

Identifying Entrepreneurial Opportunities in Agriculture and Forestry: Tracing Value-Added Processing Leakage in Mississippi



MISSISSIPPI STATE UNIVERSITY™
MS AGRICULTURAL AND
FORESTRY EXPERIMENT STATION

BULLETIN 1261

Identifying Entrepreneurial Opportunities in Agriculture and Forestry: Tracing Value-Added Processing Leakage in Mississippi (2022 Data)

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This document was approved for publication as Research Bulletin 1261 of the Mississippi Agricultural and Forestry Experiment Station (MAFES). It was published by Mississippi State University's Agricultural and Natural Resources Marketing.

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INTRODUCTION

Mississippi produces a wide variety of agricultural and forestry commodities that play a vital role in the state's economy, contributing more than \$46 billion annually. These commodities are sold either directly to end consumers as final demands or to other industries as intermediate inputs used in further manufacturing and processing. When commodities are used as intermediate inputs, they form the foundation of value-added activity that generates additional income, employment, and economic growth.

A substantial and often overlooked opportunity for economic development in Mississippi's agricultural and forestry sectors lies not merely in expanding production, but in retaining more downstream processing activity within the state. When raw or semi-processed commodities are exported for further processing elsewhere, Mississippi experiences value-added

manufacturing leakage—the loss of potential income, jobs, and wealth that could have been created locally. In effect, Mississippi supplies the inputs while other regions capture the higher-value stages of production.

This analysis quantifies the proportions of Mississippi's agricultural and forestry commodities that leave the state as final- or intermediate-demand exports. This study highlights which commodities, and their values, are exported mainly for value-added processing to fulfill out-of-state intermediate demand, offering insights into where Mississippi might most effectively boost its economy by keeping more of this processing activity. These leakage patterns not only describe trade flows but also signal where new value-added manufacturing and entrepreneurial opportunities may be most plausible within Mississippi.



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THE INPUT-OUTPUT APPROACH

Input-output (I-O) models are widely used to trace how industries purchase inputs and sell outputs across regional economies. Beyond measuring economic impacts, recent applications show that these models can also reveal supply-chain gaps and import leakages that point to opportunities for local business development.

Input-output models are widely studied using Impact Analysis for Planning (IMPLAN), a recognized input-output modeling system developed and maintained by the IMPLAN Group LLC, with annual data updates. The model used in this study employs the 546-sectoring scheme, which integrates secondary data from federal sources, including the U.S. Bureau of Economic Analysis, the Bureau of Labor Statistics, and the U.S. Census Bureau, alongside specialized data from the USDA and the U.S. Geological Survey. Each of the 546 IMPLAN sectors corresponds to one or more of the 2022 North American Industry Classification System 6-digit sectors (Table A.1).

To capture the most recent available economic structure for the region, this study used a model constructed with 2022 IMPLAN data. This study employs an IMPLAN input-output (I-O) analytical framework to evaluate the extent to which Mississippi industries capture value-added activity versus exporting production for further processing elsewhere to meet demands for intermediate inputs. Input-output analysis distinguishes between **intermediate demand**—goods and services used as inputs in further production—and **final demand**—goods and services consumed by end users—with value-added realized primarily in the latter stage of the production process.

Within this framework, Mississippi industries that predominantly supply intermediate inputs to businesses in the other 49 U.S. states indicate that upstream processing and the associated value-added occur outside Mississippi. This concept aligns with established interpretations of economic leakage, in which production linkages extend beyond the regional economy, thereby limiting local income and employment generation. Miller et al. used IMPLAN to analyze Michigan's craft beer value chain and showed that replacing imported inputs with locally produced barley and hops increased in-state value added and

supported new agricultural and processing businesses. In aquaculture, Kumar et al. used IMPLAN to estimate the economic contribution of U.S. aquaculture farms, demonstrating that feed, processing, and distribution generate substantial upstream and downstream activity that could be expanded through localized production. Similarly, Gc et al. decomposed forest-product value chains using IMPLAN to show how logging, milling, and downstream manufacturing contribute differently across regions, highlighting where processing capacity is most economically important.

Event-based and infrastructure studies further illustrate how demand translates into localized business opportunity. Welch et al. applied a multi-regional IMPLAN model to measure the effects of inland waterway disruptions on agricultural and manufacturing supply chains across multiple states, demonstrating how transportation infrastructure shapes where value-added activity occurs.

Energy-sector research reinforces this pattern. Pham et al. used IMPLAN to evaluate Ohio's community solar program and found that although solar panels were manufactured in-state, most were historically exported for use elsewhere, suggesting that downstream deployment offered a major opportunity to retain value locally rather than lose it through trade.

Together, this literature shows that when IMPLAN trade flow data indicates large intermediate purchases sourced from outside a region, it reveals potential market space for new firms. Bauman et al. further demonstrate that regional purchase coefficients (RPCs), the share of local demand met by local suppliers, are central to this logic, since low RPCs indicate unmet local production potential.

This study expands that literature by shifting from general measures of leakage and economic contribution to a structured, commodity-level identification of entrepreneurial opportunity. By separating final-demand exports from intermediate-demand exports and linking each to processing stages, **this analysis converts IMPLAN trade-flow data into entrepreneurial opportunity signals for Mississippi's value-added manufacturing sectors.**

METHODS

This analysis relies on IMPLAN trade flow data. IMPLAN provides a computerized platform for building regional economic accounts and generating input-output models that describe the flow of goods, services, and income within a region. The IMPLAN 546-sector framework draws heavily on data from federal agencies, including the U.S. Bureau of Economic Analysis, the Bureau of Labor Statistics, the Census Bureau, the Department of Agriculture, and the Geological Survey. For this study, an input-output model was developed using IMPLAN software and the latest available 2022 dataset. Using IMPLAN, we can examine trade flows data for over 100 commodities¹ produced by Mississippi's agriculture and forestry sectors. IMPLAN's interregional commodity trade flows data quantify changes in demand across regions in response to production shifts in other regions. This can allow for quantification by commodity type, indicating the volume of purchases within and outside Mississippi.

It should be noted that IMPLAN trade flow estimates are derived from modeled algorithms, including gravity models and commodity-flow apportionments, rather than directly observed transaction data. Comprehensive observed data for state-to-state or county-to-county trade in goods and services does not exist at the level of granularity required for this analysis. IMPLAN data therefore represents the most complete and systematically consistent data source available for this purpose, and its trade flow estimates are widely used in regional economic research.

The purchase of these commodities can be further separated into intermediate and final demands using IMPLAN's Social Accounting Matrix (SAM) Industry-by-Commodity tables. This approach is essentially the reverse of the methodology used in Henderson et al., in which the agricultural and forestry production-processing sectors of Mississippi and their supply chains were examined for intermediate input purchases made both within and outside Mississippi. That approach allowed quantification of the proportion of intermediate inputs sourced from within Mississippi and from outside it.

In this analysis, the objective is to better understand the intermediate-input demand of all sectors outside

Mississippi that purchase agriculture and forestry commodities produced in Mississippi. Using the industry-by-commodity SAM data and sorting it by the relevant commodity codes that represent Mississippi agriculture and forestry production, processing, and products, proportions were calculated for all sectors of the 49-state economies that purchase these commodities as intermediate inputs or as final demand. These proportions were applied to the trade flow values for all agricultural and forestry commodities leaving Mississippi for the other 49 U.S. states.

This approach helps us better understand how Mississippi's agricultural and forestry commodities are used when purchased domestically outside the state. The primary objective is to determine how many of the commodities produced in Mississippi are purchased as intermediate inputs. Intermediate inputs purchased by businesses outside the state could present opportunities for value-added manufacturing in Mississippi. By increasing the in-state value-added manufacturing of Mississippi's agricultural and forestry commodities, the economic contribution of agriculture and forestry to the state could be substantially increased, creating new wealth and employment opportunities.

Foreign purchase of Mississippi's agricultural and forestry commodities is also reported; however, the primary focus of the analysis is domestic U.S. out of state purchasing of Mississippi commodities. Domestic purchasing rather than foreign is the primary focus of this analysis, as domestic purchasing presents an indication of potential opportunities for Mississippi to be more competitive with other U.S. states in the value-added manufacturing and processing of Mississippi's own agricultural and forestry commodities.

This analysis also introduces an Entrepreneurial Opportunity Signal framework to synthesize commodity-level trade flow results to identify potential value-added manufacturing opportunities. This concept draws on integrating intermediate input demands into a framework of entrepreneurial opportunity signals, adapting from purely cognitive heuristic models to more structural, demand-side recognition of opportunity signals. The opportunity signal is not intended to predict firm entry, job creation, or economic impact.

¹The term commodities used in IMPLAN and this analysis is defined as "the goods and services produced by industries."

Rather, it serves as a heuristic screening indicator, highlighting commodities for which market demand for further processing already exists and for which that processing activity predominantly occurs outside Mississippi (Table 1).

Table 1. Entrepreneurial opportunity signal criterion, threshold, and scoring for value-added processing opportunities in Mississippi (2022).

Criterion	Threshold	Opportunity Signal Score
Intermediate Demand Share	≥ 65%	1 if yes; 0 if no
Intermediate Demand Value	> \$100 Million	1 if yes; 0 if no
Processing Stage	Low or Medium	1 if yes; 0 if no

The opportunity signal is derived from three observable characteristics reported in the results. To ensure transparency and consistency, these characteristics are combined using a simple scoring rule. Commodities receive one point for each of the following conditions:

- an intermediate demand share of 65 percent² or greater (indicating that the majority of value chain activity occurs elsewhere),
- an intermediate demand value that is economically meaningful relative to other commodities in the analysis (upper third of highest valued commodities with sales exceeding \$100 million³), and
- a low or medium stage of processing, indicating

scope for additional transformation prior to final consumption (indicated by an intermediate demand share of 90% or greater as Low, less than 90% but more than 50% as Medium, and less than 50% as High).

Commodities meeting all three conditions are classified as exhibiting a high entrepreneurial opportunity signal (3 points). Commodities meeting two of the three conditions are classified as medium entrepreneurial opportunity signal (2 points), while those meeting one or none are considered to exhibit low entrepreneurial opportunity signal. Any commodity with an exceeding \$100 million in intermediate demand value is classified as at least a medium entrepreneurial opportunity signal, ensuring that economically significant sectors are not overlooked. This scoring approach is intended to organize observed patterns in the data rather than to impose a predictive model of entrepreneurial behavior.

Commodities classified as having a high opportunity signal exhibit large out-of-state trade volume, are sold primarily as intermediate inputs, and are at relatively early or mid-stages of processing (Table 1). These characteristics indicate that Mississippi producers are supplying inputs to downstream manufacturing activities that largely occur elsewhere, signaling potential scope for entrepreneurial activity or firm expansion under appropriate market conditions. Commodities with moderate opportunity signals exhibit mixed use between final and intermediate demand, or leakage into smaller-scale processing, suggesting more context-dependent or niche opportunities.

² Because no published standardized thresholds exist for defining “majority” value-added processing, we selected 65% as a clear indicator that additional processing represents the dominant use of the exported commodity rather than a simple majority. This higher threshold helps focus the analysis on commodities where value-added processing is the core economic function and where leakage reduction opportunities are more substantial.

³ While no universal benchmark exists for defining a meaningful investment opportunity, \$100 million was selected as a practical indicator of commercially significant scale and strategic importance. The \$100 million threshold is consistent with federal practice where the Office of Management and Budget uses this benchmark to identify economically significant regulatory actions.

RESULTS

In 2022, Mississippi's agricultural and forestry sectors produced and processed 105 different commodities valued at over \$33.4 billion. Using IMPLAN data, which classifies the economy into 546 sectors, this analysis identifies these commodities as vital intermediate inputs purchased for further value-added manufacturing or processing throughout the U.S. economy. Of this total output, nearly 60% (approximately \$19.81 billion) was sold to out-of-state buyers across the other 49 U.S. states (Table 2).

Examples of these commodities, which are also valued at over \$1 billion in out-of-state sales, include processed poultry meat products (\$4.92 B), upholstered household furniture (\$2.38 B), dimension lumber (\$1.53 B), and paper from pulp (\$1.04 B). Export of commodities outside of the U.S. amounted to 20% of Mississippi production totaling to \$6.68 billion.

However, of the \$19.81 billion sold to domestic out-of-state buyers:

- \$9.23 billion (46.7%) went directly to end consumers as final demands, with no further value-added processing.
- The remaining \$10.58 billion (53.4%) was sold as intermediate inputs to out-of-state businesses for additional value-added processing (Table 3).

Examples of these commodities sold as intermediate inputs that are also valued at over \$500 million include processed poultry meat products, dimension lumber, oilseeds, reconstituted wood products, paper from pulp, and paperboard containers. Table 4 provides the entrepreneurial opportunity signal for all commodities, and Table 5 lists the top 25 commodities based upon intermediate demand value, highlighting where the largest absolute leakage occurs.



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Table 2. Mississippi's agricultural and forestry commodity demands from the other 49 U.S. states, indicating trade flows, values, final demands, and intermediate input demands in absolute dollar values and as percentages of the total value sold outside Mississippi (2022 data and dollar values).

Commodity	Production	Total MS Retained	Total Trade Flows (Domestic Exports)	Foreign Exports	% Retained	% Domestic Exports	% Foreign Exports
3001 - Oilseeds	1,495,846,749	196,754,569	833,022,803	466,069,377	13.2	55.7	31.2
3002 - Grains	537,784,687	238,705,585	195,512,141	103,566,961	44.4	36.4	19.3
3003 - Vegetables and melons	100,426,522	69,220,969	20,881,744	10,323,809	68.9	20.8	10.3
3004 - Fruit	7,866,465	5,019,437	1,340,163	1,506,865	63.8	17	19.2
3005 - Tree nuts	7,314,448	1,224,018	270,288	5,820,142	16.7	3.7	79.6
3006 - Greenhouse, nursery, and floriculture products	51,791,334	12,791,671	37,890,018	1,109,645	24.7	73.2	2.1
3008 - Cotton	421,050,238	21,309,713	91,239,838	308,500,687	5.1	21.7	73.3
3010 - All other crops	109,612,878	51,540,582	42,255,080	15,817,216	47	38.5	14.4
3011 - Beef cattle	246,518,843	129,488,333	115,655,739	1,374,771	52.5	46.9	0.6
3012 - Dairy cattle and milk products	22,966,892	15,181,910	7,784,982	0	66.1	33.9	0
3013 - Poultry and egg products	3,026,646,669	2,457,229,966	548,570,243	20,846,460	81.2	18.1	0.7
3014 - Animal products, except cattle and poultry and eggs	409,269,937	125,325,689	279,922,666	4,021,582	30.6	68.4	1
3015 - Forest, timber, and forest nursery products	31,552,844	28,657,805	1,586,745	1,308,294	90.8	5	4.1
3016 - Logs and roundwood	843,811,580	593,409,031	154,569,563	95,832,986	70.3	18.3	11.4
3017 - Fish	41,280,350	9,048,827	16,987,869	15,243,654	21.9	41.2	36.9
3018 - Wild game products, pelts, and furs	24,520,391	13,555,537	2,404,213	8,560,641	55.3	9.8	34.9
3019 - Support activities for agriculture and forestry	61,808,950	59,168,038	2,273,151	367,761	95.7	3.7	0.6
3063 - Dog and cat food	110,478,781	2,293,351	66,818,676	41,366,754	2.1	60.5	37.4
3064 - Other animal food	608,072,142	387,414,038	209,469,968	11,188,136	63.7	34.4	1.8
3065 - Flour	18,367,865	10,832,615	7,102,506	432,744	59	38.7	2.4
3066 - Rice	220,903,186	5,533,094	178,348,196	37,021,896	2.5	80.7	16.8
3067 - Malt	956,123	5,839	900,811	49,473	0.6	94.2	5.2
3068 - Wet corn	9,877,506	3,697,970	5,627,970	551,566	37.4	57	5.6
3069 - Soybean and other oilseed processing	406,494,098	7,964,934	362,514,874	36,014,290	2	89.2	8.9
3070 - Fats and oils refining and blending	36,993,210	556,728	35,762,742	673,740	1.5	96.7	1.8
3071 - Breakfast cereal	1,296,822	111,907	1,143,716	41,199	8.6	88.2	3.2
3072 - Beet sugar	194,039	176,933	13,343	3,763	91.2	6.9	1.9
3073 - Sugar cane	239,357	5,772	230,092	3,493	2.4	96.1	1.5

Table 2 (continued). Mississippi's agricultural and forestry commodity demands from the other 49 U.S. states, indicating trade flows, values, final demands, and intermediate input demands in absolute dollar values and as percentages of the total value sold outside Mississippi (2022 data and dollar values).

Commodity	Production	Total MS Retained	Total Trade Flows (Domestic Exports)	Foreign Exports	% Retained	% Domestic Exports	% Foreign Exports
3074 - Nonchocolate confectioneries	3,490,684	90,759	3,309,602	90,323	2.6	94.8	2.6
3075 - Chocolate and confectioneries from cacao beans	1,568,848	24,305	1,397,488	147,055	1.5	89.1	9.4
3076 - Confectioneries from purchased chocolate	11,781,826	344,963	9,902,120	1,534,743	2.9	84	13
3078 - Frozen specialties	298,471,808	20,285,589	157,995,567	120,190,652	6.8	52.9	40.3
3079 - Canned fruits and vegetables	75,595,562	747,183	45,193,201	29,655,178	1	59.8	39.2
3080 - Canned specialties	5,144,914	229,972	4,832,364	82,578	4.5	93.9	1.6
3081 - Dehydrated food products	22,712,676	303,664	13,592,871	8,816,141	1.3	59.8	38.8
3082 - Cheese	124,338,883	1,349,829	70,222,516	52,766,538	1.1	56.5	42.4
3083 - Dry, condensed, and evaporated dairy products	13,537,612	674,107	10,806,481	2,057,024	5	79.8	15.2
3084 - Fluid milk	138,167,054	51,694,958	85,720,515	751,581	37.4	62	0.5
3085 - Creamery butter	123,302	98,277	20,110	4,915	79.7	16.3	4
3086 - Ice cream and frozen dessert	7,929,895	1,364,311	5,620,148	945,436	17.2	70.9	11.9
3087 - Frozen cakes and other pastries	110,153,296	6,416,401	102,594,620	1,142,275	5.8	93.1	1
3088 - Processed poultry meat products	5,772,661,427	642,776,953	4,926,124,590	203,759,884	11.1	85.3	3.5
3089 - Meat (except poultry) produced in slaughtering plant	176,762,544	18,942,927	97,051,578	60,768,039	10.7	54.9	34.4
3090 - Meat processed from carcasses	722,932,105	92,091,995	356,263,873	274,576,237	12.7	49.3	38
3092 - Seafood products	636,667,326	62,179,037	325,824,972	248,663,317	9.8	51.2	39.1
3094 - Cookies and crackers	88,049,579	14,776,559	72,576,645	696,375	16.8	82.4	0.8
3095 - Dry pasta, mixes, and dough	110,654,508	9,001,949	58,526,397	43,126,162	8.1	52.9	39
3096 - Tortillas	299,479	276,222	23,257	0	92.2	7.8	0
3097 - Roasted nuts and peanut butter	79,552,546	11,662,744	65,033,748	2,856,054	14.7	81.7	3.6
3098 - Other snack foods	260,234,672	13,671,398	142,540,438	104,022,836	5.3	54.8	40
3099 - Coffee and tea	38,405,669	2,376,090	34,608,208	1,421,371	6.2	90.1	3.7
3100 - Flavoring syrup and concentrate	188,988,225	2,186,883	185,723,076	1,078,266	1.2	98.3	0.6
3101 - Mayonnaise, dressings, and sauces	6,968,297	94,888	6,491,099	382,310	1.4	93.2	5.5
3102 - Spices and extracts	207,575,986	6,694,034	197,297,903	3,584,049	3.2	95	1.7

Table 2 (continued). Mississippi's agricultural and forestry commodity demands from the other 49 U.S. states, indicating trade flows, values, final demands, and intermediate input demands in absolute dollar values and as percentages of the total value sold outside Mississippi (2022 data and dollar values).

Commodity	Production	Total MS Retained	Total Trade Flows (Domestic Exports)	Foreign Exports	% Retained	% Domestic Exports	% Foreign Exports
3103 - All other food products	268,272,602	6,193,652	154,913,133	107,165,817	2.3	57.7	39.9
3104 - Bottled and canned soft drinks and water	366,497,205	125,092,840	238,200,272	3,204,093	34.1	65	0.9
3105 - Manufactured ice	21,366,450	6,632,446	14,092,140	641,864	31	66	3
3106 - Beer, ale, malt liquor and nonalcoholic beer	24,499,515	4,235,500	18,950,319	1,313,696	17.3	77.3	5.4
3107 - Wine and brandies	12,704,403	2,476,177	9,916,779	311,447	19.5	78.1	2.5
3108 - Distilled liquors except brandies	38,308,750	176,757	25,309,824	12,822,169	0.5	66.1	33.5
3110 - Fiber filaments, yarn, and thread	7,526,543	192,113	5,119,956	2,214,474	2.6	68	29.4
3111 - Broadwoven fabrics and felts	33,037,179	777,821	25,315,402	6,943,956	2.4	76.6	21
3112 - Narrow fabrics and schiffli machine embroidery	91,015	554	53,853	36,608	0.6	59.2	40.2
3113 - Nonwoven fabrics	391,306,407	3,445,514	304,640,335	83,220,558	0.9	77.9	21.3
3114 - Knitted fabrics	953,229	47,327	557,836	348,066	5	58.5	36.5
3115 - Finished textiles and fabrics	56,683,244	1,100,573	55,582,671	0	1.9	98.1	0
3116 - Coated fabric coating	25,617,290	624,033	19,850,783	5,142,474	2.4	77.5	20.1
3117 - Carpets and rugs	3,978,805	3,702,599	121,200	155,006	93.1	3	3.9
3118 - Curtains and linens	119,572,279	700,217	69,337,385	49,534,677	0.6	58	41.4
3119 - Textile bags and canvas	8,256,126	133,749	7,786,181	336,196	1.6	94.3	4.1
3120 - Rope, cordage, twine, tire cord and tire fabric	20,243,451	190,786	12,666,002	7,386,663	0.9	62.6	36.5
3121 - Other textile products	238,710,812	5,297,599	171,131,864	62,281,349	2.2	71.7	26.1
3124 - Cut and sewn apparel from contractors	44,884,157	628,209	25,066,464	19,189,484	1.4	55.8	42.8
3125 - Men's and boys' cut and sew apparel	75,698,945	776,261	43,175,086	31,747,598	1	57	41.9
3126 - Women's and girls' cut and sew apparel	135,824,237	1,948,258	78,908,871	54,967,108	1.4	58.1	40.5
3127 - Other cut and sew apparel	24,679,731	404,036	23,472,041	803,654	1.6	95.1	3.3
3128 - Apparel accessories and other apparel	55,131,255	817,347	51,454,363	2,859,545	1.5	93.3	5.2
3129 - Tanned and finished leather and hides	12,145,003	149,546	8,572,853	3,422,604	1.2	70.6	28.2
3130 - Footwear	337,024	2,074	298,183	36,767	0.6	88.5	10.9
3131 - Other leather and allied products	29,512,950	115,541	15,558,146	13,839,263	0.4	52.7	46.9

Table 2 (continued). Mississippi's agricultural and forestry commodity demands from the other 49 U.S. states, indicating trade flows, values, final demands, and intermediate input demands in absolute dollar values and as percentages of the total value sold outside Mississippi (2022 data and dollar values).

Commodity	Production	Total MS Retained	Total Trade Flows (Domestic Exports)	Foreign Exports	% Retained	% Domestic Exports	% Foreign Exports
3132 - Dimension lumber	2,100,260,910	485,083,153	1,531,531,527	83,646,230	23.1	72.9	4
3133 - Preserved wood products	218,139,722	48,882,812	165,862,709	3,394,201	22.4	76	1.6
3134 - Veneer and plywood	603,422,985	79,419,511	504,910,824	19,092,650	13.2	83.7	3.2
3135 - Engineered wood members and trusses	148,575,490	15,964,177	85,348,004	47,263,309	10.7	57.4	31.8
3136 - Reconstituted wood products	847,591,642	89,749,058	744,062,137	13,780,447	10.6	87.8	1.6
3137 - Wood windows and doors	15,350,872	11,438,622	495,019	3,417,231	74.5	3.2	22.3
3138 - Cut stock, resawn and planed lumber	70,871,004	12,518,274	57,733,052	619,678	17.7	81.5	0.9
3139 - Other millwork, including flooring	44,711,767	26,265,238	18,294,672	151,857	58.7	40.9	0.3
3140 - Wood containers and pallets	264,241,849	73,273,501	187,489,396	3,478,952	27.7	71	1.3
3142 - Prefabricated wood buildings	82,980,057	32,797,075	15,689,694	34,493,288	39.5	18.9	41.6
3143 - All other miscellaneous wood products	221,277,036	30,747,054	87,622,529	102,907,453	13.9	39.6	46.5
3144 - Wood pulp	5,296,901	46,009	626,692	4,624,200	0.9	11.8	87.3
3145 - Paper from pulp	2,016,620,037	121,931,539	1,048,747,793	845,940,705	6	52	41.9
3146 - Paperboard from pulp	260,353,792	3,835,355	159,578,067	96,940,370	1.5	61.3	37.2
3147 - Paperboard containers	1,423,324,292	224,398,271	600,476,069	598,449,952	15.8	42.2	42
3148 - Paper bags and coated and treated paper	102,112,161	1,111,549	62,655,802	38,344,810	1.1	61.4	37.6
3149 - Stationery products	66,649,946	14,784,598	48,998,925	2,866,423	22.2	73.5	4.3
3150 - Sanitary paper products	258,475,877	26,603,891	215,021,204	16,850,782	10.3	83.2	6.5
3151 - All other converted paper products	18,317,665	833,871	11,980,641	5,503,153	4.6	65.4	30
3365 - Wood kitchen cabinets and countertops	163,949,355	2,820,072	95,902,890	65,226,393	1.7	58.5	39.8
3366 - Upholstered household furniture	4,236,112,418	55,171,062	2,387,092,166	1,793,849,190	1.3	56.4	42.3
3367 - Nonupholstered wood household furniture	169,125,899	3,424,969	133,041,113	32,659,817	2	78.7	19.3
3370 - Wood office furniture	48,332,554	599,251	29,682,642	18,050,661	1.2	61.4	37.3
3371 - Custom architectural woodwork and millwork	64,104,849	871,440	37,213,563	26,019,846	1.4	58.1	40.6
Grand Total	33,422,749,320	6,935,012,739	19,809,502,599	6,678,233,982	20.7	59.3	20

Table 3. Mississippi's agricultural and forestry commodity demands from the other 49 U.S. states, indicating trade flows values (domestic exports), final demands, and intermediate input demands in absolute dollar values and as percentages of the total value sold outside Mississippi (2022 data and dollar values).

Demands	Trade Flows	Final Demands		Intermediate Input Demands	
3001 - Oilseeds	833,022,803	0.00%	0	100.00%	833,022,803
3002 - Grains	195,512,141	2.90%	5,669,631	97.10%	189,842,509
3003 - Vegetables and melons	20,881,744	83.12%	17,356,199	16.88%	3,525,546
3004 - Fruit	1,340,163	47.13%	631,585	52.87%	708,578
3005 - Tree nuts	270,288	62.02%	167,643	37.98%	102,645
3006 - Greenhouse, nursery, and floriculture products	37,890,018	66.84%	25,324,622	33.16%	12,565,396
3008 - Cotton	91,239,838	0.64%	584,158	99.36%	90,655,680
3010 - All other crops	42,255,080	26.45%	11,174,688	73.55%	31,080,392
3011 - Beef cattle	115,655,739	0.33%	377,766	99.67%	115,277,973
3012 -Dairy cattle and milk products	7,784,982	0.04%	3,431	99.96%	7,781,551
3013 - Poultry and egg products	548,570,243	17.22%	94,479,851	82.78%	454,090,392
3014 - Animal products, except cattle and poultry and eggs	279,922,666	19.58%	54,804,422	80.42%	225,118,245
3015 - Forest, timber, and forest nursery products	1,586,745	6.41%	101,783	93.59%	1,484,962
3016 - Logs and roundwood	154,569,563	1.81%	2,790,896	98.19%	151,778,667
3017 - Fish	16,987,869	21.18%	3,598,259	78.82%	13,389,610
3018 - Wild game products, pelts, and furs	2,404,213	92.46%	2,222,823	7.54%	181,390
3019 - Support activities for agriculture and forestry	2,273,151	19.97%	453,982	80.03%	1,819,168
3063 - Dog and cat food	66,818,676	85.78%	57,319,045	14.22%	9,499,631
3064 - Other animal food	209,469,968	9.41%	19,712,987	90.59%	189,756,981
3065 - Flour	7,102,506	19.15%	1,360,389	80.85%	5,742,117
3066 - Rice	178,348,196	51.18%	91,276,279	48.82%	87,071,918
3067 - Malt	900,811	43.94%	395,799	56.06%	505,012
3068 - Wet corn	5,627,970	6.15%	346,047	93.85%	5,281,924
3069 - Soybean and other oilseed processing	362,514,874	4.86%	17,633,434	95.14%	344,881,439
3070 - Fats and oils refining and blending	35,762,742	33.62%	12,023,832	66.38%	23,738,910
3071 - Breakfast cereal	1,143,716	99.00%	1,132,269	1.00%	11,447
3072 - Beet sugar	13,343	40.50%	5,404	59.50%	7,939
3073 - Sugar cane	230,092	38.75%	89,168	61.25%	140,924
3074 - Nonchocolate confectioneries	3,309,602	91.00%	3,011,605	9.00%	297,998
3075 - Chocolate and confectioneries from cacao beans	1,397,488	48.18%	673,358	51.82%	724,130
3076 - Confectioneries from purchased chocolate	9,902,120	94.63%	9,370,531	5.37%	531,590
3078 - Frozen specialties	157,995,567	88.91%	140,476,102	11.09%	17,519,465

Table 3 (continued). Mississippi's agricultural and forestry commodity demands from the other 49 U.S. states, indicating trade flows values (domestic exports), final demands, and intermediate input demands in absolute dollar values and as percentages of the total value sold outside Mississippi (2022 data and dollar values).

Demands	Trade Flows	Final Demands		Intermediate Input Demands	
3079 - Canned fruits and vegetables	45,193,201	79.54%	35,946,151	20.46%	9,247,050
3080 - Canned specialties	4,832,364	82.04%	3,964,320	17.96%	868,043
3081 - Dehydrated food products	13,592,871	70.12%	9,530,992	29.88%	4,061,879
3082 - Cheese	70,222,516	40.50%	28,438,005	59.50%	41,784,511
3083 - Dry, condensed, and evaporated dairy products	10,806,481	60.28%	6,513,690	39.72%	4,292,790
3084 - Fluid milk	85,720,515	73.45%	62,961,285	26.55%	22,759,230
3085 - Creamery butter	20,110	75.73%	15,230	24.27%	4,880
3086 - Ice cream and frozen dessert	5,620,148	52.51%	2,951,303	47.49%	2,668,844
3087 - Frozen cakes and other pastries	102,594,620	89.38%	91,702,461	10.62%	10,892,159
3088 - Processed poultry meat products	4,926,124,590	67.27%	3,313,561,217	32.73%	1,612,563,374
3089 - Meat (except poultry) produced in slaughtering plant	97,051,578	50.08%	48,602,648	49.92%	48,448,930
3090 - Meat processed from carcasses	356,263,873	80.66%	287,357,082	19.34%	68,906,790
3092 - Seafood products	325,824,972	56.94%	185,524,821	43.06%	140,300,151
3094 - Cookies and crackers	72,576,645	92.42%	67,074,700	7.58%	5,501,945
3095 - Dry pasta, mixes, and dough	58,526,397	83.24%	48,719,311	16.76%	9,807,085
3096 - Tortillas	23,257	92.95%	21,617	7.05%	1,639
3097 - Roasted nuts and peanut butter	65,033,748	84.25%	54,793,076	15.75%	10,240,673
3098 - Other snack foods	142,540,438	85.32%	121,617,531	14.68%	20,922,906
3099 - Coffee and tea	34,608,208	74.33%	25,723,942	25.67%	8,884,266
3100 - Flavoring syrup and concentrate	185,723,076	3.78%	7,020,594	96.22%	178,702,482
3101 - Mayonnaise, dressings, and sauces	6,491,099	74.14%	4,812,757	25.86%	1,678,343
3102 - Spices and extracts	197,297,903	60.56%	119,485,821	39.44%	77,812,083
3103 - All other food products	154,913,133	77.62%	120,246,632	22.38%	34,666,501
3104 - Bottled and canned soft drinks and water	238,200,272	87.37%	208,116,977	12.63%	30,083,295
3105 - Manufactured ice	14,092,140	86.38%	12,172,147	13.62%	1,919,993
3106 - Beer, ale, malt liquor and nonalcoholic beer	18,950,319	76.04%	14,408,956	23.96%	4,541,363
3107 - Wine and brandies	9,916,779	74.72%	7,409,500	25.28%	2,507,279
3108 - Distilled liquors except brandies	25,309,824	49.21%	12,454,003	50.79%	12,855,821
3110 - Fiber filaments, yarn, and thread	5,119,956	5.46%	279,335	94.54%	4,840,622
3111 - Broadwoven fabrics and felts	25,315,402	17.30%	4,379,264	82.70%	20,936,138
3112 - Narrow fabrics and schiffli machine embroidery	53,853	7.91%	4,261	92.09%	49,591
3113 - Nonwoven fabrics	304,640,335	10.79%	32,864,899	89.21%	271,775,436
3114 - Knitted fabrics	557,836	4.29%	23,956	95.71%	533,881

Table 3 (continued). Mississippi's agricultural and forestry commodity demands from the other 49 U.S. states, indicating trade flows values (domestic exports), final demands, and intermediate input demands in absolute dollar values and as percentages of the total value sold outside Mississippi (2022 data and dollar values).

Demands	Trade Flows	Final Demands		Intermediate Input Demands	
3115 - Finished textiles and fabrics	55,582,671	5.12%	2,844,669	94.88%	52,738,002
3116 - Coated fabric coating	19,850,783	5.07%	1,006,765	94.93%	18,844,017
3117 - Carpets and rugs	121,200	82.43%	99,905	17.57%	21,295
3118 - Curtains and linens	69,337,385	72.17%	50,039,669	27.83%	19,297,716
3119 - Textile bags and canvas	7,786,181	56.15%	4,371,739	43.85%	3,414,442
3120 - Rope, cordage, twine, tire cord and tire fabric	12,666,002	42.17%	5,341,239	57.83%	7,324,763
3121 - Other textile products	171,131,864	32.46%	55,546,474	67.54%	115,585,390
3124 - Cut and sewn apparel from contractors	25,066,464	31.00%	7,769,415	69.00%	17,297,049
3125 - Mens and boys cut and sew apparel	43,175,086	71.23%	30,753,767	28.77%	12,421,319
3126 - Womens and girls cut and sew apparel	78,908,871	98.90%	78,041,283	1.10%	867,588
3127 - Other cut and sew apparel	23,472,041	100.00%	23,472,041	0.00%	0
3128 - Apparel accessories and other apparel	51,454,363	89.07%	45,831,364	10.93%	5,622,999
3129 - Tanned and finished leather and hides	8,572,853	3.14%	269,082	96.86%	8,303,771
3130 - Footwear	298,183	99.69%	297,248	0.31%	934
3131 - Other leather and allied products	15,558,146	88.85%	13,823,635	11.15%	1,734,512
3132 - Dimension lumber	1,531,531,527	2.16%	33,080,172	97.84%	1,498,451,355
3133 - Preserved wood products	165,862,709	4.35%	7,210,739	95.65%	158,651,970
3134 - Veneer and plywood	504,910,824	2.92%	14,733,087	97.08%	490,177,736
3135 - Engineered wood members and trusses	85,348,004	8.74%	7,456,962	91.26%	77,891,042
3136 - Reconstituted wood products	744,062,137	5.11%	38,008,723	94.89%	706,053,413
3137 - Wood windows and doors	495,019	4.16%	20,585	95.84%	474,433
3138 - Cut stock, resawn and planed lumber	57,733,052	2.88%	1,662,580	97.12%	56,070,472
3139 - Other millwork, including flooring	18,294,672	3.45%	631,935	96.55%	17,662,737
3140 - Wood containers and pallets	187,489,396	67.12%	125,835,957	32.88%	61,653,438
3142 - Prefabricated wood buildings	15,689,694	25.98%	4,076,938	74.02%	11,612,756
3143 - All other miscellaneous wood products	87,622,529	26.34%	23,077,123	73.66%	64,545,407
3144 - Wood pulp	626,692	2.24%	14,063	97.76%	612,629
3145 - Paper from pulp	1,048,747,793	34.38%	360,575,582	65.62%	688,172,210
3146 - Paperboard from pulp	159,578,067	0.65%	1,030,866	99.35%	158,547,202
3147 - Paperboard containers	600,476,069	4.24%	25,443,206	95.76%	575,032,863
3148 - Paper bags and coated and treated paper	62,655,802	17.42%	10,916,012	82.58%	51,739,790
3149 - Stationery products	48,998,925	74.48%	36,495,982	25.52%	12,502,943
3150 - Sanitary paper products	215,021,204	66.75%	143,525,996	33.25%	71,495,208
3151 - All other converted paper products	11,980,641	34.29%	4,108,272	65.71%	7,872,369

Table 3 (continued). Mississippi's agricultural and forestry commodity demands from the other 49 U.S. states, indicating trade flows values (domestic exports), final demands, and intermediate input demands in absolute dollar values and as percentages of the total value sold outside Mississippi (2022 data and dollar values).

Demands	Trade Flows	Final Demands		Intermediate Input Demands	
3365 - Wood kitchen cabinets and countertops	95,902,890	17.70%	16,978,678	82.30%	78,924,211
3366 - Upholstered household furniture	2,387,092,166	98.40%	2,348,948,125	1.60%	38,144,041
3367 - Nonupholstered wood household furniture	133,041,113	97.94%	130,302,935	2.06%	2,738,178
3370 - Wood office furniture	29,682,642	92.45%	27,442,544	7.55%	2,240,098
3371 - Custom architectural woodwork and millwork	37,213,563	81.83%	30,452,825	18.17%	6,760,737
Grand Total	19,809,502,599	46.65%	9,224,804,654	53.35%	10,584,697,940

Table 4. Commodity-level indicators of entrepreneurial opportunity from value-added processing leakage in Mississippi (2022 data and dollar values).*

Commodity	Total Out-of-State Trade Flows	Share Sold as Intermediate	Intermediate Demand Value	Processing Stage	Entrepreneurial Opportunity Signal
3001 - Oilseeds	\$833,022,803	100.00%	\$833,022,803	Low	High
3002 - Grains	\$195,512,141	97.10%	\$189,842,509	Low	High
3003 - Vegetables and melons	\$20,881,744	16.88%	\$3,525,546	High	Low
3004 - Fruit	\$1,340,163	52.87%	\$708,578	Medium	Low
3005 - Tree nuts	\$270,288	37.98%	\$102,645	High	Low
3006 - Greenhouse, nursery, and floriculture products	\$37,890,018	33.16%	\$12,565,396	High	Low
3008 - Cotton	\$91,239,838	99.36%	\$90,655,680	Low	Medium
3010 - All other crops	\$42,255,080	73.55%	\$31,080,392	Medium	Medium
3011 - Beef cattle	\$115,655,739	99.67%	\$115,277,973	Low	High
3012 -Dairy cattle and milk products	\$7,784,982	99.96%	\$7,781,551	Low	Medium
3013 - Poultry and egg products	\$548,570,243	82.78%	\$454,090,392	Medium	High
3014 - Animal products, except cattle and poultry and eggs	\$279,922,666	80.42%	\$225,118,245	Medium	High
3015 - Forest, timber, and forest nursery products	\$1,586,745	93.59%	\$1,484,962	Low	Medium
3016 - Logs and roundwood	\$154,569,563	98.19%	\$151,778,667	Low	High
3017 - Fish	\$16,987,869	78.82%	\$13,389,610	Medium	Medium
3018 - Wild game products, pelts, and furs	\$2,404,213	7.54%	\$181,390	High	Low
3019 - Support activities for agriculture and forestry	\$2,273,151	80.03%	\$1,819,168	Medium	Medium
3063 - Dog and cat food	\$66,818,676	14.22%	\$9,499,631	High	Low
3064 - Other animal food	\$209,469,968	90.59%	\$189,756,981	Low	High
3065 - Flour	\$7,102,506	80.85%	\$5,742,117	Medium	Medium
3066 - Rice	\$178,348,196	48.82%	\$87,071,918	High	Low

Table 4 (continued). Commodity-level indicators of entrepreneurial opportunity from value-added processing leakage in Mississippi (2022 data and dollar values).*

Commodity	Total Out-of-State Trade Flows	Share Sold as Intermediate	Intermediate Demand Value	Processing Stage	Entrepreneurial Opportunity Signal
3067 - Malt	\$900,811	56.06%	\$505,012	Medium	Low
3068 - Wet corn	\$5,627,970	93.85%	\$5,281,924	Low	Medium
3069 - Soybean and other oilseed processing	\$362,514,874	95.14%	\$344,881,439	Low	High
3070 - Fats and oils refining and blending	\$35,762,742	66.38%	\$23,738,910	Medium	Medium
3071 - Breakfast cereal	\$1,143,716	1.00%	\$11,447	High	Low
3072 - Beet sugar	\$13,343	59.50%	\$7,939	Medium	Low
3073 - Sugar cane	\$230,092	61.25%	\$140,924	Medium	Low
3074 - Nonchocolate confectioneries	\$3,309,602	9.00%	\$297,998	High	Low
3075 - Chocolate and confectioneries from cacao beans	\$1,397,488	51.82%	\$724,130	Medium	Low
3076 - Confectioneries from purchased chocolate	\$9,902,120	5.37%	\$531,590	High	Low
3078 - Frozen specialties	\$157,995,567	11.09%	\$17,519,465	High	Low
3079 - Canned fruits and vegetables	\$45,193,201	20.46%	\$9,247,050	High	Low
3080 - Canned specialties	\$4,832,364	17.96%	\$868,043	High	Low
3081 - Dehydrated food products	\$13,592,871	29.88%	\$4,061,879	High	Low
3082 - Cheese	\$70,222,516	59.50%	\$41,784,511	Medium	Low
3083 - Dry, condensed, and evaporated dairy products	\$10,806,481	39.72%	\$4,292,790	High	Low
3084 - Fluid milk	\$85,720,515	26.55%	\$22,759,230	High	Low
3085 - Creamery butter	\$20,110	24.27%	\$4,880	High	Low
3086 - Ice cream and frozen dessert	\$5,620,148	47.49%	\$2,668,844	High	Low
3087 - Frozen cakes and other pastries	\$102,594,620	10.62%	\$10,892,159	High	Low
3088 - Processed poultry meat products	\$4,926,124,590	32.73%	\$1,612,563,374	High	Medium
3089 - Meat (except poultry) produced in slaughtering plant	\$97,051,578	49.92%	\$48,448,930	High	Low
3090 - Meat processed from carcasses	\$356,263,873	19.34%	\$68,906,790	High	Low
3092 - Seafood products	\$325,824,972	43.06%	\$140,300,151	High	Medium
3094 - Cookies and crackers	\$72,576,645	7.58%	\$5,501,945	High	Low
3095 - Dry pasta, mixes, and dough	\$58,526,397	16.76%	\$9,807,085	High	Low
3096 - Tortillas	\$23,257	7.05%	\$1,639	High	Low
3097 - Roasted nuts and peanut butter	\$65,033,748	15.75%	\$10,240,673	High	Low
3098 - Other snack foods	\$142,540,438	14.68%	\$20,922,906	High	Low

Table 4 (continued). Commodity-level indicators of entrepreneurial opportunity from value-added processing leakage in Mississippi (2022 data and dollar values).*

Commodity	Total Out-of-State Trade Flows	Share Sold as Intermediate	Intermediate Demand Value	Processing Stage	Entrepreneurial Opportunity Signal
3099 - Coffee and tea	\$34,608,208	25.67%	\$8,884,266	High	Low
3100 - Flavoring syrup and concentrate	\$185,723,076	96.22%	\$178,702,482	Low	High
3101 - Mayonnaise, dressings, and sauces	\$6,491,099	25.86%	\$1,678,343	High	Low
3102 - Spices and extracts	\$197,297,903	39.44%	\$77,812,083	High	Low
3103 - All other food products	\$154,913,133	22.38%	\$34,666,501	High	Low
3104 - Bottled and canned soft drinks and water	\$238,200,272	12.63%	\$30,083,295	High	Low
3105 - Manufactured ice	\$14,092,140	13.62%	\$1,919,993	High	Low
3106 - Beer, ale, malt liquor and nonalcoholic beer	\$18,950,319	23.96%	\$4,541,363	High	Low
3107 - Wine and brandies	\$9,916,779	25.28%	\$2,507,279	High	Low
3108 - Distilled liquors except brandies	\$25,309,824	50.79%	\$12,855,821	Medium	Low
3110 - Fiber filaments, yarn, and thread	\$5,119,956	94.54%	\$4,840,622	Low	Medium
3111 - Broadwoven fabrics and felts	\$25,315,402	82.70%	\$20,936,138	Medium	Medium
3112 - Narrow fabrics and schiffli machine embroidery	\$53,853	92.09%	\$49,591	Low	Medium
3113 - Nonwoven fabrics	\$304,640,335	89.21%	\$271,775,436	Medium	High
3114 - Knitted fabrics	\$557,836	95.71%	\$533,881	Low	Medium
3115 - Finished textiles and fabrics	\$55,582,671	94.88%	\$52,738,002	Low	Medium
3116 - Coated fabric coating	\$19,850,783	94.93%	\$18,844,017	Low	Medium
3117 - Carpets and rugs	\$121,200	17.57%	\$21,295	High	Low
3118 - Curtains and linens	\$69,337,385	27.83%	\$19,297,716	High	Low
3119 - Textile bags and canvas	\$7,786,181	43.85%	\$3,414,442	High	Low
3120 - Rope, cordage, twine, tire cord and tire fabric	\$12,666,002	57.83%	\$7,324,763	Medium	Low
3121 - Other textile products	\$171,131,864	67.54%	\$115,585,390	Medium	High
3124 - Cut and sewn apparel from contractors	\$25,066,464	69.00%	\$17,297,049	Medium	Medium
3125 - Mens and boys cut and sew apparel	\$43,175,086	28.77%	\$12,421,319	High	Low
3126 - Womens and girls cut and sew apparel	\$78,908,871	1.10%	\$867,588	High	Low
3127 - Other cut and sew apparel	\$23,472,041	0.00%	\$0	High	Low
3128 - Apparel accessories and other apparel	\$51,454,363	10.93%	\$5,622,999	High	Low
3129 - Tanned and finished leather and hides	\$8,572,853	96.86%	\$8,303,771	Low	Medium
3130 - Footwear	\$298,183	0.31%	\$934	High	Low

Table 4 (continued). Commodity-level indicators of entrepreneurial opportunity from value-added processing leakage in Mississippi (2022 data and dollar values).*

Commodity	Total Out-of-State Trade Flows	Share Sold as Intermediate	Intermediate Demand Value	Processing Stage	Entrepreneurial Opportunity Signal
3131 - Other leather and allied products	\$15,558,146	11.15%	\$1,734,512	High	Low
3132 - Dimension lumber	\$1,531,531,527	97.84%	\$1,498,451,355	Low	High
3133 - Preserved wood products	\$165,862,709	95.65%	\$158,651,970	Low	High
3134 - Veneer and plywood	\$504,910,824	97.08%	\$490,177,736	Low	High
3135 - Engineered wood members and trusses	\$85,348,004	91.26%	\$77,891,042	Low	Medium
3136 - Reconstituted wood products	\$744,062,137	94.89%	\$706,053,413	Low	High
3137 - Wood windows and doors	\$495,019	95.84%	\$474,433	Low	Medium
3138 - Cut stock, resawn and planed lumber	\$57,733,052	97.12%	\$56,070,472	Low	Medium
3139 - Other millwork, including flooring	\$18,294,672	96.55%	\$17,662,737	Low	Medium
3140 - Wood containers and pallets	\$187,489,396	32.88%	\$61,653,438	High	Low
3142 - Prefabricated wood buildings	\$15,689,694	74.02%	\$11,612,756	Medium	Medium
3143 - All other miscellaneous wood products	\$87,622,529	73.66%	\$64,545,407	Medium	Medium
3144 - Wood pulp	\$626,692	97.76%	\$612,629	Low	Medium
3145 - Paper from pulp	\$1,048,747,793	65.62%	\$688,172,210	Medium	High
3146 - Paperboard from pulp	\$159,578,067	99.35%	\$158,547,202	Low	High
3147 - Paperboard containers	\$600,476,069	95.76%	\$575,032,863	Low	High
3148 - Paper bags and coated and treated paper	\$62,655,802	82.58%	\$51,739,790	Medium	Medium
3149 - Stationery products	\$48,998,925	25.52%	\$12,502,943	High	Low
3150 - Sanitary paper products	\$215,021,204	33.25%	\$71,495,208	High	Low
3151 - All other converted paper products	\$11,980,641	65.71%	\$7,872,369	Medium	Medium
3365 - Wood kitchen cabinets and countertops	\$95,902,890	82.30%	\$78,924,211	Medium	Medium
3366 - Upholstered household furniture	\$2,387,092,166	1.60%	\$38,144,041	High	Low
3367 - Nonupholstered wood household furniture	\$133,041,113	2.06%	\$2,738,178	High	Low
3370 - Wood office furniture	\$29,682,642	7.55%	\$2,240,098	High	Low
3371 - Custom architectural woodwork and millwork	\$37,213,563	18.17%	\$6,760,737	High	Low
Grand Total	\$19,809,502,596	53.43%	\$10,584,697,940	-	-

* **Notes:** Intermediate demand values are derived directly from IMPLAN Trade Flows and Social Accounting Matrix (SAM) data. Processing stage classifications reflect relative degrees of transformation prior to final consumption. Entrepreneurial opportunity signals are qualitative indicators based on the magnitude of intermediate demand and current processing depth and are intended to identify potential opportunity areas rather than predict firm entry, firm growth success, or economic impacts.

Table 5. Top 25 commodity-level indicators of entrepreneurial opportunity from value-added processing leakage in Mississippi sorted largest to smallest by intermediate demand value (2022 data and dollar values).

Commodity	Total Out-of-State Trade Flows	Share Sold as Intermediate	Intermediate Demand Value	Processing Stage	Entrepreneurial Opportunity Signal
3088 - Processed poultry meat products	\$4,926,124,590	32.73%	\$1,612,563,374	High	Medium
3132 - Dimension lumber	\$1,531,531,527	97.84%	\$1,498,451,355	Low	High
3001 - Oilseeds	\$833,022,803	100.00%	\$833,022,803	Low	High
3136 - Reconstituted wood products	\$744,062,137	94.89%	\$706,053,413	Low	High
3145 - Paper from pulp	\$1,048,747,793	65.62%	\$688,172,210	Medium	High
3147 - Paperboard containers	\$600,476,069	95.76%	\$575,032,863	Low	High
3134 - Veneer and plywood	\$504,910,824	97.08%	\$490,177,736	Low	High
3013 - Poultry and egg products	\$548,570,243	82.78%	\$454,090,392	Medium	High
3069 - Soybean and other oilseed processing	\$362,514,874	95.14%	\$344,881,439	Low	High
3113 - Nonwoven fabrics	\$304,640,335	89.21%	\$271,775,436	Medium	High
3014 - Animal products, except cattle and poultry and eggs	\$279,922,666	80.42%	\$225,118,245	Medium	High
3002 - Grains	\$195,512,141	97.10%	\$189,842,509	Low	High
3064 - Other animal food	\$209,469,968	90.59%	\$189,756,981	Low	High
3100 - Flavoring syrup and concentrate	\$185,723,076	96.22%	\$178,702,482	Low	High
3133 - Preserved wood products	\$165,862,709	95.65%	\$158,651,970	Low	High
3146 - Paperboard from pulp	\$159,578,067	99.35%	\$158,547,202	Low	High
3016 - Logs and roundwood	\$154,569,563	98.19%	\$151,778,667	Low	High
3092 - Seafood products	\$325,824,972	43.06%	\$140,300,151	High	Medium
3121 - Other textile products	\$171,131,864	67.54%	\$115,585,390	Medium	High
3011 - Beef cattle	\$115,655,739	99.67%	\$115,277,973	Low	High
3008 - Cotton	\$91,239,838	99.36%	\$90,655,680	Low	Medium
3365 - Wood kitchen cabinets and countertops	\$95,902,890	82.30%	\$78,924,211	Medium	Medium
3135 - Engineered wood members and trusses	\$85,348,004	91.26%	\$77,891,042	Low	Medium
3143 - All other miscellaneous wood products	\$87,622,529	73.66%	\$64,545,407	Medium	Medium
3138 - Cut stock, resawn and planed lumber	\$57,733,052	97.12%	\$56,070,472	Low	Medium

DISCUSSION

Viewed through this opportunity-recognition framework, the results summarized in Table 4 highlight a subset of agricultural and forestry commodities for which value-added processing leakage is most pronounced. Table 5 further demonstrates this opportunity showing the top 25 commodities ranked by intermediate demand value. Commodities receiving high opportunity signals combine substantial out-of-state trade volumes with predominant use as intermediate inputs, a dollar value of production among the upper third of commodities, and processing at relatively early or mid-stages. These characteristics indicate that **Mississippi producers are supplying inputs to downstream manufacturing activities that largely occur outside the state**, reflecting the geographic location of processing capacity rather than a lack of national market demand.

Several commodities identified in Table 4 are consistently integrated into external supply chains for further transformation. In these cases, the observed trade patterns suggest that demand for processing is already well established, but the associated value-added activity is captured elsewhere. From an entrepreneurship perspective, such commodities represent clearer opportunity signals than those exported primarily for final consumption, as they reflect unmet potential for local processing rather than end-market saturation.

Commodities classified as exhibiting moderate opportunity signals reflect more mixed patterns of

use, with intermediate demand accounting for a smaller share of total exports or with higher existing levels of processing. These cases may still present entrepreneurial opportunities, but such opportunities are more likely to be niche-specific, scale-dependent, or contingent on specialized market conditions.

It should be noted that a high entrepreneurial opportunity signal does not necessarily imply that processing activity should occur within Mississippi or that such activity would be economically viable in all cases. Factors such as capital intensity, labor availability, economies of scale, regulatory requirements, and firm-level capabilities influence the feasibility of in-state processing. However, by systematically distinguishing commodities based on observed trade and demand characteristics, this analysis provides a data-driven starting point for prioritizing entrepreneurial exploration, feasibility analysis, and targeted development efforts.

By framing value-added processing leakage through an opportunity-recognition lens, the results move beyond traditional export measurement, informing strategic decision-making across agricultural and forestry supply chains. The opportunity signals summarized in Table 4 clarify where Mississippi's production base already supports downstream manufacturing elsewhere, offering insight into where entrepreneurial initiatives, firm expansion, or value-added manufacturing investment may be most plausible if enabling conditions are present.

CONCLUSION

This study demonstrates how input-output modeling can be extended beyond traditional impact measurement to support entrepreneurial opportunity recognition in value-added manufacturing. Using IMPLAN trade flow and Social Accounting Matrix data, we distinguish intermediate-demand exports from final-demand exports to identify where Mississippi's agricultural and forestry commodities are exported primarily for further processing rather than final consumption. This approach reveals structural points of value-added leakage where downstream demand exists, but associated manufacturing activity occurs largely outside the state. This leakage could reflect comparative advantages that other states have over Mississippi, or more simply, it could also be attributed to relative differences in consumer preferences and consumer demands.

Three key results emerge. First, **a substantial share of Mississippi's out-of-state commodity trade consists of intermediate-demand exports**, indicating that production is embedded in downstream manufacturing supply chains located elsewhere. Second, **several commodities combine large trade volumes with high intermediate-demand shares**, indicating that Mississippi is competitively positioned in production yet captures a disproportionately small share of the associated value-added activity. Third, many of the **commodities exhibiting the strongest leakage patterns are at low or medium stages of processing**, suggesting that foregone value added is tied to feasible processing steps rather than to highly specialized manufacturing.

The introduction of entrepreneurial opportunity signals provides a structured framework for interpreting these results. Rather than treating all exports as equivalent indicators of economic strength, this approach highlights commodities for which trade volume, intermediate demand share, and processing stage converge, indicating where entrepreneurial entry or firm expansion may be more plausible. Commodities with high scores represent the most plausible candidate for in-state value-added expansion. Table 5 further strengthens this interpretation by shifting from a broad commodity scan to a prioritized ranking based on intermediate demand value. The ranking reflects the absolute scale of leakage. While some commodities may exhibit high proportional leakage, those with the

largest dollar volumes represent the most significant opportunities for economic impact through targeted interventions. However, even some high entrepreneurial signal commodities may face certain structural barriers to in-state expansion such as a lack of needed support for capital intensive investment, thin operating margins resulting from higher in-state transportation or supply costs, or other entrenched supply chain relationships. These signals are not predictions of firm entry or economic impact; however, they are intended to serve as screening indicators designed to narrow the field of opportunities for further feasibility analysis.

Importantly, not all observed leakage represents unrealized local opportunity. In some cases, trade patterns reflect comparative advantage, economies of scale, established supply chain configurations, or international demand for specific intermediate product forms. For example, certain commodities may be exported in raw or semi-processed form because downstream processing is more efficiently performed in other regions or countries. As a result, the opportunity signals identified in this study should be interpreted as indicative rather than prescriptive.

From a policy and development perspective, the results suggest that strategies focused solely on attracting external firms may overlook significant opportunities embedded within existing supply chains. By identifying where local production is already feeding external processing networks, this analysis supports development approaches oriented toward targeted import substitution, business retention and expansion, and entrepreneurship, particularly in rural and resource-based regions.

More broadly, this study contributes to the applied economics literature by repositioning IMPLAN as a strategic diagnostic tool for opportunity identification rather than solely as an accounting framework for economic impacts. By translating commodity-level leakage patterns into explicit entrepreneurial signals, it provides a replicable method that can be applied in other states and industries to identify where value-added manufacturing and new business formation may be most viable. Future research should integrate firm-level feasibility analysis, cost structures, and policy instruments to move from opportunity identification toward opportunity realization.

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APPENDIX

Table A.1. IMPLAN 546 sector bridge to 2022 North American Industry Classification System (NAICS) 6-digit sector. Details on each NAICS 6-digit sector available <https://www.census.gov/naics/>

Implan 546 Commodity Code	Implan 546 Commodity Code Description	2022 NAICS Code
3001	Oilseeds	111110 111120 111191
3002	Grains	111130 111140 111150 111160 111191 111199
3003	Vegetables and melons	111211 111219
3004	Fruit	111310 111320 111331 111332 111333 111334 111336 111339
3005	Tree nuts	111335 111336
3006	Greenhouse, nursery, and floriculture products	111411 111419 111421 111422
3008	Cotton	111920
3010	All other crops	111940 111992 111998
3011	Beef cattle	112111 112112
3012	Dairy cattle and milk products	112120
3013	Poultry and egg products	112310 112320 112330 112340 112390
3014	Animal products, except cattle and poultry and eggs	112210 112410 112420 112511 112512 112519 112910 112920 112930 112990
3015	Forest, timber, and forest nursery products	113110 113210
3016	Logs and roundwood	113310
3017	Fish	114111 114112 114119
3018	Wild game products, pelts, and furs	114210
3019	Support activities for agriculture and forestry	115111 115112 115113 115114 115115 115116 115210 115310
3063	Dog and cat food	311111
3064	Other animal food	311119
3065	Flour	311211
3066	Rice	311212
3067	Malt	311213
3068	Wet corn	311221
3069	Soybean and other oilseed processing	311224
3070	Fats and oils refining and blending	311225
3071	Breakfast cereal	311230
3072	Beet sugar	311313
3073	Sugar cane	311314
3074	Nonchocolate confectioneries	311340

Table A.1 (continued). IMPLAN 546 sector bridge to 2022 North American Industry Classification System (NAICS) 6-digit sector (continued). Details on each NAICS 6-digit sector available <https://www.census.gov/naics/>

Implan 546 Commodity Code	Implan 546 Commodity Code Description	2022 NAICS Code
3075	Chocolate and confectioneries from cacao beans	311351
3076	Confectioneries from purchased chocolate	311352
3078	Frozen specialties	311412
3079	Canned fruits and vegetables	311421
3080	Canned specialties	311422
3081	Dehydrated food products	311423
3082	Cheese	311513
3083	Dry, condensed, and evaporated dairy products	311514
3084	Fluid milk	311511
3085	Creamery butter	311512
3086	Ice cream and frozen dessert	311520
3087	Frozen cakes and other pastries	311813
3088	Processed poultry meat products	311615
3089	Meat (except poultry) produced in slaughtering plant	311611
3090	Meat processed from carcasses	311612
3092	Seafood products	311710
3094	Cookies and crackers	311821
3095	Dry pasta, mixes, and dough	311824
3096	Tortillas	311830
3097	Roasted nuts and peanut butter	311911
3098	Other snack foods	311919
3099	Coffee and tea	311920
3100	Flavoring syrup and concentrate	311930
3101	Mayonnaise, dressings, and sauces	311941
3102	Spices and extracts	311942
3103	All other food products	311991 311999
3104	Bottled and canned soft drinks and water	312111 312112
3105	Manufactured ice	312113
3106	Beer, ale, malt liquor and nonalcoholic beer	312120
3107	Wine and brandies	312130
3108	Distilled liquors except brandies	312140
3110	Fiber filaments, yarn, and thread	313110
3111	Broadwoven fabrics and felts	313210
3112	Narrow fabrics and schiffli machine embroidery	313220
3113	Nonwoven fabrics	313230

Table A.1 (continued). IMPLAN 546 sector bridge to 2022 North American Industry Classification System (NAICS) 6-digit sector (continued). Details on each NAICS 6-digit sector available <https://www.census.gov/naics/>

Implan 546 Commodity Code	Implan 546 Commodity Code Description	2022 NAICS Code
3114	Knitted fabrics	313240
3115	Finished textiles and fabrics	313310
3116	Coated fabric coating	313320
3117	Carpets and rugs	314110
3118	Curtains and linens	314120
3119	Textile bags and canvas	314910
3120	Rope, cordage, twine, tire cord and tire fabric	314994
3121	Other textile products	314999
3124	Cut and sewn apparel from contractors	315210
3125	Men's and boys' cut and sew apparel	315250
3126	Women's and girls' cut and sew apparel	315250
3127	Other cut and sew apparel	315250
3128	Apparel accessories and other apparel	315990
3129	Tanned and finished leather and hides	316110
3130	Footwear	316210
3131	Other leather and allied products	316990
3132	Dimension lumber	321113
3133	Preserved wood products	321114
3134	Veneer and plywood	321211 321212
3135	Engineered wood members and trusses	321215
3136	Reconstituted wood products	321219
3137	Wood windows and doors	321911
3138	Cut stock, resawn and planed lumber	321912
3139	Other millwork, including flooring	321918
3140	Wood containers and pallets	321920
3142	Prefabricated wood buildings	321992
3143	All other miscellaneous wood products	321999
3144	Wood pulp	322110
3145	Paper from pulp	322120
3146	Paperboard from pulp	322130
3147	Paperboard containers	322211 322212 322219
3148	Paper bags and coated and treated paper	322220

Table A.1 (continued). IMPLAN 546 sector bridge to 2022 North American Industry Classification System (NAICS) 6-digit sector (continued). Details on each NAICS 6-digit sector available <https://www.census.gov/naics/>

Implan 546 Commodity Code	Implan 546 Commodity Code Description	2022 NAICS Code
3149	Stationery products	322230
3150	Sanitary paper products	322291
3151	All other converted paper products	322299
3365	Wood kitchen cabinets and countertops	337110
3366	Upholstered household furniture	337121
3367	Nonupholstered wood household furniture	337122
3370	Wood office furniture	337211
3371	Custom architectural woodwork and millwork	337212
3391	All other miscellaneous manufactured products	339999



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