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Report

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Trade Prospects for Eastern Europe and U.S. Farm Commodities

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With dramatic political and economic events occurring almost daily in Eastern Europe, U.S. farmers wonder if this promises a huge new growth market for farm products. Is such optimism warranted, or will they be disappointed? This article examines the likely impact of recent developments in Eastern Europe on U.S. agricultural trade. First, the article describes the current situation in Eastern Europe and reviews how that situation developed. Next, future prospects are considered.

The future of Eastern Europe is very uncertain. At a recent conference of agricultural trade researchers, it was noted that historically we referred to these nations as centrally planned. However, an economist from Poland rose and suggested that we now refer to the Eastern Bloc countries as the unplanned economies. That is a good description of Eastern European economies, for forecasts of where these nations are headed are guesses or perhaps hopes.

The Current Situation

While conditions vary from one nation to another, in general, per capita food consumption and imports have stagnated or fallen while foreign debt has swelled. Shortages of goods are chronic. One former student at Purdue University, now in West Germany, reports that East Germans are using the "welcome money" given them by the West German government to buy fruits, chocolate, and small appliances. These items disappear as quickly as stores along the border with East Germany can place them on the shelf. There are reports that the food aid sent to Poland by the West sits on the docks because the transport system has failed to operate. When the Polish government released prices on January 1, 1990, the price of food rose 400 percent and the price of fuel went up 600 percent. With incomes low by western standards, such price increases quickly erode purchasing power.

Even before 1989, the economic situation of these nations was poor. Inflation was a major problem. In 1988, inflation reached 18 percent in Hungary, 61 percent in Poland, and more than 200 percent in Yugoslavia. Economic growth during the 1980s was slow. Only Bulgaria and Poland showed increased economic growth in 1988. Yugoslavia reported a real decline of 2 percent, while other nations' economic growth slowed.

The 1980s have not been kind to Eastern European consumers (Table 1). Per capita consumption for several commodities has fallen, especially in Hungary, Poland, Romania, and Yugoslavia. In several other cases, the growth in per capita consumption has been very modest. For meat, only Bulgaria and East Germany (GDR) report large increases, while the other nations show either a slow rise or a decrease. Romania, for example, reports a 13 percent decrease in meat consumption through 1988 but substantial increases in use of vegetables and potatoes. Per capita uses of eggs, grain, and potatoes are falling in Hungary, Poland, and Yugoslavia. Of the commodities listed in Table 1, only per capita use of vegetable oils and of sugar is consistently rising.

Except for Romania, all these nations have large foreign debts. Preliminary data for 1988 show gross external debt for the region as 112 billion dollars. This compares to 8 billion dollars in 1971 and 86 billion in 1981. Romania paid its foreign debt by forcing living standards lower to encourage exports. These external debts reduce income available for imports and increased consumption. Since 1980, net grain imports by Eastern Europe have fallen from 14 million tons annually to 3 to 5 million (Figure 1). In 1984, virtually no net grain imports were recorded. Soybean meal imports have not shown such a severe adjustment but rather stagnated in the 3 to 4 million ton range (Figure 2). Stagnant meal imports and little domestic meal production limited growth in meal use. Whereas in the late 1970s annual use of soy meal

was around 5 million tons, a decade later it still remained at that level. Despite the fall in net grain imports in the 1980s, grain consumption did not decline. In 1981 and 1983, grain use fell, but then recovered to levels slightly above those of the late 1970s. The increased use was the result of debt burdened nations encouraging internal production, which grew by 10 to 15 million tons from the late 1970s to late 1980s.

Background

Although events proceeded swiftly this past year, the decline of the Eastern European economies has been occur-

ring for several years. In agriculture much of the problem lay with the centralized price structure. Agricultural prices were fixed at low levels and remained there for decades. Farm output growth was discouraged. As per capita incomes grew, consumption and imports rose. The increased food subsidies caused by consumer prices below world market levels swelled the governments' deficits. Producer prices were adjusted upwards on occasion to encourage output, but without corresponding increases in consumer prices increased income continued to push food subsidies higher.

Attempts to raise consumer prices were strongly resisted by the population. In the early 1970s Polish food riots forced a change in the government. Food price increases also

Table 1: Changes in Per Capita Food Consumption in Eastern Europe During the 1980s (a)

Commodity	Bulgaria	Czechoslovakia	GDR	Hungary	Poland	Romania	Yugoslavia
	-- percent change from 1980 --						
Meat	18.6	2.8	11.1	-0.2	-9.9	-13.3	2.5
Eggs	28.9	8.2	4.8	-0.6	-10.8	9.2	-7.9
Vegetable Oil	4.1	15.3	0	76.2	8.8	(b)	41.6
Sugar	0.9	-0.5	0.5	4.4	11.3	(b)	3.8
Grain	-10.0	4.7	4.2	-2.6	-7.1	1.7	-5.6
Vegetables	(b)	(b)	8.5	-1.2	14.9	21.4	-12.4
Potatoes	3.7	-3.9	2.8	-18.0	-9.5	47.8	-6.6

(a) All data 1980-1987, except for meat which uses 1988 preliminary data.

(b) Data not available.

Source: Cochrane, N. J. and M. J. Lambert. "Agricultural Performance in Eastern Europe, 1988." Staff Report No. AGES 89-38 U.S. Department of Agriculture, Economic Research Service. August 1989.

Figure 1: Eastern European Total Grains Production, Consumption, and Net Imports, 1960-1988

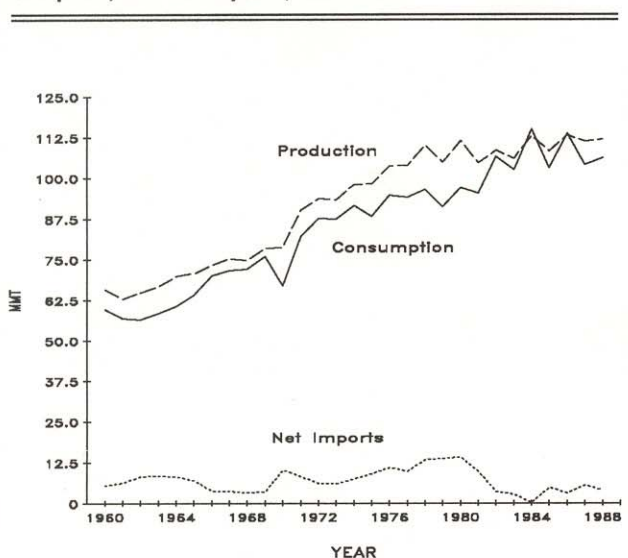
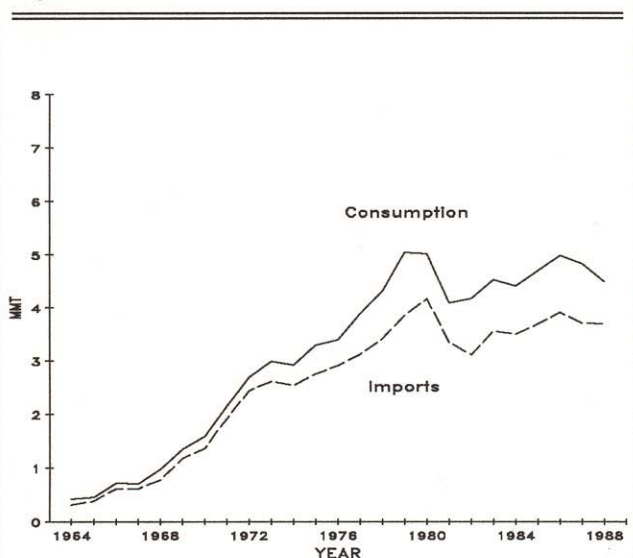


Figure 2: Eastern European Soybean Meal Consumption and Imports 1964-1988



played a major role in the 1980s. The workers of Gdansk who formed the Solidarity union did not jump over the shipyard wall to protest political oppression. Rather they were opposing food price increases and the proposed closing of the shipyard. It is ironic that it is the Solidarity government which is now raising food prices.

Concern about the political sensitivity of consumer food price increases in 1970 led to a policy change with serious long-run implications that are only now becoming clear. Eastern European governments began large imports of grains and oilmeals to fill the gap between demand and supply at the artificially low food prices. This can be clearly seen in the available data (Figures 1 and 2). Net grain imports in 1969 were 3.6 million tons. In 1970, net grain imports rose to 10.1 million tons. By the end of that decade, annual net grain imports were consistently in the 13 to 14 million ton range. Soymeal imports show a similar pattern, rising from 1.2 million tons in 1969 to around 4 million tons each year by the end of the 1970s.

Rising net food imports are not a problem by themselves, rather it depends on how the imports are financed and how the governments market those imports. Eastern European governments made very poor decisions regarding financing the imports. First, they tapped the large pool of loanable funds in international markets following the oil price shock of 1973. These loans were obtained at variable short-term interest rates, and the ability of Eastern European nations to repay them was limited. Second, Eastern Europe relied heavily on concessional purchases, such as CCC credit programs. Third, they financed large and growing consumer subsidies through government budget deficits rather than reducing the subsidies. That is, they substituted debt financed imports for price reform. Fourth, because the loans had to be serviced in scarce hard currency, they diverted much of their hard currency to servicing the debt on a consumption activity instead of using the funds for investment. This compounded the budget deficit. As imports rose, the subsidies rose, and this disastrous cycle continued.

To illustrate, assume that the world price of grain in the 1970s was \$5 per bushel, while the subsidized price to users in Eastern Europe was \$1 per bushel. Over the decade, Eastern Europe bought 108 million tons of grain. The actual cash outlay for subsidies on those imports would be \$16 billion. But these nations did not pay the loans for this grain purchased, rather the money was borrowed and rolled-over year after year through new loans. Lenders agreed to this as long as the interest was covered. The actual increase in external debt on all goods for Eastern Europe between 1971 and 1981 was 78 billion dollars. When world interest rates rose sharply in the early 1980s, the consequences of this strategy were quickly apparent. Some nations could not service the debt in hard currencies. Others limped along by paying what they could when they could. Romania squeezed domestic consumption and used exports to service its debts.

The import strategy of the 1970s left Eastern Europe in a terrible economic mess. Most nations had large foreign debts they either struggled to pay or could not pay. Government deficits resulting from the subsidies were large, thereby creating inflationary pressures in the economy. The consumer subsidies and low producer prices, which were the

source of the problem in agriculture, remained. Where prices were controlled, this inflation was reflected in shortages of goods and excess cash in consumers' hands. Where prices were "free" in the small private markets, prices rose sharply. The resulting inflation eroded consumer purchasing power.

The Future

By the late 1980s the economic problems were so severe that they could no longer be ignored. In some countries the pressure for change came from the populace below, as in Poland. In other countries, like Yugoslavia and Hungary, the need for reform was recognized by those in power. Some nations proceeded slowly and relatively orderly; others, such as in Czechoslovakia, experienced sudden but orderly changes in government. Hungary and Yugoslavia toyed with limited reform within the socialist system. Romania, in contrast, exploded.

The future for these economies is very uncertain. In the near term, economic reforms, such as price increases and cuts in government subsidies, will mean austerity. Incomes will be eroded by the price rise and the cut in subsidies. Inefficient state industries will lose their protection and be forced to downsize or to go out of business. This will result in unemployment and a further loss in per capita income. There is concern that governments experimenting with political and economic reform after 40 years of central planning will become unstable as economic conditions worsen. The outcome will depend on the willingness of Eastern Europeans to tolerate an extremely difficult economic period for increased political freedom and economic reform.

For agricultural trade, the lean years ahead in Eastern Europe suggest that most export sales to Eastern Europe will be made on a concessional basis. It is doubtful that Eastern European nations can afford large commercial imports. The United States and Western Europe already are sending increased food aid.

But the extent of food aid assistance is controversial. A recent editorial in *The Economist* magazine warns against massive U.S. and Western European food aid. The view expressed is that such assistance in the 1970s is what created the foreign debt problem in the first place. Without that aid, Eastern European governments would have had to raise food prices earlier and would not now be in such a terrible economic condition. *The Economist* recommends only minimum short-term aid to keep the present governments in power, and that the majority of the aid be long-term assistance designed to improve the functioning of these economies and to facilitate the transition to a more democratic political system. Such aid would include management training and infrastructure development. The aid would be intended to improve the operation of their markets rather than food give-away efforts that would depress agricultural prices and allow governments to avoid economic reform.

There appears to be little commercial demand in the short run. What about the long run? Successful economic reform could open possibilities for major food exporters such as the

United States, Western Europe, Canada, Argentina, Brazil, and Australia. With revived economies, Eastern Europe could again become a growth market. However, the present composition of imports would likely shift. Eastern European consumers eat more grain directly and less meat than consumers in the West. (See Table 2 for a comparison of per capita consumption of major food items in Eastern Europe, West Germany, and the United States.) Per capita income increases following reform could lead to higher meat consumption and less direct human use of grains. Livestock feeds in Eastern Europe also have a much greater grain component and a smaller protein share than Western rations. As Eastern Europe evolves toward western consumption patterns, grain use in livestock feeds could decline and the use of oilmeals, like soymeal, could increase. Thus, a growth in soybeans and soybean meal imports is possible. Grain use may grow as well, but changes in diet and in livestock feed composition may limit this growth.

If the reforms are successful, agricultural production could increase in Eastern Europe. Prior to World War II, much of Europe's agricultural production was in the East. Hungary and Romania have soils and a climate that offer a real potential for increasing output given more realistic price signals. Polish agriculture appears to be inefficient. Most of the farms are private and small. They tend to be labor intensive with little application of modern technology. It is not uncommon to see grain harvested by hand in Poland and much of the sector still uses horses. Agricultural output has been limited by the lack of modern inputs through the state-controlled distribution system. The difficulties in Eastern European agriculture are reflected in grain yields. Grain

yields in the United States, which uses a land-extensive technology, are usually one-third greater than in Eastern Europe. In 1988, Eastern European grain yields were the fourth highest since 1960. Yet the U.S. drought-reduced yield for grain still exceeded that in Eastern Europe. Hence, there is much output potential if agricultural policies are reformed.

Summary

The economic problems in Eastern Europe have been a long time coming. Their roots lie in the centralized determination of agricultural and food prices during the past 40 years and in the import decisions of the 1970s. Currently, these nations are bankrupt, and little import demand for agricultural products, except under concessional terms, can be expected in the short-run. In the long-run, successful economic reform could mean expanded trade opportunities for farm products. The United States would face tough competition from rival exporters, especially those in Western Europe, who are well situated to supply Eastern Europe. Soybean meal could be a major beneficiary of political and economic reform as meat consumption rises and as livestock feeds include more protein.

Western nations through economic aid can assist the Eastern European nations through a difficult period of economic austerity. But whether reform is successful ultimately depends on the Eastern Europeans themselves. One can only hope that they can survive these times of trial and tribulation.

Table 2: Comparison of Per Capita Consumption of Selected Foods Among Eastern Europe, West Germany, and the United States, Average 1984 - 1987 (a)

Country	Meat (b)	Eggs (c)	Potatoes	Vegetables	Grain	Vegetable Oil
			-- pounds --			
United States	212	252	69	85	150	37
W. Germany	223	274	163	165	170	31
Bulgaria	170	253	69	291	319	--
Czechoslovakia	191	342	172	169	111	30
E. Germany	213	302	337	216	223	26
Hungary	223	320	117	169	244	--
Poland	154	210	319	249	259	20
Romania	124	285	234	375	384	--
Yugoslavia	149	175	121	191	376	40

(a) The data are as consistent as possible across nations, but some differences occur. Hungarian data includes edible offals and fats in meat consumption.

(b) Excludes consumption of fish.

(c) Eggs reported in numbers rather than in pounds.

Sources:

For Eastern Europe:
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Pasture Rental Rates Rise in 1989

J.H. Atkinson, Professor of Agricultural Economics

In a June 1989 survey conducted by Purdue, the state average cash rent for permanent non-rotation pasture was \$32.32 per acre. This was up 16 percent from 1988. Favorable cattle prices and drought-related shortages of hay in 1989 likely were the major factors causing this increase.

The value of permanent pasture was \$501 per acre statewide. The cash rent was 6.5 percent of this figure.

The carrying capacity was 1.8 acres per cow. This would imply a cost per cow per year of \$58.18, or \$6.46 per cow per month based on a nine month grazing season.

By areas (Figure 1), average pasture rent per acre was similar. Except for the southeast, the area averages ranged from \$31.22 in the southwest to \$34.55 in central Indiana, or about 10 percent from low to high. The average was \$29.92 per acre in the southeast (Table 1). As a percentage of pasture land value, the range by area was from 5.9 percent to 6.4 percent except in the north where the estimate was 8.7 percent. Carrying capacity varied from 1.5 acres per cow to 2.3 acres per cow. Rent per cow per year fell mostly in the range of \$50 to \$60 in the four northern areas and \$60 to \$70 in the two southern areas.

Pasture land values fell within a \$100 range, (\$489 to \$571) in all areas except the north, where this value was only \$369. The fact that carrying capacity and cash rent estimates in the north are in line with other areas leads to the conclusion that the land value estimate in that area probably is not reliable. This conclusion is further strengthened by the fact that in four of the six areas the median was \$500 and only \$25 less in the fifth area, the southwest. Thus, pasture values as reported in the north in 1989 are out of line with all other areas of the state even though carrying capacity and cash rent were similar to other areas. They also are out of line with the 1988 estimates of that area.

In spite of the pasture value estimate concern in the north, the following conclusions arise from the survey:

1. Area averages of pasture rental rates in the central and northern parts of the state were from about \$32 to \$34.50 per acre.
2. Rental rates in the two southern areas averaged between about \$30 and \$31 per acre.
3. An average of over two acres per cow was reported in

the southern areas, while this figure was from 1.5 to 1.8 in the other areas.

4. Except for the North, average permanent pasture values per acre were from about \$490 to \$570, with the lower figure being in the southeast. In much of the state, the round figure of \$500 per acre appears reasonable.
5. Pasture rent as a percent of land value is around 6 percent except in the north. Cropland rents in 1989 were around 7 to 8 percent of land value.

There is more variation in estimates of pasture rent and carrying capacity than in estimates of corn yields and cropland rent. Owners and tenant users of permanent pasture should thus recognize that cash rents and carrying capacity of specific acreages may vary considerably from the averages in this report.

Figure 1: Geographic Areas Used in the Purdue Land Values Survey

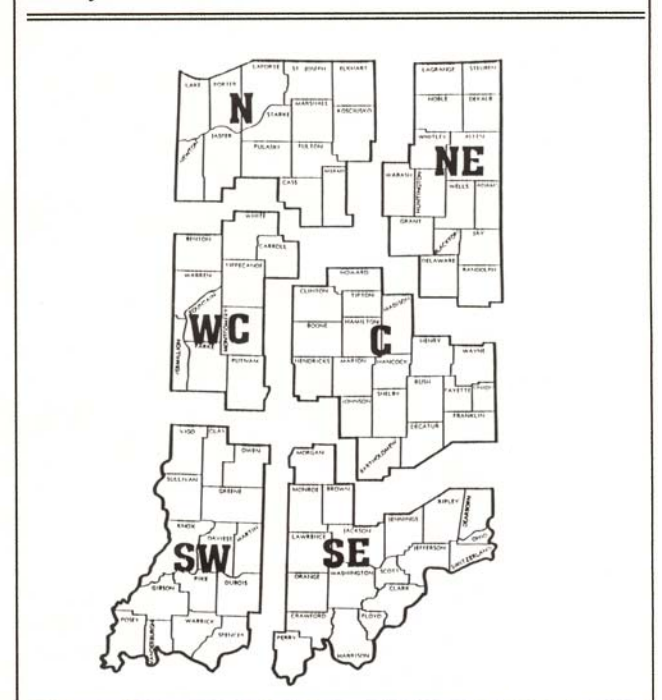


Table 1. Average Cash Rent and Land Value Per Acre, For Improved Non-rotation Pasture, By Areas of Indiana June 1989

Area	Acres/ Cow	Cash rent/Acre	Land value/Acre	Rent as % of value	Implied rent per cow per year
North	1.6	\$32.09	\$369	8.7%	\$51.34
Northeast	1.8	34.00	553	6.1	61.20
West central	1.6	32.17	503	6.4	51.47
Central	1.5	34.55	571	6.1	51.83
Southwest	2.3	31.22	526	5.9	71.81
Southeast	2.1	29.92	489	6.1	62.83
State	1.8	32.32	501	6.5	58.18

"Getting the Government Out of Agriculture:" Lessons from New Zealand

W.D. Dobson, Professor of Agricultural Economics*

People have long talked about "getting the government out of agriculture." The idea has attracted added attention in recent years as the Congress and administration have sought ways to reduce federal budget deficits. The Bush administration's proposal under the GATT is to eliminate agricultural trade restrictions and government price supports that distort agricultural trade. Many U.S. farmers favor eliminating government farm programs. For example, 35% of farmers participating in a 21-state survey in 1989, and 42% of the Indiana farmers included in the survey, favored gradually eliminating commodity programs, including set asides, price supports, deficiency payments and government storage programs (Guither, Jones, Martin and Spitze).

Discussion is one thing, but few governments in developed countries have ever eliminated major farm price support programs. An exception is the small country (3.3 million people) of New Zealand. The author was privileged to spend a year recently in New Zealand teaching and watching what happened when New Zealand's government got out of agriculture. Observations about New Zealand's noteworthy experience with unilateral elimination of government farm programs appear in this article.

Beginning in mid-1984, New Zealand's newly elected Labour Government launched an ambitious economic liberalization program (dubbed "Rogernomics") which stripped the country's farmers of almost all government support. Essentially all that remained of government help to farmers in 1989 was assistance relating to inspection and grading, animal health services, research, extension and certain residual interest rate subsidies. Even research and extension were placed partly under a "user-pays" regime.

In this article, the following questions are considered: What circumstances led to these changes in agricultural policies and other economic reforms? How were the agricultural policy reforms implemented? How did the reforms affect the economic well being of farmers and agribusinesses? What lessons emerge for policymakers in other countries from New Zealand's experience with agricultural policy reforms?

Circumstances That Produced The Economic Reforms

Prior to mid-1984, New Zealand had one of the most regulated and distorted economies outside communist countries. Wage and price controls, foreign exchange controls, import licenses, high tariffs, export subsidies all shielded, regulated or supported the economy. In agriculture, which is dominated by pastoral farming (sheep, dairy and beef), horticulture crops, wheat and barley, government assistance included support for price stabilization programs run by producer boards, fertilizer subsidies, supplementary minimum prices (floor prices for livestock producers), export subsidies, extensive support for research and extension,

and state ownership of the Rural Bank, the main supplier of subsidized farm credit.

Why were reforms adopted? Many New Zealanders were dissatisfied with the lackluster performance of the country's economy prior to the mid-1980s. Growth in Gross Domestic Product (GDP) per capita in New Zealand was only 15% of the average of all Organization for Economic Cooperation and Development (OECD) countries during 1974 to 84, while the country's inflation rate was 50% higher than the average for all OECD countries during this period (Spencer and Carey). Government interventions had produced a government fiscal deficit equal to 9.3% of New Zealand's GDP in 1984 and a foreign debt per capita which exceeded that for Brazil (Wilkinson). Many thought such deficit and debt figures were unsustainable. For agriculture in 1984, the direct subsidies, support services, revenue foregone and indirect energy subsidies totalled NZ\$1.1 billion (1.1 billion New Zealand \$ = .5 billion U.S. \$), 3.2% of GDP and about one-third of the total government deficit (Rayner). Farmers themselves recognized that budget outlays of that size for agriculture could not continue. Mr. Brian Chamberlin, President of Federated Farmers, New Zealand's largest farm organization, put it this way, "Three million people cannot afford to go on subsidizing 70 million sheep" (*The Economist*). Thus, when New Zealand's Labour Party unseated the National Party in elections held in mid-1984, the country was ready for change. In this environment, Roger Douglas, Labour's strong-willed finance minister, was able to spearhead reductions in government intervention in New Zealand's economy, and thus the name "Rogernomics" for the reforms. The segment of the economy least touched by Rogernomics was the labor market (Walker).

Implementing Ag Policy Reforms

The agricultural policy reforms were implemented quickly (during 1985-87) as part of a basket of reforms for financial markets, foreign exchange markets, tariffs, import licensing, taxes, and those related to partial deregulation of labor markets. Bundling of reforms made it easier for the government to implement them. Since many people experienced pain during the reforms, no group could legitimately claim it had been singled out for unfair treatment. Moreover, interest groups--especially those in New Zealand that were unaccustomed to fighting reforms across a broad front--were not able to effectively oppose the reform measures. Hence, the reform blitzkrieg unfolded much as the finance minister wanted.

Rather than striving for optimal sequencing which would have called for early, major reform of labor markets,

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Douglas capitalized on targets of opportunity, recognizing in particular that the political cost of confronting unions with demands for major labor market reform would have been too great for the Labour Party. While neglect of labor reforms has created problems (bottlenecks and rigidities) for New Zealand's economy, it is hard to knock Douglas' strategies since he produced more reforms in four years than other countries achieve over a period of decades.

Some limited transitional payments were made to help farmers and producer boards adjust to freer markets. Government payments for supplementary minimum prices to farmers were reduced from NZ\$346 million in 1984, to NZ\$215 million, NZ\$65 million and zero in 1985, 1986 and 1987, respectively (MAFCorp 1989). In 1986-87, the government repaid New Zealand's Reserve Bank for debts of the Producers' Meat Board, totalling about NZ\$1.0 billion, and debts incurred by the Dairy Board, totalling about NZ\$600 million (Johnson). The boards had incurred these debts partly as a result of price stabilization schemes they operated. In preparation for its sale, the government wrote down debts of the Rural Bank by NZ\$1.0 billion. It does not appear that the payments represented compensation approximating the net present value of the subsidies received by farmers, producer boards or the Rural Bank. Rather, they seem to be mainly figures arrived at through political negotiations, which the government hoped would help the recipients to adjust successfully.

New Zealand's government used a device called the Rural Bank mortgage discounting scheme to help financially strapped farmers during the early years of the reforms. This device allowed the government to provide limited help to farmers while continuing to extricate itself from the business of providing subsidized farm credit. Under this scheme, the present value of the concessional interest benefits was subtracted from the farmer's outstanding loan balance while simultaneously raising the interest rates on the adjusted loan to the market rate. While the scheme did not directly improve the cash flow position of farmers who qualified for the plan, it increased farmers' equity and facilitated debt restructuring. Commercial lenders had incentives to refinance some of these higher equity loans under terms which reduced farmers' payments.

The government permitted the Dairy Board and the Apple and Pear Marketing Board to retain some privileges under the new regime--principally the statutory right to serve as monopoly exporters. Apparently this concession was made because officials bought producers' arguments that individual exporters of dairy products, apples and pears would be weak, ineffective sellers in foreign markets and because the concession involved no budget outlays.

While New Zealand's government provided nontrivial amounts of adjustment help to producer boards, the farmers were weaned pretty much "cold turkey" from subsidies. In the case of the Rural Bank, the billion dollar loan write down made it possible for the government to sell the organization as a going concern and probably eliminated the need for a bailout of the type received by the U.S. Farm Credit System in the late 1980s. Moreover, New Zealand's government further protected itself from losses by selling the Rural Bank to the financially strong Fletcher-Challenge organization--a

multinational corporation with assets of NZ\$10.2 billion in 1988--rather than accepting the bids of a financially weaker producer group.

Impact on Farmers and Agribusinesses

New Zealand's farmers felt a profit squeeze as a result of the agricultural policy and other economic reforms and, a tight money policy that accompanied the reforms. These developments reduced output in parts of the farm economy and the sales of agribusinesses serving farmers. As noted below, sheep stock units declined by about 10% between 1983/84 (pre-reform) and 1988/89 (MAFCorp 1989).

<u>Item</u>	<u>Percent Change</u>
	<u>1983/84 to 1988/89</u>
Sheep stock units	- 9.9%
Beef stock units	+ 7.3
Dairy stock units	+ 2.5
Total pastoral stock units	- 2.6

Sheep slaughter declined by about 30% from 1983/84 to 1988/89, substantially more than stock units. This contributed to excess capacity in livestock processing plants and forced restructuring in that industry. Beef slaughter increased by about 3% and milk production remained approximately constant over the 1983/84 to 1988/89 period (MAFCorp 1987, 1989). This pattern of output meant that cattle and milk producers were unable to take full advantage of the strong international prices for beef and manufactured dairy products in 1988/89. The Labour Government has been frequently chided about this point by the opposition National Party.

The real income of New Zealand's sheep and beef farmers fell by about 13% from 1984 to 1988/89 (MAFCorp 1989). Prices received by New Zealand's manufacturing milk producers varied sharply during the last half of the 1980s. The real payout to producers for manufacturing milk by the New Zealand Dairy Board declined by 40% from 1984/85 to 1986/87 before returning to 1984/85 levels in 1989/90 (New Zealand Dairy Board). Reflecting these changes and others, the contribution of agriculture to New Zealand's GDP declined from 7.0% in 1984 to about 5.8% in 1988/89 (MAFCorp 1989).

Thus, five years into the reforms, farming had become a moderately smaller component of New Zealand's economy, and sheep producers, in particular, had suffered reductions in income. For a majority of farmers, the agricultural policy and other economic reforms were manageable. But a farm financial crisis much like the one that surfaced in the U.S. in the mid-1980s emerged in New Zealand. Symptoms of the crunch included a 60% drop in the real value of farmland from 1980 to 1989, an increase to 25% in the percent of farmers experiencing severe financial stress (MAFCorp 1989), and an increase in the percent of the Rural Bank's loans in arrears from 4% in 1984/85 to almost 12% in 1988/89 (Rural Bank). The latter figure is similar to the per-

cent of farm loans in arrears in parts of the midwestern U.S. during 1986-87.

High interest rates contributed mightily to this situation. Reflecting the Reserve Bank's restrictive monetary policies, New Zealand's nominal short-term interest rates (measured by the 90-day commercial bill rate) peaked at 26% to 27% in 1985 and again in 1987, before falling to about 14% in 1989 (Bank of New Zealand.) Record high real interest rates, which surfaced during the times of peak nominal rates, re-emerged during the last half of 1988 and 1989 as nominal rates failed to fall as much as inflation. The removal of subsidies, high real interest rates, and the strong exchange rates associated with the high interest rates left some New Zealand farmers who had purchased land and other production items on credit in the 1970s and 1980s with heavy and, in some cases, unmanageable debt burdens. Interest expenses became the largest expenditure item by a large margin for New Zealand sheep and beef farmers during 1986-89. Farmers adjusted by reducing expenditures for fertilizer, repairs and maintenance with predictable effects on agribusinesses serving them.

Farm and agribusiness finance companies also experienced difficult times. Farm lenders saw their businesses contract because New Zealand's farmers, like those in the U.S. during the recent farming downturn, paid off loans and borrowed less. In addition, the lenders received new competition from Australia's Primary Industry Bank which entered the New Zealand market and from New Zealand lenders who previously did little farm lending.

However, a survey conducted by the author in New Zealand indicated that many agribusinesses adjusted effectively to the agricultural policy and other economic reforms. Firms that were well positioned going into the reforms fared particularly well. This group included dairy cooperatives that had produced for international markets since the 1930s, subsidiaries of multinational firms that had rationalized operations under the direction of parent corporations, and others that had begun to rationalize prior to mid-1984 because they recognized the government's subsidies for agriculture were unsustainable.

Managers--particularly exporters--complained that the lack of labor market reforms prevented wage differentials from reflecting productivity differentials and kept their costs from being fully competitive. But, the results of the survey suggest that, on balance, the agricultural policy and other economic reforms produced the favorable results predicted by proponents of the reforms.

Lessons

The following lessons emerge from New Zealand's experience with agricultural policy and other economic reforms.

1. New Zealand's Labour government was able to implement sweeping agricultural policy reforms successfully because the reforms were included in a bigger package of economic reforms.
2. Like the United States, New Zealand has inflexible monetary and fiscal policies, and almost all inflation

fighting is carried out with monetary policies. Tight money policies used by New Zealand's Reserve Bank drove interest rates and exchange rates up, making the reforms more painful to farmers and agribusinesses than under more balanced monetary-fiscal policies.

3. Agribusinesses generally found the reforms to be manageable. Agribusinesses that were well positioned to deal with reforms and those gaining early mover advantages fared best.
4. A discounting scheme similar to that used by New Zealand's Rural Bank in 1986-87 might be employed by the USDA to encourage the most credit-worthy Farmers Home Administration borrowers to "graduate" to unsubsidized credit.
5. No apparent damage to the efficiency of the firms has resulted from the decision by New Zealand's government to allow the two marketing boards to retain monopoly exporting privileges. Indeed, the Dairy and Apple and Pear Marketing Boards have emerged as innovative, showcase agribusinesses.
6. Although New Zealand's economic reforms were sweeping, credible, and implemented with dispatch, there is unfinished business. The government's failure to complete labor reforms has created bottlenecks that prevent benefits from other economic reforms from being fully realized.

It may be impossible, of course, for big countries such as the United States to adopt sweeping reforms of the type implemented in New Zealand. Indeed, efforts of the Reagan administration in the early 1980s to put in place more "market-oriented" agricultural policies ran aground partly because the task was unmanageable and opponents were able to effectively mobilize opposition to the reforms (Stockman). Nonetheless, New Zealand's experiment--warts and all--shows that agricultural policy reforms, which largely took the government out of agriculture, were implemented successfully in this small, developed country. Moreover, certain lessons learned in New Zealand may have broad applicability, even for countries that undertake more modest reforms. Many New Zealanders who have lived through the reforms suggest the impact of economic liberalization can be described with the same words Mark Twain used to describe Wagner's music: "It's not as bad as it sounds."

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Record High Milk Prices: What Lies Ahead?

Harold W. Lough, Ph.D., Dairy Research Associate*

Milk prices in Indiana have reached record highs in recent months. The Order 49 (Indiana Federal Milk Marketing Order) blend price for January 1990 was \$15.99 per hundredweight. That was \$2.52 per hundredweight over the year-earlier blend price and \$2.21 per hundredweight over the blend price of any month before 1989.

These milk price increases were unexpected, as the supply and demand conditions for dairy products had changed little from 1988. U.S. milk production and consumption levels in 1989 were only one-half percent less than those of 1988. High prices were the result of a unique combination of low cheese stocks, high nonfat dry milk sales, and declining milk production per cow in 1989.

Nonfat dry milk prices in March 1989 were attractive to international traders, and heavy export commitments were made. These agreements ultimately tied up enough nonfat to send domestic prices far above international prices. At the same time export agreements were being made for nonfat dry milk, American cheesemakers were experiencing strong domestic sales and low stocks. Cheesemakers evidently decided to rely on spring flush milk production to rebuild stocks rather than bidding milk away from butter-powder operations. These conditions made milk prices highly responsive to even slight milk production decreases.

Ironically, milk production in the United States did decline from year-earlier levels during the last half of 1989. The number of milk cows was about one percent lower in 1989 and the milk production per cow decreased for much of the last half of the year due to higher feed price and lower forage quality.

The reduction in milk production combined with large nonfat dry milk export commitments, low cheese stocks, and heavy demand for cheese set off a scramble for farm milk resulting in rapid increases in dairy product prices and ultimately in milk prices.

Given the current high milk prices, two issues will be addressed:

- 1.) How milk prices are set, including the relationship between dairy product prices and the farmer's milk check, and
- 2.) The prospects for future farm milk prices.

Fluid grade milk prices will be discussed since 82% of milk production in Indiana is fluid grade.

Dairy Product Prices

Changes in the price of fluid grade milk originate with changes in prices of the dairy products--hard cheese, butter, and nonfat dry milk. The price of each of these products is determined in a national market.

Hard Cheese. The National Cheese Exchange, located in Green Bay, Wisconsin, is the only central spot market for cheese in the country. It meets every Friday and provides a place for members to buy or sell 40-pound block cheddar,

barrel American, and Swiss block cheese. The prices negotiated on Friday provide the basis for nearly all transactions in hard cheese across the United States for the following week. The Exchange price used by federal milk orders is the 40-pound block cheddar.

Butter. The national price of butter is established at the Chicago Mercantile Exchange in the cash butter market. The price used by federal milk orders is for Grade A butter.

Nonfat Dry Milk. The Dairy Division, USDA, reports weekly the prices of high heat, low heat, and Grade A nonfat dry milk. The price used by federal milk orders is the simple average of the three nonfat dry milk products.

Minnesota-Wisconsin Price

The Minnesota-Wisconsin price (M-W) reported monthly by USDA is one of the most widely used measures of changes in milk values. This is an average price for manufacturing grade milk paid by dairy products processors in the two states. However, the M-W is affected when wholesale product prices are close to government support prices. Thus, the M-W price represents national supply and demand conditions for manufactured dairy products, including the impact of USDA price support purchases.

Regulation

Milk prices in Indiana are influenced by two federal programs, milk price supports and milk marketing orders. The intended pricing impact of these programs is on farm milk although the price support program also directly affects the price of dairy products.

Price Support of Milk. The Agriculture Act of 1949 directs the Secretary of Agriculture to support the price of milk. The objective of supporting the price of manufacturing grade milk at an administratively determined price is achieved by USDA's Commodity Credit Corporation (CCC) purchasing, at announced prices, all the natural cheddar cheese, butter, and nonfat dry milk that is offered to it for sale.

The support price increased throughout the 1970s and reached a high of \$13.49 per hundredweight in 1980. It has since declined to \$10.10 per hundredweight, effective January 1, 1990. This is the lowest support price for milk since 1978 and the lowest in real prices (including inflation) since 1966.

The Minnesota-Wisconsin prices closely followed the support price through the 1980s until the summer of 1987 (Figure 1). During the last months of 1989 the M-W soared above the support price by over \$4 per hundredweight.

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Indiana Milk Marketing Order. The 166 million pounds of fluid grade milk produced in Indiana in December 1988 was regulated under six federal milk marketing orders (Chicago, Indiana, Louisville-Lexington-Evansville, Ohio Valley, Southern Illinois, and Southern Michigan). The Indiana order was largest at 128.6 million pounds or 77 percent of the total fluid grade (Edwards and Lough).

Under the Indiana order (as in all federal milk marketing orders) milk is priced each month based on its final use. The final use of fluid grade milk is divided into three classes:

- Class I - fluid milk products
- Class II - fluid cream, eggnog, yogurt, and fluid milk and cream products used to produce cottage cheese, milk shakes, and similar products
- Class III - cheese, butter, dry milk, etc.

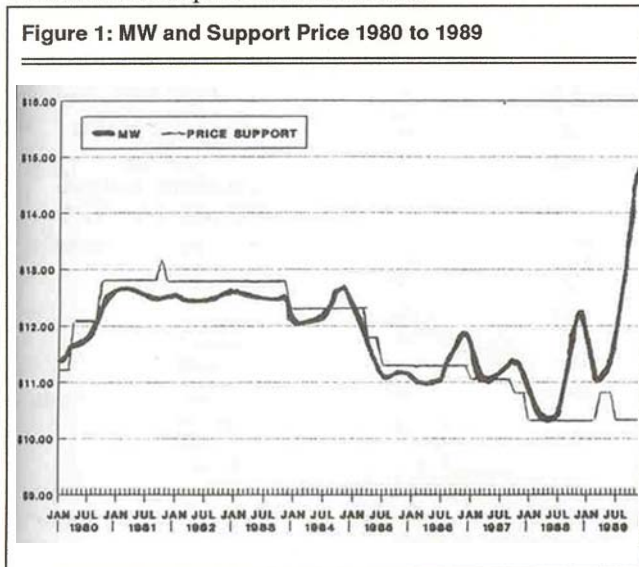
The class prices for the Indiana order are computed as follows:

Class III price - The Class III price is the basic formula price for the month. The basic formula price is the price of manufacturing grade milk for the month as reported in the Minnesota-Wisconsin (M-W) series.

Class II price - The Class II price is the basic formula price for the second preceding month adjusted by prices of butter, cheddar cheese, nonfat dry milk, and dry whey for the first 15 days of the month.

Class I price - The Class I price is the basic formula price for the second preceding month plus \$2.00.

Dairy farmers under the Indiana order receive a weighted average blend price for their milk. This is the Class I price times the proportion of the market's milk used to produce Class I products, plus the Class II price times the proportion of the market's milk used to produce Class II products, plus the Class III price times the proportion of the market's milk used to produce the Class III products. The proportion of the milk used to produce Class I products (Class I utilization) varies from month to month in a seasonal pattern and as such affects the blend price farmers receive.



Indiana Order Blend Price

Under the Indiana order the steps used to arrive at the monthly milk price take three months. Included in the blend price are the M-W from two months earlier, product prices (for butter, cheese, nonfat dry milk, and edible whey) and market utilization. For example, the January 1990 blend price was determined as follows:

- December 5 November M-W announced (Class III price). January Class I determined (as Class I price = November Class III + \$2.00/cwt).
M-W = \$14.69
Class I = \$16.69
- December 15 January Class II computed based on a formula including the November M-W price, and prices for butter, cheddar cheese, nonfat dry milk, and dry whey.
Class II = \$15.43
- February 1 Producers received payments for milk sold during first 15 days of January based on December Class III price.
- February 12 Milk utilization for January was announced.
Class I = 63%
Class II = 18%
Class III = 19%
- February 14 Last day to announce blend price for January. Blend = \$15.99
- February 18 Must settle by this date for the remainder of the January producer obligation at the blend price.

The blend price may then be adjusted in several ways. First, location adjustments of \$.20-\$.40 per hundredweight may be deducted for milk received by a plant in roughly the northern one-third of Indiana. In addition, an advertising and promotion fee of \$.15 per hundredweight is currently deducted. The handler may deduct hauling charges and adjust payment based on the fat test.

The blend price is a minimum price. The Indiana Cooperative Milk Producers Federation, Inc., has negotiated an over-order premium with handlers to more fully reflect market conditions.

Dairy Prices in 1990

The biggest price change expected in 1990 is a return to more normal markets. The declines from current prices could be dramatic.

Prices of dairy products have already gone down from their high levels of 1989. Forty-pound block cheddar cheese at the National Cheese Exchange, which reached a high of \$1.54 1/2 per pound the last of November, declined to \$1.26 3/4 per pound by February 8. Grade A nonfat dry milk, which was \$1.80 per pound at its November peak, was \$.84 1/2 per pound February 8. The export market for nonfat dry milk is weaker and the CCC again started buying stocks of this product in 1990.

As a result, the January M-W fell to \$13.94 per hundredweight, off \$.99 from the December high. The February M-W fell \$1.72 to \$12.22 per hundredweight. The M-W has declined 18% in the first two months of 1990 and is expected to decline further in March. This broke 10 straight months of increases. As a result, a stronger-than-seasonal decline in milk prices is expected this spring. The farm price into the flush period could decline by \$2 to 3 per hundredweight, from year-earlier levels. For the year, the U.S. all-farm milk price is expected to be \$12.30 per hundredweight which is \$1.00 lower than 1989 (slightly above milk prices for 1988).

As a final note, the unusual dairy prices of late 1989 resulted in a 36% M-W price increase from March to December. The M-W price was 41% above the \$10.60 per hundredweight support price in December. A search for similar price movements in previous years reveals only one, a 47% increase in the M-W from March 1973 through March 1974. At that time the M-W reached 54 percent above the support price of \$5.29 per hundredweight. In the following three months of 1974, a 23% price decline brought the M-W down to \$6.31 per hundredweight. However, during that same period in 1973-74, the support price was administratively increased from \$5.29 to \$6.57 per hundredweight. As expected, government removals of dairy products increased (following little or no removals the previous year), and when the price decline reached the support price, a rebound in milk prices occurred through the rest of 1974.

The farm milk price is still expected to be a market price, above the support level, for 1990. But unlike the 1973-74 price movement during which there was a \$1.28 per

hundredweight increase in the support price, the recent support level was lowered \$.50 per hundredweight as of January 1, 1990. Milk producers should keep in mind that any break in prices face a price support cushion that is now sharply lower than current prices.

Those interested in receiving reports on milk and product price series mentioned above can receive publications from:

Cheese, butter, and nonfat dry milk wholesale prices

Dairy Market News
P.O. Box 8911
Madison, WI 53708

Minnesota-Wisconsin Price

Market Information Branch
USDA/AMS/Dairy Division
Rm. 2753
P.O. Box 96456
Washington, D.C. 20090-6456

Indiana Order Utilization, Class II Price, and Uniform Price

Chicago Regional Marketing Area
800 Roosevelt Road
Building A, Suite 200
Glen Ellyn, IL 60137

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IN THIS ISSUE

Trade Prospects for Eastern Europe and U.S. Farm Commodities	Philip L. Paarlberg
Pasture Rental Rates Rise in 1989	J.H. Atkinson
Getting the Government Out of Agriculture: Lessons from New Zealand	W.D. Dobson
Record High Milk Prices: What Lies Ahead?	Harold W. Lough

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