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AN ECONOMIC ALTERNATIVE TO CONCESSIONAL FARM INTEREST RATES: COMMENT*

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In a recent article in this journal, Baker [1] proposed a debt reserve plan to complement a variable amortization plan for servicing farm debt. Two points require some clarification.

Firstly, where the borrower is required to pay the premiums for amortization insurance, the cost of premiums should be a component of the debt reserve plan. Notwithstanding Baker's definition of the net cost of the debt reserve plan to the borrower [1, p. 180], the cost of the premium should be included directly as a cost of the loan. Should this approach be adopted, the annual cost of the debt reserve plan is then the amount of the amortization ($6,625) plus the insurance premium ($375): a total cost of $7,000 per year. This means, therefore, that the borrower would not experience a negative cash flow (reduced consumption or additional borrowing!) due to payment of insurance premiums.

Studying Columns 3 and 4 of Baker's Table 8 [1, p. 181], the cumulative cash flow after debt service under the debt reserve plan reaches a negative balance of $1,285 in Year 4, whereas a maximum negative balance of $867 is reached in Year 3 for the conventional amortization plan. It appears that the spirit of the debt reserve plan has been negated and that a paradox exists whereby the borrower incurs a larger negative cumulative cash flow through the insurance premiums that were to afford him that protection.

The second point is Baker's comparison of the cash flow effects for the debt reserve plan and the conventional amortization plan. Comparison of Columns 3 and 4 of Table 8 [1, p. 181] cannot be made in the sense indicated by Baker: the income available after debt as cash flow. A requirement of the debt reserve plan is that disposable income above the amortization payment be deposited to earn interest. Income available should then be zero; except in the initial years where Baker has a negative income due to the payment of insurance premiums.

Baker's intention in making the comparison is not clear, notwithstanding the ability of the borrower to liquidate his debt by the debt reserve balance at some future time. However a similar case could be stated for the conventional amortization plan had surpluses been placed on interest bearing deposits. Had the payment of insurance premiums been included as a cost for the debt reserve plan, the equivalent costs for the conventional amortization plan would be those of negative and positive surpluses.

* Comment on an Article: C. B. Baker, 'An Economic Alternative to Concessional Farm Interest Rates', *Australian Journal of Agricultural Economics*, Vol. 18, No. 3, December 1974, pp. 171-192.

Taking Baker's numerical example, Tables 6, 7 and 8 are re-worked in light of the preceding comments concluding with a comparison of *liquidity after debt service.*

In Table 1 (cf. Table 6, Baker [1, p. 180]), we show the amount paid to the lender and the insurance company from the sources identified by Baker. The returns the borrower receives from his debt reserve balance are shown in Table 2 (cf. Table 7, Baker [1, p. 181]).

In Table 3 we show the cumulative cash flow where the debt has been serviced with a conventional amortization plan. Where the cumulative cash flow is negative, interest has been calculated at the rate of 14 per cent per year (to approximate overdraft rate) while 9 per cent per year has been used where cumulative cash flow is positive. Table 4 summarizes the liquidity position of the borrower after servicing payments for each plan. The difference between the two streams of liquidity reflects the payment of insurance premiums, payments received from insurance and the interest on negative and positive cash flows.

It appears therefore, that Baker's contribution has not been a new system of repayment, but rather a strengthening of the case for farm interest rates to be at commercial levels with extended amortization periods. The existence of longer repayment periods, *ceteris paribus*, would permit farmers to use the increment in disposable income to effect amortization insurance to protect debt repayment from fluctuating incomes.

References

[1] Baker, C. B., 'An Economic Alternative to Concessional Farm Interest Rates', *Australian Journal of Agricultural Economics*, Vol. 18, No. 3, December 1974, pp. 171-192.

TABLE 1

Source of Amortization ($6,625 each year) and Insurance Premium ($375 each year): A Payment of $7,000 each year[a]

Year of debt	Current Income	Debt Reserve	Insurance
	$	$	$
1	6,120	0	880
2	6,552	0	448
3	6,336	0	664
4	6,840	0	160
5	7,000	0	0
6	6,120	880	0
7	6,552	448	0
8	6,336	664	0
9	6,840	160	0
10	7,000	0	0
11	6,120	880	0
12	6,552	448	0
13	6,336	664	0
14	6,840	160	0
15	7,000	0	0

[a] While the amount paid from insurance varies from that shown by Baker, we assume the premiums will remain unchanged.

TABLE 2

Borrower's Return from Debt Reserve Balance

Year of Debt	Payment to Debt Reserve[a]	Payment from Debt Reserve[b]	Return from Debt Reserve Balance[c]	Debt Reserve Balance
	$	$	$	$
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	3728	0	0	3,728
6	0	880	336	3,184
7	0	448	287	3,023
8	0	664	272	2,631
9	0	160	237	2,708
10	3728	0	244	6,680
11	0	880	601	6,401
12	0	448	576	6,529
13	0	664	588	6,453
14	0	160	581	6,874
15	3728	0	619	11,221

[a] Column 2, Table 5 Baker [1, p. 179] less Column 1, Table 1.
[b] Column 2, Table 1.
[c] 9 per cent of the previous year's balance.

TABLE 3

Cash Flow with Conventional Amortization Plan

Year of Debt	Amortization Payment	Annual Deficit/ Surplus[a]	Interest[b]	Cumulative Cash Flow
	$	$	$	$
1	6,625	−505	0	−505
2	6,625	−73	−71	−649
3	6,625	−289	−91	−1,029
4	6,625	215	−144	−958
5	6,625	4,103	−134	3,011
6	6,625	−505	271	2,777
7	6,625	−73	250	2,954
8	6,625	−289	266	2,931
9	6,625	215	264	3,410
10	6,625	4,103	307	7,820
11	6,625	−505	704	8,019
12	6,625	−73	722	8,668
13	6,625	−289	780	9,159
14	6,625	215	824	10,198
15	6,625	4,103	918	15,219

[a] Column 1, Table 5 Baker [1, p. 179] less Column 1.
[b] Interest on previous year's balance of the cumulative cash flow calculated at the rate of 14 per cent where balance negative (cost) and 9 per cent where balance positive (return).

TABLE 4

Annual and Cumulative Liquidity with Debt Reserve Plan and Conventional Amortization Plan

Year of Debt	Debt Reserve Plan		Conventional Amortization Plan	
	Annual Liquidity[a]	Cumulative Liquidity[b]	Annual Liquidity[c]	Cumulative Liquidity[d]
	$	$	$	$
1	0	0	−505	−505
2	0	0	−144	−649
3	0	0	−380	−1,029
4	0	0	71	−958
5	3,728	3,728	3,969	3,011
6	−544	3,184	−234	2,777
7	−161	3,023	177	2,954
8	−392	2,631	−23	2,931
9	77	2,708	479	3,410
10	3,972	6,680	4,410	7,820
11	−279	6,401	199	8,019
12	128	6,529	649	8,668
13	−76	6,453	491	9,159
14	421	6,874	1,039	10,198
15	4,347	11,221	5,021	15,219

[a] Column 2 add Column 4 less Column 3, Table 2.
[b] Column 4, Table 2.
[c] Column 3, plus Column 4, Table 3.
[d] Column 4, Table 3.