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AGRICULTURAL INPUTS AND PRODUCTIVITY

OUTLOOK FOR PRICES AND SUPPLIES OF INPUTS

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In 1975 the farm production sector relied on the nonfarm sector for over 60 percent of the inputs used in farm production and the importance of these inputs is increasing. Because of this and because of the rapid changes occurring in the farm sector, events occurring in the input manufacturing sector can dominate and substantially change the cost structure for farm firms. In the longer run, farm input prices and supplies affect the price of food and fiber delivered to consumers. In order to put the input situation in perspective and discuss the outlook for 1976, it is necessary to review a bit of history and then contrast that with the current situation.

From mid 1971 to April 1974 prices of farm inputs were subject to some form of price control. In addition, world prices for inputs rose above the controlled domestic prices and prices of raw material going into the manufacture of inputs rose. With domestic margins reduced, many manufacturers turned to world markets or cut production or both. Prices of fertilizer were freed from control in late 1973, but the oil embargo in late 1973 and limited availability of natural gas in interstate pipelines created additional problems for manufacturers, particularly manufacturers of pesticides and fertilizer, throughout 1973. As prices were held down, shortages began to appear and, with the removal of price ceilings, prices for farm inputs increased rapidly.

In addition, the movement to a free market situation with respect to feed grain and the sharp increase in export sales caused farmers to expand production and increase planted acreage sharply. This increased demand for farm inputs pushed against very short supplies. The resulting sharp price increases and actual physical shortages set the tone of the input situation in 1973 and 1974.

In 1975, although input prices continued to rise, physical shortages or absolute unavailability of major inputs did not occur.

You heard yesterday that net farm income for 1975 is expected to total about $25 billion, the third largest on record. You also heard exports are expected to remain strong and that commodity prices, while declining slightly, point to favorable income in the first half of 1976. In addition, although interest rates are high relative to historical standards, farmers have been able to greatly expand the volume

of funds borrowed. These factors thus suggest a strong demand for inputs as all-out production continues into 1976. From the farm side at least, the market for all inputs remains strong.

Fertilizer prices dropped sharply between April 15 and October 15, 1975. The farm price of anhydrous ammonia and urea each declined 17 percent to averages of $219 and $203 per ton. Concentrated superphosphate declined from $214 to $179 per ton and muriate of potash (K_2O) prices dropped from $102 at the farm to $94 or about 8 percent. With the exception of potash, prices for most fertilizer products are now below prices paid in September 1974.

For the year ended June 30, 1975, total consumption of fertilizer materials dropped 10 percent below 1974 and 2 percent below the amount shipped in 1973. Consumption of primary plant nutrients was down 9 percent from a year earlier. Nitrogen consumption decreased 6 percent to 8.6 million tons, phosphate usage dropped 12 percent to 4.5 million tons, and potash was down 13 percent to 4.4 million tons. Not since 1956 has total use of N, P, and K dropped from 1 year to the next.

Phosphate usage fell to the lowest level since 1968. Both nitrogen and potash dropped below the levels of 1973 and 1974. The decline in use was more dramatic than expected. However, as early as March 1975, farmers were reporting that they intended to reduce application rates in 1975 in response to rapidly rising fertilizer prices and planned to reduce use of both phosphate and potash which, in effect, can be mined for a year or 2 from residuals of previous applications before crop yields are seriously affected.

While use declined, production increased from the previous year and at year's end, inventories of nitrogen products were at record highs at the manufacturers' level. In addition, the spread between consumption and net domestic shipments widened so that additions to inventory in the pipeline between the producer and the farmer probably exceed 650,000 tons of N, 400,000 tons of P_2O_5 and 200,000 tons of K_2O at the end of June this year. Including the buildup in inventories, the supply of N for fertilizer in 1974/75 exceed 10.5 million tons. With the buildup of inventory and with capacity to produce anhydrous ammonia increasing by half a million tons in 1975/76, the domestic supply could exceed 11 million tons for the crop year. If they operate at 90% of capacity and if industry takes its normal share.

The anticipated loss of 550,000 tons of nitrogen due to curtailment of natural gas production would not be sufficient to bring production into balance with demand at current prices.

In order to bring expected supply and consumption in line with historical patterns, nitrogen use will need to increase by more than 2 million tons over that used in the past crop year and nearly 1.4 million tons over the 1973/74 consumption level.

Fertilizer prices are falling. As a result, use probably will pick up, particularly if prices decline to their April 1974 level or lower by next spring.

If resistance to current price levels continues in the face of high inventories at all levels of the industry, further price declines are in store for nitrogen and phosphate materials.

Capacity to produce wet process phosphoric acid, the basic P_2O_5 source for the production of high analysis phosphate fertilizers, has

grown and will continue to grow in the immediate future. By the end of this year, capacity will be near 8.8 million tons P_2O_5, 1.9 million tons above the 6.9 million ton capacity available in January 1975. Thus, production capacity for phosphoric acid alone will exceed 1974/75 domestic use and net exports by approximately 1.7 million tons and 1973/74 by 1.5 million tons. With larger inventories and considerable excess capacity, probably will decline and downward pressure on prices will continue.

Capacity to produce potash fertilizer in the United States is about 3.4 million tons K_2O a year. However, domestic supply, corrected for inventory changes, has not exceeded 2.6 million tons or 76 percent of current domestic capacity. Domestic production has been about half of domestic use with the gap being filled by imports virtually all from Canada.

The Canadian potash situation remains unsettled and this could result in problems for U.S. farmers in the future. However, no major difficulties are anticipated for 1976.

FARM MACHINERY

The supply of farm machinery appears to be catching up with demand for many types of equipment. January–August sales of farm wheel tractors were down 17 percent from their level of a year ago. Data for the same period also indicate a considerable weakening of demand for many types of haying machinery, including mower conditioners, windrowers, and balers. Combine demand, however, remained strong, as it appeared that farmers were preparing for large harvests of corn and other grains. January–August sales of self-propelled combines were up 13 percent from their 1974 level.

Accompanying the slowing of demand for some types of machinery has been a rebuilding of inventories from their severely depleted levels in the past 18 months. Stocks of wheel tractors ready for sale have increased from 49,000 in December 1973 to nearly 61,000 in August 1975. With the continued strong demand for combines, however, stocks have not increased as rapidly. Nonetheless, the August 1975 level was 12,000 units, compared with 5,200 in December 1973 and 5,600 in December 1974. Overall, inventories of machines ready for sale should return to normal levels by the end of 1975 or early 1976.

The behavior of farm machinery prices has been similar to other price indicators for the economy as a whole. Through early 1974, increases in the wholesale price index (WPI) for agricultural equipment generally led retail price increases by approximately one quarter. However, as the tight supply-demand situation began to manifest itself in depleted equipment inventories and as the overall rate of inflation increased, movements became more parallel, quarter by quarter. The most dramatic increases occurred in the 12 months ending December 1974, during which the WPI and prices paid index for farm machinery (PPI) each increased 24 percent.

A steady reduction in the wholesale price index for agricultural equipment through September has indicated a likely slowing as well in prices paid by farmers for their machinery. A similar observation has held for one component of the index, farm wheel tractors. The September WPI for all agricultural machinery and equipment was

up 11 percent from its level a year before, and that for wheel tractors was up 10 percent. In the comparable 1973–1974 periods, indexes rose 22 percent and 24 percent, respectively. Although there appears to be likely a continued slowing of the rate of increase of prices paid for farm machinery, as indicated by a relatively flat rate of increase of the WPI through September, a significant jump in the index for wheel tractors in October (and a lesser increase in the index for all agricultural machinery) portends further increases in retail machinery prices.

FUEL

Fuel supplies are adequate for farming operations throughout the country. There have been no reported shortages of fuel as farmers are harvesting record acreages of crops. However, the price of gasoline is up over 8 percent from the fall of 1974, and is at an all-time high. Diesel fuel prices averaged 12 percent higher than a year ago and slightly higher than the seasonal price peak in December.

As a result of the higher prices and a strong conservation effort, total demand for petroleum products in the U.S. during the 4 weeks ending October 17 averaged 15.8 million barrels per day, 7.2 percent less than the same period in 1974 and 9.4 percent below the 17.4 million bbls. per day at the start of the embargo in 1973. Since 1973, total U.S. population increased by 3 million persons. Therefore, people are really conserving energy.

The overall fuel supply outlook is good. Gasoline and diesel fuel supplies are plentiful. However, natural gas problems exist for much of the country and these impacts on LP gas supply as 70 percent of LP gas comes from processing natural gas. Fortunately we have had a nearly ideal fall harvest period and less LP gas than normal is needed for drying the huge corn crop. This warm fall also enabled public utilities and industries to function without having to substitute much LP gas for natural gas.

Farmers powering irrigation pumps with natural gas have been concerned about a Federal Power Commission ruling that downgraded irrigation pumping priority from category 2 to category 3. The effective date of the FPC order has been deferred, however, until June 15, 1976 or until the case has been adjudicated by FPC, whichever is earlier. Shifts to other fuels will significantly increase the cost of pumping water as alternative fuels are far more costly.

Most petroleum fuels will be plentiful for farming operations. Reduced nonfarm demand has caused prices to soften somewhat. Some retailers have dropped gasoline prices 1 to 2 cents per gallon in the past month. We anticipate no major increases in fuel prices over the next several months. However, Congress has yet to complete the comprehensive energy legislative package. With emergency petroleum price and allotment controls expiring on November 15, is possible that increases in petroleum prices could occur. However, with reduced demand, this does not appear likely.

PESTICIDES

The production of pesticides was up an estimated 10 percent from a year ago and overall demand was relatively unchanged. Thus, sup-

plies of most pesticides were adequate for 1975. Although production was up, low beginning inventories, as well as difficulties in scheduling distribution, caused spot shortages of some pesticides. While some shortages of herbicides and insecticides for application at or previous to planting time were reported, growers in most sections of the country were able to obtain adequate supplies of most materials later in the season. Price rises were substantial from 1974 to 1975. Formulated pesticides reportedly were costing 20 percent more than last year when the increase was 10 to 15 percent.

Producers indicated that a number of factors were still limiting pesticide output in the first half of the 1975 production season, but production problems eased considerably in the second half of the season. Formulation problems in 1975 were considerably fewer than in 1974 with limited capacity relatively more serious than shortages of raw materials. Since many formulators have small operations with low margins and little reserve capital, they are quite concerned over the increasing costs of production.

Distributor inventories of pesticides were reduced by more than 50 percent in 1974. On the demand side, cuts in pesticide use on cotton in 1975 were offset to some extent by other more intensive uses, particularly of herbicides on certain crops.

Prospects for 1976 indicate a further improvement in the pesticide supply situation with adequate supplies expected for most pesticides. Some production capacity was added last year and more is planned or underway. Much of this was expected to be onstream for 1976. Twenty-one of 29 firms surveyed recently were expanding or planning 49 capacity expansions, including 13 for fungicides, 18 for herbicides, 13 for insecticides, and five for other pesticides. In addition, the raw material availability situation is expected to cause few problems.

The inventory situation is reported to be improved over last year. Carryover is expected to be greater with inventories closer to normal for the 1976 season.

Prices are expected to hold steady or increase only slightly in 1976. The overall price increase may be about 5 percent.

Continuing strong demand, particularly for herbicides, is likely to result in rates of increase in pesticide use in 1976 about the same as in 1975.

LABOR

In 1974 average annual hired agricultural employment was about 1.3 million. However, over 2.7 million persons did some agricultural work for wages during the year. But only about 800,000 or less than one-third, depended primarily on agricultural wage employment for their livelihood. Persons chiefly dependent on agricultural employment have increased by about 200,000 since 1971 but this number is expected to remain at or near current levels through 1976. Most persons with wage employment in agriculture are under 25, and about 40 percent are students. Youths and students have played a continually increasing role in the hired agricultural work force since the early 1960's. Although the increasing trend has moderated in recent years, youth who have no long-term commitment to the agricultural labor force will continue to provide the bulk of future short-term seasonal agricultural labor inputs.

Major changes in the use of hired labor inputs have occurred over the past decade. In the South, the number of long-term agricultural wage workers (workers employed 6 months or more) declined by about 100,000 and short-term seasonal workers (workers employed less than 3 months) declined by over 700,000. But Western and North Central regions all used more hired labor inputs in 1974 than in 1967. However, almost three-fourths of all hired employees in the North Central region work in agriculture for less than 3 months and family labor still provides about three-fourths of all labor inputs. The proportion of short-term seasonal workers drops to about 55 percent in the Western States. Hired employees account for 70 to 75 percent of the total labor force in this region. Peak seasonal planting and harvesting labor needs have steadily increased in the North Central grain States as a result of increased crop specialization and increased acreages brought into production during the past few years. By contrast, the longer growing season and more diversified agriculture of the Western States enables employers to offer greater opportunities for full time employment.

The 1975 U.S. average wage rate for workers not receiving room and board is estimated at $2.65 per hour, up about 16 percent from 1974. Thus agricultural wage rates have almost doubled since the sector first became covered under federal minimum wage legislation in 1967. Although this percentage increase is greater than increases experienced by the total private sector, the absolute hourly wage spread between the agricultural and nonagricultural sectors actually increased by 73 cents.

The overall demand situation for hired labor inputs in 1976 is expected to be similar to 1975. Easing of inflationary pressures and continuation of high nonagricultural unemployment will have a moderating influence on wage increases in the coming year. The major upward pressure will result from an increase in the agricultural Federal minimum wage to $2 per hour beginning January 1, 1976. This suggests that hourly wage rates will be up 8–11 percent over levels prevailing in the current year.