

Real Estate Cycles - A Rural Perspective

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Abstract

This paper proposes a theoretical six stage rural real estate market. The author argues that in New Zealand the rural market is likely to lead rather than lag the general economy.

The paper examines the hypothesis that cyclical fluctuations in rural real estate markets are strongly linked to the overseas commodity prices. To test this hypothesis the relationship between milkfat prices and dairy farm prices are examined by using a time series data. The paper also tests the second hypothesis that dairy farm turnover rates are a leading indicator in determining dairy farm prices and movements in the real estate cycle. The main market players in the rural market are identified and the effect of existing farmers trading properties is discussed.

The paper concludes that the theoretical model does generally fit in with the actual market performance and that farm turnover rates are an important leading indicator when predicting changes in the price of farm land.

1.0 Introduction

In his keynote address to the Real Estate Educators' Conference in Sydney, Lusht (1993) challenged real estate researchers to further investigate real estate cycles. This paper provides an introductory rural perspective to the Lusht challenge.

The value of farm land can be defined as the present worth of the rights to the future income from the property. The future income from farm land comes from the annual cash flows and changes in the value of the property over time. In New Zealand the annual cash flows to farm land move up and down in response to fluctuations in the export prices for the main farm commodities: wool, meat and milk products. Farming cash flows are also influenced by the fluctuating interest rate component in debt servicing costs.

Developing an understanding of the cyclical behaviour of real estate markets provides an on-going challenge for property practitioners and is an essential part of the valuation process. Furthermore, the most successful property investors are likely to be those with the ability to buy during cyclical downturns in the market and to sell during boom times.

The traditional view is that real estate cycles lag the general business cycle. This view has been formulated by analysing urban property markets such as housing. However, the urban lag effect is unlikely to hold true for farm land in New Zealand, because commodity prices in the farming sector are largely driven by export prices on the world market. Recent evidence, under a relatively free-market regime, suggests that the rural real estate market leads rather than lags the general New Zealand business cycle. This is because the health of the New

Zealand economy is firmly linked to the performance of the land-based primary industries. Thus, if farming is doing well farmers will first bid up to the price of farmland. Later they will spend more money in the provincial towns and cities, thereby stimulating the urban economics and urban real estate markets.

2.0 The Market Players

Recent work of Janssen *et al* (1992) highlights the importance of identifying the principal participants in the real estate market. Janssen found that in the housing market the people trading properties were likely to have different motivations and effects on the market than the new entrants.

Farm sales information in New Zealand is classified into buyer and seller types by Valuation New Zealand (1992). Existing farmers are those purchasing a replacement or additional holding. New farmers includes farm managers, sharemilkers and contractors who have not previously owned a farm but excludes business people. Business buyers generally do not personally farm the property. The other categories are central or local government, and buyers intending to use the land for non-farm purposes. The seller categories are split into farmers that are subdividing an existing holding and those that are not subdividing.

Figure 1 shows farm sales by type of purchaser over the period from 1971-1992. It is apparent that market is dominated by new entrants and existing farmers. In most years these two categories comprise over 80 per cent of the transactions. In the housing market owners generally have to sell their existing house so that they can trade up or down to another house. In the rural market some farmers may sell their complete holding in order to make a trade, but there is also a strong market for existing farmers to expand their holdings by purchasing neighbouring properties. The size needed for an economic farm unit continues to increase and thus the pressure on existing farmers to expand is likely to be on-going. Existing farmers sometimes also have the option of subdividing part of their home farm to release capital to purchase larger blocks of land in more remote localities.

The business and corporate type purchasers of farm land tend to receive considerable amounts of publicity in the media, but numerically this group is not very significant.

Survey work carried out by Percy (1987) showed that new farmers were strongly motivated by a desire to own their own properties and were often willing to accept very low rates of return on their investments. The effective demand from this group of potential buyers will tend to be dictated by the policies of the rural lending institutions. These policies are governed by the supply of funds available for rural lending and the viability of the lending proposal. When farming profitability is good the supply of funds available for farm loans is likely to increase. Conversely, restrictive lending policies in times of a poor outlook for farming reduces the volume of farm sales.

Existing farmers trading farms are simultaneously buyers and sellers in the market place. Every time they move results in at least two sales. This group is usually in a relatively strong financial position and not under any compulsion to move. This type of buyer is most active in the market when there is a positive outlook for farming.

3.0 The Six Stage Rural Market

The landmark work of Ratcliff (1949) provided a model that identified a six stage housing market. This paper draws on the work of Ratcliff by proposing a theoretical six stage market for farm land in New Zealand. The paper then analyses historical farm sales information with the objective of seeing how well the theory fits in with the actual performance of the market. The paper then discusses the use of farm product prices and real estate sales volume as leading indicators to predict changes in farm land values.

3.1 Stage 1 - Trough

At this stage farm real estate prices are in a trough. Buyers are in no hurry to purchase, and sellers have to be very realistic about their asking prices. The main purchasers are existing farmers who are in a strong financial position and looking to expand, and farmers with strong equity positions. The sellers will be dominated by farmers who are in a difficult financial position and need to sell. In general the quality of units on the market is likely to be below average, since the stronger farmers on the better units do not sell in troughs. Lending institutions will use moderately strict lending criteria.

The first indication of an upturn in the market will be an expectation of an improvement in farm profitability. This is most likely to be signalled by higher export prices being realised for wool, meat or milk products.

3.2 Stage 2 - Upturn

There will be an improvement in farm profitability resulting from improved product prices, reductions in interest rates and cost structure, taxation incentives, increased subsidies for farming, improvements in farming technology, trade negotiations, or a combination of two or more of the above factors.

The volume of farm sales will increase before the price of farm land rises. This is because the unsold stock of farms on the market have to be absorbed before land prices will rise. The vendors associated with the unsold stock will generally be conditioned to selling out under expectations formulated during Stage 1.

Lending criteria will be relaxed over that prevailing in Stage 1, since increased profitability normally means the purchasers do not require the same amount of equity capital.

3.3 Stage 3 - Boom

There is a major escalation in both farm turnover rates and the price of farm land. In some case prices may increase 3-4 percent per month. The time that farms are on the market is very short. Auctions are frequently used as a selling tool. The quality of farms on the market improves as vendors who do not have to sell are encouraged to cash in on the high prices. Above average operators use this opportunity to trade up to a better farm.

High prices for farm products means that farmers are spending money on development and consumer goods. The flow-on effect from this spending first stimulates the rural towns and then the economies in the larger cities.

Lending institutions have a surplus of funds for lending and relax their normal lending guidelines. Rural lenders compete for new business as farm lending is seen to be a low risk part of their portfolio.

City investors get caught up in the general euphoria and scramble to buy farms. A number of public farming companies and syndicates are formed to capture this city money.

Buyers are less selective about the type of properties they purchase, and a larger than normal number of poor properties change hands.

Large numbers of farms are purchased for conversion to a 'higher and better use'.

3.4 Stage 4 - Peak

Demand becomes saturated and the volume of farm sales starts to drop off. Investors perceive that the current prices of farm land only offer a modest return on capital and there are other more attractive investment opportunities.

Lending institutions start to tighten their lending criteria. To keep prices up vendors offer more attractive deals such as low interest vendor mortgages or deferred payment schemes. The time taken to sell farms lengthens, and the poorer farms are very difficult to sell at current prices.

The outlook for farm commodity prices is less certain than during Stage 3. Syndicates and public farming companies are still being promoted.

3.5 Stage 5 - Downturn

Farm profitability declines due to a downturn in farm product prices, or increasing farm costs. Because most vendors still have expectations formulated during the upturn phase the farm turnover rate sharply contracts. A few vendors are under financial pressure and have to reduce asking prices to meet the new market level. Other vendors take their farms off the market because they are not in any hurry to sell and will wait for the next upturn.

3.6 Stage 6 - Recession

Farm profitability continues to decline. This may be due to farm product oversupply on the world market. Supply continues to exceed demand, and buyers are very selective. City investors are no longer interested in buying farms. The volume of sales drops off quite dramatically. Purchasers decide to wait until the market has bottomed out before re-entering the market.

The absolute depth of the recession will normally be determined by events outside New Zealand. Lending institutions will generally be reluctant to force the sales of farms with non-performing mortgages as widespread mortgagee sales may further erode security margins. Furthermore, lenders do not wish to be associated with negative publicity that can occur with mortgagee sales of rural land.

4.0 The Pattern of Rural Cycles

Figure 2 shows the changes in the Valuation New Zealand farm price index over the period 1960-1992. These figures are expressed in nominal terms and do not show an obvious cyclical pattern. However, when the data is expressed in real terms, and the effects of inflation are removed, then an obvious cyclical pattern emerges. Figure 3 represents the same data shown in real terms. It is noticeable that during the period 1960-1992 the peaks occurred regularly at approximately 8 year intervals. It is also apparent that the shape of the waves shows very strong upward movement leading to a steep peak and a somewhat slower decline leading to the trough. After achieving a major peak in 1982 the market was in steep decline for the next five years. Much of this decline can be attributed to a major restructuring of the New Zealand economy that commenced in 1984 and resulted in the floating of the New Zealand dollar, as well as the removal of virtually all government subsidies to farming.

Forecasting the future length of rural real estate cycles is a difficult task. The previous patterns of approximately eight year cycles since 1960 is of some guidance, but it is apparent that the current cycle will be at least ten years. It is also difficult to forecast the absolute level of the peaks and troughs, since future economic conditions may be significantly different to those in the past.

5.0 The Factors Influencing Rural Markets

The general theory of real estate cycles discussed in Section 3.1-3.6 can be simplified into a model that considers the interaction of farm product prices, farm turnover rates and farm real estate prices over time. In theory in the short run, increased farm profitability is most likely to occur because product prices have increased. Increased product prices will lead to an increased volume of farm sales, and increased sales volume will signal that real estate prices are shortly to move up. Bidding up the price of real estate will decrease the annual cash returns and profitability for new entrants causing the volume of sales to drop off. A decrease in sales volume is a signal that the market is nearly peaking.

To test the turnover versus price relationship, the annual percentage changes in sales volume occurred and average selling prices have been graphed over the 40 year period 1934-1973. This data was drawn from the New Zealand Official Yearbook (1992) series. These relationships are shown in Figure 4. Like most theoretical models the actual performance of the model appears to be quite variable. For example, during the late 1950's and during the 1960's changes in sales volume occurred about one year before changes were recorded in the average selling price. Past government intervention in the market during the land sales era (1942-1950) meant that the price of land was controlled at 1942 values. In an effort to minimise the effect of the land sales legislation many potential vendors kept their properties off the market. This meant that the sales volume in the years just before, and just after, the legislation was artificially high.

6.0 Real Estate Sub-Markets

The generalised view of the cyclical fluctuations in rural real estate presented above does not take account of the fact that the rural market actually comprises of a series of sub-markets that are somewhat independent of each other. For example, the market for dairy farms has been recently showing strong upward pressure while the market for kiwi fruit orchards has strong downward pressure. While the price of milk products is unrelated to the price of kiwifruit, there is a substitution effect in real estate when kiwifruit blocks are converted back to dairy farms. Similarly, high milk prices have encouraged conversions of some arable and fattening land to dairying.

Markets can be further segmented by location, whether the unit is economic, the overall quality of the property, and size characteristics.

6.1 The Dairy Farm Sub-Market

Dairy farm data has also been used to explore the relationship between the prices that farmers receive for their milk and the price they pay for farms. Dairy farms have been chosen because typically farm income is very largely from the sale of just one item (milk). Most of the other major farming types have a wider produce mix, and this makes this analysis more complicated: the price of sheep meat may have been going up while beef is falling and wool is static.

Figure 5 shows percentage changes in dairy farm milk solids payout and percentage changes in the VNZ dairy farm index over time. It is apparent that changes in payout do lead to changes in price, but as expected there are a number of other variables that also influence the equation. New Zealand has a three year election cycle, and the large percentage price changes in 1974 and 1981 are partially a result of government stimulation of the economy in election years.

Government intervention in the market place through the now defunct Dairy Prices Fixing Authority also had the effect of limiting the amount milk solids payout could be moved either up or down from one year to the next. During this period percentage changes in the milk price were less than percentage changes in the price of land. Since 1984 we have had a more free market approach, and product prices have fluctuated more than the price of dairy farm land. This is an expected result, since, when farmers formulate a view of future incomes, they should not rely just on the income from one or two years.

There is also the substitution effect, in that the land most suitable for dairy farming is also likely to be suitable for other intensive livestock enterprises. For example, deer farming, race horse studs, and maize growing all compete with dairying for good quality flat land in the North Island. In the 1970's maize growing was sometimes a more profitable use than dairying for land in the Waikato region.

Dairy farmers use the price paid per kilogram of milk solids as the benchmark indicator. This is the equivalent of a gross income multiplier. This multiplier is expressed in Figure 6, which shows the ratio of the price paid per kilogram divided by the price per kilogram. Over a 20 year period from 1969 this ratio has averaged approximately 5. To provide consistency the payout figure used is the payout from the Dairy Board to individual Dairy Companies. From a buyer's perspective the best time to purchase is when the multiplier is low. High multipliers indicate a longer payback period for the initial investment.

The turnover hypothesis outlined under 6.0 was also applied to an examination of the relationship between dairy farm turnover rates and price changes to dairy farms. This analysis is shown in Figure 7 and generally supports the view that dairy farm turnover rates peak about a year before land prices peak. Similarly, at the trough part of the cycle, upturns in the turnover rates occur before land prices have reached the bottom of the cycle. Dairy farm prices are expressed using a deflated Valuation New Zealand Dairy Farm index set at an arbitrary figure of 1000 in 1960. The gradual decline in the number of dairy farms sold over the period 1960-1992 is simply a reflection of the fact that the population of dairy farmers is gradually decreasing as the size of an economic unit keeps increasing.

6.7 The Sheep and Beef Sub-Market

Sheep and beef farming is the dominant form of land use throughout New Zealand. This type of activity is found over a wide range of soil types, topography and climatic conditions. Valuation New Zealand classify the easier country as fattening units and the more difficult country as grazing units. The New Zealand Meat and Wool Board Economic Service (1990) use a similar, but more detailed, classification system.

Figure 8 shows the percentage changes in wool prices and in real VNZ Grazing Farm indices over the 30 year period since 1960.

It is apparent that the linkage between wool prices and grazing farm values is much more tenuous than the linkage between milk prices and dairy farm. This is not surprising since wool is only part of the income for sheep and beef farmers. In recent years wool sales have accounted for only 30-40 per cent of grazing farm incomes.

The strong relationship between the after-tax net income for sheep and beef farms and land values was demonstrated by Davison (1992), using data compiled by the New Zealand Meat and Wool Board's Economic Service. Figure 9 shows the relationship between the fattening farm turnover rate and the real Valuation New Zealand Index for fattening farms. Once again turnover rates appear as a good leading indicator that can be used to predict changes in land values.

7.0 Summary and Conclusions

The author has proposed a six stage rural real estate cycle that is based on some of the ideas originally developed for urban real estate by Ratcliff. The key rural market players are identified. The role of existing farmers acting as traders is viewed as being an important dimension in the volume of sales variable. The rural lending policies adopted by the banks are also seen as playing a key role in determining the number of new farmers settled each year.

Inflation has tended to disguise the actual ups and downs in the property market. When farm prices are expressed in real terms, the evidence since 1960 suggests an 8-10 year rural real estate cycle. Theoretically, changes to farm prices in New Zealand are likely to be driven mainly by the changes to export farm commodity prices. This relationship is not always easy to establish since past government intervention has tended to distort the price signals observed by farmers. Farming in New Zealand is now relatively free of government intervention, and the price signals observed by farmers are generally the actual world market signals.

This paper highlights the importance of using farm turnover rates as a leading indicator to predict changes in property prices. According to the data, which is analysed on an annual basis, turnover rates tend to move about a year before farm price movements. Turnover rates are a useful indicator for predicting both market upturns and market downturns.

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Figure 1

FARM SALES BY TYPE OF PURCHASER

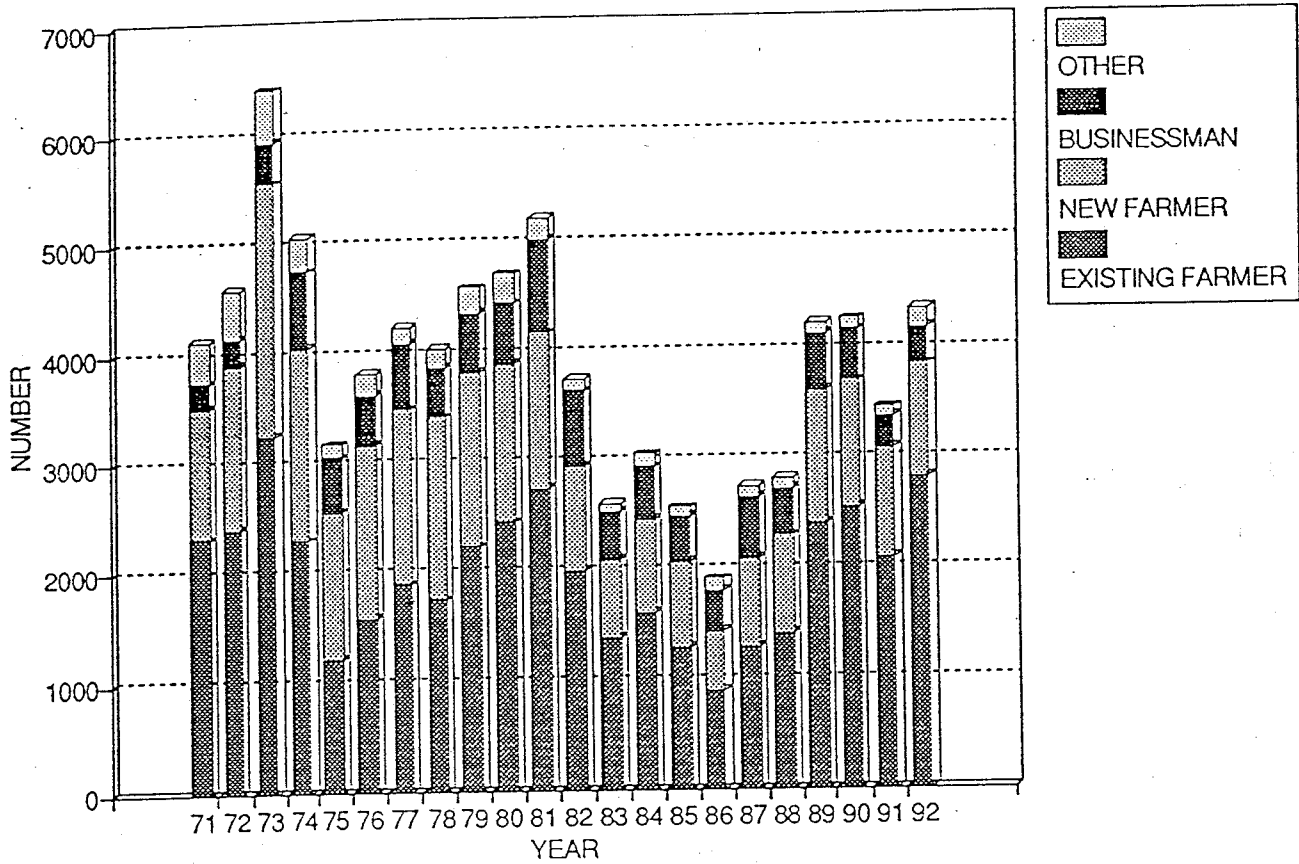


Figure 2

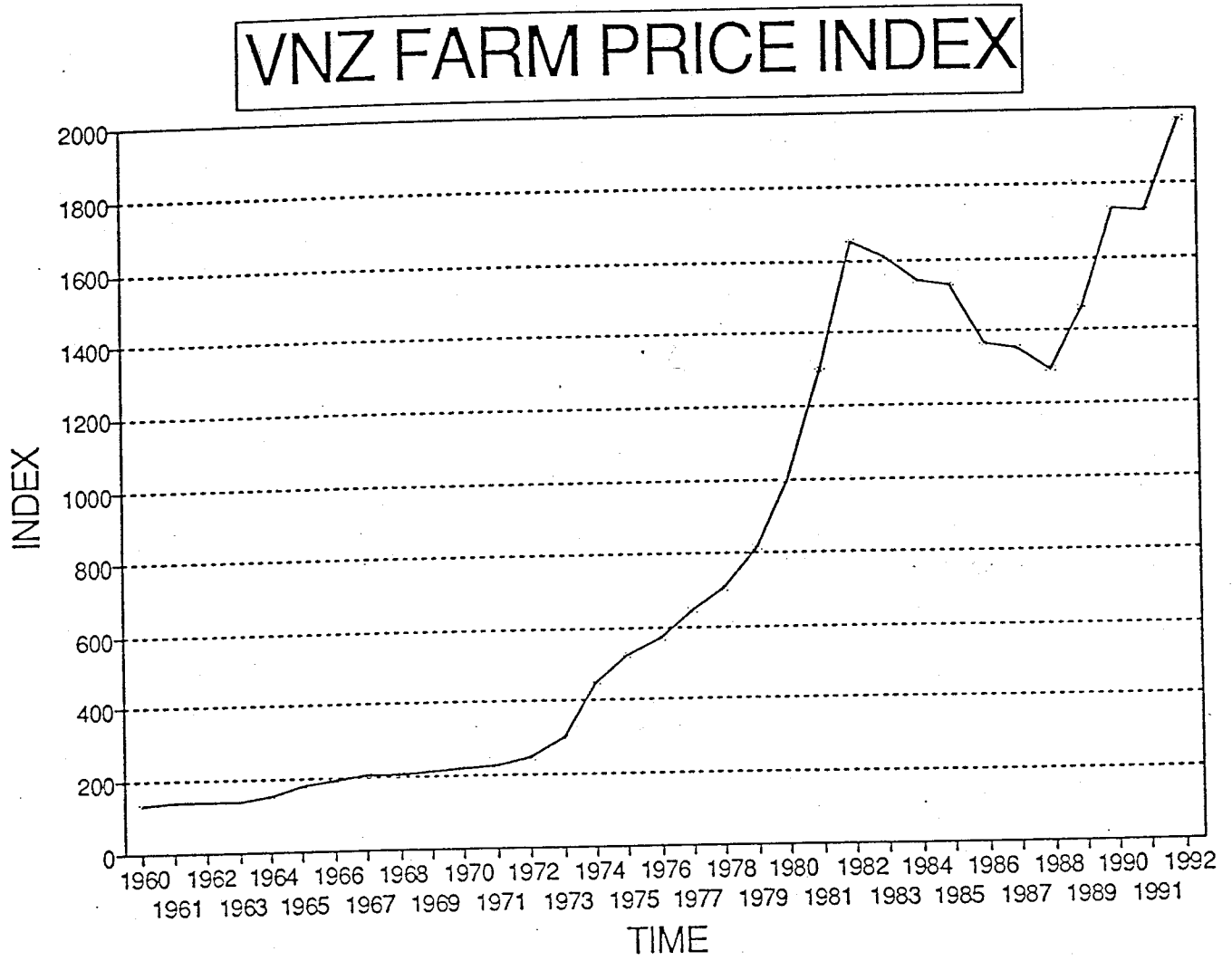


Figure 3

VNZ FARM PRICE INDEX (REAL)

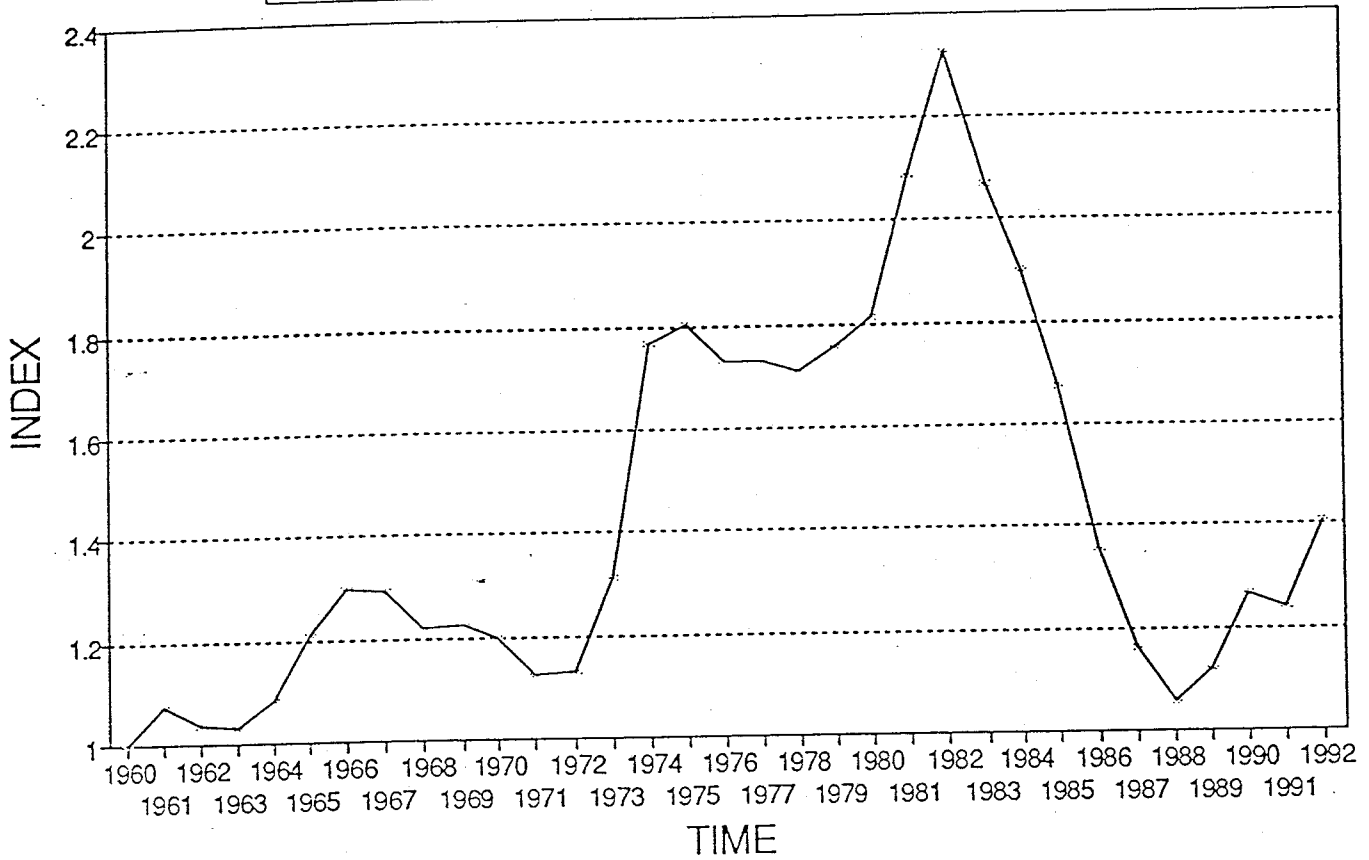
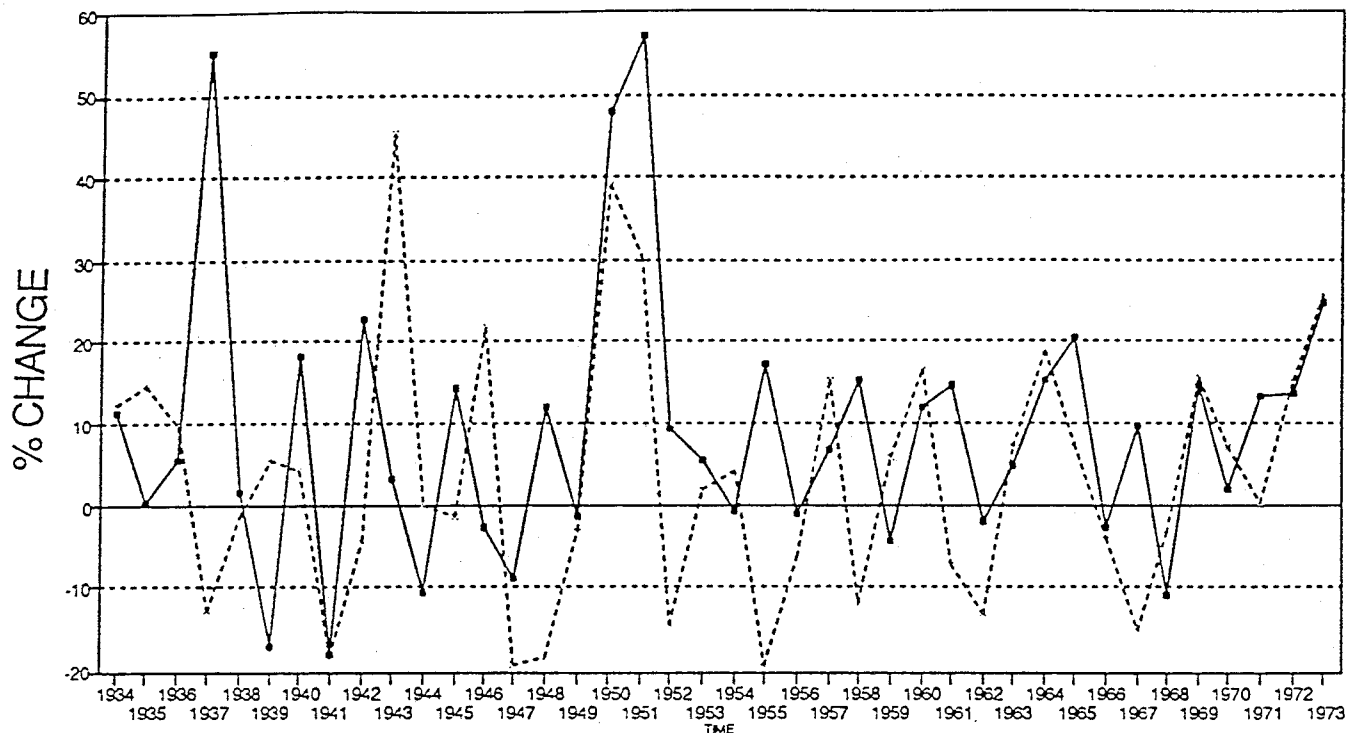


Figure 4

PERCENTAGE CHANGES IN RURAL PRICES AND SALES VOLUME



---x--- VOLUME —•— PRICE

Figure 5

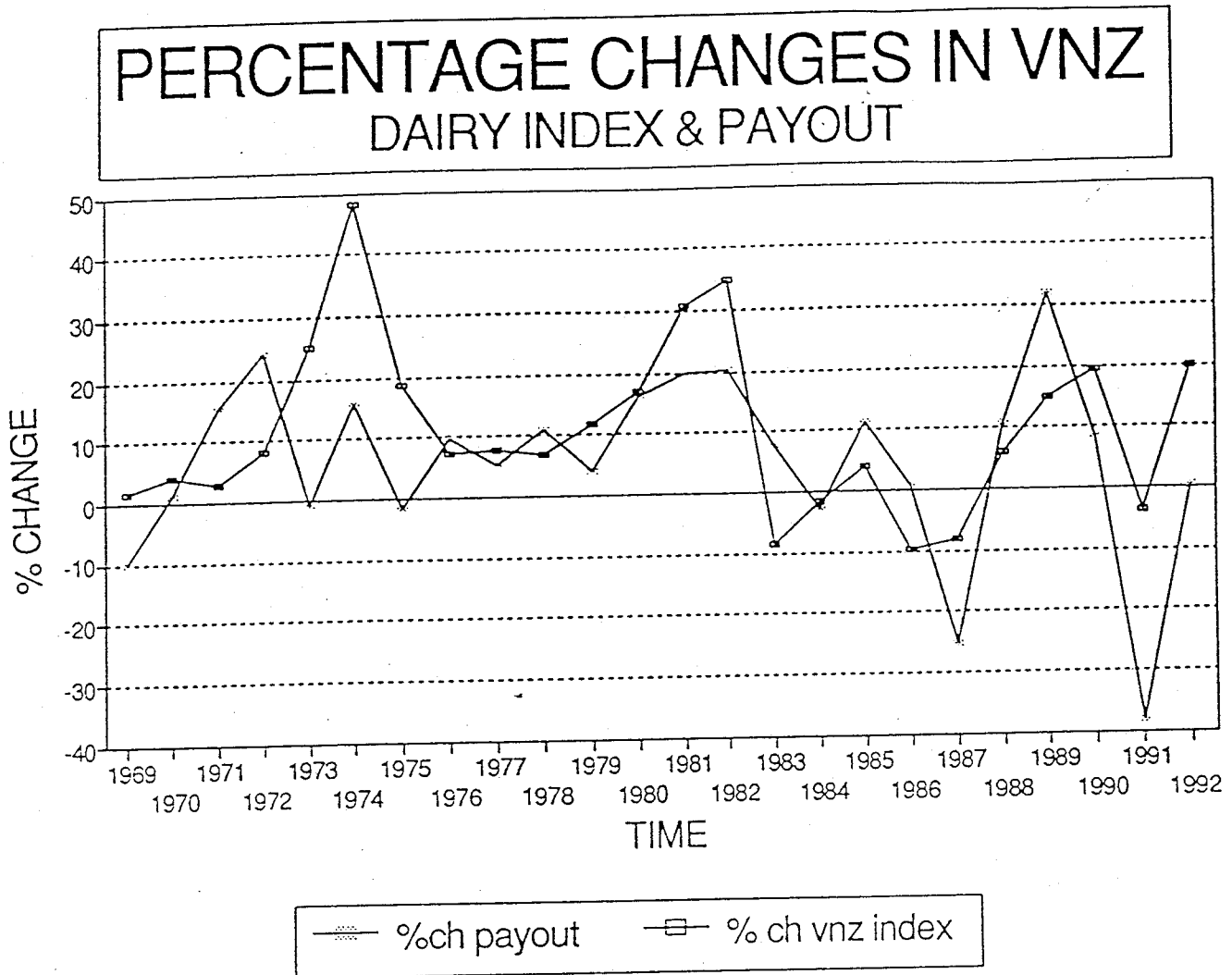
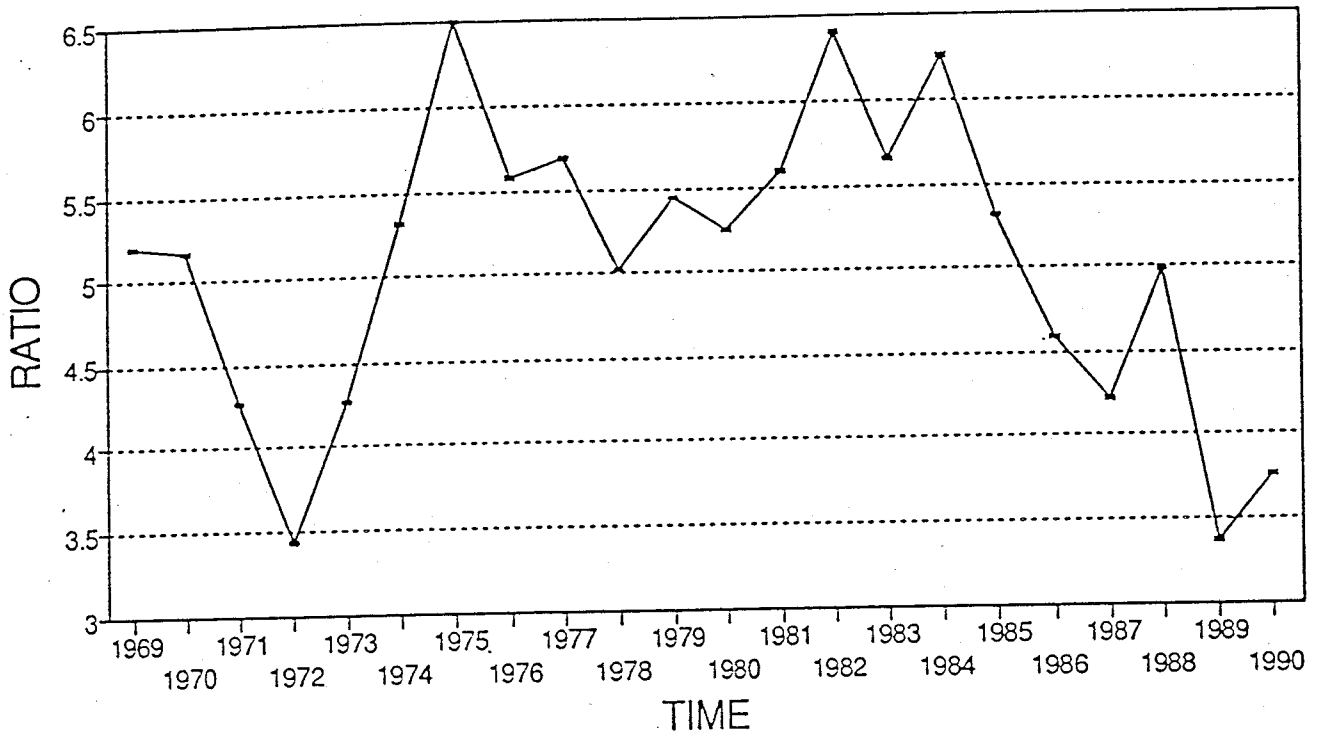


Figure 6

RATIO OF PRICE PAID PER KG. DIVIDED BY MILKFAT PRICE



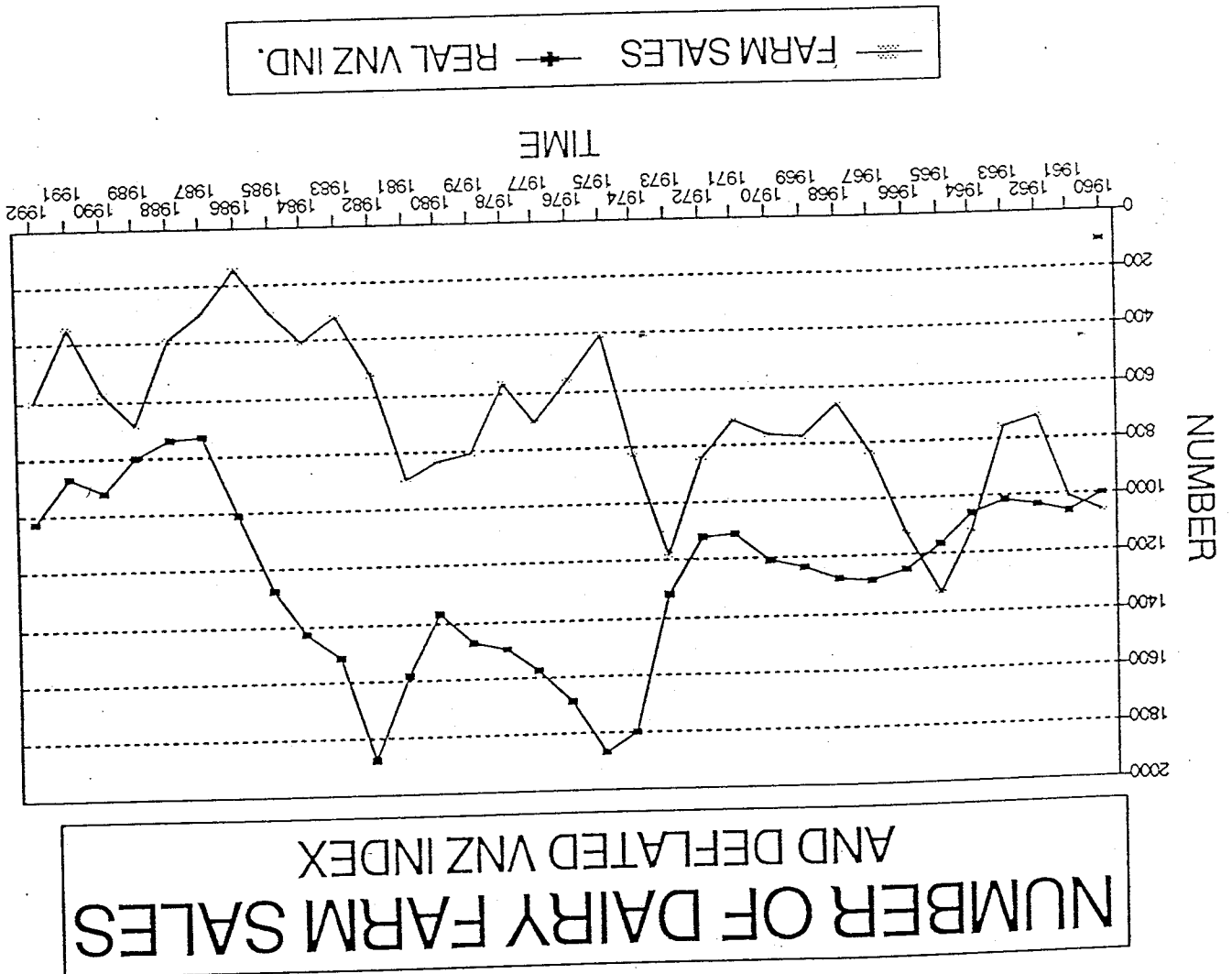


Figure 7

Figure 8

WOOL PRICE GRAZING FARM PRICE RELATIONSHIP

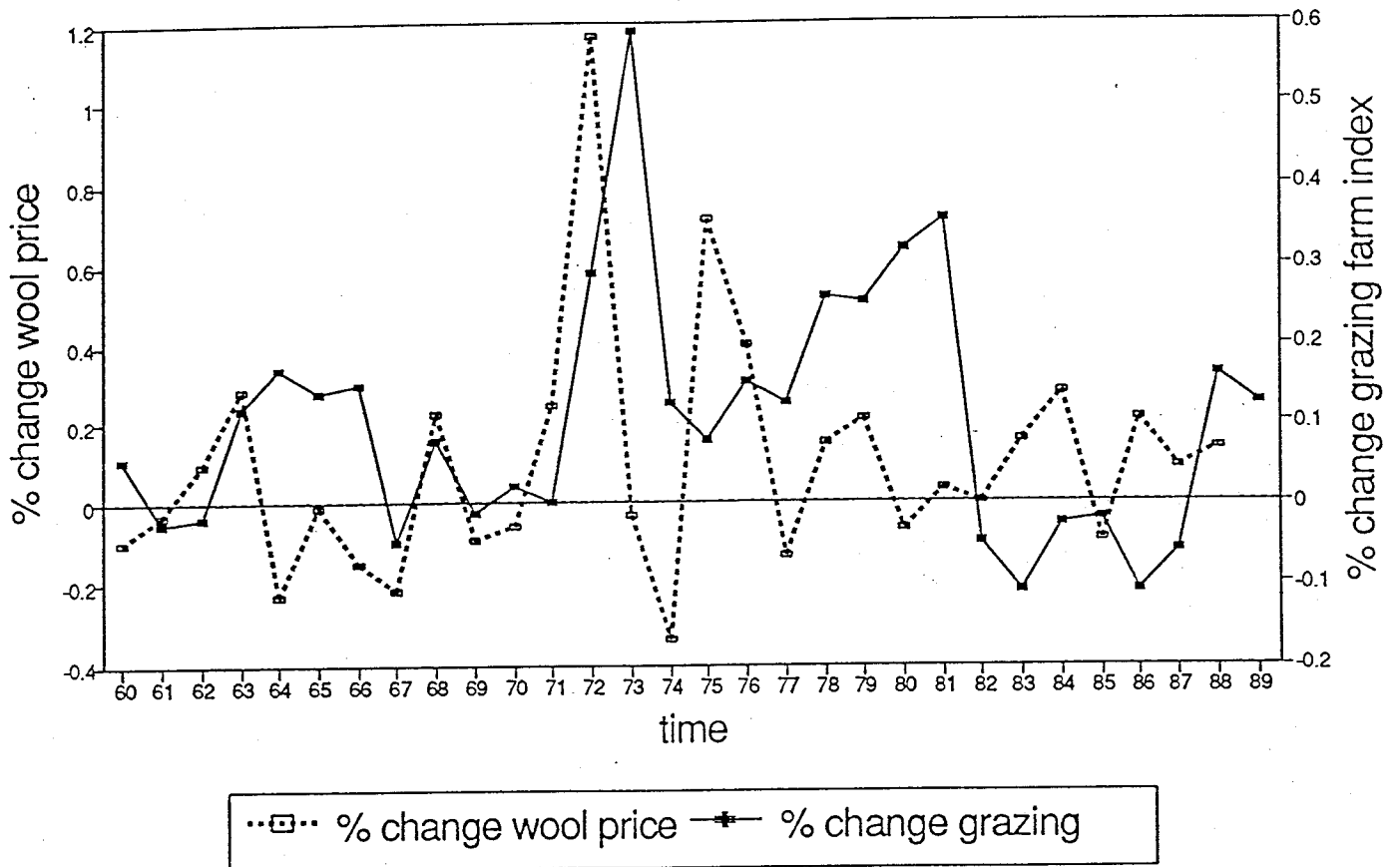


Figure 9

PRICE VOLUME RELATIONSHIPS FATTENING FARMS

