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**The Optimal Separation of Farm Taxable Income
Between Two Consecutive Tax Years Under the
Economic Recovery Tax Act of 1981**

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Introduction

The Economic Recovery Act of 1981 will reduce federal personal income tax rates during each of the next three years. This rate reduction presents taxpayers an opportunity to defer taxable income to a later year where it may be taxed at a lower rate. The deferral and possible reduction in taxes can result in a savings to farmers. This paper explores that possibility.

New Tax Rates

Under the Economic Recovery Act of 1981, personal income tax rates will decrease 23 percent over a four year period beginning with the 1981 tax year. The 1981 tax tables will show only a 1.25 percent reduction. Ten percent reductions will take affect in 1982 and 1983. A final five percent reduction will apply to tax years ending in 1984. Beginning in 1985, the tax rate schedules will be adjusted yearly for inflation based on changes in The Consumer Price Index.

Potential Tax Benefits

The reduction in tax rates during each of the next three years will allow a taxpayer to defer income to a following year where it may be taxed at a lower rate, resulting in a net reduction in income taxes for the two years. Since any deferred tax can be invested during the year that it is deferred, it may be attractive to defer income even if the deferment moves a taxpayer into a higher tax bracket. The key factor is whether or not the interest earned on the deferred tax is greater than the additional tax in the second year.

The tax benefit is of more value to farmers than nonfarmers because farmers do not need to file and pay quarterly estimates of taxes due. If a taxpayer (or taxpayers if a joint return is filed) earns two-thirds or more of his gross income from farming, he can pay income taxes when the tax return is due (typically on March 1) on income earned the previous calendar year. Taxpayers not qualifying as farmers must have their tax withheld or pay quarterly estimated payments during the taxable year. They cannot wait until their final tax return is due to pay taxes. Therefore, nonfarm taxpayers legally shifting income from December 31 to January 2 will normally only delay taxes on that income for a quarter rather than a year, but they will still be able to take advantage of tax rate reductions by deferring income.

Optimal Separation of Taxable Incomes

A computer program was written to determine the optimal amount of taxable income to shift from a current year to the following year for each of the following two-year combinations: 1981 to 1982, 1982 to 1983, and 1983 to 1984. In the program, a given total taxable income for two years was first divided into two equal taxable incomes (level taxable income between tax years), and the tax was computed on both incomes using the appropriate tax schedules for each of the two years. The tax rates used were for married taxpayers filing a joint return.¹ The second year's tax was discounted to the first year at a 15 percent interest rate and was added to the first year's tax to obtain the net present value of tax for the two years. Then, \$100 of income was transferred from the first year to the second year, and the net present value of taxes on the new incomes was computed. This new net present value of taxes was compared to the previous net present value amount. Additional amounts of income were shifted from the first to the second year until the net present value of taxes was minimized.

Table 1 lists, at various levels of taxable income, the separation of taxable income between 1981-1982, 1982-1983, and 1983-1984 that minimizes the net present value of tax for the two years at a discount (interest) rate of 15 percent. Also listed are the savings (discounted to year one) that will occur by adjusting income rather than by leveling income.

Table 2 lists the same results, but at a zero discount rate. A zero discount rate implies that a taxpayer would prefer to pay taxes the second year rather than the first year, but not at the expense of any additional tax. The 15 percent discount rate implies an even greater preference to defer taxes because taxes saved the first year can be invested at 15 percent, and the interest earned will more than pay for the additional tax later.

At no income levels should taxable income for any two consecutive years be identical, if the interest rate is 15 percent. At most income levels, at least \$4,000 more income, and often much more, should be shifted to the second year. The optimal amount to shift generally increases as taxable income increases. For example, with an interest rate of 15 percent, a farmer with a taxable income of \$36,000 for 1981-1982, can incur \$15,800 income in 1981 and \$20,200 in 1982, a difference of \$4,400 and save \$95 more than if his income for each year was \$18,000.

With a taxable income of \$60,000 for 1981-1982, the optimal separation is \$24,800 for 1981 and \$35,200 for 1982, a difference of \$10,400, and the additional savings is \$155. The larger income separation occurs because tax brackets are wider at higher income levels. Often the first year's income is at the bottom of the tax bracket, and the second year's income is at the upper end of the next tax bracket. The tax rate of the second year's bracket has fallen and is only a percentage point or two greater than the tax rate of the

¹It was assumed that all of the income was earned by just one spouse but actually the percentage earned by each spouse could range between 0 and 100. The actual percentage is important because for 1982 a deduction of five percent of income earned by the spouse with the lower income is allowed to a maximum income deduction of \$1,500. For 1983 and subsequent years, a 10-percent deduction is allowed, and the limitation increases to \$3,000.

first year's bracket. To illustrate, assume that taxable income for 1981-1982 is \$50,000. The income for the first year should be \$20,200, the bottom of a tax bracket, and the income of the second year should be \$29,800, the top of the next tax bracket.

Use of the Tables

The results presented in the tables can best be used toward the end of a tax year, when a decision must be made whether to shift taxable income from one year to another. Techniques to estimate current and the following year's taxable incomes and procedures to shift income are discussed elsewhere. Many of these procedures are only applicable to farmers who report income on a cash basis. The tables can also be used after the close of the first tax year, but before the tax return is filed, to determine appropriate depreciation methods to use for new property purchases. Much of the flexibility to select depreciation methods, however, has been lost under the new tax law. Most other options to shift income are lost after the tax year is closed.

Risk of Inaccurately Estimating Taxable Income

To derive the maximum benefit from deferring income, taxable income must be estimated. For many farmers, this is a difficult task. Not only are costs variable from year to year, but production and product prices of some commodities are highly variable.

If a farmer estimates his taxable income for the current and following years and optimally separates his income between the two years, but his actual income the second year turns out not to be the optimal amount, the earnings that he expected by separating his income may not occur. The farmer may pay more tax than if he had attempted to level his income between the two years, or he may pay less tax.

The computer program was used to assess the effect that variability of actual income from expected income has on profitability. An assumption used in the analysis is that all income variability will occur in the second year. This assumption is realistic since most farmers can closely monitor the income of a closing current year and make adjustments through last minute sales and purchases. It is usually difficult and unfeasible to force the actual income of the second year to match the estimated expected income. It may be difficult because unfavorable prices and quantities make it difficult for a farmer to buy or sell to adjust income. It is generally unfeasible because at the close of the second year the decision as to how much income to realize that second year will depend upon the estimated expected income of the second and third year and not upon the first year where income can no longer be adjusted.

After the actual income of the second year has been determined it is possible to measure the actual benefits, if any, from optimally separating income rather than leveling income between the first and second years. In the computer program this was simulated by using an income deviation of a positive 20 percent of the estimated taxable income for the two years. All of the income deviation occurred in the second year. A discount rate of 15 percent was used. The results are listed in Table 3.

To explain the results an example will be used. If a farmer had estimated his total taxable income for 1981-1982 to be \$22,000, he may have leveled his income between the two years at \$11,000 for 1981 and \$11,000 for 1982. Or, at an investment rate of 15 percent, he may have optimally separated his income to \$7,600 for 1981, and \$14,400 for 1982, for a net savings of \$66 (Table 1). If a 20 percent positive deviation of total taxable income or \$4,000 occurs in 1982, and the farmer had attempted to level his income, he would still have \$11,000 income in 1981, but he would now have \$15,000 income in 1982. If the farmer had optimally separated his estimated income, he would still have \$7,600 income in 1981, but now \$18,400 income in 1982. Either strategy will involve additional tax the second year. However, on a discounted basis, a farmer originally separating the \$22,000 income into \$7,600 and \$14,400 would pay \$30 more tax (discounted to 1981) than if he had attempted to level income.

If a farmer had estimated his taxable income for 1981-1982 to be \$80,000, at an investment rate of 15 percent, he may have optimally separated his income into \$34,200 for 1981 and \$45,800 for 1982 for a net savings of \$437. If a 20 percent positive deviation of total taxable income, or \$16,000, occurs in 1982, his net savings would be a positive \$107. This net savings is less than \$437, but still a positive savings. Only at taxable income levels where there is a large savings potential for separating income rather than leveling does a savings potential still exist, although reduced, when income the second year is increased by 20 percent of total taxable income.

Conclusion

Because federal income tax rates will be reduced during the next three years, an opportunity exists for farmers to profitably shift income from a current to a following year rather than simply leveling income between the two years. This paper shows the optimum amount of taxable income for each of two consecutive years. It also assesses the impact of errors in estimating taxable income to be separated. The savings potential that can be realized by shifting income is modest except at high income levels. With errors in estimating taxable income, even this modest savings may not be realized.

Table 1. Optimal Separation of Taxable Income Between Two Consecutive Tax Years and the Resultant Savings at 15 Percent Interest (Married Taxpayers Filing Joint Returns)

Taxable Income For Two Years	1981-1982 Tax Years			1982-1983 Tax Years			1983-1984 Tax Years		
	1981	1982	1982	1982	1983	1983	1983	1984	1984
	Income	Income	Savings	Income	Income	Savings	Income	Income	Savings
\$10,000	\$3,400	\$6,600	\$ 35	\$3,400	\$6,600	\$ 20	\$3,400	\$6,600	\$ 13
12,000	4,400	7,600	36	4,400	7,600	21	4,400	7,600	19
14,000	5,500	8,500	38	5,500	8,500	25	5,500	8,500	23
16,000	5,500	10,500	55	5,500	10,500	32	5,500	10,500	29
18,000	6,100	11,900	83	6,100	11,900	56	6,100	11,900	52
20,000	7,600	12,400	80	7,600	12,400	62	7,600	12,400	59
22,000	7,600	14,400	66	7,600	14,400	57	7,600	14,400	53
24,000	8,000	16,000	53	8,000	16,000	52	8,000	16,000	45
26,000	10,000	16,000	70	10,000	16,000	70	10,000	16,000	55
28,000	11,900	16,100	86	11,900	16,100	87	11,900	16,100	63
30,000	11,900	18,100	76	11,900	18,100	94	11,900	18,100	59
32,000	11,900	20,100	66	11,900	20,100	102	11,900	20,100	55
34,000	13,800	20,200	82	13,800	20,200	109	13,800	20,200	63
36,000	15,800	20,200	95	15,800	20,200	115	15,800	20,200	70
38,000	16,000	22,000	91	16,000	22,000	102	17,800	20,200	40
40,000	16,000	24,000	84	16,000	24,000	87	19,800	20,200	7
42,000	17,400	24,600	102	17,400	24,600	96	20,200	21,800	31
44,000	19,400	24,600	122	19,400	24,600	106	20,200	23,800	70
46,000	20,200	25,800	123	20,200	25,800	109	20,200	25,800	77
48,000	20,200	27,800	113	20,200	27,800	107	20,200	27,800	64
50,000	20,200	29,800	133	20,200	29,800	131	20,200	29,800	73
52,000	22,100	29,900	151	22,100	29,900	149	22,100	29,900	91
54,000	24,100	29,900	166	24,100	29,900	165	24,100	29,900	109
56,000	24,600	31,400	165	24,600	31,400	165	24,600	31,400	106
58,000	24,600	33,400	160	24,600	33,400	159	24,600	33,400	96
60,000	24,800	35,200	155	24,800	35,200	155	24,800	35,200	90
62,000	26,800	35,200	175	26,800	35,200	166	26,800	35,200	113
64,000	28,800	35,200	196	28,800	35,200	177	28,800	35,200	137
66,000	29,900	36,100	195	29,900	36,100	175	29,900	36,100	136
68,000	29,900	38,100	169	29,900	38,100	157	29,900	38,100	106

Table 1. Optimal Separation of Taxable Income Between Two Consecutive Tax Years and the Resultant Savings at 15 Percent Interest (Married Taxpayers Filing Joint Returns)

Taxable Income For Two Years	1981-1982 Tax Years			1982-1983 Tax Years			1983-1984 Tax Years		
	1981	1982	1982	1982	1983	1983	1983	1984	1984
	Income	Income	Savings	Income	Income	Savings	Income	Income	Savings
\$70,000	\$29,900	\$40,100	\$143	\$29,900	\$40,100	\$140	\$29,900	\$40,100	\$ 75
72,000	29,900	42,100	207	29,900	42,100	204	29,900	42,100	120
74,000	29,900	44,100	293	29,900	44,100	290	29,900	44,100	183
76,000	30,200	45,800	371	30,200	45,800	368	30,200	45,800	242
78,000	32,200	45,800	404	32,200	45,800	402	32,200	45,800	279
80,000	34,200	45,800	437	34,200	45,800	437	34,200	45,800	316
82,000	35,200	46,800	453	35,200	46,800	453	35,200	46,800	322
84,000	35,200	48,800	451	35,200	48,800	452	35,200	48,800	298
86,000	35,200	50,800	450	35,200	50,800	451	35,200	50,800	274
88,000	35,200	52,800	449	35,200	52,800	449	35,200	52,800	250
90,000	35,200	54,800	447	35,200	54,800	448	35,200	54,800	227
92,000	35,200	56,800	466	35,200	56,800	465	35,200	56,800	221
94,000	35,200	58,800	567	35,200	58,800	558	35,200	58,800	291
96,000	36,000	60,000	635	35,200	60,800	622	36,000	60,000	345
98,000	38,000	60,000	652	35,200	62,800	645	38,000	60,000	375
100,000	40,000	60,000	669	35,200	64,800	667	40,000	60,000	406

Table 2. Optimal Separation of Taxable Income Between Two Consecutive Tax Years and the Resultant Savings at 0 Percent Interest (Married Taxpayers Filing Joint Returns)

Taxable Income For Two Years	1981-1982 Tax Years			1982-1983 Tax Years			1983-1984 Tax Years		
	1981	1982	1982	1982	1983	1983	1983	1984	
	Income	Income	Savings	Income	Income	Income	Income	Income	Savings
\$10,000	\$4,500	\$5,500	\$ 9	\$4,500	\$5,500	\$ 5	\$4,500	\$5,500	\$ 0
12,000	5,500	6,500	9	5,500	6,500	5	5,500	6,500	5
14,000	6,400	7,600	11	6,400	7,600	6	6,400	7,600	6
16,000	7,600	8,400	7	7,600	8,400	4	7,600	8,400	4
18,000	7,600	10,400	25	7,600	10,400	14	7,600	10,400	14
20,000	8,100	11,900	34	8,100	11,900	19	8,100	11,900	19
22,000	10,100	11,900	16	10,100	11,900	9	10,100	11,900	9
24,000	11,900	12,100	1	11,900	12,100	2	11,900	12,100	1
26,000	11,900	14,100	19	11,900	14,100	22	11,900	14,100	11
28,000	12,000	16,000	35	11,900	16,100	40	12,000	16,000	20
30,000	14,000	16,000	17	12,000	18,000	20	14,000	16,000	10
32,000	16,000	16,000	0	12,000	20,000	0	16,000	16,000	0
34,000	16,000	18,000	18	13,800	20,200	30	16,000	18,000	10
36,000	16,000	20,000	35	15,800	20,200	60	16,000	20,000	20
38,000	17,800	20,200	20	17,800	20,200	36	17,800	20,200	12
40,000	19,800	20,200	3	19,800	20,200	6	19,800	20,200	2
42,000	20,200	21,800	21	20,200	21,800	16	20,200	21,800	8
44,000	20,200	23,800	47	20,200	23,800	36	20,200	23,800	18
46,000	21,400	24,600	42	21,400	24,600	32	21,400	24,600	16
48,000	23,400	24,600	16	23,400	24,600	12	23,400	24,600	6
50,000	24,600	25,400	11	24,600	25,400	12	24,600	25,400	4
52,000	24,600	27,400	37	24,600	27,400	42	24,600	27,400	14
54,000	24,600	29,400	63	24,600	29,400	72	24,600	29,400	24
56,000	26,100	29,900	49	26,100	29,900	57	26,100	29,900	19
58,000	28,100	29,900	23	28,100	29,900	27	28,100	29,900	9
60,000	29,900	30,100	3	29,900	30,100	3	29,900	30,100	2
62,000	29,900	32,100	38	29,900	32,100	33	29,900	32,100	22
64,000	29,900	34,100	73	29,900	34,100	63	29,900	34,100	42
66,000	30,800	35,200	78	30,800	35,200	66	30,800	35,200	44
68,000	32,800	35,200	42	32,800	35,200	36	32,800	35,200	24

Table 2. Optimal Separation of Taxable Income Between Two Consecutive Tax Years and the Resultant Savings at 0 Percent Interest (Married Taxpayers Filing Joint Returns)

Taxable Income For Two Years	1981-1982 Tax Years			1982-1983 Tax Years			1983-1984 Tax Years		
	1981		1982	1982		1983	1983		1984
	Income	Savings	Income	Savings	Income	Savings	Income	Savings	
\$70,000	\$34,800	\$ 7	\$34,800	\$ 6	\$35,200	\$ 6	\$34,800	\$35,200	\$ 4
72,000	35,200	28	35,200	32	36,800	32	35,200	36,800	16
74,000	35,200	63	35,200	72	38,800	72	35,200	38,800	36
76,000	35,200	97	35,200	112	40,800	112	35,200	40,800	56
78,000	35,200	132	35,200	152	42,800	152	35,200	42,800	76
80,000	35,200	167	35,200	192	44,800	192	35,200	44,800	96
82,000	36,200	166	36,200	192	45,800	192	36,200	45,800	96
84,000	38,200	132	38,200	152	45,800	152	38,200	45,800	76
86,000	40,200	97	40,200	112	45,800	112	40,200	45,800	56
88,000	42,200	62	42,200	72	45,800	72	42,200	45,800	36
90,000	44,200	28	44,200	32	45,800	32	44,200	45,800	16
92,000	45,800	9	45,800	8	46,200	8	45,800	46,200	4
94,000	45,800	53	45,800	48	48,200	48	45,800	48,200	24
96,000	45,800	97	45,800	88	50,200	88	45,800	50,200	44
98,000	45,800	140	45,800	128	52,200	128	45,800	52,200	64
100,000	45,800	184	45,800	168	54,200	168	45,800	54,200	84

Table 3. Savings From Optimally Separating Income Rather Than Leveling if the Second Year's Income is Actually Greater Than the Optimal Separation Amount of Table 1 by 20 Percent of Column 1.

Taxable Income For Two Years	1981-1982 Tax Years	1982-1983 Tax Years	1983-1984 Tax Years
\$10,000	\$ 9	\$ -6	\$ -8
12,000	8	-7	-9
14,000	28	14	12
16,000	8	1	-3
18,000	7	5	2
20,000	20	22	19
22,000	-30	-7	-12
24,000	-67	-39	-45
26,000	-34	-17	-32
28,000	-6	0	-24
30,000	-31	-31	-66
32,000	-107	-91	-137
34,000	-85	-65	-111
36,000	-39	-19	-64
38,000	-45	-18	-33
40,000	-133	-97	-5
42,000	-131	-106	2
44,000	-59	-52	-24
46,000	-30	-30	-38
48,000	-155	-137	-147
50,000	-274	-236	-253
52,000	-189	-156	-180
54,000	-86	-62	-93
56,000	-78	-49	-92
58,000	-101	-63	-119
60,000	-177	-131	-197
62,000	-122	-95	-147
64,000	-67	-58	-98
66,000	-54	-55	-94
68,000	-71	-73	-125
70,000	-89	-91	-155
72,000	-58	-61	-146
74,000	-16	-19	-126
76,000	-11	-6	-132
78,000	48	58	-66
80,000	107	122	1
82,000	105	133	2
84,000	43	92	-62
86,000	-11	58	-119
88,000	-12	65	-134
90,000	-14	72	-149
92,000	-3	90	-154
94,000	54	147	-120
96,000	113	205	-73
98,000	173	262	-7
100,000	234	319	58