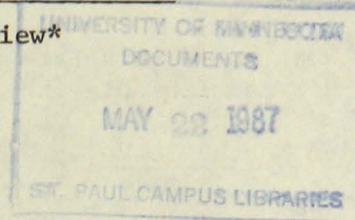


LAND VALUE/FINANCE/TRANSFER

An Overview*

I. Introduction

A. Objective

The objective of this educational program is to increase the participant's ability to deal with the major problems involved in buying and selling a farm.

The major decision areas to be considered are:

1. What is land of different quality selling for in this area?
2. What is the maximum bid price a particular person can justify?
3. How can the cash flow consequences of alternative financing arrangements be evaluated?
4. How can parents best transfer a farm to the next generation?

B. The basic dilemma in a buy land decision is illustrated by the following two statements:

1. Land is almost always a good investment--if you can pay for it.
2. The net income from a cropping program is almost never enough to cover land payments in the early years of the repayment schedule.

C. Decision framework

1. Some questions to consider before bidding on a farm.
 - a. Do you need more land to be efficient?
 - b. Are you getting good crop production now?
 - c. Will you be able to get good yields on the added acres?
 - d. Will a land purchase restrict your capital and credit for operating needs?
 - e. Will the land purchase create additional estate transfer and tax problems?
 - f. Are there alternatives to land purchase at this time?
2. Alternatives to farm purchase.
 - a. A farmer should be operating a large enough business to make a living with mostly rented land before buying.
 - b. Land purchase is like an investment in a growth stock--the farmer short of capital usually can't justify a low dividend paying investment. Higher annual returns come from investments in:
 - Operating costs for recommended practices
 - Livestock and livestock facilities
 - Machinery

* Prepared by Paul R. Hasbargen, Extension Economist in Farm Management, Agricultural Extension Service, University of Minnesota.

3. If decision is in favor of land purchase--two questions must be analyzed.
 - a. What would this farm land be worth to me?
 - b. How can I handle the cash flows?

II. What Is A Farm Worth? To Me?

A. The earnings approach

1. Future net earnings from the farm are estimated and discounted to a present value estimate.
 - a. A worksheet to do this is attached (worksheet #1). (Current earnings on crop land are 3 to 4 percent--so a capitalization rate of .03 to .04 in line F will yield expected market value for the crop land portion of a farm. The attached map shows cash rents paid for crop land of different qualities in each county. Multiplying this figure by 20 to 25 yields an approximate current crop land market value.)
 - b. A more complex formula that also considers financing and tax factors can be used by completing the first side of the attached BUYLAND input form and giving it to your Extension Director or Agricultural Instructor. (see example results on page 3)

B. The market approach

1. Other recent land sales are used to estimate the probable market price of a particular farm.
2. Adjustments are made for differences in land quality, buildings, location, size and time of sale.

III. Can I Handle The Cash Flows?

- A. Projected cash flows under five loan methods are available from the computer program BUYLAND.
 1. These can be used to compare alternative financing methods.
 2. Some example output will be provided.
- B. Worksheet #2 provides a worksheet for estimating whether or not the cash flows of a land purchase can be handled. If things really look tight, you will want to develop a more detailed cash flow.

IV. Land Financing Alternatives

- A. Contract for deed with owner
- B. Federal Land Bank or other commercial lender
- C. Farmers Home Administration
- D. Minnesota Farm Security Act

V. Land Transfer Issues

- A. Considerations in transferring the farm business
- B. Stages and tools in the transfer process
- C. Evaluating real estate transfer arrangements: tools vs. goals.

Table 1. Land bid variations given land earnings of \$50, annual growth in earnings of 4 percent, inflation rate in land values of 6 percent, and an after-tax desired rate of return of 8 percent.

| Base Maximum Bid Price = \$1,216 | | | | | | |
|----------------------------------|--|------------|---------------|-------------------|---------------|-------------------|
| Input Line # | Price Bid Factor | Base Value | Changed Value | Maximum Bid Price | Changed Value | Maximum Bid Price |
| 4 | Down payment as a percent of purchase price | 25% | 5% | \$1,253 | 45% | \$1,181 |
| 5 | Interest rate on borrowed funds | 9.5% | 8% | \$1,325 | 11% | \$1,120 |
| 6 | Amortization period in ___ years | 30 yrs. | 20 yrs. | \$1,188 | 40 yrs. | \$1,234 |
| 8 | Total marginal tax rate (fed. & state) | 30% | 15% | \$1,223 | 45% | \$1,208 |
| 9 | Percentage of capital gains taxed on property sold at end of planning period | 20% | 12% | \$1,256 | 28% | \$1,175 |

Table 2. Land bid variations given land earnings of \$100, annual growth in earnings of 4 percent, inflation rate in land values of 6 percent, and an after-tax desired rate of return of 8 percent.

| Base Maximum Bid Price = \$1,915 | | | | | | |
|----------------------------------|--|------------|---------------|-------------------|---------------|-------------------|
| Input Line # | Price Bid Factor | Base Value | Changed Value | Maximum Bid Price | Changed Value | Maximum Bid Price |
| 4 | Down payment as a percent of purchase price | 25% | 5% | \$1,973 | 45% | \$1,860 |
| 5 | Interest rate on borrowed funds | 9.5% | 8% | \$2,086 | 11% | \$1,764 |
| 6 | Amortization period in ___ years | 30 yrs. | 20 yrs. | \$1,871 | 40 yrs. | \$1,934 |
| 8 | Total marginal tax rate (fed. & state) | 30% | 15% | \$1,983 | 45% | \$1,829 |
| 9 | Percentage of capital gains taxed on property sold at end of planning period | 20% | 12% | \$1,949 | 28% | \$1,880 |

Worksheet 1. How much is land worth to me?

| <u>Income</u> | | | | | <u>Total</u> |
|-----------------------|--|--|--|--|--------------|
| Crop | | | | | |
| Acres | | | | | |
| Yield | | | | | |
| Production | | | | | |
| Price | | | | | |
| A. Expected return | | | | | \$ |
| <u>Direct costs</u> | | | | | |
| Seed | | | | | |
| Fertilizer | | | | | |
| Herb.+insect. | | | | | |
| Fuel+oil | | | | | |
| Custom hire | | | | | |
| Crop insurance | | | | | |
| B. Total direct costs | | | | | \$ |

Related operating and overhead

Machinery+equipment

 Repair \$ _____

 Depreciation or replacement _____

 Interest _____

Trucking+marketing _____

Real estate—taxes _____

 —maintenance _____

Insurance _____

Labor+management _____

Miscellaneous _____

C. Total related expenses \$ _____

D. Total costs (B+C) \$ _____

E. Residual return to land (A-D) \$ _____

F. Land value (E ÷ capitalization rate —%) \$ _____

G. Adjustments for location, bldgs., etc. (±) \$ _____

H. Estimated value of land (F±G) \$ _____

I. Land value/acre (H ÷ acres) \$ _____

Sensitivity analysis: Effect of change in prices, costs and capitalization rate

| <u>Residual return</u> <u>per acre</u> | <u>Capitalization rate</u> | | |
|---|----------------------------|------------|-------|
| | 3% | 4% | 5% |
| | | value/acre | |
| \$ _____ | _____ | _____ | _____ |
| \$ _____ | _____ | _____ | _____ |
| \$ _____ | _____ | _____ | _____ |

Worksheet 2. Determining whether land debt can be serviced

A. Estimate net cash flow available

(Cash available for land debt repayment
without jeopardizing rest of business)

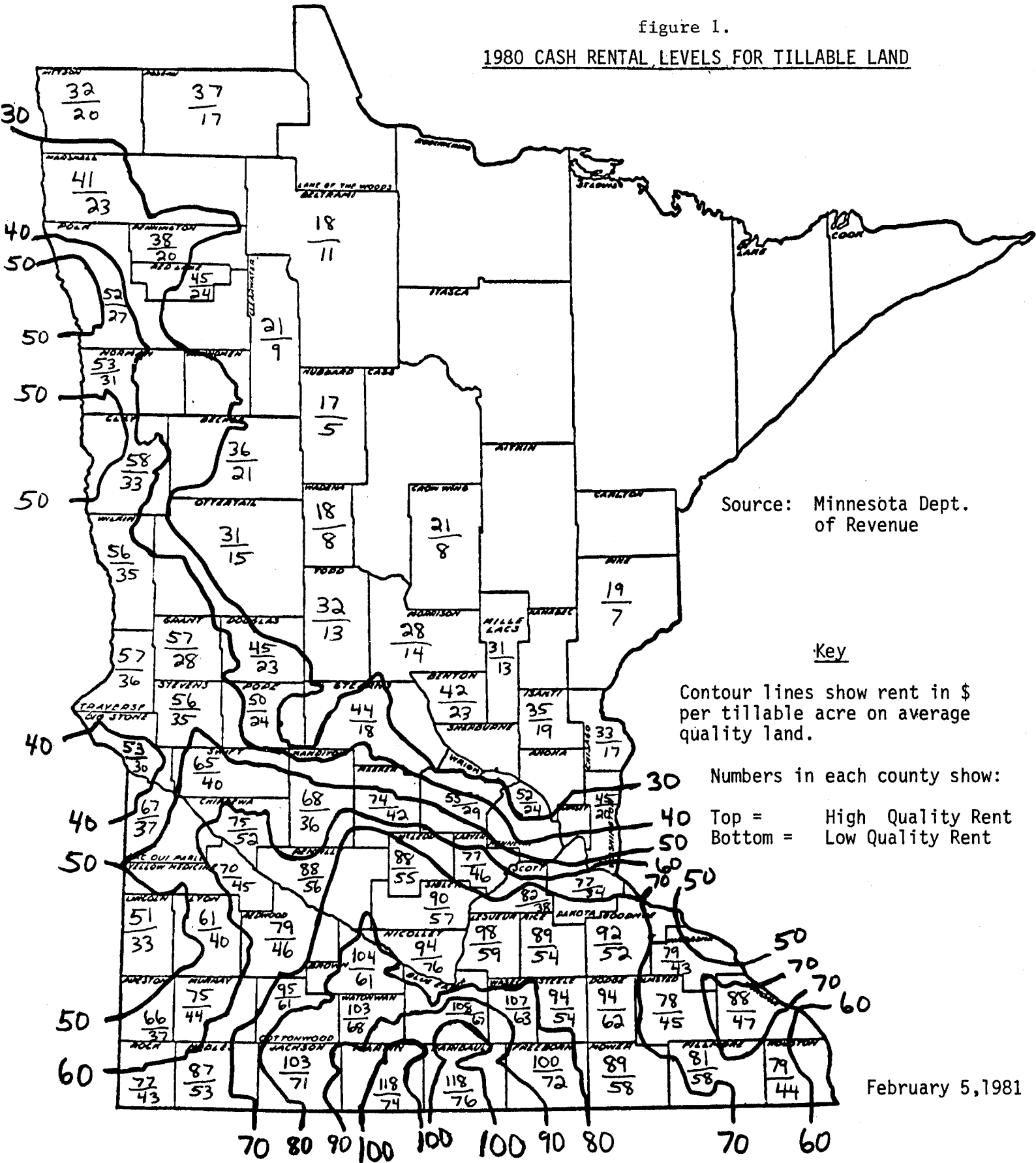
| | <u>Expected</u> | <u>Optimistic</u> | <u>Pessimistic</u> |
|---|-----------------|-------------------|--------------------|
| 1. Net cash returns from land | _____ | _____ | _____ |
| 2. Building rental, etc. | _____ | _____ | _____ |
| 3. Other cash earnings available | _____ | _____ | _____ |
| 4. Total expected annual cash available | _____ | _____ | _____ |
| 5. Cash available per acre (4 ÷ acres) | _____ | _____ | _____ |
| B. Calculate debt per acre that can be amortized | | | |
| 1. Cash available per acre (A, 5) | _____ | _____ | _____ |
| 2. Times debt repayment factor (see table) | _____ | _____ | _____ |
| 3. Equals debt per acre can be carried | _____ | _____ | _____ |
| C. Compare asking price with debt that can be carried | | | |
| 1. Debt per acre can be carried (B, 3) | _____ | _____ | _____ |
| 2. Plus per acre downpayment available | _____ | _____ | _____ |
| 3. Price per acre could be paid | _____ | _____ | _____ |
| 4. Present asking price per acre | _____ | _____ | _____ |
| 5. Difference | _____ | _____ | _____ |

Debt repayment factors
Amount of debt \$1 per year will cover—even payment

| Repayment period in years | Annual interest rate | | | | | |
|------------------------------|----------------------|---------|---------|---------|---------|---------|
| | 6% | 6.5% | 7% | 8% | 9% | 10% |
| 10 | \$ 7.36 | \$ 7.19 | \$ 7.02 | \$ 6.71 | \$ 6.42 | \$ 6.14 |
| 20 | 11.47 | 11.02 | 10.59 | 9.82 | 9.13 | 8.51 |
| 30 | 13.76 | 13.06 | 12.41 | 11.26 | 10.27 | 9.43 |
| 40 | 15.05 | 14.15 | 13.33 | 11.92 | 10.76 | 9.78 |
| forever (interest only) | 16.67 | 15.38 | 14.29 | 12.50 | 11.11 | 10.00 |

figure 1.

1980 CASH RENTAL LEVELS FOR TILLABLE LAND



Source: Minnesota Dept. of Revenue

February 5, 1981

BUYLAND, Part I
Land Bid Analysis Input Form

| <u>Input No.</u> | | <u>First Run</u> | <u>Second Run</u> | <u>Third Run</u> |
|------------------|--|------------------|-------------------|------------------|
| 1 | Annual net income per acre to pay for land (\$) | _____ | _____ | _____ |
| 2 | Anticipated annual increase in net income (%) | _____ | _____ | _____ |
| 3 | Anticipated inflation rate in land values (%) | _____ | _____ | _____ |
| 4 | Desired rate of return on after-tax dollars (%) | _____ | _____ | _____ |
| 5 | Total marginal tax rate (federal plus state) (%) | _____ | _____ | _____ |
| 6 | Marginal tax rate on capital gains income (assumes sale of land at the end of the planning span) (%) | _____ | _____ | _____ |
| 7 | Decision planning span in years (yrs) | _____ | _____ | _____ |
| 8 | Current price of comparable land in area (\$/A) | _____ | _____ | _____ |
| 10 | Equity cash down payment as a percent of purchase price (%) | _____ | _____ | _____ |
| 16 | Loan amortization period in years (yrs) | _____ | _____ | _____ |
| 17 | Interest rate on borrowed funds (%) | _____ | _____ | _____ |

(over)

BUYLAND, Part II

Cash Flow Analysis Input Form

| Input No. | | First Run | Second Run | Third Run |
|--|---|--------------|---------------|--------------|
| 1 | Annual net income per acre to pay for land (\$) | _____ | _____ | _____ |
| 2 | Anticipated annual increase in net income (%) | _____ | _____ | _____ |
| 5 | Total marginal tax rate (federal plus state) (%) | _____ | _____ | _____ |
| 7 | Decision planning span in years (yrs) | _____ | _____ | _____ |
| 9 | Actual price per acre of land being purchased (\$) | _____ | _____ | _____ |
| Arrangements For Financing Down Payment | | | | |
| 11 | Total down payment as a percent of purchase price (%) | _____ | _____ | _____ |
| 12 | Proportion of down payment financed with borrowed money (%) | _____ | _____ | _____ |
| | (lines 13, 14 and 15 are not necessary if none of down payment is borrowed; i.e. 12=0) | | | |
| 13 | Loan repayment period on down payment loan (yrs) | _____ | _____ | _____ |
| 14 | Interest rate on down payment loan (%) | _____ | _____ | _____ |
| 15 | Principal payment method on down payment (1 or 2) (1 = amortized; 2 = equal principal) | _____ | _____ | _____ |
| Arrangements For Financing Balance Of Land Debt | | | | |
| <u>Arrangements 1-3: Amortized, Equal Principal And Increasing Payment Plans</u> | | | | |
| 16 | Loan repayment period on balance of land debt (yrs) | _____ | _____ | _____ |
| 17 | Interest rate on balance of land debt (%) | _____ | _____ | _____ |
| | (line 18 will be set automatically but can be changed later) | | | |
| 18 | Annual percent increase for increasing loan payment method (%) | _____ | _____ | _____ |
| <u>Arrangement 4: Contract/Balloon Payment Plan (optional input)</u> | | | | |
| 19 | Length of contract (yrs) | _____ | _____ | _____ |
| <u>Contract Repayment Terms:</u> | | | | |
| 20 | Loan repayment period on which contract terms are based (yrs) | _____ | _____ | _____ |
| 21 | Interest rate on contract (%) | _____ | _____ | _____ |
| 22 | Principal payment method (1 = amortized; 2 = equal principal) (1 or 2) | _____ | _____ | _____ |
| <u>Balloon Repayment Terms:</u> | | | | |
| 23 | Loan repayment period on balloon (yrs) | _____ | _____ | _____ |
| 24 | Anticipated interest rate on balloon loan (%) | _____ | _____ | _____ |
| <u>Arrangement 5: Minnesota Farm Security Act (optional input)</u> (program assumes 20 year amortized loan repayment basis) | | | | |
| 25 | Interest rate on amortized loan (%) | _____ | _____ | _____ |
| 26 | Expected number of years before net worth will reach \$135,000. (yrs) | _____ | _____ | _____ |
| <u>Deffered Interest Repayment Terms:</u> (interest due state) | | | | |
| 27 | Loan repayment period for interest loan. (yrs) | _____ | _____ | _____ |
| 28 | Anticipated interest rate on interest loan (%) | _____ | _____ | _____ |