



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

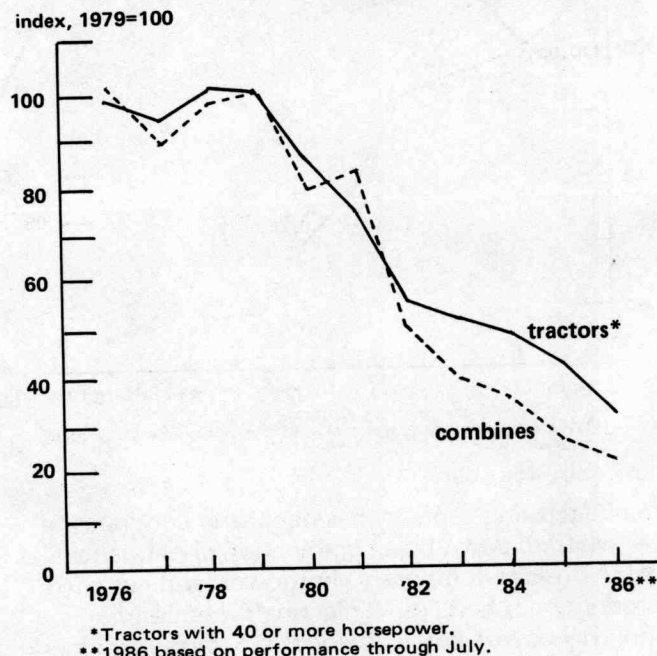
Slump in farm equipment sales continues

Reports from the Farm and Industrial Equipment Institute show that the steep slump in farm equipment sales continued through early summer. Unit retail sales of farm tractors with 40 or more horsepower through July of this year were down 22 percent from the corresponding period a year ago. Unit sales of combines, forage harvestors, and mower conditioners, although up from year-earlier levels in July, have recorded declines ranging from 9 to 17 percent on a year-to-date basis. Farm equipment manufacturing schedules have been pared even more than sales this year, resulting in some cuts in burdensome inventories. Yet inventories remain large relative to the depressed sales of the recent past. Some industry analysts believe sales may edge up next year. But traditional variables relating to farm equipment demand suggest that any increase will be modest.

The present slump in farm equipment sales began in late 1979 after extensive gains earlier in that decade. According to USDA estimates, annual farm sector gross expenditures for tractors and other farm machinery and equipment peaked at \$11.7 billion in 1979, marking a 3.3-fold increase from a decade earlier. Most of the increase in that decade represented inflation. Yet a considerable, though difficult to quantify, portion of the increase also reflected real (or inflation-adjusted) growth in gross expenditures for farm machinery and equipment.¹

Since peaking in 1979, annual gross capital expenditures for farm machinery and equipment have declined steadily. Recent USDA estimates show that such expenditures fell to about \$5.7 billion in 1985, down 52 percent from the peak. Moreover, the USDA currently projects another decline of about 13 percent for this year. Although inflation has moderated significantly, the decline is much more pronounced in terms of unit retail sales. In the first half of this year, unit retail sales of farm tractors with 40 or more horsepower were down 67 percent from the same period in 1979. Unit sales of self-propelled combines were off about 80 percent. Declines for other major types of farm equipment, including small balers, forage harvestors, corn heads, and windrowers, were comparable to those recorded for tractors and combines.

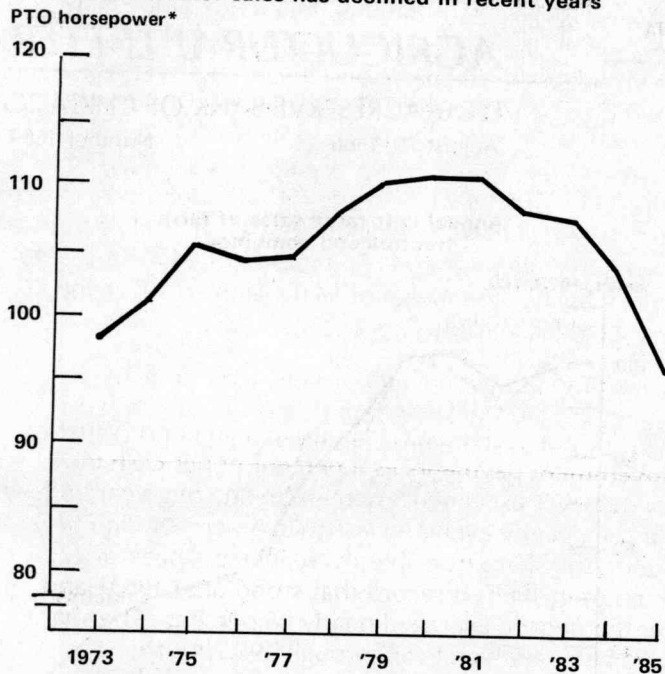
Annual unit retail sales of farm tractors and combines



While tractor sales have been declining overall, there has been a continuing shift in size preferences. But unlike the 1970s, the shift in size preference in the 1980s has led to a down-sizing. From 1979 to 1985, unit retail sales of all farm tractors with 40 or more horsepower fell 58 percent. The largest declines were for medium-sized two-wheel drive tractors (100 to 139 horsepower) and for the heavy-duty four wheel-drive tractors, off 82 and 75 percent, respectively. In comparison, unit sales of large two-wheel drive tractors (140 horsepower or more) fell 52 percent while those with 40 to 99 horsepower fell 42 percent. In line with these changes, USDA estimates suggest that the average horsepower rating of all farm tractors sold at retail has declined from a peak of 111 in the early 1980s to 96 last year, the lowest since at least 1973.

The sharp downturn in sales of farm machinery and equipment, coupled with a shift toward foreign manufacturing and foreign sourcing of components, has had a devastating impact on U.S. manufacturers and their dealers and employees. Poor operating margins have led to a number of mergers among U.S. and foreign farm equipment manufacturers and pushed others into bankruptcy. The excess domestic

Average PTO horsepower rating of annual new farm tractor sales has declined in recent years



*Average for all new tractors sold annually with 40 or more horsepower.

SOURCE: USDA

manufacturing capacity has been, and continues to be, whittled down by a combination of permanent plant closings, temporary shutdowns, and curtailed production schedules. Reflecting these trends, monthly payroll employment at U.S. farm machinery and equipment manufacturing plants, after rising from an annual average of 119,000 in 1972 to a peak of 159,000 in 1979, has since dropped to an average of 75,000 last year. Further declines are continuing this year, with May employment down a tenth from a year ago. The number of farm equipment dealerships has declined considerably, reflecting both the mergers and the financial stress of declining retail sales.

Declines in production schedules among manufacturers have apparently been even more pronounced than sales in recent months, resulting in some paring of the burdensome inventories among manufacturers and dealers. As of mid-year, FIEI reports show that inventories of farm tractors with 40 or more horsepower were down 22 percent from a year earlier and down 32 percent from two years ago. Similarly, combine inventories were off 29 percent from a year ago and down 51 percent from two years ago.

Despite the declines, inventories of tractors and combines remain large relative to the shrinking unit sales. At roughly 44,500 units, the mid-year inventory of farm tractors was equivalent to 87 percent of the unit sales of farm tractors in the 12 months ending with June. That marks only a slight decline from the year earlier inventory-to-sales ratio of 91 percent. Similarly,

the mid-year combine inventory of 7,300 units was equivalent to 94 percent of combine sales over the previous 12 months, down slightly from 99 percent a year ago. With inventories still relatively burdensome, manufacturers will likely continue to pare production schedules and maintain a variety of strong promotional programs, including extended interest waivers, to encourage new sales.

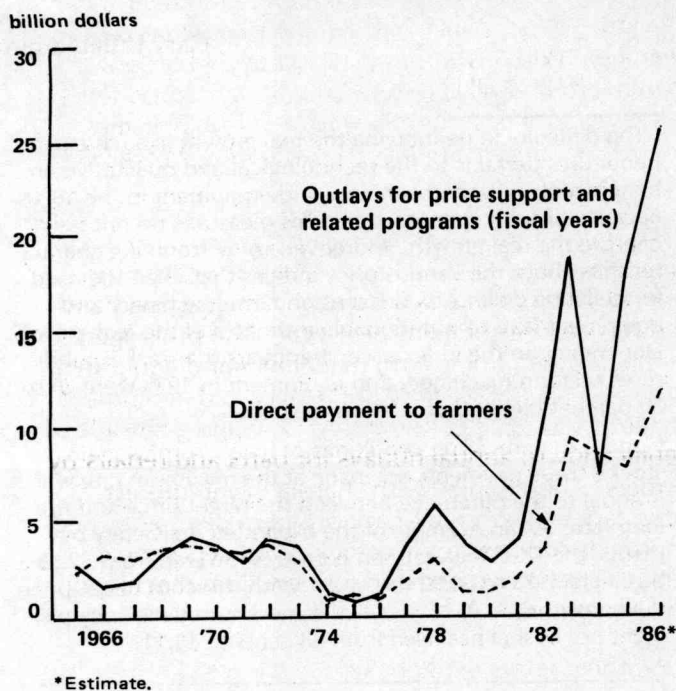
Prospects for future trends in unit sales of farm equipment are mixed, although analysts believe that the year-to-year declines will narrow in the second half and turn into slight gains next year. The prolonged slump in sales of new farm machinery and equipment suggests that the stock of machinery and equipment on farms has aged considerably. The aging has added significantly to annual outlays for parts and repairs by farmers. This coupled with sharply lower interest rates, large government farm program payments, and improving fortunes for livestock producers should tend to strengthen demand for new farm machinery and equipment.

But, other factors could be about offsetting. Huge crop surpluses suggest that government farm programs will continue to encourage farmers to devote less acreage to grains and soybeans. In addition, the pending tax legislation expected to be enacted shortly will apparently disallow tax deductions for investment credit retroactive to the first of this year. Moreover, the huge loss in equity suffered by farmers as a result of the continuing decline in land values has undermined the ability and the desire of farmers to acquire new machinery and equipment, particularly for those who need to rely extensively on debt financing to acquire new equipment. Finally, the likelihood that capital liquidations among financially stressed farmers will continue at a higher-than-normal pace implies that farmers needing additional equipment will have ample opportunities for acquiring used equipment. On balance, sales of farm equipment will likely remain at sluggish levels for several more months.

Government subsidies to agriculture reach new highs

Federal government subsidies to U.S. farmers will reach new highs this year. A complete enumeration of these subsidies and their benefits to farmers is difficult to compile. Yet two readily available measures provide some interesting insights. One pertains to direct federal government payments, in cash and in kind, to farmers. USDA projections suggest that such payments this year will range from \$10 to \$13 billion, up from \$7.7 billion last year and the previous high of \$9.3 billion in 1983. Another, more encompassing, measure captures overall federal government outlays for agricultural price support and related programs. Budget estimates for the current fiscal year ending

Federal Government Subsidies to Agriculture to Reach New Highs this Year



with September indicates that these outlays will total \$25.5 billion, up from \$17.7 billion in fiscal 1985 and the previous high of \$18.9 billion in fiscal 1983.

The new highs in government subsidies stem from the expanded government farm program benefits included in the Food Security Act of 1985 and from the mounting surplus of grains and soybeans following bumper harvests and shrinking markets. Among other things, the legislation resulted in sharply lower price-support loan rates for major program crops—to permit U.S. grain prices to be more competitive in world markets—while simultaneously holding the so-called “target prices” for those crops unchanged. As a result, actual and prospective government “deficiency” payments to program participants have soared.² Government payments to farmers have also soared because the legislation implemented new programs to trim the surplus in milk production (the whole-herd Dairy Buy-out Program) and to pull highly erodible land out of crop production (the 10-year Acreage Conservation Reserve Program). Mounting surpluses further add to the government subsidies as increasing amounts of grains and soybeans are put under loan with the Commodity Credit Corporation. Increasingly, farmers are defaulting, rather than repaying, these “non-recourse” loans, adding to the costs of the CCC’s purchase and storage operations.

The history of direct government payments to farmers goes back to at least the early 1930s. Through the 1950s, the bulk of these payments were tied to various conservation programs, including the Soil Bank Pro-

gram which carried the dual objectives of conservation and cropland retirement. Since the early 1960s, the bulk of the payments have been made through commodity-specific programs, including the feed-grain program, the wheat program, and the cotton program. The annual amount of direct government payments has varied widely, but never exceeded \$1 billion until the late 1950s. From then until the PIK-related peak of \$9.3 billion in 1983, annual government payments to farmers ranged from a low of \$530 million (in 1974) to a high of \$4.0 billion (in 1972) and averaged \$2.1 billion.

Government payments to farmers, over time, have constituted a widely-varying proportion of the farm sector’s net cash income. In the decade of the 1950s, government payments as a percent of net cash income never exceeded 9 percent in any one year and for the decade averaged less than 4 percent. In the 1960s, the share rose sharply, reaching a peak of 22 percent in 1968—a record that stood until 1983—and for the decade averaged nearly 16 percent. The share held at a very high level through 1972 but then dropped as improved market conditions sharply augmented farm sector earnings. During the 10 years ending with 1982, annual government payments as a share of net cash income never exceeded 10 percent and for the period averaged 5 percent. Since then, sharp gains in government payments have pushed net cash income in the farm sector to new highs. In the process, those payments have constituted an increasing share, reaching another new high of 24 percent in 1983, tapering down to 17 percent last year, and then rebounding to a projected range of 24 to 28 percent this year.

Compared to direct government payments to farmers, federal government outlays for agricultural price support and related programs are a much broader measure of the federal government’s cost of operating these programs. In addition to direct payments, this measure also encompasses the net operating results of the CCC’s various commodity purchase and storage programs. In the accounting standards used for federal budget purposes, these CCC commodity purchase and storage programs include such straightforward things as the purchase of manufactured dairy products (to maintain milk support prices) and, more importantly in terms of magnitude, the CCC’s commodity loan programs which maintain support prices for corn, soybeans, wheat, and other major crops. While the measure is more comprehensive, it does not provide a complete enumeration of all federal subsidies to agriculture. Among other things, it does not include the federal government’s cost of operating FmHA farm loan programs and it does not include the net costs of the Federal Crop Insurance Program.

Measured on a fiscal year basis, annual federal government outlays for agricultural price support programs ranged from \$1.3 billion to \$4.1 billion in the decade of the 1960s and averaged \$2.5 billion. In the decade of the 1970s, the range in annual outlays widened considerably, from a low of \$600 million to a high of \$5.6 billion, and the average rose to nearly \$3.0 billion. Although still highly variable so far in the 1980s, these outlays soared initially, hitting a new peak of \$18.9 billion in fiscal 1983 before dropping to \$7.3 billion in fiscal 1984 as high crop prices resulted in a substantial net pay-down on CCC crop loans. Since then, the trend has been sharply upward, with fiscal 1986 expected to total \$25.5 billion.

Projecting future levels of direct government payments to farmers and government outlays for price support and related programs is difficult. Among other things, uncertainties regarding the impact of Gramm-Rudman and various farm program provisions that affect the timing of these payments are difficult to forecast. But in light of existing market conditions and the underlying legislation for future farm programs, it is likely that both measures will remain at high, and perhaps rising, levels over the next couple of years. Because of these prospects, an interesting debate is likely to ensue as to whether the large government subsidies for agriculture are appropriate, given concerns about the overall federal budget deficit and a growing skepticism that these large subsidies will only be temporary until the market fortunes of U.S. agriculture improve. A useful part of the debate should focus on the nature and the structure of the subsidies to answer the question of what are the appropriate benefits to provide for farmers in need and

how can these benefits be better targeted on farmers most in need.

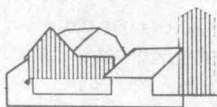
Gary L. Benjamin

¹ The difficulty in quantifying the real growth in such expenditures pertains to the technological and qualitative enhancements in farm machinery and equipment in the 1970s. Because of such changes, unit sales measures do not fully capture the real growth. Moreover, some troubling characteristics about the various price indices that might be used for deflating dollar expenditures on farm machinery and equipment lead to questionable estimates of the real growth. Depending on the index used, it appears that real expenditures on farm machinery and equipment in 1979 were 20 to 50 percent higher than a decade earlier.

² Under the prevailing conditions of heavy surplus grain stocks, these payments are made at the maximum rate which is equal to the difference between the target price and the loan rate. As an example of the expanded deficiency payments, the CCC loan rate on corn was lowered from \$2.55 a bushel in 1985 to \$1.92 this year. With the corn target price unchanged at \$3.03 a bushel, the maximum deficiency payment per bushel has risen from 48 cents to \$1.11.

AGRICULTURAL LETTER (ISSN 0002-1512) is published bi-weekly by the Research Department of the Federal Reserve Bank of Chicago. It is prepared by Gary L. Benjamin, economic adviser and vice-president, Peter J. Heffernan, economist, and members of the Bank's Research Department, and is distributed free of charge by the Bank's Public Information Center. The information used in the preparation of this publication is obtained from sources considered reliable, but its use does not constitute an endorsement of its accuracy or intent by the Federal Reserve Bank of Chicago.

To subscribe, please write or telephone:
Public Information Center
Federal Reserve Bank of Chicago
P.O. Box 834
Chicago, IL 60690
Tel. no. (312) 322-5111



AGRICULTURAL LETTER

FEDERAL RESERVE BANK OF CHICAGO

Public Information Center

P.O. Box 834

Chicago, Illinois 60690

(312) 322-5112

PREPAY
FIRST CLASS



AG001
LOUISE LEINES, LIBRARIAN
DEPT. OF AGRIC. & APPLIED ECON.
EHL CLASSROOM OFFICE BUILDING
1774 BUFORD AVENUE
ST. PAUL, MN 55108