	-4804.	-6479.	-3710.	-5300.	11722.	18592.	0.	-5421.
LESS: Cash added to savings	0.	0.	0.	0.	0.	0.	0.	0.	0.	3434.	0.	685.
LESS: Cash used to reduce operating loan	0.	0.	0.	0.	0.	0.	0.	0.	11722.	15058.	0.	0.
ADD: Transfer to operating loan	0.	0.	0.	5650.	4804.	6479.	3710.	5300.	0.	0.	0.	5421.
ENDING CASH ON HAND	0.	0.	0.	0.	0.	0.	0.	0.	0.	100.	0.	100.
ENDING STATUS (PRINCIPAL + INTEREST)												
Savings	8412.	6815.	2517.	0.	0.	0.	0.	0.	0.	3372.	2243.	0.
Operating loan	0.	0.	0.	5669.	10550.	17161.	21053.	26581.	15058.	0.	0.	5440.

PERSONAL INCOME STATEMENT FOR EACH YEAR
1991

CASH FARM INCOME	
Crop Receipts	43009.
Milk and Livestock Receipts	0.
Direct Government Payments	0.
Crop Insurance Indemnities	16209.
Direct Government Loans	18664.
Less: Repayment of Government Loans	19187.
Other Farm Income	0.
Savings Interest	179.
Other Government Payments	0.
TOTAL CASH RECEIPTS	58874.
CASH FARM EXPENSES	
Per Unit	-1758.
Materials	4935.
Chemicals	5823.
Fuel	5082.
Labor	0.
Insurance Premiums	7048.
Feed Purchases	0.
Misc. Livestock Expenses	0.
Equipment Repair	9567.
Equipment Lease	0.
Cash Rent	0.
Interest:	
Operating Loan	943.
Equipment and Livestock	611.
Land and Buildings	10629.
Other	210.
Property Taxes	2297.
Misc. Crop Expenses	1250.
TOTAL CASH EXPENSES	46636.
NET CASH FARM INCOME	12238.
+ Ending crop inventories	0.
+ Change in value of crops in ground	82.
- Economic depreciation	
Equipment	10330.
Long term assets	865.
= NET FARM INCOME	1125.
- Federal income tax	-872.
- Social security	738.
- All state taxes	0.
= NET INCOME AFTER TAXES (NIAT)	1259.
+ Land capital gains	0.
= NIAT AND CAPITAL GAINS	1259.
- Net family withdrawals	19740.
+ Change in nonfarm net worth	0.
= CHANGE IN TOTAL NET WORTH	-18481.

TAX INCOME STATEMENT FOR EACH YEAR
1991

CALCULATION OF BUSINESS TAXABLE INCOME:	
Net cash farm income	12238.
- Depreciation:	
Equipment	3330.
Buildings	504.
Section 179 expensing	0.
- Business savings interest	179.
- Tax-deductable living expenses	4300.
Farm income from Schedule F	3925.

INCOME TAX STATEMENT FOR SOLE PROPRIETOR

Taxable income from farm	3925.
+ Off-farm income	2400.
+ Non-Farm Govt Payments	0.
+ Depreciation recapture	0.
+ Interest on savings	179.
- Half of self-employment Soc Sec	277.
- Deductions + exemptions	14300.
Taxable income	-8073.

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MARKET VALUE BALANCE SHEET

INITIAL 1991

ASSETS:

Ending cash on hand	0.	100.
Ending cash in savings	10000.	0.
Ending crop inventories	0.	0.
Value of crop in ground	12800.	12882.
Market value of machinery	84516.	74186.
Market value of land	224000.	224000.
Market value of residence	15000.	14644.
Market value of buildings	21500.	20990.
Mkt. value of off-farm invest.	0.	0.
TOTAL VALUE OF ASSETS	367816.	346803.

LIABILITIES:

Outstanding operating loan	0.	5440.
Accrued taxes		
-Federal	0.	-1872.
-State	0.	-700.
-Self-employment	0.	-1862.
Outstanding Government loan	0.	0.
Machinery debt	5816.	4273.
Land and buildings debt	94903.	92810.
TOTAL LIABILITIES	100719.	98089.
EQUITY	267097.	248714.
EQUITY PLUS LIABILITIES	367816.	346803.

THE FARM MANAGEMENT SIMULATION MODEL

DEVELOPED AT OREGON STATE UNIVERSITY

BY
GREGORY M. PERRY

VERSION 2.0, JUNE 1990

FAMSIM ANALYSIS FOR REPRESENTATIVE NEW SOUTH WALES, AUSTRALIA FARM
BASED ON DATA OBTAINED FROM NSW
FARM CONTAINS 2000 ACRES OF LAND, IN SPRING WHEAT AND BARLEY
US TAXES IMPOSED ON FARM

The simulation is for 1 years, with the first year being 1991
The simulation is stochastic, with 25 iterations specified
There are 5 crops included in the model
There are 9 regular variables in the model treated as stochastic. all
others are assumed known with certainty;
Of these stochastic variables, 2 are correlated using one correlation matrix.
A second set of 2 variables are correlated using a second correlation matrix. The two matrices
are assumed independent of one another.
There are 1 ASCS farm units within this operation.
There are 2 long-term assets in the model.
There are 12 pieces of equipment in the complement
Farm is located in Australia for tax purposes.
Farm is a partnership for tax purposes and has 2 partners.
Expensing will not be used to reduce depreciable basis.
Proven yields are average of previous proven yields.
No attempt will be made to improve projected cash-flow statement if it does not meet criteria for operating loan.
The following information will be printed:
- All input data
- Only the final cash flow, income, and balance sheet statements
- Statistical information on all output variables

*****GENERAL PRODUCTION INFORMATION*****

ACREAGE BY ASCS OR OTHER SUBFARM UNIT

*****ASCS Farm Unit # 1
Name: HOME ACREAGE
Land Status: OWNED

Asset Number: 1.

ACREAGE

CROP NAME	1991
Spring Wheat	1500.
Fallow	0.
Oats	0.
Barley	500.
Blank	0.

OPTIONAL ACREAGE
IDLEMENT PROGRAM

PROGRAM PARTICIPATION BY YEAR

CROP NAME	#1	#2	1991
Spring Wheat			NO
Fallow			NO
Oats			NO
Barley			NO
Blank			NO

DIFFERENCE BETWEEN THE FOLLOWING INTEREST RATES
AND THE PRIME RATE

TYPE OF INTEREST	1991
Variable operating	.010
Variable savings	-.030
Variable int. term	-.050
Fixed intermed. term	.000
Variable long term	.000
Fixed long term	.000
CCC loan	.000

OFF-FARM INCOME AND MISCELLANEOUS EXPENSES

ITEM	January	February	March	April	May	June	July	August	September	October	November	December
Off-farm income	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Miscellaneous exp.	100.	200.	275.	200.	100.	100.	100.	100.	100.	100.	100.	100.
LABOR SUPPLY AND COST												
Family labor (free)	300.	300.	300.	300.	300.	300.	300.	300.	300.	300.	300.	300.
Family labor (paid)	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Full-time hired help	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Family labor salary	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Hired salary per man	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

Hourly labor receives \$ 5.50 per hour
Farm employs 0. full-time laborers.
Fuel costs are \$ 1.38/gallon.

***** MARKETING INFORMATION FOR CROPS*****

PROPORTION OF CROP SOLD EACH MONTH OF MARKETING YEAR

CROP	January	February	March	April	May	June	July	August	September	October	November	December
Spring Wheat	.030	.000	.250	.020	.000	.000	.030	.000	.000	.020	.000	.650
Fallow	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.650
Oats	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.650
Barley	.030	.000	.250	.020	.000	.000	.030	.000	.000	.020	.000	.650
Blank	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

MONTHLY PRICE INDICES FOR CROPS

Spring Wheat	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Fallow	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Oats	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Barley	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Blank	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

MONTHLY PREMIUM INDICES FOR PIK CERTIFICATES

Spring Wheat	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Fallow	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Oats	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Barley	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Blank	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

PROPORTION OF CROP HARVESTED BY MONTH

Spring Wheat	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Fallow	1.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Oats	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Barley	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Blank	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROP	BEGINNING STOCKS	EXPECTED PRICE FOR STOCKS	FIRST MARKETING MONTH	LIVESTOCK FEED	STORABLE CROP
Spring Wheat	0.	.000	January	NO	YES
Fallow	0.	.000	January	NO	YES
Oats	0.	.000	January	NO	YES
Barley	0.	.000	January	NO	YES
Blank	0.	.000	January	NO	YES

*****EQUIPMENT AND FIELD OPERATIONS*****

BEGINNING EQUIPMENT COMPLEMENT

EQUIPMENT NAME	CODE NO.	PURCHASE PRICE*	YEAR NEW	YEAR BOUGHT	INITIAL HOURS	MAXIMUM HOURS	PERCENT USAGE	REP. COST SCALAR	SALVAGE VALUE	DEPRECIATION PERIOD	AMOUNT DEPRECIATED	INSURANCE
Case 4994 Tract	7.	97800.	1984.	1984.	3000.	300.	1.000	1.00	0.	0.	86521.	2.12
40' Chisel Plow	26.	15800.	1978.	1978.	3000.	300.	1.000	.10	0.	0.	13890.	.00
Rodweedeers	22.	4000.	1980.	1980.	5000.	300.	1.000	.50	0.	0.	3331.	.00
IH 1460 Combine	39.	125400.	1981.	1981.	2400.	300.	1.000	1.00	0.	0.	120011.	2.12
IH 28 run Drill	35.	5300.	1977.	1977.	1500.	300.	1.000	.15	0.	0.	4755.	.00
40 HWP Tractor	1.	10000.	1978.	1978.	1200.	300.	1.000	1.00	0.	0.	9636.	.00
15' Scarifier	28.	2500.	1976.	1976.	1000.	300.	1.000	1.00	0.	0.	2282.	.00
60' Sprayer	54.	4900.	1988.	1988.	200.	300.	1.000	3.00	0.	0.	2198.	.00
IH 3070 Truck	62.	39400.	1983.	1980.	330000.	2000.	.800	.50	0.	0.	35262.	5.00
Truck	62.	2700.	1975.	1965.	400000.	2000.	.200	.50	0.	0.	2654.	5.00
Other equipment	70.	95000.	1980.	1975.	0.	300.	1.000	.25	0.	0.	79102.	.00
Landcruiser	60.	21000.	1986.	1986.	60000.	2000.	1.000	.50	0.	0.	15865.	5.00

DEBT INFORMATION ON BEGINNING COMPLEMENT

NAME	FINANCING SOURCE	PAYMENT SCHEDULE	INTEREST RATE	RATE TYPE	PAYMENT	AMOUNT FINANCED	CURRENT PRINCIPAL	TOTAL PAYMENTS	PAYMENTS REMAINING	MONTH PAID
Case 4994 Tract	Group		.00		.00	0.	0.	0.	0.	0.
40' Chisel Plow	Group		.00		.00	0.	0.	0.	0.	0.
Rodweedeers	Group		.00		.00	0.	0.	0.	0.	0.
IH 1460 Combine	Group		.00		.00	0.	0.	0.	0.	0.
IH 28 run Drill	Group		.00		.00	0.	0.	0.	0.	0.
40 HWP Tractor	Group		.00		.00	0.	0.	0.	0.	0.
15' Scarifier	Group		.00		.00	0.	0.	0.	0.	0.
60' Sprayer	Group		.00		.00	0.	0.	0.	0.	0.
IH 3070 Truck	Group		.00		.00	0.	0.	0.	0.	0.
Truck	Group		.00		.00	0.	0.	0.	0.	0.
Other equipment	Group		.00		.00	0.	0.	0.	0.	0.
Landcruiser	Group		.00		.00	0.	0.	0.	0.	0.

OTHER BEGINNING INTERMEDIATE DEBT COMMITMENTS TOTALS 0.

GROUP INTERMEDIATE DEBT INFORMATION IS AS FOLLOWS:

Beginning Principal 0.
 Time Period Remaining 5. Years
 Interest Rate .0 Percent
 Rate Type Variable
 Month Paid December

Insurance premiums for farm assets are paid in October

REPLACEMENT INFORMATION FOR EQUIPMENT

EQUIPMENT NAME	HOURS AT TRADEIN	MAXIMUM HOURS	REPLACEMENT COST	AGE WHEN PURCHASED	HOURS WHEN PURCHASED	LEASE COST (\$/MONTH)	FINANCING SOURCE	TYPE OF RATE	PAYMENT SCHEDULE
Case 4994 Tract	10000.	11000.	146087.	0.	0.	2500.	Private	Fixed	Annual
40' Chisel Plow	9000.	9000.	30000.	0.	0.	1500.	Group	Variable	Annual
Rodweedeers	9000.	9000.	8000.	0.	0.	300.	Group	Variable	Annual
IH 1460 Combine	9000.	9000.	142200.	0.	0.	2000.	Group	Variable	Annual
IH 28 run Drill	9000.	9000.	15000.	0.	0.	800.	Group	Variable	Annual

40 HWP Tractor	9000.	9000.	20000.	0.	0.	900.	Group	Variable	Annual
15' Scarifier	9000.	9000.	7000.	0.	0.	400.	Group	Variable	Annual
60' Sprayer	9000.	9000.	4500.	0.	0.	300.	Group	Variable	Annual
IH 3070 Truck	900000.	900000.	50000.	0.	0.	800.	Group	Variable	Annual
Truck	900000.	900000.	6000.	10.	80000.	500.	Group	Variable	Annual
Other equipment	9000.	9000.	95000.	0.	0.	399.	Group	Variable	Annual
Landcruiser	150000.	150000.	21000.	0.	0.	400.	Group	Variable	Annual

FIELD OPERATIONS FOR EACH CROP

OPERATIONS FOR MORE THAN ONE CROP

OPERATION NAME/ EQUIPMENT USED	TIME PERIOD ACCOMPLISHED	COST /UNIT	MATERIALS COST/ACRE	CHEMICAL COST/AC	FUEL USE (GAL/AC)	FIELD TIME (HRS/ACRE)	LABOR USE (HRS/AC)	PERCENT PER UNIT	COSTS PAID BY LANDLORD MATERIALS	CHEMICALS
Spray Roundup Landcruiser 60' Sprayer	NOV 15 - DEC 15	.000	.000	5.500	.030	.0170	.0170	.000	.000	.000
This operation was performed for Spring Wheat				Barley						
Plough Case 4994 Tract 40' Chisel Plow	DEC 1 - DEC 30	.000	.000	.000	.500	.0370	.0370	.000	.000	.000
This operation was performed for Spring Wheat				Barley						
Scarify Case 4994 Tract 15' Scarifier	FEB 1 - FEB 30	.000	.000	.000	.330	.0220	.0220	.000	.000	.000
This operation was performed for Spring Wheat				Barley						
Scarify Case 4994 Tract 15' Scarifier	MAR 1 - MAR 30	.000	.000	.000	.330	.0220	.0220	.000	.000	.000
This operation was performed for Spring Wheat				Barley						
Wide line Cult Case 4994 Tract Rodweeder	APR 1 - APR 30	.000	.000	.000	.250	.0120	.0120	.000	.000	.000
This operation was performed for Spring Wheat				Barley						
Custom Fert No equipment used	MAR 15 - APR 15	.000	.000	8.750	.000	.0000	.0000	.000	.000	.000
This operation was performed for Spring Wheat				Barley						

OPERATIONS PERFORMED SPECIFICALLY FOR Spring Wheat

OPERATION NAME/ EQUIPMENT USED	TIME PERIOD ACCOMPLISHED	COST /UNIT	MATERIALS COST/ACRE	CHEMICAL COST/AC	FUEL USE (GAL/AC)	FIELD TIME (HRS/ACRE)	LABOR USE (HRS/AC)	PERCENT PER UNIT	COSTS PAID BY LANDLORD MATERIALS	CHEMICALS
Wide line Cult Case 4994 Tract Rodweeder	MAY 1 - MAY 30	.000	.000	.000	.250	.0120	.0120	.000	.000	.000
Plant Wheat Case 4994 Tract IH 28 run Drill	MAY 1 - MAY 30	.000	2.720	.000	.300	.0830	.0830	.000	.000	.000
Spray 60% Landcruiser 60' Sprayer	JUN 15 - JUL 15	.000	.000	9.700	.030	.0170	.0170	.000	.000	.000
Harvest Wheat IH 1460 Combine	NOV 15 - DEC 15	.000	.000	.000	.011	.0020	.0020	.000	.000	.000
Usage of equipment is based on crop yield										

OPERATIONS PERFORMED SPECIFICALLY FOR Fallow

OPERATION NAME/ EQUIPMENT USED	TIME PERIOD ACCOMPLISHED	COST /UNIT	MATERIALS COST/ACRE	CHEMICAL COST/AC	FUEL USE (GAL/AC)	FIELD TIME (HRS/ACRE)	LABOR USE (HRS/AC)	PERCENT PER UNIT	COSTS PAID BY LANDLORD MATERIALS	CHEMICALS
NO SPECIFIC OPERATIONS										

OPERATIONS PERFORMED SPECIFICALLY FOR Oats

OPERATION NAME/ EQUIPMENT USED	TIME PERIOD ACCOMPLISHED	COST /UNIT	MATERIALS COST/ACRE	CHEMICAL COST/AC	FUEL USE (GAL/AC)	FIELD TIME (HRS/ACRE)	LABOR USE (HRS/AC)	PERCENT PER UNIT	COSTS PAID BY LANDLORD MATERIALS	CHEMICALS
NO SPECIFIC OPERATIONS										

OPERATIONS PERFORMED SPECIFICALLY FOR Barley

OPERATION NAME/ EQUIPMENT USED	TIME PERIOD ACCOMPLISHED	COST /UNIT	MATERIALS COST/ACRE	CHEMICAL COST/AC	FUEL USE (GAL/AC)	FIELD TIME (HRS/ACRE)	LABOR USE (HRS/AC)	PERCENT PER UNIT	COSTS PAID BY LANDLORD MATERIALS	CHEMICALS
Plant Barley Case 4994 Tract IH 28 run Drill	APR 1 - APR 30	.000	.000	3.500	.300	.0830	.0830	.000	.000	.000
Harvest Barley IH 1460 Combine	NOV 1 - NOV 30	.000	.000	.000	.011	.0020	.0020	.000	.000	.000
Usage of equipment is based on crop yield										

OPERATIONS PERFORMED SPECIFICALLY FOR Blank

OPERATION NAME/ EQUIPMENT USED	TIME PERIOD ACCOMPLISHED	COST /UNIT	MATERIALS COST/ACRE	CHEMICAL COST/AC	FUEL USE (GAL/AC)	FIELD TIME (HRS/ACRE)	LABOR USE (HRS/AC)	PERCENT PER UNIT	COSTS PAID BY LANDLORD MATERIALS	CHEMICALS
NO SPECIFIC OPERATIONS										

*****GENERAL FINANCIAL INFORMATION FOR THE FARM*****

BEGINNING SET OF LONG-TERM ASSETS

ASSET DESCRIPTION	CODE NO.	PURCHASE PRICE	MARKET VALUE	YEAR NEW	YEAR PURCHASED	ACRES	DEPRECIABLE LIFE	SALVAGE VALUE	INSURANCE COST (PER \$100 VALUE)
Home Place	1.	150000.	520000.	0.	1975.	2100.	0.	0.	1.030
INCLUDED WITH THIS LAND ASSET IS:									
House	2.	10000.	15000.	1965.	1975.	0.	0.	0.	2.500

BEGINNING DEBT INFORMATION FOR LONG-TERM ASSETS

ASSET DESCRIPTION	INITIAL PRINCIPAL	CURRENT PRINCIPAL	PAYMENT PERIOD	INTEREST RATE	RATE TYPE	TOTAL PAYMENTS	PAYMENTS REMAINING	MONTH PAID	FINANCING SOURCE
Home Place	28009.	15000.	4474.73	Annual	15.0	Fixed	20.	5.	December
House	0.	0.	.00		.0		0.	0.	Single

OTHER BEGINNING LONG-TERM DEBT COMMITMENTS TOTAL \$ 0.

GROUP LONG-TERM DEBT INFORMATION IS AS FOLLOWS:

Beginning Principal 0.
Time Period Remaining 0. Years
Interest Rate .0 Percent
Rate Type Variable
Month Paid December

MINIMUM CHANGE IN CASH FLOW REQUIRED TO QUALIFY FOR AN OPERATING LOAN

EQUITY RATIO INTERVALS	CHANGE IN CASH FLOW	PREMIUMS ON VARIABLE RATE LOANS
.000 - 1.000	-90000.	.000

Ages of children (in years) are as follows: 16., 8.,

*****GENERAL TAX INFORMATION FOR THE FARM*****

PROPERTY TAX RATES PER THOUSAND DOLLARS ASSESSED VALUE ARE:

Home and buildings 3.500
Farm land 3.500
Equipment and livestock .000

MONTHLY LIVING EXPENSES FOR EACH PARTNER

	Partner #1	% Exempt	Partner #2	% Exempt
Housing	0.	0.	0.	0.
Utilities	93.	60.	0.	60.
Fuel	295.	50.	0.	50.
Food	490.	0.	0.	0.
Medical Insur	38.	0.	0.	0.
Medical Expense	40.	0.	0.	0.
Retirement	0.	0.	0.	0.
Miscellaneous	2141.	25.	0.	25.

PERCENTAGE OF INCOME ALLOCATED TO EACH PERSON FOR TAX PURPOSES

	Partner #1	Partner #2	Partner #3
Off-Farm Income	0.	100.	
Farm Income	50.	50.	
Non-Farm Government			
Payments	0.	100.	
Charitable			
Contributions	3.	3.	

PREVIOUS YEARS TAX PAYMENTS AND CARRYOVER LOSSES

Govt Pension	500.	500.
Federal Income	16000.	16000.
State Income	0.	0.
Carryover Loss	0.	0.

AVERAGE FEDERAL TAX RATES FOR PREVIOUS YEARS

YEAR T-1	.370	.370
YEAR T-2	.370	.370
YEAR T-3	.370	.370
YEAR T-4	.370	.370

INCOME EQUALISATION DEPOSIT INFORMATION

Income Breakpt	99100.	99100.
Beginning Bal	5000.	5000.

MISCELLANEOUS TAX AND OTHER INFORMATION

Limit on Section 179 expensing is 10000.
Carryover net operating loss is 0.

Rate for Workmens Compensation Insurance is .00
Exchange rate from native currency to \$US is .7900
Previous years personal income for farmer was 63000.
Each partner assumed tax status is married, filing separately

BALANCE SHEET FOR THE FARM AS OF DECEMBER 31,1990

ASSETS		LIABILITIES	
CURRENT		CURRENT	
Cash on hand	0.	Ending operating loss	0.
Savings	10000.	Accrued taxes:	
Livestock inventories	0.	Federal	0.
Crop inventories	0.	State	0.
Value of crop in ground	0.	Self-employment	0.
		Accrued rent	0.
		CCC loan	0.
INTERMEDIATE		INTERMEDIATE	
Machinery value	172918.	Principal owed on machinery	0.
Breeding livestock value	0.	Principal owed on livestock	0.
LONG TERM		LONG TERM	
Land market value	520000.	Farm mortgage	15000.
Farm buildings	15000.		
Home(s)	0.		
Off-farm investments	0.		
TOTAL ASSETS	717918.	TOTAL EQUITY	702918.
		TOTAL EQUITY + LIABILITIES	717918.

GENERAL FINANCIAL INFORMATION
Current asset-to-liability ratio *****
Intermediate equity ratio 1.0000
Long-term equity ratio .9720
Overall beginning equity ratio .9791
Maximum allowable debt ratio
on any intermediate-term asset .9000
Maximum allowable debt ratio
on any long-term asset .1000

Discount rate used in calculating NPV is .100

*****GENERAL STATISTICAL INFORMATION FOR THE FARM*****

The Distribution For Spring Wheat Yield Is Normal

Mean =35.9000 Std. Error =18.9700

The Distribution For Fallow Yield Is Normal

Mean = .0000 Std. Error = .0000

The Distribution For Barley Yield Is Normal

Mean =39.9000 Std. Error =19.3900

The Distribution For Blank Yield Is Normal

Mean = .0000 Std. Error = .0000

The Distribution For Spring Wheat Price Is Normal

Mean = 2.9800 Std. Error = .6600

The Distribution For Fallow Price Is Normal

Mean = .0000 Std. Error = .0000

The Distribution For Barley Price Is Normal

Mean = 2.3800 Std. Error = .6700

The Distribution For Blank Price Is Normal

Mean = .0000 Std. Error = .0000

The Distribution For Prime interest rate Is Normal

Mean = .1500 Std. Error = .0000

THE FOLLOWING RANDOM VARIABLES ARE TREATED AS DETERMINISTIC IN THE ANALYSIS

VARIABLE NAME	INITIAL VALUE
Oats Yield	.000
Oats Price	.000
Fuel inflation	1.000
Chemical inflation	1.000
Material inflation	1.000
Labor inflation	1.000
Repair inflation	1.000

New equipment infl.	1.000
Lease equipment inf.	1.000
Per unit cost inf.	1.000
Misc. cost inflation	1.000
Land inflation	1.000
Building inflation	1.000
CPI	1.000
GNP Deflator	1.000
Nat. net farm income	1.000

SCALERS TO CHANGE MEAN OF RANDOM VARIABLES OVER TIME

VARIABLE	1991
Spring Wheat Yield	1.0000
Fallow Yield	1.0000
Oats Yield	1.0000
Barley Yield	1.0000
Blank Yield	1.0000
Spring Wheat Price	1.0000
Fallow Price	1.0000
Oats Price	1.0000
Barley Price	1.0000
Blank Price	1.0000
Prime interest rate	1.0000
Fuel inflation	1.0000
Chemical inflation	1.0000
Material inflation	1.0000
Labor inflation	1.0000
Repair inflation	1.0000
New equipment infl.	1.0000
Lease equipment inf.	1.0000
Per unit cost inf.	1.0000
Misc. cost inflation	1.0000
Land inflation	1.0000
Building inflation	1.0000
CPI	1.0000
GNP Deflator	1.0000
Nat. net farm income	1.0000

SCALERS TO CHANGE VARIANCE OF RANDOM VARIABLES OVER TIME

Spring Wheat Yield	1.0000
Fallow Yield	1.0000
Oats Yield	1.0000
Barley Yield	1.0000
Blank Yield	1.0000
Spring Wheat Price	1.0000
Fallow Price	1.0000
Oats Price	1.0000
Barley Price	1.0000
Blank Price	1.0000
Prime interest rate	1.0000
Fuel inflation	1.0000
Chemical inflation	1.0000
Material inflation	1.0000
Labor inflation	1.0000
Repair inflation	1.0000
New equipment infl.	1.0000
Lease equipment inf.	1.0000
Per unit cost inf.	1.0000
Misc. cost inflation	1.0000
Land inflation	1.0000
Building inflation	1.0000
CPI	1.0000
GNP Deflator	1.0000
Nat. net farm income	1.0000

FIRST CORRELATION MATRIX

Spring Wheat Yield	.7546	.4954
Barley Yield	.0000	1.0000

SECOND CORRELATION MATRIX

Spring Wheat Price	.4283	.7561
Barley Price	.0000	1.0000

Seed for random number generator is 46798.

CROP NAME	1991
Spring Wheat	.0000
Fallow	.0000
Oats	.0000
Barley	.0000
Blank	.0000

FIXED LOAN RATES	
Spring Wheat	.0000
Fallow	.0000

Oats	.0000
Barley	.0000
Blank	.0000

REQUIRED ACREAGE IN SET-ASIDE (PERCENT)

Spring Wheat	.0000
Fallow	.0000
Oats	.0000
Barley	.0000
Blank	.0000

OPTIONAL ACREAGE IN PAID DIVERSION (PERCENT)

Spring Wheat	.0000
Fallow	.0000
Oats	.0000
Barley	.0000
Blank	.0000

PAYMENT RATE/ACRE ON PAID DIVERSION

Spring Wheat	.0000
Fallow	.0000
Oats	.0000
Barley	.0000
Blank	.0000

OPTIONAL ACREAGE IN PIK DIVERSION (PERCENT)

Spring Wheat	.0000
Fallow	.0000
Oats	.0000
Barley	.0000
Blank	.0000

PAYMENT RATE/ACRE ON PIK DIVERSION

Spring Wheat	.0000
Fallow	.0000
Oats	.0000
Barley	.0000
Blank	.0000

MAXIMUM REDUCTION IN FORMULA LOAN WHEN
CALCULATING ADJUSTED LOAN (PERCENT)

Spring Wheat	.0000
Fallow	.0000
Oats	.0000
Barley	.0000
Blank	.0000

STORAGE COSTS FOR CCC LOANS

Spring Wheat	.0000
Fallow	.0000
Oats	.0000
Barley	.0000
Blank	.0000

MINIMUM LEVELS FOR FORMULA LOANS

Spring Wheat	.0000
Fallow	.0000
Oats	.0000
Barley	.0000
Blank	.0000

MINIMUM REDUCTIONS IN FORMULA LOANS FROM
PREVIOUS YEAR (IN PERCENT)

Spring Wheat	.0000
Fallow	.0000
Oats	.0000
Barley	.0000
Blank	.0000

PERCENT OF MEAN HISTORICAL MARKET PRICE
USED TO CALCULATE FLEXIBLE LOANS

Spring Wheat	.0000
Fallow	.0000
Oats	.0000
Barley	.0000
Blank	.0000

PERCENT OF BASE ACREAGE ELIGIBLE FOR
DEFICIENCY PAYMENTS

Spring Wheat	.0000
Fallow	.0000
Oats	.0000
Barley	.0000
Blank	.0000

PRODUCTION SLIPPAGE ON IDLED ACREAGE (PERCENT)

Spring Wheat	.0000
Fallow	.0000
Oats	.0000
Barley	.0000
Blank	.0000

PER ACRE CONSERVATION RESERVE PAYMENTS BY CROP

Spring Wheat	.0000
Fallow	.0000
Oats	.0000
Barley	.0000
Blank	.0000

FIXED MARKETING LOAN -
REPAYMENT LEVEL AS A PERCENT OF NONRECOURSE LOAN

Spring Wheat	.0000
Fallow	.0000
Oats	.0000
Barley	.0000
Blank	.0000

VARIABLE MARKETING LOAN -
DIFFERENCE BETWEEN WORLD PRICE AND MARKET PRICE

Spring Wheat	.0000
Fallow	.0000
Oats	.0000
Barley	.0000
Blank	.0000

PERCENT OF ADVANCE DEFICIENCY AND FINLEY PAYMENTS
PAID IN PIK CERTIFICATES

Spring Wheat	.0000
Fallow	.0000
Oats	.0000
Barley	.0000
Blank	.0000

PERCENT OF REMAINING DEFICIENCY AND FINLEY PAYMENTS
PAID IN PIK CERTIFICATES

Spring Wheat	.0000
Fallow	.0000
Oats	.0000
Barley	.0000
Blank	.0000

CROP INSURANCE GUARANTEED YIELD LEVELS (PERCENT)

Spring Wheat	75.0000
Fallow	.0000
Oats	.0000
Barley	75.0000
Blank	.0000

CROP INSURANCE PRICE ELECTION

Spring Wheat	2.5000
Fallow	.0000
Oats	.0000
Barley	2.5000
Blank	.0000

CROP INSURANCE PREMIUM (PER \$100 COVERAGE)

Spring Wheat	6.0000
Fallow	.0000
Oats	.0000
Barley	6.0000
Blank	.0000

GRAMM-RUDMAN PAYMENT REDUCTION LEVELS (PERCENT)

0.

PAYMENT LIMITATIONS:

Deficiency payment	0.
Finley payment	0.

HISTORICAL YIELDS USED TO CALCULATE PROVEN YIELD

CROP NAME	1990	1989	1988	1987	1986
Spring Wheat	44.10	44.10	36.70	45.90	.00
Fallow	.00	.00	.00	.00	.00
Oats	.00	.00	.00	.00	.00
Barley	39.70	30.90	35.30	67.00	.00
Blank	.00	.00	.00	.00	.00

HISTORICAL PRICES USED TO CALCULATE VARIABLE LOANS

Spring Wheat	.00	.00	.00	.00	.00
Fallow	.00	.00	.00	.00	.00
Oats	.00	.00	.00	.00	.00
Barley	.00	.00	.00	.00	.00
Blank	.00	.00	.00	.00	.00

FORMULA LOAN FOR 1990:

Spring Wheat	=	.000
Fallow	=	.000
Oats	=	.000
Barley	=	.000
Blank	=	.000

PERCENT OF GROSS REVENUE SUBTRACTED TO PARTICIPATE

IN GOVERNMENT PROGRAM	
Spring Wheat	.0000
Fallow	.0000
Oats	.0000
Barley	.0000
Blank	.0000

BUSINESS ACTIVITY	MONTHS IN WHICH THE FOLLOWING TRANSACTIONS ARE PERFORMED				
	Spring Wheat	Fallow	Oats	Barley	Blank
Crop placed in loan					
Crop taken out of regular loan					
PIK certificates sold					
CRP payments received					
Marketing loan repaid					
Crop insurance premiums paid	September	September	September	September	September
Crop insurance indemnities pd	October	October	October	October	October

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CASH FLOW STATEMENT FOR 1991

	January	February	March	April	May	June	July	August	September	October	November	December
CASH AVAILABLE												
Beginning Cash	0.	100.	0.	100.	0.	0.	0.	0.	0.	0.	0.	0.
Milk and Livestock Prod	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Crop receipts	3551.	0.	29596.	2368.	0.	0.	3551.	0.	0.	2368.	0.	76949.
Cull Livestock Sales	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Direct Government Paymt	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Direct Government Loans	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Other Government Paymts	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Miscellaneous Income	0.	0.	0.	0.	0.	0.	0.	0.	0.	18939.	0.	0.
TOTAL AVAILABLE CASH	3551.	100.	29596.	2468.	0.	0.	3551.	0.	0.	21307.	0.	76949.
CASH REQUIRED												
Per Unit Costs	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Feed Costs	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Misc. Livestock Expense	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Material Costs	0.	0.	0.	0.	4080.	0.	0.	0.	0.	0.	0.	0.
Chemical Costs	0.	0.	8750.	10500.	0.	7024.	7526.	0.	0.	0.	5310.	5690.
Fuel Costs	0.	846.	976.	897.	1138.	30.	32.	0.	0.	0.	655.	1665.
Labor Costs	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Insurance Premiums	0.	0.	0.	0.	0.	0.	0.	7864.	9212.	0.	0.	0.
Repair Costs	0.	338.	390.	564.	1258.	65.	70.	0.	0.	0.	7392.	3605.
Equipment Lease Costs	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Equipment Down Payment	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Land Cash Rent Costs	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Net Cash Withdrawals	3006.	3006.	3006.	3006.	3006.	3006.	3006.	3006.	3006.	3006.	3006.	3006.
Misc. Crop Expenses	100.	200.	275.	200.	100.	100.	100.	100.	100.	100.	100.	100.
Loan payments:												
Intermediates	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Long-term	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4475.
Government Loans	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Tax payments:												
Federal income	0.	0.	8800.	0.	0.	8800.	0.	0.	8800.	0.	0.	8800.
State income	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Local property	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1872.	0.
Self-employment	0.	0.	275.	0.	0.	275.	0.	0.	275.	0.	0.	275.
TOTAL REQUIREMENTS	3106.	4390.	22472.	15167.	9582.	19300.	10734.	3106.	20044.	12318.	18336.	27615.
TOTAL AVAILABLE CASH LESS												
TOTAL REQUIREMENTS	446.	-4290.	7124.	-12699.	-9582.	-19300.	-7182.	-3106.	-20044.	8989.	-18336.	49334.
PLUS: Cash from savings	0.	4290.	0.	12699.	734.	0.	0.	0.	0.	0.	0.	0.
NET CASH POSITION	446.	0.	7124.	0.	-8848.	-19300.	-7182.	-3106.	-20044.	8989.	-18336.	49334.
LESS: Cash added to savings	346.	0.	7024.	0.	0.	0.	0.	0.	0.	0.	0.	0.
LESS: Cash used to reduce operating loan	0.	0.	0.	0.	0.	0.	0.	0.	0.	8989.	0.	49334.
ADD: Transfer to operating loan	0.	0.	0.	0.	8848.	19300.	7182.	3106.	20044.	0.	18336.	0.
ENDING CASH ON HAND	100.	0.	100.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ENDING STATUS (PRINCIPAL + INTEREST)												
Savings	10448.	6241.	13363.	734.	0.	0.	0.	0.	0.	0.	0.	10000.
Operating loan	0.	0.	0.	0.	8904.	28451.	36061.	39668.	60375.	52131.	71284.	22571.

PARTNERSHIP INCOME STATEMENT FOR EACH YEAR
1991

CASH FARM INCOME	
Crop Receipts	118383.
Milk and Livestock Receipts	0.
Direct Government Payments	0.
Crop Insurance Indemnities	18939.
Direct Government Loans	0.
Less: Repayment of Government Loans	0.
Other Farm Income	0.
Savings Interest	356.
Other Government Payments	0.
TOTAL CASH RECEIPTS	137678.
CASH FARM EXPENSES	
Per Unit	0.
Materials	4080.
Chemicals	44800.
Fuel	6239.
Labor	0.
Insurance Premiums	17076.
Feed Purchases	0.
Misc. Livestock Expenses	0.
Equipment Repair	13683.
Equipment Lease	0.
Cash Rent	0.
Interest:	
Operating Loan	4082.
Equipment and Livestock	0.
Land and Buildings	2250.
Other	0.
Property Taxes	1872.
Misc. Crop Expenses	1575.
TOTAL CASH EXPENSES	95658.
NET CASH FARM INCOME	43221.
+ Ending crop inventories	0.
+ Change in value of crops in ground	0.
- Economic depreciation	
Equipment	19251.
Long term assets	356.
= NET FARM INCOME	23614.
- Federal income tax	9561.
- Social security	536.
- All state taxes	0.
= NET INCOME AFTER TAXES (NIAT)	13517.
+ Land capital gains	0.
= NIAT AND CAPITAL GAINS	13517.
- Net family withdrawals	36068.
+ Change in nonfarm net worth	0.
= CHANGE IN TOTAL NET WORTH	-22551.

TAX INCOME STATEMENT FOR EACH YEAR
1991

CALCULATION OF BUSINESS TAXABLE INCOME:	
Net cash farm income	43221.
- Depreciation:	
Equipment	12044.
Buildings	2000.
Section 179 expensing	0.
- Tax-deductable living expenses	8601.
Farm income transferred to individu	34020.
Soc Security tax for partner #1	268.
Soc Security tax for partner #2	268.
Family allowance payments	0.

INCOME TAX STATEMENTS FOR PARTNERS

PARTNER #1:

Share of farm taxable income	17010.
+ Off-farm income	0.
- Carryover net operating loss	0.
- Charitable contributions	550.
- Income equalisation deposits	-5000.
Taxable income	21460.
Federal income tax	4780.
Medicare Levy	268.
Total deposits in income equal.	0.
Average income tax rate	.223

PARTNER #2:

Share of farm taxable income	17010.
+ Off-farm income	0.
- Carryover net operating loss	0.
- Charitable contributions	550.
- Income equalisation deposits	-5000.
Taxable income	21460.
Federal income tax	4780.
Medicare Levy	268.
Total deposits in income equal.	0.
Average income tax rate	.223

MARKET VALUE BALANCE SHEET

	INITIAL	1991
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ASSETS:

Ending cash on hand	0.	0.
Ending cash in savings	10000.	0.
Ending crop inventories	0.	0.
Value of crop in ground	0.	0.
Market value of machinery	172918.	153667.
Market value of land	520000.	520000.
Market value of residence	15000.	14644.
Market value of buildings	0.	0.
Mkt. value of off-farm invest.	10000.	0.

TOTAL VALUE OF ASSETS	727918.	688311.
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LIABILITIES:

Outstanding operating loan	0.	22571.
Accrued taxes		
-Federal	0.	-22439.
-State	0.	0.
-Self-employment	0.	-464.
Outstanding Government loan	0.	0.
Machinery debt	0.	0.
Land and buildings debt	15000.	12775.

TOTAL LIABILITIES	15000.	12444.
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EQUITY	712918.	675867.
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EQUITY PLUS LIABILITIES	727918.	688311.
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