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Investment Feasibility, Cash Flows and Financial Impacts

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Market Report	Yr Ago	4 Wks Ago	1/3/03
Livestock and Products,			
Average Prices for Week Ending			
Slaughter Steers, Ch. 204, 1100-1300 lb			
Omaha, cwt	$65.63	$73.03	$74.65
Feeder Steers, Med. Frame, 600-650 lb			
Dodge City, KS, cwt	88.25	84.31	*
Feeder Steers, Med. Frame 600-650 lb,			
Nebraska Auction Wght. Avg	91.95	91.82	89.84
Carcass Price, Ch. 1-3, 550-700 lb			
Cent. US, Equiv. Index Value, cwt	102.35	111.98	112.61
Hogs, US 1-2, 220-230 lb			
Sioux Falls, SD, cwt	38.00	33.00	34.00
Feeder Pigs, US 1-2, 40-45 lb			
Sioux Falls, SD, hd	46.87	27.50	*
Vacuum Packed Pork Loins, Wholesale,			
13-19 lb, 1/4" Trim, Cent. US, cwt	106.63	84.60	89.99
Slaughter Lambs, Ch. & Pr., 115-125 lb			
Sioux Falls, SD, cwt	60.87	89.45	83.50
Carcass Lambs, Ch. & Pr., 1-4, 55-65 lb			
FOB Midwest, cwt	130.31	164.26	164.66
Crops,			
Cash Truck Prices for Date Shown			
Wheat, No. 1, H.W.			
Omaha, bu	3.09	3.98	3.89
Corn, No. 2, Yellow			
Omaha, bu	1.89	2.26	2.24
Soybeans, No. 1, Yellow			
Omaha, bu	4.08	5.48	5.65
Grain Sorghum, No. 2, Yellow			
Kansas City, cwt	3.54	4.57	4.55
Oats, No. 2, Heavy			
Minneapolis, MN , bu	2.38	2.12	2.21
Hay,			
First Day of Week Pile Prices			
Alfalfa, Sm. Square, RFV 150 or better			
Platte Valley, ton	115.00	150.00	140.00
Alfalfa, Lg. Round, Good			
Northeast Nebraska, ton	75.00	80.00	80.00
Prairie, Sm. Square, Good			
Northeast Nebraska, ton	105.00	117.50	117.50

* No market.

Investments in depreciable assets typically involve major capital outlays requiring carefully budgeted decisions. This process involves two parts -- the basic economic decision, as well as the cash flow and financial outcomes which occur over the life of the asset. The basic decision requires an annual cost to be estimated which can be compared to an expected annual return. In some cases (for example, the replacement of one item of a machinery complement), no identifiable return can be matched against the cost. Even in this case it is important to estimate the ownership cost of the asset in comparing it to leasing or lease-purchase alternatives. The basic decision as well as the cash flow and financial outcomes are presented here for an example situation. The analysis is done without the consideration of income tax consequences.

A. Basic Investment Analysis

The three major ownership cost elements of depreciable assets are 1) depreciation, 2) capital investment, and 3) repairs. Depreciation involves the wear out of the asset, while capital investment relates to the cost of having capital tied up in the asset. For estimating each we assume a linear process. Annual depreciation is calculated as the original cost minus salvage value, divided by years of life (assuming a given use per year). Annual interest on investment cost is found by multiplying the cost of debt capital or the minimum acceptable rate of return by the asset's mid-value. This mid-value is the original cost plus its salvage value plus one year's depreciation, all divided by two. Annual repair cost is simply the estimated cumulative repair cost over the asset's life divided by years of life. There is another procedure which uses discounting and annualization (termed capital recov-

ery) which closely parallels this and is slightly more accurate but more complex.

Our example assumes an original cost of $130,000, a salvage value of $10,000, a 6-year life, an interest rate of 7 percent and repairs of $150, $500, $1,000, $1,750, $2,850 and $4,250 for years 1-6 respectively. Depreciation then is $20,000 per year, interest is $5,600 per year and repairs are $1,750 per year, or a total of $27,350. If for example, annual returns are $28,500 the basic decision to purchase is sound. However, the cash flow and financial implications of the purchase need to also be examined.

B. Cash Flow and Financial Analysis

Cash flow consequences usually are a concern under the financing of the purchase. If we assume a 5-year loan with a $10,000 down payment and 7 percent interest, yearly payments are $29,267. Even without repairs, a negative cash flow will occur for five of the six years. This is illustrated in Table 1. Year 0 refers to the timing of the down payment, while the transactions for other years can be assumed to be at the end of the year. Clearly, deficits occur in years 1-5, and these deficits need to be clearly understood prior to the purchase. It needs to also be recognized that if the down payment is ignored and if it is sizable, a resulting positive cash flow for the investment life may suggest a sound investment when, in fact, it is unsound using the basic investment analysis.

Finally, the annual changes in the financial position resulting from the investment are shown in Table 2. Here, the cash flows of Table 1 are included along with reductions in the market value of the asset as well as the reduced remaining debt as loan payments are made each year. Assuming market depreciation is $30,000, $27,500, $25,000, $20,000, $10,000 and $7,500 for years 1-6 respectively, the annual changes in financial position are shown. These financial implications also need to be clearly understood when securing financing.

Glenn A. Helmers, (402) 472-1788
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Table 1. Annual Cash Flows for Investment Example

Year	Return	Salvage	Down Payment	Loan Payment	Repair	Total
0			-10,000			-10,000
1	28,500			-29,267	- 150	- 917
2	28,500			-29,267	- 500	- 1,267
3	28,500			-29,267	-1000	- 1,767
4	28,500			-29,267	-1750	- 2,517
5	28,500			-29,267	-2850	- 3,617
6	28,500	10,000		0	-4250	34,250

Table 2. Annual Financial Impacts for Investment Example

Year	Cash Flow	Debt Reduction	Reduction in Asset Value	Total
0	-10,000			-10,000
1	- 917	20,867	-30,000	-10,050
2	- 1,267	22,328	-27,500	- 6,438
3	- 1,767	23,891	-25,000	- 2,876
4	- 2,517	25,563	-20,000	3,046
5	- 3,619	27,352	-10,000	13,733
6	34,250	0	- 7,500	26,750