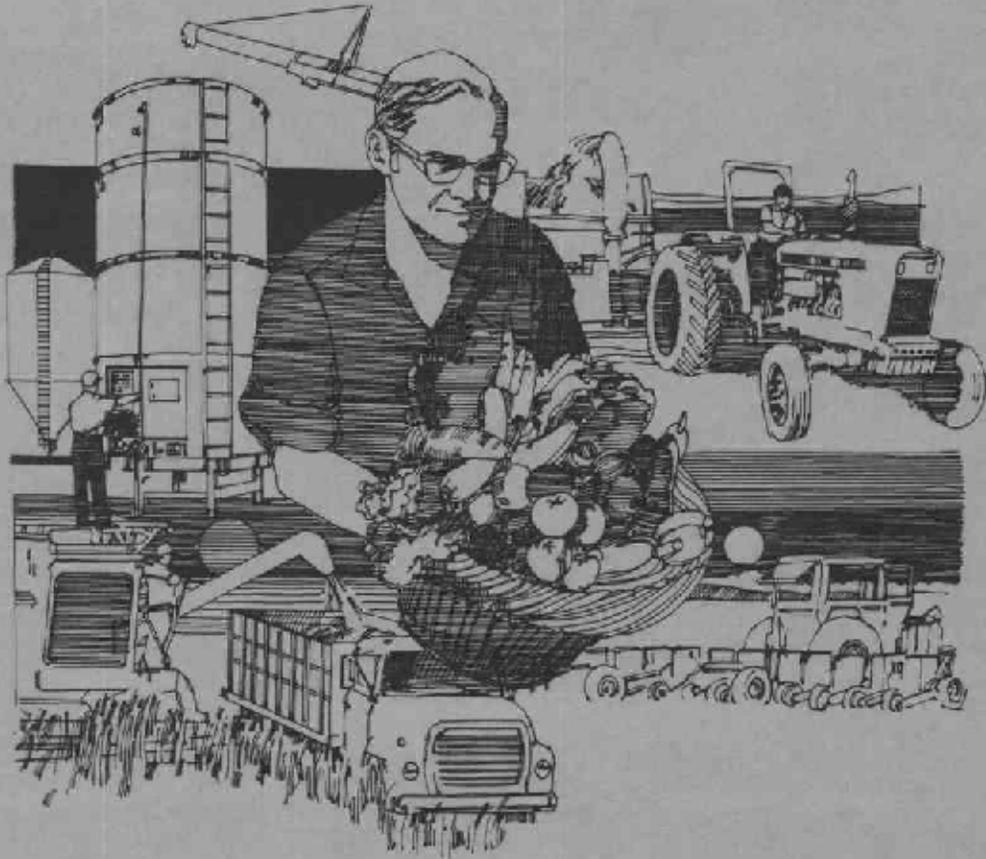


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Agriculture and Oregon's Economy



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AGRICULTURE AND OREGON'S ECONOMY

HIGHLIGHTS

Oregon's highly diversified agriculture is a stabilizing force in the State's economy. Current agricultural-related employment is about equal to employment in Oregon's timber industry, but agricultural employment is more stable over the long term. The farm gate value of agricultural crop and livestock sales has increased over four-fold since 1961 to 1.76 billion dollars in 1981. Correcting for inflation, Oregon's agriculture has grown in value by a steady 2.5 percent per year over the past two decades. Over two billion dollars worth of agricultural commodities and processed food products were exported from Oregon to other states and countries in 1981. These exports generated six billion dollars in economic activity in the State -- \$175,000 for each of Oregon's 34,500 farms and ranches. In 1981, agriculture contributed one billion dollars to the personal incomes of Oregonians, about \$400 for every person living in the State. Over half of this personal income accrued to citizens not directly associated with Oregon's agricultural industry.

INTRODUCTION

Governor Victor Atiyeh recently said that Oregon needs to seek economic diversification and cannot continue to rely on its two largest industries of agriculture and wood products [2, p. 13]. His statement clearly implies that these two natural resource-based industries are leading contributors to Oregon's economy. By emphasizing the need for economic diversification, his statement could also be interpreted as implying that both industries are unstable, or volatile. This report provides objective evidence bearing on both interpretations. Emphasis is placed on the contributions of agriculture to Oregon's economy and its stability. Information on the annual value of output, processing, and exports for Oregon's timber industry is not readily available.

OREGON'S AGRICULTURAL ECONOMY: PAST AND PRESENT

Oregon's agriculture has grown steadily over the past 20 years, as is reflected in Figure 1. In 1961, total farm cash receipts were valued at \$408 million. Of this total, \$213 million or 52 percent was due to crop sales, and \$195 million or 48 percent was attributable to sales of livestock products [3]. Twenty years ago, leading agricultural commodities were cattle and calves (\$86.9 million), dairy products (\$46.3 million), wheat (\$37.4 million), eggs (\$18.5 million), nursery crops (\$16.6 million), barley (\$15.5 million), snap beans (\$13.6 million), and potatoes (\$10.8 million).

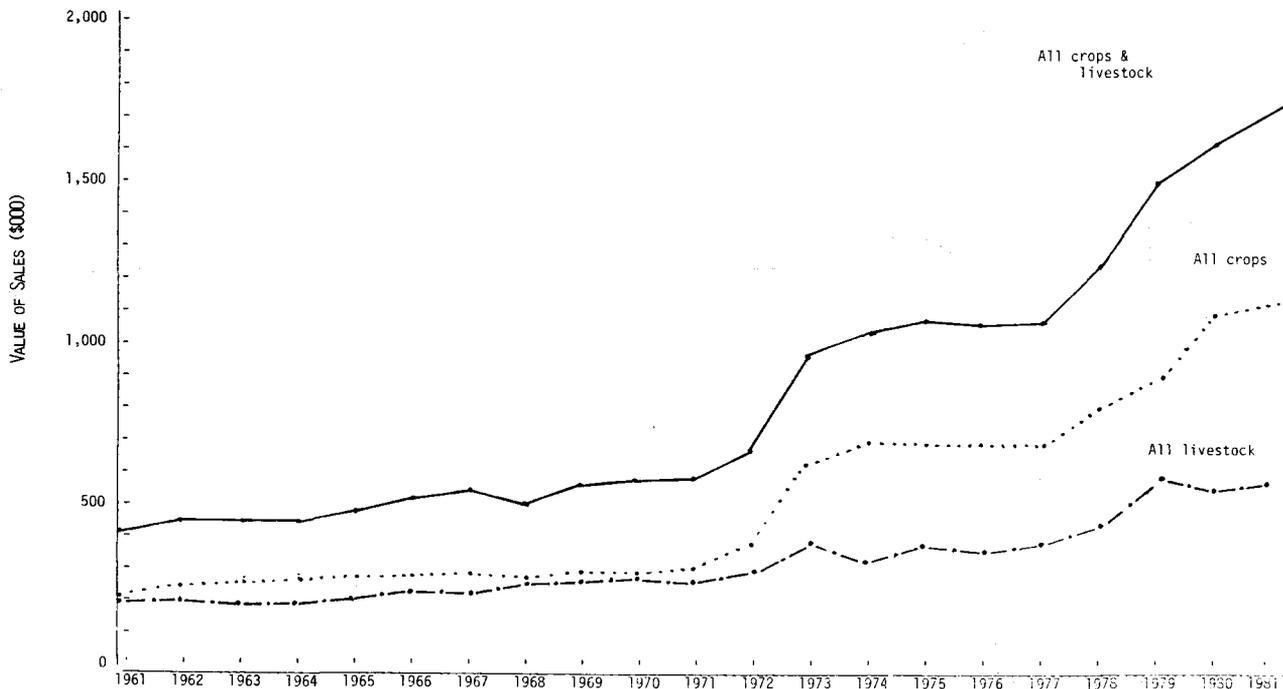


FIGURE 1. OREGON AGRICULTURE: VALUE OF CROP AND LIVESTOCK SALES IN CURRENT DOLLARS, 1961-1981.

By 1981 sales of crops and livestock had climbed to \$1,760 million, a 431 percent increase in two decades [5]. Over the twenty year period cash receipts from livestock more than tripled (increasing by 314 percent); but sales of Oregon farm crops increased even more rapidly, and were valued in 1981 at 539 percent of their 1961 level. Crop sales now account for 65 percent of Oregon's total farm cash receipts (\$1,148 million), while sales of livestock products (valued at \$612 million in 1981) account for the remaining 35 percent of total receipts. Oregon's agriculture is approaching a two billion dollar industry. Cattle and calves, wheat, and dairy products continue as dominant commodities in Oregon's agricultural economy with preliminary estimates of gross farm sales of \$308 million, \$302 million, and \$172 million, respectively in 1981 [4]. Since 1961 wheat has increased, and dairy products declined, in relative importance however. Other leading commodities now include potatoes (\$97 million) and nursery crops (\$91 million).

In 1961 eight agricultural commodities had gross farm sales in excess of ten million dollars. Today, 29 different commodities have as much, or more, in value of gross farm sales.

Inflation accounts for some, but not all, of the increase in value of cash farm receipts since 1961. By adjusting the dollar value of cash receipts for changes in the index of prices received by farmers (1967 = 100), the constant dollar value of sales by Oregon farmers and ranchers can be obtained. These adjusted values, illustrated in Figure 2, show that total cash receipts have increased by 64 percent in real terms since 1961 [6]. In other words, after adjusting for price inflation Oregon agriculture still has managed to increase its real value of output by an average of 2.5 percent per year over

the past two decades. Moreover, that growth has been remarkably steady. Only four times in the past twenty years has the real value of Oregon agricultural sales dipped. During the current recession both the nominal and the constant dollar values of agricultural farm and ranch receipts have continued to increase.

The contribution of agriculture to Oregon's economy does not stop at the farm gate. Additional value is added through the food processing and marketing chain. Such value added can exceed the value of initial cash receipts by farmers and ranchers.

For example, there is reliable evidence that "first handlers" (processors, etc.) alone add over one-third annually (or \$621 million dollars in 1981) to the value of farm and ranch products -- a figure that does not include values added by wholesalers and retailers. Proportionally less value is added to those commodities sold to out-of state buyers with little additional processing: wheat and cattle for example. Value added for meat animals is equal to about one-sixth of gross farm receipts, roughly \$50 million dollars in this instance. Value added by wheat handlers is equal to about ten percent of gross receipts, or about \$30 million in 1981.

However, value added by first handlers for certain types of crops are much higher, equalling about 111 percent of farmers' gross receipts for fruits and nuts and 168 percent of gross receipts for vegetables. For livestock products as a whole, value added by first handlers was equal to about 23 percent of the value of gross sales in 1981, or \$138 million. For all crops, first handler value added equalled about 42 percent of

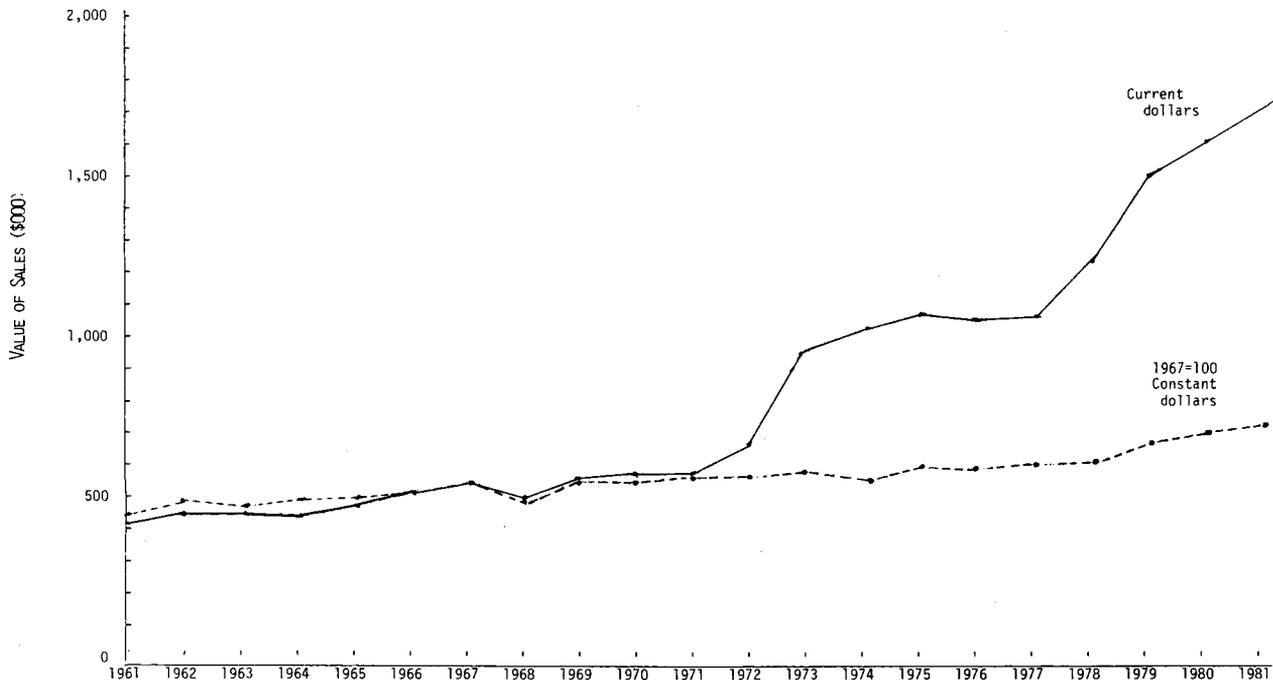


FIGURE 2. OREGON AGRICULTURE: VALUE OF SALES IN CONSTANT AND CURRENT DOLLARS, 1961-1981.

the value of gross sales, or \$483 million.

Values added by first handlers for various agricultural commodity groups are reported in Table 1. It is assumed that value added by first handlers as a proportion of income received by farmers is the same as the 1975-1977 average reported by Oregon State University in "Agriculture: Its Importance to Oregon's Economy" [9, p. 4].

A COMPARISON OF OREGON'S MAJOR INDUSTRIES:
AGRICULTURE AND TIMBER

Clearly, Oregon agriculture is a major industry. Sales of crops and livestock products plus value added by just the first handlers generated about 2.4 billion dollars in income in 1981. This is a conservative estimate of the direct contribution of agriculture to Oregon's economy since it takes into account neither value added by wholesalers and retailers nor the indirect impact of respending within the State's economy.

Timber also is a major industry in Oregon, comparable in total employment to agriculture in 1981. The most recent issue of "Oregon Economic Forecast" states that total employment in all segments of the timber industry (lumber and wood products plus paper and allied products) was 75,500 in 1981, down by 20 percent from 1979 [15]. The same report lists employment in the food and kindred products industry as 23,700, a total that has changed little since 1974. While the "Oregon Economic Forecast" does not report agricultural

wage and salary employment data, such information is available elsewhere [18, 19]. In 1981, there were roughly 34,500 operators employed on Oregon's farms and ranches. In addition, at least 15,500 employees were engaged in production agriculture. Thus, Oregon's agriculture was responsible for about 73,700 jobs in 1981 -- an employment base comparable in size to that of the timber industry.

These agricultural employment estimates do not include the 132,500 part-time or seasonal jobs on Oregon farms and ranches reported in the 1979 Census of Agriculture [18, pp. 2, 5]. The employment estimates cited above are conservative in that no family members other than the operator are assumed to be employed on the farm or ranch. The United States Department of Agriculture reported employment of 58,000 workers on Oregon farms and ranches as of April 12-18, 1981, of which 20,000 were hired and 38,000 were farm family members [19, p. 5].

AGRICULTURE'S REAL CONTRIBUTION
TO OREGON'S ECONOMY

Oregon's farms and ranches produce much more food than is needed to provide sustenance for the State's 2,600,000 residents. Most of the farm products grown in Oregon and marketed through first handlers are sold to consumers in other states and foreign countries. The Oregon Department of Agriculture, for example, has estimated that Oregon markets represent the final

Table 1. Cash Receipts from Oregon Farm and Ranch Marketings and Value Added by First Handlers in 1981.

Commodity Groups	Cash Receipts <i>dollars</i>	Value Added by First Handlers		Total Processed Value <i>dollars</i>
		Percent	Total <i>dollars</i>	
LIVESTOCK PRODUCTS				
Meat Animals	304,769,000	16.4	50,065,000	354,834,000
Dairy Products	172,466,000	38.5	66,417,000	238,883,000
Poultry & Eggs	67,695,000	29.3	19,823,000	87,518,000
Other Livestock	66,648,000	2.8	1,925,000	68,573,000
TOTAL LIVESTOCK	611,578,000	22.6	138,230,000	749,808,000
CROPS				
Grain & Hay	407,144,000	11.4	46,355,000	453,499,000
Fruits & Nuts	135,365,000	111.0	150,231,000	285,596,000
Vegetables	123,574,000	168.0	207,586,000	331,160,000
Other Crops	482,305,000	16.3	78,576,000	560,881,000
TOTAL CROPS	1,148,388,000	42.0	482,748,000	1,631,136,000
ALL COMMODITIES	1,759,966,000	35.3	620,978,000	2,380,944,000

destination for only 15 percent of the crop and livestock products grown in the State [16]. About 60 percent of Oregon's agricultural production finds its way to markets in other states, while 25 percent goes to foreign markets.

This means that people in other states and countries buy about 85 percent of Oregon's agricultural output. In other words, in 1981, Oregon farmers, ranchers, and processors exported at least two billion dollars in agricultural commodities and food products. These exports represent new income to Oregon's economy -- income subject to respending which leads to further gains in economic activity throughout the State.

Gross Economic Activity Generated by Agricultural Exports

It is possible to estimate the indirect contribution of agriculture to Oregon's economy due to the respending of export earnings. A number of studies have been conducted by the Department of Agricultural and Resource Economics at Oregon State University which can be used to measure, on a county-by-county basis, the economic impact of agriculture on the overall economy [1, 7, 10, 11, 12, 13, 14, 17, 20]. These "input-output" studies, as they are known, measure the purchases and sales from and to other businesses as farmers and ranchers conduct their business. The buying of inputs such as fertilizer, machinery, fuel, pesticides; the payment of household expenses and taxes; all these and other transactions generate dollars for other businesses and individuals--dollars spent and respent resulting in a multiplier effect.

Input-output studies have been done for nine of Oregon's 36 counties (Baker, Clatsop, Douglas, Grant, Klamath, Lincoln, Morrow, Tillamook, and Union). The multipliers for agricultural export sales range from a low of 1.51 in Morrow County to a high of 2.87 in Union County. Multipliers for export sales of processed food products range from 1.71 in Grant County to 3.08 in Baker County. In general, larger multipliers mean proportionally larger "in-county" purchases while smaller multipliers mean that local producers tend to buy their inputs from nonlocal sources. As out-of-county or import purchases increase, multipliers decline. The more "closed" is an economy in the sense that it is self-sufficient, the higher are the export sales multipliers.

For this reason it is almost certain that multipliers for agriculture and food processing in Oregon as a whole are larger than for any one county. As long as the imports to one Oregon county are exports from another Oregon county, this should be the case. It is safe to assume that the gross income multiplier for Oregon's agriculture and food processing industries is about 3.0.

A multiplier of 3.0 means that the two billion dollars in export sales in 1981 will generate about six billion dollars in total economic activity in the State of Oregon: the initial two

billion dollars plus an additional four billion dollars. The four billion dollar figure is a rather conservative estimate of the indirect contribution of agriculture to Oregon's economy.

The United States Department of Agriculture reports that there are about 34,500 farms and ranches in Oregon [18]. These production units are directly and indirectly responsible for about six billion dollars in gross economic activity within the State -- on average, about \$175,000 per farm and ranch.

Contribution of Agricultural Exports to the Personal Income of Oregonians

Not all of this direct and indirect economic activity is final or personal income to individuals, of course. However, the input-output studies referenced above also show that proportion of total economic activity which ends up as household income. For the nine counties where these studies have been done, households' share is equal to 40 to 60 percent of the initial value of export sales. Slightly less than half of this is income accruing to agricultural households. The remainder is spread throughout households in other segments of the economy not directly related to the production or processing of food.

Assuming households' share is 50 percent, agriculture contributed roughly one billion dollars to the personal income of Oregon consumers in 1981. This is just about \$400 for every person living in the State, on average. Over half of that household income--more than 500 million dollars--accrued to citizens not directly associated with agriculture. For current agricultural production, prices, and trading patterns, this represents one measure of the annual contribution of agriculture to the economic welfare of Oregon citizens.

But of course economic conditions will change in the future. As this summary of the contribution of agriculture to Oregon's economy has shown, the industry has played a significant role in the past. During good crop years and bad, high prices and low, Oregon's agricultural economy has displayed steady progress. Much of that progress, and much of agriculture's stability, is due to its diversity [8]. As new crops and new varieties are introduced and as technology develops, agriculture can be expected to play an expanding and even more stabilizing role in Oregon's economic future.

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