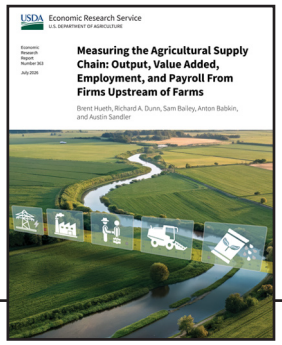
USDA Economic Research Service
U.S. DEPARTMENT OF AGRICULTURE

A report summary from the Economic Research Service

Measuring the Agricultural Supply Chain: Output, Value Added, Employment, and Payroll From Firms Upstream of Farms



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Key Points

- Agricultural producers use inputs from a range of sectors such as seed, fertilizer, tractors, and feed. Each of the producers of these goods and services have their own input requirements. We define all the stages of production in the agricultural chain that ultimately generate the inputs bought by U.S. farmers and ranchers as "upstream agricultural activity."
- Upstream agricultural activity contributes more to U.S. Gross Domestic Product (GDP), employment, and compensation to workers than agricultural production itself.
- In 2017, upstream agricultural activity accounted for $570 billion in economic activity measured in output value and $241 billion in value added contributed to U.S. GDP. As a comparison, the value of output from U.S. farms was $423.3 billion, which contributed $156 billion of value added to the Nation's GDP that year.
- Upstream agricultural activities supported more than 1.56 million jobs in the United States or 1.28 percent of all private sector jobs in the U.S. economy. For comparison, 0.88 percent of all private sector jobs were in agriculture, fishing, and forestry industries. Further, the value of employee compensation associated with upstream activities, $118.7 billion, was nearly three times the $40 billion in employee compensation specifically on farms and ranches.
- Domestic operations accounted for almost $515 billion (92 percent) of the output value upstream of agricultural producers in the agricultural supply chain with imports making up the rest.

Why Does This Matter?

The production of agricultural commodities requires goods and services (called inputs) from a wide array of industries, including construction, manufacturing, wholesale and retail trade, transportation, professional and business services, and energy. The production of each of these inputs has its own set of input requirements. Identifying the industries that support domestic agricultural production and calculating the value of the activities they undertake inform several areas of interest to policy makers, researchers, and business leaders. First, accounting for upstream agricultural activity gives a more complete picture of the total contribution of domestic agriculture to the U.S. economy. Second, identifying the industries engaged in upstream agricultural activity can better establish the places (both rural and urban) where local economies are integrated into the agricultural supply chain. Finally, identifying these industries also highlights possible sources of total factor productivity growth in agricultural production. USDA, Economic Research Service continues to be one of the leading sources of statistics on the contribution of the agricultural supply chain to the U.S. economy, and this work complements existing efforts by estimating the value of output, value added, employee compensation, and employment associated with activity upstream of agricultural producers.

A Few More Details

- Decomposing the $515 billion in domestic upstream agricultural activity and associated $241 billion in value added by supply chain position, the direct use of domestically produced inputs by U.S. agricultural producers accounted for about 57 percent ($294 billion) of output value, 54 percent ($131 billion) of value added, 51 percent ($61 billion) of payroll, and 57 percent (889 thousand) of all jobs.
- The remaining $221 billion in output value, $110 billion in value added, $58 billion in compensation, and 673,000 jobs arise from linkages further back in the agricultural supply chain, such as the value of chemicals used by pesticide producers and steel used by farm machinery manufacturers.
- Decomposing domestic upstream agricultural activity by product type, production of non-agricultural commodities accounted for the majority of activity, generating about $425 billion in total output, $213 billion in value added, $113 billion in payroll, and 1.47 million jobs.
- Domestic production of agricultural commodities that were used either directly or indirectly by other domestic agricultural producers accounted for the remaining $90 billion in total output, $28 billion in value added, $6 billion in payroll, and 96,000 jobs.
- The largest non-agricultural contributors to upstream agricultural activity were support services for agriculture and forestry, animal food manufacturing, real estate services, farm machinery and equipment manufacturing, non-residential construction, pesticide and agricultural chemical manufacturing, petroleum refining, scientific research and development, insurance carriers, non-durable good wholesalers, and transportation services.

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