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Impact of Financing Terms on Farm Real Estate Market Prices, Brookings County, South Dakota, 1978-1987

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IMPACT OF FINANCING TERMS

ON

FARM REAL ESTATE MARKET PRICES,

BROOKINGS COUNTY, SOUTH DAKOTA, 1978 - 1987

BY

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This research paper is approved as a creditable and independent investigation by a candidate for the degree, Master of Science, and is acceptable for meeting the research paper requirements for this degree. Acceptance of this research paper does not imply that the conclusions reached by the candidate are necessarily the conclusions of the major department.

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Chapter I

INTRODUCTION

Land is a durable, immobile resource. The basic properties of land either do not change over time or change so slowly that land is considered to have an infinite life. In contrast to other farm resources, land is not used up in the production of farm commodities (Barry, Hopkin and Baker, p. 247).

Controlling farmland in South Dakota has dramatically changed since the homestead era of 75 - 100 years ago. Acquiring land today often requires specialized financing and analysis of a land tract and its potential to earn returns to justify the investment.

PROBLEM STATEMENT

Farmland prices in the United States more than doubled relative to the Consumer Price Index between 1960 and 1980 (Alston, 1986). South Dakota farmland prices were on an upward trend from World War II until they reached a peak in early 1982 (Swinson and Janssen, 1984, pp.8-9). Prices steadily declined from 1982 through 1984 and continued to decline through late 1987. This dramatic decline in farmland prices (-49%) was the greatest percent decline recorded in a five year period in this century. It is important to study the factors involved in the decline in an attempt to avoid a repeat

occurrence.

Farmland prices are affected by a number of factors including: soil characteristics, interest rates and other financing terms, export markets and government policies including the farm program and trade policies.

Methods of financing farmland, and terms of financing can affect the decisions of both borrowers and lenders since a majority of farmland sales transactions are credit financed. From 1971 - 1983, 87.6% of South Dakota farmland sales transactions were reported to be credit financed (Swinson, 1984). Criteria that affect financing method selected by a buyer include percent of purchase price borrowed, loan size, interest rate, years to repay and amortization period.

Methods of farm real estate financing can be divided into two broad categories - debt financing and equity financing. Debt financing is distinguished from equity financing by a down payment to the seller and borrowing the remaining funds to finance the real estate purchase from a lender. The borrower promises to repay remaining funds to this lender at a designated time along with a payment of interest to compensate for using the funds. Debt financing may involve mortgage financing or a contract for deed (financing offered by farmland seller). Equity financing of a farm real estate

purchase does not require borrowed capital and is a cash sale between the seller and buyer.

Primary lenders are lending sources that provide all of the debt capital necessary to finance the transaction. The two main primary lenders from 1971 - 1983 were sellers and Federal Land Bank Associations (FLBA). During that time period sellers financed 41.0% of the total farmland sales, the Federal Land Bank Associations financed 30.9% and all other lenders (FmHA, commercial bankers, insurance companies, PCA's, agricultural credit associations) financed a combined total of 15.7% of farmland sales (Swinson, 1984).

During that same time period, equity financed sales rose from 9.6% in 1971 to 22.8% in 1983 for a total of 12.4% of farmland sales from 1971 - 1983. This increase in equity financed sales was attributed to reduced credit availability and tighter credit standards adopted by lending institutions in the early 1980's.

Repayment terms of a farmland loan or contract for deed can be set up in a variety of ways. Amortization of equal payments over the entire life of the loan is one common method of financing. Alternate amortization methods that are used include decreasing or increasing payment loans, short term bank notes with refinancing provisions and loans with balloon payments at the end of

the repayment period.

The year in which mortgage financing was made has been shown to be a significant factor on real prices of farmland in South Dakota (Janssen and Haque, 1987, p.30-2). The inclusion of year of financing in models captures market factors that might have changed over time, but were not accounted for in other variables in the models.

This research effort is a study of these financing terms and their influence on farmland price.

RESEARCH OBJECTIVES

The overall objective of this research paper is to examine the relationships between farmland financing terms and and their effect on market prices of farmland sales transactions that occurred in Brookings County during the time period January 1978 to December 1987. Specific objectives are:

(1) To identify, compare and contrast specific financing terms of contract for deeds, mortgages and equity (cash) financed farmland sales transactions from 1978 - 1987.

(2) To determine the number and proportion of farmland sales transactions from 1978 - 1983 that have included reversions to lender or seller (release from deed or repossessions) since the time the transaction was made to the present.

(3) To determine the significance and impact of financing terms on farmland sales price from 1978 - 1987 and determine the value of the contract in seller financed sales.

Models developed for completion of objective (3) will include the specified financing terms identified in objective (1). The time period used for objective (2) is reduced to a six year period of 1978 - 1983. Selection of this time period was because nominal prices of Brookings County farmland were increasing or stable during those years and represent the peak of the farmland price boom. Lenders have indicated that many of these sales have been refinanced or have since reverted to the lender or seller. It is important to document these impacts of the recent farm finance crisis. It is felt that examination of these impacts on sales from 1984 to 1987, when sale prices sharply declined in Brookings County, is premature at this time.

DATA COLLECTION PROCEDURES

The primary data source for this research paper are 1978 to 1987 farmland sales in Brookings County. Data on each sale was obtained from the Farm Credit Services and from the Brookings County courthouse.

The Farm Credit Services allowed the use of the Federal Land Bank of Omaha (FLB) data set on farmland

sales transactions. Each Farm Credit Services branch office collects and maintains records of agricultural land transactions that occur in the area served by the office. The Farm Credit Services uses the data collected to establish valuations of their benchmark farms for lending purposes.

The Brookings branch office of the Farm Credit Services was visited to check accuracy of the data set and to provide the complete legal description of each sale tract. Financing terms were also collected when available. Farmland sales were limited to tracts of 35 acres or larger, since this is the minimum limit for agricultural land transfer in Brookings County.

Swinson (1984) used the Federal Land Bank data set of farmland sales transactions and found that seller financing was the most important type of financing in the sales examined. Swinson also stated that there was not enough information on financial variables in the FLB data set to completely understand seller financing.

The intent of this research paper was to obtain more information on the financial variables involved in each sale by obtaining the complete legal description and conducting a two-part courthouse record search. The first part was confirming ownership or changes in ownership at the Director of Equalization office. The

second part included research of deed and mortgage books at the Register of Deeds office to obtain complete details on financing and recorded changes in ownership or modifications that have occurred from the original transaction.

In their study of two Illinois counties, Reiss and Gordon (1980) had indicated that intra-family transactions are often below market value and do not represent "arms length" transfers which portray what competing bidders in the market are willing to pay for land under typical circumstances. Care was taken in data collection to avoid any sales that were not bonafide, at "arms length", when reviewing sales sheets and courthouse records. Nine sales were discarded because of father-to-son or other close relationships involved in the sale.

Data collection ended in October, 1988. Information and inferences made about farmland sales transactions are of that closing date. Because the data contain sales over a 10 year period, sale prices in the econometric models were deflated by the GNP-PCE (Personal Consumption Expenditures) price deflator, 1982=100.

Chapter II

REVIEW OF LITERATURE - FARMLAND PRICING MODELS

Economic research studies of farmland markets have used descriptive economic analysis, cross-sectional models and time-series models to examine farmland pricing behavior. The major purpose of cross-sectional studies is to explain farmland price variation at specific points in time (Janssen, 1987, AER 87-1). Cross-sectional models are used to explain farmland price variation by determining characteristics of the individual sale and land tract information. Time series models are used to examine the impact of domestic/ international market factors such as government policy, population change, technological advances, inflation, and other factors on farmland prices over time.

This section contains a discussion of literature reviewed of time-series and cross-sectional studies. South Dakota studies relevant to the research topic and studies of general agricultural finance models developed for use in farmland market studies are included.

TIME-SERIES STUDIES

Alston (1986) looked at the association between rapid real growth in U.S. agricultural land prices and increasing inflation rate during the 1970's and the recent declines which were associated with decreasing

inflation rates.

Alston used a regression model of land prices including inflation as an explanatory variable and a comparison of international growth rates of land prices. His results indicated that inflation has little if any effect on real land price growth and that most of the real growth of U.S. land prices can be accounted for by real growth in net rental income to land during the 20 years from 1962 to 1982.

Robison, Lins and Venkaturaman (1985) contradicted Alston's statement on inflation. Their regression estimates of a two-sector land market model suggest that cash rents and the inflation rate in cash rents have an important role in determining land values. Their regression estimates, using data from 1960 - 1970 and 1971 - 1981, also suggest considerable variation among states in factors which most strongly influence the land market.

Melichar (1979), in his study of capital gains effects on farmland price, examined the magnitude and causes of asset appreciation. He noted that asset appreciation should be adjusted for general price inflation before it is compared with income. Melichar, using data from selected periods from 1954 through 1978, developed a formula to relate the equilibrium present

value of an asset, such as land, to its returns.

Melichar then showed that a farm economy characterized by rapid growth in the real current return to assets will tend to experience large annual real capital gains and a low rate of current return to assets.

Lowenberg-DeBoer and Boehlje (1986) examined the value of unrealized capital gains in their study on farmland price changes. They developed an optimization model of the impact of farmland price changes on the production and finance choices of a wealth-maximizing decision maker. Their model allows for both capital gains and losses and the possibilities that some proportion of the unrealized capital gain or loss may be substituted for current income or recognized in the financial negotiation as collateral. The model was used to show that part of the financial vulnerability of the 1980's could be traced to management decisions made in response to capital gains in the 1970's.

Shalit and Schmitz (1982) demonstrated that the price of farmland is determined not only by the profit it generates (agricultural income and capital gains) but also the debt it can carry. By using an asset valuation model with U.S. agricultural annual data from 1950 - 1978, they showed that savings (the difference between farm income and consumption) and accumulated real estate

debt are the main determinants of high farmland prices.

They showed that, as the banking system increases the supply of credit to farmers with land as collateral, land values rise at a faster rate than if no credit had been available. The expansion and contraction of credit affects the rate at which land prices increase or decrease.

Shalit and Schmitz also discussed equity financing as one method of accumulating farmland, but suggested that the rational farmer continues to borrow funds as long as the farmland investment yields a positive net present value, implying that the internal rate of return on land is greater than or equal to the market rate of interest.

CROSS-SECTIONAL STUDIES

Janssen (1987, AER 87-1) analyzed 24 cross-sectional studies of farmland markets to aid future researchers in developing models and choosing or specifying variables to be used in models.

Janssen suggests that cross-sectional models are appropriate in examining the relative importance of factors explaining individual farmland tract transfers and sale prices. Janssen also warns that researcher's should become thoroughly acquainted with the definition and specification of variables in their data set and the

continuity of these variables in the data set over time. When explanatory variables are chosen, Janssen indicates that agricultural productivity/returns often have data collection limitations which preclude direct estimation, therefore proxy variables that are highly correlated are substituted. Proxies included are: soil productivity, principal crops produced, crop yield, gross sales and percent cropland, pasture or forest.

Findings from Oscar Burt's (1986) econometric study of 1960 - 1983 farmland prices showed no influence on land prices by lending rates of the Federal Land Bank lending policy or inflation rate on farmland prices. Burt's model did indicate that a distributed lag response on rents provides a complete model for farmland price behavior when primary consideration is agricultural value as opposed to urban or recreation uses.

Wise and Gunter (1986) gave special attention to the effects of interest rates, foreclosures and government payments on farm real estate values. These researchers were concerned with interest rates because of their effect on the cash flow position of the farmers and return to equity on land and buildings. High farm mortgage interest rates imply higher discount rates, which lowers the capitalized value of future income streams from farmland.

A single equation ordinary least squares (OLS) regression model for the U.S. was used by Wise and Gunter. Their results, using 1962 - 1981 data, indicated interest rates were highly significant and negatively related to land price. The average size of farm was found to be a highly significant and positive coefficient, indicating that farm enlargement continues to be an important variable exerting upward pressure on land values. Wise and Gunter found the number of transfers to be highly significant and negatively related to land values, suggesting that the rate of transfers is an important variable related to downward pressure on price.

Peterson (1986) emphasized the problems of specification bias when he examined land quality factors affecting farmland prices and concluded that the quality characteristics used to determine land values are only partly related to agricultural uses. Peterson, using data from 1949, 1959, 1969 and 1978 census years, cautions that specification bias will occur if a researcher were to use land quality indexes as proxies when comparing land prices because non-agricultural uses account for nearly two-thirds of the variation in U.S. farmland prices. He also concluded that all agricultural production, cost and profit functions estimated up to 1985 had

adjusted for quality by bare land prices or are not adjusted at all, indicating that specification bias was potentially present in all efforts.

South Dakota Cross-Sectional Studies

Several South Dakota farmland pricing studies have been completed from 1984 - 1987.

Swinson (1984) developed econometric models to determine variables having an effect on South Dakota farmland. Swinson concluded that seller financing was the most important type of financing in the sales examined, yet there was not enough information available on financial variables in the FLB data set she was using to completely understand seller financing. Swinson indicated "that knowledge of annual payments may have improved the findings of financial characteristics, but that information was not available."

Janssen (1985) dealt with long term trends in the South Dakota farmland market, dealing with the relationship between trends in net returns to farmland and factors influencing net returns. Conclusions from this research indicate South Dakota farm operators have almost always been the major owners, buyers and sellers of farmland in the state. Second, farmland market values are derived from net returns (rents) and expected net returns. The changes occurring in the level of net

returns and expected net returns are due to the growing impact of international commodity and financial markets. Third, productivity, land use and location factors explain most of the variation in per acre farmland sales price.

Janssen and Haque (1987) used econometric models (single equation OLS) to explain variation in farmland prices in South Dakota and in different regions of the State. Cross-sectional data from credit financed farmland sales were used. They concluded that financial/lender variables are not an important set of explanatory variables in most regional models of South Dakota, especially compared to results in the state model. However, for the 1976 - 1984 period, added financial lender variables are collectively significant at the 0.01 level of significance in eastern South Dakota. These regional differences in the level of significance of financial variables may be related to differences in regional price trends of farmland.

Generally the longer the time period examined, the more likely that financial variables are collectively significant due to the added explanatory power of the variable in the equations over time.

AGRICULTURAL FINANCE MODELS

Barrows and Luening (1987), Wegener (1985), Jones

(1988) and Eberle and Fiske (1987) have developed finance models to aid farmland market participants in comparing financing terms between farmland sales.

Barrows and Luening indicate that farmland appraisers are frequently asked to adjust the stated prices in seller financed sales for the effects of favorable terms and conditions. They present a generalized model and formula that can be applied to any situation.

The general formula suggested by Barrows and Luening for cash equivalent value (CEV) is CEV = down payment + present value (PV) payments + present value (PV) balloons. Barrows and Luening further develop the formula to include periodic payment factors, a remainder interest or discount factor and present value coefficients with the use of the market interest rate and the stated interest rate in the contract loan.

The terms and conditions that should be considered in adjusting to cash equivalent value include interest rate on both new and assumable mortgages, term of the loan, size of the down payment, balloon payments, seller's points and sale of contracts.

Wegener used a similar approach involving the cash equivalent value of the loan when he developed a series of three formulas to arrive at the financing adjustment of sale prices, when low down payments, low interest

rates or adjusted amortization periods are involved in a farmland sale. The basic formulas are used in a sequence to develop the value of interest advantage and cash equivalent value of the loan by means of present value approach to arrive at a financing adjustment value equivalent to the sale price minus the down payment and cash equivalent value of the loan.

Jones considered an alternative procedure for computing the cash price equivalent for a seller financed land purchase. This alternative procedure is based on a capital budgeting model that is representative of the profit maximizing objective that a land buyer would possess. Jones developed a worksheet that computes a cash price for land, under the assumption that a buyer will have to use a mortgage with specific repayment terms to finance a land acquisition if seller financing is rejected. Jones supports this reasoning by suggesting that the worksheet yields cash price equivalents that are representative of the ones buyers compute when they are determining whether seller financing or a mortgage should be used to purchase land.

Eberle and Fiske developed a model for assessing the impact of seller financing on land prices, and tested it on Iowa farmland sales from 1975 - 1979. In the model, Eberle and Fiske developed a formula that arrived at the

contract value. Simply stated :

Contract value = Amount financed by the contract - Equivalent value of the mortgage

The equivalent value of the mortgage is the value of contract payments discounted at the market rate of interest on mortgages.

In order to use the model, Eberle and Fiske collected data on financing terms that include:

1. Type of financing.
2. The dollar amount of down payment.
3. Interest rate on the contract or mortgage.
4. Term of the loan.
5. Payment patterns.

Results of the five year study show that seller financing was found to have an impact on Iowa farmland prices equivalent to the value of the contract.

INFLUENCE OF LITERATURE REVIEWED ON RESEARCH PAPER

All literature reviewed has some degree of influence on the course taken in this research paper. In the case of this report, the time series studies were informative, but not used extensively because of the type of variables examined. There was concern for the effect of inflation on farmland price, as addressed by Alston. A variable for deflated price was created to account for inflation.

The studies of Shalit and Schmitz prompted further

investigation into equity financing and Wise and Gunters' look at interest rates were both influential in the financial term analysis. Janssen's research report on cross-sectional studies, developing models and specifying variables was extremely helpful in organizing the research. Swinson and Haque's research on South Dakota farmland sales were also quite helpful and influential in developing models and selecting explanatory variables.

A trial sample of the agricultural finance models was conducted on randomly selected Brookings County farmland sales to determine ease of use and practicality of model results. The Eberle and Fiske model used on Iowa farmland sales was selected as the most appropriate model for use in meeting the third objective of this research.

Chapter III

FINANCIAL TERM ANALYSIS

Major topics examined and discussed in this chapter include : farmland financing methods, farmland financing terms and reversion of farmland. Financing methods and financing terms of Brookings County farmland sales from 1978 - 1987 are examined, along with reversion of 1978 - 1983 farmland sales to the lender. These topics are developed to meet the requirements of research objectives 1 and 2.

FINANCING METHODS

Farmland sales are financed by three methods: cash (equity) financing, mortgage financing and seller financing. The method of financing chosen by a prospective land buyer is dependent upon the financial climate at the time of the sale. A description of the three financing methods and their frequency of occurrence in the Brookings County study follows. Table 3.1 shows the frequency of farmland sales occurring in Brookings County from 1978 to 1987.

Cash or Equity Financing

Individuals may acquire land by means of cash purchase or using equity they have earned to finance the acquisition of assets.

Cash sales were uncommon in the late 1970's and

early 1980's, but investors have seen an opportunity in recent years to purchase land by means of cash sales.

In the Brookings County sales that occurred from 1978 to 1987, 68 of the 353 sales, or 19.3%, were cash financed. During the years of increasing land prices from 1978 to 1983, only 18 of the 226 sales, or 8%, were cash financed. In more recent years of 1984 to 1987, when land values were decreasing, nearly 39%, or 50 of the 127 sales recorded were cash financed (Table 3.1).

Mortgage Financing

Land buyers secure funds from lending institutions or from individuals and pledge property or other collateral as security for the loan. Funds borrowed are to be repaid with interest. Interest rates may be fixed or variable. Payments are generally amortized over the lifetime of the loan, and a balloon payment may be attached at the end of the term.

The Brookings County study shows that 64 mortgage financed sales occurred from 1978 to 1987, accounting for 18% of all sales. Forty seven of the mortgage sales occurred from 1978 to 1983. There were 17 mortgage financed sales that occurred during the years of 1984 to 1987.

Seller Financing

Seller financing on land sales allows the buyer and

TABLE 3.1 Method of Farmland Financing by Time Period, 1978 - 1987 Brookings County Farmland Sales.

Method of Financing	Time Period 1978 - 80	1981 - 83	1984 - 87	Total
	-- number of farmland sales --			
Cash	4	14	50	68
Mortgage	16	31	17	64
Seller	94	67	60	221
Total	114	112	127	353

TABLE 3.2 Length of Financing by Method of Financing by Time Period - Frequency of Credit Financed Farmland Sales.

Years to Repay	Time Period and Method of Financing 1978 - 80 Seller	1978 - 80 Mortgage	1981 - 84 Seller	1981 - 84 Mortgage	1984 - 87 Seller	1984 - 87 Mortgage
	-- number of farmland sales --					
1 - 5	21	1	18	2	26	4
6 - 10	51	0	33	4	22	5
11 - 15	10	0	8	4	11	2
16 - 20	9	4	7	4	0	1
21 - 30	2	5	1	14	0	2
31 - 40	1	6	0	3	1	3
Totals	94	16	67	31	60	17

Average length of credit financing for Brookings County farmland sales - 1978 to 1987 time period.

Seller Financed -- 9.6 years
Mortgage Financed -- 22.8 years

Source: Federal Land Bank Data Set and Brookings County Courthouse record search.

seller much more flexibility in financing. Repayment is similar to mortgage financing, but seller financing allows the buyer and seller to make tradeoffs between interest rates, purchase price and other terms affecting repayment. Seller financing also allows many buyers to gain control of land with a low down payment.

Seller financing is by far the most common method of financing in Brookings County, although recent trends indicate a decrease in the use of seller financing. Sellers of Brookings County farmland financed 221 of the 353 sales (62.6%) from 1978 to 1987. During the years 1978 to 1983 over 71% of the sales were seller financed, while only 47% of the sales from 1984 to 1987 were seller financed, a decrease of 24 percentage points in seller financing.

FINANCING TERMS OF FARMLAND SALES IN BROOKINGS COUNTY

The length of time that the farmland purchase is financed, interest rates, annual payment amount, down payment and balloon payment amount are all expected to be important financial variables. Examination of the frequency of and variation in these terms will aid in completing requirements of the first research objective.

Years to Repay

The length of time farmland sales were credit financed in Brookings County from 1978 to 1987 ranged

from 1 to 40 years. Examination of credit financed farmland sales from 1978 to 1983 indicated 161 seller financed sales and 47 mortgages. Examining the length of financing on these sales shows that 123 of the seller financed sales, or 76.4% were 10 years or less in length. During the same time period, only 7 of the 47 mortgages were 10 years or less in length (Table 3.2).

The most frequent length of financing for seller financed sales was 6 - 10 years, accounting for 52.2% of all seller financed sales from 1978 to 1983, and 37% of all seller financed sales occurring between 1984 and 1987. Mortgages recorded in the data set are longer in term, with 59.6% being 20 to 40 years in length during the years 1978 to 1983. It would appear that a trend toward shorter financing terms occurred during the 1984 - 1987 time period, when 80% of seller financed sales and 53% of mortgages were financed for 10 years or less.

Interest Rates

Nominal interest rates for mortgage financed sales ranged from 5% to 16% from 1978 to 1987, with three 5% rates occurring in 1978, and one 16% rate in 1981.

The mortgage interest rates for 1978 - 1980 showed 11 of the 15 sales between 8.25% and 10%, with one sale in 1978 at 11%. From 1981 - 1983, 26 of the 31 sales had interest rates greater than 10%, as were 12 of the 17

mortgage sales from 1984 - 1987, with 10 of those occurring in 1984. Table 3.3 contains information on interest rates.

The contract for deed interest rates for 1978 - 1980 showed 72 of 94 sales with interest rates between 5% and 8%, and 22 occurring in the 8.25% - 10% range. There was only one sale having an interest rate over 10.5% during this time period. The range of interest rates shifted in 1981 - 1983, with only 2 sales in the 5% - 8% range. There were 59 contract for deeds in the 8.25% - 10% range, and the remaining 8 sales were in the 10.5% - 12.75% range.

Interest rates remained high during 1984 - 1987 on contract for deeds, with only 3 sales in the 5% - 8% range, 42 of the 59 seller financed sales in the 8.25% - 10% range and 15 sales with interest rates of 10.5% to 12.75%.

Interest rates may be fixed or variable over the entire term of financing. The Farm Credit Services interest rates were variable throughout the entire time period examined. The courthouse record search also provided information on seven other sales indicating variable interest rates. There were 12 Federal Land Bank of Omaha sales from 1978 - 1980, 20 from 1981 - 1983 and 5 from 1984 - 1987. There were four other mortgage

TABLE 3.3 Frequency of Interest Rates by Method of Financing by Year.

Year & Method of Financing	Nominal (Contract) Interest Rates			
	5% - 8%	8.25% - 10%	10.01% - 12.75%	12.76% - 16%
	-- number of farmland sales --			
1978 - 80				
Seller	72	22	0	0
Mortgage	4	11	1	0
1981 - 83				
Seller	2	59	6	0
Mortgage	0	5	16	10
1984 - 87				
Seller	3	42	15	0
Mortgage	0	5	8	4
Totals				
Seller	77	123	21	0
Mortgage	4	21	25	14

Source: Federal Land Bank Data Set and Brookings County Courthouse record search.

financed sales recorded from 1981 - 1983 indicating variable interest rates. Records on contract for deeds show only three with recorded variable interest rates, one occurring in each of the three time periods mentioned above.

Down Payments

The down payment amount is the amount of equity capital used by the borrower at the time of purchase. The down payment amounts ranged from $0 to $194,688. A zero down payment sale is a 100 percent debt financed sale of which there were 26 over the entire time period examined. The down payment was examined both in total dollar amount and down payment amount per acre. The most frequent down payments were in the $10,001 - $20,000 range, accounting for 73 of the 285 financed sales. There were 32 sales having down payments up to $10,000 and 57 sales having down payments of $20,001 to $30,000.

The frequency of down payment amounts drops off after $30,000 with 29 sales occurring in the $30,001 - $40,000 range and then a range of 3 to 25 sales occurring in each $10,000 increment up to $100,000 (Table 3.4a).

Down payment amounts per acre were also examined over the entire time period. The most frequent payment

TABLE 3.4a Down Payment Amounts by Time Period that Farmland Sale Transaction Occurred, 1978 - 1987.

Down Payment Amount ($)	Time Period 1978 - 1980	1981 - 1983	1984 - 1987	Total
	-- number of farmland sales --			
0	8	12	6	26
1 - 10,000	8	9	16	32
10,001-20,000	31	25	17	73
20,001-30,000	26	19	11	57
30,001-40,000	14	11	4	29
40,001-50,000	8	11	6	25
50,001-100,000	11	9	14	34
100,001 - up	4	2	4	10
Totals	110	98	77	285

Source: Federal Land Bank Data Set and Brookings County Courthouse record search.

TABLE 3.4b Down Payment Amounts per Acre by Time Period that Farmland Sale Transaction Occurred, 1978 - 1987.

Down Payment Per Acre($/Ac)	Time Period 1978 - 1980	1981 - 1983	1984 - 1987	Total
	-- number of farmland sales --			
0	8	12	6	26
1 - 50	5	1	9	15
51 - 100	16	15	15	46
101 - 150	23	23	8	54
151 - 200	32	19	8	59
201 - 250	18	16	3	37
251 - 300	3	5	1	9
301 - 400	2	1	12	15
401 - up	3	6	15	24
Totals	110	98	77	285

Source: Federal Land Bank Data Set and Brookings County Courthouse record search.

amounts per acre were in the $151 - $200 per acre range, with 59 sales recorded. The $51 - $250 per acre down payment range accounted for nearly 69% of the 285 financed sales. There were 24 sales with down payment amounts per acre over $400, with 15 occurring since 1984 (Table 3.4b).

Annual Loan Payments

The annual loan payment is the principal and interest amount scheduled for repayment. The payment is considered a level payment if the loan principal and interest has been amortized over the length of the loan, creating equal annual payment amounts. A decreasing payment loan is one in which the principal amount is equal across the entire financing period and the interest is figured on the remaining balance each payment period. Since the remaining balance is decreasing annually, the amount of interest and total payments are decreasing.

In the Brookings County data set, the annual loan payment was either specified in the terms of the contract or calculated based on the repayment terms listed. Amortized level payment loans were common in mortgage financed sales and in seller financed sales with balloon payments. Decreasing payment loans were found primarily in seller financed sales.

Examining the incidence of level payment loans and decreasing payment loans shows that 157 of the 285 credit financed sales (55%) were level payment loans and 128 (45%) were decreasing payment loans. The numbers of level payment loans (104) and decreasing payment loans (104) were exactly equal over the 1978 - 1983 time period, but the number of decreasing payment loans declined to 24 in the 1984 - 1987 time period, compared to 53 level payment loans.

Credit financed sales were further examined for annual loan payment amounts. Loan payment amounts ranged from a low of $1,583 per year to $108,907 per year. The high payment was due to a one year length of financing indicated. The most frequent occurrence of annual payments was in the $5,001 to $10,000 range, accounting for 111 sales or 38.9% of total credit financed sales. This was common for all time periods, with 39 of 110 sales for 1978 - 1980, 40 of 98 sales for 1981 - 1983 and 32 of 77 sales for 1984 - 1987. It is interesting to note that 22 of 45 sales in the lowest payment category occurred during the 1984 - 1987 time period (Table 3.5).

As one looks at the higher payment categories there were 68 sales (24% of the total) in the $10,001 to $15,000 category. The frequency is then cut in half for

TABLE 3.5a Annual Loan Payment Amount by Time Period that Farmland Sale Transaction Occurred, 1978 - 1987.

Annual Loan Payment Amount ($)	Time Period 1978 - 1980	1981 - 83	1984 - 1987	Total	%
	-- number of farmland sales --				
1 - 5,000	16	7	22	45	15.8
5,001-10,000	39	40	32	111	38.9
10,001-15,000	30	21	17	68	23.9
15,001-20,000	11	16	3	30	10.5
20,001-25,000	5	7	2	14	4.9
25,001 - up	9	7	1	17	6.0
Totals	110	98	77	285	100.0

TABLE 3.5b Annual Loan Payment Amount per Acre by Year that Farmland Sale Transaction Occurred, 1978 - 1987.

Loan Payment Amount ($/Ac)	Year 1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	Total
	-- number of farmland sales --										
to 20.00	0	1	0	0	0	0	0	0	1	0	2
20.01 - 40.00	13	5	0	4	1	2	5	3	5	11	49
40.01 - 60.00	17	14	3	6	5	11	9	4	5	6	80
60.01 - 80.00	8	12	9	7	8	7	7	1	4	0	63
80.01 - 100.00	7	4	6	6	7	10	4	1	1	0	46
100.01 - up	1	5	5	8	8	8	7	3	0	0	45
Totals	46	41	23	31	29	38	32	12	16	17	285

Source: Federal Land Bank Data Set and Brookings County Courthouse record search.

each $5,000 increment upward to $25,000 with 30 sales in the $15,001 to $20,000 range and 14 sales in the $20,001 to $25,000 range. Another 14 sales had annual payments of $25,001 to $40,000, while 3 sales had annual payments exceeding $50,000.

The annual loan payment per acre, which is the annual loan payment divided by the number of acres purchased, is the annual cash cost per acre of purchasing the land. Annual loan payment per acre can be used as a comparison to cash rental rates and in determining annual cash outlays per acre. The annual loan amount per acre varied from $12.80 to $387.50. There were only 2 sales having annual payments of less than $20 per acre. In the $20.01 to $40.00/acre range there were 49 sales, 18 from 1978 - 1980, 7 sales in the 1981 - 1983 time period and 24 occurred from 1984 - 1987. The $40.01 to $60.00/acre payment range had the highest frequency of sales, accounting for 80 sales. This would be considered the upper level for net cash rental rates (gross cash rent per acre less property taxes) in the Brookings County area. There were 154 sales (53% of financed sales) having loan payments above $60.00 per acre, with 46 of these 154 sales having annual payment above $100/acre.

Data in Table 3.6 provides estimates of farmland

TABLE 3.6 Estimates for Annual Farmland Cash Rents for Brookings County for years 1978 - 1987.

Year	Average Sale price ($/acre)-1	SD Cropland Rent/Value Ratio-2	Brookings County Est. Cash Rent ($/acre)-3	East Central CRD Rents ($/acre)-4
1978	596	6.4	38.15	29.73
1979	686	6.1	41.85	32.36
1980	811	5.8	47.05	36.60
1981	780	5.7	44.45	39.50
1982	744	5.9	43.90	42.10
1983	731	6.5	47.50	43.70
1984	592	7.0	41.45	45.00/39.86*
1985	413	8.3	34.30	38.31
1986	311	9.2	28.60	35.84
1987	333	10.0	33.30	31.25

Source: 1) South Dakota Farmland Values and Sale Price, SDSU Economics Department Research Report 88-1.

2) USDA Agricultural Resources, April 1989, for East Central Crop Reporting Districts (CRD).

3) Documented information on Brookings County farmland cash rents is not available. Brookings County farmland cash rent is estimated by multiplying Brookings County farmland sale price by the South Dakota cropland rent-to-value ratio, (1) * (2) = (3).

4) Economics Research Service Agricultural Land Rental Survey. Unpublished per acre average rental rates for cropland in this region, based on survey data.

* In 1984 a new method of reporting rents was implemented by ERS. Years 1978 to 1984 were calculated using old method and years 1984 to 1987 were calculated using new method.

cash rental rates in Brookings County and in the East Central region. These can be compared to annual payments of credit financed purchases. In each year, more than two-thirds of the annual payments per acre exceeded the estimated average cash rental rate in this county.

Balloon Payments

A balloon payment is a terminal loan balance at the end of the financing period. Balloon payments were either specified in the contract or mortgage terms, or calculated by subtracting the sum of principal payments from the purchase price and down payment(s). Contract for deed transactions most frequently have balloon payments at the end of the contract period and in the Brookings County data set, 134 (61%) of the 221 contract for deed sales from 1978 - 1987 had balloon payments. There were 9 of 64 mortgages (14%) in the 1978 - 1987 data set with balloon payments scheduled at the end of the financing term. More than half (51%) of total credit financed sales had balloon payments during the 1978 - 1987 time period (Table 3.7).

Balloon payments were examined for the entire time period. There were 143 balloon payments ranging from $752 to $308,441.80. There were 107 balloon payments under $100,000 with only 10 of those under $30,000. The most frequent balloon payment amounts were in the

TABLE 3.7a Balloon Payment Amounts by Time Period that Farmland Sale Transaction Occurred, 1978 - 1987.

Balloon Amount	Time Period 1978 - 1980	1981 - 1983	1984 - 1987	Total
	-- number of farmland sales --			
1 - 50,000	21	17	19	57
50,001-100,000	17	23	10	50
100,001-150,000	12	12	2	26
150,001 - up	6	4	0	10
Total Balloon Payments	56	56	31	143
Total Credit Financed Sales	110	98	77	285

TABLE 3.7b Balloon Payment Amounts per Acre by Time Period that Farmland Sale Transaction Occurred, 1978 - 1987.

Balloon Amount Per Acre($/Ac)	Time Period 1978 - 1980	1981 - 1983	1984 - 1987	Total
	-- number of farmland sales --			
1 - 100	2	1	1	4
101 - 200	6	1	7	14
201 - 300	8	6	8	22
301 - 400	15	14	5	34
401 - 500	7	8	6	21
501 - 600	9	9	2	20
601 - 700	6	9	0	15
701 - up	3	8	2	13
Totals	56	56	31	143
Average Sale Price ($/acre)	713.23	781.86	422.82	

Source: Federal Land Bank Data Set and Brookings County Courthouse record search.

$40,000 - $60,000 range, accounting for 23.5% of the balloon payments.

Only 10 balloon payments were above $150,000, with all of those taking place prior to 1984. There were 26 recorded sales with balloon payments of $100,001 to $150,000. Based on data results it appears that there has been a trend toward lower balloon payments over time.

Similar to the loan payment per acre variable, a balloon payment per acre variable was created to determine the buyer's incentive to pay off the balloon payment, either by obtaining additional financing or by using equity or savings. Payment would be especially questionable when the balloon amount per acre is greater than the current value of the land on a per acre basis.

For the entire time period, there were 38 sales having balloon amounts per acre under $300, with 16 sales each in the 1978 - 1980 and 1984 - 1987 time periods, and only 8 sales in the 1981 - 1983 time period. The most frequent number of sales (54) had balloon payments of $301 - $500 per acre. There were 48 sales having balloon payments per acre from $501 up to $953.67, with 18 of those occurring from 1978 - 1980, 26 sales from 1981 - 1983 and only 4 sales from 1984 - 1987. This cycle follows the increase and subsequent

decline of farmland prices that has occurred.

It is also important to examine the down payment, balloon payments and amortized principal amounts as a percent of the purchase price. Over 90% (260) of the 285 credit financed sales had down payments of 0 - 30% of the purchase price. The most frequent down payment percentage was 11 - 30% with 210 sales (Table 3.8).

The frequency of down payment percentages above 30% is relatively low, with 1 - 12 sales occurring in each 10% increment. From 1984 - 1987 there were only 4 sales having down payments above 30%, 3 of those in the 31% - 40% category.

The majority of the balloon payments were in the range of 51% - 80% of the purchase price, accounting for 70% (103) of the 143 sales with a balloon payment.

The percent of purchase price that will be paid in principal is dependent on both the amount of down payment made and the balloon payment amount. The distribution of percent amortized is wide, but there appears to be two major concentrations. The first concentration of sales have amortized principal in the 1% - 30% range (130 sales) which would indicate high balloon payments. The second concentration is in the 71% - 90% range (73 sales), accounting for 26% of all the financed sales, which are usually associated with

TABLE 3.8 Frequency of Down Payment, Balloon Payment and Amortized Principal as Percent of Purchase Price for Credit Financed Farmland Sales, 1978 - 1987.

Percent of Purchase Price	Down Payment(%)			Balloon Payment(%)			Amortized Principal(%)		
	total	cfd	mort	total	cfd	mort	total	cfd	mort (a)
0	26	2	24	142	87	55	0	0	0
1 - 10	24	14	10	2	2	0	35	35	0
11 - 20	106	93	13	3	3	0	63	61	2
21 - 30	104	97	7	6	6	0	32	30	2
31 - 40	12	6	6	6	6	0	13	10	3
41 - 50	7	4	3	19	17	2	8	5	3
51 - 60	1	1	0	27	24	3	12	9	3
61 - 70	1	0	1	51	49	2	15	7	8
71 - 80	1	1	0	22	21	1	46	42	4
81 - 90	3	3	0	7	6	1	27	20	7
91 - 99	0	0	0	0	0	0	8	0	8
100	0	0	0	0	0	0	26	2	24
Totals	285	221	64	285	221	64	285	221	64

Source: Federal Land Bank Data Set and Brookings County Courthouse record search.

(a) total = total number of credit-financed farmland sales;
cfd = number of contract for deed sales;
mort = number of mortgage financed sales.

10 - 30% down payments and no balloon payments.

REVERSION OF FARMLAND

Farmland reversions occur when farmland buyers allow their property to revert to the lender (seller, heirs of seller, or mortgagor). Reversions may be either by foreclosure, bankruptcy liquidation or by quit claim deed as recorded at the courthouse.

Legal Instruments in Land Ownership

A discussion on legal instruments is included here as a means to clarify the methods that buyers and sellers may use to transfer real estate, as in the case of farmland reversions.

The legal instrument used to convey title to real estate is a deed. The types of deeds dealt with in the Brookings County study are the general warranty deed and the quit claim deed, along with the mortgage that conveys real estate property to the mortgagee as a surety that a real estate loan will be repaid.

According to Barry, Hopkin and Baker, p. 354, "Where title to property is transferred by a general warranty deed, the grantor or seller is, in essence, promising that there is a clear, fee simple title to the land except as noted on the deed. With a quit claim deed, the buyer (grantee) receives only the grantor's interest in the property."

Warranty deeds are issued when all the requirements of a transaction are met. In the case of a contract for deed, a warranty deed is issued to the buyer after all payments are made. In the Brookings County study, 14 of the contract for deeds issued from 1978 - 1983 have been issued warranty deeds.

Quit claim deeds are commonly used in conjuction with contract for deed sales as the means for the seller to convey property interest to the buyer until such time as contract terms are met. A quit claim deed is also used when the buyer relinquishes any claim to real estate and allows the seller to have original rights to the property.

Reversion Occurrence

The number of reversions recorded (as of October, 1988) for Brookings County farmland sales from 1978 to 1983 was 65, accounting for 27.9% of the 226 sales recorded during that time period. Twenty four of the 65 reversions took place because of foreclosure action, and 41 of the reversions were due to quit claim deed by the buyer.

The number of reversions by type of buyer financing show 2 cash sales and 3 mortgage sales reverting to original seller or having foreclosure action taken. (The cash sales that reverted were sales that at time of sale

documentation were considered cash, but subsequent financing took place after the sale, according to courthouse record follow up). The remaining 62 reversions that occurred were contract for deed financed sales.

Statistical Analysis of Reversion Sales

Financing terms of 1978 - 1983 farmland sales were compared between reversion and nonreversion sales. A chi-square test was conducted for cross-tabulations of balloon payment incidence, method of financing (mortgage or contract for deed), and year of sale with reversion/nonreversion of the farmland sale. The results are found in Table 3.9 and indicate that incidence of balloon payments and contract for deed financing are associated with reversion. However, incidence of reversion did not significantly vary by year within the 1978 - 1983 period.

A t-test procedure was run on the key financing variables to test the null hypothesis that the means of each variable do not differ between sales that have reverted and those that have not. It was anticipated that higher interest rates, shorter financing periods and the amount of down payment, amount of annual loan payment and balloon payment are associated with reversion sales. The results are found in Table 3.10 and

TABLE 3.9 Chi-square tests of 1978 - 1983 Credit Financed Sales by Reversion Status of Farmland Sale.

Reversion by Year

	78	79	80	81	82	83	Total
Reversion	17	13	11	10	6	8	65
No Reversion	29	28	12	21	23	30	143
Total	46	31	33	31	29	38	208

Statistic	d.f.	value	Critical chi-square
Chi-square	5	7.00	at 5% level = 11.07

Reversion by Method of Financing

	Reversion	No Reversion	Total
Mortgage	3	44	47
Seller Contract	62	99	161
Total	65	143	208

Statistic	d.f.	value	Critical chi-square
Chi-square	1	17.47	at 5% level = 3.84

Reversion by Balloon

	Reversion	No Reversion	Total
No Balloon	15	82	97
Balloon	50	61	111
Total	65	143	208

Statistic	d.f.	value	Critical chi-square
Chi-square	1	21.083	at 5% level = 3.84

TABLE 3.10 T-test of Financial Terms by Reversion Status of Farmland Sale, 1978 - 1983 Credit Financed Sales.

Variable	Reversion	No Reversion	T-test	Probability Ho = 0
	Mean			
Years to repay	10.25	14.92	3.570	0.0004
Interest (%)	8.57	9.19	2.350	0.0197
Down payment ($)	30311	26810	-0.873	0.3837
Annual Loan Payment ($)	13111	12722	-0.244	0.8071
Down Payment Amount/acre ($/ac)	171.79	154.38	-0.997	0.3198
Annual Loan Payment Amount/acre ($/ac)	71.84	72.99	0.225	0.8224
d.f.= 206 , t.05 = 1.645 n = 208				
Balloon amount	86295	70783	-1.493	0.1483
Balloon amount /acre ($/ac)	453.93	437.83	-0.4579	0.6479
d.f.=109 , t.05 = 1.645 n = 111				

indicate that the means of years to repay and interest rates are significantly different between reversion/nonreversion sales at the 5% probability level. The means for the amount of down payment, annual loan payment and balloon payment did not significantly vary at the 5% probability level. A t-test procedure was also run on the means of down payment per acre, annual loan payment per acre and balloon payment per acre with with no significant differences in means found.

It is interesting to further examine the major financing terms of seller financed sales from 1978 - 1983 that reverted and those that did not. The mean interest rate on seller financed sales varied by less than 0.5 (+ or -) percentage points between sales that reverted and those that did not in all but one of the years. In four of the six years that average (mean) interest rate was higher on nonreversion sales.

The average purchase price and number of acres purchased did not systematically vary by year between reversion and nonreversion sales. Length of financing (years to repay) was always less for reversion sales than for nonreversion sales, with a range of 3.4 to 7.5 fewer years during the 1978 - 1983 period.

In summary, reversion sales are associated with contract for deed sales with relatively short repayment

terms and balloon payments. More than 71% (45 of 63) of reversion sales had repayment terms of less than 10 years, compared to only 57% of nonreversion sales (Table 3.11). This finding implies that farmland sales with these financing terms (contract for deed, short repayment period and balloon payments) were more likely to revert to the lender/seller than credit financed sales with longer financing terms and no balloon payments.

SUMMARY OF FINANCING TERMS

The major financing terms used in Brookings County farmland sales from 1978 to 1987 were examined. The incidence of farmland sale reversion to seller / lender from 1978 - 1983 was also examined. Farmland finance terms were compared between reversion and nonreversion sales. These reversion/nonreversion sales were examined to meet the requirements of objectives 1 and 2.

There were 364 bonafide sales documented during the entire time period. There were 11 sales that had missing or incomplete information of financing terms, so only 353 sales were used for analysis. Sixty eight of these 353 were cash financed, 64 were mortgaged financed and 221 were seller financed. Seller financing was the most frequent method of financing in each year. Cash or equity financing was infrequent in the late 1970's, but

TABLE 3.11 Frequency of Credit Financed Farmland Sales having Reversions, by Length of Financing.

Time Period Reversion Non-Reversion	Years to Repay 1 - 5	6 - 10	11 - 15	16 - 20	21 - 30	31 - 40
1978 - 1980						
Reversion	12	18	5	3	1	1
Non-reversion	10	33	5	10	6	6
1981 - 1983						
Reversion	5	10	6	2	0	0
Non-reversion	15	27	6	9	15	3

Source: Federal Land Bank Data Set and Brookings County Courthouse record search.

was more frequently used in the mid-1980's.

Seller financing was found to be shorter in term than mortgage financing, with the mean for seller financed sales at 9.6 years over the entire time period, while mortgage sales were financed for an average of 22.8 years.

Interest rates were examined, with rates being mostly in the 5% - 8% range at the beginning of the time period when most sales were seller financed. Interest rates increased over time, with a shift to the 8.25% - 10% range for 1984 - 1987. Interest rates reached a peak in 1983 - 1984 and started coming down in 1985.

Down payment, balloon payment and amortized principal payment percentages of purchase price were calculated for all credit financed sales. The results indicate contract for deeds typically have a low amortized principal amount and corresponding balloon payments that are a high percentage of purchase price. Mortgages and contract for deeds with no down payments or low down payments are more likely to be fully amortized and have no balloon payments.

Twenty eight percent (63 of 226) of Brookings County farmland sales from 1978 - 1983 have since reverted to the seller or lender. Reversion sales are associated with contract for deed sales with relatively short

repayment terms and with balloon payments.

Chapter IV

ECONOMETRIC MODELS OF FARMLAND PRICES

The third research objective was to determine the significance and impact of financing terms on farmland price and determine the value of the contract in seller financed sales.

The models presented are an attempt to replicate the research efforts of Eberle and Fiske (1987). The data collection on financing terms as presented in the previous chapter has the same basic information presented in the Eberle and Fiske paper.

Two models were developed to test 1) the impact of the contract value per acre - with the hypothesis that the value of the contract is bid into the price of land; and 2) that seller financing does not affect land prices other than the adjustment for the value of the contract. A third model was developed using the various financing terms as separate explanatory variables. This model is used to compare the performance of the financing terms to model 1, which has a contract value variable used as a proxy for all of these financing terms. A fourth and final model is also reported to test the hypothesis that the influence of cash financing on farmland price is not significantly different from the influence of mortgage financing.

THE VALUE OF THE CONTRACT

In this research paper, we have attempted to examine if the use of contract value is an appropriate method to adjust for concessionary financing terms. The calculated contract value could be used by buyers to aid them in competitive bidding on farmland based on the favorable financing offered by the contract in comparison to conventional mortgage financing.

There are limitations to the use of this method, as the available data precludes calculating the value of the contract on an after-tax basis. The value of the contract to the buyer would be expected to be less on an after tax basis because of the loss of the tax shield provided by the higher mortgage interest rate (Eberle and Fiske, 1987).

The premise behind development of the contract value is that buyers perceive concessionary financing terms -(lower interest rates and convenient length of financing) as a preferred means of financing, and will bid higher for farmland up to the value of the contract. The basis for the contract value then, is the price of land under existing mortgage financing and the value of the contract which makes seller financing equivalent to mortgage financing.

As mentioned in the literature review:

Contract Value = Amount financed by the contract - The equivalent value of the mortgage

$$\text{The equivalent value of the mortgage} = \sum_{i=1}^{n} \left(\frac{Pi}{(1 + r)} i\right),$$

where Pi= contract payment made in year i, including the principal, interest and balloon in the final year, r = market mortgage rate of interest and n = number of years financed.

The market mortgage rate of interest used in developing this variable was the average Federal Land Bank interest rate at the time the contract was initiated.

EMPIRICAL MODELS

The first empirical models were developed to test the impact of contract value per acre on farmland price. The hypothesis tested is that the value of the contract is bid into the price of farmland. The model is specified such that the price of farmland is a function of the contract value.

Model 1 is:

Deflated price = f(Acres, Percent cropland, Contract value, DV79 - 87)

where:

Deflated price = the deflated price per acre;

Acres = number of acres in purchased tract;

Percent cropland = the percent of acres purchased that is tillable cropland;

Contract value = the deflated contract value per acre for seller financed sales;

DV79 - 87 = dummy (binary) variable for each of the years 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986 and 1987. The value = 1 for the specific year, zero otherwise.

Because the model includes data covering a ten-year time period, all dollar values are deflated using the GNP-PCE (Personal Consumption Expenditures) implicit price deflator, 1982 = 100.

The binary variables for each year were included to account for other factors that may have been occurring over time but were not accounted for in variables defined.

The second model tests the hypothesis that seller financing does not affect land prices other than the adjustment factor for the value of the contract. As suggested by Eberle and Fiske (1987), it is hypothesized that the parameter estimate for contract value is not significantly different from 1, implying that the full present value of the concessionary financing terms are bid into the transfer price of farmland.

Model 2 is:

Adjusted price = f(Acres, Percent cropland, DVCFD, DV79 - 87)

where:

Adjusted price = the deflated adjusted price per acre, actual deflated price/acre less the deflated contract value /acre for seller financed sales.

DVCFD = dummy variable equal to one for seller financed sales, zero otherwise.

All other variables are previously defined in Model 1.

The deflated contract values ranging from -$207.03 to $332.68 per acre were calculated for all seller financed sales from 1978 to 1987. The mean deflated contract value per acre was $56.00. It was assumed that cash or mortgage financed sales at market interest rate received no concessionary financing, and would therefore have a contract value of zero. The mean values, 1978 -1987 for price, deflated price, percent cropland, acres, contract value, deflated contract value, length of financing, interest rates and number of sales by method of financing are presented in Table 4.1. Annual mean values for price, deflated price, percent cropland, acres, contract value, deflated contract value, interest rates and number of sales per year are included in Table 4.2.

It is interesting to observe in Table 4.1 the average deflated farmland price of the seller contract sale ($732.10) less the average deflated contract value ($56.00) equals $676.10 - just $13.12 more than the average deflated price per acre of the mortgage financed sales. There is also no major difference in the number

TABLE 4.1 Mean (average) Statistics for Brookings County Farmland Sales from 1978 to 1987, by Source of Financing.

Variable	Seller Contract	Mortgage	Cash
Price ($/Ac)	672.89	625.72	468.20
Deflated Price ($/Ac)	732.10	662.98	444.43
Percent Cropland	80.1	74.6	76.7
Acres Purchased (#)	173.1	176.6	142.8
Contract Value ($/Ac)	53.38	--	--
Deflated Contract Value ($/Ac)	56.00	--	--
Length of Financing (years)	9.6	22.8	--
Nominal Interest Rate (%)	8.84	10.98	--
Number of Sales (#)	221	64	68

TABLE 4.2 Average Price, Percent Cropland, Acres, Contract Value and Interest Rate by Year and Source of Financing, 1978 - 1987.

Variable	Seller Contract	Mortgage	Cash
		1978	
Price ($/Ac)	617.39	624.97	--
Deflated Price ($/Ac)	841.66	843.29	--
Percent Cropland	78.7	83.8	--
Acres (#)	176.8	178.8	--
Contract Value ($/Ac)	20.91	--	--
Deflated Contract Value ($/Ac)	28.53	--	--
Nominal Interest Rate (%)	7.41	7.65	--
Number of Sales (#)	36	10	0
		1979	
Price ($/Ac)	686.95	684.13	676.14
Deflated Price ($/Ac)	852.23	848.50	834.66
Percent Cropland	84.0	82.0	65.9
Acres (#)	177.9	365.2	128.5
Contract Value ($/Ac)	37.79	--	--
Deflated Contract Value ($/Ac)	47.12	--	--
Nominal Interest Rate (%)	7.90	9.45	--
Number of Sales (#)	36	5	4

Table 4.2 Continued

Variable	Seller Contract	Mortgage	Cash
		1980	
Price ($/Ac)	847.36	562.50	--
Deflated Price ($/Ac)	958.96	660.64	--
Percent Cropland	81.3	16.3	--
Acres (#)	223.0	160.0	--
Contract Value ($/Ac)	72.33	--	--
Deflated Contract Value ($/Ac)	82.12	--	--
Nominal Interest Rate (%)	8.52	10.00	--
Number of Sales (#)	22	1	0
		1981	
Price ($/Ac)	787.23	802.53	976.69
Deflated Price ($/Ac)	826.90	838.02	1,009.68
Percent Cropland	77.2	75.8	59.2
Acres (#)	193.3	175.6	115.8
Contract Value ($/Ac)	93.22	--	--
Deflated Contract Value ($/Ac)	98.00	--	--
Nominal Interest Rate (%)	8.95	12.05	--
Number of Sales (#)	20	11	4

Table 4.2 Continued

Variable	Seller Contract	Mortgage	Cash
		1982	
Price ($/Ac)	828.55	842.43	608.69
Deflated Price ($/Ac)	815.74	833.51	596.23
Percent Cropland	84.0	80.4	77.8
Acres (#)	162.0	168.5	114.4
Contract Value ($/Ac)	95.17	--	--
Deflated Contract Value ($/Ac)	93.75	--	--
Nominal Interest Rate (%)	9.76	13.17	--
Number of Sales (#)	23	6	7
		1983	
Price ($/Ac)	816.25	641.67	637.00
Deflated Price ($/Ac)	773.20	610.46	610.14
Percent Cropland	81.6	69.0	94.4
Acres (#)	150.2	176.4	144.0
Contract Value ($/Ac)	70.60	--	--
Deflated Contract Value ($/Ac)	66.96	--	--
Nominal Interest Rate (%)	9.40	11.27	--
Number of Sales (#)	24	14	3

Table 4.2 Continued

Variable	Seller Contract	Mortgage	Cash
		1984	
Price ($/Ac)	645.08	471.34	633.48
Deflated Price ($/Ac)	598.97	437.13	588.87
Percent Cropland	80.7	64.6	77.9
Acres (#)	143.0	115.9	152.8
Contract Value ($/Ac)	44.50	--	--
Deflated Contract Value ($/Ac)	41.36	--	--
Nominal Interest Rate (%)	9.80	12.57	--
Number of Sales (#)	21	11	8
		1985	
Price ($/Ac)	469.86	300.00	366.29
Deflated Price ($/Ac)	421.07	272.23	328.51
Percent Cropland	65.3	74.4	62.3
Acres (#)	153.1	160.0	132.14
Contract Value ($/Ac)	43.26	--	--
Deflated Contract Value	38.72	--	--
Nominal Interest Rate (%)	9.20	10.75	--
Number of Sales (#)	11	1	7

Table 4.2 Continued

Variable	Seller Contract	Mortgage	Cash
		1986	
Price ($/Ac)	375.34	450.00	317.00
Deflated Price ($/Ac)	328.91	389.95	276.87
Percent Cropland	77.7	100.0	81.5
Acres (#)	154.3	78.0	137.2
Contract Value ($/Ac)	21.21	--	--
Deflated Contract Value ($/Ac)	18.50	--	--
Nominal Interest Rate (%)	10.53	10.00	--
Number of Sales (#)	15	1	17
		1987	
Price ($/Ac)	336.39	253.25	334.67
Deflated Price ($/Ac)	286.69	214.75	284.59
Percent Cropland	79.9	85.8	80.1
Acres (#)	183.2	150.5	167.9
Contract Value ($/Ac)	47.45	--	--
Deflated Contract Value ($/Ac)	40.44	--	--
Nominal Interest Rate (%)	9.31	10.25	--
Number of Sales (#)	13	4	18

of acres purchased or percent cropland between mortgage financed and contract for deed sales.

The results for models 1 and 2 are presented in Table 4.3. Example 4.1 demonstrates the use of Model 1.

The R-square for models 1 and 2 are 0.65 and 0.61 respectively, indicating that 65% and 61% of the variation in deflated farmland sales prices are explained by the independent variables included in each model. The F-values for each model are significant (p=.01). For models 1 and 2, the acres purchased variable was negative and significant at the 5 percent probability level and the percent cropland variable was positive and significant at the 1 percent probability level. The dummy variables by year indicate real prices increased significantly (p=.10) from 1978 to 1980 and then decreased significantly (p=.05) by 1982 with substantially greater declines in real prices from 1983 - 1987.

For model 1, the contract value estimate is significant at the 5% probability level. There is a need to test if the contract value is fully bid into the purchase price. This requires that the coefficient for contract value is equal to one. To test whether the estimate for contract value is significantly different from one, the following t-test was conducted at the 5 percent probability level.

TABLE 4.3 Parameter Estimates for Models 1 and 2
(credit financed sales) n = 285

Variable	Model 1	Model 2
Intercept	500.35***	515.17***
	(49.74)	(52.63)
Acres	-0.17**	-0.17**
	(0.100)	(0.100)
Percent cropland	4.44***	4.37***
	(0.484)	(0.477)
Contract value	0.798***	---
	(0.204)	
DVCFD	---	-17.89
		(25.69)
DV79	-19.15	-21.01
	(37.48)	(37.42)
DV80	72.07*	63.77*
	(45.96)	(44.71)
DV81	-28.47	-39.37
	(41.20)	(40.44)
DV82	-82.03**	-92.09**
	(42.37)	(41.14)
DV83	-135.07***	-141.99***
	(38.27)	(38.25)
DV84	-289.82***	-293.36***
	(40.19)	(40.33)
DV85	-385.03***	-388.20***
	(56.70)	(56.75)
DV86	-506.90***	-503.18***
	(50.34)	(50.52)
DV87	-585.96***	-587.92***
	(49.17)	(49.19)
R-square	.65	.61
F	41.60***	35.63***

Number in ( ) indicates standard error

* significant at 10% probability level
** significant at 5% probability level
*** significant at 1% probability level

Example 4.1 An Example of the Use of Model 1 :

Assume a farmland tract consisting of 160 acres with 75 percent cropland was sold in each year from 1978 through 1987. Contract value is zero for mortgage financed sales and may be positive (or negative) on contract for deed sales. Based on results from Model 1, the real price per acre for the 1978 sale is:

Deflated Price = \$500.35 - 0.17*(160) + 4.44*(75)
+ 0.798*(contract value).

The 1978 deflated Price = \$806.95 for mortgage financed sales and \$806.95 + 0.798*(contract value) for seller financed sales. The values for each subsequent year are:

Year	Deflated Price
1979	\$787.80 + 0.798*contract value
1980	\$879.02 + 0.798*contract value
1981	\$778.48 + 0.798*contract value
1982	\$724.92 + 0.798*contract value
1983	\$671.88 + 0.798*contract value
1984	\$517.13 + 0.798*contract value
1985	\$421.92 + 0.798*contract value
1986	\$300.05 + 0.798*contract value
1987	\$220.99 + 0.798*contract value

Ho: b(cv) = 1
Ha: b(cv) not=1
t*.05,272 = 1.65
t = (0.798 - 1)/.204 = -0.990
t < t*

Based on this test the null hypothesis is not rejected, and the value of the contract is bid into the price of land.

As stated previously, Model 2 is used as a test to show that seller financing does not affect land prices other than the adjustment for the contract. It is shown in Model 2 that the estimate for DVCFD, the dummy variable for seller financing is not significantly different from zero at the 5% level. Thus we fail to reject the null hypothesis that seller financing has no effect on price other than the adjustment for the contract value.

A third model used specific financing terms as explanatory variables instead of the contract value. This model, using the specific financing terms, is compared to the performance of Model 1, which had the contract value as a proxy for the financing terms.

Model 3 is:

Deflated price = f(Interest, Term, Payacre, Balacre,
Downpac, Acres, Percent cropland,
DV79 - 87)
where:
Deflated price = the deflated price per acre,

Real Interest (-) = interest rate adjusted for inflation (nominal interest rate - inflation rate),

Term (+) = length of financing in years

Payacre (-) = annual deflated loan payment amount per acre,

Balacre (+) = terminal deflated loan balance (balloon) amount per acre,

Downpac (+) = deflated down payment amount per acre,

All other variables are discussed in Model 1.

Expected signs for the coefficients of each of the financing variables are indicated under the variable name. The real interest rate was expected to have a negative impact on farmland price, because the higher the rate of interest, the lower the rates of return. The length of financing variable was expected to have a positive sign, although this may have a positive or negative sign dependent upon the required-rate-of-return the investor stipulates. Loan payment per acre would be expected to be negative because of the interest payment built into the variable. The balloon amount per acre would be expected to be positive as the higher the balloon amount per acre the less the amount of annual payment and risk the buyer is taking at time of sale transaction. Down payment amount per acre would be expected to be positive as you increase the down payment you increase the bid price for farmland, although this

TABLE 4.4 Parameter Estimates for Model 3
(credit financed sales)

Variable	Beta Coefficient	Standard Error
Intercept	230.95***	(39.73)
Acres	-0.14**	(0.069)
Percent cropland	1.50***	(0.367)
Real Interest	-21.45***	(5.462)
Term	8.47***	(1.072)
Deflated Payacre	3.92***	(0.242)
Deflated Balacre	0.41***	(0.034)
Deflated Downpac	0.346***	(0.053)
DV79	-75.92**	(26.05)
DV80	-55.88	(34.00)
DV81	-96.84***	(28.13)
DV82	-57.26***	(29.12)
DV83	-86.56***	(33.94)
DV84	-134.86***	(44.97)
DV85	-222.02***	(49.41)
DV86	-198.92***	(51.26)
DV87	-160.83***	(50.40)

R-square = .84 F = 89.70*** n = 285

* significant at 10% probability level

** significant at 5% probability level

*** significant at 1% probability level

may vary depending on the economic conditions at the time the transaction occurs.

The results for model 3 are found in Table 4.4. The R-square is 0.84 and the F-value is significant (p=.01). Contract value is a proxy for interest, term, payacre, balacre and downpac. The results would not indicate any higher level of significance for each variable, but the R-square and F-test values are higher, indicating Model 3 may fit the data better than Model 1. All financing term variables: interest, term, deflated payment per acre, balloon amount per acre and down payment amount per acre were significant at the 1% probability level, as were all years from 1981 through 1987. Increases in real interest rates are negatively related to deflated farmland price, while loan term length, annual payment per acre, down payment per acre and balloon payment per acre were positively related to farmland sale price.

The final model investigated is one that tests the hypothesis that cash financing is not significantly different from zero, implying that a cash or equity purchase has no significant impact on the purchase price of farmland relative to mortgage financing.

The proposed Model 4 is:

Deflated price = f(Acres, Percent cropland, Contract value, DVCASH, DV79 - 87)

where:

DVCASH = dummy variable equal to 1 for cash (equity) sales, zero otherwise.

Model 4 is identical to Model 1 except for the addition of the DVCASH dummy variable and applying it to all sales instead of only credit financed sales. It is interesting to note that the overall R-square of 0.69 of this model exceeds the R-square (0.65) of Model 1, which only includes credit financed sales.

Detailed results of Model 4 are found in Table 4.5. The estimate for DVCASH, the dummy variable for a cash sale, is not significantly different from zero at the 5% level. Thus we fail to reject the null hypothesis. This also supports the implication made by Eberle and Fiske (1987) when they said that cash and mortgage financing are equivalent since the seller receives the full amount at the time of sale.

It was of concern that multicollinearity may exist between some of the variables used in the models, so collinearity and correlation tests were run on suspect variables. No severe collinearity problems were evident. Correlation coefficients for these variables are found in the appendix.

SUMMARY OF ECONOMETRIC MODELS

The key findings from the models developed in this chapter are:

1) The contract value from any concessionary

financing that may be offered is fully bid into the farmland price.

2) Contract for deed financing has no impact on farmland price other than the adjustment made for the contract value.

3) There is no difference in farmland price between cash and mortgage financed sales. This was to be expected, since in both instances the seller receives full payment upon completion of the sale.

4) The year the sale transaction occurred was very important in explaining farmland price per acre.

TABLE 4.5 Parameter Estimates for Model 4
(all sales)

Variable	Beta Coefficient	Standard Error
Intercept	538.14***	(43.59)
Acres	-0.12	(0.090)
Percent cropland	3.83***	(0.395)
Contract value	0.858***	(0.200)
DVCASH	7.28	(27.25)
DV79	-12.78	(36.35)
DV80	-65.68*	(45.54)
DV81	-0.79	(39.53)
DV82	-111.75***	(39.62)
DV83	-147.54***	(37.22)
DV84	-279.88***	(37.73)
DV85	-411.50***	(48.37)
DV86	-535.95***	(41.52)
DV87	-566.20***	(40.90)

R-square = .69 F = 57.64*** n = 353

* significant at 10% probability level

** significant at 5% probability level

*** significant at 1% probability level

Chapter V

SUMMARY, CONCLUSIONS AND IMPLICATIONS

The major objective of this research was to examine the relationships between farmland financing and farmland price on sales that occurred in Brookings County during the time period January 1978 to December 1987. Specific objectives were:

(1) To identify, compare and contrast specific financing terms of contract for deeds, mortgage and equity (cash) financed farmland sales transactions from 1978 - 1987.

(2) To determine the number and proportion of farmland sales transactions from 1978 - 1983 that have included reversions to lender or seller (release from deed or repossesion) since the time the transaction was made to the present.

(3) To determine the significance and impact of financing terms on farmland sales price from 1978 - 1987 and determine the value of the contract in seller financed sales.

Data sources were farmland sales transactions in Brookings County from 1978 - 1987. Data was collected using the Federal Land Bank of Omaha data set of farmland sales. Additional data was obtained from the Farm Credit Services Brookings branch office and from the Brookings County Courthouse Director of Equalization and

Register of Deeds offices.

MAJOR FINDINGS - FINANCING METHODS AND TERMS

Major findings from the research on financing terms and reversions (objectives 1 and 2) show that there were 364 bonafide sales documented during the entire time period, with 11 sales having missing or incomplete information for use in analysis purposes. Seller financing was the most frequent method of acquiring farmland, accounting for 221 of the 353 useable sales. Sixty eight of the sales were cash (equity) financed and 64 sales were mortgage financed. Seller financing was shorter in term than mortgage th the mean for seller financed sales at 9.6 years while mortgage sales were financed for an average of 22.8 years.

Reversion of farmland to the seller or lender was more likely to occur when associated with contract for deed sales having relatively short financing periods and having balloon payments.

Interest rates were not directly related to reversions, but were found to increase over time from 1978 until their peak in 1983 - 84, and then decrease in 1985. The shift in average farm real estate interest rates was from 5% - 8% in the 1978 - 80 time period, increasing to 8.25% - 10% for 1984 - 87.

Results of examination of down payments, balloon

payments and amortized principal payments show that many contract for deeds have a 10 - 30% down payment, relatively low amortized principal amounts and corresponding balloon payments. Mortgages and contract for deeds with longer financing periods and relatively low down payments are more likely to be fully amortized and have no balloon payments.

Farm owners selling their land by contract for deed should be aware of the added risk involved with short term contract for deeds with balloon payments when offering a contract for deed as a method of selling farmland. Buyers of farmland also need to consider this risk when submitting a bid price to the seller.

MAJOR FINDINGS - ECONOMETRIC MODELS OF FARMLAND PRICES

Econometric models were developed to test the impact of contract value per acre when concessionary financing is offered with a contract for deed, and to determine if seller financing affects farmland bid price by any means other than through the value of the contract. Since a 10 year period was examined deflated values were used for farmland prices and all financing terms.

Results from the models developed show that the contract value from any apparent concessionary financing that may be offered is fully bid into the farmland price and that the contract for deed has no impact on farmland

price other than the adjustment made for the contract value.

It was also verified that there is no difference in farmland price between cash and mortgage financed sales.

Model results also show that the year the sale transaction occurred was very important in explaining farmland price per acre.

The implications from results of these models suggest that as farm real estate appraisers and lending institutions evaluate farmland sales, they need to adjust farmland prices by the value of the contract. Farmland buyers and sellers should adjust for the value of the contract when making a bid or selling farmland.

RESEARCH IMPLICATIONS AND LIMITATIONS

There was one major bankruptcy action that included 18 parcels of land that may have slightly skewed results on reversions. However, all of the land parcels were separate farmland transactions that were negotiated at separate times to the same buyer.

Farm building values were not included in the data set. This omission will have some impact on the results of the study. Soil productivity ratings were available for only 8 of the 23 townships within Brookings County. Soil productivity variables have proven to be good proxies for land productivity in other studies, however

due to the limited number of townships that have soil ratings available, the variable was not included in the models. Tax laws and government program policies were also excluded in the study. Further studies on farmland price would benefit by including these variables as part of the data set.

At the onset of the study, it was hypothesized that refinancing of farmland was taking place at a significant rate, based on economic conditions and decreasing farmland values, and this was to be part of the research. Refinancing variables were included in the Brookings County data set as information on refinancing was collected when sales were examined at the courthouse. The results did not indicate that refinancing was occurring, as only seven of the 364 sales from 1978 to 1987 showed that recorded refinancing had taken place.

The courthouse examination of records is only one means of finding out about refinancing. Refinancing and loan write down does not have to be recorded at the courthouse. To completely assess refinancing there is a need for a survey or other means of obtaining information from lenders and borrowers.

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APPENDIX A

Date of Search_____

COURTHOUSE RECORDS SEARCH

Source of Data * = FLB, = verified at Courthouse
County:_____ State:_____ FLB Sale No._____

Legal Description:_____
School District:_____
Acres Total: _____ Cultivated: _____ Pasture: _____ Other:_____

Township Name(s) _____Where recorded data is found:_____

	Book	Vol.	Page	Book	Vol.	Page	Book	Vol	Page
_____	___	___	___	___	___	___	___	___	___
_____	___	___	___	___	___	___	___	___	___
_____	___	___	___	___	___	___	___	___	___

Name of Seller:_____ Name of Buyer:_____

Date of Transaction:_____

Type of Deed: Warranty _____ Quit Claim _____
Contract for Deed _____ Mortgage _____

Amount of Transfer Fee:_____

Property Value based on transfer:_____ Per acre:_____

Personal Property involved in transaction Yes ___ No ___
If yes, describe and state amount

Has sales transaction been modified? Yes____ No____ If yes, list modifications on reverse side.

If Mortgage or Contract for Deed, describe major terms of contract.

Dollar amount

Payment plan

Interest rate

Balloon

Modifications to sales transaction

--Date modification occurred

--Deed reverted to seller

--Interest rate changed

Soils information:

Symbol	Class	# of acres	Class	# of acres

APPENDIX B

Appendix B Pearson Correlation Coefficients for Selected Variables used in Econometric Models.

Pearson Correlation Coefficients / Probability > IRI under Ho:Rho=0 / N=285

	Acres Purchased	Term	Real Interest	Deflated Downpac	Deflated Payac
Acres Purchased	1.00000 0.0000	0.22473 0.0001	-0.18229 0.0020	-0.08741 0.1410	-0.05097 0.3913
Term	0.22473 0.0001	1.00000 0.0000	-0.00957 0.8722	-0.28805 0.0001	-0.15057 0.0109
Real Interest	-0.18229 0.0020	-0.00957 0.8722	1.00000 0.0000	-0.06915 0.2446	-0.20272 0.0006
Deflated Downpac	-0.08741 0.1410	-0.28805 0.0001	-0.06915 0.2446	1.00000 0.0000	0.08580 0.1485
Deflated Payac	-0.05097 0.3913	-0.15057 0.0109	-0.20272 0.0006	0.08580 0.1485	1.00000 0.0000
Deflated Balac	-0.02847 0.6322	-0.40763 0.0001	-0.22124 0.0002	0.14543 0.0140	0.03856 0.5167
Reversion	0.07386 0.2138	-0.16329 0.0057	-0.29682 0.0001	0.07866 0.1855	0.09802 0.0987
Balloon Occurrence	-0.02536 0.6699	-0.46490 0.0001	-0.17824 0.0025	0.17660 0.0028	-0.14043 0.0177
Contract Value/Ac	0.00438 0.9414	-0.12281 0.0383	-0.34567 0.0001	0.10959 0.0647	-0.00697 0.9068
Deflated Price/Ac	0.02000 0.7367	-0.00110 0.9852	-0.58667 0.0001	0.22609 0.0001	0.64365 0.0001

Appendix B Continued

	Deflated Balac	Reversion	Balloon Occurrence	Contract Value/Ac	Deflated Price/Ac
Acres	0.02847	0.07386	-0.02536	0.00438	0.02000
Purchased	0.6322	0.2138	0.6699	0.9414	0.7367
Term	0.40763	-0.16329	-0.46490	-0.12281	-0.00110
	0.0001	0.0057	0.0001	0.0383	0.9852
Real	0.22124	-0.29682	-0.17824	-0.34567	-0.58667
Interest	0.0002	0.0001	0.0025	0.0001	0.0001
Deflated	0.14543	0.07866	0.17660	0.10959	0.22609
Downpac	0.0140	0.1855	0.0028	0.0647	0.0001
Deflated	0.03856	0.09802	-0.14043	-0.00697	0.64365
Payac	0.5167	0.0987	0.0177	0.9068	0.0001
Deflated	1.00000	0.31176	0.83863	0.30871	0.42430
Balac	0.0000	0.0001	0.0001	0.0001	0.0001
Reversion	0.31176	1.00000	0.29145	0.16855	0.28606
	0.0001	0.0000	0.0001	0.0043	0.0001
Balloon	0.83863	0.29145	1.00000	0.27036	0.19451
Occurrence	0.0001	0.0001	0.0000	0.0001	0.0010
Contract	0.30871	0.16855	0.27036	1.00000	0.33310
Value/Ac	0.0001	0.0043	0.0001	0.0000	0.0001
Deflated	0.42430	0.28606	0.19451	0.33310	1.00000
Price/Ac	0.0001	0.0001	0.0010	0.0001	0.0000

Acres Purchased = number of acres purchased.
Term = years to repay financed amount of loan.
Real Interest = the real interest rate, adjusted for inflation.
Deflated Downpac = deflated down payment per acre.
Deflated Payac = deflated annual loan payment per acre.
Deflated Balac = deflated balloon payment per acre.
Reversion = 0/1 dummy variable for occurrence of reversions.
Balloon Occurrence = 0/1 dummy variable for balloon payment occurrence.
Contract Value/Ac = deflated contract value per acre.
Deflated Price/Ac = deflated farmland sale price per acre.