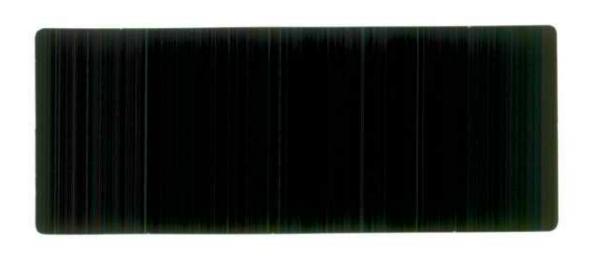


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WORKING PAPER #10

Revisions to the Treatment of Imputed House Rents in the Canadian Farm Accounts
1926 - 1979

Mike Trant, Agriculture Division Statistics Canada 1986



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The responsibility for the analysis and interpretation of the data is that of the authors and not of Statistics Canada.

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FORWARD

The general objective of the Working Paper series is to communicate new developments in the Agriculture/Natural Resources Division. The range of topics is diverse. Examples include procedures for assessing data quality, explanation and justification for new data series or a revision to data series, distribution of new and often experimental data to generate discussion and feedback, and issue-oriented analytic reports that use Statistics Canada data relating to agriculture. A parallel series of Methodology Reports is designed to document and explain on-going systems and procedures.

The present paper by Mike Trant explains the revisions to the farm income accounts arising from reviewing the imputed house rent component of income-in-kind.

ABSTRACT

This publication explains revisions in the treatment of farm house expenses. These revisions were incorporated in the farm income estimates in May 1979. The revisions involved two major changes, the first being the elimination of imputed house rent from the farm accounts and the second being the subtraction, from farm business expenses, of those costs associated with the personal use of farm dwellings.

The revisions are explained through a presentation of the background regarding the logic and concepts originally used for handling farm house expenses in the accounts and through the identification of the conceptual problems inherent in the original method. This is followed by a detailed description of the revisions to the treatment of the farm expenses associated with the farm house.

Ray D. Bollman.

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1.0 INTRODUCTION

The purpose of this publication is to explain revisions in the treatment of farm house expenses which were incorporated in the farm income estimates in May 1979. The estimates are published in Farm Net Income (Catalogue 21-202) and the series has been revised back to 1926 to provide comparable historical data. The revisions involve two major changes the first being the elimination of imputed house rent from the farm accounts and the second being the subtraction, from farm business expenses, costs associated with the personal use of farm dwellings.

In reality the term imputed rent as used in the farm accounts was really a misnomer as it was used solely in an attempt to adjust the income side of the farm accounts for personal or household expenses hidden among farm business expenses. The objective was to provide a "pure" estimate of net income from farming operations.

The term "imputed rent" suggests an income stream that is not directly observed but which accrues to an individual. The consequence of not being able to identify a flow of cash for rent has two implictions for interpreting net farm income estimates. First it means that in evaluating the welfare of the farmer with non-farmers one must increase farmer income by an imputed return since the farm house is in effect rent free accommodation. Second, as part of the farm house or its services are often used in the farm business, one must be able to identify the business portion of house expenses and ensure that they are included in total farm business expenses.

The revisions are explained through a presentation of the background regarding the logic and concepts originally used for handling farm house expenses in the accounts and through the identification of the conceptual problems inherent in this method. This is followed by a description of the revisions to the treatment of the farm expenses associated with the farm house.

2.0 Traditional Method of Treating Farm House Expenses

The treatment of farm house expenses has been under review by the Agriculture Division since 1971. The review was initiated by users of the income-in-kind series of which imputed house rent is a large component. Users were finding that the income-in-kind estimates were increasing rapidly in comparison to net farm income. For instance, in Prince Edward Island, income-in-kind contributed over 50 percent of reported net farm income in 1971. Subsequent examination of the income-in-kind series identified the imputed house rent component as the major cause of the increase. Furthermore, farmers in Prince Edward Island received more "income" from imputed house rents than from other source of net farm income in 1971. This raised questions regarding the method for calculating imputed house rent and the justification for ascribing an imputed rent to net farm income in the first instance.

See Statistics Canada, Agriculture/Natural Resources Division series regarding income-in-kind.

The original reason for including imputed house rent as a component of net farm income was to offset the over-estimation of farm business expenses resulting from personal use of the farm home. The total expenditure by farmers for taxes, interest, insurance, house repair and house depreciation was included in the farm accounts - no attempt was made to ascertain the farm business share of house expenses. The inclusion of personal expenses among farm business expenses meant that the farm was being billed for charges which were not necessarily legitimate business expenses. If no attempt had been made to offset the personal use portion of farm house expenses, published net farm income figures would have underestimated farm incomes. However, the approach taken to offset overestimated expenses actually overcompensated the income side of the farm business.

Imputed house rents were calculated not as an opportunity cost but as a shadow cost. Shadow costs being estimates of costs not directly observed though they are incurred. Depreciation on a car could be considered a shadow cost. It is incurred but not directly observed.

The methods for imputing housing costs as described in "Methods, Sources and Concepts Used in Estimating Farm Income of Farm Operators²", was accomplished by estimating shadow costs for building repairs, depreciation, interest on investment in the farm house and property taxes where applicable. These costs were then totaled for the estimate of imputed house rent.

As noted above, the old methodology actually overcompensated the income side of the farm accounts. Some of the cause for overcompensation was the result of inappropriate building repair and depreciation rates. For instance, farm house repairs were calculated as one percent of the total value of farm houses. In some years, this resulted in house repair costs that were higher than total repair and maintenance expenses for all farm buildings.

The concepts and calculations outlined in the manual "Methods, Sources and Concepts" functioned fairly well until 1971 when imputed house rent, as a proportion of net farm income, increased substantially. Basic assumptions of the family farm — a one house family that lived on the farm where they worked and received the majority of their income — began to appear dated and unrealistic.

In theory, an estimate of the income stream accruing to a farmer, as a result of being able to live in a farm house, maintained by the farm business (imputed rent) and the costs to the farm business associated with maintaining the house should be equal. Therefore, removal of the

^{2 &}quot;Methods, Sources and Concepts Used in Estimating Farm Incomes of Farm Operators" was a description of net income data and methodology. The publication was prepared by W.G. Morris in 1963 and details methods of calculation, sources of data and concepts used in the preparation of farm income estimates. It also outlines methods and sources used prior to 1963 which differed from those in use when the publication was written.

imputed house rent from the income side of the accounts and the simultaneous removal of the dwelling costs from the expense side of the accounts should not change the net farm income figure. Because of inappropriate methodology being used, this was not the case and it was necessary to review and revise the treatment and calculation of farm dwelling expenses and imputed rents.

3.0 Revision Method

The revisions to the series provide figures which are more consistent from the farm business point of view in terms of income and expenses. Furthermore, the revised approach has a second advantage of bringing income and expenses for the farming sector into line with the way figures are presented by statistical agencies for other sectors of the economy.

Imputed house rent figures may still be required but they can be separated from farm income estimates and provided in a manner more like one would expect rental income to be presented. A new imputed house rent figure might be calculated by multiplying the estimated capital value of houses by an opportunity cost of investment such as the current Canada Savings Bond rate.

The revisions of net farm income have been made back to 1926. The revised farm income series should provide a historical series of comparable data for users wishing to analyze farm income over time or evaluate the effects of the revision.

The revision procedure involves two changes. First, separating the farm business portion and the farm household portion of each expenditure item associated with the farm in order to obtain a clearer indication of farm business expenses. The second step involves removing the estimate of imputed house rent from income-in-kind.

The revisions do not involve adjustments for electricity, telephone and heating fuel expenses as the personal use component of these expenditures has been excluded from farm expenditures for some time.

The revisions involve mainly a technical change. The revisions reflect only the farm business portion of dwelling costs in farm expenses with imputed house rents treated as rental income, not as income from the farm business. These are not changes in the concept of net farm income but changes in the treatment of farm dwelling expenses and the concept of income—in—kind.

In diagrammatic form the changes in the treatment of farm dwelling expenses are shown in Figure 1. The detailed description of the changes and revision procedures are summarized in the next section which is organized into an explanation of the difference in treatment between tenant-occupied and owner-occupied farms. The arithmetic explanation of all the revisions are displayed in Appendix 1.

3.1 Tenant-Occupied Dwellings

In the tenant-occupied dwelling, interest on indebtedness, repairs on buildings, depreciation and property taxes are all covered in rental payments and included in the expense item "gross farm rent". No revision was made to gross farm rent for the tenant farmers' personal use of farm dwellings as a result of the difficulty and limited impact of making an adjustment. The justification for the decision was that the impact of an adjustment to expenses is minor and adjustments were not certain to improve the estimate since there is a lack of information to identify the house rent component of gross farm rent. Furthermore, tenant farmers comprised less than 6 percent of all Canadian farmers om 1976 and the rent paid by tenant farmers represents only a small portion of all gross farm rent. Most of the gross farm rent estimate represents payments made by farmers to rent land or community pasture to augment the land they own. As a result, the impact of any adjustment to gross farm rent for personal use of a farm dwelling will be limited. The quality of rented housing also tends to be lower than owner-occupied housing further reducing the impact of adjustment.

The gradual trend towards increasing numbers of tenant farmers in recent years may result in a need to reassess the decision in the future but as tenant farmer numbers are still far below the level recorded in the 1930's, the impact on net income of any adjustment to expenses is likely to be very minimal.

In cases where tenants directly pay all or part of the costs of house repairs or insurance in addition to gross rent, the farm business share of these expenses are included in the appropriate operating expense item. This has only been done since 1976 as this was the first year there was information identifying these expenses. Given the relatively small impact of such expenses no adjustments were made for the period prior to 1976.

3.2 Owner-Occupied Dwellings

3.2.1 Farm Business Portion of Farm Expenses

The farm dwelling often serves as a farm office and as a consequence, a portion of dwelling costs are legitimate farm business expenses.

Revenue Canada, Taxation allows up to 25 percent of dwelling costs for dwelling expenses attributable to business use, that is for interest on indebtedness, depreciation, taxes, repairs and maintenance, and insurance. However, provincial agriculturalists and statisticians have indicated that 25 percent is too high on an aggregate basis and that a more realistic estimate would be 15 percent. Revenue Canada, Taxation figures also indicate that the average claim for business use of the farm house is below their 25 percent guideline. As a consequence, the decision for revising farm expenses was to retain 15 percent of dwelling costs as a farm expense. This decision will obviously affect net farm income since 15 percent of dwelling costs will result in smaller

expenses for farms and will result in a slightly larger net farm income than if a full 25 percent of dwelling costs were ascribed to the farm business.

3.2.2 Value of Farm House

Estimates of farm house values were first compiled from information collected in the 1958 Farm Income and Expenditure Survey (FIES). For the period prior to the 1958 benchmarks, a lack of data necessitated adoption of the 1958 ratios of house to land and building values.

The 1958 benchmarks have been used in conjunction with recent survey data and the 1971 Census for series on the farm house value as a proportion of total land and building value. In recent years, estimates of the farm house, farm service buildings, and farmland values have been collected by survey.

3.2.3 Depreciation Rate on Farm House

A depreciation rate is not normally assigned to residential housing, urban or rural, by professional appraisers since houses depreciate fairly slowly, usually lasting the lifetime of the owner and often lasting into perpetuity. That is not to say that houses do not depreciate but rather that assigning them an appropriate depreciation rate is difficult because of their long life. When a depreciation rate is required the standard rule of thumb used by the Appraisal Institute of Canada is 2 percent, straight line depreciation, a house life of 50 years. This 2 percent per annum depreciation rate had its beginning in a 1938 study of the estimated life span of a house conducted by the Assessment Department of the City of Montreal. The emerging U.S. Appraisal Institute adopted the study's findings and they were eventually adopted by the Appraisal Institute of Canada³.

The straight line 2 percent per annum has remained a rule of thumb because there is still a great deal of controversy regarding an appropriate rate. Some recent studies indicate that in the short term, new housing may actually appreciate in value. It is still unclear whether it is the actual house or the land on which it is built that appreciates. Whether this is a real or inflationary increase one cannot be certain, but over the long term, it appears that housing does depreciate. An exaggerated example is the pioneer's log cabin.

Farm buildings such as barns, drive sheds and other facilities have been depreciated as a group on a 3.5 percent straight line method (lifespan 28.5 years) since 1945. Before the 1945 rate used was 4 percent. Barns and farm storage facilities are a part of the farm business. They are used in producing crop and livestock products. Buildings such as barns are subject to higher depreciation rates than a house because of wear

³ Appraisal Institute of Canada, Winnipeg, Manitoba.

and tear from animals and machinery and because they are more sensitive to technological change than a dwelling. Consequently, there appears justification to treat the farm house differently than the other farm buildings and reduce the house depreciation rate to 2 percent or less from the rate of 3.5 percent originally applied.

The method used in the revisions was to apply a 2 percent depreciation rate back to 1945, then use a series of transition rates for the period 1935 to 1945 to smooth out the difference between the early depreciation rates of 4 percent used in the historical series for the period prior to WWII, and which was probably quite appropriate for that period. The depreciation rates for the transition period are 3.5 percent in the period 1935 to 1938 and 3 percent between 1939 and 1945.

3.2.4 House Proportion of Property Taxes

The method of handling property taxes was to obtain the farm tax levy net of rebates for owner-operated land from provincial finance and municipal affairs departments or alternatively obtain the property tax estimate using a probability survey. Revisions were made in all provinces except Manitoba, Saskatchewan and Alberta, as these provinces did not have taxes on farm buildings.

Estimates of farm property taxes net of rebates on land are already reported in the farm expense series. However, the farm dwelling portion is included with total taxes. Revision of farm taxes involved identifying the personal use portion of farm dwelling taxes and subtracting them from the total farm tax expense item.

A number of provinces such as Ontario and Quebec rebate a portion of property taxes while others, such as British Columbia place an exemption on the first few thousand dollars of agricultural land. Estimates of property taxes are compiled, net of rebates and exemptions. Conceptually, provincial rebates and exemptions are for land not buildings. As a consequence, in provinces where there is some type of tax concession on farmland, property tax figures reflect a larger proportion of tax for buildings to land than the market value relationship between buildings and land values might indicate. This causes some difficulty in estimating the house proportion of property taxes as it is based on the ratio of the house value to land and building value. The calculations may therefore slightly underestimate the house portion of property taxes but with the estimate so small, it was thought impractical to refine the method.

The property tax revision involved multiplying the house proportion of land and buildings, by the total farm tax levy net of rebates. This was then multiplied by the personal use portion of the dwelling and the result, the personal portion of farm taxes, was subtracted from total farm taxes net of rebates.

Property tax changes in the provinces of Ontario in 1970 and 1973 and New Brunswick in 1975 made it necessary to make slight alterations in the manner that the revision was done in these provinces. From 1970 to

1972, Ontario offered farmers a 25 percent rebate on municipal taxes on the assumption that this 25 percent reduction meant that farmers would pay all the tax on their buildings but only 50 percent of the tax on their land. For 1970 to 1972, the tax estimate in Ontario 2/3 of the net tax multiplied by the proportion of house value to building value which is in turn multiplied by .15. The net tax times 2/3 is calculated since under the Ontario Farm Tax Reduction Program between 1970 and 1972. It is estimated that 2/3 of the property taxes that farmers paid were for taxes on buildings alone. The proportion of the property tax on land was only 1/3 as the Ontario Farm Tax Reduction Program provided for a tax rebate amounting to 50 percent of the municipal taxes on farmland. No reductions were made on farm building taxes. In 1973, the province raised the rebate to 50 percent arguing that farmers would only be paying tax on farm buildings. This means that since 1973, the calculation is the net tax multiplied by the proportion of house value to total building value multiplied by the business share of the farm house (15 percent).

In 1975 the New Brunswick municipal tax on the farm house was the same as any other rural residence. Farm property taxes in New Brunswick have not included the farm house since 1974. To overcome this difficulty in New Brunswick, the farm house portion of property taxes are calculated by,

where

HV - house value

LBV - total land and building value

LBVXH - land and building value excluding house

TAXES - property taxes.

3.2.5 Repair and Maintenance Expense on House

An annual rate of one percent of the value of farm land and buildings has been applied in the past against repairs and maintenance to buildings. The one percent rate is based upon a relationship established by the 1958 Farm Income and Expenses Survey (FIES) although there does not seem to be much documentation regarding the rate. One percent of capital value may be a fairly good estimate of repair and maintenance costs on buildings such as barns or storage facilities which housing livestock, however, the rate may be a little high when considering annual maintenance costs on a house. For instance, when house repairs were calculated at one percent of dwelling value, house repairs often exceeded total farm repair and maintenance expenses. A more appropriate method of arriving at house repairs is outlined in the following paragraphs.

First, the relationship between house repairs and total farm repair expenses was established as there was historical information regarding total repairs but only from 1958 and 1970 surveys was house repair information recorded. The 1958 and 1970 benchmarks were used to calculate ratios between farm house and total farm repair expenses for each province for the period 1958 to 1970. A projection was then made to bring the trends to the present.

For the period 1926 to 1958, the only benchmark for the proportion of house repairs to total farm repair expenses was the 1958 FIES. To overcome the problems and establish some relationship between house and farm repair expenses the 1958 ratio of farm repair expenses to house values were adopted as indices for the 1926 to 1958 period.

With the indices established, the next step was to multiply the indices by the total farm building repair figure which resulted in the repair expenses for the farm house. The farm house repair expenses were then multiplied by the personal use portion of the farm house (85%). Following that the personal use portion of farm house repairs were subtracted from total farm building repairs to arrive at the farm business portion of house repair and maintenance expenses.

3.2.6 Interest on Indebtedness

A series on outstanding farm debt by province has been compiled by the Agriculture/Natural Resources Division since 1970. The debt outstanding and interest estimates can be divided into two components, interest on farm loans secured by mortgages and interest on all other farm debt.

Revision meant subtracting the personal use portion of interest on indebtedness from farm expenses and is similar to the adjustment to expenses for building repairs. The revisions involved multiplying the farm dwelling portion of the value of land and buildings by the farm mortgage interest estimate, multiplying this by the personal use portion of the farm dwelling and subtracting the personal use portion of farm mortgage interest from the total interest expenses paid by farmers.

3.2.7 Insurance on House

The series is actually net insurance or insurance premiums minus claims. Before 1951, farm insurance expenses were computed as a part of a group of miscellaneous expenses including fencing, custom work and non-specified farm supplies and services. Figures for pre-1951 miscellaneous expenses are published, but there are no records regarding the component parts, specifically insurance expenses before the year 1951. As the figures regarding insurance for the period prior to 1951 needed to be reconstructed, the revision of the series is best explained in two parts, (1) the period prior to 1951, and (2) the period after 1951.

For the pre-1951 period, subtracting the farm dwelling proportion of farm insurance expenses from miscellaneous expenses was accomplished by establishing the insurance portion of miscellaneous expenses and the property portion of farm insurance from 1951 information and drawing the trend back through the series. The property portion of farm insurance is multiplied by the farm house proportion of the value of land and building, then the result multiplied by the personal use portion of farm dwelling costs. The amount remaining is the amount which should be subtracted from miscellaneous farm expenses. It would have been more accurate to allocate the house insurance portion of total property insurance by determining the house value as a proportion of total building value not as a proportion of total land and building value, but the extra degree of precision obtained was so insignificant that the practice explained in the previous paragraph was followed. It is recognized that land is not normally insured for fire, liability and theft.

In the post-1951 period, the property insurance portion of farm insurance is identifiable. Consequently, to subtract the personal use portion of farm house insurance for the post-1951 period, one multiplies the property portion of farm insurance by the farm house portion of land and building value which is then multiplied by the personal use portion of farm dwelling costs.

4.0 The Effect of Imputed House Rent Revision on the Net Farm Income Series

The revised method for treating farm house expenses in the farm accounts is built on a sounder conceptual base and appears more likely to be able to accommodate changes in agriculture and agricultural data without further changes in approach.

As one can see from Tables 1 to 10, the difference between the original and revised figures for the years 1951, 1961, 1971 and 1976 is prominent, especially in the more recent years. This implies that the original treatment was at one time probably a good representation but one which was becoming less accurate in more recent years. Though the trends shown on the tables are quite correct, the actual amount of change between the original and revised estimates are not totally the result of the revisions discussed in this paper. At the time that these revisions were made some other revisions were made to the methods used in estimating farm expenses. Probability surveys and administrative data were being adopted and revisions were made to some expenses such as machinery, electricity, telephone and property tax estimates back as many as 25 years. Also, intercensal revisions were being made as a consequence of information from the 1976 Census. This resulted in a number of small adjustments being made in farm cash receipts, farm inventories and the estimated value of home consumption of farm grown products. All these adjustments, though numerous, did not have a large effect on farm expenses in comparison to the revisions caused by changes in the treatment of house rent.

The tabulations in Tables 1 to 10 show the magnitude of the effect in the farm net income accounts. The effect of eliminating the imputed house rent component of farm income is reflected in income-in-kind. In Table 10, comparison of the 1951 original and revised estimates show about a \$114 million or 35 percent drop in income-in-kind. In contrast there was an \$866 million or 84 percent decrease in income-in-kind in 1976. In terms of expenses, the revisions resulted in a reduction of approximately \$87 million or 26 percent of all farm expenses for building taxes, repairs, depreciation, mortgage interest and insurance. In 1976 this reduction in expenses amounted to \$277 million or 14 percent of those expenses. The single most important reduction in farm expenses comes as a result of the adjustments made to house depreciation charges. Interest on indebtedness is second in importance, with taxes, insurance, repair and maintenance expenses all having a limited impact.

On a provincial basis before revision, Ontario and British Columbia had the largest provincial income-in-kind estimates per farmer and as a consequence displayed the greatest drop in income-in-kind and net farm income as a result of revision. This is especially apparent in the year 1976.

In Quebec the effect of the revision to income-in-kind and the resulting net income estimates for 1971 and 1976 is anomoly among provinces. The effects of revisions to the treatment of house rent in Quebec was the same as in the other provinces, a large decrease in income-in-kind and lower farm expenses. However, an increase in farm cash receipts as a consequence of intercensal revisions off-set the decrease in farm income resulting from imputed house rent revisions so that the net effect on farm income was inconsequential.

Conceptually, the revision in the treatment of imputed house rents should have little effect on farm net income. If estimates had been calculated on a sound conceptual basis, estimates of house rent would have reflected actual farm house expenses and revisions would have resulted in similar amounts being deducted from both the income and the expenditure side of the farm accounts. This would have left the original net income estimate relatively unchanged. In retrospect, it appears that the original imputed house rent series overcompensated for personal expenses charged against the farm business and as a consequence, revisions have resulted in substantial changes for income-in-kind and net farm income estimates.



TABLE 1. Changes in Farm Expenses and Net Income Resulting from Revision in the Treatment of Farm House Expenses

	1951				1961					
	Revised(1)	Before revision	Net change(2)	Percent change	Revised(1)	Before revision	Net change(2)	Percen		
	\$'000's				\$'000's					
Prince Edward Island										
Taxes	249	349	-100	-29	288	475	-187	-39		
Interest on debt	575	642	-67	-10	955	1,117	-162	-15		
Building repairs	392	797	-405	-51	481	966	-485	-50		
Miscellaneous expenses - insurance	963	942	21	2	998	1,075	-77	-7		
8uilding depreciation	529	955	-426	-45	542	1,222	-680	-56		
Operating and depreci- ation charges	13,383	14,360	-977	-7	19,707	21,212	-1,505	-7		
Income-in-kind	3,440	4,909	-1,469	-30	2,215	4,648	-2,433	-52		
Realized net income(3)	14,842	15,334	-492	-3	5,947	6,875	-928	-14		
Total net income(4)	15,413	15,905	-492	-3	6,729	7,657	-928	-12		
	1971 1976									
	Revised(1)	Before revision	Net change(2)	Percent change	Revised(1)	Before revision	Net change(2)	Percen		
	\$'000's				\$'000's					
axes	467	700	-233	-33	780	1,149	-369	-32		
Interest on debt	2,133	3,771	-1,638	-43	4,234	6,222	-1,998	-32		
Building repairs	1,094	875	-219	-25	1,545	3,168	-1,623	-51		
Miscellaneous expenses - insurance	2,440	1,542	898	58	4,565	3,080	1,485	48		
Building depreciation	1,154	2,101	-947	-45	1,995	3,761	-1,766	-47		
Operating and depreci- ation charges	34,566	36,428	-1,862	~ 5	68,237	69,416	-1,179	-2		
Income-in-kind	1,358	5,399	-4,041	-75	2,023	8,370	-6,347	-76		
Realized net income(3)	5,172	7,839	-2,667	-94	37,241	43,904	-6,663	-15		
Total net income(4)	3,096	4,829	-1,733	-36	44,120	50,650	-6,530	-13		

TABLE 2. Changes in Farm Expenses and Net Income Resulting from Revision in the Treatment of Farm House Expenses

	1951				1961			
	Revised(1)	Before revision	Net change(2)	Percent change	Revised(1)	Before revision	Net change(2)	Percent change
	\$'000's				\$'000's			
lova Scotia								
axes	877	1,199	-322	-27	1,153	1,810	-657	-36
nterest on debt	472	550	-78	-14	816	975	-159	-16
Building repairs	793	1,738	-945	-54	1,149	2,301	-1,152	-50
tiscellaneous expenses – insurance	1,311	1,358	-47	-3	1,456	1,456	_	~
Building depreciation	1,051	2,000	-949	-90	855	2,003	-1,148	-57
Operating and depreci- ation charges	24,869	27,210	-2,341	-9	31,385	34,605	-3,220	-9
(ncome-in-kind	8,078	11,583	~3,505	-30	3,522	8,009	-4,487	-56
Realized net income(3)	24,800	25,964	-1,164	-4	18,315	19,582	-1,267	-6
Total net income(4)	24,747	25,911	-1,164	-4	18,310	19,577	-1,267	-6
	1971				1976			
	Revised(1)	Before revision	Net change(2)	Percent change	Revised(1)	Before revision	Net change(2)	Percen change
	\$'000's				\$'000's			
axes	1,359	1,759	-400	-23	1,745	1,469	276	19
Interest on debt	2,208	2,962	-754	-25	3,917	5,000	-1,083	-22
Building repairs	1,692	1,697	-13	-1	3,339	5,019	-1,680	-33
Miscellaneous expensea - insurance	3,438	2,198	1,240	56	6,181	4,070	2,111	52
Building depreciation	2,038	3,100	-1,062	-34	4,473	5,093	-620	-12
Operating and depreci- ation charges	53,929	55,976	-2,047	-4	96,209	100,102	-3,893	-4
Income-in-kind	2,134	6,674	-4,640	-70	3,539	9,328	-5,789	-62
Realized net income(3)	13,045	16,416	-3,371	-21	33,743	32,251	1,492	5
Total net income(4)	11,81 5	15,489	-3,674	-24	32,988	31,071	1,917	6

TABLE 3. Changes in Farm Expenses and Net Income Resulting from Revision in the Treatment of Farm House Expenses

	1951				1961			
	Revised(1)	Before revision	Net change(2)	Percent change	Revised(1)	Before revision	Net change(2)	Percent
	\$'000's				\$'000's			
New Brunswick								
Taxes	1,395	1,901	-506	-27	1,517	2,277	~760	-33
Interest on debt	548	628	-80	-13	908	1,070	-162	-15
Building repairs	B42	1,594	-752	-47	978	1,804	-826	-46
Miscellaneous expenses - insurance	1,493	1,532	-39	-3	1,367	1,369	-2	-0.1
Building depreciation	979	1,869	-890	-48	751	1,783	-1,032	-58
Operating and depreci- ation charges	26,284	28,551	~2,267	-В	32,051	34,999	-2,948	-84
Income-in-kind	9,689	13,170	-3,481	-26	4,037	8,383	-4,346	-52
Realized net income(3)	27,111	28,325	-1,214	-4	11,099	12,497	-1,39B	-11
otal net income(4)	27,116	28,330	-1,214	-4	11,909	13,307	-1,398	-11
	1971			1976				
	Revised(1)	Before revision	Net: change(2)	Percent change	Revised(1)	Before revision	Net change(2)	Percent
	\$'000's				\$'000's			
Taxes	863	1,132	-269	-24	1,289	1,178	111	9
Interest on debt	2,806	3,049	-243	~B	5,433	5,924	-491	-8
Building repairs	1,892	1,537	-445	-29	1,754	3,400	-1,646	-48
Miscellaneous expenses - insurance	2,413	1,720	693	40	3,746	3,142	604	19
Building depreciation	1,379	2,150	-771	-36	2,498	3,576	-1,078	-30
Operating and depreci- ation charges	41,625	43,401	-1,776	-4	80,405	79,632	773	10
Income-in-kind	1,891	5,138	-3,247	-63	2,879	7,735	-4,856	-63
Realized net income(3)	12,978	14,538	-1,560	-11	35,561	41,308	-5,747	-14
Total net income(4)	14,170	15,696	-1,526	-14	35,205	40,719	-5,514	-16

TABLE 4. Changes in Farm Expenses and Net Income Resulting from Revision in the Treatment of Farm House Expenses

	1951				1961			
	Revised(1)	Before revision	Net change(2)	Percent change	Revised(1)	Before revision	Net change(2)	Percent
	\$'000's				\$'000's			
Quebec								
Taxes	8,423	10,795	-2,372	-22	10,567	14,640	-4,073	-2B
Interest on debt	7,029	8,012	-983	-12	14,569	17,080	-2,511	-15
Building repairs	6,110	13,550	-7,440	-55	В,726	18,416	-9,690	-53
Miscellaneous expenses - insurance	10,408	10,648	-240	-2	23,920	24,761	-841	-3
Building depreciation	7,802	13,900	-6,098	-44	10,508	19,794	-9,286	-47
Operating and deprecia- tion charges	198,111	215,244	-17,133	-8	299,874	326,719	-26,845	-B
Income-in-kind	54,867	74,703	-19,836	-27	37,662	71,360	-33,698	-47
Realized net income(3)	232,961	235,644	-2,703	-1	155,285	162,138	-6,853	-4
Total net income(4)	245,650	248,353	-2,703	-1	155,023	161,876	-6,853	-4
	1971				1976	· · · · · · · · · · · · · · · · · · ·		
	Revised(1)	Before revision	Net change(2)	Percent change	Revised(1)	8efore revision	Net change(2)	Percen change
	\$'000's				\$'000's			
Taxes	15,953	20,498	-4,545	-22	23,587	24,823	-1,236	-5
Interest on debt	33,549	51,888	-18,339	-35	82,115	99,698	-17,583	-18
Building repairs	16,062	25,471	-9,409	-37	33,105	49,964	-16,859	-34
Miscellaneous expenses - insurance	45,011	42,183	2,828	7	74,658	79,295	-4,637	-6
Building depreciation	18,167	27,388	-9,221	-34	31,45B	49,811	-18,353	-37
Operating and deprecia- tion charges	498,636	545,935	-47,299	-9	1,009,891	1,070,748	-60,857	-6
Income-in-kind	29,375	70,16B	-40,739	-58	44,454	109,850	-65,396	-60
Realized net income(3)	218,430	215,748	2,682	1	404,628	402,315	2,313	1
Total net income(4)	209,069	201,407	7,662	4	408,610	385,688	22,922	59

TABLE 5. Changes in Farm Expenses and Net Income Resulting from Revision in the Treatment of Farm House Expenses

	1951				1961					
	Revised(1)	Before revision	Net change(2)	Percent change	Revised(1)	Before revision	Net change(2)	Percen change		
	\$'000's				\$'000's					
Ontario										
Taxes	17,846	24,551	-6,705	-27	24,954	36,393	-11,439	-31		
Interest on debt	10,615	12,172	-1,557	-13	23,976	27,094	-3,218	-12		
Building repairs	11,773	21,492	-9,719	-45	15,017	25,924	-10,907	-42		
Miscellaneous expenses - insurance	24,386	25,187	-801	-3	47,531	48,582	-1,051	-2		
Building depreciation	10,006	20,816	-10,810	-52	20,828	42,230	-21,402	-51		
Operating and depreci- ation charges	433,175	462,767	-29,592	-6	658,293	705,530	-47,237	-7		
Income-in-kind	53,888	92,627	-38,739	-42	31,012	112,234	-81,222	-72		
Realized net income(3)	404,786	413,933	-9,147	-2	245,249	279,234	-33,985	-12		
Total net income(4)	438,992	448,139	-9,147	-2	273,041	307,026	-33,985	-11		
	1971 1976									
	Revised(1)	Before revision	Net change(2)	Percent change	Revised(1)	Before revision	Net change(2)	Percen change		
	\$'000's				\$'000's					
Taxes	26,189	42,757	-16,386	-38	29,852	41,210	-11,358	-28		
Interest on debt	74,943	77,879	-3,036	-4	183,524	186,595	-3,071	-2		
Building repairs	11,773	21,492	-9,719	-45	46,441	96,727	-50,286	-52		
Miscellaneous expenses - insurance	100,938	83,167	17,771	21	153,361	141,055	12,306	9		
Building depreciation	50,670	87,825	-37,155	-42	126,761	159,670	-32,834	-21		
Operating and depreci- ation charges	1,143,348	1,222,473	-19,125	-2	2,063,040	2,257,650	-199,610	-16		
Income-in-kind	29,305	184,081	-154,776	-84	43,522	390,599	-347,047	-89		
Realized net income(3)	303,582	389,573	-85,991	-22	760,866	960,296	-199,430	-21		
Total net income(4)	306,382	366,431	-60,103	-16	676,711	891,228	-214,517	-24		

TABLE 6. Changes in Farm Expenses and Net Income Resulting from Revision in the Treatment of Farm House Expenses

	1951				1961			
	Revised(1)	Before revision	Net change(2)	Percent change	Revised(1)	Before revision	Net change(2)	Percent change
	\$'000's				\$'000's			
Manitoba								
Taxes	7,041	8,989	-1,948	-22	8,930	11,786	-2,856	-24
Interest on debt	5,198	5,495	-297	-5	В,833	9,299	-466	-5
Building repairs	1,981	3,173	-1,192	-38	2,305	3,677	-1,372	-37
Miscellaneous expenses - insurance	5,118	5,274	-156	-3	5,305	5,439	-134	-3
Building depreciation	2,425	5,420	-2,995	55	3,602	8,046	-4,444	-55
Operating and depreci- ation charges	122,373	128,961	-6,558	-5	153,139	159,185	-6,046	-4
Income-in-kind	17,941	27,489	-9,548	-35	12,243	26,826	-14,583	-54
Realized net income(3)	167,579	170,539	-2,960	2	101,865	110,402	-8,537	-8
Total net income(4)	179,875	179,915	-2,960	-2	44,828	53,365	-8,537	-16
	1971				1976			
	Revised(1)	Before revision	Net change(2)	Percent change	Revised(1)	Before revision	Net change(2)	Percent change
	\$'000's				\$'000's			
Taxes	13,620	17,976	-4,356	-24	18,750	29,503	-10,753	-36
Interest on debt	22,275	29,954	-7,679	-26	57,735	63,327	-5,592	-9
Building repairs	5,653	8,908	-3,255	33	15,118	27,151	-12,033	-44
Miscellaneous expenses - insurance	16,147	12,299	3,848	-31	33,308	22,922	10,386	45
Building depreciation	4,926	12,402	-7,476	-60	10,564	20,543	-9,889	-48
Operating and depreci- ation charges	273,666	288,989	-15,323	-5	646,606	637,413	9,193	1
Income-in-kind	8,624	40,843	-32,219	-79	11,986	69,096	-57,083	-83
Realized net income(3)	103,523	125,267	-21,744	-17	250,480	326,201	-75,721	-23
Total net income(4)	151,625	170,992	-19,367	-11	289,879	360,057	-70,178	-19

TABLE 7. Changes in Farm Expenses and Net Income Resulting from Revision in the Treatment of Farm House Expenses

	1951				1961				
	Revised(1)	Before revision	Net change(2)	Percent change	Revised(1)	Before revision	Net change(2)	Percent	
	\$'000's				\$'000's				
Saskatchewan									
Taxes	15,423	21,044	-5,581	-27	31,923	31,875	-48	-	
Interest on debt	17,132	17,599	-467	-3	25,734	26,523	-789	-3	
Building repairs	2,674	4,959	-2,285	-46	4,138	7,123	-2,985	-42	
Miscellaneous expenses - insurance	11,460	11,814	-354	-3	14,956	14,602	-354	-2	
Building depreciation	3,511	8,470	-4,959	-59	6,871	15,367	-8,496	-55	
Operating and deprecia- tion charges	277,380	291,026	-13,646	-5	339,560	355,390	-15,830	-4	
Income—in—kind	34,984	50,946	-15,962	-31	24,335	52,211	-27,876	-53	
Realized net income(3)	389,019	391,335	-2,316	-1	297,373	309,419	-12,046	-4	
otal net income(4)	529,659	531,975	-2,316	-0.4	88,238	100,248	-12,046	-12	
	1971 1976								
	Revised(1)	Before revision	Net change(2)	Percent change	Revised(1)	8efore revision	Net change(2)	Percen change	
	\$'000's				\$'000's				
Taxes	33,966	48,652	-14,686	-30	43,115	72,888	-29,773	-41	
Interest on debt	53,154	85,427	-32,273	-38	131,860	162,103	-30,243	-19	
Building repairs	12,558	17,640	-5,082	-29	33,933	45,424	-11,491	-25	
Miscellaneous expenses - insurance	35,659	27,430	8,229	30	B6,619	65,717	30,902	47	
Building depreciation	10,818	26,662	-5,844	-22	10,818	26,662	-15,844	-59	
Operating and deprecia- tion charges	563,695	623,168	-59,473	-10	1,308,604	1,309,713	-1,109	~	
Income-in-kind	17,877	85,125	-67,275	-79	21,330	158,983	-137,653	-87	
Realized net income(3)	351,979	370,202	-18,223	-5	1,017,202	1,134,563	-117,361	-10	
Total net income(4)	465,308	447,172	-11,864	-2	1,285,636	1,419,875	-134,239	-9	

TABLE 8. Changes in Farm Expenses and Net Income Resulting from Revision in the Treatment of Farm House Expenses

	1951			1961				
	Revised(1)	Before revision	Net change(2)	Percent change	Revised(1)	Before revision	Net change(2)	Percent change
	\$'000's				\$'000's			
Alberta								
Taxes	10,905	15,011	-4,106	-27	13,874	20,310	-6,436	-32
Interest on debt	11,832	12,298	-466	-4	19,539	20,349	-810	-4
Building repairs	2,574	4,386	-1,812	-41	4,471	7,415	-2,944	-40
discellaneous expenses - insurance	9,684	9,952	-268	-3	16,020	16,363	-343	-2
Building depreciation	3,977	8,688	-4,711	-54	6,649	15,870	-9,221	-58
Operating and deprecia- tion charges	227,077	238,370	-11,363	-5	323,523	341,795	-18,492	-5
Income-in-kind	28,880	44,190	-15,310	-35	19,337	49,279	-29,942	-61
Realized net income(3)	256,399	260,346	-3,947	-2	320,523	241,973	11,450	5
otal net income(4)	395,574	389,521	3,947	1	190,309	210,759	-11,450	-6
	1971				1976			
	Revised(1)	Before revision	Net change(2)	Percent change	Revised(1)	Before revision	Net change(2)	Percent
	\$'000's				\$'000's			
laxes	20,393	32,270	-11,877	-4	26,749	50,547	-23,798	-47
Interest on debt	57,514	67,282	-9,768	-15	159,442	168,283	-8,841	-5
Building repairs	12,374	15,912	-3,538	-22	38,712	32,859	5,853	18
discellaneous expenses - insurance	41,044	31,251	9,793	-31	92,483	68,484	23,999	35
Building depreciation	3,977	8,688	-4,711	-54	46,996	53,340	-7,344	-14
Operating and deprecia- tion charges	603,372	619,137	-15,765	-3	1,449,477	1,355,078	94,399	7
ncome-in-kind	16,122	88,029	-71,907	-82	21,980	155,101	-133,121	-86
ealized net income(3)	205,271	249,968	-44,697	-18	414,316	649,762	-235,446	-36
otal net income(4)	222,415	276,017	-53,602	-19	507,531	733,150	-225,619	-31

TABLE 9. Changes in Farm Expenses and Net Income Resulting from Revision in the Treatment of Farm House Expenses

	1951			1961					
	Revised(1)	Before revision	Net change(2)	Percent change	Revised(1)	Before revision	Net change(2)	Percen change	
	\$'000's				\$'000's				
British Columbia									
Taxes	1,965	2,936	-971	-33	2,278	3,916	-1,638	-42	
Interest on debt	1,952	2,152	-200	-9	3,797	4,346	-549	-13	
Building repairs	941	1,476	-535	-36	1,716	2,716	-1,000	-37	
Miscellaneous expenses - insurance	3,062	3,129	-67	~2	5,233	5,417	-184	-3	
Building depreciation	1,790	3,499	-1,709	-49	2,688	7,011	-4,323	-62	
Operating and depreci- ation charges	56,223	59,705	-3,482	-6	91,390	98,850	-7,460	-8	
Income-in-kind	8,700	14,983	-6,283	-42	5,308	21,002	-15,694	-75	
Realized net income(3)	59,703	62,504	-2,801	-4	48,995	57,229	-8,234	-14	
Total net income(4)	60,567	63,368	-2,801	-4	52,738	60,972	-8,234	-14	
	1971 1976								
	Revised(1)	Before revision	Net change(2)	Percent change	Revised(1)	Before revision	Net change(2)	Percen	
	\$'000's \$'000's								
Taxes	4,669	8,340	-3,671	-44	11,852	13,300	-1,448	-11	
Interest on debt	18,181	12,903	5,278	41	43,810	35,682	8,128	23	
Building repairs	4,678	3,929	749	19	8,359	20,586	-12,227	-59	
Miscellaneous expenses - insurance	15,491	10,358	5,133	50	29,424	22,279	7,145	2	
Building depreciation	6,153	17,079	-10,926	-64	15,321	29,090	-13,769	-47	
Operating and depreci- ation charges	190,777	196,923	-6,146	-3	292,433	296,884	-3,451	-1	
Income-in-kind	6,177	52,061	-46,884	-90	8,716	117,603	-109,887	-93	
Realized net income(3)	36,054	79,826	-43,772	-55	95,630	194,944	-102,314	-52	
Total net income(4)	42,134	87,256	-45,122	-52	96,201	201,209	-105,008	-52	

TABLE 10. Changes in Farm Expenses and Net Income Resulting from Revision in the Treatment of Farm House Expenses

	1951				1961			
	Revised(1)	Before revision	Net change(2)	Percent change	Revised(1)	Before revision	Net change(2)	Percent
	\$'000's	-		· · · · · · · · · · · · · · · · · · ·	\$'000's			
CANADA								
Taxes	64,124	86,735	-22,611	-26	85,484	123,483	-27,998	-23
Interest on debt	55,353	59,548	-4,195	-7	99,027	107,853	-8,826	-8
Building repairs	28,080	53,165	-25,085	-47	38,981	70,342	-31,361	-45
Miscellaneous expenses - insurance	67,885	69,836	-1,951	-3	116,432	119,418	-2,986	-3
Building depreciation	32,070	65,617	-33,547	-51	53,294	113,326	-53,294	-47
Operating and depreci- ation charges	1,378,805	1,466,194	-87,839	-6	1,948,702	2,078,285	-139,583	-7
Income-in-kind	220,467	344,600	-114,133	-33	139,671	353,952	-214,281	-61
Realized net income(3)	1,571,200	1,603,944	-26,744	-2	1,114,651	1,199,349	-84,698	-7
Total net income(4)	1,904,823	1,931,377	-26,744	-1	841,125	925,823	-84,698	-9
	1971				1976			
	Revised(1)	Before revision	Net change(2)	Percent change	Revised(1)	Before revision	Net change(2)	Percent change
	\$'000's				\$'000's			
Taxes	117,479	173,902	-56,423	-32	157,719	236,067	-70,348	-33
Interest on debt	226,663	335,115	-68,452	-20	672,070	732,834	-60,764	-8
Building repairs	84,725	121,211	-36,486	-30	182,306	284,298	101,992	-36
discellaneous expenses - insurance	262,581	212,148	50,433	-24	484,345	410,044	74,301	-18
Building depreciation	111,344	211,917	-100,573	-47	364,008	374,926	-10,918	-3
Operating and depreci- ation charges	3,403,614	3,632,430	-228,816	-6	7,115,902	7,276,636	-160,734	-2
Income-in-kind	112,863	537,645	-424,782	-79	160,459	1,026,638	-866,179	-84
Realized net income(3)	1,250,034	1,469,377	-219,343	-15	3,049,667	3,788,544	-738,877	-20
Total net income(4)	1,425,960	1,615,289	-189,329	-12	3,376,881	4,113,647	-736,766	-18

⁽¹⁾ Not all change in total expenses and net income result from revisions to house rent and expenses. Some changes result from intercensal revisions in farm cash receipts and inventories and the use of probability survey information for expense estimates. Such revisions though numerous do not generally have a significant effect in comparison to the effect of house rent revisions.

⁽²⁾ Change results from the elimination of imputed house rent from the farm accounts on the income side of the ledger and on the expense side from the subtraction of costs paid by the farm business for personal use of farm dwellings.

⁽³⁾ Realized net income is total farm receipts including income-in-kind minus all farm operating expenses and depreciation charges.

⁽⁴⁾ Total net income is the same as realized net income except that it also includes any changes in inventory. Source: Agriculture/Natural Resources Division, Statistics Canada.

APPENDIX - ARITHMETIC FOR CALCULATING REVISIONS

Value of Farm House

Dwelling Value = F8V X PH_t (F_t^I)

Where PH^{t} - Dwelling value in year t as a proportion of total land and building value

F - Number of resident farm operators

 $F_{\rm t}^{\rm I}$ - number of resident farm operators in year t expressed in terms of an index (I), the base year being 1961

FBV - Farm land and building value. Estimates are obtained from the Census every five years. The Index of Farm Land and Building values from Value per Acre Surveys are used to provide annual estimates.

Depreciation Rate Revision

Repair and Maintenance Expense Revision

Interest on Indebtedness Revision

Insurance Expenses Revision - Pre 1951 Period

Revised
insurance miscellaneous expenses = expenses - pre - 51

Property Dwelling portion of value Personal use insurance x Value of land x portion of expenses and buildings dwellings (.85

Where,

property
portion of insurance = expenses at x miscellaneous expenses time t in 1951

| Miscellaneous | 1951 property insurance | expenses at x miscellaneous expenses | in 1951

Insurance Expenses Revision - Post 1951 Period

Revised Total
insurance = insurance expenses
post-51

Dwelling Personal use
x portion of
insurance Value of land dwelling
and buildings (.85)

Property Tax Revision

Total farm Dwelling Total farm Revised Personal use property = taxes net value x taxes net x portion of tax of Value of land of rebates dwelling and buildings (.85)expenses rebates

