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US Agriculture's Odyssey of the Eighties

US agriculture has made a dramatic odyssey over the past 15 years. The odyssey began with soaring expectations that a new golden era had dawned on US farms – a time when farm incomes would be high as US farmers fed a hungry world. The odyssey continued, but not as expected. The world had too much food and US exports fell. Suddenly the farm debt that seemed reasonable when hopes were high spawned instead a debt crisis as incomes fell and interest rates climbed. US farmers and banks that had lent to farmers went out of business faster than at any time since the 1930s. After more than five years of painful adjustment, US agriculture has recently embarked on a recovery once again.

What can be learned from this unique odyssey? First, US agriculture has made a number of financial adjustments that will permanently reshape it. Second, US policymakers made a number of policy responses, with varying levels of success. Those policy steps will be the subject of considerable scrutiny in the years ahead, partly because they have proved quite costly to US taxpayers. Third, US agriculture is entering the 1990s in stronger financial condition and on a more competitive footing than it entered the 1980s.

To describe the odyssey and develop conclusions, four steps are useful. The first section of the paper reviews the build-up to the 1980s, the factors that set the stage for US agriculture's steep recession. The second section pinpoints the factors that formed the turning point to the farm recession. The third section discusses the financial adjustments that occurred during the US farm recession, on the part of farmers, lenders, agribusinesses and policy makers. The fourth section examines the farm recovery and its underlying factors.

When agriculture's odyssey is viewed historically, the four sections of the paper correspond roughly to four blocks of time. The build-up occurred from the early 1970s to late 1979, the turning point came in 1980 to 1982, the recession took place from 1982 to 1986, and the recovery spans 1987 to the present.

US AGRICULTURE'S BUILD-UP

Throughout most of the 1970s US agriculture thought the world was running out of food. A number of factors supported that conclusion. World food trade grew

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at unprecedented rates; world grain trade increased more than 7 per cent a year between 1970 and 1980; and the United States was the principal beneficiary of the increase. The value of US agricultural exports grew by nearly 20 per cent a year between 1970 and 1980, while volume grew by about 10 per cent.

The United States was in the enviable position of being uniquely able to meet the increases in world grain demand. Although many other countries also benefited from the grain export boom, the United States gained tremendous dividends as residual supplier. The United States aggressively expanded its crop base to maximize those dividends, adding more than 55 million acres during the 1970s to a crop base that was about 300 million acres when that decade began. The surging exports led to strong prices for the major US crops, in turn boosting farm incomes. The 1970s became an unequalled financial success for US farmers. Farm incomes, though still volatile, were record high. Though grain farmers had the highest incomes, most segments of agriculture shared in the boom. The high incomes, and expectations that incomes would move even higher, led to rapid increases in farmland values. The total annual real return to US farm production assets was 9 per cent in the 1970s, nearly triple the average rate in the previous decade. Farmland values were also pushed up by rapid inflation accompanied by relatively low interest rates.

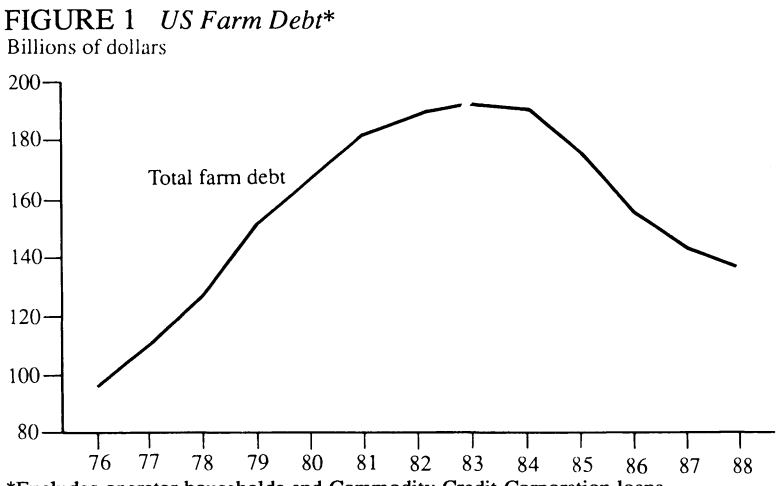
The biggest financial adjustment US farmers made during this export buildup was to add debt more aggressively than ever before. US farm debt virtually exploded in the 1970s, rising from US $49 billion in 1970 to US $155 billion in 1980, an annual growth rate of 12 per cent (Figure 1). In addition to high incomes and rising asset values against which they could borrow, farmers also met extremely low borrowing costs. US financial markets were still regulated during the 1970s. The resulting interest rates to US savers along with accelerating price inflation yielded remarkably low real interest rates, especially for long-term debt.

In short, US farmers responded to some very strong market signals in the 1970s. To meet strong export demand for their crops, they expanded production by buying land and equipment; and they predominantly used low-cost debt to do it. Finally, it must also be remembered that US farm policy makers underscored the market signals. Throughout much of the 1970s, US farm policy encouraged high crop production by idling relatively few acres and by increasing support prices.

THE TURNING POINT

Ushered in with such high expectations, the 1980s quickly dealt US agriculture some especially harsh blows. Exports not only stopped growing, they fell. Farm incomes and asset values also started to fall. But perhaps the most telling signal that things were changing was a dramatic rise in borrowing costs. The turning point for agriculture was actually defined by macroeconomic policy. The decision in late 1979 by the United States and other Western industrialized countries to fight inflation through monetary restraint set in train a series of events that brought serious consequences to US agriculture. The events of greatest significance were much higher interest rates, a global recession and the beginnings of a dramatic cycle in the exchange value of the US dollar.

FIGURE 1 *US Farm Debt**



*Excludes operator households and Commodity Credit Corporation loans

US farmers had grown accustomed to low interest rates in the 1970s. But the 1980–2 period changed all that. Market rates soared as the Federal Reserve slowed monetary growth to reduce inflation. The effects of higher market rates were amplified for agriculture because financial markets were being deregulated at the same time. Historically, farm lenders were insulated somewhat from money market developments. As markets were deregulated, farm banks quickly became integrated into national money markets. The net effect for US farmers in 1981 was that short-term borrowing rates hit 18 per cent, and farm mortgage rates climbed above 12 per cent.

Macroeconomic policies to fight inflation threw the US and world economies into deep recession in 1982. Real economic growth turned negative for the OECD countries in 1982 and slowed to a crawl for the developing world, where the anaemic economic performance was in sharp contrast to robust growth through much of the previous decade.

Suddenly, world grain trade not only stopped growing, it actually fell. US farmers once again came face to face with an old problem – surplus. The United States discovered that being a residual supplier is a two-edged sword: benefits in shortage, pain in surplus.

The US dollar, after a period of relative stability in the 1970s, began an odyssey of its own during this turning point period. The combination of monetary restraint on the part of the Federal Reserve and fiscal expansion by the US federal government led to rising real US interest rates relative to the rest of the world. These rates initiated an unprecedented wave of foreign investment in the United States, driving up the value of the dollar in the process. The soaring dollar quickly made US exports of all kinds – including farm exports – much less competitive in world markets.

Competitiveness was the fourth major factor for agriculture born during this turning point period. Recession abroad, a stronger dollar, and huge stockpiles led to serious questions about the ability of US agriculture to compete. World grain production actually had grown steadily throughout the 1970s – encouraged at

least in part by foreign agricultural policies – but strong growth in world demand made room for those additional supplies. The United States had rather blithely assumed throughout the 1970s that its production costs were among the world's lowest. As world demand slumped, that competitive edge was called into serious question.

In sum, a critical period in 1981 and 1982 turned the prosperous 1970s into what would become the deepest farm recession in 50 years. A sea change in macroeconomic policy led to high borrowing costs, a rising dollar, and weak export demand. Because agriculture entered the 1980s with large amounts of debt borrowed when interest rates were lower and expectations higher, the new macroeconomic realities almost guaranteed serious farm debt problems.

THE FARM RECESSION

The US farm recession that began in 1982 led to many historic adjustments in agriculture and in policy. This section describes the recession and its effects by examining financial adjustments by farmers, farm lenders, agribusiness and policymakers. The section considers these adjustments and assesses their impacts.

Farm-level adjustments

Farm-level adjustments during the farm recession were especially significant. Quite simply, US farmers faced a severe debt crisis. The industry was carrying about US $193 billion in debt as the farm recession began. Compared with farm income, the debt load was twice as great as in the early 1970s.

The problem was that agriculture found itself squeezed by three strongly negative financial factors. Real debt service costs were soaring. Between 1982 and 1987 the inflation adjusted interest rate on farm mortgage debt ranged from about 6 to 9 per cent, much higher than the historical average of 1 to 3 per cent. Even as interest rates climbed, farm incomes were falling, further straining the ability of farmers to service debt. Weak exports and huge surplus led to weak crop prices and sluggish farm incomes (Figure 2). Finally, with weak income and high interest rates, farmland values – representing three-quarters of all farm assets – fell sharply. US land values fell about a third between 1982 and year-end 1986 (Figure 3). But for many prime agricultural regions – the Corn Belt and Northern Plains states, in particular – the drop in land values was much more severe. For example, land values fell 55 per cent between 1981 and the end of 1986 in the seven heartland states in the Kansas City Federal Reserve District - Colorado, Kansas, Missouri, Nebraska, New Mexico, Oklahoma, and Wyoming. This substantial loss of wealth – approximately US $300 billion for the US as a whole – left borrowers with little or no credit reserve to address mounting financial problems.

High debt loads, weak incomes and falling asset values produced significantly higher financial stress among US farmers. The two primary indicators used to measure financial stress on US farms during the farm recession were net cash

FIGURE 2 *Farm Income and Government Payments*

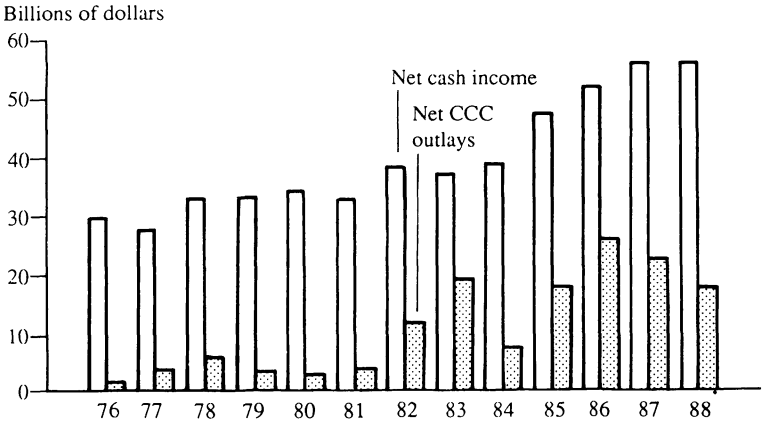
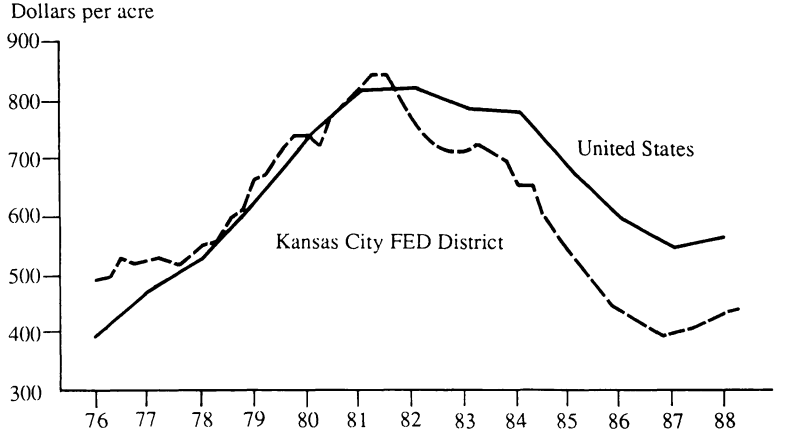


FIGURE 3 *Farmland Values*



income and the debt-to-asset ratio. Net cash income is a measure of the firm's ability to meet short-term financial obligations. The debt-to-asset ratio shows the firm's solvency position and measures the firm's longer term ability to withstand temporary financial adversity. In general, farm businesses that had used debt financing to purchase more than 40 per cent of the firm's assets fell into financial misfortune. And an excessively high debt-to-asset ratio – above 40 per cent – coupled with a negative net cash income was an almost certain indicator that the farm was in a vulnerable financial position.

The deepening financial crisis cut across almost an sectors of US agriculture, but was generally more severe among cash grain, general livestock, and dairy farms (Table 1). In early 1985 – at the depths of the farm financial crisis – over three-quarters of the financially vulnerable farms in the United States were farms of these three types. These three farm types also accounted for over three-

quarters of the debt held by financially vulnerable farms. No region of the United States completely escaped agriculture's financial crisis. But financial stress was far more prevalent in those regions where these three most severely affected farm types were most common. Those regions included the Lake States, the Corn Belt and the Northern Plains. In early 1985 about 60 per cent of all financially vulnerable farms were found here.

The difference in the level of financial stress among farms of different sizes was somewhat sharper than the difference in stress levels across regions and farm types. Financial stress was generally more severe among larger, commercial-sized enterprises (Table 2). Less than 30 per cent of all farms in the United States are commercial-sized enterprises with annual sales of US $40,000 or more. But these larger farms are clearly the heart of US farming, annually accounting for about 90 per cent of aggregate farm product sales. By 1 January 1985, 12 per cent of all US farms, but 20 per cent of the core group of commercial farms, were financially vulnerable as defined by high debt-to-asset ratios and negative net cash incomes. The percentage of financially stressed commercial farms eased only gradually, edging down to about 17 per cent by 1986 and 16 per cent by 1987. Farm financial stress was soon passed along to farm lenders since over 45 per cent of all US farm debt in 1985 was held by financially vulnerable farms. And 80 per cent of the debt held by vulnerable farms was owned by commercial-sized enterprises.

TABLE 1 *Financial stress by farm type and region (1985)*

	Per cent of stressed farms	Per cent of stressed debt
Farm type		
Cash grain	27	30
Livestock	29	28
Dairy	20	20
Total	76	78
Region		
Lake States	19	18
Corn Belt	25	24
Northern Plains	16	15
Total	60	57

Source: Financial Characteristics of US Farms, USDA/ERS.

How many US farms were eventually liquidated during the farm recession? Few solid data are available to provide an answer, but by most estimates perhaps 10 to 15 per cent of US farmers went out of business due to financial stress. An annual survey of agricultural bankers by the American Bankers Association supports an estimate at the upper end of this range. The bank survey indicates that the percentage of US farmers going out of business each year ranged from 2.3 per

cent in 1983 to a peak of 6.2 per cent in 1986. On average, only a third of the farmers who went out of business from 1983 through 1987 left the industry due to normal attrition. On balance, the bank data suggest that up to 15 per cent of US farmers were forced from the industry by financial stress during the five years from 1983 through 1987.

Farm lender adjustments

Lenders' loan portfolio problems mounted as more farmers were unable to meet debt service requirements. Three farm lenders were most affected: agricultural commercial banks, the co-operative Farm Credit System (FCS), and the government lender of last resort to agriculture, the Farmers Home Administration (FmHA).

Agricultural commercial banks experienced much higher loan losses as farmers began having difficulty servicing loans. These banks number about 5000 and are generally small in size – about half have assets of less than US $25 million. Farm loans generally account for about a third of their total loan portfolio. They lend mostly short-term, production credit to farmers, controlling 40 to 45 per cent of total US non real estate farm debt.

TABLE 2 *Financial stress on US farms*

	1985	1986	1987
Financial stress among farms of all sizes			
Percent of farms	12.6	11.2	10.5
Debt held, per cent	45.4	37.2	35.0
Financial stress among commercial farms			
Percent of farms	20.0	17.2	16.4
Debt held, per cent	38.5	32.3	28.5

Source: As for Table 1.

Loan problems became evident fairly quickly for agricultural banks because they were short-term lenders to farmers. Nonperforming loans at US agricultural banks increased from 2.4 per cent of total loans to 4.2 per cent between 1982 and 1985. The 1985 level was the highest since the 1930s.

As banks addressed themselves to the mounting problems, profits began to drop and were cut by more than half between 1982 and 1985. Profitability ratios at agricultural banks fell below rates for nonagricultural banks, a reversal of the 1970s. Declining profits left more banks with inadequate capital positions. Agricultural bank failure increased sharply. Only a handful of agricultural banks failed in 1981; 62 failed in 1985. While that was a significant increase, failures were still low compared to the total number of banks and, because most of the failing banks were small in size, the assets involved were but a fraction of total

US bank assets. Still, the failure of small banks in farming areas became one highly publicized signal of the deepening farm recession.

The Farm Credit System (FCS) experienced even greater problems than commercial agricultural banks mainly because it lends only to agriculture and lacks loan diversification. The FCS is a farm lending co-operative that is owned by its borrowers. Loans are made by a network of local associations in twelve credit districts across the United States. The FCS is the largest farm lender in the United States and holds about 40 per cent of all farm real estate debt and 15 per cent of farm nonreal estate debt.

Because the FCS specializes strictly in agricultural lending, its loan problems mounted rapidly as the US farm recession deepened. At the end of 1984 the FCS had $6.4 billion in high risk assets (nonaccruals, other high risk loans and owned property). By the end of 1986 that figure had more than doubled to US $14.3 billion, meaning that over a fifth of FCS loans was classified as high risk.

FCS profits plummeted as interest income from the troubled loan portfolio fell and reserves were set aside to cover expected loan losses. As FCS losses mounted to a combined US $4.5 billion in 1985 and 1986, the value of borrower investments in the co-operative fell. As borrowers fled to other lenders, FCS loan volume fell from US $81.9 billion to US $54.6 billion between year-end 1983 and year-end 1986. The loss of capital due to the flight of borrowers and financial losses eventually led to a package of government assistance for the troubled lender.

The Farmer's Home Administration (FmHA) of all farm lenders, experienced the sharpest deterioration in the condition of its farm loan portfolio. The FmHA, an agency of the US Department of Agriculture, provides credit at subsidized rates to beginning farmers, farmers that have suffered losses due to natural disasters, and other farmers that have been unable to obtain credit from private lenders. The FmHA lends primarily short-term credit, and holds about a fourth of farm non real estate debt.

In its role as the government-subsidized lender of last resort, the FmHA acquires higher risk loans than other lenders. As a result, the farm loan recession caused FmHA loan volume to increase while at the same time causing an especially sharp deterioration in the quality of its loan portfolio. Currently, nearly half of the Agency's US $26 billion loan portfolio is delinquent, and over a quarter has been past due for over four years. The agency will probably write off a third of its portfolio as it gradually acknowledges its loan losses.

In summary, farm lenders in the United States were rocked by the farm recession of the 1980s. But most private agricultural banks have survived, they have addressed themselves to the problems in their loan portfolios and their earnings are on the rebound. The FCS has suffered huge losses, is still plagued by a large inventory of problem loans and has been forced to rely on government assistance. Much of the FmHA's farm loan portfolio will be written off at taxpayer expense.

Agribusiness adjustments

US agricultural businesses were also severely affected by the deepening farm

recession. The effects of the farm recession's impact on US agribusiness are found on both sides of the farm gate – among firms that sell inputs to farmers and among firms that purchase products from farmers. The farm machinery manufacturing industry is an example of the former, and the grain marketing industry is an example of the latter.

Sales by farm input supply businesses fell sharply as farmers reduced capital spending and applied smaller than expected incomes to larger than expected interest payments. The effects of the farm spending retrenchment were especially acute in the farm machinery manufacturing industry. During the 1970s, expansion-minded farmers increased the total tractor horsepower on US farms at an annual rate of nearly 5 per cent, but the growth rate in farm tractors fell to zero by the mid-1980s. Annual tractor unit sales fell by two-thirds and annual self-propelled harvester unit sales fell by three-quarters from 1979 to 1986. The inevitable result was a sharp contraction in a farm machinery manufacturing industry that had grown with farmers' demand for new machines in the 1970s. Firms were merged, factories were closed, and assembly line workers were laid off in a sharp reduction of the industry through the 1980s. US employment in the farm equipment industry fell from 133,000 in 1980 to only 57,000 in 1986. The consolidation within the industry – from seven major makers in the 1970s to just three in the 1980s – led to a sharp decline in US farm equipment making capacity and a greater degree of global integration of the industry. Some old US trademarks were purchased by foreign firms, while other US makers moved more of their production off-shore.

The record of the US grain marketing industry is similar to that in farm machinery. The US grain transportation infrastructure was strained by the rising export volumes of the 1970s. But additional capital investments rapidly built a transportation infrastructure that nearly doubled the system's annual export capacity to about 200 million metric tons of grains by the early 1980s. Nearly half of the expanded grain transportation system capacity fell idle, however, as export demand for US grain plummeted in the mid-1980s. The result, as in the farm machinery manufacturing industry, was contraction and consolidation among both private and cooperative grain marketing firms, ranging from small rural grain merchandisers to large export firms. Farm co-operatives, in both grain marketing and farm input supply, were other notable victims of the farm recession. Many of these co-operatives had flourished in the 1970s, and rising profits had masked sizeable inefficiencies of operating. Reduced sales and sharply lower exports forced a harsh reassessment of operating costs. The number of agricultural co-operatives in the United States fell from 6125 in 1982 to 5369 in 1986 as mergers and dissolutions increased.

In summary, the US grain marketing industry and the US farm machinery industry are prime examples of agribusinesses that joined farmers in an aggressive expansion to meet larger export demand in the 1970s. But as export demand evaporated in the 1980s and burgeoning financial pressures forced farmers to reduce spending, these industries joined the rest of US agriculture in its general retrenchment.

Policy adjustments

Policy makers were the slowest to respond to the US farm recession. Two reasons explain the slow response. First, as the farm recession began to develop, observers were unsure of the nature of the downturn. In 1982 and 1983 many argued that US agriculture was experiencing a down cycle brought on by macroeconomic factors that would soon reverse course. In retrospect, this view failed to consider increased food production capacity worldwide or the severity of the global recession and its stagnating effect on world food trade. This cyclical view also failed to recognize that US agriculture was undergoing a secular adjustment to new realities in the world food market. Second, the extent of farmer, lender, and agribusiness financial stress was quite uncertain early in this farm recession. The farm-level effects, for example, took a couple of years to assess because farmers tried to offset deteriorating finances by increasing short-term borrowings. Only when lenders began to balk at extending these loans, beginning in about 1984, did liquidations begin to rise sharply. Public awareness of the severity of the farm recession really did not peak until the spring of 1985, when national press coverage became widespread. As the farm recession deepened through 1984 and into 1985, calls for a public policy response did increase. Nineteen eighty-five was also a year when the US government farm policy was up for reconsideration. From the start of policy deliberation pertaining to the recession, two basic responses were considered: debt assistance programmes at a micro level, and changes in commodity programmes at a macro level.

Debt assistance programmes of many forms were considered. The principal policy response, called the Debt Assistance Program, was begun in late 1984 and revised in early 1985. The administration-sponsored programme offered government loan guarantees in exchange for farm lenders writing down interest rates enough to make a loan cash flow. The guarantees were provided through the FmHA. Though sound in theory, the Debt Assistance Program had almost no effect in practice.

The clear lesson from the Debt Assistance Program is that successful micro level programmes must be well-administered and well- integrated with existing debt programmes. Lenders avoided the programme because it was cumbersome administratively and because direct loans from the FmHA offered a lower cost escape. Congress did mandate a clear movement away from direct FmHA loans to loan guarantees in the 1985 farm bill; but the redirection in policy came too late to make the Debt Assistance Program successful. Rather, the FmHA simply picked up more of the cost of the farm level debt adjustment by adding more troubled loans to its own portfolio. Micro-level policy responses in the United States, overall, were minimal. In the end, it was commodity programmes that were given the job of easing agriculture's painful financial adjustments.

Commodity programmes came under review in 1985 just as public concern over farm financial stress was peaking. As the debate wore on over the 1985 farm bill, two issues predominated. The first was to make US agriculture more competitive in world markets. The second was to bolster farm incomes as agriculture was undergoing its most serious recession in 50 years. The outcome of these two goals was a mix of policy: cuts in loan support prices – to make US, farm products more competitive – and high target prices – to keep US farm

incomes high and ease farm financial adjustments. US farm commodity programmes became the blunt instrument for easing agriculture's adjustment. The programmes were not well-targeted to ameliorate a debt crisis: the wealthy as well as the financially stressed benefited from the programmes. Nevertheless, the programmes were well-established and were the most convenient policy instrument at hand.

The cost of US farm commodity programmes actually began to increase sharply in the early 1980s as the government began to absorb increasing grain surpluses. Commodity Credit Corporation (CCC) out-lays – one measure of the cost of US farm programmes – were just US $2.8 billion in 1980. The introduction of the Payment-In-Kind programme to cut crop production in 1983 pushed CCC outlays to US $18.8 billion. But it was the 1985 farm bill, with its cuts in support prices and frozen target prices, that pushed farm spending to record levels. Farm programme costs swelled to US $25.8 billion in 1986, the first crop year affected by the bill.

As federal farm programmes pumped more dollars into farmers' pockets, farm debt problems began to ease. As 1986 wore on, more signs emerged that the worst was over.

Summary

The farm recession from 1982 through 1986 spawned more significant changes in US agriculture than the four decades that preceded it. Farmers went out of business more rapidly than in any period since the Great Depression. The acceleration in farm sales also accelerated a trend toward a dual structure in US agriculture. Medium-sized farms were some of the chief casualties. The recession pushed the United States even further toward a commercial farm industry of perhaps 300,000 farms that will control as much as three-quarters of the nation's food and fibre production. The farm recession also led to significant consolidation within the agribusiness sector.

The farm recession led to the biggest financial restructuring in US agriculture's history. Perhaps no other farm indicator better measures the effects of the farm recession than farm debt. US farm debt peaked in 1983 at nearly US $193 billion. By the end of 1986, nearly $40 billion of debt had been shed (Figure 1). Although that decline was painful to farmers, lenders and agribusiness, the adjustment proceeded quite smoothly overall, much more smoothly than many had thought possible.

The restructuring was enabled to a large degree by the record levels of govemment spending on commodity programmes – the principal policy response to the farm debt problems. Although several micro-level debt assistance programmes were considered and one implemented, the programmes were not successful. The FmHA did expand its role as lender of last resort, but other attempts to share farm debt losses among government, farmer and lender simply did not get off the ground.

THE TURNAROUND

US agriculture began a substantial recovery in early 1987. The clearest indicator of the turnaround was the bottoming out of farmland values in late 1986. As the early months of 1987 unfolded, farmers became aggressive buyers of farm land. Buoyed by record incomes and reduced debt loads, US agriculture began to look to the future.

Recovery causes

Both macroeconomic and farm policies combined to put agriculture on an upward path. The macroeconomic factors were lower interest rates, a lower exchange value of the dollar and stronger economic growth in the United States and abroad. The farm policy factor was obvious – record spending for farm commodity programmes.

Macroeconomic factors. Although interest rates peaked in 1981, generally high interest rates throughout the farm recession lowered farm incomes, exacerbated the debt service problem and encouraged further decreases in asset values. US interest rates were systematically brought down by the US and other central banks during two key periods: late 1982, prompted by severe weakness in the US and world economy; and from late 1984 through the end of 1986, prompted by concerns over the over-valued dollar. Coupled with continuing restraint of inflation, the second interest rate reduction led to long-term interest rates under 10 per cent by the end of 1986 for the first time since the farm recession began. These lower rates began to slow the land value slide.

The second round of rate declines starting in late 1984 also contributed to a decline in the value of the dollar. The exchange value of the dollar peaked in early 1985 and by late 1987 was more than 40 per cent less, as measured by the Federal Reserve Board's index. This helped US farm exports turn around.

Finally, the decline in interest rates along with continued fiscal stimulus in the United States led to strong economic recovery there and abroad. The United States is now* in its 70th month of economic expansion, providing a strong food market domestically. And economic improvement in the developing world from 1984 to the present has been an important factor underpinning the improvement in US farm exports.

Farm policy without doubt helped to end the farm recession. Federal spending, approaching a total of US $50 billion in 1986 and 1987, pushed farm income to record levels allowing farmers to restructure financially. Commodity programme outlays were nearly half of US net cash farm income in 1986 and nearly 40 per cent in 1987 (Figure 2). Even though payments were not targeted to the financially weakest farmers, the boost in farm incomes was so great that most farmers did gain financial breathing room.

Ironically, policy makers passed one of the most important pieces of farm credit legislation just as the farm recession ended. The Agriculture Credit Act of 1987 was aimed principally at bailing out the financially troubled FCS. The FCS

*Summer, 1988 (ed.)

had sought federal assistance in both 1985 and 1986, but the resulting legislative efforts were unsuccessful. Congress had passed the two bills with hopes that the FCS could marshal its own resources to solve its problems. But the FCS proved unable to agree on a collective solution to its haemorrhaging loan portfolio. Co-operatives are much better able to manage growth than financial crisis, and that lesson was evident for the FCS and many other agricultural co-operatives. The 1987 act provided direct financial assistance to the nation's largest farm borrower while requiring some internal reforms in exchange. The act also created a new secondary market for farm real estate mortgages – Farmer Mac. That market along with many possible structural changes within the FCS, promises to restructure the agricultural credit delivery mechanism in the United States.

Recovery signals

Signs that agriculture's long recession had drawn to a close began to emerge in late 1986. Since then, farm income has risen to record levels, farmland values have turned upwards, farm loan problems have diminished and farm exports have rebounded. Together, these signs chronicle the end of the farm recession. Still, some perplexing, long-term problems remain on agriculture's horizon.

Record-setting *farm income* clearly has been the driving force in the industry's recovery. Even when adjusted for inflation, 1987 farm income rose to heights not seen since the mid-1970s. An unprecedented flow of government cash supported crop farm income while keeping feed costs low for livestock feeders. Meanwhile, livestock prices soared as markets called for an expansion of swine and cattle herds that had shrunk to their smallest size in three decades. In sum, the broad-based strength in farm incomes was a tide that lifted nearly all boats. And farmers used their record incomes to pay down debt.

Surging farm incomes and lower interest rates finally stabilized *farmland values* late in 1986 and pushed them higher the past year and a half. Nationally, average farmland values were 3 per cent higher in early 1987 than they were a year before. Land values rebounded even more strongly in many regions. In the seven heartland states of the Kansas City Federal Reserve District, farmland values have risen an average of 12 per cent from the 1986 bottom.

Strong farm incomes and firm asset values are reflected in *diminishing farm loan problems* for commercial farm lenders. The percentage of nonperforming loans at agricultural commercial banks has dropped dramatically after cresting at more than 4 per cent two years ago. The FCS and FmHA still have large inventories of problem loans requiring attention. But most of the industry's loan losses are behind it, and losses now being recorded are generally a result of past rather than current developments in agriculture.

The fourth sign of recovery in US agriculture has been a heartening rebound in *agricultural exports*. After bottoming in 1986, US farm export volume increased 18 per cent last year. In value terms, however, the export of farm products from the United States rose only 6 per cent. The large difference in the volume and value increases is due to the sharp price cuts and subsidized sales that

have occurred under the 1985 farm programme, another prime example of government's hand in the industry's recovery.

Clearly, the outlook for US agriculture has improved dramatically since the depths of the farm recession just three years ago. Farm income is up, farm loan problems are down, farm land values are rising and farm exports are on the rebound. Still, the industry's continued reliance on subsidized prices and enhanced exports is troubling. US agriculture has not yet determined how to sustain its recovery if support from Washington diminishes. Agriculture's challenge in the years ahead is to address itself to its chronic mismatch of supply and demand as it weans itself from government support.

CONCLUSIONS

US agriculture's odyssey of the 1980s now appears complete. The industry entered the 1980s with extraordinary expectations that the 1980s would be a golden decade. A sea change in macroeconomic policy instead triggered the deepest farm recession since the 1930s. Historic adjustments were made by farmers, lenders, agribusiness, and policy makers during the recession. With a generous farm policy and changes in the macroeconomic policies, the farm recession turned to recovery in early 1987.

What has been learned in this odyssey? The principal lesson for all in agriculture is that the industry is now completely integrated with a domestic and global macroeconomy. It was macroeconomic forces that defined agriculture's turning point to both recession and recovery. An expensive farm policy buffered some of the negative outcomes, but it could not produce recovery on its own. Agriculture must view itself as part of a macroeconomy that is subject to fundamental change.

US farmers became more cost conscious and, in the process, more competitive. One of the principal factors in record farm incomes recently has been an unprecedented slashing of farm expenses. Inflation in the 1970s covered a lot of management mistakes. Recession exposed them. Many farmers are also now exploring techniques to manage financial and production risk, a switch from the early 1980s when risk was sometimes blindly embraced. Agribusiness also has become much more cost conscious. The consolidations in input supply and food processing have reshaped the agribusiness landscape for many years to come, with much greater concentration than before. The long-run consequences of the greater concentration – for farmers and consumers – are not yet clear.

Farm lenders learned that equity-based lending on inflated asset values can be a fatal trap. A financial conservatism born of adversity had led now to much greater attention to loans based on cash flow rather than collateral. The lingering value of this lesson will be tested as inflation pressures mount in the years ahead.

The questions surrounding the future of agriculture's recovery will test whether other lessons have been learned. Those questions are three:

(1) Will US agriculture sustain its recovery if government spending is lowered or phased out? That depends on how competitive the industry

became in the sharp recession. The cost savings have been considerable; the challenge will be to remain competitive.

(2) Will lower interest rates and rekindled positive expectations spark a renewed round of investment and borrowing, possibly setting the stage for a repeat of the 1982–6 farm collapse? A troubling indicator here is the fact that some farmers were willing to pay much higher prices for farmland in recent months than market fundamentals would support. Another troubling sign is that credit remains subsidized for many farm borrowers – either directly through the FmHA, indirectly through the agency status of the FCS, or now, through the implied agency status of Farmer Mac. It remains unclear whether US agriculture will be better able than before to match investments in capacity with market demand.

(3) Will policy makers here and abroad be able to avoid the mistakes of the early 1980s that exacerbated agriculture's difficulties? The 1981 US farm bill, like agricultural policies in other parts of the world, raised crop support prices beyond world price levels and contributed significantly to the surpluses of the mid-1980s. More than ever, farm policy must be able to change with rapid shifts in world market factors. For this to occur, strong tendencies to farm protectionism, in the United States and elsewhere, must be avoided.

DISCUSSION OPENING – LYLE P. SCHERTZ

Drabenstott and Barkema provide a very useful overview of the US farm finance crisis. The 'lessons' they identify are key ones. However, they are not sufficiently complete for anticipating possible future scenarios. I propose to identify three additional observations, which together with Drabenstott and Barkema's 'lessons', lead me to suggest that there is a high probability that financial crises will reappear in US agriculture by the end of this century. The three observations are:

(1) *US and international commodity markets are linked.* Drabenstott and Barkema remind us that agriculture 'is now completely integrated with a domestic and global macroeconomy'. The close links between US farm prices and international cereal and cotton markets are of equal if not more importance. This close linkage means that in the future farm income and therefore the ability to service farm debt will vary over time.

The link between conditions in international markets and income flows associated with US farm land is not as strong as it is for prices. This 'slippage' is due partially to the way that target prices and deficiency payments are utilized. However, even these two programme features have been designed so that changes in price and demand conditions in international markets are reflected, at least partially, in the marginal revenues associated with production of farm products. This all means that with current policies we can look forward to substantial variation in income flows associated with US farm land ownership.

(2) *Expected farm income flows affect farm land prices.* Changes of US farm land prices during the last 15 years reinforce those who conclude that expectations of income streams associated with farmland ownership and real interest

rates have a major influence on the demand and supply of farm land for transaction purposes and, in turn, transaction prices.

The closer integration of macroeconomies of developed countries that Drabenstott and Barkema refer to and the international integration of monetary markets mean that we should expect substantial variation over time in real interest rates. This expected variation in interest rates together with substantial variation of farm income will translate into variation in US farm land prices.

(3) *Land buying with credit is a major cause of crisis.* It is useful to think of two major activities associated with farming – production activities and land ownership. Over time, returns to production activities have been profitable. Commercial farmers who rented land and concentrated on production activities did not as a group experience extreme financial difficulties. In contrast, land ownership with credit made possible dramatic increases in wealth for some individuals from 1972 to 1979. Land ownership with credit was also the primary characteristic causing bankruptcies and financial stress in the 1980s.

It is important to remember that there is great diversity among US farm operators. The difficulties of the minority of farm operators experiencing financial stress in the 1980s were largely associated with taking on debt at what they and we now know was poor timing. A much larger number of farm operators were more risk averse and did not acquire more debt during the debt expansion phase described by Drabenstott and Barkema. Many of the farmers who did not acquire new debt were the neighbours of those who did. And, some of these people were ready to bid for land associated with the foreclosures and forced sales that followed.

Drabenstott and Barkema question if lower real interest rates and expectations of improved income flows will stimulate borrowing to buy land. There is little question in my mind that they will. This willingness to borrow will contribute to changes in land prices.

Future crises

In summary, US and international commodity and monetary markets are closely linked. The variability in these markets will cause variation in the expected income flows associated with land ownership and real interest rates. In turn, land prices will change. Those who acquire land with credit will gain significant wealth as land values increase and they will encounter crises when land prices decline substantially.

Future responses

The probable responses to these future crises are not at all clear. As Drabenstott and Barkema point out, the political response in the 1980s was largely aggregate in nature. Admittedly, media and political attention was intense and stimulated great sympathy as land assets were revalued downward and foreclosures became more common. This appeared to be the case even when bankruptcy activities were designed to preserve a net worth of as much as US $500,000. But, in the end,

targeted assistance was limited. Instead, the response included large income transfers in the form of assistance to the Farm Credit System and huge commodity associated payments tied to production. These transfers contrast to the general ignoring of the large number of farm and nonfarm people in rural America with incomes below politically accepted poverty levels and net worths that are nil.

More recently, Congress decided to target drought relief benefits. Future responses to financial crises will reflect future changes in attitudes toward the Farm Credit System. The recent Congressional response reflects a desire by Congress to preserve a set of institutions created earlier by Congress. However, in exchange for assistance the Farm Credit System was forced to accept a new institution whereby it will be possible for lenders, including the competitors of the Farm Credit System, to sell farm land mortgages, much like house loans are now sold by lending institutions. This step further diminishes the justification for the existence of the Farm Credit System as does the integration of national monetary markets.

I suggest that participants in the discussion focus on the probability that financial crises in US agriculture will reappear, and the possible range of responses to such crises, for the likelihood of such crises and the responses to them have great implications for the extent to which our governments permit interdependencies of our economies to evolve.