

Please mark your state and team number in the blank in the upper right corner of each page

Each team will complete and turn in only one YELLOW copy of these six pages. Other copies can be used to make notes and calculations

2004 National FFA Farm Business Management Career Development Event Team Activity

Expectations:

The team activity evaluates the ability of a team's members to work together to use decision making and problem analysis skills while applying economic principles and concepts taught in farm business management.

Evaluation:

The team activity portion is evaluated as follows:

- involve all members of the team
- organize the team effort
- communicate with each other in resolving issues relating to the current situation
- reach consensus and agreement
- complete the analysis of possible alternatives and solutions
- communicate and submit in writing the team's consensus of solutions.

Team Activity Focus:

Investment Analysis of the Moore's farm business

Scenario and Questions to Answer:

Part 1 (120 points)

The Moore farm business has several challenges relating to financial stability and profitability. Use the information described in scenarios A, B, C and other resource information provided to answer the following on the answer sheet.

Scenario A. Tobacco Buyout

Federal legislation proposes to eliminate the tobacco quota system through a tobacco quota buyout. If this legislation is enacted Wayne will receive \$7.00 per pound of tobacco quota that he owns and \$3.00 per pound of tobacco quota he rents. Wayne has projected that he would receive \$105,000 for his owned tobacco quota and \$240,000 for his rented tobacco quota over five years in equal annual installments. Wayne's projected tax liability for this income will be \$140,070.

1. If the buyout occurs Wayne will receive \$69,000 per year for five years in tobacco quota payments on a pre-tax basis. What is the present value of this income stream discounted at 6%? (15 points)

$$\begin{array}{r} \$ \underline{\quad \mathbf{290,656} \quad} \\ 69,000 \times 4.2124 = 290,656 \end{array}$$

2. Wayne will receive \$40,986 per year for five years on an after tax basis. What is the present value of this income stream discounted at 6%? (15 points)

$$\begin{array}{r} \$ \underline{\quad \mathbf{172,649} \quad} \\ 40,986 \times 4.2124 = 172,649 \end{array}$$

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Scenario B. Retirement

Wayne has no retirement investment account. He has considered some type of investment for retirement but at age 47 he has not acted on preparing for his retirement with an investment for that purpose.

Joanna, age 45, has been working at the local bank. Her benefits include health insurance for both she and Wayne and a retirement plan for her. However, since she did not begin working until their children were out of high school her retirement account is estimated to provide about \$1,200 per month at age 63 when she plans to retire.

1. Wayne and Joanna plan to retire when Wayne reaches 65 years of age. They desire a \$5,000 per month retirement income in addition to income from other investments they have.

- a. What lump sum do the Moores need to invest today at 6% interest to generate enough interest income to provide \$3,800 additional income per month when Wayne retires in 18 years? (15 points)

$$\frac{\$ \underline{\underline{266,265}}}{[(3,800 \times 12 \text{ months}) / .06] / 2.8543 = 266,265}$$

- b. How much would Wayne and Joanna need to invest annually to meet this goal in 18 years? (15 points)

$$\frac{\$ \underline{\underline{24,591}}}{760,000 / 30.9057 = 24,591 \text{ (FV of annuity @ 6\% for 18 years)}}$$

2. If the after tax amount of \$204,940 (disregard interest accruing during installment period), is invested at 6% compounded annually:

- a. What is the future value of this investment after 15 years? (15 points)

$$\frac{\$ \underline{\underline{491,159}}}{204,940 \times 2.3966 \text{ (FV of lump sum @ 6\%)}}$$

- b. Will this amount (2a: total principal and interest earned) be adequate to provide an annuity income of \$45,600 for fifteen years earning 6% per year? (15 points)

Circle the correct answer. **Yes** **No**
 $491,159 \times .1030 = 50,589$ (amortization factor of 15 years @ 6%)

Scenario C. Drip Irrigation

The Moores expect to be totally out of tobacco production within the next few years. They have been transitioning from the traditional cash crop tobacco, to strawberries and cantaloupes. However, water requirements for these crops are critical for successful production. Wayne has considered investing in a drip irrigation system. A local irrigation installation company provided a bid for installing a suitable system. For the 60 acres owned by the Moores, they estimated the cost to be \$2,500 per acre for a total of \$150,000.

1. Assume the Moores invest all their tobacco buyout dollars into a retirement account. They also decide to proceed with the irrigation \$150,000 investment.

- a. The estimated annual return from this irrigation investment is \$28,500. What is the loan payment for this investment at 7% interest and at 7-year term that can be serviced by this return? (15 points)

$$\frac{\$ \underline{\underline{153,556}}}{28,500 / .1856 = 153,556 \text{ (amortization factor of 7 years @ 7\%)}}$$

- b. If the estimated annual return is \$28,500, would the increased return from the irrigation system make the annual payment? (15 points)

Circle the correct answer. **Yes** **No**
 $153,556 > 150,000$

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Part 2 (80 points)

Advice for the Moores: Wayne and Joanna have studied their balance sheet. Some of what they see concerns them. Their available cash has been lower the last two years than the previous two years. Wayne has always felt that it was important to have close to \$75,000 cash reserve. Additionally, debt has increased and net worth has decreased from what they were in 2000 and 2001. Assuming the buyout becomes reality, the Moores will receive \$345,000 in total payments. This gives them an opportunity to make major financial changes in their farm business. You have been asked to consult with the Moores about their current financial situation. Complete the information for each item A-D below.

A. Identify five areas of concern for the Moore farm business. (20 points)

- declining net farm income
- no retirement planning
- high debt load; debt increasing
- poor liquidity
- cash flow
- working capital is -\$95,000
- finding substitutes for tobacco
- counting on the buyout
- every farm raising cantaloupe/strawberries; oversupply
- cash reserve is low
- net worth has decreased from 2001 to 2003

B. What alternatives might you present for the Moores to improve their financial position for the long term? (20 points)

- restructure debt
- increase off farm income
- rent out acres of their owned land
- switch to more profitable crops
- labor costs high
- sell land; sell machinery/equipment
- consider other enterprises—cattle, vegetables, etc.
- "grow houses"— develop property

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C. If the tobacco buyout becomes reality, how might the Moores use these resources to restructure their farm business to improve the financial stability of their business? Identify and list five actions you would recommend.(20 points)

- opportunity to invest in non-farm assets
- diversification of total portfolio
- use to improve debt situation
- exposed to more long-term risk because tobacco is a relatively low risk crop
- increase family living expenses
- buy equipment to take advantage of tax implications; to take advantage of accelerated depreciation
- put in drip irrigation

D. The Moores have been invited to make a presentation to a local civic club about how the tobacco buyout will change the prospects for their farm business? From your answers in C above, identify the two “most important” points that you recommend they present to the civic club audience. Explain why you chose those two points. (20 points)

Point 1.

Why?

Point 2.

Why?

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FINANCIAL COEFFICIENTS FOR THE TIME VALUE OF MONEYNote: All factors are based on a discount rate of: **6%**

Years	Amortization Factor	PV of Annuity	PV of Lump Sum	FV of Annuity	FV of Lump Sum
1	1.0600	0.9434	0.9434	1.0000	1.0600
2	0.5454	1.8334	0.8900	2.0600	1.1236
3	0.3741	2.6730	0.8396	3.1836	1.1910
4	0.2886	3.4651	0.7921	4.3746	1.2625
5	0.2374	4.2124	0.7473	5.6371	1.3382
6	0.2034	4.9173	0.7050	6.9753	1.4185
7	0.1791	5.5824	0.6651	8.3938	1.5036
8	0.1610	6.2098	0.6274	9.8975	1.5938
9	0.1470	6.8017	0.5919	11.4913	1.6895
10	0.1359	7.3601	0.5584	13.1808	1.7908
11	0.1268	7.8869	0.5268	14.9716	1.8983
12	0.1193	8.3838	0.4970	16.8699	2.0122
13	0.1130	8.8527	0.4688	18.8821	2.1329
14	0.1076	9.2950	0.4423	21.0151	2.2609
15	0.1030	9.7122	0.4173	23.2760	2.3966
16	0.0990	10.1059	0.3936	25.6725	2.5404
17	0.0954	10.4773	0.3714	28.2129	2.6928
18	0.0924	10.8276	0.3503	30.9057	2.8543
19	0.0896	11.1581	0.3305	33.7600	3.0256
20	0.0872	11.4699	0.3118	36.7856	3.2071
21	0.0850	11.7641	0.2942	39.9927	3.3996
22	0.0830	12.0416	0.2775	43.3923	3.6035
23	0.0813	12.3034	0.2618	46.9958	3.8197
24	0.0797	12.5504	0.2470	50.8156	4.0489
25	0.0782	12.7834	0.2330	54.8645	4.2919
26	0.0769	13.0032	0.2198	59.1564	4.5494
27	0.0757	13.2105	0.2074	63.7058	4.8223
28	0.0746	13.4062	0.1956	68.5281	5.1117
29	0.0736	13.5907	0.1846	73.6398	5.4184
30	0.0726	13.7648	0.1741	79.0582	5.7435

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FINANCIAL COEFFICIENTS FOR THE TIME VALUE OF MONEYNote: All factors are based on a discount rate of: **7%**

Years	Amortization Factor	PV of Annuity	PV of Lump Sum	FV of Annuity	FV of Lump Sum
1	1.0700	0.9346	0.9346	1.0000	1.0700
2	0.5531	1.8080	0.8734	2.0700	1.1449
3	0.3811	2.6243	0.8163	3.2149	1.2250
4	0.2952	3.3872	0.7629	4.4399	1.3108
5	0.2439	4.1002	0.7130	5.7507	1.4026
6	0.2098	4.7665	0.6663	7.1533	1.5007
7	0.1856	5.3893	0.6227	8.6540	1.6058
8	0.1675	5.9713	0.5820	10.2598	1.7182
9	0.1535	6.5152	0.5439	11.9780	1.8385
10	0.1424	7.0236	0.5083	13.8164	1.9672
11	0.1334	7.4987	0.4751	15.7836	2.1049
12	0.1259	7.9427	0.4440	17.8885	2.2522
13	0.1197	8.3577	0.4150	20.1406	2.4098
14	0.1143	8.7455	0.3878	22.5505	2.5785
15	0.1098	9.1079	0.3624	25.1290	2.7590
16	0.1059	9.4466	0.3387	27.8881	2.9522
17	0.1024	9.7632	0.3166	30.8402	3.1588
18	0.0994	10.0591	0.2959	33.9990	3.3799
19	0.0968	10.3356	0.2765	37.3790	3.6165
20	0.0944	10.5940	0.2584	40.9955	3.8697
21	0.0923	10.8355	0.2415	44.8652	4.1406
22	0.0904	11.0612	0.2257	49.0057	4.4304
23	0.0887	11.2722	0.2109	53.4361	4.7405
24	0.0872	11.4693	0.1971	58.1767	5.0724
25	0.0858	11.6536	0.1842	63.2490	5.4274
26	0.0846	11.8258	0.1722	68.6765	5.8074
27	0.0834	11.9867	0.1609	74.4838	6.2139
28	0.0824	12.1371	0.1504	80.6977	6.6488
29	0.0814	12.2777	0.1406	87.3465	7.1143
30	0.0806	12.4090	0.1314	94.4608	7.6123